

Greater Roanoke Transit Company – Valley Metro

Transit Strategic Plan (TSP)

FY2025 – FY2034

Final Report – July 2024. Final Version - September 2024



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Executive Summary

Introduction

The development of the Valley Metro Transit Strategic Plan (TSP) followed the TSP Guidelines published by the Virginia Department of Rail and Public Transportation (DRPT) and resulted in the following chapters:

- Chapter 1: System Overview and Strategic Vision
- Chapter 2: System Performance and Operations Analysis
- Chapter 3: Planned Improvements and Modifications
- Chapter 4: Implementation Plan
- Chapter 5: Financial Plan
- Appendix A: Agency Profile
- Appendix B: Origin and Destination Report

Work on the TSP was initiated in September 2023 and was completed in July 2024. Significant stakeholder outreach occurred throughout the process, including rider input through an on-board survey, community input through a general survey, staff input, and community stakeholder input. Guidance for the plan was provided by Valley Metro's Transit Passenger Advisory Committee (TPAC).

The direction of the plan was heavily influenced by prior transit planning efforts in the Roanoke Valley, including the Roanoke Valley Transit Vision Plan (2016), the Valley Metro Transit Development Plan (2018), and the Valley Metro Comprehensive Operational Analysis (2018). The strategic vision for public transportation in the Roanoke Valley includes more robust services within the current service area, as well as expansionary routes focused on areas of Roanoke County that are becoming more urban in nature. Note that any service expansions planned for Roanoke County will need the County's endorsement and local match.

The TSP should be considered a living document for improvement and growth for Valley Metro. As with any plan, it can be updated as necessary to reflect opportunities and changing conditions that may arise over the ten-year planning period.

This executive summary details the specific projects that Valley Metro and local stakeholders plan to implement over the next ten years. The TSP improvements are presented in three sections: service, infrastructure and fleet, and technology. Within each of these sections, the improvements are organized into short-term, mid-term, and long-term priorities.

The short-term projects are those that Valley Metro is planning to implement in the next three years, assuming funding is available. The mid-term projects are those that Valley Metro hopes to implement in years four through seven. Longer-term projects are those that include new routes and/or routes that serve areas outside of the current Valley Metro service area.

Service Improvements

Rider input indicate a desire for longer hours and more frequent transit service, and these improvements were prioritized over other stakeholder input that indicated a need for service to additional areas. The following service improvement is included within the short-term:

- Expanded MetroFLX service to include early mornings. Recent increases in MetroFLX ridership indicate that additional capacity on Sundays and during certain evening peak periods may also be necessary.

An important service improvement highlighted for the mid-term is:

- A return to 30-minute frequency for the highest productivity routes. This improvement is a high priority, but the annual operating expenses (about \$1 million) necessitate that it be assigned to the mid-term.

The long-term service improvements are as follows:

- New Route – the Brandon Avenue Connector,
- New Route – Route 93 – Salem (split from the current 91/92 route),
- New Route – Electric Road Corridor (partially in Roanoke County), and
- MetroFLX for the Hollins/Peters Creek/Plantation Road Area (in Roanoke County).

Estimated costs for these projects are shown in Table ES-1. Maps for the three proposed new fixed routes are provided as Figures ES-1, ES-2, and ES-3. Note that new capital will not be required for these service expansions, as Valley Metro previously operated 30-minute service on twelve routes and has rolling stock available for modest expansions. MetroFLX is currently operated by a contractor.

Table ES-1: Summary of Service Improvement Projects

Service Improvement Proposals	Total Annual Costs - FY24 Dollars	Capital Costs	Implementation
Operating:			
Expand MetroFLX hours to early morning	\$234,000	\$0	Short
30-minute frequency for four route pairs (1)	\$1,000,000	\$0	Medium
Brandon Avenue Connector (1)	\$456,350	\$0	Long
Route 93 Salem (1)	\$395,500	\$0	Long
Electric Road Corridor (1) (2)	\$456,350	\$0	Long
MetroFLX for Hollins/Peters Creek/Plantation Road Area (2)	\$275,400	\$0	Long
Total Operating Improvements	\$2,817,600	\$0	

Figure ES-1: Brandon Avenue Connector

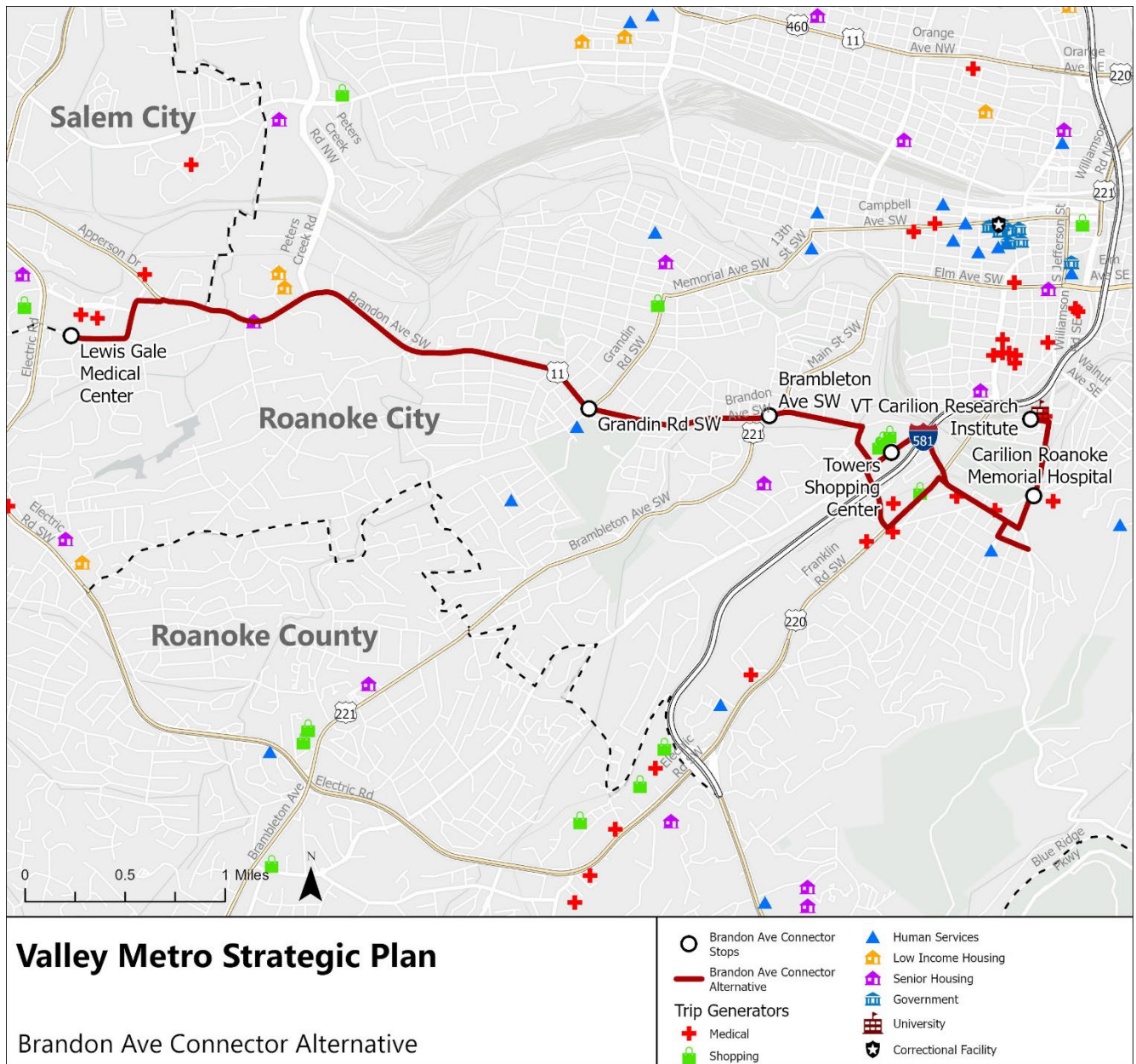


Figure ES-2: Route 93 Salem – Split from the 91/92

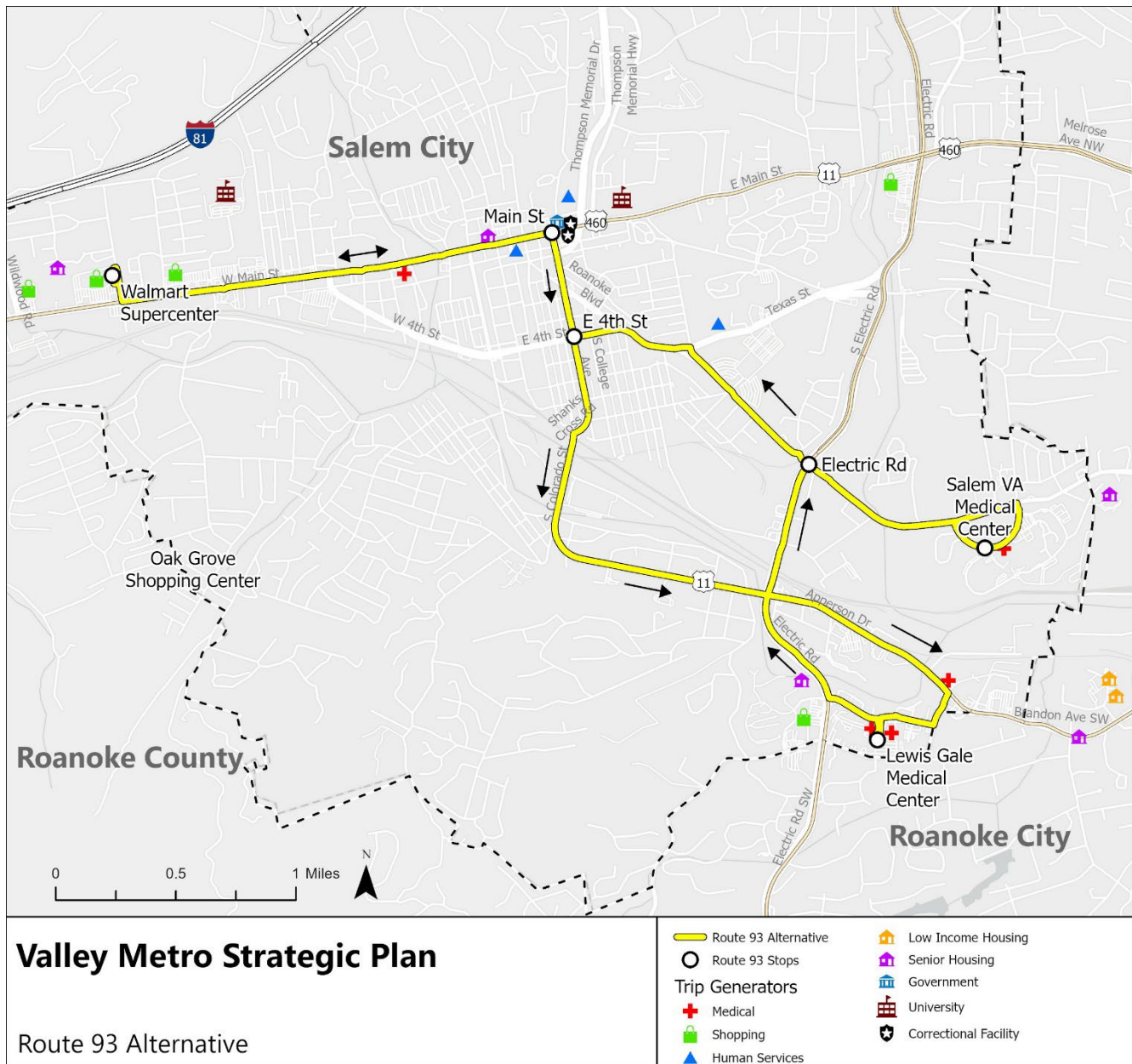
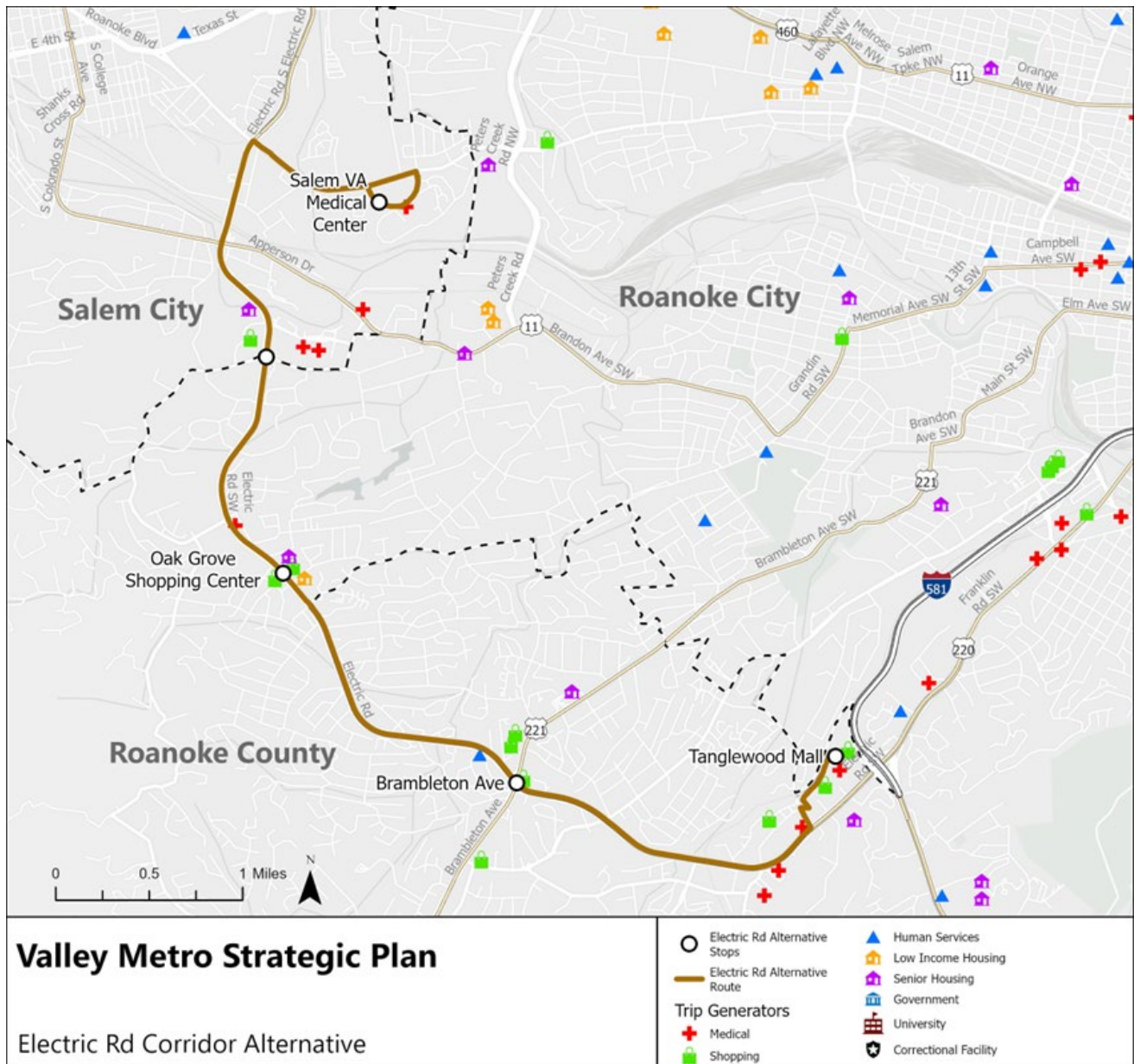


Figure ES-3: Electric Road Corridor Route



Annual Operating Budgets

For FY2025, the annual operating budget for Valley Metro is expected to be about \$14.8 million. Inflationary increases over the ten-year period (3% per year) will result in the FY2034 operating budget rising to about \$19.4 million with no new services. Adding the improvements highlighted in the TSP will result in the annual operating budget rising to about \$23 million per year. The revenue side of the budget assumes that the current funding sources will continue to be available for the program with similar funding splits among federal, state, and local sources. Farebox revenue is assumed to continue to represent about 9.3% of total operating expenses.

Infrastructure and Fleet

Capital investments that involve infrastructure as well as rolling stock are included within the category of infrastructure and fleet. The following improvements are planned for the short-term within this category:

- Shelters and Pedestrian Accessibility Infrastructure,
- New Bus Stop Signs,
- Exploration of Fleet Electrification and other Zero Emission Solutions, and
- Routine replacement of vehicles and equipment.

The capital plan includes budget line items for shelters, pedestrian infrastructure, and new bus stop signs. Valley Metro has already paid for the first step of the fleet electrification pilot project and future electrification and/or other low emission projects are to be determined based on the pilot program. The routine replacement of vehicles and equipment is also part of the ten-year plan.

The long-term capital plan includes two satellite transit centers – one in the Valley View area and one at Tanglewood.

Technology

Improving the customer experience is an important component of the ten-year plan. Projects within this category include those that help to improve communication with riders as well as making fare payments more convenient. A ride request application (app) for MetroFLX is also included. The short-term projects include:

- Website improvements, and
- Mobile ticketing.

The mid-term projects include:

- MetroFLX application, and
- Farebox Replacement.

Given the dynamic nature of technology projects, we did not include any long-term projects. The ongoing need to replace computer hardware and software is included within the capital plan.

Annual Capital Budgets

The fleet replacement budget for the ten-year period totals over \$40 million and averages about \$4.1 million per year. This category includes fixed route vehicles, over-the-road coaches, paratransit vehicles, trolleys, and service vehicles. Replacement vehicles could be zero-emission vehicles, if pilot programs deem these vehicles to be feasible. Typical federal/state/local funding splits for capital expenditures (80%/16%/4%) are used for the plan, but may not always be the same, pending the availability of federal and state funds. When only state and local funds are available the funding split is 68% state and 32% local. When only federal and local funds are available the capital funding split is 80% federal and 20% local.

The financial plan for passenger amenities, technology, and other capital averages about \$530,000 per year for the ten-year period. This plan also assumes the typical federal capital splits discussed above. The two passenger facilities planned for the long-term horizon are budgeted at about \$1.75 million in 2024 dollars.

Chapter 1

System Overview and Strategic Vision

System Overview

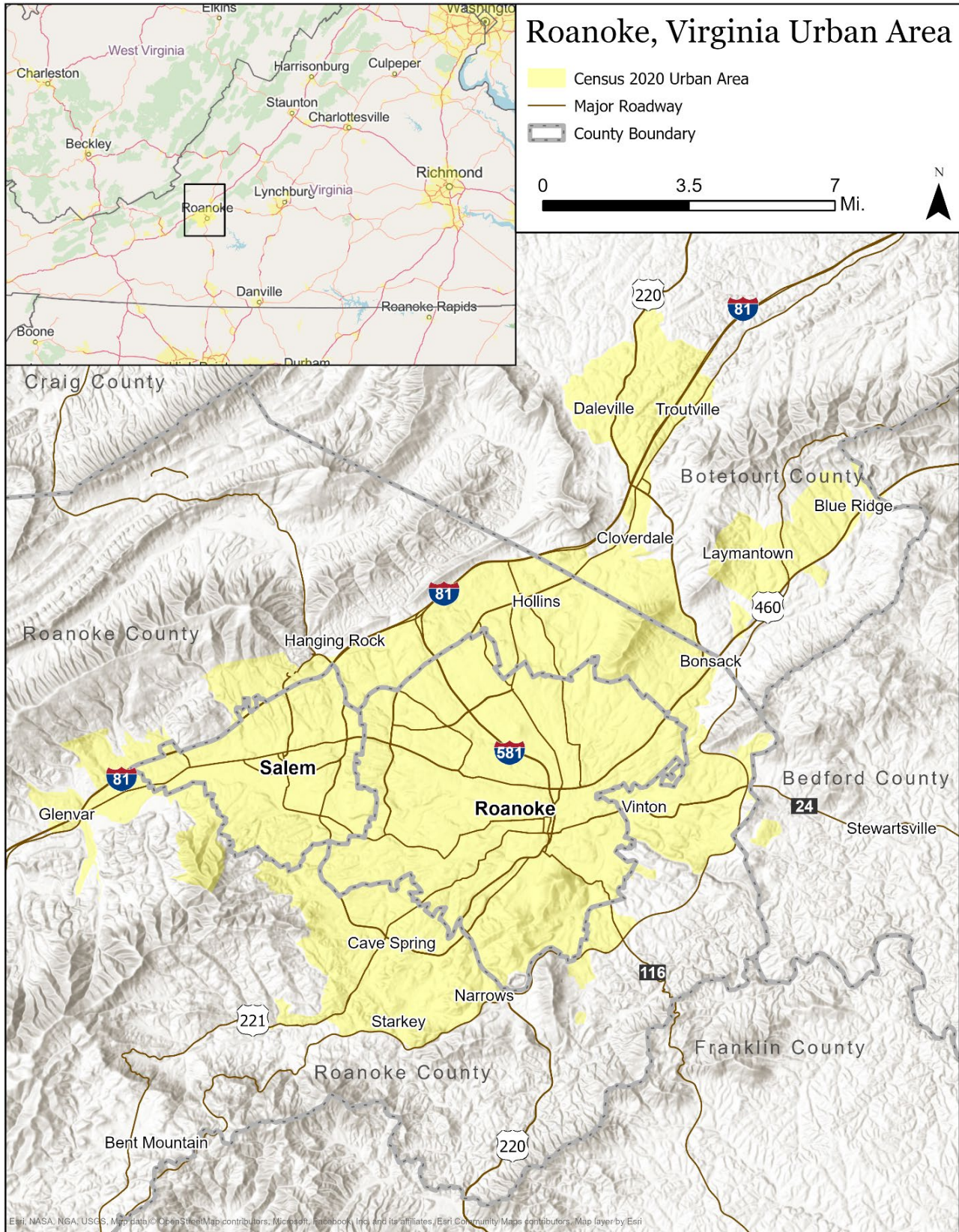
The Greater Roanoke Transit Company (GRTC), doing business as Valley Metro, provides fixed route public transit services within the cities of Roanoke and Salem and parts of Roanoke County including the Town of Vinton. Complementary ADA paratransit, termed Specialized Transit – Arranged Rides (STAR), is provided under a contractual arrangement with Unified Human Services Transportation Systems, Inc., Roanoke Area Dial-A-Ride (RADAR). Valley Metro also operates intercity bus service between the New River Valley and Roanoke (the Smart Way Commuter and Smart Way Express). Valley Metro recently initiated MetroFLX, which is a demand-response service that operates during the evening hours and on Sundays. RADAR operates MetroFLX under contract to Valley Metro.

Valley Metro is a private, non-profit, public service organization that is owned by the City of Roanoke. The seven members of the Board of Directors serve one-year terms and are appointed annually by the Roanoke City Council. The General Manager and the Assistant General Manager for Valley Metro are employees of Transdev, through a contractual agreement with the City of Roanoke. All other Valley Metro staff members are employees of the Southwestern Virginia Transit Management Company, Inc., which is a subsidiary of Transdev. The Transdev management team reports to the Board of Directors as well as to the assistant city manager, who serves as a liaison.

Greater Roanoke Area

The Greater Roanoke Area serves as the center of commerce for Southwest Virginia's Roanoke Valley and includes an urban area of over 200,000 people, which classifies the urbanized area as "large," for the purposes of transportation funding and decision making. As shown in Figure 1-1, the urban area includes all the cities of Roanoke and Salem, the Town of Vinton, and portions of the counties of Roanoke, Botetourt, Bedford, and Montgomery. Except for the Smart Way routes, which also serve the Blacksburg Urbanized Area, Valley Metro's fixed routes operate within the Roanoke Urbanized Area.

Figure 1-1: Roanoke, Virginia Urban Area



Services Provided and Area Served

Valley Metro is the primary public transportation provider for the urban areas of the Roanoke Valley. Valley Metro services include fixed routes, specialized transportation for individuals with disabilities, general public demand-response (MetroFLX) and special event shuttles. Valley Metro also operates the Smart Way Bus that delivers commuter service between Roanoke and the New River Valley.

Valley Metro Fixed Route Services

The new Third Street Station in Downtown Roanoke serves as the hub for Valley Metro's fixed route service, allowing for a "hub and spoke" style service. Each of the fixed routes has one end point at the Third Street Station and the other at another location. Except for Routes 91/92, which have two morning commuter-oriented runs, buses begin service at their end point at 5:45 a.m. and converge towards Third Street Station. Valley Metro fixed route service generally operates Monday through Saturday from 5:45 a.m. to 8:45 p.m. Hourly service is provided, with buses leaving the Third Street Station at 15 minutes past the hour. The following fixed routes are offered:

- Routes 11 and 16 – To and from Valley View Mall and Third Street Station
- Routes 12 and 15 – To and from Third Street Station and Hoback Drive Shopping Area
- Routes 21 and 22 – To and from Valley Court and Third Street Station via Williamson Road
- Routes 25 and 26 – To and from Airport and Third Street Station via Hollins Road
- Routes 31 and 32 – To and from Blue Hills Drive and Third Street Station
- Routes 35 and 36 – To and from Vinton and Third Street Station
- Routes 41 and 42 – To and from Southeast Roanoke and Third Street Station
- Routes 51 and 52 – To and from Tanglewood Mall and Third Street Station via Franklin
- Routes 55 and 56 – To and from Tanglewood Mall and Third Street Station via Colonial/Ogden
- Routes 61 and 62 – To and from Brambleton/Red Rock and Third Street Station
- Routes 65 and 66 – To and from Carleton/Grandin and Third Street Station
- Routes 71 and 72 – To and from LewisGale Medical Center and Third Street Station
- Routes 75 and 76 – To and from the Salem VA Medical Center and Third Street Station
- Routes 85 and 86 – To and from Peters Creek Road and Third Street Station
- Routes 91 and 92 – To and from Salem VA Medical Center/LewisGale Medical Center and Third Street Station via Salem

The operating statistics for each of these routes are provided in Chapter 2. Exhibit 1-1 provides a system map for the Valley Metro fixed routes. This map represents the non-construction network. There is currently a long-term detour in effect as the Wasena Bridge is being replaced. This affects the 61/62 route pair that travels on Main Street SW, and Elm Avenue. For the construction period, it will use Memorial bridge instead.

Star Line Trolley

Valley Metro operates the Star Line Trolley, which connects Downtown Roanoke with the Carilion Roanoke Memorial Hospital via Jefferson Street. The Star Line Trolley operates Monday through Friday, 7:00 a.m. to 7:00 p.m. providing service every 20 minutes.



Smart Way Bus and Smart Way Express

Smart Way Bus

The Smart Way Bus is a regional bus service operated by Valley Metro that links the Roanoke Valley to the New River Valley. Smart Way Bus service starts at Third Street Station in Downtown Roanoke and ends at Virginia Tech Squires Student Center. The Virginia Tech stop will be moved to the new Multi-Modal Transit Center that is currently under construction adjacent to the Perry Street Parking Garage on campus. The route also has stops at the Hotel Roanoke, the Roanoke-Blacksburg Regional Airport, park and ride lots along I-81 (Exits 140 and 118A), Laurel Street in Christiansburg, the Virginia Tech Corporate Research Center, and Main Street in Blacksburg.

Smart Way Express

The Smart Way Express provides service between the Virginia Tech Carilion (VTC) Health and Technology Campus on Riverside Circle in Roanoke and Virginia Tech's main campus in Blacksburg. The Exit 118 Park and Ride in Christiansburg is also served. The Smart Way Express operates Monday through Friday, between the hours of 6:20 a.m. and 10:00 p.m. There are 10 trips from Roanoke to Virginia Tech and 11 trips from Virginia Tech to Roanoke.

ADA Complementary Paratransit Service

ADA complementary paratransit service is provided by RADAR under contract to Valley Metro. The service operates as Specialized Transit – Arranged Rides (STAR) – and is available in the cities of Roanoke and Salem and the Town of Vinton, within $\frac{3}{4}$ mile of a Valley Metro fixed route. To use the service, riders must first complete an eligibility application, which includes verification of a disability by a professional who is familiar with the applicant’s disability. The application process is managed by Valley Metro.

Once approved for ADA paratransit service, riders call STAR directly to arrange their trips. Service is provided during the same days and hours as Valley Metro’s fixed route services, which are Monday through Saturday, 5:45 a.m. until 8:45 p.m.

MetroFLX

MetroFLX is a new demand-response service that serves the cities of Roanoke, Salem, and the Town of Vinton. Service is provided Monday through Saturday from 8:45 p.m. to 12:45 a.m., and on Sundays from 9:00 a.m. to 6:00 p.m. The purpose of the service is to provide mobility options for people after the fixed routes have stopped operating for the evening and on Sundays when there is no fixed route service. The service was initiated at the end of January 2024.

While the service is branded as microtransit, riders currently need to call to schedule trips for the next day. Trips are to be scheduled by 5:00 p.m. the day before the trip, though same day rides will be accommodated on a space available basis. MetroFLX is operated by RADAR under contract to Valley Metro and is considered to be a pilot program. If the program is successful, additional infrastructure, such as application-based real-time scheduling will be considered.

