

**BOARD OF SUPERVISORS  
BUSINESS MEETING  
ACTION ITEM**

**SUBJECT:** Feasibility of Commuter Bus Service into Loudoun County

**ELECTION DISTRICT(S):** Countywide

**STAFF CONTACT(S):** Gladys Hurwitz, General Services  
Ernest Brown, General Services

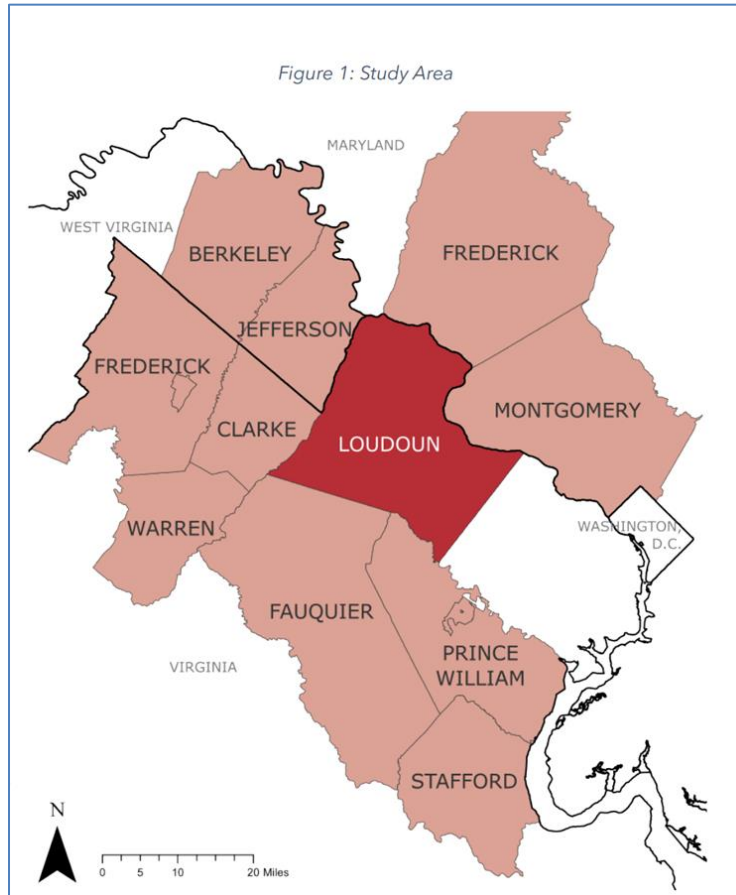
**PURPOSE:** To present the findings of the feasibility study of commuter bus service in Loudoun County and request the support of the Board of Supervisors (Board) in planning a pilot project for commuter bus routes into Loudoun County.

**RECOMMENDATION(S):** Should the Board desire to pursue a commuter service into Loudoun, staff recommends that the Board direct staff to plan and implement a two-year commuter bus pilot from Dale City and Warrenton into Loudoun County. The operating costs, costs for marketing and outreach, and Title VI Service and Fare Equity Analysis are to be included for each proposed commuter, but the pilot route will be incorporated in the Fiscal Year 2026 budget. The starting fares are recommended to start at \$8.25 during the first year of the pilot, and after the first year of operation reevaluate fares with a fare elasticity analysis. Grant funding and partnership opportunities are also to be pursued.

---

**BACKGROUND:** On May 17, 2022, the Board directed staff (8-0-0-1: Briskman abstained) to develop a work plan and identify funding needed to analyze the feasibility of providing commuter bus into Loudoun County from neighboring jurisdictions to the west and north ([Item 09 BMI-Feasibility of Commuter Bus into LC \(2\).pdf](#)). On November 9, 2023, the Board approved (6-0-3: Buffington, Kershner, Letourneau absent) the work plan and scope of services presented by staff to analyze the feasibility of providing commuter bus service into Loudoun County from neighboring jurisdictions to the West and North of Loudoun including West Virginia and Frederick and Montgomery Counties in Maryland and Virginia counties south of Loudoun including Frederick, Clarke, Warren, Fauquier, Prince William, and Stafford ([Item 04 Response to BMI: Feasibility of Commuter Bus Service into Loudoun County](#)) (See Figure 1 Study Area).

**Figure 1: Study Area**



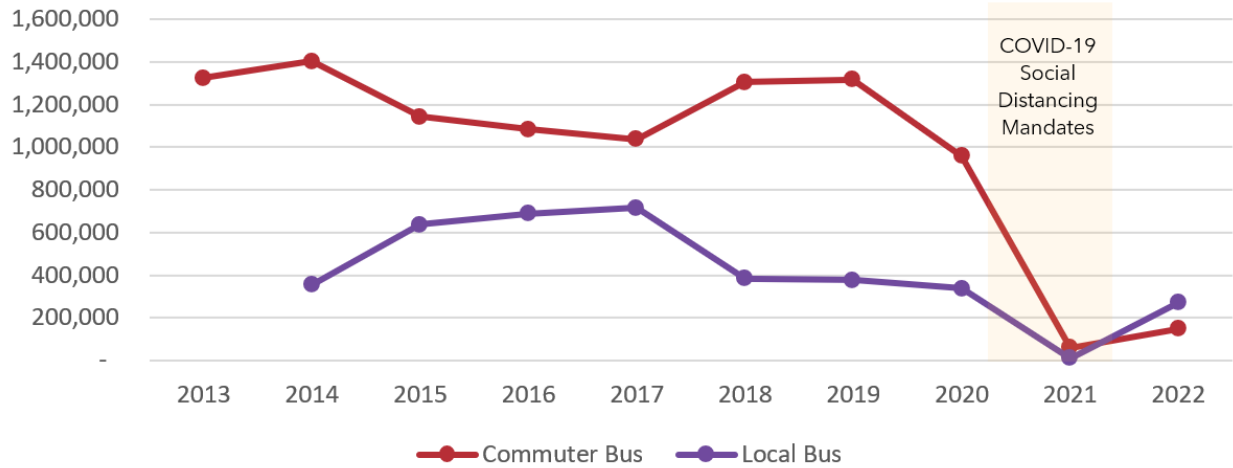
The work plan (scope of work) included identifying service needs and existing conditions, developing and implementing a survey of Loudoun County-based businesses to determine where their workforce is commuting from, the level of interest in utilizing the service, and the desired destinations within Loudoun County. There was also analysis on inflow/outflow trends of persons from surrounding counties into Loudoun County for employment, operating costs, potential ridership analysis including ridership forecasts, availability of park and ride lots from origination locations, key performance measures, recommendations for marketing and outreach, fare elasticity analysis, and unmet ridership demand.

### **Existing Service**

Loudoun County currently operates a commuter bus service to the Washington, D.C. and Northern Virginia. This service was suspended in early 2020 due to the COVID-19 pandemic and resumed in July 2020 at reduced capacity. Before the pandemic, daily ridership ranged from 3,300 to 4,650 riders across 53 buses serving over 115 routes. However, according to Loudoun County Transit (LCT) annual commuter ridership in the National Transit Database (NTD), as of Fiscal Year 2022, commuter bus ridership has only recovered to 11 percent of pre-pandemic levels (see Figure 2).

Several factors have contributed to the decreased demand, including the ongoing popularity of telework, concerns about airborne diseases, and enhanced service from Washington Metropolitan Area Transit Authority (WMATA)’s expanded Silver Line.

**Figure 2: LCT’s Annual Commuter Ridership (NTD Database)**



Source: National Transit Database, FY2013 - FY2022

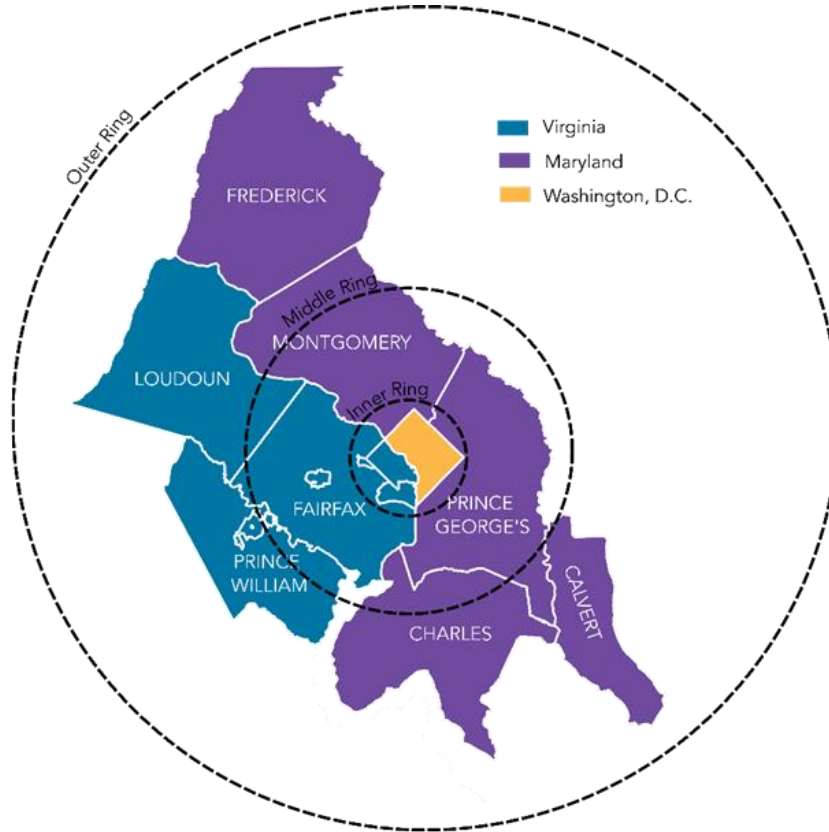
**Commuting Patterns**

The 2022 State of the Commute (SOC) Survey Report for the Washington, D.C. metropolitan region reveals that driving alone and teleworking accounted for nearly 90 percent of commute days in 2022, a significant increase from just 10 percent in 2019. Since the last SOC survey in 2019, the percentage of commuters driving alone has risen from 64.6 percent to 78.4 percent. In the region's Outer Ring, which includes Calvert County, MD; Charles County, MD; Frederick County, MD; Prince William County, VA; and Loudoun County, VA, approximately 88 percent of commuters drive alone to work.

The 2022 SOC report highlights that Outer Ring residents typically work in the Middle Ring or Inner Ring of the region (See Figure 3). These commuters often experience longer travel times, greater traffic delays, and longer distances than those living in the Inner or Middle Rings. These travel challenges could encourage Outer Ring commuters to consider alternative transportation methods.

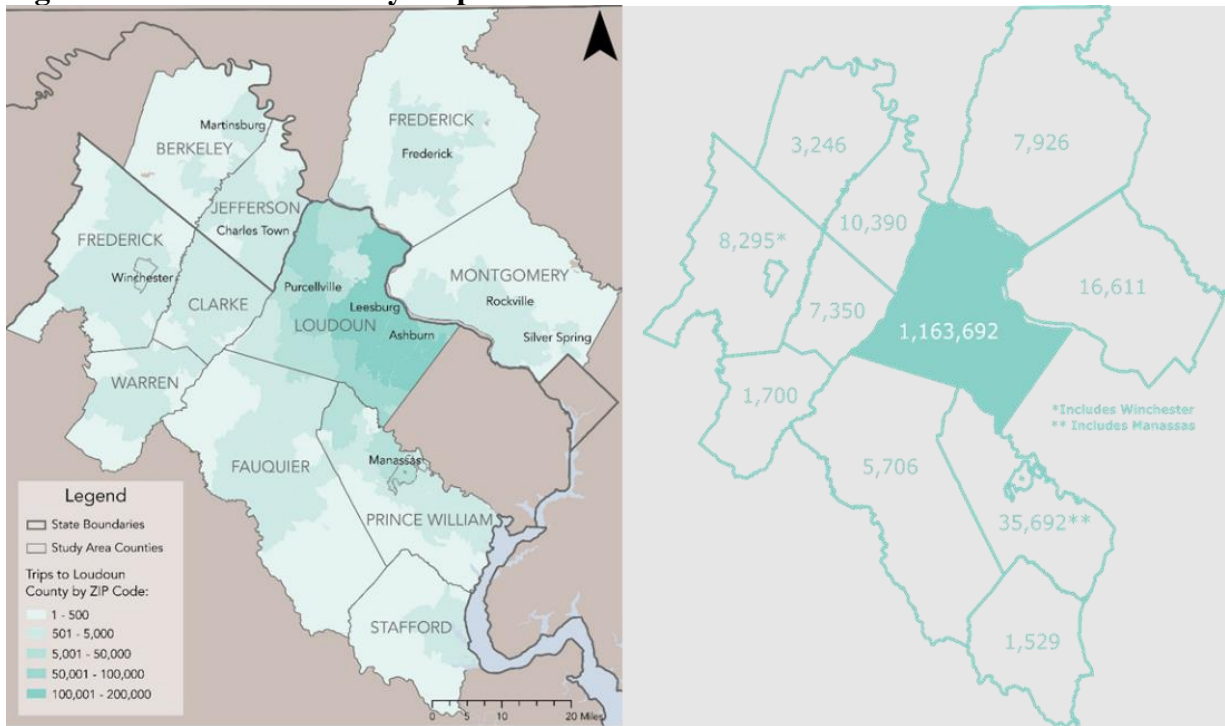
Many employees of Loudoun County-based businesses and government facilities commute from jurisdictions to the west and north, such as West Virginia and Maryland, where the cost of living is lower. However, the tradeoff is a significantly longer commute. As a result, local businesses face challenges in recruiting and retaining employees due to the distance from employment centers and extended travel times.

**Figure 3: State of Commute Outer, Middle, and Inner Rings**

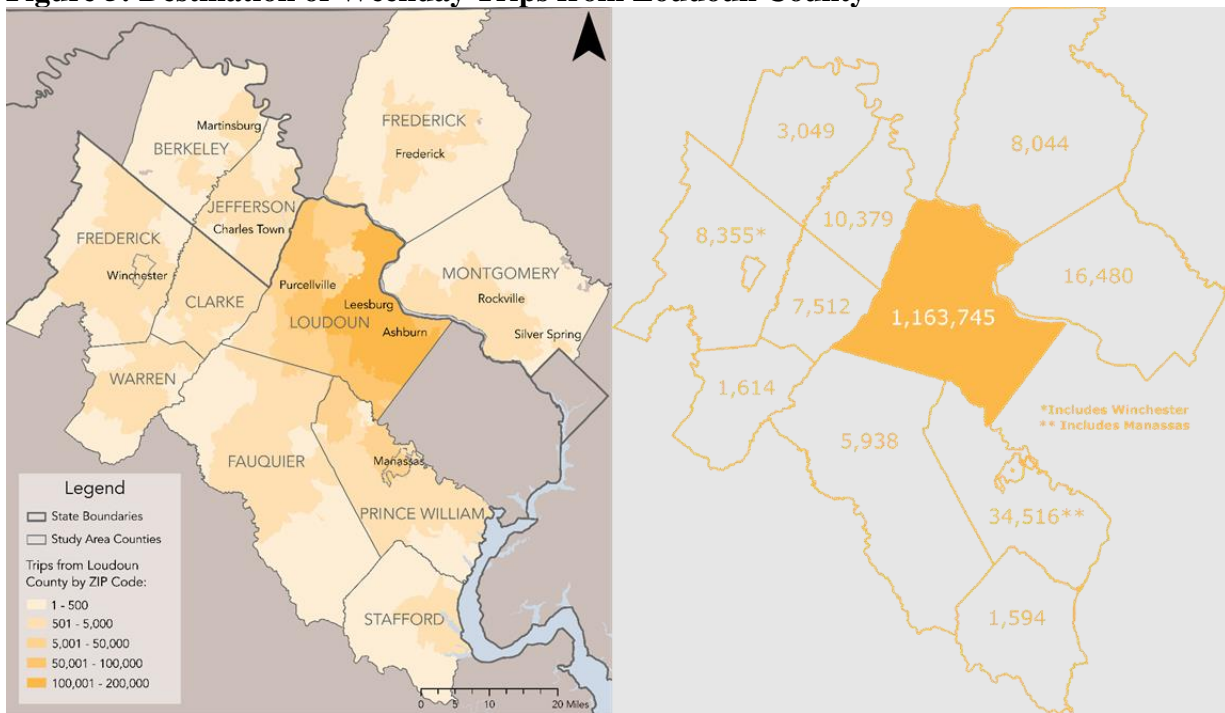


A large portion of the workers who live in Loudoun County commute to other locations within the county (See Figure 4). However, many employees commute to Loudoun County from other counties, especially Montgomery County in Maryland, Prince William County in Virginia, and Jefferson County in West Virginia, which all have more than 10,000 workers commuting to Loudoun County on an average weekday. Based on the Study, more than 98,000 workers are commuting to Loudoun County on an average weekday according to origin-destination data obtained from Replica. This pattern is reflected when accounting for destination trips, or commuters traveling from Loudoun County to locations within the study area, as seen in Figure 5, and roughly the same number of commuters are traveling to Montgomery County, MD; Prince William County, VA; and Jefferson County, WV.

**Figure 4: Source of Weekday Trips**



**Figure 5: Destination of Weekday Trips from Loudoun County**



The largest percentage of trip origins and destinations are from ZIP code 20147 in Loudoun County, VA (See Table 1). The majority encompassed zip codes from communities within Loudoun such as Ashburn and Belmont. This shows that many of the Loudoun County workforce also live within Loudoun County.

However, the surrounding counties in the study area have significant travel patterns to Loudoun County, with Jefferson County, West Virginia, averaging more than 10,000 trips; Montgomery County, Maryland, averaging more than 16,000 trips; and Prince William County, Virginia, averaging about 30,000 trips on an average weekday. As noted above, around 98,000 employees commute to Loudoun County from the study area counties on an average weekday. The similarities between origin and destination data for Loudoun County indicate that there is a robust commuting network between the study area counties and Loudoun County for travel to work on a given weekday.

**Table 1: Origin and Destination Zip Codes**

Origin ZIP Codes	Origin Area	% Total Trips	Destination ZIP Codes	Destination Area	% Total Trips
20147	Ashburn, Belmont	13%	20147	Ashburn, Belmont	13%
20176	Leesburg, Lansdowne	10%	20176	Leesburg, Lansdowne	10%
20148	Ashburn, Brambleton	8%	20148	Ashburn, Brambleton	8%
20166	Sterling, Arcola	8%	20164	Sterling, Sugarland Run	8%
20164	Sterling, Sugarland Run	8%	20166	Sterling, Arcola	8%
20175	Leesburg, Virts Corner	7%	20175	Leesburg, Virts Corner	8%
20152	Chantilly, South Riding	5%	20152	Chantilly, South Riding	5%
20165	Sterling, Countryside	5%	20165	Sterling, Countryside	5%
20105	Aldie, Stone Ridge	4%	20105	Aldie, Stone Ridge	4%
20132	Purcellville, Hillsboro	4%	20132	Purcellville, Hillsboro	4%
	Other ZIP Codes	28%		Other ZIP Codes	28%

**Service Needs Analysis: Feedback from Potential Commuters and Employers**

To learn more about the needs of existing commuters who travel to Loudoun County for employment, LCT conducted interviews with local stakeholders and major businesses and followed up with surveys to directly engage both employers and employees.

Between February 15 and 26, 2024, LCT conducted virtual interviews with employers and stakeholders within Loudoun County.

1. Dulles Area Transportation Association
2. Equinix Data Center
3. Loudoun County Chamber of Commerce
4. Loudoun County Department of Economic Development
5. Loudoun County Workforce Resource Center
6. George Washington University, Transportation and Logistics
7. JK Moving Services
8. Reston Limo
9. Telos Corporation
10. United Dulles Airport

These stakeholder interviews focused on span of work hours, transportation barriers to employment, use of commuter benefits, and desired commuter bus destinations. The feedback highlighted key commuting trends and helped inform the commuter service planning process, with the following takeaways:

- Employers have frequently heard their staff complain about the cost of commuting, especially paying the toll for the Dulles Greenway. Cost is a significant factor for staff when considering transportation, and many employees would sacrifice a more direct commute to get a cheaper commute.
- Most employers were unfamiliar with Loudoun County Transit's Employer Services Program but were interested to learn more about it.
- The majority of employees work standard first-shift positions from around 6 am to 5 pm, but many employers have at least some employees working on the weekend or working four 12-hour shifts from 8 am to 8 pm.
- Many employees commute from counties west of Loudoun County, especially the Eastern Panhandle of West Virginia.
- Multi-employer locations along Route 7, such as One Loudoun in Ashburn, would be useful for commuter bus destinations. The Ashburn Metro Station or other transit hubs were also suggested as commuter bus stops.

## **Employer Survey Results**

As part of LCT's efforts to gauge interest in expanded commuter service and identify potential work destinations, Loudoun County also created and distributed two online surveys to gather input from employers and employees. Local business contacts and Loudoun Commuter Services' employer contacts received a link for a SurveyMonkey survey that asked questions about perceived transit demand and potential origin-destination pairs. These businesses were also given a separate survey link to disseminate among their workforces to directly assess employees' demand for commuter services and preferred times or locations for service. Both surveys were open from January 11 until February 23, 2024.



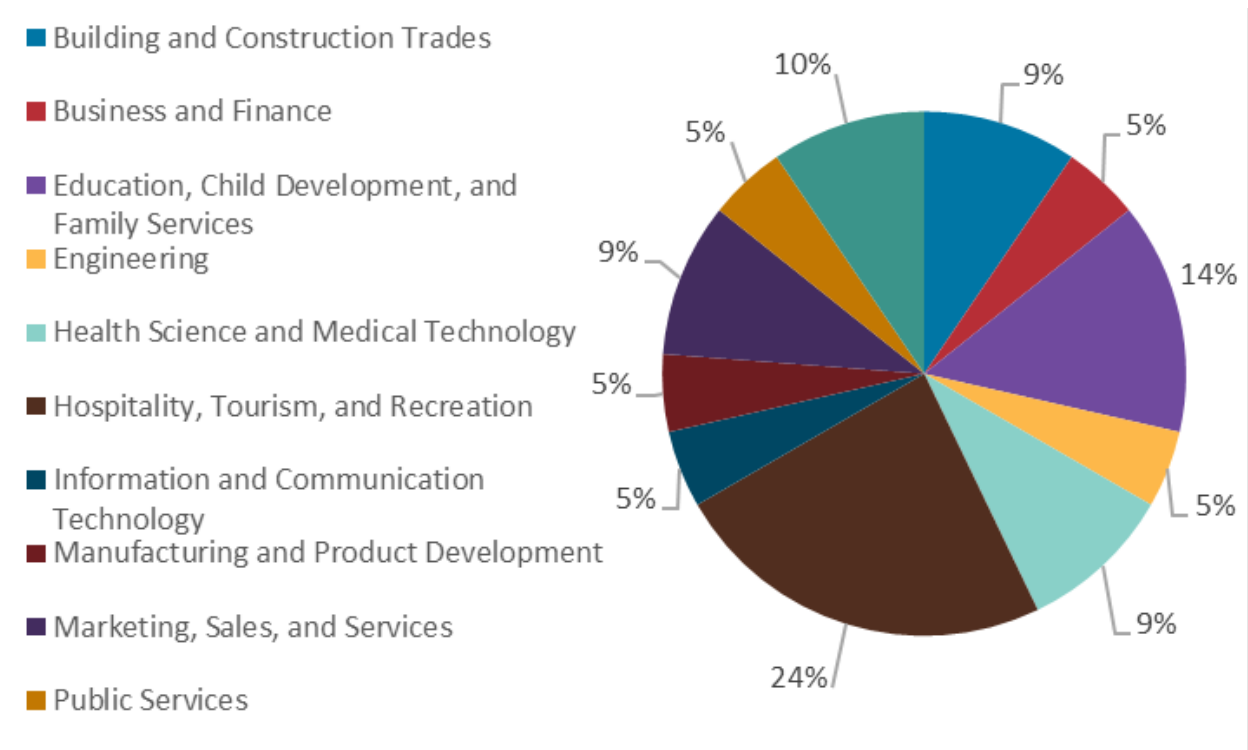
Twenty-one representatives of local businesses completed the employer survey, representing 11 different industries including building and construction trades; business and finance; education, child development, and family services; engineering; health sciences and medical technology; hospitality, tourism, and recreation, information and communication technology; manufacturing and product development. Although there were no responses from the largest single employer in Loudoun County, Loudoun County Public Schools, other branches of the Loudoun County Government and private educators completed the survey.

Key takeaways from the Employer Survey results:

Key Takeaway: Diversity of Respondents

Figure 6 shows that Respondents represented a variety of industries including Building and Construction Trades, Business and Finance, Education, Child Development and Family Services, Engineering, Health Science and Medical Technology, Hospitality Tourism and recreation, Information and Communication Technology, Manufacturing and Product Development, Marketing, Sales and Services, and Public Services.

**Figure 6: Which industry best describes your business?**

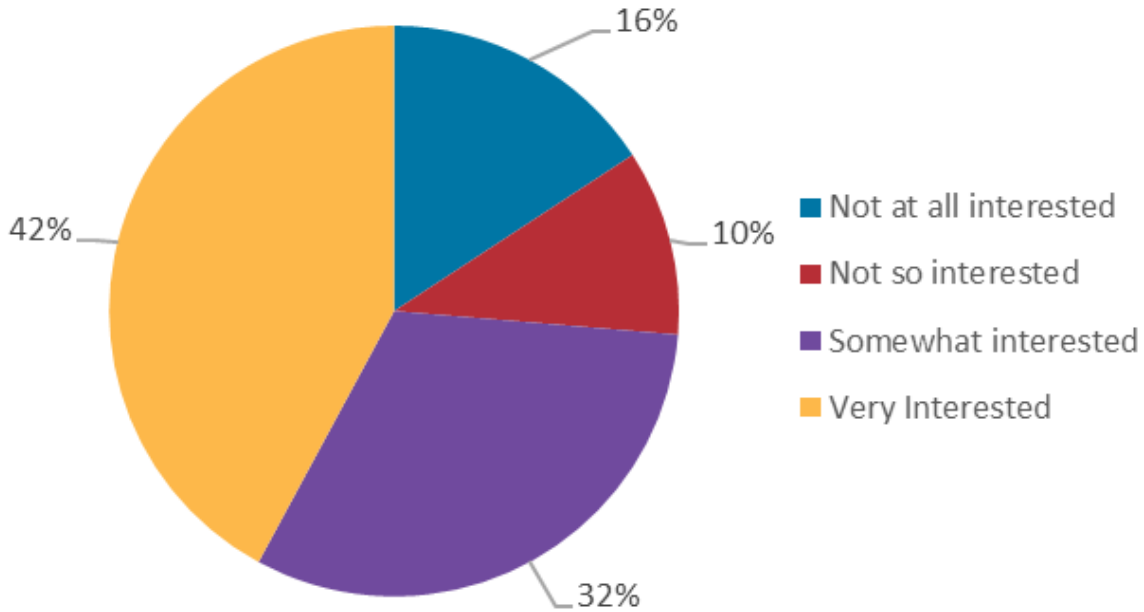




**Key Takeaway: Employer Interest**

Figure 7 shows that 74 percent of employers were very interested or somewhat interested in a commuter bus service.

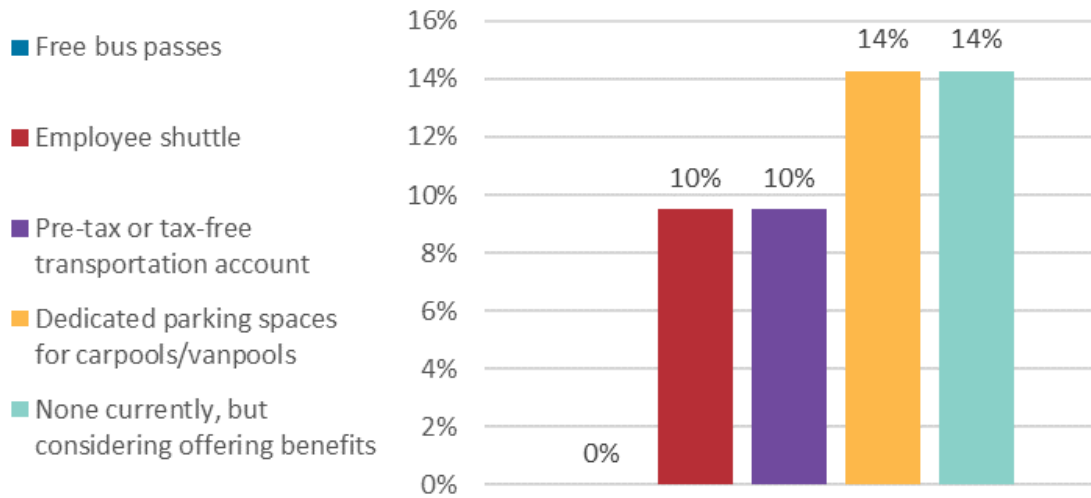
**Figure 7: How would you gauge employee interest in a commuter bus service?**



**Key Takeaway: Employer Transportation Benefits**

Figure 8 shows that 14 percent of employers already offer at least one transportation benefit to their employees, potentially easing the transition to commuter buses for their employees. Another 14 percent are considering such benefits. More than 1/3 of participating employers already offer at least one benefit. No employers currently offer free transit passes to employees.

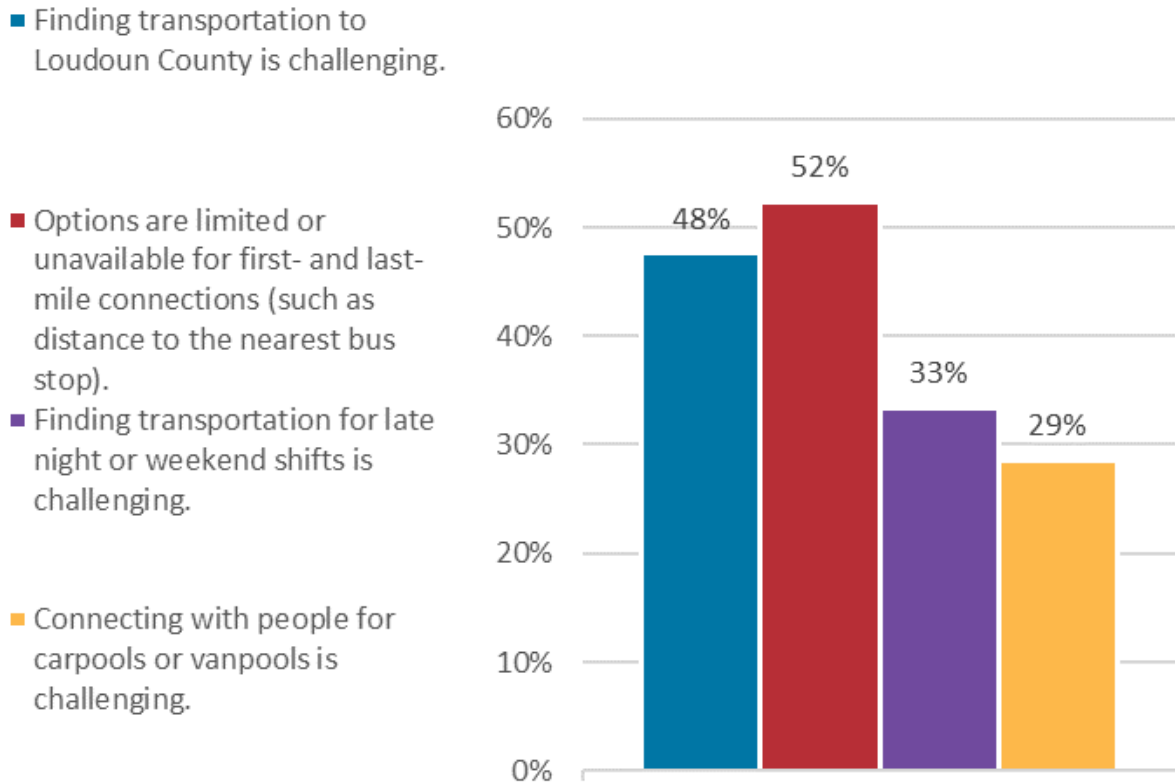
**Figure 8: Does your workplace offer any transportation benefits?**



**Key Takeaway: Transportation Feedback during Recruitment and Hiring**

Figure 9 shows concerns voiced by employees or job applicants during recruitment or hiring: 48 percent find transportation to Loudoun County challenging, 52 percent face limited options for first and last-mile connections, 33 percent have trouble with transportation for late-night or weekend shifts, 29 percent struggle to connect with others for carpools or vanpools, and 80% indicate that longer or complicated commutes increased the risk of employer turnover.

