

Lextran

Microtransit Feasibility Study

August 2025

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EXECUTIVE SUMMARY

Lextran commissioned the Microtransit Feasibility Study to assess whether a flexible, on-demand service could supplement Lexington's fixed-route network and paratransit program. The study's purpose was not to replace buses or paratransit, but to evaluate how microtransit could improve first/last-mile connections and serve lower-density areas where fixed routes are less efficient. The analysis combined community input, market demand modeling, zone design, cost and performance projections, and implementation strategies to determine where microtransit could provide the most value and how to deploy it responsibly.

Community & Market Insights

Public engagement revealed cautious openness to microtransit, paired with a strong desire to maintain and strengthen fixed-route service. Riders emphasized that any new service should complement, not compete with, the existing network. Survey responses also highlighted that many residents do not yet have a firm understanding of how microtransit works. This underscores the need for continued education and clear communication about its role, eligibility, and connection to the broader system.

The market analysis used a composite demand index that combined adjusted population and employment, with population weighted by transit propensity through a Transit Index Factor (TIF). This ensured that all populations, including minority, low-income, zero-car, senior, and disabled residents, were proportionately represented in demand estimates. Jobs were factored more heavily to capture the importance of employment as a transit driver while also serving as a proxy for shopping and service trips.

Cost & Scale

The study modeled service from 6:00 a.m. to 8:00 p.m., 365 days per year, at an assumed rate of \$95 per revenue hour for contracted operations plus \$200,000 in annual administrative overhead per zone. Launching all six proposed zones simultaneously would cost an estimated \$8.4 million annually, making phased deployment essential.

At the trip level, cost differences are significant. The average fixed-route trip costs \$5.04 per trip (one-way), while the modeled microtransit trip averages \$60.94 per trip, more than twelve times higher. This cost disparity reinforces the importance of preserving fixed-route service as the backbone of the system and limiting microtransit to targeted gaps.

Zone Results (Quantitative Comparison)

Six potential service zones were scored on four categories (demand, need, cost, and performance):

- Zone 1: The most balanced zone overall, with high need, moderate costs, and diverse trip generators. Ranked first in total weighted score.
- Zone 2: Highest equity need, but limited ridership potential and high cost per trip.
- Zone 3: Strong job density supports demand, though weaker productivity and cost-effectiveness reduce feasibility.
- Zone 4: Highest demand and ridership potential but requires the largest vehicle commitment and highest total cost. Best suited for future large-scale deployment.
- Zone 5: Most productive and cost-efficient, but lowest in transit need, meaning service would primarily serve general mobility.
- Zone 6: A compact zone with low costs and strong need, making it a good candidate for phased or lower-risk rollout.

Zone Performance Highlights:

Metric	Zone 1 Northwest	Zone 2 Northeast	Zone 3 East	Zone 4 Southeast	Zone 5 Southwest	Zone 6 West	Zone Average
Zone size (sq miles)	9.9	6.8	7.9	16.5	10.7	6.5	9.7
Peak vehicles	2	2	3	4	3	2	2.7
Annual ridership	21,372	13,208	20,748	43,940	35,100	16,900	25,211
Riders per hour	2.1	1.3	1.5	2.3	2.5	1.9	1.9
Cost per passenger	\$54.66	\$88.45	\$72.97	\$45.47	\$43.14	\$60.94	\$60.94
Annual operating cost	\$1,168,240	\$1,168,240	\$1,514,040	\$1,998,160	\$1,514,040	\$1,029,920	\$1,398,773
Total Weighted Score	27.6	20.6	18.6	19.5	19.8	26.1	22.0

Recommendation

The study recommends Zone 1 – Northwest as the top candidate for a pilot project. It combines above-average productivity and manageable costs with high-need populations and a strong mix of residential, retail, medical, and industrial destinations. Zone 6 – West is identified as a second strong option for phased implementation, while Zone 4 – Southeast offers the greatest opportunity for a future expansion when resources allow.

Implementation Priorities

To ensure a successful pilot, the study emphasizes:

1. **Start small and protect quality:** Pilot one compact zone with clear KPIs such as riders per hour, cost per passenger, wait time, on-time performance, and improved access.
2. **Phase expansion:** Expand only after achieving performance targets and securing sustainable funding.
3. **Right-size resources:** Match vehicle supply and service hours to demand to minimize long waits and denied trips.
4. **Fund realistically:** Seek grants and partnerships to launch a pilot, but secure long-term support from local funding partners before expanding to permanent service.
5. **Educate and include:** Pair launch with broad outreach and ensure app-based, phone-in, and accessible payment options for all riders.

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1 INTRODUCTION

The Lextran Microtransit Feasibility Study explores the potential for introducing microtransit service in Lexington-Fayette County. Building on the Lextran 2022 Comprehensive Operations Analysis, this study evaluates microtransit could supplement the existing fixed-route network. As a feasibility study, the purpose was not to recommend a permanent policy shift, but to evaluate whether microtransit is a viable, strategic tool to fill service gaps, meet changing demand, and extend the reach of Lextran's existing network by providing the necessary data, context, and analysis to inform future decision-making.

Microtransit is a broad term that describes a shared transportation service that sits between traditional fixed-route transit and ride-hailing services like Uber or Lyft. Microtransit can be used to supplement fixed route bus service and provide first-and-last mile solutions, and it can be used in less dense suburban areas, where fixed-route transit is more difficult to operate effectively.

Lexington-Fayette Urban County Government (LFUCG) is a merged city-county government within Fayette County, Kentucky. LFUCG is segregated into an urban services area, in which nearly all residential and economic development occurs, with the balance in rural areas with very low density and little to no opportunities to develop. Lextran's fixed route service area effectively matches the urban services area.

This report includes a detailed review of peer agency case studies of microtransit programs, input derived from community engagement efforts, a market assessment of local conditions, and a set of operational guidelines for exploration of service design, funding, and implementation. Together, these components provide a roadmap for launching a pilot program and scaling microtransit.

STUDY PURPOSE, GOALS, AND DELIVERABLES

Lextran funded the Microtransit Feasibility Study to identify best practices for implementing, operating, promoting, and funding microtransit in the Lexington-Fayette County Government Urban Services Area, including coordination between government agencies and supporting organizations.

Table 1 Microtransit Feasibility Study Goals
Review and identify microtransit service best practices of peer agencies
Identify mobility needs of community through existing conditions analysis
Engage community and stakeholders to gather input and reach populations potentially impacted by service changes
Develop microtransit service guidelines and recommendations, including feasibility, design, delivery, funding, and implementation

The study goals (Table 1) inform the project deliverables, listed in Table 2 Microtransit Feasibility Project Deliverables.

Table 2 Microtransit Feasibility Project Deliverables

Community and Stakeholder Input Summary
Peer Agency Case Studies (3-5)
Existing Conditions and Market Assessment
Microtransit Service Guidelines and Evaluation
Implementation Strategies

PROJECT TIMELINE

Nelson/Nygaard contracted with Lextran in October 2024 to conduct the microtransit feasibility study, with a planned completion date in Summer 2025. Table 3 illustrates the tasks completed during the feasibility study. Input, analysis, and findings influenced each step of the planning process ensuring that this final report aligns with takeaways from both quantitative and qualitative methods.

Table 3 Microtransit Feasibility Study Timeline

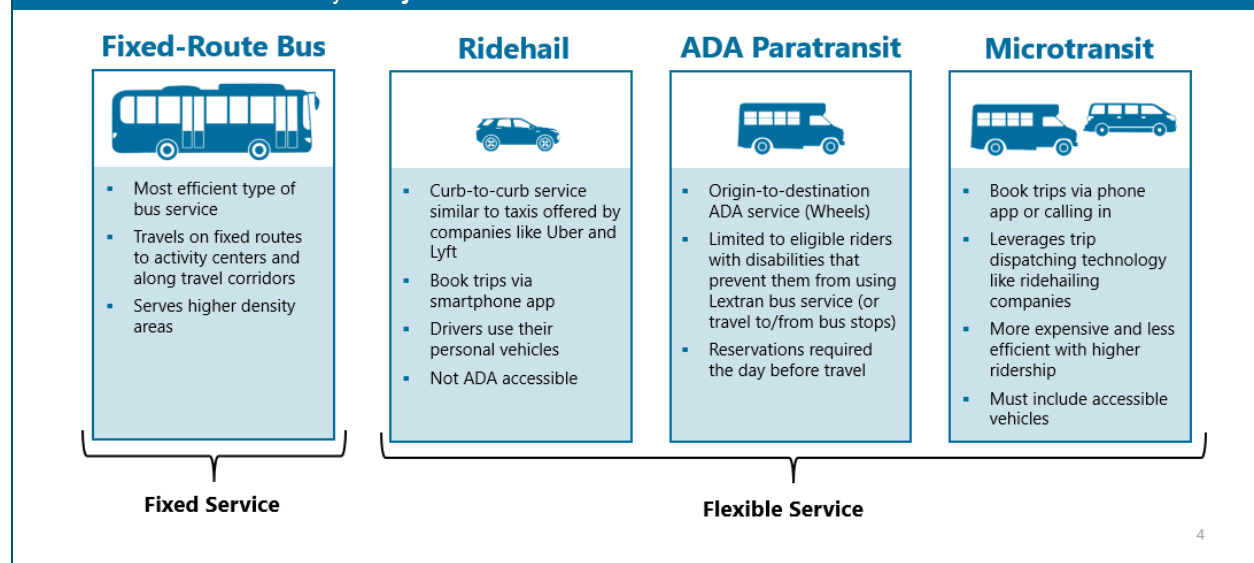
Task	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Data Collection									
Case studies									
Existing conditions and market analysis									
Engagement									
Recommendations development									

2 INTRODUCTION TO MICROTRANSIT

Transit agencies in the U.S. have offered microtransit services for the past decade, with a significant increase in programs during and following the pandemic. The success and failures of these programs offer valuable insights into understanding the underlying features and benefits of a microtransit service to a community.

2.1 DEFINING PUBLIC TRANSPORTATION MODES

Understanding the distinct characteristics of various public transportation modes is essential for designing a balanced transit network. Each mode, or type of public transportation, serves different user needs and geographic contexts, from highly structured fixed-route systems to flexible, on-demand services. The following descriptions provide an overview of fixed-route bus service and the various demand-response services (ride-hailing, ADA paratransit, and microtransit) operating in Lexington, highlighting their core features and typical applications. There are many other types of public transportation, some of which Lextran has previously operated (vanpool, deviated fixed route, dial-a-ride, job bus), and others more common in larger US cities (e.g. bus rapid transit, light rail, subway). **Figure 1 Transit Modes Considered in the Microtransit Feasibility Study**



Fixed-Route Bus Service

Fixed-route bus service operates along established routes with predetermined stops and schedules. Passengers board and exit at designated stops, and service typically runs on a consistent timetable. Service frequency and coverage are often dictated by demand and available funding.

Complementary Paratransit

Required by the Americans with Disabilities Act (ADA) complementary (i.e. supplemental) paratransit is an origin-to-destination demand-response transportation service for individuals with disabilities who are unable to travel to/from or ride fixed-route transit. Riders must be certified as eligible and must reserve trips at least one (1) day prior to travel with accessible vehicles.

Ridehailing Services

Ridehailing services are on-demand, app-based transportation options provided by individuals in their personal vehicles through transportation network companies (TNCs) such as Uber or Lyft. Customers request trips through a smartphone app and a nearby driver is dispatched to their location. Rides are typically point-to-point and do not require sharing with other passengers, though pooled options are available in some cities. TNC drivers are contractors, not employees, and are not subject to certain regulations or standards, including ADA accessible vehicles availability, drug and alcohol testing, and continuous training. Ride-hailing offers convenience and speed, particularly in areas with limited public transit, but tends to be more expensive and subject to driver supply.

Microtransit

Microtransit is a flexible, tech-enabled, shared transportation service that operates within defined service zones. At first glance, microtransit bears many similarities to ride-hailing services with some notable differences.

Table 4 Microtransit vs Ridehail Services

Riders can book trips both through a smartphone application or call center.

Microtransit trips are limited to small zones, where trips both start and end within the same zone.

Microtransit, whether operated in-house or sub-contracted, is subject to the same regulatory requirements and standards as fixed-route bus service, including compliance with the Americans with Disabilities Act (ADA) to offer equivalent service to individuals with disabilities.

Microtransit drivers are employees who receive training and operate under company policies and procedures to provide a uniform experience for all customers.

2.2 HOW A MICROTRANSIT TRIP WORKS

Microtransit offers flexibility for users by leveraging technology to create a user experience similar to ride-hailing, and generally includes these steps:

1. Reserve Trip

Users request or schedule microtransit trips via a smartphone application or call center. The app allows users to input their pickup and drop-off locations, view estimated arrival times, and track the vehicle in real time. Sometimes riders are instructed to walk to a nearby virtual or physical stop to create more efficient routing and reduce delays. Prebooking is available in some program structures while most use real-time requests for trips.

2. Routing and Dispatch

Once a trip is booked, the scheduling and dispatching software dynamically assigns a rider to a shared vehicle based on proximity and destination compatibility. Routes are optimized in real time to balance efficiency with user convenience. Notifications and vehicle tracking help minimize wait times and improve reliability. While this type of dynamic scheduling and routing is not limited to microtransit, it is one of the major benefits to the service model.

3. Pickup Experience

Microtransit vehicles are oftentimes branded vans or small cutaway vehicles. At least some of the fleet must be wheelchair accessible vehicles (WAVs). When operating mixed fleets, transit agencies are required to use WAVs for customers who request them and are also required to deliver equivalent service (similar hours, fares, wait times, etc.). Microtransit is a shared service and most trips will involve brief detours for additional pickups or drop-offs while on board, but deviations are minimized via dynamic routing technology.

4. Drop-off and Feedback

Riders are dropped off at or near their destination. The smartphone app may prompt users to provide feedback on the service, helping operators monitor performance and adjust service.

2.3 MICROTRANSIT USE CASES

Microtransit can enhance a multimodal transit network by improving flexibility and extending the reach of transit. It is best suited for challenges that traditional fixed-route transit cannot effectively address. The following are potential use cases for microtransit:

Service Expansion Through Infill

There are many reasons why a transit agency may not be able to serve an area with fixed-route buses, including low housing density, street networks that lack connectivity, and streets that are physically unsuitable for buses (e.g. narrow streets, cul-de-sacs, unsafe left turns). Microtransit may be able to better serve these areas with smaller vehicles based on real-time demand and the number of people in the area, effectively expanding the service area by filling in existing gaps between routes. This use case is oftentimes applicable in suburban or rural locations with low demand for transit services.

Service Expansion Through New Connections

Sometimes riders are just beyond the reach of or have difficulty accessing transit or other more efficient transit centers, such as rail stations, high-frequency bus lines, or park and ride lots. New connections are especially effective for transit agencies whose service area includes multiple disconnected cities or agencies that abut large urban transit agencies. In these cases, microtransit can serve as a first-/last-mile connection to connect riders to the transit network.

Technology Enhancement

Transit agencies (or their sub-contractors) have operated demand-response transit services since at least the early 1990s, utilizing the technology widely in paratransit applications. Dial-A-Ride services were common for decades, and continue to be offered in many communities by non-profit organizations or faith-based groups offering trips for medical care, employment, etc. Deviated fixed-route service, where a bus follows a dedicated route, but users can pre-schedule a pickup or drop-off within certain distance of the route, is less common today, but still offered in smaller rural communities in the U.S.

Microtransit technology is not so much a new transit service as the natural successor to these older forms of on-demand transit. These technology improvements and enhancements (e.g. app-based trip booking, fare payment, real-time tracking, and dynamic routing) increase transparency and reliability, helping to reduce common barriers to using transit.

2.4 DOES MICROTRANSIT FIT WITH LEXTRAN'S MISSION AND VALUES

Microtransit aligns with Lextran's mission statement, *We Serve People and Our Community with Mobility Solutions*, by offering a flexible, adaptive transit option that complements the agency's existing services. While fixed-route bus service remains Lextran's backbone due to its efficiency and cost-effectiveness, the agency has a long history of exploring diverse mobility strategies to better meet community needs. Microtransit represents a continuation of this commitment, exploring more personalized service options for areas or populations where traditional routes may be less effective.

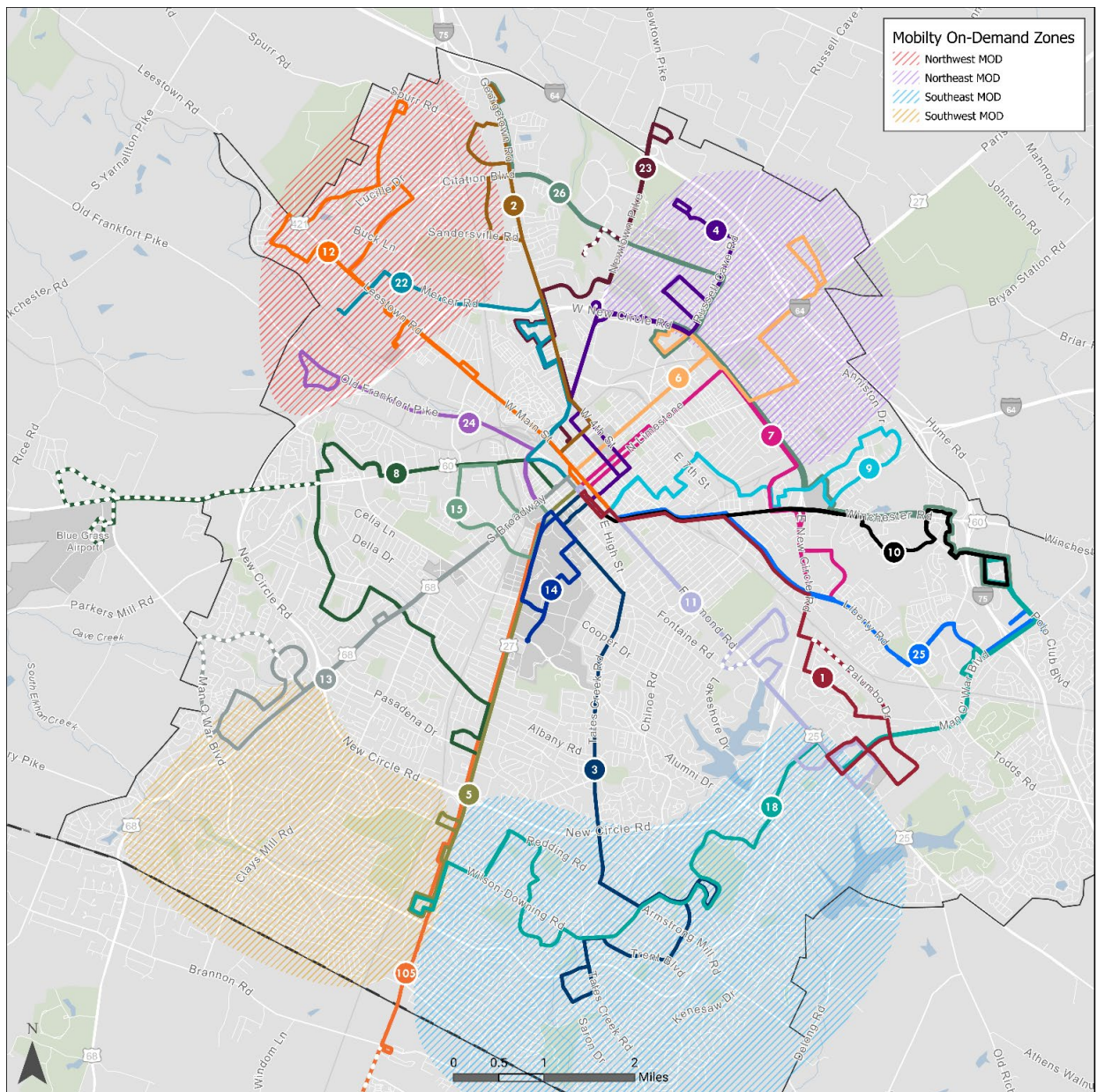
2022 Comprehensive Operations Analysis

Lextran completed its most recent Comprehensive Operations Analysis (COA) in 2022. The purpose of COA study is to develop strategies to align Lextran's resources with demand for public transportation throughout the Lexington-Fayette County community. Comprehensive operational analyses are typically short-range studies with a five-year planning horizon, focused on service optimization strategies derived from analyses of the existing network and input from customers and stakeholders.

The COA provided a thorough evaluation of the existing system and included recommendations for fixed-route service, mobility on-demand (MOD) strategies (more commonly known today as microtransit), capital planning, and financial planning. As part of the MOD recommendations, the plan addressed potential use cases, service design considerations, and the benefits and challenges associated with flexible transit models. Much of the data that was used in the COA was reflective of the active pandemic and the conditions of that time.

In the long horizon plan, the COA identified four (4) potential MOD zones based on geographic and service characteristics: Northwest, Northeast, Southeast, and Southwest, shown in Figure 1. Each zone was analyzed in terms of demographics, employment density, paratransit activity, and connectivity to the Lextran network. The analysis also estimated ridership and vehicle requirements using population and job density factors.

While the COA identified four (4) zones within the Lextran service area, the COA did not rank or recommend a specific zone for a pilot study. The MOD section of the COA is included as Appendix D: 2022 Lextran COA Mobility on Demand (MOD). This Microtransit Feasibility Study builds on the efforts of the COA to do a more in-depth evaluation of potential microtransit zones.

Figure 2 Comprehensive Operations Analysis Mobility On-Demand Zones (July 2022)

3 INPUT THROUGH ENGAGEMENT

The microtransit feasibility study's success depends on meaningful engagement with a diverse range of stakeholders who represent the community's needs, priorities, and challenges. Lextran's engagement strategy consisted of three phases:

1. Stakeholder Identification and Initial Outreach
2. Broad Public Engagement
3. Findings and Feedback Loop

3.1 ENGAGEMENT PLAN, PURPOSE, AND USE

Phase One focused on identifying key influencers and stakeholders with significant interest in or influence over transportation decisions. This includes elected officials and decision-makers at various government agencies, advocacy groups, and institutions. The goal was to inform these stakeholders about the study, its purpose, and potential impacts while consulting them to gather initial feedback on priorities and focus areas. Their input shaped the next phases of engagement, ensuring the study reflects the community's diverse perspectives and supports effective microtransit solutions.

Using feedback from stakeholder interviews in Phase One, Lextran engaged the broader community through focus groups, tabling events, and a bilingual online input survey in Phase Two. Phase Three is the distribution of Lextran's Community Engagement Findings, effectively the contents of this report, which will be publicly available on the Lextran website. Lextran will present the findings to other community groups on request.

3.2 ENGAGEMENT PLAN LIMITATIONS

Lextran received input from hundreds of community members, but it's important to note that the input is not necessarily reflective of all Lexingtonians. Stakeholders were identified for their position in the community, knowledge of public transit, Lextran riders, or other influential factors. These individuals or groups are inherently biased or predisposed to certain perspectives. Participants in the online survey self-selected, or volunteered, to complete the survey, resulting in a respondent group that is not statistically valid or representative. The takeaways that follow are still very valuable and helped Lextran and the consultants understand key gaps or misunderstandings about microtransit that can be addressed through further education and engagement.

3.3 ENGAGEMENT PLAN TAKEAWAYS

Initial stakeholder interviews revealed a lack of clarity and common misconceptions about microtransit, even among individuals with strong transit knowledge or decision-making authority. Many confused microtransit with ride-hailing or assumed it would operate citywide, without understanding its zone-based structure and limited span of service. Several stakeholders also viewed microtransit as a solution to concerns about paratransit productivity and customer service, despite the differences between the two service models. These findings underscore the importance of public education and messaging that clearly distinguishes microtransit's role within the broader transit system. Even so, stakeholder outreach proved valuable in identifying additional voices for Phase Two, and most interviewees committed to helping circulate the survey through their networks.

Direct engagement in Phase Two included a focus group with seniors and tabling in public spaces. Following a brief explanatory presentation, participants expressed interest for using microtransit but largely only advocated for service to their own neighborhoods when asked.

Some participants were current or former paratransit riders who shared personal experiences and concerns. For these individuals, the engagement clarified persistent misconceptions (e.g. paratransit is limited to essential trips like medical appointments) and revealed continued confusion around scheduling windows and eligibility rules. These conversations underscored that the need for clear, ongoing public education never ends. Without consistent, intentional outreach, misunderstandings that have persisted for decades with paratransit may quickly emerge in microtransit as well.

Overall, survey findings show cautious optimism toward microtransit. A majority of survey respondents expressed a willingness to consider microtransit, with high smartphone ownership supporting the feasibility of app-based booking. However, open-ended responses reflected strong concerns about ensuring microtransit does not detract from investments in fixed-route bus service. Reliability, affordability, and expanded access to underserved destinations emerged as consistent public priorities. Demographic results showed broad participation across age groups, income levels, and housing types, with a notable concentration of working-age adults, homeowners, and smartphone users. All questions and responses can be found in **Appendix C: Community Input Survey Analysis & Findings**.

Taken together, these insights reflect a community eager to learn about new mobility options and open to using them, provided that microtransit is clearly explained, complements existing services, and meets expectations for convenience and accessibility.

When asked where microtransit could work, most participants defaulted to their own neighborhood, underscoring the tendency for people to evaluate new services through a personal lens rather than a systems perspective. This reinforces a key lesson: education and marketing must be continuous. Even long-standing services like paratransit, which have changed little over decades, remain widely misunderstood, even by frequent users. To support successful adoption, Lextran must invest early and often in education, outreach, and transparent communication.

4 CASE STUDIES

The consultant team prepared six (6) case studies of microtransit and on-demand programs from transit agencies across the country. Together, these case studies represent a range of delivery models and offer valuable insights into how microtransit can be tailored to different communities. Each case study summarizes the service model, goals, implementation strategies, challenges, and outcomes. A summary of key takeaways is provided below. **Appendix A: Case Studies** shows an in-depth overview of each of the case studies. **Appendix B: Case Study Questionnaire** includes the questionnaire used in the interviews.

4.1 IN-DEPTH QUALITATIVE INTERVIEWS

The purpose of these interviews was to gather in-depth, experience-based insights from peer transit agencies that have implemented microtransit or on-demand services. Interviews targeted agency staff directly involved in planning, procurement, and operations to understand the decisions, challenges, and strategies behind service design. These conversations helped answer core questions such as:

- What goals did the agency hope to achieve through microtransit?
- What implementation models were used?
- How was each stage of program implementation funded?
- What worked, what didn't, and how was the service adjusted over time?

Unlike surveys or data analysis, qualitative interviews provide context, nuance, and perspective that can't be captured through quantitative metrics alone. By speaking directly with decision-makers at peer agencies, the consultant team gained access to lessons learned, internal rationale, and on-the-ground experiences that shaped the outcomes of each program. These interviews informed the structure of the case studies, and the synthesis of key takeaways used to guide to form the findings and recommendations identified in **Sections 6 Guidelines and Evaluation** and **7 Implementation Strategies**.

4.2 SELECTING PEER AGENCIES

The consultant identified peer transit agencies in the United States that provide fixed route bus service and have an existing microtransit service in place. In coordination with Lextran, peer agencies were then culled down to five (5) agencies that offer six (6) programs (DART has both a microtransit service and a separate TNC partnership) as shown in Table 5. The selection focused on agencies whose microtransit or TNC services have been in existence for a minimum of three (3) years, and then narrowed to ensure that multiple services models, technology partners, and operators were represented.

Finally, the consultant contacted each agency to request a minimum one-hour interview with decision-makers involved in the planning, procurement, and daily operation of their services. Interviewees were provided interview questions in advance to facilitate productive conversations.

Table 5 Peer Agency Comparison

Transit Agency	Location	Service Model	Technology Partner	Operator	Funding Source
DART Flex Connect	Des Moines, IA		Uber	Uber	Local
DART On Demand	Des Moines, IA				Local Tax, Federal
LYNX by CATS	Baton Rouge, LA				Local Tax
MetroLink MicroLink	Tulsa, OK				Local, State, Federal
Morrisville Smart Shuttle	Morrisville, NC				Local – MPO & City
RTA Connect On-Demand	Dayton, OH		Uber	Uber	Restricted Local
 <i>Microtransit</i>  <i>TNC (e.g. Uber / Lyft)</i>					

4.3 CASE STUDY KEY TAKEAWAYS

The following section summarizes general findings from interviews with peer agencies. See **Appendix A: Case Studies** for the full case study report.

Project Purpose and Use Case

Agencies were asked questions to determine why they started microtransit and how each tackled the transition from exploration to commitment.

4. **Feasibility study** – Programs conducted internal or consultant-led feasibility studies to assess viability, demand potential, and program design parameters.
5. **Pilot project** – Most programs began as a pilot to test the service before committing to permanent or expanded services. Each of the agencies used the pilot period to gather feedback, adjust service design, evaluate performance, and prove program viability.
6. **Improving unproductive service** – Most programs interviewed stated that one of the primary reasons for implementing the program was to reduce gaps in fixed-route bus service, either geographically or to extend the hours of operation in an area. A fast-growing community initiated its first ever public transit service with microtransit.
7. **Flexibility improved non-peak and weekend service** – Three (3) programs specifically identified nighttime or weekend services with poor ridership and high operating costs (MetroLink, Flex Connect, RTA) that benefited from improved flexibility.

8. **Regional Transit Authorities** – Transit agencies that service multiple distinct communities balance differing priorities in each community. These agencies used microtransit to replace unproductive fixed route or deviated fixed-route services in smaller satellite communities. Programs in these areas were typically championed by local leaders to demonstrate direct value to their constituents for paying into a regional transit authority.
9. **Low-density development** – All of the microtransit services operate through relatively low-density areas. Interviews confirmed that microtransit services are better suited to areas with lower demand than traditional fixed-route services.
10. **Coordination with other services** – Implementation of on-demand services is typically coordinated with other services (e.g., fixed-route service). Some services removed deviations and simplified portions of the fixed route network (RTA Connect On-Demand, MetroLink MicroLink). Other programs completely replaced underperforming non-core transit services, such as demand response (e.g. Dial-A-Ride) or deviated fixed-route service.

Funding and Governance

Agencies were then asked questions to understand how they fund microtransit programs, both during the pilot project and the succeeding permanent service.

1. **Funding sources** – Funding for microtransit typically comes from the same local source (e.g. property tax, other local tax, regional transit authority member funding) as existing transit services. Two programs (MetroLink and DART On Demand) leveraged federal formula funding to support microtransit.
2. **Local funding partners offer flexibility** – Local funding partners included local government and in one instance the state government. Supporting governments included the MPO (Morrisville SMART Shuttle), county (DART On Demand), and state department of transportation (DART On Demand).
3. **Public private partnerships offer strategic flexibility** -- Local businesses provide funding to DART through an Unlimited Access Partners program that includes Principal Financial, Blue Cross Blue Shield, and a regional community college.
4. **Service design impacts funding needs** – Hub-to-Hub or smaller zones (Morrisville, Flex Connect) help contain costs and reduce operational complexity. Fare-free services attract high demand but risk exceeding available resources without scalable funding.
5. **TNCs do not meet federal funding restrictions** – Funding for TNC partnerships was limited to local funding only (RTA Connect On Demand and DART Flex Connect) to avoid complications with federal reporting and compliance standards.
6. **TNC vendor procurement** – TNC partnerships included multiple vendors. Currently, the “taxicab exception” to the FTA drug and alcohol testing regulations applies when passengers choose from multiple providers, making it impractical for the agency to administer testing. However, the status of this rule is uncertain and may be updated to require transit agencies to conduct drug and alcohol testing for TNC operators.

Implementation and Operations

1. **Turnkey service delivery** – Several agencies selected a turnkey delivery model contracting both operations and technology and them to launch service quickly without purchasing vehicles or hiring operators. This approach reduced internal burden and expedited deployment (CATS, Morrisville). While turnkey models accelerate launch, they do not eliminate capital costs for vehicles, instead shifting costs into the vendor's pricing structure.
2. **Fare payment** – Fares were oftentimes complicating factors for agencies. Technology for fare payment between fixed route and microtransit may be incompatible, making free transfers difficult or impossible. Fare collection can be completed various ways, including processing fares through a smartphone app, installing fareboxes on each vehicle (assuming the agency owns the vehicles), collecting cash fares onboard (safety concerns), or processing fare payment over the phone at a call center.
3. **Fares** – Fares varied in price by agency. Some fares were priced as a premium, while others were priced equal cost to fixed-route service. Two programs operated zero fare (\$0.00) but cited the free service as one of the reasons for experiencing overwhelming demand. At least two (2) agencies had previously increased their fare price in response to overwhelming demand.
4. **Trip booking** – Agencies typically provide multiple options for requesting a trip. Trips are typically requested via a smartphone app or by calling in. Calls can be handled in-house or contracted out. However, a contracted call center may have additional challenges such as language barriers if located internationally (LYNX by CATS).

Findings

1. **Qualified Success** – All agencies interviewed described microtransit as successful, offering clear value to riders and local community. However, success was qualified by ongoing challenges related to excessive demand, service span, zone size, and salability. Agencies emphasized that program continuation depends on securing stable and sustainable funding. The study team did not include interviews with agencies that had implemented microtransit programs which were unsuccessful and subsequently discontinued.
2. **Key Performance Indicators (KPIs)** – Every agency tracks KPIs to measure progress over time. Each technology platform provides KPIs in the form of dashboards so that agencies can access up to date information on performance. Smartphone apps can request ratings of the service, including driver performance. Contracts played a large role in managing KPIs and reporting.
3. **Capacity** – Mobility on demand services have limitations in capacity. The highest performing microtransit achieves an average of 5-6 riders per revenue hour, and this was in a relatively small (efficient) service area (approximately 8.5 square miles). On-demand services become overwhelmed at much lower volumes of passengers compared to fixed-route service.

4. **Denied trip requests** – Popular services risk becoming overwhelmed by demand, resulting in denied trips with a “seat unavailable.” Every agency interviewed cited at least periodic challenges with overwhelming demand. Services tend to become overwhelmed at the start of service or at peak periods.
5. **Customer satisfaction** – Customer satisfaction can diminish if passengers are comparing mobility on demand service with TNCs (Uber, Lyft). Trips are generally shared when services are well utilized, and trips are sometimes indirect to pick up and drop off other passengers. Passengers accustomed to TNC service may experience disappointment when trips are shared with multiple passengers.
6. **Union relations** – Many microtransit zones are staffed by non-union operators, which can create tension between the union and the agency. Distinguishing microtransit from other services that are union operated can help maintain positive relations.
7. **ADA paratransit** – TNCs are not ADA accessible, so the agency must fill that gap with accessible vehicles. If available, existing paratransit vehicles can sometimes be used for these trips, but the scheduling software for ADA paratransit must be compatible with the mobility on demand technology platform.
8. **Student market** – Students and young people were an unexpected strong market for multiple agencies (Morrisville SMART Shuttle, DART On Demand, and MetroLink MicroLink).

4.4 MICROTRANSIT BEST PRACTICES

1. **Start small and scale strategically** – Design initial service zones conservatively to avoid overwhelming demand. It's easier to loosen restrictions (e.g., zone size, booking windows, fares) over time than to impose them retroactively. Incremental growth improves long-term stability and service quality.
2. **Actively manage demand through service design** – Use policy levers (e.g. walk distances, zone boundaries, booking restrictions, and fare changes) to control demand and balance capacity. Flexible service parameters help agencies match supply with operational realities.
3. **Invest in dedicated agency staffing** – Even when outsourcing operations, assign internal staff to oversee contracts, ensure regulatory compliance (ADA, Title VI), handle public inquiries, and manage outreach. In-house programs require additional roles such as operators, dispatchers, and call center staff.
4. **Integrate and simplify technology platforms** – Select technology providers that support integration across booking, payment, and performance tracking systems. Minimize the number of apps required for riders to access service and ensure backend compatibility with fixed-route platforms where possible.
5. **Plan for driver availability shortfalls** – Anticipate gaps in driver supply during off-peak hours, inclement weather, or holidays, especially when working with TNC partners. Have contingencies for service coverage and clear communication plans for riders when delays or denied trips occur.

6. **Educate the public and support new riders** – Offer clear, accessible materials on how to use the service. Provide real-time support for riders unfamiliar with on-demand booking apps, especially older adults and ADA riders. Use overlap periods when transitioning from legacy service to allow for adjustment.
9. **Prepare for non-scalable operating costs** – Unlike fixed-route transit, microtransit's cost per rider does not decrease with higher ridership. Agencies should model financial projections based on linear cost growth and avoid assuming economies of scale.
10. **Anticipate and negotiate vendor rate escalations** – Build financial flexibility into contracts to account for potential annual cost increases. Agencies like CATS and RTA Dayton experienced steep hikes in hourly and per-trip rates, which strained budgets and forced service cuts or fare hikes.
11. **Monitor regulatory risks, especially drug and alcohol compliance** – Be aware that the current FTA "taxicab exception" to drug and alcohol testing requirements may change. If so, agencies may become responsible for administering these tests to TNC drivers, increasing oversight burden and cost.

Challenges

Transit agencies implementing microtransit encountered a wide range of challenges that reflect the inherent tension between flexibility, affordability, and scalability in on-demand public service. These challenges fall into five (5) key categories: operations, finance, regulatory compliance, technology integration, and rider experience.

Operational Challenges

Agencies consistently reported that microtransit services have limited capacity. As demand grew, often rapidly in fare-free or student-heavy zones, services became saturated, resulting in longer wait times and denied trip requests. Vehicle overuse in high-demand zones, back-to-back trip booking by individual users, and uneven ridership across service areas further complicated operations. Agencies operating services in-house also faced strain on dispatch and call center staff, prompting structural changes like separating customer service from trip scheduling. Additionally, physical infrastructure constraints (e.g. lack of vehicle storage space in satellite communities) created logistical burdens.