Other Regional Transportation Services

The following additional transportation services are available within or connecting to the Roanoke Valley.

Greyhound has a passenger stop at Valley Metro’s Third Street Station. There is currently a 5:10 a.m. bus that travels east toward Lynchburg and on to Richmond to connect to the national intercity bus network. There is also a 12:35 p.m. bus that travels south and west toward Wytheville and on toward Tennessee.

Amtrak provides service from Roanoke to points east and north via the Northeast Regional route. Eastbound trains leave Monday through Friday at 6:20 a.m. and 4:30 p.m. On Saturdays and Sundays, the morning train leaves at 8:45 a.m. and there is a second train at 4:30 p.m. Trains arrive from points east and north at 1:13 p.m. and 10:06 p.m., Monday through Friday. On Saturdays and Sundays, the westbound trains arrive at 1:51 p.m. and 9:28 p.m.

Virginia Breeze – While the City of Roanoke is not directly served through the Virginia Breeze intercity bus program, service is available from Salem, Blacksburg and Christiansburg and riders can use the Smart Way bus to connect to the Virginia Breeze. The closest Virginia Breeze service is offered through the Highlands Rhythm route, which provides service between Bristol and Washington, D.C., serving Wytheville, Radford, Christiansburg, Salem, Harrisonburg, Dulles Airport, and the West Falls Church Metrorail. The Salem stop is located at Exit 140 VDOT Park and Ride lot and is served at 1:45 p.m. in the northbound direction and 6:00 p.m. in the southbound direction.

The Valley Flyer route provides service between Blacksburg and Washington, D.C., with northbound service leaving Blacksburg at 8:00 a.m. and Christiansburg at 8:15 a.m., arriving in D.C. at 2:15 p.m. The route also serves Lexington, Staunton, Harrisonburg, Front Royal, Dulles Airport, and the West Falls Church Metrorail station. From Washington D.C., the bus leaves D.C. at 9:35 a.m. and arrives back in Christiansburg at 3:30 p.m. and in Blacksburg at 3:50 p.m.

CORTAN is the name of Roanoke County’s mobility service for Roanoke County residents who are at least 65 years old, or who have a disability. The service is available to and from destinations within Roanoke County, the Town of Vinton, the City of Salem, and the City of Roanoke. The program is administered by the County and operated by Via. Service is offered Monday through Friday from 7:00 a.m. to 6:00 p.m. The service mode is curb to curb demand-response. Riders need to first register with the program. Once registered, riders can book trips using the CORTAN mobile app, calling Via directly, or booking online. Trip requests are taken up until 3:00 p.m. the day prior to the desired trip. The fare is \$5.00 per trip.

RADAR is a non-profit organization based in Roanoke that provides a variety of rural and specialized transportation services in the greater Roanoke area. RADAR operates Valley Metro’s STAR ADA paratransit service, as well as the new MetroFLX, under contractual agreements. RADAR also provides the following route deviation services:

- Mountain Express, serving Alleghany County, Covington, Clifton Forge, and Iron Gate
- Maury Express, serving Buena Vista, Lexington, and Rockbridge County
- Piedmont Area Regional Transport (PART), serving Martinsville and Henry County
- College Express, serving Ferrum College

Each of these services has slightly different operating parameters.

From Valley Metro’s Smart Way services, riders can also connect to Blacksburg Transit and Radford Transit.

Agency Profile

A more detailed overview of Valley Metro is included in Appendix A. This Appendix includes the following system information:

- History,
- Governance details,
- Organizational structure,
- More detailed information concerning the services provided and the areas served,
- Fare structures, payments, and purchasing,
- Transit asset management,
- Transit security program,
- Intelligent transportation systems programs,
- Data collection and ridership/reporting method,
- Coordination with other transportation service providers, and
- Current initiatives.

Recent Initiatives

Third Street Station

A major initiative that Valley Metro completed in 2023 was the opening of the Third Street Station. Valley Metro had been seeking a suitable site for the re-location of the downtown transit hub for several years. The prior hub, Campbell Court, had reached the end of its useful life and the system had outgrown the facility. In addition, the City of Roanoke wished to re-develop the site. The re-introduction of passenger rail service also factored into the new station, though the chosen location ended up a few blocks away.

The Third Street site was chosen after it was suggested in the 2018 Comprehensive Operational Analysis. It is in front of the Transportation Museum of Virginia, about three blocks away from Campbell Court. A major focus for the system over the past few years has been the development of the station. The project was a multi-year effort, with design occurring in FY2020 and FY2021, followed by construction. The project cost about \$13 million and was funded with state and federal funds through the Flexible Surface Transportation Program.

The new station includes a building with restrooms, a waiting area, and an information booth. A conference room and a driver's break room area are also included within the building. Outside amenities include platforms, push-button voice communication, and information screens. Each route has a designated bay, making it easy to find the correct vehicle. Greyhound has a designated location at the station. There is also a customer service center at the station. Some photos of the new station are provided in Figures 1-2 through 1-5.

Figure 1-2: Third Street Station Sign



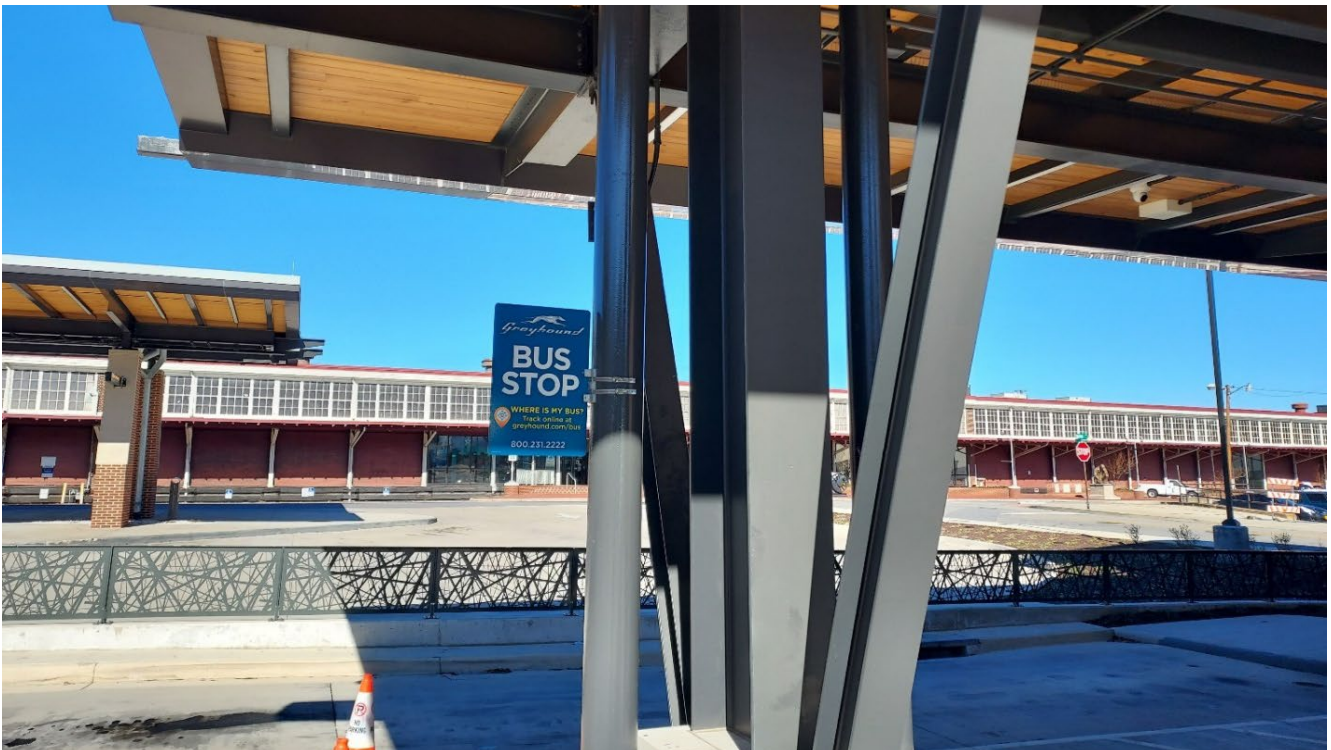
Figure 1-3: Digital Information Screen at the Third Street Station Platform



Figure 1-4: Third Street Station Platform



Figure 1-5: Greyhound Stop Location at the Third Street Station



VMGO Application

Another initiative for Valley Metro since the prior TDP is the introduction of real-time bus schedule information through the VMGO application (app). The VMGO app is available for free download through Google Play or the Apple store. A photo of the interface is shown in Figure 1-6. VMGO was first initiated on the Smart Way buses in 2019 and has been expanded to include information on all the routes and services. Alerts and other Valley Metro information can also be accessed through the app.

Figure 1-6: VMGO App



MetroFLX

As discussed above in the “services provided” section, Valley Metro recently launched MetroFLX to help meet mobility needs in the evenings and on Sundays. Valley Metro reported that ridership has been growing each week, with 900 reservations in February 2024, the first full month of the program. Sundays have been the most active day thus far, representing half of the total trips.

Bus Replacement

Beginning in 2018, Valley Metro was able to embark on a multi-year effort to replace aging revenue fleet vehicles. The GRTC Bus Replacement and Rebuild program was funded through the Regional Surface Transportation Program. Valley Metro also replaced vehicles with the assistance of VW settlement funds, traditional federal funds, and state funds. Since 2018, Valley Metro has been able to replace 35 vehicles.

Bus Stop Improvements

Valley Metro is working with the Roanoke Alleghany Regional Commission on a bus stop accessibility and improvement plan. Valley Metro has its own internal bus stop improvement priority process that prioritizes stops to consider for shelters according to ridership tiers. Valley Metro has added nine shelters for the fixed route network since the prior TDP. The full bus stop inventory is provided in Appendix A.

Strategic Vision

Valley Metro’s Mission Statement is:



“The Greater Roanoke Transit Company will provide quality public transportation in a safe, convenient, reliable, affordable, and environmentally responsible manner.”

Roanoke Valley Transit Vision Plan

A major visioning effort for the Roanoke Valley was completed in 2016 and resulted in the Roanoke Valley Transit Vision Plan (TVP). The vision articulated in the plan was:

“The Roanoke Valley is a livable community with a growing economy and recognized for its outstanding quality of life. As such, the residents and employees of the Roanoke Valley envision a community where transit provides an easy and timely way for people to get to their destination.”

The regional vision for transit was also articulated in the TVP and is as follows:

“As the region’s decision-makers and citizens work together to develop a more livable community, they envision transit in the Roanoke Valley will:

- Serve a greater part of the region than it does now.
- Serve people who do not drive as well as people who drive but prefer transit for some trips.
- Be part of an integrated multimodal transportation system and complement other modes of transportation.
- Be safe.
- Be compliant with the Americans with Disabilities Act of 1990.
- Be convenient.
- Be frequent where it makes sense.
- Be dependable.
- Be affordable to riders.
- Be cost-effective in that the services provided justify the cost.
- Be competitive with other modes in travel time.
- Be an employee benefit.
- Be environmentally friendly via the vehicles and fuels used.
- Help visitors become better acquainted with the region.
- Share the cost of providing services and amenities by establishing public-private partnerships with businesses.
- Use new technology to make riding transit easier for new riders”¹

Transit Strategic Plan Visioning

One of the strategic vision tasks that is incorporated into the Transit Strategic Plan (TSP) scope of work is for communities to think about their priorities regarding balancing the need for high frequency services within a core area versus providing geographic coverage to a larger geographic service area. The TVP vision suggested that both priorities are important, including language about increasing coverage while also discussing the need to provide more frequent service where it makes sense.

The TSP process included two surveys, both of which included questions targeting this basic trade-off. The first survey was primarily an origin-destination survey and was administered on board the vehicles in early December 2023. This survey provided a statistically significant sample of the opinions of current

¹ Roanoke Valley Transit Vision Plan, Roanoke Valley Transportation Planning Organization, September 2016, page 8.

riders. The second survey included both riders and non-riders and was completed at the Third Street Station and online. The second survey was not statistically significant but did capture important opinions. Ongoing stakeholder engagement also occurred throughout the TSP process and has included discussions concerning the basic trade-offs of frequency versus coverage.

Rider Opinion

The rider survey asked three opinion questions – two had to do with satisfaction and the third asked riders to choose which of the following potential improvements was most important: longer hours of service for existing routes, more frequent service for existing routes, or service to additional geographic areas. The majority of riders (63%) reported preferring longer hours of service for existing routes. Those with access to cars were significantly more likely to prefer more frequent service to those without (44% compared to 28%), while those without access to cars were significantly more likely to prefer longer hours of service (66% compared to 50%). Service to additional geographic areas was preferred by seven percent of the riders.

It should be noted that the onboard rider survey was conducted prior to the launch of MetroFLX, which has addressed the need for service in the evenings and on Sundays. The survey results are more fully discussed in Chapter 2.

Broader Community Opinion

The results of the broader community survey indicated that 46% of the respondents desired more frequent service, 31% desired longer hours of service for the existing routes, and 23% desired service to additional geographic areas.

Stakeholder opinion, including input from Valley Metro dispatchers and supervisors, also indicated that longer hours, greater frequency, and service to additional areas are all important. The stakeholder groups generally favored service to additional locations, particularly to areas that are in Roanoke County adjacent to the current service area. The survey results are more fully discussed in Chapter 2.

Input from the community also indicated needs that were not related to service levels, such as improvements focused on comfort, convenience, and technology. Suggested improvements included more shelters and benches, bus stop signs that include route information, website improvements, mobile ticketing, and additional amenities for the Third Street Station.

Goals and Objectives

The goals included in the TVP, and repeated in the 2018 TDP are as follows:

Goal #1: Capitalize on the community's investment in transit to enrich the economy of the Roanoke Valley.

Goal #2: Utilize transit to support people's ability to live healthy lifestyles.

Goal #3: Sustain the Roanoke Valley's natural environment by embracing transit on a personal and community level.

Goal #4: Provide infrastructure to support people's ability to safely use transit.

Goal #5: Improve the mobility of residents, employees, and visitors throughout the Roanoke Valley by providing seamless connections with other transportation modes and enabling people to get around without the need for a personal vehicle.

Input provided by the Transit Passenger Advisory Committee (TPAC) during this TSP process indicated that some of these goals may be a bit too broad for Valley Metro and are not able to be measured or supported by specific objectives. The study team has taken the essence of these five goals and incorporated additional priorities to form a set of goals, with supporting objectives. These goals and objectives are presented below.

Goals and Objectives

Note that these goals and objectives are not listed in any priority order.

Goal #1: Strive to improve the mobility of residents, employees, and visitors throughout the Roanoke Valley by providing a safe, secure system that offers seamless connections with other transportation modes and enables people to get around without the need for a personal vehicle.

Objective #1: Work with Roanoke County to expand Valley Metro services to key County locations that are located along shared travel corridors.

Objective #2: Promote the multimodal connections that are currently in place, such as the ability to take Valley Metro services to the Roanoke-Blacksburg Regional Airport; the ability to take Valley Metro services to access Amtrak and Greyhound in Downtown Roanoke; and the ability to take the Smart Way bus to access the Virginia Breeze in Blacksburg and Christiansburg.

Objective #3: Work to implement the service improvement strategies that are highlighted within the TSP.

Goal #2: Provide infrastructure to support people's ability to safely use transit.

Objective #1: Work with the area localities to improve pedestrian access to bus stops.

Objective #2: Use the bus stop accessibility information currently being collected and analyzed by the Roanoke Valley Alleghany Commission (RVARC) to develop a bus stop improvement plan.

Objective #3: Fully explore the concepts of developing additional transit service hubs at key locations such as the Valley View area and the Tanglewood area.

Goal #3: Ensure that the public has access to Valley Metro service information.

Objective #1: Re-design and update the Valley Metro website so that it is reflective of current activities.

Objective #2: Continue to maintain a presence on social media.

Objective #3: Add route and schedule information to bus stop signs. This could be in the form of a QR code.

Objective #4: Work with area colleges and universities to ensure area students know about the services provided and how to use them.

Objective #5: Maintain and update the VMGO app and digital media outreach.

Goal #4: Continue to improve the customer experience.

Objective #1: Work to implement cashless options, such as mobile ticketing.

Objective #2: Fully implement MetroFLX as a microtransit service by adding a mobile app with real-time, on-demand scheduling.

Objective #3: Examine the potential for integrating fare payment between STAR, MetroFLX and Valley Metro fixed routes.

Goal #5: Promote system efficiency and effectiveness.

Objective #1: Monitor the **efficiency** measures of cost per trip and cost per vehicle hour for Valley Metro services to discover routes or services that may need adjustment.

Objective #2: Monitor the **effectiveness** measures of passenger trips per revenue hour and passengers per trip (Smart Way) to discover routes, trips, or services that may need adjustment.

Goal #6: Exercise sound fiscal practices that work to build Valley Metro's long-term financial sustainability.

Objective #1: Ensure the agency is positioned to pursue federal and state funding opportunities that may be available.

Objective #2: Actively seek additional partnerships that could help provide local match opportunities.

Objective #3: Attend the Federal Transit Administration's Transit Award Management System (TrAMS) training sessions when made available.

Goal #7: Engage in practices that are environmentally responsible.

Objective #1: Continue to explore fleet electrification and other low emission options.

Service Design Standards

Service design standards are benchmarks that reflect a transit program's goals in various service categories. Standards are typically developed for each type of service provided reflecting the most important service parameters, such as safety and service (service coverage, frequency, passenger convenience, and passenger comfort). Service standards are also used as a measure of compliance with Title VI of the Civil Rights Act of 1964 to ensure that services are provided equitably to all persons in the service area, regardless of race, color, or national origin.

Valley Metro has included the following service design standards within its Title VI Plan:

- **Vehicle Load** – the average of all loads during the peak operating period should not exceed the vehicles' capacities. Vehicle loads reflect both safety and passenger comfort.
- **Vehicle Headway and Span of Service** – The Title VI standards listed in the plan call for 60-minute headways Monday through Saturday throughout the service day, and 30-minute headways Monday through Friday on select routes, from 5:45 a.m. to 8:45 a.m. (from the end of each affected line), and from 3:15 p.m. to 6:15 p.m. from downtown. Note that since the Covid-19 pandemic, Valley Metro has been providing 60-minute headways. A return to 30-minute headways on select routes is a TSP recommendation. Frequency and span of service reflect passenger convenience and affect the ability of people to use the system to meet their mobility needs.
- **Service Availability** – Valley Metro's goal is to distribute transit service so that 80 percent of all residents in the Valley Metro service area have reasonable access to transit. Valley Metro defines its service area as the City of Roanoke, the City of Salem, and the Town of Vinton, though there are some services that operate outside of this primary service area. The Title VI Plan also states that local bus stops will not be more than one mile apart, though there are a few areas where this is not the case. Current policy is to locate bus stops at half-mile intervals within high density areas, with stops in other locations spaced at one-mile intervals.
- **Transit Stop Amenities** – Valley Metro's transit stop amenities are distributed throughout the system. Rider feedback has indicated that additional shelters are desired. The locations of Valley Metro stop amenities are determined by the following factors: ridership, individual and community requests, staff recommendations, and the ability to obtain the necessary right of way. Valley Metro's Title VI Plan indicates that a large transit bus stop shelter should be considered for stops that experience 35% of transit vehicle capacity and a small transit bus stop shelter should be considered for stops that experience 25% of transit vehicle capacity. Bus stop shelters include solar lighting, a bench, and a trash receptacle.

Performance Standards

Developing and using performance standards specific to each type of transit service provided is an important way to measure how well the services are functioning and whether they are meeting the system's goals. Performance standards are typically developed in several categories such as ridership, cost efficiency, safety, system accessibility, and service quality. The most effective performance standards are straightforward and relatively easy to calculate and understand.

Suggested performance standards for Valley Metro's services are highlighted in Table 1-1. Note that these measures should be calculated separately for each of the primary services: fixed route, Smart Way, trolley, ADA paratransit, and MetroFLX.

Table 1-1: Suggested Performance Standards

Category	Measures
Ridership	Passenger trips per revenue hour
	Passenger trips per revenue mile
	Passengers per vehicle trip (Smart Way, Smart Way Express)
Cost Efficiency	Operating cost per revenue hour
	Operating cost per revenue mile
	Operating cost per passenger trip
	Farebox recovery
Safety	Accidents per 10,000 passenger trips
	Number of preventable passenger injuries
Accessibility	Population within 1/2 mile of Valley Metro fixed route stop
	Jobs within 1/2 mile of Valley Metro fixed route stop
	Percentage of high need Census block groups served by fixed route
Service Quality	On-time performance
	Valid complaints per 100,000 revenue miles
	Percentage of stops with transit amenities

Chapter 2: System and Service Data

Introduction

Chapter 2 of the Transit Strategic Plan (TSP) provides data and analyses that are integral to understanding the current strengths and weaknesses of the Valley Metro transit network. The information gathered and analyzed for this chapter helped to guide the direction of the recommended TSP improvements.

The following five sections are included:

1. System and Service Data
2. Transit Market Demand and Underserved Areas
3. Performance Evaluation
4. Operating and Network Efficiency Evaluation
5. Analysis of Opportunities to Collaborate with Other Agencies and Stakeholders

System and Service Data

An overview of Valley Metro services is provided in this section, followed by the detailed results of a fixed route origin-destination survey, the results from a community survey, and information gathered from key stakeholders.

Service Snapshot

An overall snapshot of the Valley Metro system and the region is provided in Table 2-1.

Table 2-1: Valley Metro Service Snapshot

Characteristic	Value	
Primary Service Area Population (1)	132,630	
Service Area Square Miles	60.3	
Density - people per square mile	2,200	
Primary Urban Area Population (2)	217,312	
Primary Urban Area Square Miles	126	
Density - primary urban area	1,732	

Characteristic	Value	
Secondary Urban Area Population (3)	72,400	
Secondary Urban Area Square Miles	34	
Density - secondary urban area	2,131	
FY2023 Operating Costs (4)	\$12,964,007	
# of Vehicles in Peak Service - Fixed Route	22	
# of Fixed Route Vehicles	52	
# of Demand Response Vehicles (5)	17	
Total Passenger Trips (6)	1,349,724	
Total Revenue Hours	123,137	
Total Revenue Miles	1,825,337	
Span of Service		
Fixed Route and ADA Paratransit	M-Sat: 5:45 a.m. to 8:45 p.m.	
Trolley	M-F: 7:00 a.m. to 7:00 p.m.	
Smart Way	M-F: 5:00 a.m. to 11:30 p.m.	
	Sat: 6:40 a.m. to 11:00 p.m.	
	Sun: one trip each way	
MetroFLX	M-Sat: 8:45 p.m. to 12:15 a.m.	
	Sun: 9:00 a.m. to 5:30 p.m.	

NOTES:

(1) THE POPULATION AND SQUARE MILEAGE DATA INCLUDES THE CITY OF ROANOKE, THE CITY OF SALEM, AND THE TOWN OF VINTON. SOURCE: ACS FIVE YEAR ESTIMATE, 2022

(2) ROANOKE URBAN AREA - 2020 CENSUS

(3) BLACKSBURG- CHRISTIANSBURG-RADFORD URBAN AREA - 2020 CENSUS (SERVED BY SMART WAY)

(4) THE AUDITED OPERATING EXPENSES EXCLUDING DEPRECIATION

(5) VALLEY METRO OWNS 12 PARATRANSIT VEHICLES. AN ADDITIONAL 5 ARE USED BY THE CONTRACTOR TO PROVIDE ADA PARATRANSIT.

(6) DATA FOR STAR ESTIMATED BASED ON FY22

Route Design and Schedule Standards

While Valley Metro does not have adopted route design and schedule standards, these topics are addressed in the agency's Title VI Plan. Valley Metro's Title VI Plan has the following route design and schedule goal:

- To distribute transit service so that 80% of all residents in Valley Metro's service area have reasonable access to transit service.

Some of the other standards within the Title VI Plan need to be updated, as the plan was written prior to the pandemic when 30-minute service was provided on the core routes during peak periods and shorter headways (10-15 minutes, depending upon the service period) were offered on the Star Line Trolley.

On-Board Origin-Destination Survey

This section summarizes the results of the O&D survey conducted December 1-10, 2023. Staff from WB&A Research collected data on all fixed routes during all service periods, gathering a statistically valid sample of Valley Metro riders' trip patterns and demographics. In total, 884 surveys were completed. The complete survey report and methodology are provided in a separate report (Appendix B) and summarized below.

Trip Characteristics

Customers were asked about their origins and destinations on the trip where they were intercepted. Roughly half of all trips began at home (48%). A similar portion of trips began at home across both weekday and Saturday travel (48% compared to 47%). Doctor, medical service, or hospital (non-work purposes) was significantly more common among weekday riders when compared to Saturday riders (5% compared to 1%). Shopping/Restaurant was significantly more common among Saturday riders with nearly two in ten (19%) reporting this origin on Saturdays compared to one in ten (10%) on weekdays. These results are shown in Table 2-2.

Table 2-2: Origin Type

Where are you coming from now? (Q1)	Total (A) (n=883)	Weekday (B) (n=653)	Saturday (C) (n=230)
Home	48%	48%	47%
Work	22%	22%	20%
Shopping/Restaurant	11%	10%	19% ^B
Recreation/Social	7%	7%	7%
Doctor, Medical service, or Hospital (non-work only)	5%	5% ^C	1%
School/College (Student Only)	3%	3%	2%
Religious/Community	2%	2%	<1%
Errands/Personal business	1%	1%	<1%
Hotel/Motel	<1%	<1%	1%
Airport (passengers only)	<1%	<1%	<1%
Sporting or Special event	<1%	<1%	-
Other	1%	1%	1%

BASE= THOSE ANSWERING

SUPERSCRIT LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

Home was also the most common destination, with an equal proportion of weekday and Saturday riders (39%) reporting home as their destination. Again, shopping/restaurant was a significantly more common destination among Saturday riders compared to weekday riders (27% versus 14%), with doctor, medical service, or hospital, religious/community, and errands/personal business all being more common destinations among weekday riders. The destination results are shown in Table 2-3.

Table 2-3: Destination Type

What type of place is your final destination on this one-way trip? (Q8)	Total (A) (n=877)	Weekday (B) (n=650)	Saturday (C) (n=227)
Home	39%	39%	39%
Work	22%	23%	17%
Shopping/Restaurant	16%	14%	27% ^B
Recreation/Social	9%	8%	13%
Doctor, Medical service, or Hospital (non-work only)	5%	5% ^C	1%
School/College (Student Only)	3%	3%	<1%
Religious/Community	3%	3% ^C	1%
Errands/Personal business	2%	3% ^C	<1%
Airport (passengers only)	<1%	<1%	<1%
Hotel/Motel	<1%	<1%	-
Sporting or Special event	<1%	<1%	<1%
Other	<1%	<1%	1%

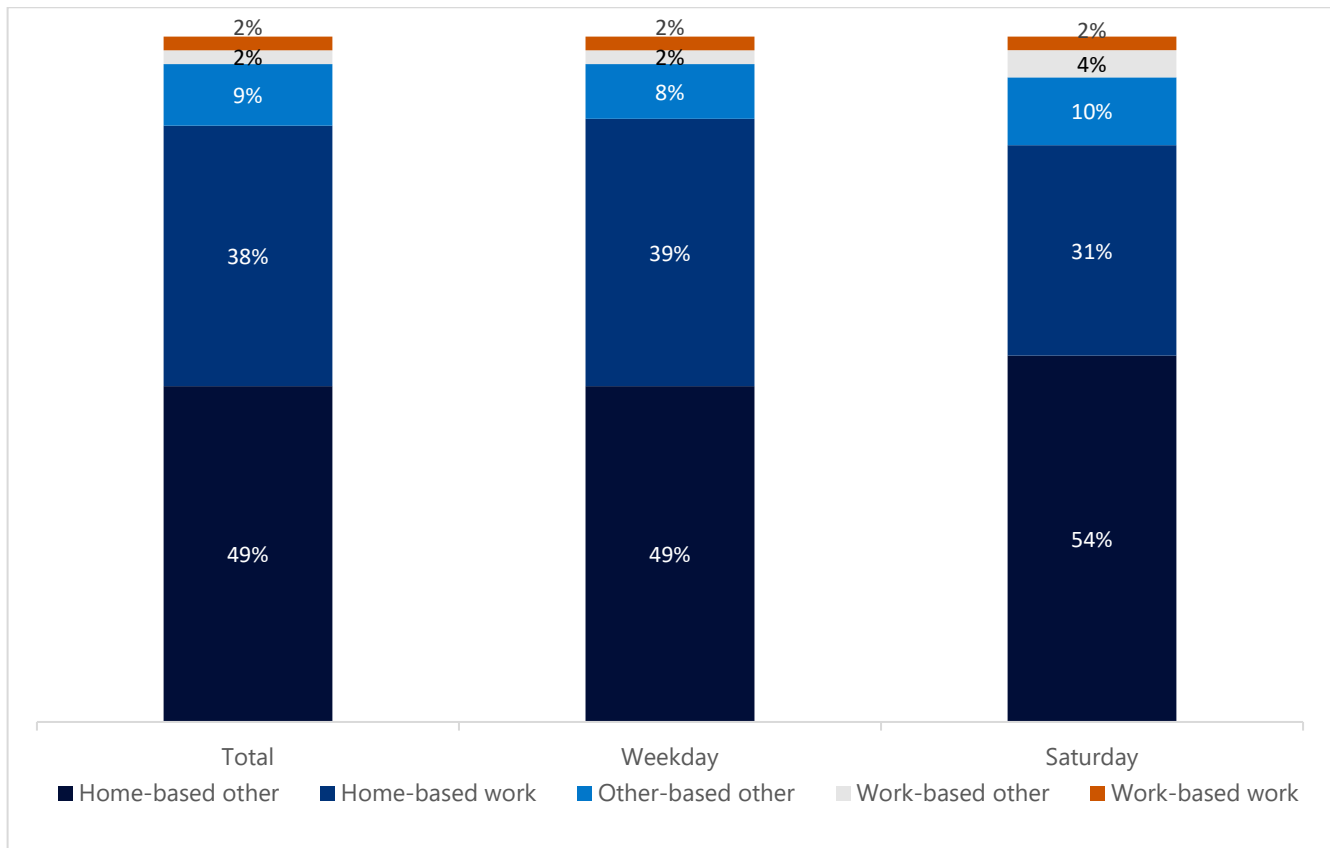
BASE=THOSE ANSWERING

SUPERSCRIT LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

Trips were categorized by their combined origin and destination into the following categories:

- Home-Based Work – trips that have an O-D combination of home and work;
- Home-Based Other – trips that have an O-D combination of home and another location;
- Work-Based Work – trips that have an O-D combination of work and another work or job related location;
- Work-Based Other – Trips that have an O-D combination of work and another location; and
- Other-Based Other – Trips that have an O-D combination of two non-work, non-home locations.