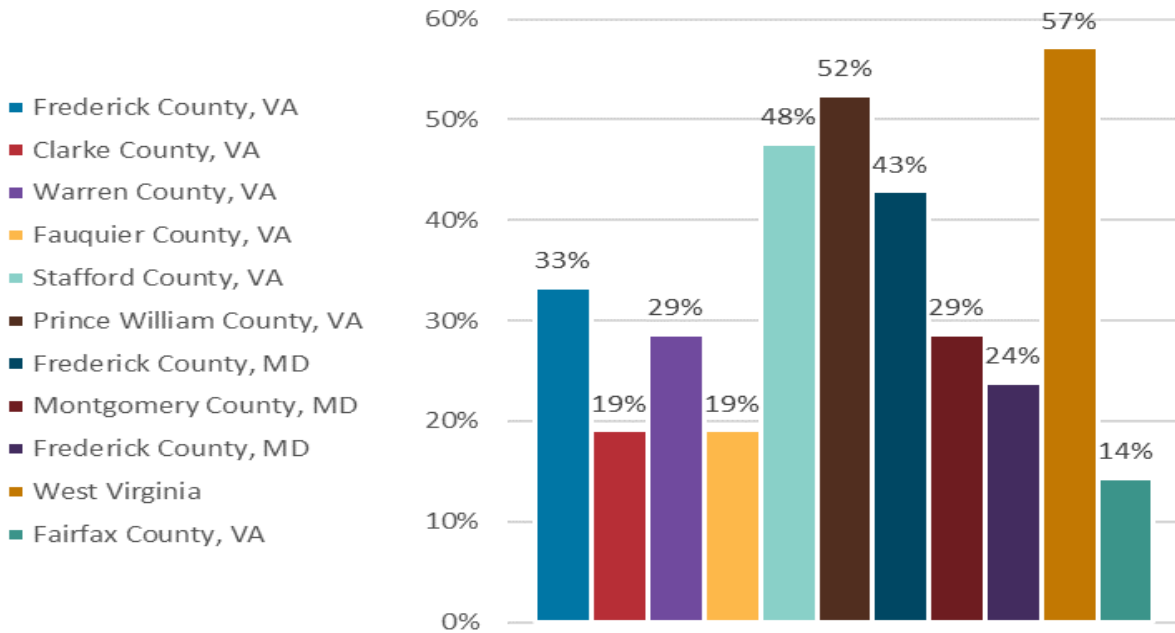
**Figure 9: Which concerns have employees or job applicants shared during recruitment or when hired?**



**Key Takeaway: Top Origin Locations**

Figure 10 shows the top origin locations from neighboring jurisdictions. Among the employers surveyed, 57 percent employ commuters from West Virginia, 52 percent employ commuters from Prince William County, VA; 48 percent employ commuters from Stafford County, VA; and 43 percent employ commuters from Frederick County, MD.

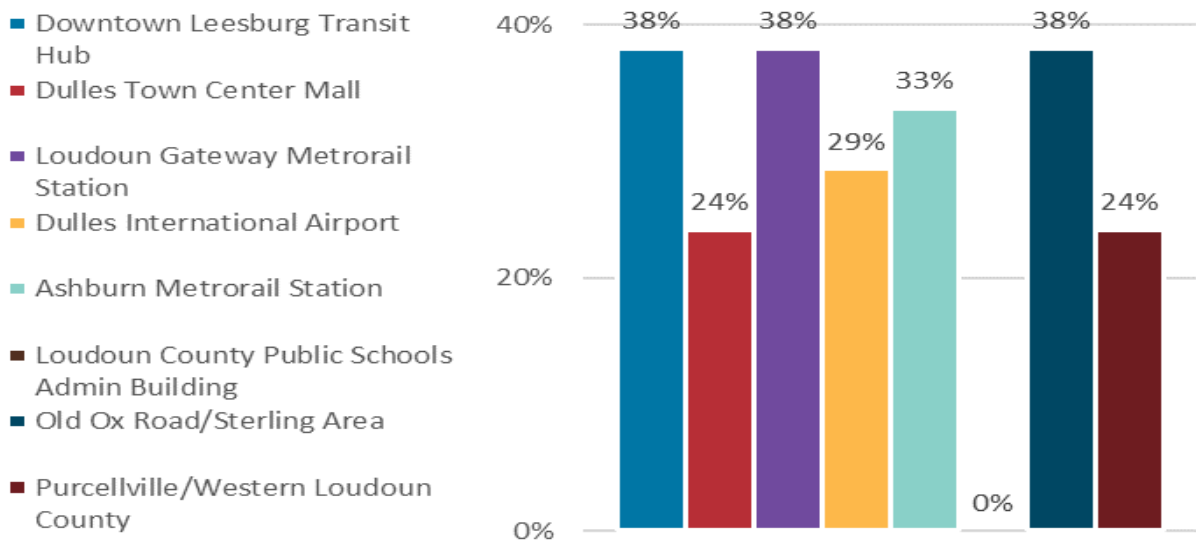
**Figure 10: Do your employees travel from any of the following locations?**



**Key Takeaway: Top Locations for Commuter Bus Service Stops**

Figure 11 shows the top locations within Loudoun County for desired Commuter bus services stops including the Downtown Leesburg Transit Hub, Loudoun Gateway Metrorail Station, Old Ox Road, Sterling Area, and Ashburn Metrorail Station.

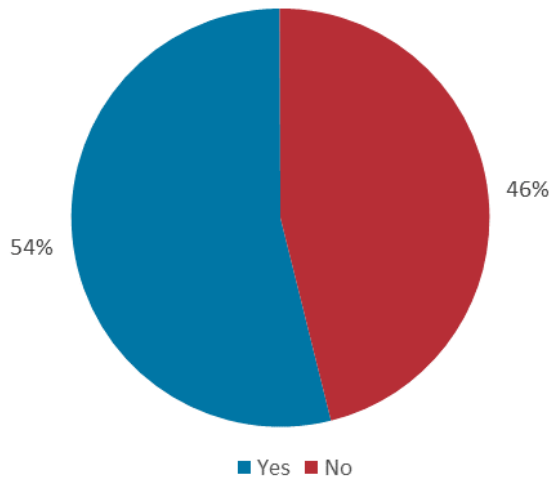
**Figure 11: What locations within Loudoun County would be desired stops for potential commuter bus service?**



**Key Takeaway: Drivers Consideration of Public Transportation**

Figure 12 shows that despite the majority currently driving alone or using rideshares/taxis, over half are open to using public transportation.

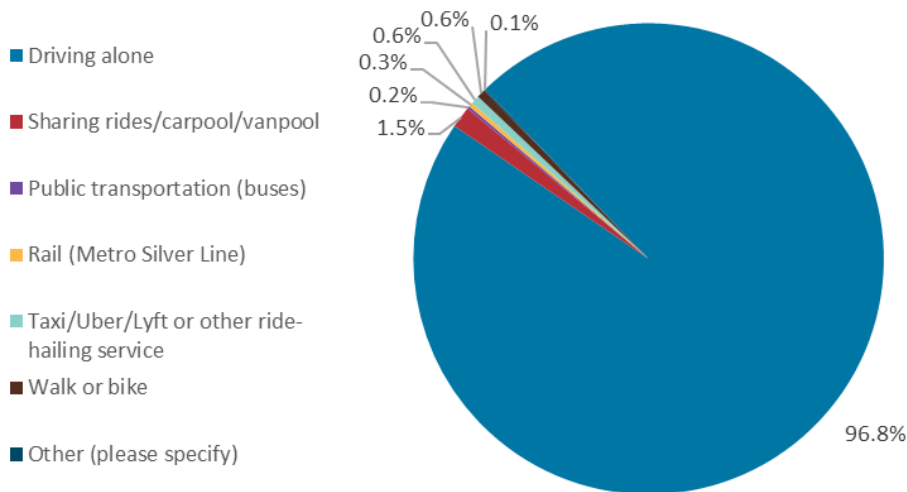
**Figure 12: If you currently drive yourself to work, would you consider using public transportation instead?**



**Key Takeaway: Majority Drive Alone to Work**

Figure 13 shows that nearly all employee survey respondents drive alone to work, less than one percent use public bus or rail, and less than two percent carpool. However, of those who drive alone, the majority indicated that they would be interested in commuting by transit if a commuter service met their needs.

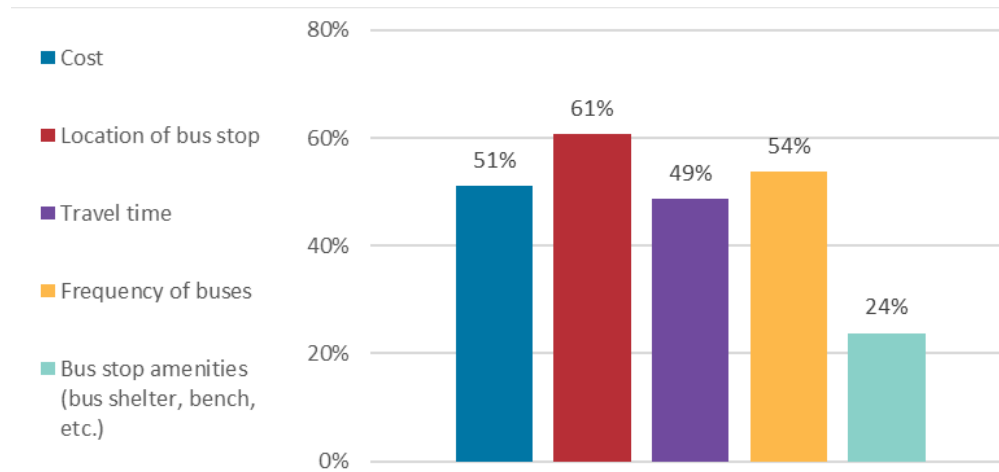
**Figure 13: How do you usually get to work?**



**Key Takeaway: Consideration of Commuter Bus**

Figure 14 shows that the biggest factors that respondents said would influence them to use public transportation were the proximity of bus stops, the frequency of buses, and trip duration.

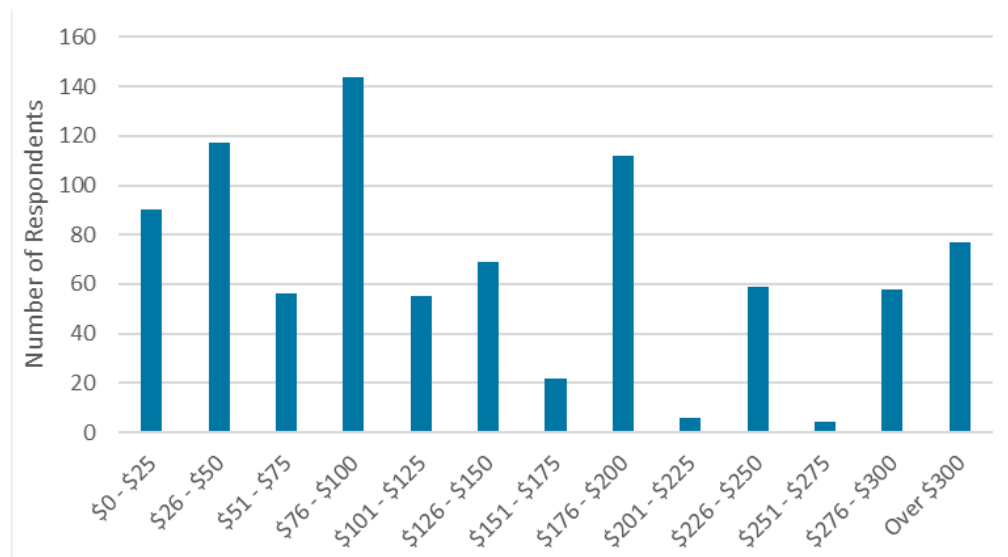
**Figure 14: What would make public transportation a convenient option for commuting to work?**



**Key Takeaway: Commute Cost**

Figure 15 shows that about half of respondents spend less than \$100 per month on commuting, while three-fourths spend less than \$200.

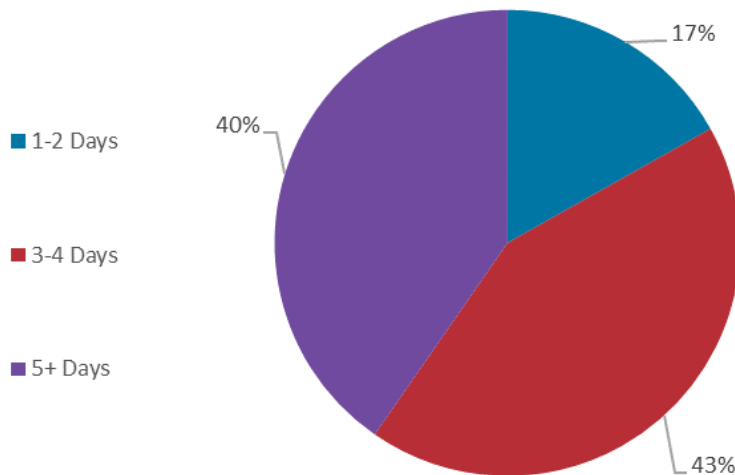
**Figure 15: On average, what does it cost per month to travel to and from work?**



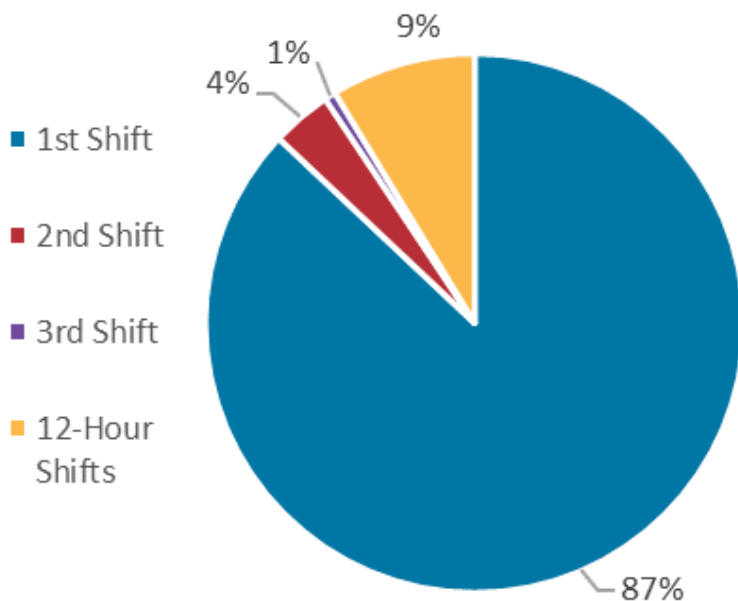
**Key Takeaway: Number of Days Commuting to Work & Work Start and End Time**

Figure 16 shows that partly due to telework and hybrid schedules, less than half of respondents commute to work five or more days per week. However, over 80 percent still commute at least three days per week. Figure 17 shows that most respondents, 87 percent, worked the first shift, and 12-hour shifts were the second highest percentage at 9 percent.

**Figure 16: How many days per week do you commute to work?**



**Figure 17: What time do you typically start and end your day at work?**

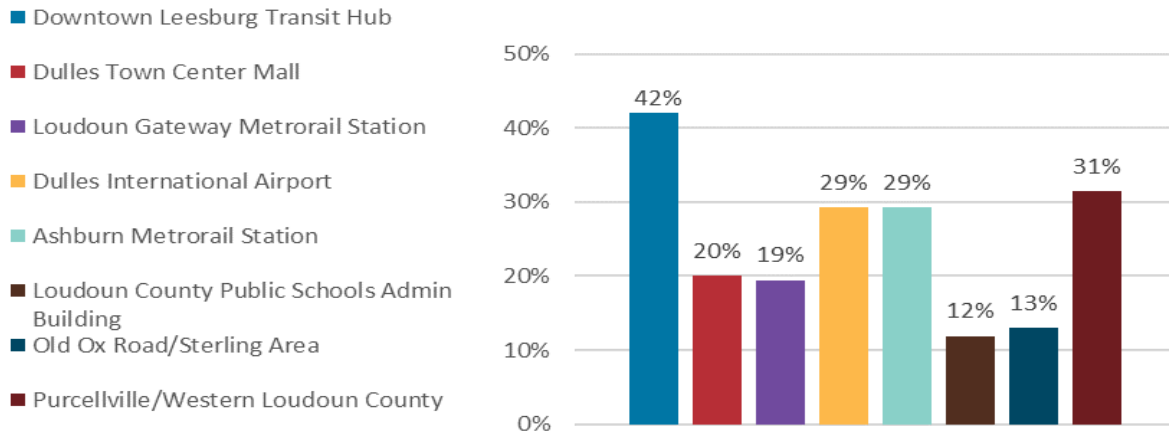




**Key Takeaway: Desired Bus Stop Location in Loudoun County**

Figure 18 shows that many employee respondents expressed interest in commuter bus stops at downtown Leesburg, Purcellville, Dulles International Airport, and Ashburn Metrorail Station.

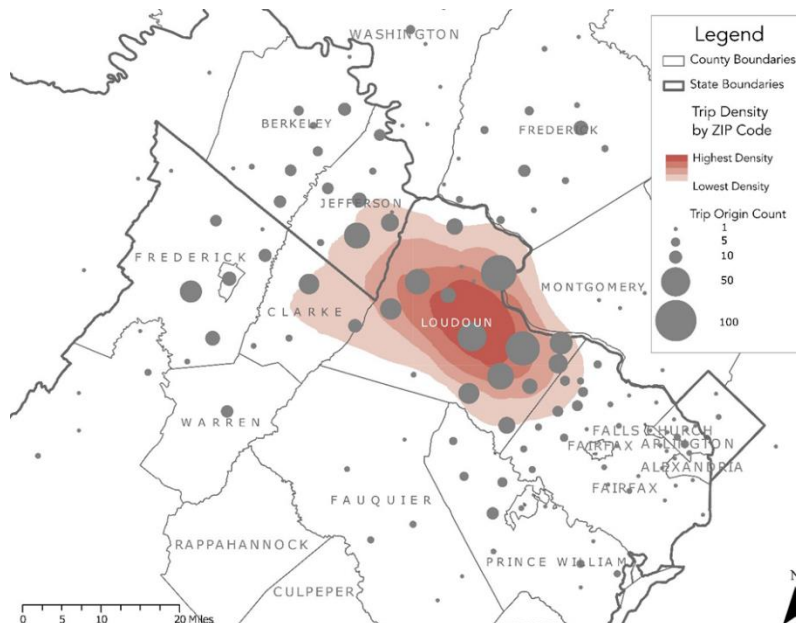
**Figure 18: If there were a commuter bus service, what would be some desired bus stop locations in Loudoun County?**



**Key Takeaway: Employee Commute Patterns**

Figure 19 shows that most out-of-county trips originated from Northwest areas like Clarke County, VA; and Jefferson County, WV. Other popular trip patterns extended from central Loudoun County to the north (Frederick County, MD) or southeast (Fairfax County, VA).

**Figure 19: Employee Commuting Patterns**



**Commuter Bus Route Planning and Analysis**

As part of the analysis, the following assumptions and methodology were used for route planning and analysis:

1. **Operating Costs:** The annual operating costs for each proposed route were calculated using LCT's average operating cost per vehicle revenue mile for its existing commuter bus service. This includes expenses such as operator wages, benefits, fuel, and maintenance. Each route was inputted into Remix by Via, an integrated transit planning and scheduling software. Remix estimates the one-way trip length (excluding deadhead), the daily vehicle requirements based on the number of concurrent trips, and the average daily service per vehicle. The total annual vehicle revenue miles for each route are compared with LCT's FY2022 average operating cost of \$8.96 per vehicle revenue mile.

$$\text{Annual Operating Cost} = \text{Round-trip Distance (Miles)} \times \text{\# Trips per Day} \times \text{\# Service Days per Year} \times \text{FY2022 Average Cost per Mile}$$

2. **Ridership:** To estimate potential demand under ideal conditions (effective marketing, competitive fares, reliable on-time performance, etc.), an unconstrained potential annual ridership was calculated for each route. This was based on several factors: the number of workers commuting into Loudoun County from the origin counties (Spring 2022 Replica data), the popularity of transit and carpool options (2022 ACS data and industry access rates), average daily trips from employee survey responses (accounting for partial telework), and an assumption of 250 service days per year. This metric reflects maximum annual trips under optimal conditions and unlimited service availability.

$$\text{Potential Ridership (Trips per Year)} = \text{Unconstrained Ridership (Trips per Year)} \times \text{\% Commuters Who Work within Service Hours}$$

3. **Driver Hours:** Average weekly driver hours were calculated for each proposed route to provide a general estimate of staffing requirements.

$$\text{Weekly Driver Hours} = \text{Round-trip Length (Hours)} \times \text{\# Trips per Day} \times \text{\# Service Days per Week}$$

The final list of route destinations for consideration of commuter bus services was identified using the following factors:

1. Top destinations requested by employers and employees in the Employer and Employee survey results were compared with the top zip code destinations in the Replica data.
2. Top employers according to the Loudoun County Department of Economic Development list of Top Employers in Loudoun County.
3. Existing transit hubs that would allow commuters to transfer to a local bus route or Metrorail station. In particular, stops that connect to the larger transit network in

Loudoun County will help commuters make the last-mile connection to more destinations, making the commuter service more productive.

4. Locations away from traffic where passengers can alight safely and that can logistically accommodate a large bus, such as 45-foot over-the-road coaches.

The final routes include Dale City, Frederick MD, Harpers Ferry, WV, Marshall VA, Martinsburg WV, Warrenton VA, and Winchester VA.

Each proposed route was further analyzed for the following basic services:

1. Daily Vehicle Requirements
2. Daily Vehicle Requirements
3. One- Way Trip Length
4. Average Daily Service per Vehicle
5. Driver Hours
6. Annual Operating Costs
7. Annual Vehicle Revenue Miles
8. Potential Annual Ridership
9. Potential Average Passengers per Trip

**Ridership Estimates**

The ridership targets for the first 3 years of a new commuter route assume that 25 percent of the potential ridership will be achieved in the first year, 50 percent in the second year, and 75% by the third year. Table 2 outlines the projected daily ridership targets over this period.

Dale City and Warrenton are expected to have the highest ridership during the first 3 years of operation. These key performance indicators (KPIs) will be critical in objectively evaluating the service over time and determining whether it should continue.

**Table 2: Three-Year Ridership Targets for Total Daily Riders**

Proposed Commuter Route	Year 1	Year 2	Year 3
Dale City	53	107	160
Frederick, MD	8	16	24
Harpers Ferry	9	18	27
Marshall	5	11	17
Martinsburg	14	29	43
Warrenton	49	98	147
Winchester	17	35	52

**Comparative Analysis of Routes**

A comparative analysis of routes was completed to provide insight into key services for each proposed route (See Table 3). The average cost per passenger trip was influenced by the potential

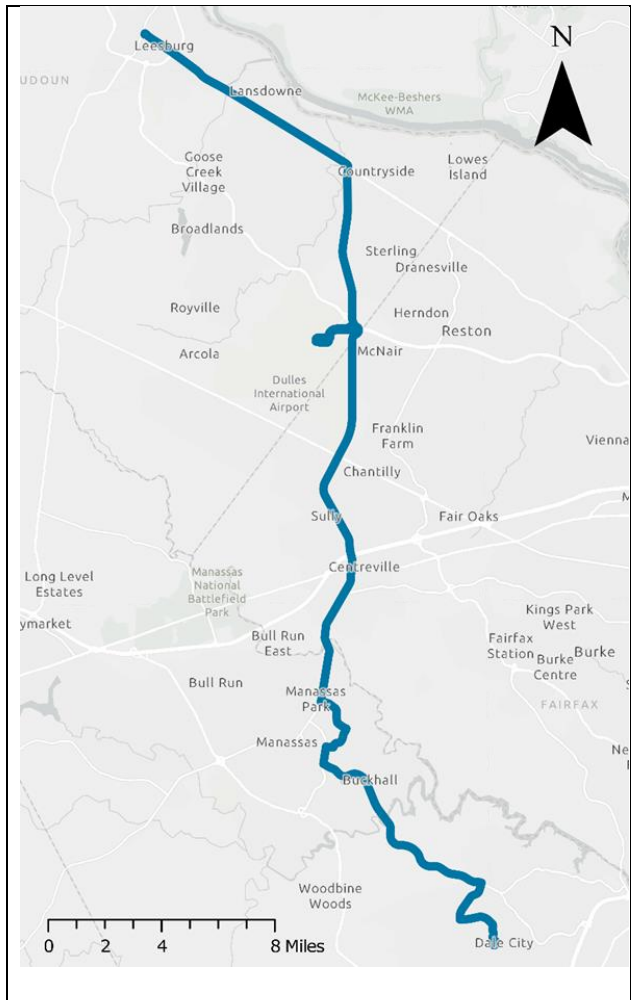
annual ridership and the annual cost. The Dale City route (See Figure 20) and Warrenton route (See Figure 21) have the lowest average cost per passenger trip.

**Table 3: Commuter Bus Routes- Comparative Analysis Matrix**

*Table 5: Commuter Bus Routes - Comparative Analysis Matrix*

Proposed Commuter Line	Stops per Trip	Annual Operating Cost	One-Way Trip Time	One-Way Trip Length	Potential Annual Ridership	Average Cost per Unlinked Passenger Trip
Dale City	4	\$852,000	79 min.	47 mi.	53,419	\$15.95
Frederick, MD	6	\$673,000	63 min.	37 mi.	7,996	\$84.17
Harpers Ferry	6	\$628,100	60 min.	35 mi.	9,067	\$69.27
Marshall	6	\$900,200	87 min.	49 mi.	5,756	\$156.40
Martinsburg	7	\$939,100	88 min.	51 mi.	14,612	\$64.27
Warrenton	6	\$902,700	83 min.	49 mi.	49,345	\$18.29
Winchester	6	\$930,000	81 min.	51 mi.	17,579	\$52.90

**Figure 20: Dale City Route**

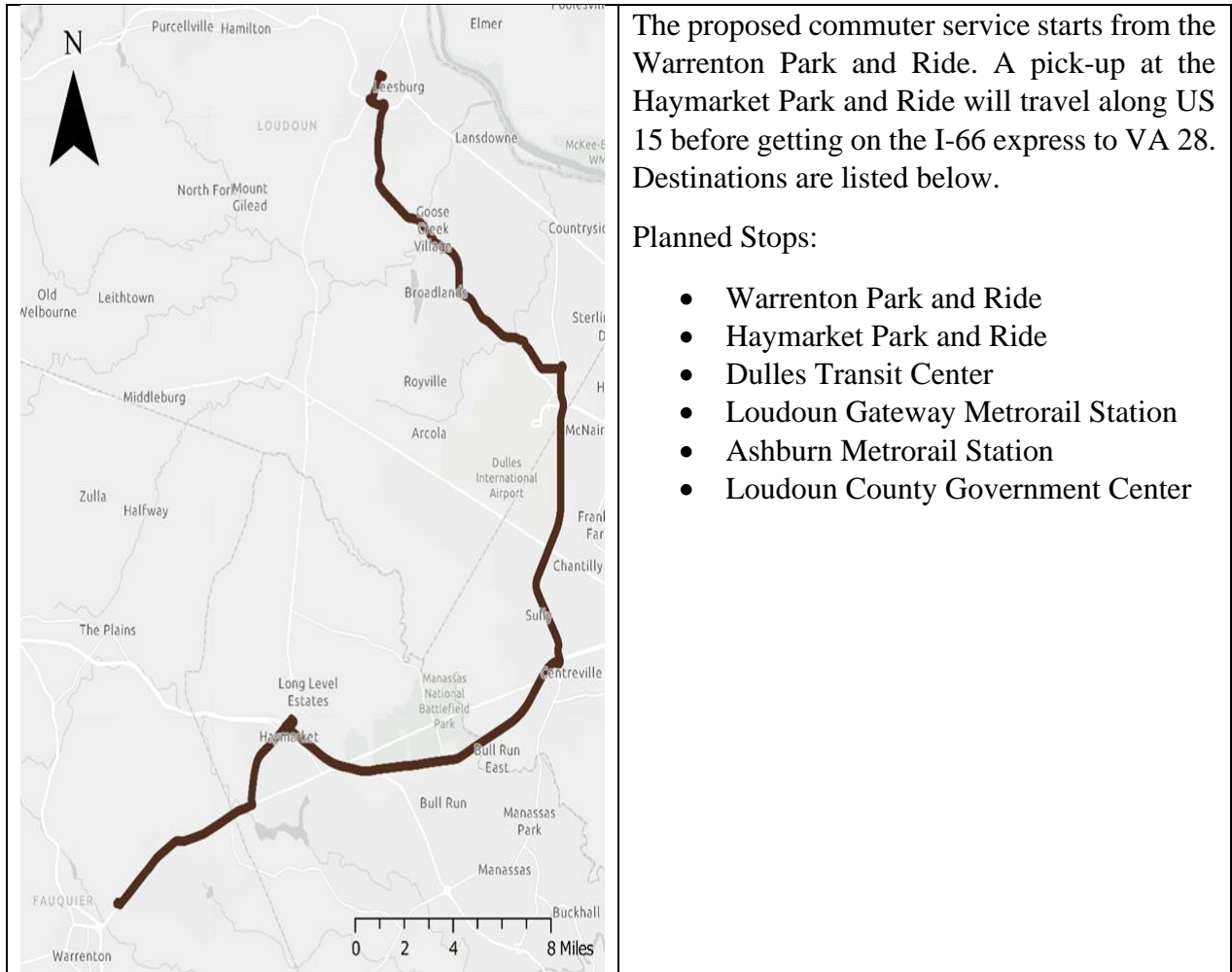


The commuter route begins at Dale City Commuter Lot. It follows VA-28 North, stopping at the Manassas Park Commuter Lot before continuing on the Prince William Parkway to destinations at the Dulles International Airport and the Loudoun County Government Center.

**Planned Stops:**

- Dale City Commuter Lot
- Manassas Park Commuter Lot
- Dulles International Airport
- Loudoun County Government Center

**Figure 21: Warrenton Route**



**Projections of Future Demand**

Long-term ridership demand is expected to increase along with the region’s growing population. Based on the current forecasts for 2025, 2030, and 2040, no unmet demand is expected in the next 16 years on any of the proposed routes (See Table 4). If this does occur, LCT could consider increasing service capacity by adding another bus to the route to allow for ten trips per day (five inbound, five outbound).

**Table 4: Long-Term Projections of Annual Ridership Demand**

Proposed Commuter Route	2025	2030	2040
Dale City	53,419	61,341	70,935
Frederick, MD	7,996	8,777	9,611
Harpers Ferry	9,067	9,558	10,074
Marshall	5,756	6,250	6,847
Martinsburg	14,612	16,655	18,936
Warrenton	49,345	56,421	65,204
Winchester	17,579	19,267	21,477

**Fare Elasticity Analysis**

Fare elasticity measures how transit ridership responds to fare changes. Understanding this concept helps predict the impact of fare adjustments on ridership and revenue; since fare elasticity is used to optimize existing services, LCT could perform a fare elasticity analysis after the first full year of a new commuter route, especially if ridership or fare revenue falls short of expectations.

Introducing a new fare always carries some risk. If the fare is set too high, ridership may drop, discouraging potential new riders. Survey results indicate many commuters currently spend less than \$200 per month, suggesting a one-way fare should not exceed \$8.25. Commuter benefits, such as pre-tax or direct benefits (up to \$315 per month tax-free), can help offset costs. Additionally, it's important to note that Loudoun County Commuter Bus fares will increase to \$11 in 2025, a comparatively shorter route than the proposed new commuter routes.

Therefore, it is recommended that LCT conduct a fare elasticity analysis after the first year of service to assess if fare adjustments are necessary.

**Marketing and Outreach**

The marketing and outreach section of the feasibility study outlines a framework for future marketing efforts. Effective marketing is crucial to the success of any proposed commuter route. Key recommendations include:

- **Develop a Marketing Campaign:** Create a targeted campaign for future commuter services.
- **Consider Local Demographics:** Consider the local economy and demographic factors at each origin, such as the age of the workforce and population density near commuter bus origins.
- **Identify Target Markets:** Clearly define the target markets for the service.
- **Strategic Marketing Elements:** Tailor marketing materials and strategies to each specific campaign, ensuring that all elements communicate the intended message effectively.

