New Orleans Paratransit Study

Final Report

Volume I: RTA / LIFT

Texas A&M Transportation Institute

with

Alpha Route

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EXECUTIVE SUMMARY

1. Introduction

The New Orleans Regional Planning Commission (RPC) in collaboration with the Regional Transportation Authority (RTA) and Jefferson Parish Transit (JP Transit) retained Texas A&M Transportation Institute (TTI), along with teammates AlphaRoute and EME Consulting, to perform a comprehensive analysis of LIFT and MITS, these two agencies' ADA paratransit services. The Final Report is split into two volumes: Volume I pertains to LIFT and Volume II pertains to MITS. This report constitutes Volume I.

The study was originally commissioned as a paratransit "companion piece" to the New Links network design. But with new policies to handle inter-parish paratransit trips being implemented by both transit agencies soon after the study began, along with other reasons for not consolidating the two systems at this time, the study soon re-focused on assessments of each service and the development of recommendations that focuses on improving the service quality and service/cost efficiency and ensuring regulatory compliance of each system.

This 11-month study (March 2022-January 2023) culminated with specific, timeframe-based-specific recommendations for implementable changes to service policies and practices and for implementable changes to operational approaches (services mix, fleet mix, dedicated run structures, interagency coordination) that will help the RTA and JP Transit achieve these goals.

2. Service Background and Performance

2.1 Service Background

Operating 24-7, LIFT serves ADA paratransit riders making trips in the RTA's service area, not only within Orleans Parish, but as of mid-March 2022, inter-parish trips to/from Jefferson Parish. Formerly (prior to mid-March 2022), riders making inter-parish trips had to transfer from one service to another at transfer points at Ochsner Hospital on the Eastbank, Delgado Community College (City Park Campus), and the Gretna Transit Terminal on the Westbank. Since the policy change, LIFT now serves inter-parish trips directly.

Riders can book a trip from 1 to 7 days in advance. Same-day service may also be requested; however, such trips are only served if there is space available. The base fare of LIFT service is $2.00, which enablers a rider to go anywhere within Orleans Parish, and to/from Jefferson Parish. There are two special destination fares charged for trips to the AMTRAK-Greyhound station ($5.00) and to Armstrong International Airport ($15.00).

Up until May 2019, the service had been operated under an operations/management contract with Transdev, noting that Transdev used a DBE subcontractor to operate a few dedicated runs to help RTA meet its DBE goals. Earlier in 2019, there was a decision to transition the service in-house. The transition started in June 2019 and was completed in December 2020. Since that time, the management and operation of LIFT in-house has been performed entirely with RTA employees. LIFT is currently operated entirely with dedicated vehicles.

2.2 Service Performance

In pre-COVID 2019, when service was still being managed and provided by Transdev, the RTA operated 124,740 revenue vehicle hours (RVHs) with a fleet of 43 vehicles in serving 225,092 passenger trips (including PCAs and companions). With a 2019 operating cost of over $15.1 million, unit costs for 2019 were calculated at $121.12 per RVH and $67.12 per passenger trip. Based on the figures above, the 2019 productivity was 1.80 passenger trips/RVH, also noting that in 2018, the LIFT productivity was 1.96 passenger trips per hour. And, in 2019, on-time performance exceeded the RTA's 90% standard for on-time performance in seven of the 12 months.

In 2020, ridership and productivity on LIFT decreased significantly because the COVID-related decrease in demand and because of the scheduling practices implemented to ensure in-vehicle social distancing. From 2019 to 2020, ridership decreased from 225,092 to 132,517 passenger trips (or 56% of its 2019 level). From 2020 to 2021, ridership rebounded somewhat to 140,876 trips or 63% of its pre-COVID ridership (which is within the 60% to 80% range being reported by transit agencies nationally).

The most dramatic change though was in operating cost per hour and cost per trip. Largely as a result of bringing the service in-house, the **operating cost per hour increased 21%** - from $121 per RVH in 2019 to over $146 per RVH in both 2020 and 2021. As a result of bringing the service inhouse, but also stemming from COVID-related productivities, LIFT's **operating cost per passenger trip increased by 50%** from $67 in 2019 to over $100 in both 2020 and 2021.

From 2019 to 2021, there was a steady slide of productivity, from 1.80 to 1.46 to 1.38 passenger trips per hour. The decrease in 2020 is not surprising because of COVID-related factors. The decrease in 2021 was more unexpected because of increased ridership (typically, the greater the ridership, the higher the productivity because there are more ridesharing opportunities). But upon closer inspection, the 1.38 productivity figure was impacted greatly by the COVID-related productivities in the first few months of 2021. By the end of the 2021, productivity was back above 1.7 and trending upward.

Meanwhile, on-time performance (OTP), which is one of the most common metrics used to measure service quality, had a mixed performance. In 2019, OTP exceeded the 90% level in seven of the 12 months. OTP hit its peak in 2020, exceeding 90% for all but one month. The increase in 2020 can largely be attributed to lower demand and to the change in service policies brought on by COVID, resulting in a dramatic decrease in the number of shared rides (in order to achieve in-vehicle social distancing). The less shared rides, the greater OTP tends to be. In 2021, OTP remained above the 90% level during the first two months when the pandemic was still impactful; however, from March 2021, LIFT's OTP has been substandard, ranging from the mid to high 80%'s. Indeed, in comparing the 2019 vs. 2021 month-to-month OTP figures from March to December (pre-COVID vs post-COVID, but also under different management), OTP was worse in 2021 for each of the 10 months, also falling below the 90% OTP standard for each of the 12 months.

3. Methodology

In addition to project management, the major study tasks performed by the TTI team included:

- Establishing a Project Advisory Committee (PAC) and keeping them advised on study findings and recommendations. The PAC, chaired by Adam Tatar of NORPC, was composed of representatives for stakeholder organizations, a LIFT rider (who also served on the RTA Board), MITS rider, and LIFT and MITS management staff.

- Collecting and analyzing service and cost data
- Interview and observing LIFT staff in various functional areas and discussing with LIFT staff the team's analyses, findings and recommendations
- Conducting rider focus groups, interviewing stakeholder organizations and providing fodder for a project website set up by RPC
- Developing a service profile of LIFT and assessing its performance; this consisted mostly of trend analyses or various service and cost performance metrics, as well as peer review. In addition, the TTI team conducted a detailed analysis of four focus areas: the eligibility determination function, the call and control center, software/technology, and complaint management.
- Simulating the benefits of modifying the run structure and service mix; this was spearheaded by AlphaRoute using its optimization software tool, AlphaPlan.
- Developing recommendations

4. Summary Findings and Recommendations

Stemming from the findings and analyses, the study's recommendations focus on strategies that are designed to improve the service/cost efficiency or service quality and to ensure regulatory compliance. Each recommendation was prioritized based on the timing of implementing the recommendation as follows:

- **Immediate** within 1 years
- **Short-Term** 2-3 years
- **Long-term** 4+ years

Findings and recommendations are discussed below are based on the following ten categories:

4.1 Organizational Structure
4.2 Policies and Practices
4.3 Vehicle Fleet, Fleet Maintenance, In-Vehicle Equipment
4.4 Technology
4.5 Booking, Scheduling and Dispatching
4.6 Run Structure and Service Mix
4.7 Safety Training
4.8 Compliance Monitoring
4.9 Complaint Management
4.10 Providing Options for ADA Paratransit Customers

Prior to discussing the findings and recommendations, there are a few over-riding findings regarding cost and service quality that establish a context for our recommendations. Compared to the set of peers, LIFT was by far the most expensive service. LIFT's operating cost per trip, at $104.52, is **nearly twice** the average unit cost of the four peers ($53.31). To a large extent, the disparity is due to a LIFT having an extremely high operating cost per revenue vehicle hour (RVH) and a comparatively low productivity. At $146.58 per RVH, LIFT had the highest operating cost per RVH among the peer group, which ranged from $40.79 to $129.00 per RVH. Indeed, LIFT's hourly cost of $146.58 was **55% higher** than the peer average of $94.42 per RVH. The $146.58 figure is among the highest cost per RVH figures the TTI team has seen nationally.

To a large extent, the **27% increase** in LIFT's cost per RVH over the last five years, from $116.50 in 2017 to $146.58 in 2021, can be traced to bringing the service in-house. From 2017 to 2019 when LIFT was managed and operated by Transdev, the cost per RVH ranged from $112.32 to $121.12 per RVH. After the full transition to the RTA, the operating cost per RVH for 2020 and 2021 increased substantially to above $146,00 for both years. It is likely that increase in cost per RVH stems from the higher wage rates and compensation packages that typically are associated with public sector employees vs. contractors, and higher driver wages and benefits in particular which can represent up to 70% of the operating cost structure of paratransit services. The increase in cost per RVH also stems from providing an oversupply of service during certain days and at certain times during those days.

Bringing a service in-house – and absorbing the additional cost of doing so – can sometimes be justified by an improvement to service quality that results. By bringing the service in-house, a transit agency has more direct control over elements that impact service quality. However, in the case of LIFT, that has not happened. In 2019, on-time performance (OTP) mired mostly in the mid 80%'s and upon occasion, broke above the RTA-established 90% standard. OTP did improve in 2020 but that was mainly due to the reduced demand because of the pandemic and practices implemented to keep customers safe from exposure to other riders. In 2021, as ridership returned, on-time performance sunk back below 90% for 10 of the 12 months. It is true that LIFT's complaint frequency ratio did improve between the Transdev and RTA regimes but we believe that had more to do changes in the way complaints are now being processed, especially since denials have skyrocketed as a result of capacity constraints.

What follows is an abbreviated version of the major findings and recommendation s which are designed to (1) lower cost and improve cost efficiency, (2) address service quality issues, and (3) ensure compliance with regulatory requirements. A more detailed discussion of these findings and recommendations can be found in Chapter 5 of this report.

4.1 Organizational Structure

There are several positions tied directly to LIFT services that are in other RTA departments, i.e., not under the direct control of the Director of Mobility and Alternative Modes, who manages LIFT. These include: (1) the Eligibility Specialist; (2) Data Analyst; (3) Trainers; (4) Mechanics; and (5) Safety & Emergency Preparedness staff. This results in delays in needed actions.

Recommendation: Positions that are at least 75% focused on LIFT should be re-organized to fall under the Director of Mobility and Alternative. **Immediate.** At the last PAC meeting, RTA management commented that a re-organization at RTA is taking place and this recommendation is being considered in that process.

4.2 Policies and Practices

Service Area and Elimination of Transfers

In adopting the new policy for serving inter-parish directly, the RTA effectively increased its service area. resulting in decreased productivity. At the same-time, MITS had no other alternative but to serve inter-parish trips as well, resulting in service duplication.

Recommendation: To reduce (if not eliminate) service duplication, one of the following changes in policy should be made, noting that any changes should be discussed and planned in advance with MITS management. Scheme #1: The customer calls the system responsible for the area in which the trip originates. So, if a rider lives in Jefferson Parish and works in Orleans Parish, the customer would then call MITS for the going trip and LIFT for the return trip. Scheme #2: The customer calls the system based on residence, arranging for the entire round trip with that agency. In addition, any planning pertaining to this recommendation should be done with JP Transit staff. **Short-term.** At the last PAC, RTA indicated that it was favoring Scheme #1 and that inter-agency coordination and the final plan for inter-parish ADA paratransit service would be set forth in an inter-agency Memorandum of Understanding (MOU). JP Transit/Transdev management agreed that a MOU would be a good idea.

Eligibility Determination

With the percentage of eligible determinations increasing from the 76%-77% (2017-2019) to 85%-89% (2020-21), the RTA has been more inclusive (or lax) in deeming applicants eligible. In-person interviews will result in applicants self-selecting out. The use of functional assessments and FACTS testing is also proven way of more accurately determining eligibility, and in particular, conditional eligibility. Implementing these practices will reduce the demand (or minimize the increase in demand) for LIFT, thereby ensuring that RTA's limited resources are used for riders who truly are ADA paratransit eligible. Requiring re-certification every three years, a policy of many transit agencies, will have a similar outcome.

Focus group participants, some of whom were blind, indicated that they found the eligibility application difficult to complete, also mentioning that the application is very long. The re-wording of some questions would also seem to appropriate, especially if in-person interviews become mandatory.

Importantly, focus group participants also indicated that the response time for an eligibility determination takes an average of **3-4 months**. Per FTA/ADA policy, if an agency is unable to make a determination within 21 days, the agency must grant presumptive eligibility to the applicant until a determination is made. This practice is not occurring and hence a compliance violation.

Recommendations: (1) The RTA should immediately begin to require in-person interviews for all applicants and functional/FACTS assessments as necessary. Such interviews and assessment should be included the recertification process. These new eligibility determination processes can be handled by RTA staff dedicated to this function or by a third-party organization that specializes in ADA paratransit eligibility determination. (2) The RTA should work with Lighthouse employees to better understand ways in which the application can be made more accessible. (3) The RTA should immediately observe the 21-day day policy mentioned above.. **Immediate.**

Advance Reservations and Premium Fares

The LIFT Ride Guide indicated that riders may book an advance reservation up to 5 days in advance, even though the current policy allows trips to be booked 7 days in advance. The LIFT Rider Guide also indicates that premium trips (requested on the day of travel) are charged a higher fare, even though in practice, all trips are charged the same fare.

Recommendation: The LIFT Rider Guide needs to be changed to reflect that riders can request a trip up to 7 days in advance and that no premium fare will be charged for same-day trips that are served. **Immediate.** At the last PAC meeting, RTA indicated that it was in the process of revising the LIFT Rider Guide. At the meeting, TTI staff also recommended that in that process, steps should also be taken to ensure the accessibility of the on-line Ride Guide (so that it is compliant with Section 508 and follows Web Content Accessibility Guidelines (WCAG) 2.2 and W3C Web Accessibility Initiative guidelines) and that RTA may want to enlist the help of visually impaired Louisiana Lighthouse staff in the re-design phase and test-driving the on-line Rider Guide.

Pick-Up Times and On-Time Performance

Within the LIFT program, all trip requests are entered into Trapeze based on pick-up time. While trips can be requested based on pickup time or by appointment/drop-off time within Trapeze, a different process is used by the LIFT reservations staff for the latter to manually convert such requests into a pick-up time. The problem that arises is that the RTA bases on-time performance (OTP) on the pick-up time only. Thus, a vehicle can arrive at the destination after the appointment time or requested drop off time and still be on-time, leading to a skewed on-time performance measure. Moreover, RTA has no policy for a drop-off window for trips that are requested based on an appointment time to requested drop-off time. Without such a policy, trips can be dropped off way early; in some cases, the drop-off can happen when building is not yet open.

Recommendations: (1) At a minimum, appointment times or requested drop-off times should be noted in the notes field. (2) LIFT reservation agents should book trips based on appointment times or requested drop-off times for trips so requested. (3) With this change, on-time performance for such trips should be based not only on the vehicle arriving during the confirmed pick-up window but also arriving at the destination by the requested drop-off time. (4) The RTA should also establish a drop-off window, such as -15/0 minutes, to address early drop-offs. **Immediate.**

No Show/Late Cancellation Policy and Subscription Trip Cancellation Policy

The RTA has a reasonable no-show/late cancellation "abuse" policy and a subscription trip cancellation policy, but neither are being managed. Reducing the number of no-shows and late cancellations will have a positive impact on both productivity and on-time performance.

Recommendation: The RTA should immediately begin pursuing riders suspensions based on its existing no-show/late cancellation policy and subscription cancellation policy, while also clarifying in the Rider Guide the period by which the percentage of cancellations of subscription trips are measured as noted above. In conjunction with this and in an effort to improve productivity and on-time performance., correspondence should go out to all riders that this will now be managed in earnest. **Immediate.**

4.3 Vehicle Fleet, Fleet Maintenance, In-Vehicle Equipment

Vehicle Fleet

At the time of our study, the LIFT Fleet consisted of 54 body on chassis vehicles. During summers, when A/C systems malfunction, the spare vehicle ratio essentially decreases to 0%. This is one reason why vehicles without working MDTs are allowed to leave the yard. While the 11 vehicle on order should help,

6 others are due to be retired, resulting in a net gain of 5 vehicles through 2022. However, an additional 15 vehicles are due to be retired in 2023.

Recommendation: At a minimum, the RTA should immediately put in for purchasing at least 15 vehicles to replace the 15 Fords due to be retired in 2023. Increasing that number to 20 vehicles should give the RTA more cushion in the summers. **Immediate.** At the last PAC meeting, RTA management indicated that it had ordered and received 21 new paratransit vehicles.

Fleet Maintenance

Procurement of parts is a major issue for the maintenance department. Since the RTA brought maintenance in-house, all part acquisitions have to go through a formal process with the Procurement department to determine whether it should go out for bid or be a sole source; most of the time the department determines that a bid should be used. Previously (under Transdev) the maintenance department was able to make blanket purchase orders for parts acquisitions, which was a much more efficient process. Also, tire replacement is relegated to the Canals Street facility per RTA's Goodyear contract. Having to make a separate trip to Canal Street can sometimes result in operational delays.

Recommendation: The RTA procurement and part storage processes need to be revisited to enable the maintenance department to turn around downed vehicles in a timely fashion. The maintenance department should also be enabled to stock up on other common preventative maintenance parts for paratransit vehicles. In addition, RTA should look into whether or not that Goodyear contract can be modified to allow for tire replacement at the ENO facility. **Immediate.**

MDTs and Tablets

Currently, vehicles are going out in service without working MDTs. This has an adverse effect on collecting service data and aiding dispatchers (and automated service-day optimization functions) with accurate real-time vehicle locations. Moreover, it makes service-day changes more difficult to communicate. RTA intends to replace these MDTs with tablets onto which Trapeze's DriverMate will be loaded.

Recommendation: The entire LIFT fleet should be retrofitted with mounts and SIM card-based tablets as soon as possible. A sufficient number of tablets should be purchased to allow for spares. **Immediate.** At the last PAC meeting, RTA management indicated that each of the new vehicles (see above) have been equipped with tablets, and that it intends to so equip each new vehicle that it receives, as older vehicles are retired.

4.4 Technology

Trapeze PASS Scheduling/Dispatching System

Trapeze's PASS software's capabilities supporting rider registration, reservations, scheduling, dispatching, data collection, and reporting. At the heart of the system is a set of scheduling algorithms and configurable scheduling parameters that can be used to tailor how Trapeze schedules trips. The scheduling and dispatching functions use an underlying GIS map. RTA reservation agents use Trapeze to enter trip requests and schedule them onto specific runs operating on the requested trip date, based on solutions that Trapeze suggests (real-time scheduling). If there is no solution for a trip, schedulers later attempt schedule these unassigned trips onto runs. However, while most transit agencies also use

Trapeze to subsequently perform various types of batch scheduling processes to further optimize a schedule, LIFT does not. LIFT staff has stated that it does not conduct batch optimization because the staff does not trust the results. But the underlying problem is that Trapeze's scheduling algorithms and parameters have never been tuned to LIFT and New Orleans.

Recommendations: (1) The RTA should retain a Trapeze expert to train LIFT staff to review and adjust scheduling parameters and to implement separate batch optimization processes for future day schedules, next day schedules and service-day schedules. (2) RTA dispatchers should utilize Viewpoint as a real-time dispatch tool as well as a resource for exception-based data management (i.e., trip reconciliation). (3) The RTA should acquire and implement PASS-WEB G3 so that customers can review, cancel (and eventually book) trips without having to contact LIFT staff by phone. (4) RTA may also wish to consider upgrading the Trapeze software to Version 21 (V21), which provides a much more robust and MUCH better-designed dispatching function) and paves the way to moving Trapeze to the cloud. **Immediate.** At the last PAC meeting, RTA management indicated that it is seeking a Trapeze expert to assist with the above recommendations and is pursuing the V21 upgrade.

Interactive Voice Recognition (IVR) System

RTA uses an IVR system to (1) confirm trip reservations the evening before the trip, and (2) place imminent arrival calls/texts (as preferred by the customer) as the vehicle to which rider's trip has been assigned is approaching the pick-up location. However, there are many outdated/incorrect phone numbers still in the customer profiles, which prohibits the confirmation and imminent arrival calls/texts from reaching the rider. Such calls/texts are key to reducing no-shows and increasing productivity.

The IVR system agreement also provides for inbound functionality, which would enable riders to confirm and cancel trips. The combined effect of these additional features is quite positive at sites where it is available, with up to 50% of trip cancellations being handled by customers themselves instead of calling in to agents. While the average hold times for LIFT reservations were generally good, there were long hold times (over 5 minutes) at several times over the course of the week analyzed. Note that this would be in addition to the RTA acquiring PASS-WEB G3 (see above).

Recommendations: (1) Reservation agents should confirm the phone number of every customer in the trip booking process. (2) In addition, the RTA should "turn-on" the IVR inbound capability. **Immediate.** At the last PAC meeting, RTA management indicated that it is has already revised the reservation agent script to confirm phone numbers and other key information and to seek missing information. RTA management also reported that it is pursuing using the IVR system for inbound trip confirmations and cancellations.

Replace Trapeze?

There are now several alternatives to Trapeze, some emerging from the on-demand technology vendors but that are now proven in medium-to-large ADA paratransit services. Indeed, several transit systems are using these software systems to support both their microtransit and ADA paratransit services in cases where they operate microtransit solely or partially with dedicated vehicles or where the two services are consolidated.

Recommendation: RTA should monitor how the new products are faring elsewhere. If Trapeze ultimately proves to be too expensive, RTA can always conduct an RFP or RFI procurement effort to see about capabilities and cost, and then decide whether to keep or replace Trapeze based on the responses. **Long-Term.**

4.5 Booking, Scheduling, and Dispatching

Booking and Trip Negotiation

LIFT reservation agents are not consistently attempting to negotiate alternative trips times when confronted with no solutions. For advance reservation and next-day requests, no-solution trips are more often left unassigned instead, with the reservation agent instructing the customer to "call back later." If there is no solution when the rider calls back, the LIFT reservation agents are required to flag the request as a denial. However, this is not being done. And in cases where trip negotiation is attempted and a solution beyond the negotiation window is accepted by the rider, the trip also needs to be flagged as a denial based on ADA guidelines. However, this is not currently being done either.

For advance reservation trips, focus group participants told us that they are being dissuaded from booking trips with pick-ups between 7:00-8:00 am and between 2:30-6:30 pm because it is unlikely they will get a trip at the time desired, if at all. Such a demand management technique masks what would otherwise expose a capacity constraint. It may also be a reason why denials (at less than 2 per day) are as low as they are. More importantly, actively instructing ADA paratransit riders to not book trips during certain times of the day is blatantly not in compliance.

Recommendation: (1) Reservation agents should perform trip negotiations in response to no-solution scenarios, and then deny the trip if there are no solutions. Denials are important as they are point to capacity constraints that need to be fixed. (2) Reservation agents should immediately cease the practice of instructing customers to refrain from requesting trips at certain times. **Immediate.**

Scheduling

LIFT scheduling and dispatching staff do not use Trapeze's batch scheduling function to optimize a schedule (i.e., to make it more productive or make it more customer-friendly or otherwise to achieve a balance of the two goals). Indeed, there is very little of any real effort to revise the initial scheduling of trips, once a trip has been initially scheduled, leading up to the day of service. A trip scheduled 7 days in advance may no longer be in the optimal place in a schedule given trips that are subsequently scheduled or cancelled. These can often lead to holes, or a sequence of events on a driver/run manifest that no longer makes sense. These should be addressed by the scheduling function and not left for the morning dispatcher.

Recommendation: Once Trapeze's scheduling parameters are properly tuned (see previous recommendation), LIFT staff, with a Trapeze expert, should develop and deploy various job agents to re-optimize trips on the days leading up to the trip date, and at the very least, on the day before the trip date. **Immediate.**

Subscription Trips

Currently, there is no regular systematic process for reviewing the efficiency of the scheduled subscription trips, which has a negative impact on service productivity. In addition, the current process of intaking subscription trip requests on paper (and then forwarding the sheet to the Lead Reservationist who then enters the request) is redundant. Focus group participants indicated that getting a subscription trip once it has been requested can often take month if not years.

Focus group participants also expressed significant dissatisfaction with the way their subscription trips have been scheduled. The scheduling practice focuses on commingling onto one vehicle trips from all over the service area that are destined to one employment site, regardless of when each rider needs to be at work. Two additional shortcomings that results from this practice include poor OTP at the pickup locations on both legs and excessively long travel times.

Recommendations: (1) RTA's Lead Scheduler should systematically review the efficiency of the scheduled subscription trips once a month, using Trapeze as a tool once Trapeze has been properly tuned. (2) Once the capacity constraints are solved, subscription trips can be added up until the point where capacity constraint manifest themselves. (3) Reservation agents should also be responsible for inputting subscription trips requests. (4) LIFT management should establish a standard/target turn-around time for scheduling a subscription trip. (5) Schedulers should explore other solutions for organizations with dispersed employees who different work schedules. **Immediate.**

Dispatching

While LIFT displays an industry-standard 20:1 vehicle-to-dispatcher ratio (40 vehicles to 2 dispatchers), the monitoring attention and focus of the dispatchers is diffused by the concurrent duties including window dispatching, radio dispatching, handling service-day rider calls transferred from reservation agents and calling back no-show riders. Moreover, any dispatcher can address an issue from any driver and on any run, therein forcing each dispatcher to be keeping track of all vehicles. In addition, the real-location of many of vehicles often does not show up on the dispatching screen because some vehicles have malfunctioning MDTs.

Recommendations: (1) The in-service fleet between the two dispatchers, rather than having each be responsible for the entire set of runs. This dispatch team re-organization could easily be accommodated by the radio talk groups currently assigned to LIFT. The only coordination needed between the dispatchers would be if one wants to assign a trip to one of the other dispatcher's vehicles. (2) A dispatch assistant per shift should be added to handle incoming and outgoing telephone calls. If dialysis trips continue to be problematic, the dispatch assistant could also serve as the dialysis patient/facility liaison. **Immediate. (3)** Once Trapeze's scheduling parameters have been tuned and tested, a job agent for service-day continuous dynamic optimization can be set up and tested. At a minimum, this will automate the proactive dispatching and free up the Lead Dispatcher to truly oversee and monitor the dispatching and to pitch in as needed. **Short-term.**

Handling Service Day Calls

The responsibility for handling service day calls is currently split between reservation agents and dispatchers, with staff estimating that reservation agents handle 80% of the calls and transfer the other 20% to dispatch. The feedback from the riders participating in the focus groups pointed to several issues with respect to service-day calls, focusing on getting misleading information that is not grounded in reality.

In addition, riders indicated that they have tried "will-call returns" from medical appointments but have vowed never to schedule a will-call again, claiming that response times of 2+ hours are common.

Recommendations: (1) LIFT's Reservations Lead should begin monitoring registration agents' performance in real time or via recordings to verify the extent of misleading information on the service-day being provided to riders. Additional training may be required. (2) If such occurrences are prevalent, LIFT management may wish to consider moving this function to a dispatch assistant. (3) The RTA should establish a not-to-exceed response time of 60 minutes for will-call return trips from medical appointments and track late pick-ups for will-calls accordingly. **Immediate.**

4.6. Run Structure and Service Mix

The conclusion of the run structure analyses and scenario simulations in Task 6 was that there are daily instances of an undersupply and an oversupply of service (at different hours) and that there are several opportunities to shift surplus hours to times where they are needed.

The Scenario 1 run structure optimization analysis, which maintains roughly the same number of weekly service hours as currently deployed, concludes that revisions to the run structure can significantly increase productivity (which results in a lower cost per trip) and would likely help with on-time performance as well. The Scenario 2 optimization analysis indicates that a more radical re-structuring is possible and would lead to a dramatic decrease in service hours, while still maintaining service quality standards.

The service mix analysis concluded that use of non-dedicated service providers (such as taxis or "adaptive" TNCs like UZURV) could augment the supply of service to help address capacity constraints at key times. Moreover, once service has stabilized from implementing the above recommendations, the increased use of non-dedicated service provides can be used to replace dedicated vehicles in the LIFT fleet, for substantial savings.

Recommendations: (1) Implement the changes to the run structure reflected in Scenario 1 while other recommendations from the report are implemented and evaluate actual changes to productivity and on-time performance. **Immediate.** (2) Once performance has stabilized, gradually re-optimize shifts (per Scenario 2) at least twice a year or whenever driver picks are done. We do not advise moving to the optimal solution right away, but slowly reducing total service hours. Ongoing and frequent monitoring of both changes in productivity and OTP will be key here, as the RTA seeks to achieve its desired balance of these two metrics. **Short-term.** (3) Once performance has stabilized, RTA should contact possible NDSP partners to discuss their willingness to provide "overflow" ADA paratransit trips. Initially, the use of NDSPs should be viewed as a low-cost way to augment the supply of service, especially at key times. Based on the RTA's experience with the pilot, RTA can then adjust the percentage of trips outsourced and possibly gradually reduce the number of dedicated vehicles as suggested by the simulation results. **Short-term to long-term.**

4.7 Safety Training

The industry standard for both transit and paratransit is 1 preventable accident per 100,000 total vehicle miles. The RTA's accident frequency ratio for 2021 was almost 3 accidents per 100,000 total vehicle miles; unfortunately however, the accident data RTA provided to the study team did not categorize the accidents into preventable and non-preventable (meaning a *preventable* AFR could not be calculated).

Recommendations: (1) RTA should begin categorizing and tracking accidents as preventable or non-preventable and calculating LIFT's *preventable* AFR. (2) If LIFT's preventable AFR is over 1.0, steps should be taken by the RTA/LIFT's safety trainers to analyze the types of preventable accidents, trace the accidents to their root cause, and revise the driver training curriculum to address the root causes. **Immediate.** At the last PAC meeting, RTA management indicated that it's records show that LIFT's preventable AFR is 1.5.

4.8 Compliance Monitoring and Capacity Constraints

Based on many of LIFT metrics such as OTP, denials, and telephone access data, and focus group comments relative to OTP and excessively long trips, it would appear that patterns do exist that suggest capacity constraints, which is violation of FTA requirements for ADA paratransit service. Also, RTA does not have in place practices to analyze these and other metrics to determine whether or not such patterns exist, which is also a compliance issue.

Recommendation: RTA should develop a process for periodically (once a quarter) analyzing whether or not patterns of these metrics exist and whether those patterns point to a capacity constraint. Recommendations to addressing such service capacity constraints are found in previous sections. **Immediate.**

4.9 Complaint Management

The complaint frequency ratio (CFR) for LIFT has been excellent. However, this excellent rating would appear to be not in concert with other service quality measures for LIFT, especially since OTP has remained substandard (below 90%) and in view of the rider and stakeholder input. Possible explanations for this mismatch could be traced to (1) riders not being able to submit a complaint on-line, (2) rider complacency with the existing level of LIFT service quality, (3) past rider complaints not materializing into improved service, and/or (4) fear of retribution.

The process for submitting a complaint is detailed in the LIFT Rider Guide. Complaints may be submitted by mail, by fax, in-person or by phone. Curiously, the Rider Guide does not mention emailed complaints as a valid way to submit a complaint. This should be corrected, by proving an on-line form that can be completed on-line or otherwise providing an email address.

Recommendations: The RTA should enable riders to submit complaints on-line and/or by email. In addition, the RTA may wish to consider a campaign of outreach to the LIFT rider community, such as a telephone-based survey (which was beyond the resources of this study), to determine a statistically relevant level of satisfaction, and for those that express dissatisfaction, whether or not they have registered a complaint (and reasons for not complaining) and whether they were satisfied with the outcome of the complaint investigation and with any stated changes that resulted from their complaint. **Immediate.**

4.10 Providing Options for ADA Paratransit Customers

Currently, the demand for ADA paratransit service is outstripping the supply of service. Re-deploying dedicated vehicles and augmenting the fleet with non-dedicated service providers, as recommended above, should mitigate – but may not totally solve – the mismatch. One solution is to provide more service, which increases cost. Another solution, which reduces cost, is to "divert" trips to a broader array of lower-cost NDSPs—taxis and TNCs – whose drivers are not ADA-paratransit certified. There are two ways to do this.

Alternative Service

The first way is to offer an "alternative service." This is an on-demand service that the RTA would offer to their ADA paratransit customers and that is provided through NDSPs such as taxis and TNCs. In such a program, riders request service directly from the service providers. Note there would need to be a wheelchair accessible vehicle (WAV) service option to achieve the ADA-required service equivalence, sometimes accomplished through subcontracts with WAV operators. In the end, the RTA will reduce overall costs if the savings from the diverted trips is greater than the subsidies paid to the service providers to serve newly induced trips (that would otherwise not have been made on LIFT). TCRP Report 239 on Alternative Services, just issued on January 25, 2023 and co-authored by TTI's project manager, is a great source for different models.

Rider Opt-In Program

The second way is through a rider opt-in program. In such a program, LIFT riders (who wish to) sign an opt-in agreement that would give the RTA a blanket permission to assign an ADA paratransit request to a TNC, taxi or other type of carrier under contract that does not use drivers (independent contractors) who are drug and alcohol tested and not trained to proficiency. In effect, this means that LIFT would be able to convert, with the rider's permission, an ADA paratransit trips to a non-ADA paratransit trips. The rider fare would be the same as the LIFT fare. And riders would maintain the option to "opt-out" for any particular trip. Through such a program, the RTA would not only be serving these trips at a lower cost but would also improve the productivity of the dedicated LIFT fleet by assigning to the TNCs the trips that would otherwise adversely impact the productivity of the dedicated fleet.

Recommendation: RTA should conduct/commission a feasibility for a pilot that combines an alternative service and an opt-in program. Such a combined program has been successfully piloted in Boston by the MBTA. As was done in Boston, we suggest first implementing an alternative service pilot, and then weaving in the opt-in program. **Short-Term.**

CHAPTER 1: INTRODUCTION, BACKGROUND, METHODOLOGY AND REPORT ORGANIZATION

1.1 Introduction

The New Orleans Regional Planning Commission (RPC) in collaboration with the Regional Transportation Authority (RTA) and Jefferson Parish Transit (JP Transit) retained Texas A&M Transportation Institute (TTI), along with teammates AlphaRoute and EME Consulting, to perform a comprehensive analysis of LIFT and MITS, these two agencies' ADA paratransit services. The Final Report is split into two volumes: Volume I pertains to LIFT and Volume II pertains to MITS. This report constitutes Volume I.

The study was originally commissioned as a paratransit "companion piece" to the New Links network design. But with new policies to handle inter-parish paratransit trips being implemented by both transit agencies soon after the study began, along with other reasons for not consolidating the two systems at this time, the study soon re-focused on assessments of each service and the development of recommendations that focuses on improving the service quality and service/cost efficiency and ensuring regulatory compliance of each system.

This 11-month study (March 2022-January 2023) culminated with specific, timeframe-based-specific recommendations for implementable changes to service policies and practices and for implementable changes to operational approaches (services mix, fleet mix, dedicated run structures, interagency coordination) that will help the RTA and JP Transit achieve these goals.

1.2 Background/Service Summary

Operating 24/7, LIFT provides ADA paratransit trips within Orleans Parish as well as inter-parish trips to/from Jefferson Parish. Formerly (prior to mid-March 2022), riders making inter-parish trips had to transfer from one service to another at transfer points at Ochsner Hospital on the Eastbank, Delgado Community College (City Park Campus), and the Gretna Transit Terminal on the Westbank.

Riders can book a trip from 1 to 7 days in advance up through 5:00 pm on the day before the trip; same day service may also be requested but will only be accepted on a space-available basis. The base fare of LIFT service is $2.00, which enablers a rider to go anywhere within Orleans Parish, and since April 2022, from/to Jefferson Parish. Previously, such a trip would cost a rider $5.00 – a $3.00 fare for the Jefferson Parish leg and $2.00 for the Orleans Parish leg. There are two special destination fares charged for trips to the AMTRAK-Greyhound station or to Armstrong International Airport.

Up until May 2019, the service had been operated under an operations/management contract with Transdev, noting that Transdev used a DBE subcontractor to operate a few dedicated runs to help RTA meet its DBE goals. Earlier in 2019, there was a decision to transition the service in-house. The transition started in June 2019 and was completed in December 2020. Since that time, the management and operation of LIFT in-house has been performed entirely with RTA employees. LIFT is currently operated entirely with dedicated vehicles.

1.3. Methodology and Report Organization

In addition to project management, the major study tasks performed by the TTI team included:

- Establishing a Project Advisory Committee (PAC) and keeping them advised on study findings and recommendations. PAC members, which included staff from the RTA and Jefferson Parish/Transdev, are identified in Appendix A.
- Collecting and analyzing service and cost data; this was aided by establishing a OneDrive folder to which LIFT staff could directly copy requested data.
- Interview and observing LIFT staff and discussing with the staff the team's analyses, findings and recommendations
- Conducting rider focus groups, interviewing stakeholder organizations and providing fodder for a project website set up by RPC
- Developing a profile of LIFT (See Chapter 2)
- Assessing the performance of LIFT (See Chapter 3)
- Simulating the benefits of modifying the run structure and service mix (See Chapter 4)
- Developing recommendations (See Chapter 5)

CHAPTER 2: SERVICE PROFILE

In Chapter 2, the study team documents the operating characteristics, policies, and practices of the RTA's LIFT service, which serves to fulfil the RTA's ADA complementary paratransit obligation. LIFT's service profile includes sections on:

2.1 Organizational Chart
2.2 General Service Design and Policies
- 2.2.1 Service Area and Regional Service Connections
- 2.2.2 Service Days and Hours
- 2.2.3 Fares
- 2.2.4 Reservations Hours and Advance Booking Policies
- 2.2.5 Subscription Trip Policies
- 2.2.6 Pick-Up and Drop-Off Windows
- 2.2.7 No-show and Cancellation Policies
- 2.2.8 Reasonable Accommodation

2.3 Infrastructure and supporting resources
- 2.4.1 Facilities
- 2.4.2 Vehicle Fleet
- 2.4.3 Scheduling System, Driver Communication and On-Board Equipment
- 2.4.4 Interactive Voice Recognition (IVR) System

2.5 Functions
- 2.5.1 Eligibility Certification and Customer Registration
- 2.5.2 Next-Day and Advance Reservations and Scheduling
- 2.5.3 Subscription Trip Requests, Scheduling and Maintenance
- 2.5.4 Run structure
- 2.5.5 Dispatching and Window Dispatching
- 2.5.6 Handling Customers' Service-Day Calls
- 2.5.7 Trip Reconciliation
- 2.5.8 Vehicle Operations/Service Delivery
- 2.5.9 Driver Requirements and Training
- 2.5.10 Road Supervision
- 2.5.11 Fleet Maintenance
- 2.5.12 Reporting
- 2.5.13 Complaint Management
- 2.5.14 Compliance Monitoring – Capacity Constraints

2.1 Organizational Chart

RTA's organizational structure for LIFT is shown in Figure 1. A separate organizational chart for RTA's safety and emergency management department is shown in Figure 2. As shown in Figure 1, the LIFT service is under RTA's Director of Mobility and Alternative Modes. This figure also illustrates that there are several functions associated with LIFT that are not under the auspices and control of the Director of Mobility and Alterntive Service. These include ADA paratransit eligibility certification, IT, safety/training and maintenance.

The RTA recently announced the ratification of a four-year labor agreement with the Amalgamated Transit Union (ATU) Local 1560. The agreement between ATU and RTA covers 518 represented employees. These include LIFT operators, dispatchers, reservationists, clerks, and training instructors. The four-year agreement is effective through June 30, 2025.

Figure 1. RTA Organizational Structure of LIFT

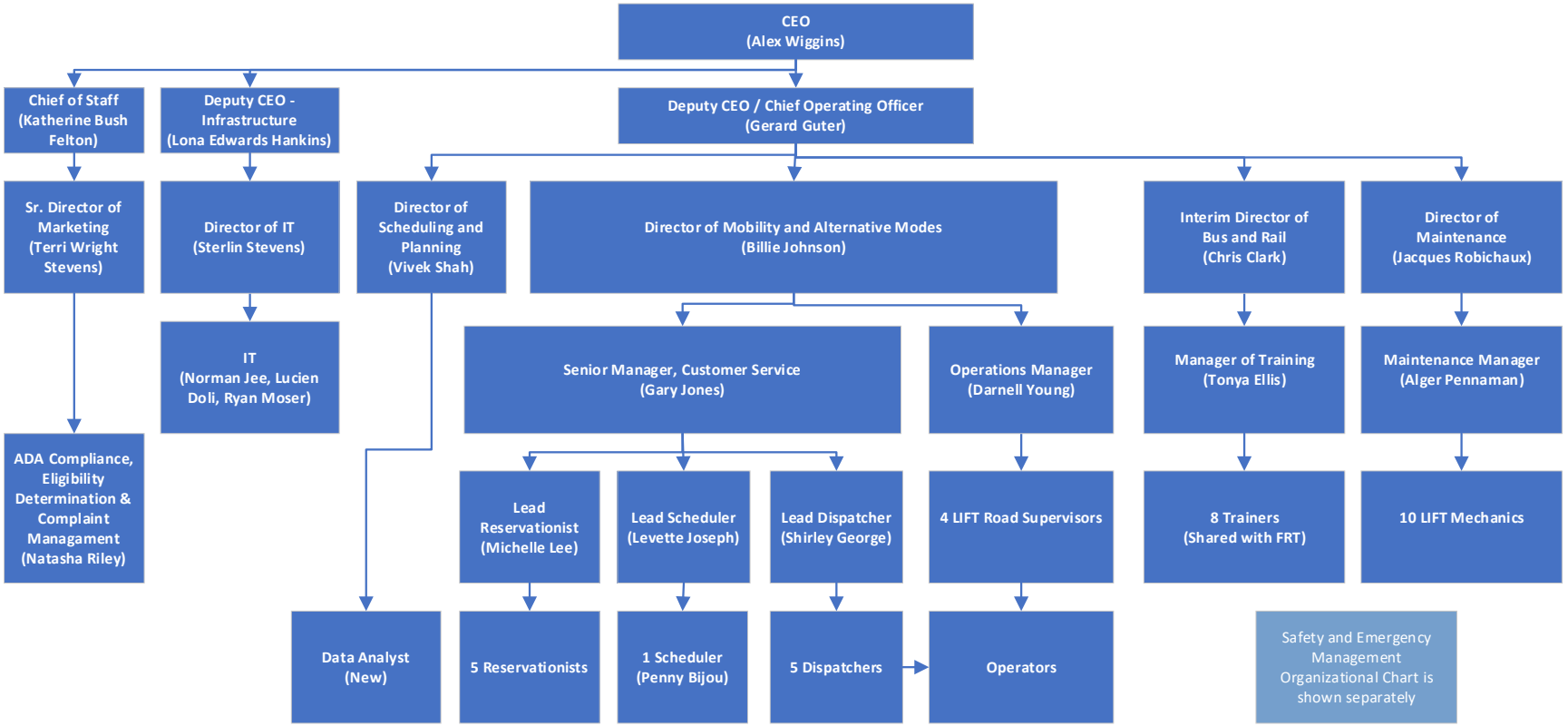
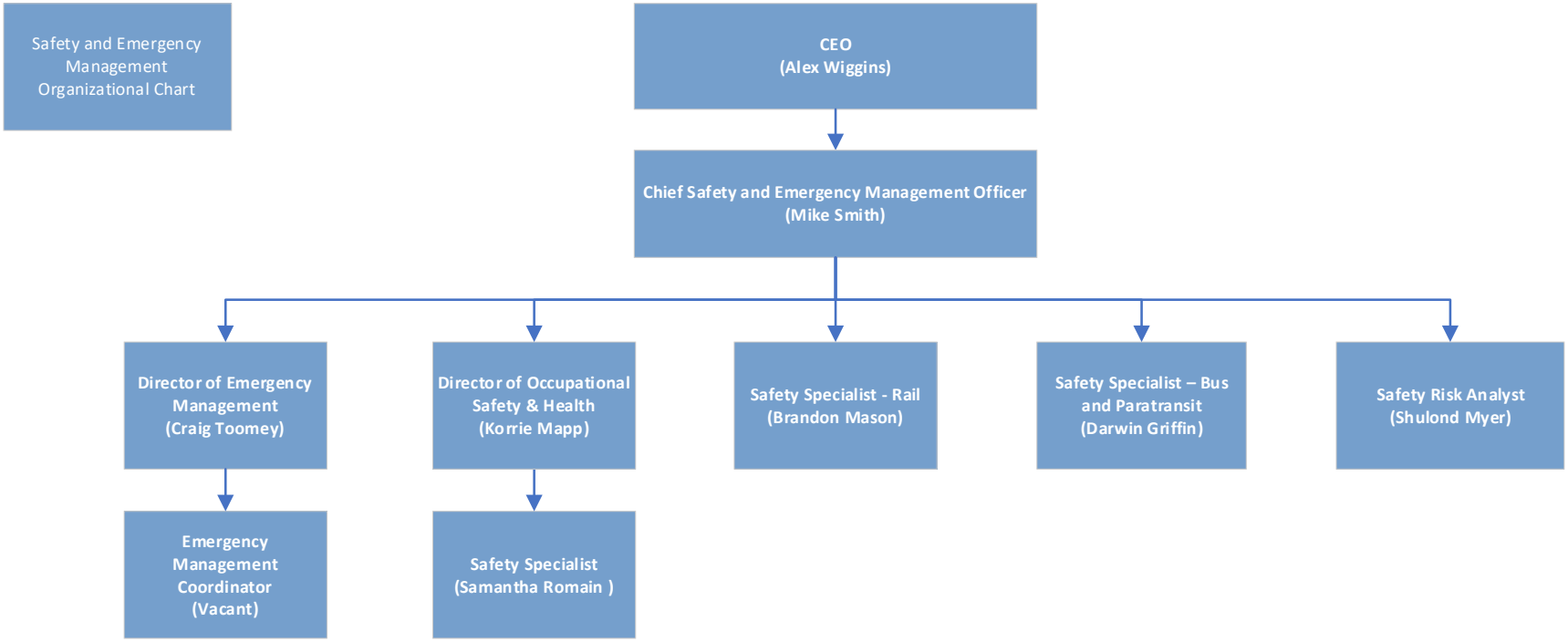


Figure 2. RTA Organizational Structure of Safety and Emergency Management

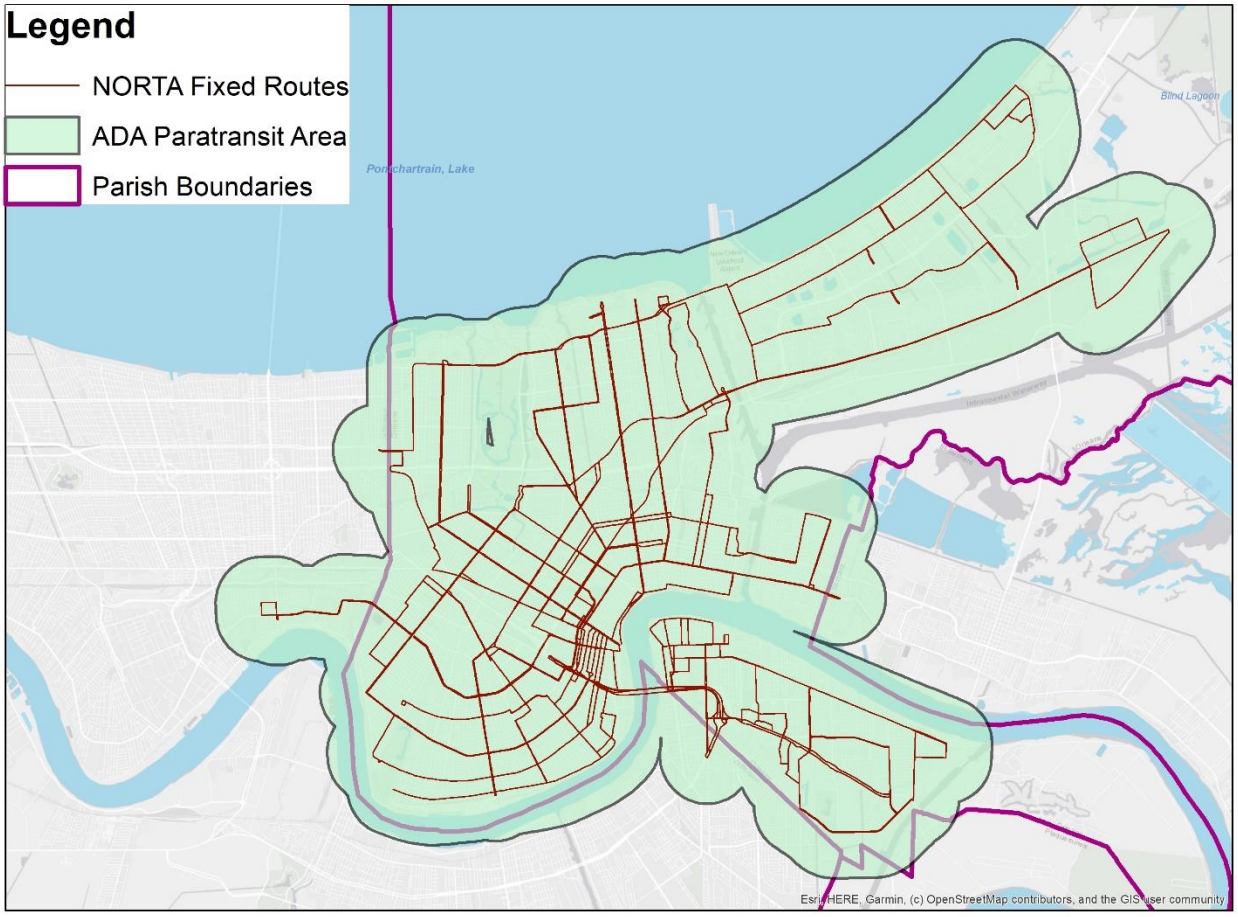


2.2 General Service Design and Policies

2.2.1 Service Area and Regional Service Connections

LIFT's service area covers all of Orleans Parish, encompassing the ¾ mile transit route corridors that RTA is obligated to serve plus other areas. See Figure 3.

Figure 3. RTA ADA Paratransit Service Area



Up until mid-March 2022, LIFT also interfaced with MITS, JP Transit's ADA paratransit. This interface was accomplished via transfers at three transfer points at Ochsner Hospital on the Eastbank, Delgado Community College (City Park Campus), and the Gretna Transit Terminal on the Westbank. Such transfers were not orchestrated between the LIFT and MITS. Rather, a rider requesting an inter-parish trip needed to call both LIFT and MITS to arrange each leg of the trip.

As of mid-March, RTA adopted a new policy where riders requiring a trip from Jefferson Parish to Orleans Parish (and the return trip, if applicable) no longer needed to arrange for a transfer; instead, such riders could call the LIFT to arrange for a direct (inter-parish) trip. Thus, by adopting this policy, the RTA effectively increased its service area but only for inter-parish trips.

2.2.2 Service Days and Hours

The LIFT service is provided 24/7 throughout the year.

2.2.3. Fares

The base fare of LIFT service is $2.00, which enablers a rider to go anywhere within Orleans Parish, and since April 2022, from/to Jefferson Parish. Previously, such a trip would cost a rider $5.00 – a $3.00 fare for the Jefferson Parish leg and $2.00 for the Orleans Parish leg.

According to the LIFT Rider Guide, the RTA also charges $4.00 for same-day requests that are accommodated on a space available basis only, and $4.00 for return trips associated with no-shows. However, in practice, these $4.00 are not charged.

In addition, LIFT also has two special "destination" fares: a $5.00 for trips to/from the AMTRAK-Greyhound station and to/from the Port of New Orleans (where the cruise ships embark/disembark passengers) and $15.00 for trips to/from Armstrong International Airport.

Fare can be paid by cash, tickets or tokens. RTA has a policy of no-fare, no ride.

2.2.4 Reservation Hours and Advance Booking Policies

Reservation hours are from 8:00 am to 5:00 pm on weekdays and from 8:00 am to 4:00 pm on Saturdays and Sundays. Riders can book a trip from 1 to 7[1] days in advance up through 5:00 pm on the day before the trip. Same day service may also be requested but will only be accepted on a space-available basis and at a premium fare (see above).

2.2.5 Subscription Trip Policies

Subscription trips are defined by RTA has going to/from the same two locations at the same time on the days requested. The minimum number of days per week for a subscription trips is one day. Thus, a subscription trip can be booked for only one day a week.

2.2.6 Pick-up and Drop-off Windows

The on-time pick-up window policy is +/-15 minutes based on the confirmed pick-up time given to the rider at the time that the rider books the trip. There is no policy for an on-time drop-off window (for trips requested based on an appointment time to requested drop-off time).

2.2.7 No-Show and Cancellation Suspension Policies

The RTA has a no-show suspension policy. The RTA will notify riders by telephone if they have no-showed or late-cancelled 20% of their trips. The RTA defines late cancellations as cancellations made within 2 hours of the confirmed pick-up window. After the warning, if rider accumulates an additional 10% of no-shows/late cancellations they will be subject to suspension. All suspension notices include a copy of this policy, information on disputing no-shows or late cancellations, and how to appeal suspensions. The first violation in a calendar year triggers a warning letter but no suspension. Subsequent violations result in the following suspensions: Second violation: 5-day suspension, Third violation: 10-day suspension, Fourth violation: 15-day suspension, Fifth and subsequent violations: 30-day suspension. Cancellations in excess of 20% in a given month will trigger a warning letter. If after the

[1] The LIFT Rider Guide says 1-5 days in advance.

warning letter, cancellations exceed 20% in two consecutive months, a seven-day suspension will be imposed. Cancellations of subscription trips in excess of 20% will result in cancellation of the subscription trip.

However, suspensions are currently not being pursued at this time.

2.2.8 Reasonable Accommodation

The RTA does have a "Reasonable Accommodation" policy that reflects FTA/ADA policy. However, this needs to be added to the Rider Guide and needs to be featured prominently on the RTA's LIFT webpage.

2.3 Infrastructure and Supporting Resources

2.3.1 Facilities

Most of the LIFT functions are located at the RTA's East New Orleans (ENO) facility at 3900 Desiree Drive in New Orleans. The ENO building houses the call center, operations and maintenance, and most of the administrative functions. The exceptions include the eligibility determination and IT functions, which are housed at the main RTA administrative building located at 2817 Canal Street.

The LIFT fleet is also stored and maintained (primarily) at the ENO complex, noting that tire replacement, per the RTA's Goodyear contract, are stored at the Canal Street maintenance facility. The ENO facility has around 10 bays on the paratransit maintenance side of the facility, which are also used for maintenance of any non-revenue vehicles, offices for the maintenance supervisors, a vehicle wash area, and a storeroom area which houses a modest parts inventory.

2.3.2 Vehicle Fleet

The LIFT fleet currently consists of 54 body on chassis vehicles as listed in Figure 4.

Figure 4. LIFT Fleet

No. of Vehicles	Make	Model Year	FTA Retire-ment Year53K-	Mileage	Condition
5	Glaval	2012	2019	211K-258K	Needs to be Replaced
5	Dodge	2015	2022	118K-150K	Good
1	Ford	2015	2022	203K	Good
15	Ford	2016	2023	152K-223K	Good
13	Dodge	2019	2026	53K-88K	Good
10	Ford	2019	2026	75K-98K	Good
5	Ford	2021	2028	1K to 9K	New
54	Total				

In addition, there are eleven 2021 Fords on order. The peak pullout is currently 39 vehicles. If one excludes the 5 Glavals, this leaves 10 spare vehicles, which equates to a spare ratio of 25%. However, the New Orleans summers have a significantly adverse impact on air conditioning systems, and so the practical spare vehicle ratio, with vehicles down for A/C issues and other vehicles down for repair and preventive maintenance reasons, is virtual nil. This is the reason why vehicles without working MDTs and/or working radios are allowed to leave the yard, as a preferred alternative to re-assigning trips from those runs being operated with fully functioning vehicles but with already tight schedules. The 11 new vehicles on order will certainly help address this problem.

All of these vehicles are equipped with lifts which allow persons with wheelchairs to use the LIFT service. Most of the existing fleet – the cutaways - have capacities of 8 seats and 1 wheelchair position. The new 2021 Fords have capacities of 12+0 ,12+1, 8+2, and 6+3.

2.3.3 Scheduling System, Driver Communications, and On-Board Equipment

Trapeze's PASS software (hereinafter called Trapeze) is the primary software used to support LIFT. Its capabilities support rider registration, reservations, scheduling, dispatching, and reporting. At the heart of the system is a set of scheduling algorithms and configurable scheduling parameters that can be used to tailor how Trapeze schedules trips. The scheduling and dispatching functions use an underlying GIS map.

RTA reservation agents use Trapeze to enter trip requests and schedule them onto specific runs operating on the requested trip date, based on solutions that Trapeze suggests. This is known as real-time scheduling. If there is no solution for a trip, schedulers later attempt schedule these unassigned trips onto runs. While most transit agencies also use Trapeze to subsequently perform various types of batch scheduling to further optimize a schedule, LIFT does not.

On the day of service, dispatchers use Trapeze to monitor the progress of the LIFT runs, to re-assign trips as needed (using the same capabilities as available to the schedulers), and process no-shows and missed trips. Dispatcher-driver communications are performed with Trapeze in combination with mobile data terminals (MDTs) in each vehicle. Through Trapeze, dispatchers can send messages to drivers, and add or subtract trips, as needed, while drivers can send "canned" messages (e.g., alerting dispatchers to no-shows and asking for direction to wait or proceed) back to the dispatcher. In addition, drivers and dispatchers are equipped with "push-to-talk" radios; there are three "talk groups" (similar to radio channels) that are assigned to LIFT, noting that LIFT currently uses only two, one of which serves as the primary channel for dispatcher driver communications and the other used for emergency situations.

The MDTs are also critical in sending real-time vehicle locations back to the dispatcher where they can be displayed (within Trapeze) on a map. At each stop, drivers are supposed to "perform" arrivals and departures on their MDT. This action time-stamps the event and geo-stamps the vehicle location via GPS satellite tracking. In between stops, real-time locations are also sent back via GPS satellite tracking. Knowing where a vehicle is in real-time is critical for dispatchers in making decisions for trip re-assignments and processing knop-shows. The real-time location and ETA at the next stop are also critical for processing "Where's my ride?" calls for riders and triggering "imminent arrival" calls/texts (discussed below). When vehicles without working MDTs are in service, these processes are compromised.

TTI's understanding is that RTA intends to replace these MDTs with tablets onto which Trapeze's DriverMate will be loaded. There are several advantages of using tablets in comparison to MDTs, and the paratransit industry has largely been switching to tablets. The primary two benefits are (1)

functionality – tablets provide additional navigation and alert/warning functions that are helpful to drivers; and (2) ease and speed of replacing, which dramatically impacts the extent to which trips need to be re-assigned. Tablets with SIM cards also allow the switching out of a SIM card as a first recourse.