Approximately half of all trips were home-based other (49%), with home-based work making up the majority of remaining trips (38%). Those without access to a car were significantly more likely to make home-based other trips compared to those with cars (52% compared to 40%). Older riders (65+) were also more likely to make home-based other trips (76% compared to 46% of those 35-64 and 48% of those under 35). This aligns with younger riders making many more home-based work trips (37% of riders under 35 and 42% of riders 35-64 compared to 20% of riders over 65). These findings are shown in Figure 2-1.

Figure 2-1: Trip Type

BASE=THOSE ANSWERING

SUPERSCRIT LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

Frequency of Use

Riders were asked how often they use the Valley Metro system as well as each individual service provided by Valley Metro. Riders used the system nearly five days a week (4.5) on average. Those surveyed on weekend trips were more likely to ride one to four days a week (41% compared to 33% of weekday trips). Weekday riders were significantly more likely to report using the system five days per week (29% compared to 16% of weekend riders). This could be due to weekday riders being more likely to use the system for their daily commute to school or work. This is also supported by riders making home-based work trips being significantly more likely to report using the system at least five days per week (76% compared to 48% of home-based other and 52% of other-based other trips). Low-income riders averaged significantly more days of use compared to non-low-income riders (4.6 days compared to 4.3). These ridership patterns are summarized in Table 2-4.

Table 2-4: Frequency of Use

How frequently do you ride Valley Metro (Q12)	Total (A) (n=869)	Weekday (B) (n=646)	Saturday (C) (n=223)
Average (Days per week)	4.5	4.5	4.3
Fixed route service (Q20A)	(n=865)	(n=640)	(n=225)
Net: Used	95%	95%	97%
Average	4.3	4.3	4.2
Smart Way (Q20B)			
Net: Used	20%	20%	18%
Average	0.2	0.2	0.2
Paratransit (S.T.A.R.) (Q20C)			
Net: Used	3%	3%	8% ^B
Average	0.1	<0.1	0.1
Trolley (Q20D)			
Net: Used	38%	39%	35%
Average	0.5	0.5	0.3

BASE=THOSE ANSWERING

SUPERScript LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

Q20: HOW OFTEN DO YOU RIDE THE FOLLOWING SERVICES?

Mode Choices

On how riders would have made their trips if Valley Metro were not available, rideshare (such as Uber or Lyft) was the most common alternate trip mode, with one in three riders reporting this as the way that they would make this trip if Valley Metro was not available (33%). **Nearly one in four riders (23%) reported that they would not make this trip were Valley Metro not available.** Weekday riders were significantly more likely to report that they would drive if Valley Metro was not available (4% compared to only 1% of weekend riders). Weekend riders were significantly more likely to report that they would not have made this trip were Valley Metro not available. These results are shown in Table 2-5.

Table 2-5: Alternate Trip Modes

If Valley Metro had not been available today, how would you have made this trip? (Q11)	Total (A) (n=859)	Weekday (B) (n=637)	Saturday (C) (n=222)
Would not make this trip	23%	22%	32%^B
Rideshare service such as Uber, Lyft, or taxi	33%	31%	42% ^B
Walk	20%	21% ^C	11%
Ride with someone to your final destination	19%	19%	15%
Drive a vehicle directly to your final destination	4%	4% ^C	1%
Bike or scooter to your final destination	2%	2%	<1%
Some other way	<1%	<1%	-

BASE=THOSE ANSWERING

SUPERSCRIT LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

Access and Egress to Transit

Riders were overwhelmingly likely to report walking as their mode of access to Valley Metro, with nearly nine in ten (88%) reporting walking only. Of those who walked, the average walking distance to Access transit was 0.3 miles. These results are shown in Table 2-6.

Table 2-6: Mode of Access

How did you get from your origin to the first bus on this one-way trip? (Q3)	Total (A) (n=884)	Weekday (B) (n=654)	Saturday (C) (n=230)
Walked only	88%	88%	90%
Walking distance (miles)	0.3	0.3 ^C	0.2
Amtrak or intercity bus	5%	5% ^C	2%
Rode with someone	3%	3%	2%
Drove a car	2%	2% ^C	<1%
Personal bicycle or scooter	1%	1%	<1%
Bike/Scooter distance (miles)	1.3*	1.3*	5.0*
Mobility aid (cane, walker, wheelchair, etc.)	1%	<1%	3% ^B
Mobility aid distance (miles)	0.3*	0.3*	0.3*
Rideshare service such as Uber, Lyft, or taxi	<1%	<1%	1%
Bikeshare or scootershare	<1%	<1%	-
Bike/Scootershare distance (miles)	3.0*	3.0*	-
Other	1%	1%	2%

BASE=THOSE ANSWERING

SUPERSCRIT LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

*CAUTION, EXTREMELY SMALL BASE

DISTANCES REPORTED AS AVERAGE DISTANCE IN MILES

DISTANCE BASES WALK=729, 542, 187; BIKE/SCOOTER=6, 5, 1; MOBILITY AID=4, 1, 3; BIKESHARE/SCOOTERSHARE=1, 1, 0

Walking was also the most common mode of egress as well, with over nine in ten (92%) riders reporting walking to their final destination after getting off the bus. Similarly to modes of access, those who walked after getting off the bus specified an average of 0.2 miles. These results are shown in Table 2-7.

Table 2-7: Mode of Egress

When you get off your final bus, how will you get to your destination? (Q10)	Total (A) (n=876)	Weekday (B) (n=650)	Saturday (C) (n=226)
Walk only	92%	91%	96% ^B
Walking distance (miles)	0.2	0.2	0.2
Amtrak or intercity bus	3%	3% ^C	<1%
Ride with someone	2%	2%	1%
Personal bicycle or scooter	1%	1%	1%
Bike/Scooter distance (miles)	2.0*	1.9*	5.0*
Drive a car	1%	1%	<1%
Mobility aid (cane, walker, wheelchair, etc.)	1%	1%	2%
Mobility aid distance (miles) ¹	0.3*	0.3*	0.3*
Rideshare service such as Uber, Lyft, or taxi	1%	1%	<1%
Other	<1%	<1%	1%

BASE=THOSE ANSWERING

SUPERSCRIT LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

*CAUTION, EXTREMELY SMALL BASE

DISTANCE BASES WALK=756, 559, 197; BIKE/SCOOTER=7, 6, 1; MOBILITY AID=5, 3, 2

¹THE AVERAGE DISTANCE TRAVELED BY MOBILITY AID (0.3 MILES) BEING SLIGHTLY LONGER THAN THE AVERAGE DISTANCE WALKING (0.2 MILES) MAY SEEM COUNTERINTUITIVE, THIS MAY BE DUE TO THE SMALL NUMBER OF RIDERS RESPONDING TO THE SURVEY WHO USE MOBILITY AIDS.

Transfers

Riders were split, with approximately half (47%) reporting riding only one bus, and 52% reporting making one transfer. Note that the below table is reported as buses used, rather than transfers made. This means that corresponding inbound and outbound routes (e.g., routes 11 and 16) are counted as one route with no transfers when they are paired together in a trip chain. These results are shown in Table 2-8.

Table 2-8: Number of Routes Taken

How many buses will you take to get to your final destination? (Q4)	Total (A) (n=882)	Weekday (B) (n=654)	Saturday (C) (n=228)
1 (no transfers)	47%	47%	40%
2 (one transfer)	52%	51%	60% ^B
Net: 3 or more (2+ transfers)	2%	2% ^C	-

BASE=THOSE ANSWERING

SUPERSCRIT LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

CORRESPONDING INBOUND AND OUTBOUND ROUTES (I.E., 11 AND 16) COUNTED AS ONE ROUTE.

Transit Reliance

Transit reliance is the level of reliance on public transportation that an individual has in order to travel. The questions used to determine transit reliance for this study were:

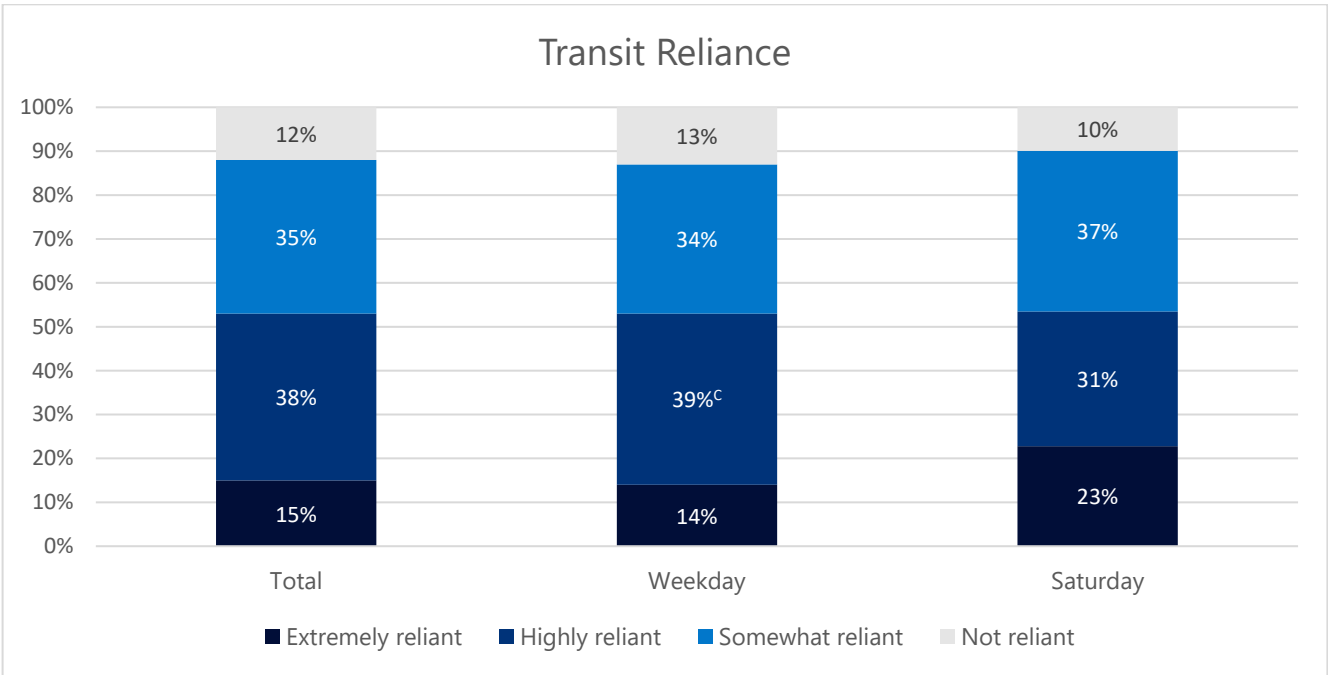
- Q11, "If Valley Metro had not been available today, how would you have made this trip?"
- Q21, "Do you have access to a car or motorcycle you could have used to make this trip?"; and
- Q22, "Do you have a valid driver's license?"

Depending on the responses to these questions, riders were categorized as being either Extremely Reliant, Highly Reliant, Moderately Reliant, or Not Reliant on public transit. These were defined as:

- **Extremely Reliant** – Would not have made this trip if Valley Metro was not available.
- **Highly Reliant** – Would have made the trip another way if Valley Metro was not available, but do not have a valid driver's license.
- **Moderately Reliant** – Do have a valid driver's license, but do not have access to a working vehicle; and
- **Not Reliant** – Would have driven themselves were Valley Metro not available.

Weekday riders were significantly more likely to be classified as “Highly Reliant,” with nearly four in ten (39%) receiving this distinction, compared to around three in ten Saturday riders (31%). Older riders (65+) were the most likely to be considered “Extremely Reliant” (27% compared to 12% and 11% of trips made by those under 35 and those age 35 to 64.) These results are shown in Figure 2-2.

Figure 2-2: Transit Reliance



BASE=THOSE ANSWERING

SUPERScript LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

LEVELS OF TRANSIT RELIANCE ARE DEFINED AS FOLLOWS:

EXTREMELY: Q11(96) AND Q21(02) AND Q22(02)

HIGHLY: Q11(02-96) AND Q22(02) AND Q21(02)

MODERATELY: Q11(02-96) AND [Q21(01) OR Q22(01)]

NOT: Q21(01) AND Q22(01)] OR Q11(01)

Rider Demographics

Fewer than two in ten (16%) of the riders' report having access to a vehicle. A larger portion (42%) report having a valid driver's license, but this is still the minority. These data are shown in Table 2-9.

Table 2-9: Vehicle Access/Driver's License

Do you have access to a car or motorcycle you could have used to make this trip? (Q21)	Total (A) (n=839)	Weekday (B) (n=625)	Saturday (C) (n=214)
Yes	16%	17%	14%
No	84%	83%	86%
Do you have a valid driver's license? (Q22)	(n=837)	(n=625)	(n=212)
Yes	42%	42%	42%
No	58%	58%	58%

The majority of riders identify as either white (48%) or black (45%) with a small portion reporting other races. These data are shown in Table 2-10.

Table 2-10: Race/Ethnicity

What is your race or ethnicity? (Q31)	Total (A) (n=821)	Weekday (B) (n=612)	Saturday (C) (n=209)
Caucasian or white	48%	49%	44%
African American or Black	45%	45%	47%
Hispanic or Latino	3%	3%	5%
Asian	3%	2%	4%
Middle Eastern/North African	1%	1%	1%
American Indian/Alaska Native	1%	1%	-
Native Hawaiian or other Pacific Islander	<1%	<1%	-
Other	<1%	-	1%

The median income of riders is \$19,400, with nearly four in ten (38%) reporting having an income of less than \$15,000 dollars. Weekend riders had considerably lower incomes, with a significantly greater portion reporting the lowest income category, and a mean nearly \$6,000 lower than weekday riders. These results are shown in Table 2-11.

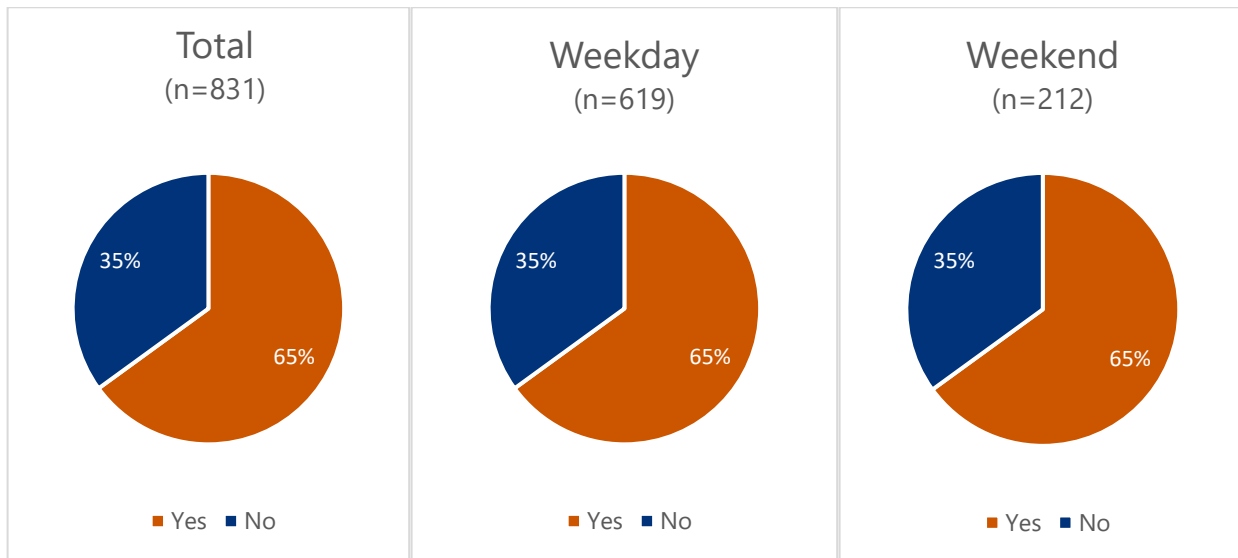
Table 2-11: Income

Which of the following best describes your total annual household income in 2022 before taxes? (Q35)	Total (A) (n=582)	Weekday (B) (n=439)	Saturday (C) (n=143)
Less than \$15,000	38%	36%	50% ^B
\$15,000 to less than \$20,000	14%	14%	12%
\$20,000 to less than \$25,000	12%	12%	10%
\$25,000 to less than \$30,000	11%	11%	9%
\$30,000 to less than \$35,000	7%	7%	5%
\$35,000 to less than \$40,000	4%	4%	8%
\$40,000 to less than \$45,000	3%	3%	2%
\$45,000 to less than \$50,000	4%	4% ^C	<1%
\$50,000 to less than \$75,000	3%	3%	2%
\$75,000 to less than \$100,000	2%	2%	1%
\$100,000 to less than \$150,000	1%	1%	1%
\$150,000 to less than \$200,000	1%	1%	-
\$200,000 or more	1%	1%	<1%
Average	\$26.8K	\$27.5K	\$20.9K
Median	\$19.4K	\$19.8K	\$15K

BASE=THOSE ANSWERING

SUPERSCRIPT LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

Riders were identified as low-income based on their area of residence, household size, and income. ZIP codes with an above average population of low-income residents, relative to the Valley Metro service area, were designated as low income. This included ZIP codes where low-income residents make up more than 14.1% of the total population. Among Weekday and weekend riders, approximately two in three (65%) are defined as low-income. These data are shown in Figure 2-3.

Figure 2-3: Low Income

BASE=THOSE ANSWERING

The average household size across all trips surveyed was 2.3 people. Smaller households were more common among older riders, with nearly seven in ten (69%) of riders over 65 reporting living alone, compared to less than half (46% of those 35-64 and 25% of those under 35). These data are shown in Table 2-12.

Table 11: Household Size

Including yourself, how many people live in your household? (Q25)	Total (A) (n=813)	Weekday (B) (n=611)	Saturday (C) (n=202)
1	43%	42%	47%
2	28%	27%	29%
3	11%	11%	7%
4	9%	9%	8%
5	4%	4%	4%
6	3%	3%	1%
7+	3%	3%	4%
Average	2.3	2.3	2.2
Median	2.0	2.0	2.0

More than one in four (28%) riders reported having a disability. Among these, the most commonly used mobility devices were canes and walkers (3% each). These results are shown in Table 2-13.

Table 2-13: Disability/Mobility Devices

Do you consider yourself to have a disability? (Q36)	Total (A) (n=824)	Weekday (B) (n=614)	Saturday (C) (n=210)
Yes	28%	27%	34%
No	72%	73%	66%
Do you use mobility devices when riding? (Q37)¹	(n=813)	(n=609)	(n=204)
Support cane	3%	4%	1%
Walker	3%	3%	3%

BASE=THOSE ANSWERING

SUPERScript LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

¹TOP MENTIONS

The overwhelming majority of riders speak English very well. Even among those who report primarily speaking a language other than English at home, over eight in ten (81%) report speaking English “very well.” The language data is shown in Table 2-14.

Table 2-14: English Proficiency/Primary Language

How well do you speak English? (Q28)	Total (A) (n=829)	Weekday (B) (n=618)	Saturday (C) (n=211)
Very well	99%	99%	98%
Well	1%	1%	1%
Not well	<1%	-	<1%
Not at all	<1%	<1%	-
Do you predominantly speak a language other than English? (Q26)	(n=826)	(n=616)	(n=210)
English	93%	93%	93%
Spanish (including all dialects)	3%	3%	2%

Fewer than one in ten riders (6%) are armed forces, military, or veterans. The proportion is significantly higher among older riders (65+), with around one in six (16%) reporting veteran status. These data are shown in Table 2-15.

Table 2-15: Military Status

Are you in the armed forces, military, or a veteran? (Q38)	Total (A) (n=822)	Weekday (B) (n=612)	Saturday (C) (n=210)
No	94%	94%	96%
Net: Yes	6%	6%	4%
Yes; Retired/Veteran	6%	6%	4%
Yes; Active military	<1%	<1%	-

Riders tended to skew slightly male, with over half (53%) identifying as male. This came from older riders being more heavily male (54% of riders 35-64, and 65% of riders 65+). Younger riders were significantly more likely to identify as female, with over half (53%) of riders under 35 identifying as female. These data are shown in Table 2-16.

Table 2-16: Gender

What is your gender identity? (Q32)	Total (A) (n=826)	Weekday (B) (n=614)	Saturday (C) (n=212)
Female	46%	46%	49%
Male	53%	53%	50%
Non-binary	1%	1%	1%

As shown in Table 2-17, nearly nine in ten (89%) riders report owning a smartphone. Nearly all (98%) of riders under 35 report owning a smartphone, and 88% of those 35 to 64, compared to less than eight in ten (79%) riders over 65. Riders between 35 and 64 were in the middle with nearly nine in ten owning smartphones (88%).

Table 2-17: Smartphone Ownership

Do you own a smartphone? (Q23)	Total (A) (n=838)	Weekday (B) (n=626)	Saturday (C) (n=212)
Yes	89%	89%	89%
No	11%	11%	11%

As shown in Table 2-18, approximately one in ten riders (11%) is a student. Of these students, over nine in ten (92%) are college or university students.

Table 2-18: Student Status

Are you currently a student? (Q29) ¹	Total (A) (n=835)	Weekday (B) (n=622)	Saturday (C) (n=213)
Yes	11%	12%	9%
No	89%	88%	91%
If so, what is your student status? (Q29A) ²	(n=51)	(n=38)*	(n=13)*
Student in college/university/community college	92%	93%	91%
Student in vocational/trade/school/other	7%	7% ^C	-
Student in K-12 th grade	1%	-	9%

¹BASE=THOSE ANSWERING

²BASE=STUDENTS

SUPERScript LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

*CAUTION, SMALL BASE

The average age of Valley Metro riders is 45.6 years old, with 45-54 also being the most commonly reported age group (22%). Male riders had a significantly higher average age with an average of 47.8 years old compared to female riders' 43.8 years old. These data are shown in Table 2-19.

Table 2-19: Age

What is your age? (Q33)	Total (A) (n=822)	Weekday (B) (n=613)	Saturday (C) (n=209)
16-17 ¹	1%	1%	1%
18-24	11%	11%	8%
25-34	16%	16%	14%
35-44	18%	19%	16%
45-54	22%	22%	24%
55-64	20%	19%	26%
65-74	10%	10%	9%
75+	1%	1%	1%
Average	45.6	45.4	47.1
Median	46.7	46.4	48.9

BASE=THOSE ANSWERING

SUPERScript LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

¹NOTE THAT RIDERS UNDER 18 ARE OFTEN UNDERREPRESENTED IN ONBOARD SURVEYS AS THERE ARE LIMITATIONS WITH SURVEYING CHILDREN.

Fares

Customers were asked what method of payment they use in order to access Valley Metro. The majority of riders (53%) reported paying cash. Saturday riders were significantly more likely to use 31-day passes compared to weekday riders, with nearly three in ten (28%) Saturday riders compared to under two in ten (19%) weekday riders reporting this payment method. These data are shown in Table 2-20.

Table 2-20: Fare Payment Method

What fare payment method was used for this one-way trip? (Q13)	Total (A) (n=867)	Weekday (B) (n=643)	Saturday (C) (n=224)
Cash	53%	52%	56%
31-Day pass	20%	19%	28% ^B
7-Day pass	10%	9%	11%
No fare (fare free service)	6%	6% ^C	1%
Net: Student/Carillion ID	6%	7%	3%
Student ID (including Virginia Tech ID)	4%	4%	3%
Student ID (including Roanoke Public School ID)	3% ^C	3%	-
Virginia Tech Carillion ID	<1%	<1%	-
15 Trip pass	3%	3% ^C	1%
Faculty ID	1%	1%	-
Senior Discount (not specific)	<1%	1%	-
24-Hour pass	<1%	<1%	-
Other	1%	1%	1%

BASE=THOSE ANSWERING

SUPERScript LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

Nearly three in four riders (73%) reported paying a full fare. Those making work-based trips were also significantly more likely to report having paid a full fare (84% to 91% of work-based trips compared to 49% to 63% of non-work-based trips). These data are shown in Table 2-21.

Table 2-21: Fare Type

What type of fare was this? (Q14)	Total (A) (n=745)	Weekday (B) (n=529)	Saturday (C) (n=216)
Regular/Full fare	73%	73%	71%
Discounted fare	24%	24%	26%
Roanoke Public School student	<1%	<1%	-
Did not pay a fare	3%	3%	2%

BASE=THOSE WHO PAID A FARE AND NOT SMART WAY AND ANSWERING

SUPERScript LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

Two in three riders (67%) reported having ever purchased a pass. Younger riders (under 35) were significantly more likely to report never having purchased a pass (47% compared to 29% of those 35 to 64, and 28% of those 65 and up). Those who use Valley Metro for work were more likely to report having purchased a pass, with at least seven in ten doing so (71% of home-based work and 79% work-based work compared to 52% other-based-other). These results are shown in Table 2-22.

Table 2-22: Pass Purchase

Have you ever purchased a Valley Metro Pass? (Q15)	Total (A) (n=865)	Weekday (B) (n=642)	Saturday (C) (n=223)
Yes	67%	66%	68%
No	33%	34%	32%

BASE=THOSE ANSWERING

SUPERScript LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

Satisfaction

Riders were asked a series of questions about their use of and satisfaction with Valley Metro services. First, they were asked what element of Valley Metro service they would most like to see improve in the future. They were given an option of longer hours of service for existing routes, more frequent service for existing routes, or service to additional geographic areas. The majority of riders (63%) reported preferring longer hours of service for existing routes. Those with access to cars were significantly more likely to prefer more frequent service to those without (44% compared to 28%), while those without access to cars were significantly more likely to prefer longer hours of service (66% compared to 50%). These results are shown in Table 2-23.

Table 2-23: Preferred Service Improvements

If Valley Metro were to improve service, please indicate which improvement would help you most. (Q18)	Total (A) (n=866)	Weekday (B) (n=643)	Saturday (C) (n=223)
Longer hours of service for existing Valley Metro routes	63%	64% ^C	53%
More frequent service for existing Valley Metro routes	31%	30%	39% ^B
Net: Service to additional areas	7%	7%	8%

BASE=THOSE ANSWERING

SUPERScript LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

MULTIPLE RESPONSES ACCEPTED

Information

The most common sources of information regarding Valley Metro service were screens onboard buses or at bus stations (39%), the Valley Metro website (36%), and the VMGO app (27%). Younger riders (under 35) were significantly more likely to make use of the VMGO app (38% compared to 25% of those 35 to 64 and 15% of those 65 and older), while older customers were significantly more likely to report reading screens on buses or at stations (58% of 65 and older riders and 40% of 35-64 riders compared to 26% of riders under 35). These responses are summarized in Table 2-24.