- **Establish Fare Guidelines:** Set clear guidelines for fare structures to ensure transparency and alignment with rider expectations.
- **Engage the Public:** Use well-branded multimedia campaigns to promote the service, recruit new riders, and enhance public engagement.

Understanding the needs and preferences of current and potential riders is essential to effectively marketing transit services. Marketing strategies should be designed to meet the specific needs of the target audience, ensuring that transit services offer solutions that resonate with them.

### **Potential Funding Sources**

The Feasibility Study also identified potential funding sources at the state and federal level that could assist with one-time startup funds, limited-term pilot funds, or ongoing operating funds.

State Programs: Making Efficient and Responsible Investments in Transit (MERIT), demonstration Project Assistance Program, Commuter Assistance Program, and Transit Ridership Incentive Program (TRIP).

Federal Programs: Congestion Mitigation and Air Quality Program (CMAQ), RAISE, HOPE.

### **Feasibility Study Recommendations**

Based on their potential annual ridership and cost per trip, the proposed Dale City and Warrenton routes are recommended for Phase 1 implementation. With average operating costs of \$15.95 and \$18.29 per unlinked passenger trip and annual ridership projections exceeding 53,000 and 49,000 respectively, these routes represent a strategic investment to serve the largest number of potential commuters.

Additionally, the proposed Martinsburg route should be explored in partnership with the local transit agency and state DOT in the Eastern Panhandle of West Virginia. With a projected cost below \$40 per trip, this service would address a significant need identified in the surveys.

Survey results show that most commuters spend less than \$200 per month on transportation, which suggests a one-way fare should not exceed \$8.25 for those commuting an average of three days per week. After the first year of pilot service, LCT could conduct a fare elasticity analysis to evaluate the feasibility of a fare increase. If fare increases negatively impact ridership, alternative funding sources can be considered to offset operational costs.

### **Benefits of Implementing Commuter Bus Routes into Loudoun County**

There are several benefits to implementing commuter bus routes into Loudoun County:



### Support for Employee Recruitment and Retention

Businesses in Loudoun County have reported significant challenges in recruiting and retaining employees due to the rising cost of living in the county and surrounding Northern Virginia jurisdictions. A key finding from stakeholder interviews revealed that transportation costs are a major concern for employees, with many indicating they would prefer a longer, less direct commute if it meant lower expenses.

Survey results further highlight this issue: over 80 percent of respondents stated that lengthy and complicated commutes increase the likelihood of employee turnover. In addition, more than 70 percent of employers reported receiving feedback from potential recruits and new hires regarding difficulties in finding affordable and reliable transportation options into Loudoun County.

### Economic Benefits for Loudoun County

This study demonstrates that many employees commute into Loudoun County from surrounding areas. Offering commuter bus services could enhance economic development efforts by improving access to employment opportunities. These transportation options can potentially attract new businesses and a larger workforce to the county, further driving economic growth.

### Environmental Benefits

In the fourth year of operating two commuter bus routes from Dale City and Warrenton, the projected annual ridership is 102,854 passengers. This ridership equates to removing an equivalent number of single-occupancy gasoline-powered vehicles from the road, significantly reducing the region's carbon footprint.

Without these services, the equivalent volume of vehicles would produce an estimated 432,156 metric tons of carbon dioxide (CO<sub>2</sub>) emissions annually. To put this into perspective, this reduction in CO<sub>2</sub> emissions is comparable to:

- The emissions produced by 48,627,924 gallons of gasoline consumed.
- The carbon sequestration provided by 7,145,743 tree seedlings grown over a ten-year period.
- The annual carbon sequestration of 504,555 acres of U.S. forests.

These figures highlight the environmental benefits of the commuter bus routes, demonstrating a substantial contribution to reducing greenhouse gas emissions and supporting climate change mitigation efforts.

Source: EPA Greenhouse Gas Equivalencies Calculator:

(<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results>)

## **Key Factors for Ensuring the Success of Commuter Bus Routes into Loudoun County**

### **Strategic Planning**

Effective strategic planning is critical to successfully implementing the new commuter bus routes. Through thoughtful and detailed planning, potential challenges can be anticipated and mitigated while enhancing the service's overall operational effectiveness. This approach will ensure a seamless transition from conception to execution, maximizing the community's benefits from the new routes.

### **Marketing and Outreach**

A robust marketing and outreach campaign will be essential for the success of the new commuter bus routes. Key components include targeted outreach to employers in Loudoun County, collaboration with neighboring jurisdictions, and partnerships with stakeholders such as Loudoun County Economic Development, transit agencies, the Chamber of Commerce, and the Workforce Resource Center. Gathering public feedback on proposed routes will further ensure alignment with community needs and preferences, helping drive awareness and engagement.

### **Promotion of Commuter Benefits**

Recent survey results indicate that a limited number of employers currently offer commuter benefits to their employees. This presents an opportunity to promote the IRS Transportation Fringe Benefit, which allows employees to reduce their taxable income by up to \$3,780 per year (\$315 per month) through pre-tax deductions, employer subsidies, or a combination. By raising awareness of this benefit and other available commuter incentives, the cost of using transit can be reduced, making the new bus routes more attractive to potential riders.

### **Fare Risk Considerations**

Appropriate fare levels are critical to ensuring the service's success. Fares set too high may discourage ridership, potentially undermining efforts to meet ridership and revenue targets. A balanced approach to fare pricing will help maintain affordability while sustaining service viability.

### **Fare Elasticity Analysis**

Following the first year of service, a fare elasticity analysis will be essential. This analysis will assess the relationship between fare levels and ridership, enabling data-driven adjustments to optimize ridership levels and financial sustainability. The findings will guide necessary modifications to achieve operational goals.

### **Title VI Service and Fare Equity Analysis**

Before launching the pilot service, Loudoun County Transit must conduct a Title VI Service and Fare Equity Analysis in compliance with federal regulations. This analysis will ensure that the proposed service and fare changes do not disproportionately impact low-income or minority populations, maintaining equity in service provision.

**Partnership Opportunities**

Loudoun County Transit should pursue partnership opportunities to enhance the success of the new commuter bus routes. The Eastern Panhandle Authority in West Virginia has previously expressed interest in collaborating with Loudoun County, and additional partnerships with Dale City and Warrenton should be explored as opportunities emerge. These collaborations could strengthen the overall service offering and broaden regional connectivity.

**Funding and Grant Opportunities**

Loudoun County Transit should actively pursue state, local, and other grant opportunities to support the implementation of the new commuter bus routes. Securing grant funding can help offset the initial launch and ongoing operational costs, playing a crucial role in ensuring the long-term sustainability and success of the service.

**ISSUES:**

Ridership estimates will take time to reach their potential.

Projected Ridership estimates for each route are based on ideal conditions that assume all riders who are likely to utilize the service choose to take the bus every day that they commute. According to a recent report from the Northern Virginia Transportation Commission, *Northern Virginia Transit Trends, June 2024*<sup>1</sup>, use of public transit for commuting decreased from approximately 10-11 percent pre-COVID-19 pandemic to 2.8 percent in 2021 and rose to 4.1 percent in 2022. While the trend for using public transit to commute is increasing, it will take time and extensive marketing and outreach for potential riders to become aware of, try out, and become comfortable with a new commuter bus service into Loudoun County.

The pilot service ridership targets assume that 25 percent of the projected ridership will be achieved in the first year of operation, 50 percent in the second year, and 75 percent by the third year. Table 5 outlines the target daily and annual ridership over the initial three-year period.

**Table 5: Target Daily and Annual Ridership**

Proposed Commuter Route	Year 1		Year 2		Year 3	
	Total	Annual	Total	Annual	Total	Annual
	Daily	Ridership	Daily	Ridership	Daily	Ridership
	Riders		Riders		Riders	
Dale City	53	13,355	107	26,710	160	40064
Warrenton	49	12,366	98	24,673	147	37008

Risk associated with Potential Fares

It is important to note that there is a potential risk of either losing riders with a fare increase or turning potential riders away when a fare is too expensive.

<sup>1</sup> <https://novatransit.org/uploads/studiesarchive/2024%20Northern%20Virginia%20Transit%20Trends%20Report>.

Three-quarters of respondents to the employee survey reported that they could drive themselves to work for less than \$200 per month. That amount equates to a one-way fare of no more than \$8.25 for someone who commutes three days a week. On December 1, 2024, the fare for the existing Commuter Bus service to Washington, D.C., and Arlington County is planned to increase from \$10 to \$11 each way using a SmarTrip card in Fiscal Year 2025 and plans to increase to \$12 in Fiscal Year 2026. A fare of \$8.25 would be 25% less than the \$11 fare for Commuter Bus. The study’s report advised that potential commuters into Loudoun County would likely favor driving if the one-way fare exceeded \$8.25 per trip.

**Table 6: Estimated FY 2026 Local Tax Funding Impact**

Description	Staff Recommendation \$8.25 one-way fare			Commuter Bus Fare FY 26 \$12.00 one-way fare	
	Est. FY 26 Expenditures	Est. FY 26 Revenues	Est. net LTF Impact	Est. FY 26 Revenue	Est.net LTF Impact
Dale City	\$860,000	\$110,178	\$749,822	\$160,260	\$699,740
Warrenton Route	\$910,000	\$102,020	\$808,039	\$148,392	\$761,692
Marketing and Outreach	\$80,000	—	—	—	—
Title VI Service and Fare Free Equity Analysis (One Time)	\$45,000	—	—	—	—
<b>Total</b>	<b>\$1,895,000</b>	<b>\$212,139</b>	<b>\$1,682,861</b>	<b>\$308,568</b>	<b>\$1,586,432</b>

Year 1 estimated fare revenue based on a fare of \$8.25 and \$12.00 for the first-year annual targeted ridership projection of 13,355 for Dale City Route and 12,366 for Warrenton (See Table 6).

**FISCAL IMPACT:** Should the Board desire to pursue a commuter service into Loudoun, the fiscal impact of the staff’s recommended option to establish a pilot program for Commuter Bus service into Loudoun County requires approximately \$1.7 million of one-time local tax funding (LTF) in the FY 2026 operating budget for DGS to fund annual operating costs of two new routes (Dale City and Warrenton), outreach and marketing, and a Title VI Service and Fare Equity Analysis. The Board would have the opportunity to consider continuing the pilot program’s second year as part of the FY 2027 budget development process.

The total net LTF impact includes the projected fare revenue generated annually from the recommended \$8.25 one-way fare. If ridership targets are not achieved, a fare elasticity analysis will be necessary after the first year of operation to optimize the fare structure. Additionally, staff will actively pursue grant opportunities as they become available, although there is no guarantee of receiving these funds or clarity on when they may be awarded.

**ALTERNATIVES:**

1. The Board may direct staff to plan and implement a commuter bus route pilot for Dale City and Warrenton as recommended and set the starting fare at \$8.25. After the first year of operation, fares will be reevaluated with a fare elasticity analysis. Marketing will also continue throughout the pilot period. Also, operating costs, costs for marketing and outreach, and Title VI service and fare equity analysis should be included as recommended for each proposed commuter bus pilot route to be incorporated into the FY 2026 budget. Pursue grant funding opportunities as recommended and explore and pursue partnership opportunities for recommended routes.
2. The Board may direct staff to plan and implement any of the seven potential commuter routes apart from Dale City and Warrenton and set the starting fare to match the commuter bus fare rates at the time of implementation at \$12 or \$8.25. After the first year of operation, fares will be reevaluated with a fare elasticity analysis. Marketing will also continue throughout the pilot period. Also, operating costs, costs for marketing and outreach, and Title VI service and fare equity analysis should be included as recommended for each proposed commuter bus pilot route to be incorporated into the FY 2026 budget. Pursue grant funding opportunities as recommended and explore and pursue partnership opportunities for recommended routes.
3. The Board may direct staff to explore and pursue partnership opportunities for recommended routes.
4. The Board may direct staff not to plan or implement new commuter routes into Loudoun.

**DRAFT MOTIONS:**

1. I move that the Board of Supervisors direct staff to implement a commuter bus route pilot program, and institute two routes as described in this item, from Dale City and Warrenton into Loudoun County and set the starting fare to \$8.25.

I further move that the Board of Supervisors direct staff to include operating costs, Marketing and Outreach costs, and Title VI Service and Fare Equity Analysis, as recommended, in the FY 2026 budget.

OR

3. I move an alternate motion.

**ATTACHMENT(S):**

1. *Feasibility Study of Commuter Bus Service into Loudoun County*



**FEASIBILITY STUDY OF  
COMMUTER BUS SERVICE  
INTO LOUDOUN COUNTY**



**2024**

**Table of Contents**

Executive Summary .....	2	Key Performance Indicators .....	45
Background.....	2	Comparative Analysis of Routes .....	47
Major Findings .....	2	Fare Elasticity Analysis .....	48
Potential Routes .....	3	Recommendations .....	50
Next Steps .....	4	Collaboration with Neighboring Jurisdictions.....	50
Study Purpose.....	5	Marketing and Outreach Efforts .....	51
Existing Conditions and Service Needs.....	6	Introduction .....	51
Study Area Characteristics.....	6	Campaign Audience.....	52
Existing Service .....	7	Transit Marketing Elements.....	53
Commuting Patterns.....	15	Transit Marketing Strategies.....	57
Top Employers.....	19	Industry Examples .....	59
Feedback from Potential Commuters and Employers ....	20	Potential Funding Sources .....	65
Commuter Bus Route Planning and Analysis.....	28	State Programs.....	65
Assumptions and Methodology .....	28	Federal Programs .....	70
Route Design .....	29		



# Executive Summary

## Background

This report is the culmination of a year-long study on the feasibility of adding commuter bus service to Loudoun County, VA, from areas north, west, and south of the county. Although thousands of Loudoun County residents have utilized Loudoun County Transit's (LCT) existing commuter buses to the Washington, D.C., area, major employment centers within Loudoun County are attracting employees from other counties in Virginia as well as Maryland and West Virginia. These growing employment centers can benefit from public transportation that increases access to potential employees.

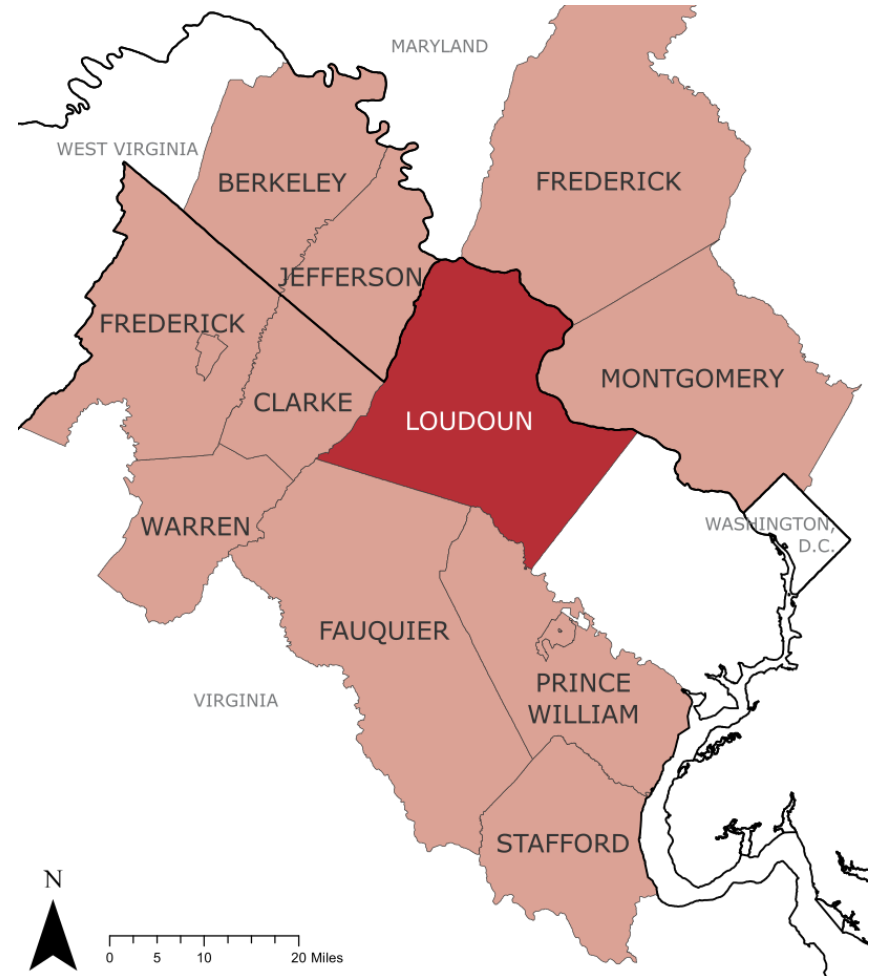
To support employment and economic growth, LCT's study investigated the potential benefits and resources needed to provide commuter bus service from the following origins:

- Jefferson County, West Virginia
- Berkeley County, West Virginia
- Frederick County, Maryland
- Montgomery County, Maryland
- Clarke County, Virginia
- Frederick County, Virginia
- Warren County, Virginia
- Fauquier County, Virginia
- Prince William County, Virginia
- Stafford County, Virginia

## Major Findings

The study used demographic research of the study area, interviews with major employers, and surveys of over 1,000 local employees to identify the most important parameters of a possible commuter route to one or more of the 10 origin counties. Through the public outreach portion of the study, it was determined that all responding employers are supportive of expanded commuter service and many employees were likely to use commuter bus service if offered.

Figure 1: Study Area



Based on this feedback, the most desirable destinations for commuter bus service to Loudoun County are:

1. Loudoun County Government Center
2. Purcellville
3. Dulles International Airport
4. Ashburn Metrorail Station
5. Loudoun Gateway Metrorail Station
6. Sterling

More than three-quarters of employees indicated that they could drive themselves to work for less than \$200 per month, which equates to **a fare of roughly \$8.25** for commuters travelling an average of three times a week. Charging a higher fare than that would reduce the likelihood of people using the service compared to driving alone. Since fares are not expected to cover the cost of a new commuter route, other income sources (such as state MERIT funds for operations or federal Low/No funds for new vehicles) could be used to make up the difference.

## Potential Routes

To further examine the feasibility of commuter bus service, existing road conditions and ridership modeling were used to draft the seven most productive route alignments from the origin counties.

Table 1: Summary of Possible Commuter Routes

Proposed Commuter Line	Origin Jurisdiction(s)	One-Way Trip Time	One-Way Trip Length	Annual Operating Cost	Potential Annual Ridership
<b>Dale City</b>	Prince William County, VA	79 min.	47 mi.	\$852,000	53,419
<b>Frederick, MD</b>	Frederick County, MD	63 min.	37 mi.	\$673,000	7,996
<b>Harpers Ferry</b>	Jefferson County, WV	60 min.	35 mi.	\$628,100	9,067
<b>Marshall</b>	Fauquier County, VA	87 min.	49 mi.	\$900,200	5,756
<b>Martinsburg, WV</b>	Berkeley County, WV Jefferson County, WV	88 min.	51 mi.	\$939,100	14,612
<b>Warrenton</b>	Fauquier County, VA Prince William County, VA	83 min.	49 mi.	\$902,700	49,345
<b>Winchester</b>	Frederick County, VA Clarke County, VA City of Winchester, VA	81 min.	51 mi.	\$930,000	17,579

## Next Steps

With these route options in hand, LCT's next step towards implementing a new commuter service would be to pilot one or two new routes for 1-3 years. The actions required for a pilot include:

1. Select route(s) to further as pilot projects.
2. If necessary, collaborate with neighboring jurisdictions (such as the Eastern Panhandle Transit Authority or OmniRide) to coordinate services.
3. Conduct public outreach with the assistance of major employers and stakeholders to solicit feedback on proposed service, bus stop locations, and schedule .
4. Identify and applying for funding sources for additional vehicles and day-to-day operating expenses.
5. If necessary, purchase additional vehicles for the new service.
6. Begin to market the new service through social media, public engagement events, and through partnerships with major employers and neighboring jurisdictions along the route. Continue marketing campaign throughout the pilot.
7. Implement service.
8. Track key performance indicators (such as ridership and operating expenses) from month to month and performing a mid-point evaluation analysis 1-1.5 years into the new service.
9. At the end of the pilot period, determine whether to continue, expand, or cancel the service.

Operating funding for a pilot service could come from Virginia's **MERIT New Service Projects fund** (up to 80% of operating expenses, or up to 96% if supplemented with federal funds) and/or the federal **Congestion Mitigation and Air Quality Program** (funding allocated based on the project need described in an agency's grant application).



## Study Purpose

This study outlines the feasibility, demand, and strategies to operate public commuter bus service that could connect employment sites in Loudoun County with workers from areas west and north of Loudoun County (including Jefferson and Berkeley Counties in West Virginia and Frederick and Montgomery Counties in Maryland) as well as Virginia counties south of Loudoun County (including Frederick, Clarke, Warren, Fauquier, Prince William, and Stafford Counties).

The employer outreach specialist at Loudoun County Transit works closely with county-based businesses and the Loudoun County Workforce Resource Center to identify challenges that transit could help address. Through this outreach, many businesses have expressed difficulty recruiting and retaining employees due to the high cost of living in Loudoun County and other areas of Northern Virginia. The issue is further exacerbated by the limited commuting options from areas to the west, north, and south of Loudoun County.

Following the expansion of the Silver Line rail system from Washington, D.C., to stations in Loudoun County, the need for commuter services to other neighboring jurisdictions has grown more apparent. Providing commuter bus options to access employment in Loudoun County from the west, north, and south could support the county's economic development efforts, reduce traffic congestion on state routes, and bolster the workforce recruitment efforts of local businesses.

# Existing Conditions and Service Needs

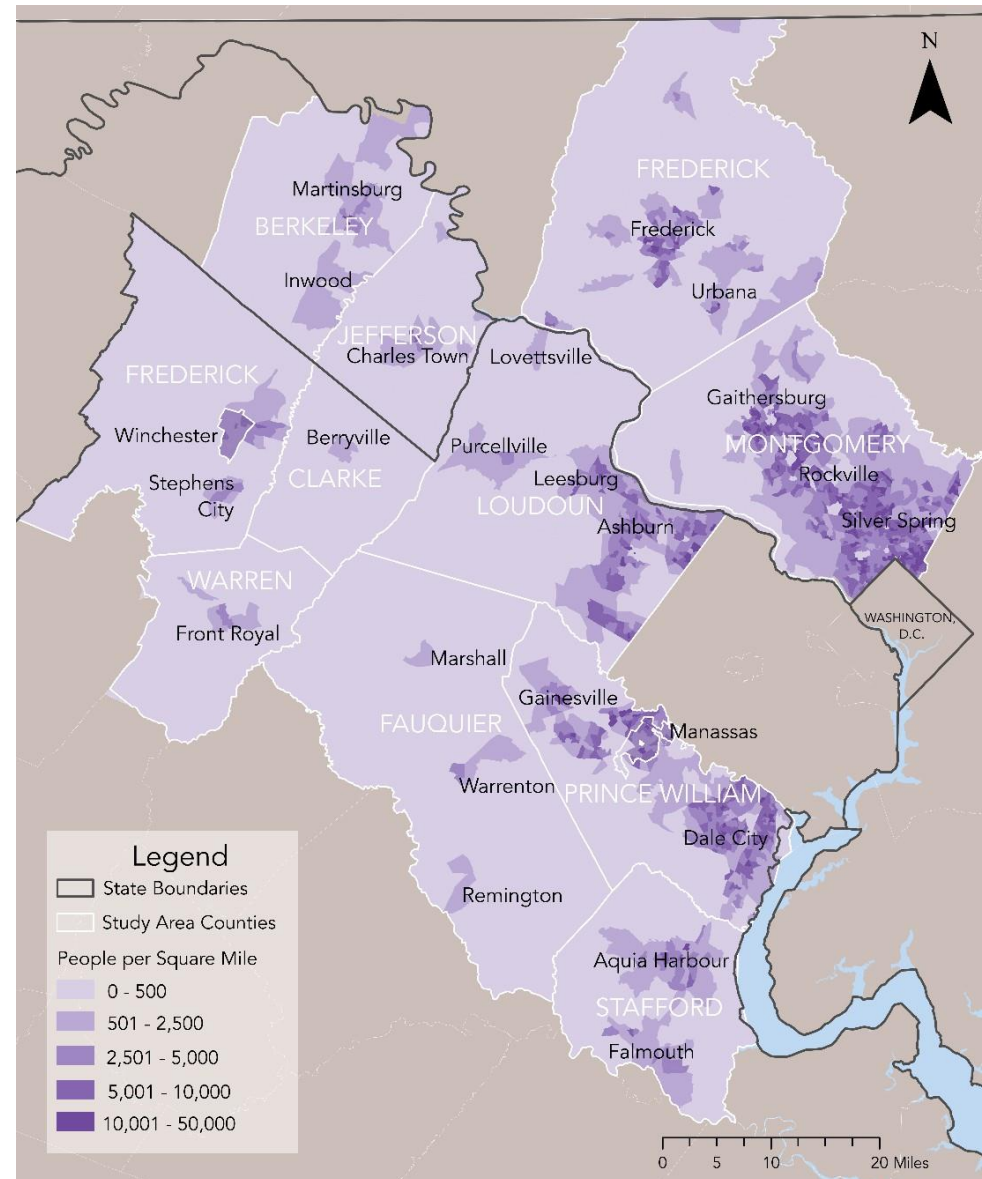
## Study Area Characteristics

Loudoun County is situated in Northern Virginia, about 40 miles northwest of Washington, D.C. Due to Loudoun County's proximity to the nation's capital, it has a significant population that commutes to work in Washington, D.C. This eastward commuting pattern is currently served by commuter bus service from LCT, as well as the Washington Metropolitan Area Transit Authority (WMATA) Silver Line heavy rail extension into Loudoun County and associated bus shuttle services.

To explore the feasibility of commuter bus service elsewhere, LCT is focusing on a study area comprised of the following ten counties:

- Jefferson County, West Virginia
- Berkeley County, West Virginia
- Frederick County, Maryland
- Montgomery County, Maryland
- Clarke County, Virginia
- Frederick County, Virginia
- Warren County, Virginia
- Fauquier County, Virginia
- Prince William County, Virginia
- Stafford County, Virginia

Figure 2: Population Density in the Study Area



Source: U.S. Census Bureau ACS 5-Year Estimates, 2022

As of 2022, the U.S. Census Bureau estimates that there are approximately 420,773 residents of Loudoun County, with the bulk of the population concentrated in the Ashburn and Leesburg areas in southeast and central parts of Loudoun County (Figure 2). Montgomery County in Maryland and Prince William County in Virginia also have higher population densities than the rest of the study area due to their proximity to Washington, D.C.

## Existing Service

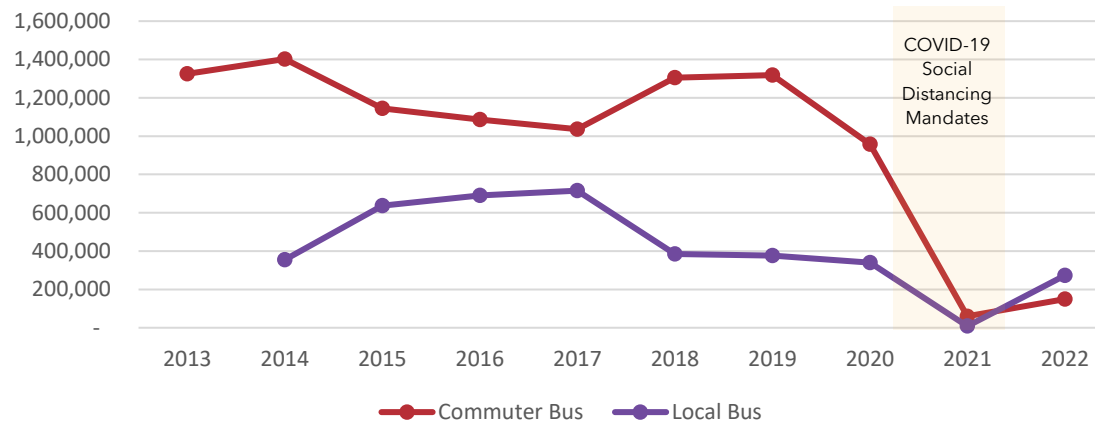
LCT has a comprehensive commuter bus program that operates from several park and ride lots in Loudoun County to stops such as Rosslyn, Crystal City, the Pentagon, and Washington, D.C. There are limited commuting options to the west and north, as rail and commuter bus services do not operate beyond Loudoun County.

While service gaps currently exist in the areas to the west and north of Loudoun County, other existing services provide valuable transportation for the residents in Loudoun County and the surrounding areas to the east.

### Existing Commuter Bus Service

Currently, LCT operates commuter bus service to the Washington, D.C., metropolitan area. The commuter bus service was suspended in early 2020 due to the COVID-19 pandemic, then restarted in July 2020 at a reduced capacity. Prior to the pandemic, commuter bus ridership was between 4,100 and 5,600 riders per weekday on 65 buses serving 20 routes. According to the National Transit Database (NTD), as of Fiscal Year 2022, LCT's commuter bus ridership has only returned to 11 percent of pre-pandemic levels. The continued popularity of telework, lingering anxiety about airborne diseases, and competition with WMATA's recently expanded Silver Line have contributed to a significant change in demand for commuter bus service east of Loudoun County.

Figure 3: LCT's Annual Ridership



Source: National Transit Database, FY2013 - FY2022



### Service Hours and Service Area

LCT operates commuter bus services from park and ride lots within the county to Rosslyn, Crystal City, the Pentagon, and Washington, D.C. Commuters are not required to pay for parking at Loudoun County park and ride lots. Commuter buses operate during morning and late afternoon rush hours on weekdays. There are 20 routes operating each weekday.

#### Commuter Bus routes stopping at the Brambleton Park and Ride lot:

Route 486 (a.m. travel) and 886 (p.m. travel): Service to and from Loudoun County and Washington, D.C.

#### Commuter Bus routes stopping at the Dulles South (Stone Ridge II) and East Gate Park and Ride lots:

Routes 281 (a.m. travel) and 681 (p.m. travel): Service to and from Loudoun County and Washington, D.C.

Routes 282 (a.m. travel) and 682 (p.m. travel): Service to and from Loudoun County and Rosslyn/the Pentagon/Crystal City.

Route 284 (a.m. travel): Morning service from Loudoun County to Arlington (Army/Navy Drive and Fern Street) and the Pentagon.

Route 684 (p.m. travel): Afternoon service from the Pentagon to Loudoun County.

#### Commuter Bus routes stopping at the Harmony Park and Ride lot:

Routes 483 and 484 (a.m. travel): Morning service from Loudoun County to Washington, D.C.

Routes 883, 884 and 885 (p.m. travel): Afternoon service from Washington, D.C., to Loudoun County.

#### Commuter Bus routes stopping at the Leesburg Park and Ride lot:

Routes 481 and 484 (a.m. travel): Morning service from Loudoun County to Washington, D.C.

Routes 881, 884 and 885 (p.m. travel): Afternoon service from Washington, D.C., to Loudoun County.

Routes 482 (a.m. travel) and 882 (p.m. travel): Service to and from Loudoun County and Rosslyn/the Pentagon/Crystal City.

### Fares

LCT charges \$11 cash and \$10 for SmarTrip Card users per one-way trip. SmarTrip is a card or mobile-based payment program utilized by WMATA at Metrorail stations in Washington, D.C., Maryland, and Virginia, along with WMATA parking garages and lots, WMATA Metrobus routes, MDOT Maryland Transit Administration (MTA), and partner regional bus providers such as LCT.

## Fixed Route Bus

In addition to commuter bus service, LCT and Virginia Regional Transit (VRT) both operate local bus service in Loudoun County. VRT provides fixed route and demand-response service in rural northwest Virginia; its Purcellville Connector (Route 40) provides weekday service to the Loudoun County Government Center in Leesburg. LCT has 21 routes connecting to four Silver Line Metrorail stations in Ashburn, Herndon, Dulles, and Reston. These local routes and Metrorail routes have made a substantial comeback after the COVID-19 pandemic, returning to more than 70% of their pre-pandemic ridership by Fiscal Year 2022 (Figure 3).

### Service Hours and Service Area

LCT provides weekday and limited Saturday local fixed route bus service. This service covers the area from Purcellville through Leesburg and eastern Loudoun County. Most fixed route bus service operates from 7:00 a.m. to 7:00 p.m. Two routes - Route 70 and Route 82 - operate until 10:00 p.m.