All of the LIFT vehicles are also equipped with video cameras that are always on when the vehicle is in service, with videos transmitted over the airwaves to a repository. The purpose of this video surveillance is to document driver and/or rider behavior in the event of an incident or accident. It can also be used for training purposes.

2.3.4 Interactive Voice Recognition (IVR) System

RTA uses an IVR system to (1) confirm trip reservations the evening before the trip, and (2) place imminent arrival calls/texts (as preferred by the customer) as the vehicle to which rider's trip has been assigned is approaching the pick-up location. One problem mentioned by the IT Department staff is that there are many outdated/incorrect phone numbers still in the customer profiles, which prohibits the conformation and imminent arrival calls/texts from reaching the rider. The IT staff suggests that a "clean-up" effort to update/correct these phone numbers is called for.

2.4 Functions

2.4.1 Eligibility Certification and Customer Registration

The eligibility function for LIFT is performed by one eligibility specialist, who is organizationally in the Marketing Department. She is based at the RTA's 2817 Canal Street facility. Her primary functions include processing LIFT applications.

Applications are available online or can be picked up at the RTA Administrative Office or at various social service agencies within the service area. Upon request, application can also be mailed to the applicant, noting that related materials can be requested in alternative accessible formats such as large print, Braille, and audio tape.

The ADA paratransit eligibility application is in two parts. Part 1 is the applicant Information, and Part 2 is the Heath Care Professional Verification. As with some transit agencies, this process is almost entirely based on this two part-application, with follow up calls as needed to clarify certain responses or address missing information. As applications are received, they are logged into the system, noting that staff understands that if a determination is not rendered with 21 days, the applicant is presumptively eligible. (According to the eligibility staff, this has never happened, as they have always been able to render a decision within this 3-week period.)

Once eligibility has been determined, staff sends an eligibility determination letter to the applicant There are four outcomes of the eligibility determination process: unconditionally eligible, conditionally eligible, temporarily eligible, and ineligible. If the applicant is determined to be eligible, staff registers the applicant into Trapeze and sends a rider guide to the applicant along with the determination letter. Once entered into the system, the new customer may book a trip on LIFT. Applicants may also appeal a decision. The RTA Appeal Board then has 90 days to respond.

Staff states that 20% are deemed to be conditionally eligible. Notes on conditional eligibility are entered in the comment section of the customer profile in Trapeze. When taking a reservation, agents consult the comment section of the screen (which pulls for the customer profile).

The RTA also has a Visitor Policy which is detailed in the Rider Guide and instructs how visitors to New Orleans who are certified ADA paratransit customers in another jurisdiction (anywhere in the US) can apply for temporary, 21-day visitor eligibility status with LIFT.

Currently, there are 10,707 LIFT customers in the system. It has been estimated that approximately 1,000-1,200 are active users.

2.4.2 Next-Day and Advance Reservations and Scheduling

On weekdays, LIFT reservations are handled by five reservation agents who are overseen by a Reservations Supervisors. On weekdays, one agent works from 6:00 to 3:00, a second agent works from 7:00 to 4:00, and three other agents work from 8:00 to 5:00. Note that agents whose shifts start before the reservations lines open up at 8:00 are needed to handle service-day calls for riders (e.g., the "Where's my ride?" or WMR calls). On weekend days, there are four reservation agents all working 8:00 to 4:00. Reservationists were allowed to work from home during the pandemic. They returned to the ENO facility a brief period in the spring of 2022 but were sent home because of persistent air conditioning issues. (At the time of our visit in June 2022, all reservationists were working from home.) After the air conditioning units were fixed, the reservation agents returned to the ENO facility.

As mentioned in Section 1.3.4, above, riders can call to reserve trips up to seven days in advance. Riders may also request a trip on the day of service, but this is not guaranteed and is only granted on a space available basis only. When a rider calls to book a next-day or advance reservation trips, the LIFT reservation agent enters the rider ID and the trip-specific information into Trapeze. For many of the fields, information about the rider is automatically populated into the trip request based on information from the rider's customer file. Former trips made by that rider are also available as templates.

Within the LIFT program, trip requests are primarily based on pick-up time. While trips can be requested based on pickup time or by appointment/drop-off time within Trapeze, a different process is used by the reservations staff for the latter. The LIFT reservation policy is to enter a pick-up time (depending on the trip distance and direction) that is 60 minutes to 75 minutes before the appointment time or requested drop-off time. This determined time then becomes the requested pick-up time.

After the trip request has been completed (and while the customer is still on the phone), the reservation agent asks Trapeze for scheduling suggestions. For each suggestion, Trapeze identifies the vehicle run to which the trip could be assigned and the pick-up time and drop-off time. Trapeze's suggestions are ordered based on a balance of service quality (close to the requested pick-up time) and productivity/cost efficiency, as generated by configurable and weighted scheduling parameters. The reservation agent discusses these possibilities with the rider, who chooses one of the suggestions offered.

This pick-up time becomes the "confirmed" pick up time and is the basis for the customer's expectations on when the vehicle will arrive. As mentioned previously, the 30-minute pick-up window centered about this confirmed time is stated to the customer as the reservation agent repeats all the relevant information about the trip. Once these times are set, they are rarely changed.

If Trapeze cannot find a solution, the reservation agent can try to negotiate an alternative time within 1 hour (before and after) of the original requested time (as allowed by ADA paratransit guidelines), noting that there are circumstances which preclude this, such as the end time for a workday, class or appointment. If there is a solution and the rider accepts the solution, that time becomes the confirmed pick-up time. If there is a valid solution and the rider refuses the solution, it is deemed a "refusal." If there is a solution beyond the 2-hour span, and the rider accepts the solution, the trip is booked

accordingly, but this is also to be flagged as a denial based on ADA guidelines. However, this is not currently being done by LIFT reservation agents.

If there is no solution, reservation agents are required to flag the request as a denial. However, this is being done either. Instead, the reservation agent instructs the customer to "call back later" and either a solution materializes or it doesn't.

If there is no solution for next-day trip request, even after trip negotiation is attempted, customers are asked whether or not they wish to leave the trip unassigned in hopes that a "hole" in the schedule opens up by the end of the day. If they agree, riders are instructed to call back later. For advance reservations, no-solution trips are left unassigned.

The primary job of the Lead Scheduler (in addition to helping out with dispatch) is to ensure that all unassigned trips for the following day get scheduled to a run. If no solutions present themselves by the end of the day, the Lead Scheduler – to avoid a denial -- gives the trip to a Road Supervisor to serve. This happens 1x to 2x per month. After all unassigned trips for the next day have been assigned, she will work on the unassigned trips for the next day, and so on. Now with a new second scheduler under the Lead Scheduler. It is anticipated that the Lead Scheduler will tackle the unassigned trips on the heavier days (Monday, Wednesday, and Friday), while the new scheduler can focus on the lighter days.

Pick-up times for return trips are entered for all trips. In the case of medical trips, these can be converted to "will-calls" if the rider calls in advance of the scheduled pick-up time. If they do not call in advance, their return trip will be designated as a no-show. (As discussed below, RTA also has a no-stranded policy, and so dispatchers will make every effort to serve re-emerging no-shows as they occur.)

It is important to point out that LIFT schedulers do not employ batch scheduling to optimize the schedule. This means that a trip that was scheduled 7 days out will rarely be changed. By the day before the trip date there have been 5 days of scheduling in this incremental way, but no attempt to further optimize the schedule.

Many transit agencies use batch scheduling to optimize the schedule, as well as to run specific scheduling processes. For example, many agencies batch schedule their wheelchair trips a few days out, as they are often the most difficult to schedule. Other transit agencies systems will use Trapeze's "job agents" to run different optimization routines (with scheduling parameters tailored for each) to optimize the schedule in the morning of the day before the trip vs. the afternoon of the day before the trip date. Some transit agencies also use job agents after the scheduling has been completed and throughout the service day to continuously optimize the schedule. This is called continuous dynamic optimization, and in a sense, automated the proactive dispatch function (further discussed under Dispatching). Trapeze has this capability, which includes "offsets" for the next hour or two (so as to not interfere with what the drivers are doing at the moment) and configurable intervals as to how often the process is run.

LIFT is not using these capabilities. Staff states that it is uncomfortable with the ways that the scheduling parameters have been tuned, i.e., that if they tried batching, the resulting optimization would have several flaws. However, RTA's IT staff provided the current parameter settings to TTI, and it turns out these settings are Trapeze's default settings. If this is correct, one can presume that Trapeze has never been tuned to New Orleans. This not only impacts the potential to use batch scheduling but also the solutions that are presented to the reservation agents. There is hence an immediate need to tune the Trapeze parameters, not only to improve the current solutions for real-time scheduling but to enable batch optimization, which in turn should improve productivity (and reduce the cost per trip).

2.4.3 Subscription Trip Requests, Scheduling and Maintenance

As mentioned above, riders may request subscription trips, even for trips as infrequent as once per week (as long as they are going to/from the same locations at the same time). Requests for subscription trips are called in, just like other trip requests; however, they are processed differently. Instead of entering them into Trapeze, a reservation agent records the request on printed form and forwards the completed form to the Lead Reservationist to input the request into Trapeze. From there, the Senior Manager of Customer Service (who oversees the Reservations, Scheduling and Dispatching functions) schedules the subscription trips into runs for each day of that the trip is to be served.

Trapeze has a specific set of runs for each day of the week. These are called master schedules or template schedules. It is onto these runs that subscription trips are scheduled. Then, Trapeze uses the master schedules (along with all the subscription trips that are served on that day) to create a schedule for a specific date. For example, the Thursday master schedule is used to create the schedule for Thursday, June 30, 2022. This is done in advance so that the dated schedule is in place before advance reservations can be scheduled to that date 7 days out.

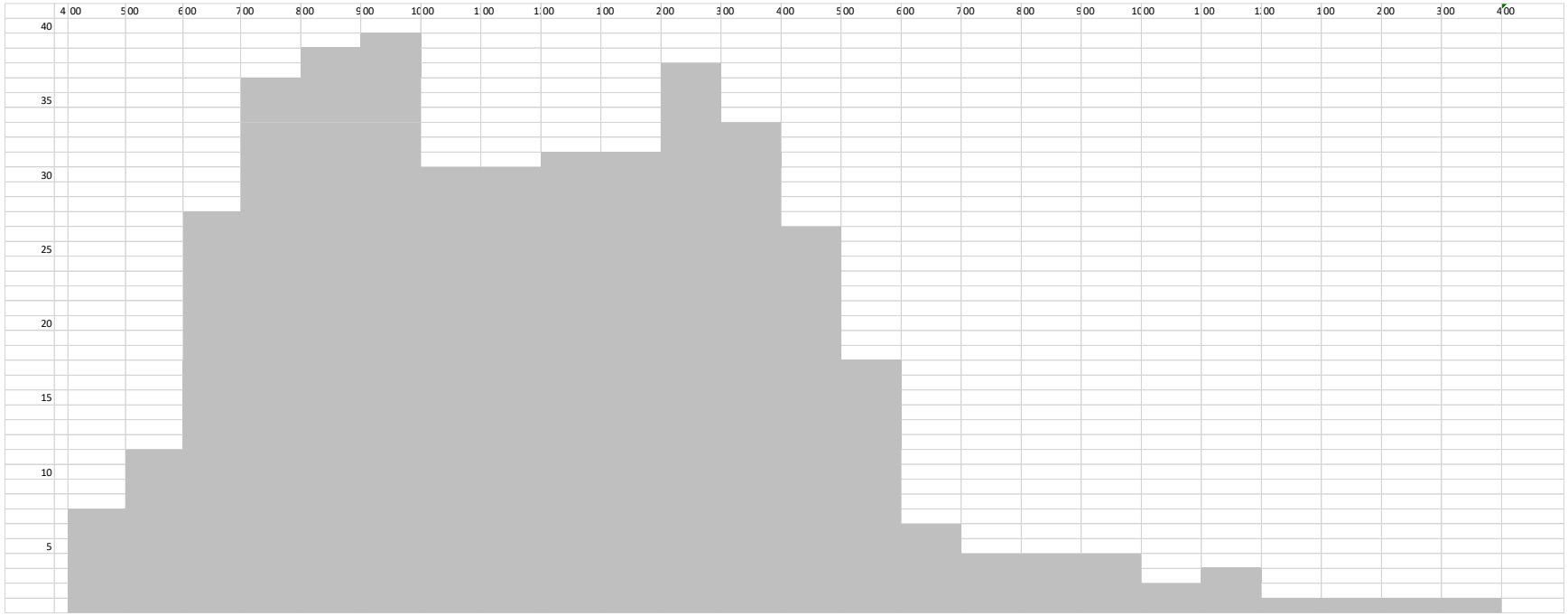
With subscription trips changing or ending from time to time, It is important that the scheduling of the subscription trips on these master schedules be reviewed frequently (ideally, once a month, and at least once a quarter) in order to determine if the scheduling still makes sense. The greater the percentage of subscription trips, the more influence they have on the overall productivity of the services. Currently, there is no regular systematic process for doing this. The Senior Manager states that this is done only "organically" as new subscription trips are added. This is another reason for tuning the scheduling parameters, as batch optimization scheduling is an important tool for optimizing the master schedules. Once Trapeze parameters are tuned, the master schedules can be re-optimized in a test area for example. LIFT's Lead Schedule estimates that 40% of the current trips are subscription trips.

2.4.4 Run Structure

Figure 5 shows the run structure for an average weekday in mid-June 2022. The start and end times of each run were developed by the Senior Manager of Customer Service in collaboration with the Lead Scheduler. As presented, the run structure shows that there are 39 vehicles in service between during the morning peak between 9:00 and 10:00 am. The afternoon peak between 2:00 and 3:00 pm has 37 vehicles. The double-humped run structure is a common occurrence in paratransit, with an attempt to mirror the run structure to the demand profile. (The degree to which it matches the demand profile will be assessed in the Task 5 Tech Memo). In part, the double-hum approach is partially accomplished with 9 vehicles running 8 hour (4 hour + 4 hour) split shifts. The remaining runs are all mostly 10 hour shifts. There is one run that operates overnight from 11:00 pm to 9:00 am.

It should also be noted that on particular heavy days, the Scheduler may ask for extra "tripper" routes that operate from 4:00 am to 8:00 am to better accommodate the morning demand, but this is not always possible because of the vehicle and driver shortages that the RTA is experiencing. Indeed, the Scheduler, when posed with what an ideal run structure might look like to handle the current demand, indicated that there is a need for 4 more vehicles running the same split shift (4:00-8:00 am and 2:00-6:00 pm) as the other 9 split shifts (or 8 partial 4-hour shifts if drivers cannot be secured for split shifts). She also mentioned a need for 2 more partial shifts in the evening (from 8:00 pm to 12:00 midnight).

Figure 5. LIFT Run Structure



Given the current driver and vehicle shortages, making that a reality may not be possible. However, many transit agencies have augmented their in-house (or contracted) dedicated vehicles with non-dedicated vehicles operated by taxis companies, NEMT providers, and even some TNCs, as long as the drivers are ADA paratransit-certified, i.e., are trained to proficiency and drug and alcohol tested. The RTA used to use a local taxi company as an "overflow" provider years ago. This could present a way to provide more supply of service at needed times. Moreover, for dispatchers, non-dedicated service providers provide an effective tool to handle re-emerging no-shows (rather than turning back a vehicle to serve the trip or fitting into another run) and vehicle breakdowns while in service. For schedulers, non-dedicated service providers are an effective resource for serving any trip that would otherwise adversely impact the productivity of the dedicated fleet.

It is also possible that the situation could be helped by "off-loading" demand via an alternative service. This can be done in one of two ways.

- The first way is to offer an alternative service, an on-demand service that transit agencies offer to their ADA paratransit customers and that are provided through non-dedicated service providers such as taxis and TNCs. Note there would need to be a WAV service option, sometimes accomplished through subcontracts and sometimes through additional WAV operators, in order to achieve service equivalence as mandated by the ADA.

- The second way of off-loading trips is through an opt-in program similar to the MBTA's The RIDE Flex program in Boston, where opt-in riders allow the MBTA to convert their ADA paratransit trip to a non-ADA paratransit trip (if advantageous for the MBTA). This then permits the MBTA to re-assign the trip to a TNC, taxi or other type of carrier under contract that does not used ADA-paratransit certified drivers.

2.4.5 Dispatching and Window Dispatching

At the time of TTI's site visit in mid-June, there were 4 dispatchers under a Lead Dispatcher, with another new dispatcher soon to be on-board. The Lead Dispatcher's shift is from 6:00 am – 2:00 pm. The other dispatcher shifts are 8:00 am - 4:00 pm, 11:00 am - 7:00 pm , 2:00 pm – 11:00 pm, and 10pm – 6:00am. With these shifts, there are always at least two dispatchers during the heavy periods, with the Lead Dispatcher focusing on proactive dispatching. While one dispatcher prefers to work in the ENO facility (despite the A/C issues), most dispatchers work from home.

Trapeze is used to support the dispatching functions which mostly involves (1) monitoring the dispatch screen to make sure that runs are not falling behind, (2) re-assigning trips as needed to get later-running vehicles back on schedule or in response to driver call-outs or accident/breakdowns while a vehicle is in service; (3) processing no-shows which includes some customer calling as described earlier; (4) assigning re-emerging no-shows to runs; (5) assisting driver with navigation help or incidents; (6) responding to reservationists who do not have the information relevant to WMR or ETA calls from customers. The late night dispatcher also schedules any unassigned trips that may have been left-over from scheduling and assigns vehicles and drivers to runs.

Monitoring the vehicles progress is challenging on one part because each dispatcher is dispatching the entire fleet in service (this is discussed more below). Moreover, the real-location of many of vehicles does not show up on the dispatching screen because these vehicles have a non-working MDT, although in observing one dispatcher, he rarely relied on the vehicle location as shown on the map even when

processing a no-show. . Many vehicles also have non-working radios, which further inhibits dispatcher-driver communication. TTI staff observed one dispatcher texting a photo of the dispatch screen to a driver's cell phone to communicate a change in his schedule (even though use of cell phones while driving is forbidden), but this is a way that the dispatcher has used their ingenuity and available (personal) resources to adapt to limiting circumstances.

The procedure for a no-show procedure is for the driver to wait 5 minutes, which starts at the beginning of the pick-up window should the vehicle have arrived early, and then check with the dispatcher for direction. Most systems then have the dispatcher or a dispatch assistant call the customer to determine whether the customer is aware the vehicle is outside and to see if the customer still wants to make the trip. The LIFT policy however is to call the no-showing rider though only if (1) the rider is visually impaired or hearing impairment, (2) if drivers can't find a good place to park, or (3) if there are special instructions. In quizzing the dispatchers, TTI staff determined that dispatch staff had an accurate understanding of no-shows, which are the fault of riders vs. missed trips which are the fault of the RTA.

Window dispatching duties at pull-out include printing the run manifests (so that drivers have them at pull-out as back-up) and making sure that each driver has both a money bag and a gas card. Window dispatching can also involve going over the manifest if the driver spots an issue or has a question, and tweaking the schedule as needed. Window dispatching also involves coordinating vehicle replacements (as needed) if a vehicle is downed in pre-trip inspection or if a driver calls out at the last minute. If the dispatchers are busy at the time of pull-out, the Lead Scheduler will pitch in. Indeed, TTI witnessed good communication between the Lead Scheduler and the dispatch staff.

At pull-in, dispatchers are responsible for ensuring that the drivers have completed their driver log and post-trip inspection and have turned in their money bag. Both driver and the dispatchers check to see whether the total fare collected matches the driver log before the money bag is deposited in the driver room safe.

In summertime, the LIFT vehicles regularly experience A/C problems. If the problem is detected at pull-out, the vehicle is driven over to maintenance, and either a spare vehicle is used for that run (if available) or more likely, dispatchers have to re-assign trips from that run to other runs. It typically takes a day for maintenance to address a problem with an AC unit. At time of visit, 4-5 vehicles were down because of AC issues and no spares were available.

Ideally, the dispatcher to vehicle ratio should be 1 to 20, which is the standard in the paratransit industry. RTA has achieved this ratio with the regular dispatchers, again noting that the Lead Dispatchers performs the proactive dispatching function to identify and solve upcoming problems before they manifest themselves as a problem in time. However, while LIFT displays a 20:1 ratio at peak times (near 40 vehicles to 2 dispatchers), the attention and focus of the dispatchers is diffused by all the other things they are doing, including window dispatching but especially including handling the calls that come from the reservation agents stemming from WMR calls they cannot handle (see below) and calling back qualifying no-show riders. Moreover, any dispatcher can address an issue from any driver and on any run, therein forcing each dispatcher to be keeping track of all vehicles. This is especially challenging and is exacerbated by dispatchers working in different places.

Other transit agencies have solved this issue by (1) adding a dispatch assistant per shift to handle incoming and outgoing telephone calls; for the RTA, this may also allow for broadening the no-show call

back policy; and (2) splitting the in-service fleet between the two dispatchers, rather than having each be responsible for the entire set of runs. For example, 40 vehicles could be split evenly between the two dispatchers with each being responsible for 20. The only coordination needed between the dispatchers would be if one wants to assign a trip to one of the other dispatcher's vehicles. This dispatch team re-organization could easily be accommodated by the radio talk groups currently assigned to LIFT. There are three talk groups, which means each dispatcher could have their own talk group and leaving the third talk group for emergencies.

With two teams, there could be friendly competitions (with rewards!) between the teams, which has been shown to improve both productivity and on-time performance as well as morale (to address some tension between drivers and some dispatchers).

Moreover, some transit agencies have dedicated a dispatch assistant to dialysis patient/facility liaison. It is not unreasonable to conceive that the same dispatch assistant who works the phones could also be the liaison for the dialysis trips.

Lastly, tuning the Trapeze parameters will not only help with better solutions for the schedulers but for the dispatchers as well, and as mentioned, this would also enable service-day continuous dynamic optimization which effectively automates the proactive dispatching that Lead Dispatchers and sometimes others dispatchers (after the Lead Dispatcher leaves for the day) are doing, thereby freeing up the Lead Dispatcher the time to truly oversee and monitor the dispatching and to pitch in as needed. Using this function in Trapeze though also assumes that the RTA has functioning MDTs. As mentioned above, RTA's IT department is in the process of switching from MDTs to tablets. Besides enabling more functionality, tablets (and their sim cards) are more easily and quickly replaceable at pull-out, meaning that there is no reason why real-time locations, upon which continuous dynamic optimization depends, shouldn't be available for the in-service fleet.

The cleaning up of the phone records will also help in increasing the number of successful IVR confirmation calls and imminent arrival calls which in turn should recue the number of no-shows and the dispatcher actions related to no-shows. Adding non-dedicated service providers to the service mix also supplies a potentially better way to handle re-emerging no-shows if there are not easy solutions among the RTA-operated dedicated runs.

2.4.6 Handling Customers' Service-Day Calls

On the day of service, WMR and ETA calls are fielded by the reservationists. According to staff interviews and confirmed by TTI observations, approximately 80% of these calls are successfully handled by the reservations staff. The other 20% of calls that the reservation agents can't answer are largely due to vehicles in service with non-working MDTs. Fixing this problem (via switching to tablets as previously discussed) should increase the percentage of service-days calls that are able to be addressed by the reservation agents.

Fixing the phone numbers in the customer profiles should also increase the number of IVR confirmation and imminent arrival calls/texts that successfully make it to the customers. This should reduce the number of ETA calls.

2.4.7 Trip Reconciliation

The trip reconciliation function, currently performed by LIFT's Lead Scheduler, involves adding missing or incorrect arrival/departure times. These data "holes" exist if then driver forgets to perform an arrival or a departure at a particular stop or performs it early or late when comparing the performed time against the driver's log and/or the time stamp when the GPS system records that the vehicle is at the pick-up or drop-off location. Trip reconciliation also is necessary when the vehicle is in service with a non-working MDT.

According to the Lead Scheduler, most of the missing or incorrect times can be entered or changed based on the driver log, and if this is found to be faulty, from the GPS times. The switch to the tablets should result in a significant reduction of staff time devoted to trip reconciliation, and in general a more accurate tally of on-time performance.

One observation about this function: this is largely a clerical function that could be performed by an administrative assistant or data analyst.

2.4.8 Vehicle Operations/Service Delivery

At pull-out, drivers receive an empty money bag for the collection of fares on their run. For each trip and at each pick-up location, drivers record the fare received and whether the fare was paid in cash, tickets, or tokens. After the run at pull-in, drivers make sure that the fares to be collected, the fares collected as documented on the driver log, and the actual fares collected (in the money bag) all match.

Upon leaving the yard, drivers primarily use MDTs in the LIFT vehicle for schedule information, with the paper print out manifest as a backup if the MDT is not functional. The MDT does not have a working map feature, drivers must radio the dispatcher or other drivers for navigational assistance. Drivers will also radio with the dispatcher for any issues on the road (such as traffic/construction, finding a client at the pickup point, or non-functional stoplights at intersections), assuming the radio is working which has been a problem. The MDT shows the next 8 pick-ups or drop-offs (or "events") on the driver's run. Once the driver completes a pick-up or drop-off, the driver performs the event on the MDT, which time-stamps and geo-stamps the event. After performing the event, the screen will flash with the next event (pick-up or drop-off) to be performed. If there has been a change to the schedule, performed by the dispatcher, the driver is alerted to refresh the screen.

For pick-ups, the driver will typically honk for the customer if the customer is not present. LIFT is a curb-to-curb service, but drivers sometimes will help clients get to/from the vehicle and carry the client's bags onto the vehicle as needed. For drop-offs, driver protocol is to watch clients enter the building of their destination before departing from the drop-off point.

From focus groups conducted with LIFT drivers, some drivers pointed out the difficulties with having enough working vehicles and drivers for the service, which can in turn cause issues with overloaded runs. Providing trips that make the vehicle travel across the river is also a frequent operational challenge, as the roadways across are busy most of the day and vehicles must travel longer distances. The same challenge for longer distance runs is also beginning to occur with providing service into Jefferson Parish. One driver also said that there are not always enough money bags for the runs that day; a makeshift solution RTA has done at times is stapling a piece of paper to form an envelope (which is less secure).

2.4.9 Driver Requirements and Training

RTA recently hired a new Manager of Training at the time of TTI's site visit, with the person having previous transit training experience but still learning the particulars of the transit agency. This position oversees new hire training and recertification for RTA drivers on all modes (not just paratransit); they are in charge of 5 full-time and 3 part-time trainers. New hire drivers are required to have a CDL with a passenger endorsement, along with a COVID vaccination card.

The existing training process for new hires lasts about 6-8 weeks, starting with classroom instruction, then instruction behind the wheel on a closed course, followed by cadeting with another driver. Currently retraining is only done in cases when a driver is involved in an accident/incident, or if a driver has not worked for over 30 days; there is no annual refresher training in place. The new Manager of Training suggested they may look into changing this process and instituting annual refresher training for drivers sometime in the future.

2.4.10 Road Supervision

The primary job of the road supervisor is to assist drivers when needed (e.g., in response to a rider incident or accident or to assist the driver with loading a passenger (if two people are necessary) and to monitor/evaluate the performance of drivers in the field. Road supervisors are sometimes used to serve trips especially as a result of a vehicle breakdown or accident while in service, and as mentioned above, road supervisors are also called upon to serve a trip that cannot be served by one of the dedicated vehicles.

There are four full-time road supervisors dedicated to LIFT. This number allows for there to be one road supervisor to be present 24/7. Only having one road supervisor at any given moment may not appear to be sufficient to adequately cover the entire service area, but most locations withing LIFT's service area can be accessed by a Road Supervisor within 15 to 30 minutes. However, now that LIFT is serving inter-parish trips directly, the effective service area (when road supervision may be necessary) has been broadened and may require crossing over a bridge which can often be congested.

2.4.11 Fleet Maintenance

As discussed previously, all paratransit vehicles are parked and serviced at the ENO location. There is also the body shop at the Canal St. location which handles dent repair, paint, flooring, and related issues. And per the RTA's contract with Goodyear, tire replacement us handled at the Canal St. location. Paratransit parking and maintenance used to be at the Canal St. location before the program grew to be too large for the facility (this move occurred in the early 2000s). At ENO, the maintenance department is split between fixed route and paratransit modes and overseen by the Head of Maintenance. The Paratransit Supervisor for Maintenance oversees 12 mechanics who work in 8 hour shifts (4 per shift); this person is the supervisor during the day, while another mechanic acts as the night supervisor. On the weekends there are still 3 shifts but fewer mechanics. The paratransit maintenance group is also responsible for maintenance of any non-revenue vehicles and/or motorized equipment, which can strain available staff capacity at times.

The supervisor estimates that the bus to mechanic ratio in the paratransit department is around 9:1 or 10:1. RTA can have issues in attracting quality applicants to fill open mechanic positions, particularly finding applicants that have solid vehicle maintenance experience and knowledge of working with bus vehicles. Currently, training is essentially done by the supervisor and other experienced mechanics in the shop; the supervisor acknowledged that existing processes for mechanic training cold be improved.

Previously there was a training department from SE Louisiana that was good for mechanic training, but NORTA went away from that resource during the Transdev period; there was also previously a mechanic apprenticeship program and written test upon application that worked well to identify and train quality applicants.

Within the maintenance department, the inventory control manager reports to Head of Maintenance and mostly functions in monitoring available inventory of parts; the supervisors are not required to get approval from the inventory control manager for conducting a repair. The maintenance department uses Ron Turley software to manage the fleet, preventative maintenance (PM) scheduling, work orders, and mileage tracking (from fuel cards). The software has a PM schedule for four sets of PMs; RTA uses a PM adherence standard of +/- 10% of the mileage targets. Nearly all maintenance work is done in house; sometimes the department will outsource repairs that are under warranty (such as AC issues), but this is uncommon as the warranty periods are not usually very long. The department will do engine and transmission replacements but does not have a vehicle rehabilitation program in place.

Procurement of parts is a major issue for the maintenance department. Since NORTA brought everything in-house, all part acquisitions have to go through a formal process with the Procurement department to determine whether it should go out for bid or be a sole source; most of the time the department determines that a bid should be used. Previously the maintenance department was able to make blanket purchase orders for parts acquisitions, which was a much more efficient process. This has caused issues in being able to turn around vehicles that need repair work due to not having the available parts. Under current RTA rules, the paratransit maintenance group is unable to stock up on key parts for PM or minor repairs, delaying the turnaround time for getting paratransit vehicles back on the road. The RTA procurement and part storage processes need to be revisited to enable the maintenance department to turn around down vehicles in a timely fashion.

2.4.12 Reporting

As discussed above, most of the service data that goes into Trapeze originates from data collected on the MDTs, and this is augmented as needed through the trip reconciliation process (see Section 3.5.7).

Trapeze has a wealth of reports that reflect this data. Of significant usefulness for gauging service performance are the productivity report and the on-time performance (OTP) report. These reports are also used to report monthly statistics to RTA management and the RTA Board. The NTD report is also valuable in suppling required NTD information to the FTA's national transit database each year.

The Senior Manager of Customer Service and the Scheduler use the "optimize" report for scheduling purposes; this report identifies single rides that can potentially be grouped together.

2.4.13 Complaint Management

Complaint management is the responsibility of the same person who performs eligibility determination.

The process for submitting a complaint is detailed in the LIFT Rider Guide. Complaints may be submitted by mail, by fax, in-person or by phone. Curiously, the Rider Guide does not mention emailed complaints as a valid way to submit a compliant.

Once a complaint has been received, a letter is sent back to the complainant – in a format preferred by the rider -- acknowledging its receipt and detailing how the complaint will be processed. Staff uses "Issue Track" to enter and track complaints.

As mentioned in the Rider Guide, the RTA has 60 days to investigate the complaint from the receipt of the complaint. The investigation process typically will include (1) review of any and all relevant documents, reports, and if appropriate, videos, and (2) focused interviews with key staff or contacts for the purpose of obtaining facts and evidence regarding the allegations in the complaint. The investigator will elicit information from all contacts and witnesses that can provide firsthand information about the incident, event or action specified in the complaint. All relevant documentation, including interview notes and/or recordings will be dated. Additionally, a chronological contact sheet will be maintained in the case file throughout the investigation.

If more information is needed to resolve the case, the RTA may contact the complainant in writing to request the information. The complainant has 30 business days from the date of the letter to send requested information to the investigator assigned to the case. If the investigator is not contacted by the complainant or does not receive the additional information within 30 business days, the RTA may administratively close the case. A case can also be closed if the complainant no longer wishes to pursue their case.

After the reviewing the complaint and investigation materials, the investigator will issue one of two letters to the complainant: a closure letter or a letter of finding. A closure letter summarizes the allegations and states the reasons why the case is being closed. If the complainant wishes to appeal the decision, she/he has 60 days after the date of the letter or the letter of finding to do so. A letter of finding summarizes the allegations and the interviews regarding the alleged incident, and explains whether any disciplinary action, additional training of the staff member, or other action will occur.

If the decision is made not to investigate the complaint, the complainant will be notified in writing within 20 calendar days and the notification shall state the specific reasons the complaint was deemed to not have investigative merit.

Complaints and related materials associated with ADA-related complaints must be kept for 7 years and be kept in a separate file.

2.4.14 Compliance Monitoring – Capacity Constraints

Per FTA guidelines, an ADA paratransit service may be capacity constrained if it exhibits a *pattern* of **denials**, **late trips**, **missed trips**, and **excessively long trips.** If such patterns can be traced to capacity constraints, the service is in violation of ADA guidelines. There is also a fifth service quality/capacity metric, **telephone access**, which is typically measured in average and maximum hold times. If there is a pattern of access issues (by ADA paratransit customers), this too is considered by the FTA to be a capacity constraint. Each of these five metrics is discussed below.

Denials – The RTA has a goal of zero denials and goes beyond the call of duty (for example, using road supervisors to serve some trips that do not fit in the schedule) to avoid denials. However, it is unclear whether or not the LIFT staff is tracking all denials (as included in FTA guidelines) where a denial is defined as:

(1) A trip request that cannot be accommodated at the requested time +/- 60 minutes (within reason) because of capacity constraints, or

(2) A trip request that can be accommodated but beyond the +/- 60-minute negotiation period, with the rider either choosing to accept or to refuse the offered pick-up time.

One cautionary note about the first part of the definition. The phrase “within reason” is part of the definition because there are circumstances when a pick-up time is available and offered within 60

minutes of the requested pick-up time but that time is incompatible with appointment times, work or class start or end times, building opening and closing times, etc. For example, the pick-up time for a return trip is offered at time when the rider has not yet concluded his/her workday.

The second part of the definition needs to be heeded. It is common in in the industry for such denials to not be tracked. When systems report zero denials, most FTA reviewers will dig deeper to see how denials are tracked, and if there is not a process in place, the agency will be found to be non-compliant.

Late Trips – One of the RTA's shortcomings (as discussed above) is that it does not track the on-time performance of drop-offs for trips that were requested by a requested drop-off time or a stated appointment time. Also, a stated above, regardless of whether or not an OTP standard is reached, a pattern of late trips can still exist. LIFT does not currently have a process for identifying patterns of late pick-ups and late drop-offs.

Missed Trips – LIFT dispatchers have a basic understanding to differentiate missed trips for no-shows, but not a complete understanding of missed trips. There are five definitions for a missed trip. A missed trip is an event where (1) the vehicle never arrives; (2) the vehicle arrives early and departs before the pick-up window begins; (3) the vehicle arrives on-time or late but departs before the 5-minute wait time is over; (4) a driver fails to carry out specific instructions included with the reservation (e.g., a specific building entrance, door-to-door assistance, honk on arrival, etc.), which results in the rider missing their ride; or (5) the vehicle arrives after the pick-up window and the customer does not appear or cancels-at-door. Such events are not the fault of the rider and hence should not be designated as a no-show. Missed trips are currently be tracked in Trapeze by LIFT staff. But more so, even if the percentage of missed trips do not exceed a standard (commonly 0.5%, noting that LIFT has not established a not-to-exceed goal), patterns may still exist, and it behooves the RTA to establish a process for identifying a pattern of missed trips.

In Boston, the MBTA also requires that its contractors separately track and report missed trips where the vehicle arrives (1) between 0 and 15 minutes after the end of the pickup window, (2) 16 and 30 minutes after the end of the pick-up window, and (3) more than 30 minutes after the scheduled pick-up time. Clearly, the MBTA is interested in the severity of missed trips as a performance issue. It may be something that RTA may wish to replicate.

Excessively Long Ride Times - The percentage of excessively long ADA paratransit trips is another service quality metric that can also point to capacity issues. Many ADA paratransit systems have set a maximum ride time standard in their scheduling system, but this is used solely as a scheduling parameter so that the scheduling system (in this case Trapeze) will not suggest a solution that violates this threshold. However, for ADA paratransit services the FTA defines an excessively long trip as a travel time that is longer than travel time for the same trip taken on fixed route transit service, adding in travel time to/from stops and reasonable wait and transfer times.

Even if a standard percentage is established (many systems use no more than 5%), a pattern of excessively long ADA paratransit trips may indicate a capacity constraint (e.g., if a limited supply of service forces schedulers and dispatchers to share rides to the point where a rider is on-board for an excessively long period). As with the above metrics, the RTA needs to design and implemented a process to ensure that there is not a pattern of excessively long trips, as compared to the trip time of comparable transit trips.

Telephone Access - Telephone access is another service quality metric that can also point to a capacity constraint if there is an insufficient number of call-takers (or telephone lines) to handle the demand. Most incoming calls from customers can be categorized into four groupings, noting that capacity issues focus on the first three as the more critical:

- Service requests subdivided further into advance reservations vs. same-day requests and will-calls.
- Cancellations
- Same-day customer issues (e.g., ETA requests and "where's my ride?" calls)
- General requests for information

The daily and hourly figures for call volumes and hold times as segregated into these categories can often point to certain days and hours of the week when substandard telephone access exists, and where there is a capacity constraint, remembering that the FTA's ADA paratransit policies indicate that a capacity violation may exist where patterns of substandard telephone access occur. The most common examples where such constraints exist is where the supply of call-takers and/or the supply of telephone lines are outstripped by the volume of incoming calls, or where the volume of same-day calls (associated with customer issues) is extremely large because of late service stemming from an undersupply of vehicles or drivers.

Telephone access is usually defined in two ways: (1) the number or percentage of incoming calls that have a wait time of under "X" minutes or seconds in any day and hour, and (2) the number of calls that exceed a maximum (not to exceed) hold time, e.g., 5 minutes. In both cases, it is important the average hold time and max hold time for each hour of each date be reported.

It is also important to note here that a pattern in any of these areas can exist even if standards are met or exceeded. This could include, for example, frequent late trips or exceedingly long trips as experienced by riders from the same area, or substandard hold times on specific days and at specific times, such as Mondays when the phone lines up for reservations first open up. Moreover, even if it is unlikely that a pattern does exist because of exemplary service statistics in these five areas, a transit agency may face a finding of non-compliance if the agency does not have a process in place to detect such patterns. In short, the RTA must not only track these measures (and establish standards) but also have a process in place to identify any patterns in each area, regardless of whether or not each standard has been achieved. Currently, there is no one on the LIFT staff that is systematically looking for such patterns.

CHAPTER 3: SERVICE PERFORMANCE

Chapter 3 focuses on an evaluation of LIFT's performance and is organized as shown below. Many of the analyses consider trends over the last full five calendar years, from 2017 to 2021. During this period, there was a transition in the way the RTA provided LIFT service. In 2017, 2018, and through the first half of 2019, LIFT was managed and operated by Transdev, under contract to the RTA. Beginning in mid-2019, an 18-month transition of system to the RTA occurred, concluding in December 2020. Thus, 2021 was the first full year where LIFT was managed and operated in house. Note too that impact of COVID pandemic, which began in March 2020, on demand and service delivery also needs to be considered in the trend analyses. Hurricane Ida in September 2021 also impacted demand.

3.1 Eligibility Certification - A trend analysis of eligibility statistics.

3.2 Demand and Ridership - Trend analyses of ridership statistics including the numbers of – and where appropriate, percentages and breakdowns of -- trips requested, denials, trips booked, advance cancellations, trips scheduled, trips completed

3.3 Trip Characteristics – Our analysis includes GIS maps of origins and destinations by day and trip density patterns and special analysis of origins and destinations of inter-parish trips.

3.4 Telephone Hold and Call Times - A trend analysis of telephone access, which includes a temporal analysis of hold times and call times from May 2022.

3.5 Service Supply and Service Efficiency - Trend analyses of key service supply and service efficiency metrics including the number of revenue vehicle hours (RVHs), and service productivity.

3.6 Run Structure vs. Demand Profile - A comparison between the run structure and the demand profile to identify instances of over- and under-supply of service.

3.7 Operating Cost and Cost Efficiency - Trend analyses of operating cost and cost-efficiency.

3.8 Service Quality Metrics - Trend analyses of service quality metrics such as on-time performance and complaint frequency ratio.

3.9 Safety and Maintenance Effectiveness - Trend analyses of safety metrics (accident frequency ratio) and maintenance effectiveness (miles between road calls)

3.10 Possible Capacity Constraints – A discussion of patterns of denials, late trips, missed trips, excessively long trips, and substandard telephone access

3.11 Peer review – A comparison of LIFT's key performance statistics with the same statistics from similarly sized ADA paratransit services; the statistics compared include ridership, service productivity, unit operating costs, on-time performance, missed trip percentage, complaint frequency ratio and accident frequency ratio

3.12 Focus Areas - A "deep dive" evaluation of the following six aspects of each service: (1) organizational structure; (2) eligibility determination/certification functions; (3) call and control center functions; (4) software assessment; (5) complaint management function; and (6) contract assessment (for the JP Transit-Transdev contract.

3.13 Rider focus group and stakeholder interviews.

3.14 Other observations.

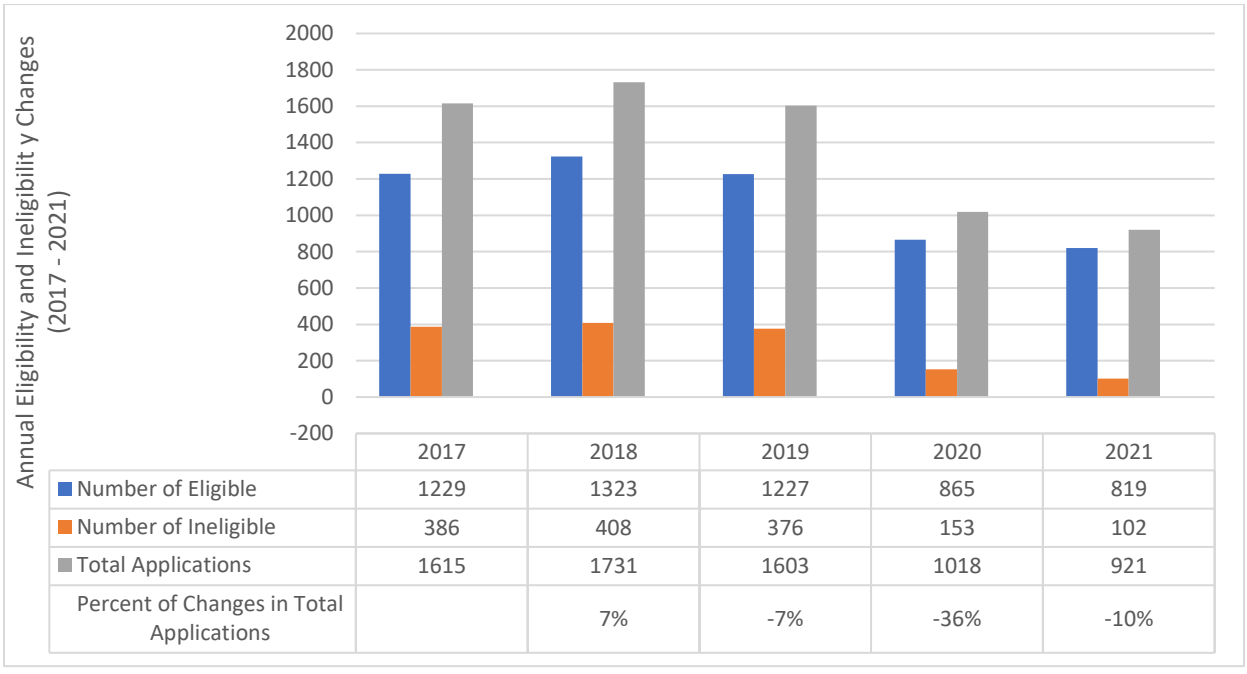
3.1. Eligibility Certification

At the time the Task 4 Tech Memo was being prepared, it was learned that there were approximately 10,700 eligible LIFT customers that were in the Trapeze system. RTA's eligibility specialist also indicated that that approximately 1,000-1,200 were active users and that approximately 20% of the customers were determined to have conditional eligibility, noting that RTA eligibility staff was unable to retrieve any data to evidence this.

Data indicating the number of applications and their determinations during the last 5 calendar years are presented in Figure 6. The total number of applications was fairly consistent from 2017-20019, ranging between 1603 to 1731. As might be expected, the total number of application dropped dramatically in 2020 and 2021, undoubtedly because of the pandemic. Riders deemed eligible are required to be re-certified every three years.

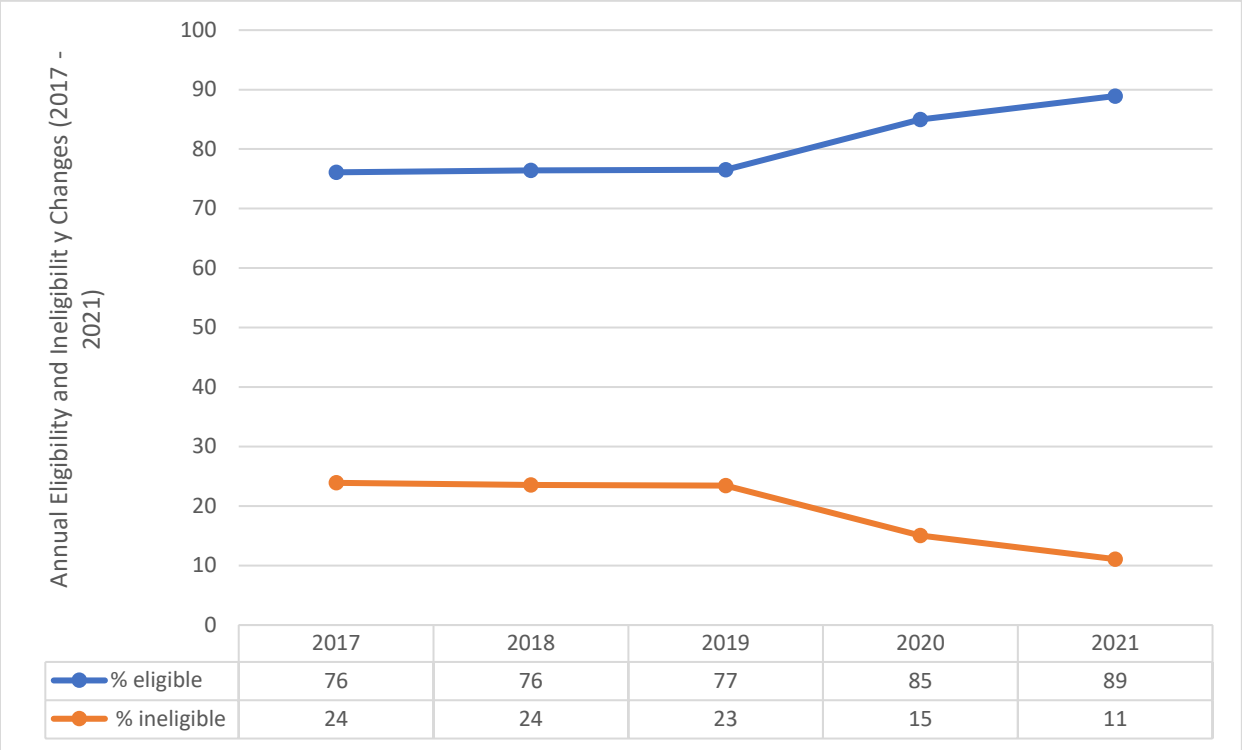
The percentage of eligible vs. ineligible determinations over the same period is presented in Figure 7. Interestingly, under Transdev, the split was essentially consistent from 2017 to 2019. Once this function was brought in-house, there was a dramatic shift in the split, with the percentage of eligible determinations increasing from the 76%-77% level to the 85%-89%. This would seem to point to the RTA (1) having a more inclusive (or lax) determination process with applicants being deemed eligible who otherwise perhaps should not be, and/or (2) determining a higher number of applicants as conditionally eligible persons. Without any data on the number of applicants deemed conditionally eligible though, it is difficult to determine which one is occurring or whether there is some combination of both. Also, as a point of reference, the percentage of denials one typically sees with an ADA paratransit eligibility process that includes in-person interviews and functional assessments is typically in the 2% to 10% range, but this is because a number of applicants typically self-select out when they know they have to show up in-person.

Figure 6. Applications and Eligibility Determinations (2017-2021)



	2017	2018	2019	2020	2021
Number of Eligible	1229	1323	1227	865	819
Number of Ineligible	386	408	376	153	102
Total Applications	1615	1731	1603	1018	921
Percent of Changes in Total Applications		7%	-7%	-36%	-10%

Figure 7. Percentage Split Between Eligibility Determinations (2017-2021)

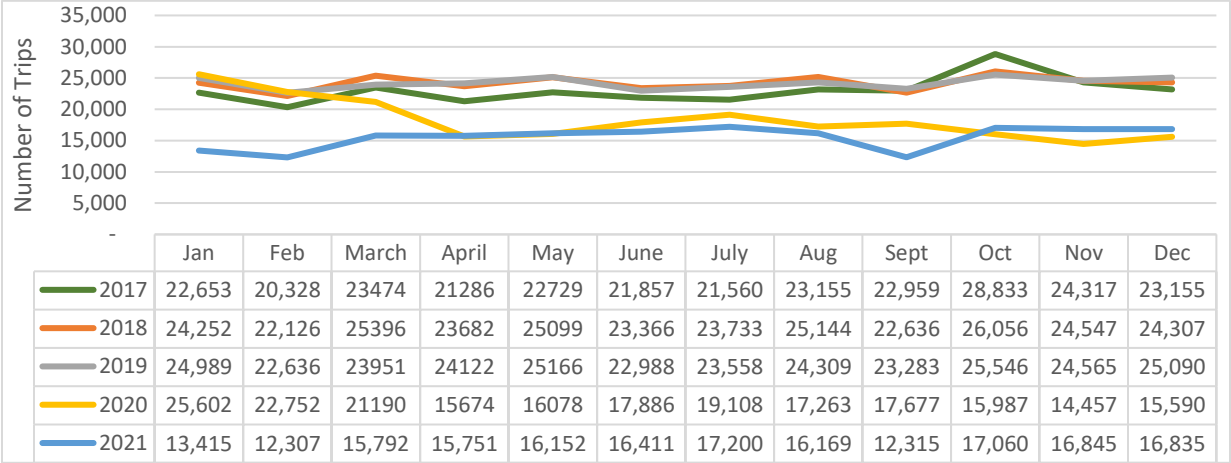


3.2 Demand and Ridership

3.2.1 Number of Trips Requested

Figure 8 displays the trips requested per month over a five-year period from 2017 through 2021. The monthly requested trips for service followed a similar pattern from 2017 to 2019, with a low demand point in February and high demand point in November. In January 2020, the demand for LIFT paratransit was at its high point during this period. However, LIFT's demand dropped significantly dropped due to the COVID-19 pandemic beginning in March 2020. The service started to recover its ridership from social distancing and shelter-in-place orders by March 2021, receiving the 60% of its 2017 maximum requested service in July 2021. However, the ridership encountered another fall in September 2021, probably due to Hurricane Ida.

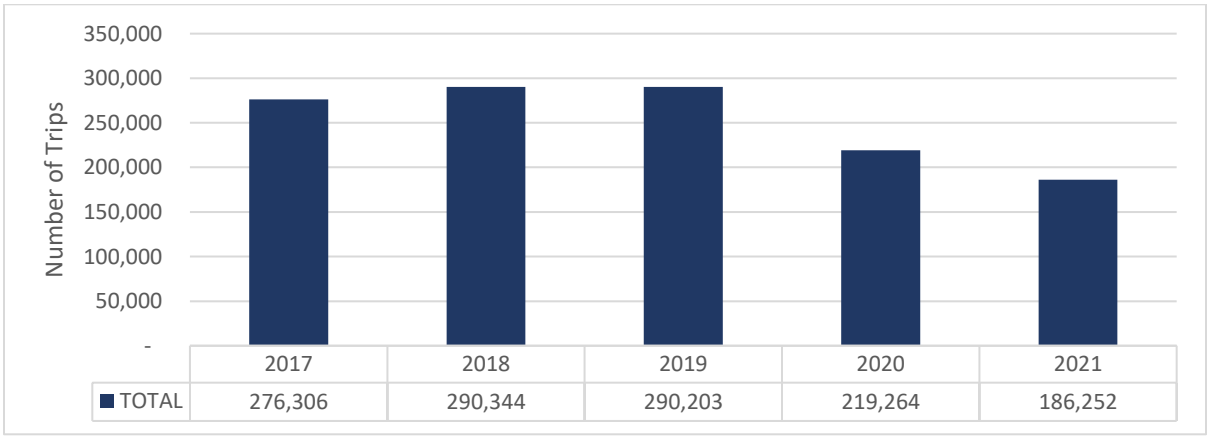
Figure 8. Total requested trips for LIFT by month (2017-2021)



	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2017	22,653	20,328	23474	21286	22729	21,857	21,560	23,155	22,959	28,833	24,317	23,155
2018	24,252	22,126	25396	23682	25099	23,366	23,733	25,144	22,636	26,056	24,547	24,307
2019	24,989	22,636	23951	24122	25166	22,988	23,558	24,309	23,283	25,546	24,565	25,090
2020	25,602	22,752	21190	15674	16078	17,886	19,108	17,263	17,677	15,987	14,457	15,590
2021	13,415	12,307	15,792	15,751	16,152	16,411	17,200	16,169	12,315	17,060	16,845	16,835

The total changes in requested trips by LIFT are shown in Figure 9Figure . As shown, the demand in 2018 and 2019 was essentially level, having increased by 5% from 2017. But as mentioned above, the requested trips decreased in 2020 and again in 2021 because of the pandemic. If one compares the 186,252 trips requested in 2021 with the 290,203 in 2019, the 2019 demand is 64% of what it was in 2017. This is fairly consistent with the bounce-back experience in the industry.

Figure 9. Total requested trips for LIFT (2017-2021)

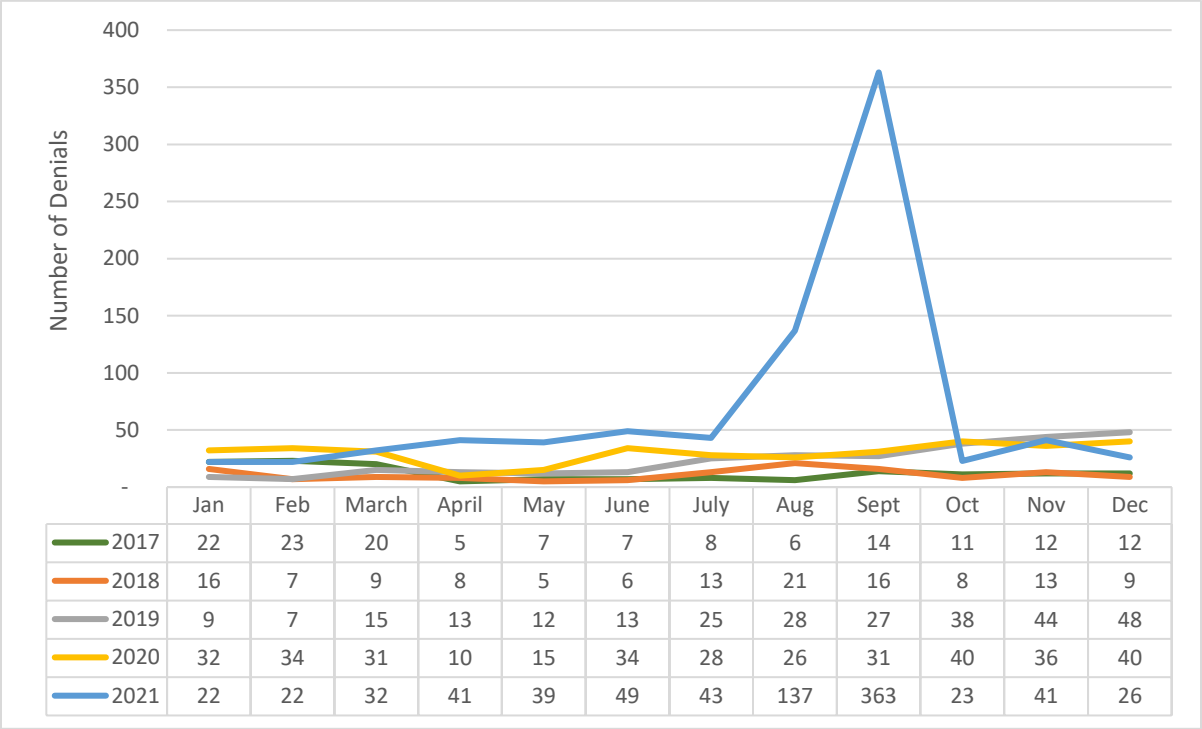


	2017	2018	2019	2020	2021
TOTAL	276,306	290,344	290,203	219,264	186,252

3.2.2 Number of Denials

The monthly and yearly trip denials for LIFT are shown in Figure 10 and Figure , respectively. The monthly graph in Figure 5 shows that the monthly denials for the last five calendar years did not change significantly (all under 50 or averaging less than 2 per day for most of the months, although, after operation of the service was brought in-house, the number of denials tended to be slightly higher, and were significantly higher in August and September of that year, probably due to Hurricane Ida, which hit New Orleans in late August but had far reach effects well into September.