Table 6 Operational Challenges

Challenge	Description	Examples
Trip capacity limitations	Microtransit becomes saturated at low volumes (5–6 pax/hr), especially in high-demand zones	All agencies
Trip overuse/abuse	Riders book back-to-back trips before driver leaves	MetroLink
Uneven demand across zones	High ridership in student or commercial zones, low elsewhere	MetroLink, Morrisville
Driver availability	TNC drivers unreliable during off-hours, bad weather	RTA, DART Flex Connect
Dispatch stress	In-house operations need more dispatch/call center staff	MetroLink
Infrastructure constraints	Agencies lacked storage for vehicles in satellite cities	LYNX by CATS
Overwhelming demand	Services become saturated, leading to long waits or denied trips	All agencies
Agency staffing	New staffing required for contract oversight, compliance, marketing, customer support	All agencies
Sensitivity to change	Small changes to service policies (e.g., walk distance, fare, booking) have outsized impacts on demand, agency perception	All agencies

Financial and Cost Challenges

Most agencies found that microtransit operating costs scale linearly with demand. Unlike fixed-route services that benefit from economies of scale, microtransit costs rise with each added rider or vehicle hour. Several programs, including CATS and DART, had to scale back service as demand and corresponding costs outpaced available funding. Introducing or raising fares often helped manage demand, but also led to significant ridership loss, as in RTA's case where ridership dropped 68% the month after fares were introduced. Additionally, funding partners, particularly municipalities contributing through taxes or service agreements, expected visible results, increasing political pressure to maintain high-performing service.

Table 7 Financial and Cost Challenges

Challenge	Description	Examples
Fare sensitivity	Fare increases led to major drops in ridership	RTA
Operating costs not scalable	More demand = higher cost, with no efficiency gains	CATS, DART On Demand
Contract rate increases	Higher per hour or per trip rates outpaced budget	CATS, RTA
Airport and access fees	Agency assessed airport Taxi / Rideshare drop-off fees	LYNX
Funding partner pressure	Local partners expect visible ROI on contributions	CATS, Morrisville

TNC-based programs encountered recurring difficulties with vendor contracts. Agencies such as RTA Dayton noted that Uber and Lyft refused to accept standard public sector agreements, requiring lengthy and complex negotiations. Another concern was the uncertain status of the FTA's taxicab exception: if revoked, transit agencies could be required to administer drug and alcohol testing for TNC drivers, creating a compliance burden that could jeopardize TNC-based service models.

Table 8 Contractual and Regulatory Challenges

Challenge	Description	Examples
TNC contract rigidity	Uber/Lyft refuse to use agency-standard contracts	RTA Dayton
Call center quality	Outsourced centers had language/communication issues	LYNX by CATS
FTA drug/alcohol compliance	Changing rules could require testing of TNC drivers	All TNC's
Vendor control of data/tech	Agencies rely on Via/Uber for KPI dashboards, performance control	All Agencies

While app-based booking platforms were essential, many agencies faced technology limitations. Booking apps didn't always integrate with fare systems, ADA paratransit platforms, or fixed-route trip planners. As a result, passengers often had to use multiple apps to access different services, reducing convenience and increasing confusion. Fare technology compatibility was another frequent barrier; agencies struggled to implement free transfers between microtransit and fixed-route modes due to incompatible payment systems.

Table 9 Technology and Integration Challenges

Challenge	Description	Examples
App limitations	Inflexibility in parameters like wait time or booking windows	Morrisville, DART
Multiple apps required	Poor integration between microtransit, fixed route	DART, MetroLink
Lack of fare integration	Incompatible systems block free transfers to fixed-route	RTA, CATS, Morrisville

Agencies noted that riders accustomed to rideshare services like Uber and Lyft often expected private, direct trips and were disappointed by the shared-ride, pooled nature of public microtransit. Riders also expressed frustration with indirect routes and wait times, particularly in high-demand periods. Educating the public, especially older adults, ADA riders, and first-time users, was critical to ensuring adoption. Some agencies found that expected ridership markets (commuters, low-income workers) were less prevalent than anticipated, while student and leisure travelers became the dominant user base.

Challenge	Description	Examples
Rideshare expectations	Riders expect point-to-point trips like Uber; dislike shared rides	All agencies
Limited awareness or education	Some riders didn't understand how to use service or app	DART, Morrisville
Older adults & ADA riders need phone support	Reliance on smartphone apps created access barriers	LYNX, RTA

Mismatch between intended and actual markets	Planned for commuters, but real users were leisure/social	Morrisville, MetroLink
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5 EXISTING CONDITIONS AND MARKET ASSESSMENT

This section evaluates Lexington’s existing transit network and local market characteristics to identify areas where microtransit may be most viable. The analysis incorporates Lextran’s operational data (e.g. route frequency, stop-level ridership, and ADA paratransit trip origins and destinations) to assess how well the current fixed-route system meets community needs.

This transit data was layered with demographic indicators from the U.S. Census Bureau, including household income, vehicle ownership, and other factors correlated with transit propensity. Together, these datasets reveal where transit currently performs well and, more critically, where unmet demand may exist.

Although microtransit will not replace ADA paratransit, analyzing paratransit trip patterns is still valuable because it highlights areas with consistent demand for short, local trips that could also be served by microtransit.

This data-driven approach helps pinpoint geographic gaps in service and supports the identification of priority zones for microtransit. It establishes an evidence-based rationale for why certain areas are strong candidates for flexible, on-demand service.

5.1 EXISTING SERVICE ANALYSIS

Existing Service Levels

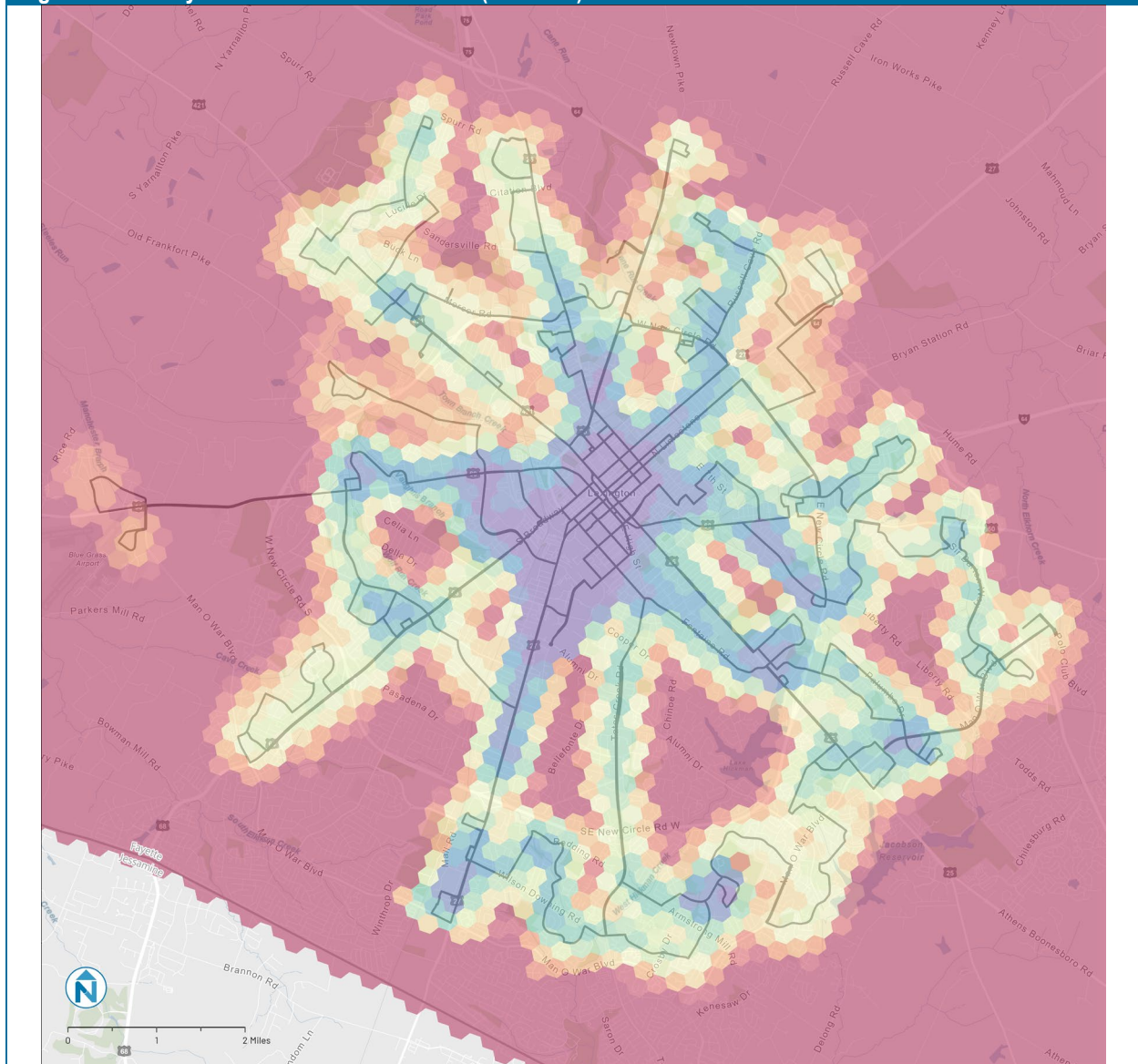
Understanding where fixed-route service is most frequent and accessible provides a foundation for identifying areas that could benefit from additional coverage or flexibility. To assess service availability, the project team created half-mile walksheds around each bus stop and weighted them by weekday service frequency.

Results of the service level analysis include:

- Transit service was most concentrated near the downtown core, consistent with Lexington’s radial street network.
- The University of Kentucky and Red Mile Road area also showed high service levels.

- The Nicholasville Road (Route 5) and Versailles Road (Route 8) corridors have the highest service densities, with more frequent service.

Figure 3 Weekday Fixed-Route Service Levels (Fall 2024)



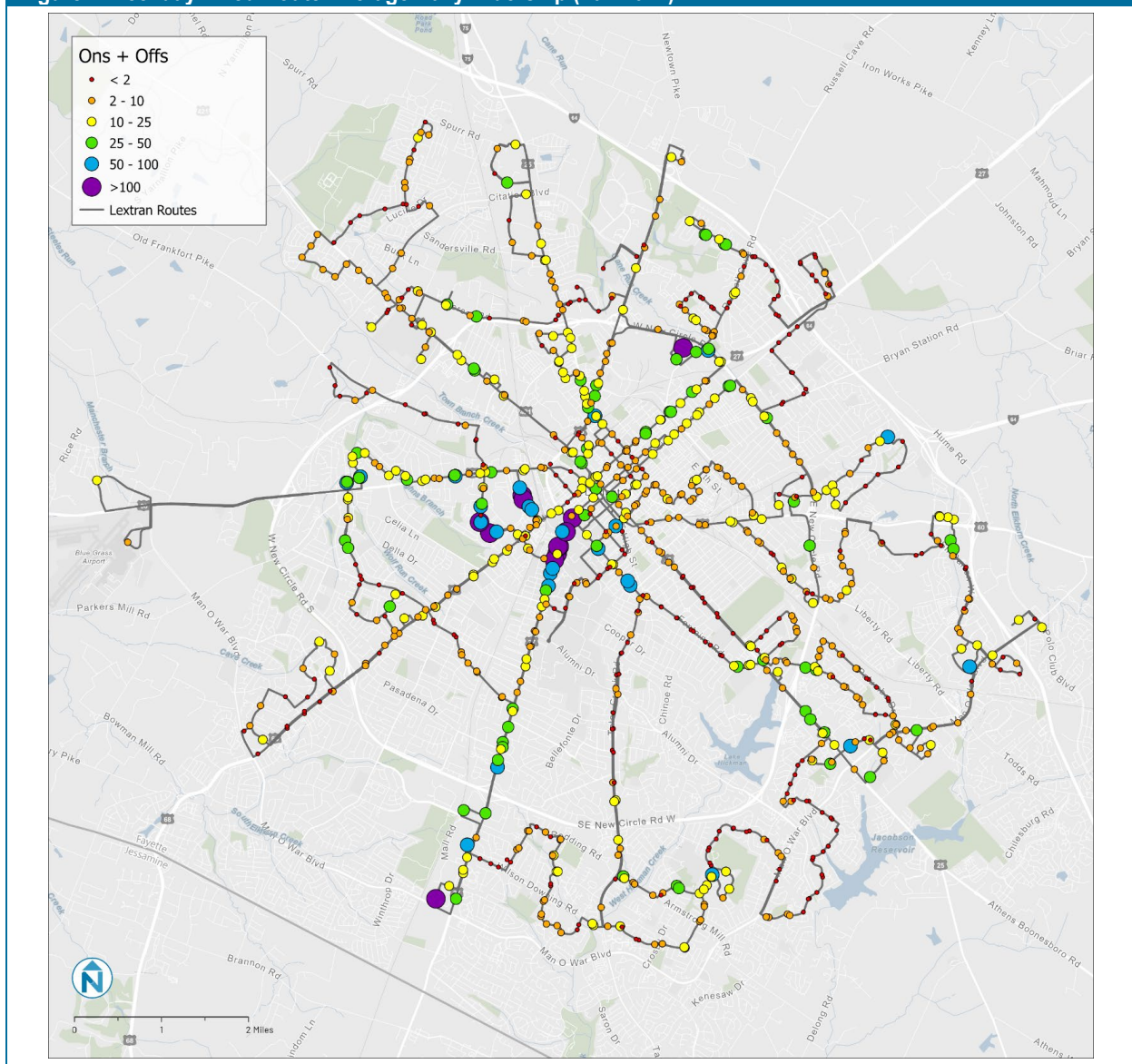
Fixed-Route Ridership by Stop

Ridership is an important component in understanding the potential opportunities for microtransit primarily for two (2) reasons:

1. Low ridership areas can be opportunities to leverage microtransit to expand coverage and improve flexibility for passengers.
2. High ridership stops indicate strong anchor points for microtransit service to connect to.

The team analyzed Fall 2024 average weekday daily stop-level ridership to understand the distribution of riders in the current network. High ridership locations that could serve as anchor points include Walmart at Russell Cave Road and Walmart on Nicholasville Road, for example.

Figure 4 Weekday Fixed Route Average Daily Ridership (Fall 2024)



Paratransit Ridership

Lextran’s ADA paratransit service, Lextran Wheels, operates year-round, providing shared, door-to-door transportation for eligible riders. While this essential service cannot be replaced by microtransit, paratransit usage offers valuable insights into localized travel demand that microtransit could help address.

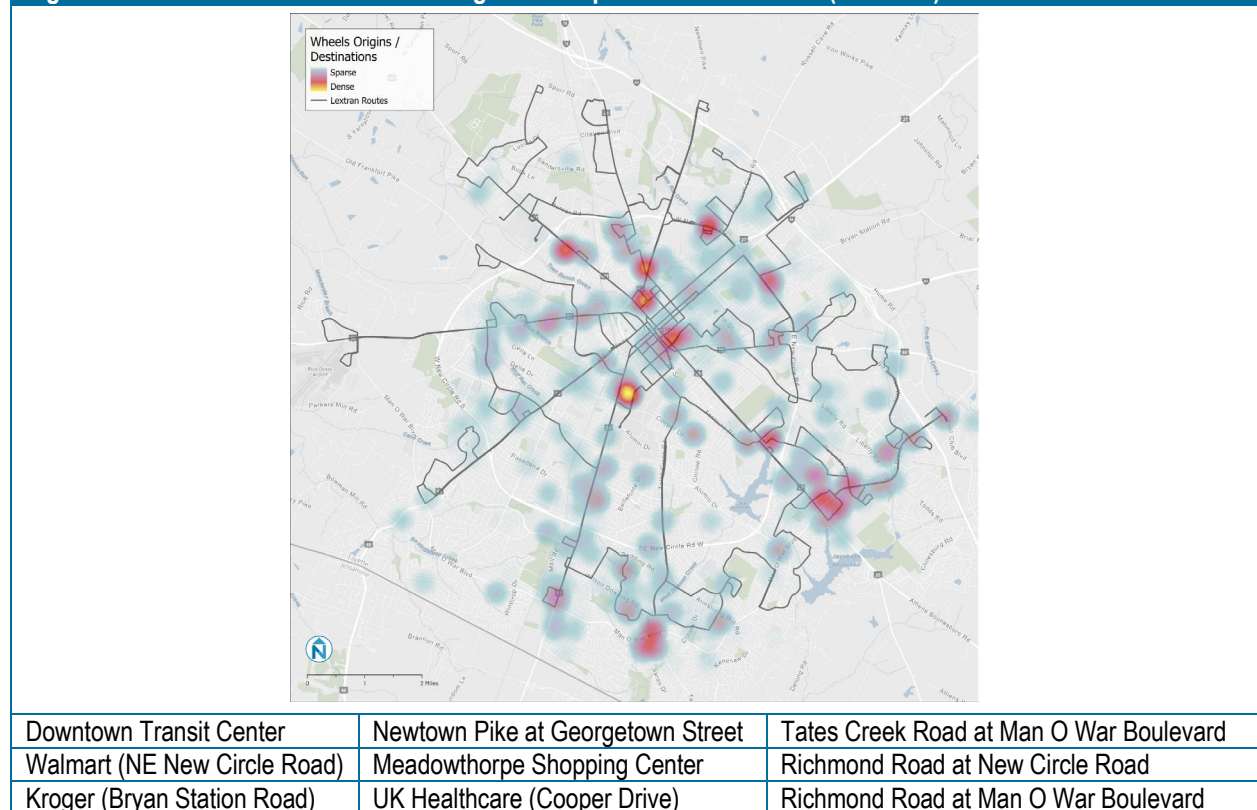
Paratransit ridership data supports microtransit feasibility in three key ways:

1. It provides point-to-point travel patterns that reveal consistent origin-destination pairs.
2. It indicates when trips occur, helping define peak periods of localized demand.
3. It highlights opportunities where microtransit could supplement ADA service for some users, offering more flexibility and travel options.

The study team analyzed Lextran Wheels data from August 25 to November 18, 2024, focusing on trips under two miles to isolate shorter, local trips that microtransit could reasonably serve. Removing longer trips helps ensure the findings reflect realistic service areas and avoid inefficiencies.

Figure 6 presents a map and listing of high-demand paratransit origins and destinations under two miles. These locations include healthcare facilities, retail centers, and employment hubs, making them strong candidates for future microtransit zones or pilot programs.

Figure 5 Paratransit Destinations and Origins for Trips Less Than 2 Miles (Fall 2024)



5.2 MARKET ANALYSIS

Evaluating where microtransit service is most appropriate in Lexington requires a deep understanding of where demand is likely to be strongest. This section examines multiple indicators, including population and job density, transit propensity, and mobility gaps, to identify areas where microtransit could offer meaningful benefits, particularly for residents underserved by the fixed-route system. These indicators are used throughout the study to inform zone selection, service design, and implementation planning.

Transit Modes and Demand

Transit services are most effective when tailored to the land use and activity patterns they serve. Fixed-route bus service performs best in areas with high ridership potential and concentrated demand, while microtransit can bridge gaps in neighborhoods that are too spread out or too low in density to efficiently support fixed routes. Microtransit, in particular, works best in areas with population densities between 2 and 15 people per acre or job densities between 2 and 10 jobs per acre; areas dense enough to generate rides, but not so dense as to exceed vehicle capacity. Figure 6 illustrates how various transit modes correspond to different land use intensities.

Figure 6 Population Density, Job Density, and Transit Mode

LAND USE			TRANSIT	
Land Use Type	Residents per Acre	Jobs per Acre	Appropriate Types of Transit	Frequency of Service
 Downtowns & High Density Corridors	>45	>25	 Light Rail  BRT  Rapid Bus  Local Bus	 10 mins or better
 Urban Mixed-Use	30-45	15-25	 BRT  Rapid Bus  Local Bus	 10-15 minutes
 Neighborhood & Suburban Mixed-Use	15-30	10-15	 Local Bus	 15-30 minutes
 Mixed Neighborhoods	10-15	5-10	 Local Bus  Micro-transit	 30-60 minutes
 Low Density	2-10	2-5	 Micro-transit  Rideshare  Volunteer Driver Pgm	 60 mins or less or On Demand
 Rural	<2	<2	 Rideshare  Volunteer Driver Pgm	 On Demand

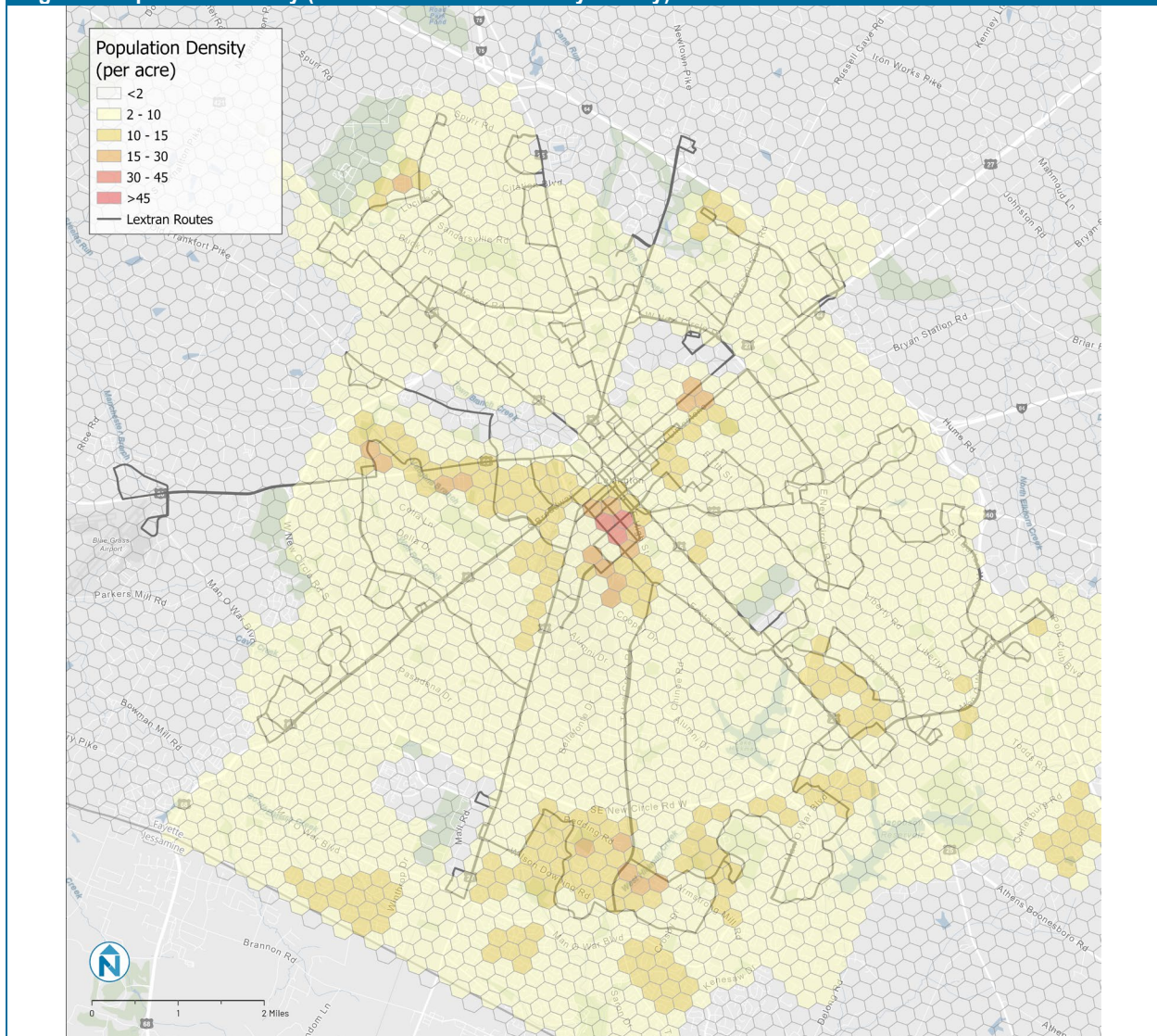
Source: Thresholds based on research by Nelson\Nygaard.

Population Density

Population density is one of the strongest predictors of transit use. As shown in Figure 7, large parts of Lexington meet or exceed the minimum population density threshold for effective microtransit service. While fixed-route service remains most appropriate in the densest neighborhoods (e.g. downtown and the University of Kentucky campus) many outer neighborhoods fall within the target range for microtransit.

However, density alone does not fully capture likely demand. Certain population groups are more reliant on transit due to factors such as household income, vehicle ownership, or disability. To better assess microtransit suitability, population characteristics must be factored into the analysis. The next section introduces a transit propensity framework used to evaluate these additional indicators.

Figure 7 Population Density (2023 American Community Survey)



Transit Propensity

Transit propensity refers to the likelihood that residents will use public transportation based on their demographic and socioeconomic characteristics. To estimate this, the study team calculated Transit Index Factors (TIFs) for Fayette County using available U.S. Census Journey to Work data. These values quantify how much more or less likely a person is to use transit based on factors such as race, income, vehicle access, and nativity. For example, a person living in a household with no car is 14.1 times more likely to use transit than the average resident.

Table 10 summarizes the TIF values used in this analysis. These values were applied to Census block group data to map neighborhood-level variations in transit propensity.

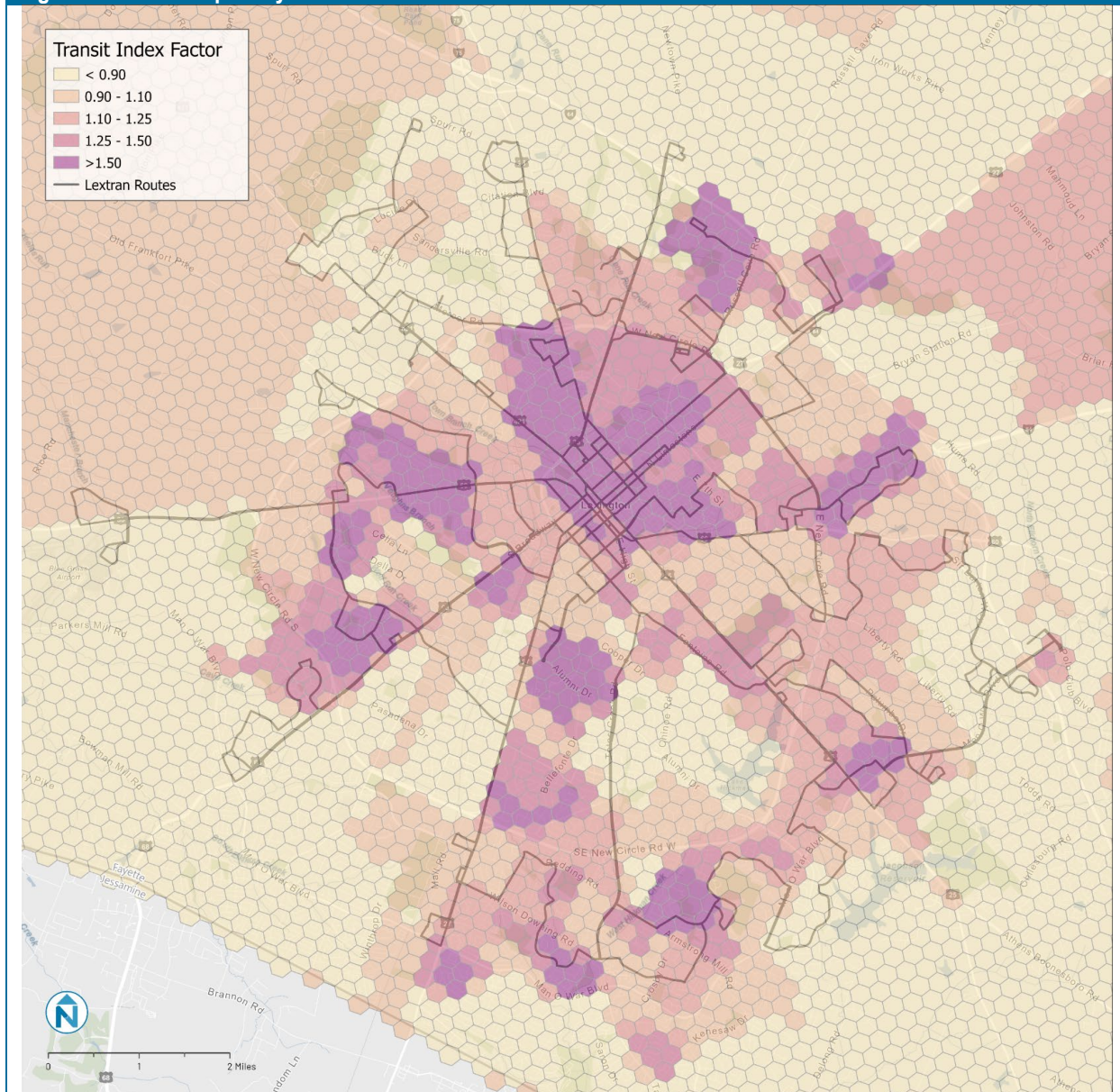
Table 10 Transit Index Factors (TIFs) for Fayette County, KY

Census Category	Demographic Group	Transit Index Factor
Race and Ethnicity	White	0.65
	Other	1.89
Household Vehicle Ownership	No car	14.1
	One car	1.55
	Two or more cars	0.24
Country of Origin	Native	0.94
	Foreign	1.4
Household Income	Less than \$25,000	2.11
	\$25,000 - \$35,000	1.36
	\$35,000 - \$50,000	0.84
	More than \$50,000	0.26

The adjusted population shown in Table 10 incorporates the Transit Index Factor (TIF), which weights residents based on their likelihood of using transit. The TIF is calculated using data from the 2019–2023 American Community Survey (ACS, Table B25044) on household vehicle access. Specifically, the transit mode share of individuals without access to a vehicle is compared to the overall transit mode share of the general population to produce a multiplier. This factor is then applied to the number of residents in zero-vehicle households, ensuring they are represented proportionately to their actual rate of transit usage. By accounting for this demographic characteristic, the TIF provides a more accurate measure of potential transit demand than population counts alone.

Figure 8 highlights areas with elevated transit propensity, regardless of overall density. These areas reflect where the need for transit access is likely highest due to reliance on public transit, and therefore where microtransit could provide critical connectivity.

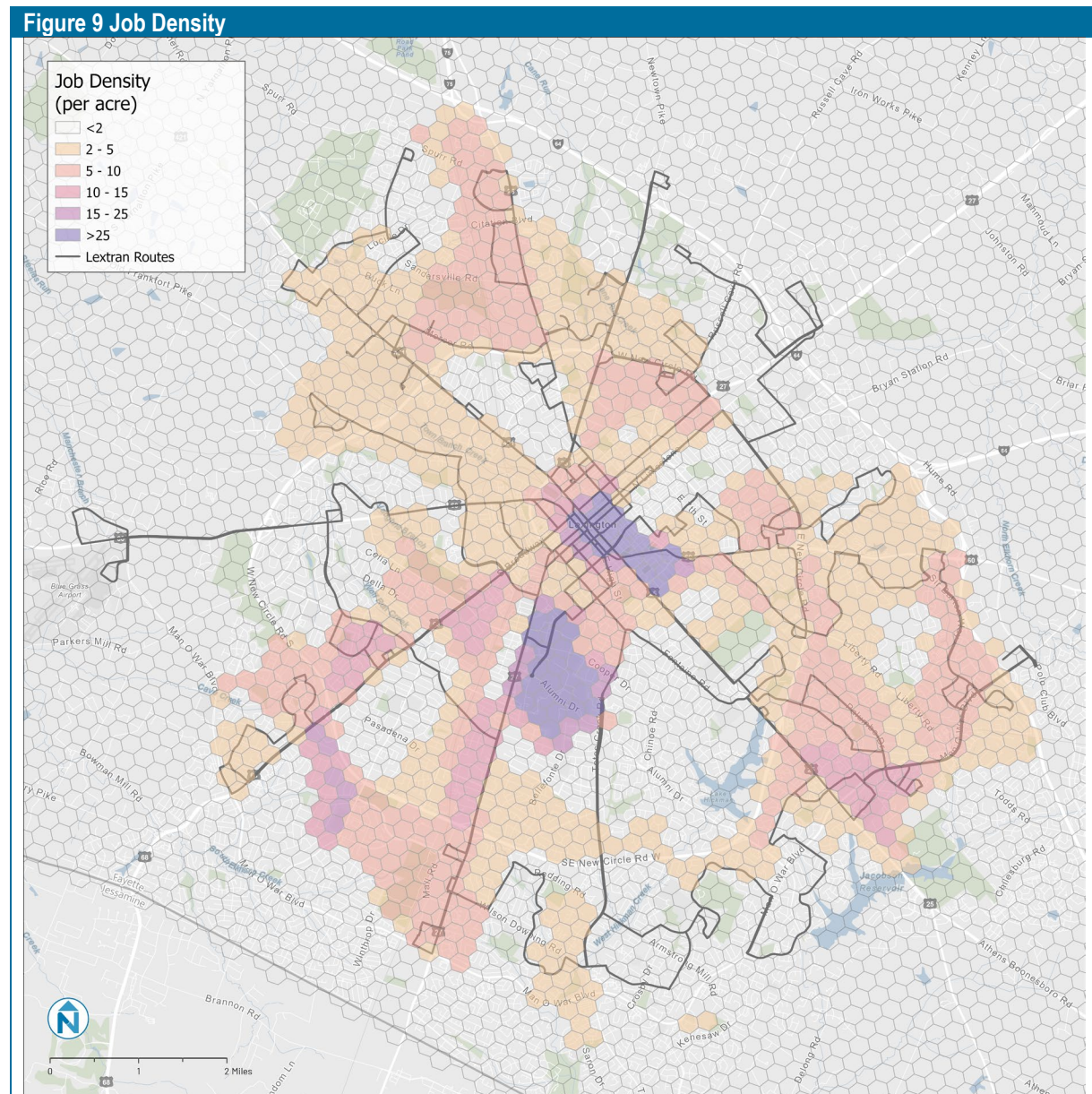
Figure 8 Transit Propensity



Armstrong Mill	Gainesway	Polo Club Boulevard
Briarwood	Garden Springs	Red Mile Road
Cardinal Valley	Glendover	St. Martins Village
Douglas Park	Joyland	Wilson Downing Road Corridor
East End	Mapleleaf Drive Corridor	Winburn
Eastland	Northside	UK Campus South

Job Density

Commuting is one of the most common transit trip purposes, making employment density a key indicator of transit demand. Employment centers are key destinations for any transit service. Job density, particularly in the 2 to 10 jobs per acre range, indicates areas where microtransit could be effective. Below this range, ridership may be too low to justify service; above it, demand could exceed what microtransit can reliably serve. Figure 9 maps employment density throughout Lexington. While the highest job concentrations occur in the city's core, a number of employment clusters also exist outside of fixed-route coverage areas, highlighting opportunities for targeted microtransit deployment..



Composite Demand

Population density, sociodemographic factors, and employment density each indicate potential transit demand individually. To provide a more complete picture of transit potential, the study combined population density, job density, and transit propensity into a composite demand score. This integrated approach helps identify zones where residential and employment activity intersect with a higher likelihood of transit use.

Composite demand is a measure designed to capture the overall potential demand for transit service by combining population characteristics with employment density. It accounts for both where people live and where they travel for work and other activities, offering a fuller picture of transit needs than either factor alone.

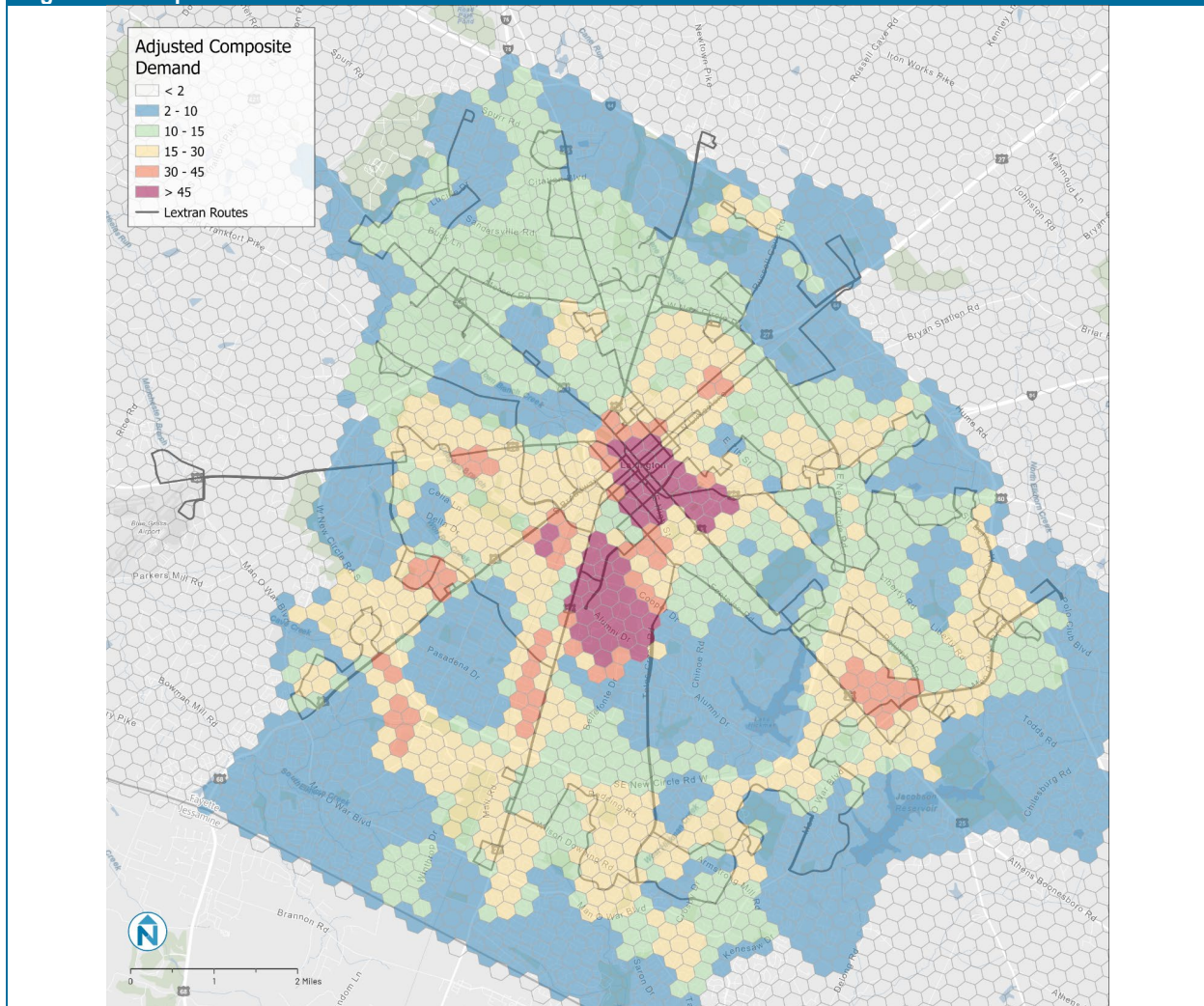
The formula used in this study is: *Composite Demand = Adjusted Population + (2 × Jobs)*

Adjusted population incorporates demographic adjustments through the Transit Index Factor (TIF), which weights certain population groups more heavily due to higher observed transit usage (for example, low-income households, zero-car households, or older adults). This ensures that population counts reflect not just raw numbers but also likely transit propensity.