Table 2-24: Valley Metro News Source

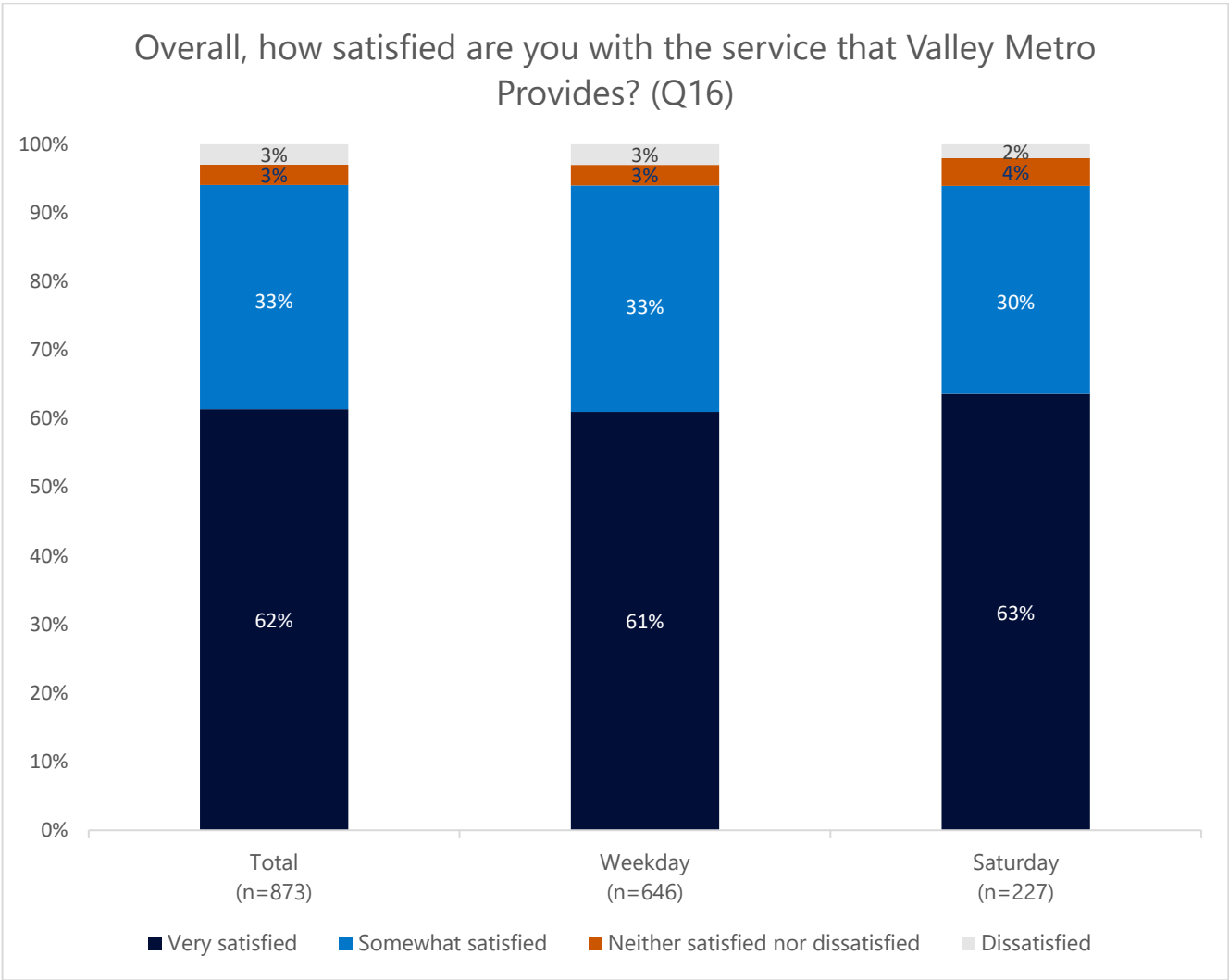
How do you get updates or news about Valley Metro? (Q19)	Total (A) (n=790)	Weekday (B) (n=592)	Saturday (C) (n=198)
Screens onboard buses or at bus stations	39%	39%	36%
Valley Metro website	36%	36%	35%
VMGO app	27%	28% ^C	18%
Social media	9%	10%	5%
Valley Metro phone line	7%	7%	9%
Television	5%	5%	5%
Word of mouth	3%	3% ^C	1%
Newspaper	2%	2%	4%
Google/Google Maps	1%	1%	1%
Just know/Ride regularly	1%	<1%	2%
Phone (not specific)	<1%	-	1%
Other	<1%	<1%	-

BASE=THOSE ANSWERING

SUPERScript LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

Over nine in ten riders reported being satisfied with the service that Valley Metro provides. Over six in ten (62%) reported being “very satisfied” with service. Those who made one transfer were significantly more likely to report being “very satisfied” than those who made none (67% compared to 56%). This may be due to the fact that those who made one transfer were also more likely to report using Valley Metro five or more days per week, so it may be a product of familiarity with the system. These data are shown in Figure 2-4.

Figure 2-4: Overall Satisfaction

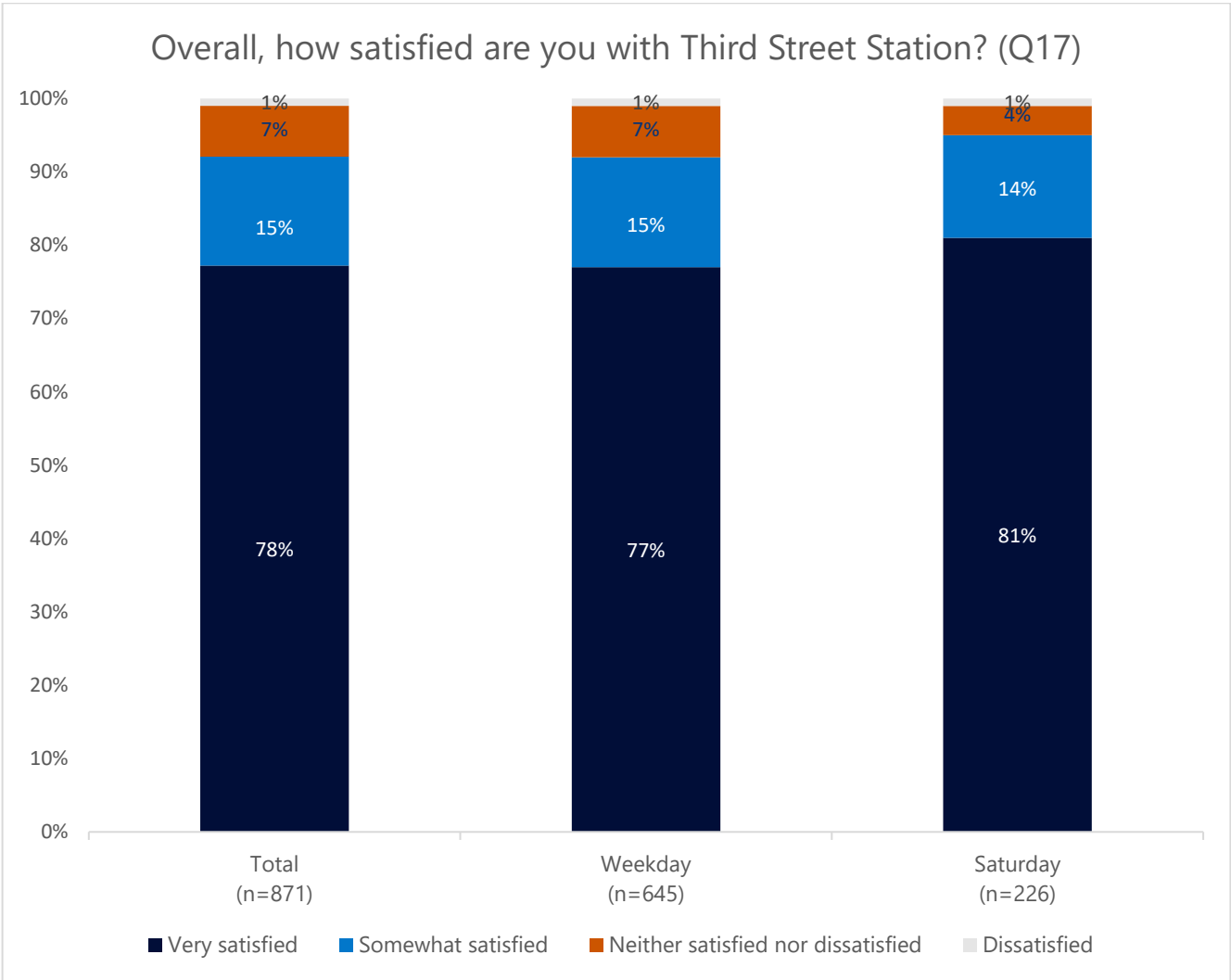


BASE= THOSE ANSWERING

SUPERSCRIPT LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

Levels of satisfaction with Third Street Station are high, with over nine in ten (92%) again reporting being satisfied. Those without access to a car were significantly more likely to report being satisfied with Third Street Station (94% compared to 85%). These data are shown in Figure 2-5.

Figure 2-5: Third Street Station Satisfaction



BASE=THOSE ANSWERING

SUPERScript LETTERS (E.G., B, OR C) INDICATE THAT THE LABELED PERCENTAGE IS SIGNIFICANTLY HIGHER THAN THE PERCENTAGE IN THE CORRESPONDING SEGMENT (I.E., B FOR WEEKDAY, C FOR SATURDAY.)

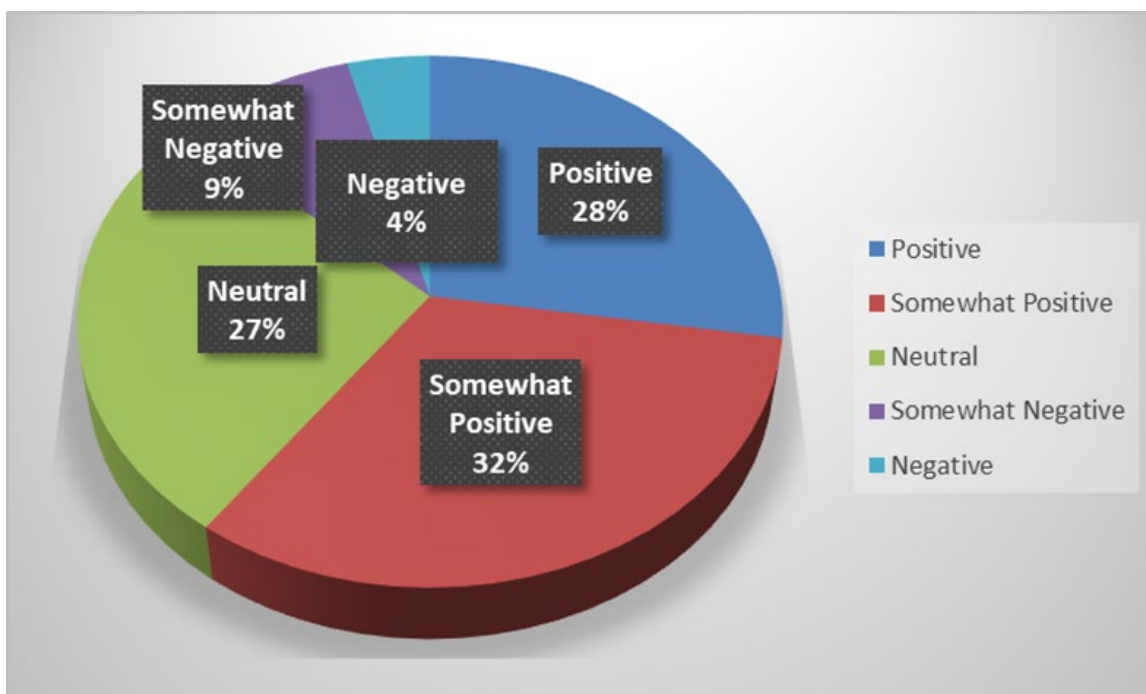
Community Survey

A community survey was also designed for the TSP. The purpose of the community survey was to solicit opinions from both riders and non-riders concerning the awareness of Valley Metro within the community and to learn what types of transit improvements were desired by the community. The surveys were administered in-person at the Third Street Station on Transit Equity Day (February 5, 2024), and electronically via Survey Monkey. The electronic survey database was open February 5 to March 8, 2024. Paper surveys were also available at Third Street Station for people to complete. Two hundred seventy-four (274) surveys were completed. Of those, 50 were completed on paper and 224 were completed electronically.

Awareness and Impression of Valley Metro

The first survey questions asked about whether the respondents were aware of Valley Metro services, and further, what their impressions were of Valley Metro. The results show that 88% of the respondents are aware of Valley Metro services. Their impressions of Valley Metro services ranged from Positive to Negative, with 60% indicating positive or somewhat positive; 27% indicating neutral opinions, nine percent indicating somewhat negative impressions, and four percent indicating negative impressions. These data are shown in Figure 2-6.

Figure 2-6: Impression of Valley Metro Services



Public Transportation Usage

The following public transportation modes have been used by survey respondents:

- Valley Metro Fixed Routes – 46%
- Smart Way or Smart Way Express – 13.3%
- Star Line Trolley – 29%
- STAR – 5.9%
- MetroFLX – 4.3%
- Amtrak – 14.8%
- Uber/Lyft 30%
- Taxis – 2%

Fifty-five percent (55%) of the survey respondents report that they have used Valley Metro within the last six months.

Service Improvement Questions

The survey asked respondents who use public transportation to indicate what improvements would result in them using public transportation more. The most frequently reported improvement was more frequent service, followed by additional stops with shelters/benches, and Sunday service. The full results are shown in Table 2-25.

Table 2-25: Public Transportation Desired Improvements

I would use public transportation more often if:	
Service was more frequent	61%
There were more stops with shelters/benches	45%
The bus operated on Sundays	44%
The bus trip took less time	33%
I had more information about how to use the bus	23%
The bus was more reliable	22%
It was cleaner	21%
It went to other locations	21%
The fare was lower	19%
There was better security on board the vehicles	15%
It was safer	14%

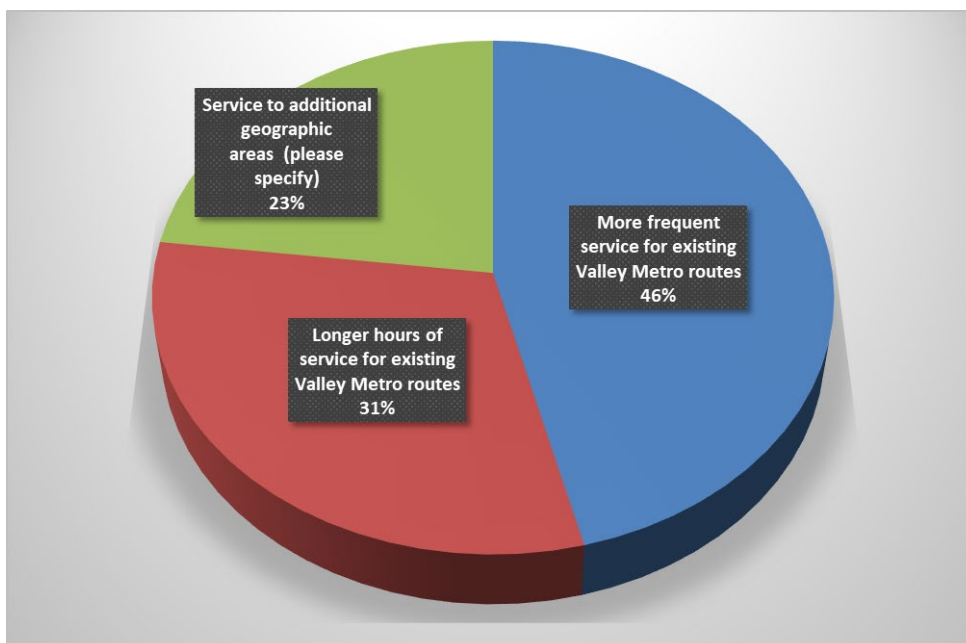
Non-riders were asked why they do not ride. The most frequently reported response was “the bus does not go where I want to go,” followed by “I prefer to drive,” and “the wait is too long between buses.” The full results are presented in Table 2-26.

Table 2-26: Reasons for Not Using Public Transportation

I do not use public transportation because:	
The bus does not go where I want to go	39%
I prefer to drive	37%
The wait is too long between buses	33%
It takes too long	29%
I don't know how to use the bus	16%
Other	16%
I prefer to walk	14%
The bus is too crowded	11%
The fare is too high	8%
I prefer to ride a bike	6%

The community survey replicated the question on the O-D survey, giving respondents a choice of three potential improvements. Respondents could ask for more frequent service, longer hours on the existing routes, or service to new areas. These results show that the most highly desired improvement is more frequent service for existing Valley Metro routes. These results are shown in Figure 2-7.

Figure 2-7: Desired Improvements



For those respondents who indicated that they would like to see service to additional areas, the following areas were mentioned:

- Roanoke County (general)
- Hollins Area
- Cave Spring
- Clearbrook
- Salem, Roanoke College
- Salem to Tanglewood
- SW Roanoke – Brambleton Route
- Peters Creek Road
- Electric Road
- Franklin County
- Roanoke Valley

When asked to choose among several areas identified for expansion within prior transit planning studies, the following responses were provided:

- Hollins Area (29%)
- Electric Road Corridor (State Route 419) (27%)
- Cave Spring (20%)
- Brandon Avenue Corridor (12%)
- Bonsack (8%)
- Glenvar (4%)

Comments from Transit Equity Day

In addition to passing out paper surveys and survey postcards with links to an electronic version of the survey, project staff also talked to riders and the public while on site at the Third Street Station. The following service requests were received from discussions with the public on Transit Equity Day:

- Return to peak service – 30 minutes
- Greater frequency – every 10 minutes
- Bus service to Hollins
- Bus service in Roanoke County
- Service earlier in the morning to get to work by 6:00 a.m.
- Bus routes 65/66 – more than every other hour on Saturdays

Stakeholder Discussions

The Valley Metro Transit Strategic Plan (TSP) process included a series of stakeholder interviews. These meetings were held both virtually and in person. The following organizations and committees provided input as stakeholders:

- Transit Passenger Advisory Committee (TPAC)
- Roanoke Valley – Alleghany Regional Commission (RVARC)
- Unified Human Services Transportation Systems, Inc. – Roanoke Area Dial A Ride – RADAR
- Roanoke County Planning Department – Transportation Division
- Roanoke Redevelopment and Housing Authority
- Valley Metro staff, including dispatchers and supervisors
- Bus Riders of Roanoke Advocacy Group

The stakeholder opinion gathered so far for the TSP has identified the following needs:

Transit Service

- Longer hours of service are needed.
- Some stakeholders advocated for 24/7 service to meet the needs of shift workers.
- There is a need to improve bus stop accessibility as well as pedestrian connectivity.
- Greater frequency of service is needed.
- Service to locations in Roanoke County that are adjacent to the current service area is needed. This is particularly important for access to employment opportunities. The following areas were specifically identified:
 - Hollins area
 - Plantation Road area (new Wells Fargo employment site)
 - Peters Creek Road area (DMV and Valleypointe)
 - Electric Road – Route 419 – Oak Grove area
 - Cave Spring
 - Tanglewood area, beyond the current end of the line
 - Glenvar – Richfield Living community
 - East Vinton Shopping Plaza (Food Lion)
 - Route 460 corridor toward Bonsack
- The hours of service for the fixed routes, coupled with the hourly frequency make it difficult to use the system for employment trips.
- Seamless connections between the County's CORTAN service and Valley Metro are needed.
- Sunday service is needed.
- Mobile ticketing would be helpful for passengers.

Marketing and Communication

- Valley Metro's website is not up to date.
- Some stakeholders find the route information confusing to understand.

Infrastructure

- More shelters and benches throughout the system.
- The development of additional hubs so that not all trips need to come downtown.
- Bus stop signs that included route and schedule information -- this could be through a QR code.
- Benches on the platforms at Third Street Station.¹
- A bike rack at Third Street Station.
- Recycling available at Third Street Station.
- Solar panels atop the canopies at Third Street Station.

Input from Roanoke County indicated that they are meeting the needs of their residents who have mobility challenges through the CORTAN program.

Transit Market Demand and Underserved Areas

This section provides an analysis of current and future population trends in the study area, as well as an analysis of the demographics of population groups that often depend on transportation options beyond an automobile. Data sources for this analysis include the 2020 U.S. Census, American Community Survey (ACS) 5-year estimates, the U.S. Census Longitudinal Employer Household Dynamics (LEHD), and the Weldon-Cooper Center for Public Service, University of Virginia.

Population Trends

Table 2-27 shows the U.S. Census population counts for the Commonwealth of Virginia and the study area from 2000 to 2020. The study area population as a whole grew faster between 2000 and 2010 than it did between 2010 and 2020. Among the jurisdictions in the region, Roanoke County had the highest rate of growth during the twenty-year period, growing 13%. This rate of growth is lower than that of the Commonwealth (21.9%).

The American Community Survey 5-year population estimates for the jurisdictions are shown in Table 2-28. These data show a small population loss in the region since the 2020 Census.

¹ Valley Metro reported that it is not possible to provide outdoor benches at the Third Street Station due to agreements made during the construction of the station.

Table 2-27: Historical Populations

Place	2000	2010	2020	2000-2010 % Change	2010-2020 % Change	2000-2020 % Change
Virginia	7,078,515	8,001,024	8,631,393	13.0%	7.9%	21.9%
City of Roanoke	94,911	97,032	100,011	2.2%	3.1%	5.4%
City of Salem	24,747	24,802	25,346	0.2%	2.2%	2.4%
Roanoke County	85,778	92,376	96,929	7.7%	4.9%	13.0%
<i>Town of Vinton</i>	7,782	8,098	8,059	4.1%	-0.5%	3.6%
Region	205,436	214,210	222,286	4.3%	3.8%	8.2%

SOURCE: U.S. CENSUS

Table 2-28: American Community Survey Population Estimates – 2022

ACS One Year Estimates – 2022	
Place	Population
Virginia	8,624,511
City of Roanoke	99,213
City of Salem	25,372
Roanoke County	96,653
<i>Town of Vinton</i>	8,045
Region	221,238

Population Forecast

Population forecasts for 2030, 2040, and 2050 are shown in Table 2-29. These data indicate that region is expected to see modest population growth over the period, ranging from 2.1% to 3.6%. This rate of growth is lower than the Commonwealth's expected growth (5.8% to 7.9%).

Table 2-29: Population Forecast 2030-2050

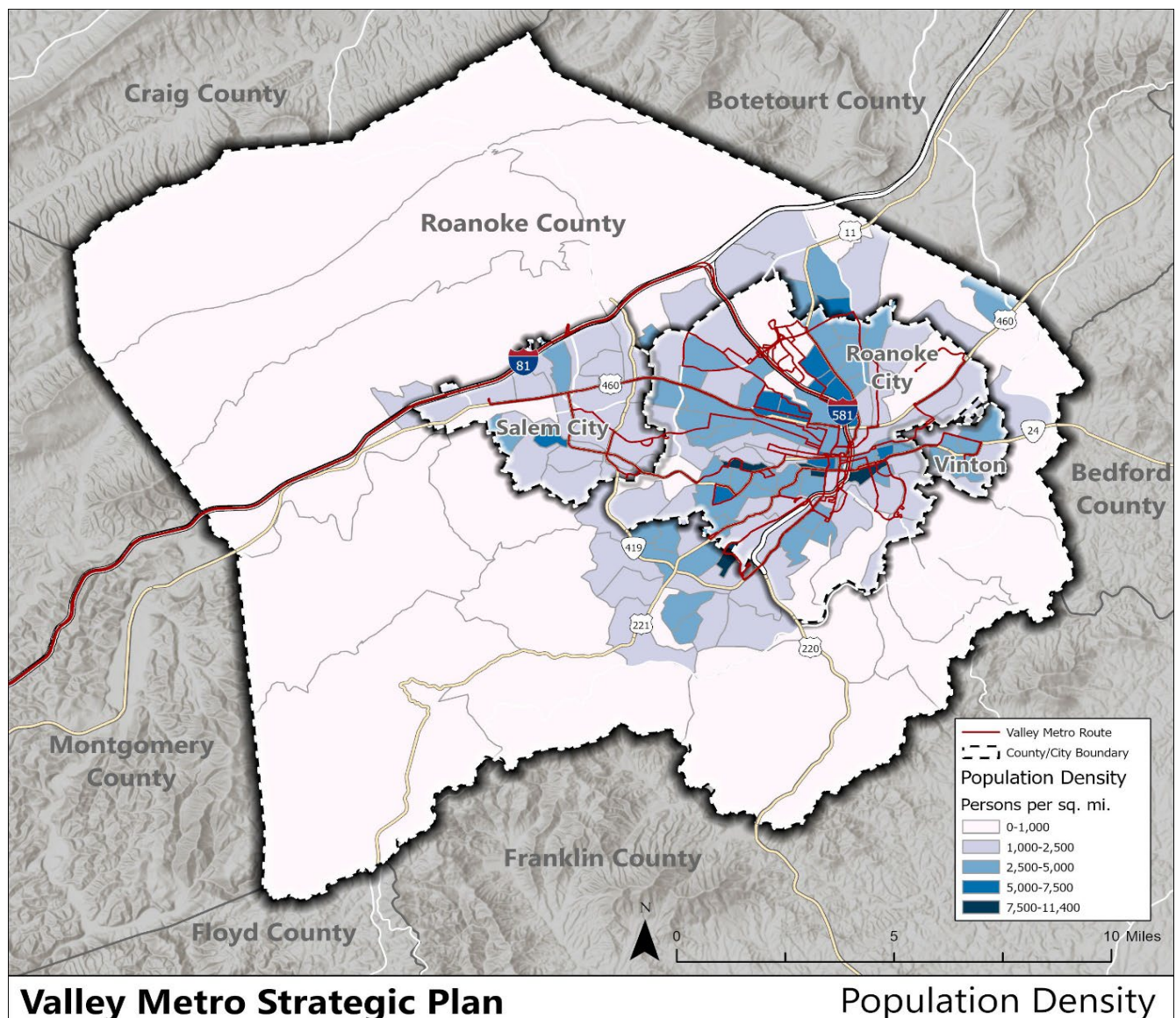
	2030	2040	2050
Virginia	9,129,002	9,759,371	10,535,810
City of Roanoke	101,514	102,529	105,079
City of Salem	25,519	25,438	25,737
Roanoke County	100,027	104,046	109,621
Region	227,060	232,013	240,437

SOURCE: WELDON-COOPER CENTER FOR PUBLIC INTEREST, UNIVERSITY OF VIRGINIA

Population Density

Population density is often used as a determinate for the type of public transportation service that is feasible in an area. Typically, an area with a density greater than 2,000 persons per square mile will be able to sustain frequent daily fixed route bus service. Whereas an area with a population density below 2,000 persons per square mile may be better suited for deviated fixed route, flex schedule, or dial-a-ride service. Figure 2-8 shows the population density at the Census block group level and Valley Metro's fixed route service in the region. The map indicates that within the City of Roanoke the high-density areas are served by Valley Metro. There are clusters of population density outside of the city that may be able to support fixed route services. These areas include Cave Spring, Hollins, and Bonsack.

Figure 2-8: Population Density in the Region



Source: U.S. Census, American Community Survey, 2018-2022

Transit Dependent Populations

To understand public transportation requirements, it is important to identify specific segments within the overall population that are more inclined to utilize transit services. These segments often include transit-dependent populations who either lack access to private vehicles or are unable to drive themselves due to factors such as age or disability constraints. Analyzing the size and distribution of these transit-dependent populations helps assess the effectiveness of existing transit services and evaluate the extent to which they meet the needs of the community. By identifying these populations and their geographical locations, informed decisions can be made regarding service improvements and adjustments to better serve the community.

The Transit Dependence Index (TDI) is an aggregate measure displaying relative concentrations of transit dependent populations. Five factors make up the TDI calculation: population density, autoless households, elderly populations (age 65 and over), youth populations (ages 10-17), and below poverty populations.

The factors above represent specific socioeconomic characteristics of area residents. For each factor, individual block groups were classified according to the prevalence of the vulnerable population relative to the regional average. The factors were then put into the TDI equation to determine the relative transit dependence of each block group.

As illustrated in Figure 2-9, the relative classification system utilizes averages in ranking populations. For example, areas with less than the average transit dependent population fall into the “very low” classification, where areas that are more than twice the average will be classified as “Very High.” The classifications “Low, Moderate, and High” all fall between the average and twice the average; these classifications are divided into thirds.