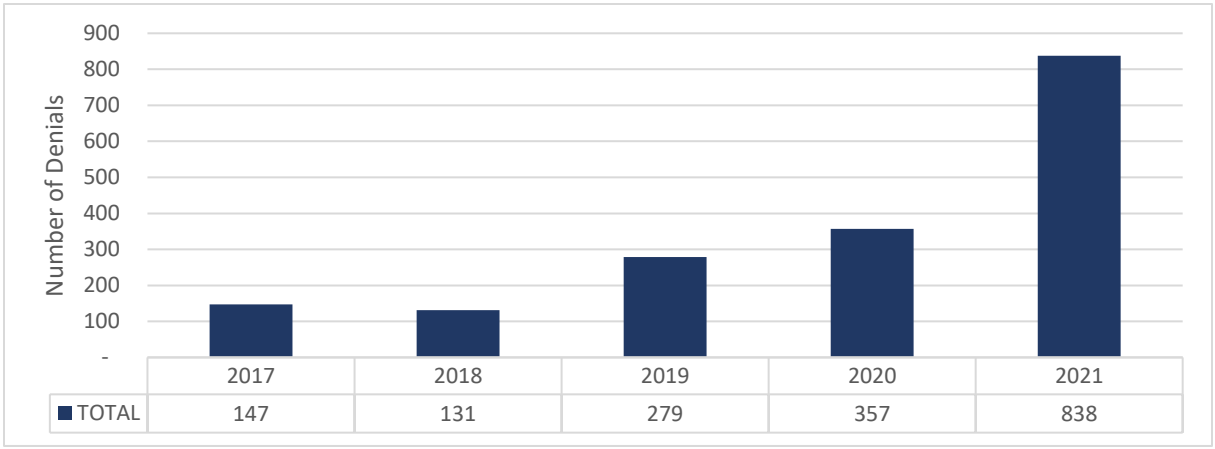
Figure 10. Number of trip denials by month for LIFT (2017-2021)



	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2017	22	23	20	5	7	7	8	6	14	11	12	12
2018	16	7	9	8	5	6	13	21	16	8	13	9
2019	9	7	15	13	12	13	25	28	27	38	44	48
2020	32	34	31	10	15	34	28	26	31	40	36	40
2021	22	22	32	41	39	49	43	137	363	23	41	26

Figure 11 shows the annual number of denials over the last five calendar years. The graph shows that denials in 2017-2018 were fairly level at 131 to 141 denials, but more than doubled in 2019, with another significant increase in 2020. But in 2021, denials increased substantially, in part because of the weather-related factors discussed above, but also as a result of capacity limitations and other factors. Compared to the 131 denials in 2018, the 838 denials in 2021 were 640% higher.

Figure 11. Total number of trip denials for LIFT (2017-2021)

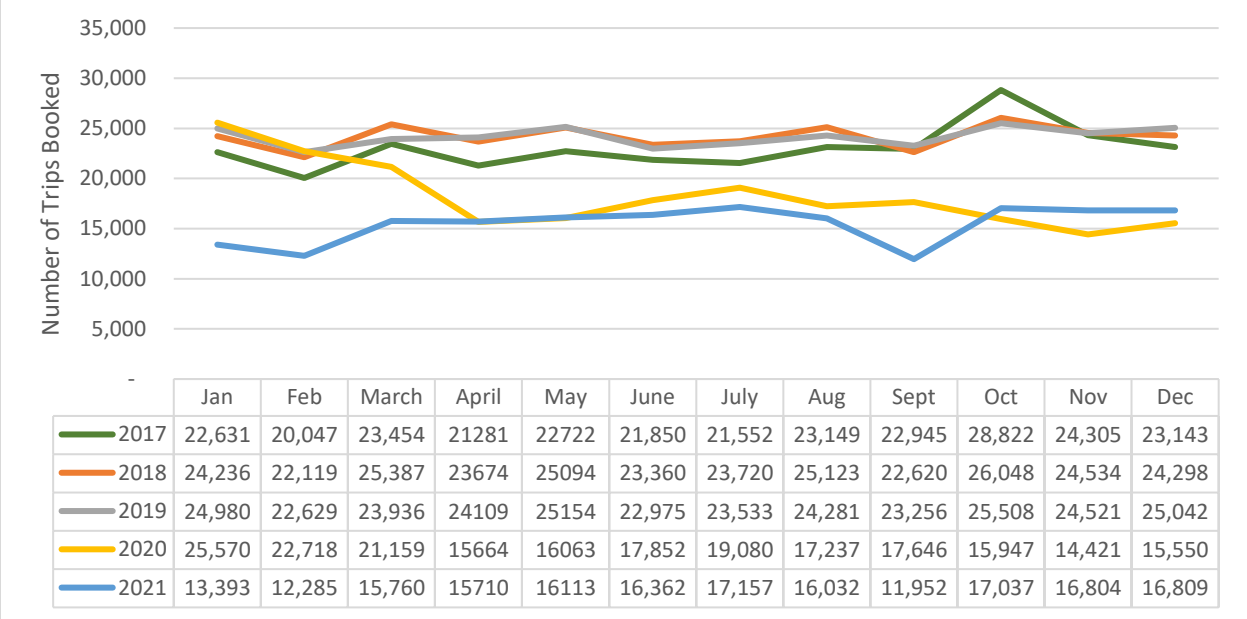


	2017	2018	2019	2020	2021
TOTAL	147	131	279	357	838

3.2.3 Number of Trips Booked

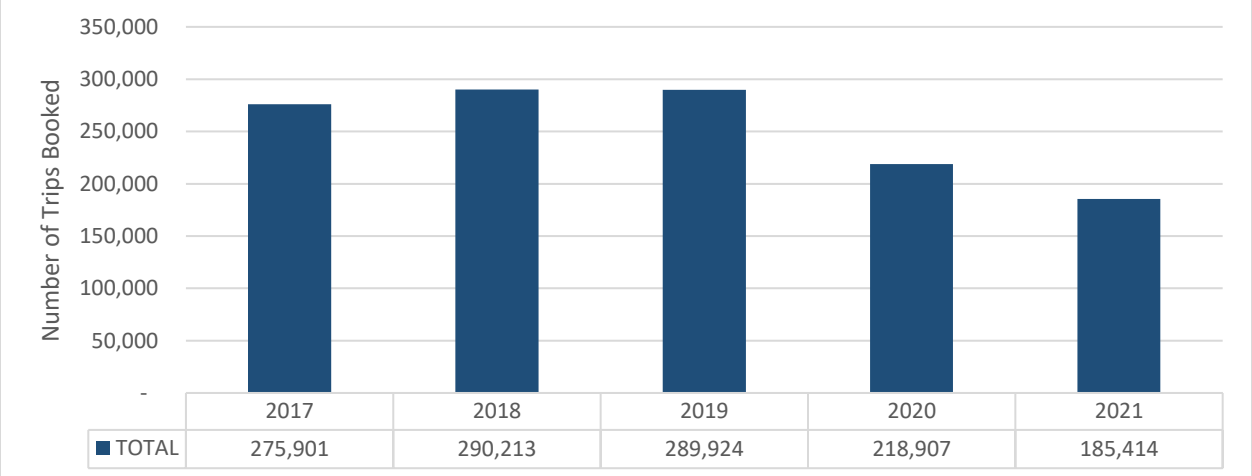
The number of trips requested less the number of trips denied is the number of trips booked. The temporal changes in booking trips for LIFT are depicted in Figure 12 and Figure below. As with the number of trips requested, this number was fairly consistent in 2017-2019, and decreasing in March 20210 and again in April 2020 because of the pandemic. Since 2020, the number of trips booked also decreased as a result of fewer trips requested and a larger number of trips denied.

Figure 12. Number of trips booked by month for LIFT (2017-2021)



	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2017	22,631	20,047	23,454	21281	22722	21,850	21,552	23,149	22,945	28,822	24,305	23,143
2018	24,236	22,119	25,387	23674	25094	23,360	23,720	25,123	22,620	26,048	24,534	24,298
2019	24,980	22,629	23,936	24109	25154	22,975	23,533	24,281	23,256	25,508	24,521	25,042
2020	25,570	22,718	21,159	15664	16063	17,852	19,080	17,237	17,646	15,947	14,421	15,550
2021	13,393	12,285	15,760	15710	16113	16,362	17,157	16,032	11,952	17,037	16,804	16,809

Figure 13. Total trips booked for LIFT (2017-2021)

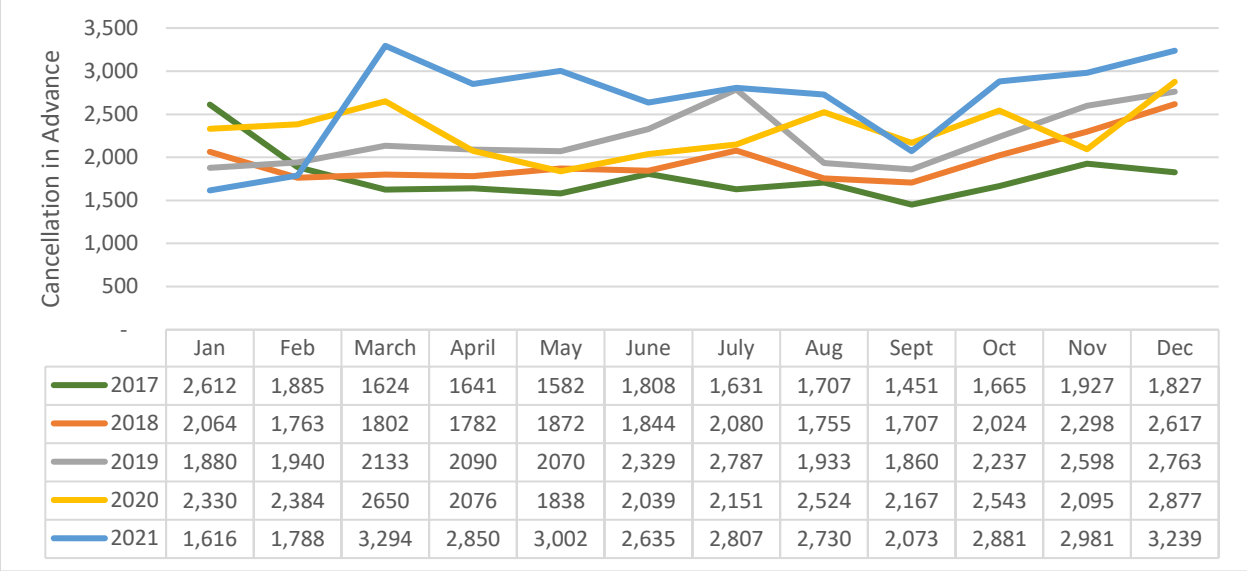


	2017	2018	2019	2020	2021
TOTAL	275,901	290,213	289,924	218,907	185,414

3.2.4 Advance Cancellations

Advance cancellations are defined by the RTA as cancellations placed at least two hours before the confirmed picky- time (or 2 hours before the beginning of the confirmed pick-up window) Monthly and annual advance cancellations for LIFT are shown in Figure and Figure . The data reveals that advanced cancellations increased during the pandemic years (2020 and 2021). By early 2021, the rate of cancelations was low, however, it began to increase again in March 2021.

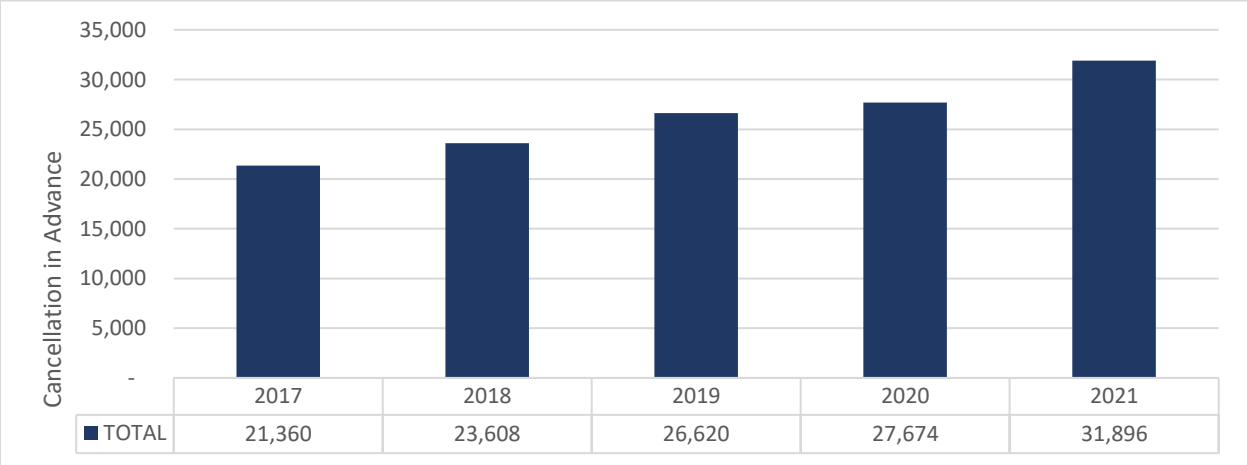
Figure 14. Number of advance cancellations by month for LIFT (2017-2021)



	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2017	2,612	1,885	1624	1641	1582	1,808	1,631	1,707	1,451	1,665	1,927	1,827
2018	2,064	1,763	1802	1782	1872	1,844	2,080	1,755	1,707	2,024	2,298	2,617
2019	1,880	1,940	2133	2090	2070	2,329	2,787	1,933	1,860	2,237	2,598	2,763
2020	2,330	2,384	2650	2076	1838	2,039	2,151	2,524	2,167	2,543	2,095	2,877
2021	1,616	1,788	3,294	2,850	3,002	2,635	2,807	2,730	2,073	2,881	2,981	3,239

Figure 15 shows that the number of advance cancellations steadily increased over the five-year period, culminating in the number of advance cancellations in 2021 being nearly 50% higher than in 2017.

Figure 15. Total advance cancellations for LIFT (2017-2021)

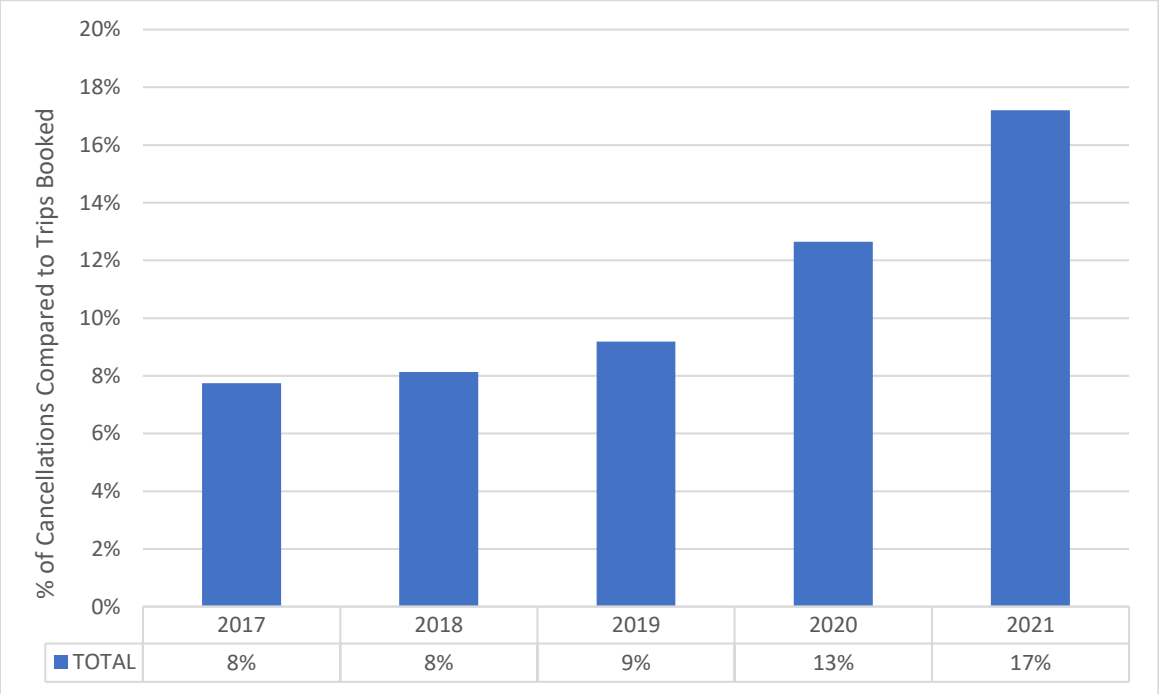


	2017	2018	2019	2020	2021
TOTAL	21,360	23,608	26,620	27,674	31,896

Advance cancellation, and even those placed before the trip date, can cause havoc with the schedule and in particular productivity, especially with the lack of schedule adjustments being made on the day before the trip date. The current scheduling of trips happens when they are requested, and as advance cancellations occur, the holes created are considered by Trapeze for new trips booked after each cancellation, but there is no attempt to optimize the schedule before the schedule is turned over to the dispatchers on the day of service. In this kind of environment, it is especially important therefore to minimize the number of advance cancellations.

Transit agencies typically monitor the percentage of cancellations (as compared to the number of trips booked) and will attempt to consider the cause of a high percentage of cancellations, typically when the percentage exceeds 15%. One common cause for this, and this may be happening in New Orleans, is a capacity constraint. Under these conditions, when customers cannot consistently get a desired pick-up time, they "work the system" by requesting "place-holder" trips and then will cancel them if they do not need them. As shown in Figure 16, this percentage of advance cancellation was below this threshold but has been creeping upward from 2017 through 2020, and finally exceeded this threshold in 2021.

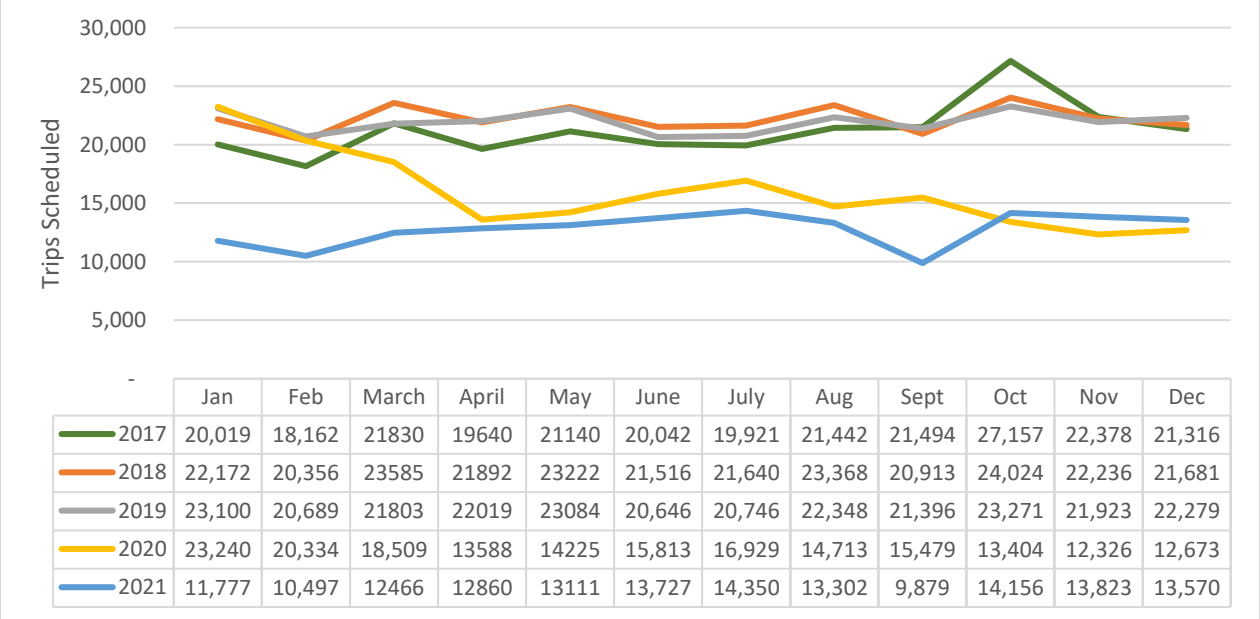
Figure 16. Percent of advance cancellations compared to trips booked for LIFT (2017-2021)



3.2.5 Trips Scheduled

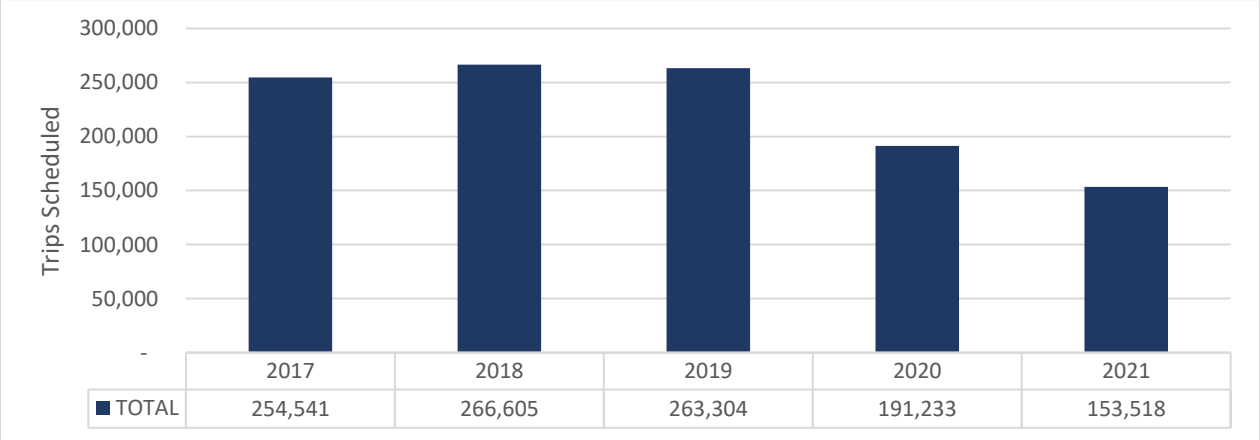
Removing the number of advanced cancellations from the number of trips booked yields the final number of trips scheduled. The month-to-month and annual figures for trips scheduled on LIFT are shown in Figure 1 and Figure 2. The number of monthly scheduled trips was consistent from 2017 to 2019. In 2020, the trips scheduled significantly dropped, again likely due to the COVID-19 pandemic. Over the last five calendar years, the number of annual trips scheduled was at its lowest point in 2021. The total number of scheduled trips in 2021 was 40% less than the total number scheduled in 2017 and even lower (in most months) than comparable months in 2020 during the height of the pandemic.

Figure 17. Number trips scheduled by month for LIFT (2017-2021)



	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2017	20,019	18,162	21830	19640	21140	20,042	19,921	21,442	21,494	27,157	22,378	21,316
2018	22,172	20,356	23585	21892	23222	21,516	21,640	23,368	20,913	24,024	22,236	21,681
2019	23,100	20,689	21803	22019	23084	20,646	20,746	22,348	21,396	23,271	21,923	22,279
2020	23,240	20,334	18,509	13588	14225	15,813	16,929	14,713	15,479	13,404	12,326	12,673
2021	11,777	10,497	12466	12860	13111	13,727	14,350	13,302	9,879	14,156	13,823	13,570

Figure 28. Total trips scheduled for LIFT (2017-2021)

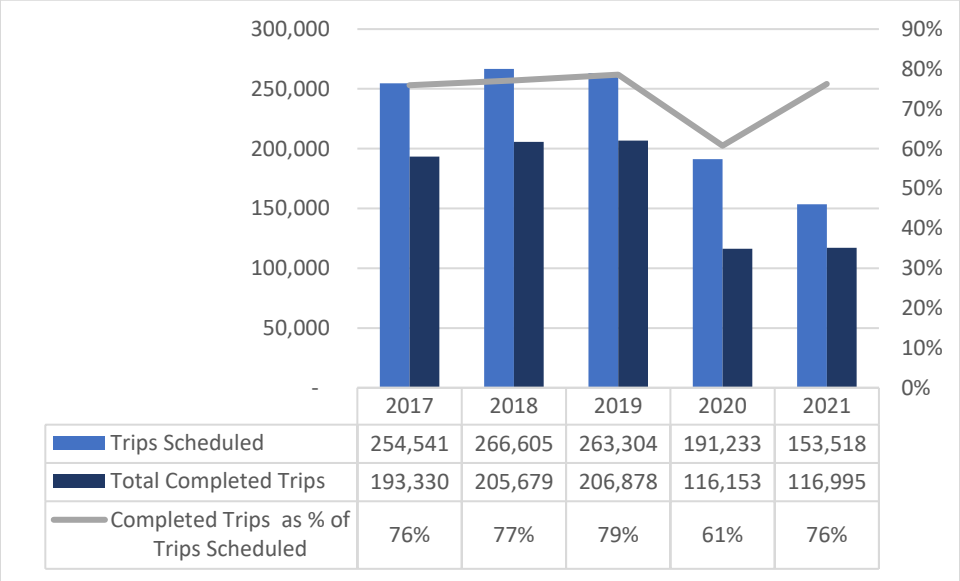


	2017	2018	2019	2020	2021
TOTAL	254,541	266,605	263,304	191,233	153,518

Figure 19 presents a comparison between trips completed and trips scheduled by way of a percentage. The percentages were fairly concistent in 2017 through 2019 and in 2021, ranging between 76% and 79%. The anomaly was in 2020, with only 61% of the trips scheduled completed, undoubtedly to the pandemic.

Generally, this figure should be around 80%, with cancellations no more than 15%, and trips not completed no more than 5.5%, noting that LIFT's percent of trips not completed ranged from 4% in 2020 to 7% in 2021.

Figure 3. Annual percentage of trips scheduled for LIFT (2017-2021)

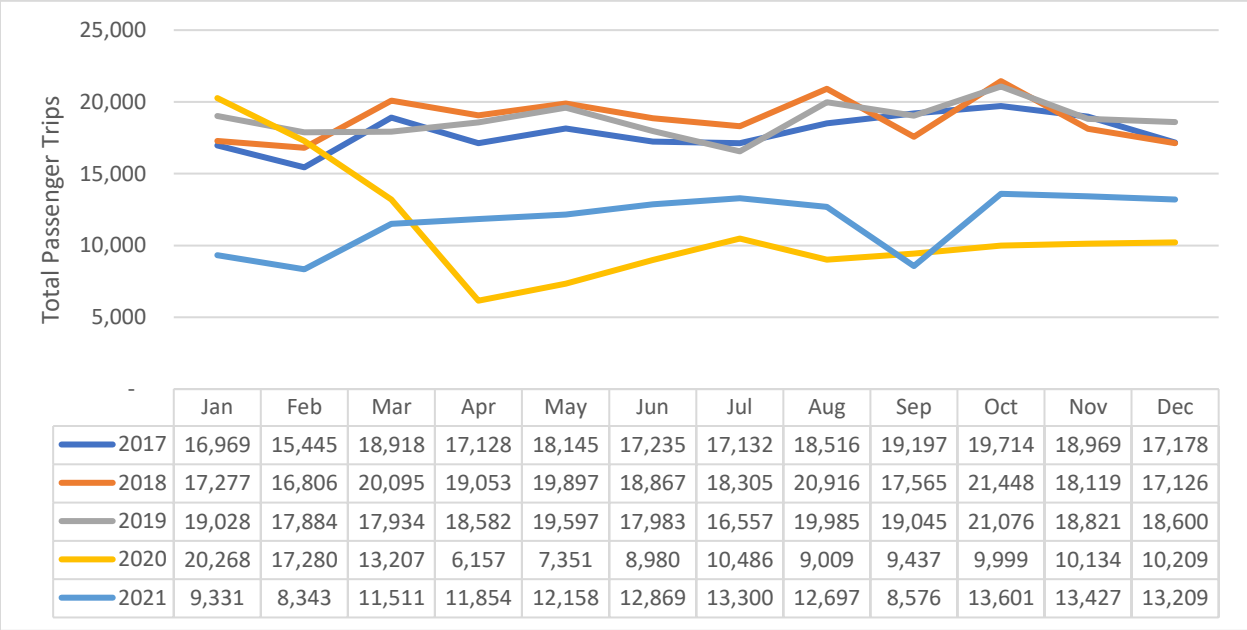


	2017	2018	2019	2020	2021
Trips Scheduled	254,541	266,605	263,304	191,233	153,518
Total Completed Trips	193,330	205,679	206,878	116,153	116,995
Completed Trips as % of Trips Scheduled	76%	77%	79%	61%	76%

3.2.6 Passenger Trips Completed

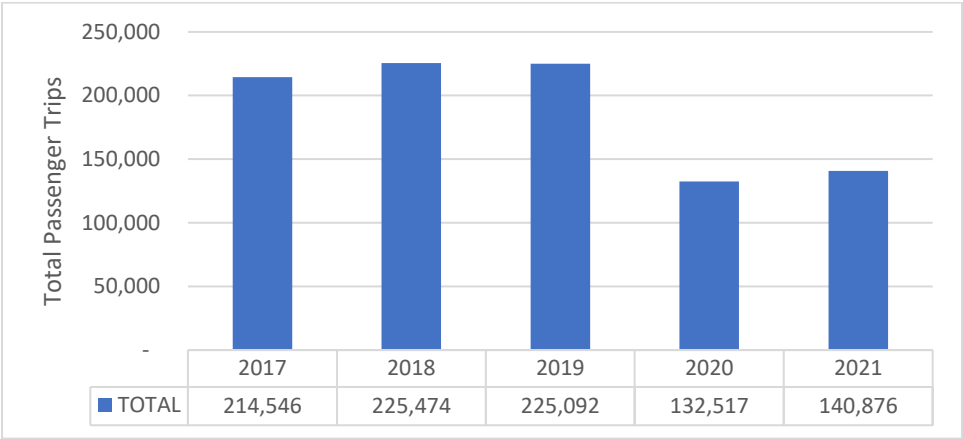
The month-by-month and annual numbers of completed passenger trips (which includes PCAs and companions) for the last five years are presented in Figure 20 and Figure 21, respectively. In 2017 through 2019, the number of passenger trips ranged between 214,546 in 2017 and 225,092 in 2019. Because of COVID, the number of passenger trips tumbled ito 132,517 in 2020 and then rebounded somewhat to 140,876 in 2021. The 2021 ridership was 63% of the pre-COVID 2019 ridership, which is consistent with the 60% to 80% range breing reported by other US transit agencies.

Figure 49. Number of passenger trips by month on LIFT (2017-2021)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	16,969	15,445	18,918	17,128	18,145	17,235	17,132	18,516	19,197	19,714	18,969	17,178
2018	17,277	16,806	20,095	19,053	19,897	18,867	18,305	20,916	17,565	21,448	18,119	17,126
2019	19,028	17,884	17,934	18,582	19,597	17,983	16,557	19,985	19,045	21,076	18,821	18,600
2020	20,268	17,280	13,207	6,157	7,351	8,980	10,486	9,009	9,437	9,999	10,134	10,209
2021	9,331	8,343	11,511	11,854	12,158	12,869	13,300	12,697	8,576	13,601	13,427	13,209

Figure 20. Annual number of passenger trips on LIFT (2017-2021)

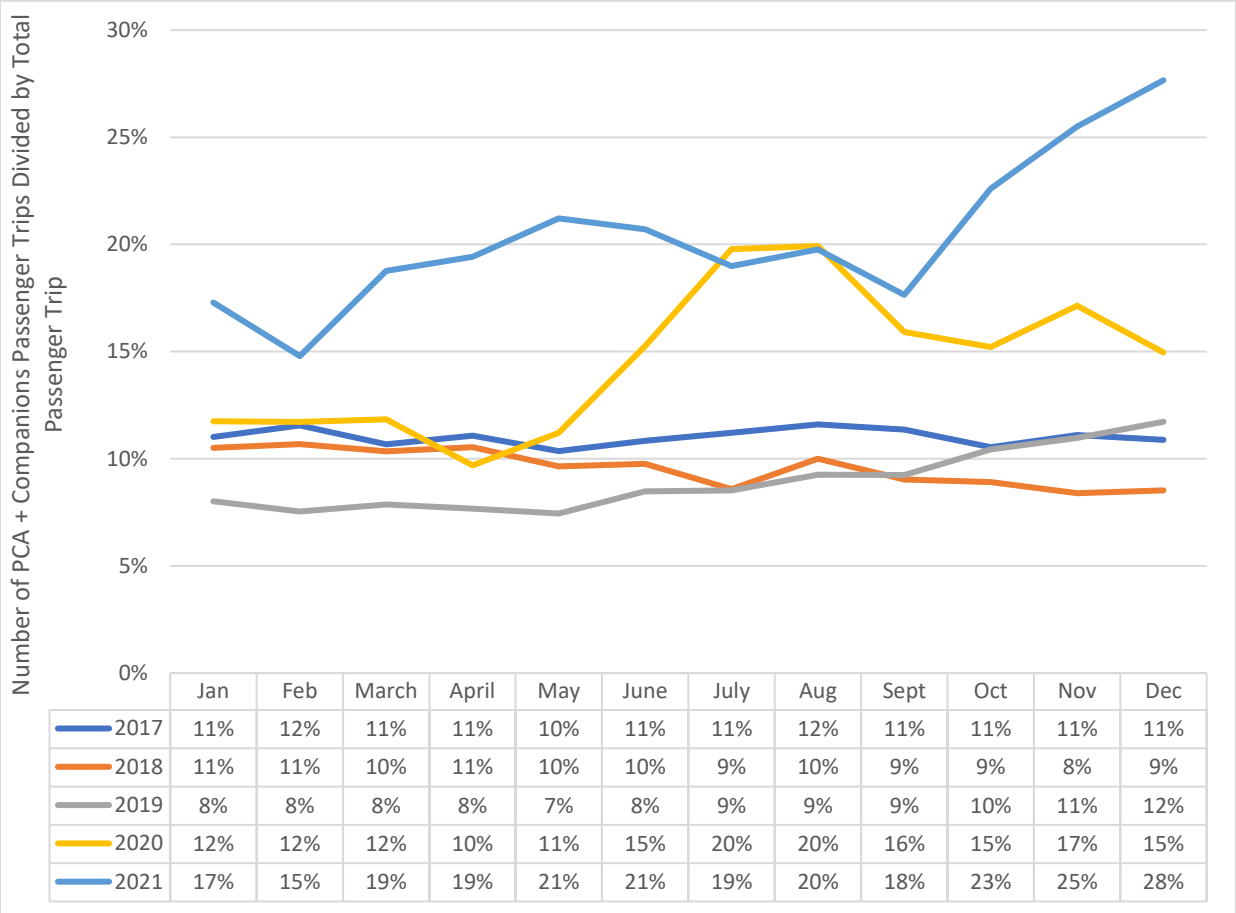


	2017	2018	2019	2020	2021
TOTAL	214,546	225,474	225,092	132,517	140,876

3.2.7 PCAs and Companions

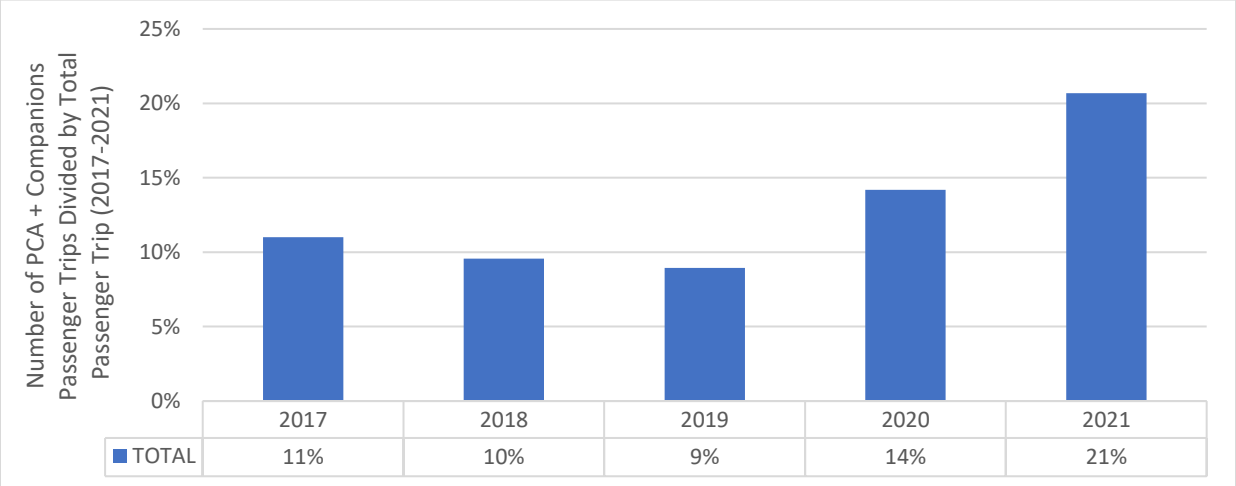
Figure 5 present month by month and annual percentage of PCA and companion trips. The PCA plus companion percentages are based on the total number of passenger trips. In 2017 through 2019, the percentages are relatively stable, ranging between 7% and 12% (or 9% and 11% if viewed annually). These percentages began to increase dramatically in the summer of 2020 and further increased in 2021 to 28% in December 2021. Typically, transit agencies find that this percentage rarely exceeds 13%. Thus, the escalation is viewed as somewhat unusual. Possible explanations include a more inclusive (lax) under the RTA, where the need for PCAs is not being checked. Because PCAs ride free whereas companions (such as friends and family) must pay a fare, some paratransit customers have been known to claim a need for PCA which would enable that person – really a companion – to ride free.

Figure 22. Monthly percentage of PCAs and companions for LIFT (2017-2021)



	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2017	11%	12%	11%	11%	10%	11%	11%	12%	11%	11%	11%	11%
2018	11%	11%	10%	11%	10%	10%	9%	10%	9%	9%	8%	9%
2019	8%	8%	8%	8%	7%	8%	9%	9%	9%	10%	11%	12%
2020	12%	12%	12%	10%	11%	15%	20%	20%	16%	15%	17%	15%
2021	17%	15%	19%	19%	21%	21%	19%	20%	18%	23%	25%	28%

Figure 5. Annual percent of PCAs and companions for LIFT (2017-2021)



	2017	2018	2019	2020	2021
TOTAL	11%	10%	9%	14%	21%

3.3 Trip Characteristics

TTI researchers examined Trapeze data provided by RTA for LIFT service from 1/1/2022 to 6/1/2022 (essentially 5 months of service in 2022) for any patterns in demand characteristics of the service. This subsection focuses on information synthesized from the Trapeze data.

3.3.1 Temporal Trip Patterns

Ridership by Day of Week

LIFT ridership by day of week is presented in Table 1. The average weekday ridership on LIFT was 10,556 trips, with the low ridership of 9,957 trips on Thursdays and a high ridership of 12,004 trips on Wednesdays. Sunday ridership at 3,258 trips is 31% of average weekday ridership, while Saturday ridership is 40% of the average weekday ridership.

Table 1. Ridership by day of week for LIFT (January 1 – June 1, 2022)

Day of the Week	Trips
Sunday	3,258
Monday	10,188
Tuesday	10,358
Wednesday	12,004
Thursday	9,957
Friday	10,275
Saturday	4,200
Grand Total	**60,240**

Ridership by Month

Looking at the same dataset by month (Table 2), total trips on Lift gradually increased month-by-month in 2022; this is expected as more travel would occur as the weather was warmer in most places. Mardi Gras may have also been a factor for a slightly depressing ridership in February.

Table 2. Ridership by month for LIFT (January 1 – June 1, 2022)

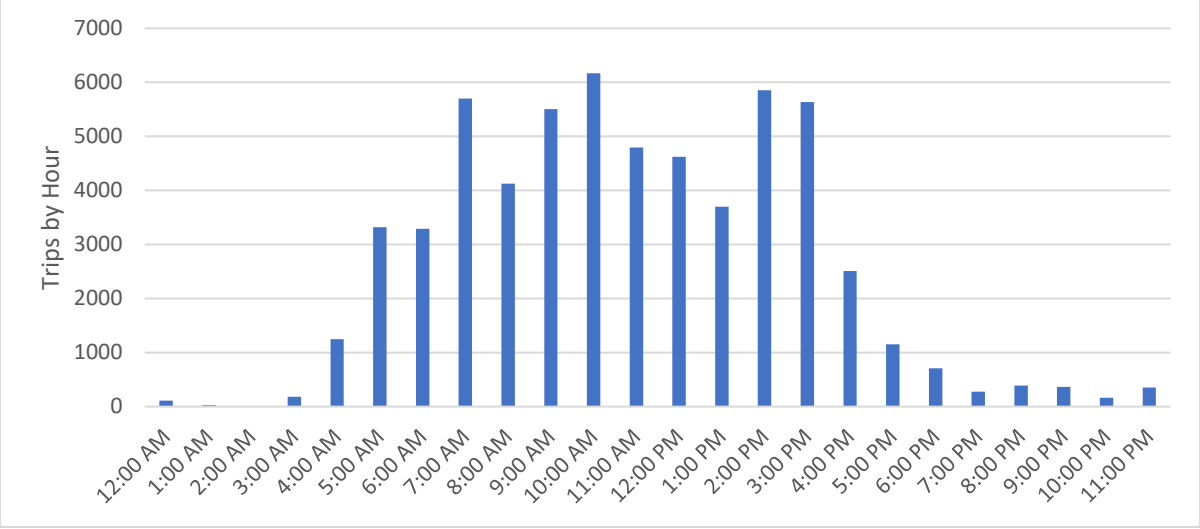
Month	Count of Trips in 2022 Dataset
January	10,123
February	10,633
March	12,544
April	12,875
May	13,452
June	613
Grand Total	**60,240**

Trips by Hour (Demand Profile)

Error! Reference source not found. presents trips by hour for LIFT for the same 5 month period in 2022, r emembering that LIFT provides 24 hour service. As shown, the peak hours in the morning are at 7am (5,703 trips), 9am (5.506 trips), and 10am (6,171), with a curious dip at 8am (4,126 trips). The afternoon peak is at 2pm (5,855 trips) and 3pm (5,637trips), dropping off steadily from 4 pm on.

The mid-day ridership at the 11 am (4,796 trips) and the 12noon hour (4,625) is fairly high as well. The importance of this has to do with recovery time; if operational challenges are confronted during the morning peak, and there is an equal or lesser amount of vehicle resources serving the mid-day, recovery from the morning peak will be difficult. LIFT also serves a significant number of trips from 4:00 am to 7:00. Similarly, if not enough resources are devoted to these early morning hours, the operational issues encountered will cause a ripple effect into the morning peak. This is discussed in more detail in Section 6.

Figure 6. Annual percent of PCAs and companions for LIFT (2017-2021)



3.3.2 Spatial Trip Patterns and Densities

TTI examined the most common pick-up drop off address for LIFT during the five month period in 2022, mapping information as available from the Trapeze data in ArcGIS software. These are presented in Table . Key destinations with the most frequent addresses in the data set for destination appear to be health and medical-related establishments (such as dialysis centers and clinics).

Origin and destination maps for LIFT are presented in **Error! Reference source not found.** and **Error! Re ference source not found.**6, respectively. Figure 25 shows that trip pickups are concentrated (shown in bright blue) south of Interstate 10 down to the banks of the Mississippi River with a gap in demand around Tulane University. Figure 26 shows that destinations during the same period appear to be more concentrated (shown in bright yellow) in the Uptown / Garden District areas. A day by day breakdown of LIFT origins and destinations is found in the appendix.

Table 3. Top addresses for LIFT trips (January 1 – Jun 1, 2022)

Address in New Orleans	Count of Trips
1139 NAPOLEON AV	1,479
1401 FOUCHER ST	670
1514 JEFFERSON HWY	622
1522 CHIPPEWA ST	373
1751 GENTILLY BLVD	272
2820 NAPOLEON AVE	207
3434 PRYTANIA ST	702
4427 S ROBERTSON ST	522
5700 LOYOLA AVE	464
All others	52,147
Grand Total	**57,458**

Figure 7. Origins for LIFT service (January 1 – June 1, 2022)

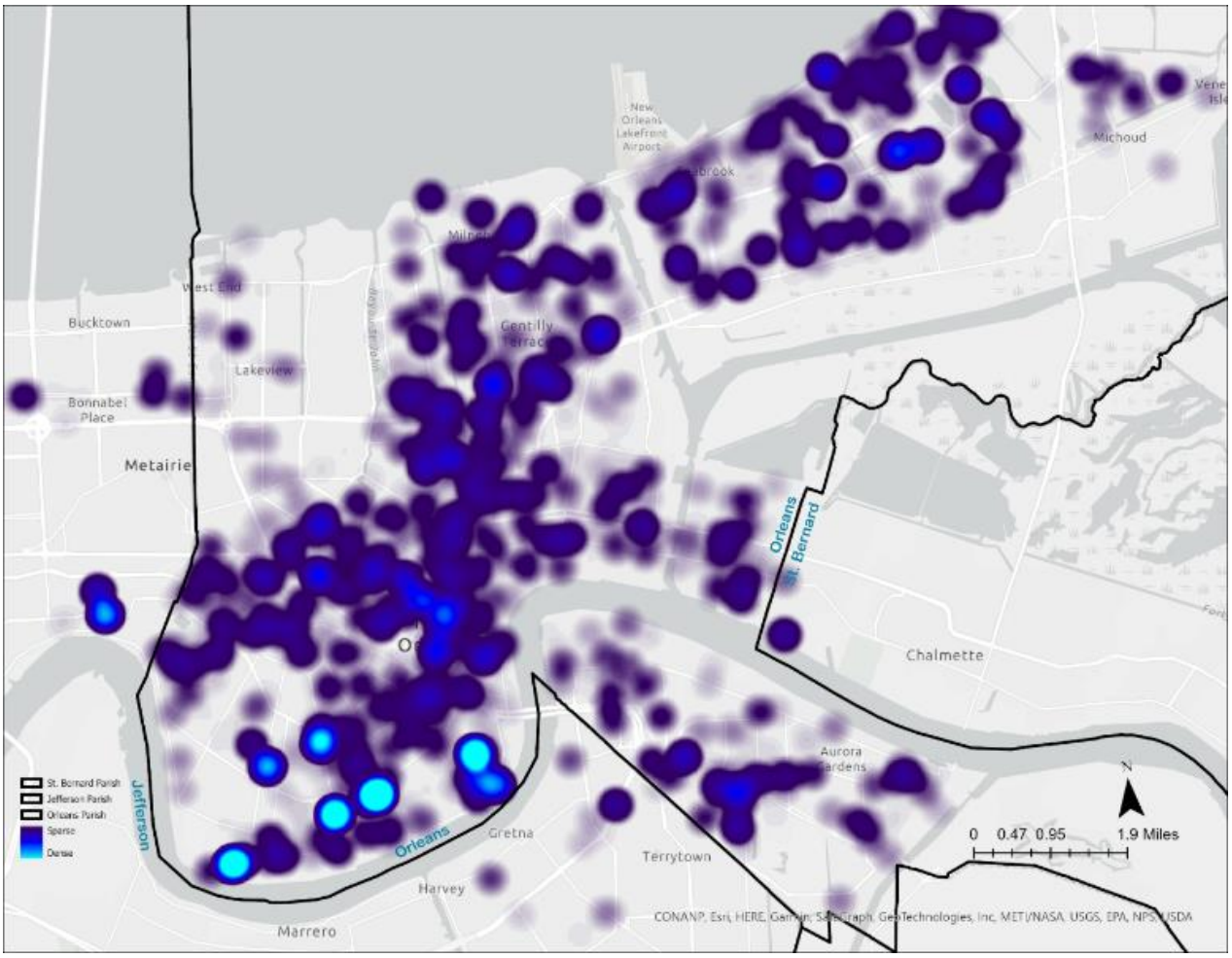
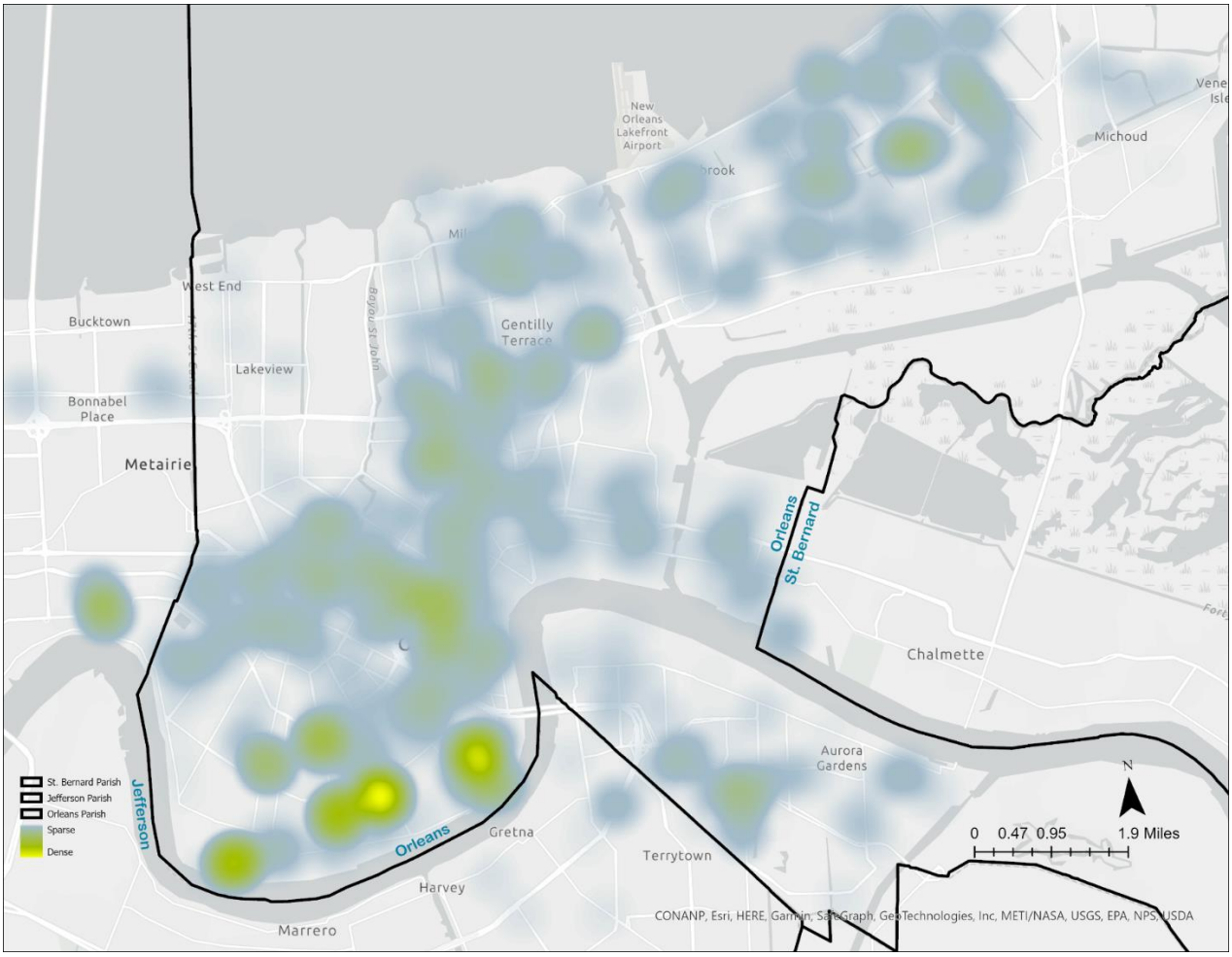


Figure 26. Destinations for LIFT service (January 1 – June 1, 2022)



3.3.3 Average Trip Length and Duration

Table and Table present month-by-month and annual averages for average trip distance and trip duration on LIFT for 2017-2021. Notably, the average trip distance and trip duration increased in 2020 and 2021. LIFT's average trip length of 6 miles flat in 2021 was 16% higher than the 5.17 mile average of 2017-2019. A similar comparison of trip duration finds that LIFT's 2021 trip duration of 43.66 was 37% higher than during the 2017-2019 years. Short of differences in traffic congestion between the years and/or customers deciding to make longer trips than during 2017-2019, the longer mileage from each trip's origin to destination and longer on-board travel times would appear to be tied to differences scheduling/dispatching practices.

Table 4. Average LIFT trip distance in miles (2017- 2021)

Average Trip Distance (in miles)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
2017	5.31	5.13	5.01	5.14	5.21	5.34	5.30	5.34	5.23	5.26	5.24	5.41	5.24
2018	5.16	4.97	4.94	4.91	4.98	4.96	5.00	4.93	5.18	5.02	5.28	5.34	5.06
2019	5.15	5.13	5.12	5.16	5.22	5.30	5.29	5.14	5.24	5.07	5.45	5.36	5.22
2020	5.19	5.67	5.89	6.30	6.35	6.31	6.11	6.40	6.31	5.86	5.74	5.90	6.00
2021	5.84	6.16	6.36	6.38	5.93	5.94	6.09	5.95	6.15	5.88	5.76	5.53	6.00

Table 5. Average LIFT trip duration in minutes (2017- 2021)

Average Trip Duration (in minutes)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
2017	33.31	32.36	31.72	32.74	33.65	34.18	33.14	32.94	31.35	31.71	31.69	34.17	32.75
2018	31.42	29.43	28.97	28.91	29.28	29.51	30.53	30.11	31.12	29.64	31.44	32.55	30.24
2019	30.75	30.46	31.49	30.81	32.11	36.27	37.83	32.27	33.80	32.05	32.42	33.25	32.79
2020	32.22	33.28	37.47	54.76	53.54	46.28	40.30	43.35	44.48	42.25	39.48	42.53	42.50
2021	43.99	58.16	55.56	49.24	43.84	40.70	39.70	39.69	48.14	36.22	34.75	33.96	43.66

3.3.4 Interparish Service

Figure 27 and Figure 28 respectively present LIFT trips that originate and end in Jefferson Parish during the period January 1 through June 1, 2022. Up through mid-March, all of these were transfer trips, reflected by the high density of trips at the transfer center. Since then, LIFT has offered direct service to/from Jefferson Parish (but not within Jefferson Parish.) During this five-month period, 6,464 trips out of 60,240 total trips served by LIFT had origins or destinations in Jefferson Parish; this represents **11%** of LIFT service during the period. Interparish trips originating in Jefferson Parish accounted for 3,109 (or 48%) of the 6464 trips, while interparish trips ending in Jefferson Parish accounted for 3,355 (or 52%) of the 6464 trips, indicating that not all of these trips were part of round trips. Figure 8 and Figure 9, with higher concentrations of trip points depicted in yellow.

Figure 87. Trip origins for LIFT in Jefferson Parish (January 1 – June 1, 2022)

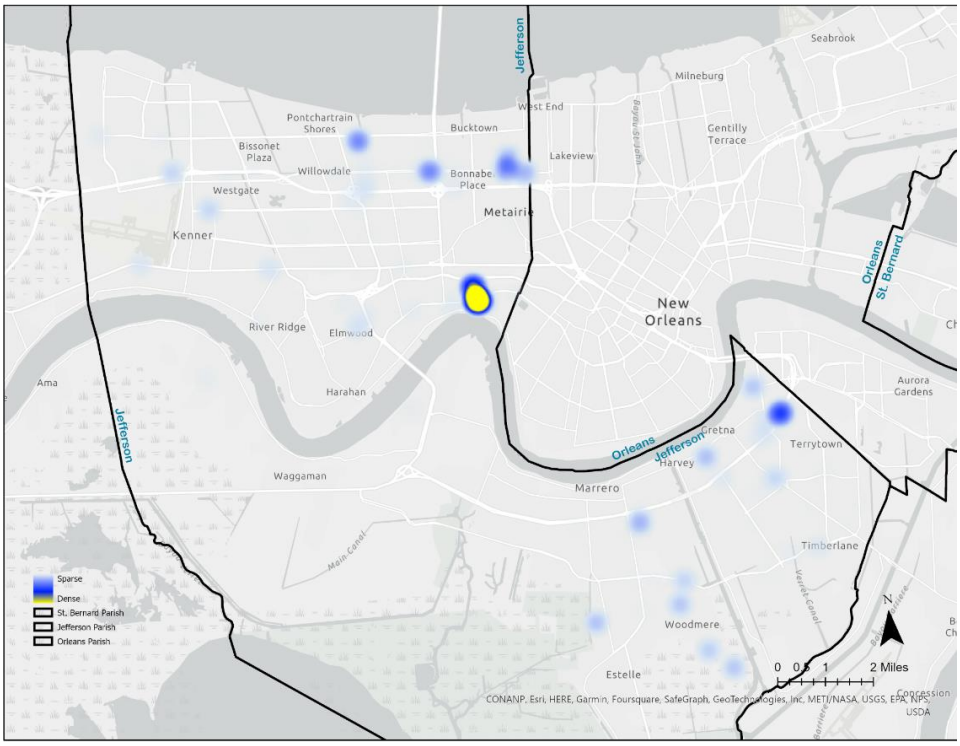
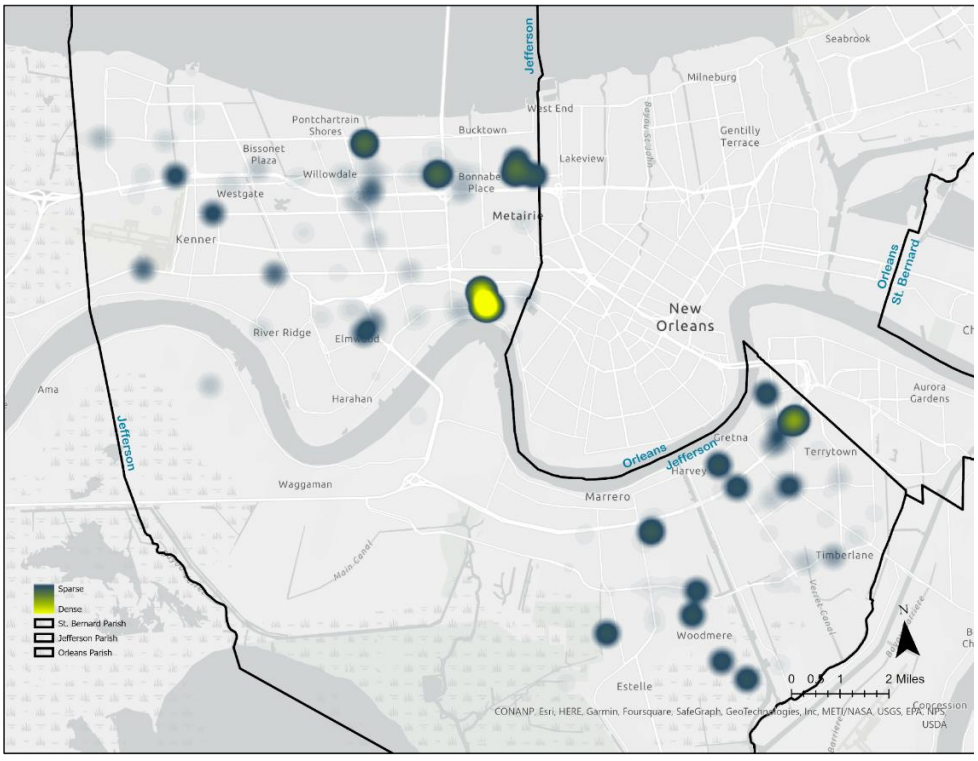


Figure 98. Trip destinations for LIFT in Jefferson Parish (Jan. 1 – June 1, 2022)



3.4 Telephone Hold and Call Times

TTI looked at a dataset of average hold times and phone call durations for reservations calls into LIFT for each day of May 2022. Figure 9 shows the average hold time for reservations calls to LIFT during May 2022 for each day of the week. The average hold time was around 13 seconds, while the highest data point was 21 seconds. Both are exceptional.