Jobs are factored in at twice the weight of population because they represent both direct commute demand and indirect trip demand (e.g., shopping, medical, or recreational trips clustered near employment centers). Employment density is therefore a strong predictor of recurring travel activity that supports sustainable transit service.

Together, these inputs create a composite score that highlights areas with both strong residential need and strong trip-attracting activity. This helps identify locations where microtransit could generate sufficient demand to be effective and equitable.

Figure 10 presents the composite demand. Composite densities between two (2) and 15 are generally appropriate for microtransit service. Several areas of Lexington may have the ability to overwhelm microtransit service with demand, shown in the yellow, orange and red areas. It is important to note, however, that fare policy, connections to destinations, and zone shape and size will all have significant effect on microtransit demand.

Figure 10 Composite Demand

Mobility Gaps

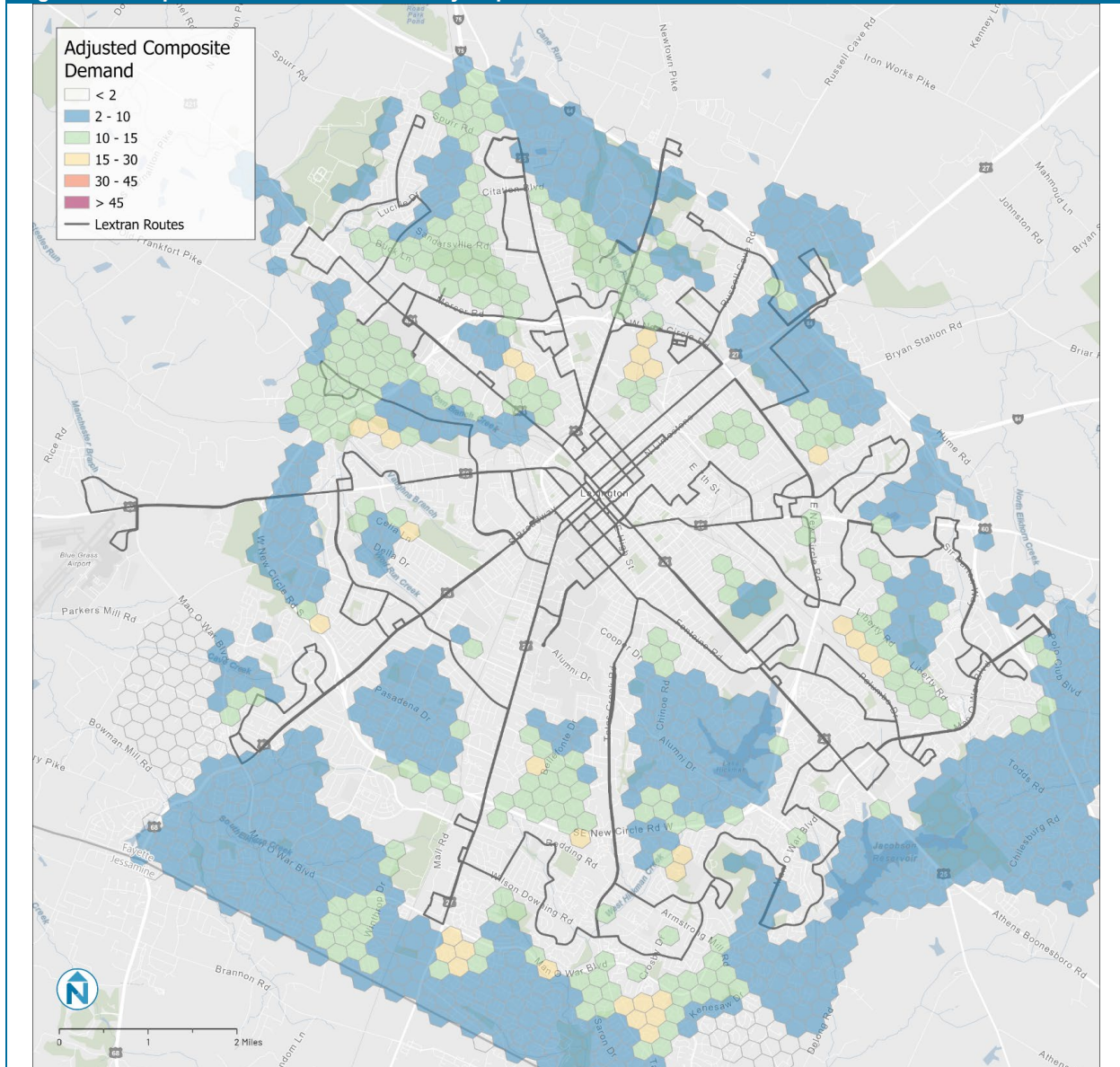
Mobility gaps occur in areas where there is latent demand for transit but limited or no fixed-route service. These gaps may be the result of low service frequency, service boundaries, or infrastructure constraints. Areas with mobility gaps represent opportunities for transit providers to add or increase service. Microtransit can be a useful solution in such instances.

To identify mobility gaps, the study overlaid composite demand with existing service coverage (Figure 11). Areas where demand is high but fixed-route access is limited are candidates for microtransit, particularly when the gaps coincide with employment or shopping destinations.

A separate analysis used only transit propensity and current fixed-route availability to highlight areas of unmet need regardless of density (Figure 12). These locations may not meet typical fixed-route thresholds but still contain residents with high reliance on public transportation. In such cases, microtransit may serve as a critical link to jobs, healthcare, and essential services.

The results show there are some areas in Lexington with demand for transit but have little (or no) transit service. It is important to note that while paratransit provides service to the entirety of Fayette County, eligibility requirements are strict and premium trips that start or end outside of the standard service area (defined as within ¾ mile of fixed route) cost more and take longer.

Figure 11 Composite Demand-Based Mobility Gaps



West of Georgetown Road corridor

East of Nicholasville Road just inside New Circle

East of Georgetown Road outside of New Circle

South Lexington outside of Man O War Boulevard

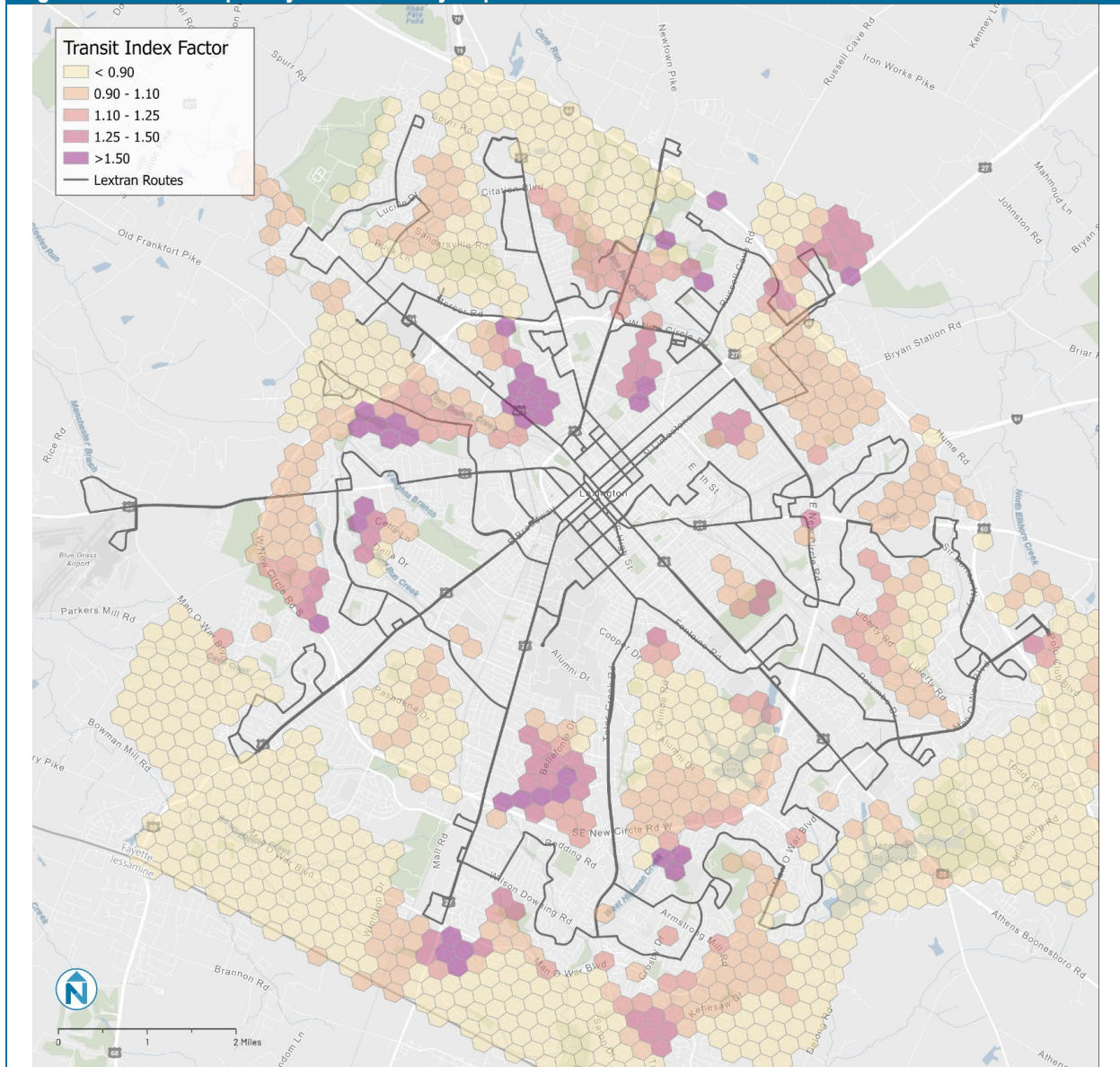
Old Frankfort Pike corridor

Liberty Road between New Circle and Man O War

Mobility gaps do not always occur in areas of high density. Mobility gaps can also occur in areas that simply have a higher proportion of residents that typically need and use transit. Microtransit can be productive in these areas that show a need for transit services but do not have densities to justify fixed routes services.

TIFs from the transit propensity analysis were utilized here to show the level of need for transit. The service level analysis data was then used to remove areas of Lexington that already have strong access to Lextran's fixed route network. Figure 12 maps the result of combining these datasets, revealing locations where there is a need for transit service but there is very little to no existing fixed-route service available.

Figure 12 Transit Propensity-Based Mobility Gaps



Newtown Pike corridor, north and south of New Circle	Northwest Lexington, on both sides of Leestown Road
Joyland outside of I-64	East of Nicholasville Road just north of New Circle
West Lexington on both sides of Alexandria Drive	Nicholasville Road at Man 'O War

Areas of medium-to-high service access were removed to better illustrate underserved areas.

6 GUIDELINES AND EVALUATION

This section outlines a framework to help Lextran design, implement, and evaluate potential microtransit service in Lexington. It draws on national best practices and local context to define service parameters, guide zone design, and establish evaluation criteria. These guidelines are intended to support future decision-making if Lextran pursues a microtransit pilot. All concepts are subject to funding availability, community input, additional analysis, and alignment with agency priorities.

6.1 SERVICE PARAMETERS

Microtransit services are highly adaptable and can be designed in multiple ways to meet a community's specific transportation goals, geographic characteristics, and user needs. Establishing clear service parameters is foundational to planning and implementing microtransit and has direct implications for the quality, efficiency, and sustainability of service.

These parameters include the size and shape of service zones, who is eligible to ride, how fares are set, how long passengers wait, how far they walk, and how trips are structured within the zone. While each decision point offers flexibility, every parameter involves trade-offs between rider convenience, service reliability, operating cost, and system efficiency. For example, providing door-to-door service increases user satisfaction but reduces the number of trips a vehicle can complete in an hour. Similarly, expanding a zone may increase access but make it harder to pool riders efficiently.

Defining these parameters requires balancing three core principles: flexibility, access, and cost-effectiveness. A well-designed microtransit system should offer enough flexibility to meet real mobility needs, provide equitable access across demographic and geographic groups, and do so at a cost that is sustainable over time. These choices also need to align with broader agency goals, such as improving access to fixed-route services, reducing reliance on paratransit, or serving low-density areas where traditional buses are not viable.

The following subsections outline key service design options and operational considerations based on industry best practices, insights from peer agency case studies, and community input. Together, these parameters serve as a framework to guide Lextran's decision-making process should it pursue a microtransit pilot. Each component is scalable and can be adjusted over time as the agency monitors performance, receives community feedback, and evaluates long-term viability.

Service Design Model Types

The service design model defines how trips are structured within a microtransit zone and determines the degree of flexibility, efficiency, and integration the service offers. Each model represents a different approach to how riders access the service and how vehicles are routed in real time. Selecting the appropriate model depends on multiple factors: the purpose of the service (e.g., first/last mile, general access), the expected demand, the physical and demographic characteristics of the zone, and how the microtransit service will interact with the existing Lextran fixed-route network.

The three most commonly used models across U.S. transit agencies are:

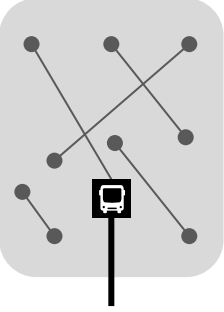
- **Anywhere-to-Anywhere:** Riders can travel between any two points within the zone. This model maximizes flexibility but is typically the most costly and complex to operate.
- **Anywhere-to-Hub:** Riders can travel from any point in the zone to a fixed transfer location, such as a transit center or commercial anchor. This model balances flexibility with operational efficiency.
- **Hub-to-Hub:** Trips are limited between designated stops or anchors. This model is efficient and predictable but limits access for riders far from those hubs.

These models are not mutually exclusive and can be applied differently across zones depending on land use, trip purpose, and service goals. The tables below summarize the core features, benefits, and trade-offs of each model to help Lextran evaluate which configurations best fit potential pilot zones in Lexington.

Anywhere to Anywhere

In this model, riders can request trips between any two (2) points within a defined service zone. The system dynamically routes vehicles based on real-time demand, with no fixed origin or destination constraints within the zone. This model is best suited for areas where fixed-route transit is not viable due to dispersed land use, such as rural edges, residential subdivisions, or low-density commercial zones.

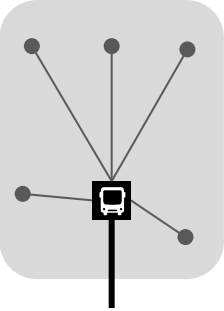
Table 11 Anywhere to Anywhere Service Design Model

Anywhere to Anywhere	Hallmarks	Strengths	Limitations
	Travel permitted between any origin or destination within zone	Maximizes rider flexibility and convenience	Requests from varied locations can cause inefficiencies that overwhelm capacity
	Expanding service / new service areas	Ideal for low-density areas where trip patterns are dispersed	Difficult to pool rides or optimize vehicle routing at scale
	Stop Type 1 Curb-to-curb (customers picked up at requested address)	Supports diverse trip purposes (e.g., work, shopping, healthcare)	
	Stop Type 2 Corner-to-corner (users walk to designated “virtual stop” for pickup)		

Anywhere to Hub

This model allows riders to travel from any location within the zone to one or more designated hubs such as major transit centers, employment clusters, or service destinations.

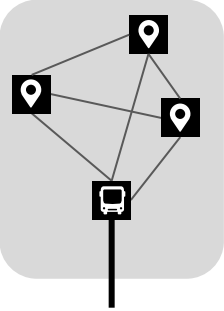
Table 12 Anywhere to Hub Service Design Model

Anywhere to Hub	Hallmarks	Strengths	Limitations
	Travel permitted between a designated service hub and any origin or destination within zone	Supports first and last mile connections to fixed-route transit	Can be operationally inefficient if demand is scattered
	Hubs may be co-located at bus stops or as stand-alone facilities at key destinations	More efficient routing due to centralized destinations	Difficult to pool rides or optimize vehicle routing at scale
	Connecting riders to existing fixed route network	Encourages multimodal travel and increased transit ridership	

Hub to Hub

In this design, riders travel only between predefined hubs within the zone. Vehicles operate dynamically but within a limited set of origin-destination pairs. This model is most effective in zones with well-defined destinations and known travel flows, such as employment corridors, campus loops, or shopping districts.

Table 13 Hub to Hub Service Design Model

Hub to Hub	Hallmarks	Strengths	Limitations
	Travel permitted between designated service hubs within zone	Highly efficient and scalable due to predictable demand patterns	Least flexible for users; requires travel to and from hubs on either end
	Hubs may be co-located at bus stops or as stand-alone facilities at key destinations	Simplifies scheduling and routing, especially during peak hours	May require additional infrastructure (e.g., park-and-ride lots or bike or scooter options)
	Connecting riders to existing fixed route network	Ideal for connecting major transit nodes, campuses, or business parks	

Implementing a service design model depends on several factors, such as goals of the program, funding, zone density and land-use, transit connections, and more. The relatively low-density of the existing Lextran service area likely makes an anywhere-to-anywhere model preferable. Travel patterns are likely to be distributed throughout the zone, without a clear set of origins and destinations. Most residential development extends over large areas that cannot be served effectively with a single hub location. Destination locations, although to a lesser degree, are also spread out. Walk distances, discussed in the next section on service parameters, should also be considered in an anywhere-to-anywhere service design model.

Passenger Eligibility

Most on-demand services are open to the public, while a significant minority are limited to specific populations with mobility needs, such as seniors, people with disabilities, qualified ADA paratransit customers, or students. For the purposes of the potential on-demand services discussed in this study, we assume that on-demand transit service is available to the public.

Fares

Fare policy plays a pivotal role in shaping access and ridership levels, and the financial sustainability of microtransit services. Because microtransit operates with lower vehicle capacity, higher per-trip costs, and greater flexibility than fixed-route, fare design must balance the goals of affordability and demand management with the need to contain costs and preserve operational efficiency.

Lextran's microtransit fare structure should align with the broader transit system's fare policies to encourage seamless multimodal use, particularly when microtransit acts as a first/last mile connector. At the same time, pricing must discourage overuse and help preserve capacity for those who need the service most.

Key fare policy considerations include:

- **Integration with fixed-route fare structure:** Fare parity between microtransit and buses promotes mode-shift flexibility and avoids confusing discrepancies.
- **Demand management:** Fares can be used to control trip volume, especially during peak times or in high-demand zones.
- **Equity and simplicity:** Fare models must remain easy to understand and equitably applied, especially for riders with limited access to digital payment tools or financial resources.
- **Data-driven adjustments:** Collecting data on fare sensitivity, trip purpose, and ridership demographics allows for refinements over time.

Table 14 outlines the three (3) most common fare models used by transit agencies across the U.S., along with their relative benefits and drawbacks. These models may be used independently or in combination depending on the pilot zone's characteristics.

Table 14 Microtransit Fare Models

Fare Model	Description	Strengths	Limitations
Flat Fare	Riders pay a consistent fare per trip, regardless of distance travelled	- Simple and easy to communicate - Easy to integrate with existing fare structure	Longer (more expensive) trips earn the same fare as shorter (less expensive) trips
Distance-Based or Zone-Based	Fare varies based on trip distance of whether travel crosses into another zone	- Reflects actual service cost more accurately - Encourages shorter, more efficient trips	- Adds complexity for riders and back-end systems - May introduce equity concerns if longer trips are necessary for certain populations
Free or Zero Fare	No fare is charged to the rider	- Maximizes ridership and lowers access barriers - Simplifies operations and booking process	- May attract unsustainable demand without limits - Greatest funding requirement

This study recommends keeping fares simple and encouraging the use of fixed-route bus services. Flat fare models are oftentimes preferred for their simplicity when microtransit zone size is small and passenger trips are short. Distance-based fares may be preferred when zones are larger, with longer passenger trips. Fares priced higher than fixed route fares discourage overuse, maintains system capacity, and encourages users to continue using fixed-route where possible.

For Lexington, a \$3 flat fare with free transfers to fixed-route bus service is recommended for initial microtransit pilots. This approach balances the need to manage demand while still offering a predictable and affordable rider experience. A flat fare also simplifies payment, reduces barriers for first-time users, and supports Lextran's broader goal of improving system integration.

- **Transferability:** Microtransit fares should allow for free transfers to and from fixed-route buses within a reasonable time window (e.g., 90 minutes), similar to existing fare policies.
- **Equity safeguards:** Discounted microtransit fares for eligible groups (e.g., seniors, persons with disabilities, low-income riders) should be evaluated in tandem with the agency's broader fare policies.

As the service evolves, fare structures can be adjusted based on operational cost recovery, ridership demand, and community feedback.

ADA Paratransit Commingling

Commingling ADA paratransit and microtransit trips (i.e. using the same vehicles, drivers, or dispatch systems for both services) offers a potential strategy to improve service efficiency and expand mobility options. While the two services have distinct eligibility requirements, scheduling rules, and fare structures, careful coordination can create operational and financial benefits without compromising regulatory compliance.

For Lextran, commingling could provide several advantages. In many parts of the service area, paratransit and microtransit demand overlap both geographically and temporally. In these cases, deploying a unified vehicle fleet and scheduling platform could reduce deadhead time, improve vehicle utilization, and offer more timely service to riders, particularly during off-peak periods or in low-density areas.

However, commingling presents complex administrative and technical challenges. Because ADA paratransit is federally regulated under the Americans with Disabilities Act (ADA), any integrated service model must preserve full compliance with ADA requirements. This includes strict trip eligibility screening, service quality metrics, capacity standards, and fare limits.

- **Technology Platform:** The scheduling and dispatch system must support both advance-reservation paratransit trips and real-time microtransit requests. The platform must prioritize ADA paratransit trips to ensure they are never denied or delayed due to microtransit demand.
- **Vehicle and Driver Requirements:** Vehicles must meet ADA accessibility standards, including securement systems and lifts or ramps. Drivers must receive appropriate training in ADA boarding and assistance protocols. Commingled service must never reduce capacity for ADA-eligible riders.
- **Fare Structure:** ADA paratransit fares are capped by federal regulation at no more than twice the base fixed-route fare. Microtransit fares, which are often higher and may be distance-based, must be programmed to ensure ADA passengers never pay more than the allowable maximum even if sharing a vehicle with microtransit users.
- **Trip Purpose and Booking:** While microtransit typically supports same-day, demand-responsive travel, ADA paratransit users must still be guaranteed the ability to reserve rides in advance. The system must preserve the differences in booking windows and service guarantees.

While commingling should not be viewed as a replacement for paratransit, it could provide long-term benefits such as:

- Reduced per-trip operating cost through shared dispatching and vehicle pooling
- Improved ride availability during off-peak hours or in lower-demand areas
- Expanded mobility options for paratransit-eligible riders seeking more flexibility

Any commingling pilot must be carefully documented, evaluated, and audited to ensure that ADA riders continue to receive full protections under federal law and that no service degradations occur.

Vehicles

The type of vehicle used for microtransit depends on goals, passenger demand, accessibility needs, and operating environment. Typical vehicle types used for microtransit include cutaways, passenger vans, and minivans. For most microtransit programs, WAVs offer a good balance of capacity, maneuverability, and cost-efficiency. As service scales or demand increases, agencies may consider cutaways for greater capacity. The three (3) most common vehicle types are shown in Table 15 Microtransit Vehicle Types. Lextran's passenger demand would likely be accommodated with passenger van vehicles with a capacity of seven to ten (7-10) passengers.

Table 15 Microtransit Vehicle Types

Vehicle	Passenger Capacity	Use Case	Benefits	Drawbacks
Cutaway	12-20	Moderate demand zones with many shared rides	▪ ADA-accessible with wheelchair lifts or ramps ▪ Room for multiple passengers and flexible seating configurations ▪ Suitable for pooled trips and higher-volume corridors	▪ More expensive than smaller vehicles ▪ Vehicle size may not be ideal for narrow streets
Passenger Van	7-10	Low to moderate demand zones	▪ Easier to maneuver in residential areas ▪ Lower capital and operating costs ▪ May be WAVs	▪ Limited capacity for shared rides
Minivan	4-6	Low demand, rural zones or non-WAV backup vehicles	▪ Easier and quicker to acquire ▪ Cost-effective and fuel-efficient	▪ Not ADA-compliant ▪ Limited capacity for shared rides

Based on Lexington's development pattern and anticipated microtransit demand, passenger vans likely provide the best balance of flexibility, accessibility, and cost-efficiency for an initial microtransit pilot. A mixed fleet that includes a minimum number of ADA-compliant vehicles should be prioritized to ensure equitable access and compliance from day one.

As Lextran evaluates pilot performance and demand patterns, vehicle types and fleet composition can be adjusted to match the operational realities of each zone.

Span of Service

Span of service refers to the hours and days during which microtransit is available to riders. This parameter is critical to defining the availability and usefulness of the service, particularly for those who rely on public transit for work, medical appointments, shopping, and other essential activities. Establishing a consistent and reasonable span of service ensures the microtransit program meets rider expectations while aligning with operational resources and budget constraints.

Establishing an appropriate span of service requires balancing rider needs with available funding. Longer service spans increase flexibility and allow microtransit to serve a broader population, but they also drive up operating costs. These include labor, fuel, maintenance, dispatching, and supervision, whether the service is operated in-house or contracted to a vendor. For most agencies, including Lextran, available funding is the single greatest constraint in determining how many service hours can be sustained. A longer span increases vehicle service hours, and unless paired with sufficient budget, can strain quality by stretching resources too thin.

For microtransit services to be effective, they must operate at times that match rider needs. Many microtransit programs operate during the same hours as fixed-route services to maximize connectivity and allow for seamless transfers. Aligning schedules supports a cohesive transit network and encourages riders to use both fixed-route and microtransit. However, microtransit span of service can also be adjusted based on the specific purpose of the zone. For example, a zone serving employment centers may prioritize weekday peak periods, while a zone focused on general community access may need broader hours, including evenings and weekends.

Additionally, agencies must consider how span of service intersects with other operational parameters, including driver availability, fleet size, and wait time expectations. Maintaining a long span with limited resources can dilute service quality and increase wait times, leading to reduced customer satisfaction.

Key Considerations for Lextran's Pilot:

- Align hours with fixed-route to support transfers and promote fixed-route connectivity
- Ensure availability for common trip purposes (work, appointments, shopping)
- Monitor trip data to refine days and hours of operation
- Balance span of service with staffing and vehicle availability to maintain service reliability

For a microtransit pilot in Lexington, a service span matching the fixed-route span will reach the greatest number of users. A span of 6:00 a.m. to 8:00 p.m. is recommended if funding is not available to match the fixed-route span of service. These hours will support a wide range of trip purposes. This span also allows for early morning commutes, midday medical and shopping trips, and return travel in the evening.

Agencies that launched microtransit with limited spans (e.g., peak-only or weekday-only service) frequently reported challenges. Riders were confused or frustrated when service was unavailable at expected times, limiting adoption and undermining public perception. In some cases, short spans failed to match real trip patterns, such as evening or weekend travel for service workers or social trips. Conversely, agencies that launched service with long spans without sufficient resources experienced long wait times, high denial rates, or the need for service cutbacks soon after launch. Both scenarios reduce rider trust and program momentum.

Agencies should monitor trip demand across time periods and adjust service hours accordingly. Some programs have shifted start or end times based on usage, or reduced hours in lower-demand zones to prioritize coverage and reliability.

Wait Time Standard

Wait time, also known as response time, is the interval between when a rider requests a trip and when the vehicle arrives for pickup. This metric plays a central role in shaping the rider experience and reflects the system's operational efficiency. Shorter wait times increase convenience and rider satisfaction but come at a higher operational cost, requiring more vehicles, more drivers, and tighter dispatch coordination. Longer waits reduce costs but risk making the service less useful and unreliable.

Most microtransit programs aim to maintain average wait times within a clearly defined range. In dense, high-frequency systems, this may be 10 to 15 minutes. In lower-density suburban or rural areas, 20 to 30 minutes is considered acceptable. Wait time expectations must also be tailored to rider types. Commuters and riders making time-sensitive trips are generally less tolerant of long waits than riders using the service for social, shopping, or medical purposes.

In the context of Lexington, where development patterns are largely suburban and microtransit service does not yet exist, a targeted average wait time of 20 minutes is a reasonable starting benchmark for a pilot program. This aligns with national standards for similar geographies and allows for flexibility in routing and vehicle pooling. A maximum wait time of 40 minutes should serve as the upper bound to ensure that no rider is left waiting for an unacceptably long period. These targets can be refined over time using real-time performance data and customer feedback.

It is also important to implement minimum dwell time rules (i.e. the minimum time a rider must spend at their destination before requesting another trip). Without this safeguard, some riders may try to request a return trip immediately upon boarding, which can cause the vehicle to idle at the destination and reduce system efficiency. Enforcing a brief minimum (e.g., 10 minutes) discourages misuse and helps maintain availability for other riders.

As a point of reference, many of Lextran's fixed-route buses currently operate at 35-minute headways. While microtransit is not intended to match this exact frequency, offering comparable or slightly faster wait times can position the service as a practical complement to the existing network and build public trust in the new mode.

Key Considerations for Lextran's Pilot

- A 20-minute average wait time balances cost and convenience in Lexington's land use context
- A 40-minute maximum helps prevent outlier delays and ensures baseline reliability
- Minimum dwell times should be enforced to prevent monopolization of vehicles
- Wait time standards should be reevaluated after launch and adjusted using performance data

A clearly defined wait time standard helps set realistic expectations for riders and helps Lextran manage service levels in a transparent and measurable way.

Walk Distances

Walk distance refers to how far a passenger must travel on foot between their origin and pickup location, and again from their drop-off point to final destination. In microtransit systems, walk distance is not a fixed value and can be configured by the agency using the platform's software. This level of control allows agencies to balance rider convenience with service efficiency.

Shorter walk distances (e.g., curb-to-curb or minimal deviation from requested pickup location) create a more seamless and accessible rider experience. These are especially important for individuals with limited mobility, older adults, or those traveling with children, groceries, or other burdens. However, prioritizing short walk distances increases the number of stops vehicles must make, which can reduce overall system efficiency and vehicle availability.

By contrast, slightly longer walk distances, such as requiring passengers to meet the vehicle at a designated corner or virtual stop, can reduce dwell time, streamline routing, and improve vehicle productivity. These small compromises allow more rides to be pooled and help ensure more equitable distribution of service throughout the zone. However, if walk distances are too long, particularly in areas with limited pedestrian infrastructure or poor lighting, riders may opt out entirely or find the service difficult to use.

In practice, many agencies use a default walk distance of approximately one-eighth (1/8) mile, or about 600–700 feet, as the standard. This allows for operational efficiencies while keeping the system accessible to most riders. Agencies may allow walk distances to be shorter for riders who qualify for ADA accommodations or for pickups at major anchors like hospitals or transit hubs.

Key Considerations:

- Shorter walk distances improve accessibility but reduce efficiency
- Longer walk distances increase pooling potential and reduce vehicle stops
- One-eighth mile is a commonly used standard that balances trade-offs
- Flexibility is essential to adjust based on street conditions, safety, and rider needs

Lextran should work with the technology provider to ensure that walk distance settings are tailored to local conditions, including sidewalk availability, intersection safety, and seasonal weather. These parameters can be refined over time using ridership data and rider feedback to optimize both usability and efficiency.

6.2 ZONE DESIGN

This section presents zone creation best practices and then identifies potential microtransit zones. Each microtransit zone is described in detail, including details on zone location, existing land development, and existing fixed route connections.

Zone Best Practices

Effective microtransit zone design requires alignment with community needs, transit system goals, and the practical constraints of available funding. Microtransit is not a one-size-fits-all solution. Successful zones reflect local land use, travel behavior, and operational realities while fitting within existing or anticipated budget frameworks. The following principles provide guidance for designing successful microtransit zones:

1. Complement existing transit services - Microtransit should be integrated into the broader transit network rather than compete with it.

- Connect to fixed-route transit. Design service zones with clear anchor points at major transit stops or stations to support first and last mile connectivity.
- Avoid duplicating bus service. Ensure that microtransit does not cannibalize high-performing fixed routes, particularly in areas with strong transit ridership or frequent service.

2. Support a mix of trip types - A successful microtransit zone should serve a diverse range of riders and trip purposes.

- Target appropriate demographics. Focus on populations who are likely to rely on transit, such as seniors, people with disabilities, low-income households, or individuals without access to a personal vehicle.
- Include key trip generators. Ensure the zone includes access to destinations such as employment centers, grocery stores, healthcare facilities, schools, and other community resources to support a wide range of travel needs.

3. Define a manageable but productive zone size - Zone size has a direct impact on service reliability, efficiency, coverage, and budget.

- Start with approximately five (5) square miles. This is a useful baseline for balancing coverage and operational efficiency.
- Adjust based on density and demand. In denser areas, smaller zones may suffice, while larger or more dispersed areas may require expanded boundaries.
- Design for at least two (2) vehicles per zone. Single-vehicle zones are generally insufficient for meeting demand and maintaining service reliability, except during very low-demand periods.

4. Plan within funding constraints - Zone design must account for the operational funding available for microtransit pilots or long-term deployment:

- Prioritize zones with strong ridership and low duplication risk. Limited budgets require difficult choices. Zones most likely to demonstrate success and long-term sustainability should take precedence.
- Explore external funding opportunities. Grants, partnerships, and pilot funding may expand what is possible, but zones should not depend on one-time funds unless there is a path to continued support.

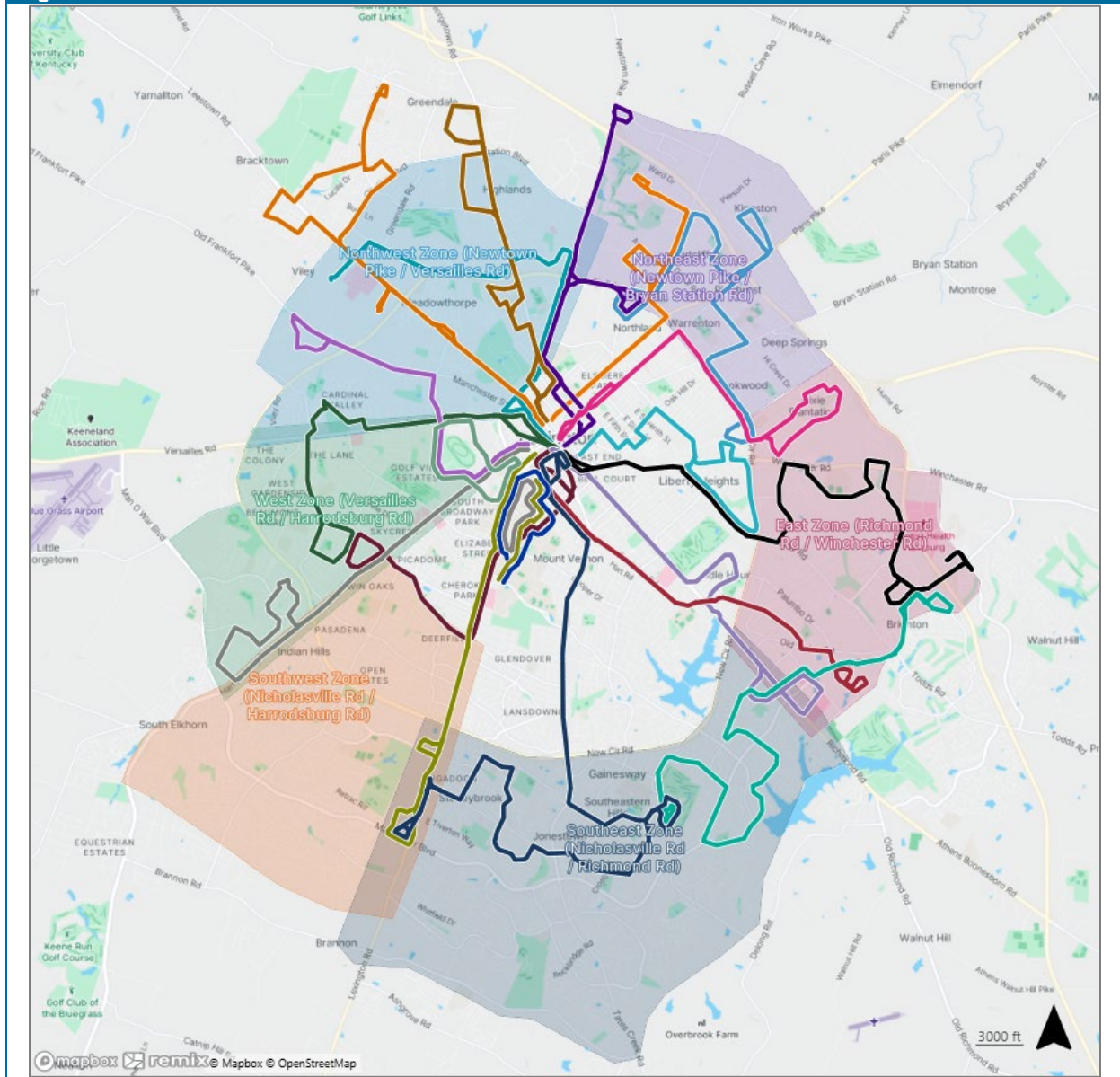
- Phase implementation if needed. Rather than launching multiple zones simultaneously, a phased approach can help Lextran evaluate performance, build support, and scale based on success and funding availability.
- 5. Emphasize simplicity and user-friendliness** - Microtransit should be intuitive and easy for riders to understand and use.
- Choose recognizable zone names. Use familiar geographic references or community identifiers to help riders quickly understand where the service operates.
 - Establish logical boundaries. Use well-known streets, landmarks, or natural features to define the zone clearly.
 - Serve both sides of local streets. Avoid confusion by ensuring that the service area includes both directions of travel on major corridors, preventing user frustration caused by partial or fragmented coverage.