Figure 2-9: Transit Dependent Populations Classification System

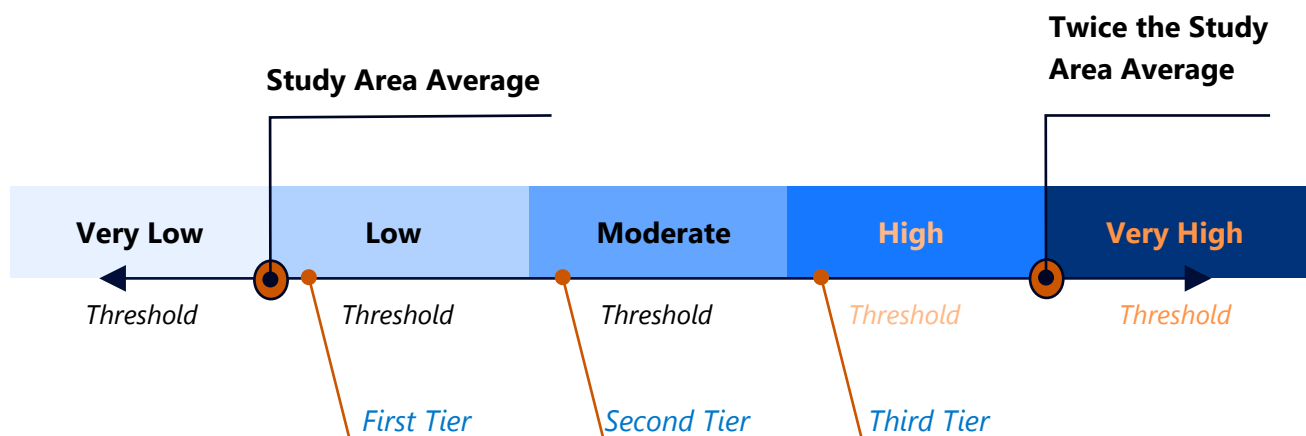


Figure 2-10 exhibits the TDI rankings assigned to different areas within the City of Roanoke, the City of Salem, and Roanoke County. Regions characterized as having a "very high need" can be found in central Roanoke, as well as in pockets adjacent to the Melrose Avenue Corridor, the Ferncliff/Cove Road area, and pockets of Salem along the southern boundary with the City of Roanoke. These areas are served by Valley Metro.

The Transit Dependence Index Percent (TDIP) provides a complementary analysis to the TDI measure. It is nearly identical to the TDI measure except for the exclusion of population density. Figure 2-11 displays the distribution of need levels in different block groups within the region. This analysis shows the areas of lower population density that have high needs populations. The "very high need" areas include pockets of Roanoke County west of Glenvar and south of I-81, areas of Salem along the southern border with Roanoke city as well as the Southern Hills area, several block groups within the City of Roanoke, and a block group of Roanoke County bordered by U.S.220 South and the Roanoke City border. The areas outside of the Cities of Roanoke and Salem are not served by Valley Metro.

Individual Demographic Analyses

In addition to the aggregate needs data presented in the TDI score, the following data and analyses show the regional block groups displayed according to the relative concentration of each individual TDI characteristic. These analyses will help the study team further understand which primary population elements are driving the aggregate TDI scores.

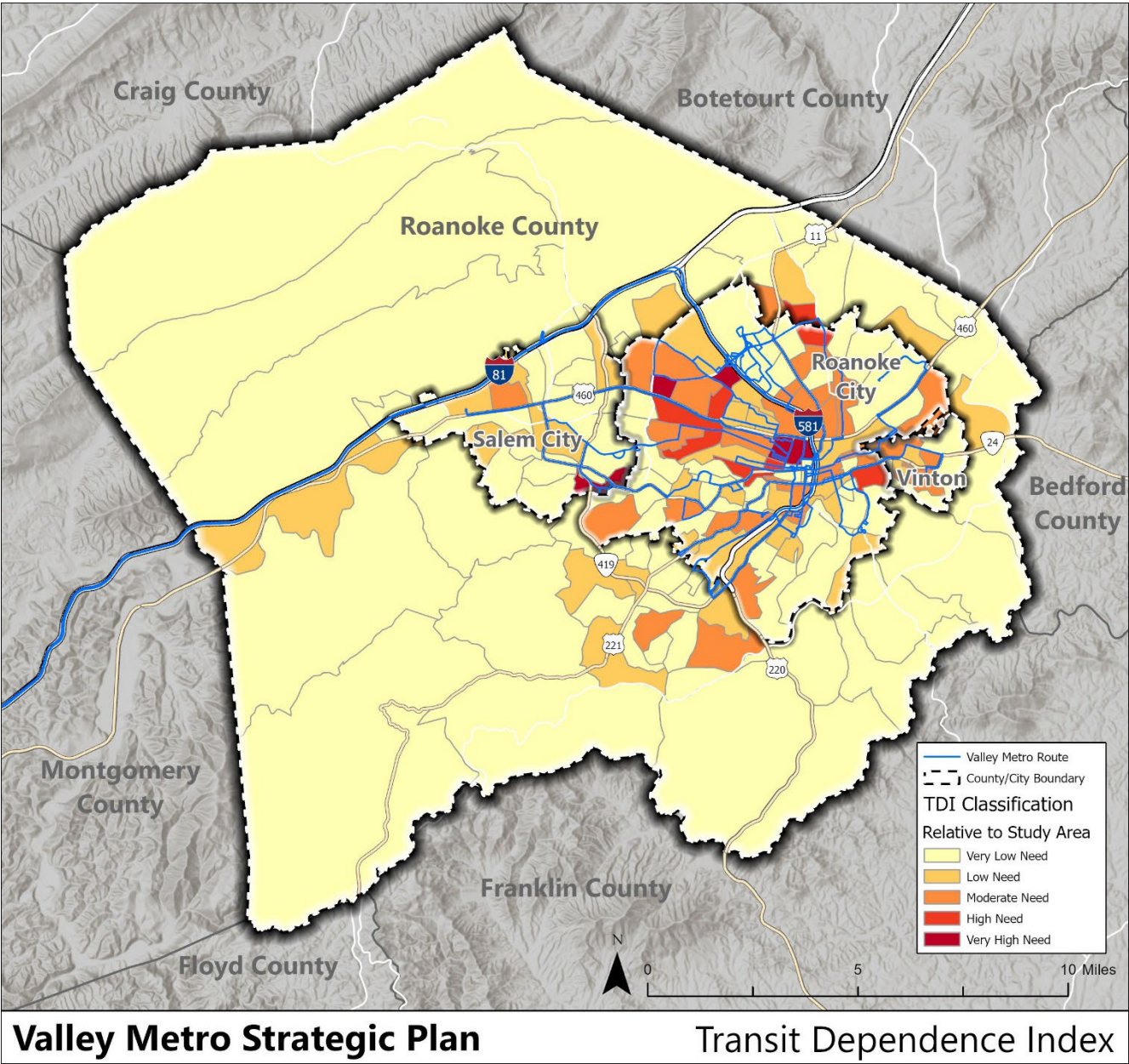
Autoless Households

Households without a personal vehicle are more likely to use public transit than households with access to a personal vehicle. Understanding where there are autoless households in the region is important because many land uses in the region are at distances too far for non-motorized travel. As seen in Figure 2-12, there are very high concentrations of autoless households in several areas within the City of Roanoke, as well as the Franklin Road corridor (both within and adjacent to the city), an area northeast of Vinton, an area in Salem that includes the Walmart, as well as the area that encompasses Roanoke College, pockets along U.S. Route 460 west of Glenvar, and the Hollins University area.

Senior Adult Population

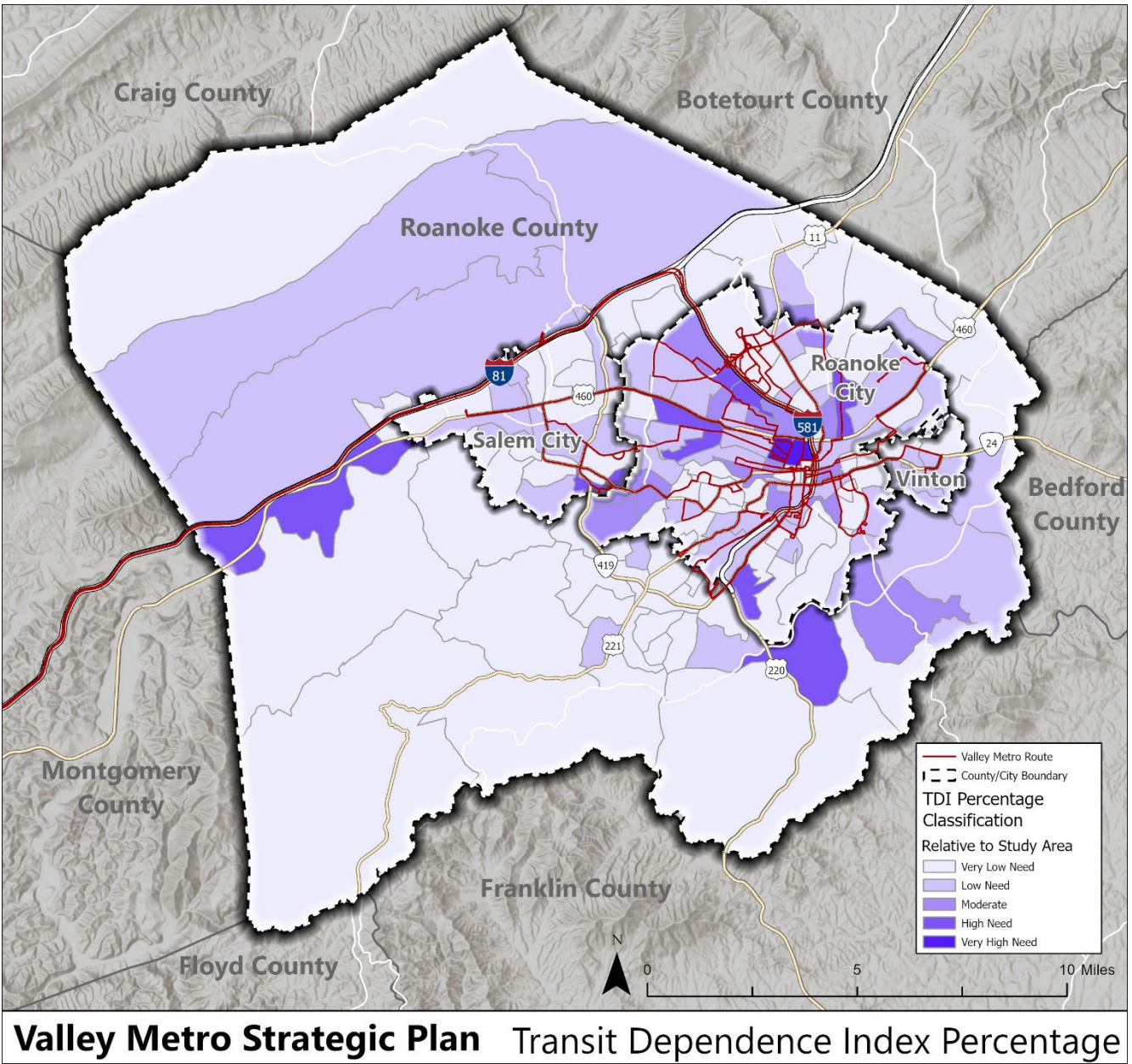
Individuals aged 65 years and older may scale back their use of personal vehicles as they age, leading to a greater reliance on public transportation compared to those in other age brackets. Illustrated in Figure 2-13: there are higher concentrations of senior adults along U.S. 460 west of Glenvar (similar to the autoless household data); an area of Salem and Roanoke that likely encompasses the LewisGale Medical center; an area just south of the City of Roanoke, east of Franklin Road; the Southern Hills area; an area of Salem between U.S. 460 and U.S. 11; and several smaller pockets scattered throughout the region.

Figure 2-10: Transit Dependence Index



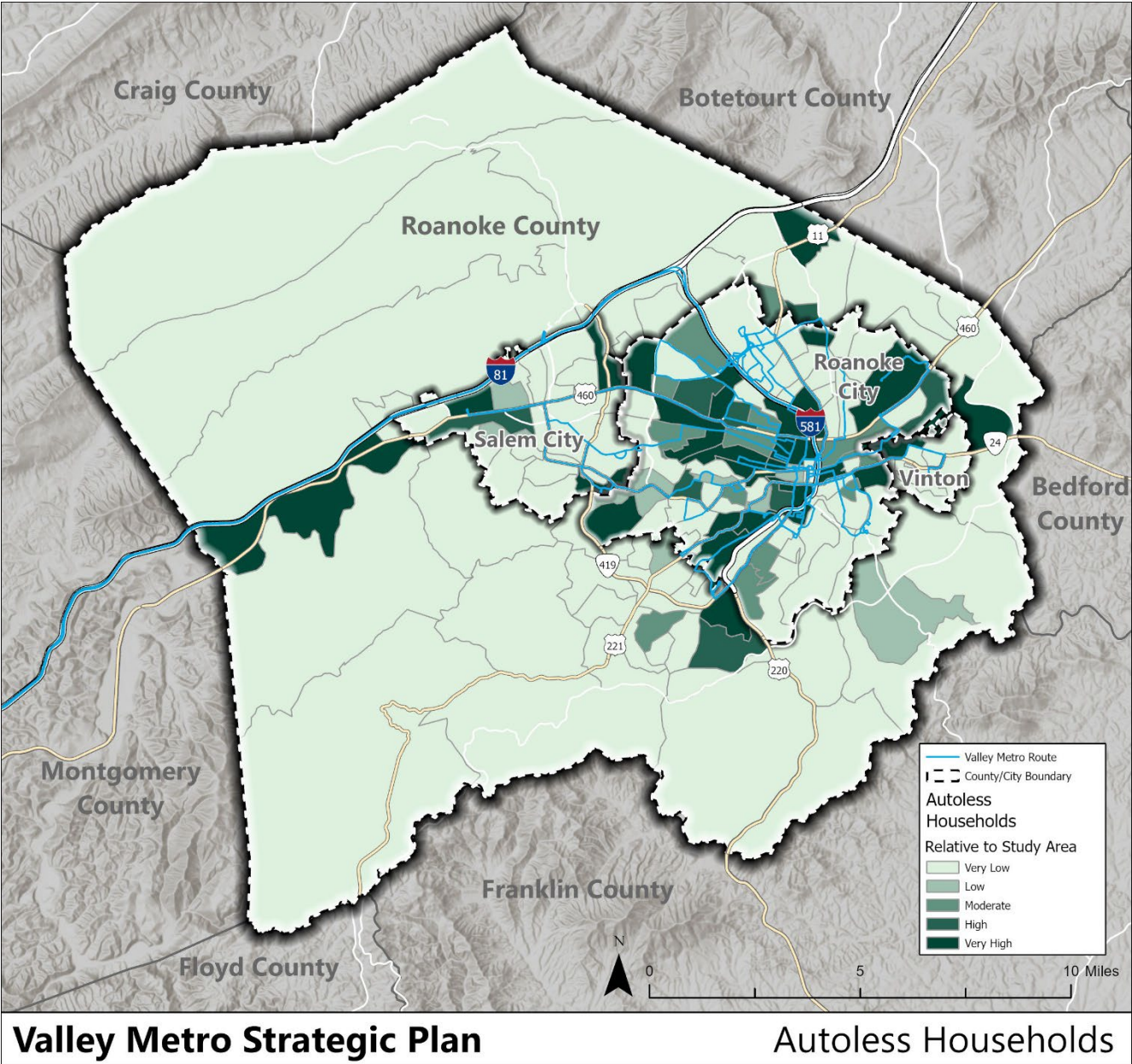
Source: U.S. Census, American Community Survey, 2018-2022

Figure 2-11: Transit Dependence Index Percentage



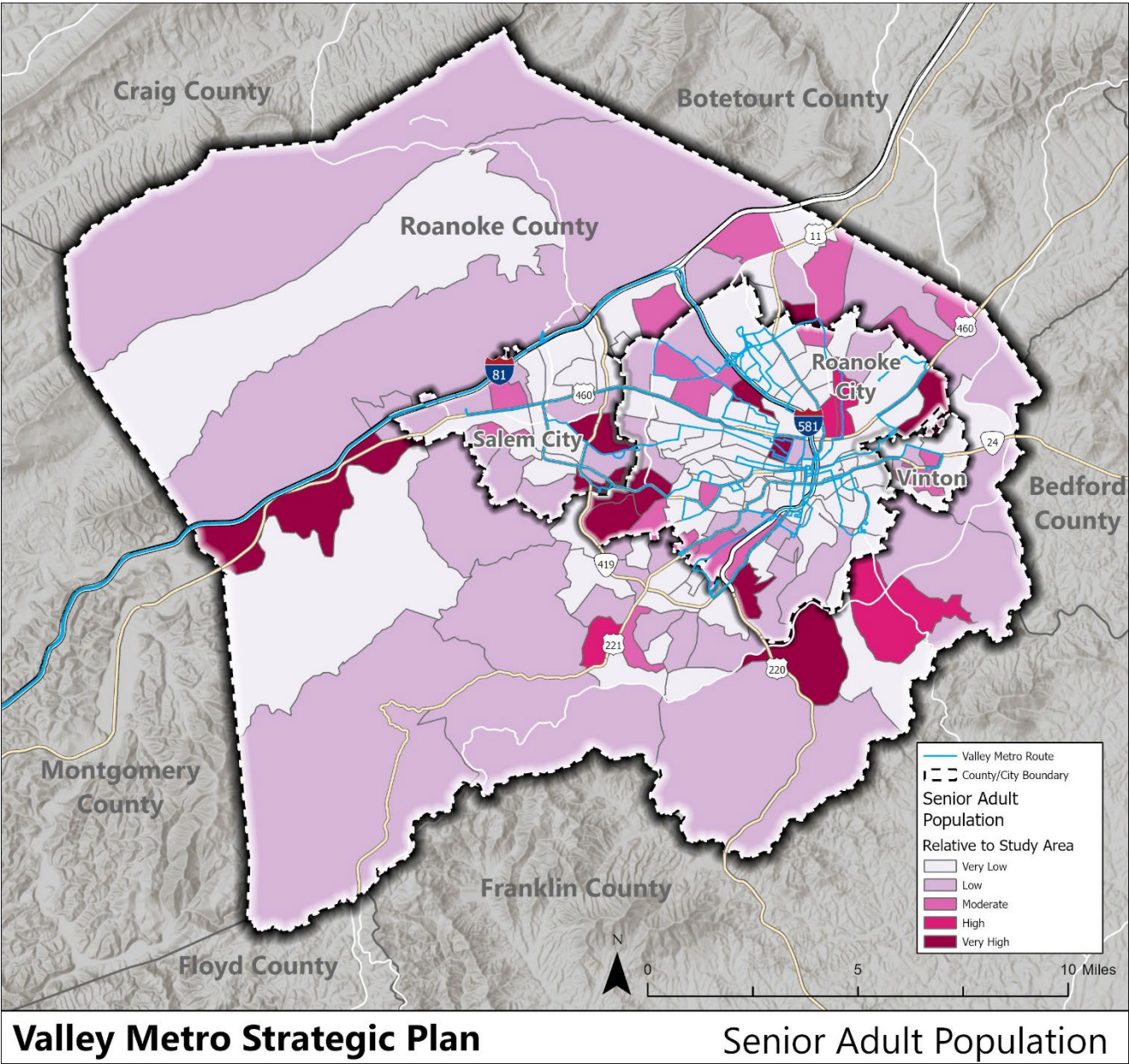
Source: U.S. Census, American Community Survey, 2018-2022

Figure 2-12: The Relative Concentration of Autoless Households by Census Block Group



Source: U.S. Census, American Community Survey, 2018-2022

Figure 2-13: The Relative Concentration of Senior Adults by Census Block Group

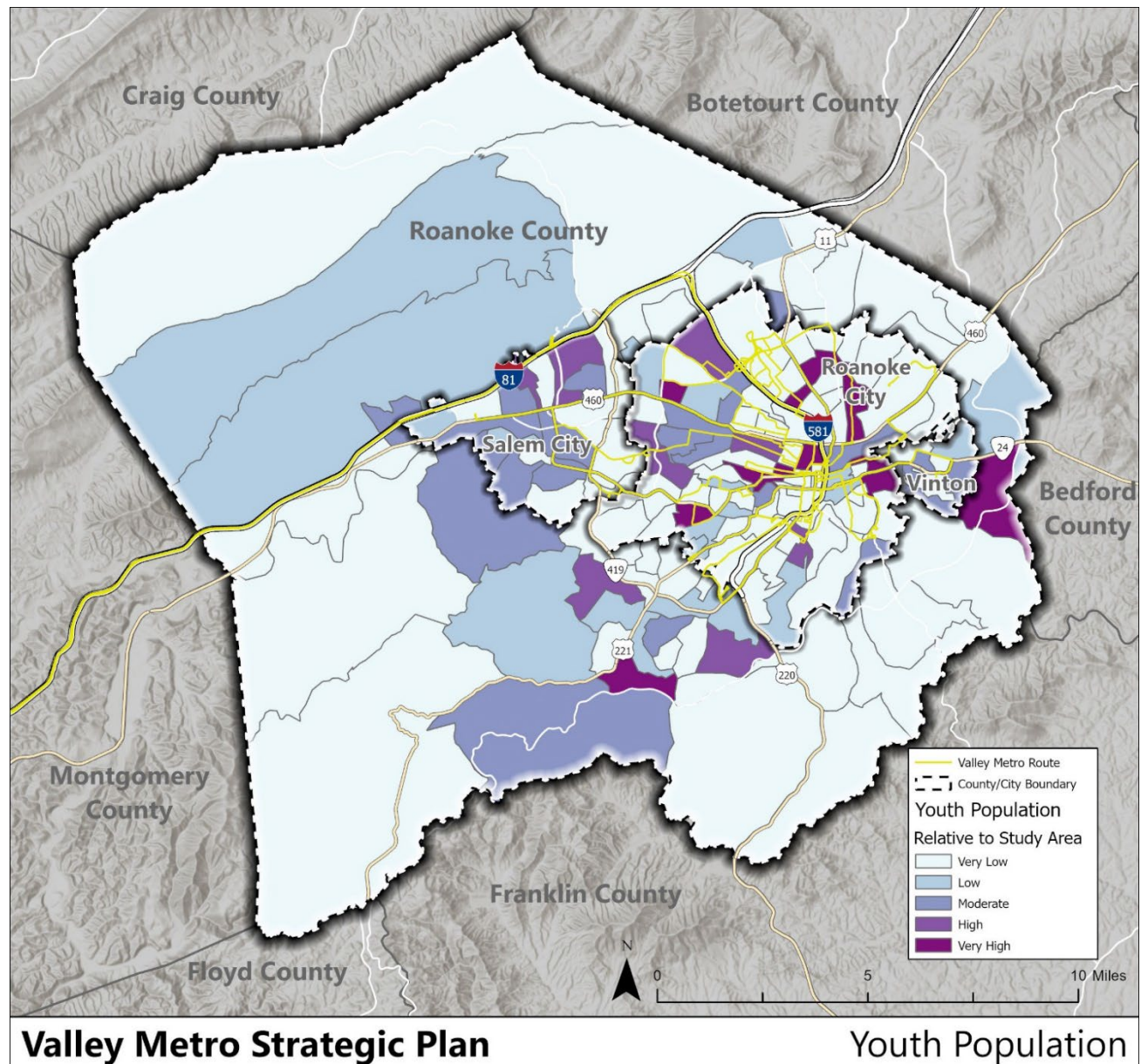


Source: U.S. Census, American Community Survey, 2018-2022

Youth Population

Youths and teenagers, age 10 to 17 years, who cannot drive or are just starting to drive but do not have an automobile available also tend to use public transportation. Figure 2-14 illustrates the concentrations of the youth population in the study area. There are pockets of relatively high concentrations of youth in downtown Roanoke, as well as an area east of Vinton, and area southwest of the City of Roanoke, in the Poage's Mill area.

Figure 2-14: Relative Concentration of Youth by Census Block Group

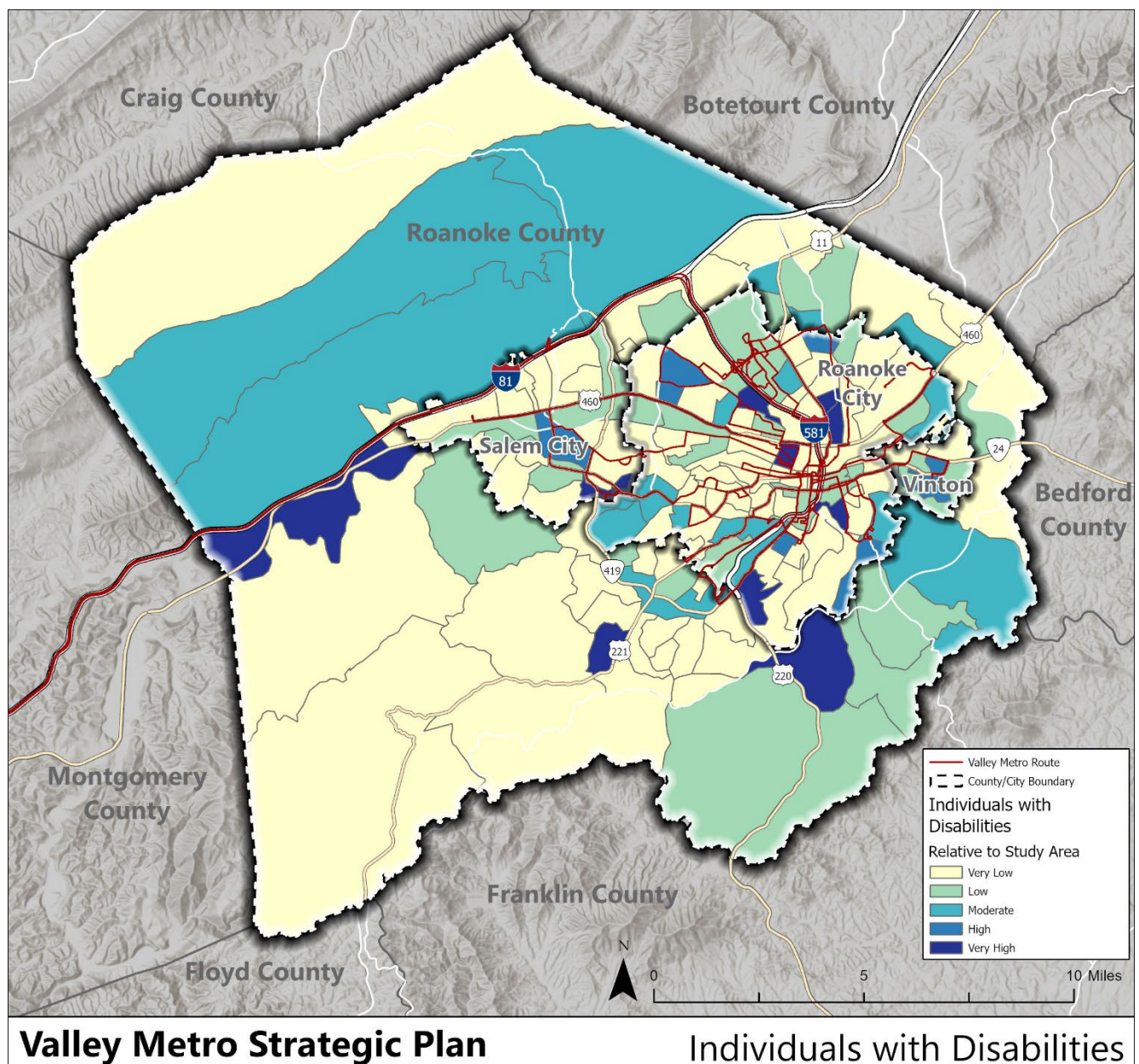


Source: U.S. Census, American Community Survey, 2018-2022

Individuals with Disabilities

Figure 2-15 illustrates the relative concentrations of people with disabilities in the study area. Persons with disabilities often use public transit for many of their trips. The largest block group that shows a high relative concentration of people with disabilities is located just outside the southern border of the City, east of Franklin Road. Other pockets are found in the Williamson Road corridor and the Gainsboro and Washington Park areas of the City, as well as the areas along the U.S. 460 corridor west of Glenvar and the Poage's Mill Area.

Figure 2-15: The Relative Concentration of Individuals with Disabilities by Census Block Group



Title VI Analysis

Title VI of The Civil Rights Act of 1964 prohibits discrimination on the basis of race, color or national origin in programs and activities receiving federal subsidies. This includes agencies providing federal funds for public transportation. In accordance with Title VI, the following section examines the minority and below poverty populations in the service area. This section also summarizes the prevalence of residents with Limited-English Proficiency (LEP) in the service area.