### Fares

According to information on LCT's website, LCT charges \$1 cash per trip and \$1 for SmarTrip Card users.<sup>1</sup> SmarTrip users are not charged for riding the Route 40 Purcellville Connector. The aforementioned fare rates refer to one-way trips.

#### Local Buses to Silver Line Metrorail Stations:

Routes 331/332, 341, 342, 343, 344: Northside Ashburn Metrorail Station

Routes 351, 371, 372, 373, 374, 375, 391: Southside Ashburn Metrorail Station

Routes 320/321, 322, 323: Innovation Center Metrorail Station

Routes 333, 381, 382: Loudoun Gateway Metrorail Station

Route 312: Reston Town Center Metrorail Station

#### Local Fixed Route Buses:

Route 40: Purcellville Connector (Virginia Regional Transit)

Routes 55, 56 and 57: Leesburg Routes (Includes free Safe-T Ride shuttle across the Route 15 Bypass)

Route 62: Ashburn Connector

Route 70: Leesburg to Sterling via Leesburg Pike

Route 80: Sugarland Run Connector

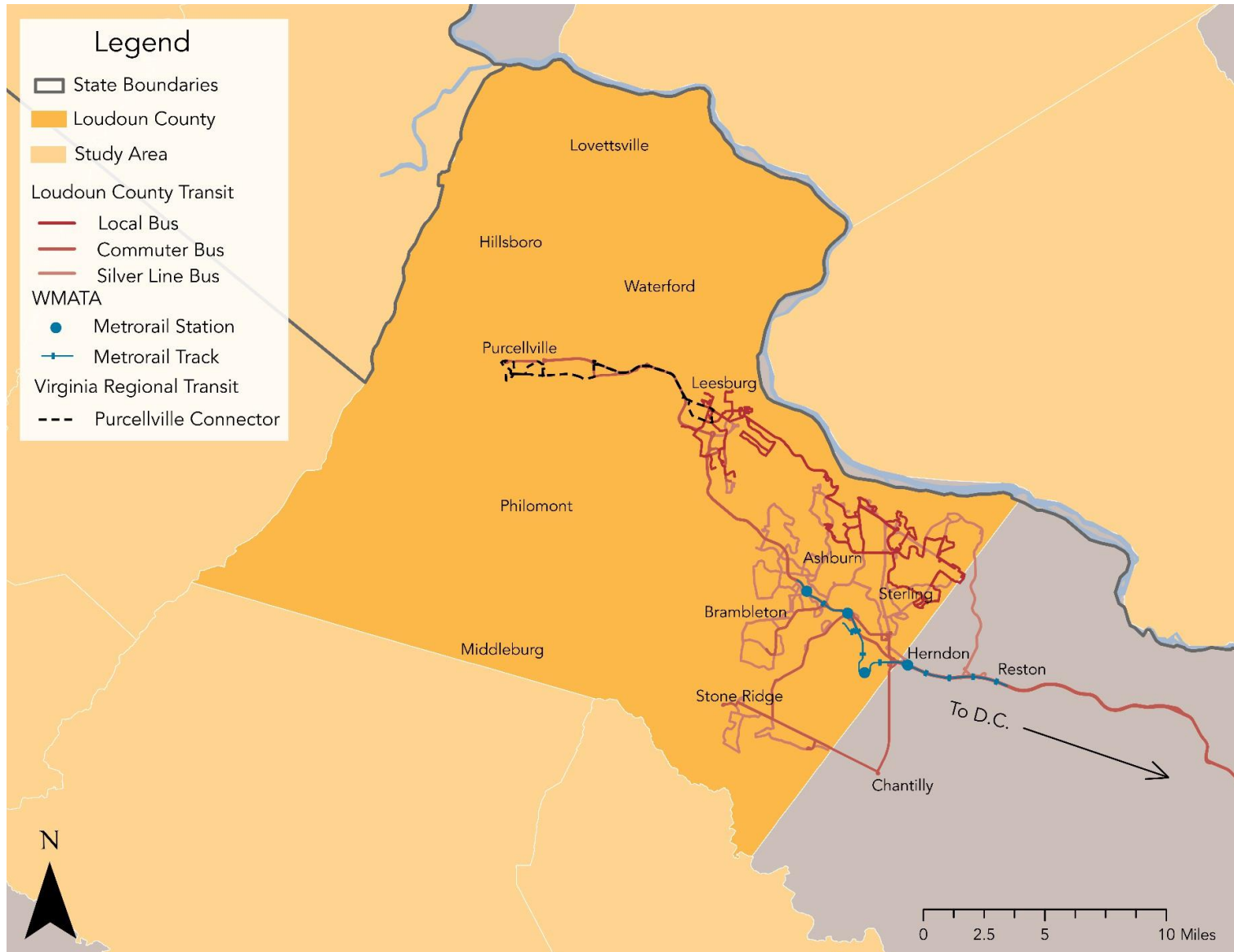
Route 81: Countryside Connector

Route 82: Sterling Connector

<sup>1</sup> "Fares." Loudoun County Transit and Commuter Services, [www.loudoun.gov/2472/Fares](http://www.loudoun.gov/2472/Fares).



Figure 4: Fixed-Route Transportation in Loudoun County



## Carpool

### Service Hours and Service Area

LCT collaborates with the Metropolitan Washington Council of Governments (MWCOG) Commuter Connections program to offer complimentary ridematching service for carpooling and vanpooling. Commuter Connections is a regional network of transportation organizations. Their combined efforts assist interested commuters in connecting with other commuters traveling to the same destination. Ridematching also works in tandem with vanpool services and enables commuters to find individuals with similar commuting routes to form a vanpool.

### Fares

Guaranteed Ride Home (GRH) provides commuters who regularly (twice a week) carpool, vanpool, bike, walk, or take transit to work with a free and reliable ride home in the event of an emergency. Commuters may take advantage of GRH up to six times per year to get home for unexpected emergencies such as a sick child or unscheduled overtime.

The 'Pool Rewards program also provides cash payments of up to \$130 during a 90-day period for those who start or join a new carpool.

The CarpoolNow mobile app aids in the ridematching process. The app operates similarly to ridesharing services like Uber or Lyft, except the driver is commuting to and from work and the passenger rides at no cost. Drivers receive a \$10 incentive per trip and can earn up to \$600 per year.

Other programs place sustainability in the forefront. IncenTrip is a mobile app offering eco-points for fuel-efficient driving, transit trips, carpool trips, bicycle trips and other environmentally friendly travel. Eco-points can be traded in for gift cards and other prizes.

Similar incentive programs like Flextime Rewards provides payments to those who delay traveling during peak congestion periods in designated corridors in the region. Participants receive real-time notifications and are rewarded up to \$8 per trip for delaying their departure.<sup>2</sup>

---

<sup>2</sup> "Carpools." *Loudoun County Transit and Commuter Services*, [www.loudoun.gov/270/Carpools](http://www.loudoun.gov/270/Carpools).

## Vanpool

### Service Hours and Service Area

Vanpools serve as a convenient, reliable, and cost-effective transportation mode for commuters who live 15 or more miles from their place of employment. Vanpools operate on a consistent schedule wherein members agree on a ride schedule and share the expense of a leased commuter van, minivan, or SUV.

LCT does not own, lease, or operate vanpool vehicles but helps commuters form and join vanpools. Some van rental agencies that operate within Loudoun County include:

- ABS Vans Rentals, LLC
- Commute with Enterprise
- Green Line Commuter, Inc.
- Patriotic AdVANtures LLC.
- YEJ Vans

### Fares

Vanpool fares vary based on the agreement with the van rental agency. In Loudoun County, the average price paid by vanpool members is \$200 per month per vehicle.<sup>3</sup> This cost is split among riders and supplementary costs such as gas, and tolls are factored into the cost of a vanpool.

Vanpool participants can pay for their commute using pre-tax and/or direct transportation benefits provided by their employers. Vanpool participants save money and avoid wear and tear on their own vehicles.

LCT also shares a cooperative relationship with Vanpool Alliance. Loudoun County commuters who choose to vanpool may utilize financial savings from Vanpool Alliance. Vanpool Alliance is a public-private partnership created to enhance commuter travel options through vanpooling. Vanpool Alliance seeks to reduce traffic congestion and improve air quality in the region. Participating vanpools in Northern Virginia receive \$300 per month in exchange for providing important, ongoing information to Vanpool Alliance.<sup>4</sup> Vanpools traveling to or from Loudoun County with seven to 15 passengers are eligible to work with Vanpool Alliance.<sup>5</sup>

### Vehicle Types

The vehicles range from crossovers and SUVs to minivans and full-sized vans. In order to qualify as a vanpool, the vehicle must be able to accommodate from seven to 15 adults, including the driver.

---

<sup>3</sup> "FAQs." *Loudoun County Transit and Commuter Services*, [www.loudoun.gov/FAQ.aspx?QID=73](http://www.loudoun.gov/FAQ.aspx?QID=73).

<sup>4</sup> "Vanpool Providers." *Loudoun County Transit and Commuter Services*, [www.loudoun.gov/282/Vanpool-Providers](http://www.loudoun.gov/282/Vanpool-Providers).

<sup>5</sup> "Transportation Services - Vanpooling." *Loudoun County Transit and Commuter Services*, [www.loudoun.gov/FAQ.aspx?QID=73](http://www.loudoun.gov/FAQ.aspx?QID=73).

## WMATA Metrorail Silver Line

### Service Hours and Service Area

The WMATA Metrorail Silver Line provides service Monday through Thursday from 5:00 a.m. to 12:00 a.m. Friday service spans from 5:00 a.m. until 1:00 a.m. Saturday service begins at 7:00 a.m. and concludes at 1:00 a.m. Sunday services cover the timeframe of 7:00 a.m. until 12:00 a.m.

The Silver Line links Washington, D.C., westward to Dulles International Airport and further extends to Northern Virginia localities of Tysons, Reston, Herndon, and Ashburn. From Washington, D.C., eastward the Silver Line spans into downtown Largo, Maryland. The Silver Line is especially useful in reducing the reliance on highway traffic within the Washington, D.C., metropolitan area.

### Fares

The Silver Line follows the same fare structure as the rest of the WMATA Metrorail system. WMATA Metrorail charges a regular fare ranging between \$2.25 and \$6.75 depending on the distance travelled, time of day, and line used. Reduced fares charge between \$1.10 and \$3.35. Riders are eligible for reduced fare if they are seniors or identify as possessing disabilities.<sup>6</sup>

---

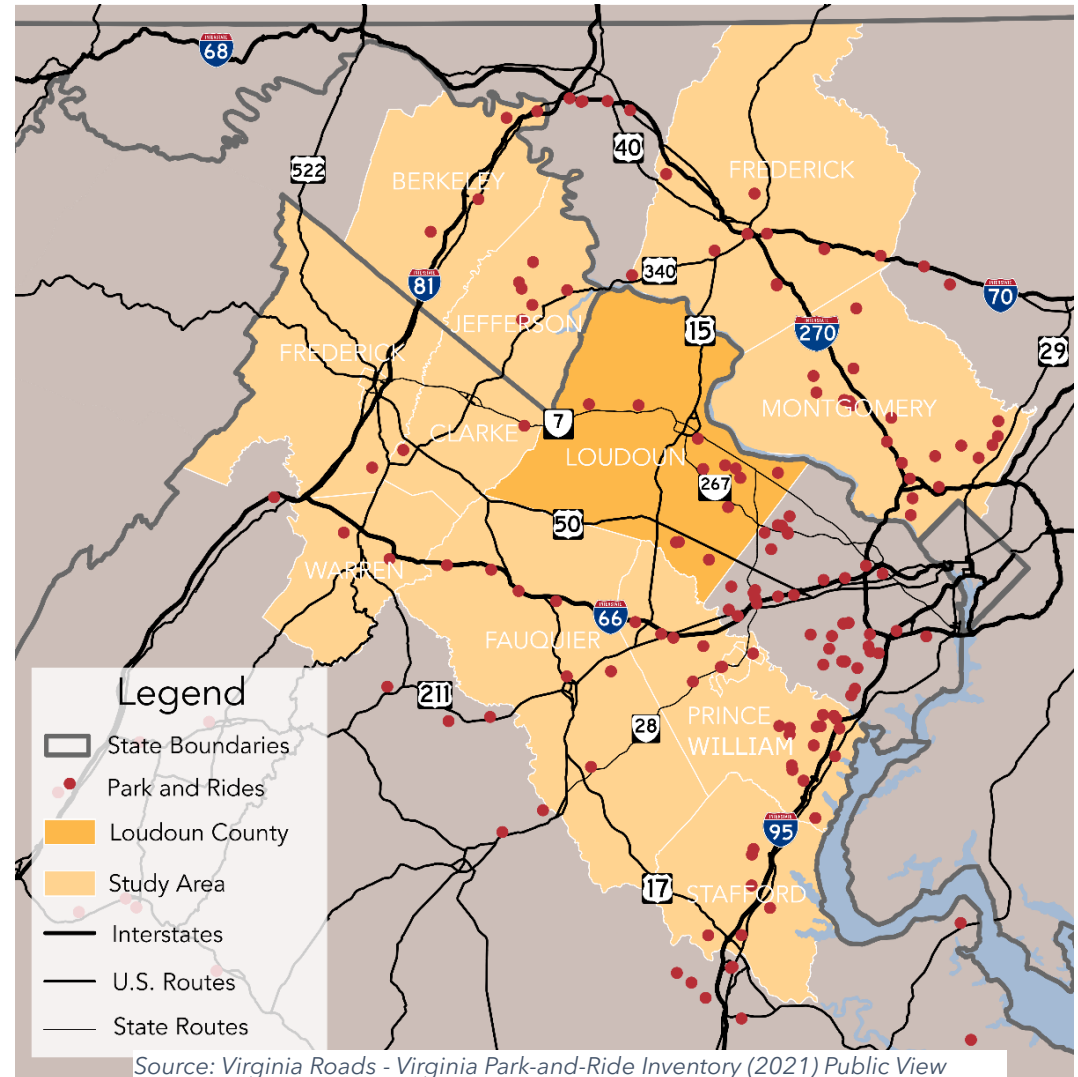
<sup>6</sup> "Cost to Ride." Washington Metropolitan Area Transit Authority, [www.wmata.com/fares/basic.cfm](http://www.wmata.com/fares/basic.cfm).

## Park and Ride Lots

There are more than 100 existing park and ride locations in Frederick, Clarke, Warren, Fauquier, Prince William, and Stafford counties in Virginia; Jefferson and Berkeley counties in West Virginia; and Frederick and Montgomery counties in Maryland.

These park and ride lots vary greatly in capacity, use, and amenities. Lots range from small locations containing up to 20 parking spaces with very few amenities to frequently used lots with hundreds of parking spaces, multiple shelters, bike racks, and lighting fixtures.

Figure 5: Park-and-Ride Lots in Loudoun County and Surrounding Counties



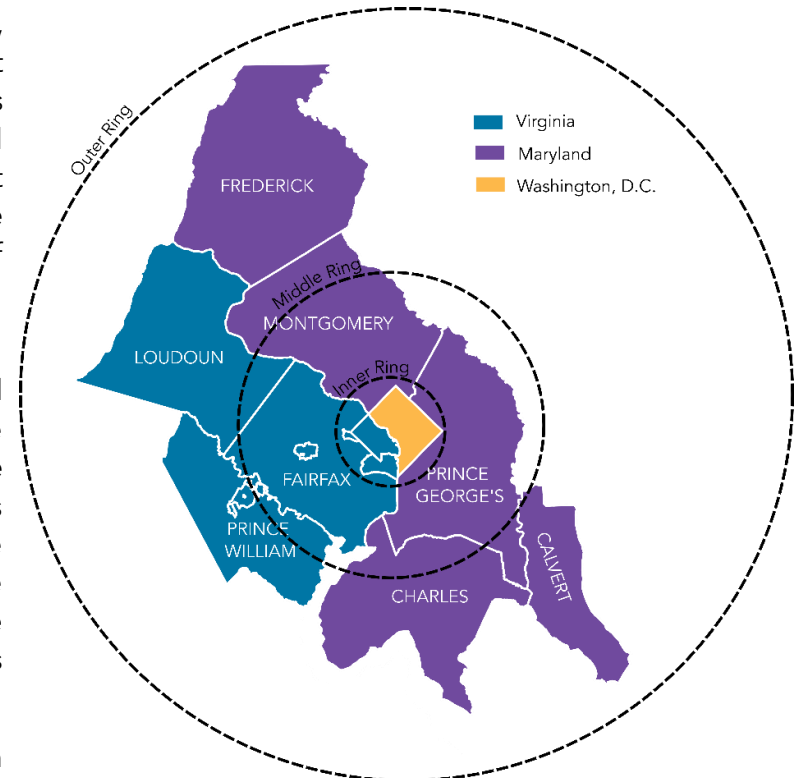
## Commuting Patterns

According to the 2022 State of the Commute (SOC) Survey Report on the Washington, D.C., metropolitan region, driving alone and telework accounted for nearly 90 percent of commute days in 2022, up sharply from ten percent in 2019. Since the last SOC was conducted in 2019, the percentage of commuters driving alone to work has increased from 64.6 percent to 78.4 percent. In Washington, D.C.'s, Outer Ring area (Calvert County, Maryland; Charles County, Maryland; Frederick County, Maryland; Prince William County, Virginia; and Loudoun County, Virginia), an estimated 88 percent of commuters drive to work alone.

About seven percent of respondents who lived or worked in Loudoun County had contacted Commuter Connections or their partner organizations (although it should be noted that awareness and responses to the Commuter Connections SOC were generally higher for programs in the Outer Ring than in Inner Ring or Middle Ring, see Figure 6). The 2022 SOC concludes that Outer Ring residents tend to work at locations that are within the Middle Ring or Inner Ring of the region. These residents are more likely to encounter longer delays in traffic, have longer travel times, and commute further distances than residents of Inner Ring and Middle Ring jurisdictions. These travel inconveniences could encourage commuters from the Outer Ring jurisdictions to seek alternative commuting methods instead of driving alone.

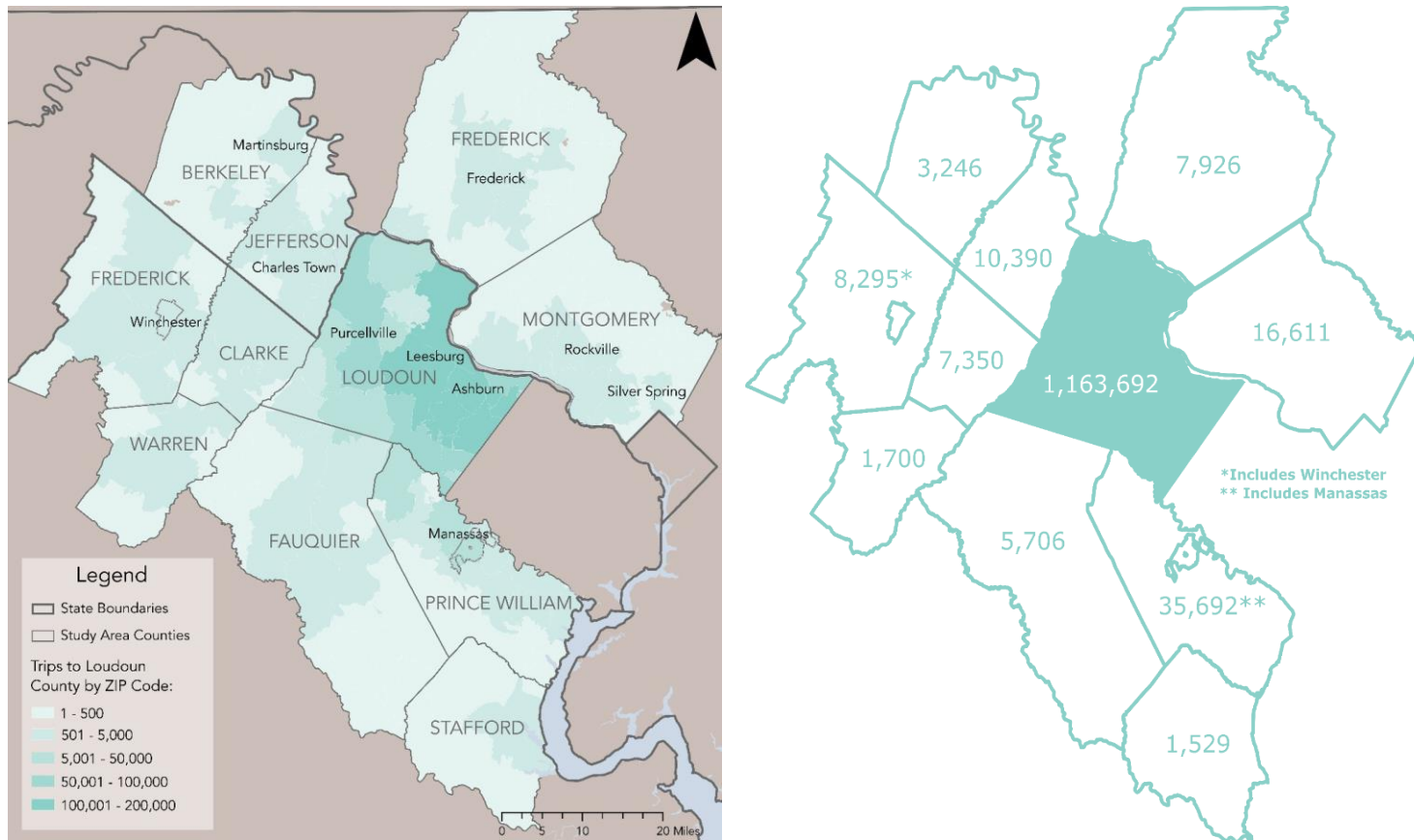
As noted above, existing transit infrastructure largely serves riders travelling between Loudoun County and Washington, D.C., and Arlington, Virginia. However, there is a significant number of employees at Loudoun County-based businesses and local government facilities that commute from jurisdictions to the west and north of Loudoun County. These areas in West Virginia and Maryland tend to have lower costs of living than Loudoun County or neighboring counties to the east, but the tradeoff for employees is a much longer commute time. As a result, many stakeholders within the business community have encountered difficulties in recruiting and retaining employees due to large distances from employment centers and long travel times.

Figure 6: SOC Outer, Middle, and Inner Rings



Source: 2022 State of the Commute, "Geographic Sub-Areas"

Figure 7: Source of Weekday Trips to Destinations in Loudoun County

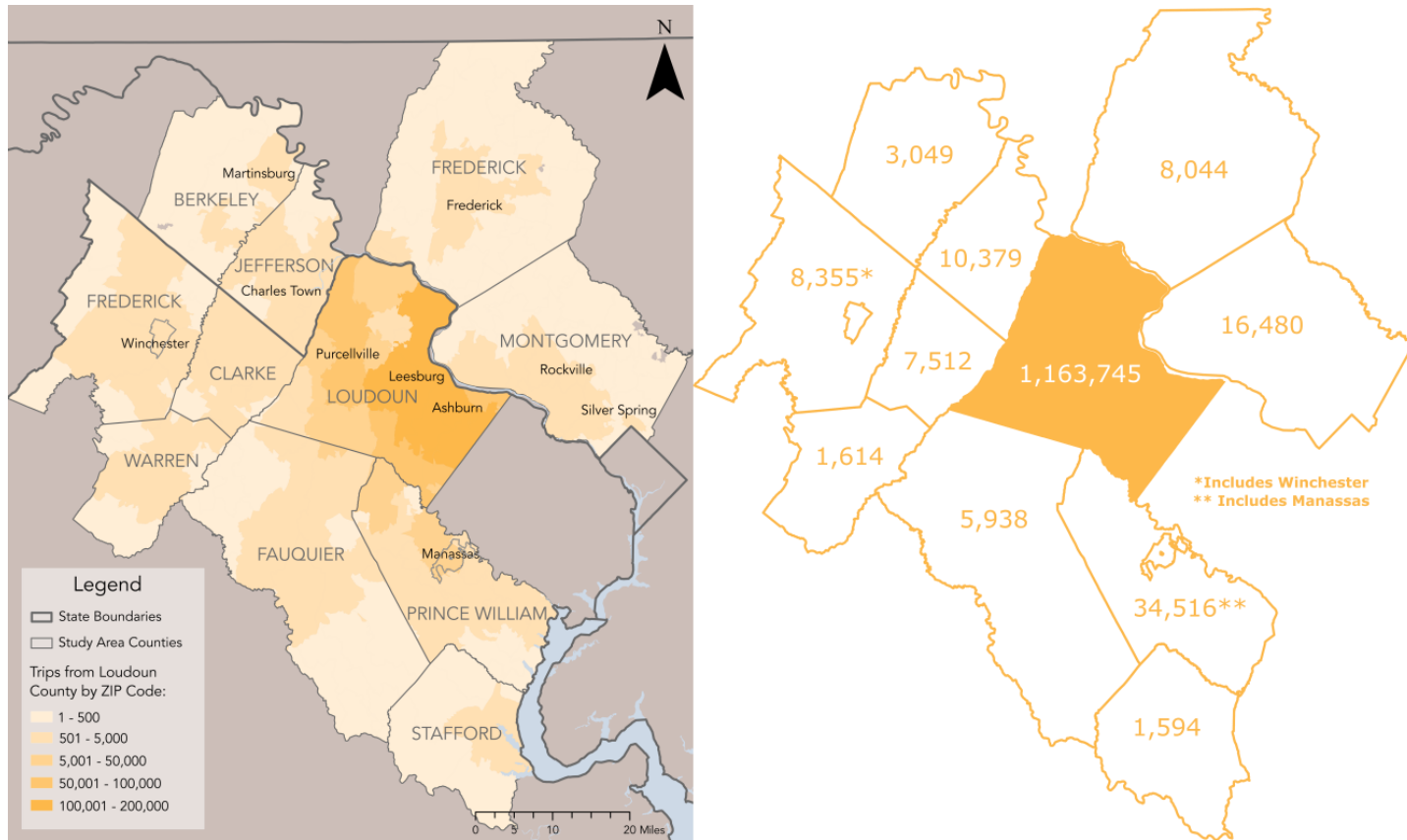


Source: Replica Spring 2023 Commuter Data

As seen in Figure 7, a large portion of the workers who live in Loudoun County commute to other locations within the county. However, a significant number of employees commute to Loudoun County from other counties, especially Montgomery County in Maryland, Prince William County in Virginia, and Jefferson County in West Virginia, which all have more than 10,000 workers commuting to Loudoun County on an average weekday. In total, there are more than 98,000 workers commuting to Loudoun County on an average weekday according to origin-destination data obtained from Replica. This pattern is reflected when accounting for destination trips, or commuters traveling from Loudoun County to locations within the study area, as seen in Figure 8, and roughly the same number of commuters are traveling to Montgomery County, MD; Prince William County, VA; and Jefferson County, WV.



Figure 8: Destinations of Weekday Trips from Loudoun County



Source: Replica Spring 2023 Commuter Data

The largest percentage of both trip origins and destinations are from ZIP code 20147 in Loudoun County, VA (Table 2). This ZIP code encompasses the communities of Ashburn and Belmont. The second largest percentage of trip origins and destinations can be attributed to ZIP code 20176, encompassing Leesburg, Lansdowne, Lucketts, Stumptown, and Ashburn Junction. The third largest contributor to trip origins and destinations is ZIP code 20148, also from Loudoun County, which is composed of the communities of Brambleton, Broadlands, Moorefield Station, Arcola, Waxpool, and Southbridge. All ten top origin ZIP codes are within Loudoun County; similarly, all ten top destination ZIP codes are also located within Loudoun County. This indicates that a large portion of the Loudoun County workforce also lives there.

However, the surrounding counties in the study area have significant travel patterns to Loudoun County, with Jefferson County, West Virginia, averaging more than 10,000 trips; Montgomery County, Maryland, averaging more than 16,000 trips; and Prince William County, Virginia, averaging about 30,000 trips on an average weekday. As noted above, around 98,000 employees commute to Loudoun County from the study

area counties on an average weekday. The similarities between origin and destination data for Loudoun County indicates that there is a robust commuting network between the study area counties and Loudoun County for travel to work on a given weekday.

Table 2: Origin and Destination ZIP Codes

Origin ZIP Codes	Origin Area	% Total Trips	Destination ZIP Codes	Destination Area	% Total Trips
20147	Ashburn, Belmont	13%	20147	Ashburn, Belmont	13%
20176	Leesburg, Lansdowne	10%	20176	Leesburg, Lansdowne	10%
20148	Ashburn, Brambleton	8%	20148	Ashburn, Brambleton	8%
20166	Sterling, Arcola	8%	20164	Sterling, Sugarland Run	8%
20164	Sterling, Sugarland Run	8%	20166	Sterling, Arcola	8%
20175	Leesburg, Virts Corner	7%	20175	Leesburg, Virts Corner	8%
20152	Chantilly, South Riding	5%	20152	Chantilly, South Riding	5%
20165	Sterling, Countryside	5%	20165	Sterling, Countryside	5%
20105	Aldie, Stone Ridge	4%	20105	Aldie, Stone Ridge	4%
20132	Purcellville, Hillsboro	4%	20132	Purcellville, Hillsboro	4%
	Other ZIP Codes	28%		Other ZIP Codes	28%

Source: Replica Spring 2023 Commuter Data

## Top Employers

According to the Census Bureau’s Longitudinal Employer-Household Dynamics data, most Loudoun County commutes originate and end within Loudoun County, which aligns well with the existing local service that LCT provides. There is a growing number of employees, however, who commute from outside the county. Through this study, LCT is working to address the transportation needs of those out-of-county commuters, as well as the untapped pool of prospective employees who would seek employment in Loudoun County if transit were available.

Table 3 shows the top work destinations for those who are employed in Loudoun County. In many cases, employees are dispersed across multiple locations, such as the teachers and staff in the Loudoun County School District who report to nearly 90 different schools across the county.

*Table 3: Top Employers in Loudoun County*

Employer	Number of Employees
Loudoun County Public Schools	11,995
Loudoun County Government	4,125
Verizon	2,500 to 5,000
Northrop Grumman	1,000 to 2,500
United Airlines	1,000 to 2,500
U.S. Department of Homeland Security	1,000 to 2,500
Raytheon Technologies	1,000 to 2,500
Inova Loudoun Hospital (Main & Cornwall Campuses)	1,000 to 2,500
Walmart	1,000 to 2,500
US Postal Service	1,000 to 2,500
Dynaletric	1,000 to 2,500
Amazon	1,000 to 2,500
Swissport USA, Inc	1,000 to 2,500
M.C. Dean, Inc.	1,000 to 2,500

*Source: Loudoun County Department of Economic Development, Major Employers, Comprehensive Annual Financial Report, 2020*

## Feedback from Potential Commuters and Employers

To learn more about the needs of existing commuters who travel to Loudoun County for employment, LCT conducted interviews with local stakeholders and major businesses and followed up with surveys to directly engage both employers and employees. Based on the results of the stakeholder interviews and the employer/employee surveys, it was determined that almost all responding employers are supportive of expanded commuter service and many employees were likely to use commuter bus service if offered.

### Stakeholder Interviews

Between February 15 and 26, 2024, LCT conducted virtual interviews with employers and stakeholders within Loudoun County.

1. Dulles Area Transportation Association
2. Equinix Data Center
3. Loudoun County Chamber of Commerce
4. Loudoun County Department of Economic Development
5. Loudoun County Workforce Resource Center
6. George Washington University, Transportation and Logistics
7. JK Moving Services
8. Reston Limo
9. Telos Corporation
10. United Dulles Airport

These stakeholder interviews focused on span of work hours, transportation barriers to employment, use of commuter benefits, and desired commuter bus destinations. The feedback highlighted key commuting trends and helped inform the commuter service planning process, with the following takeaways:

- Employers have frequently heard their staff complain about the cost of commuting, especially paying the toll for the Dulles Greenway. Cost is a significant factor for staff when considering transportation, and many employees would sacrifice a more direct commute to get a cheaper commute.
- Most employers were unfamiliar with Loudoun County Transit's Employer Services Program, but were interested to learn more about it.
- The core of employees work standard first-shift positions from around 6am to 5pm, but many employers have at least some employees working on the weekend or working four 12-hour shifts from 8am to 8pm.
- Many employees commute from counties to the west of Loudoun County, especially the Eastern Panhandle of West Virginia.
- Multi-employer locations along Route 7, such as One Loudoun in Ashburn, would be useful commuter bus destinations. The Ashburn Metro Station or other transit hubs were also suggested as commuter bus stops.