Zone Identification

Preliminary microtransit zones were developed in accordance with the findings from case studies, the microtransit community input survey, stakeholder feedback, and the existing conditions and market assessment. Using lessons learned from agency peers, the team developed draft zones with the best chance of success. In addition, the team conducted staff workshops to revise and modify zones to ensure they captured desirable locations and travel patterns. Zones were designed to provide first and last mile access to existing fixed-route service, provide service in high transit propensity areas, and improve connections to key activity centers within the study areas. The preliminary service zones were refined based on their potential for successful implementation, ability to complement existing fixed-route transit service, and potential to meet the unique needs of the community.

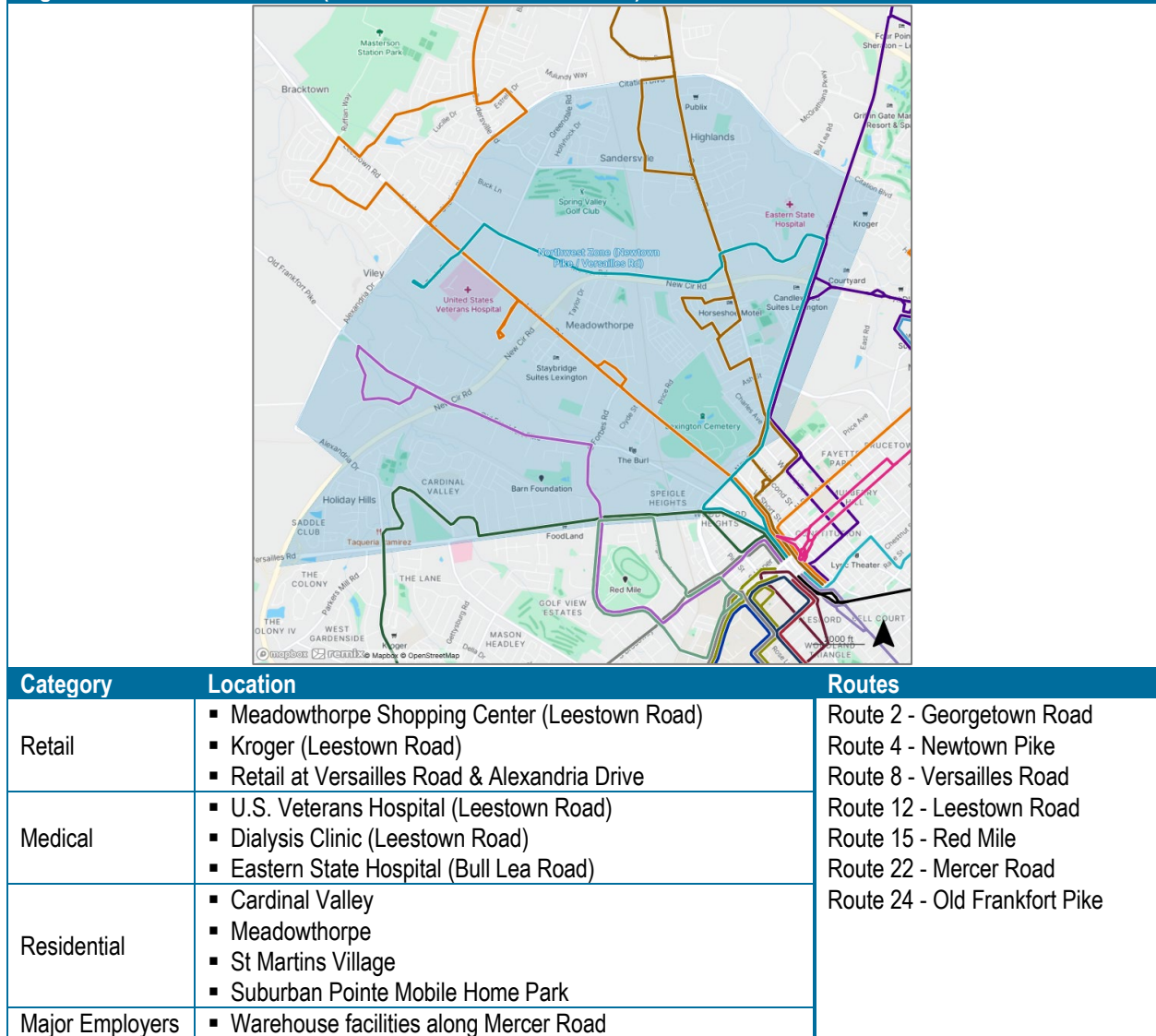
Figure 13 All Potential Microtransit Zones shows all six (6) zones. Each zone is described in detail in this section. The next section evaluates and compares zones to identify candidates for a potential pilot.

Figure 13 All Potential Microtransit Zones



Zone 1 – Northwest (Newtown Pike/Versailles Road)

Figure 14 Zone 1 – Northwest (Newtown Pike/Versailles Road)

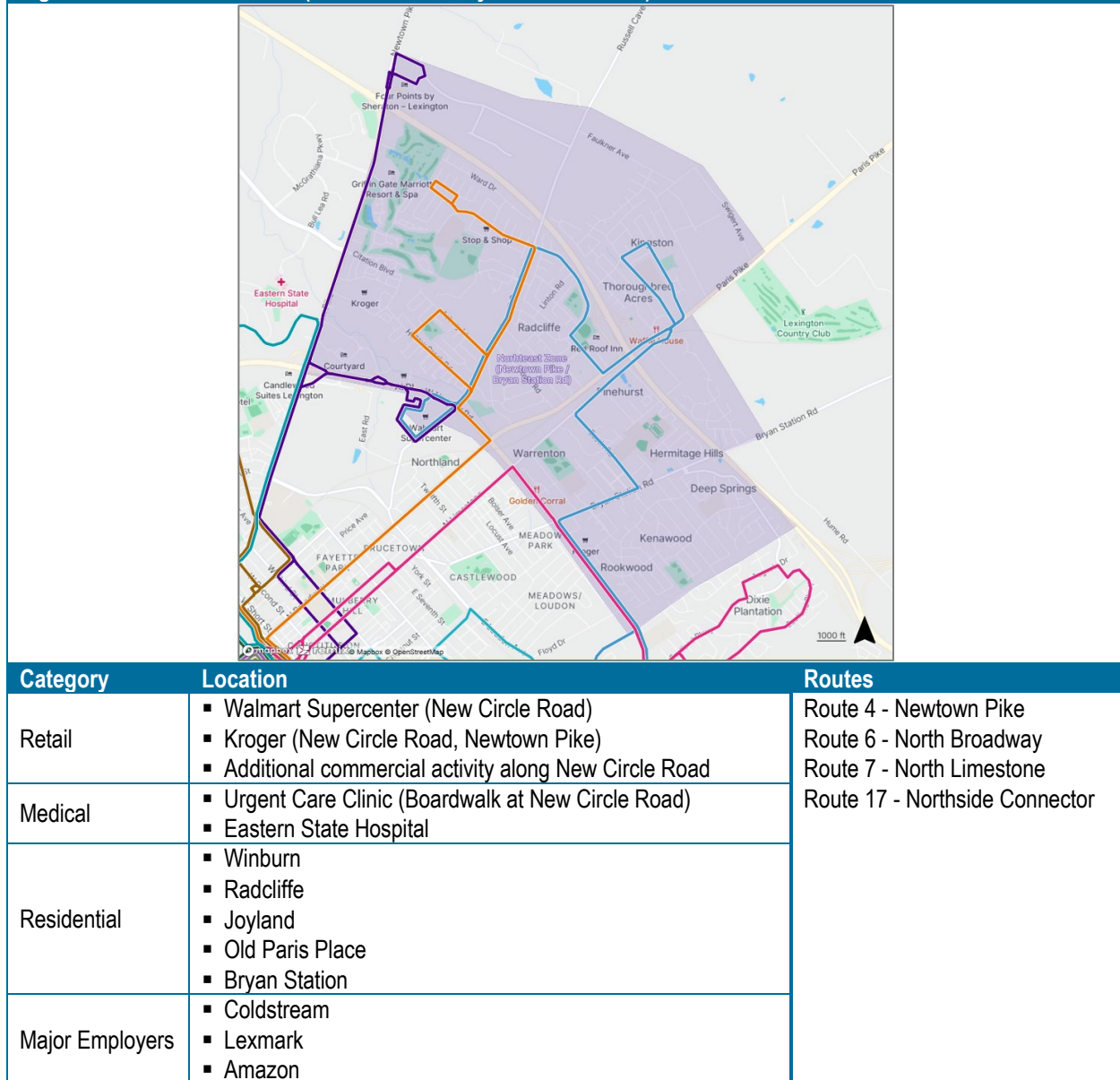


Zone 1 - Northwest (Figure 14) covers approximately 9.9 square miles northwest of downtown Lexington, bounded by Versailles Road, Newtown Pike, Citation Boulevard, and Alexandria Drive/New Circle Road. The zone includes a diverse mix of land uses (e.g. retail, medical, industrial, and residential) that together support a wide range of trip purposes, including shopping, employment, and healthcare.

Seven (7) Lextran fixed routes serve the area, but high-frequency service is limited. While Routes 2, 4, and 8 maintain 35-minute headways, they are not centrally located within the zone. Routes 12, 22, and 24 operate less frequently. Improving Route 12 to provide consistent 35-minute service throughout the day would strengthen connectivity between the Northwest Zone and the downtown Transit Center.

Zone 2 - Northeast Zone (Newtown Pike/Bryan Station Road)

Figure 15 Zone 2 - Northeast (Newtown Pike/Bryan Station Road)

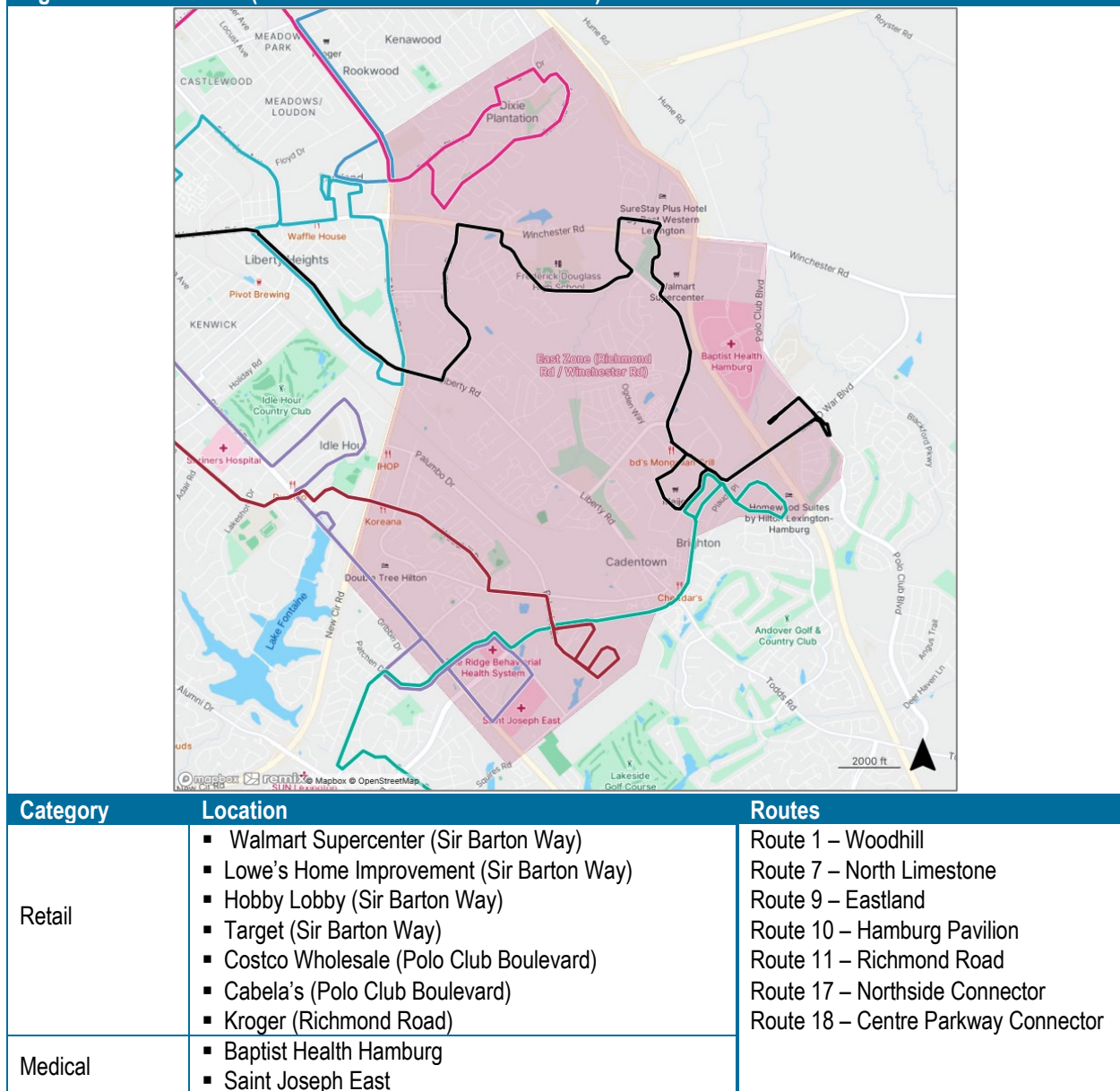


Zone 2 - Northeast (Figure 15) covers approximately 6.8 square miles in the northeastern portion of the Lextran service area, stretching from Newtown Pike to Eastland Neighborhood along New Circle Road. The zone is primarily residential with strong grocery access positions the zone well for daily shopping trips, with limited access to healthcare.

Four Lextran fixed routes serve the zone. Routes 4, 6, and 7 operate with consistent 35-minute headways, creating strong microtransit-to-fixed route connections. The Walmart Supercenter on New Circle Road stands out as a high-potential anchor point, averaging 65 weekday boardings. Route 17 also serves the area but at lower frequencies; its performance should be monitored if microtransit service is introduced.

Zone 3 - East (Richmond Road/Winchester Road)

Figure 16 Zone 3 - East (Richmond Road/ Winchester Road)

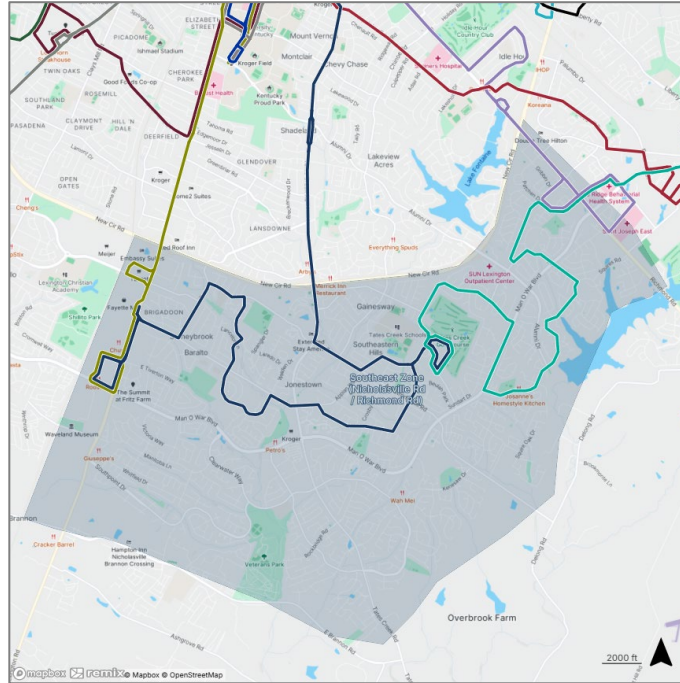


Zone 3 - East spans approximately 7.9 square miles east of New Circle Road, extending to I-75 and Polo Club Boulevard, with Richmond Road and Man O War Boulevard forming the southern boundary. The zone features a strong mix of residential, commercial, and medical land uses, including Baptist Health Hamburg, Saint Joseph East, and major retail clusters along Sir Barton Way, Polo Club Boulevard, and Richmond Road.

Seven Lextran fixed routes serve the area. Routes 1, 7, 10, and 11 offer consistent 35-minute headways and strong connections to the downtown Transit Center. Routes 9 and 17 operate along the zone boundary. The Kroger on Richmond Road and the Meijer on Alysheba Way serve as promising microtransit anchor points due to existing ridership and transit access.

Zone 4 - Southeast (Tates Creek, Nicholasville-to-Richmond)

Figure 17 Zone 4 - Southeast (Tates Creek Area – Nicholasville-to-Richmond Rd)



Category	Location	Routes
Retail	- Fayette Mall (Nicholasville Road) - Target (Nicholasville Road) - Walmart Supercenter (Nicholasville Road) - Commercial development along Tates Creek Road - Kroger (Hartland Parkway) - Kroger (Brannon Road)	Route 3 – Tates Creek Road Route 5 – Nicholasville Road Route 11 – Richmond Road Route 18 – Centre Parkway Connector
Residential	- Gainesway - Armstrong Mill Road neighborhoods - Wilson Downing Road neighborhoods	

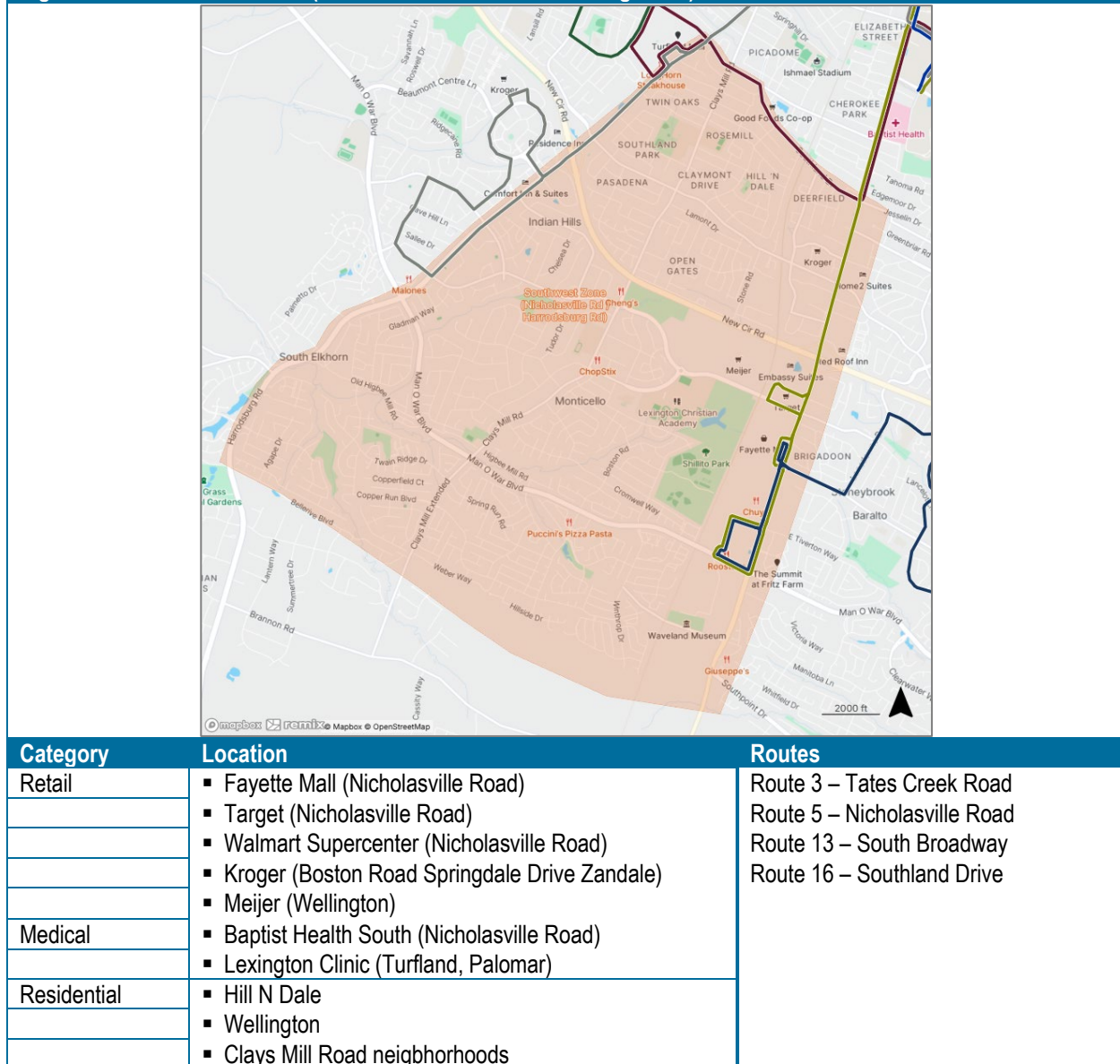
Zone 4 - Southeast Figure 16 spans approximately 16.5 square miles and is the largest proposed microtransit zone. Located south of New Circle Road between Nicholasville Road and Richmond Road, the zone extends as far as Brannon Road on the southern edge.

The area is predominantly residential, with commercial development concentrated along the zone's periphery. Major shopping destinations such as Fayette Mall, Target, and Walmart Supercenter are located on Nicholasville Road, while additional grocery and retail options are situated along Richmond Road and Tates Creek Road. These development patterns indicate a high volume of daily shopping trips as a key use case for microtransit service.

The zone is served by four Lextran fixed routes: Routes 3, 5, 11, and 18. Route 5 operates frequent 15-minute service, providing a strong connection to the broader transit network. The Walmart Supercenter stop, which averages 83 weekday boardings, could serve as a key transfer location and microtransit anchor.

Zone 5 - Southwest (Nicholasville Road/Harrodsburg Road)

Figure 18 Zone 5 - Southwest (Nicholasville Road/Harrodsburg Road)



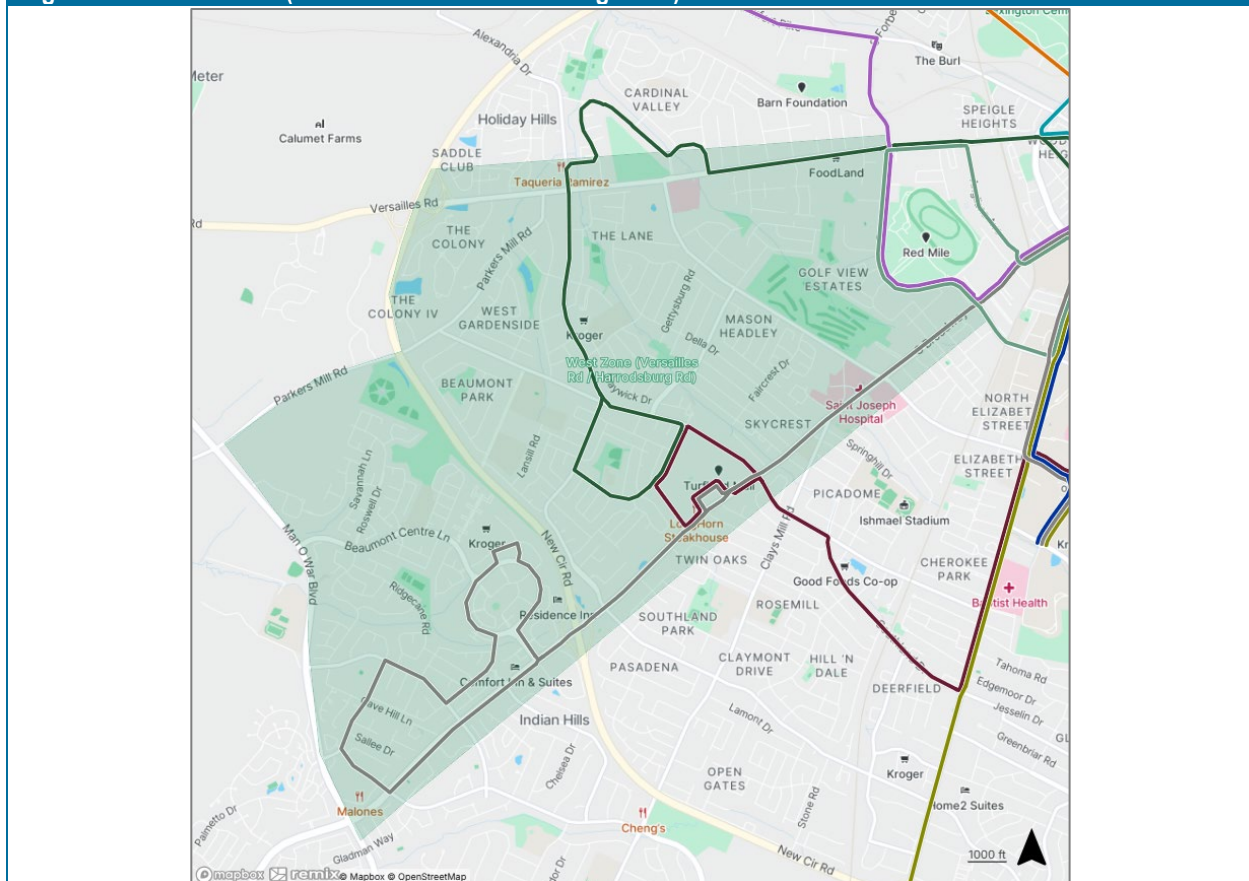
Zone 5 – Southwest (Figure 20) spans approximately 10.7 square miles between Nicholasville Road and Harrodsburg Road, bounded by Lane Allen Road and Southland Drive in the north and extending south past Man O War Boulevard. The zone is primarily residential but features significant employment and commercial activity along both major corridors.

Nicholasville Road is one of Lexington's most commercially developed corridors, with dense retail, medical, and office land uses. Harrodsburg Road also includes substantial commercial development, such as the Palomar Centre, Kroger, and multiple healthcare clinics. Additional shopping and neighborhood services are found along Southland Drive. The zone supports varied trip purposes, including shopping, employment, medical, and personal business.

Fixed-route transit coverage in the Southwest Zone is limited. No routes operate through the center of the zone. Instead, four Lextran routes—Route 3 (Tates Creek Road), Route 5 (Nicholasville Road), Route 13 (South Broadway), and Route 16 (Southland Drive)—run along the zone’s outer edges. Route 5 offers the most frequent service with 15-minute headways for most of the day, making it the most likely candidate for a strong microtransit transfer point. Route 3 operates at 35-minute headways, while Routes 13 and 16 operate less frequently and may provide limited connectivity.

Zone 6 - West (Versailles Road/Harrodsburg Road)

Figure 19 Zone 6 - West (Versailles Road/Harrodsburg Road)



Category	Location	Routes
Retail	- Fayette Mall (Nicholasville Road) - Target (Nicholasville Road) - Red Mile - Kroger (Beaumont, Alexandria Drive) - Meijer (Wellington)	Route 8 – Versailles Road Route 13 – South Broadway Route 15 – Red Mile Route 16 – Southland Drive
Medical	- St. Joseph Hospital - Lexington Clinic - Cardinal Hill Rehabilitation Hospital	
Residential	- Beaumont - Gardenside - Mason Headley - Parkers Mill Road neighborhoods	

Zone 6 – West (Figure 19) covers approximately 6.5 square miles and is the smallest of the potential zones. It spans from Red Mile Road to New Circle Road and Man O War Boulevard, with Versailles Road as the northern boundary and Harrodsburg Road/South Broadway forming the southern edge. The zone encompasses established neighborhoods along with dense commercial and medical corridors.

Development patterns in the West Zone are diverse, with concentrated retail along Harrodsburg Road, Versailles Road, and Southland Drive. Key destinations include multiple Kroger locations, Meijer, the Red Mile, and Saint Joseph Hospital, along with a high concentration of medical offices and clinics. The area also includes employment centers west of New Circle Road and community institutions such as schools, parks, and healthcare facilities.

Five Lextran fixed routes connect to the zone: Route 8 – Versailles Road, Route 13 – South Broadway, Route 15 – Red Mile, Route 8 provides the most consistent service with 35-minute headways and would serve as the primary connection to the fixed-route network.

6.3 ZONE EVALUATION

This section presents a detailed evaluation of six (6) potential microtransit service zones in Lexington. Each zone was analyzed using a comprehensive set of metrics across four (4) key categories: demand, need, cost, and performance. These categories reflect the core considerations for planning microtransit: identifying where people are likely to use the service, where the need is greatest due to transit dependency, how much it would cost to operate, and how well the service is expected to perform. By combining demographic data, travel demand indicators, operating assumptions, and projected outcomes, this analysis provides a data-driven framework for prioritizing zones for implementation. The results offer a clear picture of which areas are best positioned for pilot programs and future expansion based on both feasibility and impact. This section ends with a description of each zone's strengths and challenge, along with quantitative scoring to support decision-making.

Zone Demand

Demand for service is a critical evaluation category that identifies which zones are most likely to generate high ridership and support productive microtransit service. Total population and population density show where potential riders live, while job count and job density highlight trip destinations. paratransit trip data, which reflects actual usage by individuals with mobility limitations, helps forecast potential microtransit usage. The following key findings illustrate the unique demand profile of each zone:

- **Zone 1 - Northwest:** This zone shows a balanced mix of residential and employment activity—over 26,000 residents and 22,000 jobs—with a strong paratransit trip density (1.3 trips per acre). Major generators include Eastern State Hospital, VA Hospital, and warehouse employment along Mercer Road. This concentration of both origins and destinations within the zone supports all-day trip-making and positions the Northwest as one of the most promising zones for microtransit.
- **Zone 2 - Northeast:** The Northeast has the lowest job count (4,336) and job density (1.0 per acre), reflecting its primarily residential character. However, it shows moderate residential density and higher-than-average paratransit use relative to its size. This pattern suggests microtransit could play a key role in connecting residents—many of whom may lack personal vehicles—to destinations beyond the zone, such as retail and medical services on New Circle Road or downtown.
- **Zone 3 - East:** The East zone contains over 24,000 jobs, the highest among all zones, and a job density of 4.8 jobs per acre, second only to the West zone. Employment centers include major retail outlets at Hamburg Pavilion and Richmond Road as well as two major hospitals, Baptist Health Hamburg and Saint Joseph East. These concentrated job and activity centers suggest a strong potential for microtransit demand, especially for commuting and access-to-care trips.
- **Zone 4 - Southeast:** With over 72,000 residents, the Southeast zone has nearly double the population of the next largest zone and the highest population density (6.9 persons per acre). It also has the highest daily paratransit activity (21.1 trips) and is tied with the Northwest zone for the highest paratransit trip density. These indicators point to strong underlying demand, particularly for shopping and medical trips. However, the zone's large size and sprawling layout mean more vehicles and longer service hours are needed to maintain acceptable wait times and coverage.
- **Zone 5 - Southwest:** With 38,207 residents and a relatively high population density (5.6 per acre), the Southwest zone presents strong demand potential. It has a high job count (22,417) centered along Nicholasville Road and New Circle Road, but relatively low paratransit usage—just 4.6 daily trips and 0.4 trips per acre. This may reflect lower baseline need or barriers to accessing ADA services. Nevertheless, the zone's density, size, and established destinations suggest it could deliver strong general ridership, particularly for shopping and employment trips.
- **Zone 6 - West:** While smaller in population, the West zone has a high job density (4.0 jobs per acre) and is anchored by employment clusters west of New Circle Road and retail centers along Harrodsburg Road and Southland Drive. Despite a lower total number of daily paratransit trips, the trip density indicates a base level of demand in a compact service area, supporting efficient operations.

Table 16 Zone Demand Metrics

	Zone 1 Northwest	Zone 2 Northeast	Zone 3 East	Zone 4 Southeast	Zone 5 Southwest	Zone 6 West	Average
Population	26,686	19,247	24,604	72,672	38,207	25,190	34,434
Population density (acres)	4.2	4.4	4.9	6.9	5.6	6.1	5.3
Jobs	22,421	4,336	24,487	16,332	22,417	16,541	17,756
Job density (acres)	3.5	1.0	4.8	1.5	3.3	4.0	3.0
Daily paratransit trips	12.9	3.8	3.8	21.1	4.6	1.7	8.0
Paratransit trip density (acres)	1.3	0.6	0.5	1.3	0.4	0.3	0.7

Zone Need

Zone need reflects the degree to which each area contains residents likely to depend on transit for daily mobility. The analysis uses five demographic indicators of transit dependency: minority population, low-income households, zero-car households, individuals with disabilities, and adults aged 65 or older. These measures help prioritize zones where microtransit could deliver the greatest benefit. Key findings for each zone are below:

- **Zone 1 – Northwest:** This zone exhibits the highest overall need, with top-three rankings in every indicator except age 65+. Over 60% of residents identify as minority, 35% fall below the poverty line, and 42% live in zero-car households. The disability rate is 14%, and the senior population is 13%. Combined with high paratransit demand and a mixed land-use profile, these figures suggest strong transit reliance and make Zone 1 the highest-need area in Lexington.
- **Zone 2 – Northeast:** The Northeast zone shows elevated need, especially for senior and ADA-accessible service. Seventeen percent of residents are over 65, and 16% report a disability, the highest rate among all zones. More than half the population are racial or ethnic minorities, and 27% fall below the poverty line. Despite low employment density, the demographic profile indicates a high reliance on public transportation for essential trips.
- **Zone 3 – East:** Zone 3 presents moderate need across most indicators. Forty-five percent of residents are minorities, 28% are low-income, and 41% live in zero-car households. The disability and senior shares (12% and 14%, respectively) are average. Given its job density and healthcare access, microtransit here would serve to meet access-to-opportunity needs.
- **Zone 4 – Southeast:** This zone has a large absolute number of transit-dependent residents, but lower relative need indicators. While 41% of households are zero-car, only 32% of residents are minorities, and 26% are low-income. Disability and senior rates are each 12% and 13%, respectively. These figures suggest significant raw demand due to population scale, but more moderate socio-economic need per capita.

- **Zone 5 – Southwest:** Zone 5 shows the lowest relative need. Only 19% of residents identify as minority, 11% are low-income, and 32% live in zero-car households, the lowest across all six zones. Disability prevalence is also low at 12%. However, this zone has a large senior population (17%), indicating potential value in service tailored to older adults despite lower transit reliance overall.
- **Zone 6 – West:** Zone 6 demonstrates a strong demographic case for microtransit. Forty-two percent of residents live in zero-car households, the highest rate, tied with Zone 1. Minority (34%) and low-income (29%) populations are above average, and the disability and senior rates (14% and 17%) are both high. This demographic mix, paired with the zone's compact size, suggests microtransit would be both impactful and efficient.

Table 17 Zone Need Metrics

	Zone 1 Northwest	Zone 2 Northeast	Zone 3 East	Zone 4 Southeast	Zone 5 Southwest	Zone 6 West	Average
% Minority	61%	55%	45%	32%	19%	34%	41%
% Low-income	35%	27%	28%	26%	11%	29%	26%
% Zero car	42%	39%	41%	41%	32%	42%	40%
% With a disability	14%	16%	12%	12%	12%	14%	13%
% Age 65+	13%	17%	14%	13%	17%	17%	15%

Zone Cost

Evaluating operating cost is essential to determine the financial feasibility of launching microtransit service. Cost estimates for each zone were developed based on zone size, population, employment levels, and demographic characteristics, combined with consistent operating assumptions. All zones were modeled to operate 6:00 AM to 8:00 PM, 365 days a year. The base operating cost was set at \$95 per revenue hour for contracted service, with an additional \$200,000 in annual administrative overhead to cover contract management, marketing, and procurement. Although administrative costs are held constant, differences in required service hours and vehicle needs result in meaningful cost variations across zones.

On average, a fixed-route bus trip costs \$5.04, while a microtransit trip across all modeled zones is estimated at \$60.94, underscoring that microtransit is more than twelve times as expensive to provide on a per-trip basis. Other key findings from the cost analysis include:

- **Zones 1 – Northwest and 2 – Northeast** each require 10,192 annual service hours and two (2) peak vehicles. Their compact layouts and lower population densities allow for full coverage with a lower overall operating burden, keeping their total costs to \$1.17 million annually.
- **Zone 3 – East and Zone 4 – Southeast** are both more expensive than average. The East zone (7.9 square miles) requires 13,832 hours and three (3) vehicles, while the Southeast zone, the largest by land area (16.5 square miles) and population (72,672), demands the most coverage. With nearly 19,000 annual hours and four (4) peak vehicles, the Southeast zone totals just under \$2 million in annual operating costs.

- **Zone 5 – Southwest** is the most expensive zone to operate due to its geographic size (10.7 square miles) and dense development along Nicholasville Road and Harrodsburg Road. Covering this large area at acceptable service levels requires an estimated 18,928 annual service hours and a peak of four (4) vehicles, resulting in the highest projected total annual cost: \$1.998 million.
- **Zone 6 – West** has the lowest total cost (\$1.03 million) primarily due to its compact size (6.5 square miles) and lower service hour requirement (8,736 hours annually). Its moderate demand supports a leaner deployment model with two (2) peak vehicles during weekdays and potentially just one on weekends.

This analysis highlights how cost scales not only with geography but also with the operational complexity needed to maintain service standards across each zone. If all six proposed microtransit zones were implemented simultaneously, the combined annual operating cost would total approximately \$8.4 million. This figure includes contract costs and administrative overhead and represents a scale of investment approaching one-third of Lextran’s existing fixed-route operating budget. Such a commitment underscores both the potential magnitude of systemwide microtransit implementation and the importance of carefully prioritizing zones, phasing service expansion, and balancing resources to avoid undermining core fixed-route service.

Table 18 Operating Requirements of Potential Microtransit Zones

	Zone 1 Northwest	Zone 2 Northeast	Zone 3 East	Zone 4 Southeast	Zone 5 Southwest	Zone 6 West	Average
Annual operating hours	10,192	10,192	13,832	18,928	13,832	8,736	12,619
Peak vehicle count	2	2	3	4	3	2	3
Annual contract cost	\$968,240	\$968,240	\$1,314,040	\$1,798,160	\$1,314,040	\$829,920	\$1,198,773
Annual admin cost	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
Total annual operating cost	\$1,168,240	\$1,168,240	\$1,514,040	\$1,998,160	\$1,514,040	\$1,029,920	\$1,398,773
<i>Operating requirements assume span of service of 6 a.m.-8 p.m. 365 days a year</i>							
<i>Cost per hour is assumed to be \$95</i>							
<i>Cost assumptions are for 2025. Costs should be assumed to increase with inflation over time</i>							

Zone Performance

Performance metrics evaluate how efficiently each zone would operate based on estimated ridership and cost assumptions. Ridership estimates were developed using Remix and informed by demographic and land use data that was then paired with operating requirements to calculate key performance indicators such as riders per revenue hour, cost per passenger, and farebox recovery ratio. For reference, the average cost per trip for Lextran fixed-route service is \$5.04 per passenger. These metrics provide a data-informed view of service productivity and financial sustainability.