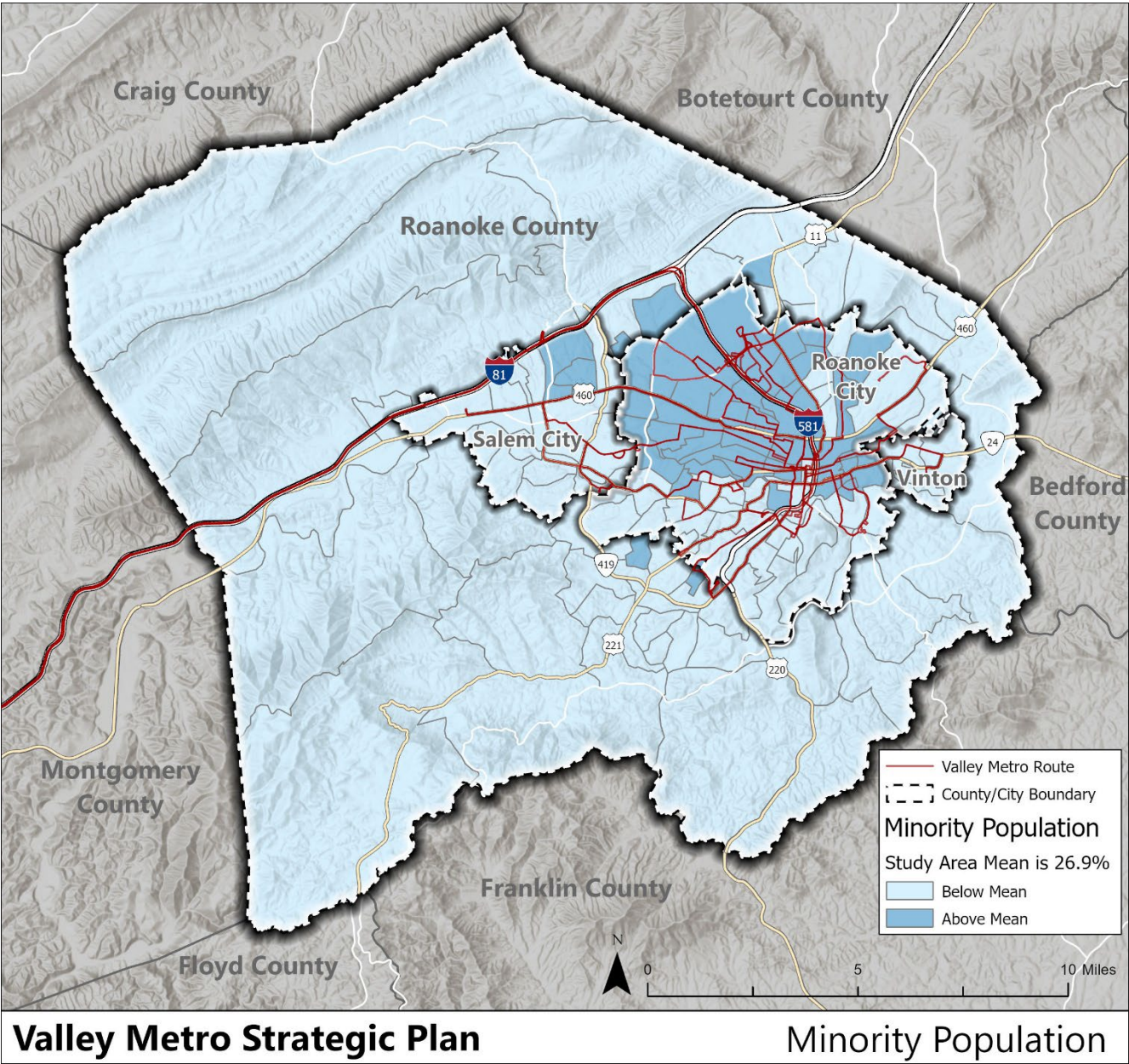
Minority Population

In accordance with Title VI of the Civil Rights Act of 1964, it is important to ensure that areas with a higher-than-average concentration of racial and/or ethnic minorities are not negatively impacted by proposed alterations to existing public transportation services. To determine whether an alteration would have an adverse impact it is necessary to first understand where concentrations of minority individuals reside. Figure 2-16 provides a map of the service area showing the Census block groups shaded according to whether they have minority populations of above or below the regional average (26.9%). Above average concentrations of minorities are located primarily within the City of Roanoke.

Low-Income Population

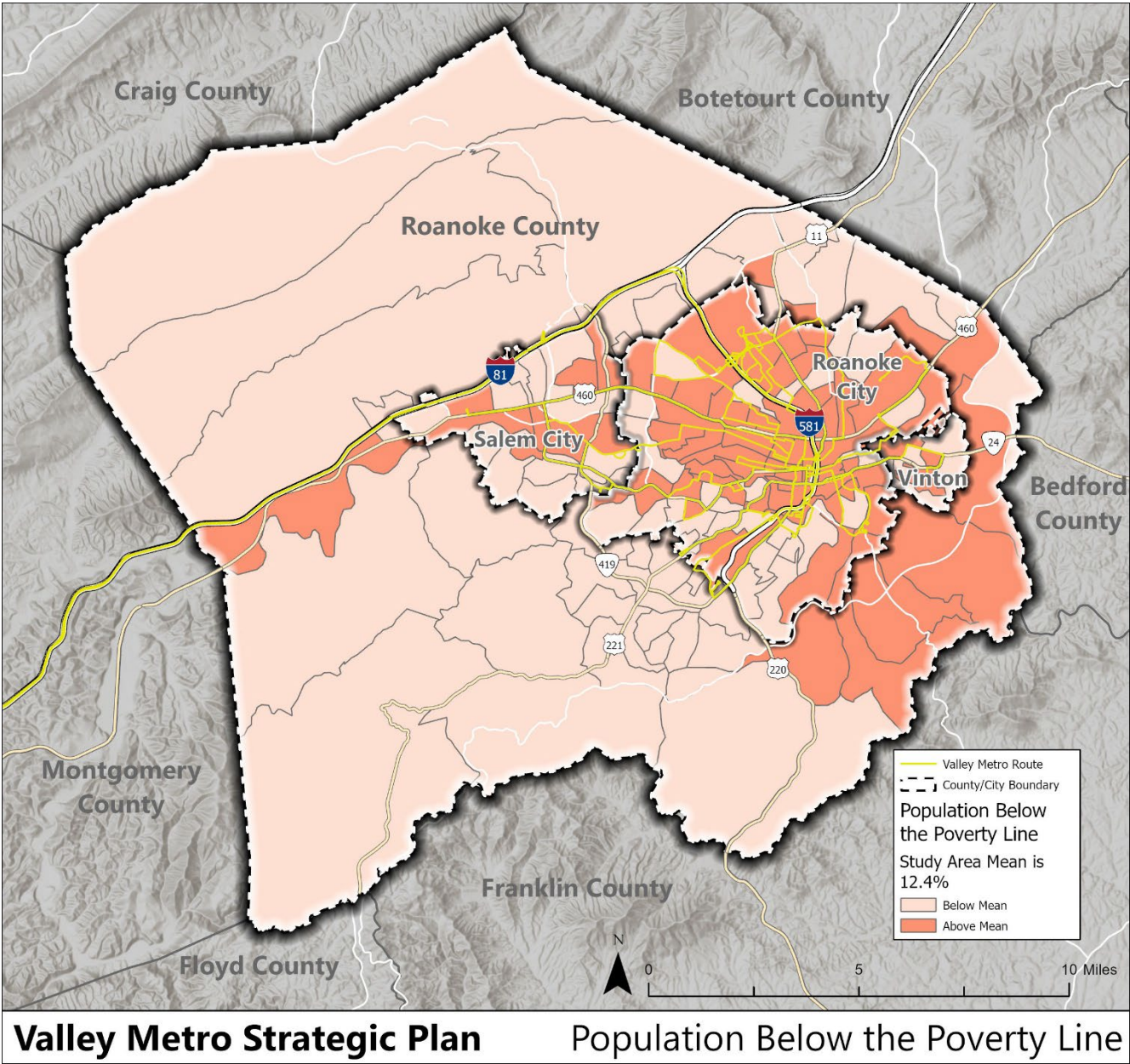
This socioeconomic group represents individuals who earn less than the federal poverty level. These individuals face financial hardships that make owning and providing the necessary maintenance of a personal vehicle difficult. For this segment of the population, public transportation may be the more economical choice. Figure 2-17 provides a map that shows the Census block groups according to whether the poverty rate is above or below the regional average of 12.4%. Note that for the prior TDP, the regional average was 15.2%. According to the map, there are a significant number of block groups within the City of Roanoke that exhibit higher levels of poverty than the regional average. Much of Roanoke County north of I-81 also exhibits higher levels of poverty than the regional average.

Figure 2-16: Areas Above and Below the Study Area Average for Minority Populations



Source: U.S. Census, American Community Survey, 2018-2022

Figure 2-17: Areas Above and Below the Study Area Average for Poverty



Source: U.S. Census, American Community Survey, 2018-2022

Limited-English Proficiency (LEP)

In addition to equitably providing public transportation to individuals of diverse socioeconomic backgrounds, it is also important to realize the variety of languages spoken by area residents so that public information can be provided in other languages, if needed. According to the American Community Survey's five-year estimates for 2018-2022, English is the most predominately spoken language of residents. Spanish is the most common language among non-English speakers in Roanoke City (9.5%), in Roanoke County (2.9%), and in Vinton (1.3%). In Salem, Spanish (2%) and Indo-European languages (2%) are the most common spoken languages among non-English speakers. As seen in Table 2-30, the only language where over 1,000 people speak English less than "very well" is Spanish within the City of Roanoke. Over 1,000 people or 5% (whichever is smaller) is the level at which vital documents are required to be translated.

Table 2-30: Limited English Proficiency

LANGUAGE SPOKEN AT HOME	Roanoke City		Roanoke County		Salem City		Vinton Town	
	#	%	#	%	#	%	#	%
Population 5 years and over	92,836		92,250		24,360		7,674	
English only	83,988	90.5%	85,031	92.2%	23,162	95.1%	7,521	98.0%
Language other than English	8,848	9.5%	7,219	7.8%	1,198	4.9%	153	2.0%
Speak English less than "very well"	3,366	3.6%	2,246	2.4%	299	1.2%	72	0.9%
Spanish	4,824	5.2%	2,716	2.9%	495	2.0%	102	1.3%
Speak English less than "very well"	1,943	2.1%	827	0.9%	171	0.7%	54	0.7%
Other Indo-European languages	2,186	2.4%	2,290	2.5%	476	2.0%	51	0.7%
Speak English less than "very well"	774	0.8%	537	0.6%	93	0.4%	18	0.2%
Asian and Pacific Islander languages	1,358	1.5%	1,968	2.1%	145	0.6%	-	0.0%
Speak English less than "very well"	434	0.5%	811	0.9%	-	0.0%	-	0.0%
Other languages	480	0.5%	245	0.3%	82	0.3%	-	0.0%
Speak English less than "very well"	215	0.2%	71	0.1%	35	0.1%	-	0.0%

Employment Information

A data tool developed by the U.S. Census was used to generate maps that show the density of jobs in the City of Roanoke, the City of Salem, and Roanoke County. These maps are presented as Exhibits 2-1, 2-2, and 2-3 and discussed below.

City of Roanoke

According to the data collected through the LEHD, there are a total of 66,241 jobs within the City of Roanoke (2021 data). The density of these jobs is shown in Exhibit 2-1. As would be expected, the area with the highest job density is downtown Roanoke, extending south to the Carilion Hospital complex area. There are also major job clusters near the Roanoke-Blacksburg Regional Airport, the Blue Hills Industrial Center, and the Valley View area. There are also several relatively high-density clusters scattered through the southwestern quadrant of the city. The highest density job clusters within the City of Roanoke are served by Valley Metro.

City of Salem

There are a total of 21,564 jobs reported via the LEHD data within the City of Salem. Job density in the City of Salem is shown in Exhibit 2-2. The area with the highest density of jobs within Salem centers around the Salem VA Medical Center and the LewisGale Medical Center. Additional dense job clusters are found near Roanoke College and along the West Main Street Commercial corridor. There are also smaller clusters west of the Electric Road corridor, on either side of Roanoke Boulevard. These areas are served by Valley Metro.

Roanoke County

In Roanoke County, including the Town of Vinton, there are 37,440 jobs. As shown in Exhibit 2-3, the highest density of jobs is clustered around the City of Roanoke. The highest density job clusters are located adjacent to the Roanoke County School Board, along Cove Road, just south of I-81. This is somewhat misleading, as the jobs are likely dispersed throughout the county. Other clusters are in the Hollins area, the Cave Spring area, Glenvar, Vinton, and Bonsack. The only one of these clusters that is currently served by fixed route transit is the Town of Vinton. CORTAN is available for seniors and people with disabilities who reside within Roanoke County.

Employment Projections

According to the Virginia Employment Commission, employment in the Western Virginia region is projected to grow by 4.37% between 2020 and 2030. Given the development that is occurring in the region, the employment growth in the Roanoke Valley area is likely to be higher than that of Western Virginia as a whole. Employment projections were not available at the jurisdictional level.

Exhibit 2-2: Job Density in the City of Roanoke

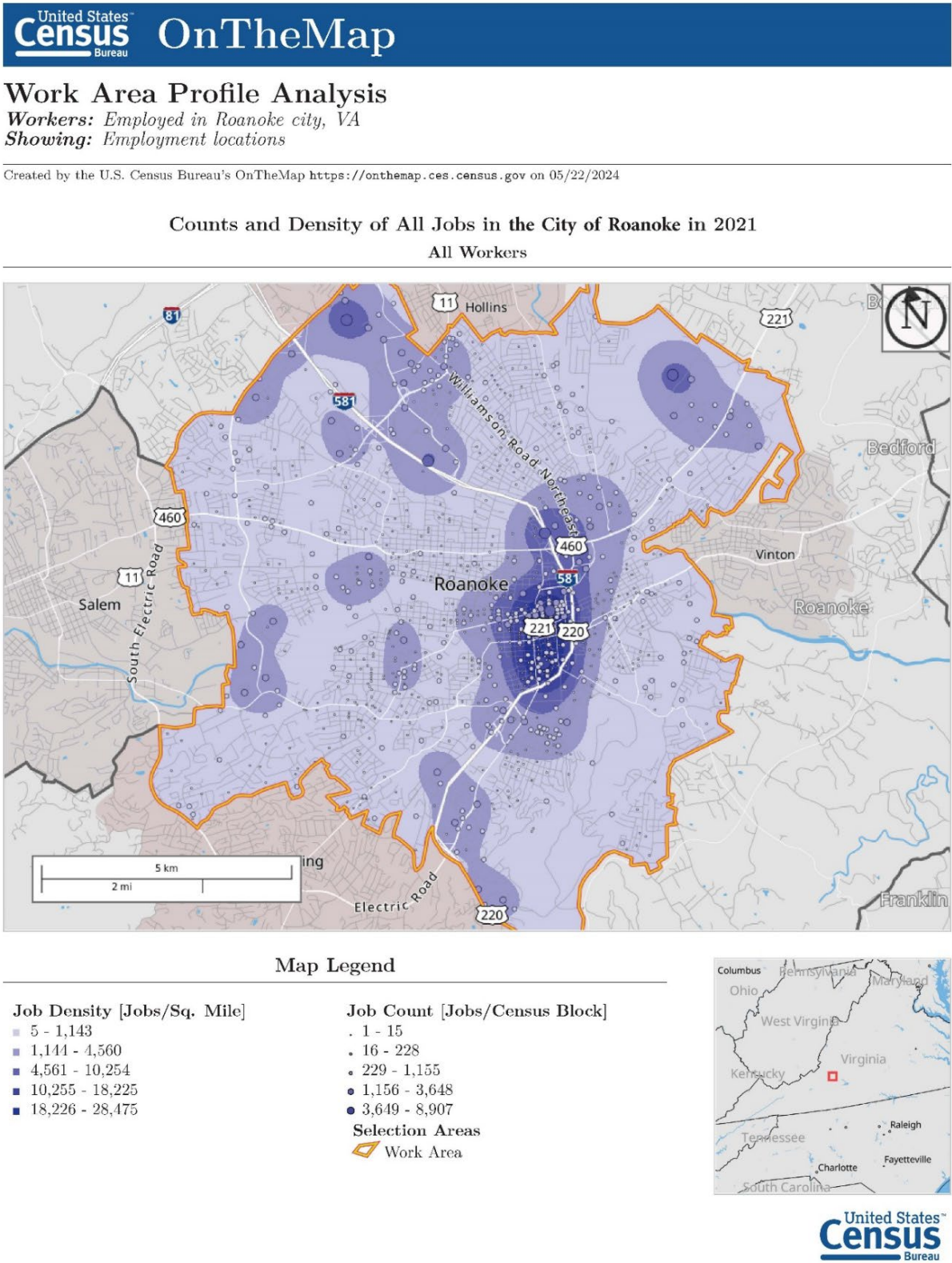


Exhibit 2-2: Job Density in the City of Salem

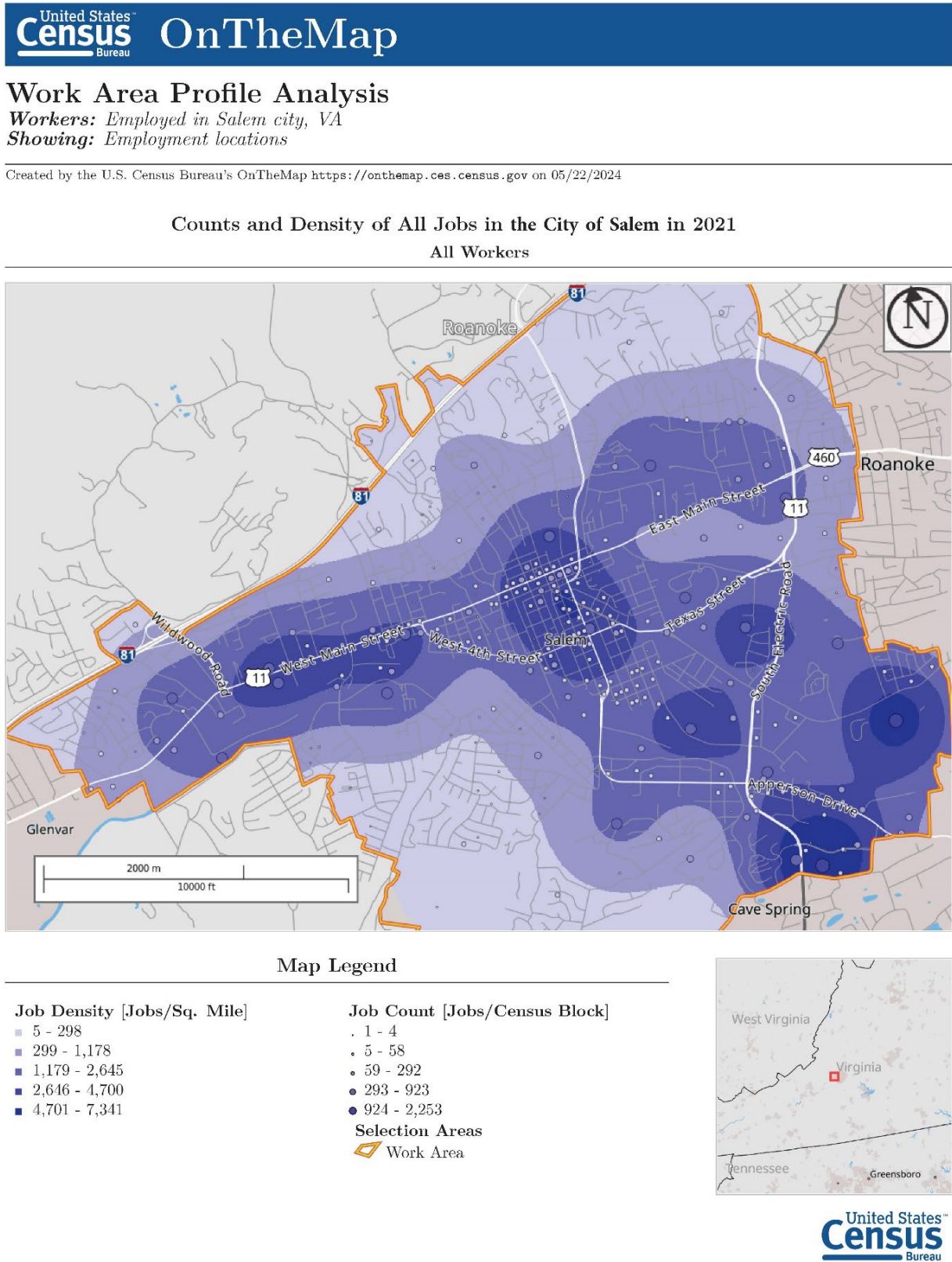
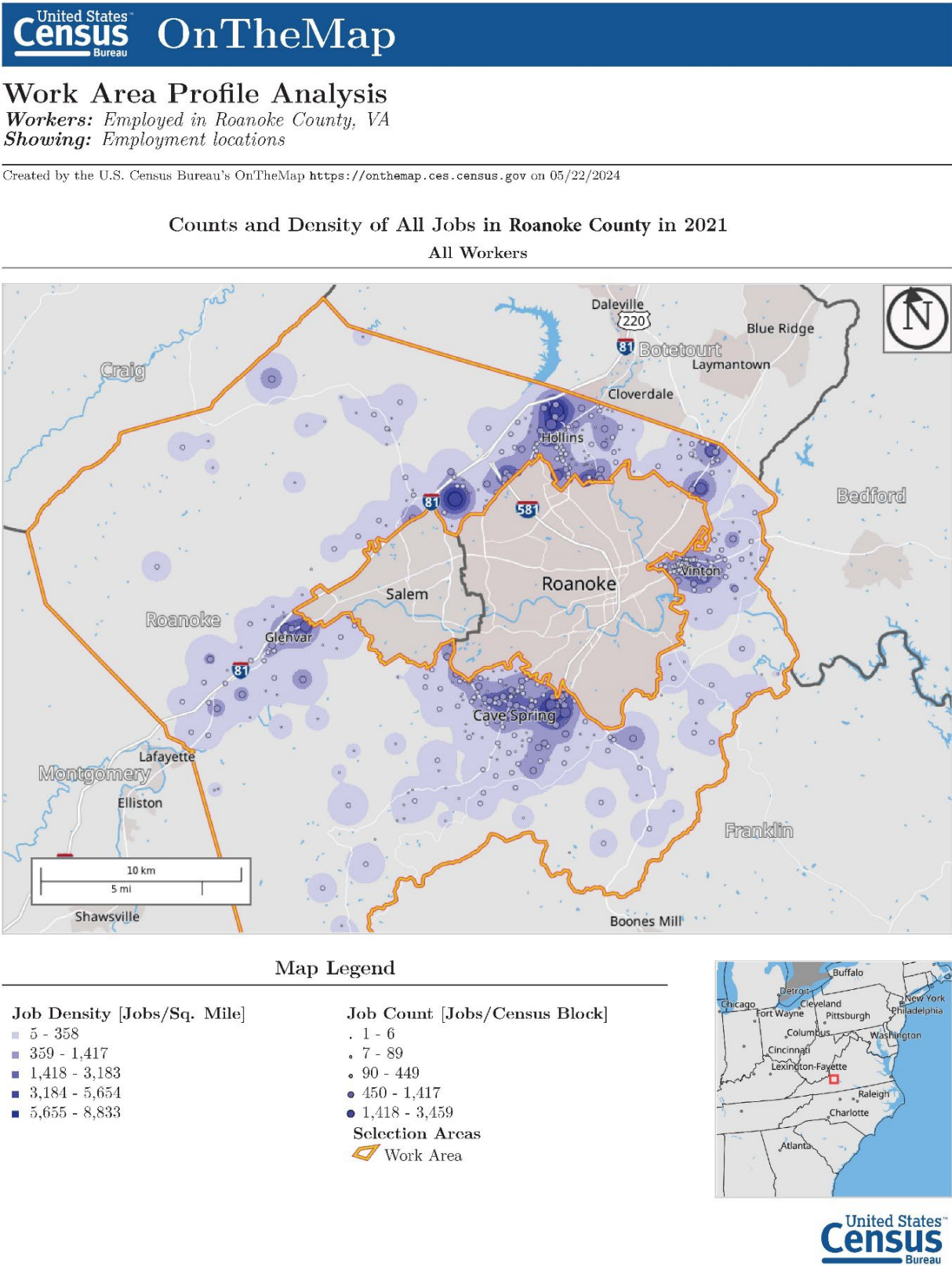


Exhibit 2-3: Job Density in Roanoke County



Employment Travel Patterns

Roanoke City Workers

According to the American Community Survey Data Five-Year Estimates (2016-2020), there were 46,829 Roanoke City residents aged 16 or above in the workforce. The top ten work locations for these residents are shown in Table 2-31. As these data show, 61% stayed within the City for employment, another 18.9% worked in Roanoke County, and 11.3% worked in Salem.

Table 2-31: Top Ten Work Locations for Roanoke City Residents

Work Location	#
Roanoke city	28,391
Roanoke County	8,863
Salem city	5,329
Botetourt County	1,870
Montgomery County	465
Franklin County	321
Bedford County	320
Staunton city	144
Floyd County	141
Lynchburg city	123

Salem City Workers

About 48% of Salem City residents who are in the workforce stayed within Salem for work. The next two most popular locations were Roanoke City and Roanoke County. The top ten work locations for these residents are shown in Table 2-32. Note that there are two out of state locations on the list. These were likely smaller numbers that were inflated during the sampling process. The margin of error was high for both of those pairs. The number of workers (16+) who live in Salem was estimated to be 12,205.

Table 2-32: Top Ten Work Locations for Salem City Residents

Work Location	#
Salem city	5,823
Roanoke city	3,348
Roanoke County	1,947
Botetourt County	438
Montgomery County	372
Maricopa County, AZ	65
Giles County	34
Franklin County	22
Philadelphia County, PA	21
Richmond city	21

Roanoke County Workers

The Roanoke County workforce aged 16 and over was estimated to be comprised of about 44,953 workers. The number one work destination for these workers was the City of Roanoke (41.7%), followed by Roanoke County (35.9%), and Salem City (11.8%). The top ten work locations for these residents are shown in Table 2-33.

Table 2-33: Top Ten Work Locations for Roanoke County Residents

Work Location	#
Roanoke city	18,751
Roanoke County	16,158
Salem city	5,327
Botetourt County	1,541
Montgomery County	1,102
Franklin County	566
Bedford County	348
Wake County, NC	109
Fairfax County	86
Henry County	68

Commute Characteristics

Commute characteristics collected from the ACS 2018-2022 dataset are presented in Table 2-34. These data show that the majority of commuters in all the jurisdictions drive alone to work. The transit mode share was highest for the City of Roanoke commuters, at 2.9%. With the exception of Vinton, the most popular time of departure for work is between 7:30 a.m. and 7:59 a.m. Salem City commuters had the shortest commute time at 18.8 minutes, while Vinton commuters had the longest at 25.3 minutes.

Table 2-34: Commute Characteristics

	Roanoke city	Salem city	Vinton town	Roanoke County
Label	Estimate	Estimate	Estimate	Estimate
Workers 16 years and over	46,368	12,358	3,950	46,477
MEANS OF TRANSPORTATION TO WORK				
Car, truck, or van	83.70%	83.90%	85.60%	85.60%
Drove alone	76.6%	77.7%	81.5%	79.7%
Carpooled	7.1%	6.2%	4.2%	5.9%
In 2-person carpool	5.3%	3.9%	4.2%	3.9%
In 3-person carpool	0.5%	2.1%	0.0%	1.1%

	Roanoke city	Salem city	Vinton town	Roanoke County
Label	Estimate	Estimate	Estimate	Estimate
In 4-or-more person carpool	1.3%	0.3%	0.0%	0.9%
Workers per car, truck, or van	1.05	1.04	1.02	1.04
Public transportation (excluding taxicab)	2.9%	0.5%	0.7%	0.4%
Walked	2.0%	6.6%	0.8%	0.8%
Bicycle	0.2%	0.2%	0.0%	0.0%
Taxicab, motorcycle, or other means	1.5%	0.4%	1.9%	0.7%
Worked from home	9.7%	8.5%	11.0%	12.5%
TIME OF DEPARTURE TO GO TO WORK				
12:00 a.m. to 4:59 a.m.	3.7%	1.3%	4.2%	3.5%
5:00 a.m. to 5:29 a.m.	3.3%	2.8%	2.0%	1.8%
5:30 a.m. to 5:59 a.m.	4.8%	3.9%	11.1%	4.0%
6:00 a.m. to 6:29 a.m.	10.2%	5.3%	6.0%	9.3%
6:30 a.m. to 6:59 a.m.	7.2%	9.9%	11.8%	9.2%
7:00 a.m. to 7:29 a.m.	12.2%	14.7%	18.0%	15.7%
7:30 a.m. to 7:59 a.m.	13.0%	18.8%	10.9%	15.8%
8:00 a.m. to 8:29 a.m.	12.4%	12.0%	7.7%	10.9%
8:30 a.m. to 8:59 a.m.	5.4%	6.4%	4.7%	5.6%
9:00 a.m. to 11:59 p.m.	27.8%	24.9%	23.5%	24.2%
TRAVEL TIME TO WORK				
Mean travel time to work (minutes)	20.9	18.8	25.3	22.5

Development Information

There are a significant number of development projects in the planning and construction stages in the Roanoke region, particularly in areas of Roanoke County adjacent to Roanoke City. These include mixed use development/redevelopment projects, as well as business and technology parks.

The following mixed-use projects are currently under development:

- 419 Town Center** – This project involves the re-development and land use diversification of about 380 acres in the Tanglewood Mall area along Route 419. The plan suggests a transformation from auto-oriented strip mall development to pedestrian-friendly, mixed-use town center. The planning documents call for improved pedestrian and bicycle infrastructure, as well as a transit circulator using smaller vehicles. The Tanglewood Mall is currently the terminus for Valley Metro's 50 series routes. This project is in Roanoke County, adjacent to the southwest border of Roanoke City.

