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TransLoc
4505 Emperor Blvd STE 120,
Durham, NC 27703

(888) 959-3120

transloc.com



Planning for Uncertainty with Flexible Transit

Tips to Improve Efficiency
and Coverage as Ridership
Patterns Change



Moving Forward

The State of Public Transit in 2021

At its core, great transit is about reliable connection. Whether it's students riding a bus to class, healthcare workers taking a shuttle to a clinic, or late night employees requesting an on-demand ride to work, transportation is an experience that's both everyday and essential. The best transit agencies make commutes like these as simple and routine as possible—which meant the coronavirus pandemic and its social distancing rules were a once-in-a-generation challenge.

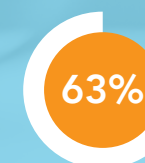
During the COVID-19 pandemic, steady routine changed to rapid action. Transit departments for cities, universities, and hospitals had to quickly adapt to new public health guidelines that required extra space between riders. This not only **reduced capacity for transit vehicles, but also reduced revenues for each ride**. At the same time, the closure of many businesses and schools along with increased demand on healthcare centers meant transit agencies needed to shift service away from their regular ridership to those with new travel schedules.

Fortunately, transit agencies proved up to the challenges presented by COVID-19, rapidly adapting their services to meet changing transportation needs. And with **more than 76 million Americans fully vaccinated from COVID-19** (as of April 2021), cities and communities are on the road to recovery. That said, there is still a long way to go before transit operations can approach normalcy.

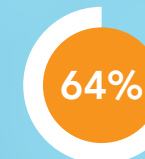
Maximizing Efficiency while Mitigating Risk

In this paper, we will examine how two transit agencies adapted and launched new services to lead the way in providing great rider experience with smaller budgets and fluctuating ridership.

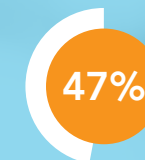
By focusing on flexible transit and planning based on current demand, transit agencies can pinpoint underperforming routes and find ways to optimize—providing accessible transit without a hefty price tag.



63% of academic parking and transit agencies anticipate a return to pre-COVID-19 travel levels in 2021.



64% of transit agencies plan to maintain social distancing on shuttles for Spring 2021, with 1 in 5 implementing these rules for the first time.



47% of transit agencies implemented curbside pick-up/ drop-off options in Fall 2020, and 2/3 intend to maintain these for Spring 2021.



74% of agencies see potential for disruptions to Fall 2021 budgets, limiting nonessential projects and expenses.

Public health rules, new transit programs, and budget shortfalls represent ongoing transportation challenges in 2021 and beyond.

SOURCE: International Parking & Mobility Institute – Roadmap to Recovery survey

Emory University

Cutting Trip Times in Half by Embracing Flexible Transit

Universities are often the lifeblood of cities, and Emory University is no exception. This [top-ranking](#) private research university is the [biggest employer in Atlanta](#) and also home to the [largest healthcare system in Georgia](#). Like many transit agencies during COVID-19, Emory needed to rapidly adapt service to fit new needs—but all their rider data had been gathered before the pandemic and was thus no longer accurate.

“We were all caught by surprise,” said Brittany Barrett, former Assistant Director of Transportation at Emory University. “We were trying to figure out where we needed to put resources, how to safely continue operating shuttle service, and make our policies fit while keeping the ridership at a level we could maintain.”



EMORY
UNIVERSITY



CASE STUDY



3 Million Annual Rides



52 Vehicles



55,000 Riders Served



**2009 Emory Partners
with Transloc**



EMORY
UNIVERSITY



CASE STUDY

PROBLEM:

How to Serve Changing Ridership with Limited Resources

Emory's ridership during the pandemic saw some commuters practically disappear and others take on less predictable schedules. Emory's 14,000+ students were no longer living on campus and hence not using transit services. In contrast, healthcare workers needed more rides at more times to meet increased medical demand at Emory University Hospital.

Making matters more complex, new public health rules changed bus occupancy to ensure social distancing. This meant Emory's transit agency needed to provide healthcare workers and university employees a safe, reliable way to get to work even as the pandemic forced constant changes in schedules and resources.

"It was a lot of data analysis trying to watch ridership. Usually I'd run a report twice a month, but now I needed reports every single day to look at hourly ridership to see who needs the service because things were changing so quickly."

— Brittany Barrett

SOLUTION:

Rapid Data Analysis and Flexible Transit to Improve Ride Efficiency

By analyzing ridership data in real time, Emory had the insight needed to optimize their transit operations by deploying the right vehicles to the right riders at the right time. Working with TransLoc Planning and Design Services, [Emory's transit agency could isolate average ridership per hour based on route and time of day while also forecasting how changing ridership during COVID-19 would impact trip times and rider experience.](#)

[This enabled Emory to optimize late night routes with low ridership by adding microtransit vehicles and expanding on-demand services.](#)

"Moving some of our fixed route service to on-demand style meant reduced wait times and we're able to improve our customer service."

— Brittany Barrett

Emory rolled out service announcements within the TransLoc app that provided notifications to riders whenever there were service changes as well as bus occupancy information to address safety concerns.