## Employer Survey Results

As part of LCT's efforts to gauge interest in expanded commuter service and identify potential work destinations, the county also created and distributed two online surveys to gather input from employers and employees. Local business contacts and Loudoun Commuter Services' employer contacts received a link for a SurveyMonkey survey that asked questions about perceived transit demand and potential origin-destination pairs. These businesses were also given a separate survey link to disseminate among their workforces to directly assess employees' demand for commuter services and preferred times or locations for service. Both surveys were open from January 11 until February 23, 2024.

Twenty-one representatives of local businesses completed the employer survey, representing 11 different industries (Figure 9). Although there were no responses from the largest single employer in Loudoun County, Loudoun County Public Schools, other branches of the Loudoun County Government and private educators completed the survey.

Overall, employers were supportive of expanded commuter service. Of the employers who took the survey, 74 percent believed their employees would be interested in a commuter bus service (Figure 10).

Figure 9: "What industry best describes your business?"

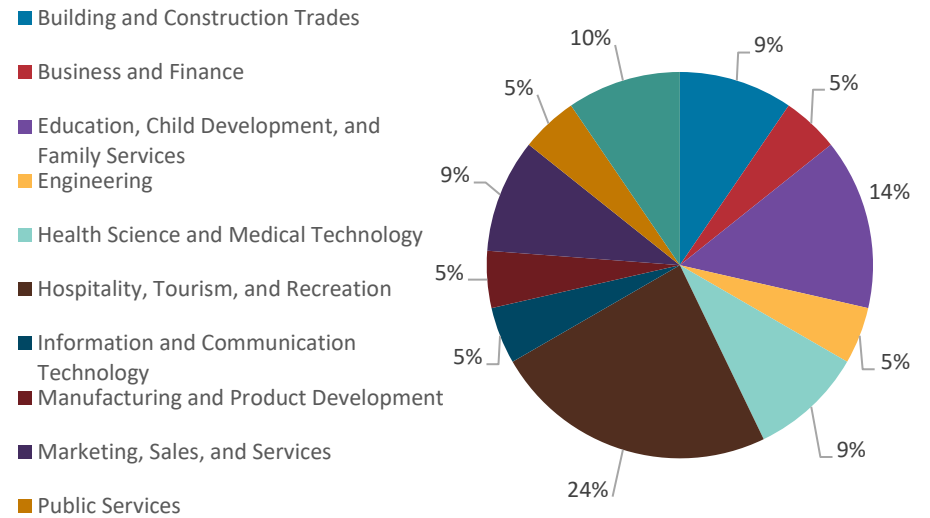
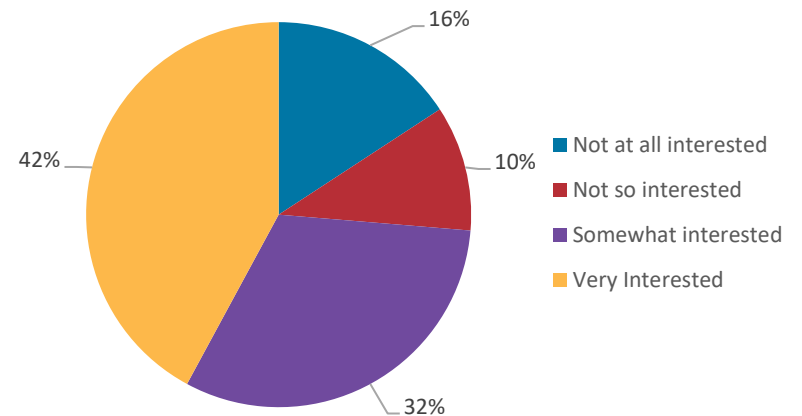
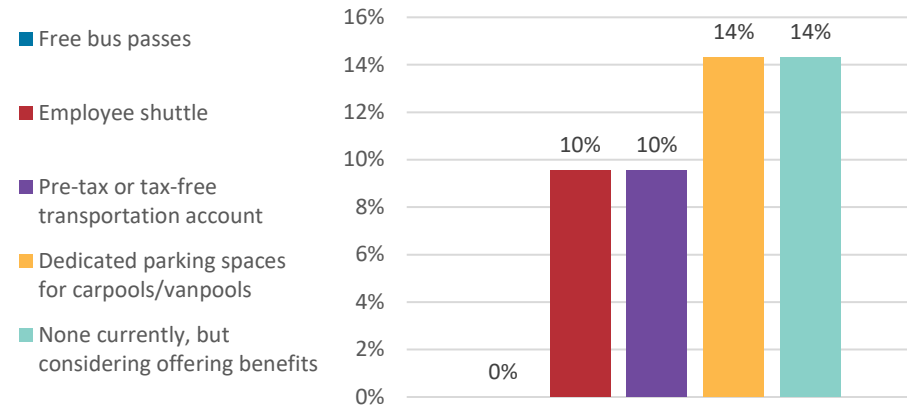


Figure 10: "How would you gauge employee interest in a commuter bus service?"



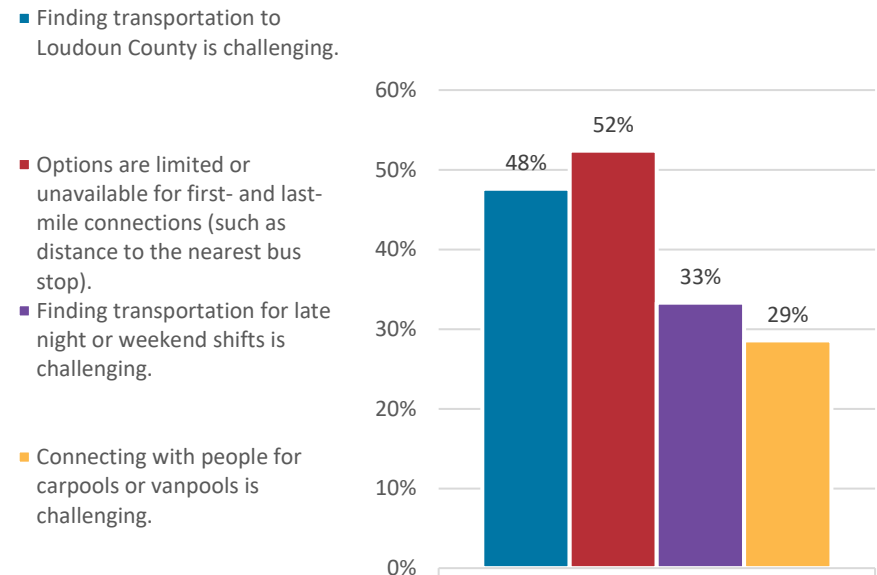
Furthermore, 14 percent of responding employers already offer at least one transportation benefit to their employees to encourage carpooling or transit use (such as a tax-advantaged transit spending account, employee shuttle, or dedicated parking spaces for carpool/vanpool vehicles), and another 14 percent are considering such benefits (Figure 11). No employers noted that they already offer free bus passes to employees (*shown as 0% in Figure 11*), but some employers showed interest in the concept during stakeholder interviews. This indicates that not only are employees likely to use commuter bus service if offered, but one quarter of employers are willing to take steps to encourage transit use.

Figure 11: "Does your workplace offer any transportation benefits?"



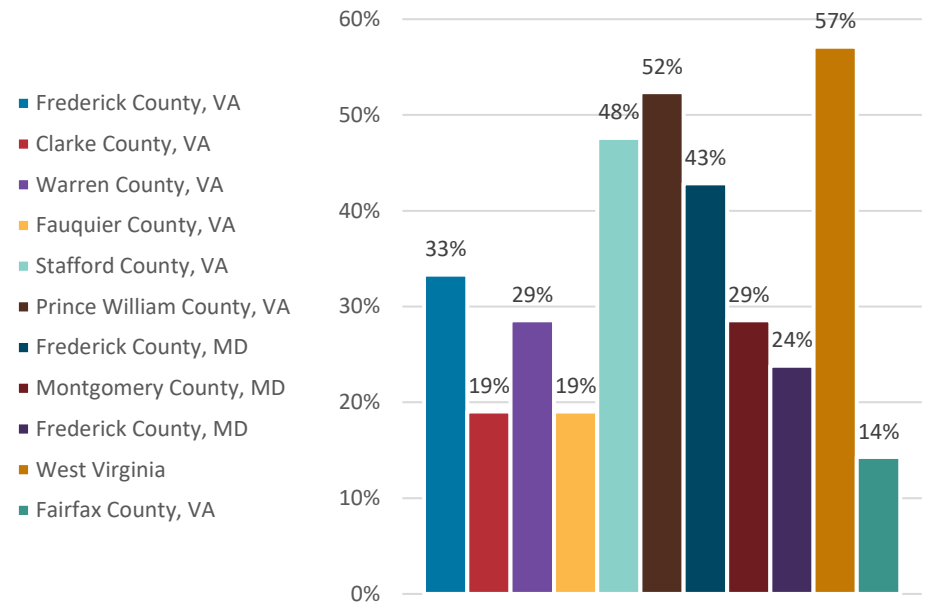
Although more than two-thirds of responding employers recruit new employees at least 30 miles from their business locations in Loudoun County, more than 80 percent of respondents also acknowledged that longer or more complicated commutes increased the likelihood of employee turnover. Multiple respondents pointed to 45 minutes specifically as the threshold past which commute times became untenable for new employees. More than 70 percent of employers also reported hearing about transportation concerns from potential recruits or new hires, especially finding transportation into Loudoun County or making first- and last-mile connections to and from existing transit networks (Figure 12).

Figure 12: "Which concerns have employees or job applicants shared during recruitment or when hired?"



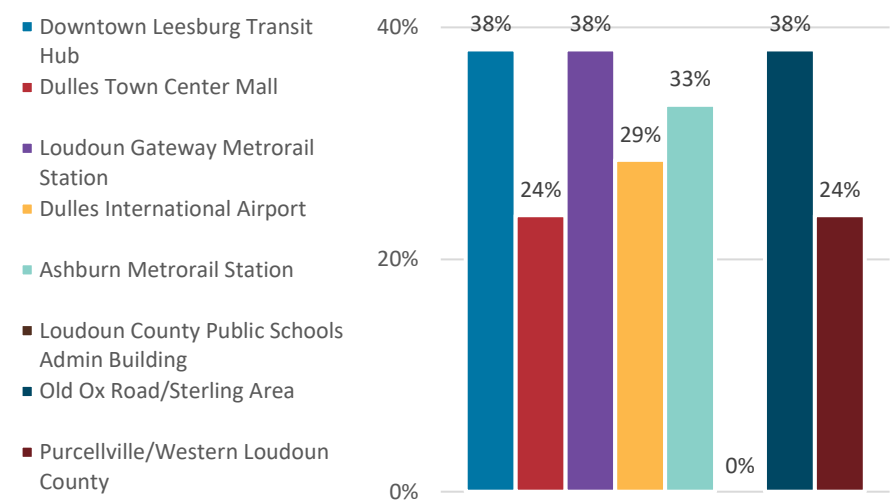
All employers reported that at least some of their employees commuted from outside of Loudoun County, in particular from West Virginia; Prince William County, Virginia; Stafford County, Virginia; and Frederick County, Maryland (Figure 13).

Figure 13: "Do your employees travel from any of the following locations?"



As for potential commuter bus stops within Loudoun County, many employers suggested the transit hub in downtown Leesburg, the Loudoun Gateway Metrorail Station, the Sterling area, or the Ashburn Metrorail Station. Although no employers indicated that the Loudoun County Public Schools administration building would be a preferred stop (shown as 0% in Figure 14), it should be noted that the school district is still the top employer in the county and some school district locations may merit further consideration.

Figure 14: "What locations within Loudoun County would be desired stops for a potential commuter bus service?"





## Employee Survey Charts and Graphs

Employers who received the employer survey also helped distribute the Employee Survey to their workforce, of whom 1,033 responded. Currently, nearly all of the Employee Survey respondents drive alone to work, less than one percent use public buses or rail, and less than two percent carpool (Figure 15). However, of those who drive alone, the majority indicated that they would be interested in switching to commuting by transit if a commuter service met their needs (Figure 16).

Figure 15: "How do you usually get to work?"

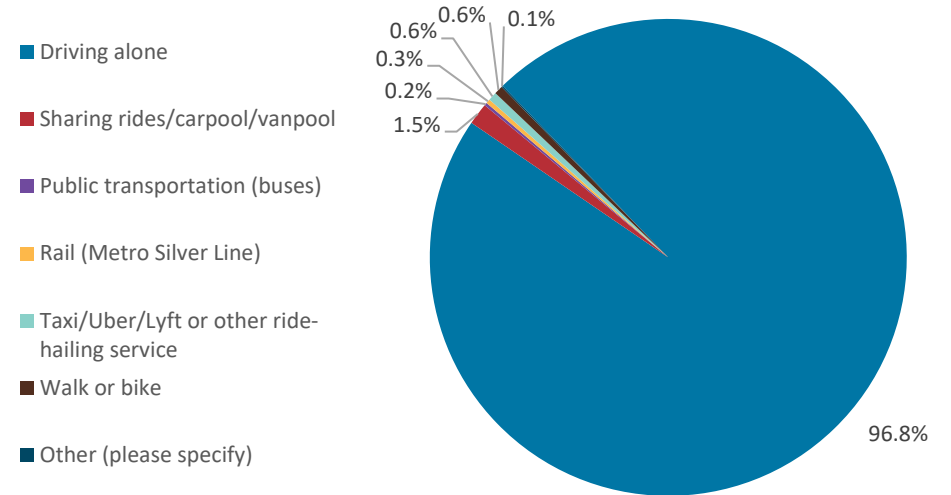
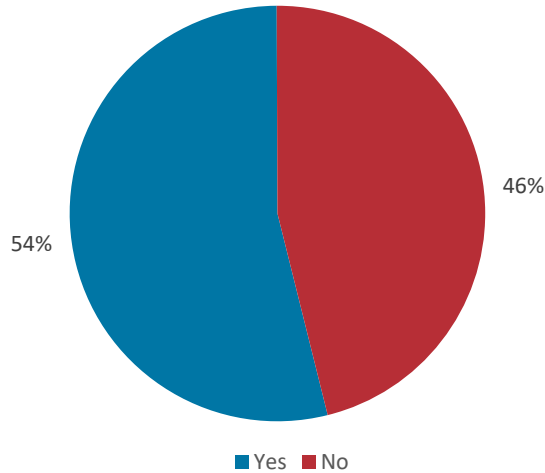
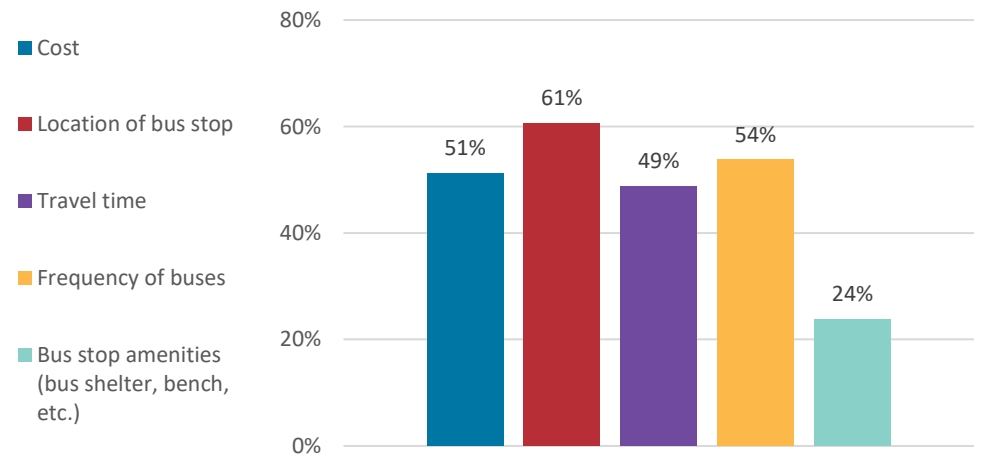


Figure 16: "If you currently drive yourself to work, would you consider using public transportation instead?"



The biggest factors that respondents said would influence them to use public transportation were the proximity of bus stops, frequency of buses, and cost (Figure 17).

Figure 17: "What would make public transportation a convenient option for commuting to work?"



Conversely, for those drivers who said they would not consider using public transportation, distance to bus stops, span of service, and length of trip were the biggest detractors (Figure 18). Among employees who selected "Other (please describe)" in answer to this question, many described the need to run errands before or after work (such as dropping off children at school or daycare), being required to use an employer-issued vehicle for their work regardless of transit options near them, and health and safety concerns about using shared public transportation (particularly in light of the COVID-19 pandemic).

For employees who identified "cost" as either a potential benefit or drawback of using public transit, it should be noted that approximately half of respondents estimated that they currently pay less than \$100 per month on commuting costs (Figure 19). Others, however, estimated that they spend much more on commuting costs (including fuel, tolls, and general wear and tear)—23 percent spend more than \$200 per month, and nearly ten percent spend more than \$300 per month. Many respondents also added that they pay "too much" for their current commutes or that their commutes "cost them a lot of time."

Figure 18: "If you responded 'no' to the previous question, please explain what would

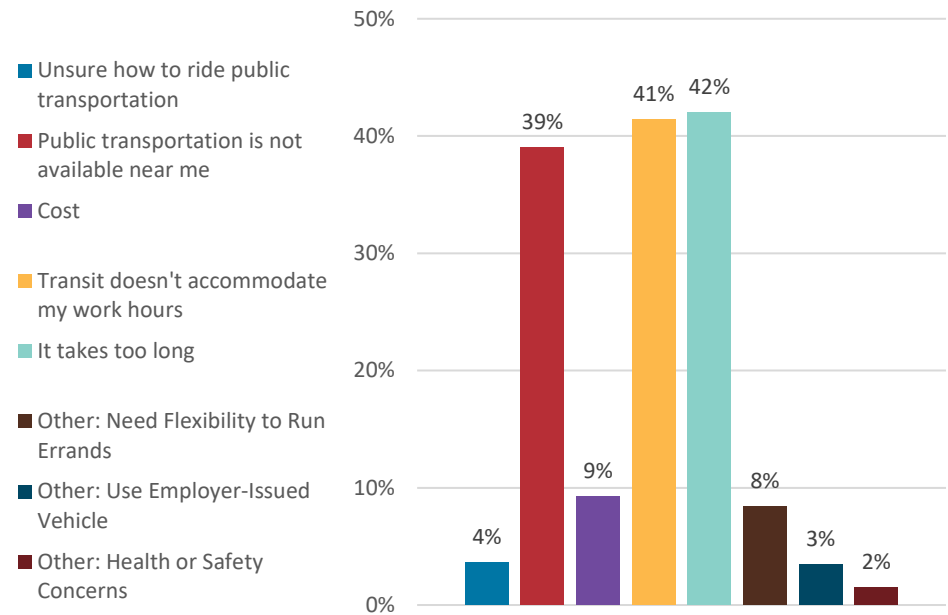
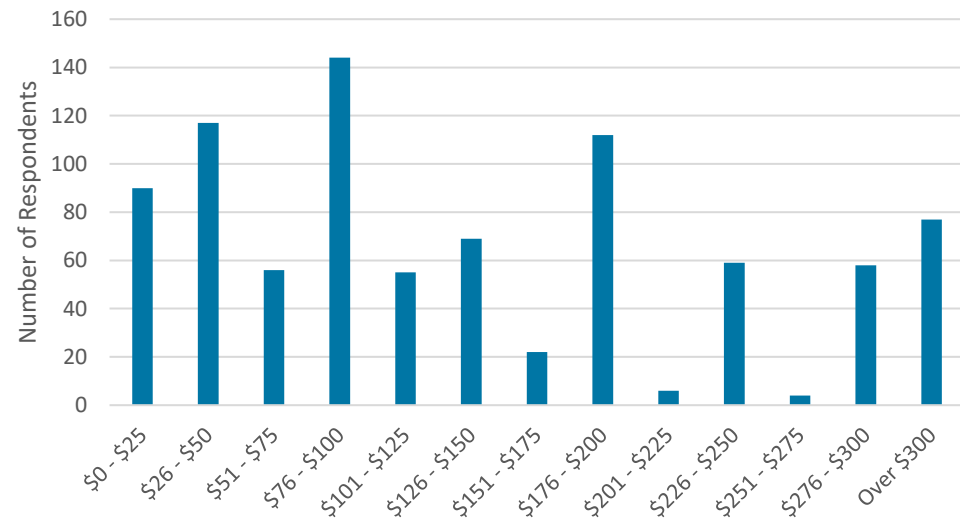


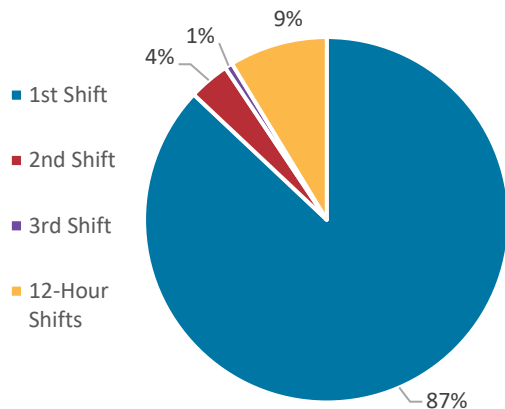
Figure 19: "On average, what does it cost per month to travel to and from work?"



Partly due to the continued popularity of telework and hybrid schedules, many employees commute one to four days per week rather than the traditional five-day commute. However, more than 80 percent of respondents still travel to work at least three days per week, indicating that a cheaper or more efficient mode of travelling to work would still be impactful (Figure 20).

And among all commuters, the vast majority of respondents working full-time are first-shift workers, with 9% of commuters working 12-hour shifts at various times of the day.

Figure 21: "What time do you typically start and end your workday?"



For specific employment destinations, many employee respondents suggested commuter bus stops in downtown Leesburg, Purcellville, Dulles International Airport, or the Ashburn Metrorail Station (Figure 22).

Figure 20: "How many days per week do you commute to work?"

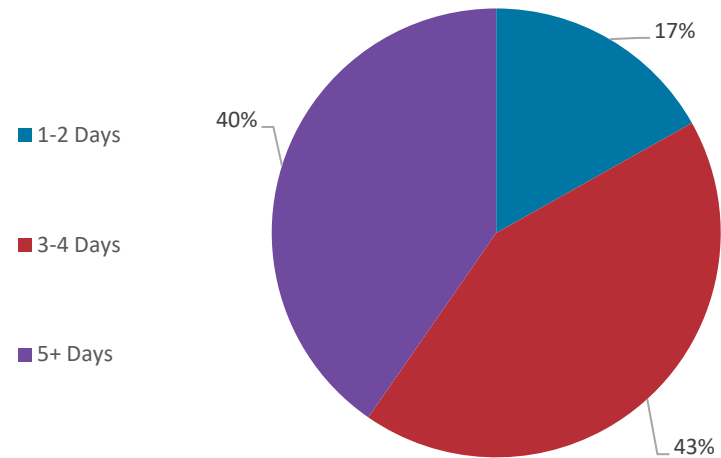
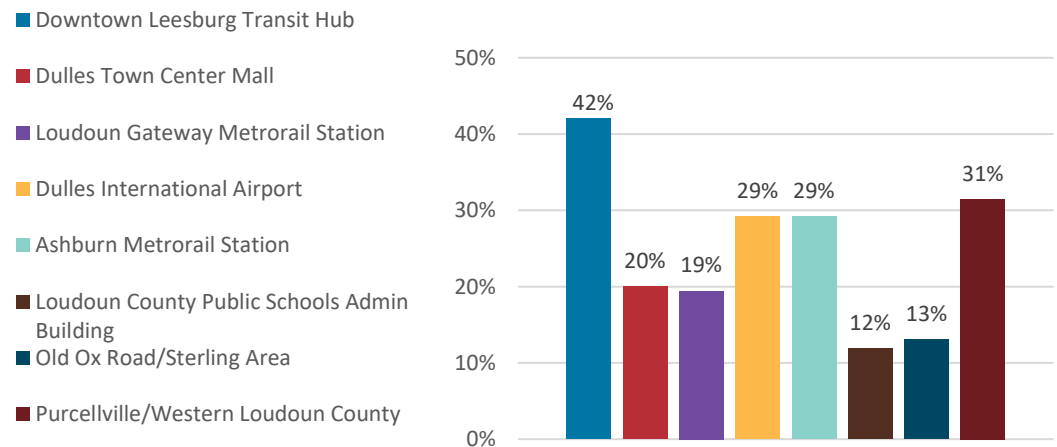
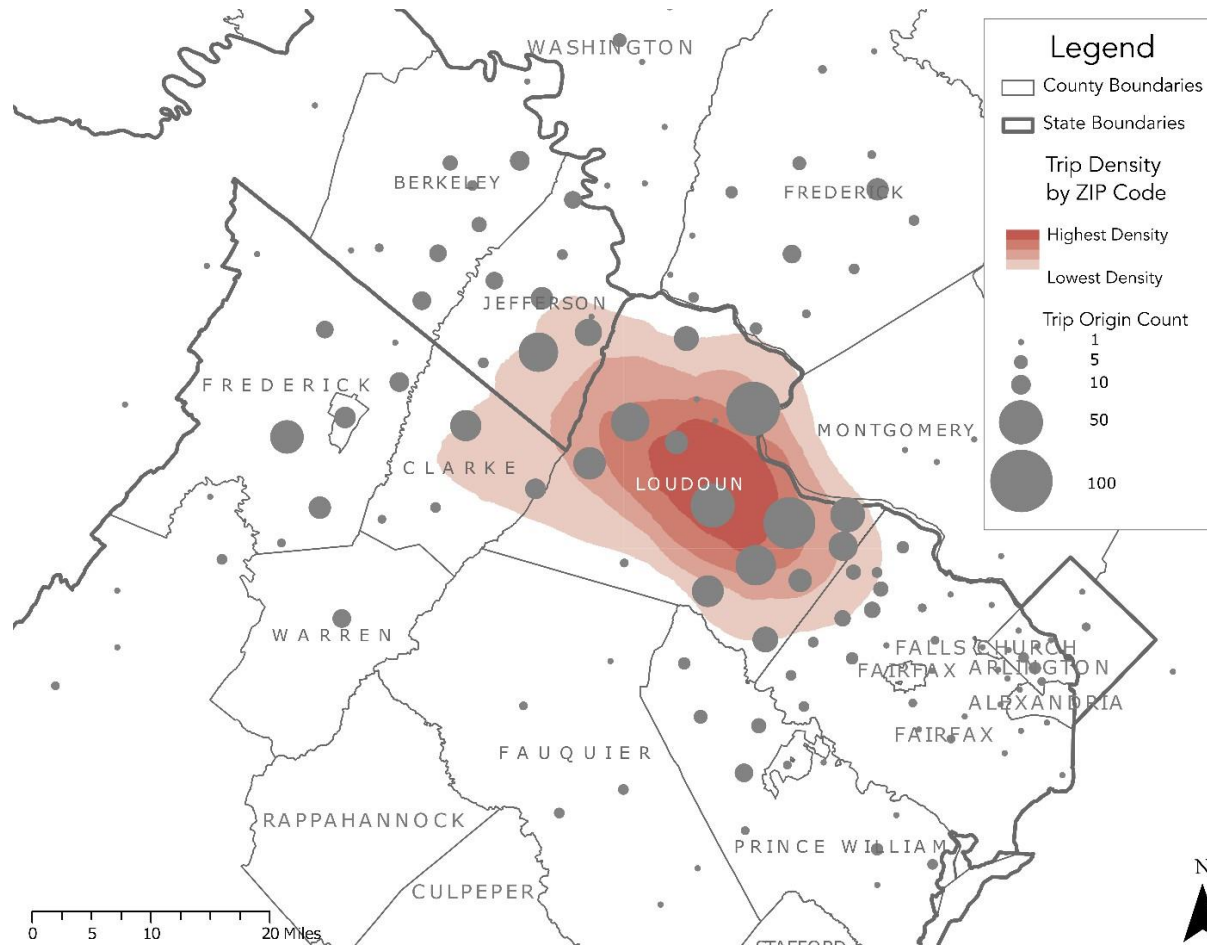


Figure 22: "If there were a commuter bus service, what would be some desired bus stop locations in Loudoun County?"



Respondents to the Employee Survey were also invited to share their home ZIP code and their workplace ZIP code. This information was used to generate origin-destination lines; the resulting heat map shows the most optimum areas/locations for commuter destinations (Figure 23). The heat map shows that the bulk of out-of-county trips came from areas to the Northwest (Clarke County, VA, and Jefferson County, WV), North (Frederick County, MD), and Southeast (Fairfax County, VA):

Figure 23: Employee Commuting Patterns (Origin-to-Destination)



# Commuter Bus Route Planning and Analysis

## Assumptions and Methodology

### Operating Costs

The **annual operating costs** for each proposed route were drawn from LCT’s average operating cost per vehicle revenue mile for its existing commuter bus service, which includes operator wages, benefits, fuel, maintenance personnel wages, and other maintenance costs. LCT totals these costs by mode (commuter bus, demand-response, etc.) every fiscal year and reports them to the NTD. Although operating costs are measured per vehicle revenue mile, they also include costs for deadhead hours.

The proposed routes were each entered into the integrated transit planning and scheduling software Remix by Via (Remix). When a route is sketched out in Remix, the software automatically calculates the **number of miles travelled round-trip** for each route (including the closed-door, deadhead portion of each route) and then extrapolates the annual miles travelled based on the proposed **four round trips per day** across **250 service days per year**. The software also estimates the **one-way trip length** (excluding the deadhead portion of each route), **daily vehicle requirements** based on how many inbound and outbound trips are running concurrently, and **average daily service per vehicle**.

The total annual miles travelled for each route (the **annual vehicle revenue miles**) is then compared to the average operating cost per mile of LCT’s existing commuter bus service. According to FY2022 data, LCT’s costs for commuter bus service were **\$8.96 per vehicle revenue mile**.<sup>7</sup>

$$\text{Annual Operating Cost} = \text{Round-trip Distance (Miles)} \times \text{\# Trips per Day} \times \text{\# Service Days per Year} \times \text{FY2022 Average Cost per Mile}$$

### Ridership

To estimate how much demand exists for each service under favorable conditions (effective marketing, appealing fare, strong on-time performance, etc.), a value for **unconstrained potential annual ridership** was developed for each route by weighing the number of workers who commute into Loudoun County from the route’s origin counties (from Spring 2022 Replica data), the popularity of transit and carpool options from the origin counties (from 2022 ACS data and industry-wide access rate), the average trips per day that employees in the region take based on responses to the Employee Survey (accounting for respondents who telework part of the week), and an assumption of 250 service days per year. This metric reflects maximum annual trips under ideal conditions and unconstrained service availability.

Using the unconstrained maximum ridership as a basis, **potential annual ridership** was calculated using each route’s maximum ridership constrained by the hours of service for each route (which, as proposed, would limit ridership to **first-shift commuters**) and capped by the seating

<sup>7</sup> “2022 Annual Agency Profile - Loudoun County dba Loudoun County Transit.” Federal Transit Administration, www.transit.dot.gov/.

capacity provided by the 50-passenger coaches serving each inbound and outbound trip. Because each proposed scenario only makes four roundtrips per day (four trips inbound, four trips outbound) on 50-passenger coaches, potential ridership is capped at 400 riders per day or 119,000 trips per year.

$$\text{Potential Ridership (Trips per Year)} = \text{Unconstrained Ridership (Trips per Year)} \times \% \text{ Commuters Who Work within Service Hours}$$

This potential ridership reflects how much demand there could potentially be for a commuter bus service in a given locality. Since real-world conditions may not be able to meet the full potential for ridership, the target ridership for a pilot service will be significantly lower (see Table 4).

## Driver Hours

To provide a general estimate of staffing requirements for each proposed route, average weekly driver hours were calculated for each route. Based on the weekly minimum manhours required for each route, LCT can assign a combination of part-time and/or full-time drivers to cover the additional commuter bus service.

An average travel speed of 35mph was assumed for all routes to find the **one-way trip time**, which accounts for variable road speeds, any traffic congestion, and dwell time at bus stops. The **weekly driver hours** were calculated from the number of **hours travelled round-trip** for each route (including both the one-way trip time, the faster deadhead portion of each route, and time for driver breaks) and then increased based on **four round trips per day** across **five days of service per week**.

$$\text{Weekly Driver Hours} = \text{Round-trip Length (Hours)} \times \# \text{ Trips per Day} \times \# \text{ Service Days per Week}$$

## Route Design

To fully investigate the possibility of commuter bus service to and from multiple counties and independent cities in the service area, seven possible commuter routes were created that would be suitable for 45-foot over-the-road coaches. LCT already uses over-the-road coaches for its commuter service to Washington, D.C., which are the most comfortable option for long-distance travel. These commuter routes are described in detail below including the route alignments, stops and the service schedule. The description also includes cost and ridership estimates.