- **Oak Grove Center** – This project is a joint Roanoke City/Roanoke County project that is located along Electric Road (Route 419), near the Grandin Road intersection. The west side of Electric Road includes the Southwest Plaza, located in the City of Roanoke and the east side of Electric Road includes the Oak Grove Shopping Center. The plan calls for improved and additional outdoor amenities; improved transportation connectivity, safety, and mobility; expanded housing options; and upgraded facilities and stormwater infrastructure. The plan specifically recommends an expansion of Valley Metro service along Route 419.
- **Hollins Center** – This Roanoke County plan focuses on the Hollins area, between Williamson Road and I-81, with Hollins University serving as the Eastern border and Walrond Park serving as the western border. The recommendations focus on improving community facilities and improving and expanding the multimodal transportation network. The plan calls for expanded transit opportunities for the study area “when and where feasible.”²

Roanoke County is also working on developing the following business and technology parks:

- Wood Haven, 109 acres at the intersection of I-81 and I-581
- Center for Research and Technology – 480 acres - 460 Corridor, in the Glenvar area

Roanoke and County and the Town of Vinton are jointly working on the Vinton Business Center, which is located on Hardy Road, just east of the Town’s border. This industrial located is over 100 acres and is about 1.3 miles east of the closest Valley Metro stop in the Town of Vinton. Cardinal Glass is the current major tenant.

With the City of Roanoke, the following large scale areas area under development:

- **Roanoke Centre for Industry and Technology (RCIT)** – This light industrial park is located off U.S. 460 along Blue Hills Drive. There are currently 11 major employers located within the park and two properties available. RCIT is served by Valley Metro’s Route 31.
- **American Viscose Plant Historic District** – This area of southeast Roanoke is bordered by 9th Street, SE, Industry Avenue, SE, River Avenue, SE, and Progress Drive SE. It is the location of the former American Viscose Corporation, which produced rayon from the 1920’s until 1958.³ The site is on the National Register of Historic Places. There are currently a mix of businesses located within the district. The city is working on a mixed-use plan for the site, though brownfield remediation will be required before residential development can occur.⁴ The site is served by Valley Metro’s Route 41/42 pair.

The city also has a number of smaller re-development projects at various locations.

² Roanoke County, Hollins Center Plan, Adopted July 28, 2020.

³ Wikipedia, American Viscose Plant Historic District, viewed online May 2024.

⁴ Ibid

Performance Evaluation

Trend Analysis

Fixed Route and Smart Way Service

In FY2023, Valley Metro provided almost 1.3 million passenger trips on the fixed route and Smart Way services. This is up from the pandemic low of 1.03 million trips, but down from the pre-pandemic level of 1.9 million trips.

A five-year trend analysis for Valley Metro's fixed routes is provided in Table 2-35. These data include the Roanoke fixed routes, the Star Line Trolley, and the Smart Way service. The effects of the pandemic begin to appear in FY2020, with FY2021 recording the lowest fixed route ridership (45% lower than in FY2019). The study team believes that the revenue hours and miles within the NTD data are higher than the actuals for FY2022.

For FY2023, productivity increased significantly to 14 passenger trips per revenue hour. Valley Metro currently operates 24 fixed route vehicles in peak service, down from the pre-pandemic level of 37 vehicles.

Table 2-35: Valley Metro Fixed Route Trends FY2019-FY2023

Fixed Route Service	FY2019	FY2020	FY2021	FY2022	FY2023
Fixed Route Passenger Trips	1,895,355	1,613,442	1,037,170	1,071,150	1,286,396
Fixed Route Revenue Hours (1)	113,283	115,210	116,550	116,530	91,458
Fixed Route Revenue Miles	1,877,977	1,782,712	1,785,107	1,668,204	1,274,220
Fixed Route Operating Costs	\$8,131,979	\$8,142,127	\$8,366,670	\$8,515,840	\$8,975,688
FR Trips/Revenue Hour	16.73	14.00	8.90	9.19	14.07
FR Trips/Revenue Mile	1.01	0.91	0.58	0.64	1.01
FR Miles/Hour	16.58	15.47	15.32	14.32	13.93
FR Cost/Trip	\$4.29	\$5.05	\$8.07	\$7.95	\$6.98
FR Cost/Revenue Hour	\$71.78	\$70.67	\$71.79	\$73.08	\$98.14

SOURCE (FY2019-FY2022): NATIONAL TRANSIT DATABASE

SOURCE FY2023: VALLEY METRO AND STUDY TEAM ESTIMATES

NOTE - (1) THE HOURS AND MILES FOR FY22 APPEAR TO INCLUDE PEAK SERVICE, WHICH DID NOT OPERATE DURING THE YEAR

Demand Response Service

Valley Metro's ADA complementary paratransit service (STAR) is operated by RADAR under a contractual agreement. STAR services are operated using 17 vehicles in maximum service. Like the fixed route ridership trend, ADA paratransit demand dropped in FY2020 and FY2021, but not as dramatically as the fixed route ridership drop.

In FY2023, STAR provided 70,233 passenger trips, up significantly from the FY2021 low of 59,902 passenger trips, but still down about 7% from the FY2019 high of 75,452 passenger trips. Productivity on the service has remained relatively stable at about 2 passenger trips per revenue hour. The cost per hour has risen significantly since the pandemic, which is typical across the transit industry and reflects increased labor costs, as well as increased costs for goods and services used. The STAR trend data are shown in Table 2-36.

Table 2-36: STAR Trend Data

	FY2019	FY2020	FY2021	FY2022	FY2023
DR Passenger Trips	75,452	66,081	59,902	63,328	70,233
DR Revenue Hours	37,606	31,035	28,710	31,679	36,370
DR Revenue Miles	706,006	563,743	518,541	551,117	654,515
DR Operating Costs	\$2,212,938	\$2,183,735	\$2,363,385	\$2,872,749	\$3,226,816
DR Trips/Revenue Hour	2.01	2.13	2.09	2.00	1.93
DR Trips/Revenue Mile	0.11	0.12	0.12	0.11	0.11
DR Miles/Hour	9.36	8.53	8.66	8.70	9.32
DR Cost/Trip	\$29.33	\$33.05	\$39.45	\$45.36	\$45.94
DR Cost/Revenue Hour	\$58.85	\$70.36	\$82.32	\$90.68	\$88.72

SOURCE: NATIONAL TRANSIT DATABASE

SOURCE FY2023: VALLEY METRO, RADAR, AND STUDY TEAM ESTIMATES

FY2023 Route Level Operating Statistics, Analysis, and Profiles

Analysis of Fixed Routes – Productivity

An analysis of these data shows that the average productivity among all fixed routes was 16.73 trips per revenue hour in FY2023. This compares to the pre-pandemic FY2017 productivity of 20.9 trips per revenue hour. The data for the fixed routes and the Star Line Trolley are provided in Table 2-37.

Routes that Performed Above the System Average

During FY2023, there were four routes that provided over 20 passenger trips per revenue hour. These were Routes 15, 22, 35, 91. The following routes provided between 16.73 and 20 passenger trips per revenue hour: Routes 21, 36, 51, 55, 61, 66, 71, 75, and 92.

Routes that Performed Below the System Average

The following routes performed just below the system average, recording between 15 and 16.3 trips per hour: Routes 11, 16, 31, 55, 62, 65, and 76. The following routes performed between 10 and 15 trips per hour: Routes 12, 25, 26, 32, 41, 42, 52, 56, 72, 86, and the Star Line Trolley. The only fixed route that recorded productivity of below 10 passenger trips per revenue hour was Route 85.

Table 2-37: FY2023 Valley Metro Fixed Route Operating Data

Route	Passenger Trips	Rev Hours	Rev Miles	Trips/Hour	Trips/Mile	MPH	Estimated Cost	Estimated Cost Per Trip
11	41,425	2,576	27,722	16.08	1.49	10.8	\$252,809	\$6.10
12	18,034	1,405	17,976	12.84	1.00	12.8	\$137,887	\$7.65
15	61,505	2,604	27,554	23.62	2.23	10.6	\$255,557	\$4.16
16	29,150	1,884	24,769	15.47	1.18	13.1	\$184,896	\$6.34
21	54,726	2,854	21,441	19.18	2.55	7.5	\$280,092	\$5.12
22	42,707	2,018	22,998	21.16	1.86	11.4	\$198,047	\$4.64
25	35,680	2,409	27,729	14.81	1.29	11.5	\$236,419	\$6.63
26	22,103	1,879	27,739	11.76	0.80	14.8	\$184,405	\$8.34
31	37,515	2,491	30,206	15.06	1.24	12.1	\$244,467	\$6.52
32	27,836	2,220	24,907	12.54	1.12	11.2	\$217,871	\$7.83
35	57,390	2,121	21,102	27.06	2.72	9.9	\$208,155	\$3.63
36	46,690	2,380	21,990	19.62	2.12	9.2	\$233,573	\$5.00
41	43,128	2,925	33,833	14.74	1.27	11.6	\$287,060	\$6.66
42	22,810	1,586	23,489	14.38	0.97	14.8	\$155,650	\$6.82
51	39,509	2,052	19,484	19.25	2.03	9.5	\$201,383	\$5.10
52	28,328	2,401	24,682	11.80	1.15	10.3	\$235,634	\$8.32
55	37,309	2,397	22,603	15.56	1.65	9.4	\$235,242	\$6.31
56	17,577	1,407	18,585	12.49	0.95	13.2	\$138,083	\$7.86
61	35,228	1,926	22,659	18.29	1.55	11.8	\$189,018	\$5.37
62	35,401	2,171	23,000	16.31	1.54	10.6	\$213,062	\$6.02
65	31,877	1,966	20,538	16.21	1.55	10.4	\$192,943	\$6.05
66	30,657	1,647	16,270	18.61	1.88	9.9	\$161,637	\$5.27
71	36,511	2,122	23,036	17.21	1.58	10.9	\$208,253	\$5.70
72	28,362	2,108	25,001	13.45	1.13	11.9	\$206,879	\$7.29
75	33,509	1,854	17,777	18.07	1.88	9.6	\$181,952	\$5.43
76	40,756	2,541	23,808	16.04	1.71	9.4	\$249,374	\$6.12
85	27,061	3,039	28,054	8.90	0.96	9.2	\$298,247	\$11.02
86	22,115	1,876	24,787	11.79	0.89	13.2	\$184,111	\$8.33
91	98,731	4,414	50,637	22.37	1.95	11.5	\$433,190	\$4.39
92	80,352	4,289	57,964	18.73	1.39	13.5	\$420,922	\$5.24
Totals/Averages	1,163,982	69,562	772,340	16.73	1.51	11.1	\$6,826,815	\$5.87
Trolley	57,401	5,569	41,264	10.31	1.39	7.4	\$546,542	\$9.52

SOURCE: TRIPS, HOURS, AND MILES FROM VALLEY METRO GFI. COSTS ESTIMATED FROM BUDGET.

Operating Speed- Fixed Routes

The average scheduled operating speed was 11.1 miles per hour, with a range of between 14.8 miles per hour (Routes 26 and 42) and 7.4 miles per hour (Star Line Trolley). Operating speed is not a performance indicator, but rather a metric to use when planning routes and diagnosing service issues. Routes that require above average operating speeds may have trouble with on-time performance if there are not some segments of the route that have higher operating speeds or no passenger activity.

Operating Cost per Passenger Trip- Fixed Routes

In FY2023, the estimated average total operating cost per passenger trip for the fixed routes was \$5.87, with a low of \$3.63 for Route 35 and a high of \$11.02 for Route 85.

On-Time Performance

Valley Metro provided APC data for all timepoints for the month of April 2024. These data show the following statistics for the fixed routes:

- 47.1% on time
- 35.5% early (this data includes the arrival at Third Street Station, so is likely skewed)
- 17.4% late

The APC data is based on arrival at the stop. On-site observations suggest that the buses are generally on-time, so additional specific investigation of these data are needed.

Smart Way Analysis

The Smart Way service, connecting Roanoke with Christiansburg, Blacksburg, and Virginia Tech has seen considerable rebound from the pandemic. In FY2023, the services provided about 65,000 passenger trips. This compares to 65,661 passenger trips provided in FY2017. While the ridership is stable, there is significant unused capacity on several of the vehicle trips and the cost per trip is relatively high, particularly for the Smart Way Express. The FY2023 operating data is provided in Table 2-38.

Table 2-38: FY2023 Smart Way Operating Data

	SW Commuter	SW Express
Passenger Trips	47,889	17,124
Estimated Vehicle Round Trips	3,679	2,677.5
Passengers per Vehicle Round Trip	13.02	6.40
Revenue Hours	9,297	7,030
Revenue Miles	264,272	196,344
MPH	28.4	27.9
Trips per Hour	5.15	2.44
Estimated Cost	\$912,408	\$689,924
Estimated Cost Per Vehicle Round Trip	\$248.00	\$257.67
Estimated Cost Per Passenger Trip	\$19.05	\$40.29

On-Time Performance

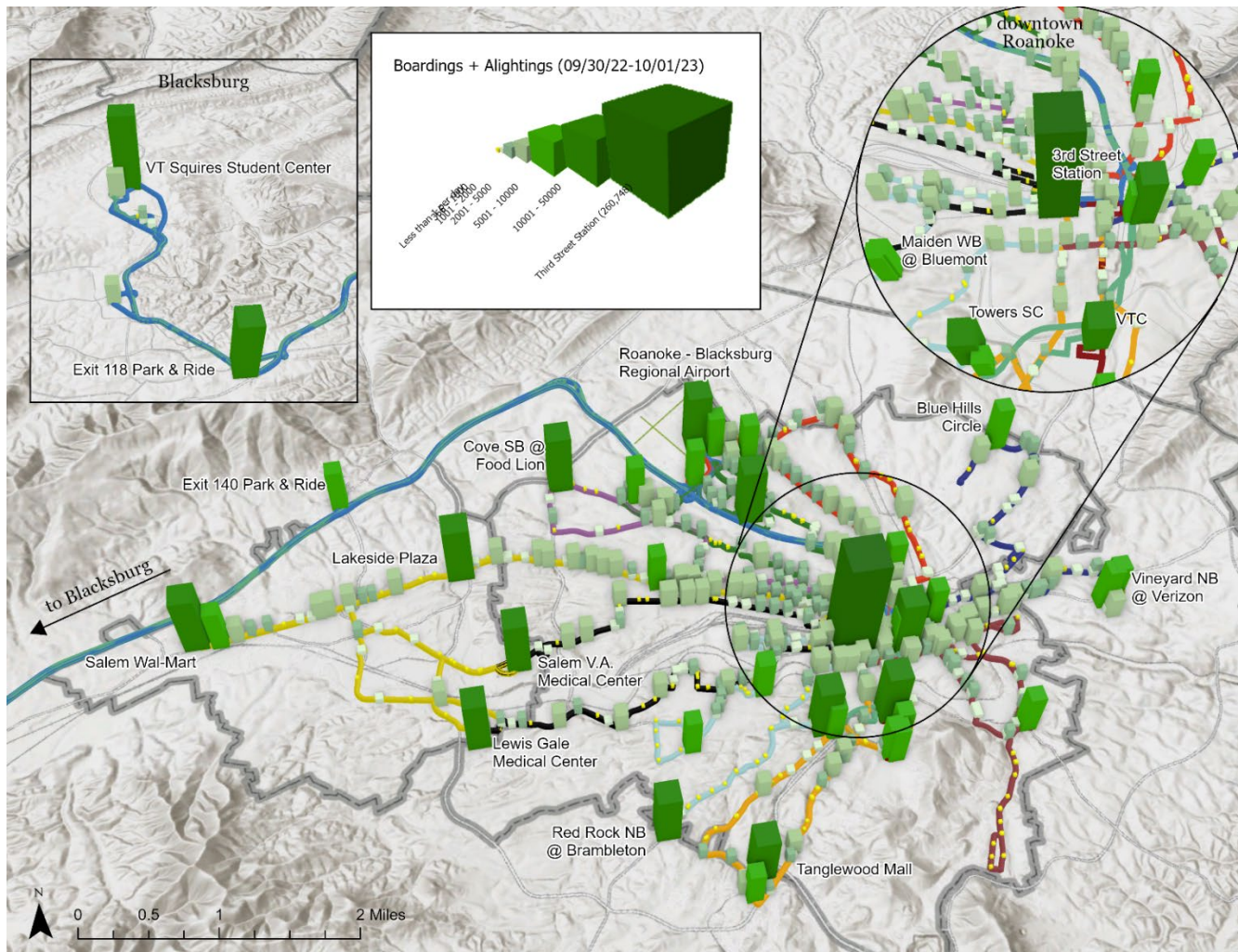
Valley Metro provided APC data for all timepoints for the month of April 2024. These data show the following statistics for the Smart Way services:

- 50.5% on time
- 24.5% early (this data includes the arrival at Third Street Station, so is likely skewed)
- 25% late

The APC data is based on arrival at the stop. On-site observations suggest that the buses are generally on-time, so additional specific investigation of these data are needed.

System Overview

A system-wide visual overview of the boardings/alightings during FY2023 is provided in Figure 2-18. These data were collected via Valley Metro's automatic passenger counters (APCs). The high activity areas for the system are easy to identify through this map and are discussed in further detail within the route profiles.

Figure 2-18: System Overview – FY2023 Stop Activity

Route Profiles

For each of the routes operated by Valley Metro, a route profile was developed. These profiles provide a map of the route, major trip generators served, and daily stop activity for FY2023 as recorded by the automatic passenger counters (APCs).

Valley Metro's fixed route system identifies its routes by numbers. Odd numbered routes indicate the route is traveling outbound from downtown Roanoke while even numbered routes are traveling inbound to downtown Roanoke from a destination elsewhere in the service area. Generally, each route has an inverse route that travels on the same path but in the opposite direction.

Routes 11, 12, 15, and 16

Route 11 and Route 15: Downtown Roanoke – Valley View

Route 11 and Route 15 are both outbound routes that provide service to Valley View from downtown Roanoke. Route 11 approaches Valley View from Hershberger and Cove Roads. Major trip generators that are served by the Route 11 include downtown Roanoke, City of Roanoke neighborhoods (e.g., Gainsboro, Melrose-Rugby), Gainsboro Library, St. Andrew's Catholic Church, Blue Ridge Behavioral Healthcare, Roanoke Academy for Math and Science, William Fleming High School, Ferncliff Avenue shopping area, and the Valley View shopping area.

Route 15 also begins in downtown Roanoke and proceeds to Valley View via Grandview and Greenland Avenues. Major trip generators accessible via Route 15 include downtown Roanoke, City of Roanoke residential neighborhoods (e.g., Gainsboro, Greater Huntington, and Greater Grandview), the Gainsboro Library, Gainsboro YMCA, St. Andrew's Catholic Church, Washington Park, Lincoln Terrace Elementary School, and the Valley View shopping area. During FY2023, Route 15 had the second highest productivity among the fixed routes, providing 23.6 passenger trips per revenue hour.

Route 12 and Route 16: Valley View – Downtown Roanoke

Route 12 and Route 16 are the inbound routes providing service between Valley View and downtown Roanoke. These two routes are the reverse of Routes 11 and 15. Route 12 starts at Valley View and proceeds to downtown Roanoke via Hershberger and Cove Roads. It travels the same path as Route 11, but in reverse order. Route 16 originates at the Valley View Walmart stop, traveling via Grandview and Greenland Avenues to reach downtown Roanoke. Route 16 is the reverse of Route 15 and serves the same trip generators.

Highest Activity Stops – 11/12 Pair

For the outbound/inbound Route 11/12 pair, the highest activity stops are Valley View Mall, Third Street Station, McDowell at 6th Street (Blue Ridge Behavioral Health), the Ferncliff Apartments, and William Fleming High School.

Highest Activity Stops – 15/16 Pair

For the outbound/inbound Route 15/16 pair, the highest activity stops are Valley View Mall, Third Street Station, Gainsboro at Patton, Hunt at 8th Street, and Hershberger at Rutgers. The corridor served by the 15/16 has significantly more activity than the corridor served by the 11/12 pair.

These four routes are profiled in Figure 2-19.

Routes 21, 22, 25, and 26

Routes 21 and 22 (outbound/inbound) provide service between downtown Roanoke and Valley View Court off Thirlane Road, serving the Williamson Road Corridor. Major trip generators include downtown Roanoke, the Roanoke Higher Education Center, Hotel Roanoke and Conference Center, Berglund Center and Performing Arts Theater, Williamson Road Library, Breckenridge Middle School, the Hershberger Road commercial area, the Virginia Employment Commission, and numerous small businesses and residential areas just off Williamson Road. Route 22 was the fourth most productive fixed route in FY2023, providing over 21 passenger trips per revenue hour.

Routes 25 and 26 provide service between downtown Roanoke and the Roanoke-Blacksburg Regional Airport, serving the Hollins Road and Plantation Road corridors. This route pair travels to downtown Roanoke via Hollins Road, Plantation Road, Hershberger Road, and Towne Square Boulevard. Major trip generators and landmarks along Routes 25/26 include: downtown Roanoke, the Roanoke Higher Education Center, Hotel Roanoke and Conference Center, Roanoke Gas, Cosmetic Essence Innovations (CEI), Edinburgh Square, Friendship Manor, the Towne Square Shopping area, and the Airport.

Highest Activity Stops – 21/22 Pair

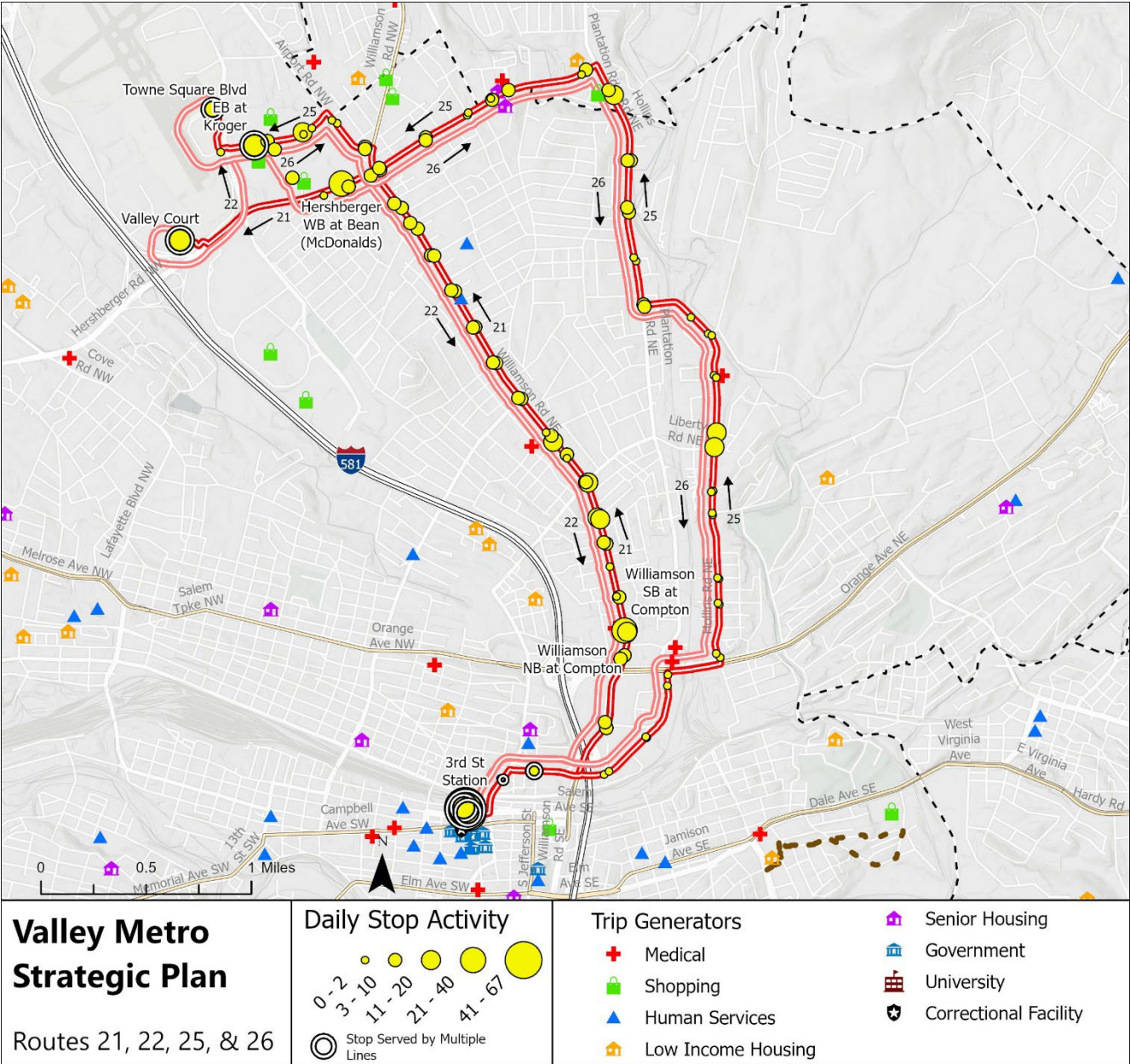
For the outbound/inbound Routes 21/22 the highest activity stops include the Third Street Station, Valley Court, the Krispy Kreme stop on Hershberger, the Civic Mall on Williamson, and Williamson/Laconia. The Williamson Road corridor has relatively high transit use throughout the length of the segment served.

Highest Activity Stops – 25/26 Pair

For the outbound/inbound Routes 25/26, the highest ridership stops are the Third Street Station, Towne Square Kroger, Hollins and Liberty, and the airport.

These four routes are profiled in Figure 2-20.

Figure 2-20: Route Profiles: Routes 21, 22, 25, and 26



Routes 31, 32, 35, and 36

Routes 31 and 32 provide service between the Third Street Station and the Blue Hills Industrial Park. Major trip generators include downtown Roanoke, the Valley Metro administrative office, the Wildwood neighborhood, the Indian Village neighborhood, Thrasher Park, the Tinker Creek Greenway, and the commercial and residential areas around Orange Avenue and King Street.

Routes 35 and 36 provide service between the Third Street Station and Vinton. Major trip generators include downtown Roanoke, Lake Drive Plaza, River Park Shopping Center, the Dale Avenue Corridor, and then E. Washington Street corridor. Route 35 had the highest productivity among the fixed routes, providing 27 passenger trips per revenue hour in FY2023.

Highest Activity Stops – 31/32 Pair

The highest activity stops along the 31/32 route are the Third Street Station, the Blue Hills Industrial Park, Valley Metro, and Orange/King Streets.

Highest Activity Stops –35/36 Pair

Routes 35 and 36 carry significantly more riders than Routes 31/32. The highest activity stops along these routes include the Third Street Station, Tazewell/Fourth Street, and the Lake Drive Plaza.

These four routes are profiled in Figure 2-21.