Figure 29. Average hold times for LIFT service (May 2022)

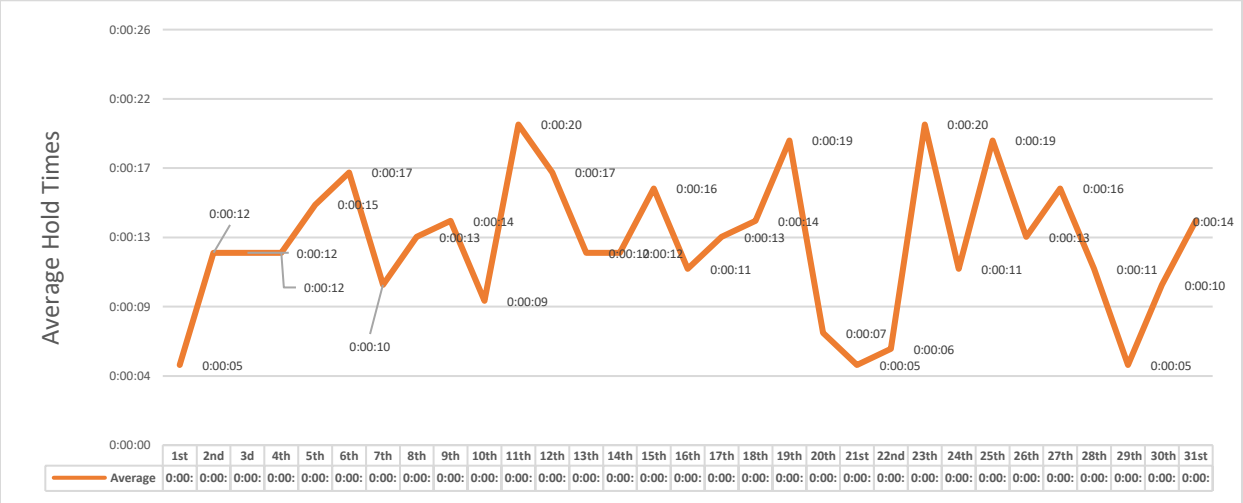
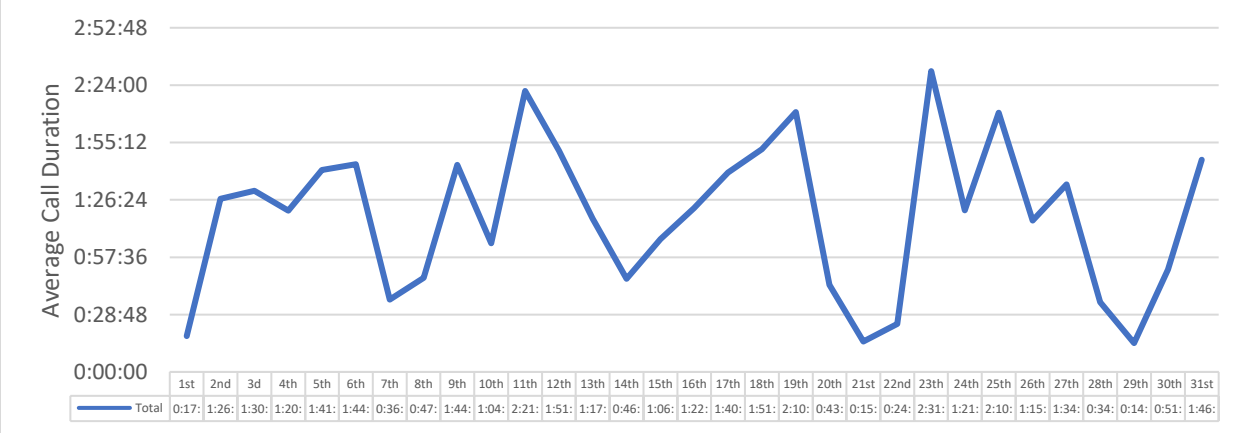


Figure 10 shows average call duration for each day of May 2022. This represents the length of time it takes to book a trip and get a confirmed pick-up time (or window) after the booking agent uses Trapeze to assign the trip to a run. As shown, the average daily call duration times ranged from below 30 seconds (on weekends) to around 2 minutes and 30 seconds. These call durations evidence staff efficiency in the reservations/scheduling function.

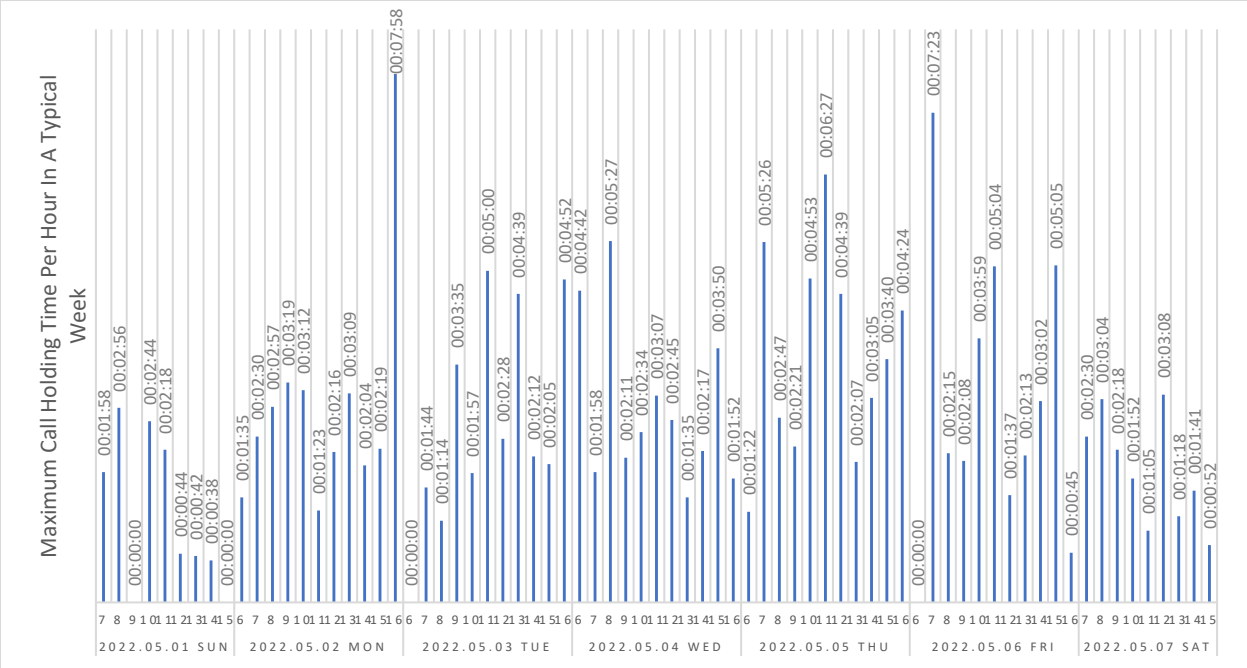
Figure 10. Average call duration for LIFT service (May 2022)



However, a closer look at the day-by-day and hour-by-hour maximum hold times indicate there may be access issues during certain times. Figure 10 presents maximum hold times per hour for each day from May 1 through May 7, 2022, noting that reservation hours for LIFT are from 8:00 am to 5:00 pm on weekdays and from 8:00 am to 4:00 pm on Saturdays and Sundays, but that some of these calls may reflect "where's my ride" calls. While most of these maximum hold times are under 5 minutes on weekdays and under 3 minutes on weekends, the following hold times are beyond the 5 minutes threshold, with the top three bolded:

- **Monday evening, 6:00 pm (7 minutes, 58 seconds)**
- Wednesday morning, 8:00 am (5 minutes, 27 seconds)
- Thursday morning, 8:00 am (5 minutes, 22 seconds)
- **Thursday morning, 11:00 am (6 minutes, 27 seconds)**
- **Friday morning, 7:00 am (7 minutes, 23 seconds)**
- Friday morning, 11:00 am (5 minutes, 4 seconds)
- Friday afternoon, 5:00 pm (5 minutes, 5 seconds)

Figure 11. Maximum hold times for LIFT service (May 1 – May 7, 2022)



Remembering that reservation agents are working from home, possible causes to substandard hold times in the early morning could stem from a trickle effect of late sign-ons, while the 11:00 issues could be caused by early lunches. Similarly, the late afternoon issues could possibly be caused by early signoffs. While TTI does not have access to telephone MIS sign-ons and signoffs, RTA management should monitor this to see if there is a correlation between such occurrences and substandard hold times, or whether there is just an unusually high number of calls at these times.

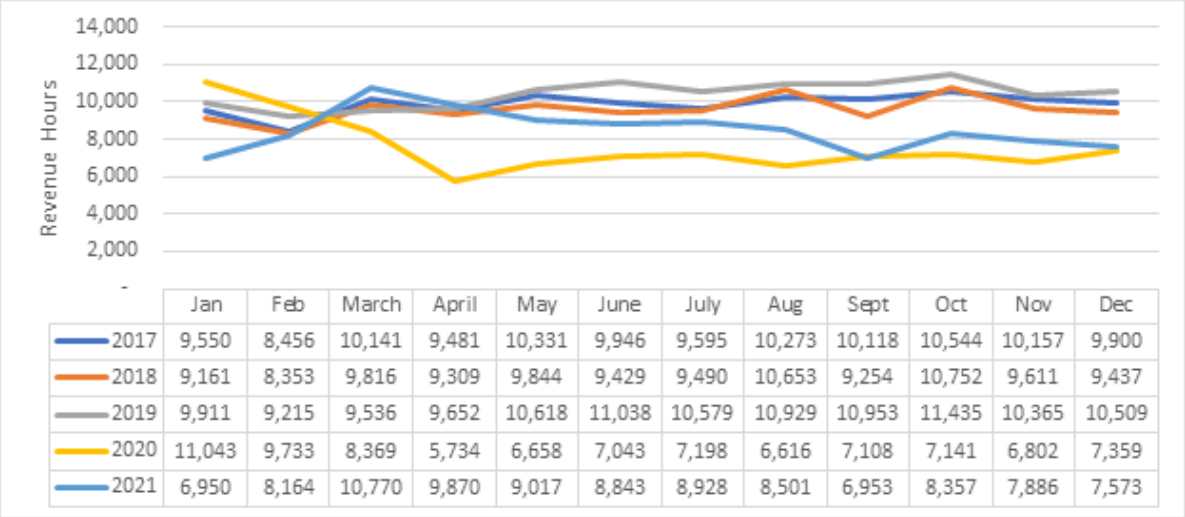
3.5 Service Supply and Service Efficiency (Productivity)

TTI also looked at monthly and annual data from 2017 through 2021 for any trends in LIFT service supply and service/cost productivity.

3.5.1 Revenue Vehicle Hours

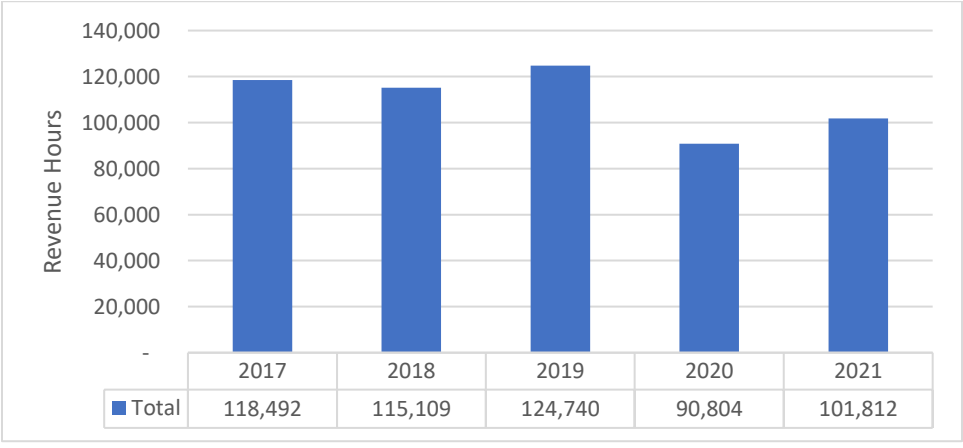
Figure 12 shows the level of revenue vehicle hours (RVH) for LIFT service over the past five years. Service levels in 2017 and 2018 were fairly consistent but increased significantly in the second half of 2019. Service understandably decreased in 2020 during the COVID-19 pandemic before rebounding to previous levels in the first half of 2021. In the months following July 2021, however, there was another drop in service levels. Figure 13 shows the annual changes in total RVH for LIFT from 2017 to 2021. Interestingly, if one compares Figure 33 with the number of total trips in Figure 20, it shows that the amount of service supplied increased by 12% from 2020 to 2021 while ridership remained level, indicating that the service was less productive in 2021 than in 2021 (as confirmed in Figure 28 below).

Figure 12. Revenue Vehicle Hours for The LIFT (2017-2021)



	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2017	9,550	8,456	10,141	9,481	10,331	9,946	9,595	10,273	10,118	10,544	10,157	9,900
2018	9,161	8,353	9,816	9,309	9,844	9,429	9,490	10,653	9,254	10,752	9,611	9,437
2019	9,911	9,215	9,536	9,652	10,618	11,038	10,579	10,929	10,953	11,435	10,365	10,509
2020	11,043	9,733	8,369	5,734	6,658	7,043	7,198	6,616	7,108	7,141	6,802	7,359
2021	6,950	8,164	10,770	9,870	9,017	8,843	8,928	8,501	6,953	8,357	7,886	7,573

Figure 13. Total Revenue Vehicle Hours for The LIFT (2017-2021)

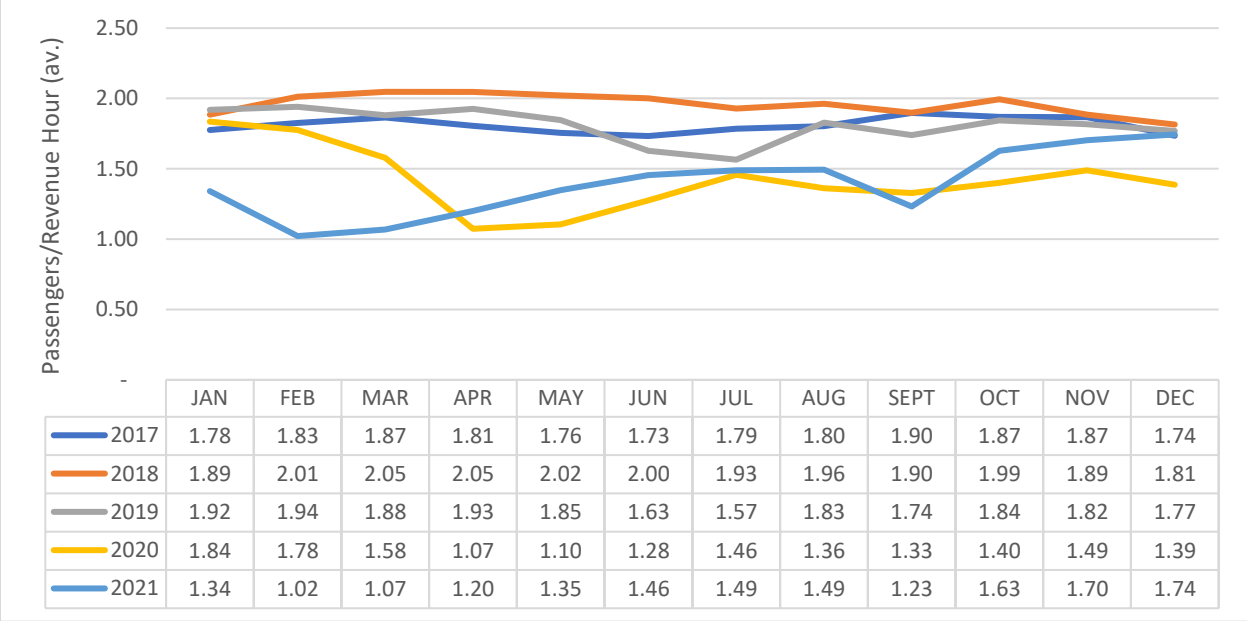


	2017	2018	2019	2020	2021
Total	118,492	115,109	124,740	90,804	101,812

3.5.2 Service Productivity

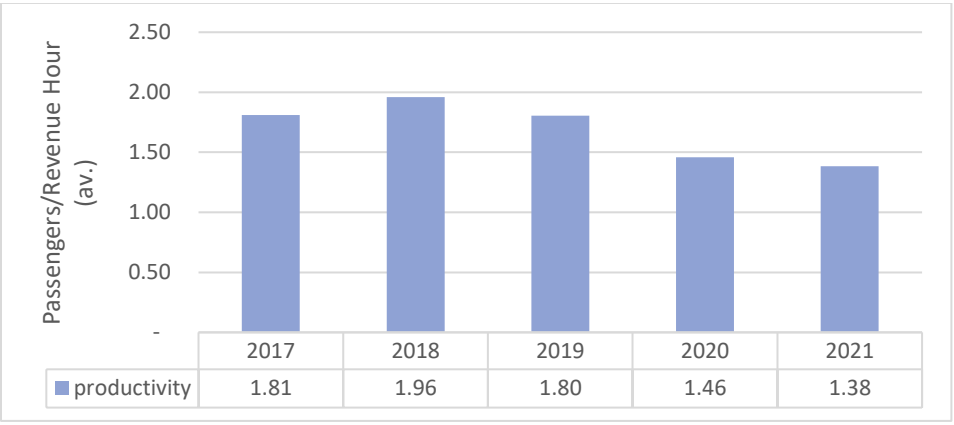
Service productivity is typically measured by passenger trips per revenue vehicle hour (RVH), noting that some transit agencies include all passenger trips and other transit agencies just include trips taken by registered customers (excluding PCAs and companions). The latter is typically labeled as just "trips per RVH." Figure 34 shows the average month-by-month service productivity (as passenger trips per RVH) for LIFT from 2017-2022, while Figure 34 shows the annual productivity figure (again as passenger trips per RVH). As shown, productivities were consistently higher in 2017 through 2019, followed by a dramatic reduction during the pandemic (April 2020 – March 2021), reflecting both a reduced demand and scheduling practices to ensure in-vehicle social distancing. While the productivity in early 2021 continued to reflect pandemic conditions, the pandemic in the second half of 2021 (except in September 2021) showed increases to pre-COVID numbers.

Figure 34. Monthly passenger trips per RVH for LIFT service (2017-2021)



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
2017	1.78	1.83	1.87	1.81	1.76	1.73	1.79	1.80	1.90	1.87	1.87	1.74
2018	1.89	2.01	2.05	2.05	2.02	2.00	1.93	1.96	1.90	1.99	1.89	1.81
2019	1.92	1.94	1.88	1.93	1.85	1.63	1.57	1.83	1.74	1.84	1.82	1.77
2020	1.84	1.78	1.58	1.07	1.10	1.28	1.46	1.36	1.33	1.40	1.49	1.39
2021	1.34	1.02	1.07	1.20	1.35	1.46	1.49	1.49	1.23	1.63	1.70	1.74

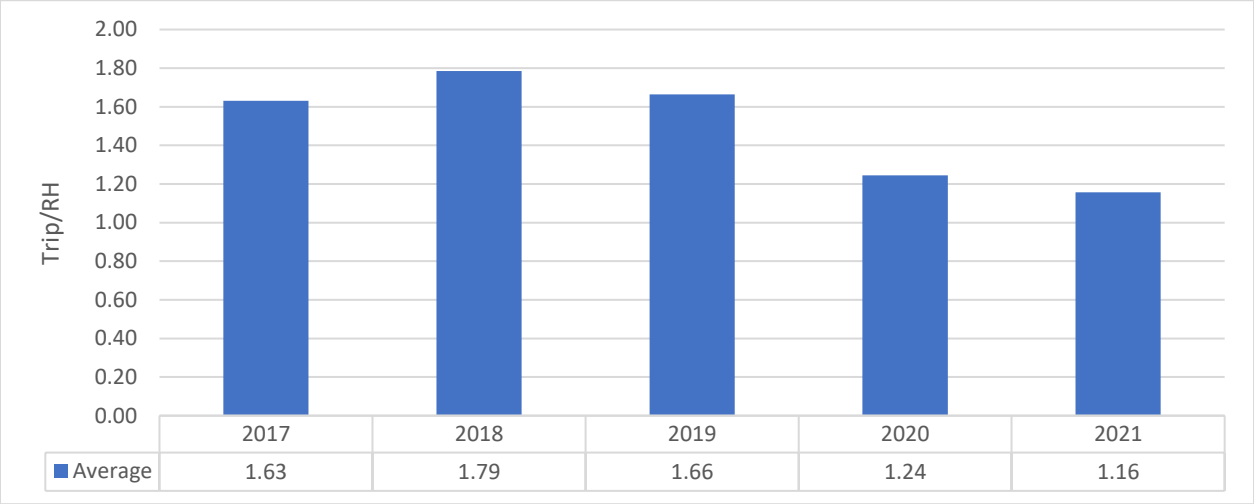
Figure 14. Annual passenger trips per RVH for LIFT service (2017-2021)



	2017	2018	2019	2020	2021
productivity	1.81	1.96	1.80	1.46	1.38

If productivity is portrayed as (registered) trips per RVH, the annual productivity is understandably lower because the number of registered passenger trips is lower than the number of total passengers. Figure 34 shows this "alternative" productivity figure for each of the last five calendar years.

Figure 36. Average registered customer trips per RVH for LIFT (2017-2021)



3.6 Run Structure vs. Demand Profile Analysis

In this section, the TTI team looked at how the run structures match up with the demand profile to identify the times at which there is an under or over-supply of service and at what times the supply of service appears to be well-match to the demand. Figure 347 through Figure 34 present these analyses for each day of the week. Note also that The TTI Team stripped out data from holidays, such as MLK Jr Day, Mardi Gras week and Memorial Day) which have their own analysis, shown in Figure 34 The data used for this analysis spanned January 1, 2022 through June 1, 2022. The following reflect our observations:

Monday (Figure 34)

- The demand profile for Monday exhibits a three-peak pattern at 7:00am, 10:00 am, and 3:00 pm. Paratransit mid-day peaks are usually lower than the morning and afternoon peaks and are typically around the noon hour. In New Orleans, the third – and highest demand peak -- is at 10:00 am, while there is an unusual trough at 8:00. Both are fairly unusual.
- The run structure appears to be somewhat misaligned with the demand profile, causing there to be insufficient resources to meet the demand at the 4am and 5am hours, at the 10am hour, and at the 2pm and 3pm hours.
- There are more resources than are perhaps needed at 8am, 1 pm and after 4pm.

Tuesday (Figure 34)

- The demand profile for Tuesday is a bit different than Monday's demand profile. For example, the mid-day peak, again at 10:00 am, is much less pronounced.
- While the Tuesday run structure is different than the Monday run structure, there are similar mismatches resulting in insufficient resources at the 5am, 7am, 10am, 2pm and 3pm hours.
- There appears to be more resources than are perhaps needed after 4pm.

Wednesday (Figure 34)

- As evidenced previously in Table 1, Wednesdays typically have the highest ridership. The demand curve has a similar three-peak shape to Monday's demand curve, noting that the peak is at 2:00 pm and not 3:00pm, and that the peaks are more pronounced (higher) because of the higher ridership, causing even greater mismatches.
- This causes there to be insufficient resources at the 4am, 5am, 7am, 10am, 11am, 2pm and 3pm hours. The mismatches begin right off the bat at 4:00 am, with challenges building upon challenges until 4:00 pm. Importantly, there is virtually no built-in recovery time.

Thursday (Figure 34)

- The demand profile and run structure on Thursday is a near duplicate to the curves on Tuesday.

Friday (Figure 34)

- Friday's demand profile and run structure are fairly similar to the curves on Monday. The one difference is that the service provided at the 6am and 7am hours aligns better than on Monday.

Saturday (Figure 34)

- The demand profile on Saturday has an unusual mini peak at 5:00 am and then a strikingly high peak at 10:00 am.
- Because of the mismatches, there are insufficient resources provided at the 5am, 9am, 10am, 11am, and 11 pm hours.
- Otherwise, the run structure is closely aligned with the demand profile with the exception of the 1pm, and after 4pm (up through the 10:00pm hour) when there is an over-supply of service.

Sunday (Figure 34

- The demand profile on Sunday shows a peak at 10:00, undoubtedly linked to church trips.
- There is an insufficient amount of resources from the 8am hour through the 12 noon hour.
- There is a surplus of resources from the early morning through the 7am hour, and huge oversupply of resources from the 1pm hour through the 5pm hour.

Holidays (Figure 34

- The demand profile on holidays is quite similar to Saturday' demand profiles, only about 50% of the Saturday demand, with a mini peak at 5:00 am and a pronounced peak at 10:00am.
- The run structure for Holidays is identical to LIFT's Saturday demand profile, with insufficient resources at the 4am, 5am, 9am, 10am, and 11 am hours. and an especially large mismatch at 9am and 10am.
- Also, similar to Saturday, there appears to be an oversupply of service in the 7am, 8am, 12n, 1pm and 2pm hours, and after 4pm.

Figure 37. Run structure and demand profile for LIFT – Monday

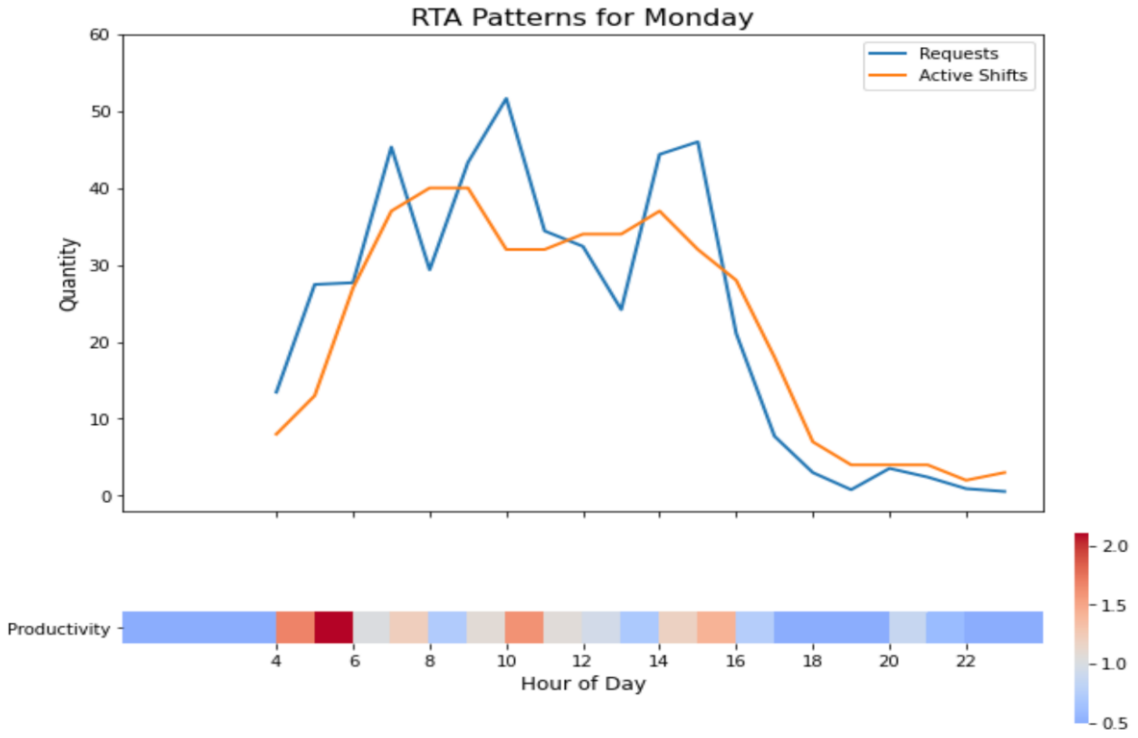


Figure 38. Run structure and demand profile for LIFT – Tuesday

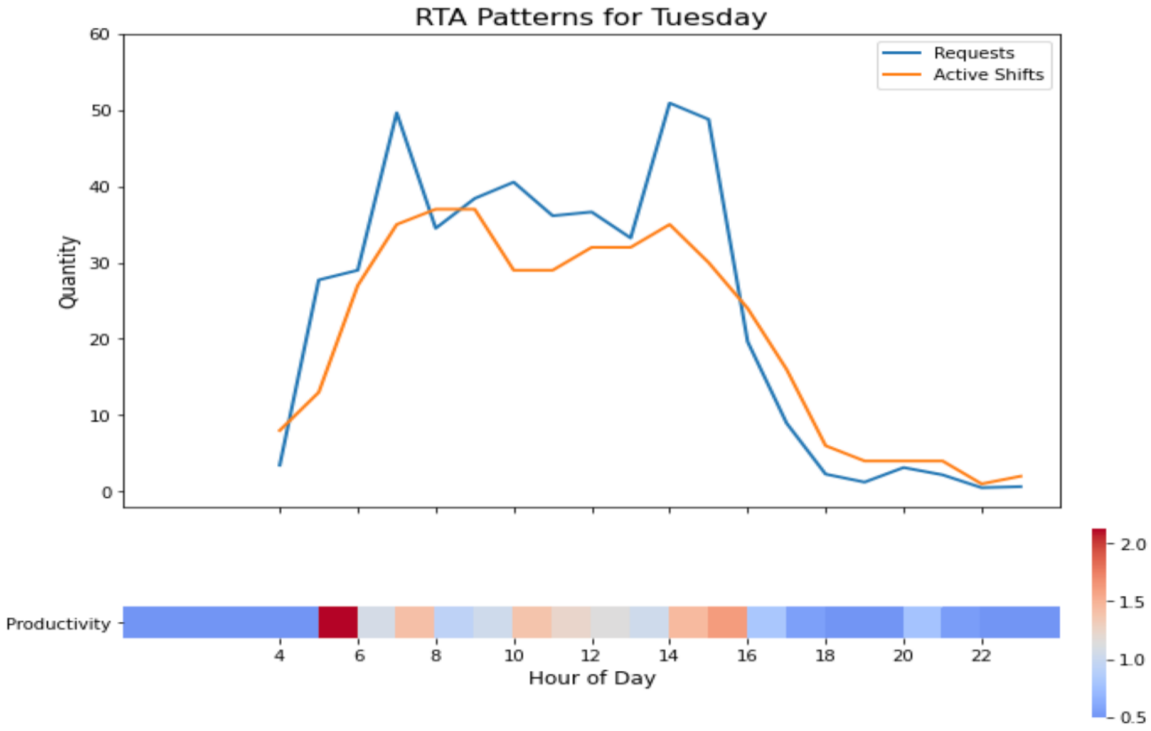


Figure 39. Run structure and demand profile for LIFT – Wednesday

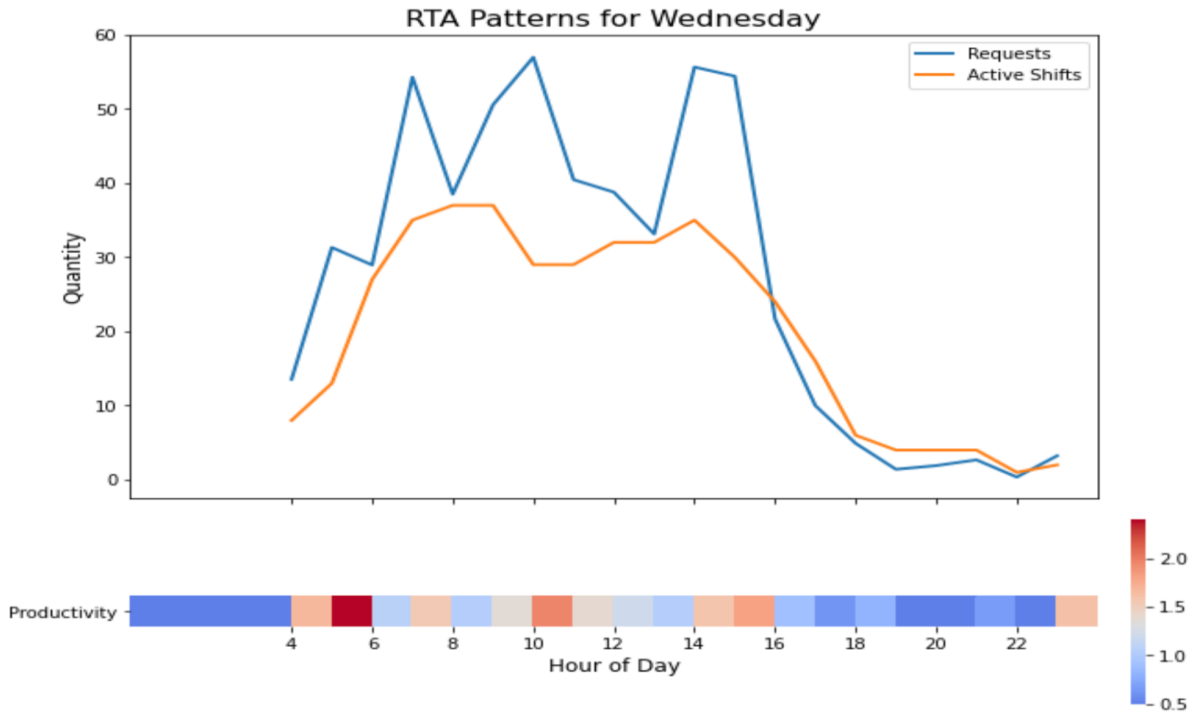


Figure 40. Run structure and demand profile for LIFT – Thursday

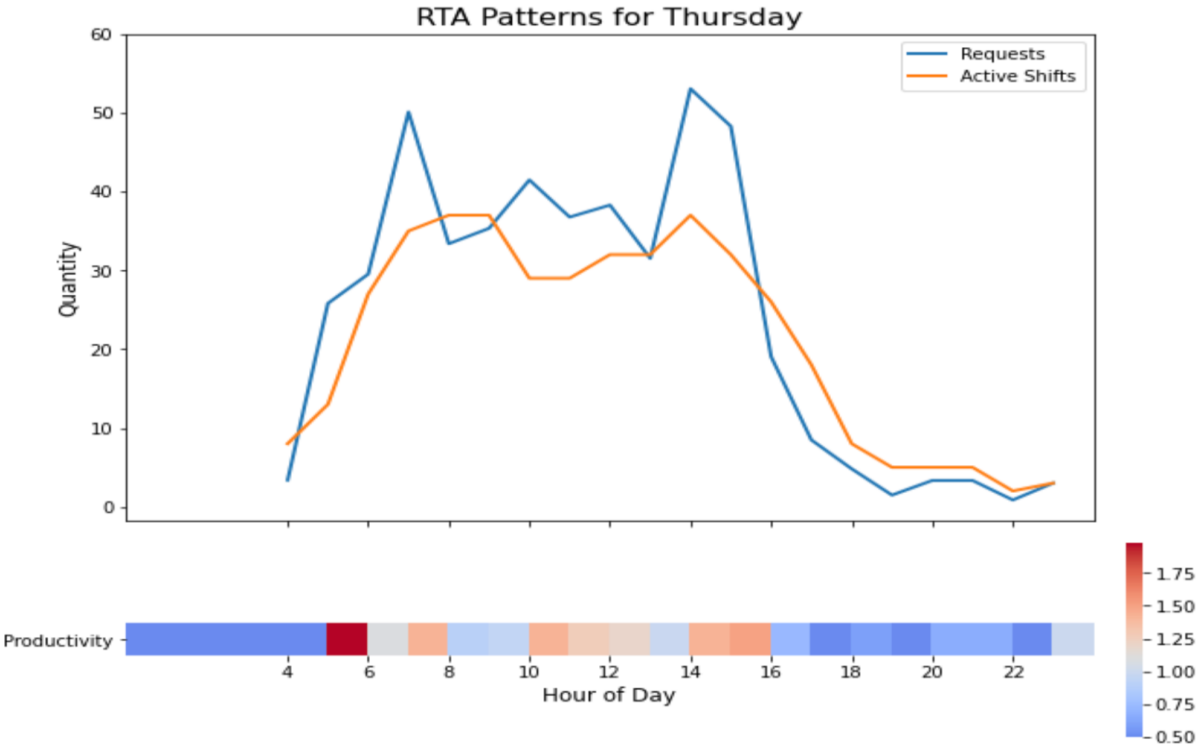


Figure 41. Run structure and demand profile for LIFT – Friday

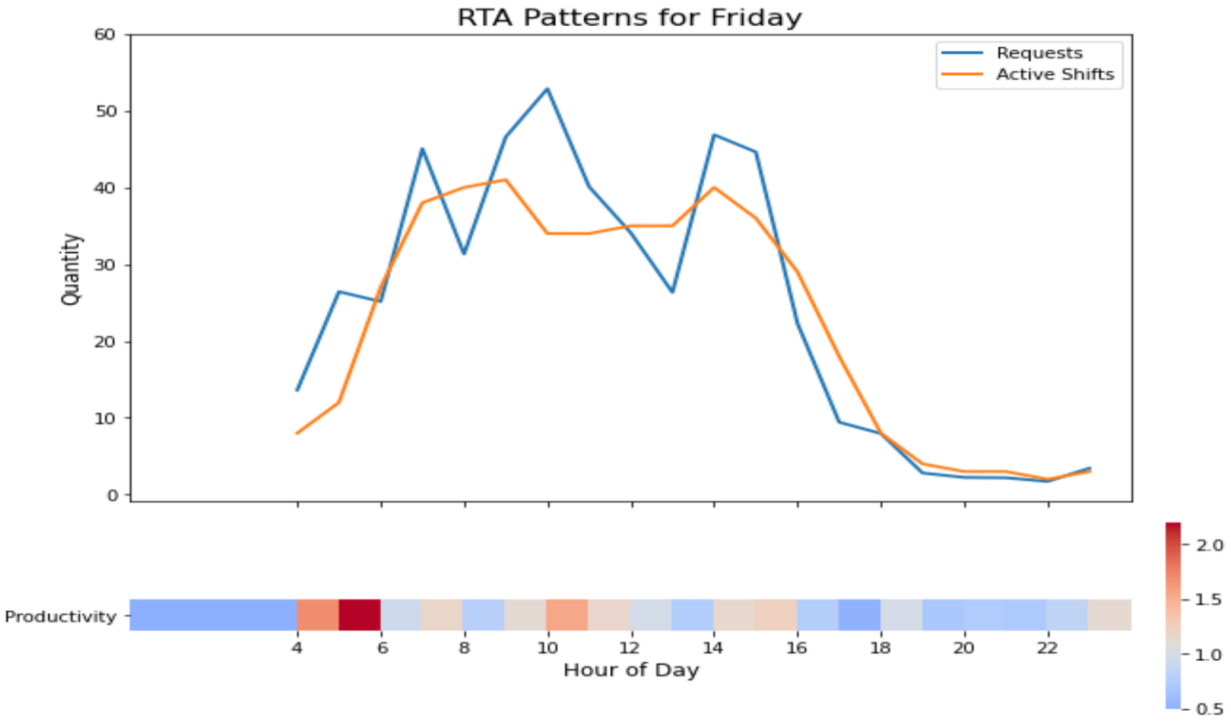


Figure 42. Run structure and demand profile for LIFT – Saturday

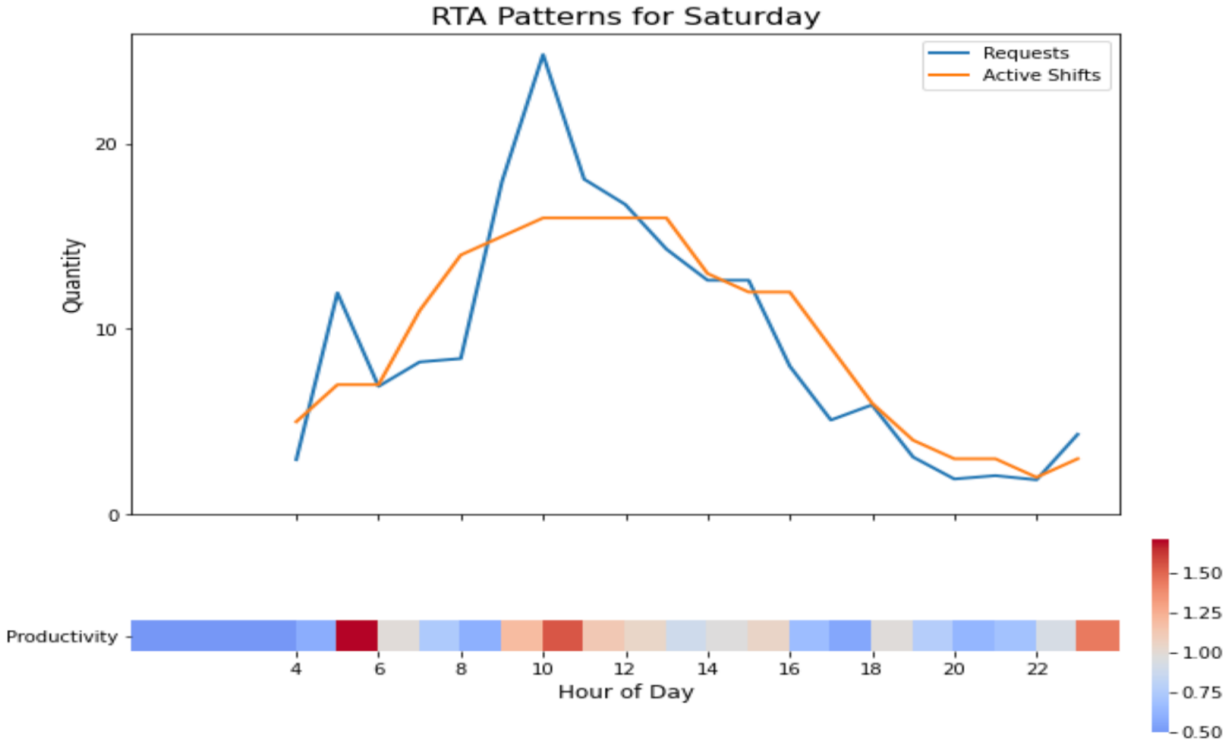


Figure 43. Run structure and demand profile for LIFT – Sunday

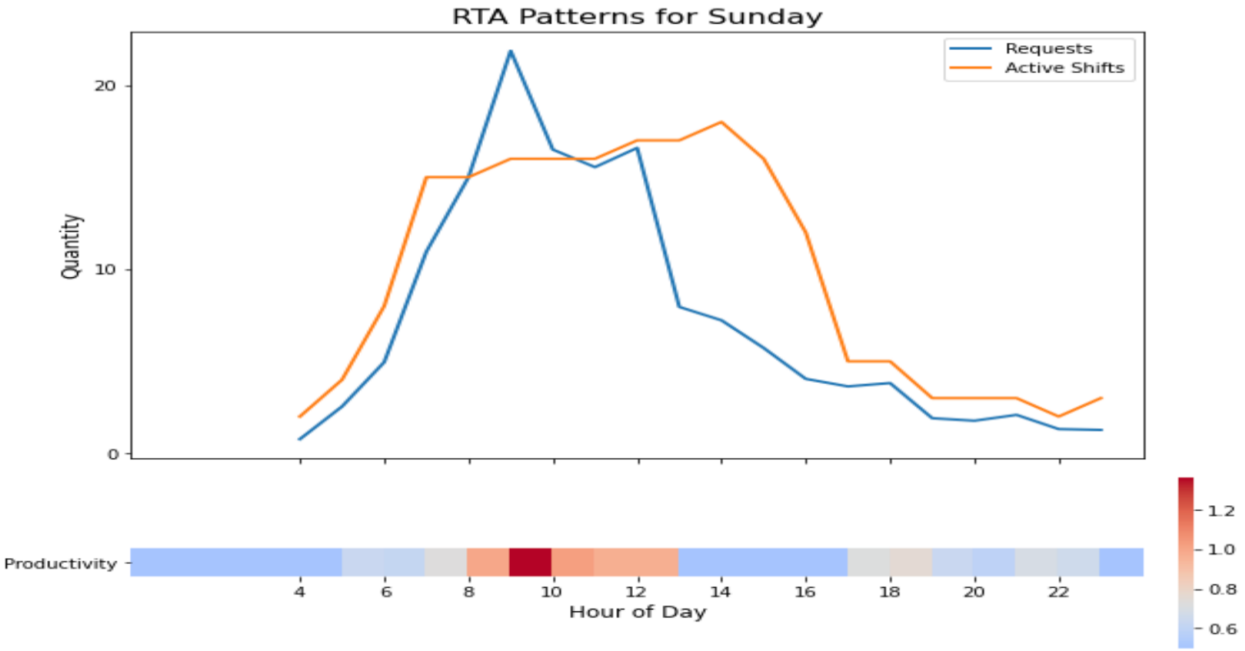
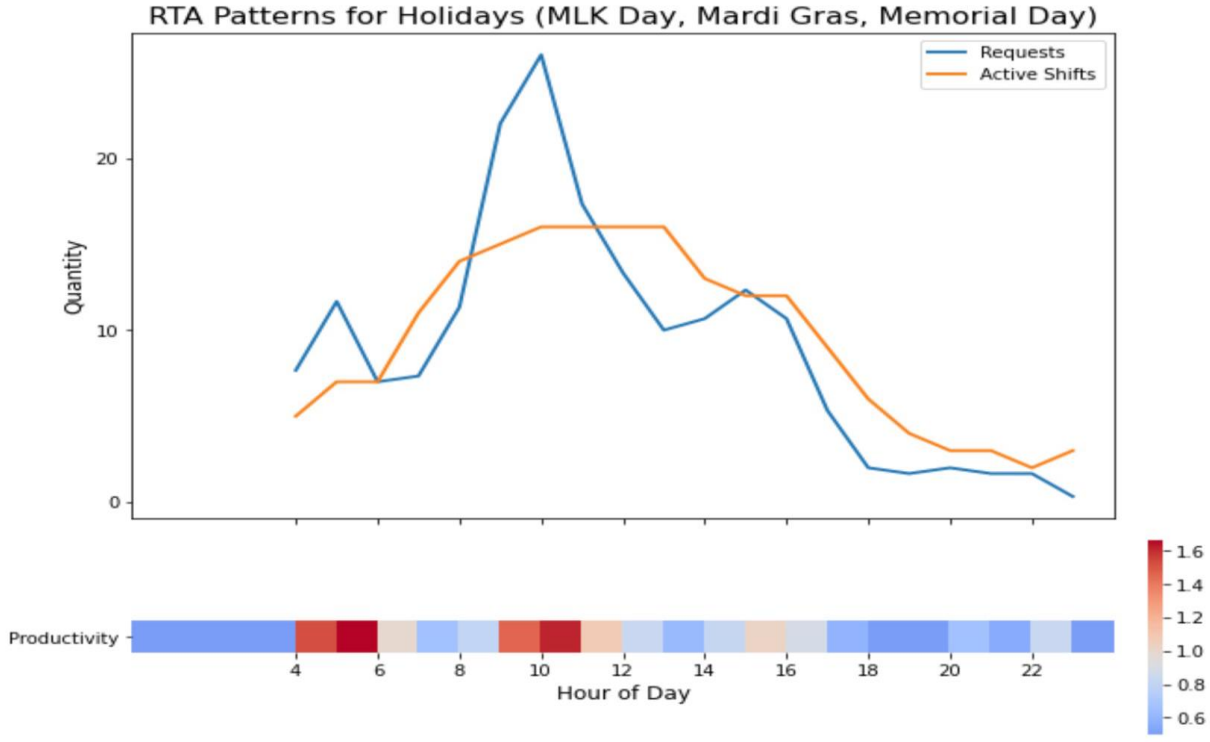


Figure 44. Run structure and demand profile for LIFT – Holiday



3.7 Operating Cost and Cost Efficiency

The cost trend analyses in Section 7 were based on cost information form RTA's NTD reporting. Figure shows total operational costs from 2017-2021 for LIFT; total costs were highest in 2019 at $15.1 million, then after a drop in 2020 returned up to $14.9 million. The drop in 2020 can in part be explained by the drop in ridership, while the equivalence in cost between 2019 and 2021, despite the much lower ridership in 2021 (see Figure 20) can be attributed to the higher cost associated with bringing the LIFT service in-house.

Figure 45. Total operational costs for LIFT service (2017-2021)

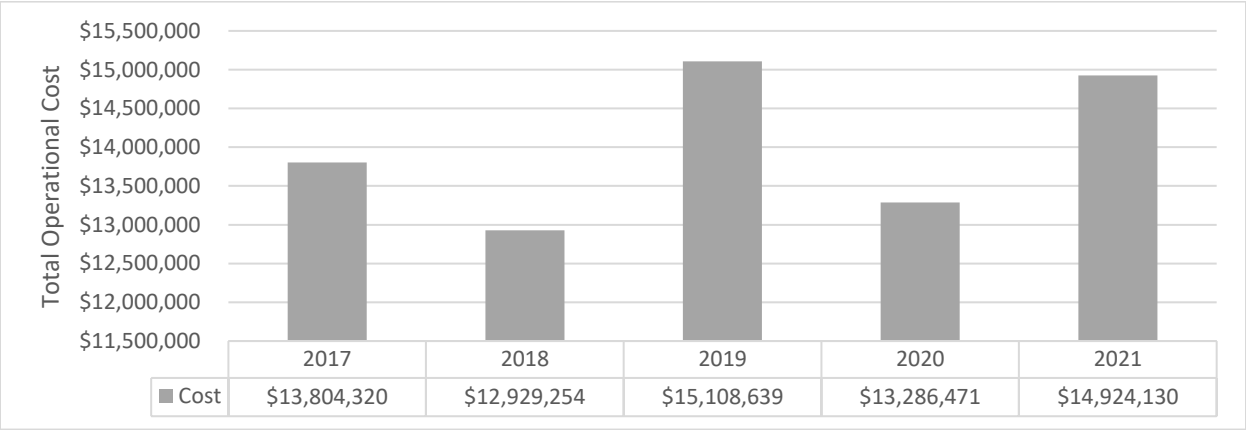
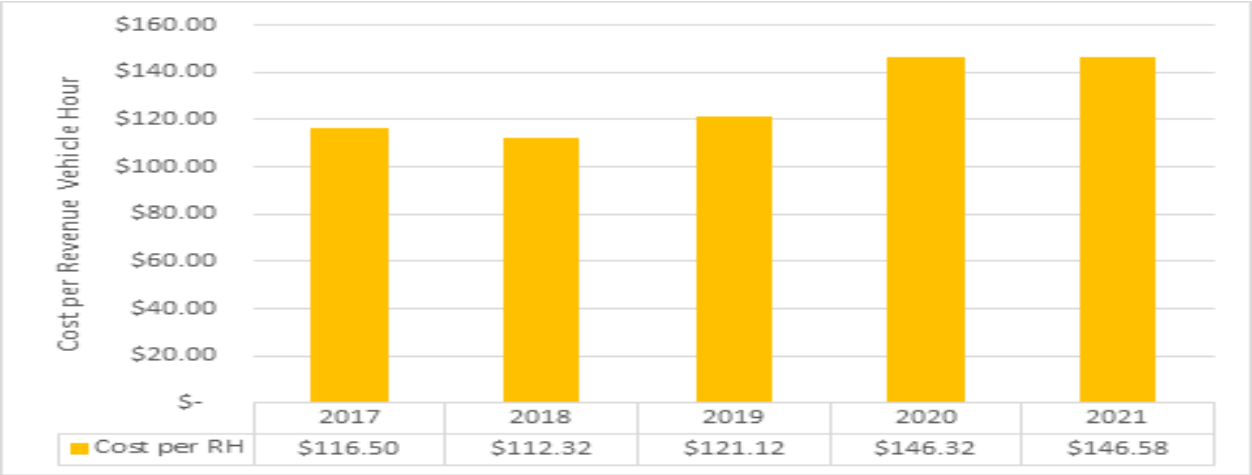


Figure 6 and Figure show how unit costs for service were relatively level from 2017 through 2019 but escalated in 2020-2021, when management/operation of the LIFT was brought in-house. The operating cost per RVH ranged between $112.32 to $121.12 when LIFT was operated by Transdev and increased (by 21%) to over $146 per RVH when the management/operation of LIFT was brought in-house.

Figure 46. Operating cost per revenue vehicle hour for LIFT service (2017-2021)



And as shown in Figure 7, the operating cost per passenger trip has risen even more significantly during the same time period. In 2017 through 2019, the cost per trip ranged between $57.34 and $67.12. When it was brought in house, the cost per trip first increased by 49% to $100.26 per trip between 2019 and 2020, and then by 6% the following year to $105.94. Over the two-year period from 2019 to 2021, the operating cost per trip increased by **58 percent.** In part, this can be traced to the significant increase in operating cost per revenue hour (see Figure 46), but the higher operating cost per trip also stems from the significant decrease in ridership and lower productivity due to COVID (See Section 3.5.2)..

Figure 47. Operating cost per passenger trip for LIFT service (2017-2021)

3.8 Service Quality Metrics

Two common metrics that are used to measure paratransit service are on-time performance (OTP), which points to the reliability of a service, and complaint frequency ratio (CFR), which is the number of complaints per 10,000 passenger trips. OTP and complaint data for LIFT comes from the RTA's ridership reports compiled by RTA staff, noting that the RTA only tracks pick-up OTP and does not track drop-off performance (for example, when a rider states an appointment time.

3.8.1 On-Time Performance

Figure and Table show the reported OTP for LIFT pickups from 2017 to 2021. There does not appear to be a monthly trend from year to year, but some patterns do emerge, especially in comparison to RTA's OTP goal of 90% (a common industry standard). In 2017, OPT was mired in the mid-80%'s, only surpassing the 90% standard in October and November. In 2018, OTP was worse, with OTP ranging between 80% and 86%. OTP improved significantly in 2019 with OTP exceeding the 90% level in seven of the 12 months. OPT hit its peak in 2020, exceeding 90% for at least 11 of the 12 months. (Data for December 2020 was missing from these reports provided to TTI). The increase in 2020 can largely be attributed to the change in service policies brought on by COVID, resulting in a dramatic decrease in the number of shared rides (in order to achieve in-vehicle social distancing). In 2021, with the relaxing of

these parameters and with fewer trips in January and February (because of colder weather), OTP started out well, above the 90% level; however, from February on, LIFT's OTP has been substandard, ranging from the mid to high 80%'s.

Figure 48. On-Time Performance for The LIFT Pickups (2017-2021)

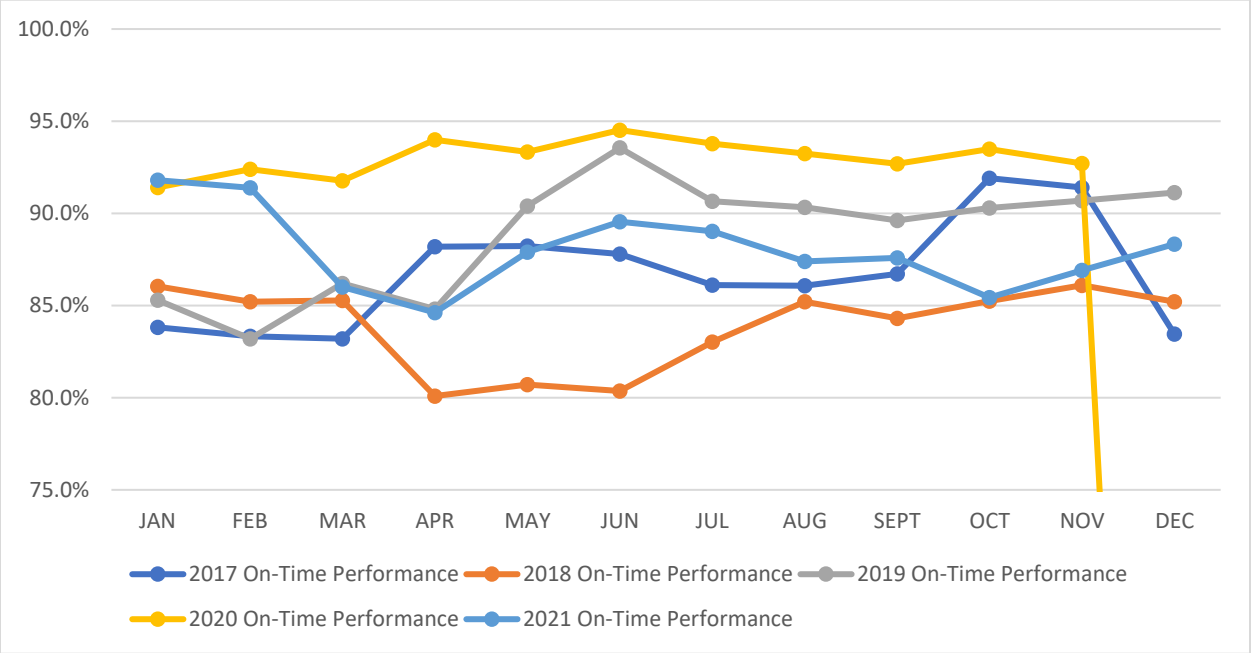


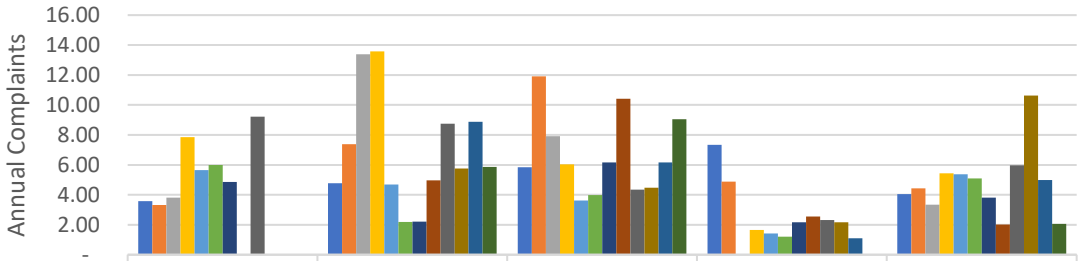
Table 6. On-Time Performance for The LIFT Pickups (2017-2021)

OTP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
2017	83.8%	83.3%	83.2%	88.2%	88.2%	87.8%	86.1%	86.1%	86.7%	91.9%	91.4%	83.5%
2018	86.0%	85.2%	85.3%	80.1%	80.7%	80.4%	83.0%	85.2%	84.3%	85.3%	86.1%	85.2%
2019	85.3%	83.2%	86.2%	84.8%	90.4%	93.6%	90.7%	90.3%	89.6%	90.3%	90.7%	91.1%
2020	91.4%	92.4%	91.8%	94.0%	93.3%	94.5%	93.8%	93.2%	92.7%	93.5%	92.7%	ND
2021	91.8%	91.4%	86.0%	84.6%	87.9%	89.6%	89.0%	87.4%	87.6%	85.4%	86.9%	88.3%

3.8.2 Complaint Frequency Ratio (CFR)

For ADA paratransit services, the complaint frequency ratio (CFR) is generally measured by the number of complaints per 10,000 passenger trips. A commonly used CFR score for ADA paratransit is: Excellent (under 10); Good (10-19); Acceptable (20-29) and Poor (30 and above). Figure shows the results of this metric from 2017-2021. Complaints were at their lowest during 2020 at the height of the COVID-19 pandemic, and have gone up slightly, from 2020, with the CFR around 4-5 complaints in most months of 2021, but still in the "excellent" range. While it is possible that the intake and tracking of complaints under Transdev may differ from how RTA manages complaints, the annual figure for CFR was 6.87 in 2018 and 6.66 in 2019, while in 2021, the annual CFR was 4.77, indicating a positive trend.