Key findings by zone include:

- **Zone 1 – Northwest** achieves a healthy 2.1 riders per hour and \$54.66 cost per passenger, placing it above average. With over 21,000 annual riders and a relatively balanced population and employment base, the zone performs well without requiring excessive resources.
- **Zone 2 – Northeast** is the lowest-performing zone across nearly all performance metrics. With just 13,208 annual riders, 1.3 riders per hour, and a farebox recovery of 3.4%, it faces challenges in achieving sustainability. Nonetheless, its demographic profile and population may still justify investment as a less efficient microtransit zone.
- **Zone 3 – East** generates over 20,700 riders annually, driven by strong employment activity and retail destinations. However, its 1.5 riders per hour and \$72.97 cost per passenger place it below average in efficiency, likely due to higher trip lengths or less centralized demand patterns.
- **Zone 4 – Southeast** delivers the highest projected annual ridership (43,940) and fare revenue (\$131,820) of any zone. Despite its large geographic footprint, it achieves a strong 2.3 riders per hour and \$45.47 cost per passenger. Its size poses challenges in terms of longer trip distances and vehicle coverage, but the underlying demand supports high utilization.
- **Zone 5 – Southwest** demonstrates the highest performance across multiple metrics. With 2.5 riders per hour, \$43.14 cost per passenger, and a 7.0% farebox recovery, this zone offers the most cost-effective service potential. Its moderate size and balanced land use likely support short, productive trips to established destinations along Nicholasville Road and Harrodsburg Road.
- **Zone 6 – West** shows modest ridership (16,900 annually) but benefits from its compact size (6.5 square miles). The zone's 1.9 riders per hour and \$60.94 cost per passenger suggest operational efficiency and solid returns, especially considering its lower cost base and transit-dependent population.

These performance results help distinguish zones with strong ridership potential from those that may require policy-driven investment to ensure equitable access.

Table 19 Performance Metrics of Potential Microtransit Zones

	Zone 1 Northwest	Zone 2 Northeast	Zone 3 East	Zone 4 Southeast	Zone 5 Southwest	Zone 6 West	Average
Zone size (square miles)	9.9	6.8	7.9	16.5	10.7	6.5	9.7
Annual ridership	21,372	13,208	20,748	43,940	35,100	16,900	25,211
Fare revenue	\$64,116	\$39,624	\$62,244	\$131,820	\$105,300	\$50,700	\$75,634
Riders per revenue hour	2.1	1.3	1.5	2.3	2.5	1.9	1.9
Cost per passenger	\$54.66	\$88.45	\$72.97	\$45.47	\$43.14	\$60.94	\$60.94
Farebox recovery ratio	5.5%	3.4%	4.1%	6.6%	7.0%	4.9%	5.2%

Ridership estimates generated from Remix transit planning software analysis tool

Zone Results

The six proposed microtransit zones were evaluated across four categories (demand, need, cost, and performance) using a composite scoring framework. For each category, selected metrics were normalized on a 0 to 1 scale based on the observed range, then rescaled to a 0–10 range to ensure equal weighting across categories. This approach allowed for a direct, quantitative comparison of zones based on feasibility, impact, and efficiency.

Table 20 shows the results of the composite scoring. Key takeaways by zone are summarized below:

- **Zone 1 – Northwest** emerges as the most balanced zone overall, with strong performance across all categories. Its mix of dense residential areas, major employers, and a high-need population makes it well-suited for microtransit. With moderate costs and solid ridership projections, it ranks first in combined feasibility and impact.
- **Zone 2 – Northeast** ranks highest in need due to its high percentage of transit-dependent residents but has the lowest ridership potential and highest cost per passenger. It is best suited for coverage-oriented service focused on improved access rather than productivity.
- **Zone 3 – East** delivers strong demand due to significant job concentrations but ranks lower in performance and cost-effectiveness. With moderate need and below-average productivity, the East zone presents a mixed case for investment.
- **Zone 4 – Southeast** leads in overall demand and total ridership, indicating strong potential for service uptake. However, its large size drives up vehicle requirements and annual costs. This zone is best positioned for a full-scale pilot when resources allow for a larger service footprint.
- **Zone 5 – Southwest** scores highest on performance metrics including productivity and farebox recovery, thanks to its density and trip-making patterns. However, it ranks lowest in transit need, suggesting that service in this area would primarily support general mobility rather than address access gaps.
- **Zone 6 – West** combines low costs and high transit need, making it a strong candidate for a phased or lower-risk implementation. While its ridership and productivity are moderate, its compact size supports efficient operations.

Table 20 Microtransit Evaluation Results

Evaluation Category	Metrics	Zone 1 Northwest	Zone 2 Northeast	Zone 3 East	Zone 4 Southeast	Zone 5 Southwest	Zone 6 West
Demand	Population, population density, jobs, job density, daily paratransit trips, paratransit trip density	5.5	0.8	4.5	7.9	4.5	3.6
Need	% minority, % low-income, % zero car, % with a disability, % age 65+	7.0	8.6	5.5	4.3	1.8	7.1
Cost	peak vehicle count, total annual operating cost	9.3	9.3	5.0	0.0	5.0	10.0
Performance	zone size, annual ridership, riders per revenue hour, cost per passenger	5.8	1.9	3.6	7.3	8.6	5.3
Total Weighted Score		27.6	20.6	18.6	19.5	19.8	26.1

7 IMPLEMENTATION STRATEGIES

Implementing microtransit in Lexington requires a phased strategy that moves from concept development to pilot launch and ultimately to long-term, sustainable service. This section provides a structured roadmap for Lextran to evaluate, initiate, and expand microtransit operations. Each stage requires key operational decisions, resource alignment, and clear funding strategies.

The section begins with a comparison of service delivery models (directly operated vs. contracted), outlining how each approach affects not only operational control and staffing but also capital investment and eligibility for federal and local funding. A preliminary staffing plan identifies essential roles and responsibilities, scaled to each service model and funding level. Marketing strategies are tailored to match different deployment phases and align with outreach funding and potential partnerships. Detailed cost estimates (capital and operating) are presented for both models, grounded in industry benchmarks and assumptions from the COA, and structured to support grant applications and local funding requests.

A dedicated section on funding explores the mix of federal, local, and supplemental sources required to support startup, operations, and potential expansion. The chapter concludes with a five-phase implementation plan (planning, procurement and setup, pilot launch, evaluation and adjustment, and permanent service expansion) designed to guide Lextran through each stage of the process while maintaining financial viability and program accountability.

7.1 SERVICE DELIVERY MODELS

Selecting a service delivery model is a foundational decision that shapes how microtransit will be launched, managed, and sustained. Lextran must decide the balance of responsibilities between the agency and outside vendors. Two primary options exist:

1. A directly operated model
2. A contracted (turnkey) model

In a directly operated model, Lextran provides service using its own vehicles, drivers, maintenance team, and facilities. The agency procures microtransit software (typically via a software-as-a-service or SaaS agreement) to handle trip booking, dispatching, and customer interaction. This model provides strong internal control and continuity with existing transit operations but requires significant up-front capital investment and staffing. Funding for this approach is more likely to require a mix of capital grants (e.g., FTA 5339), local funds, and supplemental sources to cover vehicles, hardware, and operating costs. However, ongoing costs may be more predictable in the long term if Lextran absorbs operations in-house.

In a contracted turnkey model (often described as transportation-as-a-service or TaaS), Lextran would contract with a vendor to provide a full suite of services, including vehicles, drivers, technology, and operations management. This approach supports faster implementation and scalability, making it attractive for a pilot phase or phased rollout. Although contract oversight and procurement require staff time and internal management, the model limits Lextran’s up-front capital exposure and can be supported by short-term discretionary grants and partner contributions. Over time, however, service flexibility and cost control may be more constrained under vendor-managed operations.

Table 21 compares the two delivery models across common use cases, benefits, and drawbacks.

Table 21 Microtransit Service Delivery Options

Model	Common Use Cases	Benefits	Limitations
Directly Operated (i.e. software-as-a-service / SaaS)	▪ Lextran-owned vehicles, drivers, and facilities ▪ Lextran-managed operations and software procurement	▪ Strong internal control ▪ Seamless integration with existing service ▪ Leverages agency assets	▪ Requires upfront capital and new staff ▪ Higher complexity to implement ▪ Needs long-term funding for operations and maintenance ▪ Potentially higher cost per trip
Turnkey Contract (i.e. transportation as a service / TaaS)	▪ Third-party operator manages vehicles, staff, and technology ▪ Lextran oversees contract and outreach	▪ Quicker to launch ▪ Easier to scale or test new zones ▪ Capital costs absorbed into contracted rate	▪ Reduced control over service delivery ▪ Potential labor implications ▪ May cost more long-term and reduce operational flexibility

Ultimately, Lextran’s decision will depend on internal capacity, funding availability, and desired level of control over microtransit operations. A contracted model may offer a low-risk entry point for a pilot, while a directly operated model could support long-term sustainability, particularly if capital resources and staff growth align with agency goals.

7.2 PRELIMINARY STAFFING PLAN

A clear staffing strategy ensures microtransit service is safe, responsive, and cost-effective. Staffing needs differ depending on whether Lextran pursues a directly operated model or a turnkey contract. Direct operation requires a larger in-house team to manage daily operations and customer service, while a turnkey contract requires fewer Lextran staff but increases the need for oversight and contract management. Staffing should be evaluated in three distinct phases:

1. Concept Phase – focus on internal planning capacity (e.g., planning, procurement, marketing).
2. Pilot Phase – staff for initial service launch, prioritizing cost control, flexibility, and feedback collection.
3. Permanent Service Phase – right-size staffing based on pilot outcomes and service scale, with potential for added positions or realignment.

Regardless of the model, early roles should emphasize:

- Flexibility – adjust staffing levels as rider demand stabilizes.
- Efficiency – use shared roles or part-time employees where possible.
- Scalability – design roles that can expand alongside service.

Funding strategies for staffing should match the service model in both the pilot and permanent service phases. Directly operated models will require sustainable operating support from a mix of sources that could include local funds, FTA 5307 formula funding, and supplemental support from city partners or institutional stakeholders. Turnkey contract models may rely on short-term grants to fund oversight, marketing, and contract management staffing during the initial pilot. Long-term positions will require durable local partnership funding.

Table 22 shows a preliminary staffing plan comparison with roles, full-time equivalent (FTE) estimates, and responsibilities.

Table 22 Microtransit Staffing Plan

Role	FTE Estimate	Responsibilities	Directly Operated	Turnkey Contract
Driver / Vehicle Operator	5-6	- Operate microtransit vehicles - Assist passengers, including ADA riders - Perform pre/post-trip inspections	✓	
Dispatcher / Scheduler	1-2	- Manage real-time vehicle assignments - Handle bookings via phone or app - Support drivers and monitor operations	✓	
Microtransit Supervisor	2	- Oversee daily operations and staffing - Resolve service issues in the field - Monitor service quality and safety	✓	
Maintenance Technician	0.5 - 1.0	- Perform preventative maintenance and repairs - Ensure vehicle readiness and safety - Coordinate with fleet management	✓	
Program Manager	1	- Lead program planning and performance monitoring - Analyze ridership and system data - Recommend service improvements	✓	✓
Marketing / Outreach Specialist	0.25 - 0.5	- Develop promotional campaigns and rider education - Coordinate with community partners - Manage service branding and materials	✓	✓
Planner / Data Analyst	0.25 - 0.5	- Analyze ridership and performance data - Support zone design and optimization - Ensure service aligns with planning goals	✓	✓
Customer Service Representative	1-2	- Assist with rider inquiries and feedback - Support scheduling and trip booking - Manage lost and found, complaints	✓	
Contract / Procurement Specialist	0.1 - 0.25	- Manage contract compliance and amendments - Review invoices and SLA adherence - Maintain documentation and regulatory compliance		✓
Accessibility / Paratransit Coordinator	As needed	- Ensure ADA compliance - Coordinate service design for riders with disabilities - Monitor accessibility performance	✓	✓
<i>Checkmarks indicate need for respective service delivery model</i>				

Staffing costs will vary based on labor structure, service span, and technology tools. During the pilot, Lextran may consider time-limited or reallocated roles supported by pilot funding sources. For permanent service, roles tied to compliance, data analytics, and outreach are critical to ensuring the program evolves with rider needs and aligns with broader agency goals.

7.3 MARKETING

Marketing and outreach are essential to microtransit success, from concept to pilot to permanent service. Effective marketing not only builds initial awareness and trust, but also drives adoption, ensures access, and supports long-term sustainability.

At the concept stage, marketing priorities include stakeholder briefings, framing the service vision, and gathering community input to build public trust and inform zone design. Pilot phase marketing focuses on education and awareness and clearly explaining how to book a trip, when and where the service operates, and how it complements fixed-route service. For permanent service, marketing must evolve to emphasize consistency, long-term reliability, and seamless integration into the Lextran system.

Funding for marketing efforts can come from pilot grant awards, local partnerships (e.g., universities, hospitals), or be included as a line item in a turnkey contract. In a directly operated model, Lextran will need to dedicate internal staff time or local funds to manage outreach and ongoing rider education. Marketing strategies should:

- Build a unique, recognizable service identity tied to Lextran's values and distinct from fixed-route and paratransit.
- Use multi-channel outreach (digital, print, media, etc.) to engage all rider segments.
- Target high transit propensity populations with tailored communications.
- Use community partnerships to expand reach and build credibility.

By embedding outreach into every phase Lextran can ensure riders understand, trust, and use microtransit service. A well-funded, thoughtfully executed marketing program will not only drive ridership but also demonstrate Lextran's ongoing commitment to innovation, accessibility, and responsive service.

Table 23 Microtransit Marketing Strategies

Strategy	Primary Audience	Examples
Service branding	General public	Create a distinct name, logo, and color scheme that aligns with Lextran's brand
Digital communication	Tech-savvy riders, younger audiences	Service webpage, social media posts & ads, email campaigns, app store promotion
Printed materials	Riders with limited digital access	Flyers, posters at transit stops, community boards, informational brochures
Media outreach	General public, community stakeholders	Press release, feature story in local news, radio interviews
In-person engagement	Transit-dependent & low-income populations	Tabling at events, demos at transit hubs, neighborhood meetings
Community partnerships	Underserved & hard-to-reach groups	Outreach through employers, schools, social services, senior centers, and advocacy groups

7.4 COST ESTIMATES

Launching a microtransit program requires clear financial planning, careful budgeting, and identification of feasible funding sources. While initial startup costs can be significant, strategic planning can help Lextran scale service efficiently over time.

Cost estimates were developed based on the 2022 Comprehensive Operations Analysis (COA), peer system benchmarking, and updated industry pricing to account for inflation. Tables 23 and 24 present unit-level assumptions for capital and operating expenses under both directly operated and turnkey contract service models.

Startup Capital Costs – Concept and Pilot Phases

Capital expenses reflect one-time investments necessary to prepare for a pilot launch, including vehicle acquisition, onboard hardware, and technology setup. These costs apply primarily to a directly operated model. Under a turnkey contract, these costs are bundled and absorbed by the vendor, reducing Lextran's upfront financial exposure but increasing per-hour operating costs. Capital costs can be funded through federal discretionary grants (e.g., FTA's Integrated Mobility Innovation or RAISE programs), local capital reserves, or partnerships with private entities and institutions.

Table 24 Capital Cost Assumptions (Directly Operated Only)

Cost	Cost Range	Cost Estimate	Assumptions
Vehicle acquisition	\$82,500 to \$110,000 per accessible van	\$96,250	- Cost of acquiring vehicles for the service - Assumes entire fleet is wheelchair accessible - Assumes installation of fare collection and security features
Hardware	\$220 to \$550 per tablet	\$385	Cost to purchase tablets, mounts, chargers, and dispatcher hardware
Software installation fee	\$22,000 to \$55,000	\$38,500	Software installation fees vary depending on the provider and the size of the deployment

Recurring Operating Costs – Pilot and Permanent Service

Ongoing operating and maintenance costs differ significantly by delivery model. Direct operation assumes Lextran covers all expenses (e.g. personnel, fuel, maintenance, and insurance) while turnkey contracts typically include both per hour and per trip rates and often include minimum service level or minimum spend requirements. Contracted models enable faster pilot deployment and easier scaling but require dedicated contract management and may be more difficult to adjust mid-program.

Regardless of model, microtransit pilot operations are unlikely to be fully supported by existing federal formula funds or local operating funds. Instead, Lextran would need to rely on discretionary grants (e.g., FTA AIM, Mobility Innovation, or ATCMTD), and institutional partnerships to fund pilot operations. Long-term service will require sustainable local funding sources or ongoing cost-sharing arrangements with partners such as healthcare providers, large employers, or the Lexington-Fayette Urban County Government.

Table 25 Operating Cost Assumptions

Cost	Cost Range	Cost Estimate	Assumptions
Directly Operated			
Operating and maintenance	\$77 to \$116 per vehicle revenue hour	\$96	- Costs inflated from 2022 COA by 10% - Inclusive of operations, maintenance, insurance, management, and dispatch/customer service functions
Software licensing fee (single)	\$22,000 to \$66,000	\$44,000	Software installation fees vary depending on the provider and the number of vehicles needed to operate the service
Turnkey Contract			
Service contract	\$80 to \$110 per vehicle revenue hour	\$95	- Based on case study research - Fully loaded cost per vehicle revenue hour, including recurring technology fees, vehicle leases, driver pay, and customer service
Management / marketing / procurement	\$150,000 to \$250,000	\$200,000	Includes time and resources required for program manager activities, marketing/outreach specialist, planner /data analyst, and contract / procurement

Cost estimates for each of the six potential microtransit zones are shown in Table 26 and Table 27. Vehicle requirements affect the vehicle, hardware, and data costs. It should be noted that the number of vehicles is for peak service delivery and does not include spare vehicles. Additional vehicles used when primary vehicles are down for maintenance should be considered when implementing service. Software licensing is a single fee. Operating costs are driven by annual revenue vehicle hours, or the number of total hours in service, which depends on vehicle requirements and demand evaluation from the previous section. Operating cost estimates are presented for both service delivery models (directly operated and contracted).

Zone-Level Cost Estimates

Tables 25 and 26 provide cost estimates by zone to help Lextran compare different rollout options. These zone-level costs reflect varying service sizes and deployment requirements. Capital costs are exclusive to direct operation. Software fees are single-instance per deployment. Operating hours are scaled to each zone's demand profile and peak vehicle need.

These estimates help Lextran compare candidate zones based on size, resource needs, and potential financial exposure. They do not represent a phased expansion plan. Rather, they support selection of one or two zones for pilot deployment based on feasibility and strategic fit.

Table 26 Capital Cost Estimates (Directly Operated Only)

Cost	Zone 1 Northwest	Zone 2 Northeast	Zone 3 East	Zone 4 Southeast	Zone 5 Southwest	Zone 6 West
Peak vehicles	2	2	3	4	3	2
Vehicle cost	\$192,500	\$192,500	\$288,750	\$385,000	\$288,750	\$192,500
Hardware / data	\$770	\$770	\$1,155	\$1,540	\$1,155	\$770
Software	\$38,500	\$38,500	\$38,500	\$38,500	\$38,500	\$38,500
Total	\$231,770	\$231,770	\$328,405	\$425,040	\$328,405	\$231,770

Table 27 Operating and Maintenance Cost Estimates

Cost	Zone 1 Northwest	Zone 2 Northeast	Zone 3 East	Zone 4 Southeast	Zone 5 Southwest	Zone 6 West
Annual vehicle hours	10,192	10,192	13,832	18,928	13,832	8,736
Direct Operation						
Operating and maintenance	\$981,000	\$981,000	\$1,331,300	\$1,821,800	\$1,331,300	\$840,800
Software licensing	\$44,000	\$44,000	\$44,000	\$44,000	\$44,000	\$44,000
Management / marketing / procurement	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
Total	\$1,225,000	\$1,225,000	\$1,575,300	\$2,065,800	\$1,575,300	\$1,084,800
Turnkey Contract						
Service contract	\$968,240	\$968,240	\$1,314,040	\$1,798,160	\$1,314,040	\$829,920
Management / marketing / procurement	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
Total	\$1,168,240	\$1,168,240	\$1,514,040	\$1,998,160	\$1,514,040	\$1,029,920

The key takeaways from the cost estimates above for Lextran to consider include:

- Turnkey delivery models reduce initial capital needs, enabling Lextran to test microtransit with lower startup investment.
- Direct operation allows for long-term cost control but requires significant upfront funding and staffing.
- Transitioning from pilot to permanent service requires sustainable local and partner-supported funding, as formula grants and pilot grants cannot sustain operations alone.

7.5 FUNDING SOURCES

Launching and sustaining a microtransit pilot in Lexington will require a flexible, multi-source funding strategy. While microtransit can deliver clear mobility benefits, especially for underserved populations, its financial viability is constrained by limited fare revenue and a lack of dedicated funding streams. As with many innovative transit services, initial implementation will rely heavily on one-time funding, with long-term success depending on Lextran's ability to secure stable and diverse sources of support.

Pilot Implementation:

Startup funding will likely need to come from competitive federal grant programs or local partner contributions. Federal discretionary programs such as the FTA's Mobility on Demand Sandbox, Accelerating Innovative Mobility (AIM), or RAISE grants offer opportunities for pilot-scale deployment. However, these programs are competitive and not guaranteed. Local funding support, whether through in-kind contributions, direct funding from LFUCG, or institutional sponsorship, will be critical to strengthen applications and meet match requirements.

Ongoing Operations:

Permanent or expanded microtransit service will require dedicated local operating funds. Lextran's federal formula dollars are fully committed to existing fixed-route and paratransit operations, and ballot initiatives for new transit funding are politically difficult and geographically constrained. A viable long-term funding plan may include shared-cost agreements with large employers, hospitals, or educational institutions benefiting from the service, as well as small supplemental revenues from advertising, branding partnerships, or limited farebox recovery.

Diversification:

No single funding source is sufficient or guaranteed. Instead, Lextran should pursue a layered funding strategy that combines federal grants (where available), local government support, institutional partnerships, and small-scale supplemental revenue. Early stakeholder engagement will be essential to build alignment, secure commitments, and strengthen applications for external funding.

Table 28 Potential Funding Sources

Source	Characteristics and Challenges	Recommended Use	Likelihood of Access
Federal formula funding	- Currently fully allocated to paratransit service and fleet maintenance - Extremely limited flexibility - Formula increases are rare	Not applicable	Low
Federal grant funding	- Limited grant opportunities - Competitive application process - Long-term funding not available	Pilot/startup	Low
Local funding	- Current local funding falls short of existing needs - Ballot initiatives are expensive and uncertain - Service does not benefit entire city	Operations	Low
Local partnerships	- Lexington-Fayette Urban County Government - Major employers (e.g. hospitals, warehouse distribution centers) - Nonprofit organizations or foundations, including colleges and universities	Pilot/startup or supplemental	Medium
Supplemental funding	- Subsidized fares generate little revenue - Advertising (e.g. in-app ads, vehicle wraps, naming rights) offer limited revenue	Supplemental only	High

Note: Likelihood of Access ratings reflect the current political and economic climate. Many of the grants used by peer transit agencies during the COVID-19 recovery period were tied to expiring programs such as ARPA and the Inflation Reduction Act. The current federal administration has signaled an intention to reduce discretionary spending, limiting future availability of one-time federal funds for pilot programs.

7.6 IMPLEMENTATION STEPS

Launching a successful microtransit service requires a structured, phased implementation plan that spans from initial planning through long-term integration. This roadmap ensures Lextran can move deliberately and strategically from concept to pilot to permanent service. The process emphasizes operational readiness, community trust, financial stewardship, and data-driven decision-making.

The timeline includes a short planning period (3–6 months), a full pilot phase (ideally 24 months), and ongoing evaluation. Each phase builds on the last, with clear goals and key actions aligned to funding availability, public engagement, and internal capacity. Careful, conservative decisions early on will reduce risk and create a strong foundation for scalability within a successful zone. Table 28 outlines each phase and its objectives.

Lextran should ensure that implementation decisions, including zone selection, service design, and delivery model, are aligned with available startup and operating funding, including any minimum spend thresholds in a service contract.

Table 29 Implementation Plan

Goals	Key Actions
Phase 1 – Planning and Preparation (3 months)	
- Finalize service design - Select delivery model - Secure funding and stakeholder support	- Decide between directly operated or contracted (turnkey) service model - Finalize service parameters (hours of operation, fleet size, ADA accessibility) - Secure startup and operational funding - Develop procurement documents (for software and/or turnkey vendor, if needed) or conduct internal staffing analysis (if directly operated) - Begin community engagement and outreach to inform the public and partners
Phase 2 – Procurement and Setup (3 months)	
- Acquire necessary resources (vehicles, software, vendor) - Set up operations infrastructure	- Procure vehicles and install necessary technology (if directly operated) or award contract to selected turnkey vendor (if contracted) - Acquire and configure dispatch/booking software - Hire and train drivers, dispatchers, and support staff (if applicable) - Coordinate with marketing and IT teams to launch service webpage, app, and call-in options - Finalize service policies (fares, performance standards) - Test service technology and routing logic with staff/internal users
Phase 3 – Pilot Launch (3 months)	
- Begin service operations in a controlled rollout - Monitor performance and gather rider feedback	- Launch microtransit service in pilot zone(s) - Resolve operational issues in real-time (e.g., zone boundaries, on-time performance, cancellations and no-shows) - Begin monthly reporting and performance tracking (ridership, wait times, cost per trip, service reliability)
Phase 4 – Program Evaluation and Adjustment (6 months post-launch; repeat semi-annually)	
- Assess pilot effectiveness - Identify areas for improvement or optimization	- Evaluate performance against KPIs (riders per hour, cost per trip, transit access outcomes) - Gather rider and driver feedback through outreach - Recommend service adjustments or policy updates - Evaluate continued funding needs and sources
Phase 5 – Program Optimization and Long-Term Planning (12 months post-launch; repeat annually)	
Sustain or scale the service based on pilot outcomes and funding availability	- Pursue longer-term funding and partnerships - Modify service based on demand and feedback - Evaluate new zones for service based on feasibility and need - Plan for long-term integration with fixed-route and paratransit - Formalize service contracts or agency operations for long-term delivery - Continue community engagement and marketing

8 APPENDIX A: CASE STUDIES

CASE STUDY OVERVIEW

Across the United States, agencies have piloted and implemented microtransit in a variety of contexts, ranging from rural coverage replacements to urban first/last-mile connectors. This section presents a series of microtransit case studies from diverse agencies, including RTA (Dayton, Ohio), MetroLink (Tulsa, Oklahoma), CATS (Baton Rouge, Louisiana), DART (Des Moines, Iowa), and the Smart Shuttle (Morrisville, North Carolina). Each case study highlights the unique goals, service designs, operational models, funding approaches, and challenges encountered. These examples offer valuable insights into how agencies of different sizes and capacities have approached microtransit implementation, enabling informed decision-making for future deployments.

The case studies were selected to reflect a wide range of microtransit applications and operational strategies. Included are examples of both directly operated and contracted service delivery models, as well as partnerships with Transportation Network Companies (TNCs) such as Uber and Lyft. The selection also highlights different technology platforms and vendors, such as Via and RideCo, to showcase varying approaches to software integration and service management. Together, these case studies provide a representative cross-section of how microtransit is being deployed across the country under different governance structures, community needs, and funding landscapes.

RTA CONNECT ON-DEMAND

Introduction

- **Agency** – RTA is the transit service provider in the greater Dayton, Ohio. RTA operates fixed route, paratransit, and on-demand via TNC (Transportation Network Company) partnerships. The TNC partnerships are branded as RTA Connect On-Demand.
- **TNC Partnership** – The Connect On-Demand service is provided via partnerships with Uber, Lyft, and a local taxicab company. RTA paratransit vehicles are utilized for trips that require a lift-equipped vehicle. The service includes four on-demand zones and operates curb to curb service within each zone.

Project Purpose and Use Case

- **Service need** – In 2016 and 2017, RTA began scrutinizing services and identified several low-performing routes in low-density rural areas. RTA weighed the costs of these fixed routes compared to the potential cost of TNC partnerships and decided to replace some fixed-route service with on demand service. The original intent of the on-demand service was to maintain coverage in locations that were losing fixed-route service.
- **Pilot program** – RTA initially researched on demand transportation before beginning the program. In 2017, RTA launched the program as a pilot as a test to see if the new type of service would work in the area. RTA used the pilot as a learning experience, adjusting the shape and size of the zones to make them more successful. RTA has continued to modify the zones over time to control demand.
- **Coordination with other services** – RTA Connect On-Demand has been well coordinated with other services since implementation. Changes to fixed routes and on demand zones are implemented simultaneously for comprehensive network efficiency. Introduction of on-demand services has coincided with the removal of fixed-route service, and vice versa. Paratransit service operates county wide (not limited to $\frac{3}{4}$ mile distance from fixed routes) and is not impacted by on-demand service.

Funding and Governance

- **Procurement** – RTA launched a formal procurement process to go out to bid for service providers. The procurement is continual, however, so service providers can be added if they meet minimum requirements outlined in the RFP. RTA initially selected Lyft but later added Uber and a local taxi service to the program.

- **Contracting** – The current service contract charges RTA the public rates of Uber, Lyft, and the taxi service. The program was approved as a regular RTA service in February 2021 by its Board of Trustees. The contract with Uber and Lyft is for 5 years. Uber and Lyft do not accept RTA’s standard agreement and have required changes to contracts every renewal. The contracting process with Uber and Lyft have required significant time and effort.
- **Funding** – Although the program would be eligible to apply for federal funding, RTA only uses restricted local operating dollars to fund the program to avoid any possible future risk of evolving federal funding requirements.

Implementation and Operations

- **Service design** – Initially the service design was node to node. RTA left the existing fixed-route bus stops in place and served as required origins and destinations for on-demand passengers. However, ATU (operators union) didn’t approve of the new service because the new service wasn’t using union operators. RTA then removed the bus stops so the service operates less like fixed route, which resolved the union’s concerns.
- **Managing the program** – RTA Connect is managed by RTA’s Special Services Supervisor, who coordinates with regional managers from Uber, Lyft, and the taxi service when necessary. Uber, Lyft, and the taxi service are all independent companies responsible for vehicles, drivers, and operations.
- **Trip requests** – Riders can use the Lyft or Uber app to book a trip. If riders don’t have the app, they can call RTA and an employee will book the trip for them. If passengers are under 18 or need a lift-equipped vehicle they call in and RTA books a trip with their other service.
- **Trip costs** – TNC partners charge RTA on a per-trip basis. RTA recently started charging passengers \$3 per trip in January 2025. The average cost per trip is \$12, creating an average cost of \$9 per trip for RTA.

Outcomes

- **Fixed-route transfers** – The goal of the program is to connect as many riders to the fixed-route service as possible. Currently over 70% of Connect On-Demand trips are connecting to fixed routes, which is considered a success.
- **Ridership** – There was a 68% decrease in ridership when fares were implemented in January 2025. RTA has observed a significant reduction in short trips, which is likely due to passengers choosing to walk instead of paying \$6 per round trip. In December 2024, there were 18,815 trips. In January 2025, there were about 6,500 trips. The highest ridership month in 2024 was in May with about 24,000 trips. RTA trimmed back zones after May and saw an immediate drop of 4,000 trips in June. Since the program started in 2017, RTA has completed 732,000 trips.

- **Program costs** – Connect On-Demand has grown significantly over the years, leading to much higher total costs. In addition, Uber and Lyft have become more expensive services, particularly since the COVID-19 pandemic. In 2022 the cost of the program was \$600,000. By 2024 the cost of the program had grown to over \$1 million. The program was becoming too expensive, so reducing costs via introduction of fares was considered a necessity.
- **Fares** – RTA implemented all new fares in January 2025, including fixed route, paratransit, and on demand. Fares for fixed routes are \$2.20, paratransit are \$4.00, and \$3.00 for on demand. Fares were determined by the finance department.

Challenges and Lessons Learned

- **Driver availability** – TNC drivers tend to be unavailable in certain areas during certain times of the day. This issue is pronounced in rural areas early in the morning or sometimes late at night. RTA worked with Uber and Lyft to advertise and encourage drivers to be in certain areas at certain times of the day to meet these needs.
- **In-house operations** – RTA has no intent of taking this service in house. RTA would not be able to operate the service if they didn't contract it out to TNCs and taxis because it would be prohibitively expensive.
- **Plans** – RTA is currently awaiting further information regarding the taxicab exception rule change. Should this rule change go into effect, RTA would be responsible for drug and alcohol testing of all Connect On-Demand drivers. This change would likely create significant burden on RTA and jeopardize the program.
- **Union relations** – The biggest challenge to the program was managing the union. RTA was able to resolve the union's concerns by modifying the service by removing bus stops.

METROLINK MICROLINK

Introduction

- **Agency** – MetroLink (or MetroLink Tulsa) operates transit service in greater Tulsa, Oklahoma, serving the region with fixed route, ADA paratransit, and on-demand services. MetroLink’s on-demand microtransit service is branded as MicroLink.
- **Microtransit** – MetroLink launched MicroLink, a point-to-point microtransit service, in April 2023. MicroLink service consists of eight zones that operate various times and days of the week. Microtransit zones that operate during the day are designed to complement fixed routes, while zones that operate at night and on Sundays are designed to replace fixed routes.

Project Purpose and Use Case

- **Project purpose** – The purpose of the project was to transition away from nighttime/Sunday deviated fixed-route service because it wasn’t performing well. The service was relatively expensive for the ridership it was returning. MetroLink hoped to try new/different services to try to make the best use of the limited resources they had. Daytime microtransit services enabled MetroLink to replace fixed-route service that was underperforming as well. Zones were designed to relieve the fixed-route services so that fixed routes could operate more efficiently.
- **Target market** – MetroLink implemented microtransit to serve low density communities that had underperforming fixed-route services. MetroLink didn’t want to remove service from these communities without offering an alternative. Much of the daytime service zones operate through areas that might not have any transit service at all if it weren’t served by microtransit.
- **Daytime/nighttime service** – MetroLink designed zones that vary by time of day and day of week to meet different levels of demand. Daytime zones are smaller and provide additional coverage and connectivity to complement the fixed route network. Nighttime zones are much larger, covering about 200 square miles, and replace the fixed route network when demand is much lower.

Funding and Governance

- **Procurement** – MetroLink began the microtransit service as a pilot. MetroLink contracted out the operators and dispatch for the pilot but took the service in house after the pilot. MetroLink currently only contracts out the on-demand software to operate the service, which is sourced from RideCo. It should be noted that MetroLink also uses the RideCo paratransit dispatch software platform.

- **Funding** – MetroLink used all local and state money (no federal or grant funding) to fund the microtransit pilot program, which ran for four months (April to August 2023). MetroLink continued to use local and state funding until they were approved by FTA for federal funding in September/October of 2024. MetroLink is now funded by a mix of local, state, and federal dollars.
- **NTD reporting** – Microtransit is reported to FTA as demand response directly operated hours with paratransit. Microtransit was implemented at the end of a reporting year, making the first two years of reporting the service difficult. MetroLink had reductions/differences in revenue hours that were difficult to explain.

Implementation and Operations

- **Implementation** – MetroLink piloted a single zone. After the pilot, MetroLink deployed citywide of night and Sunday service. Since the service began in 2023, the MetroLink has iterated and modified the zones to better suit the needs of the community while balancing demand.
- **Vehicle deployment** – MetroLink assigns vehicles to each zone. Vehicles generally stay within the same zone, so zones are not understaffed. However, the routing software can temporarily shift vehicles from zones with little activity to zones with heavy activity.
- **Software/technology service options** – At the beginning of service, RideCo provided an extensive questionnaire for MetroLink to complete. Questions included: “How long should drivers wait for passengers?” and “How many trip cancellations should passengers be permitted?” Answers to the questions directly informed how the service operates and influences demand for service.
- **Command center and dispatch** – Managing trips is completed by two separate groups. The command center handles trip bookings. Dispatch handles schedules, operator shifts, and the extra board. MetroLink used to have command center and dispatchers combined (shared duty) but separated them in 2024. Service runs smoother and more efficiently with this separation of duties.

Outcomes

- **Ridership** – MetroLink usually has a little less than 9,000 trips a month. Ridership initially grew quickly month over month until it leveled off at current levels. Ridership is relatively evenly distributed over the service area. However, one zone (Zone 6) has more ridership because the service has become popular among high school students (students can use the service for free).

- **KPIs** – MetroLink receives KPI results daily. KPIs include completed rides, percent of rides are shared, pickups, OTP, departures, and customer feedback (rider ratings). The microtransit app includes driver ratings and feedback from customers, which is currently 4.7 out of 5.0. The app asks for rating after every trip and customers like to give feedback. MetroLink can use the ratings to address issues with drivers. MetroLink also keeps a record of ride requests that failed because they are outside the microtransit boundaries to consider zone modifications.
- **Fixed-route impacts** – Implementing microtransit has enabled MetroLink to modify and improve the fixed route network. MetroLink changed alignments to improve the fixed routes, which now operate faster. One fixed route used to operate through a lot of neighborhood streets, but now it stays on the more major roads and operate quicker. The microtransit vehicles have a much easier time operating through the smaller neighborhood streets.

Challenges and Lessons Learned

- **Microtransit overuse** – MetroLink found that some passengers were using microtransit excessively. Passengers were booking multiple trips one after the other shortly after arriving at their destination before the operator had a chance to leave to pick up other passengers. MetroLink modified their trip booking policy by requiring at least 15 minutes between the end of one trip and requesting another trip. This has continued to be an issue, and MetroLink is considering extending the requirement to 20 minutes.
- **Education** – Service changes can be disruptive to people's daily lives, and thus, need to be communicated well in advance to allow them to prepare. Customer engagement and education before the service changes are therefore very important. MetroLink put notices at bus stops and actively engaged with passengers.
- **Overlap in services** – MetroLink operated both the deviated fixed route and microtransit at the same time during the pilot (about four months). The overlap in services eased the transition.
- **Customer experience** – MetroLink strives to improve the customer experience with creative solutions so that booking trips and using the service is as frictionless as possible. MetroLink has installed kiosks at both of their stations so customers can book microtransit trips at the station instead of on their phone. MetroLink also added charging stations in several locations so that customers can charge their phones.