RESULTS:

Better Trip Times and Rider Experience alongside Reduced Costs

Drawing on these data-driven efficiencies, Emory University transit cut door-to-door trip time averages in half and delivered an improved and safer rider experience while [saving a potential \\$24,700 in annual operations cost](#). And as Emory gathers more data, they are better positioned to safely serve returning students with optimized fixed route and on-demand services.

"We can serve more people with fewer vehicles, putting resources out there where they're most needed and providing that right level of mobility for everyone."

— Brittany Barrett



2 week

TURNAROUND



\$24.7K

POTENTIAL ANNUAL
SAVINGS



<7min

DOOR-TO-DOOR
TRIP TIMES

UT Southwestern Medical Center

Doubling On-Demand Transit to Efficiently Transport Healthcare Workers

Home to the [largest medical school in Texas](#), UT Southwestern's 27 hospitals provide medical [care in 80 specialties](#) to millions of patients each year. Healthcare hubs like the University of Texas Southwestern Medical Center played a critical role in fighting COVID-19, but reliably transporting healthcare workers during the pandemic was a challenge.

As UT Southwestern's Transportation Supervisor Kerry Bryant said, "COVID-19 put us in a tough position, because we need to reduce vehicle capacity to keep everyone safe but that also meant less revenue to keep the shuttles running."

UT Southwestern
Medical Center



CASE STUDY



130 Average Rides
Per Day



23,247 Riders Served
Annually



2013 UT Southwestern
Partners with Transloc

UT Southwestern
William P. Clements Jr.
University Hospital

UT Southwestern
Medical Center



CASE STUDY

PROBLEM:

How to Increase Healthcare Worker Mobility with Reduced Budgets

To ensure the best care during the pandemic, healthcare workers needed swift and reliable transportation across the UT Southwestern campus. But with work schedules and clinical needs constantly changing, the medical center's fixed route buses could not transport healthcare workers as efficiently as was needed—especially when these buses needed to operate at reduced capacity for public health reasons. UT Southwestern had an on-demand program for more agile transit, but there were only two vehicles averaging 45 rides per day.

“Reliable transit is a key part of an effective medical center. For our doctors and nurses to quickly get where they needed to go during COVID-19, we needed a better, more flexible system.”

— Kerry Bryant

SOLUTION:

Scale Up On-Demand Program for More Flexible Transit

To improve flexibility and efficiency, UT Southwestern began to transition their fixed route system to more on-demand transit in May of 2020. Partnering with TransLoc on their “Fixed to Flex” program helped UT Southwestern scale up their on-demand options, offering more flexibility for healthcare workers to move around campus without overcrowding vehicles.

“Now we have the data to know where to send which vehicles and at what time. This helps us get the most out of both fixed route shuttles and on-demand vehicles while ensuring riders reach their destinations fast.”

—Kerry Bryant

RESULTS:

Optimized On-Demand Program Increases Healthcare Worker Mobility

UT Southwestern completed the testing period for its new on-demand program and moved into a full service launch in May of 2021, having doubled in size to a four-vehicle solution that completes more than 130 rides per day. This represents both a significant savings in budget efficiency along with increased mobility for UT Southwestern's healthcare workers. What's more, new driver apps and technology from TransLoc have improved the ride experience for both drivers and passengers.

“I love this system so much. It is really easy to use and learn. I can also put my newer drivers on it since they have turn-by-turn directions to their next pick-up. I wish I had had this 4 years ago!”

—Kerry Bryant



VEHICLES



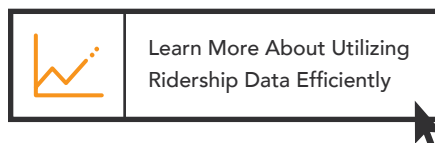
AVERAGE RIDE
TIME

Key Takeaways

On-demand services can be tailored to a variety of objectives, which are analyzed based on the nuances of each agency's system.

It's safe to say that COVID-19 challenged contingency plans for transit providers everywhere, as the world was thrust into a situation that nobody had planned for. However, thanks to flexible on-demand service options and access to real-time ridership data, operators were able to rapidly shift to support riders without relying on full system coverage.

As transit continues to evolve - despite what unforeseen circumstances may yet arise - deploying on-demand service to meet riders when and where they are can provide a reliable option for smarter transit without an excessive price tag.



THREE KEY TAKEAWAYS



1. Real-time data analysis is crucial to effective decision making.

You need reliable and accurate ridership data to make smart transit decisions. By partnering with TransLoc, Emory University and UT Southwestern quickly analyzed ridership numbers in real time to optimize how they moved staff around their campuses without overcrowding vehicles.

2. Aligning fixed-route and on-demand services to work in tandem can maximize transit efficiency.

By digging into ridership data, you can ensure both fixed-route and on-demand services reach the right areas at the right times. Identifying which routes have less-than-expected ridership helped Emory University and UT Southwestern deploy cost-effective on-demand vehicles to those areas while reserving larger buses for busier routes.



3. Transit apps simplify and speed up communication with riders.

COVID-19 showed both agencies and riders how quickly situations could change, making in-app notifications and communication helpful. Emory University used TransLoc's app to alert riders to changing routes, schedules, and ride conditions so they could make safer choices.



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📍 www.transloc.com