Figure 49. Complaints per 10,000 Trips for The LIFT (2017-2021)



	2017 Complaints per 10,000 Trips	2018 Complaints per 10,000 Trips	2019 Complaints per 10,000 Trips	2020 Complaints per 10,000 Trips	2021 Complaints per 10,000 Trips
JAN	3.58	4.77	5.85	7.33	4.04
FEB	3.33	7.39	11.91	4.89	4.44
MAR	3.81	13.38	7.91	-	3.34
APR	7.86	13.59	6.03	1.65	5.45
MAY	5.65	4.68	3.63	1.42	5.38
JUN	6.00	2.19	3.98	1.21	5.10
JUL	4.86	2.22	6.16	2.17	3.82
AUG	-	4.97	10.41	2.55	2.03
SEPT	9.22	8.74	4.34	2.32	5.98
OCT	-	5.76	4.48	2.18	10.62
NOV	-	8.88	6.17	1.09	4.99
DEC	-	5.87	9.05		2.06

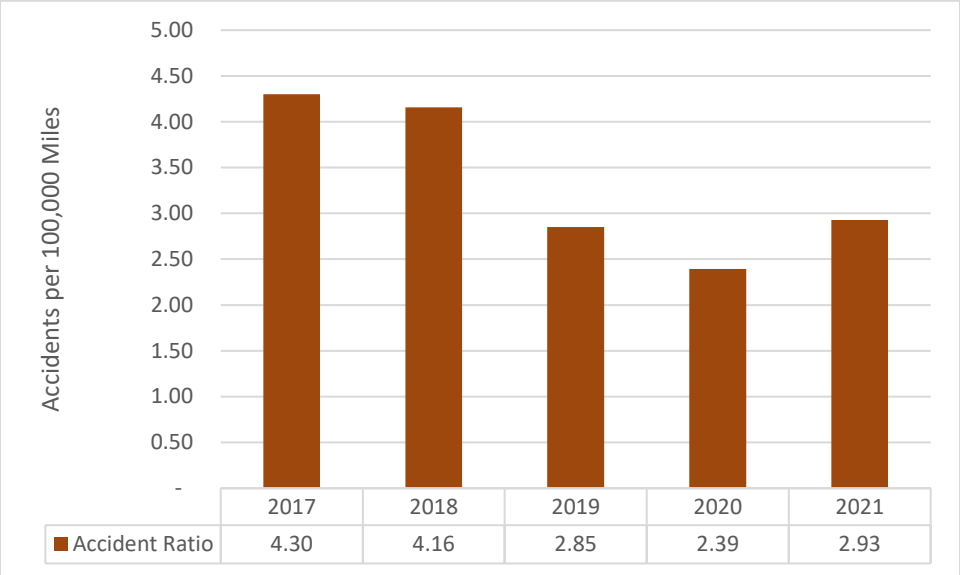
3.9 Safety and Maintenance Effectiveness

3.9.1 Accident Frequency Ratio

A reported number of accidents (both preventable and non-preventable) are useful figures but do not tell the complete tale. Generally, a preventable AFR is a better figure, as it is more comparable in trend analyses and peer comparisons because it is reported based on the same number of miles. The industry standard for both transit and paratransit is 1 preventable accident per 100,000 total vehicle miles.

RTA provided an export report of accident logs over the last five years, which TTI compared to annual total miles for LIFT. Unfortunately, the report did not specify whether an accident was preventable or non-preventable, so TTI cannot compare RTA's AFR with the industry standard. However, we can look at the trend, and the trend is positive. As shown in Figure , accidents have occurred less frequently over the last three years than in 2017 or 2018, calculating to a AFR of 2.93 in 2021.

Figure 50. Accident Frequency Ratio for The LIFT (2017-2021)



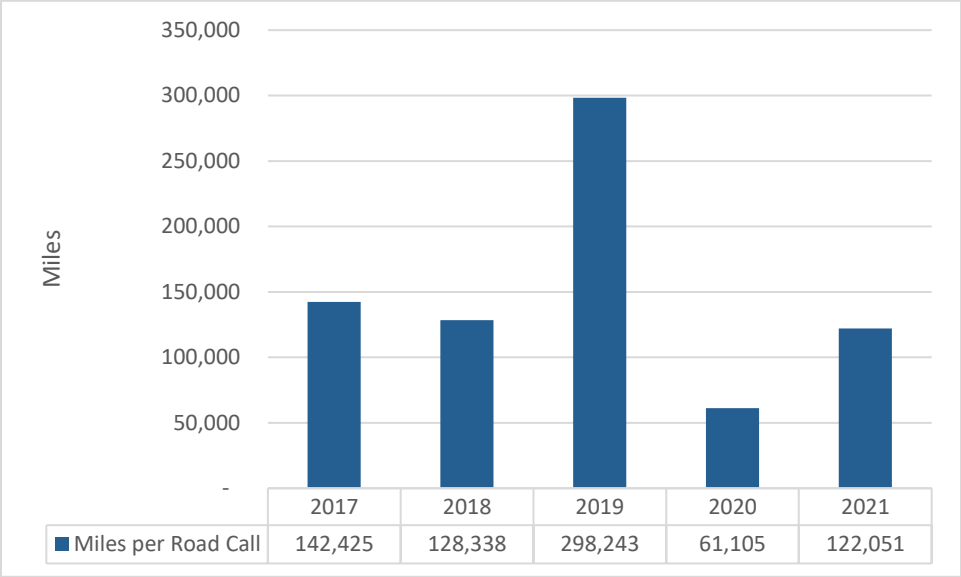
3.9.2 Miles between Road Calls

Miles between road calls is another common metric that is used to gauge the performance of the vehicle maintenance program and staff. Figure presents a trend analysis for total miles between road calls over the last five calendar years. While there appears to be no industry standard for this, TTI analyzed NTD data and found that the average miles between road calls was 14,743 miles for directly operated demand-response transportation (DRT) and 21,025 miles for purchased DRT service. IN an FTA document on safety performance targets, the following was reported:

> "*Finally, the large transit provider reviewed its major mechanical failure data as reported to the NTD to establish its system reliability SPT in terms of total VRMs between failures. The large transit provider selected a target of 75,000 miles between failures for its fleet of light rail vehicles, 6,500 miles between failures for its bus fleet and 55,000 miles between failures for its fleet of paratransit vans.*"

Lastly, in various RFPs and contracts collected by TTI over time, the paratransit goals/standards for miles between road calls range from no fewer than 5,500 miles up to no fewer than 12,500 miles. All of these figures contrast dramatically with Figure 51 that show miles between road calls ranging between 120,000-140,000 miles. This points to either superior vehicle maintenance, or differences in tracking road calls, which seems more likely, especially since the data for 2019 shows an even longer period between road calls, more than double in performance from other years. In addition, the data from and 2021 is consistent with the 2017-2018 figures, despite an aging fleet, with many vehicles that are their retirement age used in service (because of industry-wide delays in acquiring new vehicles.)

Figure 51. Miles per Road Call for The LIFT (2017-2021)



3.10 Possible Capacity Constraints

The section highlights observations of possible constraints in service capacity for LIFT, based on analysis of available data. TTI's observations are on five key metrics that, as are commonly reviewed by FTA ADA paratransit reviewers: patterns of (1) denials; (2) late trips; (3) missed trips; (4) excessively long trips; and (5) substandard telephone access. Not only do FTA reviewers look for such patterns, but they also determine whether a transit agency has in place processes to identify such patterns. Note too that it is not just whether or not a transit agency has reached or not reached a certain threshold, but whether there are patterns, nevertheless. For example, while a transit agency might have achieved a 90% OTP, a pattern of late trips might be tied to trips from a certain area or at a certain time, indicating there are not enough resources in that area or time to handle demand. Similarly, while an agency might have a very low average hold time, a pattern of hold times on a certain day of the week and certain time might point to not enough reservation agents at that time to handle the number of calls, another example of a capacity constraint in the eyes of the FTA.

3.10.1 Patterns of Denials

Definition – The accepted definitions of denials are as follows:

(1) A trip request that cannot be accommodated at the requested time +/- 60 minutes (within reason) because of capacity constraints, or

(2) A trip request can be accommodated but beyond the +/- 60-minute negotiation period, with the rider either choosing to accept or to refuse the offered pick-up time. Either way, it's a denial.

One cautionary note about the first part of the definition. The phrase "within reason" is part of the definition because there are circumstances when a pick-up time is available and offered within 60 minutes of the requested pick-up time, but that time is incompatible with appointment times, work or class start or end times, building opening and closing times, etc. For example, the pick-up time for a return trips is offered at time when the rider has not yet concluded his/her workday.

The second part of the definition needs to be heeded. It is common in in the industry for such denials to not be tracked, and indeed, the RTA does not currently track these; per the definition, denials include cases where a trip request is assigned a pick-up time that is beyond the one hour trip negotiation window. Even if this trip is served, it is also still a denial.

As previously discussed, the number of trip denials for LIFT has gone up per month since the latter half of 2019 and into 2020/2021. This pattern may or may not have been impacted by COVID-19 pandemic, but since the uptick in monthly denials (around 35-40 per month) began in late 2019 and has been consistent through 2021, this appears to also be tied to the period of LIFT management/operations moving in-house, and especially the RTA has received fewer trip requests and are completing fewer annual trips in the last two years. This may possibly be a result of a capacity constraint. The RTA needs to perform an analysis of the denial specifics (unavailable to TTI) to determine whether a pattern of denials exists.

3.10.2 Patterns of Late Trips

Definition – FTA policy leaves to the local transit agency the details and span size of the pick-up window for ADA paratransit service as well as any other details of what is considered on-time vs late. It is generally a good idea to also involve the disability community as it develops any standards. A trip is considered to be ***on time*** at the pick-up location if

- the vehicle arrives within the confirmed pick-up window that is confirmed with the customer
- the trip is completed

With respect to the first part of the definition, a scheduled pick-up time is typically confirmed either at the time of the request or, in cases where trips are scheduled later, after the trip has been scheduled.

As discussed in Section 8.1, RTA has a goal of 90% on-time and is falling short of that goal, with sub 90% OTPO in the last 10 months of 2021. This suggests that there may be a capacity constraint, which is further bolstered anecdotally by staff interviews about driver and vehicle shortages, stakeholder interviews, and the driver focus groups. (See also Section 13.) But regardless of whether or not the RTA is hitting this standard, the RTA does not have a process in place to determine whether or not there are patterns of late service, noting that this granular level of data tracking was not available to TTI in our analysis. It is important that RTA develop and execute such a process as soon as possible.

In addition, some transit agencies also have established a drop-off window for trips requested based on a drop-off time or where an appointment time or work/class start time is made known. These transit establish a drop-off window, not only to track on-time performance, but also to ensure that vehicle does not arrive too early. Common spans include -15/0 and -20/0. Some agencies also have adopted a policy that a rider cannot be dropped off “x” minutes before a building opens up in the morning, if that open time is communicated by the rider.

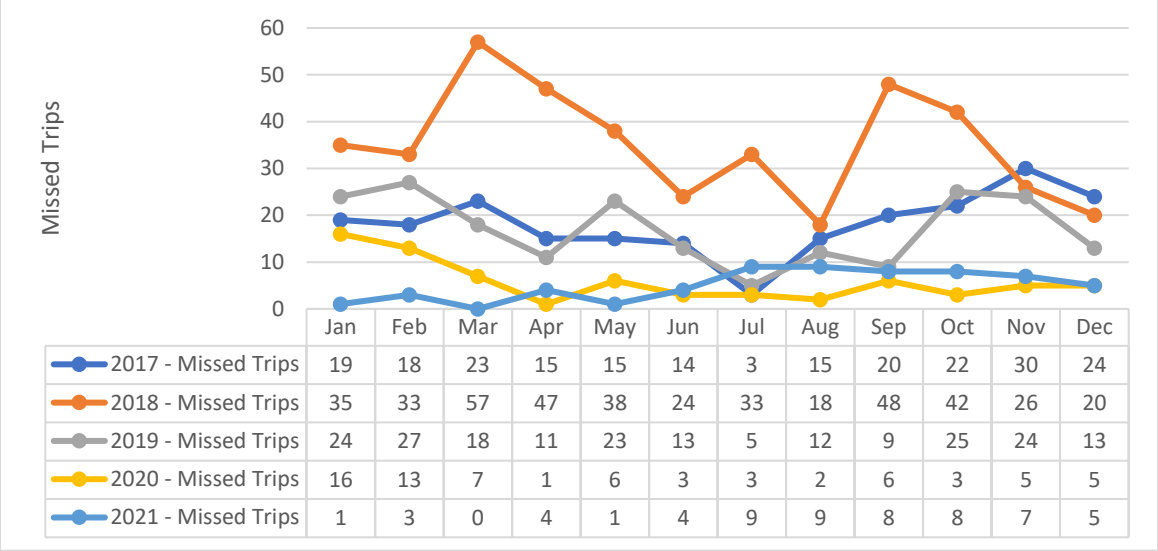
3.10.3 Patterns of Missed Trips

Definition - A missed trip is an event where (1) the vehicle never arrives; (2) the vehicle arrives early and departs before the pick-up window begins; (3) the vehicle arrives on-time or late but departs before the 5-minute wait time is over; (4) a driver fails to carry out specific instructions included with the reservation (e.g., a specific building entrance, door-to-door assistance, honk on arrival, etc.), which results in the rider missing their ride; or (5) the vehicle arrives after the pick-up window and the

customer does not appear or cancels-at-door. Such an event is the fault of the service delivery operator, and not the rider. Missed trips are not no-shows and need to be tracked separately as they are, again, one of five metrics that point to the possibility of a capacity constraint, which is a compliance issue. It was clear to TTI in its interviews that RTA staff did not have a grasp of all of these definitions.

Figure 52 presents missed trips data from the route productivity reports. As shown, monthly missed trips for LIFT have been lower in the past two years than in the preceding three years. In part, the decrease in the number of missed trips is somewhat proportional to the decrease in service demand and delivery. However, we also surmise, based on interviews with staff and drivers, that RTA drivers and dispatchers are incorrectly reporting missed trips as no-shows. In addition to the interviews, this may be further evidenced by the increase in the percentage of no-shows in 2021, up to 7%, compared to lower ranges in 2017-2019. The same observation as with denials and late trips holds true here as well: the RTA needs to develop a process for identifying spatial, temporal or client-specific patterns of missed trips.

Figure 52. Missed trips for LIFT service (2017-2021)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017 - Missed Trips	19	18	23	15	15	14	3	15	20	22	30	24
2018 - Missed Trips	35	33	57	47	38	24	33	18	48	42	26	20
2019 - Missed Trips	24	27	18	11	23	13	5	12	9	25	24	13
2020 - Missed Trips	16	13	7	1	6	3	3	2	6	3	5	5
2021 - Missed Trips	1	3	0	4	1	4	9	9	8	8	7	5

3.10.4 Patterns of Excessively Long Trips

Definitions - For ADA paratransit services, the FTA defines an excessively long trip as a travel time that is longer than travel time for the same trip taken on fixed route transit service, adding in travel time to/from stops and reasonable wait and transfer times.

A pattern of excessively long ADA paratransit trips may indicate a capacity constraint (e.g., if limited supply of service forces schedulers and dispatchers to share rides to the point where a rider is on-board for an excessively long period). As with the above metrics, the RTA needs to design and implement a process to periodically ensure that there is not a pattern of excessively long trips, as compared to the trip time of comparable transit trips. For example, if more than 5% of the sampled ADA paratransit trips have trip times that are 10% or greater than the trips times of comparable transit trips, it is advised that the RTA investigate a greater sample to determine the possible existence of a pattern.

For this study, such a detailed analysis was beyond the scope of the project.

3.10.5 Patterns of Substandard Hold Times

Definition – Telephone access is usually defined in two ways: (1) the number or percentage of incoming calls that have a wait time of under "X" minutes or seconds in any day and hour; and (2) the number of calls that exceed a maximum (not to exceed) hold time, e.g., 5 minutes. And in both cases, it is important the average hold time and max hold time for each hour of each date be reported.

Telephone access is another service quality metric that can also point to a capacity constraint if there is an insufficient number of call-takers (or telephone lines) to handle the demand. Most incoming calls from customers can be categorized into four groupings, noting that capacity issues focus on the first three as the more critical:

- Service requests, subdivided further into advance reservations vs. same-day requests (if allowed) such as will-calls.
- Cancellations.
- Same-day customer issues (e.g., ETA requests and "where's my ride?" calls)
- General requests for information

The telephone system used by the RTA comes with a telephone tree with groupings that are geared to these categories and with the capability to not only track for each group incoming and outgoing calls and call-times but also average and maximum hold times for each day and hourly period of the day. Such telephone system and these MIS reports are hugely important to developing call-taker staffing plans that match demand, and that minimize hold times, assuming there are a sufficient number of incoming telephone lines and rollover numbers.

The daily and hourly figures for call volumes and hold times can often point to certain days and hours of the week when substandard telephone access exists, and where there is a capacity constraint, remembering that the FTA's ADA paratransit policies indicate that a capacity violation may exist where patterns of substandard telephone access occur. The most common examples where such constraints exist is where the supply of call-takers and/or the supply of telephone lines are outstripped by the volume of incoming calls, or where the volume of same-day calls (associated with customer issues) is extremely large because of late service stemming from an undersupply of vehicles or drivers. Requests for Same-day service alone (over and above what ADA paratransit minimally requires, such is that which for same-day service (again, if allowed) can also substantially increase the demand for service, and hence the corresponding number of incoming calls.

As discussed in Section 4, the average and maximum hold times for LIFT callers seem to be very reasonable, with only a few outliers in the week analyzed. While average hold times do not appear to be an issue, maximum hold times may need to be addressed, specifically on weekdays and times in the day when more calls are occurring to make sure no single customer is holding on the phone for more than 5 minutes. LIFT management needs to perpetually analyze these reports to determine if a patterns persists, and if so, needs to adjust call-taking resources accordingly.

3.11 Peer Review

3.11.1 Introduction and Rationales for Peer Selection

TTI identified eight transit agencies as possible peers, focusing on the similarity of their ADA paratransit ridership, service area, service area density and service characteristics (e.g., trip length). TTI's selection criteria also considered the service delivery models, attempting to identify ADA paratransit services that

were either partially or entirely operated in-house. Metropolitan area size and geography was also considered..

Using primarily NTD data for the preliminary assessment supplemented with the TTI's knowledge of transit agencies' practices, the list was narrowed down to four main peers which focuses on the cost per revenue hour and total unlinked passenger trips as further factors for service similarity. NORPC approved the first four "peer" systems by email:

- City of Charlotte North Carolina, dba: Charlotte Area Transit System (North Carolina)
- City of Memphis, dba: Memphis Area Transit Authority (Tennessee)
- Niagara Frontier Transportation Authority (Buffalo, New York)
- Utah Transit Authority (Salt Lake City, Utah)

The TTI team reached out to each of these four transit agencies; only Memphis Area Transit Authority was unresponsive to the request. The team decided to next reach out to Greater Dayton Regional Transit Authority in Ohio from the list of backups, who agreed to participate along with the other three identified peers. The final four agencies included in this peer review are:

- City of Charlotte North Carolina, dba: Charlotte Area Transit System (CATS)
- Greater Dayton Regional Transit Authority (GDRTA)
- Niagara Frontier Transportation Authority (NFTA) in Buffalo
- Utah Transit Authority (UTA) in Salt Lake City

Summaries of each of the ADA paratransit services for CATS, GDRTA, NFTA, and UTA are presented below. Tables of their service characteristics and service performance metrics for each follow the descriptions. After these tables, LIFT's ridership, cost and other performance metrics are compared with the performance metrics for the four peers.

3.11.2 Peer System Descriptions

Charlotte Area Transit System (CATS) – Special Transportation Services

CATS in Charlotte NC, was selected as a peer agency due to their total passenger trips and trips per capita to NORTA according to 2019 NTD data. CATS has a larger service area of 675 square miles (vs. the RTA's 75 square miles) and lower service area density of 1,930 (vs. 5,202 in New Orleans).

Similarly to LIFT, CATS operates its ADA paratransit service, called Special Transportation Services (STS), directly in-house and provides curb-to-curb level of driver assistance. STS had higher total ridership in 2021 at 159,101 compared to 116,995 for The LIFT. CATS uses zoned areas within its STS service model but does not provide trips beyond the required ADA area. STS' average trip length was 12.2 miles in 2021, over twice as longer as LIFT's 6.0 average trip length. STS does not have conditional eligibility for some customers, while RTA staff estimates around 20 percent of LIFT customers have been deemed to be conditionally eligible.

Software systems and in-vehicle equipment also differ between the agencies. CATS used Routematch in 2021 with tablets equipped in the vehicles (and noting that CATS transitioned to Via Mobility to support

STS in May 2022), while The RTA uses Trapeze with MDTs in vehicle to support LIFT. STS uses 83 total vehicles (all WAVs) with a peak pull-out of 45 vehicles. Comparatively, LIFT has a lower total fleet of WAVs (54) but a closer peak pull-out number at 39 vehicles.

CATS does not have any additional alternative service programs for ADA paratransit customers but does provide a TNC-based first-mile/last-mile service (not part of this peer review).

Greater Dayton Regional Transit Authority – RTA Connect

GDRTA was selected as a peer agency backup due to their similar total demand response trips and trips per capita according to 2019 NTD data. GDRTA has a larger service area of 274 square miles (vs. the RTA's 75 square miles) and a lower service area density at 2,040 (vs. the RTA's 5,202) persons per square mile. GDRTA's paratransit service is similar to LIFT in that it is operated completely in-house by the agency, does not use any non-dedicated service providers, and operationalizes conditional eligibility for some ADA customers (either by path of travel or temporarily). The ADA paratransit service in Dayton t has door-to-door service as its default level of service and provides county-wide service (beyond the ADA required area).

In 2021, RTA Connect had 172,982 total passenger trips, higher than LIFT's passenger trips at 116,995 during the same period. RTA Connect's average trip length of 8.61 miles, or 44% longer than LIFT's 6.0 miles. And while GDRTA has a higher number of total vehicles (with 75 WAVs), the peak pull-out is the same as LIFT's 39 vehicles. RTA Connect also uses Trapeze PASS for scheduling and dispatch and used Clever Devices' Grey-Hawks in the vehicles.

Niagara Frontier Transportation Authority – Paratransit Access Line (PAL)

NFTA in Buffalo, NY was selected as a peer agency to NORTA due to their similar number of demand response trips and trips per capita according to 2019 NTD data. NFTA has a larger service area of 383 square miles (vs. 75 square miles for NORTA) and a lower service area density at 2,563 persons per square mile, compared to 5,202 in New Orleans). NFTA's paratransit service is called Paratransit Access Line, or "PAL" for short.

Like LIFT, PAL is operated completely in-house by the transit agency, service is provided curb-to-curb, and the agency does not utilize any non-dedicated service providers. PAL also has conditional eligibility for some PAL customers but at higher proportions compared to LIFT; approximately 40% of ADA applications for PAL in 2021 were approved with the condition for path of travel, while an additional 1% of applications were approved based on seasonal conditions (namely snowfall and ice in Buffalo, NY).

PAL served 201,286 total passenger trips in 2021, higher than LIFT's 116,995 trips. PAL's average trip length of 8.4 miles is 40% longer than LIFT's 6.0 mile average trip length. NFTA uses a total of 72 WAVs for PAL service, with a peak pull-out of 55 vehicles in 2021 (compared to 39 peak for LIFT). Both LIFT and PAL are supported by Trapeze software for scheduling and dispatch of service, while PAL vehicles are equipped with Samsung Galaxy tablets.

Utah Transit Authority – Paratransit Service ADA Program

UTA was selected as a peer agency due to their similar total demand response trips, trips per capita, and cost per revenue hour according to 2019 NTD data. Even with those similarities, UTA's service area of 696 square miles is much larger than RTA's 75 square miles, noting that UTA's service area density of 3,062 persons per square mile is more comparable to New Orleans' density of 5,202. UTA's ADA paratransit service is identified as their Paratransit Service ADA Program; for the remainder of this peer review it is referred to as UTA Paratransit.

Like LIFT, UTA uses only dedicated vehicles for UTA Paratransit, provides curb-to-curb service, uses Trapeze software and MDTs in vehicles, and has their call and control center functions entirely in-house. However, while UTA operates 65% of the UTA Paratransit service in-house (in their core area centered around Salt Lake City, it contracts the remainder in its other two service areas (northern and southern) to other providers. MV Transportation serves about 25 percent of UTA Paratransit service in the Northern service area, while Utah Valley Paratransit (UVP) serves the remaining 10 percent of service in the Southern service area. The service areas in all three zones are based on ¾ miles of transit corridors (i.e., no service is provided to extended areas).

Over half (52%) of applicants have been deemed to be conditionally eligible, with UTA using 16 possible different conditions for conditional eligibility. These conditions can include distance to fixed routes, snow and ice, lack of curb cuts or sidewalks, steep or busy streets, extreme temperatures, unfamiliar paths of travel, required transfers, hours of darkness, and more. UTA also grants temporary eligibility and eligibility for visitor applications and requires periodic recertifications for paratransit customers.

The main dissimilarity is UTA paratransit's ridership, which at 346,645 trips almost triple LIFT's 116,995 trips. That said, the average trip lengths between the two services are fairly comparable, with UTA Paratransit's average trip length at 6.71 miles and LIFT's average trip length at 7.3. The fleet size of UTA Paratransit is also much larger: 125 total WAVs and a 114-vehicle peak pull-out, although this includes fleet size includes UTA's Flex Routes which provide route deviation service, noting that some of these flex transit routes were implemented in "extended" areas when UTA cut its ADA paratransit service back to the minimally required service corridors.

Separately from its ADA paratransit service , UTA has an on-demand microtransit service with Via (not included in this peer analysis).

3.11.3 Peer Service Comparisons

Service characteristics and performance standards and metrics for LIFT and each of the four peers' ADA paratransit services are found in the tables on the following pages. The comparative analysis – comparing the ridership, unit costs and service performance of LIFT to the other demand-responsive services with those of the four peers follows these tables.

New Orleans Regional Transit Authority –LIFT service

Service Characteristics	
Service Area	
Service area (sq. miles)	75
Service area population	390,144
Service area density	5,201.92
Traffic Congestion	
Delay per Auto Commuter	54 hours
Planning Time Index	42 minutes
Travel Time Index	27 minutes
Eligibility	**The LIFT service**
Eligible riders	Unknown
ADA applications - results	
- % unconditional	Unknown
- % conditional - path of travel	~20%
- % conditional - other	Unknown
- % denied	Unknown
Conditional eligibility operationalized?	Yes
Transit free-fare program	No
Service Type and Model	
Call and control functions	In house
Dedicated service operator	In house
Non-dedicated service providers	n/a
Dedicated vs non-dedicated	100% / 0%
Service areas zoned?	No
Extended service area	Yes (service into Jefferson Parish since March 2022)
Door-to-door vs curb-to-curb	Curb-to-curb
Technology	
Sched/dispatch software	Trapeze
In-vehicle equipment	MDTs
Direct dispatch to NDSPs	n/a
Rider apps	n/a
2021 Trips, Mi/Trip	
Total passenger trips	140,876
- Registrant trips	116,741
- PCA / companion trips	24,135
- Ambulatory trips	72% (84,054)
- WC trips (reg/xlarge)	19% (22,181)/ 9% (10,507)
- Conditionally eligible trips	Unknown
- Feeder trips	n/a
Average Trip Length	6.0 miles

New Orleans Regional Transit Authority – LIFT service (continued)

Fleet	The LIFT service
Total/peak pull-out	54 / 39
WAVs/Sedans	54 / 0
# veh shared w/ FRT or other Service	0
Average operating speed	8.4 MPH
Performance Metrics (2021)	
Service Efficiency	
Productivity – Combined – Standard	n/a
Productivity – Combined – Actual	1.38
Productivity – Dedicated – Standard	n/a
Productivity – Dedicated – Actual	1.38
Productivity – Non-Dedicated – Std	n/a
Productivity – Non-Dedicated – Act	n/a
Cost Efficiency	
Operating Cost per Trip	$105.94
Operating Cost per RVH	$146.59
On-Time Performance	
Pickup – Standard	90%
Pickup – Actual	87.58%
Dropoff – Standard	n/a
Dropoff – Actual	n/a
On-Board Travel Time*	
Avg/Max Standards	n/a
% excessively long trips – Standard	n/a
% excessively long trips – Actual	Unknown
Missed Trip	
Missed Trip % – Standard	n/a
Missed Trip % – Actual	<0.1%
Telephone Access	
Avg/Max Hold Times – Standard	n/a
Avg/Max Hold Times –Actual	May 2022: average 00:13 / 07:58 max
Complaint Frequency Ratio	
Comp/10,000 trips – Standard	n/a
Comp/10,000 trips – Actual	2.80
Preventive Accident Ratio	
PA/100,000 miles – Standard	n/a
PA/100,000 miles - Actual	2.52
Miles Between Road Calls	
Standard	n/a
Actual	141,648

Charlotte Area Transit System (CATS) – Special Transportation Services (STS)

Service Characteristics	
Service Area	
Service area (sq. miles)	675
Service area population	1,302,619
Service area density	1,929.8
Traffic Congestion	
Delay per Auto Commuter	53 hours
Planning Time Index	35 minutes
Travel Time Index	24 minutes
Eligibility	**STS**
Eligible riders	ADA paratransit
ADA applications - results	
- % unconditional	99%
- % conditional - path of travel	0%
- % conditional - other	0%
- % denied	<1%
Conditional eligibility operationalized?	No
Transit free-fare program	No
Service Type and Model	
Call and control functions	All In-House
Dedicated service operator	CATS
Non-dedicated service providers	None
Dedicated vs non-dedicated	100%/0
Service areas zoned?	Y
Extended service area	N
Door-to-door vs curb-to-curb	Curb-Curb
Technology	
Sched/dispatch software	Routematch 7.x, Via (5/2022)
In-vehicle equipment	Tablets
Direct dispatch to NDSPs	N/A
Rider apps	None
2021 Trips, Mi/Trip	
Total passenger trips	159,101
- Registrant trips	149,558
- PCA / companion trips	9,543
- Ambulatory trips	125,850
- WC trips (reg/xlarge)	33,251
- Conditionally eligible trips	0
- Feeder trips	0
Average Trip Length	12.2 mi

Charlotte Area Transit System (CATS) – STS (continued)

Fleet	STS
Total/peak pull-out	83 / 45
WAVs/Sedans	WAV
# veh shared w/ FRT or other Service	0
Average operating speed	21.5
Performance Metrics (2021)	
Service Efficiency	
Productivity – Combined – Standard	2.0
Productivity – Combined – Actual	1.97
Productivity – Dedicated – Standard	2.0
Productivity – Dedicated – Actual	1.97
Productivity – Non-Dedicated – Std	N/A
Productivity – Non-Dedicated – Act	N/A
Cost Efficiency	
Operating Cost per Trip	55.01
Operating Cost per RVH	108.67
On-Time Performance	
Pickup – Standard	93%
Pickup – Actual	83.3%
Dropoff – Standard	95%
Dropoff – Actual	58.3%
On-Board Travel Time*	
Avg/Max Standards	10 min<=1 mi, 30 min/ 10 mi, 60 min max
% excessively long trips – Standard	< 5%
% excessively long trips – Actual	Data loss
Missed Trip	
Missed Trip % – Standard	0.1 %
Missed Trip % – Actual	0.37 %
Telephone Access	
Avg/Max Hold Times – Standard	50/300 sec
Avg/Max Hold Times –Actual	24 sec avg, 51 min max (working on these reports)
Complaint Frequency Ratio	
Comp/10,000 trips – Standard	10/10,000 trips
Comp/10,000 trips – Actual	16.5
Preventive Accident Ratio	
PA/100,000 miles – Standard	0.50 (for collisions over $500)
PA/100,000 miles - Actual	0.19
Miles Between Road Calls	
Standard	15,000 miles
Actual	Data loss

Greater Dayton Regional Transit Authority – RTA Connect service

Service Characteristics	
Service Area	
Service area (sq. miles)	274
Service area population	559,062
Service area density	2,040.4
Traffic Congestion	
Delay per Auto Commuter	32 hours
Planning Time Index	23 minutes
Travel Time Index	22 minutes
Eligibility	**RTA Connect service**
Eligible riders	5,170
ADA applications - results	563
- % unconditional	92%
- % conditional - path of travel	Do not calculate by specific conditional type.
- % conditional - other	7% (includes temporary eligible)
- % denied	1%
Conditional eligibility operationalized?	Yes.
Transit free-fare program	Yes, on fixed route.
Service Type and Model	
Call and control functions	Operated in-house call center and dispatch operations.
Dedicated service operator	Greater Dayton RTA.
Non-dedicated service providers	None.
Dedicated vs non-dedicated	N/A
Service areas zoned?	No.
Extended service area	Yes, county-wide.
Door-to-door vs curb-to-curb	Door-to-door
Technology	
Sched/dispatch software	Trapeze PASS
In-vehicle equipment	Clever Devices Grey-Hawk
Direct dispatch to NDSPs	N/A
Rider apps	Not available.
2021 Trips, Mi/Trip	
Total passenger trips	172,982
- Registrant trips	160,890
- PCA / companion trips	12,092
- Ambulatory trips	119,441
- WC trips (reg/xlarge)	41,449
- Conditionally eligible trips	22,322
- Feeder trips	0
Average Trip Length	8.61 miles

Greater Dayton Regional Transit Authority – RTA Connect service (continued)

Fleet	RTA Connect service
Total/peak pull-out	75 / 39
WAVs/Sedans	75 WAVs
# veh shared w/ FRT or other Service	0
Average operating speed	Do not calculate this metric.
Performance Metrics (2021)	
Service Efficiency	
Productivity – Combined – Standard	N/A
Productivity – Combined – Actual	1.69
Productivity – Dedicated – Standard	N/A
Productivity – Dedicated – Actual	1.69
Productivity – Non-Dedicated – Std	N/A
Productivity – Non-Dedicated – Act	N/A
Cost Efficiency	
Operating Cost per Trip	$76
Operating Cost per RVH	$129
On-Time Performance	
Pickup – Standard	N/A (10-/20+ scheduled pickup time)
Pickup – Actual	74.6%
Dropoff – Standard	N/A (at or before appt. time)
Dropoff – Actual	91.6%
On-Board Travel Time*	
Avg/Max Standards	N/A
% excessively long trips – Standard	N/A (>60 minutes is long)
% excessively long trips – Actual	0.01%
Missed Trip	
Missed Trip % – Standard	N/A
Missed Trip % – Actual	Less than 1%
Telephone Access	
Avg/Max Hold Times – Standard	N/A
Avg/Max Hold Times –Actual	1:39 average
Complaint Frequency Ratio	
Comp/10,000 trips – Standard	N/A
Comp/10,000 trips – Actual	24.8
Preventive Accident Ratio	
PA/100,000 miles – Standard	N/A
PA/100,000 miles - Actual	1.77 (using total miles, not revenue miles)
Miles Between Road Calls	
Standard	N/A
Actual	13,166

Niagara Frontier Transportation Authority – Paratransit Access Line (PAL) service

Service Characteristics	
Service Area	
Service area (sq. miles)	383
Service area population	981,771
Service area density	2,563.4
Traffic Congestion	
Delay per Auto Commuter	49 hours
Planning Time Index	27 minutes
Travel Time Index	23 minutes
Eligibility	**Paratransit Access Line (PAL) service**
Eligible riders	4,782
ADA applications - results	1,259
- % unconditional	58%
- % conditional - path of travel	40%
- % conditional - seasonal	1%
- % denied	1%
Conditional eligibility operationalized?	Yes
Transit free-fare program	All PAL customers ride FR free with PAL ID
Service Type and Model	
Call and control functions	All service, customer care and control is in house
Dedicated service operator	All service is in house
Non-dedicated service providers	N/A
Dedicated vs non-dedicated	N/A
Service areas zoned?	No
Extended service area	No
Door-to-door vs curb-to-curb	Curb to Curb
Technology	
Sched/dispatch software	Trapeze
In-vehicle equipment	Samsung Galaxy Tab A
Direct dispatch to NDSPs	N/A
Rider apps	N/A
2021 Trips, Mi/Trip	
Total passenger trips	201,286
- Registrant trips	191,606
- PCA / companion trips	9,680
- Ambulatory trips	177,079
- WC trips (reg/xlarge)	24,207
- Conditionally eligible trips	Not tracked
- Feeder trips	0
Average Trip Length	8.40 mi

Niagara Frontier Transportation Authority – PAL service (continued)

Fleet	Paratransit Access Line (PAL) service
Total/peak pull-out	72/55
WAVs/Sedans	72/0
# veh shared w/ FRT or other Service	0
Average operating speed	17.12
Performance Metrics (2021)	
Service Efficiency	
Productivity – Combined – Standard	2.0
Productivity – Combined – Actual	2.27
Productivity – Dedicated – Standard	2.0
Productivity – Dedicated – Actual	2.27
Productivity – Non-Dedicated – Std	N/A
Productivity – Non-Dedicated – Act	N/A
Cost Efficiency	
Operating Cost per Trip	$49.25
Operating Cost per RVH	$99.20
On-Time Performance	
Pickup – Standard	95.0% (30 minutes after scheduled time)
Pickup – Actual	81.8%
Dropoff – Standard	OTP is tracked by Pick up only
Dropoff – Actual	Do not track drop off OTP
On-Board Travel Time*	
Avg/Max Standards	Same as the trip time of the equivalent FR trip
% excessively long trips – Standard	>5%
% excessively long trips – Actual	8%
Missed Trip	
Missed Trip % – Standard	0%
Missed Trip % – Actual	0.4%
Telephone Access	
Avg/Max Hold Times – Standard	3:00
Avg/Max Hold Times –Actual	00:17
Complaint Frequency Ratio	
Comp/10,000 trips – Standard	N/A
Comp/10,000 trips – Actual	10.18
Preventive Accident Ratio	
PA/100,000 miles – Standard	Goal is -%5 year over year
PA/100,000 miles - Actual	0.9
Miles Between Road Calls	
Standard	N/A
Actual	68,829

Utah Transit Authority – Paratransit Service ADA Program

Service Characteristics	
Service Area	
Service area (sq. miles)	696
Service area population	2,131,121
Service area density	3,062.0
Traffic Congestion	
Delay per Auto Commuter	46 hours
Planning Time Index	30 minutes
Travel Time Index	23 minutes
Eligibility	**Paratransit Service ADA Program**
Eligible riders	4,951
ADA applications - results	454 – 1,073 recertifications
- % unconditional	47%
- % conditional	28%
- % temporary disability / temporary COVID eligibility	8%
- % new mobility aid certified	11%
- % visitors processed	4%
- % incomplete	1%
- % denied	>1%
Conditional eligibility operationalized?	Yes, 16 different conditions
Transit free-fare program	No for paratransit, yes for fixed route
Service Type and Model	
Call and control functions	In house
Dedicated service operator	Contract with 2 separate providers: MV Transportation for the Northern service area & Utah Valley Paratransit for the Southern service area UTA 65%; MV Transit 25%; UVP 10%
Non-dedicated service providers	n/a
Dedicated vs non-dedicated	100% / 0%
Service areas zoned?	Yes, zoned by provider https://platform.remix.com/map/51da9aff?latlng=40.66455,-111.95607,10.545&public=true&showBufferRadius=1207.010414020828&showBufferType=stops
Extended service area	No
Door-to-door vs curb-to-curb	Curb-to-curb
Technology	
Sched/dispatch software	Trapeze
In-vehicle equipment	MDT (tablets)
Direct dispatch to NDSPs	n/a
Rider apps	n/a

Utah Transit Authority – Paratransit Service ADA Program (continued)

2021 Trips, Mi/Trip	
Total passenger trips	346,645
- Registrant trips	324,945
- PCA / companion trips	13,202
- Ambulatory trips	269,456
- WC trips (reg/xlarge)	68,138
- Conditionally eligible trips	15,723
- Feeder trips	n/a
Average Trip Length	6.71 miles
Fleet	**Paratransit Service ADA Program**
Total/peak pull-out	125 / 114; includes Flex Routes (route deviation)
WAVs/Sedans	100% WAV cutaway buses
# veh shared w/ FRT or other Service	n/a
Average operating speed	25 mph
Performance Metrics (2021)	
Service Efficiency	
Productivity – Combined – Standard	>2.1
Productivity – Combined – Actual	1.2
Productivity – Dedicated – Standard	>2.1
Productivity – Dedicated – Actual	1.2
Productivity – Non-Dedicated – Std	n/a
Productivity – Non-Dedicated – Act	n/a
Cost Efficiency	
Operating Cost per Trip	$32.98
Operating Cost per RVH	$40.79
On-Time Performance	
Pickup – Standard	95%
Pickup – Actual	96.5%
Dropoff – Standard	95%
Dropoff – Actual	94.9%
On-Board Travel Time*	
Avg/Max Standards	No trips longer than 90 min
% excessively long trips – Standard	% not established
% excessively long trips – Actual	0.02%
Missed Trip	
Missed Trip % – Standard	1%
Missed Trip % – Actual	0.03%

Utah Transit Authority – Paratransit Service ADA Program (continued)

Telephone Access	
Avg/Max Hold Times – Standard	75% of calls answered within 4 min. & 90% of calls answered within 5 min.
Avg/Max Hold Times –Actual	1:00 avg. / 6:19 max
Complaint Frequency Ratio	
Comp/10,000 trips – Standard	n/a
Comp/10,000 trips – Actual	37.25
Preventive Accident Ratio	
PA/100,000 miles – Standard	1.0
PA/100,000 miles - Actual	0.50
Miles Between Road Calls	
Standard	47,000
Actual	58,369

3.11.4 Comparative Analysis

For the purpose of assessing how LIFT has performed relative to similar services provided by the four peer transit agencies, comparative analyses were performed for ridership, unit costs, and various performance standards and metrics. All metrics are from 2021.

But first, it is important to compare how the 5 metropolitan areas compare with each other in terms of congestion, as this can have a significant impact on travel speeds and hence productivity, and if the scheduling software parameters are not properly tuned, on on-time performance as well.

Congestion Information

TTI gathered information on congestion in the metropolitan areas for New Orleans and the peer agencies. TTI annually publishes the Urban Mobility Report, which provides congestion data and associated measures for urbanized areas across the United States. The analysis uses crowdsourced data of travel on streets and highways from INRIX as well as highway inventory data from FHWA. The latest report is available for download (or its data as a visualization map) at https://mobility.tamu.edu/umr/. All five cities are examined according to data from the 2019 report.

Researchers looked at three measures from the Urban Mobility Report for comparison between the peer agencies' cities: Delay per Auto Commuter, Planning Time Index, and Travel Time Index. Delay per Auto Commuter is defined as the yearly delay for auto commuters who travel during the morning and afternoon peak periods (between 6 to 10 a.m. and 3 to 7 p.m.); the measure is calculated by hours as the extra travel time during the year dividing by the number of commuters in private vehicles. Planning Time Index measures reliability of travel for auto commuters based on a "typical" 20-minute trip; this index is translated to minutes for the total travel time planned for a "typical" trip for the commuter to avoid being late. Travel Time Index measures a ratio of peak-period travel time compared to travel time at free-flow conditions (defined as trips that would take 20 minutes to complete with no traffic on the road); this index is measured in a ratio and then translated to minutes needed to make this trip.

For 2019, the congestion measures for the five urban areas in the peer group are shown in Table . These measures indicate that New Orleans and Charlotte are quite similar to one another, while Buffalo and Salt Lake City are comparable to one another. And compared to these two sets of pairings, Dayton is last in terms of these congestion indices.

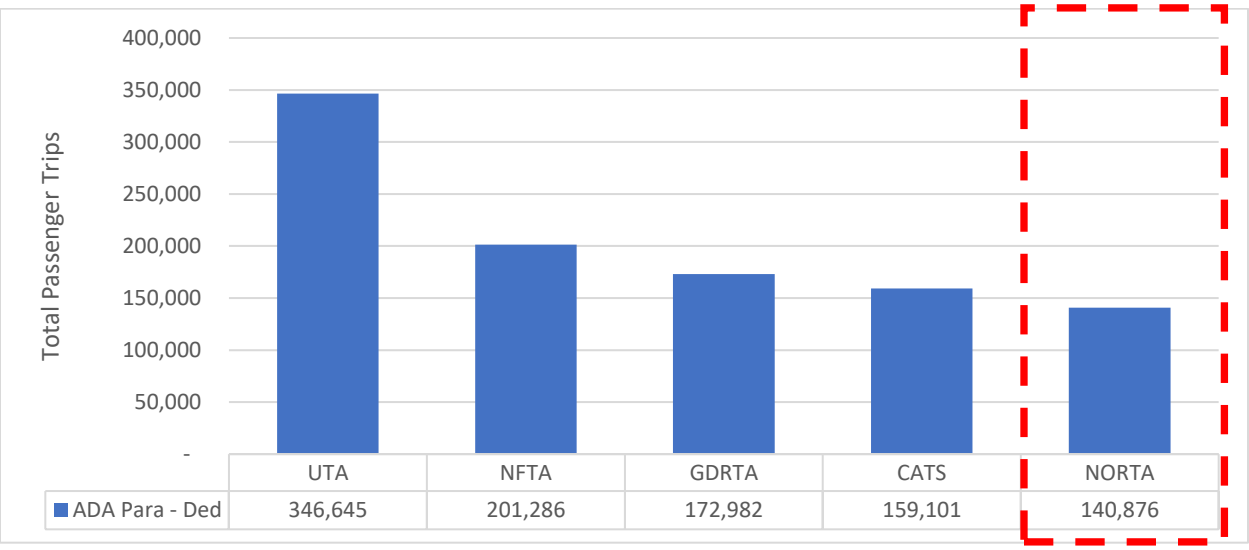
Table 7. Comparison of congestion metrics for peer group cities

2019	New Orleans	Buffalo	Charlotte	Dayton	Salt Lake City
Delay per Auto Commuter (hours)	54	49	53	32	46
Planning Time Index (min.)	42	27	35	23	30
Travel Time Index (min.)	27	23	24	22	23

Total Passenger Trips

Figure compares ADA paratransit ridership among the five agencies. LIFT had the lowest total passenger trips in 2021 among the set of peers at 140,876 trips. UTA was much higher than the rest of the peer group, while the remaining three peers fell around 160-200K total paratransit trips in 2021. As noted previously, LIFT's service area is also smaller than the service areas of the other peer agencies. LIFT's service area also has a higher service area density than its peers.

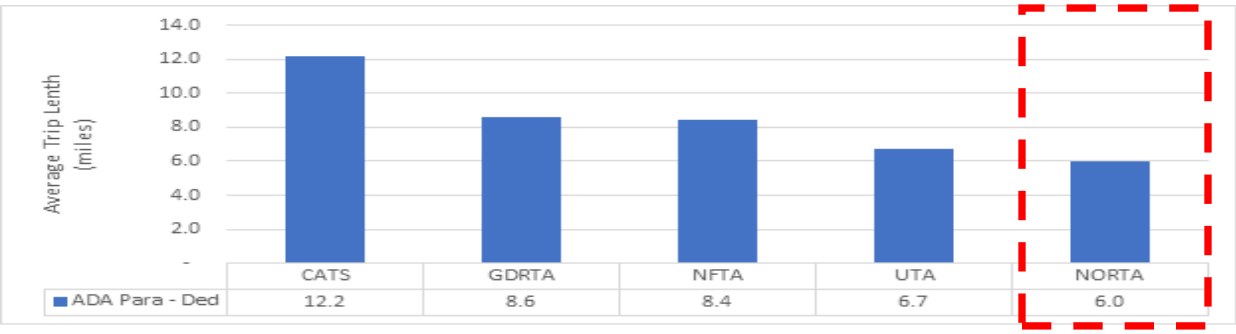
Figure 53. Comparison of total ADA passenger trips (2021)



Average Trip Length

Figure compares average trip length among the five agencies' ADA paratransit services. Average trip length can have a material effect on productivity and cost per trip; often, the longer the average trip, the lower the productivity and the higher the cost per trip. LIFT's average trip length at 6.0 miles per trip fell below the range of the other peer services. CATS had the highest trip length with 12.2 miles per trip, while the remaining peers were all between 8.6 and 6.7 miles per trip. Note that CATS does not provide service beyond the required ADA service area, while GDRTA (8.6 miles per trip) provides service throughout their county. Also note that since all of the peer comparison data is for 2021, the average trip length for LIFT does not account for directly providing non-transfer interparish trips, a policy implemented in mid-March 2022.

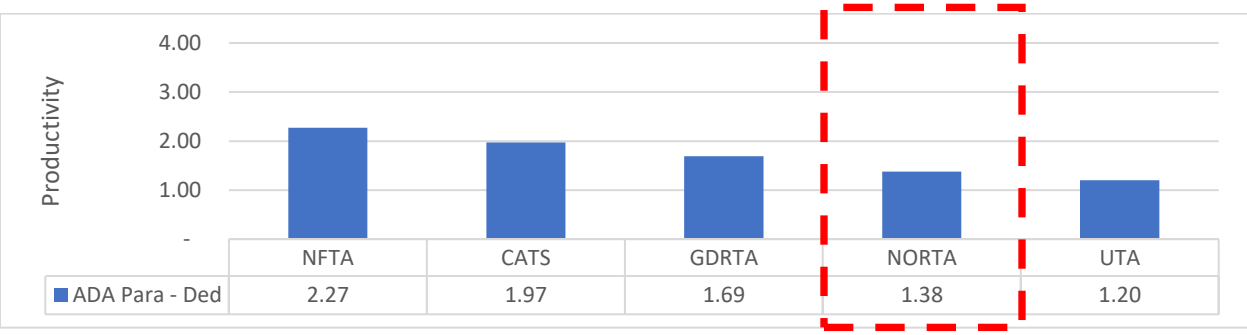
Figure 54. Comparison of average ADA Paratransit trip length (2021)



Service Productivity

Figure compares service productivity among the five agencies' ADA paratransit services, with productivity defined as number of passenger trips per RVH. LIFT had the second lowest service productivity of the peer group at 1.38 in 2021. UTA had the lowest service productivity at 1.20, noting that UTA. Other peer agencies fell within a range of 1.69-2.27 in reported service productivity. While the RTA and GDRTA do not use a productivity standard, CATS and NFTA use a productivity standard of 2,0 while UTA uses a productivity standard of 2.1.

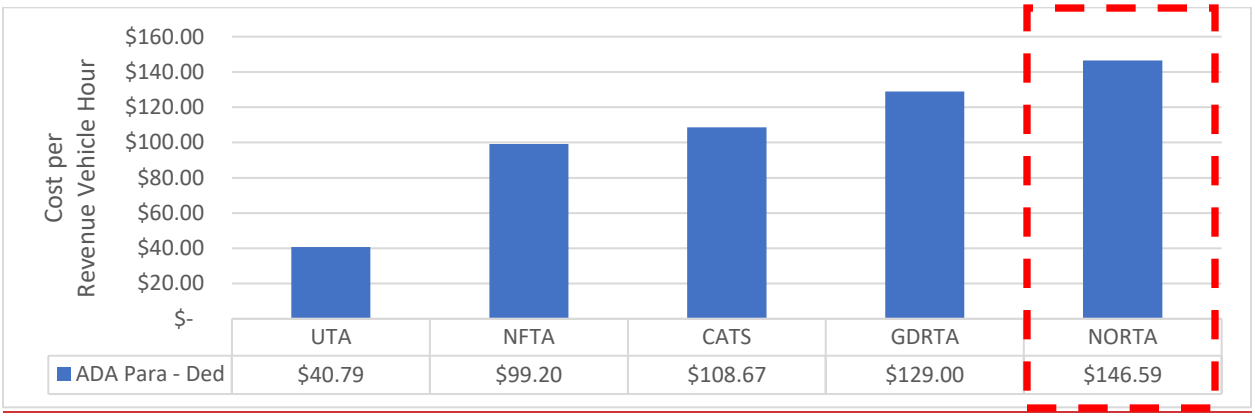
Figure 55. Comparison of ADA paratransit productivity (2021)



Operating Cost per Revenue Vehicle Hour

Figure compares operating costs per revenue vehicle hour. LIFT had the highest operating cost per revenue vehicle hour (RVH) among the peer group, which ranged from $40.79 per RVH to $129.00 per RVH. LIFT's hourly cost of $146.59 was **55% higher** than the 4-peer average of $94.42 per RVH.

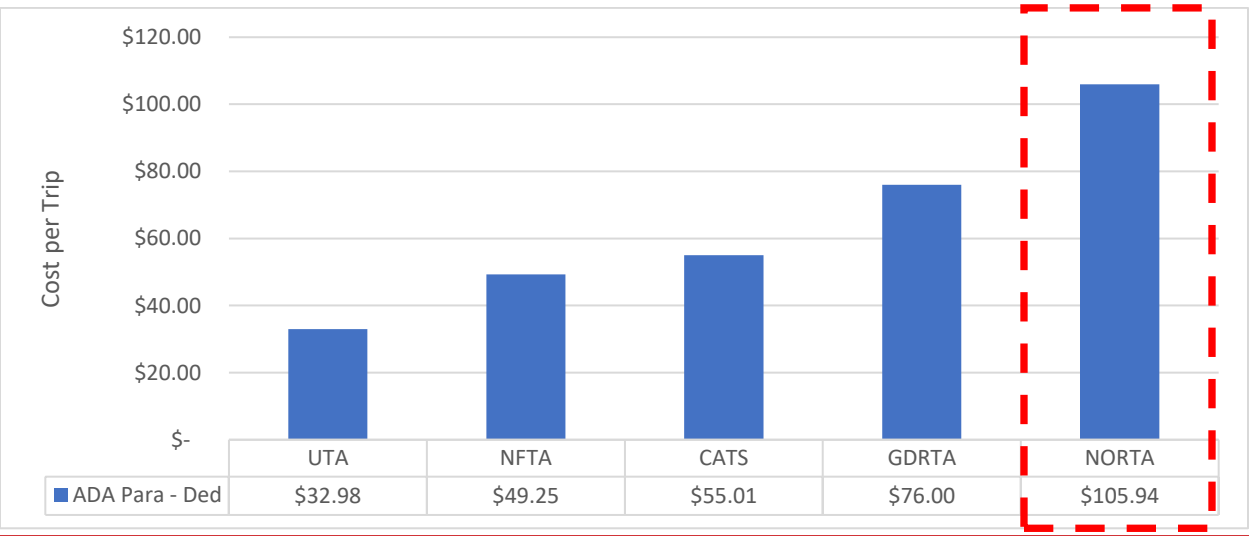
Figure 56. Comparison of total cost per revenue vehicle hour (2021)



Operating Cost per Passenger Trip

Figure compares operating costs per passenger trip among the five agencies' ADA paratransit services. LIFT was by far the most expensive service of the five agencies' ADA paratransit services. LIFT's operating cost per trip, at $105.94, is **nearly twice** the average unit cost of the four peers ($53.31). To a large extent, the disparity is due to a LIFT having an extremely high operating cost per RVH and a comparatively low productivity.

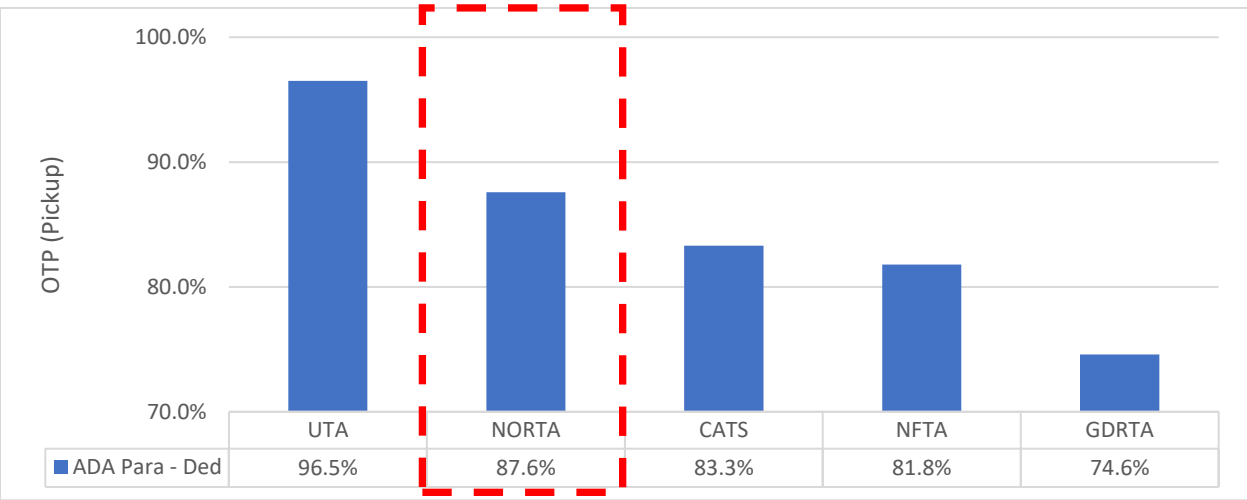
Figure 57. Comparison of total cost per paratransit trip (2021)



Pick-up On-Time Performance and Standards

Figure compares pick-up on-time performance (OTP) percentages among the five agencies' ADA paratransit services. LIFT's , 87.6% pick-up on-time performance (OTP) for 2021 was in line with the OTP figures from the peer agencies. OTP ranged from a low of 74.6% in Dayton to 96.5% in Salt Lake City, noting that . OTP service *standards* for OTP were as follows: 90% (NORTA), 93% (CATS), and 95% (NFTA and UTA). GDRTA does not use a service standard for OTP at pickups. As previously mentioned, "at least 90%" is generally considered as the industry norm for OTP and advised by the FTA. Of the five agencies, only the UTA exceeded this, also noting that the UTA's OTP standard is 95%.