The top destinations requested by employers and employees (Figure 14 and Figure 22) were compared with the top zip code destinations in the Replica data (Table 2), the top employers according to the Loudoun County Department of Economic Development (Table 3), and existing transit hubs that would allow commuters to transfer to a local bus route or Metrorail station (Figure 4). In particular, stops that connect to the larger transit network in Loudoun County will help commuters make the last-mile connection to more destinations, making the commuter service more productive.

After considering a destination's popularity and productivity, the list of destinations was refined to include only locations away from traffic where passengers can alight safely and that can logistically accommodate a large bus.

**Ashbrook Commons** - A shopping plaza with proximity to other employment centers along Route 7; located in the most-frequented zip code according to Replica data and walkable to LCT Route 70.

**Ashburn Metrorail Station** - A Silver Line Metrorail station in Ashburn that is also served by 12 LCT bus routes; one of the top recommendations from the stakeholder interviews, employer survey, and employee survey.

**Dulles International Airport** - The region's major international airport in Sterling that employs workers for multiple airlines, retail and restaurants, and federal agencies; includes a Silver Line Metrorail station that provides a connection to other stations and LCT bus stops; one of the top recommendations from the employer and employee surveys.

**Dulles Transit Center** - A park-and-ride in Sterling that connects to four existing LCT commuter routes (481, 482, 484, and 486) for commuters who want to travel on to Washington, D.C.

**Inova Cornwall** - The Inova Loudoun Hospital campus in the City of Leesburg; one of the top employers in the county and located in the second-most popular destination zip code according to Replica data; served by LCT Route 56.

**Inova Lansdowne** - The primary Inova Loudoun Hospital campus near Lansdowne; one of the top employers in the county and located in the second-most popular destination zip code according to Replica data; served by LCT Route 70.

**Loudoun County Government Center** - The core of Loudoun County government functions and the site of the Downtown Leesburg Transit Hub; one of the top employers in the county according to the County Department of Economic Development; one of the top recommendations from the stakeholder interviews, employer survey, and employee survey; served by LCT Routes 40, 55, 56, and 57.

**Loudoun Gateway Metrorail Station** - A Silver Line Metrorail station in Dulles that is also served by LCT Routes 333, 381, and 382; one of the top recommendations from the stakeholder interviews, employer survey, and employee survey.

**One Loudoun** - A large shopping complex in Ashburn that employs workers in retail and food services; served by LCT Routes 62, 70, and 331/332.

**Purcellville Giant** - A supermarket in the Town of Purcellville along Main Street; one of the top recommendations from the employee survey; connects to Route 40, one of the westernmost points of LCT's network.

If any commuter bus stops inside or outside of Loudoun County are located on private property where LCT doesn't currently have jurisdiction, LCT would enter into a memorandum of understanding (MOU) with the property owner, defining the roles and responsibilities of LCT and the property owner for the operation of commuter bus service from this new site to the destination in Loudoun County, Virginia. The MOU should also include the proposed service plan and schedule of the commuter bus service.



## Dale City Route

Commuter route begins at Dale City Commuter Lot and follows VA-28 North, stopping at the Manassas Park Commuter Lot before continuing on the Prince William Parkway to destinations at the Dulles International Airport and the Loudoun County Government Center.

Planned Stops:

- Dale City Commuter Lot
- Manassas Park Commuter Lot
- Dulles International Airport
- Loudoun County Government Center

### Basic Service

Daily Vehicle Requirements: Four over-the-road coaches

One-Way Trip Length: 47 miles

Average Daily Service per Vehicle: 94.0 miles

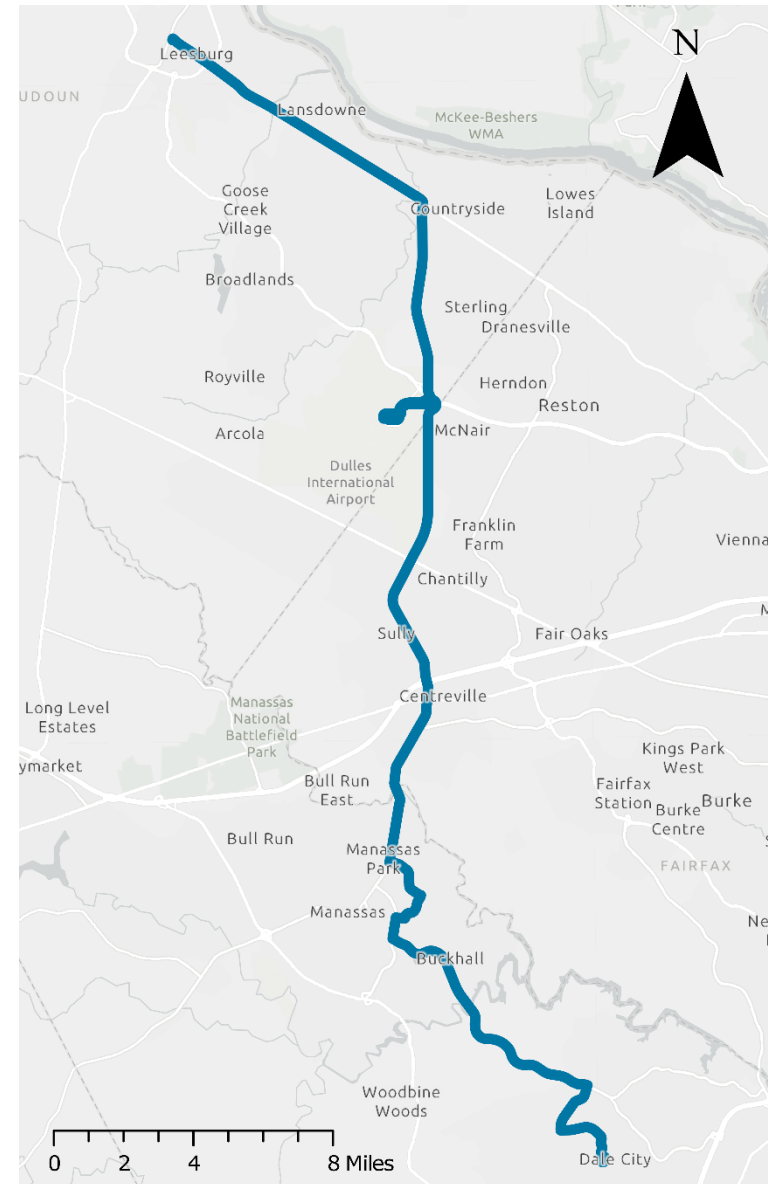
Driver Hours: 76 hours per week

Annual Operating Cost: \$852,000

Annual Vehicle Revenue Miles: 95,086

Potential Annual Ridership: 53,419 trips per year

Potential Average Passengers per Trip: 26.7 passengers



Schedule (M-F):

<b>Inbound</b>	<b>Dale City</b>	<b>Manassas</b>	<b>Dulles</b>	<b>Gov't Center</b>
	5:00	5:24	5:52	6:21
	6:00	6:24	6:52	7:21
	7:00	7:24	7:52	8:21
	8:00	8:24	8:52	9:21
<b>Outbound</b>	<b>Gov't Center</b>	<b>Dulles</b>	<b>Manassas</b>	<b>Dale City</b>
	17:00	17:27	17:55	18:19
	18:00	18:27	18:55	19:19
	19:00	19:27	19:55	20:19
	20:00	20:27	20:55	21:19

## Frederick, MD, Route

Starting at the Park and Ride on New Design Road in Frederick, Maryland, the route follows U.S. Route 15 South to stops in Leesburg and Ashburn.

### Planned Stops:

- New Design Road Park and Ride
- Inova Cornwall
- Loudoun County Government Center
- Inova Loudoun
- One Loudoun

### Basic Service

Daily Vehicle Requirements: Three over-the-road coaches

One-Way Trip Length: 37 miles

Average Daily Service per Vehicle: 98.7 miles

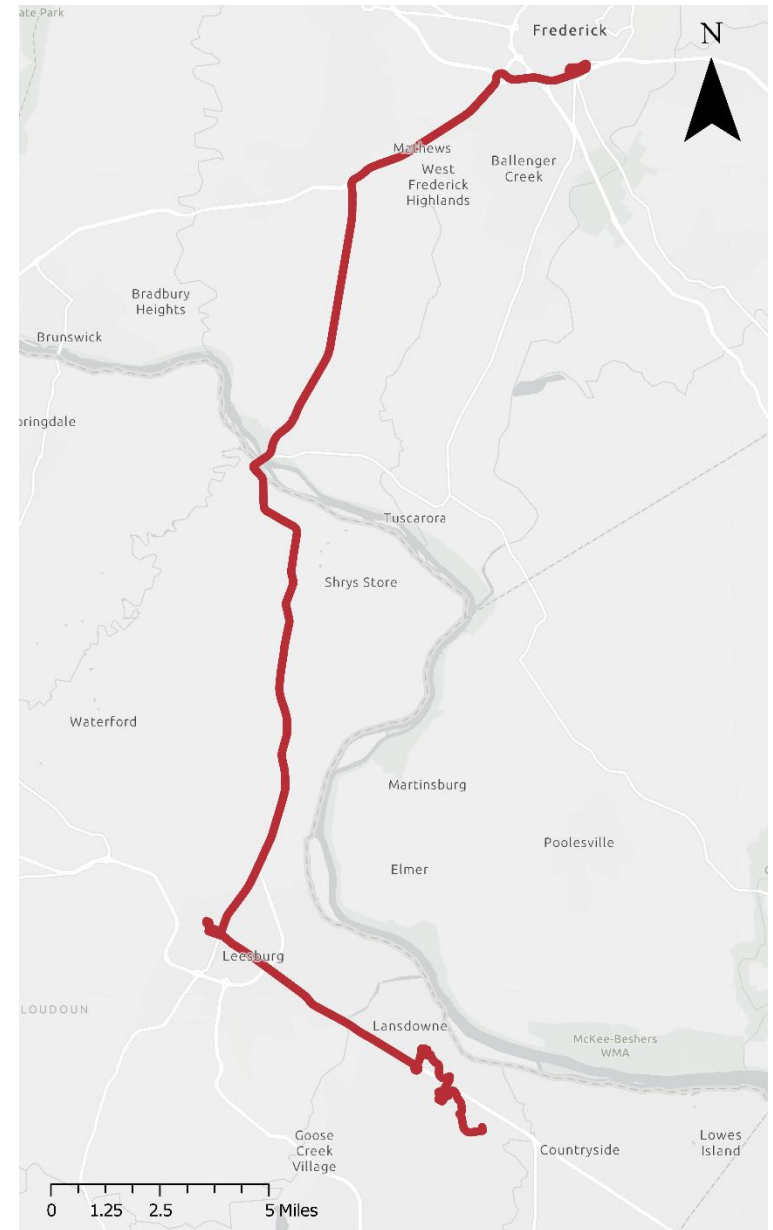
Driver Hours: 100 hours per week

Annual Operating Cost: \$673,000

Annual Vehicle Revenue Miles: 75,111

Potential Annual Ridership: 7,996 trips per year

Potential Average Passengers per Trip: 4.0 passengers



Proposed Schedule (M-F):

Inbound	<b>New Design</b>	<b>Cornwall</b>	<b>Gov't Center</b>	<b>Inova Loudoun</b>	<b>Ashbrook</b>	<b>One Loudoun</b>
	5:00	5:45	5:46	5:57	6:00	6:03
	6:00	6:45	6:46	6:57	7:00	7:03
	7:00	7:45	7:46	7:57	8:00	8:03
	8:00	8:45	8:46	8:57	9:00	9:03
Outbound	<b>One Loudoun</b>	<b>Ashbrook</b>	<b>Inova Loudoun</b>	<b>Gov't Center</b>	<b>Cornwall</b>	<b>New Design</b>
	17:00	17:03	17:06	17:16	17:18	18:03
	18:00	18:03	18:06	18:16	18:18	19:03
	19:00	19:03	19:06	19:16	19:18	20:03
	20:00	20:03	20:06	20:16	20:18	21:03

## Harpers Ferry Route

Service starts at Harpers Ferry Park and Ride and follows Harpers Ferry Road to Charles Town Pike, and then Leesburg Pike. Destinations are at employers in Leesburg and Ashburn.

Planned Stops:

- Harpers Ferry Park and Ride
- Inova Cornwall
- Loudoun County Government Center
- Inova Loudoun
- Ashbrook Commons
- One Loudoun

### Basic Service

Daily Vehicle Requirements: Three over-the-road coaches

One-Way Trip Length: 35 miles

Average Daily Service per Vehicle: 93.3 miles

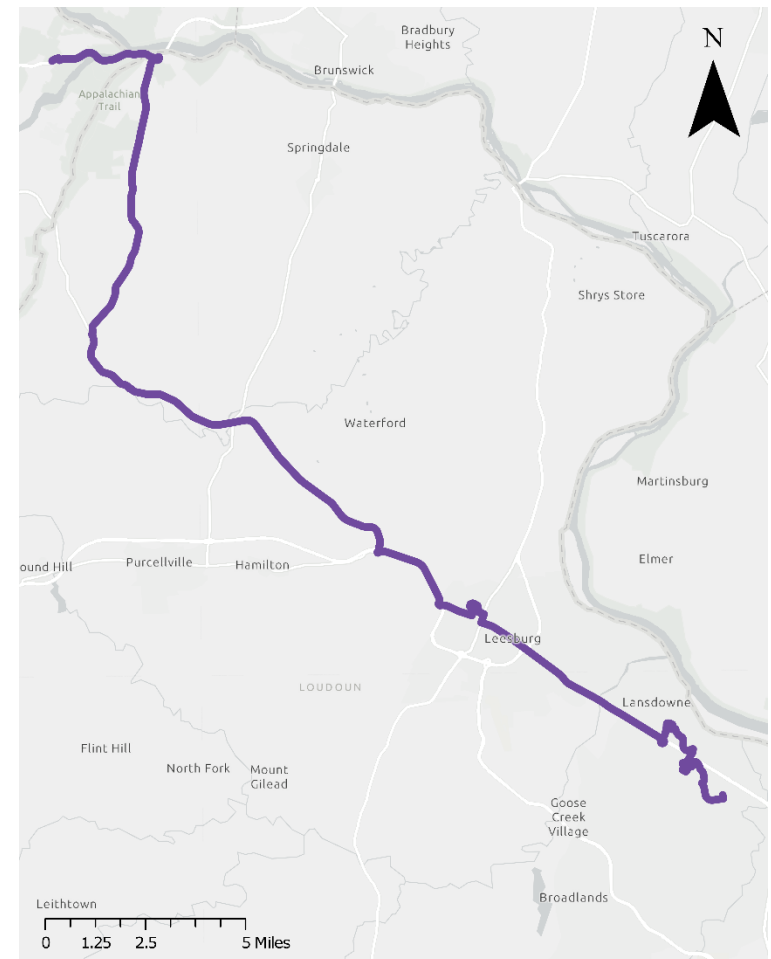
Driver Hours: 96 hours per week

Annual Operating Cost: \$628,100

Annual Vehicle Revenue Miles: 70,103

Potential Annual Ridership: 9,067 trips per year

Potential Average Passengers per Trip: 4.5 passengers



Proposed Schedule (M-F):

Inbound	Harpers Ferry	Cornwall	Gov't Center	Inova Loudoun	Ashbrook	One Loudoun
	5:00	5:41	5:43	5:54	5:57	6:00
	6:00	6:41	6:43	6:54	6:57	7:00
	7:00	7:41	7:43	7:54	7:57	8:00
	8:00	8:41	8:43	8:54	8:57	9:00
Outbound	One Loudoun	Ashbrook	Inova Loudoun	Gov't Center	Cornwall	Harpers Ferry
	17:00	17:03	17:06	17:16	17:18	17:58
	18:00	18:03	18:06	18:16	18:18	18:58
	19:00	19:03	19:06	19:16	19:18	19:58
	20:00	20:03	20:06	20:16	20:18	20:58

## Marshall Route

Starting at the Park and Ride on Frost Street in Marshall, this route travels along I-66 to SR 28 into Loudoun County. Destinations are at employers in Leesburg and Ashburn.

Planned Stops:

- Marshall Park and Ride
- Inova Cornwall
- Loudoun County Government Center
- Inova Loudoun
- Ashbrook Commons
- One Loudoun

## Basic Service

Daily Vehicle Requirements: Four over-the-road coaches

One-Way Trip Length: 49 miles

Average Daily Service per Vehicle: 98.0 miles

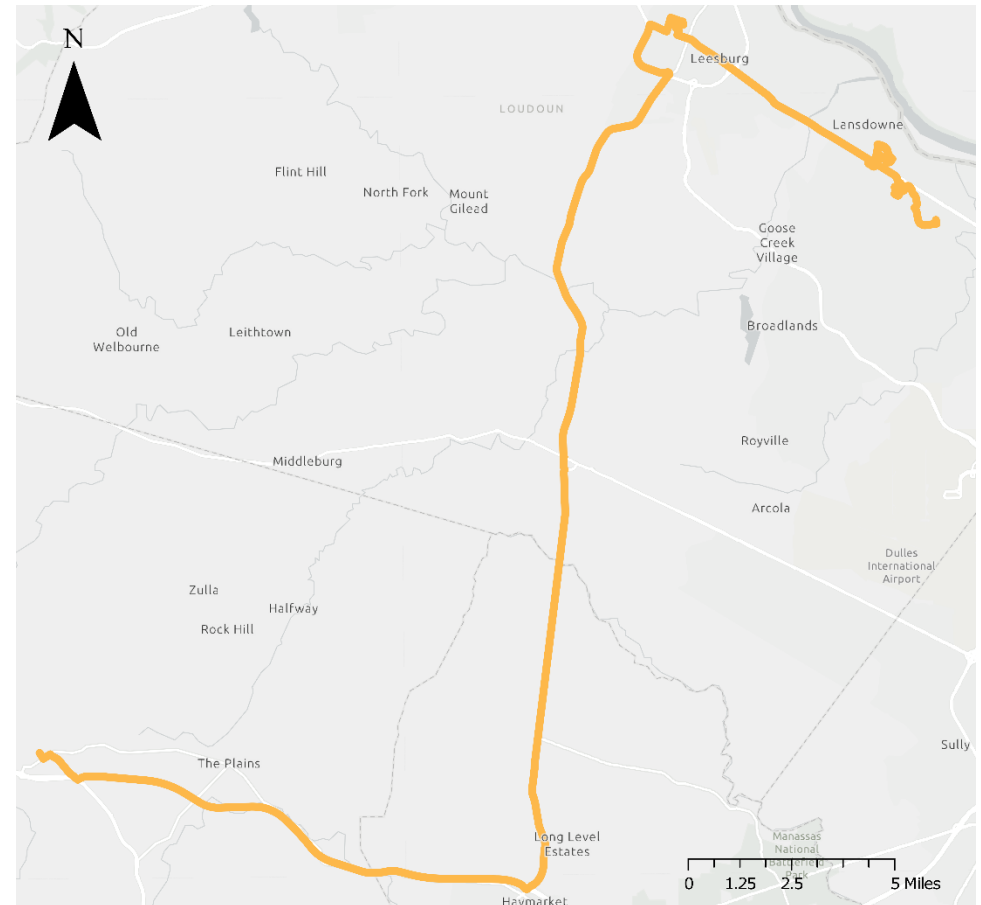
Driver Hours: 125 hours per week

Annual Operating Cost: \$900,200

Annual Vehicle Revenue Miles: 100,469

Potential Annual Ridership: 5,756 trips per year

Potential Average Passengers per Trip: 2.9 passengers





Proposed Schedule (M-F):

Inbound	Marshall	Cornwall	Gov't Center	Inova Loudoun	Ashbrook	One Loudoun
	5:00	6:05	6:06	6:17	6:23	6:27
	6:00	7:05	7:06	7:17	7:23	7:27
	7:00	8:05	8:06	8:17	8:23	8:27
	8:00	9:05	9:06	9:17	9:23	9:27
Outbound	One Loudoun	Ashbrook	Inova Loudoun	Gov't Center	Cornwall	Marshall
	17:00	17:03	17:06	17:18	17:19	18:22
	18:00	18:03	18:06	18:18	18:19	19:22
	19:00	19:03	19:06	19:18	19:19	20:22
	20:00	20:03	20:06	20:18	20:42	21:22

## Martinsburg Route

This route begins at the park and ride in Martinsburg, WV, with a second stop at the park and ride in Charles Town, WV, and travels along Charles Town Pike to employers in Leesburg and Ashburn.

Planned Stops:

- Martinsburg Park and Ride
- Charles Town Park and Ride
- Inova Cornwall
- Loudoun County Government Center
- Inova Loudoun
- Ashbrook Commons
- One Loudoun

### Basic Service

Daily Vehicle Requirements: Four over-the-road coaches

One-Way Trip Length: 51 miles

Average Daily Service per Vehicle: 102.0 miles

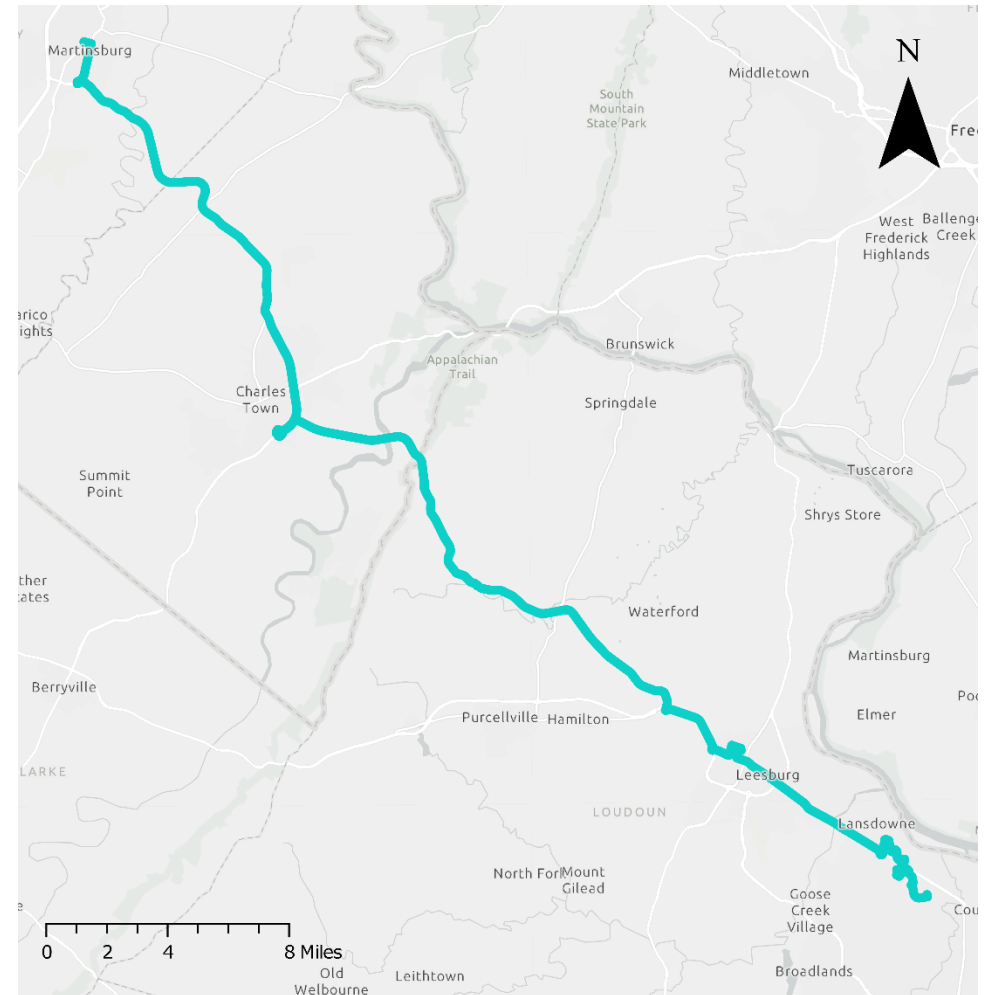
Driver Hours: 127 hours per week

Annual Operating Cost: \$939,100

Annual Vehicle Revenue Miles: 104,806

Potential Annual Ridership: 14,612 trips per year

Potential Average Passengers per Trip: 7.3 passengers



Proposed Schedule (M-F):

<b>Inbound</b>	<b>Martinsburg</b>	<b>Charles Town</b>	<b>Cornwall</b>	<b>Gov't Center</b>	<b>Inova Loudoun</b>	<b>Ashbrook Commons</b>	<b>One Loudoun</b>
	5:00	5:30	6:10	6:11	6:22	6:25	6:28
	6:00	6:30	7:10	7:11	7:22	7:25	7:28
	7:00	7:30	8:10	8:11	8:22	8:25	8:28
	8:00	8:30	9:10	9:11	9:22	9:25	9:28
<b>Outbound</b>	<b>One Loudoun</b>	<b>Ashbrook Commons</b>	<b>Inova Loudoun</b>	<b>Gov't Center</b>	<b>Cornwall</b>	<b>Charles Town</b>	<b>Martinsburg</b>
	17:00	17:03	17:07	17:18	17:19	17:58	18:28
	18:00	18:03	18:07	18:18	18:19	18:58	19:28
	19:00	19:03	19:07	19:18	19:19	19:58	20:28
	20:00	20:03	20:07	20:18	20:19	20:58	21:28

## Warrenton Route

Proposed commuter service starts from the Warrenton Park and Ride and a pick-up at the Haymarket Park and Ride will travel along US- 15 before getting on the I-66 express to VA 28. Destinations are listed below.

### Planned Stops:

- Warrenton Park and Ride
- Haymarket Park and Ride
- Dulles Transit Center
- Loudoun Gateway Metrorail Station
- Ashburn Metrorail Station
- Loudoun County Government Center

### Basic Service

Daily Vehicle Requirements: Four over-the-road coaches

One-Way Trip Length: 49 miles

Average Daily Service per Vehicle: 98 miles

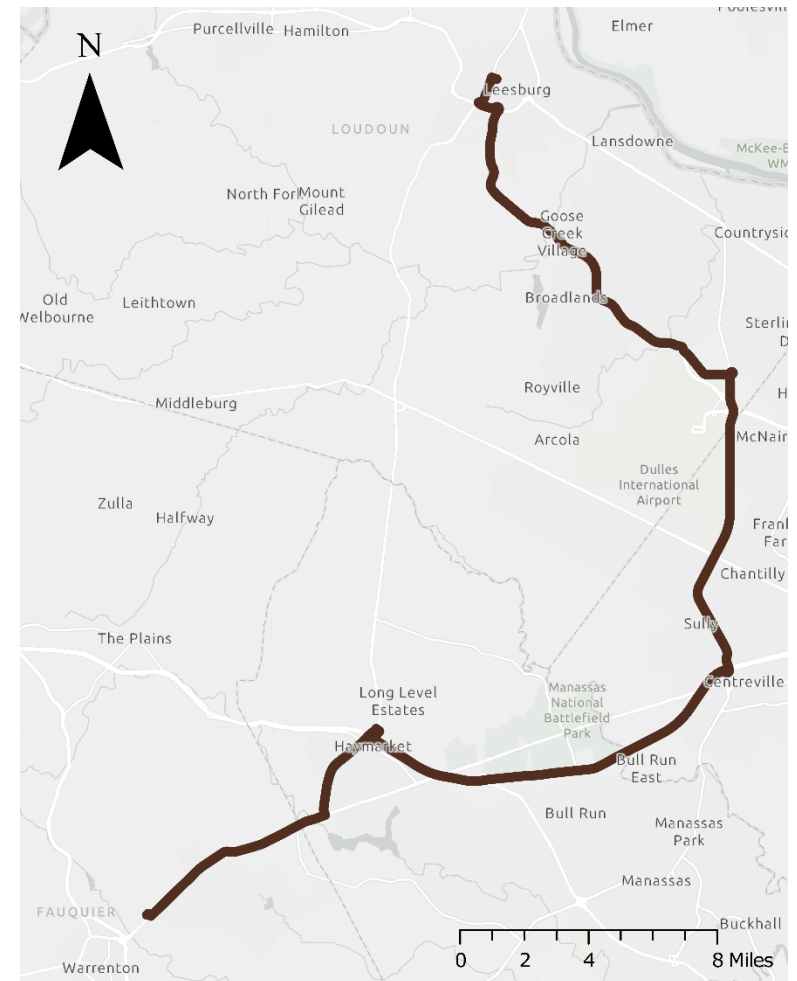
Driver Hours: 85 hours per week

Annual Operating Cost: \$902,700

Annual Vehicle Revenue Miles: 100,751

Potential Annual Ridership: 49,345 trips per year

Potential Average Passengers per Trip: 24.7 passengers



Proposed Schedule (M-F):

<b>Inbound</b>	<b>Warrenton</b>	<b>Haymarket</b>	<b>Dulles</b>	<b>Loudoun Gateway</b>	<b>Ashburn Metro</b>	<b>Gov't Center</b>
	5:00	5:18	5:59	6:01	6:05	6:23
	6:00	6:18	6:59	7:01	7:05	7:23
	7:00	7:18	7:59	8:01	8:05	8:23
	8:00	8:18	8:59	9:01	9:05	9:23
<b>Outbound</b>	<b>Gov't Center</b>	<b>Ashburn Metro</b>	<b>Loudoun Gateway</b>	<b>Dulles</b>	<b>Haymarket</b>	<b>Warrenton</b>
	17:00	17:19	17:24	17:29	18:09	18:26
	18:00	18:19	18:24	18:29	19:09	19:26
	19:00	19:19	19:24	19:29	10:09	20:26
	20:00	20:19	20:24	20:29	21:09	21:26

## Winchester Route

This route begins at Sharp Shopper in Winchester to Martin's in Berryville and continues on Harry Byrd Highway with a stop at Giant Foods supermarket in Purcellville. The route continues into Leesburg with destinations at Loudoun County Government Center and Ashburn Metrorail Station.

### Planned Stops:

- Sharp Shopper, Winchester, VA
- Martin's Super Markets, Berryville, VA
- Giant Foods, Purcellville, VA
- Inova Cornwall
- Loudoun County Government Center
- Ashburn Metrorail Station

### Basic Service

Daily Vehicle Requirements: Four over-the-road coaches

One-Way Trip Length: 51 miles

Average Daily Service per Vehicle: 102 miles

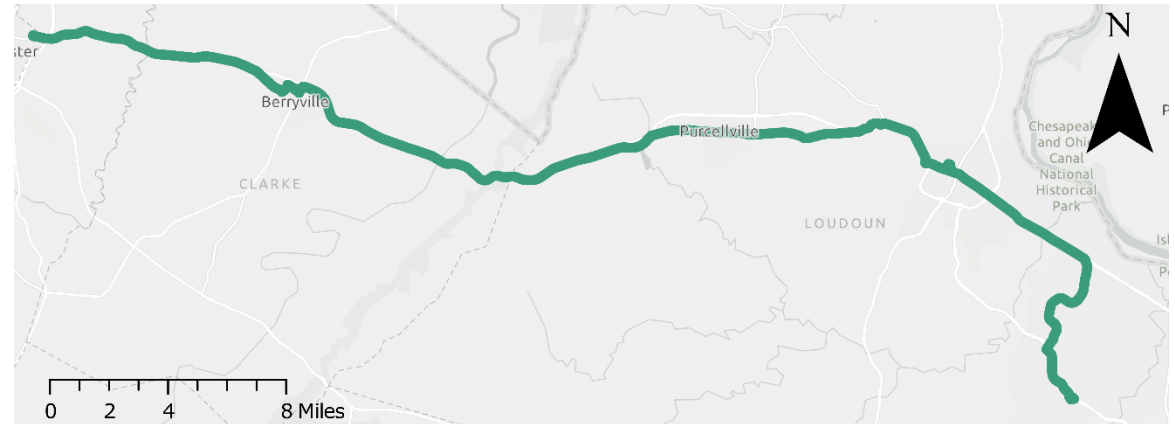
Driver Hours: 113 hours per week

Annual Operating Cost: \$930,000

Annual Vehicle Revenue Miles: 103,796

Potential Annual Ridership: 17,579 trips per year

Potential Average Passengers per Trip: 8.8 passengers



Proposed Schedule (M-F):

<b>Inbound</b>	<b>Winchester</b>	<b>Berryville</b>	<b>Purcellville</b>	<b>Cornwall</b>	<b>Gov't Center</b>	<b>Ashburn Metro</b>
	5:00	5:17	5:44	6:00	6:01	6:21
	6:00	6:17	6:44	7:00	7:01	7:21
	7:00	7:17	7:44	8:00	8:01	8:21
	8:00	8:17	8:44	9:00	9:01	9:21
<b>Outbound</b>	<b>Ashburn Metro</b>	<b>Gov't Center</b>	<b>Cornwall</b>	<b>Purcellville</b>	<b>Berryville</b>	<b>Winchester</b>
	17:00	17:19	17:21	17:44	18:11	18:34
	18:00	18:19	18:21	18:44	19:11	19:34
	19:00	19:19	19:21	19:44	20:11	20:34
	20:00	20:19	20:21	20:44	21:11	21:34



## Key Performance Indicators

The following Key Performance Indicators were established to objectively evaluate the service over time to determine if it should be continued once it is no longer eligible for pilot grant funding.