LYNX BY CATS

Introduction

- **Agency** - CATS (Capital Area Transit System) is the transit service provider in the cities of Baton Rouge and Baker in southern Louisiana. CATS operates multiple transit modes, including fixed route, paratransit, and microtransit. Service in Baker is a combination of fixed route and microtransit service.
- **Microtransit program** - The microtransit service is branded as Lynx by CATS and operates anywhere to anywhere within Baker city limits. Additional destination points outside of city limits are also accessible, which include a nearby hospital and Southern University campus.

Project Purpose and Use Case

- **Planning studies** - In 2019 the CATS planning department conducted a service improvement plan for the entire transit network. This plan led to the removal of the circulator in Baker in February 2019 but kept the fixed route that connected Baker to Baton Rouge. CATS conducted a microtransit feasibility study after Baker expressed interest in restoring service in the area. In 2022, CATS selected a vendor for a fully turnkey microtransit service. Microtransit service began in June 2022.
- **Purpose** – Baker is part of the CATS service area and contributes funding for CATS through a millage tax. With the removal of the circulator in Baker due to its poor performance, Baker was left with a single route connecting it to the rest of the CATS network. CATS sought to restore service in Baker with an alternative service model more suited to lower demand. Microtransit was an emerging model that appeared to fit the needs of the community, so CATS decided to launch a pilot program as a test in June 2022. The community responded exceptionally well to the new service and demand has remained high.
- **Service demand** - The circulator in Baker that was eliminated in the service improvement plan was one of the lowest performing routes in the transit network. Baker is relatively small and low density, with approximately 12,000 residents, one high school, one middle school, and one elementary school. The area was difficult to serve with fixed route transit efficiently, and thus was identified as an area that could benefit from microtransit service.

Funding and Governance

- **Millage tax** – CATS transit service is funded through a local property millage tax. For CAT to operate service to a new area, the city or parish must pass a tax resolution authorizing funding for the transit service. The city or parish can pass a tax resolution via a ballot measure for an increase in millage to fund transit.

- **Operating contract** – The RFP for turnkey microtransit service was for three years. Via was awarded the contract in February 2022 and began service June 2022. The initial cost of the program was \$1.1 million per year. The total cost of the service grew to about \$1.5 million per year in 2025. CATS was forced to reduce service beginning in January 2025 because of a budget gap. Saturday service was eliminated, and weekday hours were cut (service ended at 8pm instead of 9pm). The 2025 budget for the service is \$1.1 million annually after accounting for the service reductions.
- **Costs** – Via bills CATS by the net driver hour (cumulative hours drivers spend behind the wheel). The original cost was about \$80 per driver hour in 2022, which has gone up to \$90.03 per hour in 2025. The total cost of the service is approximately \$80,000 per month.

Implementation and Operations

- **Operations** – Via operates and manages the service and is very responsive to service issues. CATS has been very pleased with Via's responsiveness and professionalism in operating the service. Via provides a dashboard for CATS to monitor the service at any time. CATS can quickly see how many vehicles are operating, how many rides have been completed, how many passengers are awaiting pickup, as well as other metrics. In addition, Via provides KPIs that CATS uses to track the service including completed rides, seat unavailable, cancelled trips, unaccepted proposals, no shows, invalid requests, and completed rides rate.
- **Trip booking** – Booking a trip must be done through the Via app or by calling. Via has a call center that passengers can call to request a trip. However, some customers have complained that calling in to book a trip is not ideal because the call center is international and communication with call center employees isn't always clear.
- **Vehicle storage** – Via requires the microtransit vehicles to be stored in the zone they operate in. CATS's garage is not in Baker, so CATS had to figure out where to store the vehicles overnight. CATS worked with the city of Baker to designate overnight parking spaces where the vehicles could be stored. The number of vehicles for the service has increased from 4 to 7 since the start of the program, requiring Baker to accommodate the growing fleet with additional parking spaces.

Outcomes

- **Nationally recognized** – The program is award winning (APA Louisiana chapter and Association of Municipalities) and staff have been invited to give presentations at conferences. Multiple transit agencies across the United States have reached out to CATS to learn more about the program.

- **Customer satisfaction** – Overall, the service has been very well received in the community. Passengers appreciate how convenient and flexible the service is. When negative reviews of the service occur, they tend to be about the availability of the service at certain times of the day. Other negative reviews include complaints about trip length because the service oftentimes picks up and drops off passengers mid route because the service is a rideshare.
- **Ridership** – CATS is the second most productive market in the United States, averaging 5.6 passenger trips per hour. In October 2024, Lynx recorded their highest ridership at 8,153 rides for the month. This is especially impressive because Baker has a population of only 12,000. Monthly ridership is typically closer to 6,000. There were no observed changes in ridership to other services when microtransit service began.
- **Older adults** – There was initial concern about older adults being able to use the new service because of the emphasis on technology. However, surveys show that the highest age group using the service is 45-65. The second highest age group is 65 plus.

Challenges and Lessons Learned

- **Challenges** – The two greatest challenges to LYNX have been funding and staffing. CATS has two additional zones planned but does not have the funding or drivers to expand service.
- **Increasing costs** – CATS has learned that costs increase as ridership increases. The public has responded well to the new service, and ridership has grown, but this has led to increasing costs that are difficult to accommodate.
- **Union relations** – The operator union has expressed dissatisfaction with the service operated by non-union members. The current service is operated by independent contractors, and therefore not part of the operator's union. CATS has resisted transitioning the service to union drivers however, because the cost would become prohibitively expensive. However, CATS is open to considering union operators for future microtransit zones.
- **Airport service** – Initially, the airport was included as an external zone that the service could operate to/from. However, the airport insisted that CATS pay a \$3 service fee for pickups/drop-offs at the airport (the same service fee that TNC's such as Uber and Lyft pay). CATS considered requesting the legislature to amend the law to specify that TDMs operated by transit agencies would be exempt from the airport surcharge but instead has opted to discontinue the service. The service to the airport only lasted a few months (June to August 2022).

DART FLEX CONNECT

Introduction

- **Agency** – DART operates transit service in greater Des Moines, Iowa. Service types include fixed route, paratransit, microtransit, on call, vanpool, and TNC partnerships.
- **TNC partnership** – The DART TNC partnership is branded as Flex Connect. The Flex Connect service operates within a defined zone in Urbandale, Iowa, at the northwestern edge of DART service area. DART contracts with Uber and a local taxicab company (YellowCabCo) to complete trips. The service is available from anywhere in the zone to one of three points, designed to operate primarily as a fixed route feeder service.

Project Purpose and Use Case

- **Project Purpose** – DART has operated a range of flexible and on-demand services. DART used to operate deviated fixed routes but began transitioning to on-demand services around 2015 because of poor performance of the deviated fixed routes. The DART board directed DART staff to explore TNC partnership with the goal of improving customer satisfaction and reducing costs. DART replaced Route 73 in the northwest suburbs with the TNC partnership in 2019. The Flex Connect service operates “anywhere to point,” connecting passengers to one of three locations (Merle Hay Mall, or one of two express bus stops). The goal of the Flex Connect service is to connect riders to the fixed route network.

Funding and Governance

- **TNC partnership procurement** – DART went through a formal procurement process to obtain an operator for the Flex Connect service. DART received approximately 7 or 8 bids but ultimately chose Uber as the TNC partner. One of the reasons DART decided to choose Uber was because Uber provided the most robust data.
- **TNC partnership funding** – Flex Connect is funded 100% locally and does not use federal dollars. DART’s local funding comes from property taxes, which account for about 60% of total DART operating budget. DART prefers to keep Flex Connect locally funded to avoid the complexity of reporting for federal funding.

Implementation and Operations

- **Flex Connect service design** – Service is designed as anywhere to node. Passengers can go to/from one of three point locations in the zone. Two point locations are connections to express routes, with the third being a connection to the local shopping mall where passengers can connect to four local fixed routes.

- **Flex Connect fare** – Fares are not collected on the Flex Connect service. This was a policy decision because DART's intended goal was to connect passengers to the fixed-route service. DART set up a voucher code that passengers can use on Uber that would reduce the fare to zero when trips meet certain criteria (at least one trip end was at one of the three points, and the other trip end was within the zone boundary). DART also has a partnership with the local yellow cab taxi, so that passengers can alternatively use the taxi service for free if the trips meet the same criteria.
- **Flex Connect booking** – Passengers can either book through the Uber app and use a voucher or they can call DART and DART can book the trip with Uber or arrange the trip with the taxi provider. If a trip requires a wheelchair accessible vehicle, DART will send one of their paratransit vans to complete the trip.

Outcomes

- **Flex Connect and COVID-19 impacts** – DART launched the Flex Connect service only about 5 months before the COVID-19 pandemic became widespread. This caused major challenges for the service because the service was designed to connect passengers to the express bus stops, and the pandemic caused large decreases in express ridership and still haven't fully recovered.
- **Cost** – DART Flex Connect costs \$20,000 a year and completes just over 2,000 rides a year.
- **TNC partnership** – DART has learned a lot about the pros and cons of TNC partnerships through the relationship with Uber over the last 6 years. Ideally TNCs would be utilized as a backup when microtransit becomes overwhelmed with demand. Uber Pool would be a valuable service, but that feature is not available in Des Moines. Uber operates more like a tech company and subscribes to the ethos of "moving fast and breaking things". DART has had to become comfortable with continuous change.

Challenges and Lessons Learned

- **TNC driver availability** – DART generally has a hard time with availability of drivers at certain times, such as during the early hours. During the COVID-19 pandemic many Uber drivers transitioned to meal delivery, reducing the availability of drivers for the Flex Connect service. Driver availability on Uber is better during the day and at night. Before 8am, when DART Express service demand is highest, Flex Connect riders oftentimes have a difficult time getting a ride.
- **TNCs and weather** – Supply of Uber rides can decrease quickly and dramatically when weather conditions make driving difficult. DART has learned that when it snows, most of the TNCs stop running because drivers don't want to drive in bad weather. This has caused some passengers to become stranded. Taxicabs, however, tend to keep operating despite poor weather conditions.

- **Smartphone app clutter** – Having options to meet various needs of passengers is valuable, but this can lead to customers having to keep track of too many apps. Integrating the different services into one app would be ideal.

DART ON DEMAND

Introduction

- **Agency** – DART operates transit service in greater Des Moines, Iowa. Service types include fixed route, paratransit, microtransit, on call, vanpool, and TNC partnerships.
- **Microtransit program** – Microtransit service is branded as DART On Demand. The microtransit service is differentiated from the DART On Call using technology enabling dynamic routing. The DART On Call service requires advanced reservation and lacks the ability to dispatch and accommodate trips in real time. DART On Demand is available in Ankeny only (north of Des Moines), while DART On Call is available in Ankeny, Altoona, and Bondurant. Both DART On Demand and On Call operate point to point services within each defined zone.

Project Purpose and Use Case

- **Microtransit project purpose** – The DART On-Demand zone in Ankeny was previously an on-demand zone. DART simply modified the service to operate as a microtransit service. Instead of calling in to book a trip in advance, passengers could request a ride in the app when they needed a ride. The hours of the service didn't change when making the switch from dial a ride (On-Call) to on-demand. The service runs M-F 6 a.m.-6:30 p.m.
- **Innovation** – DART has tested markets with new services to discover more effective mobility options in the community. However, some new services were discontinued because of low ridership. DART had two additional On-Demand zones that operated from Spring 2023 to Summer 2024.
- **Microtransit trip types** – Elementary, middle, and high school students make up a large portion of DART On Demand ridership. Student fare is \$0.75. Many microtransit trips are generated by students that live too close to the school to have a designated school bus route.
- **Paratransit to microtransit transition** – ADA paratransit trips have experienced recent rapid growth. The implementation of microtransit has helped ease the demand for ADA paratransit trips. ADA passengers are incentivized to use the microtransit service when they can because it's less expensive. Paratransit trips are also incentivized to use the fixed-route service through free fares.

Funding and Governance

- **Microtransit funding** – DART On Demand is funded similar to their other core services such as fixed route and demand response. A significant portion of DART's operating budget is from local property taxes (approximately 60% of total operating costs).
- **Unlimited access partners** – DART partners with businesses (Principal financial, Blue Cross Blue Shield, a regional community college) for unlimited transit use for patrons. DART negotiates the cost for each business using ridership information collected from the previous year. One of the regional community colleges in Ankeny is an unlimited access partner, which generates high ridership. However, high ridership on microtransit from this program sometimes overwhelms the service and creates long wait and travel times. Unlimited access partners programs are better suited for fixed-route service than microtransit service.
- **Funding for other services** – DART previously operated an on-demand zone in central Des Moines with historically limited resources and opportunities. Funding for this on-demand zone was from the Principal Foundation and local government, but the service resulted in very low ridership and was discontinued after only one year.

Implementation and Operations

- **Microtransit vehicle counts** – DART operates 3 vehicles in Ankeny during peak demand and 2 vehicles during non-peak. Two shifts are split shifts for the peak service.
- **Microtransit operations** - DART manages the operations and operators. DART contracts the technology services to Via, which includes the software for trip dispatching and routing. DART owns and maintains the vehicles, including hardware (tablets and mounting materials) for routing software.
- **Microtransit fare** – Fares started with a promotion for \$1 per trip. Fares then increased to \$1.75 to match the fixed-route service, before increasing again to \$3.50 per trip. There are several fare programs where students (and other groups) only pay only \$0.75 per trip.
- **Microtransit booking** – Requesting a trip on DART On-Demand can be made in the DART On Demand App, through a web portal, or by calling customer service. DART allows booking up to 7 days in advance for the DART On-Demand service.
- **Microtransit implementation** - When implementing the service, DART transitioned directly from demand response to microtransit. There was no overlap in services. However, the new services were very close to the previous service. Anyone using the old services had to call in anyway, so they could talk to the riders about the change.

Outcomes

- **Success** – Microtransit service has been considered very successful. However, the demand for service oftentimes exceeds the supply, leading to long wait times and denied trips. Passengers must pre book trips during certain times or they won't get a ride.
- **Total costs** – DART On-Demand costs are comingled with demand response and paratransit costs and therefore difficult to estimate. The only external costs for DART On-Demand are the technology costs, which Via bills for zone set up and for each vehicle in the zone.
- **Metrics reports** – Metrics include completed trips, average wait time, mobile booking rate, unique riders, and first-time riders.
- **KPIs** – Via has standard key performance indicators (KPIs) that are available to DART staff through an online dashboard. KPIs include wait time, service levels met, trips per hour, completed rides, total requests, and denied trip requests. Data is summarized and easily consumable, but also available in more granular detail if desired.
- **Ridership** – In 2024, DART On-Demand served 20,625 passenger trips. On average, On-Demand has 3 to 4 passenger trips per revenue hour. Ridership is generally as high (or higher) as the service can tolerate. Other On-Demand zones were discontinued because of low demand (central Des Moines had 174 trips and West Des Moines had 8 trips).

Challenges and Lessons Learned

- **Large microtransit service area** – Microtransit is much harder to operate because the service area is much more expansive than with fixed route. With fixed-route service there are only a handful of streets that the operator must consider. With microtransit, the operator must consider/evaluate every street in the zone. The entire zone becomes the service area instead of just major streets. The service as designed is very difficult to serve effectively because there are not enough resources for the observed demand.
- **High demand** - The demand for microtransit exceeds demand leading to long wait times. Via has suggested that DART add more vehicles to shorten wait times. However, DART has resisted expanding service because the costs quickly become unmanageable. Demand can be controlled by choosing various options in the Via app. In retrospect, DART should have chosen some options that help limit demand. One such example is that passengers can make reservations up to 7 days in advance. Advance reservations could have been limited to curtail the demand.
- **Microtransit staffing** – There is a long list of tasks that microtransit dispatchers must do to keep service operating smoothly. Dispatchers must keep track of multiple dashboards at once (transit master, UZERV, Uber, and Via). DART allows passengers to call in to book a trip, which requires staff to answer calls and book the trips for passengers. Sometimes this service is overwhelmed by the demand.

MORRISVILLE SMART SHUTTLE

Introduction

- **Agency** – The Town of Morrisville, North Carolina manages the Morrisville SMART Shuttle. Although there are several adjacent transit agencies (GoTriangle, GoRaleigh, GoCary), there are no other transit services in Morrisville.
- **Microtransit program** – The Morrisville SMART Shuttle operates as a node to node on-demand service with a total of 17 points throughout the service area. Trips must begin and end at one of the 17 points.

Project Purpose and Use Case

- **Transit study** – In 2019 the town council adopted a transit study, with the initial goal of finding out if there is demand for transit service in the area. Previously there was no transit available in the area. The initial study recommended node to node microtransit service with over 20 nodes. The SMART Shuttle was initially set up as a pilot and started service in October 2021.
- **Project purpose** – The program was designed to fill a void of transit in the area. Morrisville sought to provide mobility options because they were experiencing growth but didn't have any transit services. The town also initially wanted to launch the program to test the market for a better understanding of demand for transit in the area. An additional objective for transit to take cars off the road has been expressed as well.
- **Land use** – Morrisville is primarily made up of suburban development and office parks. Research Triangle Park (RTP), a large regional employment center, extends into Morrisville's business park.
- **Markets** – Despite the high number of jobs in Morrisville, very few passengers use the SMART Shuttle for work trips. Business park nodes are the least utilized in the network. Morrisville would like to target work trips to serve this market better. The shopping centers, parks, and locations for recreational activities are much more popular. These types of activities are less time sensitive compared to work locations.

Funding and Governance

- **Funding** – Morrisville receives half of its funding from the region's community funding program supported by a local sales tax. The town of Morrisville provides funding for the remaining half of service costs. The Wake Forest microtransit program is similar, which began service in Fall 2024. The budget for 2025 is \$805,000.

- **Sponsorships** – In 2024, a potential private business partner (battery manufacturer) had emerged with interest in partnering with the town to expand service on Saturdays. Discussion is ongoing. Sponsorships with this and other private businesses are something that Morrisville is interested in exploring more in the future.

Implementation and Operations

- **Node to Node** – Operating node to node instead of a more flexible service increases efficiency and helps control demand for the service. Nodes can be added as demand for additional locations arises. Morrisville recently added a new node at Church Street Park because of customer feedback. However, the SMART Shuttle is at capacity in its current form and makes adjustments to the network carefully.
- **Management** – Morrisville coordinates between the service operator (GoCary) and the technology provider (Via). Morrisville planning staff also makes sure that Morrisville is communicating effectively with the public, town council, and with CAMPO.
- **Vehicles** – GoCary uses 19 passenger vehicles for the SMART Shuttle service. Passenger loads are typically low relative to the vehicle capacity, with approximately 2 to 3 passengers onboard at a time and 5 passengers at maximum.
- **Technology provider** – Via is the technology provider. Via owns the app, maintains the app, organizes the data, and gives Morrisville access to the data. Via also provides the app for drivers and passengers, as well as a dashboard for Morrisville staff to view the service in real time. The contract with Via is fixed at 60 months at a rate per of \$912 per vehicle. Morrisville pays \$1,824 a month for two vehicles.
- **Declined trip requests** – Via provides the technology to adjust parameters for declining trips. Currently, if riders in the queue would be delayed by more than 25 minutes, then the request would be denied. Additionally, if total wait time is more than 60 minutes, then the request would be denied (initially Morrisville had chosen a total wait time limit of 40 minutes but later increased it to 60 minutes). Morrisville has made the policy decision that declined trips can occur up to 8% of the time. The percentage of trips declined had reached 18% or 19% of total trips on Saturdays before a second vehicle was added to service.

Outcomes

- **Ridership** – Ridership increased 28% over the first year and 6% the second year. Average daily ridership is typically close to about 65 rides. Ridership peaks during the summer months at around 70 daily passengers and declines to about 50 daily passengers during winter months.

- **Destinations** – Ridership at nodes varies significantly. One of the business park nodes generates as few as 5 rides per month. The largest shopping center generates about 500 rides per month. Interestingly, passengers generally are not going to work or medical appointments. Instead, passengers visit restaurants, shopping centers, movies, and parks. Ridership among younger people is high, especially during the summer.
- **Expectations** – Overall the program has exceeded expectations. The shuttle is busy and taking people where they want to go. However, over time the expectations have shifted, and people have become less satisfied with the service. Too many trips end up taking 20 minutes when they're estimated to take 10 minutes because the demand is too high for the number of vehicles available.
- **Future growth** - Morrisville is currently seeking to understand how transit should evolve in the area via a transit study in 2025. Potential outcomes of the study could be recommendations for additional modes such as fixed-route service.

Challenges and Lessons Learned

- **Overwhelming demand** – The SMART Shuttle frequently experiences levels of demand that it cannot accommodate with the current number of vehicles. Although charging fares would reduce demand, Morrisville would like to keep the service fare free. The summer months are particularly high demand times. Ideally, Morrisville would increase the number of vehicles in operation but is currently resistant to increasing the operating budget.
- **Fixed-route service** – The overwhelming demand for the service has led Morrisville to evaluate additional transit services that can accommodate higher capacity. Pending the findings of the 2025 transit service study, fixed-route transit service may be a future option.
- **Unexpected market** – Morrisville initially anticipated higher demand for work trips because of the high number of jobs in the area. However, there has been little to no demand for commuting to work on the shuttle. Morrisville has instead experienced very high demand for leisure and shopping trips.
- **Technology**– Morrisville encountered unexpected challenges with the technology in the first few months of service. One example was when Morrisville was frequently but unexpectedly experiencing periods of zero trips. Staff eventually discovered that if drivers minimized the Via dispatching app on the onboard tablet, trip requests would be silenced and drivers would then not see trip assignments.

9 APPENDIX B: CASE STUDY QUESTIONNAIRE

Introduction

- Can you please describe your role in [organization] and your involvement in the administration of this program?

Funding and Governance

- Who was the project sponsor for the program?
- Were there any outside partners (e.g. vendors, other agencies, community partners)?
- Can you describe how the program was initially developed (e.g. internally or received an unsolicited proposal from a vendor)?
- Describe the procurement of resources necessary for the service (operations, technology, vehicles, etc.) and if there were key issues in that process.
- What funding sources did you use for the program? (e.g. fed/state grants, general fund, private contributions)
- What barriers, risks, or legal concerns did you or others in your organization identify at the outset of the program? And how did you overcome them?

Project Purpose and Use Case

- What purpose and objectives do the project intend to serve (i.e. what problem is it trying to solve)?
- What are the land use characteristics of the project service area?
- Who is your target market? (e.g. general public or a more targeted population) Are there equity goals/policies?
- Describe the customer experience in terms of trip booking, transfers to connecting services, service eligibility or restrictions, etc.

Implementation and Operations

- Who manages the day-to-day operation of the program?
- Who operates the program (i.e. owns and maintains the vehicles/devices)? (e.g. directly operated or service contract)
- What key technology applications/platforms are used for the service?
- Were there any coordinated changes to existing services with implementation of the new service? For example, maybe fixed route was replaced with on-demand service.

- How did you market the program?
- What is the total annual cost of the program?

Outcomes

- What metrics did you use to measure success? (e.g. ridership, cost-per-trip, efficiency or utilization, percent of requests served, app downloads, travel patterns)
- What is the total annual or average daily ridership for the program?
- Were there any (known) impacts to existing services when the service was implemented? For example, did ridership increase on a connecting route, or perhaps decrease via cannibalization of services? Did service impact ADA paratransit ridership?
- How has the program met your expectations, and where is there room for improvement?
- What has the customer satisfaction been? What are customers' biggest challenges with the program?
- Do you expect to continue or expand the program in the future?

Challenges and Lessons Learned

- Are there any particular challenges or lessons learned from the implementation of this program?
- Are there any ways you would pursue this program differently if you could do it all over again?

10 APPENDIX C: COMMUNITY INPUT SURVEY ANALYSIS & FINDINGS

MICROTRANSIT FEASIBILITY STORY

COMMUNITY INPUT SURVEY ANALYSIS AND REPORT

FINDINGS SUMMARY

Lextran conducted the Microtransit Feasibility Study Survey to better understand community awareness, interest, and concerns regarding the potential introduction of microtransit service in Lexington. The survey was administered online through multiple distribution channels, including Lextran's social media platforms, stakeholder networks, and in-person promotion on buses using printed materials and QR codes. This multi-pronged approach aimed to engage both current transit riders and broader community members who may benefit from more flexible mobility options.

A total of 273 individuals participated in the survey. Of these, approximately 180 respondents (66 percent) fully completed the survey, while others submitted partial responses. Among all participants, 189 provided at least some demographic information, while 84 completed survey questions but did not respond to demographics. The survey was not conducted as a random sample and is therefore not statistically representative of the entire Lexington population. Results should be interpreted as insights into the perspectives of those who chose to engage, rather than definitive measures of community-wide preferences. Even so, the findings remain valuable for understanding the experiences, needs, and expectations of individuals connected to the local transit system and interested in future mobility options.

Overall, the results reflect cautious optimism toward microtransit. Most participants expressed interest in the service, and many indicated a willingness to consider paying more for the added flexibility and access. At the same time, open-ended responses revealed strong concerns about protecting and improving the existing fixed-route bus network. Consistent priorities across the survey included affordability, convenience, reliability, and equitable access. High levels of smartphone ownership support app-based booking but also underscore the need for inclusive alternatives to ensure broad usability.

The survey results also demonstrate that further education is needed, as many respondents do not yet have a firm grasp on what microtransit entails or how it differs from Lextran's current services. This lack of familiarity underscores the importance of clear communication, community engagement, and ongoing education to ensure potential users understand both the opportunities and limitations of this emerging service model.

Taken together, the survey highlights both opportunity and caution. While many respondents welcome the adaptability of microtransit, there is a clear expectation that its introduction should complement, not compete with, Lextran's fixed-route system, which remains the foundation of public transit in Lexington.

PART 1: GENERAL QUESTIONS

QUESTION 1: PRIMARY CONNECTION TO LEXINGTON

Question: What is your primary connection to Lexington?

A total of 212 respondents answered this question, with an overwhelming 95 percent reporting that they live in Lexington. Only a small minority indicated that they work or attend school in Lexington (4 percent) or travel to the city for shopping, medical care, or other services (1 percent). This distribution demonstrates that survey responses primarily reflect the perspectives of Lexington residents, ensuring that findings are rooted in the experiences of individuals directly connected to the local transit system.

Responses	Count	Percent
I live in Lexington	201	95%
I work or go to school in Lexington	8	4%
I travel to Lexington for shopping, medical care, or other services	2	1%
Other	1	0%
Grand Total	212	100%

QUESTION 2: ACCESS TO PERSONAL VEHICLE

Question: Do you have access to a personal vehicle you can drive?

Of the 205 respondents who answered, 65 percent reported access to a personal vehicle, while 35 percent did not. This sizable group without vehicle access highlights the presence of a captive transit market who may be more reliant on public transportation or flexible mobility options. At the same time, the majority with personal vehicle access underscores the importance of ensuring that microtransit offers convenience and value to attract choice riders as well.

Response	Count	Percent
Yes	134	65%
No	71	35%
Grand Total	205	

QUESTION 3: USE OF OTHER TRANSPORTATION MODES

Question: Do you use any forms of transportation other than a personal vehicle? (Select all that apply with usage frequency)

Respondents reported varied use of alternative modes beyond personal vehicles. Walking was the most common, with 34 percent walking most days and another 14 percent a few days per week. Biking was far less common, with nearly 60 percent reporting they never bike. Use of Lextran's fixed-route buses was more evenly distributed: nearly one-quarter (24 percent) rode most days, while one-third (33 percent) never rode. Paratransit (Wheels) saw limited use, with over 90 percent reporting they never use it. Rideshare services such as Uber or Lyft were used occasionally, with most respondents indicating rare or infrequent use. Carpooling showed a wide spread, with some reporting frequent use but over one-fifth reporting never. These findings indicate that while walking and bus service are meaningful travel modes for many, other options remain niche. This diversity of behavior highlights the potential role of microtransit in complementing existing options and filling mobility gaps.

Each mode of transportation is reported below as a frequency distribution:

Frequency	Walking	Biking	Fixed-Route	Paratransit	Rideshare	Carpooling
Most days	34%	4%	24%	2%	3%	6%
A few days a week	14%	8%	10%	3%	6%	13%
About once per week	5%	6%	6%	0%	7%	13%
Less than once per week	11%	6%	8%	0%	15%	20%
Rarely	23%	16%	20%	3%	38%	27%
Never	13%	60%	33%	90%	31%	21%

QUESTION 4: FREQUENCY OF RIDING LEXTRAN BUSES

Question: How often do you ride Lextran buses?

Of the 211 respondents, 26 percent reported riding Lextran almost every day, and another 8 percent reported using it two to three times per week. However, the largest share (51 percent) rarely or never ride. This split illustrates the presence of a core group of frequent transit riders alongside a much larger group with limited engagement. Perceptions of microtransit may therefore differ significantly between current users who understand the system and potential riders less familiar with existing services.

Frequency	Count	Percent
Almost every day	55	26%
2-3 times per week	16	8%
Once per week	12	6%
A few times per month	20	9%
Rarely or Never	108	51%
Grand Total	211	

QUESTION 5: CHALLENGES OR BARRIERS TO USING LEXTRAN BUSES

Question: What challenges or barriers do you face when using Lextran buses? (Select all that apply)

Respondents identified more than 500 barriers, with each person selecting multiple options. The most common challenge was that buses do not run frequently enough (25 percent), followed by trips taking too long compared to driving (21 percent). Additional barriers included the absence of nearby stops (16 percent), limited operating hours (14 percent), and difficulty accessing stops (9 percent). A small number reported feeling uncomfortable riding (5 percent) or not knowing how to use the system (5 percent). Only 4 percent reported no barriers at all. These findings show that service frequency, travel time, and geographic coverage are the dominant obstacles to greater bus use, and suggest that microtransit could potentially alleviate obstacles to using public transit.

Response	Count	Percent
Buses do not run frequently enough	127	25%
Bus trips take too long compared to driving	108	21%
No bus stop near my home or destination	81	16%
Buses do not operate when I need them	69	14%
The nearest bus stop is difficult to access	47	9%
I do not know how to use the bus system	26	5%
I feel uncomfortable riding the bus	25	5%
I do not experience any barriers	21	4%
Grand Total	504	

QUESTION 6: WHAT IS MOST AND LEAST IMPORTANT WHEN USING PUBLIC TRANSIT?

Question: Please rate each feature from 1 (Least Important) to 5 (Most Important)

Respondents rated service features on a scale of one to five. The highest priorities were service coverage, payment options, affordability, and reliability, each rated “most important” by roughly one-third of respondents. Service frequency and ADA accessibility also ranked strongly, though slightly lower. By contrast, features such as real-time service information and vehicles with car seats were rated least important overall. This distribution suggests that riders place the greatest emphasis on basic service quality and equitable access, while specialized or niche features are secondary considerations.

Factor	Mean	Median	Mode	Most Important Count	Most Important Percent
Service Coverage	3.08	4	5	95	35%
Affordable Fares	3.05	4	5	91	33%
Available Payment Options	2.96	4	5	95	35%
Service Frequency	2.92	3	5	82	30%
Short Walk Times	2.82	4	4	65	24%
Reliability	2.82	3	5	92	34%
Short Wait Times	2.79	3	0	69	25%
ADA Accessibility	2.70	3	5	76	28%
Weekend Availability	2.67	3	5	71	26%
Early Morning or Evening Availability	2.30	2	0	63	23%
Real Time Service Information	2.00	1	0	36	13%
Vehicles with Car Seats	1.52	1	1	22	8%

QUESTION 7: UNREACHABLE DESTINATIONS BY PUBLIC TRANSIT

Question: Are there places you would like to go but cannot reach using public transit?

Open-ended responses revealed two broad themes: systemic limitations and specific locations that remain inaccessible. General comments highlighted concerns about lack of service outside Fayette County (32 percent of such comments), the absence of microtransit in neighborhoods (16 percent), and difficulty accessing parks, medical care, and retail destinations. Specific locations mentioned most often included parks (18 percent), retail centers such as Fayette Mall and Hamburg (17 percent), and key corridors like Man o' War Boulevard (16 percent). Entertainment venues, the airport, cultural institutions, and neighborhoods also emerged as priorities. These findings reinforce that residents see service reach and direct connections to activity centers as major unmet needs.

Generalized Comments	Count	Percent
Outside Fayette County	12	32%
No Microtransit	6	16%
Parks	4	11%
Stop Accessibility	3	8%
Friends & Family	3	8%
Medical	2	5%
Work	2	5%
Retail	2	5%
Cultural Institution	2	5%
School	1	3%
Neighborhood	1	3%
Grand Total	38	100%

Locations	Count	Percent
Parks	18	18%
Retail	17	17%
Corridor	16	16%
Entertainment	12	12%
Airport	8	8%
Outside Fayette County	7	7%
Cultural Institution	7	7%
Neighborhood	6	6%
Work	3	3%
School	2	2%
Medical	2	2%
Government	1	1%
Grand Total	99	100%

PART 2: MICROTRANSIT SPECIFIC QUESTIONS

QUESTION 8: INTEREST IN LEARNING ABOUT MICROTRANSIT

Question: Do you want to learn some basics of microtransit first?

This question was included mid-survey to assess respondents' interest in receiving a brief overview of microtransit before continuing with more detailed questions. The purpose was to ensure that all participants, regardless of their familiarity with the topic, had the opportunity to engage with the survey from a shared baseline of understanding.

Response	Count	Percent
Yes, I want to learn about microtransit first.	125	60%
No, I know enough about microtransit to answer the questions.	83	40%
Grand Total	208	

A majority of respondents indicated that they were interested in learning more about microtransit. This finding highlights both a gap in general awareness and an openness to new mobility options. It also underscores the importance of providing accessible information when introducing new transit services, particularly those that may differ in structure or operation from traditional fixed-route systems.

The inclusion of this educational moment within the survey design helped frame the subsequent questions and likely improved the quality and thoughtfulness of the responses that followed.

QUESTION 9: WILLINGNESS TO USE MICROTRANSIT

Question: Would you consider using microtransit in Lexington?

Following the optional microtransit primer, respondents were asked whether they would be willing to try microtransit if it were available in Lexington. The question aimed to gauge general receptiveness to this new type of on-demand transit service.

The vast majority of respondents expressed a willingness to try microtransit. This strong interest suggests that many residents are open to alternatives beyond the traditional fixed-route bus system, particularly if microtransit can address gaps in service coverage, reduce walking distances, or improve travel time.

While willingness does not always translate into actual ridership, these results indicate a favorable climate for introducing or expanding microtransit. It also suggests that any pilot program or service rollout may benefit from an early pool of interested users, which can assist in testing and refining service design.

Response	Count	Percent
Yes	137	72%
Not sure	27	14%
No	26	14%
Grand Total	190	

QUESTION 10: WILLINGNESS TO PAY MORE THAN THE SINGLE-RIDE BUS FARE (\$1.00)

Question: Would you be willing to pay more for microtransit than a Single-Ride Adult Bus Fare (\$1.00)?

Respondents were asked if they would pay more than the single-ride bus fare of \$1.00 for microtransit. A majority (61 percent) said yes, while 21 percent said no and 18 percent were unsure. These findings suggest that many participants recognize the added value of flexible service, but affordability remains a sensitive issue. Fare policy for microtransit must therefore balance cost recovery with equity, ensuring that service is priced within reach of lower-income riders while reflecting the enhanced convenience of on-demand travel.

Response	Count	Percent
Yes	115	61%
No	39	21%
Not sure	34	18%
Grand Total	188	

QUESTION 11: PREFERRED METHOD FOR BOOKING MICROTRANSIT

Question: How would you prefer to book a microtransit ride?

The majority of respondents (64 percent) preferred using a smartphone app to book microtransit rides. Another 19 percent said either method would work, while only 3 percent preferred calling a dispatcher and 1 percent required someone else to book for them. A minority of 14 percent indicated they would not use microtransit at all. With 96 percent of all survey respondents owning smartphones, this finding strongly supports a digital-first booking model. However, the small share without digital access underscores the need for alternative call-in options to avoid excluding vulnerable users.

Response	Count	Percent
Smartphone app	121	64%
Either method	36	19%
I would not use microtransit	26	14%
Calling a dispatcher	5	3%
I would need someone else to book for me	2	1%
Grand Total	190	

QUESTION 12: TRIP PURPOSES FOR MICROTRANSIT

Question: Where would you use microtransit to travel? (Select all that apply)

Respondents identified multiple potential uses for microtransit, submitting more than 650 responses. The most common trip purposes were grocery stores and shopping centers (22 percent), medical appointments (17 percent), and work or school (17 percent). Other frequent purposes included traveling to community centers or events (16 percent) and Bluegrass Airport (15 percent). A smaller but notable share (10 percent) reported using microtransit to connect to a Lextran bus stop. These results indicate that microtransit could serve both essential daily trips and discretionary travel needs, while also supporting first/last-mile connections to fixed-route service.

Response	Count	Percent
Grocery stores or shopping centers	109	22%
Medical appointments	86	17%
Work or school	85	17%
Community centers or local events	81	16%
Bluegrass Airport	75	15%
Connecting to a Lextran bus stop	51	10%
Other	18	4%
Grand Total	505	

QUESTION 13: CONCERNS ABOUT MICROTRANSIT

Question: What concerns you the most and least about microtransit? (Rated from 1 = Least Concerning to 5 = Most Concerning)

Reliability emerged as the dominant concern, with 38 percent of respondents rating uncertainty about wait times, availability, or dependability as most concerning. Program cost for Lextran (36 percent) and fare affordability (31 percent) were also highly ranked. Fewer respondents identified difficulty walking to pickup points (25 percent) or safety concerns when walking (24 percent) as top issues, while only 7 percent were most concerned about using a smartphone app. These results suggest that while physical accessibility and safety remain considerations, the financial sustainability and service reliability of microtransit are the greatest concerns among potential users.

Response	Mean	Median	Mode	Most Important Count	Most Important Percent
Uncertainty about reliability, wait times, or availability	3.7	4	5	69	38%
Overall program cost for Lextran	3.4	4	5	66	36%
Affordability of fares	3.4	3	5	56	31%
Difficulty walking to a pickup point	2.8	3	1	45	25%
Safety concerns when walking to a pickup point	2.7	2	1	43	24%
Safety concerns about sharing a ride with others	2.6	2	1	32	18%
Difficulty using a smartphone app or calling for a ride	1.9	1	1	13	7%

QUESTION 14: WOULD YOU USE MICROTRANSIT TO REACH A LEXTRAN BUS STOP?