Figure 58. Comparison of on-timer performance at pickups (2021)

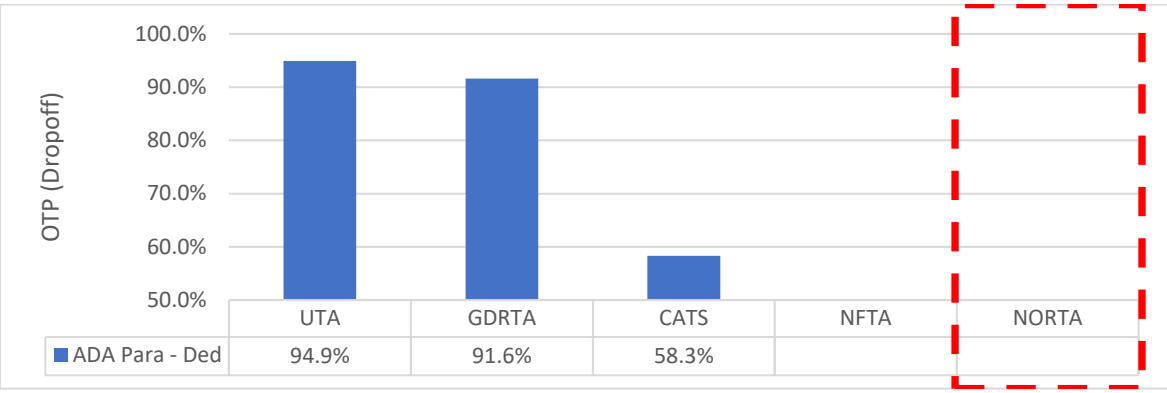


It is also important to consider UTA's OTP achievement in the context of productivity. Productivity and OTP typically have an inverse relationship (i.e., they are on a seesaw): the higher the OTP, the lower the productivity (which is the case with UTA), and conversely, the higher the productivity, the lower the OTP (which is the case with NFTA). Clearly, these two peers have chosen to balance these two metrics differently, with the UTA stressing OTP over service efficiency, and NFTA stressing service efficiency over OTP. While the RTA appears to favor OTP over service efficiency, it still is struggling to meet its OTP goal of 90%.

Drop-off On-Time Performance and Standards

Figure compares drop-off on-time performance (OTP) percentages, noting that only three of the five track this OTP metric and have an associated OTP standard for trips that are requested based on a desired drop-off or an appointment. (Neither the RTA nor NFTA measure OTP for drop-offs (i.e.,). For the remaining three peers, two (UTA and GDRTA) reported OTP at drop-offs higher than 90 percent. CATS reported a much lower OTP at drop-offs around 58 percent in 2021. Both CATS and UTA use a 95 percent performance standards for OTPs at paratransit drop-offs.

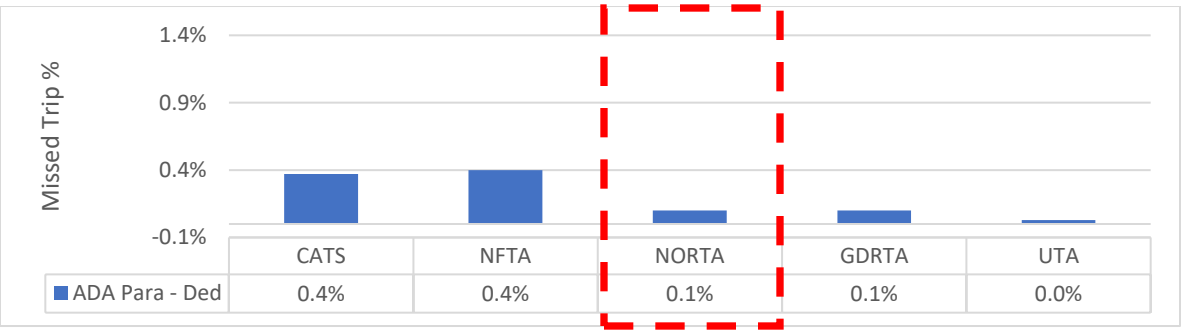
Figure 59. Comparison of on-time performance at drop-offs (2021)



Missed Trip Percentage

Figure compares missed trip percentages for the five agencies, noting all five agencies reported missed trip percentages below the commonly used "not to exceed" standard 0.5%. CATS and NFTA reported 0.4% missed trips, while NORTA and GDRTA reported 0.1% missed trips during the same period. At 0.03%,UTA had very few missed trips. LIFT's percentage of missed trips at 0.1% is commendable and compares well with the peers. As discussed later though, it is suspected that many missed trips are incorrectly being reported as no-shows, and so the missed trip percentage may actually be higher (and the LIFT no-show rate -- at 7% -- lower.) Peer agency performance standards for missed trips were as follows: 1 percent (UTA), 0.1 percent (CATS), and 0 percent (NFTA); NORTA and GDRTA do not use a performance standard for this metric.

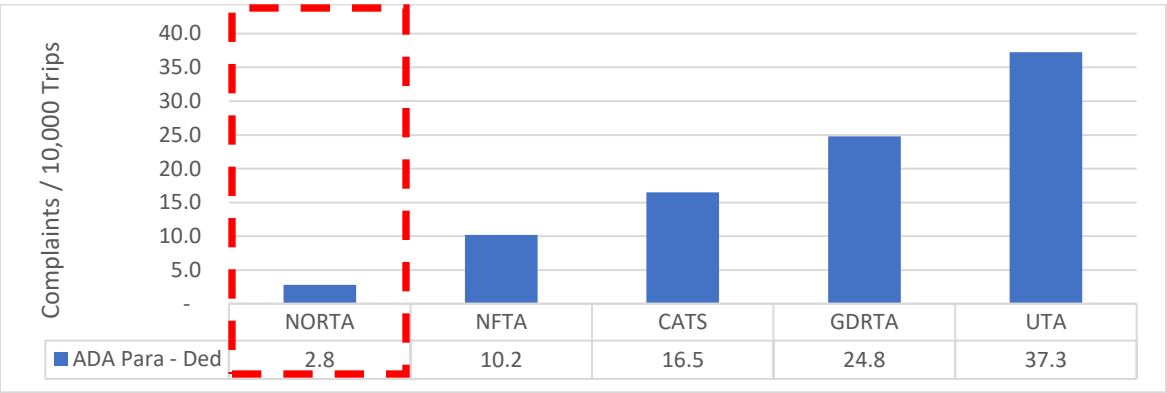
Figure 60. Comparison of missed trip percentage (2021)



Complaint Frequency Ratio (CFR)

Figure compares for the five agencies the number of complaints per 10,000 trips. As shown, NORTA out-performed other agency peers with respect to CFR, with a ratio of 2.8, although this may be a factor of how complaints are tracked, as discussed previously. Other agencies reported CFR's ranging between 10.2 to 37.3. CATS was the only agency that reported using a standard for this metric, aiming for less than 10 complaints per 10,000 trips. A commonly used score for CFR is Under 10 (Excellent); 10-19 (Good); 20-29 (Acceptable); and 30 and over (Poor).

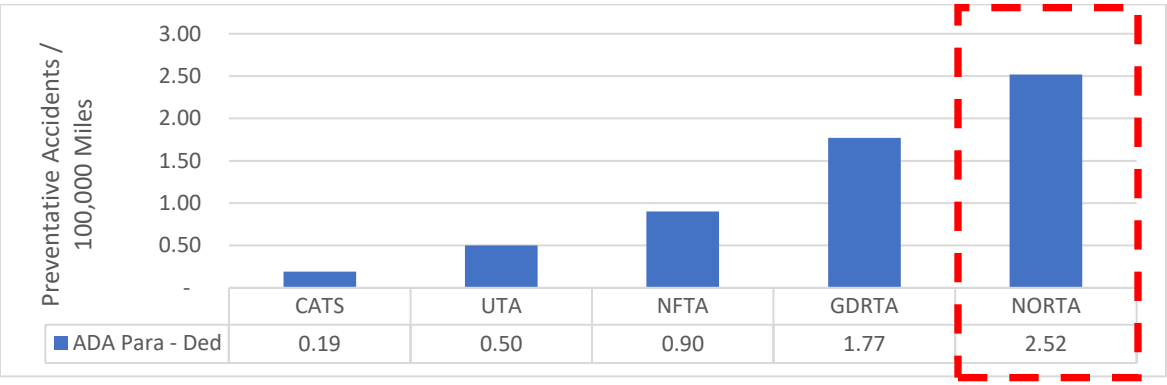
Figure 61. Comparison of complaint frequency ratio (2021)



Accident Frequency Ratio (AFR)

Figure compares the number of preventable accidents per 100,000 total miles. At an AFR of 2.52, LIFT had the highest AFR, and hence the lowest safety record, among the five agencies, noting that the other AFRs range from 0.19 to 1.77. The agencies with a performance standard for this metric approach its measurement in different ways: UTA has a standard of less than or equal to 1.0; NFTA has a goal reducing the metric by 5 percent year over year; CATS has a standard of 0.50 accidents per 100,000 miles for collisions over $500. The most common standard in the industry is and AFR of 1.0.

Figure 62. Comparison of Accident Frequency Ratio (2021)



3.12 Focus Areas

Section 12 assesses how RTA approaches the functions (1) eligibility determination; (2) the call and control center tasks of reservations, scheduling, dispatching and handling customers' service day calls and whether the RTA is taking full advantage of its paratransit scheduling system, Trapeze; and (3) complaint management.

3.12.1 Eligibility Function Assessment

The eligibility function for LIFT is performed by one person, who is organizationally under the Director of Marketing. She is based at the Canal Street facility.

Applications are available online or can be picked up at the RTA Administrative Office or at various social service agencies within the service area. Upon request, application can also be mailed to the applicant, noting that related materials can be requested in alternative accessible formats such as large print, Braille, and audio tape.

The ADA paratransit eligibility application is in two parts. Part 1 is the applicant Information, and Part 2 is the Heath Care Professional Verification. Part 1 requests basic information about the applicant and the applicant's functional abilities. In Part 2, a healthcare professional certification is sought that attests to the applicant's type of disability and indication of the applicant's ability to independently perform specified functions required to use fixed route transit. The applicant is responsible for obtaining this certification.

As with some transit agencies, this process at the RTA is almost entirely based on this two part-application, with follow up calls as needed to clarify certain responses or address missing information. As applications are received, they are logged into the system, noting that staff understands that if a determination is not rendered with 21 days, the applicant is presumptively eligible. (According to the eligibility staff, this has never happened, as they have always been able to render a decision within this 3-week period.)

Once eligibility has been determined, staff sends an eligibility determination letter to the applicant There are four outcomes of the eligibility determination process:

- unconditionally eligible
- conditionally eligible
- temporarily eligible
- ineligible

If the applicant is determined to be eligible, staff registers the applicant in Trapeze and sends a rider guide to the applicant along with the determination letter. Once entered into the system, the new customer may book a trip on LIFT. Applicants may also appeal a decision. The RTA Appeal Board then has 90 days to respond.

The RTA also has a Visitor Policy which is detailed in the Rider Guide and instructs how visitors to New Orleans who are also certified ADA paratransit customers in another jurisdiction (anywhere in the US) can apply for temporary, 21-day visitor eligibility status with LIFT.

Currently, there are 10,707 LIFT customers in the system. It has been estimated that approximately 1,000-1,200 are active users. The Eligibility Specialist states that 20% are deemed to be conditionally eligible. Notes on conditional eligibility are entered in the comment section of the customer profile in Trapeze. When taking a reservation, agents consult the comment section of the screen (which pulls for the customer profile).

There have been numerous studies in the industry which have concluded that a 100% paper review process is the most lenient/inclusive of the certification approaches and results in many more applicants being deemed eligible. Other, more restrictive (and more accurate) approaches include in-person interviews and in-person functional assessment.

For example, with many transit agencies, once an applicant has the completed Part 1 and Part 2 in hand, the applicant then calls the transit agency to set-up a required in-person interview that may also include a functional assessment. The applicant then brings the application and healthcare professional certification to the transit agency on the scheduled date, bring with them any mobility device used to travel in the community. If needed, transportation is provided without charge to and from the interview. If a functional assessment is deemed necessary or if it is standard practice, the eligibility specialist then sets up a simulated trip to/from a bus, if not an actual bus trip. Some agencies have an eligibility facility where different kind of common obstacles can be simulated. Other transit agencies use actual bus stops and buses. In setting up the functional assessment for a particular applicant, it behooves the transit agency to provides information about the functional assessment, stating that the assessment, if conducted, will involve a simulated trip to and from the bus. If used, it is also stated that applicants with cognitive disabilities will be assessed with the FACTS test which provides a Functional Assessment of Cognitive Transit Skills.

Requiring an in-person interview is considered to be a "good practice" as it gives the transit agency the opportunity to observe the applicant's mobility skills, supplementing the written information in the application. The interview also provides an opportunity to explain to the applicant the accessibility of the fixed route service and travel training (if offered). Another example of a good practice is telling applicants who use a mobility device that they are to bring to the interview the specific device that they use when traveling in the community.

In virtually all cases where in-person interviews are required, the process has proved to be self-screening. That is, when it becomes known to an applicant that they are required to show-up for an in-person interview, and that that would reveal no disabilities that would inhibit the applicant's use of fixed route transit service, they withdraw their application or simply do not show up. Use of functional assessments (or FACTS testing) is also a much proven way of accurately determining eligibility, and in particular, conditional eligibility. In the end, such actions have provided greater clarity and accuracy in determining applicants who are truly ADA paratransit eligible or who are conditionally eligible. Ultimately, this will reduce the demand or minimize the increase in demand for LIFT, thereby ensuring that RTA's limited resources are used for riders who truly are ADA paratransit eligible. Requiring re-certification every three years, a policy of many transit agencies, has a similar outcome.

If indeed eligibility determination has become increasingly lenient in the last two years as discussed in Section 1, TTI believes that the RTA should move to 100% interviews, with function assessments required as needed. TTI further suggests that moving the eligibility determination function under the Director of Mobility and Alternative Modes would better ensure the actions above are more aligned

with LIFT's goals. Note though that the RTA's eligibility specialist is currently also responsible for the intake and management of complaints, a function which should not be under the Director of Mobility and Alternative Modes because of the inherent conflicts of interest. But if the eligibility specialist's position, with the increased responsibilities for in-person interviews and functional assessments and re-certifications, still does not add up to a full-time position under the Director of Mobility and Alternative Modes, the coordination of travel training if not a mobility management ambassador role, could be added to this position.

3.12.2 Call and Control Center Assessment

Reservations, Cancellations and Handling Service-Day Calls

Reservation hours are from 8:00 am to 5:00 pm on weekdays and from 8:00 am to 4:00 pm on Saturdays and Sundays. On weekdays, LIFT reservations are handled by five reservation agents who are overseen by a Reservations Supervisors. On weekdays, one agent works from 6:00 to 3:00, a second agent works from 7:00 to 4:00, and three other agents work from 8:00 to 5:00. Note that agents whose shifts start before the reservation's lines open up at 8:00 are needed to handle service-day calls for riders (e.g., the "Where's my ride?" or WMR calls). On weekend days, there are four reservation agents all working from home from 8:00 to 4:00.

It would seem that there are enough reservation agents to keep the average hold time below 30 seconds (which by industry standards is exceptional), and with a handful of exceptions, keeping the maximum hold times below 5 minutes, also an industry standard.

Reservationists worked from home during the height of the pandemic. They returned to the ENO facility for a brief period in the spring of 2022 but were sent home because of persistent air conditioning issues. (At the time of our visit in June 2022, all reservationists were working from home.) After the air conditioning system was fixed, the reservations returned to the ENO facility.

As a result of the pandemic, more and more transit agencies have allowed reservation agents to work at home, as it broadens the pool and quality of reservation agents and because call center supervisors are technologically able to monitor the actions, calls and productivity of the reservation agents with the current telephone MIS. In addition, to not exacerbating pandemic conditions, there are additional benefits for the RTA, which include being able to draw from a more highly skilled labor pool, and for the employees, because they do not have to spend time and money commuting. LIFT management may wish to consider allowing reservation agents to work from home if call center labor recruitment and cost becomes an issue.

The LIFT Rider Guide says that riders can book a trip from 1 to 5 days in advance (up through 5:00 pm on the day before the trip) and notes that same day service may also be requested but will only be accepted on a space-available basis and at a premium fare. Based on current practice though, the LIFT Rider Guide needs to be changed to reflect that riders can request a trip up to 7 days in advance and no premium fare will be charged for same-day trips that are served.

Subscription trips are defined by RTA has going to/from the same two locations at the same time on the days requested. The minimum number of days per week for a subscription trips is one day. Thus, a subscription trip can be booked for only one day a week. Currently, LIFT staff estimate that 40% of the

current trips are subscription trips. As long as there is not a capacity constraint, the one day per week minimum appears to be a reasonable policy.

The current process of intaking subscription trip requests on paper (and then forwarding the sheet to the Lead Reservationist who then enters the request) is redundant. There would appear to be no reason why reservation agents couldn't enter these directly into Trapeze, where their scheduling can still be done by the Scheduler.

However, according to comments from focus group participants, who in their work role, assist clients of the Lighthouse for the Blind, getting a subscription trip once it has been requested can often take month if not years. (TTI was unable to confirm this statement with LIFT staff.)

For next-day and advance trips, reservation agents give riders a 30 minute pick-up window, based on +/- 15 minutes of the pick-up time as identified by Trapeze in alternative solutions presented to the reservation agent. This becomes the "confirmed" pick-up window and is the basis for customers' expectations and the basis for determining (1) whether the vehicle arrives on-time or is late, as well as (2) whether an incomplete trip is a result of a no-show/cancel-at-door or a missed trip. Note though that RTA has no policy for a drop-off window for trips that are requested based on an appointment time to requested drop-off time.

Indeed, while trips can be requested based on pickup time or by appointment/drop-off time within Trapeze, a different process is used by the reservations staff for the latter. The LIFT reservation policy is to enter a staff-calculated pick-up time (depending on the trip distance and direction) that is 60 minutes to 75 minutes before the appointment time or requested drop-off time. This calculated pick-up time then becomes – and is treated as -- the requested pick-up time. Meanwhile, the time that a rider needs to be the destination gets lost in this process, unless that time is noted by the reservation agent in the trip notes field (which is not the current procedure). As mentioned above, it is possible to request a trip in Trapeze based on the appointment or drop-off time.

At a minimum, appointment times or requested drop-off times should be noted in the notes field. As/if batch optimization becomes a standard practice at LIFT (see below), trip requests with appointment times or requested drop-off times should be entered into Trapeze as such. In conjunction with this, RTA should also establish a formal drop-off window (e.g., -15/0) so that riders are not dropped off too early and are not dropped off late. Currently, riders can be dropped off after their requested dropoff or appointment time while such events are not recorded as late trips. Thus, LIFT's true OTP may in fact be worse than is currently documented.

RTA's policy for differentiating between advance cancellations and late cancellations is the two hour mark before the confirmed pick-up time. This differentiation and equating late cancellations with no-shows, are both fairly common in the industry.

The Rider Guide also states that cancellations in excess of 20% in a given month will trigger a warning letter. If after the warning letter, cancellations exceed 20% in two consecutive months, a seven-day suspension will be imposed. This seems a bit unusual and seems to be tied to the way the RTA performs – or doesn't perform -- scheduling. Because no batch scheduling is done, and with schedules put together in effect by the reservation agents reacting to Trapeze suggestions, we understand how advance cancellations can create holes that are not addressed until the service day dispatchers. If LIFT was to utilize Trapeze's batch optimization functions, dissuading customers from making cancellations

by way of the 20% rule would likely not be necessary. On the other hand, it currently is doing no harm, especially since RTA is not monitoring the number of cancellations made by each rider.

The Rider Guide also states that cancellations of subscription trips in excess of 20% will result in cancellation of the subscription trip. This policy is not a bad one but needs to be clarified as to the time frame by which the percentage is calculated. Here too though, the LIFT staff does not appear to be monitoring subscription trip cancellations.

LIFT reservation agents are also responsible for fielding customer calls from riders on their day of service. Such calls include "where's my ride?" (WMR) calls and requests for an estimated time of arrival (ETA), for example. According to staff interviews and confirmed by TTI observations, approximately 80% of these calls are successfully handled by the reservations staff. The other 20% of calls that the reservation agents can't answer are largely due to vehicles in service with non-working MDTs. Hence, these calls are transferred to dispatchers who are in direct contact with drivers via Trapeze and push-to-talk radios (see below). As mentioned in the Task 4 Tech Memo, the RTA's replacing the MTDs with tablets should increase the percentage of service-days calls that are able to be addressed by the reservation agents. In addition, RTA's IT staff indicated that there is an acute need to update customers' outdated phone numbers. Fixing these phone numbers in the customer profiles should also increase the number of IVR confirmations and imminent arrival calls/texts that successfully make it to the customers. This effort should contribute to reducing the number of service-day calls from riders.

The Scheduling Function and Use of Trapeze

Immediately after a trip request is booked and while the caller is still on the phone, RTA reservation agents use Trapeze to schedule trips onto specific runs operating on the requested trip date, based on solutions that Trapeze suggests. This is known as real-time scheduling. If Trapeze is unable to find a solution for a trip, schedulers do not assign the trip to a specific run at this time and leave the trip unscheduled. Later, attempts are made to schedule these unscheduled trips onto runs. While most transit agencies also use Trapeze to subsequently perform various types of batch scheduling to further optimize a schedule, LIFT does not. The unassigned trips are scheduled one at a time.

If Trapeze cannot find a solution, the reservation agent can try to negotiate with the customer an alternative time within one hour (before and after) of the original requested time (as allowed by ADA paratransit guidelines), noting that there are circumstances in which preclude this, such as the end time for a workday, class or appointment. If there is a solution and the rider accepts the solution, that time becomes the time about which the confirmed pick-up window is based. If there is a valid solution and the rider refuses the solution, it is deemed a "refusal." If there is a solution beyond the 2-hour span, and the rider accepts the solution, the trip is booked accordingly, but this should also be flagged as a denial based on ADA guidelines. However, none of these are currently occurring.

If there is no solution, the LIFT reservation agents are required to flag the request as a denial. However, this is being done either. For advance reservation requests, no-solution trips are always left unassigned. The reservation agent then instructs the customer to "call back later" and either a solution materializes or it doesn't when they call back. If there is no solution for a next-day trip request, even after trip negotiation is attempted, customers are asked whether or not they wish to leave the trip unassigned in hopes that a "hole" in the schedule opens up by the end of the day. If they agree, riders are instructed to call back later.

As mentioned above, LIFT scheduling and dispatching staff do not use Trapeze's batch scheduling function to optimize a schedule (i.e., to make it more productive or make it more customer-friendly or otherwise to achieve a balance of the two goals). Indeed, there is very little of any real effort to revise the initial scheduling of trips, once a trip has been initially scheduled, leading up to the day of service. And as discussed above, advance cancellations can often lead to holes, or a sequence of events on a driver/run manifest that no longer makes sense. And these problems are left for the morning dispatcher to deal with.

It is possible with Trapeze to set up automated or on-demand processes (called job agents in Trapeze) to do batch optimization jobs. As part of the process, directives can be established which may shift a pick-up time within the quoted pick-up window and possibly shift a trip from one run to another in order to generate a more productive schedule, or otherwise achieve the balance between service efficiency and OTP that the RTA desires.

Many transit agencies use batch scheduling to optimize the schedule, as well as to run specific scheduling processes. For example, many agencies batch schedule their wheelchair trips a few days out, as they are often the most difficult to schedule. Other transit agencies systems will use Trapeze's "job agents" to run different optimization routines (with scheduling parameters tailored for each) to optimize the schedule in the morning of the day before the trip vs. the afternoon of the day before the trip date. Some transit agencies also use job agents after the scheduling has been completed and throughout the service day to continuously optimize the schedule. This is called continuous dynamic optimization, and in a sense, automated the proactive dispatch function (further discussed under Dispatching). For same-day optimization, Trapeze includes "offsets" for the next hour or two (so as to not interfere with what the drivers are doing at the moment) and configurable intervals as to how often the process is run.

But again, the RTA is not taking advantage of these capabilities. LIFT staff states that it is uncomfortable with the ways that the scheduling parameters have been tuned, i.e., that if they tried batching, the resulting optimization would have several flaws. However, RTA's IT staff provided the current parameter settings to TTI, and it turns out these settings are Trapeze's default settings. If this is correct, one can presume that Trapeze has never been tuned to New Orleans. This not only impacts the potential to use batch scheduling but also the solutions that are presented to the reservation agents in real-time. There is hence an immediate need to tune the Trapeze parameters, not only to improve the current solutions for real-time scheduling but to enable batch optimization, which in turn should improve productivity (and reduce the cost per trip).

In addition to not using the full set of scheduling tools available from Trapeze, there are other scheduling practices that were voiced by participants in the LIFT rider focus groups (rider feedback is further described in Section 13.) that contribute to customer dissatisfaction.

- For advance reservation trips, focus group participants told us that they are dissuaded from booking trips with pick-ups between 7:00-8:00 and between 2:30-6:30 because it is unlikely they will get a trip at the time desired, if at all. Such a practice would confirm the capacity constraint highlighted by TTI's run structure in Section 6. Interestingly, it may also be a reason why denials, at less than 2 per day (see Section 2.2.), are as low as they are.

- Subscription service is not mandated by the ADA; it is a convenience for both the rider and the RTA. However, LIFT focus group participants working at Lighthouse for the Blind also expressed significant dissatisfaction with the way their subscription trips have been scheduled. According to these riders, their requests for subscription trips at certain times are being "shoe-

horned" into runs largely dedicated to Lighthouse employees, regardless of when they need to be at work. For example, in the case of one rider who needed to be at work by 8:00 start time, the only two options presented to her were (1) a drop-off at 6:30-6:45 (because that run was established for riders who needed to be at the Lighthouse for a 7:00 work start time) or (2) a drop-off at 8:30 on a run that was originally set up for riders needing to be at Lighthouse by 8:00, but that is perpetually 30 minutes late because of the dispersed pick-up locations of the riders. Both options are unreasonable for the rider, while the first option equates to a denial (even if completed). A third option, calling in for an advance reservation trip instead of a subscription trip, is also not really an option given the above bullet point, and the likelihood that such a request would be denied, or fulfilled at inconvenient times. Thus, the only way for this rider to get to work on time is to arrive 1.5 hours early. And in the case of another Lighthouse rider participating in the focus group and with a work start-time at 7:00, the only subscription option available to him results in arrivals times that have consistently been between 7:15 and 8:15.

Again, the root cause of this is a capacity constraint combined with a scheduling practice that does not put a premium on when a rider needs to be at work (remembering that RTA's tracking of on-time performance does not consider when a rider has to be at work or needs to be at an appointment.

With subscription trips changing or ending from time to time, It is important that the scheduling of the subscription trips on these master schedules be reviewed frequently (ideally, once a month, and at least once a quarter) in order to determine if the scheduling still makes sense. The greater the percentage of subscription trips, the more influence they have on the overall productivity of the services. Currently, there is no regular systematic process for doing this. The Senior Manager states that this is done only "organically" as new subscription trips are added. This is another reason for tuning the scheduling parameters, as batch optimization scheduling is an important tool for optimizing the master schedules. Once Trapeze parameters are tuned, the master schedules can be re-optimized in a test area for example. LIFT's Lead Schedule estimates that 40% of the current trips are subscription trips.

The Dispatching Function and Use of Trapeze

At the time of TTI's site visit in mid-June, there were 4 dispatchers under a Lead Dispatcher, with another new dispatcher soon to be on-board. The Lead Dispatcher's shift is from 6:00 am – 2:00 pm. The other dispatcher shifts are 8:00 am - 4:00 pm, 11:00 am - 7:00 pm , 2:00 pm – 11:00 pm, and 10pm – 6:00am. With these shifts, there are always at least two dispatchers during the heavy periods, with the Lead Dispatcher focusing on proactive dispatching. During the pandemic and during the summer of 2022 when the ENO air conditioning system was not working, most dispatchers worked from home, noting that one dispatcher preferred to work in the ENO facility despite the air conditioning issue.

After the scheduling function has been completed on the day before the trip date, and throughout the service day, dispatchers then use Trapeze in the following ways:

- monitoring the dispatch screen to make sure that runs are not falling behind
- re-assigning trips as needed to get late-running vehicles back on schedule or in response to driver callouts or accident/breakdowns while a vehicle is in service
- processing no-shows which includes some customer calling as described earlier; (4) assigning re-emerging no-shows to runs

- assisting driver with navigation help or incidents
- responding to reservationists who do not have the information relevant to WMR or ETA calls from customers. The late-night dispatcher also schedules any unassigned trips that may have been left over from scheduling and assign vehicles and drivers to runs.

Dispatcher-driver communications are performed with Trapeze in combination with mobile data terminals (MDTs) in each vehicle. Through Trapeze, dispatchers can send messages to drivers, and add or subtract trips, as needed. Using Trapeze, drivers can send "canned" messages (e.g., alerting dispatchers to no-shows and asking for directions to wait or proceed) back to the dispatcher. In addition, drivers and dispatchers are equipped with "push-to-talk" radios. As discussed in the Task 4 Tech Memo, RTA has three "talk groups" (similar to radio channels) that are assigned to LIFT. LIFT currently uses only two of the talk groups though. One of these talk groups serves as the primary channel for dispatcher driver communications and the other is used for emergency situations.

The MDTs are also critical in sending real-time vehicle locations back to the dispatcher where they can be displayed (within Trapeze) on a map. At each stop, drivers are supposed to "perform" arrivals and departures on their MDT. This action timestamps the event and geo-stamps the vehicle location via GPS satellite tracking. In between stops, real-time locations are also sent back via GPS satellite tracking. Knowing where a vehicle is in real-time is critical for dispatchers in making decisions for trip re-assignments and processing no-shows. The real-time location and ETA at the next stop are also critical for processing "Where's my ride?" calls for riders and triggering "imminent arrival" calls/texts (discussed below). When vehicles without working MDTs are in service, these processes are compromised.

Monitoring the vehicle's progress is challenging on one part because there is each dispatcher is dispatching the entire fleet in service, with a vehicle to dispatcher ratio that exceeds industry standards. Moreover, as discussed above, the real-location of many of vehicles does not show up on the dispatching screen because these vehicles have a non-working MDT, although in observing one dispatcher, he rarely relied on the vehicle location as shown on the map even when processing a no-show. Many vehicles also have non-working push-to-talk radios, which further inhibits dispatcher-driver communication. TTI staff observed one dispatcher texting a photo of the dispatch screen to a driver's cell phone to communicate a change in his schedule (even though use of cell phones while driving is forbidden), but this is a way that the dispatcher used ingenuity and available (personal) resources to adapt to limiting circumstances.

The procedure for a no-show procedure is for the driver to wait 5 minutes, which starts at the beginning of the pick-up window should the vehicle have arrived early, and then check with the dispatcher for directions. Most systems then have the dispatcher or a dispatch assistant call the customer to determine whether the customer is aware the vehicle is outside and to see if the customer still wants to make the trip. The LIFT policy however is to call the no-showing rider only if (1) the rider is visually impaired or hearing impairment, (2) if drivers can't find a good place to park, or (3) if there are special instructions.

Ideally, the dispatcher to vehicle ratio should be 1 to 20, which is the standard in the paratransit industry. RTA has achieved this ratio with the regular dispatchers, again noting that the Lead Dispatchers performs the proactive dispatching function to identify and solve upcoming problems before they manifest themselves as a problem in time. But, while LIFT displays a 20:1 ratio at peak times (near 40 vehicles to 2 dispatchers), the attention and focus of the dispatchers is diffused by all the

other things they are doing, including window dispatching (discussed below) and especially handling the calls that come from the reservation agents stemming from WMR calls they cannot handle (discussed above) and calling back qualifying no-show riders. Moreover, any dispatcher can address an issue from any driver and on any run, therein forcing each dispatcher to be keeping track of all vehicles. This is especially challenging and is exacerbated by dispatchers working in different places.

Other transit agencies have solved this issue by (1) adding a dispatch assistant per shift to handle incoming and outgoing telephone calls; for the RTA, this may also allow for broadening the no-show call-back policy; and (2) splitting the in-service fleet between the two dispatchers, rather than having each be responsible for the entire set of runs. For example, 40 vehicles could be split evenly between the two dispatchers with each being responsible for 20. The only coordination needed between the dispatchers would be if one wants to assign a trip to one of the other dispatcher's vehicles. This dispatch team re-organization could easily be accommodated by the radio talk groups currently assigned to LIFT. There are three talk groups, which means each dispatcher could have their own talk group and leave the third talk group for emergencies.

With two teams, the RTA could be initiate friendly competitions between the dispatcher-driver teams, which has been shown to improve both productivity and on-time performance and to mend tension between drivers and some dispatchers).

Other transit agencies have dedicated a dispatch assistant to dialysis patient/facility liaison. A dispatch assistant who is responsible for fielding service-day calls from riders (that cannot be handled by reservation agents) could also serve as that liaison

Tuning the Trapeze parameters will not only help with better solutions for the schedulers but for the dispatchers as well, and as mentioned, this would also enable service-day continuous dynamic optimization which effectively automates the proactive dispatching that Lead Dispatchers and sometimes others dispatchers (after the Lead Dispatcher leaves for the day) are doing, thereby freeing up the Lead Dispatcher to truly oversee and monitor the dispatching and to pitch in as needed. However, using this function in Trapeze assumes fleet-wide accurate real-time location of vehicles, which is currently not possible with non-functioning MDTs.

With that in mind, RTA's IT department is in the process of switching from MDTs to tablets to address the problems stemming from non-working MDTs, noting also that Trapeze's Drivermate will be loaded not the new tablets. There are several advantages of using tablets in comparison to MDTs, and the paratransit industry has largely been switching to tablets. The primary two benefits are (1) functionality – tablets provide additional navigation and alert/warning functions that are helpful to drivers; and (2) ease and speed of replacing, which dramatically impacts the extent to which trips need to be re-assigned. Tablets with SIM cards also allow the switching out of a SIM card as a first recourse. With the successful deployment of tablets combined with the proper tuning for service-day optimization, the RTA would be able to utilize Trapeze's continuous dynamic optimization capabilities.

Lastly, cleaning up of the phone records, as discussed above, will also help in increasing the number of successful IVR confirmation calls and imminent arrival calls which in turn should reduce the number of no-shows and the dispatcher actions related to no-shows.

3.12.3 Software/Technology Assessment

Trapeze PASS

Trapeze's PASS software is the primary software used to support LIFT. Its capabilities support rider registration, reservations, scheduling, dispatching, and reporting. At the heart of the system is a set of scheduling algorithms and configurable scheduling parameters that can be used to tailor how Trapeze schedules trips. The scheduling and dispatching functions use an underlying GIS map.

As discussed in the preceding section, RTA reservation agents use Trapeze to enter trip requests and schedule them onto specific runs operating on the requested trip date, based on solutions that Trapeze suggests (real-time scheduling). If there is no solution for a trip, schedulers later attempt schedule these unassigned trips onto runs. While most transit agencies also use Trapeze to subsequently perform various types of batch scheduling to further optimize a schedule, LIFT does not.

On the day of service, dispatchers use Trapeze to monitor the progress of the LIFT runs, to re-assign trips as needed (using the same capabilities as available to the schedulers), and process no-shows and missed trips. Dispatcher-driver communications are performed with Trapeze in combination with mobile data terminals (MDTs) in each vehicle, supplemented by "push-to-talk" radios. As discussed above, RTA is planning to replace MTDs with tablets.

Trapeze also serves as the primary source for reporting, providing a full array of standard reports that meet RTA's needs for performance monitoring and NTD reporting.

Our assessment of how the RTA uses Trapeze suggests that it is reasonable for the RTA to continue using Trapeze as long as a particular emphasis is placed on better utilization of existing functionality by undertaking the following actions:

- Review and adjust scheduling parameters, including system speeds by time of day, so that Trapeze solutions are accepted by schedulers and can be realistically driven by operators.

- Implement new Schedule Job Agent batch jobs to automatically optimize future day schedules and, critically, create new jobs to make same-day adjustments to routes based on changes which occur on the day of service.

- With the success and experience of future day optimization, and the successful transition to tablets, implement a new Schedule Job Agent for same-day optimization.

- Improve the utilization of Viewpoint as a real-time dispatch tool as well as a resource for exception-based data management (i.e., trip reconciliation).

TTI also suggests implementing PASS-WEB G3 so that customers can book, review, and cancel trips without having to contact the LIFT staff by phone.

If schedulers and dispatchers are challenged by new developments and street name changes, the RTA may wish to long into updating the base map in Trapeze. Certainly, the first time the map is updated there is more work to be done to ensure as much existing functionality is retained and if necessary rebuilt, but subsequent upgrades can be done on a regular maintenance schedule with minimal

additional adjustments. The benefits of automated, accurate geocoding of PASS trips will accrue to both staff and LIFT riders.

RTA may also wish to consider moving Trapeze to the cloud. As announced at the Trapeze Think Transit conference held in Fort Worth in March 2022, this would require the RTA to upgrade the PASS software to V21. Trapeze has said that the timeline for moving all clients to the cloud is still to be determined, but it is the study team's estimate this transition will occur over the next 5-10 years. This may or may not be the long-term vision for RTA, however, there are a number of benefits of upgrading to V21 as soon as is practical, including taking advantage of all the latest features (especially a much more robust and MUCH better-designed dispatching function) of the products as well as ensuring the RTA is on a fully supported version of the software.

Interactive Voice Recognition (IVR) System

RTA uses an IVR system to (1) confirm trip reservations the evening before the trip, and (2) place imminent arrival calls/texts (as preferred by the customer) as the vehicle to which rider's trip has been assigned is approaching the pick-up location. As discussed above, outdated/incorrect phone numbers still in the customer profiles prohibit the confirmation and imminent arrival calls/texts from reaching the rider. The IT staff suggests that a "clean-up" effort to update/correct these phone numbers is called for. Short of implementing PASS-WEB G3, RTA wishes to leverage PASS-IVR so that customers can confirm or cancel trips on their own.

Video Surveillance

All of the LIFT vehicles are also equipped with video cameras that are always on when the vehicle is in service, with videos transmitted over the airwaves to a repository. The purpose of this video surveillance is to document driver and/or rider behavior in the event of an incident or accident. It can also be used for training purposes.

Alternative Paratransit Scheduling Software that also Supports Microtransit

Because Trapeze PASS is expensive and because it is sometimes difficult to get the attention of their support personnel, the RTA may wish to consider replacing Trapeze at some point. In our research, TTI has identified five (really four) software systems as possible replacements for Trapeze, all of which support ADA paratransit and all of which support continuous dynamic optimization (CDO). In the narratives below, we note instances of each technology's support of microtransit services as well in case the RTA is also interested in using the paratransit scheduling technology to also support its planned microtransit services with a single-technology platform.

Ecolane - Ecolane literally supports scores and perhaps hundreds of smaller to midsized ADA paratransit services, many of which also have a brokering function. Ecolane, has also been supporting microtransit services since 2016. Of the vendors listed in this section, Ecolane by far has the most experience with supporting ADA paratransit, and it offers (service-day) continuous dynamic optimization, the automate approach to proactive dispatching. The latter point is underscored because it is the only traditional paratransit software besides Trapeze and QRyde that offers this capability. We know of at least ten Ecolane users who use continuous dynamic optimization in support of their ADA paratransit services. In a recent call with Ecolane Users for a TCRP research project (SB-36) on continuous dynamic optimization, virtually all of the Ecolane users contacted reported gains in both productivity and on-time

performance and, in some cases, the re-purposing of dispatching staff to other activities, as another outcome. Perhaps the largest of the ADA paratransit services supported by Ecolane is in Sacramento (currently **700-800** per day) at the Sacramento Regional Transit District (SacRT). SacRT's paratransit ridership compares well with the bottom end of LIFT's 2019 (pre-pandemic) weekday ridership. Examples of microtransit systems Ecolane supports are in Kansas City, MO, San Juaquin, CA, and in Arlington, TX.

QRyde - QRyde is the name of the software from HBSS, Inc., a Massachusetts-based company. QRyde has been around for 23 years, supporting several smaller to medium sized ADA paratransit services in Massachusetts, Maine, Georgia, Mississippi, and Ohio. It also supports brokering functions, including Medicaid NEMT brokerages in Massachusetts, New Hampshire and Minnesota. QRyde also supports microtransit services for MART in Fitchburg, MA; Delaware County, OH, and will soon be in Collier County, FL). Within the last five years, and under contracts with the Georgia DOT and the Mississippi DOT, QRyde is now supporting over 100 public transit services in these two states, many of which are demand responsive. Pertinent to LIFT, QRyde is currently being installed at the RTD in Denver for RTD's Access-a-Ride ADA paratransit service, replacing Routematch, with the Go-Live date imminent. Currently, daily ridership on this system is approximately **1,900** trips, down from 3,000 trips per day pre-Covid.

Via Mobility – Via Mobility, one of the leading technology providers for microtransit, has begun providing technology platforms for ADA paratransit, with a number of implementations in smaller cities, such as Green Bay. But more pertinent to the RTA, Via Mobility's ADA paratransit software is now supporting CATS Paratransit in Charlotte, with a daily ridership of about **500-600** rides, and has been since May 1, 2022. Via Mobility's software was selected with two goals in mind: to improve on-time performance and decrease the number of rides that dispatchers have to assign manually (they previously would go into an average weekday with between 100-150 rides unassigned each day). Their weekday pickup on-time performance has improved from 68 percent in the first two weeks of May to 83 percent in the last two weeks of June. In addition, the software's "full" optimization cut the number of rides unassigned to start each day down to about 15-30 on an average weekday. According to our interview with CATS staff, the planning and implementation of the transition all went fairly smoothly. Otherwise, it is hoped that the on-time performance will continue to improve.

Spare Labs - Spare Labs technology is currently supporting (1) an ADA paratransit service in Cheyenne, WV; (2) the ADA paratransit service and microtransit service in Pinellas County, Florida for Pinellas Suncoast Transit Authority (PSTA) and (3) a consolidated service in Lubbock, TX. For comparisons sake, we focus on PSTA. On an average weekday, PSTA's ADA paratransit service had ridership ranges between **540** to **1100** trips. Since the Spare Labs technology has been in use, the productivity of the system has increased by 10% and as a result, the cost per trip has decreased. No data were available to point to any changes in on-time performance, however. Another big difference has been that dispatchers have been able to focus on a wider variety of tasks. Also, Capital Metro in Austin is currently in the process of transitioning from Trapeze to Spare Labs for its ADA paratransit service (with a current weekday ridership ranging between **1800** and **2000** trips per day.

Moovit - The Jacksonville Transit Authority is proceeding with a 3-5 year plan where all of its demand-responsive transportation services, including ADA paratransit, premium service, flex transit,

microtransit, etc. will be under one single technology platform from Moovit. At this time, however, Moovit's ADA paratransit software is still in development.

In view of these potential options but acknowledging the mammoth effort that would be required to transition to new technology, we suggest that the RTA continue with Trapeze in support of LIFT while implementing other actions recommended improving LIFT service. If continuing with Trapeze does not result in the desired outcome and/or the RTA finds continuing with Trapeze to be cost-prohibitive, the RTA consider conducting a procurement for new ADA paratransit technology that also has the capability to support microtransit operated with dedicated service or a mixture of dedicated service and non-dedicated service.

3.12.4 Complaint Management Assessment

Complaint management is the responsibility of the same person who performs eligibility determination. The process for submitting a complaint is detailed in the LIFT Rider Guide. Complaints may be submitted by mail, by fax, in-person or by phone. Curiously, the Rider Guide does not mention emailed complaints as a valid way to submit a complaint. This should be corrected, by proving an on-line form that can be completed on-line or otherwise providing an email address.

Once a complaint has been received, a letter is sent back to the complainant – in a format preferred by the rider -- acknowledging its receipt and detailing how the complaint will be processed. Staff uses "Issue Track" to enter and track complaints. As mentioned in the Rider Guide, the RTA has 60 days to investigate the complaint from the receipt of the complaint. The investigation process typically will include (1) a review of any and all relevant documents, reports, and if appropriate, videos, and (2) focused interviews with key staff or contacts for the purpose of obtaining facts and evidence regarding the allegations in the complaint. The investigator will elicit information from all contacts and witnesses that can provide firsthand information about the incident, event or action specified in the complaint. All relevant documentation, including interview notes and/or recordings, will be dated. Additionally, a chronological contact sheet will be maintained in the case file throughout the investigation.

If more information is needed to resolve the case, the RTA may contact the complainant in writing to request the information. The complainant has 30 business days from the date of the letter to send the requested information to the investigator assigned to the case. If the investigator is not contacted by the complainant or does not receive the additional information within 30 business days, the RTA may administratively close the case. A case can also be closed if the complainant no longer wishes to pursue their case.

After reviewing the complaint and investigation materials, the investigator will issue one of two letters to the complainant: a closure letter or a letter of finding. A closure letter summarizes the allegations and states the reasons why the case is being closed. If the complainant wishes to appeal the decision, she/he has 60 days after the date of the letter or the letter of finding to do so. A letter of finding summarizes the allegations and the interviews regarding the alleged incident and explains whether any disciplinary action, additional training of the staff member, or other action will occur.

If the decision is made not to investigate the complaint, the complainant will be notified in writing within 20 calendar days and the notification shall state the specific reasons the complaint was deemed to not have investigative merit.

Complaints and related materials associated with ADA-related complaints must be kept for 7 years and be kept in a separate file.

As discussed in Section 8.1, the complaint frequency ratio (CFR) for LIFT has been in the "Excellent" range. However, this excellent rating would appear to be not in concert with other service quality measures for LIFT, especially since OTP has remained substandard (below 90%) and in view of the rider and stakeholder input (see Section 13). Possible explanations for this mismatch could be traced to (1) riders not being able to submit a complaint on-line, (2) rider complacency with the existing level of LIFT service quality, (3) past rider complaints not materializing into improved service, and/or (4) fear of retribution.

RTA may wish to consider a campaign of outreach to the LIFT rider community, such as a telephone-based survey (which was beyond the resources of this study), to determine a statistically relevant level of satisfaction, and for those that express dissatisfaction, whether or not they have registered a complaint (and reasons for not complaining) and whether they were satisfied with the outcome of the complaint investigation and with any stated changes that resulted from their complaint.

3.13 Rider Focus Groups and Stakeholder Interviews

3.13.1 Rider Focus Group Input

The Rider Focus Group Participants

The RTA had challenges recruiting in-person rider focus groups scheduled for July 20222 and virtual rider focus groups scheduled in August 2022. In the end, RTA was unsuccessful in recruiting no one. Members of the PAC were enlisted to help with recruiting activities for the August focus groups, resulting in the recruitment of three riders.

These three riders, all employees of Lighthouse for the Blind, all had been using LIFT for between 10 and over 20 years. In one case, one rider's use of LOIFT focused on work trips. The other used LIFT for a variety of trip purposes including work trips. They all used LIFT multiple times per week, from between 6-8 one-way trips to 16-20 one-way trips per week. One of the riders lives on the Westbank, while the other two live on the Eastbank.

Appreciation for LIFT

All three focus group participants were appreciative that LIFT is provided and provides them with a source of mobility. All three riders mentioned the fare was attractive. One rider called out overnight service being very important.

The riders were appreciative of the automated line which allows riders to confirm and cancel trips, as well as the (IVR-driven) confirmation calls placed to the riders the evening before and the day of service, although they did mention that these calls had recently stopped.

As riders who are blind, they were appreciative of the level of assistance to/from the vehicle that most drivers generally provide, as well as their display of sensitivity awareness. One rider added that new drivers appear to need more training, adding that he has been in fact training new drivers how best to assist him when he detects they are doing things incorrectly. All three riders also concurred that most drivers care. One rider gave an example of drivers missing their lunch breaks to minimize rider delays.

All three riders felt safe on board. One rider commented that LIFT's new buses are "awesome".

Comments about the Eligibility Application/Determination Process

As it happens, the focus group participants, as part of their work, assist other applicants in completing their application and were aware of the turn-around time for RTA's processing of the application.

Noting that all of the LIFT rider focus group participants have a visual impairment, the riders noted that the RTA does not offer an electronic version of the application. All three found it difficult to complete the process, also mentioning that the application is very long. In connection with these observations, one rider suggested that the re-certification application (the RTA requires recertifications to take place every 3 years) could be shortened focusing on whether or not anything has changed.

One rider called out one question having to do with whether or not the applicant can walk 6 blocks. She pointed out that while an applicant may have that capability, there may not be a bus stop within 6 blocks of their residence.

Participants indicated that the response time for an eligibility determination takes an average of **3-4 months**. Per FTA/ADA policy, if an agency is unable to make a determination within 21 days, the agency must grant presumptive eligibility to the applicant until a determination is made. This means providing the applicants with access to LIFT after that 21-day period. However, none of the participants were aware of the 21-day presumptive eligibility policy, hat the RTA did not include this in their instructions, noir did it proactively get back to the applicants after 21 days. This should be fixed immediately.

Comments about Booking and Scheduling

The experiences incurred by the focus group participants in trying to book advance reservation trips and subscription service is documented in Section 12.2.

Comments about Service-Day Experiences

In terms of their service-day experiences and specifically for subscription trips, the riders indicated a vehicle arriving 30 minutes late, both for the going trip and for the return trip was "not unusual." For pick-ups on the going trips, the riders who live on the Eastbank indicated that LIFT was late between 10% and 30% of the time, while the rider on the Westbank indicated that LIFT was late 60% of the time. However, the situation becomes worse on return trips. All three riders concurred that when the vehicle has not arrived by the end of the pick-up window and place an ETA call, a common response is that it will be another 30 minutes for the vehicle arrive, adding that it was again "not unusual" for this additional wait period to be take 90 minutes, while noting that this trip, if served directly, takes approximately 15-20 minutes to complete depending on the time of day. And despite all this, all three riders agreed that the subscription trips generally were "smoother" than advance reservation trips.

In response to "Where's my ride?" calls on advance-reservation trips, riders stated that they were often supplied with misleading information (they'll be there in 10 minutes, when it's often 30 minutes or more. In one instance, the rider was told that the driver is stuck in traffic on a particular bridge (when a spouse confirmed there was no traffic on the bridge). The rider was getting the impression that they were just being fed a line.

All three of the riders have tried "will-call returns" from medical appointments but have vowed never to schedule a will-call again, as the response times of 2+ hours are common. One of the riders often cancels the return trip on such occasions and gets an Uber (as the response time is good and it takes 10-15 minutes to get home.

The alternative to a will-call return is to schedule the return trip with extra time built in case an appointment runs along. But vehicles are still late. One rider told of a recent return pick-up time that with the extra time built in was requested for 5:15. The best they could schedule in advance was a 6:00 pick-up and the vehicle didn't arrive until 6:30 (after the building was closed).

In terms of on-board travel time, one rider also mentioned that the vehicles are provided with very circuitous routing, noting one example where he was on-board for 3 hours. The other riders concurred that travel times can be VERY long, relative to the distance, and that they – and some of their LIFT drivers -- often do not understand the logic of the routing. The rider qualified this statement by stating some veteran drivers will figure out a better way to run the route on the fly vs. rookie drivers and other drivers will run the manifest as ordered, even if they see that the order is illogical. The rider also added one of the better drivers commented to him that dispatchers don't listen to him. Long travel times harkens back to the discussion about excessively long trips in Section 10.4.

General Concerns

The rider focus group's (collective) "top concerns about LIFT were as follows:

- Problems with reliability (too many late pick-ups and drop-offs)
- Inconvenient subscription trip arrival times at work
- Very long wait time
- Very long travel times

Their general concerns were traced to inconsistent service: when a service is that unreliable, it's hard to depend on it. And using these service that adds hours of waiting and travel time to one's day can be demoralizing when it is your only option.

To improve service in the areas, the focus group riders were all convinced that the service needs more vehicle and drivers, especially now that LIFT has elected to provide direct service to interparish trips. One of the riders mentioned a direct correlation to degraded on-time performance with the new direct service policy, adding that as more and more riders are finding out about this new policy, riders are choosing to make longer trips. Without an increase in vehicles/drivers, the rider's perception is that the RTA has spread themselves too thin.

One rider also mentioned that drivers could use re-fresher training and that driver-dispatcher relationships could be improved.

3.13.2 Stakeholder Agency Input

The TTI team also interviewed five human service organizations whose clients were LIFT riders s surveyed organizations that interact with the clients of paratransit services, noting that three of the stakeholder organizations also provided or sponsored client transportation to/from the organization's location through directly operated transportation. In general, the stakeholder representatives echoed what was heard in the rider focus groups.

Three stakeholders stated that their clients generally needed assistance in applying for eligibility and found the process difficult. They also reported that their clients, before LIFT changed its policy about direct interparish service, sometimes required assistance with the LIFT-MITS, adding that inexperience

with technology as well as the absence of a customer app was among the reasons that caused a burden for clients in requesting or transferring trips.

All of the stakeholders mentioned cases (around 2-3 times per month) where they would hear from clients about (1) their struggles to schedule a trip at their requested pick-up time, and (2) late pickup/drop off by LIFT. Four out of five organizations stated that they receive complaints that LIFT failed to pick them up for a scheduled trip on the order of 1 to 2 times per month.

Stakeholders were asked to express their main concerns regarding LIFT paratransit services for their clients. The survey results indicate that non-accurate pickup/drop-offs and late/early pickup/drop-offs have been reported as the main concerns regarding using LIFT and therefore affected the reliability of the service. The stakeholders also believe that the main reasons for LIFT not being able to provide on-time and reliable service to clients was traffic congestion, shortage of drivers, and a constrained limited budget.

Finally, the stakeholders were asked to provide their ideas on service improvement. They stated that increasing the capacity of the service, adding more vehicles and drivers, improving reliability, and communicating with clients are the most important factors that can reinforce the performance of the service for clients.

3.14 Other Observations

3.14.1 Organizational Restructuring

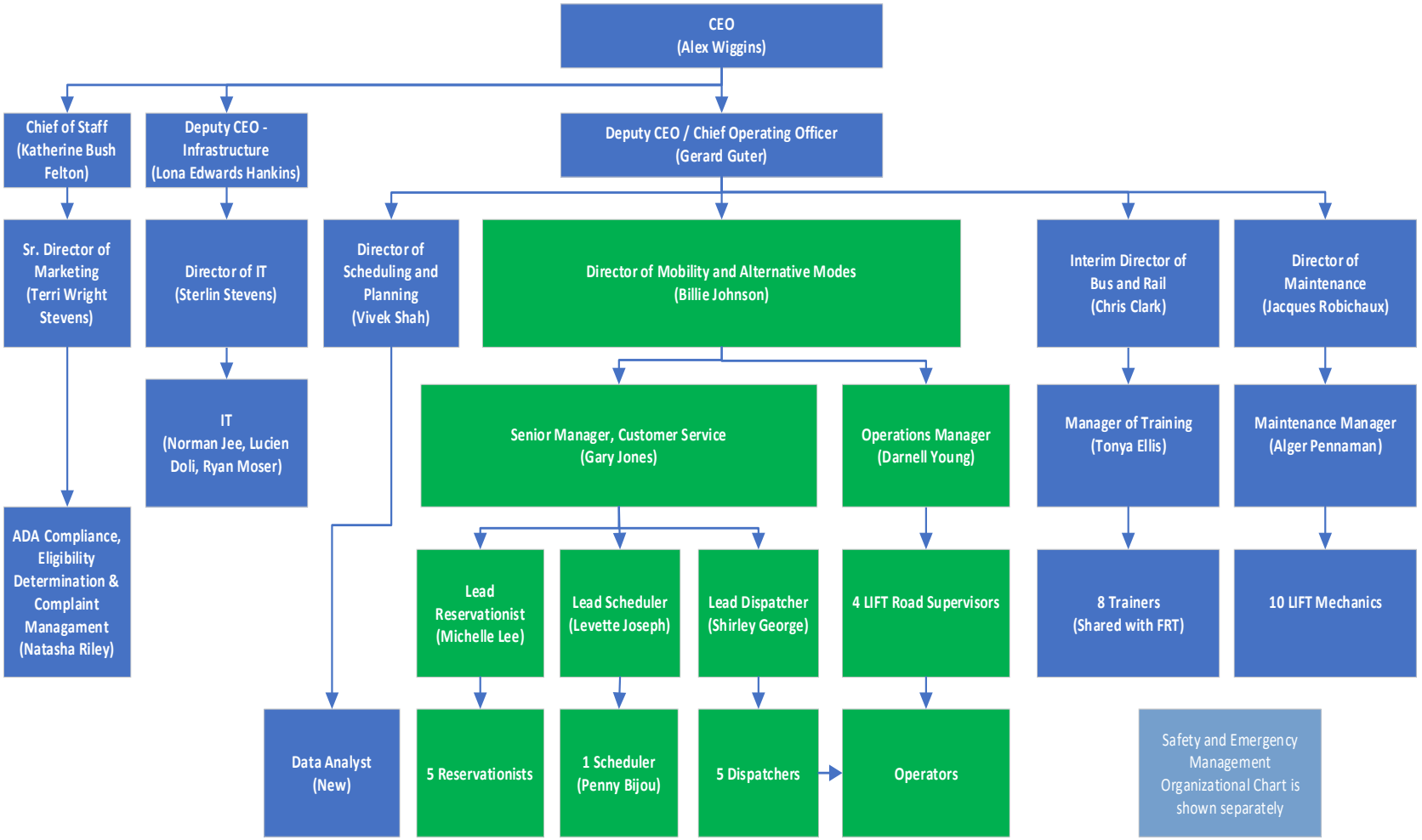
Figure presents the RTA's organizational structure for LIFT. The boxes in green reflect those staff positions that are under the direct control of the Director of Mobility and Alternative Modes. As shown, there are several other positions tied directly to LIFT services that are in other silos within the organization. These include: (1) the Eligibility Specialist; (2) Data Analyst; (3) Trainers; (4) Mechanics; and (5) Safety & Emergency Preparedness. It is suggested that these positions re-organized to fall under the Director of Mobility and Alternative, especially if their job is more than 75% focused on LIFT service.

3.14.2 Adding Capacity and Diverting Demand

Currently, LIFT is suffering from a vehicle shortage. The RTA has recently received a portion of the additional eleven 2021 Fords on order; when the rest are delivered to RTA, this influx of vehicles will result in a 25% spare ratio, a good target figure. However, many of the remaining vehicles in the fleet, some of which are beyond their retirement age, are often down with mechanical issues. And in the New Orleans summers, A/C issues play havoc with the fleet. Consequently, even with the additional vehicles considered, LIFT is still short vehicles and is still unable to meet the demand at critical times of the day. although alternative run structures suggested by the simulations in Task 6 should help.

Independent of the vehicle shortage, the RTA has also had difficulty amassing a sufficient number of drivers, an industry-wide problem, although the RTA has had some success in recruiting additional drivers in the last few months.

Figure 63. RTA Organizational Structure for LIFT



Many transit agencies have augmented their in-house (or contracted) dedicated vehicles with non-dedicated vehicles operated by taxis companies, NEMT providers, and even some TNCs, as long as the drivers are ADA paratransit-certified, i.e., are trained to proficiency and drug and alcohol tested. The RTA formerly retained a local taxi company as an "overflow" provider years ago. This could present a way to provide more supply of service at needed times. Moreover, for dispatchers, non-dedicated service providers provide an effective tool to handle re-emerging no-shows (rather than turning back a vehicle to serve the trip or fitting into another run) and vehicle breakdowns while in service.