### Target Ridership

Ridership will be the primary performance metric used to evaluate a pilot service. To assess route performance as the service develops from month-to-month and quarter-to-quarter, ridership should initially be tracked in daily rather than annual increments. The following daily ridership targets shown in Table 4 have been developed as benchmarks for a commuter service pilot.

*Table 4: Three-Year Ridership Targets for Total Daily Riders*

Proposed Commuter Route	Year 1	Year 2	Year 3
<b>Dale City</b>	53	107	160
<b>Frederick, MD</b>	8	16	24
<b>Harpers Ferry</b>	9	18	27
<b>Marshall</b>	5	11	17
<b>Martinsburg</b>	14	29	43
<b>Warrenton</b>	49	98	147
<b>Winchester</b>	17	35	52

The targets for pilot service assume that 25 percent of the potential ridership will be met in a commuter route’s first year of operation, 50 percent in the second year, and 75 percent by the third year. If any of the proposed services meets or exceeds the established ridership standards, LCT could consider increasing the frequency of service to every 30 minutes or expanding the hours of service.

## Annual Service Costs

Annual service costs (or “operating” costs) are another important metric for LCT to consider when evaluating a pilot service. As a performance metric, operating expenses per revenue vehicle mile tend to be fairly consistent regardless of daily or seasonal fluctuations in ridership, and it reflects all ongoing costs associated with driver and mechanic labor, overhead costs, fuel, and maintenance supplies. Operating costs are best measured annually to account for sporadic expenses such as maintenance supplies and overall service patterns, such as negotiated driver compensation, new funding sources, or deadhead miles.

Although operating costs are measured by mode (commuter bus, demand-response service, etc.), they may not be measurable by specific route, since vehicles and drivers may be assigned interchangeably across routes of similar service type. As a result, the projected operating costs for each proposed route will need to be considered in aggregate with LCT’s other commuter bus service.

In FY2022, LCT reported that operating expenses per revenue vehicle mile averaged \$8.96, which is comparable to the pre-pandemic rate of \$7.02 per revenue vehicle mile.<sup>8</sup> If a pilot service is contributing to greater inefficiency for LCT’s total commuter bus service after the mid-point of the pilot phase, the pilot service may need to be streamlined or adjusted.

## On-time Performance

On-time performance (OTP) can be a helpful measure of service appropriateness. If OTP is low, it may indicate that advertised times should be adjusted or that service should be reduced to achieve the preferred span of service.

Since OTP is one of the service standards mandated by LCT’s Title VI Program, any pilot service should be reevaluated if it does not meet the service standards for early or late buses. At the time of this report, the 2023-2026 Title VI service standards stipulate a reevaluation of commuter bus service if OTP falls below 85 percent, where “on-time” is defined as no more than one minute early and no more than five minutes late to a designated boarding location.<sup>9</sup>

---

<sup>8</sup> “2022 Annual Agency Profile – Loudoun County dba Loudoun County Transit (NDT ID 30081).” *Federal Transit Administration*, [https://www.transit.dot.gov/sites/fta.dot.gov/files/transit\\_agency\\_profile\\_doc/2020/30081.pdf](https://www.transit.dot.gov/sites/fta.dot.gov/files/transit_agency_profile_doc/2020/30081.pdf)

<sup>9</sup> “Loudoun County Transit Title VI 2023-2026 Program.” *Loudoun County Transit and Commuter Services*, [https://www.loudoun.gov/DocumentCenter/View/173212/LCT-Title-VI-2023-2026-Program\\_Approved](https://www.loudoun.gov/DocumentCenter/View/173212/LCT-Title-VI-2023-2026-Program_Approved)

## Comparative Analysis of Routes

Table 5 provides key metrics to help prioritize which service(s) should be pursued first—annual operating cost, trip length, annual ridership, and operating cost per trip.

Table 5: Commuter Bus Routes – Comparative Analysis Matrix

Proposed Commuter Line	Stops per Trip	Annual Operating Cost	One-Way Trip Time	One-Way Trip Length	Potential Annual Ridership	Average Cost per Unlinked Passenger Trip
Dale City	4	\$852,000	79 min.	47 mi.	53,419	\$15.95
Frederick, MD	6	\$673,000	63 min.	37 mi.	7,996	\$84.17
Harpers Ferry	6	\$628,100	60 min.	35 mi.	9,067	\$69.27
Marshall	6	\$900,200	87 min.	49 mi.	5,756	\$156.40
Martinsburg	7	\$939,100	88 min.	51 mi.	14,612	\$64.27
Warrenton	6	\$902,700	83 min.	49 mi.	49,345	\$18.29
Winchester	6	\$930,000	81 min.	51 mi.	17,579	\$52.90

### Future Demand

Because each proposed scenario only makes four roundtrips per day (four trips inbound, four trips outbound) on 50-passenger coaches, potential ridership is capped at 100,000 trips per year or 50 riders per trip. Given that an average over-the-road coach can seat around 50 passengers depending on the model and configuration, potential demand is limited on the seven example routes presented in this feasibility study due to the limited number of trips and days of service.

The long-term ridership, shown in Table 6, is expected to increase along with the region’s growing population.<sup>101112</sup> Based on the current forecasts for 2025, 2030, and 2040, no unmet demand is expected in the next 16 years on any of the proposed routes. If this does occur, LCT could consider increasing service capacity by adding another bus to the route to allow for ten trips per day (five inbound, five outbound).

<sup>10</sup> “Virginia Population Projections.” *Cooper Center*, 11 Sept. 2023, [www.coopercenter.org/virginia-population-projections](http://www.coopercenter.org/virginia-population-projections).

<sup>11</sup> “West Virginia Population Projection by Counties 2020-2040 Summary Table.” *Bureau of Business and Economic Research WVU*, [business.wvu.edu/files/d/73f29801-fb12-40d4-b8d0-5802a29742be/wvsummary\\_2022.pdf](http://business.wvu.edu/files/d/73f29801-fb12-40d4-b8d0-5802a29742be/wvsummary_2022.pdf).

<sup>12</sup> “Historical and Projected Total Populations for Maryland’s Jurisdictions.” *Maryland Department of Planning*, [planning.maryland.gov/MSDC/Documents/popproj/TotalPopProj.pdf](http://planning.maryland.gov/MSDC/Documents/popproj/TotalPopProj.pdf).

Table 6: Long-Term Projections of Annual Ridership Demand

Proposed Commuter Route	2025	2030	2040
Dale City	53,419	61,341	70,935
Frederick, MD	7,996	8,777	9,611
Harpers Ferry	9,067	9,558	10,074
Marshall	5,756	6,250	6,847
Martinsburg	14,612	16,655	18,936
Warrenton	49,345	56,421	65,204
Winchester	17,579	19,267	21,477

**Fare Elasticity Analysis**

Fare elasticity measures the response of transit ridership to fare changes. Knowledge of fare elasticity provides information on the expected ridership and revenue resulting from a proposed fare change. Since a fare elasticity analysis exists to fine-tune the fare of an existing service, LCT could perform a fare elasticity after the first full year of a new commuter route if either ridership or fare revenue is not meeting expectations.

A fare elasticity analysis operates with an assumed amount of elasticity—in some communities, the riders may be more tolerant of fare increases, while in other locations small changes to the fare may have more significant effects on ridership. Overall, transit fare elasticities typically range between -0.33 and -0.22. However, smaller cities with populations less than 1 million have higher elasticities than larger cities, and elasticity tends to be higher (-0.41) for car owners.<sup>13</sup> In practical terms, this would mean that for every 10 percent increase in fares, there would be a 4.1 percent decrease in ridership. Given that none of the population centers in the proposed new commuter bus scenarios has over 1 million residents, and assuming most of the potential riders for the proposed commuter service already own cars, -0.41 is a reasonable rate of elasticity to use when evaluating LCT's new commuter service. The elasticity rate compounds upon each preceding fare increase, the formulas for calculating fare increases and ridership decreases are shown below (where a *decrease* in fares would be represented by a *negative* number of fare increases).

$$\text{New Fare} = \text{Base Fare} \times (1.1)^{\text{\# of Fare Increases}}$$

$$\text{Estimated Ridership} = \text{Current Ridership} \times (0.959)^{\text{\# of Fare Increases}}$$

As a hypothetical example, if LCT were to set a ridership target of 20,000 trips per year and charge \$10 per trip, a fare elasticity analysis could be used to identify how low the fare would need to be to bring underperforming ridership (say 17,000) up to 20,000. Alternatively, if fare revenues need to be increased to cover a larger share of operating costs, the same analysis could be used to calculate how much LCT could afford to charge before annual ridership dropped below a minimum acceptable threshold for ridership (say 15,000).

<sup>13</sup> "Transit Price Elasticities and Cross-Elasticities." Litman, Todd, Victoria Transport Policy Institute, 2023. <https://www.vtpi.org/tranelas.pdf>

Table 7 shows what a fare elasticity analysis would look like under such conditions, with a rate of elasticity of -0.41.

*Table 7: Example of a Fare Elasticity Analysis (-0.41 Elasticity Rate) on a Hypothetical Route with a Fare of \$10*

Price per Trip	Ridership (annual)	Estimated Fare Revenue (annual)
\$4.78	22,522	\$107,655
\$5.31	21,635	\$114,882
\$5.90	20,783	\$122,620
\$6.56	19,964	\$130,964
\$7.29	19,178	\$139,808
\$8.10	18,423	\$149,226
\$9.00	17,697	\$159,273
<b>\$10.00</b>	<b>17,000</b>	<b>\$170,000</b>
\$11.00	16,303	\$179,333
\$12.10	15,635	\$189,184
\$13.31	14,994	\$199,570
\$14.64	14,379	\$210,509

In the medium term, once LCT has the ridership and fare revenue results from operating a pilot service in real-world conditions, a brief fare elasticity analysis can help provide direction if the pilot commuter service(s) needs to be adjusted.

## Recommendations

Based on their respective potential annual ridership and costs per trip, the proposed **Dale City and Warrenton routes** are recommended for the pilot or Phase 1 implementation. With an average operating cost of \$15.95 and \$18.29 per unlinked passenger trip and potential annual ridership above 53,000 and 49,000, respectively, these routes represent the most strategic investment of funds to reach the greatest number of potential commuters.

The proposed **Martinsburg route** may also be worth exploring in partnership with the transit agency and state DOT in the Eastern Panhandle of West Virginia, since the projected cost is likely to be under \$40 per trip and service to that region would meet an acute need identified in the surveys.

Based on the results of the employee survey (see Figure 19), the majority of commuters can get to work for less than \$200 per month, which equates to a **one-way fare not exceed \$8.25** for a commuter going to work an average of three days per week. After the first full year of a pilot service, LCT could perform an elasticity analysis to judge whether a fare increase would be worthwhile. If increasing fares would cause too few commuters to use the service, then there are many other funding sources to make up the cost of operating the new service (see chapter on **Potential Funding Sources**).

### Collaboration with Neighboring Jurisdictions

There may be an opportunity to coordinate commuter bus service with the Eastern Panhandle Transit Authority (EPTA) to transport commuters from parts of West Virginia to the Governments Center and to the Ashburn Metrorail Stations. A combined route could benefit commuters from both jurisdictions without duplicating service.

In addition, although OmniRide provides commuter bus service connecting Manassas to the Herndon-Reston area, a commuter bus route connecting Manassas to the Dulles International Airport or to the Loudoun Government Center may be worthy of a joint approach between LCT and OmniRide.



# Marketing and Outreach Efforts

## Introduction

The marketing and outreach portion of this feasibility analysis provides a framework for LCT's future marketing efforts around any new commuter service. As new commuter service is developed and the specifications of its launch are finalized, the following strategies will be helpful as the service enters first the pilot phase and then regular operations. The following section provides a wide-ranging summary of the best practices and tools that transit providers use to market and promote service to current and potential transit users.

Commuter transit in Loudoun County has historically been a key aspect to local and regional transportation. Because of its importance, LCT understands the need to prioritize the promotion and marketing of services to the public and community stakeholders. LCT is part of the greater Washington, D.C., metropolitan area and is part of the Commuter Connections program spearheaded by the MWCOG. Prior to the official opening of the WMATA Silver Line Extension, commuter bus service from Loudoun County had annual totals of more than a million riders.

Following the coronavirus pandemic and the launch of the Silver Line Extension, LCT commuter bus ridership dropped from 1.32 million trips in 2019 to 150,000 trips in 2022, according to data from the National Transit Database.<sup>14</sup> Even so, commuter bus service remains a significant method for daily transportation. In parallel, the industry is experiencing an everchanging period of technological advancements and social e-trends, making it critical that agencies update their marketing and outreach efforts regularly to adapt to the changing ways in which community members use transit and receive information.

This study provides an opportunity for Loudoun County to analyze the potential for commuter service from neighboring counties into Loudoun County. There are major employers for the region in Loudoun County that could benefit from the service including the largest employers in the county: Loudoun County Government and Loudoun County Public Schools.<sup>15</sup>

<sup>14</sup> "2022 Annual Agency Profile - Loudoun County dba Loudoun County Transit (NDT ID 30081)." *Federal Transit Administration, 2022*, [https://www.transit.dot.gov/sites/fta.dot.gov/files/transit\\_agency\\_profile\\_doc/2022/30081.pdf](https://www.transit.dot.gov/sites/fta.dot.gov/files/transit_agency_profile_doc/2022/30081.pdf)

<sup>15</sup> "Major Employers: Market Proximity. 2024." *Loudoun County Department of Economic Development*, <https://biz.loudoun.gov/information-center/major-employers/>



## Campaign Audience

When creating a marketing campaign for any future commuter service, the campaign should be developed around the local geographies for the origin of the commuter route, such as Prince William County and specifically Dale City and Manassas in the case of the proposed Dale City route (Table 8).

Table 8: Target Geographies for Proposed Commuter Routes

Proposed Commuter Route	Origin Municipality	Origin County
<b>Dale City</b>	Dale City Manassas	Prince William County Manassas City
<b>Frederick, MD</b>	Frederick, MD	Frederick County, MD
<b>Harpers Ferry</b>	Harper’s Ferry	Jefferson County, WV
<b>Marshall</b>	Marshall	Fauquier County
<b>Martinsburg</b>	Martinsburg, WV Charles Town, WV	Berkeley County, WV Jefferson County, WV
<b>Warrenton</b>	Warrenton Haymarket	Fauquier County Prince William County
<b>Winchester</b>	Winchester Berryville	Winchester City Clarke County

In addition to local geography, it will also be important to consider local economy and demographics in each origin, such as the age of the working population and centers of population near commuter bus origins. The target demographics for a commuter bus marketing campaign will be residents of the origin areas who are between the ages of 16 and 64.

Although a commuter bus service will appeal to workers who do not have access to a personal vehicle, the service will equally be marketed towards “choice” riders who have access to alternative modes of transportation but find a commuter bus cheaper or otherwise more convenient. Choice riders are demographically diverse, with a mix of ethnic backgrounds, income levels, educational attainment, and access to personal vehicles.<sup>16</sup>

<sup>16</sup> Erick Guerra, “Transit Dependents, Choice Riders, and Service Criticality: An Analysis of the Determinants of Bus Ridership in the Philadelphia Region,” *Mobility21 National University Transportation Center*, 2023.

## Transit Marketing Elements

### Marketing Objectives

The goal of Loudoun County's marketing and outreach efforts is to provide guidance to strategically market the future commuter bus service. Once the routes and service have been finalized, LCT can use these guidelines and marketing tools to develop a firm and expanded marketing strategy and plan of action for commuter bus service and the overall transit system. The plan will expand upon the objectives listed below to help guide LCT and Loudoun County's Public Affairs and Communications Office (PAC) in this process.

#### Objective 1: Identify Markets

To market future service to the intended audience, LCT will strategically identify the target market that they intend to reach. The process can start with recognizing current riders, identifying potential riders, and classifying groups of non-riders that need to be reached based on the geographical location of the transit system. As the audience is identified, these entities can be added to Loudoun County's outreach efforts and be utilized for the remainder of the marketing initiative. In the Target Markets section of this report, some potential strategies are listed for identifying target markets.

#### Objective 2: Identify Marketing Elements

In the Marketing Strategies section of this report, essential marketing elements are presented that can serve as baseline tools for an effective marketing campaign. It is important for LCT to define these elements based on the specific campaign or project at hand to ensure each element is strategically designed to communicate the intended message.

#### Objective 3: Establish Fare Guidelines and Marketing Strategy

Once the desired message is clear and the elements are in place, a marketing strategy can be successfully executed to meet engagement goals and communicate the intended message. As Fare Guidelines are established, marketing elements and strategy can serve as a middle ground for educating the intended audience, receiving feedback from target markets, and can provide a space to capture progress and measure success of initiatives.

### Target Markets

#### Current Riders

LCT should take advantage of existing opportunities to market their new service with current transit riders. While the current riders may not benefit from a service outside of the county, they may know people who live elsewhere and commute into the county. By keeping current riders aware of new service opportunities, LCT can maximize its marketing impact through an existing audience.

These are examples of social media engagement tactics used by transit service providers:

**Outreach & Engagement:** Interact with riders in real-time, with events like virtual “lunch & learns” about the service. Agencies can host an “Ask Me Anything” (AMA) for riders and community members to ask questions about the service or post a poll to get public feedback. If an agency gives riders a platform to share their thoughts, they will feel heard.

**Social Media Takeover:** Social media “takeovers” are a form of influencer marketing where an organization lets someone temporarily post content on its social media accounts. This person might be a fellow team member, industry expert, or an influencer. Is there someone with an online presence who rides the service who can promote the new service as a brand ambassador? By recruiting brand ambassadors, LCT can use this to showcase rider and/or driver stories, driving authentic, engaging content.

**Themed Days:** Themed days are playful and fun ways to connect with riders and the community. For example, transit agencies can use established themes such as #TransitTuesday or #SchoolsOut campaigns to encourage riders and families to show how they use the service for family activities when kids are on summer break. LCT can also come up with a different Theme Day campaign to engage the community.

### Potential Riders

Although some of the methods for engaging existing bus riders can also be used to engage potential riders, LCT could take a more targeted approach to engage potential riders through communication with employers near the destinations. LCT can try direct communication through emails, distributing flyers and posters at employment sites, or setting up information tables during any event hosted by the employer.

### Non-Riders

As mentioned above, building a bigger presence in the community will help LCT become a recognizable and trusted community brand. It is important to note that just because someone is not a rider or potential rider doesn’t mean engagement isn’t useful or effective. Community matters and building a strong presence will help increase support for the agency and their services.

### Branding

Instead of simply publishing route pamphlets and limited on-vehicle advertising, LCT should engage the public and recruit new riders through well-branded multimedia campaigns marketing the agency, and in this case, a particular service. Marketing should be a continual effort to sustain a positive image for the agency. Marketing and branding work simultaneously through the efforts described below.

Branding helps the public to identify a transit agency and is a tool that creates an image for an existing service. Branding helps create a unified, recognizable, and positive image in the mind of potential customers. According to the National Rural Transit Assistance Program (National RTAP),<sup>17</sup>

---

<sup>17</sup> “Marketing Toolkit.” *National Rural Transit Assistance Program, 2024*, <https://www.nationalrtap.org/Toolkits/toolkits-overview>.

a program of the Federal Transit Administration (FTA), key elements for a transit brand can include name, logo, vehicle colors and graphics, bus stop signage and facilities.








When considering a possible branding campaign, LCT should study the best practices of other transit agencies with successfully developed brand standards and guidelines for their entire agency, such as Metro Transit,<sup>18</sup> Arrowhead Transit,<sup>19</sup> and Sound Transit.<sup>20</sup> These resources provide detailed guides for everything from fonts and colors () to voice and the use of emojis.

LCT has established branding for local transit and commuter service. Once the new service is established, LCT has the option to create a new complimentary brand identity for the new service in coordination with branding the entire system. Although branding some buses for a particular service makes it harder to swap out vehicles between commuter routes, as the new service establishes its own familiarity with community members, it creates a new, innovative addition to the agency’s relationship with the community. By branding the new service, it will catch the eye of potential new riders, while keeping elements from existing branding and naming conventions. Single service branding allows agencies to distinguish new services from pre-existing ones, building a new reputation for their service as reliable, fast, and comfortable. Distinct branding of the service allows the public to create new associations with the proposed service.

These examples highlight what other transit agencies have done to promote single-service branding to differentiate or highlight new services:

- When Roaring Fork Transit Authority (RFTA) in Colorado converted its express bus service to the first rural BRT service between Glendale and Aspen, CO, the new system was branded as VelociRFTA. This name was a play on the name of the speedy velociraptor dinosaur and was used to emphasize how quickly travelers could move up and down the valley. The service branding effort carried into the station design with benches shaped like dinosaur eggs, safari-style driver uniforms, and the slogan “My Other Ride is a Dinosaur” on branded items sold by the agency.

Figure 24: Colors defined by the Metro Transit Style Guide

	<b>Transit Blue</b> PMS 287 CMYK: 100/72/0/6 RGB: 0/83/160 HEX: 0053A0		<b>METRO Green</b> PMS 348 CMYK: 97/23/100/10 RGB: 0/130/68 HEX: 008144
	<b>Transit Red</b> PMS 485 CMYK: 0/100/91/0 RGB: 237/27/46 HEX: ED1B2E		<b>METRO Orange</b> PMS 151 CMYK: 0/55/100/0 RGB: 255/115/0 HEX: FF7300
	<b>Transit Gold</b> PMS 116 CMYK: 0/16/100/0 RGB: 255/210/0 HEX: FFD200		<b>METRO Purple</b> PMS 2603 CMYK: 70/100/0/5 RGB: 107/31/124 HEX: 6B1F7C
	<b>METRO Gray</b> PMS 430 CMYK: 55/40/35/5 RGB: 122/134/144 HEX: 7A8690		

Source: Metro Transit Brand Identity and Style Guide, 2023

<sup>18</sup> “Metro Transit Brand Identity and Style Guide.” *Metro Transit*, 2023, [https://www.metrotransit.org/Data/Sites/1/media/logos/brand\\_standards.pdf](https://www.metrotransit.org/Data/Sites/1/media/logos/brand_standards.pdf)

<sup>19</sup> “Brand Guide.” *Arrowhead Transit*, 2024, <https://arrowheadtransit.com/brand-guide/>

<sup>20</sup> “Style and Standards Guides.” *Sound Transit*, 2023, <https://www.soundtransit.org/get-to-know-us/our-brand/style-guides>

- The new RideSmart Commuter Bus was recently established by the Northern Shenandoah Valley Regional Commission. The branding for the commuter service, Figure 26, maintains certain elements from the transit agency's logo, Figure 25. The colors and font have changed to distinguish the service from other services provided, and the new design signifies a new and fast service. However, keeping the naming convention of "RideSmart" helps to identify the service as part of the Northern Shenandoah Valley Regional Commission's umbrella of transit services.

Figure 25: RideSmart Commuter Bus Logo



Source: RideSmart Northern Shenandoah Valley

Figure 26: RideSmart Northern Shenandoah Valley Logo



Source: RideSmart

Once LCT has confirmed which routes they will pilot for this commuter bus initiative, LCT should consider developing a branding campaign following the branding guidelines proposed by the National RTAP:

**Name:** The name should be short and easy to remember, and it should communicate the nature and the service area.

**Logo:** This is a graphic representation of the name and should be used on everything associated with the transit system. A good transit logo is attractive, clear, simple, and easily identifiable.

**Vehicle graphics:** Your vehicle can display your branding and act as a mobile billboard to market your service.

**Bus stop signage:** For transit agencies, signage can be another opportunity to promote your brand. It is a useful tool that lets passengers know where their bus is going, and it creates system visibility. For a commuter route, after obtaining buy-in from park and ride lot owners, a sign can help establish the service's presence in the area.

**Bus stop facilities:** As shown with the VelociRFTA BRT stops, agencies can get creative with how they brand their facilities and build support and recognition for their services.

## Transit Marketing Strategies

To market transit services successfully, there must be an understanding of the needs and wants of current and potential riders. The marketing strategies must be tailored to targeted groups who have needs that the transit services can fulfill. As LCT introduces the new commuter service, a variety of strategies of both earned media and paid sources, can be used to reach target audiences, and communicate effectively.

### In Print

Even in the age of smartphones and social media, printed materials such as flyers, posters, and direct mail remain effective engage riders and potential riders. Non-paid communication channels might include news releases, whereas paid media advertising would include transit advertising, newspaper advertisements, posters or flyers at transit hubs and onboard buses, and direct mail.

LCT should also consider printing a guide for the new commuter service, explaining what distinguishes it from the existing commuter service, provide schedules and hours of operation as well as fare rates and methods of payment. Additional information that could be useful to passengers might include Wi-Fi connection, mobile applications, and holiday hours. The printed guides should use the colors to reflect branding for the new service, and update text to make it as concise as possible. These guides can be handed out at job fairs and other community events, or given to employers to place in their break rooms.

### Online

Customers often go online for information such as fare rates, service times and schedules, and destinations. This information should be accessible and easy-to-read, while following branding colors and guidelines set for the service or agency. Digital marketing campaigns are an effective tool for engaging different customers through captivating and informative media campaigns. These campaigns include non-paid as well as paid media advertising channels, and it is important to utilize both avenues to reach potential and current riders. Non-paid, organic communication channels can include:

- Posts to LCT's Meta platforms (Facebook, Instagram, and Threads)
- X Corp.
- Website posts to [loudoun.gov](http://loudoun.gov)
- Email blasts
- YouTube
- Email Announcements and Newsletters (such as LCT's *Commuter Shortcuts*)

Maintaining an active presence online can increase the reach of service alerts and valuable information through newsletters and social media-specific push notifications which send messages directly to a customer's mobile device<sup>21</sup>.

It is essential to build a social media engagement strategy to build a network of potential customers. It is free and it allows the agency to connect with current, potential, and non-riders, building support for the agency and its services. An authentic and transparent communication with riders can reach different demographics, as seen in Figure 27.

### In the Community

In addition to communication with employers and employees in the county, LCT should try marketing in areas with high foot traffic near the route origins, such as grocery stores, pharmacies, fitness centers, hardware stores, etc. Setting up information tables or booths at these areas, especially in consultation with neighboring transit agencies and state Departments of Transportation, can help spread information to potential riders and boost ridership for the new service. LCT can also try to reach potential riders through educating and engaging with the community at job fairs and large community events.

There are diverse ways to get involved in the community to promote its service. As shown in the **Industry Examples** section, tabling events can be a way to promote service to potential new clients and expand knowledge about the agency and its services.

Figure 27: SamTrans (San Mateo County, CA) Shares Service and Community Updates on its X Corp.



<sup>21</sup> Loudoun County produces a quarterly employer newsletter called *Commuter Shortcuts*. This newsletter includes commuter bus information and is useful for employer transportation coordinators. The newsletter includes a written section titled "ready to share" content that the employer is urged to copy, paste and share with employees.



## Industry Examples

The following list shows examples of marketing and communication strategies from suburban commuter services to introduce a new service to potential riders.

### Example Agency: LeeTrans

**Strategy:** Facebook post via local partners/Social Media Kits

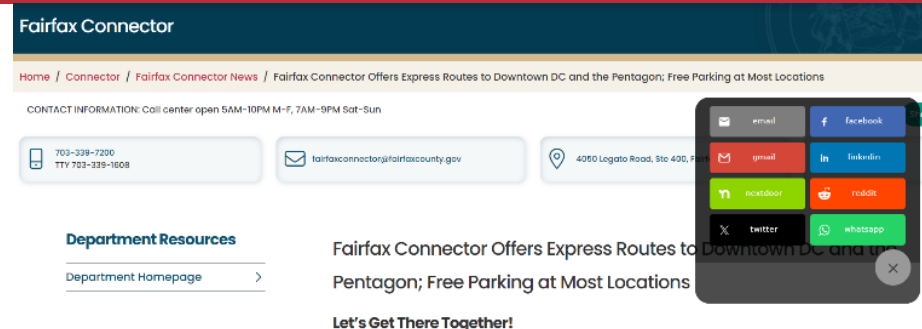
**Project Approach:** Provide social media kits with information and graphics local businesses, government, and elected officials inviting them to post on their social media in support of new transit services.



### Example Agency: Fairfax County

**Strategy:** Sharing feature on website

**Project Approach:** Create a simple option for sharing or distributing information regarding commuter services across email, text, and social media



**Example Agency: Maryland Department of Transportation**

**Strategy:** Partnering with reputable state-led programs  
**Project Approach:** MDOT’s partnership with Commuter Choice Maryland incentivizes Maryland commuters to choose transit, carpooling, vanpooling, bicycling, walking, telework, and flexible scheduling instead of driving alone to work and offers guaranteed ride home if unforeseen circumstances arise.



**Example Agency: GRTC Transit System**

**Strategy:** Partnering with local businesses to offer rewards for transit users  
**Project Approach:** The Richmond, Virginia agency partners with local businesses to offer rewards to members who possess the RideGRTC Unlimited Ride Pass.

The screenshot shows a website section titled 'FEATURED RIDEGRTC REWARDS'. Below the title, it says 'Like these? There's So Many More. Learn How To Get Rewarded & Check Out Our Local Reward Partners' and a 'VIEW ALL REWARDS' link. There are four reward cards: 'FREE BEVERAGE' from 'CARIBBEAN CHEF', '10% OFF ENTIRE FOOD PURCHASE' from 'MAGARITAS', '10% OFF FOOD PURCHASES' from 'SOUTHERN RAILWAY TAP HOUSE', and 'FREE 7 DAY GYM PASS' from 'ANYTIME FITNESS'. The footer includes contact information: '(804) 358-4782', 'webcustomerservice@ridegrtc.com', 'more contact info', and 'careers'. It also says '© 2024 GRTC Transit System', 'Operator: RideGRTC Web Login', and 'Get Ready To Connect with GRTC on' followed by social media icons for Facebook, Twitter, Instagram, LinkedIn, and YouTube.

**Example Agency: GWRideConnect**

**Strategy:** Directly pairing with the mobile app of partner agencies

**Project Approach:** The GWRideConnect webpage serves as the turnkey site for all connections, whether local or long-distance commuter and links their local lines with regional rail connections.