Question: Would you use microtransit to reach a Lextran bus stop?

When asked if they would use microtransit specifically to connect to fixed-route service, 34 percent said yes, 37 percent said no, and 29 percent were unsure. This nearly even split shows that microtransit's role as a feeder service remains uncertain. While some see it as a viable solution for bridging gaps to fixed-route service, many appear to view microtransit as a standalone travel option rather than simply a connector to the bus network.

Response	Count	Percent
No	69	37%
Yes	63	34%
Not sure	55	29%
Grand Total	187	

QUESTION 15: WHAT WOULD MICROTRANSIT REPLACE?

Question: If microtransit were available to you, what would it replace? (Select all that apply)

Respondents identified a variety of travel modes that microtransit could replace, with 167 participants providing 359 responses. The largest shares were new trips that respondents would not otherwise make (24 percent) and driving a personal vehicle (23 percent). Other notable categories included rides from friends or family (18 percent), regular Lextran buses (14 percent), and walking or biking (14 percent). A smaller share (6 percent) reported that microtransit would replace paratransit. These results suggest that microtransit could generate both net new trips and mode shift from personal vehicles, but it also carries the potential to divert riders from existing Lextran services.

Response	Count	Percent
I would take trips I wouldn't otherwise make	87	24%
Driving a personal vehicle	84	23%
Getting a ride from friends/family	66	18%
Taking a regular Lextran bus	52	14%
Walking or biking	49	14%
Using Wheels (paratransit)	21	6%
Grand Total	359	

QUESTION 16: HOW OFTEN WOULD YOU USE MICROTRANSIT?

Question: If microtransit were available to you, how often would you use it?

When asked how often they would use microtransit, 13 percent said almost every day, 19 percent said two to three times per week, and 10 percent once per week. The largest share (33 percent) said a few times per month, while 26 percent said rarely or never. This spread suggests that while microtransit could attract a core base of frequent users, the majority of riders may use it more occasionally, likely for specific trip types or time-sensitive needs.

Response	Count	Percent
Almost every day	24	13%
2-3 times per week	36	19%
Once per week	18	10%
A few times per month	62	33%
Rarely or never	49	26%
Grand Total	189	

QUESTION 17: WHEN WOULD YOU USE MICROTRANSIT?

Question: What days and times would you use microtransit? (Select all that apply)

161 survey participants provided a total of 371 weekday responses, an average of 2.3 each. Respondents identified strong demand for both weekday and weekend service. On weekdays, afternoon (66 percent of respondents) and evening (57 percent) periods were most popular, with moderate demand for mornings (55 percent) and midday (52 percent). On weekends, demand was even more distributed, with 69 percent citing afternoon use and 68 percent evening use, while 64 percent indicated midday and 42 percent morning. These results demonstrate a clear need for all-day service coverage, particularly during afternoon and evening hours, and show that demand extends into weekends as much as weekdays.

Weekday Respondents

Response	Count	Percent of Responses	Percent of Respondents
Mornings 6 AM-10 AM	89	24%	55%
Mid-day 10 AM-2 PM	84	23%	52%
Afternoons 2 PM-7 PM	107	29%	66%
Evenings 7 PM - Midnight	91	25%	57%
Grand Total	371		

Weekend Respondents

Response	Count	Percent of Responses	Percent of Respondents
Mornings 6 AM-10 AM	63	17%	42%
Mid-day 10 AM-2 PM	95	26%	64%
Afternoons 2 PM-7 PM	103	28%	69%
Evenings 7 PM - Midnight	102	28%	68%
Grand Total	363		

All Responses

Response		Count	Percent
Weekday	Mornings 6 AM-10 AM	89	12%
Weekday	Mid-day 10 AM-2 PM	84	11%
Weekday	Afternoons 2 PM-7 PM	107	15%
Weekday	Evenings 7 PM - Midnight	91	12%
Weekend	Mornings 6 AM-10 AM	63	9%
Weekend	Mid-day 10 AM-2 PM	95	13%
Weekend	Afternoons 2 PM-7 PM	103	14%
Weekend	Evenings 7 PM - Midnight	102	14%
All	Grand Total	734	

QUESTION 18: MICROTRANSIT ZONE LOCATIONS (OPEN-ENDED QUESTION)

Respondents were asked to identify areas of Lexington where they would like to see microtransit service introduced. A total of 178 location-specific responses were received and categorized into major types. The most common requests were for specific neighborhoods (37 percent) and corridors (22 percent), reflecting demand for hyper-local service coverage and direct connections along key travel routes. Larger geographic areas and citywide requests accounted for 10 and 7 percent respectively, while retail centers, the University of Kentucky, parks, the airport, and entertainment venues each accounted for smaller but notable shares. A limited number of respondents suggested rural or intercity service.

When mapped against the six proposed microtransit zones, 94 responses directly referenced areas within those boundaries. Zone 4 generated the highest number of mentions (35 percent), followed by Zone 5 (23 percent) and Zone 3 (17 percent). Zones 1, 2, and 6 were referenced less frequently, though each still received multiple responses. This distribution suggests stronger recognition of service needs in zones covering Lexington's growing suburban areas, while also indicating interest across all proposed zones.

Eighteen general comments further clarified respondents' perspectives. The most common of these highlighted gaps in Lextran's existing system (28 percent), reinforcing that microtransit is seen by many as a way to fill unmet service needs. Others emphasized the importance of focusing service on low-income riders (17 percent), improving ADA accessibility (11 percent), and providing access to medical destinations (11 percent). A smaller share expressed skepticism about the role of microtransit, either opposing it outright or questioning its effectiveness.

Seventeen respondents also listed broader destination categories not tied to specific zones. The most frequently cited were retail centers (47 percent), followed by medical and cultural institutions (12 percent each), with smaller mentions of parks, entertainment venues, family destinations, government offices, and intercity connections.

Taken together, these responses suggest that residents see microtransit as a tool to address neighborhood-level gaps, corridor connections, and access to key activity centers. The findings also underscore the importance of designing service with equity and accessibility in mind, ensuring that low-income riders, seniors, and individuals with disabilities can benefit from expanded mobility options.

Requested Locations by Type

Location	Count	Percent
Neighborhood	66	37%
Corridor	39	22%
Large Area	17	10%
Retail	12	7%
City Wide	12	7%
UK	8	4%
Park	8	4%
Airport	7	4%
Entertainment	6	3%
Rural	2	1%
Intercity	1	1%
Grand Total	178	

General Comments

General Comment	Count	Percent
Lextran Gaps	5	28%
Low-Income Focused	3	17%
ADA Accessibility	2	11%
No Microtransit	2	11%
Medical	2	11%
Unsure	1	6%
Rural	1	6%
Job Focused	1	6%
Elderly Focused	1	6%
Grand Total	18	100%

Requested Locations within Identified Zones

Zone	Count	Percent
Zone 1	7	7%
Zone 2	6	6%
Zone 3	16	17%
Zone 4	33	35%
Zone 5	22	23%
Zone 6	10	11%
Grand Total	94	

General Locations

General Location	Count	Percent
Retail	8	47%
Medical	2	12%
Cultural Institution	2	12%
Park	1	6%
Family	1	6%
Entertainment	1	6%
Intercity	1	6%
Government	1	6%
Grand Total	17	100%

QUESTION 19: OTHER TRANSIT COMMENTS

Several key themes emerged from the open-ended responses that provide a consolidated view of the most common issues, priorities, and perspectives shared by participants. These themes reflect recurring concerns about service frequency, coverage, affordability, amenities, and the potential role of microtransit. While the table summarizes major patterns, all unedited respondent comments are included in Appendix A: Respondent Comments to allow readers to review the complete range of feedback in the participants' own words.

Theme	Summary of Comments	Representative Examples
Improve Existing Fixed-Route Service	Many respondents emphasized that improving the current bus system should be a higher priority than introducing microtransit. Desired improvements included more frequent service, shorter travel times, expanded routes, and Sunday/night service.	"Buses do not run frequently enough"; "More routes and higher frequency"; "Better weekend service"; "Run later at night, especially weekends."
Stop Amenities and Accessibility	Strong calls for enhanced bus stop conditions. Respondents requested more shelters, benches, concrete pads, lighting, and sidewalk connections to improve safety and comfort.	"Bus stops desperately need shelters and concrete pads"; "Accessible bus stops outside New Circle"; "Trash collection and cleaning needed."
Equity and Affordability	Several comments focused on ensuring affordability for seniors, students, and low-income riders. Discounted passes, free student/senior fares, and alternative payment options were frequently suggested.	"BCTC/UKY students should ride with ID"; "Discounted yearly passes"; "Alternative payment options beyond cash."
Microtransit Support	Some participants supported microtransit as a flexible "gap-filler" for underserved areas, last-mile connections, and trips to destinations like the airport, shopping, or medical appointments. However, they emphasized it should supplement, not replace, fixed-route service.	"Good option to fill gaps for medical and work trips"; "Helpful for airport trips"; "Microtransit should supplement Wheels."
Microtransit Skepticism and Opposition	Several strongly opposed microtransit, citing high costs, poor scalability, equity concerns, and fears of diverting resources from fixed-route service. Some referenced national studies showing poor outcomes.	"Farce that shifts money to for-profit tech firms"; "Microtransit is inefficient and unsustainable"; "Better to invest in fixed-route buses."
Alternative Transit Models	Respondents suggested exploring Bus Rapid Transit (BRT), light rail, or dedicated bus lanes as long-term solutions for Lexington's growth.	"Lexington should explore BRT downtown to the airport"; "Consider light rail instead of microtransit."
Special Needs and Accessibility	Several respondents highlighted needs for seniors, riders with disabilities, and those with mobility challenges. Some questioned whether microtransit vehicles could accommodate large wheelchairs.	"I cannot walk to a bus stop but would use Wheels or microtransit"; "Vehicles must accommodate wheelchairs."
Safety Concerns	A smaller set of comments raised safety issues, particularly around harassment, unsafe pedestrian access, and walking across major roads.	"Men harassing women at the transit center"; "Crossing seven lanes of Winchester Road to reach the bus."
Technology and Payment Systems	Respondents requested smartphone payment options and better real-time tracking. Some criticized the current tracking system as unreliable.	"Mobile ticketing like TARQ in Louisville"; "Tracking system needs to show when buses are on break."
Service Expansion Requests	Specific service needs included airport access, service to major shopping areas, cultural destinations, and more coverage in outer neighborhoods.	"Service to Bluegrass Airport"; "More service around Tates Creek and Hamburg."
General Support for Transit Expansion	Many expressed support for expanding transit in general, whether through more buses, microtransit, or other modes. Respondents framed transit as critical for economic opportunity, equity, and reducing car dependency.	"Any expansion of Lextran is good"; "Transit is critical for employment opportunities."

PART 3: DEMOGRAPHIC QUESTIONS

QUESTION 20: WHAT IS YOUR HOME ZIP CODE?

Survey respondents represented a broad cross-section of Lexington neighborhoods, with a total of 184 individuals providing ZIP code information. The largest concentrations of responses came from 40502 (15 percent), 40504 (13 percent), 40503 (11 percent), and 40508 (10 percent). Together, these four areas accounted for nearly half of all responses, reflecting strong participation from central Lexington neighborhoods. Suburban areas, including 40517, 40515, 40509, and 40511, were also well represented, each contributing between 5 and 8 percent of responses. A small number of participants lived outside Fayette County, highlighting that the survey primarily reflects the views of Lexington residents while still incorporating perspectives from surrounding communities.

Zip Code	Count	Percent	Zip Code	Count	Percent	Zip Code	Count	Percent
40502	27	15%	40517	12	7%	40516	2	1%
40504	24	13%	40515	10	5%	40324	1	1%
40503	21	11%	40514	9	5%	40502	1	1%
40508	18	10%	40507	4	2%	40602	1	1%
40505	15	8%	40513	4	2%	40415	1	1%
40509	15	8%	40390	2	1%	40305	1	1%
40511	13	7%	40526	2	1%	40356	1	1%

QUESTION 21: DO YOU HAVE A MOBILE PHONE?

Nearly all respondents reported access to mobile technology, with 96 percent indicating that they own a smartphone. An additional 3 percent reported having a basic cell phone, while only 1 percent reported no mobile phone at all. This finding suggests that a digital-first booking model for microtransit would be broadly feasible in Lexington. However, the small group of individuals without smartphone access underscores the importance of offering alternative booking methods, such as call-in dispatching, to ensure equitable access.

Response	Count	Percent
Yes, I have a smartphone	182	96%
Yes, I have a cell phone (not a smartphone)	5	3%
No	2	1%
Grand Total	189	

QUESTION 22: DO YOU OWN OR RENT YOUR HOME?

Of the 185 individuals who responded to the housing tenure question, half (50 percent) reported owning their home, while 44 percent reported renting. The remaining participants indicated other living situations, including living with family, supported housing, or homelessness. This balance between renters and homeowners suggests that the survey captured perspectives from both transit-dependent populations and those more likely to use transit by choice.

Response	Count	Percent
Own	92	50%
Rent	81	44%
Other	12	6%
<i>Family</i>	7	4%
<i>Homeless / Supported Housing</i>	2	1%
<i>Unspecified</i>	3	2%
Grand Total	185	

QUESTION 23: WHAT TYPE OF HOUSING DO YOU LIVE IN?

Respondents reported living in a range of housing types, though single-family homes were most common. A majority of 59 percent lived in detached houses, while 37 percent lived in townhomes, condominiums, or apartments. Just 2 percent reported living in mobile homes, and 1 percent in senior living facilities. This mix reflects the suburban character of much of Lexington's housing, while also highlighting the significant share of residents in denser housing types more often associated with transit use.

Response	Count	Percent
Single-family house	110	59%
Townhouse, condominium, or apartment	70	37%
Mobile home	3	2%
Other	3	2%
Senior living residence	1	1%
Grand Total	187	

QUESTION 24: ANNUAL HOUSEHOLD INCOME

The 181 respondents who reported income levels represented a wide socioeconomic range. One in five respondents (20 percent) reported annual household incomes below \$25,000, while 23 percent fell into the \$50,000–\$74,999 range. Smaller but meaningful shares reported incomes between \$25,000 and \$49,999 (24 percent combined) and incomes above \$100,000 (20 percent combined). This distribution suggests that while the survey included higher-income households, it disproportionately captured lower- and middle-income respondents, many of whom are most likely to be reliant on public transit.

Response	Count	Percent
Less than \$25,000	37	20%
\$25,000 to \$34,999	21	12%
\$35,000 to \$49,999	22	12%
\$50,000 to \$74,999	41	23%
\$75,000 to \$99,999	17	9%
\$100,000 to \$124,999	20	11%
\$125,000 to \$149,999	6	3%
\$150,000 or more	17	9%
Grand Total	181	

QUESTION 25: WHAT IS YOUR EMPLOYMENT STATUS?

Employment status reflected the active workforce as well as populations with unique mobility needs. Of 187 respondents, 62 percent reported being employed full-time, followed by 14 percent who were retired, 10 percent employed part-time, and 5 percent students. Four percent reported being unemployed, with others indicating self-employment, multiple jobs, or disability. These results demonstrate that the survey engaged both individuals who depend on reliable daily commuting options and those with more occasional travel needs.

Response	Count	Percent
Employed full-time	116	62%
Employed part-time	19	10%
Retired	26	14%
Student	9	5%
Unemployed	8	4%
Other	9	5%
<i>Disabled</i>	4	2%
<i>Self-Employed</i>	2	1%
<i>Multiple Jobs</i>	2	1%
<i>Unspecified</i>	1	1%
Grand Total	187	

QUESTION 26: WHAT IS THE HIGHEST DEGREE OR LEVEL OF SCHOOL YOU HAVE COMPLETED?

Survey participants reported high levels of educational attainment relative to the general population. Among 188 respondents, 35 percent held a bachelor's degree and 30 percent held an advanced degree. Another 16 percent reported a high school diploma or GED, and 12 percent had some college but no degree. Smaller groups reported technical training (3 percent) or an associate degree (4 percent). The prevalence of highly educated respondents suggests that the survey reflects the perspectives of individuals with greater awareness of transportation options, though it may underrepresent groups with lower educational attainment.

Response	Count	Percent
Less than high school	1	1%
Graduated high school or GED	30	16%
Some college, no degree	22	12%
Trade/technical school	6	3%
Associate degree	7	4%
Bachelor's degree	66	35%
Advanced degree (Master's, Ph.D., M.D.)	56	30%
Grand Total	188	

QUESTION 27: AGE GROUP

The age distribution of 187 respondents skewed toward working-age adults, with 26 percent between the ages of 25 and 34 and 24 percent between 35 and 44. An additional 15 percent were aged 45 to 54, and 11 percent were between 55 and 64. Seniors accounted for a combined 14 percent of respondents, with 9 percent aged 65 to 74 and 5 percent aged 75 or older. Younger adults aged 18 to 24 represented 10 percent of the sample. This spread shows that the survey engaged a broad range of age groups, though the largest share was concentrated among younger and middle-aged adults.

Response	Count	Percent
18-24	18	10%
25-34	49	26%
35-44	45	24%
45-54	28	15%
55-64	21	11%
65-74	16	9%
75 and older	10	5%
Grand Total	187	

QUESTION 28: GENDER

Gender responses reflected a near balance, with 52 percent identifying as female and 40 percent as male. An additional 8 percent identified as another gender or preferred not to disclose. This balance suggests that the survey captured perspectives across genders, though the slightly higher share of female respondents may indicate elevated representation of concerns related to safety and comfort when using transit services.

Response	Count	Percent
Female	95	52%
Male	73	40%
Other/Prefer not to say	15	8%
Grand Total	183	

QUESTION 29: RACE OR ETHNICITY

Of 186 respondents, a large majority identified as White (84 percent). Black or African American respondents accounted for 6 percent, with smaller shares identifying as Asian, Hispanic or Latino, American Indian or Alaska Native, or Native Hawaiian or Pacific Islander (1–2 percent each). Two percent reported being of two or more races, and 4 percent preferred not to answer. While the racial distribution broadly mirrors Lexington's demographics, the relatively low response rate among minority groups suggests that their perspectives may be underrepresented in the survey results.

Response	Count	Percent
White	156	84%
Black or African American	11	6%
Asian	3	2%
Hispanic or Latino (any race)	3	2%
American Indian or Alaska Native	3	2%
Native Hawaiian or Pacific Islander	2	1%
Two or More Races/Other	2	1%
Prefer Not to Answer	8	4%
Grand Total	186	

APPENDIX A: RESPONDENT COMMENTS

No.	Comment (Unedited)
1	a complete re-think of bus routing so it actually works for most people in most situations is more important than whatever microtransit is
2	BCTC/UKY students should ride with student ID and senior should ride for free.
3	BUILD's push for microtransit is an absolute farce for an organization ostensibly committed to justice. The largest public transportation employee union has published a study comprehensively debunking the false promises of microtransit. Examples across North America show how it is not sustainable, does not scale, shifts money from public entities towards for-profit tech companies, and benefits primarily riders who would otherwise use commercial rideshare. A taxpayer subsidized version of "Ueber" is fundamentally unjust and will make Lextran's mission harder to accomplish.
4	Bus 22 should run on the weekends.
5	Bus riding needs to be more convenient and driving needs to be less convenient. As we can see with buses at UK, people will ride buses if the math works. I would love to ride the bus more on a day to day basis, but it's really inconvenient for me to the point of being impossible. More is more!
6	Bus stops desperately need shelters and at minimum a concrete pad so we stop getting soaked up to our ankles in mud and water. Also many bus stops have no sidewalks around them (like Liberty road) which makes getting there really dangerous for pedestrians.
7	Bus stops going both directions on major roads need to be more accessible, as well as run more often. The further out you get from downtown the less accessible the buses and stops are. There are so many stops in southeast Lexington that are just on the side of a road and don't have a sidewalk to access or any protection from traffic. I would also prefer to see any funding that would be allocated to microtransit go towards building a more robust transit system that already exists! We don't need to create a new form of transit!
8	Buses on Sat need to have one inbound and outbound til at least 4p and also rt 18 needs Sunday schedule
9	Definitely consider improving frequencies between buses, especially on weekends, since some routes have quite a long wait if you miss the next bus. Also, I think getting more public awareness in Lextran could help improve support for it, a lot of people could certainly take the bus, but choose not to, and telling people about the benefits of transit could certainly help with that.
10	Discounted 6 month or yearly passes should be available, especially during the remodeling project with less convenient access to purchasing passes. Alternative payment options other than cash/coin would help. When I forget my wallet (including bus pass) then I don't have cash either. I do however have a phone with tap to pay.
11	generally better access to parks
12	Given limited funds, LexTran should strongly consider improving the frequency and efficiency of the current system rather than add high cost-per passenger mile micro-transit system. Improving LexTran Wheels will better serve those who need door-to-door service.
13	Have a bus rapid transit (BRT) system that SOLELY services the downtown area and that connects to the airport. Have periphery neighborhood bus routes that connect to the downtown BRT stops. Also, bus stops should be placed near destinations that service pedestrians. They should, at the very least, have sidewalk access and be very close to areas with essential services (for work, shopping, recreation).
14	Help with transportation to medical appointments is needed
15	I am a bioptic driver but only use it along known routes for getting to and from work. Microtransit would be a beneficial service for my life outside of work as I typically have to be driven places or use a Lyft. Lyft is somewhat limiting because of the expense. For instance when meeting friends at a location across town, I could pay well over \$50 for a round trip. If I took Lextran, it would require over 2 hours of travel time round trip and I might have to walk along busy roads that don't have a sidewalk or well-controlled intersections for pedestrians. My household makes over \$50k thought, so under your current parameters, I wouldn't be eligible to use it. It might be more useful for a larger group of people to offer the service as a flat rate of say \$5 a one way ride and then at a far reduced rate for people that are income-eligible. Also I would be willing to pay more for door to door rather than a meeting point.

- 16 I am a huge transit advocate. I would ride all the time if I could get to a bus stop, but physically cannot walk that far. Wheels for me was an epic failure, because they kept sending the wrong kind of vehicle to pick me up for my evaluation appointment. I love taking the bus. I MISS taking the bus. It's horrible to be trapped in your hours because you can't get anywhere. An Uber costs me \$40 round trip to my doctors office and back home.
- I want Lextran to succeed. I was in the Citizens Transit Advisory Board under Scotty Baesler, and have been 100% supportive of public transit over the years. It hurts not being able to use it anymore.
- 17 I am in favor of any expansion of Lextran services!
- 18 I am wheelchair bound and am curious as to whether these vehicles can accommodate my large wheelchair.
- 19 I feel that Lexington should explore Bus only lanes and BRT systems that are used in order cities. Make the city less car dependent.
- 20 I live in Patchen Wilkes, which doesn't have a bus stop. The only one at all accessible by foot requires crossing Winchester Road, which is 7 lanes wide, which I wouldn't feel comfortable doing in general, and especially not every time I want to use public transit.
- The next neighborhood to the west of ours along Winchester Road seems to have a handful of bus stops, but unfortunately there's no viable way of going over there on foot—I checked a few weeks ago and there's a fence separating the two neighborhoods basically right up until Winchester Road.
-
- On a different note:
- I don't know very much about varieties of public transit to have a very informed opinion, but from a first impression, even if it's not something that I'd personally use if I had the opportunity, I am hopeful that microtransit would be helpful for people who need it.
- Wishing all the best for success in this and future public transit endeavors!
- 21 I really don't have an immediate need for microtransit, but I am a senior citizen and can see a need for it in the (likely) not too different future.
- 22 I think increasing frequency, speed to destinations, and quality of service is the most important transit needs in Lexington. I will add that investing in different types of vehicles, mainly IMC Trolleybuses as the green option rather than electric buses.
- 23 I think let's try and should be more acceptable for strollers on the buses my son is 2 years old and disabled and I've gotten yelled at twice because of the stroller but he cannot walk he has to have a stroller according to the bus driver twice now i need to hurry up and fold it faster but I'm alone with my son on the bus most of the time so I have to sit him down before I can fold the stroller and put it under the seat
- 24 I think that microtransit is an interesting "gap-filler", and I'm glad Lextran is explore ways to increase service and equity. However, I don't think it is an innovative tool that will significantly change the transit landscape in Lexington as it is only a more efficient version of paratransit. Lexington's transit system needs significantly more funding and support to increase bus headways, stop amenities, and route coverage. Additionally, the city needs to see increased housing and employment density along Lextran corridors for the fixed route system to be more useful. Lextran should work with community leaders to explore innovative ways to increase development along its routes. Finally, while it is good to see the transit center received much needed repairs, I think the transit center will still feel like a under-invested community space. Other communities have created transit centers that are vibrant, mixed-use, and better connected to the downtown, and these examples leave a much more dignified experience for transit users and community members; I wish Lextran and the community could design a completely new transit center that is not simply repurposed space at the bottom of a parking garage.
- 25 I think this is a great idea to implement on a test basis. I think other cities have done it successfully. Lexington really needs to up their public transit rate and address the automobile congestion issues somehow practical like this.
- 26 I think using it to get to the airport is a great idea. I would definately take advantage of that. I have cocerns about whether it would incentive people to live in low density suburbs as opposed to locating closer to work and school.

- 27 I was severely disappointed in the "results" of the New Circle Road, northside, plan. We're no longer interested in staying here because there's no investment in actual urban planning policies that center quality of life and walkability, etc. all while an ever-increasing number of people die due to traffic issues each week. I'm glad there's such great talk about "growth" but planning is extremely shoddy and not forward-thinking in the least.
- 28 I work on horse farms and would be uncomfortable bringing my stinky, unsanitary work clothes and boots in a small vehicle where they could bother others. Though I don't think the bus will ever likely reach most of my potential jobs.
- The only way I have ever been able to tolerate a bus ride it was because I knew I probably wouldn't have to interact with anyone and could keep my headphones on. The idea of smaller vehicles sounds even more stressful.
- I am easily overwhelmed and confused at times due to health concerns. When I see a potential bus route has any connections I usually consider it undoable because if I got it wrong at all it could ruin my entire day. I am not comfortable using the bus for anything vital timewise such as work or doctors appointments as it doesn't run frequently enough to leave at a reasonable time with any room for error.
- The ride itself not even including the wait FOR the bus is far longer than the car ride and oftentimes it even ends up longer than just walking dangerously on the side of the multi lane road. I think this level of inconvenience and needing to plan your whole day around catching buses is a dealbreaker for a majority of people who otherwise might consider taking them routinely. People aren't able to fit in their day sitting in a bus for 50 minutes before and after a long day of work when the car takes 15 minutes.
- 29 I would be interested in using public transportation for local events and trips to places where parking is difficult like downtown or to the farmers market at grey line station.
- 30 I would prefer an increase in regular Lextran service (more routes and higher frequency). Most of my travel is within the downtown core so I would benefit more from better services over new services. The existing routes are too long and complex - I wish there were easier and more frequent connections between the main corridors or points of interest. Additionally many bus stops are inaccessible or in areas that are unsafe or unpleasant to walk, which makes me less willing to ride.
- 31 I would prefer to see an expansion of our bus system and/or expanding into light rail
- 32 I would want to carefully weigh the costs, and how funding dedicated to microtransit could be otherwise spent improving the fixed route system.
- 33 I'd rather have more frequent buses and routes that didn't require everything going to the transit center, than microtransit
- 34 If Microtransit Was To be Instituted Then I Think It Would be a Big Plus+ for More Ridership. I learned recently that Lextran Ran 24/7 Some Years back, Maybe Management can bring that back as A Pilot Program, and see how many Riders actually use this. I understand Lextran Owns 76 Vehicles that are within there Reach. Management cannot use the excuse that they do not have the Fleet. Maybe Manpower as you are currently always recruiting for Drivers, This Would be a Great Plus. I think Business Professionals will use the City busses, Only If the Reliability was there. another thing to note Visitors Arriving and Departing from the Bluegrass airport would see this as an Added Plus. Therefore the Need for Uber/Lyft to take Passengers to and From There Residence to the Airport, or from there Hotel To The Airport would be great. It makes good Business Sense to run the System 24/7 Maybe From 500am-3am Daily Including Holidays and Weekends, with that 1 hour break to re-energize for the Day. Trust Me You Will See the Results once You Advertise, and thru Word of Mouth People will be Excited, and be Willing to use Lextran, and For Many Service Workers they do not need to worry about how they will get home after There Shifts during late night. Management just needs to stay out of the Process, as the Saying goes If it aint Broken then don't fix it. leave it as is. That is why we currently have the Problem of Homelessness, and Proverty In Our County, and Across The State of Kentucky. because elected Public Servants and those Change agents within Fayette County and Across the State of Kentucky Dismantles the System and leaves Middle Class Citizens to end up Homeless or in Proverty. and Guess What the Reality is that People who are in Power just sit at home, or In a Nice Office, and Takes frequent trips to destinations while those of us In Proverty Struggle, and try to make a living continue To Suffer.
- 35 If the current routes ran more often, I would be able to not use my car

36	If there were routes that didn't require a bus change as you move from North to South, that would be a game changer.
37	I'm concerned about riding with non-CDL drivers who are not trained as well as regular bus drivers. I just want the buses to run one time and more fequent. We don't need a fnacy luxury service, just more buses.
38	Improve bus, bike, walking options, and study light rail before pursuing micro transit. More cars on the roads will only exacerbate the traffic problems.
39	Improve the existing service and make it actually usable for people who don't have no other choice. That should be the priority instead of microtransit. It shouldn't take 5-10 times longer to get somewhere just because you take transit and that is currently the case in Lexington.
40	In a perfect world we would have a women-only option (and yes, trans women welcome because i have never been afraid of, hurty by, or sexually harassed by a trans woman). I am sick to death of men harassing me at the transit center and on busses. Men make the transit system unsafe. At night, I actually find it safer to walk home than to be at a mostly-empty transit center with strange men.
41	I've seen microtransit thrive in other cities where it was well done. Would love it in Lexington!
42	Larger buses and more availability
43	Lexington has a unique opportunity to save money, because in my own research I have seen that peer cities spend less by subsidizing microtransit than paratransit.
44	Make regular buses more convenient, more frequent and direct
45	Microtransit has many problems: • Microtransit cannot efficiently scale to meet customer demand. •Microtransit's efficiency and service quality do not improve as ridership grows. •The cost of providing the first rider's trip is roughly equal to that of a third rider, or a tenth, or a thousandth. • It has been shown to serve a younger, more affluent, and less diverse ridership than fixed route service. • Its environmental benefit are doubtful. • It encourages cost cutting through privatization.
46	Microtransit is well studied and is highly costly and massively inefficient for the outcomes achieved. I highly oppose this use of public money when Lextran needs all its budget and more. Cf. https://usa.streetsblog.org/2018/06/26/the-story-of-micro-transit-is-consistent-dismal-failure; https://www.governing.com/transportation/microtransit-has-broad-appeal-despite-clear-drawbacks
47	More benches at bus stops.
48	More shelters, more seating areas, more security, more electric buses more supervision
49	More special events busses such as to the Horse Park.
50	More stops around Tates creek area near veterans park neighborhood
51	More transportation options so I will have more employment opportunities
52	My mobility has changed so I have to use wheels bc they can transport my DME with me.. They are very helpful.. when I am getting on and off the bus
53	N/A
54	Need to improve fixed route service and not pursue this boondoggle.
55	Nicholasville road during the afternoon needs to kept to schedule more, or have more vehicles on the route. Frequently 30+ minutes behind schedule.
56	Night service or microtransit for everyone on sunday
57	No
58	No
59	People on medications for opioid use disorder need to efficiently get to a treatment provider early in the morning to be able to get to work

60	Please more covered shelters, especially at grocery stores. It can be sweltering waiting for the bus in summer and having some shade can be lifesaving.
61	Protected shelters at bus stops. Accessible bus stops outside of new circle (they are just in the side of the busy road with no sidewalks)
62	Service on Sundays needs to cover all hours of the day just like Monday-Saturday. People still need to get to and from work all day Sunday. Even if it is fewer buses, combo routes, etc., at least the hours of service need to be the same.
63	Sometimes they be at the stop too early and instead of staying there until that time it's suppose to be there they end up leaving
64	The buses need to to intersect instead of having to go all the way to transit center to switch busses. They take too long to commute 1 to 2 miles. Especially if they don't pull out at the same time. And the outer corners of the city are not serviced. My husband and I would like to live in the newer neighborhoods but don't have access to transit if we don't live directly in town. Or would have to walk 20 mins to a bus stop. Almost slightly seems discriminatory. Trying to keep people out of the nicer neighborhoods. For lack of transit in these areas.
65	The busses are huge and I only ever see 4-5 people on them. Why not use large vans or smaller busses instead? There could be a good park and ride system to downtown events/Keeneland/campus events.
66	The fare price per ride should increase. The amount of homeless riding around town makes the bus much less of an option to most people who have any other alternative. Or have certain commuter expeess routes perhaps from Brannon or Gtown to downtown with increased fares and no stops to serve commuters.
67	There are many areas that are under- or unserved by Lextran and people are forced to walk up to 40 minutes to catch a bus; the infrequency of buses makes it an inconvenient and unreliable alternative to cars—even as many people have no other options. I wonder about "last mile" or "last two miles" options. Putting a bike on the bus is great. What about allowing people to take a scooter on the bus?
68	There just needs to be more options and accessibility city wide. There is no reason for there to be an hour and a half trip for a destination that is only ten minutes away. It is difficult to navigate and work around when you are reliant on the transit system. Additionally, the drivers need to be better about staying on schedule. Taking stops randomly for phone calls or to run into gas stations is incredibly frustrating when it causes a bus full of people to be late for work, school, or missing a connecting bus.
69	There needs to be a bus that runs the length o Man o war connecting to each of the arterial buses. There needs to be park and ride points so that people don't have to park on one side of the road to pick up the bus, then have to cross 7 lanes of traffic on foot to get back across on the return trip (or ride all the way to the end and back to get off where they got on.)
70	This is a good stop gap but Lexington needs to increase the robustness of Lextran with more routes and dedicated bus lanes where possible. Additionally neighborhoods need to be more walkable to safely reach bus stops. Some still don't have any sidewalks or shade and cars speed through the streets.
71	This is ridiculous. Better to get more buses, improve current routes, and add more routes than spend any money to put MORE cars on the road. Let's get more bike lanes, more sidewalks, and more bus stops before subsidizing private companies that would make traffic worse. On a related note, I would much rather hear about plans to implement a light rail system both within the city/metro area and connecting cities throughout Kentucky and surrounding states. Let's stop the car dependency!
72	This seriously has potential to save people. I was 28 when I got my license because of disability and mental barriers—anxiety, psychosis—and had to go off my psych meds and suffer, prior, in all elements of weather. My shoes basically were my car, because though my mental state isn't as healthy off meds, I walked everywhere. I could leave the transit center when the bus took off and, practically by the time the next bus came, could about near beat any bus in town getting anywhere on foot. I've done it personally. And never tried wheels all the story's of 2 hour waits and such never cared to try but still am eligible mental record alone just never seen a point because of all the stories.
73	This service is needed to meet the demands of travel for residents who do not have access to or do not prefer to invest in private cars. Micotransit will be able to fill gaps for medical appointment attendance and employment opportunities.
74	This would be incredibly helpful to me.
75	Those who cannot drive because of physical limitations should not have to wait all day for wheels to pick them up. Microtransit should supplement what wheels cannot do.

76	Transit works well for me for getting to and from work but that's not my main need/interest. I would like to use LexTran to get to events/concerts/bars in the evenings, the library on the weekend, and occasionally the airport or Keeneland.
77	Trash collection, seating, and shelter at all stops!
78	We just need more options that are available to more people in more areas. I know that's vague but it's true. We have some good programs but not enough to supply the need.
79	We need bathrooms at the transit center while the renovation is going on.
80	We need more bike-ped infrastructure. Greenways and neighborhood greenways should use Moto filters to get cars off the neighborhood streets. We need to slow traffic down, have dedicated bike lanes, get local control inside the new circle, and start more bike buses. We should auto ticket drivers with cameras and have that money support non-car transit. Cars need 20 mph inside the new circle and 15 mph on neighborhood streets and schools. We need to require bike-ped trails In every development that will eventually connect to larger trails.
81	Weekend service should be increased for fixed route
82	Weekends take too long to get home over 2 hours to get home I take 12 and miss the 5 bus
83	Wheels drivers need better training. Some seem illiterate and get lost. My blind clients tell them where to go. Website is not UTD. I have been at bus stops with no sign that it's not in service. After waiting a long time I called to find out they don't serve that stop anymore. Not on website either.
84	When I was in Toronto Canada, there were dedicated city staff to help people get to locations almost 24/7. Everyone needs public transportation at night. No one wants to leave a bar at 11 pm to wait for public transportation. It should be available through 4 a.m. on Fridays and Saturdays. I will never use any public transportation if it isn't available when I need it. It's ridiculous that the busing ends when people go to the bar. There should be buses downtown and at the distillery district from midnight through 4 a.m.
85	Yes it should be available 24/7
86	Yes lextran needs to work on making sure the busses make it to the transit on time so we can catch out bus to work
87	Yes! I would rather see increased frequency of already existing bus routes instead of micro-transit. More fixed route service would be incredible!! Additionally, I would love to see the bus network transition from a hub and spokes to a more multi-nodal network. To improve trip times. Similar to what Madison Wisconsin did a few years ago. Thank you so much!!
88	Yes, It would be awesome if we could use our smartphone to pay fares and buy passes. TARQ in Louisville and Orbit Huntsville, AL have that. It would be super helpful.
89	Your tracking system is truly terrible; and should show when the driver is on a "break" - I used lextran for a whole year for 90% of my transit and the amount of times it would have been faster to walk because of an unscheduled break or that I had just missed the bus would have been useful. The pickup timesheets aren't accurate, but if they aren't the online tracking should.

11 APPENDIX D: 2022 LEXTRAN COA MOBILITY ON DEMAND (MOD)

4. Mobility On-Demand

4.1 Introduction

This chapter documents the findings and recommendations of a Mobility On-Demand (MOD) feasibility analysis performed for the Lextran service area. The following sections provide an overview of on-demand service and use cases, define potential on-demand zones in Lexington, and identify potential costs and implementation strategies should Lextran choose to offer this service in the future.