It is also possible that the situation could be helped by "off-loading" demand via an alternative service. This can be done in one of two ways.

- The first way is to offer an alternative service (vs. a general public microtransit service), an on-demand service that transit agencies offer to (just) their ADA paratransit customers and that are provided through non-dedicated service providers such as taxis and TNCs. Note there would need to be a WAV service option, sometimes accomplished through subcontracts and sometimes through additional WAV operators, in order to achieve service equivalence as mandated by the ADA. In the worst case, the RTA could provide WAV service for the alternative service, but only if supplying the vehicle and driver does not detract from using those resources for LIFT (especially recognizing that LIFT is capacity constrained). IN most alternative services, the transit agency's subsidy is limited with the customer paying a base fare and any overage past what the transit agency is willing to contribute. For example, say the RTA is willing to contribute up to $25 for each trip its sponsors. With a 2021 operating cost of $127 per trip, the RTA would save over $100 for "mode-shift" trip. However, the RTA would also be paying up to $25 for each newly "induced trip" that the new program generates. If fewer than 5 trips are induced for each mode-shift trip, the RTA saves money. If the max subsidy per trip is lower, RTA would save more money. In undertaking a TCRP research project on alternative services (currently being published), TTI found that the MBTA's alternative "On-Demand" service in Boston created a net savings of 3% by led to an overall increase in ridership of 50%. But as important, implementing such a service frees up capacity on the LIFT service for each mode-shift trip.

- The second way of off-loading ADA Paratransit trips is through a rider opt-in program, which was also pioneered in Boston and, along with the alternative "On-Demand" service has now been rebranded the MBTA's The RIDE Flex program. In this program, riders who sign an opt-in agreement allow the MBTA to assign an ADA paratransit request to a TNC, taxi or other type of carrier under contract that does not used ADA-paratransit certified drivers. The rider fare is the same as the ADA paratransit fare. And riders have the ability to "opt-out" for any particular trip, but in general, they are leaving it up to the MBTA to either put their trip on an ADA paratransit vehicle or assign it to a TNC, therein converting that ADA paratransit trip to a non-ADA paratransit trip. As with the riders-choice alternative service, this providers-choice program reduces cost because (1) the trips assigned to the TNCs are the ones that would otherwise adversely impact the productivity of the dedicated fleet, and (2) the cost of the TNC is way less expensive than the operating cost per trip of an ADA paratransit trip.

CHAPTER 4: SIMULATIONS

4.1 Introduction

This chapter presents the methodology and findings associated with conducting optimization simulations that address the oversupply and undersupply of service. The two sets of simulations, one for each day of the week, focus on (1) optimizing the dedicated vehicle run structure, and (2) optimizing the run structure while also assigning a portion of the trips to non-dedicated service providers. AlphaRoute's AlphaPlan simulation tool was used both to identify the mismatch of service to the demand for each day of the week and then to perform the optimization simulations.

- **Run Structure Optimization.** The first strategy involves re-building the run structure to smooth out these imperfections. AlphaPlan starts with the demand profiles for LIFT and builds runs/driver shifts to better accommodate the hour-to-hour changes in demand. Where possible, AlphaPlan also attempts to reduce the number of revenue vehicle service hours (RVHs). The result of the simulation is the "Optimal Run Structure" for each day of the week.

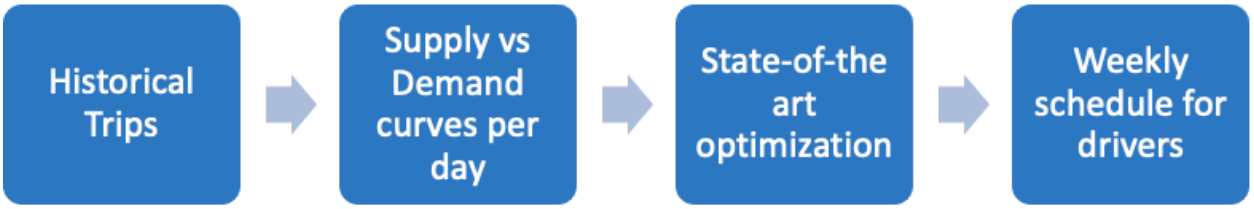
- **Service Mix Optimization.** The second strategy starts with the Optimal Run Structure for each day of the week, and then shifts varying percentages of trips to overflow providers operating in a non-dedicated mode and who are willing to comply with FTA/ADA paratransit requirements for their drivers. These requirements primarily entail training drivers "to proficiency" and ensuring that drivers are being drug and alcohol tested. Compliance with these requirements are generally not a problem for NEMT providers. Taxi companies and some TNCs (but Lyft and Uber) have also complied with these requirements in many cities across the U.S. in order to be serve as an overflow provider for ADA paratransit services. The split of trips scheduled to dedicated vehicles vs. assigned to non-dedicated vehicles is called "service mix." In these simulations, AlphaPlan, at certain service mixes, also estimates the number of dedicated runs that can be reduced. The objective of using non-dedicated service providers (NDSPs) is to reduce cost per trip. NDSPs can reduce cost per trip in two ways: (1) by reducing operating costs and (2) maximizing ridesharing in the dedicated vehicles. The in-house cost of operating dedicated vehicles is far greater than the cost of using NDSPs, where in many cases the drivers are independent contractors, working for lower wages and who do not receive near the employee benefits offered by the RTA. The use of NDSPs is also a more efficient way of serving (1) trips in low-density areas and at low-demand times, (2) will-calls and re-emerging no-showed trips, (3) trips impacted by accidents or incidents, (4) longer trips that are not ridesharable; and (5) basically any trips that adversely impact the productivity of the dedicated fleet. The point at which the combined cost per trip is minimized is called the "Optimal Service Mix."

4.2 Methodologies

4.2.1 Run Structure Optimization

The process for run structure (driver shift) optimization is illustrated in Figure 64. The process involved first analyzing the day-by-day, hour-by-hour supply of service (available service hours) vs. the day-by-day and hour-by-hour demand profile (historical trip requests). The analysis was based on 6 months of data from Trapeze. The TTI team then met with LIFT staff to establish the respective sets of guidelines (e.g., parameters, work rules, and optimization rules), which were then loaded into AlphaPlan. Finally, AlphaRoute was then used to determine the optimal run structure (drivers shifts) to match the weekly demand, again respecting the guidelines provided by LIFT management. The goal of this analysis was to produce an optimal run structure based on the demand profile by day of the week and hour of day (and that conformed to the stated guidelines), that reflects a shifting of RVHs from times where there is an oversupply of service to times where they are needed more. And again, the simulation also identifies the possibilities where RVHs could possibly be reduced.

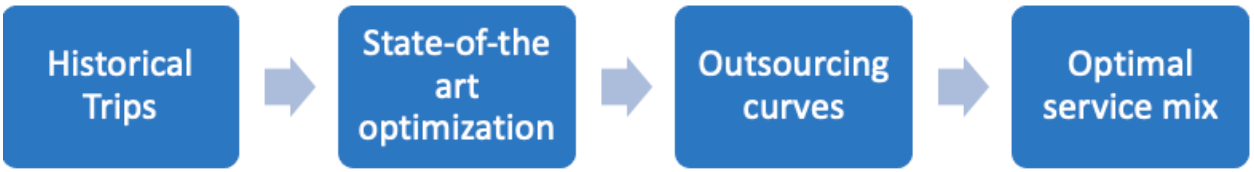
Figure 64: Run Structure Optimization Process



4.2.2 Service Mix Optimization

The process for optimizing the service mix is illustrated in Figure 65. This process involves using AlphaPlan to plan and simulate the use of overflow providers to better maximize cost efficiency. AlphaPlan uses historical trip data to quantify the results of dozens of different service mixes. In doing so, AlphaPlan also identifies the best trips to be served by the dedicated vs. non-dedicated vehicles in each scenario. The compilation of millions of iterations is plotted in "outsourcing curves." The curves are analyzed to find the optimal service mix, where the cost per trip is minimized, in part by reducing the number of dedicated service RVHs and replacing that service with lower-cost NDSP overflow service and in part by smartly selecting daily which trips are the best candidates to be shifted to the NDSPs.

Figure 65. Service Mix Optimization Process



4.3 Optimal Run Structure Simulation

4.3.1 Optimal Run Structure

Input Datasets and Optimization Rules

RTA provided (1) a trip dataset of over 60,000 paratransit trips that were made during the first five months of 2022, as well as (2) the run structure for each day of the week as of 07/05/2022. A summary of this data set is provided in Table 8. A meeting was held with the LIFT management team to define the key optimization rules, defining the boundaries of the optimization.

A summary of the optimization rules pertinent to LIFT is presented in Table 9. Prior to beginning the simulation, the optimization rules were sent back to the LIFT team for verification. No changes were needed.

Table 8. Summary of Input Data

Data Analyzed	RTA
# of Trip Requests	60,240
Start date	Jan1 2022
End Date	June 1 2022
# of weeks	23
Busiest Day of the week	WED (Avg. 542 req)
Peak # of active shifts	41

Table 9. Summary of Optimization Rules

Parameter	Value	Notes
Min shift length (h)	8h	4,5,6 hours also possible for part-time
Max shift length (h)	10h	Split shifts 2x 4h
Min shift increment (h)	0.33h	20 min
Max # of active vehicles on the road	41	Lower is better
Min # of active vehicles on the road	1	24/7 operations
Max # of vehicles starting at the same time?		No restriction
Split runs (Y or N)	Y	
Can drivers start / end at different times on different days? Which days of the week can a driver work?	Y	Flexibility but driver's value consecutives days off and 4 workdays/week
Max # of working hours per week?	40h	Option to use part-time max 30h

Simulation Description

LIFT's optimal run structure simulation was broken down in two scenarios to better reflect a path forward towards implementation. The TTI team views these two scenarios as sequential, with the first scenario producing immediate improvements and with Scenario 2 gradually moving the RTA towards an optimal run structure for LIFT:

- **Scenario 1 - Optimization while maintaining current service hours** – This scenario maintains the approximate amount of current total service hours, i.e. hours from pull-out to pull-in, including deadheading. The main objective is to reshuffle existent service hours into different days of the week and hours of the day, shifting hours from when there was an oversupply of service to hours where there was undersupply of service or to hours where it helps improve the overall solution.
- **Scenario 2 – Optimization with more substantial service hour reduction** – This scenario reshuffles hours as In Scenario 1; however, the simulation also strives to reduce the total

number of hours without compromising service quality standards. The analysis considered all trips scheduled within the current operating rules for LIFT. This scenario assumes that the full automated scheduling/optimization capabilities of Trapeze (or any similar routing software) will be used by LIFT staff.

Simulations Results: Scenario 1 - Optimization While Maintaining Current Service Hours

This simulation reduced the total amount of weekly service hours by only 1.2% (31 service hours) while reallocating most service hours to days of the week and hours of the days where it was needed the most. This scenario should be seen as the starting point into a transition to a more efficient run structure (Scenario 2), allowing for significant efficiency gains without major changes into the system. Table 10 presents the results of the Scenario 1 optimization.

Table 10. Scenario 1 Changes in Total Service Hours

Weekday	AlphaRoute solution (h)	Current solution (h)	Hours Gained or Lost (h)
Sun	130	196	-66
Mon	415	438	-23
Tues	440	407	+33
Wed	452	407	+45
Thu	431	422	+9
Fri	449	452	-3
Sat	164	190	-26
Total	2481	2512	

The optimization added 61 service hours for weekdays and reduced 92 service hours for weekends. This reflected a 33.6% reduction in service hours on Sunday, 13.7% reduction on Saturday and a 5.3% reduction on Monday. On other weekdays, the optimization simulation also reflected an 8.1% increase in hours on Tuesday, 11% increase on Wednesday, 2.1% increase on Thursday, and a very minimal reduction on Fridays.

The Scenario 1 optimization maintained the same number of drivers as of today (65 drivers), allocating 50 drivers in a 4 workdays schedule (77%) and 15 drivers in a 5 workday schedule (23%). While evaluating expected performance for this scenario, the new run structure produced expected productivity (measured in registrant trips/service hour, and not passenger trips per RVH) that were on average **12% higher** than the current average. For this scenario, on-time performance is expected to raise due to better allocation of hours to where they are needed the most, noting that small customizations might be required to fulfill specific operational needs. There was up to 55% improvement in productivity on the weekend and up to 17% improvement in productivity on weekdays. The solution also allowed for a 26% reduction in the variability of each day's (hour-by-hour) productivity, i.e. it produced a much more stable solution, without large peaks and valleys in productivity level throughout the day. A summary of each day's productivity and productivity variability under this scenario is presented in Table 11.

Table 11. Performance Comparison -- Scenario 1 Productivity and Productivity Variability

	Expected Productivity (Trips/Serv. Hour)		**Intraday Prod. Variability**	
Day	*Current - Avg*	*Alpha - Avg*	*Current - Std*	*Alpha - Std*
Sun	0.7	1.09	0.25	0.23
Mon	0.97	1.14	0.52	0.38
Tue	0.99	1.07	0.51	0.39
Wed	1.2	1.13	0.55	0.37
Thu	0.97	1.07	0.43	0.31
Fri	1.06	1.06	0.39	0.22
Sat	0.96	1.16	0.31	0.25
Weekly Avg	***0.98***	***1.10***	***0.42***	***0.31***
% Change	***12%***		***-26%***	

Next, in Figures 66 through 72, we present graphical representations of the supply vs demand curves for each day of the week and each hour of the day under Scenario 1, comparing actual demand with both the current run structure and proposed run structure. The color scale on the bottom of the graph represents the expected productivity to close the gap between supply and demand. Ideally, a good solution will try to minimize periods with very high and very low expected productivity (as represented by the more intense hues in the figures), while looking for a more stable solution within standard

paratransit industry productivity levels. A more stable solution usually helps minimize on-time-performance issues during the day-of-service. Note that overnight shifts are included in the overall analysis numbers but they were excluded from the graphical representation to facilitate visualizations.

Figure 66. Scenario 1 - Comparative Analysis for Mondays

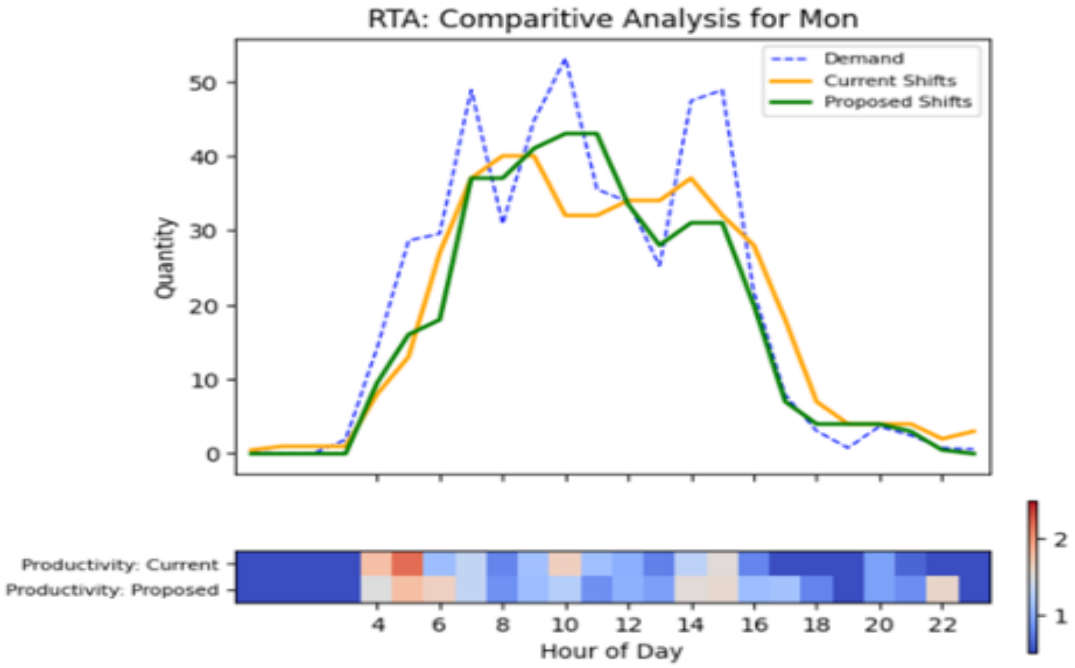


Figure 67. Scenario 1 - Comparative Analysis for Tuesdays

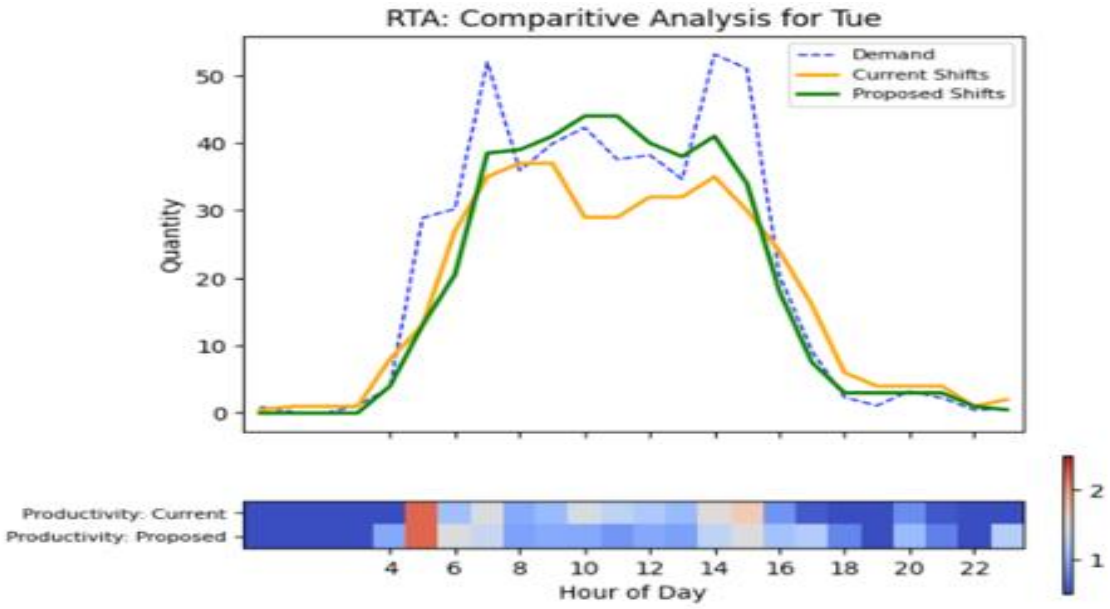


Figure 68. Scenario 1- Comparative Analysis for Wednesdays

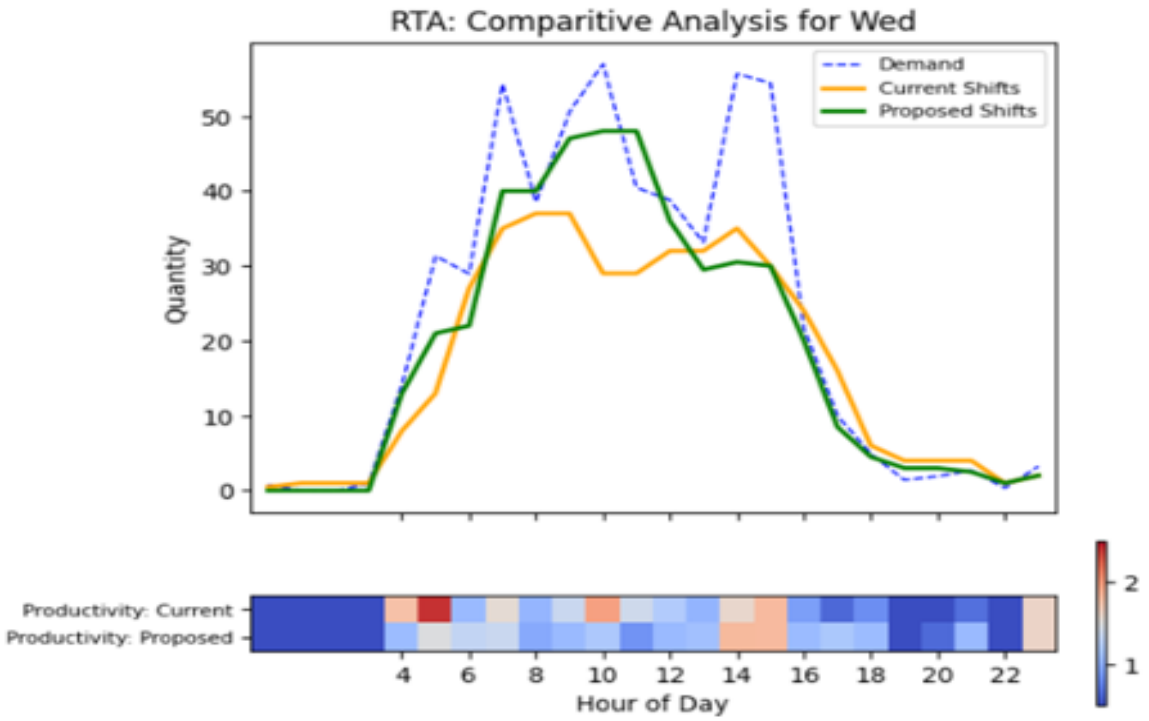


Figure 69. Scenario 1 - Comparative Analysis for Thursdays

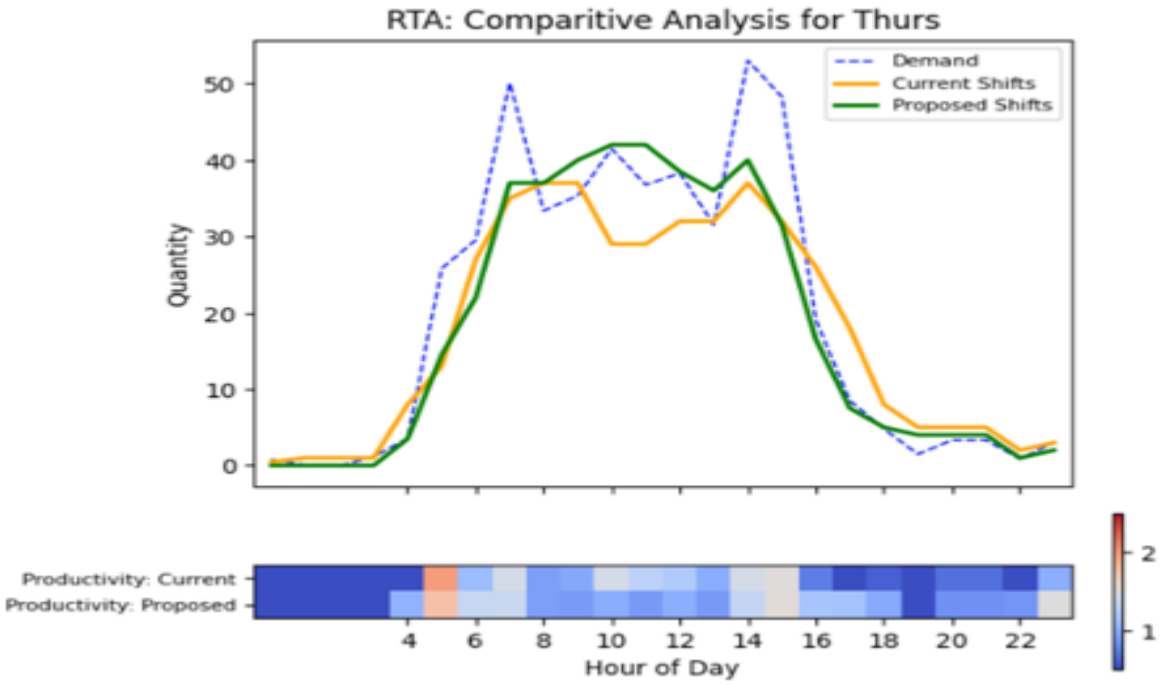


Figure 70. Scenario 1 - Comparative Analysis for Fridays

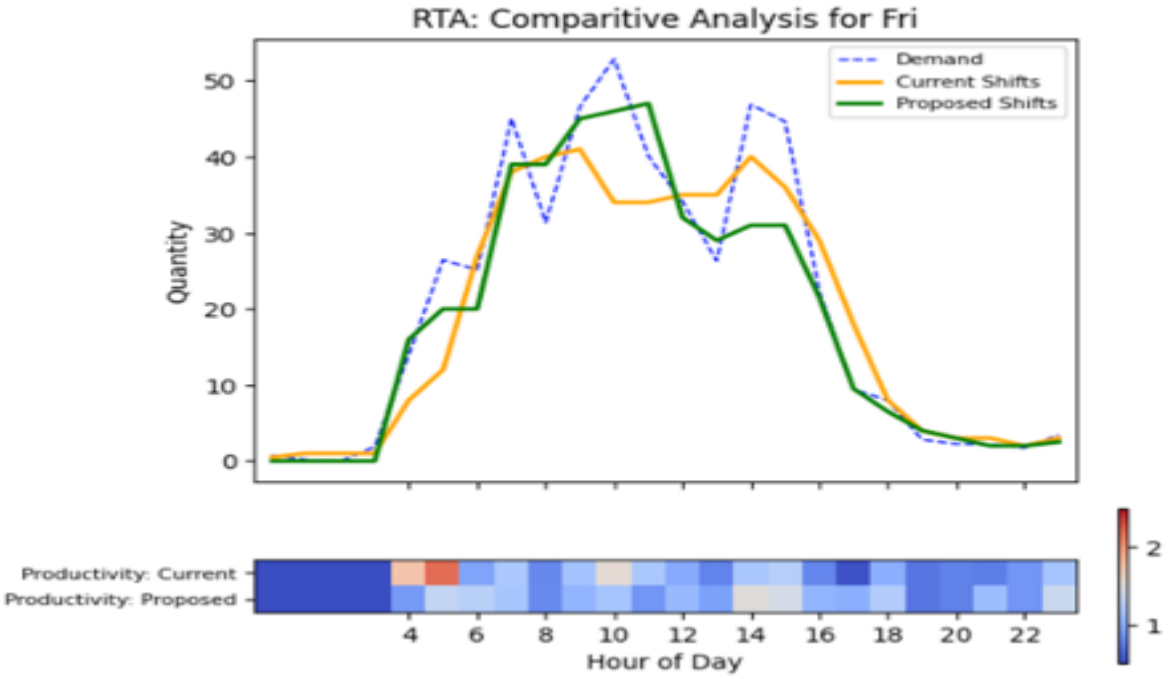


Figure 71. Scenario 1 - Comparative Analysis for Saturdays

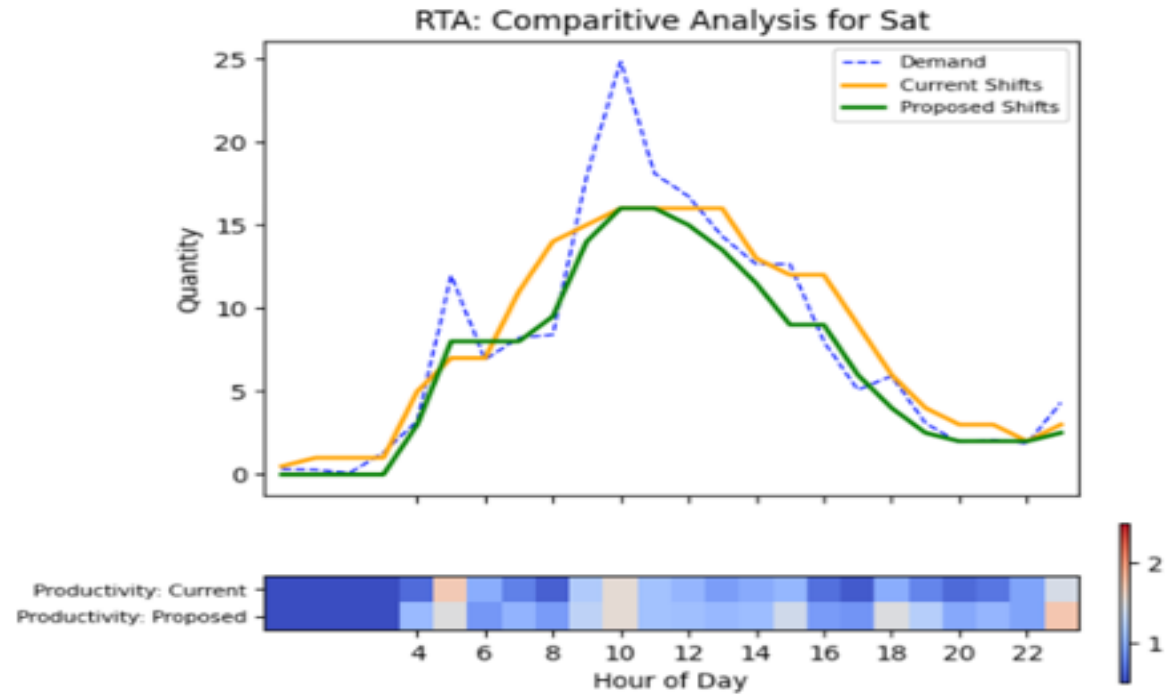
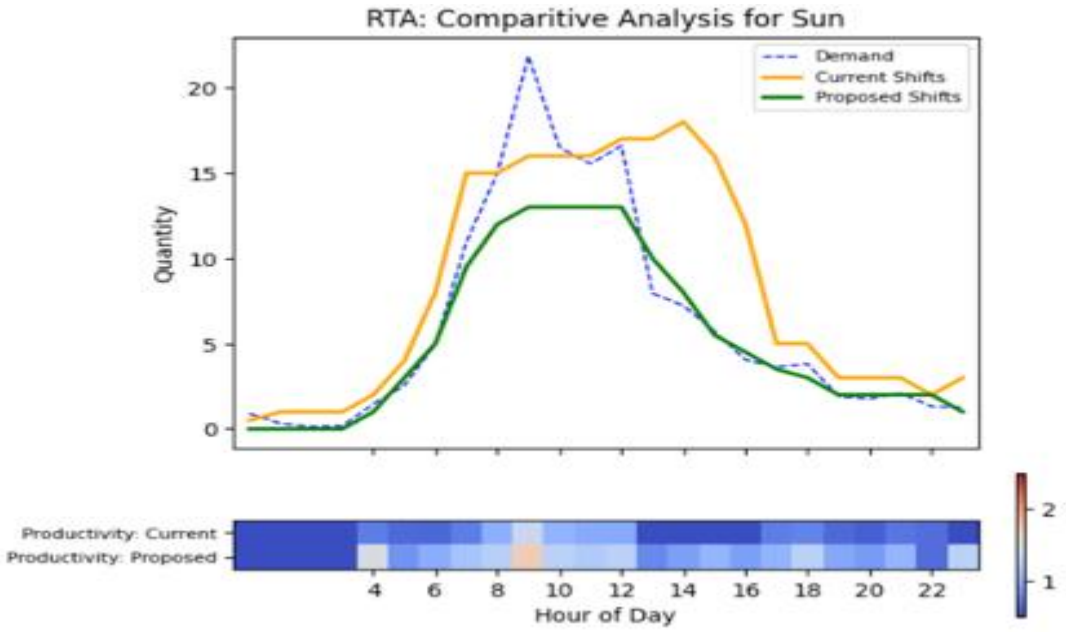


Figure 72. Scenario 1 - Comparative Analysis for Sundays



Simulation Results: Scenario 2 - Optimization with More Substantial Reduction of Service Hours

Scenario 2 seeks the optimal run structure, assuming that the recommended tuning of Trapeze and the subsequent creation and use of appropriate optimization job agents and other recommended scheduling practices are first implemented. With those caveats in mind, the simulation under Scenario 2 looks to reduce total service hours, while abiding by all operating rules for LIFT service. For example, as with Scenario 1, all trips are scheduled to be picked up within the on-time pick-up window. This scenario should be seen as the end goal into a transition to a more efficient run structure. It should only be implemented after fine-tuned automated scheduling and optimization capabilities are in place.

Table 12 presents the results of the Scenario 2 optimization. The Scenario 2 optimization delivered a 21% reduction of 567 total service hours per week, as compared to the current run structure. As shown in Table 5, all days of the week saw a reduction of total service hours. The largest reduction (44%) was on Sunday, while the reduction on weekdays averaged 18%.

The Scenario 2 optimization reduced the number of required drivers to 53 compared to 65 drivers as of today (18.4%), allocating 39 drivers in a 4 workday schedule (73.6%), 13 drivers in a 5 workday schedule (24.5%) and 1 driver on the overnight shift with 6 workday schedule (1.9%). The highest percentage reduction on the number of drivers occurs on the weekends, with a 33% reduction on Sunday and a 28% reduction on Saturday.

Table 12. Scenario 2 Changes in Total Service Hours

Weekday	AlphaRoute solution (h)	Current solution (h)	Gap (h)
Sun	110	196	-86
Mon	330	438	-108
Tues	353	407	-55
Wed	354	407	-53
Thu	344	422	-78
Fri	355	452	-97
Sat	127	190	-63
Total	1973	2512	

In evaluating expected operational performance for this scenario, the new run structure produced a productivity that was on average **38% higher** than the current average. Despite the large increase, expected scheduling productivity levels are within industry standards. Please also note that January 2021 to June 2021 has historically a lower productivity level than the 2nd half of the same year and in-line with our findings of January to May of 2022. And again, all operating rules were considered. If a fine tunned automated scheduling and optimization process is in place, on-time performance is expected to stay at industry standard levels, noting that small customizations might be required to further enhance on-time performance. The solution also allowed for a 14% reduction in the variability of productivity within each day, as discussed under Scenario 1. A summary of the productivity and productivity variability under Scenario 2 is presented in Table 13.

Table 13. Performance Comparison - Scenario 2 Productivity and Productivity Variability

	Expected Productivity (Trips/Serv. Hour)		Intraday Prod. Variability	
Day	*Current - Avg*	*Alpha - Avg*	*Current - Std*	*Alpha - Std*
Sun	0.7	1.28	0.25	0.26
Mon	0.97	1.39	0.52	0.42
Tue	0.99	1.3	0.51	0.44
Wed	1.2	1.42	0.55	0.43
Thu	0.97	1.3	0.43	0.36
Fri	1.06	1.35	0.39	0.29
Sat	0.96	1.44	0.31	0.35
Weekly Avg	***0.98***	***1.354***	***0.42***	***0.36***
% Change	***38%***		***-14%***	

Next, in Figures 73 through 79, we present graphical representations of the supply vs demand curves for each day of the week and each hour of the day under Scenario 2, comparing actual demand with both the current run structure and proposed run structure. As was the case in Scenario 1, the overnight shifts are included in the numbers but were excluded from the graphical representation to facilitate visualizations.

Figure 73. Scenario 2 - Comparative Analysis for Mondays

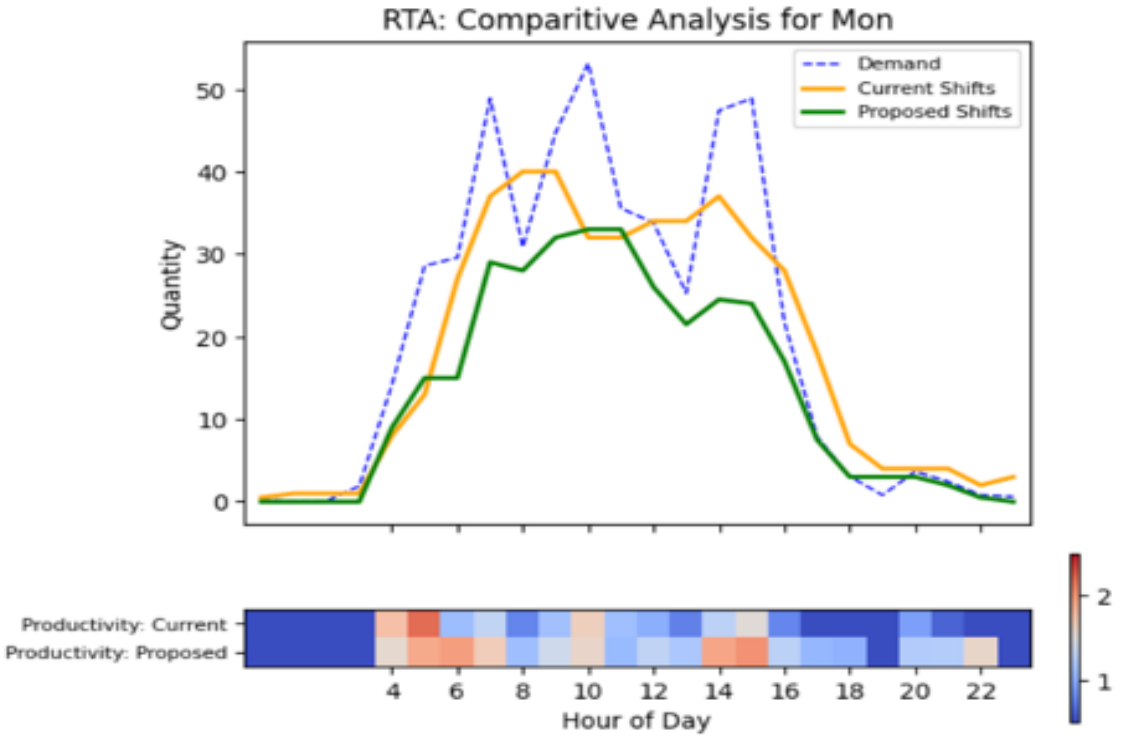


Figure 74. Scenario 2 - Comparative Analysis for Tuesdays

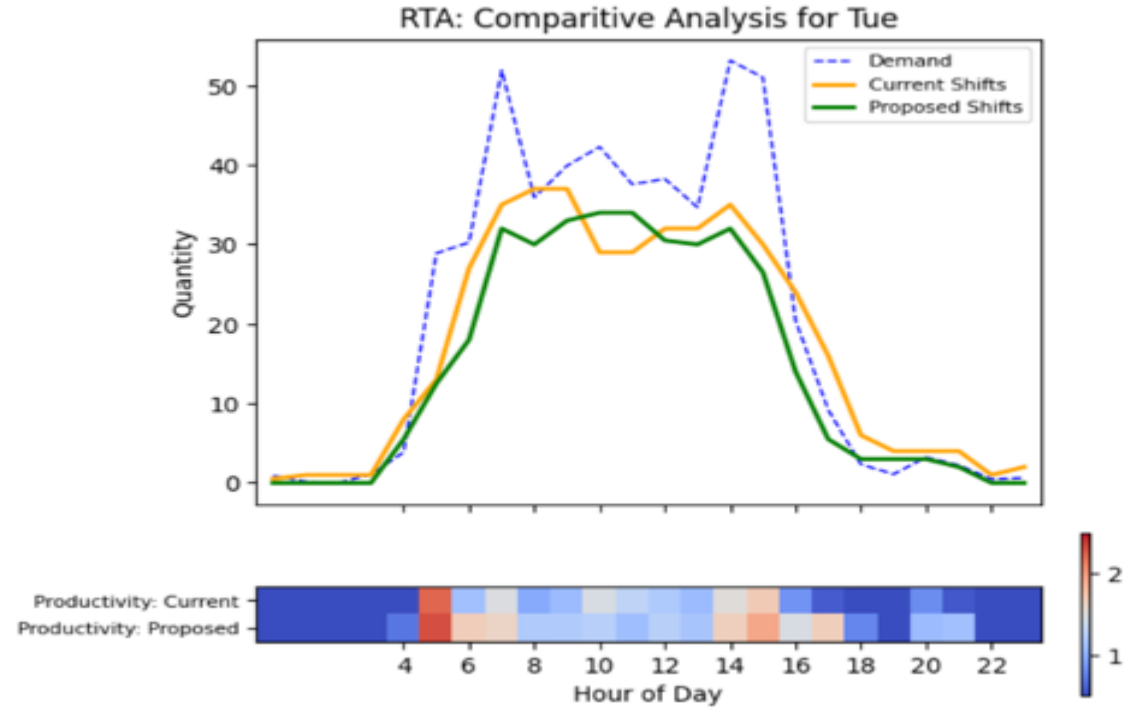


Figure 75. Scenario 2 - Comparative Analysis for Wednesdays

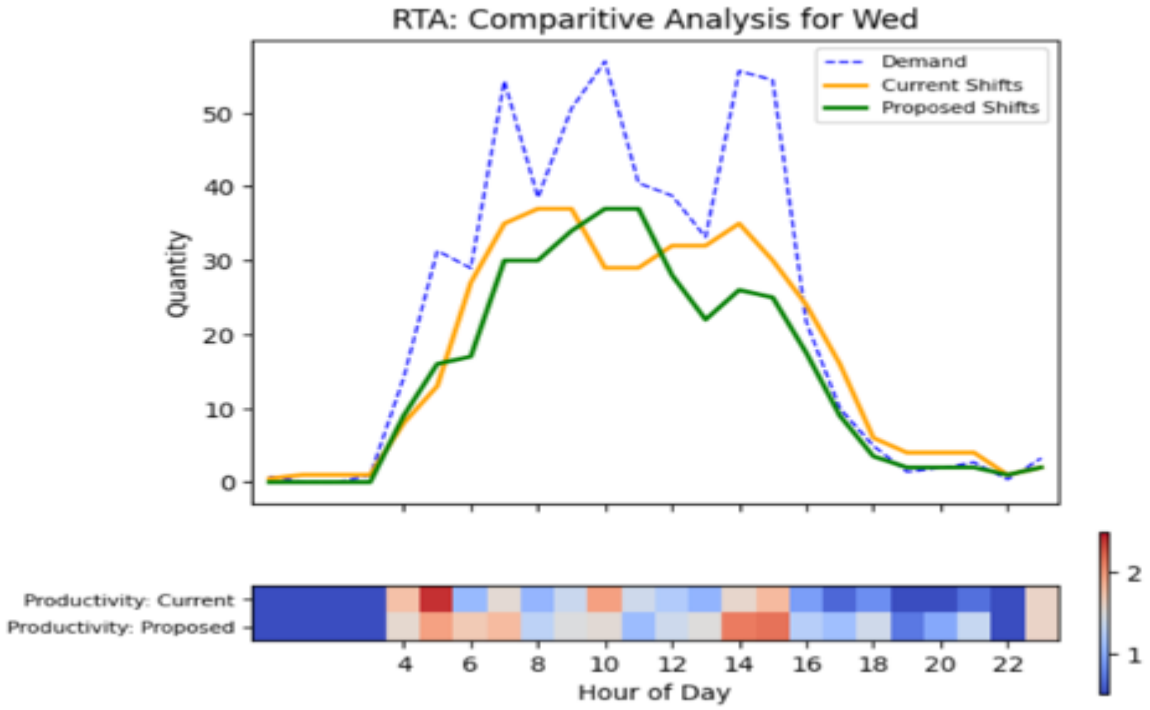


Figure 76. Scenario 2 - Comparative Analysis for Thursdays

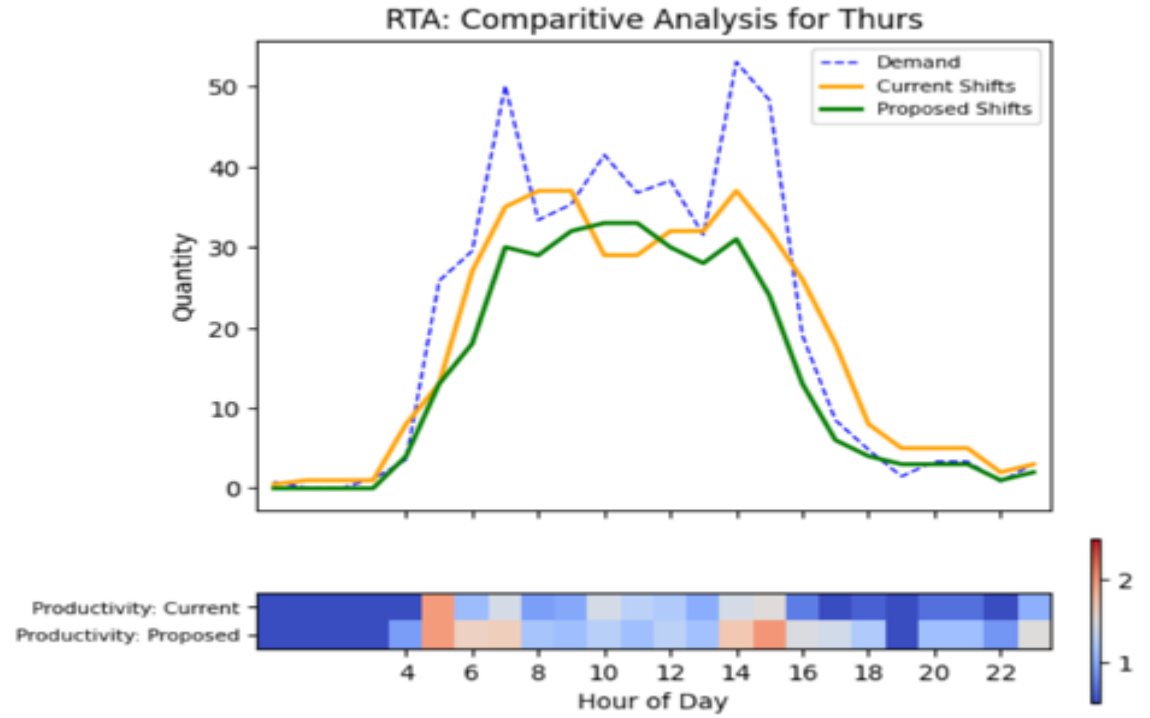


Figure 77. Scenario 2 - Comparative Analysis for Fridays

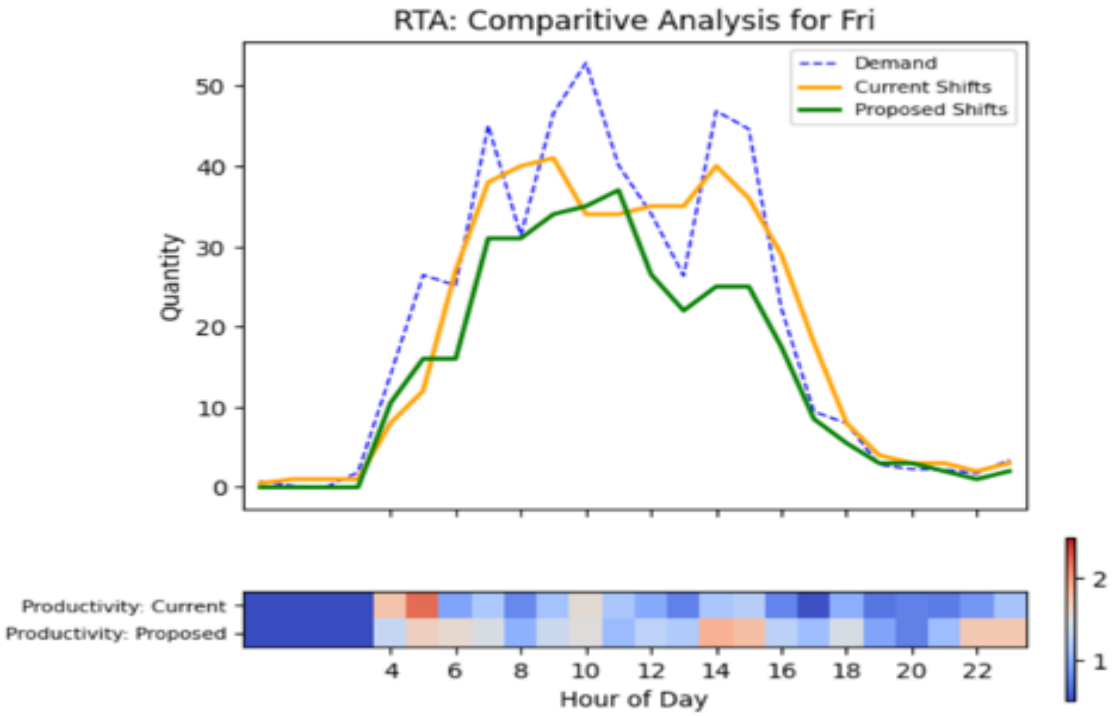


Figure 78. Scenario 2 - Comparative Analysis for Saturdays

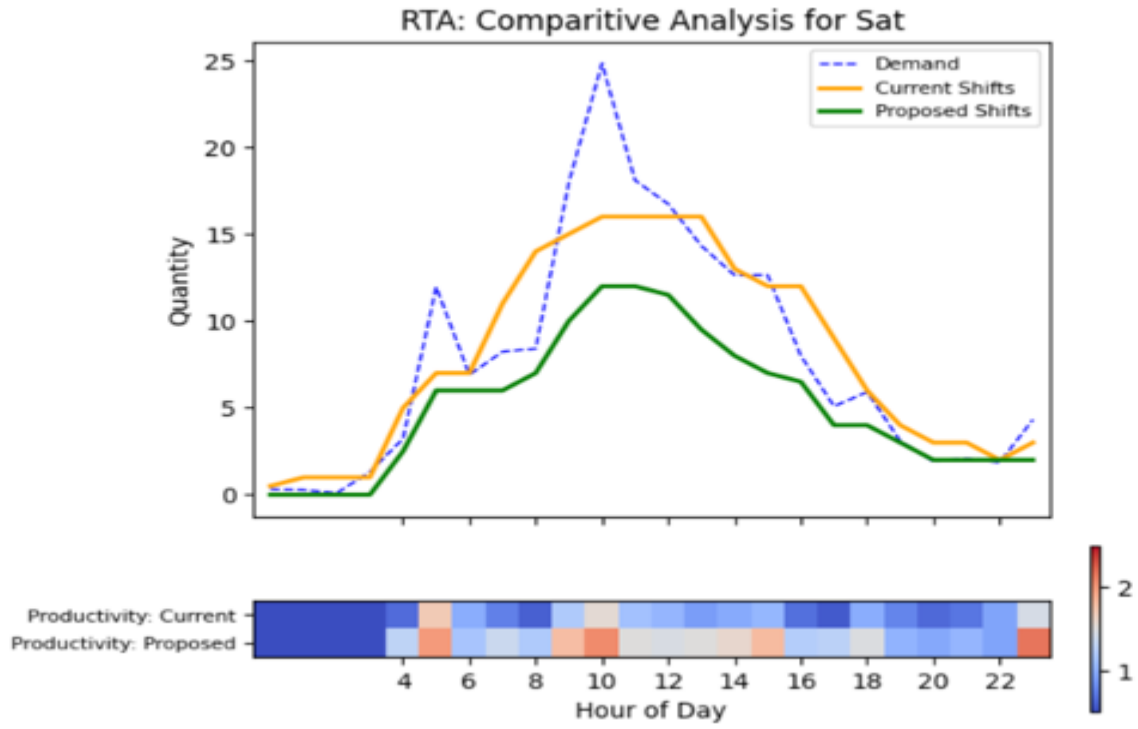
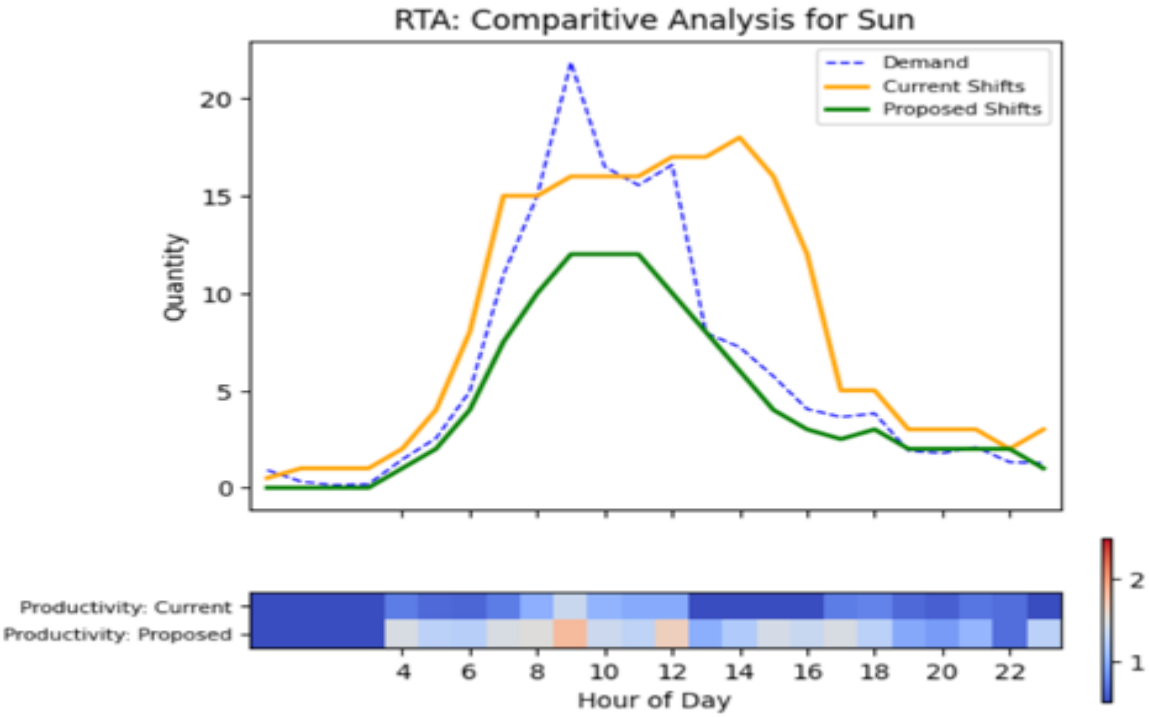


Figure 79. Scenario 2 - Comparative Analysis for Sundays



Optimal Run Structure – Summary and Implementation Strategy

The optimization solutions under both scenarios result in significant improvements over the current run structure solution:

- Between 12-38% improvement in expected productivity
- Up to 21% reduction in total service hours. Utilizing the latest operating cost per revenue hour[2] ($146.58) reported on Tech Memo #5, this is equivalent to over $3M[3] per fiscal year in savings
- Up to 26% reduction in intraday productivity variability. This will support a more robust solution with less day of service issues

The following needs for change by day include:

- Mondays, Wednesdays and Fridays
    - better alignment between supply and demand in the early mornings (4-6h)
    - additional supply to cover the midday peak and help recovery from morning peaks
    - reduce excess capacity after 4pm
    - evaluate alternative strategies to serve late night (11pm) “spikes” in demand

[2] Revenue Hours reduction are estimated as 80% of service hours reduction (539 reduced service hours x 80% = 431.2 reduced revenue hours)

[3] 431.2 reduced service hours per week x 52 weeks x $146.58 = $3,286,675

- Tuesdays and Thursdays
    - additional supply to cover the midday peak and help recovery from morning peaks
    - reduce excess capacity after 4pm
    - evaluate alternative strategies to serve late night (11pm) “spikes” in demand
- Saturdays
    - reduce excess capacity in the morning (6-9am) and evening (5pm to 9pm)
    - evaluate alternative strategies to serve late night (11pm) “spikes” in demand
- Sundays
    - better alignment with demand pattern
    - reduce excess capacity throughout the day, specially afternoon / evening

As an overall strategy for implementation, we suggest the following plan:

- Start with Scenario 1 while other recommendations from the report are implemented and then evaluate actual changes to productivity and on-time performance.
- Once performance has stabilized, gradually re-optimize shifts, per Scenario 2. at least twice a year or whenever driver picks are done. We do not advise moving to the optimal solution right away, but slowly reducing total service hours reflected in the Scenario. Monitoring of both changes in productivity and OTP will be key here, as the RTA seeks to achieve its desired balance of these two metrics. The monitoring of this balance should be a continuous effort.

4.3.2 Optimal Service Mix

Input Datasets and Optimization Rules

The same dataset that was used for the run structure optimization process (see Section 3.3.1) was used for service mix optimization process.

Simulation Description

The service mix simulation analyzed 31 different service mixes to generate the underlying data for the outsourcing curves. Trip scheduling was done utilizing travel times with traffic to improve accuracy of the results, starting with the Scenario 2 optimal run structure from Section 3.3.1. In the simulations results section, three main visualizations representing these results are provided:

- **NDSP Outsourcing Curve** - This curve represents the mean fraction of trips outsourced for each number of vehicles in the dedicated fleet for all days in the analysis. The objective of this curve is to allow a transit agency to make a data driven decision to select a target level of outsourcing.
- **NDSP Outsourcing Distribution** - This curve represents the range of NDSP outsourcing for each number of vehicles in the dedicated fleet for all days in the analysis. The objective of this curve is to allow a transit agency to understand the variability of the level of outsourcing. I.e. the minimum, the median and the maximum percentage of trips outsourced from all days in the analysis.

- **No Outsourcing Curve** - This curve represents the fraction of all days in the analysis with 0% outsourcing for each number of vehicles in the dedicated fleet. The objective of this curve is to allow a transit agency to understand the service reliability on non-dedicated vehicles and additional operational capacity with outsourcing.

Simulations Results

In order to create the baseline for comparison of the outsourcing results, we looked into the dataset to determine the daily peak number of vehicles (41) in use during the dataset period. This was also discussed with and approved by the RTA/LIFT team.

Table 14 compares, for each day of the week, the number of dedicated vehicles currently required vs. the number of dedicated required under the Scenario 2 optimization result in Section 3.1, without any outsourcing. Under Scenario 2, the peak number of dedicated can be reduced from 41 (on Thursday) to 28 (on Wednesday), a 31% reduction from the current peak.

Table 14. Peak Number of Vehicles Comparison with No Outsourcing

Day	AlphaRoute (no outsourcing and optimal run structure)	RTA (no outsourcing and current run structure)	Gap
Sun	**12**	**18**	**-6**
Mon	**22**	**40**	**-18**
Tues	**25**	**37**	**-12**
Wed	**28**	**37**	**-9**
Thu	**24**	**37**	**-12**
Fri	**23**	**41**	**-18**
Sat	**12**	**16**	**-4**

Figure 80-82 show the additional vehicle-reduction "before-and-after" results that result from incremental levels of outsourcing. Note that we grouped days of the week with similar demand to simplify the analysis and implementation. Thus, for Monday and Friday (Figure 80), that have lower ridership than other weekdays, our starting point for the analysis is 23 vehicles. For Tuesday, Wednesday and Thursday (Figure 81), our starting point is 28 vehicles. For Saturdays and Sundays, with very low ridership, our starting point is 12 vehicles. (Again, these peak vehicle required numbers stem from the Scenario 2 optimization in the previous section.) If the RTA decides to move forward with

outsourcing, an optimal level of outsourcing can also be defined for each day of the week to maximize performance. Those respective starting points are reflected in Figure 16 by the vertical black line on the right side of the graphs.

So, as an example, in Figure 80 (Monday and Friday), outsourcing just 2.5% of the LIFT trips to NDSPs could reduce the number of dedicated vehicles from 23 to 19.