**200+ VANPOOL ROUTES**

**OMNIRIDE EXPRESS BUS SERVICE**

**VRE TRAIN EXPRESS SERVICE**

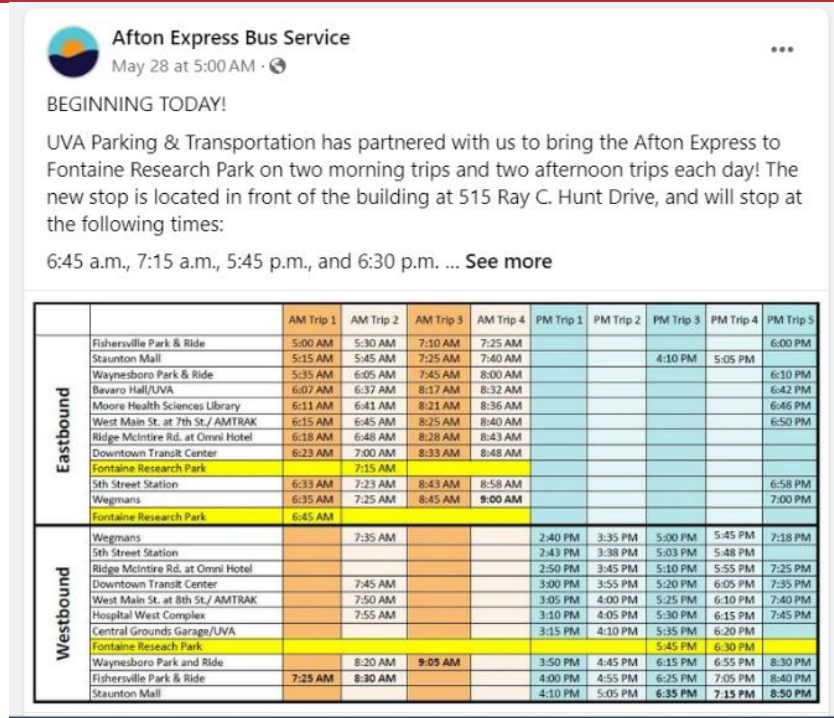
**GWRideConnect**  
CELEBRATING 50 YEARS OF SERVICE

GWRIDECONNECT.ORG  
(540)373-7665

**Example Agency: Afton Express Bus Service**

**Strategy:** Partnering with universities to increase service and ridership

**Project Approach:** Afton Express partnered with the University of Virginia's Parking and Transportation services to increase their service frequency. This cooperation shares resources and facilitates social media and word-of-mouth engagement among commuters and UVA students, faculty, and staff alike.



**Afton Express Bus Service**  
May 28 at 5:00 AM · 🌐

BEGINNING TODAY!

UVA Parking & Transportation has partnered with us to bring the Afton Express to Fontaine Research Park on two morning trips and two afternoon trips each day! The new stop is located in front of the building at 515 Ray C. Hunt Drive, and will stop at the following times:

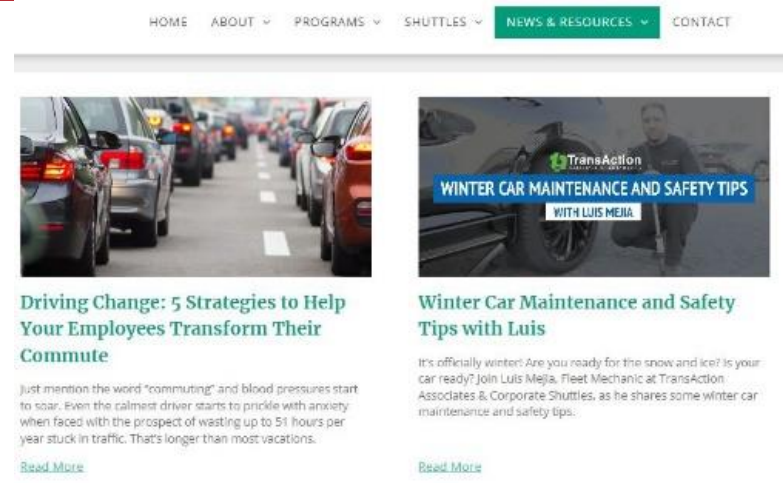
6:45 a.m., 7:15 a.m., 5:45 p.m., and 6:30 p.m. ... [See more](#)

	AM Trip 1	AM Trip 2	AM Trip 3	AM Trip 4	PM Trip 1	PM Trip 2	PM Trip 3	PM Trip 4	PM Trip 5
<b>Eastbound</b>	Fishersville Park & Ride	5:00 AM	5:30 AM	7:10 AM	7:25 AM				
	Staunton Mall	5:15 AM	5:45 AM	7:25 AM	7:40 AM			4:10 PM	5:05 PM
	Waynesboro Park & Ride	5:35 AM	6:05 AM	7:45 AM	8:00 AM				6:10 PM
	Bavaro Hall/UVA	6:07 AM	6:37 AM	8:17 AM	8:32 AM				6:42 PM
	Moore Health Sciences Library	6:11 AM	6:41 AM	8:21 AM	8:36 AM				6:46 PM
	West Main St. at 7th St./ AMTRAK	6:15 AM	6:45 AM	8:25 AM	8:40 AM				6:50 PM
	Ridge McIntire Rd. at Omni Hotel	6:18 AM	6:48 AM	8:28 AM	8:43 AM				
	Downtown Transit Center	6:23 AM	7:00 AM	8:33 AM	8:48 AM				
	Fontaine Research Park		7:15 AM						
	5th Street Station	6:33 AM	7:23 AM	8:43 AM	8:58 AM				6:58 PM
Wegmans	6:35 AM	7:25 AM	8:45 AM	9:00 AM				7:00 PM	
Fontaine Research Park	6:45 AM								
<b>Westbound</b>	Wegmans		7:35 AM		2:40 PM	3:35 PM	5:00 PM	5:45 PM	7:18 PM
	5th Street Station				2:43 PM	3:38 PM	5:03 PM	5:48 PM	
	Ridge McIntire Rd. at Omni Hotel				2:50 PM	3:45 PM	5:10 PM	5:55 PM	7:25 PM
	Downtown Transit Center		7:45 AM		3:00 PM	3:55 PM	5:20 PM	6:05 PM	7:35 PM
	West Main St. at 8th St./ AMTRAK		7:50 AM		3:05 PM	4:00 PM	5:25 PM	6:10 PM	7:40 PM
	Hospital West Complex		7:55 AM		3:10 PM	4:05 PM	5:30 PM	6:15 PM	7:45 PM
	Central Grounds Garage/UVA				3:15 PM	4:10 PM	5:35 PM	6:20 PM	
	Fontaine Research Park						5:45 PM	6:30 PM	
	Waynesboro Park and Ride		8:20 AM	9:05 AM	3:50 PM	4:45 PM	6:15 PM	6:55 PM	8:30 PM
	Fishersville Park & Ride	7:25 AM	8:30 AM		4:00 PM	4:55 PM	6:25 PM	7:05 PM	8:40 PM
Staunton Mall				4:10 PM	5:05 PM	6:35 PM	7:15 PM	8:50 PM	

**Example Agency: Neponset Valley Transportation Management Association**

**Strategy:** Regular blog posts

**Project Approach:** Specialized blog posts towards residents can serve as an effective tool for transportation agencies to reach out to their current or desired audience. With information including new services, updates, initiatives, or best practices, this can foster transparency and engagement with desired audiences.



**Example Agency: Chicago Transit Authority (CTA)**

**Strategy:** Local Media Outreach/ Press Release

**Project Approach:** Initiate early relationships and coordination with media contacts local experts, and elected officials. Distribute Press Releases on major development to create opportunities for earned media at no cost with accurate reporting.

<https://www.youtube.com/watch?v=sH8WfIBslzo>



**Example Agency: Chicago Transit Authority (CTA)**

**Strategy:** Innovative and Active YouTube Channel; CTA's Ride the Routes Video Series

**Project Approach:** Establish communication plan and schedule for maintaining an active YouTube channel (in addition to other selected social media channels) and incorporate an attractive video series.

<https://www.youtube.com/watch?v=B8Y1mApBAbE>

*Ever wonder what it would be like to see Chicago from the point-of-view of a Chicago Transit Authority (CTA) bus operator? Well, now you can, thanks to our **new** "Ride the Routes" video series! The entire life of our bustling City is right outside your windshield! Now, the CTA offers an exciting companion piece to its popular 2014 video series, "Ride the Rails." That collection of videos - highlighting CTA's eight rail lines, with each seen from*

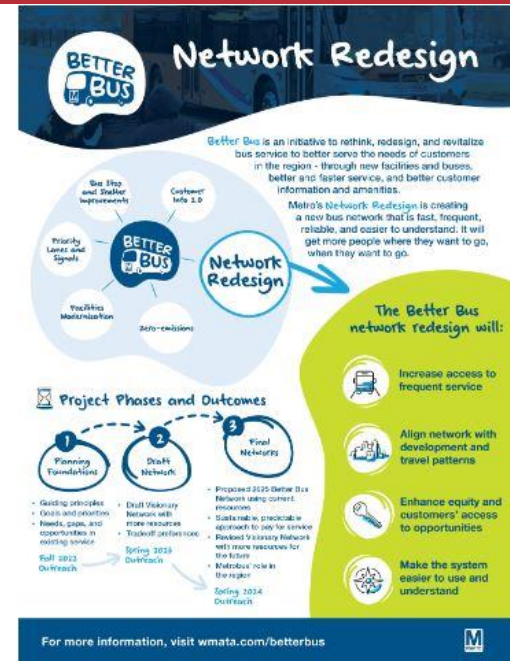


the perspective of the rail operator - has had more than 3 million views worldwide since its original release and 2019 update. Our stunning 4K "Ride the Routes" videos follow some of the City's most popular bus routes, taking you, for example, down Jean Baptiste Point DuSable Lake Shore Drive and the Mag Mile or past Soldier Field or right to Navy Pier.

**Example Agency: Washington Metropolitan Area Transit Authority**

**Strategy:** Bus Network Redesign Campaign

**Project Approach:** Coined, Better Bus, this campaign makes stops around the region with Discovery Day events across their service area. These events are a more interactive informational session than public meetings while gathering feedback on riders' perspectives. Also, this agency instituted a Community Connections Committee and a Technical Committee. Both committees provide community or technical insight to best navigate the campaign, as well as the network redesign.



**Example Agency: City of Moore Public Transportation**

**Strategy:** [Feasibility Study with Stakeholder Committee](#)

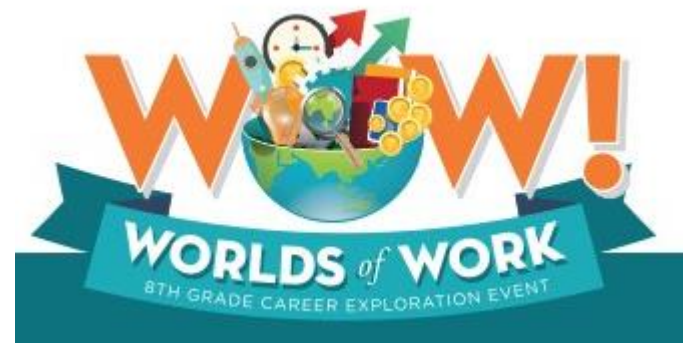
**Project Approach:** The feasibility study includes notable features like existing conditions and market analysis reports, resident surveys, and multiple alternatives. With input on this information from their Stakeholder Committee they can continually refine service through public engagement initiatives.



**Example Agency: RideSmart Northern Shenandoah Valley**

**Strategy:** Tabling the event to teach and engage young area residents on the function of transit agencies and ways the agency can provide for the community and future job opportunities

**Project Approach:** RideSmart is a sponsor and exhibitor at Worlds of Work, an immersive career exploration. Over 70 businesses, educators, and economic development partners from Clarke County, Frederick County, Page County, Rappahannock County, Shenandoah County, Warren County, and Winchester, Virginia engage with over 3,000 eighth grade students in the region to expose them to different industries and careers.



# Potential Funding Sources

Nationwide, it is very rare for transit agencies to cover the cost of transit operations with fare revenues alone. Standard practice for agencies in urban areas is to cover 20%-50% of service costs with fare revenues, advertising revenues, and funding from local governments, while the other 50%-80% is supplied by one of many state or federal grants. Among fixed-route transit providers in Virginia, directly generated revenue from fares and advertising cover an average of 10% of annual operating costs (Figure 28).

To implement new commuter bus service from any of the scenarios described in this study, LCT will need to secure additional funding for the added operating expenses as well as any new vehicles needed to provide the proposed service. LCT can apply to state programs as well as federal programs to receive one-time startup funds, limited-term pilot funds, or ongoing operating funds. The various programs are described below.

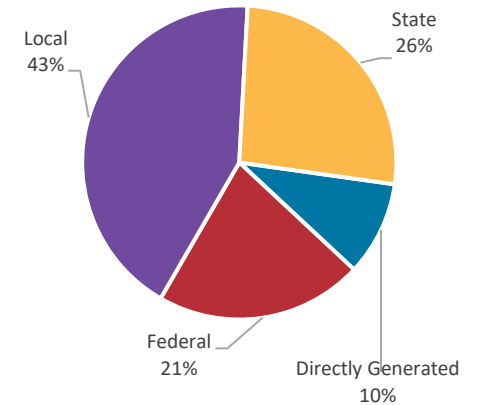
## State Programs

The Virginia Department of Rail and Public Transportation (DRPT) requires agencies operating a commuter assistance program (CAP) or seeking funding for their CAP, to develop a Commuter Assistance Program Strategic Plan (CAPSP). LCT's existing outbound commuter bus service and accompanying CAPSP ensures the agency is eligible for the CAP. Loudoun's CAPSP maintains that all CAPs and services are planned to meet the mobility needs of their communities in the most effective and cost-efficient manner. The CAPSP allows LCT to operate a flexible CAP that can evaluate and update their policies and services to respond to changes in travel demand, mobility, and transportation needs.

The CAPSP must also provide a foundation for future funding requests, directly advising the agency's programming and grant application processes in the years following its adoption. Applications for DRPT's grant programs should align with the procedures outlined in the agency's CAPSP, as the DRPT application review will include an assessment of the relationship between the CAPSP and the application.

LCT's proposed commuter bus services would greatly benefit from CAPSP funding and provide transportation to Loudoun County from municipalities without existing direct commuter service to Loudoun County. MERIT funding is fit for providing this funding.

Figure 28: Source of Operating Funds for Fixed-Route Transit Providers in Virginia



Source: National Transit Database, FY2022

## Making Efficient and Responsible Investments in Transit (MERIT)

MERIT is Virginia's statewide grants program administered by the DRPT. The program provides financial assistance to support public transportation services throughout Virginia. MERIT was created in 2018 to facilitate major reform and improve accountability for public transportation funding statewide.

Eligible MERIT applicants include:

- Local Governments
- Planning District Commissions
- Metropolitan or Transportation Planning Organizations
- Transit Agencies that Receive State Operating Assistance

Loudoun County Transit & Commuter Services are eligible as a division of the Department of General Services under Loudoun County's local government.

The program requires that transit agencies possess Transit Strategic Plans (TSPs) to ensure that transit services meet the needs of their communities. LCT's 2025 - 2034 Transit Strategic Plan outlines their intention to obtain state funding through an operating assistance grant, one of several MERIT State Aid Grant Programs.<sup>22</sup> There are other state aid grant programs to pursue; these programs include operating assistance, capital assistance, demonstration project assistance, technical assistance, and public transportation workforce development. The following subcategories are described and applied to LCT's situation.

### Demonstration Project Assistance Program

The Demonstration Project Assistance Program is a competitive grant program that supports local efforts to improve transit. The program focuses on reliability, access to amenities, and interconnected transit. Demonstration projects can serve as models and learning opportunities for other transportation agencies throughout the Commonwealth of Virginia.

The types of projects eligible for this program fall under two categories:

- **New Service** – Projects that add transit service to new areas, help invest in local businesses, and meet accessibility requirements to serve persons with disabilities.

---

<sup>22</sup> "Loudoun County Transit Development Plan." *Loudoun County Virginia Transit Strategic Plan*, 3 Mar. 2024, [www.loudoun.gov/DocumentCenter/View/122385/Transit-Strategic-Plan-FY2025-FY2034?bidId=](http://www.loudoun.gov/DocumentCenter/View/122385/Transit-Strategic-Plan-FY2025-FY2034?bidId=).



- **Technology and Innovation** - Projects that employ emerging transit technology, especially technology created or implemented by Virginia-based companies.

LCT could pursue funding for additional commuter services under the New Service category. Although many of the individual stops served in the proposed scenarios are already part of an existing transit network (LCT, OmniRide, EPTA, VRT, etc.), the bus connections between Loudoun County and the neighboring counties identified in this study represent new, unduplicated service.

## Commuter Assistance Program

The Commuter Assistance Program (CAP) is a statewide grant program to fund projects that increase ridership on transit, vanpools, and carpooling. Examples of programs and projects that can be funded by CAP are:

- Ridematching programs
- Commuter assistance websites and phone numbers
- Marketing, outreach, and promotion of carpooling, vanpooling, and transit
- Guaranteed/Emergency Ride Home (GRH/ERH) programs

The CAP utilizes the principles of project prioritization for capital needs. This process allows DRPT to allocate and assign limited resources into projects and investments identified as the most critical. The prioritization process is designed to favor projects that maintain a state of good repair of existing assets. Projects should also possess a holistically beneficial impact on public transportation services throughout Virginia. Furthermore, this prioritization process evaluates major capital investments in terms of their potential benefits related to congestion mitigation, economic development, accessibility, safety, environmental quality, and land use.

There are two specific grants under the CAP program: Operating Assistance and Project Assistance.

### CAP Operating Assistance

The CAP Operating Assistance program provides funding to support the operation of regional and local CAPs that serve the public, by providing ridematching services and commuter options information. In turn, the CAP program helps transit agencies, and their services facilitate a significant reduction in single occupant vehicle (SOV) trips, and vehicle miles traveled, along with an increase in carpool, vanpool, and transit use. Commuter bus services facilitate moving more people through heavily traveled corridors without increasing the number of vehicles in those corridors, reducing pollution, conserving fuel, and helping the public cut down on their commute cost.

Eligible operating expenses covered by the CAP Operating Assistance program include ridematching services, commuter assistance websites and phone numbers, marketing and promotion of carpool, vanpool, and transit, along with guaranteed/emergency ride home programs.<sup>23</sup>

LCT has an existing CAP program in place for operating assistance, and funding for a new commuter service would follow the same procedure.

### **CAP Project Assistance**

The CAP Project Assistance grant program supports transportation demand management projects, such as employer trip reduction, vanpool assistance, and transit marketing projects. While the CAP Operating Assistance program provides useful outreach and trip safeguards, the CAP Project Assistance grant program is a result-/outcome-focused grant program. Grant program applicants must demonstrate that their program/project will attain measurable change in transportation habits, namely an increase in transit ridership, an increase in vanpool ridership, or an increase in carpooling.

Prior award of funding from the CAP Project Assistance grant does not guarantee continuous or future award of funds. Eligibility criteria for the CAP Project Assistance grant program requires that projects reduce SOV travel. Methods for reducing SOV travel range from broad, marketing projects to individualized work schedule amendments. These methods include, but are not limited to, the following:

- Employer Trip Reduction Projects - Applicants receiving funding for employer services from VDOT must detail their expenses using the VDOT funding and total amount received in their Supplemental Application
- Vanpool Projects
- Transit Marketing Projects
- Other Projects - Any other project that can provide measurable results demonstrating a reduction in SOV trips, an increase in transit ridership, increase in vanpool ridership, or increase in carpooling

All potential projects—employer, vanpool, transit marketing and other projects—must be submitted as separate applications. Each application must ensure proper measurement of results and tracking of funding.

Eligible project expenses covered by the CAP Project Assistance program include salaries, wages, and indirect costs associated with the operation administration. Other eligible expenses include incentive and reward programs like Commuter Connections. Travel expenses for project staff are also eligible, so long as they comply with federal, state, and DRPT regulations.

---

<sup>23</sup> "Transit and Commuter Assistance Grant Application Manual." *Public Transportation and Commuter Assistance Programs*, [drpt.virginia.gov/wp-content/uploads/2023/09/FY25-Transit-and-Commuter-Assistance-Grant-Application-Manual.pdf](https://drpt.virginia.gov/wp-content/uploads/2023/09/FY25-Transit-and-Commuter-Assistance-Grant-Application-Manual.pdf).

To receive funding, LCT would be required to report all revenues and other sources of funding in their application. Revenue sources include funding from state or federal agencies, membership dues, advertising revenue, and more.<sup>24</sup>

Ultimately, all State Aid Grant Program applications are made online at the DRPT's Online Grant Administration website.<sup>25</sup>

### **Transit Ridership Incentive Program (TRIP)**

DRPT administers the TRIP, which provides funding to transit agencies and governing bodies to create more accessible, safe, and regionally significant transit networks. TRIP funds four project categories:

- Zero and Reduced Fare
- Regional Connectivity
- Public Safety
- Passenger Amenities

TRIP's Regional Connectivity component is designed to improve regional connectivity and mitigate congestion in urban areas with population over 100,000 through regional public transportation projects.

The following project types are deemed eligible for TRIP Regional Connectivity funding:

- The improvement and expansion of routes with regional significance
- The implementation of integrated fare collection
- The development and implementation of regional subsidy allocation models
- The establishment of bus-only lanes on routes of regional significance

LCT belongs to Region 10 in the TRIP Regional Connectivity Map as part of the Washington-Arlington-Alexandria area. Additionally, U.S. Route 15 and Virginia State Route 7 could qualify LCT for funding as these routes provide regionally significant service. This means that the routes facilitate intra-regional travel within the urbanized area. These routes could be deemed significant based on their connections to employment, education, recreation, healthcare, and other vital community services.

---

<sup>24</sup> "Transit and Commuter Assistance Grant Application Manual." *Public Transportation and Commuter Assistance Programs*, [drpt.virginia.gov/wp-content/uploads/2023/09/FY25-Transit-and-Commuter-Assistance-Grant-Application-Manual.pdf](https://drpt.virginia.gov/wp-content/uploads/2023/09/FY25-Transit-and-Commuter-Assistance-Grant-Application-Manual.pdf).

<sup>25</sup> "WebGrants." *Virginia Department of Rail and Public Transportation*, <https://grants.drpt.virginia.gov/index.do>

## Federal Programs

Although LCT's current policy advises against accepting federal formula funding for its *operating* expenses, there are other funds from the FTA available for capital purchases such as transit vehicles, infrastructure, facilities, equipment, and more.

### Congestion Mitigation and Air Quality Program (CMAQ)

The goal of the CMAQ program is to reduce congestion and improve air quality through surface transportation improvement projects in areas that fall below national standards for ozone, carbon monoxide, or particulate matter pollution. The program administers funds for transportation projects in areas of the country that do not achieve national air quality standards. By funding transportation projects that reduce regulated emissions associated with carbon monoxide, ozone and particulate matter pollution through congestion mitigation techniques, overall air quality can be improved. Persistent traffic and industry throughout the Washington DC Metropolitan area can adversely effects air quality standards, making LCT viable to receive CMAQ funding.

CMAQ plays a role in both large and small metropolitan areas and is focused on the need to reduce traffic congestion, decrease emissions, and maintain economically viable and mobile communities. LCT's efforts to improve and adapt local transit and commuter bus implementation encourages alternatives to driving alone and improves traffic flow. This aligns with CMAQ's goals and makes the agency a viable candidate for funding.

Ultimately, the Commonwealth of Virginia was earmarked to receive \$62,256,732 worth of CMAQ funding in FY2024.<sup>26</sup> In FY2025, the federal government will allocate a further \$2.69 Billion across the country. Because Loudoun County has been designated as not meeting the current air quality standard<sup>27</sup>, LCT could benefit from applying and receiving CMAQ funding to continue improving their transit services.

### Grants for Buses and Bus Facilities Program

The Grants for Buses and Bus Facilities Competitive Program utilizes federal resources available to states and direct recipients to replace, rehabilitate, and purchase buses and related equipment to construct bus-related facilities, including technological changes or innovations to modify low or no emission vehicles or facilities. These grants are disbursed to states and agencies that may otherwise be unable to fund

---

<sup>26</sup> "Infrastructure Investment and Jobs Act (Bipartisan Infrastructure Law)." *Federal Highway Administration*, 24 Jan. 2024, [www.fhwa.dot.gov/bipartisan-infrastructure-law/comptables/table7p1.cfm](http://www.fhwa.dot.gov/bipartisan-infrastructure-law/comptables/table7p1.cfm).

<sup>27</sup> "Ozone." *Virginia Department of Environmental Quality*, [www.deq.virginia.gov/our-programs/air/monitoring-assessments/air-quality-planning/ozone](http://www.deq.virginia.gov/our-programs/air/monitoring-assessments/air-quality-planning/ozone).

improvements to their facilities through formula grants alone. In FY2024 \$390 million in competitive grants was disbursed under Grants for Buses and Bus Facilities Program.<sup>28</sup>

In FY2023, two Virginia agencies received the Buses and Bus Facilities grant. The Transportation District Commission of Hampton Roads received \$25,000,000 in grants while the Virginia Department of Rail and Public Transportation (DPRT) received \$4,690,010. LCT has also successfully obtained FTA funding, receiving \$13,880,910 in Low or No Emission grant money in FY2023.<sup>29</sup> If LCT continues to build its federal funding network and applies for a Bus and Bus Facilities grant, these funds can be used to purchase any additional buses required to operate the new commuter service.

### Low- and No-Emission Grant Program

The Low- or No-Emission program provides funding to state and local governmental authorities for the purchase or lease of zero-emission and low-emission transit buses as well as acquisition, construction, and leasing of required supporting facilities.

Eligible applicants include direct or designated recipients of FTA grants; States; local governmental authorities; and Indian Tribes. Eligible projects may incorporate leasing or acquiring low- or no-emission buses, constructing new facilities or leasing facilities and equipment for low- or no-emission buses, or rehabilitating or improving existing public transportation facilities to accommodate low- or no-emission vehicles.

In FY 2023, LCT received \$13,880,910 in Low- and No-Emission funding to buy 37 compressed natural gas buses, build a fueling station and improve its maintenance facility. These are the first steps in the agency's 10-year net-zero energy strategy. The buses will anchor the agency's fleet and service the county's environmental justice communities while reducing greenhouse gas emissions.

### Rebuilding American Infrastructure with Sustainability and Equity (RAISE)

RAISE grants are competitive grants for planning or constructing surface transportation infrastructure projects that improve safety; environmental sustainability; quality of life; mobility and community connectivity; economic competitiveness and opportunity including tourism; state of good repair; partnership and collaboration; and innovation. Since the passage of the Bipartisan Infrastructure Law (BIL) in 2021, the demand for RAISE funding has outpaced available funds. This high level of demand contributes to the competitive nature of the grant.

---

<sup>28</sup> "FY 2024 Competitive Funding Opportunity: Low or No Emission Grant Program and the Grants for Buses and Bus Facilities Competitive Program." *U.S. Department of Transportation*, 8 Feb. 2024, [www.transportation.gov/bipartisan-infrastructure-law/regulations/2024-02246#:~:text=The%20Federal%20Transit%20Administration%20\(FTA,grants%20under%20the%20FY%202024.](https://www.transportation.gov/bipartisan-infrastructure-law/regulations/2024-02246#:~:text=The%20Federal%20Transit%20Administration%20(FTA,grants%20under%20the%20FY%202024.)

<sup>29</sup> "FY23 FTA Bus and Low- and No-Emission Grant Awards." FY23 FTA Bus and Low- and No-Emission Grant Awards | FTA, [www.transit.dot.gov/funding/grants/fy23-fta-bus-and-low-and-no-emission-grant-awards](https://www.transit.dot.gov/funding/grants/fy23-fta-bus-and-low-and-no-emission-grant-awards).

LCT is eligible for RAISE grant application as a transit agency. Some potential RAISE grant projects include highway or bridge projects, public transportation projects, passenger and freight rail transportation projects, port infrastructure investments, airport surface transportation projects, and more.

While RAISE grants are primarily intended for urban areas, Loudoun County's commuter bus program could be categorized under the public transportation subgroup; the commuter bus program could be uniquely applicable to address safety, mobility, and quality of life in both rural and urban areas.

### **Helping Obtain Prosperity for Everyone Program (HOPE)**

The FTA's HOPE Program aligns with the USDOT's efforts to address deteriorating conditions and disproportionately high fatality rates on rural transportation networks. The HOPE program supports infrastructure projects that will address the transportation challenges faced by areas of persistent poverty, deteriorating conditions, and high fatality rates.

HOPE supports planning, engineering, and technical studies along with financial planning to improve transit services in areas experiencing long-term economic distress. Loudoun County's commuter bus program may align with the USDOT's focus on addressing the confluence of issues facing rural residents and their transportation infrastructure by providing safer commuting alternatives. The HOPE program entails a coordinated human service transportation approach to improve transit service or provide new services such as rides to opioid abuse recovery and treatment.

Overall, the FTA's HOPE Program supports projects that will address the transportation and mobility challenges faced by areas of persistent poverty and could be applicable to Martinsburg, WV, and Marshall, VA, areas due to high poverty census tracts in Martinsburg and possible high poverty areas in Fauquier County, VA.

Table 9 and Table 10 outline potential federal and state funding sources and their applicability for the proposed Loudoun Commuter Bus service.

Table 9: State Funding Programs

Grant Program	Commuter Bus Program Applicability	Projected Grant Award Amount (Variable/Non-Guaranteed)	Level of Difficulty for Award
<b>Making Efficient and Responsible Investments in Transit (MERIT)</b>	MERIT's New Service Projects subcategory is suitable because new commuter bus service provides transit service to new areas, helps invest in local businesses, and meets accessibility requirements to serve persons with disabilities.	Demonstration Project Assistance Program: State Funding: Up to 80% of eligible expenses Local Match: 20% Federal: Recipients can augment state funds with federal funds not controlled by DRPT; however, a minimum 4% local match is required	Medium
<b>Commuter Assistance Program (CAP)</b>	LCT already uses the CAP and the agency's CAP use is referenced in their fiscal year (FY) 2025 - FY 2029 CAPSP document.	Both Operating Assistance and Project Assistance State Funding: Up to 80% of eligible expenses Local Match: 20%	Medium
<b>Transit Ridership Incentive Program (TRIP)</b>	Loudoun County's new commuter bus routes could qualify for the regional significance section of TRIP's Regional Connectivity category. The commuter bus routes along U.S. Route 15 and Virginia State Route 7 could be deemed regionally significant.	Match rates generally mirror those of the MERIT Capital Program. State Funding: Up to 80% of eligible expenses Local Match: 20%	High

Table 10: Federal Funding Programs

Grant Program	Commuter Bus Program Applicability	Projected Grant Award Amount (Variable/Non-Guaranteed)	Level of Difficulty for Award
<b>Congestion Mitigation and Air Quality Program (CMAQ)</b>	Reduces vehicular congestion and improves air quality by decreasing overall VMT.	\$62,231,828 (Total Projected Grant Award Amount for Virginia in FY2025) <sup>30</sup>	Medium
<b>Grants for Buses and Bus Facilities Program</b>	Replace, rehabilitate, and purchase new vehicles and related equipment.	\$14,845,005 (Average Virginia Grant in FY2023)	Medium
<b>Low- and No-Emission</b>	CNG buses could be used for commuter bus service.	\$13,880,910 (Received by LCT in FY2023)	High
<b>Rebuilding American Infrastructure with Sustainability and Equity (RAISE)</b>	Useful for multimodal, multi-jurisdictional projects that are difficult to support through traditional USDOT programs. Grant can be applied to road projects that align with national objectives.	FY2024 minimum grant award: \$5,000,000 in urban areas \$1,000,000 in rural areas <sup>31</sup>	High
<b>Helping Obtain Prosperity for Everyone Program (HOPE)</b>	Potentially applicable to Martinsburg, WV, and Marshall, VA, areas due to high poverty census tracts in Martinsburg and possible high poverty areas in Fauquier County, VA.	An average of \$338,415 distributed across 25 projects in FY2020 <sup>32</sup>	High

<sup>30</sup> "Statewide Transportation Improvement Program (STIP)." *Virginia Department of Transportation (VDOT)*, [www.vdot.virginia.gov/media/vdotvirginiagov/projects/how-projects-are-funded/stip/FFY2024-2027-Virginia-STIP-FINAL\\_acc10272023.pdf](http://www.vdot.virginia.gov/media/vdotvirginiagov/projects/how-projects-are-funded/stip/FFY2024-2027-Virginia-STIP-FINAL_acc10272023.pdf).

<sup>31</sup> "Notice of Funding Opportunity for Fiscal Year (FY) 2024." *Office of the Secretary of Transportation*, [www.transportation.gov/sites/dot.gov/files/2024-02/FY\\_2024\\_RAISE\\_NOFO\\_Amendment\\_1.pdf](http://www.transportation.gov/sites/dot.gov/files/2024-02/FY_2024_RAISE_NOFO_Amendment_1.pdf).

<sup>32</sup> "Fiscal Year 2020 Helping Obtain Prosperity for Everyone (HOPE) Program Projects." *Fiscal Year 2020 Helping Obtain Prosperity for Everyone (HOPE) Program Projects | FTA*, [www.transit.dot.gov/funding/grants/fiscal-year-2020-helping-obtain-prosperity-everyone-hope-program-projects](http://www.transit.dot.gov/funding/grants/fiscal-year-2020-helping-obtain-prosperity-everyone-hope-program-projects).