4.2 What is Mobility On-Demand?

As part of its long-term vision, Lextran is considering a new service type, Mobility on-Demand (MOD or on-demand transit service), to complement the fixed-route network and paratransit service. While on-demand service is not a new concept, recent advances in mobile technology and dynamic scheduling have fundamentally changed the way demand-responsive trips are booked and dispatched. Instead of booking a trip by phone, customers can hail a vehicle using an application on a mobile device with minimal advance reservation time required. The following sections summarize the typical MOD user experience, use cases, and benefits and challenges.

4.2.1 MOD User Experience

On-demand transit is similar to a conventional, fixed-route bus in that passengers are asked to walk to meet a vehicle at a 'virtual bus stop' that may be up to ¼ of a mile from their requested location. However, it is different from a bus in that there are no schedules or route maps. Instead, trips must start and end within zones that fill gaps in the bus network. Along the way, the vehicle will pick up and drop off other passengers heading in the same direction, but care is taken to avoid lengthy detours for passengers already on board.

To use the service, passengers can book a trip using a smartphone application ("app"), a website, or by phone. Once the passenger submits a trip request, they are notified when the vehicle will arrive and where to meet it. Typically, passengers must wait between 5 and 30 minutes for a trip. Fare payments are facilitated through the app using debit or credit cards or pre-loaded transit passes. Cash-paying customers can be accommodated through various means, including mobile payment through the booking app, on-board payment, or through vouchers purchased at retail outlets. **Figure 4-1** illustrates the typical end-to-end MOD user experience. **Table 4-1** on the following pages summarizes the key differences between fixed-route bus, ADA paratransit, and on-demand transit service from a user perspective.

Figure 4-1: Typical MOD User Experience

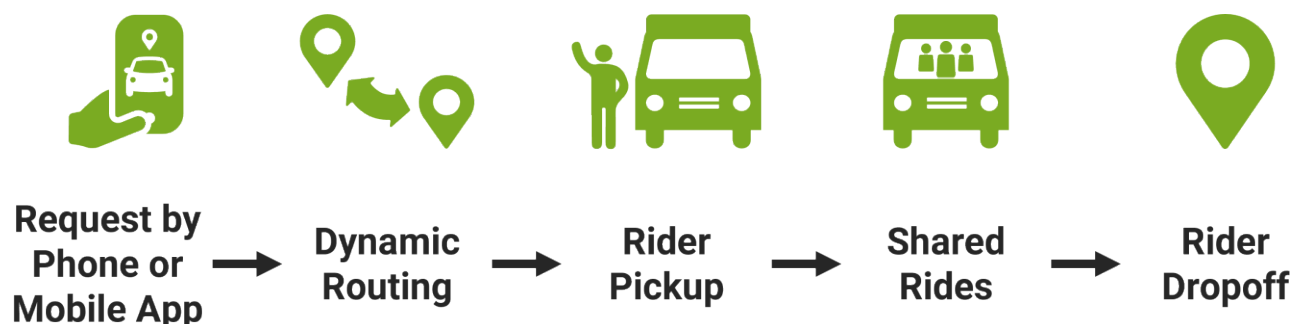


Table 4-1: Mobility On-Demand Rider Experience Frequently Asked Questions

On-Demand FAQs	Fixed Route Service	Paratransit Service	On-Demand Service
Where will I be picked up or dropped off?	Bus Stop	Front Door	Nearby Intersection
Where can I ride?	Trips must begin or end at fixed-route bus stop	Trips must begin and end within Fayette County	Trips must begin and end within defined on-demand zone
Do I need to book a ride in advance?	No advance booking is required	24-hour advance booking is required	Same-day booking. Typical wait time of 30 minutes or less.
Who can ride?	Anyone can ride	Pre-approved customers only	Anyone can ride
Is the service ADA-accessible?	Wheelchair accessible	Wheelchair accessible + Assistance provided	Wheelchair accessible
Will I share a ride with another passenger?	Yes	Sometimes	Sometimes

4.2.2 MOD Use Cases

Many transit agencies have implemented MOD service in recent years to provide service coverage where traditional fixed-route service is unproductive or to supplement existing ADA paratransit service. A survey of U.S. transit properties reveals several common applications, including providing first and last mile connectivity to fixed-route transit hubs, providing coverage in low-density and/or high-needs areas, and offering service during unproductive time periods (e.g. early morning or late evenings). Below is a summary of the most common MOD use cases throughout the industry.

- **Local Transportation in Lower Density Neighborhoods.** In Lexington, one of the more relevant use cases is local transportation in areas where fixed-route service is either unavailable or unproductive, such as in lower-density or suburban neighborhoods. To serve this use case, on-demand transit provides access to any location within a specific zone, and customers are not required to transfer to fixed-route service (though many passengers will still do so to complete longer trips).
- **First and Last Mile Connections:** Another common use case for on-demand transit is to effectively expand the fixed-route network by connecting riders to nearby bus services. In this use case, customers complete the first or last segment of their trip using on-demand transit. The first mile / last mile connection use case is most suitable if the fixed-route service at the transfer point offers frequent service throughout the day, ideally every 15 minutes or better. In Lexington, this use case is most applicable for zones adjacent to the Nicholasville Road corridor, which is served by the highest frequency route in the network, Route 5.
- **Off-Peak Travel Markets:** Serving off-peak travel demand is another key use case for on-demand transit. Because passenger travel demand is typically lower during off-peak times such as late evenings and weekends, it is also possible that on-demand transit can operate at a lower cost-per-trip (using smaller, right-sized vehicles) compared to the cost of extending fixed-route service running during the same hours.
- **Supplemental and Same-Day ADA Paratransit Service:** Supplementing an agency's existing ADA paratransit service is another common on-demand transit use case. Like most ADA paratransit services, Lextran's paratransit service requires passengers to book rides in advance (by 5:00 pm the day prior to the trip) and provides passengers with a variable, 30-minute pickup window. These factors limit the efficacy of paratransit for many types of trips and do not allow for the spontaneity that many passengers need. An alternative approach involves comingling ADA-compliant paratransit and mainstream on-demand transit services. This use case allows paratransit and on-demand services to share vehicle fleets, driver shifts, and even individual passenger trips. Comingling offers transit agencies significant potential cost savings by allowing mainstream on-demand and ADA paratransit customer trips to be routed and shared more efficiently among fewer vehicles and vehicle-hours. Paratransit riders benefit by receiving same-day, on-demand service if traveling within the on-demand zone.

4.2.3 MOD Benefits and Challenges

MOD offers transit agencies a range of potential benefits as well as risks and challenges that must be addressed. Some of the typical benefits of on-demand transit, compared to fixed-route service, include:

- Shorter average wait times, particularly compared to fixed-route bus corridors with existing frequencies of 30 minutes or more
- Shorter typical walking distances for riders to access pickup and drop off locations
- Greater geographic coverage without sacrificing quality of service
- No bus stop infrastructure required, with “Virtual Bus Stops”
- Lower insurance and driver training requirements due to smaller vehicles—in some cases, these may result in a lower cost-per-trip relative to underperforming fixed routes.

On-demand transit also carries several potential challenges and risks that should be addressed in service design and planning. Because on-demand service typically operates with smaller vehicles, it offers lower passenger capacity compared to fixed-route service. Likewise, on-demand offers a lower maximum productivity of service compared to the most productive fixed-route corridors because of the smaller vehicles used. Some on-demand passenger trips may require detours to pick up other passengers, though overall journey times are often shorter than comparable fixed-route trips. As a newer, less familiar form of demand-response transportation, on-demand transit requires an upfront investment in marketing and community outreach to attract significant ridership. Successful marketing campaigns for new on-demand transit services often include distributing promotional materials at key activity centers (e.g. major bus transfer points, colleges, grocery stores, or community centers), posting announcements on bus stop signage, and local news or social media advertising campaigns.

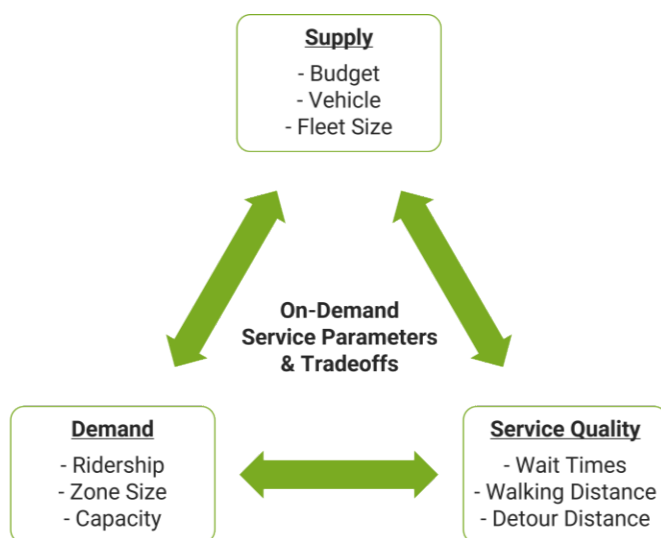
4.3 Proposed Mobility On-Demand Zones

This section outlines the various service design parameters that should be considered when establishing a new MOD service, identifies potential MOD opportunity zones in Lexington, and summarizes the methodology and results of a ridership and vehicle demand analysis for the potential MOD zones.

4.3.1 Service Design Parameters

Service design for MOD is highly configurable and involves numerous trade-offs that influence the selection of specific on-demand transit zones. These decisions are essential to determining a suitable solution that optimizes both quality of service and cost-effectiveness. Below is a summary of the key service design parameters to consider when designing a MOD service.

Figure 4-2: MOD Service Design Parameters and Tradeoffs

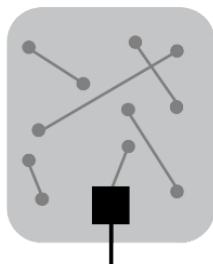


1. Trip Restrictions

In some on-demand zones, transit agencies restrict certain trips from being served by on-demand transit despite having an origin and destination falling within the overall service zone boundaries. Most commonly, these restrictions are implemented where there is a frequent and reliable fixed-route service operating within the zone (e.g. bus or train service) that could complete certain trips more cost-effectively. To avoid the displacement of fixed-route ridership to the on-demand service and ensure that trips connect to the broader fixed-route system, some on-demand zones require riders to select a designated transfer point as either their origin or destination. This effectively limits the on-demand service to fulfilling the first mile / last mile connection use case, described in the previous section, while precluding it from serving other types of trips. These trip restrictions are likely to marginally improve an on-demand service's productivity (passenger boardings per vehicle-hour) by ensuring that each trip is anchored by a key node of the fixed-route network, while discouraging travel on less commonly traveled routes. However, in lower-density cities like Lexington where high-frequency fixed-route service is not widely available, these trip restrictions are more likely to discourage ridership by making the on-demand service less useful to riders.

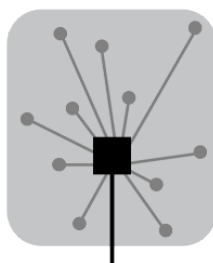
Figure 4-3: Dynamic Point-to-Point vs. Anchored First/Last Mile Service Designs

Dynamic Point-to-Point Zone



- Provides customer full flexibility to travel from any origin to any destination within defined zone.

Anchored First/Last Mile Zone



- Customer restricted to trips that begin or end at specific location (usually a transfer hub) within defined zone.
- Most effective when tied to frequent routes (15-minute headways or better) at dedicated transfer facilities.

2. Passenger Eligibility

Most on-demand services are open to the general public, while a significant minority are limited to specific populations with mobility needs, such as seniors, people with disabilities, qualified ADA paratransit customers, or students. For the purposes of the potential on-demand services discussed in this chapter, we assume that on-demand transit service is available to the general public.

3. Fare Structure

Fares are an important determinant of ridership in many on-demand transit services. Unlike a taxi or ride-hailing service, on-demand transit is intended to be a fully integrated component of the public transit system. While some agencies offer fare-free on-demand services, a large majority charge flat fares equivalent to their existing one-way fixed-route bus fares, and a smaller number charge distance-based fares which reflect the higher cost of serving longer-distance trips. In most cases, free transfers are offered between on-demand and fixed-route services.

4. Advance Booking Restrictions

On-demand transit operators provide two primary service models, dynamic or pre-booked. In either case, riders may request rides with a mobile app, web portal, or by calling a customer service center. Both service models also feature real-time vehicle tracking in the passenger mobile app as well as arrival times updated in real time throughout the trip.

- **Dynamic on-demand** services involve rides booked on a same-day basis at the time of need, with vehicles dispatched immediately following a trip request and passenger wait times of typically between 5 and 30 minutes. This service model is generally preferable in urban or suburban areas with relatively short journey times (typically less than 30 minutes) and sufficient travel demand to justify a low-frequency, coverage-oriented fixed-route service.
- **Pre-booked on-demand services** are similar to conventional demand-response services and enable customers to book rides between 2 hours to several weeks in advance as well as book

recurring rides (also known as “subscription trips”). This service model is generally preferable in rural areas with very low, diffuse travel demand or for services geared primarily towards passenger groups who may prefer booking their trips in advance (e.g. some ADA paratransit customers) or on a recurring basis (e.g. dialysis patients, people with disabilities attending day support programs).

A summary of the advantages and disadvantages of dynamic and pre-booked on-demand service models is shown in **Table 4-2**.

Table 4-2: Comparison of Dynamic On-Demand vs. Pre-Booked On-Demand Service Models

	Advantages	Disadvantages
Dynamic On-Demand	- Higher capacity for same-day bookings - Flexibility to book at time of need, adjusts easily to daily schedule - Simpler user experience - Automatic adjustments of supply without the need for dispatch intervention	- Rides cannot be booked in advance nor can recurring rides be booked - Selection of correct booking time is up to rider, and there is no automatic link to bus schedule
Pre-booked On-Demand	- Customers can book rides in advance and recurring rides - Higher level of guarantee that a ride is indeed booked (barring unforeseen circumstances) - Greater potential for trip aggregation, especially in very low-density areas	- Higher average wait times - In a hybrid system, lower capacity for same day bookings because seats are filled “in advance” - Worse experience for rider if a pre-booked ride is missed compared to on-demand - Significantly more complex to operate, especially when needing to adjust supply

5. Vehicle Selection

On-demand transit is highly customizable with respect to the fleet vehicles used to operate service. Most software platforms are suitable for deployment on a range of vehicle types, from large transit buses to cutaways, minivans, and even passenger vehicles. However, ensuring a cost-effective on-demand service requires that transit agencies strike a balance between vehicle capacity (and therefore the service’s capacity) and its cost to operate. Typically, in lower-density areas expected to serve a lower ridership, on-demand services can be operated most cost-effectively with smaller minivans with a capacity of between 6 and 10 passengers. These vehicles are less expensive to operate than cutaways or shuttles and typically carry lower insurance and driver training requirements.

6. Hours of Operation

Many on-demand services share the same hours of operation as the fixed-route transit system to maximize both the service’s legibility and riders’ ability to make transfers between on-demand and fixed-route buses. Alternatively, an on-demand service can be designed to fill the temporal gaps in fixed-route service, such as evening and weekend hours.

4.3.2 Zone Identification

Findings from the Existing Conditions analysis were essential to identifying potential on-demand transit zones for further screening. Potential on-demand transit service zones were screened for further analysis based on their ability to facilitate any of a range of improvements to the transit system in Lexington, such as:

- Replacing fixed-route bus service in corridors where transit is currently unproductive, or serves very low ridership;
- Providing first/last-mile connections to more productive fixed-route bus services;
- Facilitating short, locally-oriented trips for residents and employees living or working in the zone;
- Improving mobility for low-income residents;
- Enhancing access to medical facilities, shopping centers, and major employers; and
- Providing a same-day mobility option for ADA paratransit customers.

Characteristics of an ideal on-demand transit zone include the following:

- Multiple clearly defined, overlapping use cases to ensure an even distribution of demand throughout the day
- Major activity centers to generate ridership (e.g. shopping centers, hospitals, schools, social services, or universities)
- Demonstrated need for improved quality of service in the zone, which may be supported by:
 - Poor ridership or productivity on existing fixed-route bus services
 - Significant service gaps - either spatial or temporal
 - High-need or disadvantaged communities with higher propensity to ride transit
- Clear, legible boundaries (i.e. boundaries along major roadways or other natural barriers)
- Transfer opportunities to other fixed-route services

Based on these criteria, four potential on-demand zones were identified in Lexington, as identified in **Figure 4-4** and described below.

7. Northwest Zone

The Northwest zone covers the Masterson Station, Leestown Road, and western portion of the Georgetown Road neighborhoods. The zone is roughly bounded by New Circle Road on the south, Alexandria Drive, the RJ Corman railroad on the west, Masterson Station Park on the north, and the Norfolk Southern railroad on the east. Much of this zone is relatively low-density single-family residential with commercial uses located along the Leestown Road corridor. The zone is also home to important light industrial and warehouse job centers located along the Mercer Road and Citation Boulevard corridors. Other notable activity generators include the VA Hospital and Bluegrass Community and Technical College. Approximately 12,700 residents and 11,700 jobs are located in the zone. Fixed-route connections include routes 12 and 22.

8. Northeast Zone

The Northeast zone covers the Joyland, Winburn/Radcliff, and Bryan Station neighborhoods. The zone is bounded by New Circle Road to the south, Newtown Pike to the west, Swigert Avenue on the north, and Kilkenny Drive and Marietta Drive on the east. The zone is primarily comprised of low-density single-family residential land uses. New Circle Road serves as the zone's main commercial corridor and includes major retail destinations such as Walmart and Kroger. The planned connection of Citation Boulevard between Newtown Pike and Russell Cave Road will provide improved connectivity in this area. Approximately 18,000 residents and 3,700 jobs are located in the zone. The Northeast zone has the highest percentage of minority and low-income residents of the four proposed MOD zones. Fixed- route connections include routes 4, 6, and 7.

9. Southwest Zone

The Southwest zone covers the Wyndam Downs and portions of the Beaumont neighborhoods along with the southern end of the Nicholasville Road corridor. The zone is bounded by the Fayette County line to the south, Harrodsburg Road to the west, Pasadena Drive on the north, and Nicholasville Road on the east. The zone includes a mix of single and multi-family residential, retail, and office land uses.

Major destinations include the Fayette Mall and adjacent shopping centers along Nicholasville Road and shopping centers and medical offices at Beaumont Center just west of the zone boundary.

Approximately 30,700 residents and 18,300 jobs are located within this zone. Fixed-route connections include routes 5, 8, and 13.

10. Southeast Zone

The Southeast zone covers the Kirklevington Park, Southeastern Hills, East Lake, and Park Place neighborhoods along with the southern end of the Nicholasville Road corridor. The zone is bounded by the Fayette County line to the south, Nicholasville Road in the west, the Urban Service Area boundary to the east, and New Circle Road in the north. Land uses in the zone include single and multi-family residential and retail centers located along Nicholasville Road, Tates Creek Road, and Richmond Road corridors. Approximately 70,000 residents and 12,700 jobs are located within the zone. Fixed-route connections include routes 3, 5, 11, and 18.

11. Combined Zones

The project team also evaluated the feasibility of combining the northeast and northwest zones into a single north zone and the southeast and southwest zones into a single south zone. From a customer service perspective, it may be advantageous to combine adjacent zones to provide more trip making opportunities. From an operational perspective, combining zones provides the ability to share vehicles across zones, potentially resulting in fewer vehicles required and higher vehicle utilization.

Table 4-3: Mobility On-Demand Zone Characteristics

	Individual Zones				Combined Zones	
	Northwest Zone	Northeast Zone	Southwest Zone	Southeast Zone	North Zone	South Zone
Area (sq. mi.)	5.1	5.0	8.1	13.5	10	22
Population	12,700	18,000	30,700	70,000	30,700	100,700
Households	5,000	7,500	12,500	31,900	12,500	44,400
Jobs	11,700	3,700	18,300	12,700	15,400	31,000
Minority Population	4,100	9,100	4,800	21,300	13,200	26,100
Percent Minority Population	32%	51%	16%	30%	43%	26%
Low-Income Population	1,200	5,400	2,800	15,800	6,600	18,600
Percent Low-Income Population	9%	30%	9%	23%	21%	18%
Carless Households	50	700	100	1,800	750	1,900
Percent Carless Households	1%	9%	1%	6%	6%	4%
Existing Average Weekday Bus Boardings	146	424	372	722	570	1,094
Existing Annual Paratransit Trips within Zone	760	1,590	1,380	7,440	4,350	13,900
Fixed-Route Connections	Route 12 Route 22	Route 4 Route 6 Route 7	Route 5 Route 8 Route 13	Route 3 Route 5 Route 11 Route 18	Route 4 Route 6 Route 7 Route 12 Route 22	Route 3 Route 5 Route 8 Route 11 Route 13 Route 18

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4.3.3 Ridership & Vehicle Demand Estimation

Estimating ridership demand for new MOD services is challenging due to the wide variation of use cases and underlying land use and socio-economic characteristics across the industry. However, basic ridership assumptions are essential in order to estimate the number of vehicles, drivers, and financial resources needed to operate a MOD service. This section outlines the methodology and results of a ridership and vehicle demand analysis for the proposed MOD zones.

12. Methodology

A range of ridership estimates for the conceptual MOD zones were developed based on the following methodology using industry-standard demand and productivity factors provided in **Table 4-4**.

1. To estimate weekly ridership demand, a range of industry-standard market “capture” rates were applied to the aggregate residents and jobs within each zone. On the low end, this approach assumes that every 1,000 residents and jobs within a proposed MOD zone will produce five weekly MOD trips. On the high end, it is assumed that every 1,000 residents will produce 16 weekly trips, on average.
2. Average daily demand was calculated by dividing the total weekly demand estimates by the total weekly operating days. It is assumed that the proposed MOD zones will operate seven days per week, consistent with Lextran’s fixed-route bus service.
3. Hourly demand was calculated by dividing the total daily demand by the total daily operating hours. It is assumed that the proposed MOD zones will operate 14 hours a day, seven days per week. For the purpose of this conceptual demand estimate, it is further assumed that the demand profile will be relatively flat throughout the day without significant peaking.
4. Finally, vehicle requirements are estimated by applying a productivity factor to the hourly demand estimates for each zone. Productivity factors will vary based on zone size and service parameters such as wait time, in-vehicle deviations, and walk distances. As such, a range of productivity factors was applied to each demand estimate, with a factor of three passenger trips per vehicle hour representing the low end of the range and seven trips per vehicle hour representing the high end.

Table 4-4: MOD Ridership & Vehicle Demand Estimation Factors

Range	Ridership Capture Rate (weekly trips per 1,000 people + jobs)	Productivity Factor (passenger trips per vehicle hour)
Low	5	3
Medium	11	5
High	16	7

13. Ridership and Vehicle Estimation Results

The results of the ridership and vehicle demand analysis are presented in **Table 4-5**. For this exercise, demand and vehicle estimates are provided for each individual zone and combined north and south zones. Given the various factors that influence demand, a range of potential ridership and vehicle requirements are provided for each zone. The results are summarized below:

- **Northwest Zone:** The Northwest zone is estimated to produce 20 to 60 trips per day and require between one and two vehicles.
- **Northeast Zone:** The Northeast zone is estimated to produce 20 to 50 trips per day and require between one and two vehicles.
- **Southwest Zone:** The Southwest zone is estimated to produce 40 to 110 trips per day and require between one and three vehicles.
- **Southeast Zone:** The Southeast zone is estimated to produce 60 to 190 trips per day and require between one and five vehicles.
- **North Zone:** The combined North zone is estimated to produce between 40 and 110 trips per day and require between one and three vehicles.
- **South Zone:** The combined South zone is estimated to produce between 90 and 300 trips per day and require between one and eight vehicles.

Table 4-5: Ridership and Vehicle Estimates by Proposed MOD Zone

	Individual Zones				Combined Zones	
	Northwest Zone	Northeast Zone	Southwest Zone	Southeast Zone	North Zone	South Zone
Population + Jobs	24,400	21,700	49,000	82,700	46,100	131,700
Average Weekly Passenger Trips	120 - 390	110 - 350	250 - 780	410 - 1,320	230 - 740	660 - 2,110
Average Daily Passenger Trips	20 - 60	20 - 50	40 - 110	60 - 190	40 - 110	90 - 300
Average Hourly Passenger Trips	1 - 4	1 - 4	3 - 8	4 - 14	3 - 8	6 - 21
Peak Vehicle Requirement	1 - 2	1 - 2	1 - 3	1 - 5	1 - 3	1 - 8
<i>Low Productivity Factor</i>	1 - 2	1 - 2	1 - 3	2 - 5	1 - 3	2 - 7
<i>Medium Productivity Factor</i>	1	1	1 - 2	1 - 3	1 - 2	2 - 5
<i>High Productivity Factor</i>	1	1	1 - 2	1 - 2	1 - 2	1 - 3

4.4 Mobility On-Demand Implementation Plan

This section summarizes the key steps that Lextran will need to complete in order to implement a new on-demand service. These steps include identifying a service delivery model, refining the service design parameters and zones, defining a capital and operating budget, identifying funding sources, and developing an implementation workplan.

4.4.1 Service Delivery Models

On-demand transit is typically delivered through one of two service models: 1) directly operated in-house using Lextran drivers and vehicles and 2) contract operated through a private vendor. These two service models are described below and summarized in **Table 4-6**.

In-House Operation: In this model, Lextran would provide on-demand transit services using the existing fleet, drivers, and operations team (or new vehicles and resources procured by Lextran) and procure a new software-as-a-service (SaaS) solution to facilitate on-demand trip booking and dispatching. Other services such as ongoing service design and optimization, operational support, and customer service may also be included as part of the technology procurement. This approach provides continuity with Lextran's existing fixed-route operating model using agency staff and assets. The primary disadvantage of this approach is the need to adapt existing resources—including fleet, staff, operators—and procedures to implement a new and unfamiliar service, which may create short-term inefficiencies and a higher cost-per-trip than the Transportation as a Service model described below.

Lextran would need to hire or retrain drivers to operate an on-demand service and might need to create new labor classifications. The SaaS technology platform solution includes, at a minimum, the following components:

- Dynamic vehicle routing
- Passenger aggregation (shared-rides)
- Rider and driver mobile apps, with real-time vehicle tracking and live updated ETAs
- Support for booking by phone, as well as some form of cash payment for unbanked individuals
- Backend administrative tools, such as data dashboards to monitor performance
- Ongoing technical, operational, and marketing support

Turnkey Contract: In this model, a turnkey on-demand transit vendor provides a bundled solution that includes the on-demand transit technology described above plus drivers, vehicles, and operations management. The potential advantages of a turnkey contract solution include lower up-front costs and scalability. After the initial pilot project is launched, Lextran could evaluate whether to incrementally increase fleet size and/or extend operating hours. A bundled approach also ensures the operator and technology platform are interoperable and configured to work efficiently together. The primary disadvantage of this approach is the need to rely upon a vendor to operate and maintain the service, which may present administrative or labor-related challenges. Another potential drawback to the turnkey contract model is that Lextran would have less direct control over specific operational decisions, such as the vehicle make/model, driver recruitment and wages/benefits, and vehicle maintenance processes, provided the vendor meets the terms of its service level agreement with Lextran.

Table 4-6: MOD Service Delivery Models

Service Model	Description	Benefits	Drawbacks
In-House Operations	Lextran provides service using own fleet, drivers, maintenance staff/facility, and management team. Lextran procures software/technology package for reservations/dispatch, customer-facing user interface, operational support, and customer service (optional).	- Provides continuity with existing services - Agency owns fleet, providing flexibility in service delivery method	Requires need to adapt existing resources – including fleet, staff, operators – and procedures to implement a new and unfamiliar service
Turnkey Contract	Lextran procures turnkey contractor for software/technology, drivers, vehicles, maintenance, customer service, and operations management	- Faster deployment - Easily scalable based on ridership demand and desire to add new zones or expand existing zones	Requires reliance on contractor, which may present administrative or labor-related challenges

4.4.2 Cost Estimates & Potential Funding Sources

This section presents cost estimates for the proposed MOD zones based on the in-house and turnkey contract service models described in the previous section. Several potential funding sources for MOD service are presented at the end of this section.

14. Cost Estimates

Capital and operations and maintenance (O&M) costs were estimated for the proposed MOD zones based on financial data gathered from Lextran’s National Transit Database (NTD) reports and industry pricing data. Capital cost assumptions are summarized in **Table 4-7** and ongoing O&M cost assumptions are summarized in **Table 4-8**. Basic costing assumptions are summarized below.

- **Capital Costs:** Upfront capital costs include one-time expenses required to start the service, including vehicles, hardware and data plans, software installation fees, and marketing. If Lextran chooses the turnkey contract delivery model, some or all upfront costs may be amortized over the life of the contract and reflected in the contract operator’s annual fixed fee.
- **O&M Costs:** The in-house cost estimate assumes that Lextran will directly operate MOD service using agency vehicles, drivers, and maintenance facilities. Ongoing operational costs include all recurring fixed and variable expenses such as drivers, support and maintenance staff, fuel, and consumables. The turnkey cost estimate assumes that Lextran will procure a third-party contractor to operate and maintain the MOD service. This service model bundles all recurring costs such as vehicle leases, and driver pay, dispatch, and maintenance into a fully loaded cost per vehicle revenue hour. As shown in **Table 4-8**, two tiers of hourly costs are provided based on fleet size to reflect the economies gained by spreading fixed costs across a larger quantity of vehicles and revenue hours. Fixed costs include administration and dispatch, technology

Table 4-7: Upfront Capital Cost Assumptions

Type of cost	Cost Range	Assumptions
Vehicle acquisition	\$35,000 - \$50,000 per small van \$75,000 - \$100,000 per accessible van	Cost of acquiring vehicles for the service. Assumes entire fleet is wheelchair accessible.
Hardware and data plans	\$200 - \$500 per tablet plus ongoing data plan subscription	Cost to purchase tablets, mounts, chargers, and dispatcher hardware (computer, phone, etc.) Each device will require an active data plan.
Software installation fees	\$20,000 - \$50,000	Software installation fees vary depending on the provider and the size of the deployment.
Marketing	\$10,000 - \$40,000	Cost to market the service prior to launch, ensuring riders are aware of any changes. This includes the cost of providing referral incentives (e.g., refer a friend and get \$5).

Table 4-8: Ongoing Operations and Maintenance Cost Assumptions

Type of cost	Cost Range	Assumptions
In-House Operations		
O&M Cost	\$70 - \$105 per vehicle revenue hour According to the National Transit Database for the FY2020 reporting year, Lextran spent \$105 per vehicle revenue- hour on its fixed-route service and \$45 per vehicle revenue hour on its paratransit service. Actual O&M cost will likely fall towards the upper end of this range.	- These figures are inclusive of operations, maintenance, insurance, management, and dispatch/customer service functions. - Lextran would either contract with a 3rd-party vehicle operator to manage ongoing vehicle maintenance or would provide maintenance with its own staff. - A third-party contractor or Lextran would manage the service. Usually this requires at least one person at all times. This individual would act as a dispatcher, receiving phone bookings, managing driver issues, and more.
Software licensing fees	\$20,000 - \$60,000 / year	Software installation fees vary depending on the provider and the number of vehicles needed to operate the on-demand service.
Turnkey Contract Operations		
O&M Cost (less than 5 fleet vehicles)	\$80 - \$100 per vehicle revenue hour	Fully loaded cost per vehicle revenue hour, which includes recurring technology fees, vehicle leases, driver pay, and customer service.
O&M Cost (5-10 fleet vehicles)	\$60 - \$80 per vehicle revenue hour	

15. Cost Summary

Table 4-9 summarizes the estimated capital and O&M costs associated with the in-house and turnkey contract service delivery models. For both service models, the O&M cost estimates represent the midpoint of the demand and productivity ranges summarized in the previous section. Actual operating costs may be higher or lower depending on the chosen service design parameters and ridership demand. Capital costs for the turnkey contract model are assumed to be included in the annual O&M cost.

Table 4-9: MOD Cost Estimate Summary based on Medium Demand and Productivity Assumptions

Zone	In-House		Turnkey Contract
	Capital	O&M	O&M
Individual Zones			
Northwest Zone	\$235,700	\$487,500	\$459,900
Northeast Zone	\$235,700	\$487,500	\$459,900
Southwest Zone	\$235,700	\$487,500	\$459,900
Southeast Zone	\$323,550	\$934,900	\$919,800
System Total	\$850,650	\$2,277,300	\$1,788,500
Combined Zones			
North Zone	\$235,700	\$487,500	\$459,900
South Zone	\$411,400	\$1,382,400	\$1,379,700
System Total	\$587,100	\$1,829,800	\$1,430,800

Table 4-10 on the following page provides additional detail including vehicle requirements, annual vehicle-hours, and costs to operate on-demand services under both service delivery models. The table also shows the cost per passenger trip as a measure of the service's relative cost-effectiveness.

Table 4-10: MOD Cost Estimate Detail based on Medium Demand and Productivity Assumptions

Cost Category	Individual Zones					Combined Zones		
	Northwest Zone	Northeast Zone	Southwest Zone	Southeast Zone	System	North Zone	South Zone	System
Cost Drivers								
Fleet Vehicles	2	2	2	3	9	2	4	6
Annual Vehicle Hours	5,110	5,110	5,110	10,220	25,550	5,110	15,330	20,440
Capital								
Vehicles	\$175,000	\$175,000	\$175,000	\$262,500	\$787,500	\$175,000	\$350,000	\$525,000
Hardware / Data	\$700	\$700	\$700	\$1,050	\$3,150	\$700	\$1,400	\$2,100
Software	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000
Marketing	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Capital Total	\$235,700	\$235,700	\$235,700	\$323,550	\$850,650	\$235,700	\$411,400	\$587,100
Operating								
In-House Model								
O&M	\$447,500	\$447,500	\$447,500	\$894,900	\$2,237,300	\$447,500	\$1,342,400	\$1,789,800
Software Licensing	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
In-House Operating Total	\$487,500	\$487,500	\$487,500	\$934,900	\$2,277,300	\$487,500	\$1,382,400	\$1,829,800
Cost per Passenger Trip	\$40.63	\$54.17	\$23.21	\$25.97	\$29.20	\$23.21	\$23.04	\$22.59
Turnkey Contract Model								
O&M	\$459,900	\$459,900	\$459,900	\$919,800	\$1,788,500	\$459,900	\$1,379,700	\$1,430,800
Turnkey Operating Total	\$459,900	\$459,900	\$459,900	\$919,800	\$1,788,500	\$459,900	\$1,379,700	\$1,430,800
Cost per Passenger Trip	\$38.33	\$51.10	\$21.90	\$25.55	\$22.93	\$21.90	\$23.00	\$17.66

16. Potential Funding Sources

In addition to Lextran’s existing operations funding resources, the following sources could provide financial support for on-demand transit services:

- **State and Federal grants:** Most on-demand transit operators will support public agencies in their applications for State and Federal grants. The FTA’s RAISE and Accelerating Innovative Mobility (AIM) grant programs are two funds that are particularly suitable for on-demand transit.
- **Private financing:** Private capital can defray the upfront costs of operating microtransit services, aligning the private provider and public partner’s interest over the term of the contract. In some cases, private sources of funding have contributed sponsorships or matching funds to operate on-demand transit service. These private sources include major employers, retail and entertainment associations, universities, and other local institutions with a vested interest in ensuring the mobility needs of their communities are met, spurring economic development in the region, offering visitors convenient transportation.
- **Advertising:** Some on-demand transit services have recouped operational expenses by offering “takeover” advertising campaigns. These campaigns may include elements of advertising on vehicles, in-app affiliate marketing, and branded event promotions. Combined into a takeover campaign, these individual strategies have greater value to a potential advertiser. The unique qualities of an on-demand transit service – an app-based system with dedicated vehicles serving geographically-defined markets – make it particularly well suited for a takeover campaign strategy.

4.4.3 ADA Paratransit Considerations

Serving current ADA paratransit customers, particularly with same-day service options, is a primary objective of on-demand transit. On-demand transit may potentially offer Lextran additional cost savings if existing ADA paratransit customers shift a portion of their trips from ADA service to on-demand transit. This shift is due to the fact that MOD is likely to be operated at a slightly lower cost compared to Lextran’s 2020 ADA paratransit cost-per-trip of \$26. Based on findings from other American MOD services, we find that areas with on-demand transit service generate levels of ADA paratransit ridership (normalized for underlying population) 31% lower than areas without on-demand transit service.⁴ By applying this modal shift assumption to the ADA trips that currently have an origin *and* destination within the proposed MOD zones Lextran would realize \$20,000 to \$50,000 in annual savings, depending on the service delivery model.

⁴ Khan et al. 2021. “Travel Behaviors of the Transportation-Disabled Population and Impacts of Alternate Transit Choices: A Trip Data Analysis of The Handitran Paratransit Service in Arlington, TX.” p. 9. <https://doi.org/10.1061/9780784483534.043>.

4.4.4 Marketing New Services

For any new transit service to be successful, it is critical to create a comprehensive marketing plan prior to the launch of the service. Marketing efforts for new MOD services could include:

- Street marketing at fixed-route bus stops
- Parking branded service vehicles in high-traffic areas
- Canvassing or handouts at key points of interest
- Bus driver handouts
- Ads/notices on bus stop signage
- Producing a public service announcement (PSA) to be aired on local public television or the agency's YouTube account
- Placing social media ads
- Participation in community events (e.g. farmers markets, sports tournaments, street fairs)
- Activation of key local influencers and community leaders
- Free ride promotions
- A launch event with local politicians, business leaders, and media present to promote the service

In addition to marketing to customers directly, local institutions are often excellent marketing partners who can help promote local transit services to their customers, employees, and, in the case of universities, students. Lextran should explore such partnership opportunities with local institutions such as the University of Kentucky, Bluegrass Technical College, local healthcare/hospital systems, and other major employers in Lexington.

4.4.5 Implementation Steps & Phasing

The following steps were identified to advance the implementation of on-demand service in Lexington.

17. Planning & Fundraising

- Identify pilot project scope (zonal boundaries, service levels, service policies, fares)
- Select service delivery model (in-house vs. turnkey contract) and define budget
- Identify and pursue grant opportunities and identify supplemental operating and capital funding sources
- Initiate procurements, including a service contractor (if outsourcing operations), vehicles, technology.

18. Phase 1 Pilot Testing (6-12 months)

- Start-up activities
- Marketing
- Service launch
- Service monitoring and evaluation
- Refine service policies in advance of expansion

19. Phase 2 Service Expansion

- Expand existing zones or launch new zones
- Initiate procurements, as needed, including new vehicle acquisition and/or modifying service contracts.