Figure 80. NDSP Outsourcing Curve for Mondays and Fridays

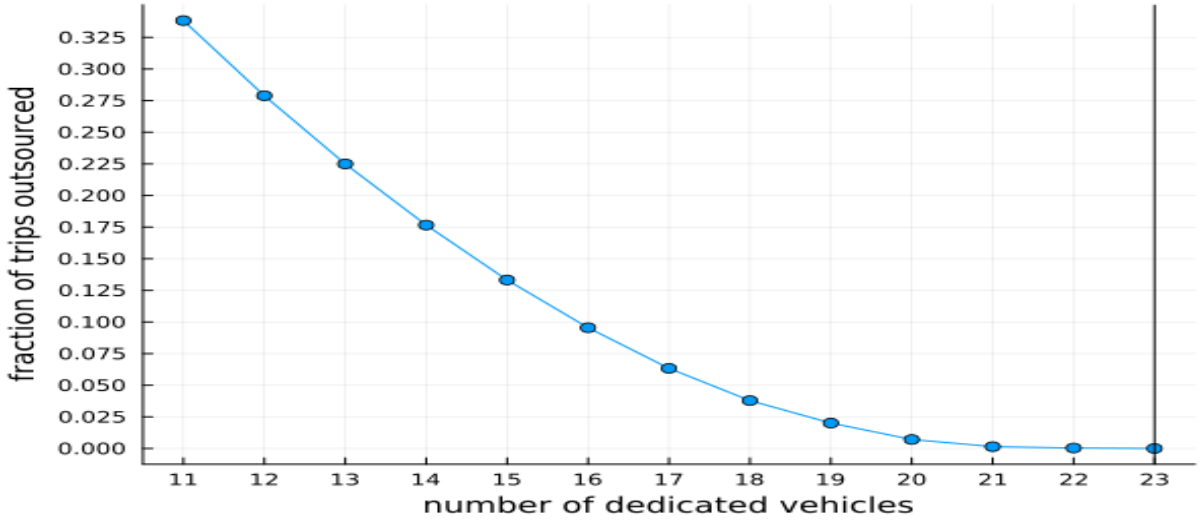


Figure 81. NDSP Outsourcing Curve for Tuesdays, Wednesdays and Thursdays

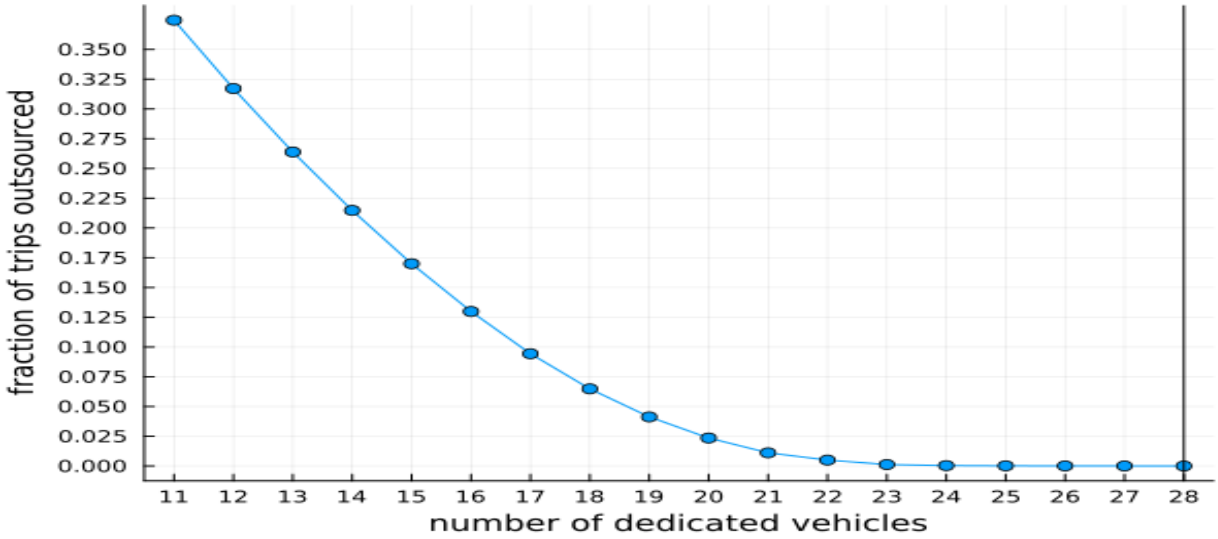
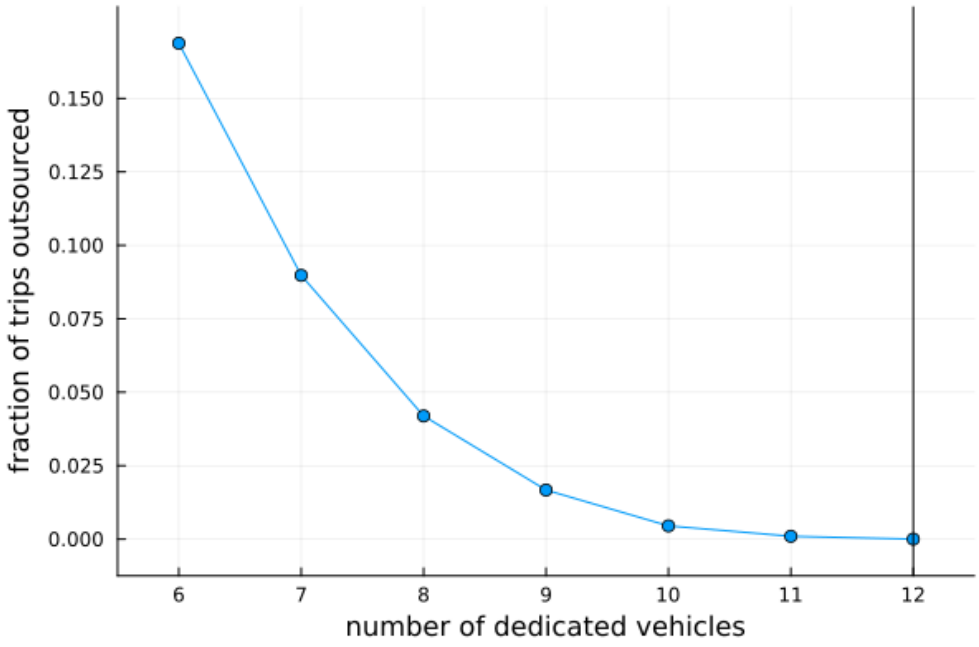


Figure 82. NDSP Outsourcing Curve for Saturdays and Sundays



That same 2.5% level of outsourcing in Figure 16 (Tuesday, Wednesday and Thursdays) results in a reduction in required dedicated vehicles from 28 vehicles to 20 dedicated vehicles, and in Figure 82 (Saturday and Sunday), from 12 to 9 dedicated vehicles.

It is important to remember that this reduction is based on optimal run structures and AlphaRoute routing algorithms. A similar reduction is expected under the recommended (in Section 3.1.) Scenario 1 but it will require more dedicated vehicles. Still, even under Scenario 1, a service mix of 97.5%/2.5% might be a good place to start for all days, assuming there our NDSPs in Orleans Parish that have the available capacity and are willing to meet ADA paratransit requirements for driver training and driver drug and alcohol testing. As the number of total service hours are ratcheted down, the RTA can experiment with outsourcing higher percentages of trips.

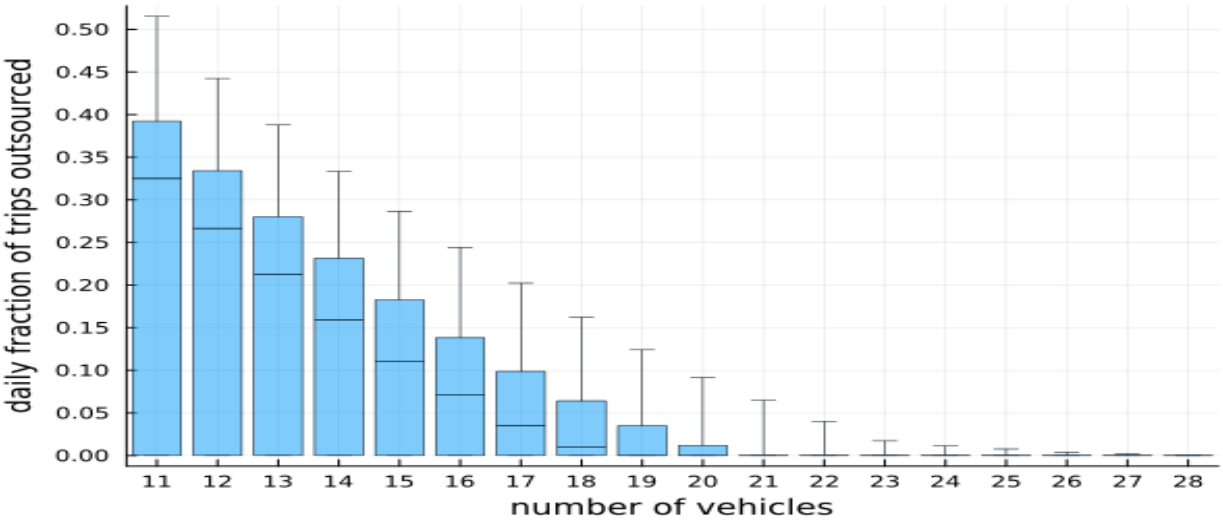
The Outsourcing Distribution chart is presented in Figure 83. This shows the range of NDSP outsourcing for each number of vehicles in the dedicated fleet for all days in the analysis. From the bottom up, each element represents:

- The minimum percentage outsourced
- Percentage outsourced for 25% of the days (Lower quartile)
- Percentage outsourced for 50% of the days (Median)
- Percentage outsourced for 75% of the days (Upper quartile)
- The maximum percentage outsourced

So, for example, at 20 dedicated vehicles, the RTA would outsource 0% outsourcing on slow days (when the dedicated fleet will be sufficient) up to a maximum of 9% on the busiest day, with a median of 2.5%. This graph provides the RTA with a range of how many trips should be outsourced to maximize the performance on the overall system. The numbers on this plot should be used as references for NDSP contractual decisions and service planning. From the study, at 20 dedicated vehicles, the number of

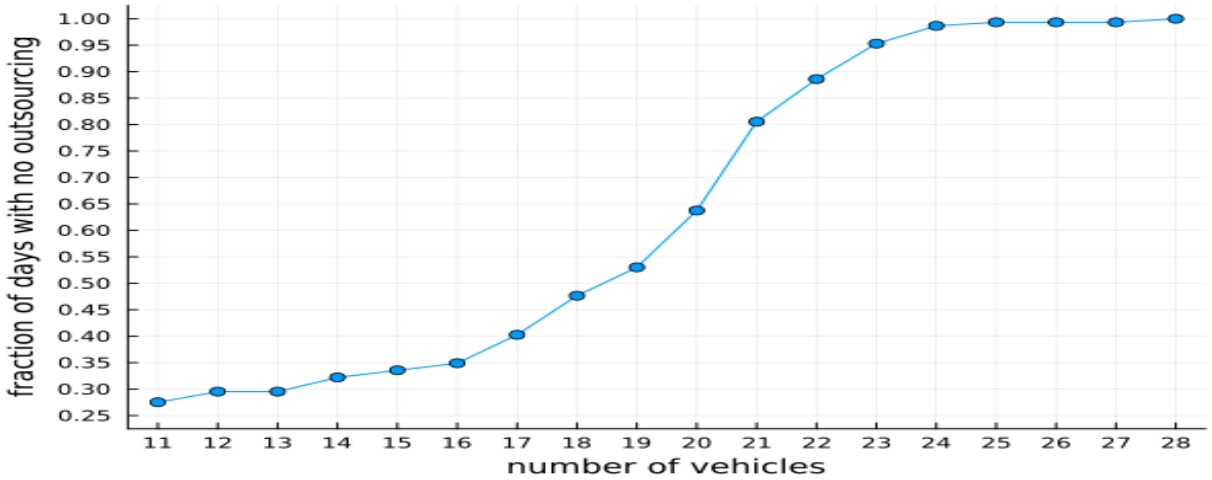
outsourced trips were between 0 to 56 trips on weekdays and 0 to 24 trips on weekends. To determine exactly which trips and how many, optimal outsourcing needs to be done on a daily basis using the actual available run structure. Otherwise, LIFT may incur the possibility of (1) having excess capacity on the dedicated vehicles while paying for an outsourced trips or (2) impacting on-time performance by outsourcing fewer than needed trips.

Figure 83. Outsourcing Distribution



To better understand the frequency of these days with 0% trips outsourced, AlphaRoute created the No Outsourcing curve, shown in Figure 84. This curve represents the fraction of all days in the analysis with 0% outsourcing for each number of vehicles in the dedicated fleet.

Figure 84. No Outsourcing Curve



For a selected scenario with 20 dedicated vehicles, 64% of all days in the analysis required no outsourcing. This is due to the fact that there is variability in demand, i.e., demand varies per day of the week, month of the year, types of trips, trip volumes and time of trip requests, etc.

On days when no-outsourcing is required, NDSPs can be used to help improve on time performance and help dispatchers to handle day-of-service issues. A target level of outsourcing per day of the week could also be set to reduce the number of days with 0% outsourcing.

As part of this analysis, AlphaRoute performed an evaluation of the outsourced trips to non-dedicated service providers for all days in the data set. The goal of the outsourced trips analysis is to provide guidance or efficient contracting with non-dedicated service providers. Mainly, the team double checked that the algorithms' outsourced trips are:

- Distributed well throughout the service area
- Follow a similar spatial distribution pattern of the overall paratransit trips
- Distributed well throughout the service hours

As part of this analysis, AlphaRoute team calculates the outsourcing score for each trip in the dataset. AlphaRoute's outsourcing score indicates the likelihood of a trip being outsourced. The higher the score, the more likely a trip is to be outsourced. The score is later utilized to create the visualizations in Figure 85 which shows the origins of all trips origins in the dataset and Figure 86 which shows the origins for outsourced trips only. The darker colors of the heatmaps represent areas with a larger concentration of paratransit trips. In comparing the two figures, the heat maps show a very similar pattern of distribution. The RTA should this seek NDSP contractors that can serve the area with focus on darker colors of Figure 86.

Figure 85. All Paratransit Trips Heatmap

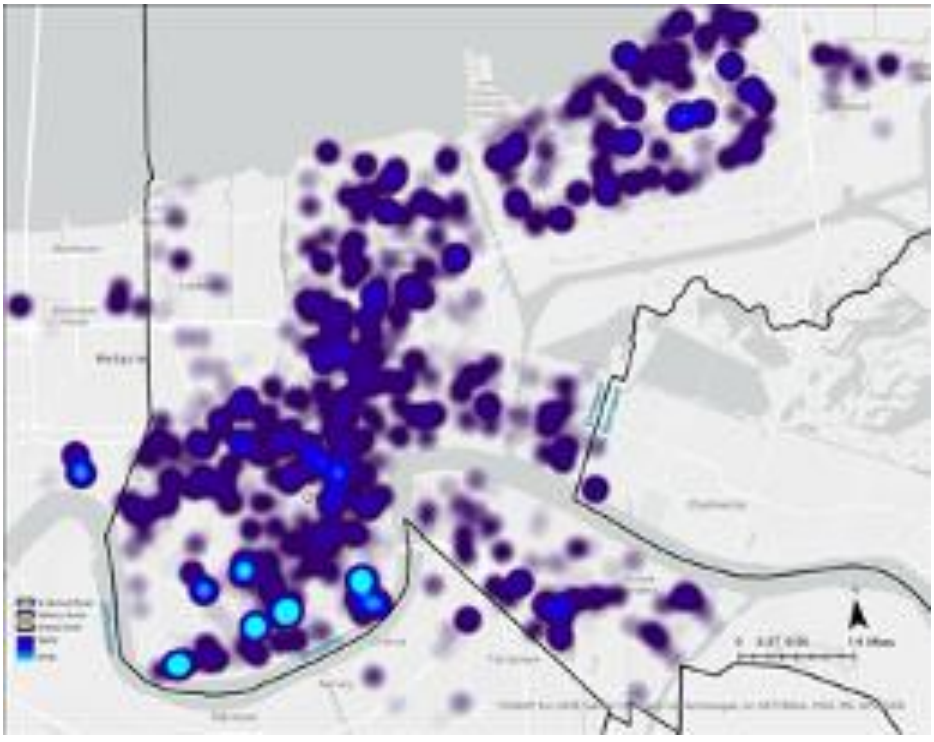
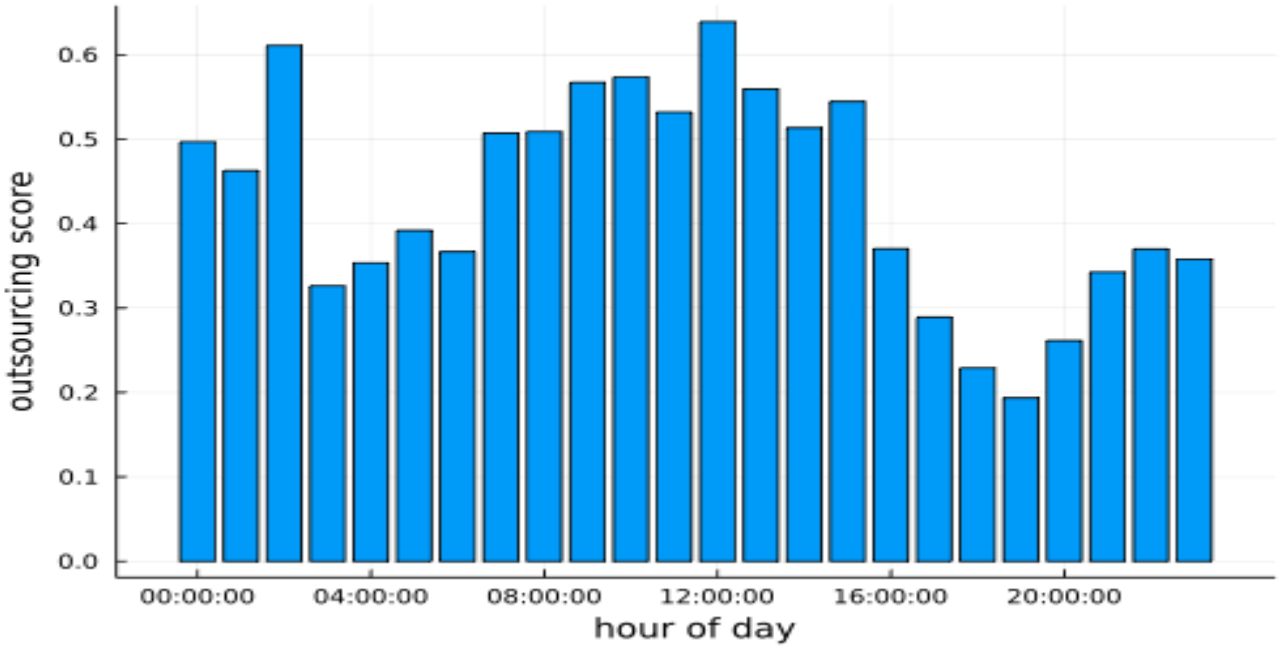


Figure 86. Outsourced Trips Heatmap

Figure 87 shows the times at which trips are most likely to be outsourced. Outsourcing trips at these times will not only help relieve the load at peak hours (and possibly replace dedicated vehicles late at night) but improve on-time performance as well. The RTA should look for NDSP contractors that can serve trips at these times with higher outsourcing scores.

Figure 87. Outsourced Trips Time Distribution



Optimal Service Mix - Strategy Evaluation

Implementing an efficient outsourcing strategy would provide the following benefits compared to the no outsourcing solution:

- **Mondays and Fridays:** Reduction of up to 4 dedicated vehicles (17%) with a 2.5% outsourcing level
- **Tuesdays, Wednesdays and Thursdays:** Reduction of up to 8 dedicated vehicles (28.5%) with a 2.5% outsourcing level
- **Saturdays and Sundays:** Reduction of up to 3 dedicated vehicles (25%) with a 2.5% outsourcing level
- **Additional overall benefits of the use of NDSPs**:
    - Reduction on the number of required drivers or alleviate driver shortage
    - Reduction in the dedicated fleet capital investments and maintenance costs
    - Alleviate vehicle shortage
    - Positive impact on on-time performance
    - Reduction in the cost per trip

Depending on the RTA objectives, the outsourcing strategy could be tailor to achieve goals such as:

- Cost reduction
- Improve service capacity
- Improve on-time performance
- Provide alternative service

As an overall strategy for implementation, we suggest the following plan:

- Plan and contract for NDSP services
- Start with 2.5% percent of trips outsourced
- Implement a daily dedicated vs. non-dedicated vehicle optimization
- Adjust dedicated vehicle fleet over time
- Monitor changes in demand patterns, volumes of trips and NDSP service adoption

As a strategy, contracting with NDSPs that also operate wheelchair-accessible vehicles will provide schedulers and dispatchers with more flexibility, but it is not critical to achieving the results above. And as mentioned above, the NDSPs must be willing to abide by certain ADA paratransit requirements. The RTA may find that some NDSPs require a certain minimum daily volume of trips.

The Federal Transit Administration (FTA) and Transportation Research Board (TRB) have done extensive research on the use of non-dedicated service providers, e.g., TCRP Report 121, *Toolkit for Integrating Non-Dedicated Vehicles in Paratransit Service*, for which TTI's Will Rodman served as Principal Investigator. Another recommendation from the TTI consulting team was to reach out to other transit agencies with more mature NDSP programs to learn from it. NDSP strategies can be an extremely valuable resource to help the RTA deal with demand growth, service area increase and control operational costs.

CHAPTER 5: RECOMMENDATION

Chapter 5 provides recommendations for LIFT stemming from the findings in the preceding chapters. The recommendations focus on strategies that will improve the service/cost efficiency, service quality, and compliance. The recommendations, boxed in each section, are categorized into **Immediate** (within 1 year), **Short-Term** (2-3 years) and **Long-term** (4+ years).

5.1 Organizational Structure

There are several positions tied directly to LIFT services that are in other RTA departments, i.e., not under the direct control of the Director of Mobility and Alternative Modes, who manages LIFT. These include: (1) the Eligibility Specialist; (2) Data Analyst; (3) Trainers; (4) Mechanics; and (5) Safety & Emergency Preparedness staff.

Recommendation: Positions that are at least 75% focused on LIFT should be re-organized to fall under the Director of Mobility and Alternative. **Immediate.**

5.2 Policies and Practices

5.2.1 Service Area and Elimination of Transfers

As of mid-March 2022, RTA adopted a new policy where riders requiring a trip from Jefferson Parish to Orleans Parish (and the return trip, if applicable) no longer needed to arrange for a transfer; instead, such riders could call the LIFT to arrange for a direct (inter-parish) trip. Thus, by adopting this policy, the RTA effectively increased its service area, resulting in decreased productivity. At the same-time, MITS has been serving inter-parish trips as well, resulting in service duplication.

Recommendation: One of the following changes should be made to reduce (if not eliminate) service duplication, one of the following changes in policy should be made, noting that any changes should be discussed and planned in advance with MITS management. Scheme #1: The customer calls the system responsible for the area in which the trip originates. So, if a rider lives in Jefferson Parish and works in Orleans Parish, the customer would then call MITS for the going trip and LIFT for the return trip. Scheme #2: The customer calls the system based on residence, arranging for the entire round trip with that agency. **Short-term.**

5.2.2 Eligibility Determination

With the percentage of eligible determinations increasing from the 76%-77% (2017-2019) to 85%-89% (2020-21), it would seem that the RTA has been more inclusive (or lax) in deeming applicants eligible who otherwise perhaps should not be. It is also possible that many of these applicants were deemed conditionally eligible, noting that the RTA was unable to provide the study team with any data as to the type of eligibility. There have been numerous studies in the industry which have concluded that a 100% paper review process is the most lenient/inclusive of the certification approaches and results in many more applicants being deemed eligible. In-person interviews end up resulting in applicants self-selecting out. The use of functional assessments and FACTS testing is also a much proven way of accurately determining eligibility, and in particular, conditional eligibility. In the end, such actions have provided greater clarity and accuracy in determining applicants who are truly ADA paratransit eligible or who are conditionally eligible. Ultimately, this will either reduce the demand or minimize the increase in demand

for LIFT, thereby ensuring that RTA's limited resources are used for riders who truly are ADA paratransit eligible and truly require PCAs. Requiring re-certification every three years, a policy of many transit agencies, has a similar outcome.

Focus group participants, some of whom were blind, indicated that they found the eligibility application difficult to complete, also mentioning that the application is very long. In connection with these observations, one rider suggested that the re-certification application (the RTA requires recertifications to take place every 3 years) could be shortened focusing on whether or not anything has changed. One rider called out one question having to do with whether or not the applicant can walk 6 blocks. She pointed out that while an applicant may have that capability, there may not be a bus stop within 6 blocks of their residence.

Participants indicated that the response time for an eligibility determination takes an average of **3-4 months**. Per FTA/ADA policy, if an agency is unable to make a determination within 21 days, the agency must grant presumptive eligibility to the applicant until a determination is made. This means providing the applicants with access to LIFT after that 21-day period. However, none of the participants were aware of the 21-day presumptive eligibility policy, nor did the RTA proactively get back to the applicants after 21 days.

Recommendations: (1) The RTA should immediately begin to require in-person interviews for all applicants and functional/FACTS assessments as necessary. Such interviews and assessment should be included the recertification process. These new eligibility determination processes can be handled by RTA staff dedicated to this function or by a third-party organization that specializes in ADA paratransit eligibility determination. (2) The RTA should work with Lighthouse employees to better understand ways in which the application can be made more accessible. (3) The RTA should immediately observe the 21-day day policy mentioned above; if the assertions made by the focus group participants are true, the RTA is not in compliance with the ADA. **Immediate.**

5.2.3 Advance Reservations and Premium Fares

The LIFT Ride Guide indicated that riders may book an advance reservation up to 5 days in advance, even though the current policy allows trips to be booked 7 days in advance.

The LIFT Rider Guide also indicates that premium trips (requested on the day of travel) are charged a higher fare, even though in practice, all trips are charged the same fare.

Recommendation: The LIFT Rider Guide needs to be changed to reflect that riders can request a trip up to 7 days in advance and that no premium fare will be charged for same-day trips that are served. **Immediate.**

5.2.4 Pick-Up Times and On-Time Performance

Within the LIFT program, trip requests are based on pick-up time. While trips can be requested based on pickup time or by appointment/drop-off time within Trapeze, a different process is used by the LIFT reservations staff for the latter. Instead, LIFT reservation agents enter a pick-up time that (depending on the trip distance and direction) is 60 to 75 minutes before the appointment time or requested drop-off time. This determined time then becomes the requested pick-up time and the basis for on-time performance. Thus, a vehicle can arrive at the destination after the appointment time or requested drop off time and still be on-time, leading to a skewed on-time performance measure. Also, RTA has no policy

for a drop-off window for trips that are requested based on an appointment time to requested drop-off time. Without such a policy, trips can be dropped off way early; in some cases, the drop-off can happen when building is not yet open.

Recommendations: (1) At a minimum, appointment times or requested drop-off times should be noted in the notes field. (2) LIFT reservation agents should book trips based on appointment times or requested drop-off times for trips so requested. This is done by entering that time in the requested drop-off field. By using Trapeze's wizard for real-time scheduling, the system will provide a calculated pick-up time, which would then serve as the basis for the confirmed pick-up window. Scheduling optimization processes can then be tailored to move a scheduled pick-up time only so far within the confirmed pick-up window (if at all). (3) With this change, on-time performance for such trips should be based not only on the vehicle arriving during the confirmed pick-up window but also arriving at the destination by the requested drop-off time. (4) The RTA should also establish a drop-off window, such as -15/0 minutes, to address early drop-offs. **Immediate.**

5.2.5 No Show/Late Cancellation Policy and Subscription Trip Cancellation Policy

The RTA has a reasonable no-show/late cancellation policy, but it is not being managed. Reducing the number of no-shows and late cancellations will have a positive impact on both productivity and on-time performance.

The Rider Guide also states that cancellations of subscription trips in excess of 20% will result in the cancellation of the subscription trip. This policy is not a bad one but needs to be clarified as to the time frame by which the percentage is calculated. Here too though, the LIFT staff does not appear to be monitoring subscription trip cancellations.

Recommendation: The RTA should immediately begin pursuing riders suspensions based on its existing no-show/late cancellation policy and subscription cancellation policy, while also clarifying the period by which the percentage of cancellations of subscription trips are measured as noted above. In conjunction with this, correspondence should go out to all riders that this will now be managed in earnest, in an effort to improve on-time performance. **Immediate.**

5.3 Vehicle Fleet, Fleet Maintenance, In-Vehicle Equipment

5.3.1 Vehicle Fleet

At the time of our study, the LIFT Fleet consisted of 54 body on chassis vehicles. In addition, there were eleven vehicles on order. Without the incoming vehicles, and not counting the five 2012 Glavals, the spare vehicle ratio equated to 25%, which normally is good. However, the New Orleans summers have a disastrous impact on A/C systems, which effectively brings the spare vehicle down to 0%. This is one reason why vehicles without working MDTs are allowed to leave the yard. While the 11 vehicle on order should help, 6 others are due to be retired, resulting in a net gain of 5 vehicles through 2022. However, an additional 15 vehicles are due to be retired in 2023.

Recommendation: At a minimum, the RTA should immediately put in for purchasing at least 15 vehicles to replace the 15 Fords due to be retired in 2023. Increasing that number to 20 vehicles should give the RTA more cushion in the summers. Similar to the newer Fords the RTA has purchased, the seating configurations should accommodate capacities of 12+0 ,12+1, 8+2, and 6+3. If supply issues persist and such vehicles cannot be secured within 12 months, the RTA should consider purchasing sedans or non-

accessible minivans, especially in consideration that roughly 75% of the LIFT trips do not require wheelchair accessible vehicles. The key to this is timing: to avoid vehicle shortages, RTA needs to acquire a sufficient number of vehicles to address the problems expected to arise next summer. **Immediate.**

5.3.2 Fleet Maintenance

Procurement of parts is a major issue for the maintenance department. Since the RTA brought maintenance in-house, all part acquisitions have to go through a formal process with the Procurement department to determine whether it should go out for bid or be a sole source; most of the time the department determines that a bid should be used. Previously (under Transdev) the maintenance department was able to make blanket purchase orders for parts acquisitions, which was a much more efficient process. The new process has caused issues in being able to turn around vehicles that need repair work due to not having the available parts. Under current RTA rules, the paratransit maintenance group is unable to stock up on key parts for PM or minor repairs, delaying the turnaround time for getting paratransit vehicles back on the road. Additionally, tire replacement, per the RTA's Goodyear contract, takes place at the Canal St. location, which slows the process of routine vehicle maintenance further.

Recommendation: The RTA procurement and part storage processes need to be revisited to enable the maintenance department to turn around downed vehicles in a timely fashion. The maintenance department should also be enabled to stock up on other common preventative maintenance parts for paratransit vehicles. In addition, RTA should look into whether or not that Goodyear contract can be modified to allow for tire replacement at the ENO facility. **Immediate.**

5.3.3 MDTs and Tablets

Currently, vehicles are going out in service without working MDTs. This has an adverse effect on collecting service data and aiding dispatchers (and automated service-day optimization functions) with accurate real-time vehicle locations. Moreover, it makes service-day changes more difficult to communicate. RTA intends to replace these MDTs with tablets onto which Trapeze's DriverMate will be loaded. There are several advantages of using tablets in comparison to MDTs, and the paratransit industry has largely been switching to tablets. The primary two benefits are (1) functionality – tablets provide additional navigation and alert/warning functions that are helpful to drivers; and (2) ease and speed of replacing, which dramatically impacts the extent to which trips need to be re-assigned. Tablets with SIM cards also allow the switching out of a SIM card as a first recourse.

Recommendation: The entire LIFT fleet should be retrofitted with mounts and SIM card-based tablets as soon as possible. A sufficient number of tablets should be purchased to allow for spares. **Immediate.**

5.4 Technology

5.4.1 Trapeze PASS Scheduling/Dispatching System

Trapeze's PASS software (herein after referred to as Trapeze) is the primary software used to support LIFT, its capabilities supporting rider registration, reservations, scheduling, dispatching, and reporting. At the heart of the system is a set of scheduling algorithms and configurable scheduling parameters that can be used to tailor how Trapeze schedules trips. The scheduling and dispatching functions use an underlying GIS map.

As discussed in the preceding section, RTA reservation agents use Trapeze to enter trip requests and schedule them onto specific runs operating on the requested trip date, based on solutions that Trapeze suggests (real-time scheduling). If there is no solution for a trip, schedulers later attempt schedule these unassigned trips onto runs. While most transit agencies also use Trapeze to subsequently perform various types of batch scheduling to further optimize a schedule, LIFT does not.

On the day of service, dispatchers use Trapeze to monitor the progress of the LIFT runs, to re-assign trips as needed (using the same capabilities as available to the schedulers), and process no-shows and missed trips. Dispatcher-driver communications are performed with Trapeze in combination with mobile data terminals (MDTs) in each vehicle, supplemented by "push-to-talk" radios. As discussed above, RTA is planning to replace MTDs with tablets.

Trapeze also serves as the primary source for reporting, providing a full array of standard reports that meet RTA's needs for performance monitoring and NTD reporting.

Recommendations: It is reasonable for the RTA to continue using Trapeze for the foreseeable future as long as a particular emphasis is placed on better utilization of existing functionality. The RTA should retain a Trapeze expert to (1) review and adjust scheduling parameters, including system speeds by time of day, so that Trapeze solutions are accepted by schedulers and can be realistically driven by operators; (2) implement new job agent batch for optimizing future day schedules; (3) with the success and experience of future day optimization, and the successful transition to tablets, implement a new job agents for service-day optimization; and (4) work with staff in tuning Trapeze, setting job agents, and training LIFT staff to better manage Trapeze. (5) RTA dispatchers should utilize Viewpoint as a real-time dispatch tool as well as a resource for exception-based data management (i.e., trip reconciliation). (6) We also suggest that the RTA acquire and implement PASS-WEB G3 so that customers can review, cancel (and eventually book) trips without having to contact LIFT staff by phone. (7) In addition, if schedulers and dispatchers are challenged by new developments and street name changes, the RTA may wish to long into updating the base map in Trapeze. (8) RTA may also wish to consider moving Trapeze to the cloud. As announced at the Trapeze Think Transit conference held in Fort Worth in March 2022, this would require the RTA to upgrade the Trapeze software to Version 21 (V21). Trapeze has said that the timeline for moving all clients to the cloud is still to be determined, but it is the study team's estimate this transition will occur over the next 5-10 years. While this may or may not be in RTA's long-term vision for LIFT, there are a number of benefits of upgrading to V21 as soon as is practical. These include taking advantage of all the latest features (especially a much more robust and MUCH better-designed dispatching function) of the products as well as ensuring the RTA is on a fully supported version of the software. **Immediate.**

5.4.2 Interactive Voice Recognition (IVR) System

RTA uses an IVR system to (1) confirm trip reservations the evening before the trip, and (2) place imminent arrival calls/texts (as preferred by the customer) as the vehicle to which rider's trip has been assigned is approaching the pick-up location. One problem mentioned by the IT Department staff is that there are many outdated/incorrect phone numbers still in the customer profiles, which prohibits the conformation and imminent arrival calls/texts from reaching the rider.

We were unable to confirm at the time of writing whether or not IVR agreement can be leveraged to provide inbound functionality for trip confirmations and cancellations. The combined effect of these additional features is quite positive at sites where it is available, with up to 50% of trip cancellations being

handled by customers themselves instead of calling in to agents, as well as reductions in no-shows and cancel at door thanks to reminders. While the average hold times for LIFT reservations were generally good, there were long hold times (over 5 minutes) at several times over the course of the week analyzed.

Recommendations: (1) Reservation agents should confirm the phone number of every customer in the trip booking process. (2) In addition, the RTA should seek clarification on whether its IVR system can be used by customers to confirm and cancel trips. If so, this capability should be turned on. **Immediate.**

5.4.3 Customer Apps

Trapeze has a customer web portal that would allow customers to confirm and cancel trips, as well as providing customers the ability to update their own phone number(s) and verify other components of their Trapeze profile, such as mobility aids and preferred space types. The customer app also allows customers to see the location and ETA of the vehicle to which their trips has been assigned, which also has been shown to reduce no-shows. And while the customer app can also be used to book trips, we would advise not turning this on until some of the underlying run structure and scheduling issues are resolved.

Recommendation: RTA should pursue acquiring Trapeze's customer portal app. **Immediate.**

5.4.4 Replace Trapeze?

There are now several alternatives to Trapeze, some emerging from the on-demand technology vendors but that are now proven in medium-to-large ADA paratransit services. Indeed, several transit systems are using these software systems to support both their microtransit and ADA paratransit services in cases where they operate microtransit solely or partially with dedicated vehicles or where the two services are consolidated.

Recommendation: RTA should keep its eye out for how the new products are faring elsewhere. If Trapeze ultimately proves to be too expensive, RTA can always conduct an RFP or RFI procurement effort to see about capabilities and cost, and then decide whether to keep or replace Trapeze based on the responses. **Long-Term.**

5.5 Booking, Scheduling, and Dispatching

5.5.1 Booking and Trip Negotiation

In our observations, reservation agents are not attempting to negotiate alternative trips times when confronted with no solutions. In such an instance, FTA guidance allows a reservation agent to negotiate an alternative time within one hour (before and after) of the original requested time, noting that there are practical circumstances which limit this, such as the end time for a workday, class, or appointment. If there is a solution and the rider accepts the solution, that time becomes the confirmed pick-up time. If there is a valid solution and the rider refuses the solution, it is deemed a "refusal." If there is a solution beyond the 2-hour span, and the rider accepts the solution, the trip is booked accordingly but should also be flagged as a denial based on ADA guidelines. However, this is not currently being done by LIFT reservation agents. If there is no solution, the LIFT reservation agents are required to flag the request as a denial. However, this is being done either. For advance reservation requests, no-solution trips are always left unassigned. The reservation agent then instructs the customer to "call back later" and either a solution materializes or it doesn't when they call back. If there is no solution for a next-day trip request,

even after trip negotiation is attempted, customers are asked whether or not they wish to leave the trip unassigned in hopes that a "hole" in the schedule opens up by the end of the day. If they agree, riders are instructed to call back later.

For advance reservation trips, focus group participants told us that they are dissuaded from booking trips with pick-ups between 7:00-8:00 am and between 2:30-6:30 pm because it is unlikely they will get a trip at the time desired, if at all. Such a demand management technique masks what would otherwise expose a capacity constraint. It may also be a reason why denials (at less than 2 per day) are as low as they are. More importantly, actively instructing ADA paratransit riders to not book trips during certain times of the day is blatantly not in compliance.

Recommendation: Reservation agents should immediately cease the practice of instructing customers to refrain from requesting trips at certain times, should perform trip negotiations in response to no-solution scenarios, and then deny the trip if there are no solutions. Denials are important as they are point to capacity constraints that need to be fixed. Capacity constraints should not be masked. **Immediate.**

5.5.2 Scheduling

LIFT scheduling and dispatching staff do not use Trapeze's batch scheduling function to optimize a schedule (i.e., to make it more productive or make it more customer-friendly or otherwise to achieve a balance of the two goals). Indeed, there is very little of any real effort to revise the initial scheduling of trips, once a trip has been initially scheduled, leading up to the day of service. A trip scheduled 7 days in advance may no longer be in the optimal place in a schedule given trips that are subsequently scheduled or cancelled. These can often lead to holes, or a sequence of events on a driver/run manifest that no longer makes sense. These should be addressed by the scheduling function and not left for the morning dispatcher as they are now.

It is possible with Trapeze to set up automated or on-demand processes (called "job agents" in Trapeze) to do batch optimization jobs. As part of the process, directives can be established which may shift a pick-up time within the quoted pick-up window and possibly shift a trip from one run to another in order to generate a more productive schedule, or otherwise achieve the balance between service efficiency and OTP that the RTA desires.

Many transit agencies use batch scheduling to optimize the schedule, as well as to run specific scheduling processes. For example, many agencies batch schedule their wheelchair trips a few days out, as they are often the most difficult to schedule. Other transit agencies systems will use job agents to run different optimization routines (with scheduling parameters tailored for each) to optimize the schedule in the morning of the day before the trip vs. the afternoon of the day before the trip date. Some transit agencies also use job agents after the scheduling has been completed and throughout the service day to continuously optimize the schedule. This is called continuous dynamic optimization, and in a sense, automated the proactive dispatch function. For service-day optimization, Trapeze includes "offsets" for the next hour or two (so as to not interfere with what the drivers are doing at the moment) and configurable intervals as to how often the process is run.

Currently, the RTA is not taking advantage of these capabilities. LIFT staff states that it is uncomfortable with the ways that the scheduling parameters have been tuned, i.e., that if they tried batching, the resulting optimization would have several flaws. However, RTA's IT staff provided the current parameter settings to TTI, which indicate Trapeze's default settings. If this is correct, one can presume that Trapeze has never been tuned to New Orleans. This not only impacts the potential to use batch scheduling but

also the solutions that are presented to the reservation agents in real-time. There is hence an immediate need to tune the Trapeze parameters, not only to improve the current solutions for real-time scheduling but to enable batch optimization, which in turn should improve productivity (and reduce the cost per trip).

Recommendation: Once Trapeze's scheduling parameters are properly tuned, LIFT schedulers should develop and deploy various job agents to re-optimize trips on the days leading up to the trip date, and at the very least, on the day before the trip date. A Trapeze expert should be involved in this process. (See Section 4.1, Recommendation #5) **Immediate.**

5.5.3 Subscription Trips

With subscription trips changing or ending from time to time, it is important that the scheduling of the subscription trips on these master schedules be reviewed frequently (ideally, once a month) in order to determine if the scheduling still makes sense. The greater the percentage of subscription trips, the more influence they have on the overall productivity of the services. Currently, there is no regular systematic process for reviewing the efficiency of the scheduled subscription trips.

The current process of intaking subscription trip requests on paper (and then forwarding the sheet to the Lead Reservationist who then enters the request) is redundant. There would appear to be no reason why reservation agents couldn't enter these directly into Trapeze, where their scheduling can still be done by the Scheduler.

Focus group participants indicated that getting a subscription trip once it has been requested can often take month if not years. (RTA staff did respond to this statement when it was posed to them.)

Focus group participants also expressed significant dissatisfaction with the way their subscription trips have been scheduled. According to these riders, their requests for subscription trips are "shoe-horned" into runs largely dedicated to Lighthouse employees, regardless of when they need to be at work. For example, in the case of one rider who needed to be at work by 8:00 start time, the only two options presented to her were (1) a drop-off at 6:30-6:45 (because that run was established for riders who needed to be at the Lighthouse for a 7:00 work start time) or (2) a drop-off at 8:30 on a run that was originally set up for riders needing to be at Lighthouse by 8:00, but that is perpetually 30 minutes late because of the dispersed pick-up locations of the riders. Both options are unreasonable for the rider, while the first option also equates to a denial (even if completed). Thus, the only way for this rider to get to work on time is to arrive 1.5 hours early. In the case of another Lighthouse rider with a work start-time at 7:00, the only subscription option available resulted in arrivals times that have consistently been between 7:15 and 8:15. The root cause of this is a capacity constraint combined with a scheduling practice that does not put a premium on when a rider needs to be at work (remembering that RTA's tracking of on-time performance does not consider when a rider has to be at work or needs to be at an appointment). Notice too that scheduling solutions for the agency riders focus on vehicles dedicated to that agency vs. other possible solutions.. An additional shortcoming that results from this practice has been excessively long travel times. One rider indicated that he was recently on-board for 3 hours. The other riders concurred that travel times can be VERY long, relative to the travel distance, and that they – and some of their LIFT drivers -- often do not understand the logic of the routing. In terms of their service-day experiences, the subscription trip riders participating in the focus groups indicated that late pickups for both the going trip and for the return trip were "not unusual" and in one case estimated that late pickups occurred 60% of the time. There was also general agreement that late pickups on return trips were more prevalent.

Recommendations: (1) RTA's Lead Scheduler should systematically review the efficiency of the scheduled subscription trips once a month. Once the underlying issues with Trapeze are resolved, a separate job agent for optimizing subscription trips can be used as a tool in a test area for identifying possible revisions. (2) Once the capacity constraints are solved, additional subscription trips can be scheduled up until the point where capacity constraint manifest themselves. (3) Reservation agents should also be responsible for inputting subscription trips requests. (4) LIFT management should establish a standard/target turn-around time for scheduling a subscription trip. While subscription trips are not required for ADA paratransit service, and such requests can be put on a waiting list as they are now, long turn-around times are another indicator of capacity constraints. (5) Schedulers should explore other solutions for organizations with dispersed employees who different work schedules. **Immediate.**

5.5.4 Dispatching

Ideally, the dispatcher to vehicle ratio should be 1 to 20, which is the standard in the paratransit industry. RTA has achieved this ratio with the regular dispatchers; however, while LIFT displays a 20:1 ratio at peak times (near 40 vehicles to 2 dispatchers), the attention and focus of the dispatchers is diffused by all the other things they are doing, including window dispatching but especially including handling the calls that come from the reservation agents stemming from "Where's My ride?" calls they cannot handle (see below) and calling back qualifying no-show riders. Moreover, any dispatcher can address an issue from any driver and on any run, therein forcing each dispatcher to be keeping track of all vehicles. This is especially challenging and further exacerbated by dispatchers working in different places. In addition, the real-location of many of vehicles does not show up on the dispatching screen because some vehicles have a malfunctioning MDT. Many vehicles also have non-working radios, which further inhibits dispatcher-driver communication. TTI staff observed one dispatcher texting a photo of the dispatch screen to a driver's cell phone to communicate a change in the driver's schedule (even though use of cell phones while driving is forbidden), but this is a way that the dispatcher has used their ingenuity and available (personal) resources to adapt to limiting circumstances.

Recommendations: (1) We recommend splitting the in-service fleet between the two dispatchers, rather than having each be responsible for the entire set of runs. For example, 40 vehicles could be split evenly between the two dispatchers with each being responsible for 20. The only coordination needed between the dispatchers would be if one wants to assign a trip to one of the other dispatcher's vehicles. (2) We also recommend adding a dispatch assistant per shift to handle incoming and outgoing telephone calls, the incoming calls from reservation agents who cannot address an ETA or WMR call, and outgoing calls to no-showing riders. (3) This dispatch team re-organization could easily be accommodated by the radio talk groups currently assigned to LIFT. There are three talk groups, which means each dispatcher could have their own talk group and leaving the third talk group for emergencies. (4) If dialysis trips continue to be problematic, we recommend dedicating a dispatch assistant to dialysis patient/facility liaison. It is not unreasonable to conceive that the same dispatch assistant who works the phones could also be the liaison for the dialysis trips. **Immediate.**

(5) Once Trapeze's scheduling parameters have been tuned and tested, and the MDTs replaced with tablets, a job agent for continuous dynamic optimization can be set up and tested. At a minimum, this will automate the proactive dispatching and free up the Lead Dispatcher to truly oversee and monitor the dispatching and to pitch in as needed. **Short-term.**5.5 Handling Service Day Calls

The responsibility for handling service day calls is split between reservation agents and dispatchers, with staff estimating that reservation agents handle 80% of the calls and transfer the other 20% to dispatch. The feedback from the riders participating in the focus groups pointed to several issues with respect to service-day calls. In response to "Where's my ride?" calls, riders stated that they were often supplied with misleading information such as "they'll be there in 10 minutes" when it's often 30 minutes or more, sometimes up to 90 minutes according to the rider. In another instance, the rider was told that the driver was stuck in traffic on a particular bridge (when a spouse confirmed there was no traffic on the bridge). The riders are under the impression that for some of their calls, they were just being fed a line. We suspect but could not confirm due most reservation agents and dispatchers working from home, that misleading information may be coming from the reservation agents vs. dispatchers. In addition, riders indicated that they have tried "will-call returns" from medical appointments but have vowed never to schedule a will-call again, claiming that response times of 2+ hours are common.

Recommendations: (1) LIFT's Reservations Lead should begin monitoring registration agents' performance in real time or via recordings to verify the extent of misleading information on the service-day being provided to riders. Additional training may be required. (2) If such occurrences are prevalent, LIFT management may wish to consider moving this function to a dispatch assistant. (3) The RTA should establish a not-to-exceed response time of 60 minutes for will-call return trips from medical appointments and track late pick-ups for will-calls accordingly. (Handling will-call returns with non-dedicated service providers may help; see Section 6.0 below). **Immediate.**

5.6 Run Structure and Service Mix

The conclusion of the run structure analyses and scenario simulations in Task 6 was that there are several opportunities to shift surplus hours to times where they are needed, and that the use of non-dedicated service providers would help augment the supply of service to help address capacity constraints. Both of these actions also have the potential to reduce costs.

The Run Structure Optimization Scenario 1 simulation kept the same number of drivers (65), of which 77% were assigned to 4 workday schedules and 23% to 5 workday schedules, while adding 61 service hours to the weekdays and reducing 92 service hours during weekends. The simulation also shows a 12% increase in productivity (17% on weekdays and 55% on weekends).

The more aggressive Scenario 2 simulation reduced the number of required drivers to 53, of which 74% were assigned to 4 workday schedules, 25% to 5 workday schedules, with one driver on the overnight shift 6 days a week. The highest reduction on drivers was during the weekends. Scenario 2 also resulted in a significant decrease in service hours per week and 38% increase in productivity.

The use of non-dedicated service providers (NDSPs) to replace or augment dedicated service is a proven strategy in the industry. NDSPs can help improve the productivity of the dedicated fleet by serving trips that adversely impact productivity; this can include serving "overflow" trips during the peak that the LIFT vans cannot handle, longer-distance single trips, will-call trips, re-emerging no-showed trips, and trips interrupted by breakdowns or accidents. The resulting increase in productivity reduces the operating cost per trip, and if the number of dedicated vehicle hours can be reduced, there is an associated reduction in cost. Most transit agencies that use overflow providers outsource between 5% and 15% to NDSPs, while a few transit agencies outsource more than 50% of their trips to NDSPs.

The Service Mix Optimization simulation suggests that assigning 2.5% of LIFT trips to non-dedicated service providers (NDSPs) would enable the reduction of up to 4 dedicated vehicles on Mondays and Fridays, 8 dedicated vehicles on Tuesday, Wednesdays and Thursdays, and 3 dedicated vehicles on

Saturdays and Sundays, noting that the starting point of this analysis was the run structure optimization simulation in Scenario 2 above.

Recommendations: (1) Implement the changes to the run structure reflected in Scenario 1 while other recommendations from the report are implemented and evaluate actual changes to productivity and on-time performance. **Immediate.** (2) Once performance has stabilized, gradually re-optimize shifts (per Scenario 2) at least twice a year or whenever driver picks are done. We do not advise moving to the optimal solution right away, but slowly reducing total service hours. Monitoring of both changes in productivity and OTP will be key here, as the RTA seeks to achieve its desired balance of these two metrics. The monitoring of this balance should be a continuous effort. **Short-term.** (3) Once performance has stabilized, RTA should contact possible NDSP partners to discuss their willingness to provide "overflow" ADA paratransit trips (which would require that their drivers be trained to proficiency and drug and alcohol tested) and to determine whether or not they can provide wheelchair accessible service (not necessary but helpful). Based on the NDSDP partners' available capacity, RTA should pilot an effort where 2.5% of the trips are outsourced to the NDSP partners, noting that this pilot would involve supplying the "ADA-paratransit certified drivers" with the same tablets used by RTA/LIFT drivers. If none wish to participate as such, there are national TNCs such as UZURV that do have ADA paratransit certified drivers and NEMT carriers whose drivers are likely drug and alcohol tested and specially trained. We do not recommend replacing any dedicated vehicles with this strategy though (at least not immediately). Thus initially, the use of NDSPs should be viewed as a low-cost way to augment the supply of service, especially at key times. Based on the RTA's experience with the pilot, RTA can then adjust the percentage of trips outsourced and possibly gradually reduce the number of dedicated vehicles as suggested by the simulation results. **Short-term to long-term.**

5.7 Safety Training

The industry standard for both transit and paratransit is 1 preventable accident per 100,000 total vehicle miles. The RTA's accident frequency ratio for 2021 was almost 3 accidents per 100,000 total vehicle miles; unfortunately however, the accident data RTA provided to the study team did not categorize the accidents into preventable and non-preventable (meaning a *preventable* AFR could not be calculated).

Recommendations: (1) RTA should begin categorizing and tracking accidents as preventable or non-preventable and calculating LIFT's *preventable* AFR. (2) If LIFT's preventable AFR is over 1.0, steps should be taken by the RTA/LIFT's safety trainers to analyze the types of preventable accidents, trace the accidents to their root cause, and revise the driver training curriculum to address the root causes. **Immediate.**

5.8 Compliance Monitoring

Per FTA guidelines, an ADA paratransit service may be capacity constrained if it exhibits a *pattern* of denials, late trips, missed trips, and excessively long trips. If such patterns can be traced to capacity constraints, the service is in violation of ADA guidelines. There is also a fifth service quality/capacity metric, telephone access, which is typically measured in average and maximum hold times. If there is a pattern of access issues (by ADA paratransit customers), this too is considered by the FTA to be a capacity constraint.

Not only do FTA reviewers look for such patterns, but they also determine whether a transit agency has in place processes to identify such patterns, regardless of whether the metrics show that an average threshold has been met or not. For example, while a transit agency might have achieved a 90% OTP, a pattern of late trips might be tied to trips from a certain area or at a certain time, indicating there are not enough resources in that area or time to handle demand. Similarly, while an agency might have a very low average hold time, a pattern of hold times on a certain day of the week and certain time might point to not enough reservation agents at that time to handle the number of calls, another example of a capacity constraint in the eyes of the FTA.

Recommendation: RTA should develop a process for periodically (once a quarter) analyzing whether or not patterns of these metrics exist and whether those patterns point to a capacity constraint. **Immediate.**

5.9 Complaint Management

Complaint management is the responsibility of the same person who performs eligibility determination. It is generally a good idea for the complaint management to be outside of the department that manages the paratransit service. At the same time, it is also a good idea to have the eligibility specialists in that department.

The process for submitting a complaint is detailed in the LIFT Rider Guide. Complaints may be submitted by mail, by fax, in-person or by phone. Curiously, the Rider Guide does not mention emailed complaints as a valid way to submit a complaint. This should be corrected, by proving an on-line form that can be completed on-line or otherwise providing an email address.

LIFT's complaint frequency ratio (CFR) for LIFT has been excellent. However, this excellent rating would appear to be not in concert with other service quality measures for LIFT, especially since OTP has remained substandard (below 90%) and in view of the rider and stakeholder input. Possible explanations for this mismatch could be traced to (1) riders not being able to submit a complaint on-line, (2) rider complacency with the existing level of LIFT service quality, (3) past rider complaints not materializing into improved service, and/or (4) fear of retribution.

Recommendations: (1) We recommend splitting up the eligibility determination function and complaint management so that these functions are performed by two different people, with the former reporting to the Director of Mobility and Alternative Modes. (2) The RTA should enable riders to submit complaints on-line and/or by email. (3) In addition, the RTA may wish to consider a campaign of outreach to the LIFT rider community, such as a telephone-based survey (which was beyond the resources of this study), to determine a statistically relevant level of satisfaction, and for those that express dissatisfaction, whether or not they have registered a complaint (and reasons for not complaining) and whether they were satisfied with the outcome of the complaint investigation and with any stated changes that resulted from their complaint. **Immediate.**

5.10 Providing Options for ADA Paratransit Customers

Currently, the demand for ADA paratransit service is outstripping the supply of service. Recommendations in Section 6 above -- re-deploying dedicated vehicles and augmenting the fleet with non-dedicated service providers – should mitigate but may not totally solve – the mismatch. One solution is to increase the supply of dedicated and/or non-dedicated service to meet the demand. Another solution is to "divert" trips to a broader array of lower-cost NDSPs—taxis and TNCs – whose drivers are not trained to proficiency nor are drug and alcohol tested. There are two ways to do this.

The first way is to offer an "alternative service." This is an on-demand service that the RTA would offer to their ADA paratransit customers and that is provided through NDSPs such as taxis and TNCs. In such a program, riders request service directly from the service providers. Note there would need to be a wheelchair accessible vehicle (WAV) service option, sometimes accomplished through subcontracts and sometimes through additional WAV operators, in order to achieve service equivalence as mandated by the ADA. In the end, the RTA will reduce overall costs if the savings from the diverted trips are greater than the subsidies paid to the service providers to serve newly induced trips (that would otherwise not have been made on LIFT). This is described in more detail in the Task 5 Technical Memorandum. A TCRP Report on Alternative Services, co-authored by the study team's project manager, is also soon to be published.

The second way is through a rider opt-in program. In such a program, LIFT riders (who wish to) would sign an opt-in agreement which would give the RTA a blanket permission to assign an ADA paratransit request to a TNC, taxi or other type of carrier under contract that does not used ADA-paratransit certified drivers. In effect, this means that LIFT would be able to convert, with the rider's permission, an ADA paratransit trips to a non-ADA paratransit trips. The rider fare would be the same as the LIFT fare. And riders would maintain the option to "opt-out" for any particular trip. Through such a program, the RTA would not only be serving these trips at a lower cost but would also improve the productivity of the dedicated LIFT fleet by assigning to the TNCs the trips that would otherwise adversely impact the productivity of the dedicated fleet.

Recommendation: RTA should conduct/commission a feasibility for a pilot which combines an alternative service and an opt-in program. Such a combined program has been successfully piloted in Boston by the MBTA. As was done in Boston, we suggest first implementing an alternative service pilot, and then weaving in the opt-in program. **Short-Term.**

APPENDIX A: PROJECT ADVISORY COMMITTEE

Name	Title	Organization
Tatar, Adam (Chair)	Brownsfield Coordinator	New Orleans Regional Planning Commission
Ainsworth, Jamie	Contract Program Manager	Louisiana Depratment of Transportation and Developmer
Barrios, Ninette	Director of Transportation	Jefferson Parish
Bryant, Laura	NA	New Orleans Mayor's Office of Transportation
Buckley, Melissa	Sr. Director of Operations	Arc of Greater New Orleans
Green, David	Staff	Lighthouse Louisiana
Hammond, Alisha	Assistant Director	New Orleans Resources for Indpendent Living (NORIL)
Jackson, Courtney	Executive Director	RIDE New Orleans
Johnson, Billie	Director of Mobility & Alternative Modes	New Orleans Regional Transit Authority
Kennon, Robin	MITS customer	
Killebrew, Rob (replaced by Jones, Gary)	Transdev General Manager	JP Transit / Transdev
Raymond, Mark	Director / LIFT customer	New Orleans RTA Board of Drirectors
Rocca,Tory	Director of Public Policy and Community Engagement	Disability Rights Louisiana