Figure 2-21: Route Profiles: Routes 31, 32, 35, and 36



Routes 41 and 42

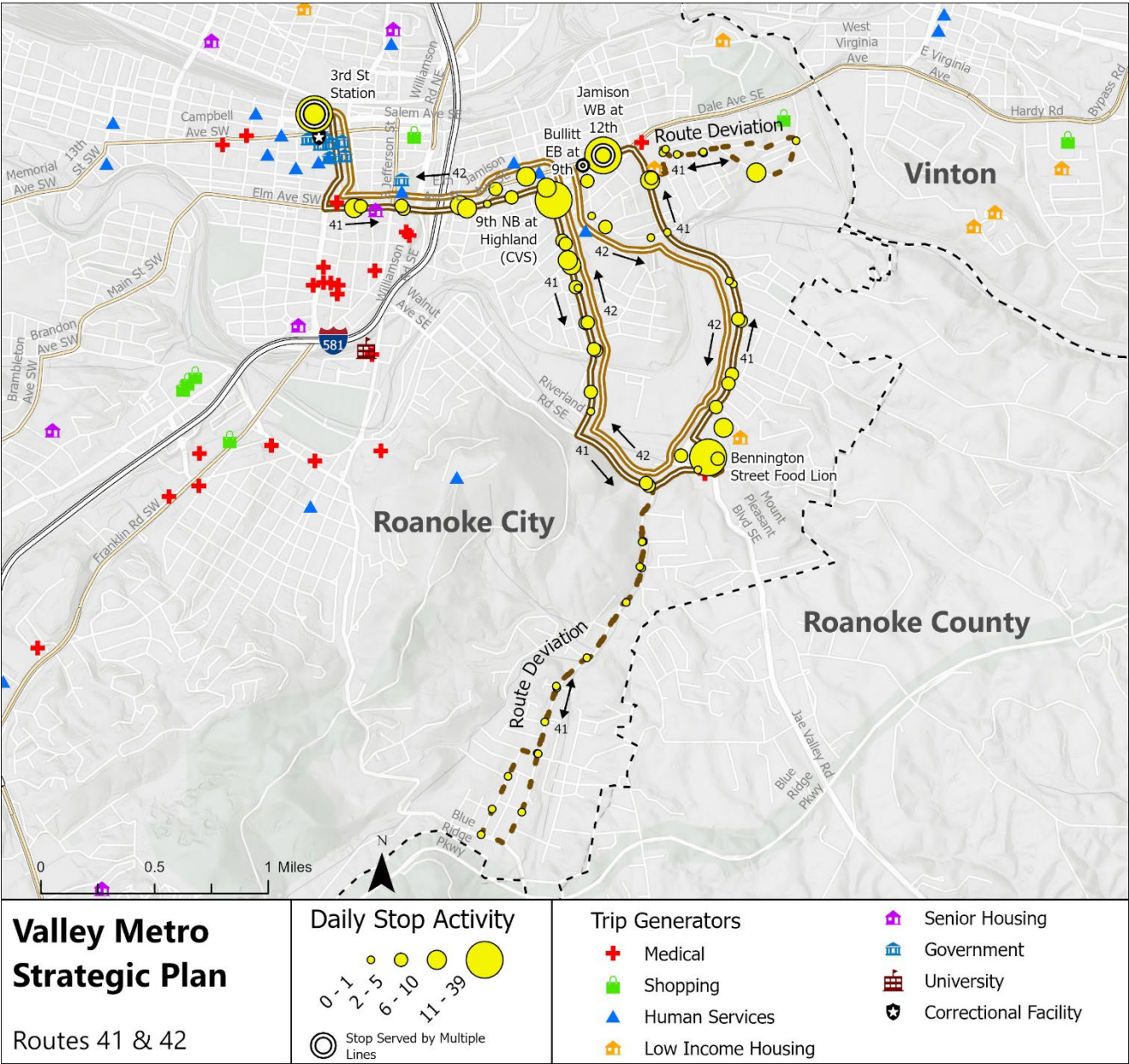
Routes 41 and 42 provide service between downtown Roanoke and the City of Roanoke's Belmont, Starview, and Southeast neighborhoods. Route 41 is the outbound route originating in downtown Roanoke. Key trip generators include the residential neighborhoods and village centers along 9th Street, Riverland Road and Bennington Street/13th Street, Jackson Park, Jackson Park Library and Middle School, the Roanoke River and Garden City Greenways, the Star City trailhead at Mill Mountain, and Garden City Elementary School. The route terminates on 11th Street southbound at Highland Avenue. The Kenwood neighborhood is served via deviation on nine daily trips, and the Garden City neighborhood is served via deviation on seven daily trips.

Route 42 travels inbound to downtown Roanoke from 11th Street southbound at Highland Avenue in the City of Roanoke's Southeast neighborhood. From there, the route retraces the path of Route 41.

Highest Activity Stops

The highest activity stops on the 41/42 pair are the Third Street Station, the Bennington Street Food Lion, Jamison at 12th Street, and 9th Street at Highland Ave. The route profile is provided in Figure 2-22.

Figure 2-22: Route Profile – 41/42



Routes 51, 52, 55, 56

Routes 51 and 55 both travel to Tanglewood Mall from downtown Roanoke. Route 51 travels outbound to Tanglewood Mall via Jefferson Street, Avenham Avenue, and Franklin Road, while Route 55 goes to Tanglewood Mall via Franklin Road and Colonial Avenue. Major trip generators on Route 51 include downtown Roanoke, Jefferson College of Health Sciences, numerous medical facilities along Jefferson Street, Carilion Roanoke Memorial Hospital, Virginia Tech – Carilion School of Medicine, Reserve Avenue recreational fields, South Roanoke neighborhoods, Franklin Road businesses and Tanglewood Mall.

Major trip generators along Route 55 include downtown Roanoke, Old Southwest neighborhood and small businesses, the Reserve Avenue recreational fields, Towers Shopping Center, Virginia Western Community College, Ogden Road residential areas, and Tanglewood Mall.

Routes 52 and 56 provide inbound service to Campbell Court from Tanglewood Mall and follow the same paths as Routes 51 and 55, but in reverse order. Route 52 serves the same destinations as Route 51 and arrives in downtown Roanoke via Franklin Road (south of Brandon Avenue) and Jefferson Street. Route 56 reaches downtown Roanoke from Colonial Avenue and Franklin Road (north of Brandon Avenue).

Highest Activity Stops – 51/52 Pair

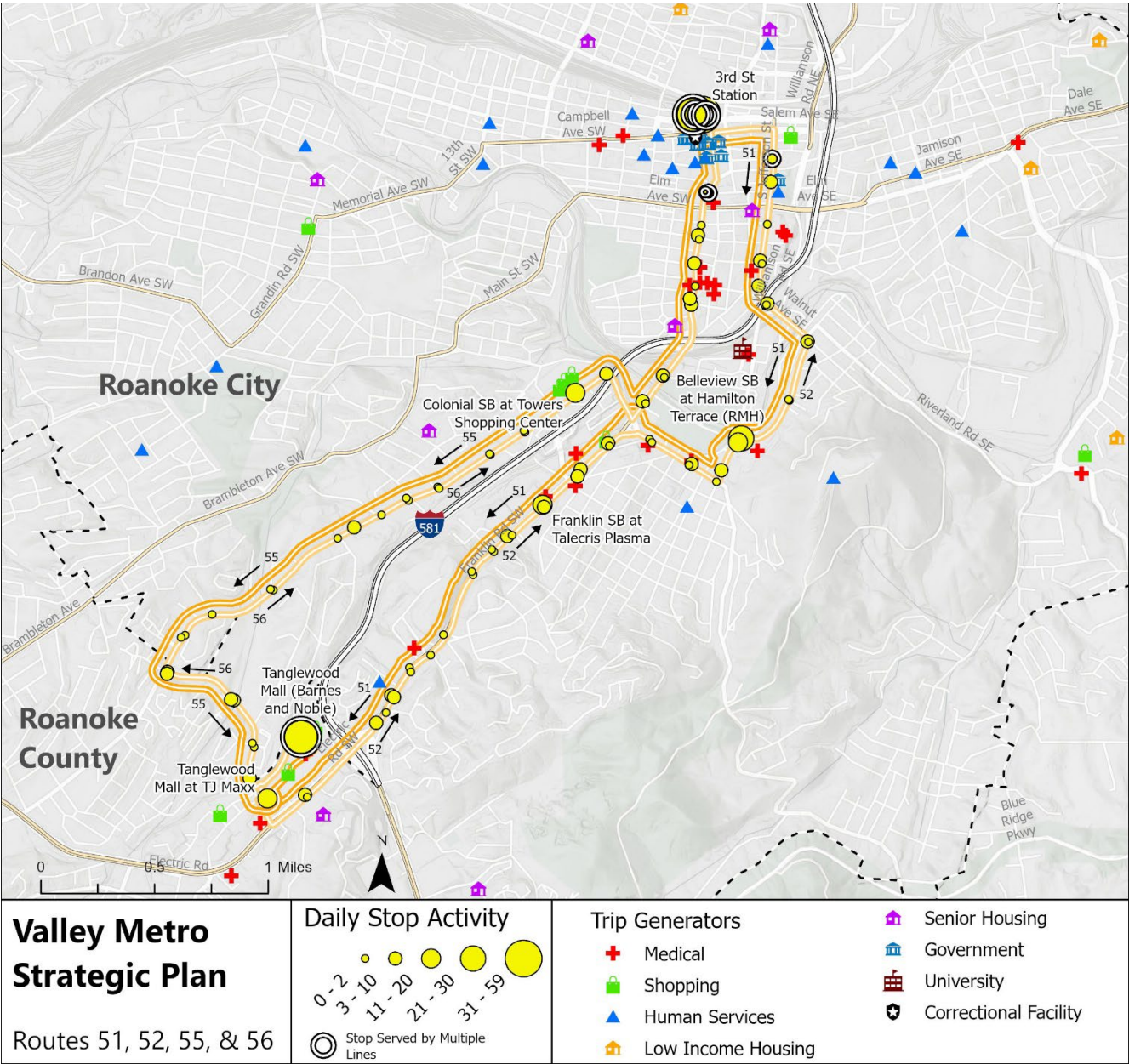
The stops with the highest activity on the 51/52 route pair were the Third Street Station, Roanoke Memorial Hospital, and Tanglewood Mall. The outbound Route 51 showed higher ridership than the inbound Route 52, providing over 19.6 trips per revenue hour.

Highest Activity Stops 55/56 Pair

The stops with the highest activity on the 55/56 route pair were the Third Street Station, the Towers Shopping Center, and the Tanglewood Mall. The outbound Route 55 showed higher ridership than the inbound Route 56.

The route profiles for these four routes are shown in Figure 2-23.

Figure 2-23: Route Profiles – Routes 51, 52, 55, and 56



Routes 61 and 62

Route 61 travels through the Old Southwest and Wasena neighborhoods via Elm Avenue/Main Street to Towers Shopping Center before heading down Brambleton Avenue to Red Rock Road, which is the last street in the City of Roanoke before Brambleton Avenue continues into Roanoke County. Many residential areas as well as Wasena Park, the Roanoke River Greenway, Lakewood Park, James Madison Middle School, Murray Run Greenway, Fishburn Park, and Grandin Court Elementary can be accessed via Route 61. Route 62 travels to downtown Roanoke along the reverse path of Route 61.

There is currently a detour in place for Routes 61 and 62 during the Wasena Bridge closure. The bridge was closed for re-construction at the end of April 2024. During the bridge closure period, the 61/62 will not serve the Elm/8th stop or the Main/Winona stop. In addition, Route 62 will not stop at Towers Shopping Center.

Highest Activity Stops

The highest activity stops on the 61/62 route pair are the Third Street Station, The Towers Shopping Center, Red Rock at Brambleton, and Elm Avenue at 5th Street.

Routes 65 and 66

Route 65 begins in downtown Roanoke and travels outbound via Salem Avenue through the West End, Hurt Park, and Mountain View neighborhoods to Memorial Avenue and Grandin Road and the Raleigh Court/Grandin Court neighborhoods. The route turns off from Memorial Avenue to provide service to Terrace Apartments on Maiden Lane. From Grandin Road, the route loops along Brandon Avenue to Carlton Road and back to Grandin Road before terminating at Patrick Henry High School. Key destinations along the route include the Hurt Park Village Center, Hurt Park Elementary School, Vic Thomas Park, the Roanoke River Greenway, Grandin Village, Virginia Heights Elementary, Shrine Hill Park, and Raleigh Court Library. The inbound Route 66 follows a similar path in the reverse direction.

Highest Activity Stops

The highest activity stops on the 65/66 route pair are the Third Street Station, Maiden at Bluemont, Wasena at Maiden, and Patrick Henry High School.

Figure 2-24 provides the route profiles for the four routes. Exhibit 2-4 provides a map of the detour for the 61/62 during the Wasena bridge closure.

Figure 2-24: Route Profiles – Routes 61, 62, 65, and 66

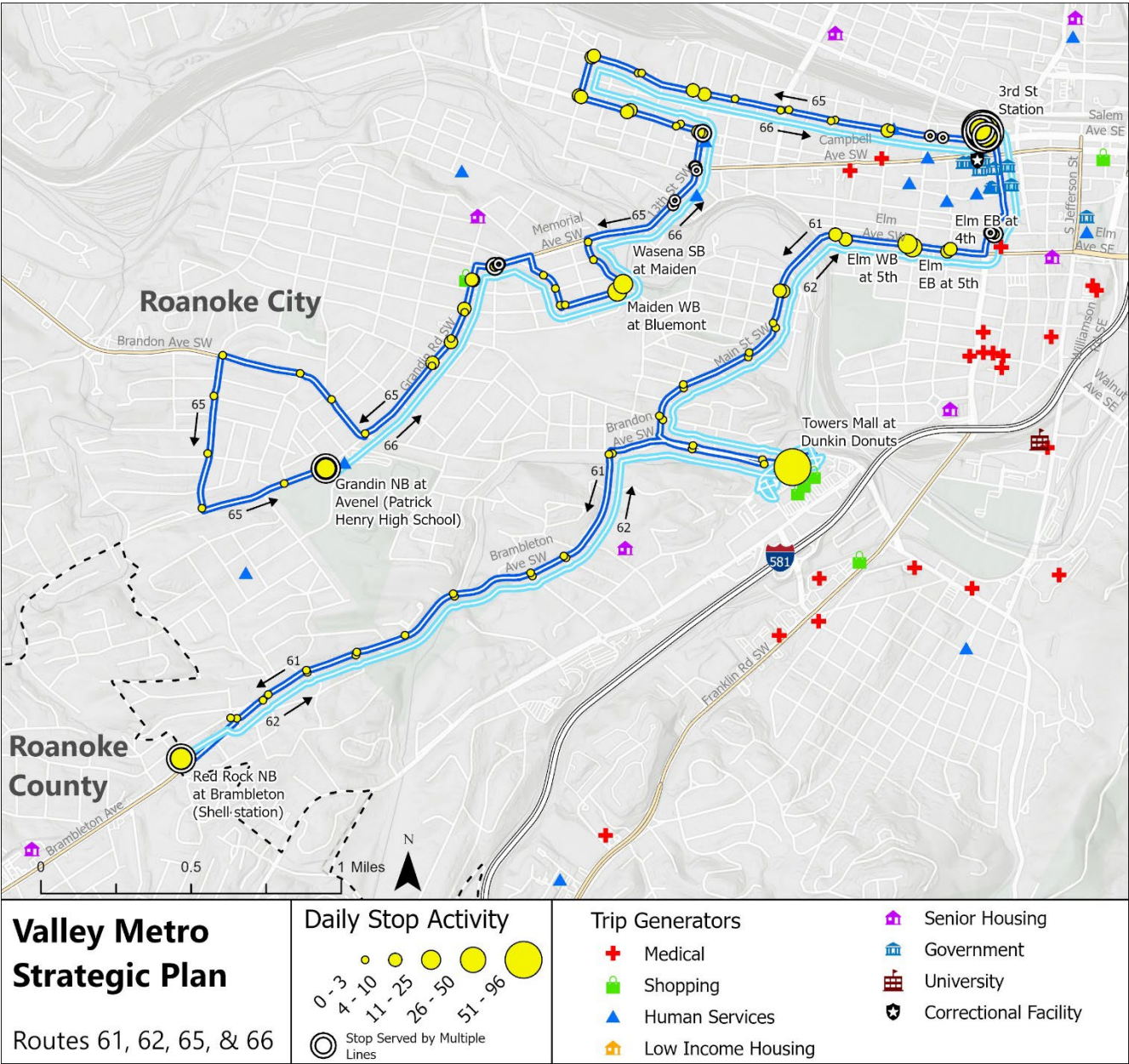
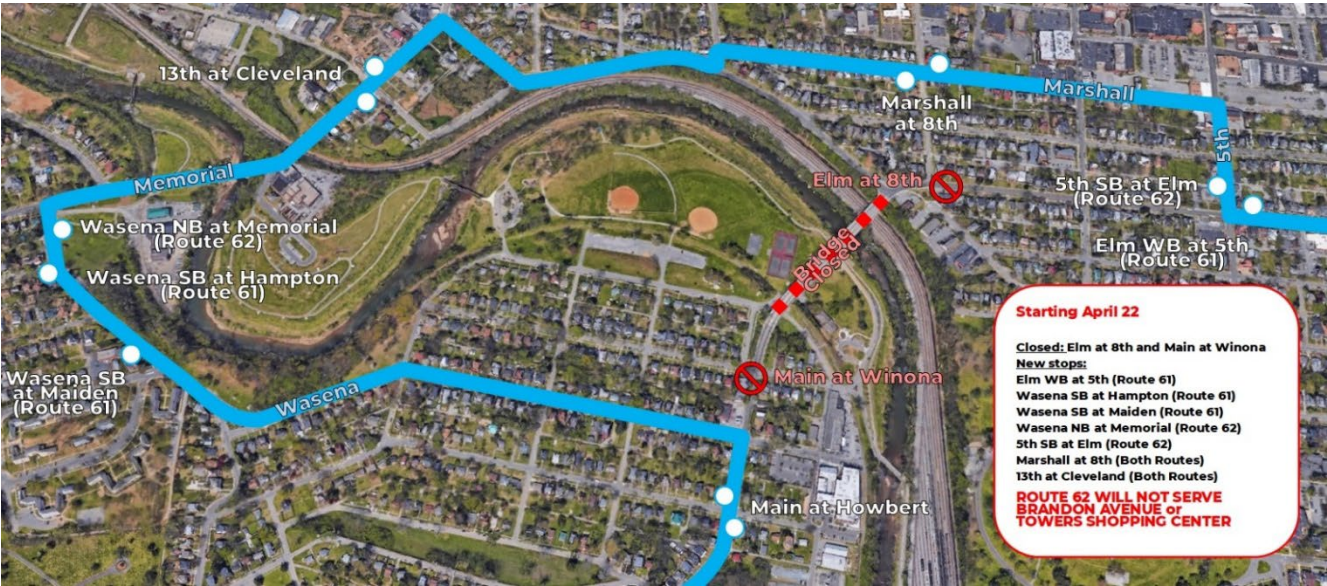


Exhibit 2-4: Route 61/62 Detour for Wasena Bridge Closure



Routes 71 and 72

Route 71 starts in downtown Roanoke and travels southwest through the Raleigh Court neighborhood to Salem until it reaches LewisGale Medical Center. Route 72 travels in the reverse direction starting at LewisGale Medical Center. Besides providing access to LewisGale Medical Center, Routes 71 and 72 also serve the Roanoke Courthouse and Municipal Building, and the Kirk Family YMCA, Hurt Park, Raleigh Court and the Greater Deyerle neighborhoods, the Hurt Park and Grandin Villages, Vic Thomas Park and the Roanoke River Greenway, Virginia Heights Elementary School, and numerous businesses and medical facilities along Brandon Avenue and Braeburn Drive.

Highest Activity Stops

The highest activity stops for the 71/72 pair are Third Street Station, LewisGale Medical Center, Brandon Oaks, and Edgewood/Brandon.

Routes 75 and 76

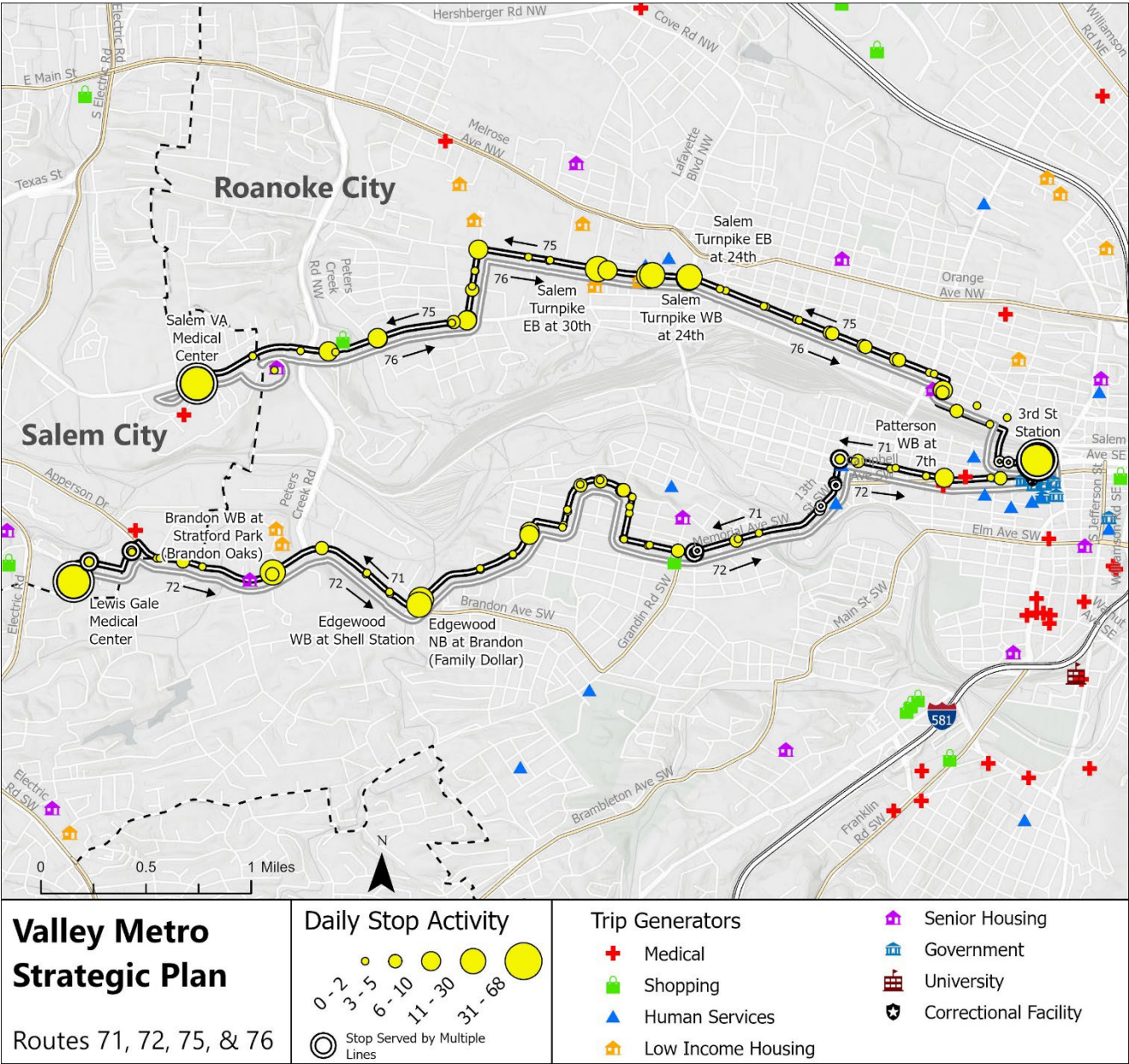
Route 75 provides transit service from downtown Roanoke to the Salem Veterans Affairs (VA) Medical Center, one of the largest VA Hospitals in Virginia. Route 75 serves the City of Roanoke's Gilmer, Loudon-Melrose, Shenandoah West, and Cherry Hill neighborhoods. Other key trip generators include Lansdown Housing Complex, Fairview Elementary School, Greenvale School, the Virginia Veterans Care, and the Adult Care Center – Roanoke Valley. Route 76 is the inbound route from Salem VA Medical Center.

Highest Activity Stops

The highest activity stops on Routes 75/76 are Third Street Station, Salem VA Medical Center, and three stops along Salem Turnpike between 24th Street and 30th Street, serving the Roanoke Redevelopment and Housing Authority's multi-family properties.

The route profiles for these four routes are shown in Figure 2-25.

Figure 2-25: Route Profiles – Routes 71, 72, 75, and 76



Routes 85 and 86

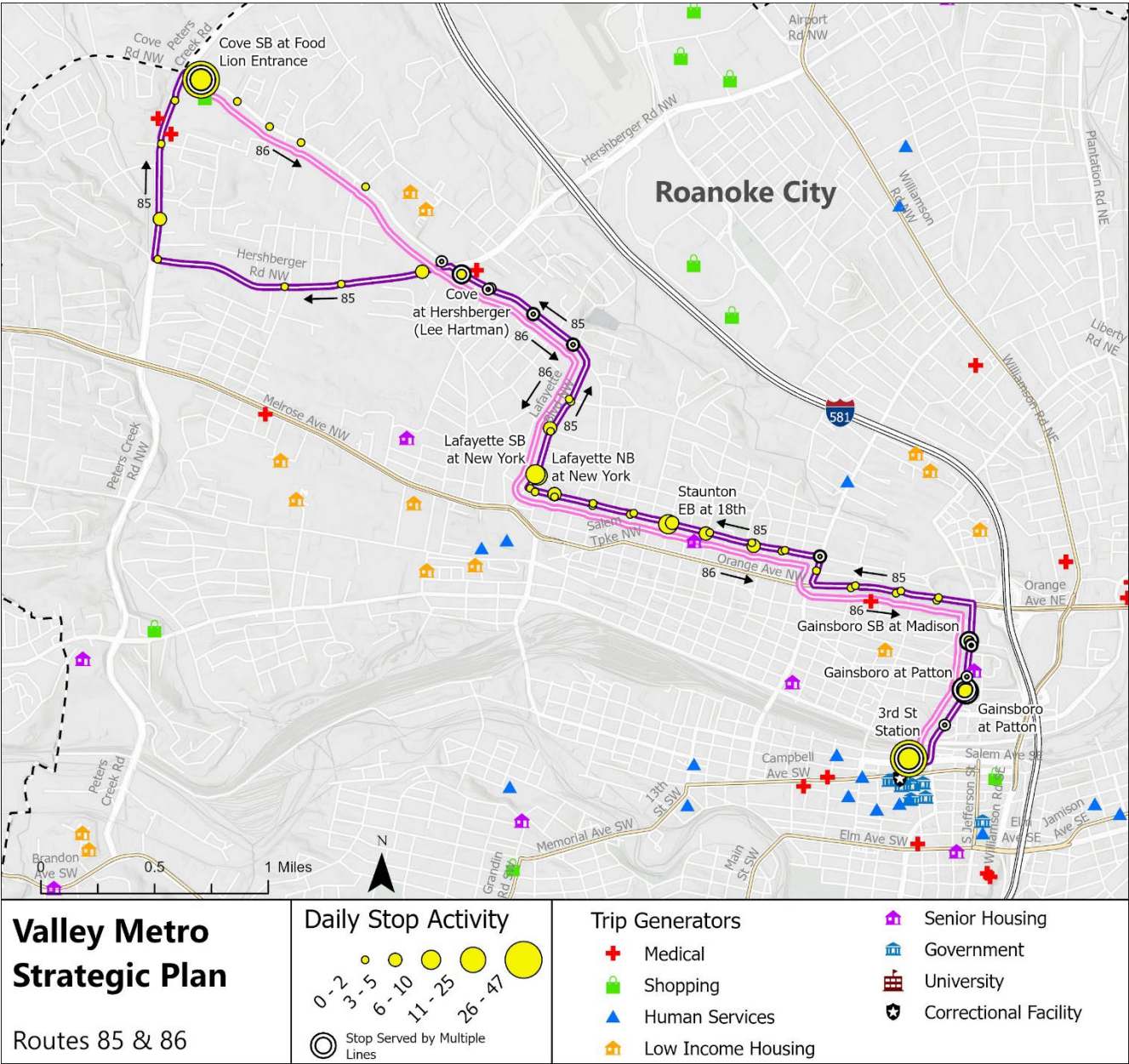
Routes 85 and 86 provide service between downtown Roanoke and the Westview Terrace neighborhood at Peters Creek Road/Cove Road in the City of Roanoke. Route 85 begins in downtown Roanoke and travels northwest through the Melrose/Rugby and Villa Heights neighborhoods to reach Peters Creek Road. Other destinations accessible by Route 85 include Gainsboro Library, Gainsboro YMCA, Washington Park, Lucy Addison Middle School, Eureka Park and Recreation Center, and Villa Heights Park. Route 85 exhibited the lowest productivity among the fixed routes in FY2023, providing 8.9 passenger trips per revenue hour.

Route 85 becomes Route 86 at the Cove Road Food Lion stop. Route 86 continues along Cove Road, traveling inbound to downtown Roanoke, servicing many of the same places as Route 85.

Highest Activity Stops

The highest activity stops for the 85/86 pair are Third Street Station, Food Lion at Cove, and Peters Creek, and Gainsboro and Patton. Note that there are very few riders along Hershberger between Cove Road and Peters Creek Road. The route profile for Route 85/86 is provided in Figure 2-26.

Figure 2-26: Route Profile – 85 and 86



Routes 91 and 92

Routes 91 and 92 are the main transit routes within the City of Salem, with connections to Routes 71/72 (near LewisGale) and 75/76 (Salem VA Medical Center). At double the distance and total route time as any of the other fixed routes, Route 91/92 is a key connector among many destinations within the cities of Salem and Roanoke

Route 91 travels from downtown Roanoke through the residential neighborhoods and businesses along the Melrose Avenue/East Main Street corridor to downtown Salem. Route 91 continues through downtown Salem along West Main Street to the commercial areas in West Salem before turning around at the Salem Walmart and returning to downtown Salem. From downtown Salem, the route continues along S. College Avenue and Apperson Drive toward LewisGale Medical Center. From there the route continues north along Electric Road to the Salem VA Medical Center (where Route 91 becomes Route 92), then back toward downtown Salem providing service to the Salem Civic Center, Salem Football Stadium, and the Salem Red Sox Baseball stadium. From downtown Salem, the Route 92 service mirrors the Route 91 service to downtown Roanoke. Route 91 was the third most productive fixed route in FY2023, providing 22.3 passenger trips per revenue hour.

Major trip generators in the City of Roanoke include the residential neighborhoods and businesses along the Melrose Avenue/East Main Street corridor, Melrose Park, the Goodwill Support Center and Jobs Campus, Forest Park Academy, Melrose Towers, Roanoke Country Club, and Lakeside Plaza.

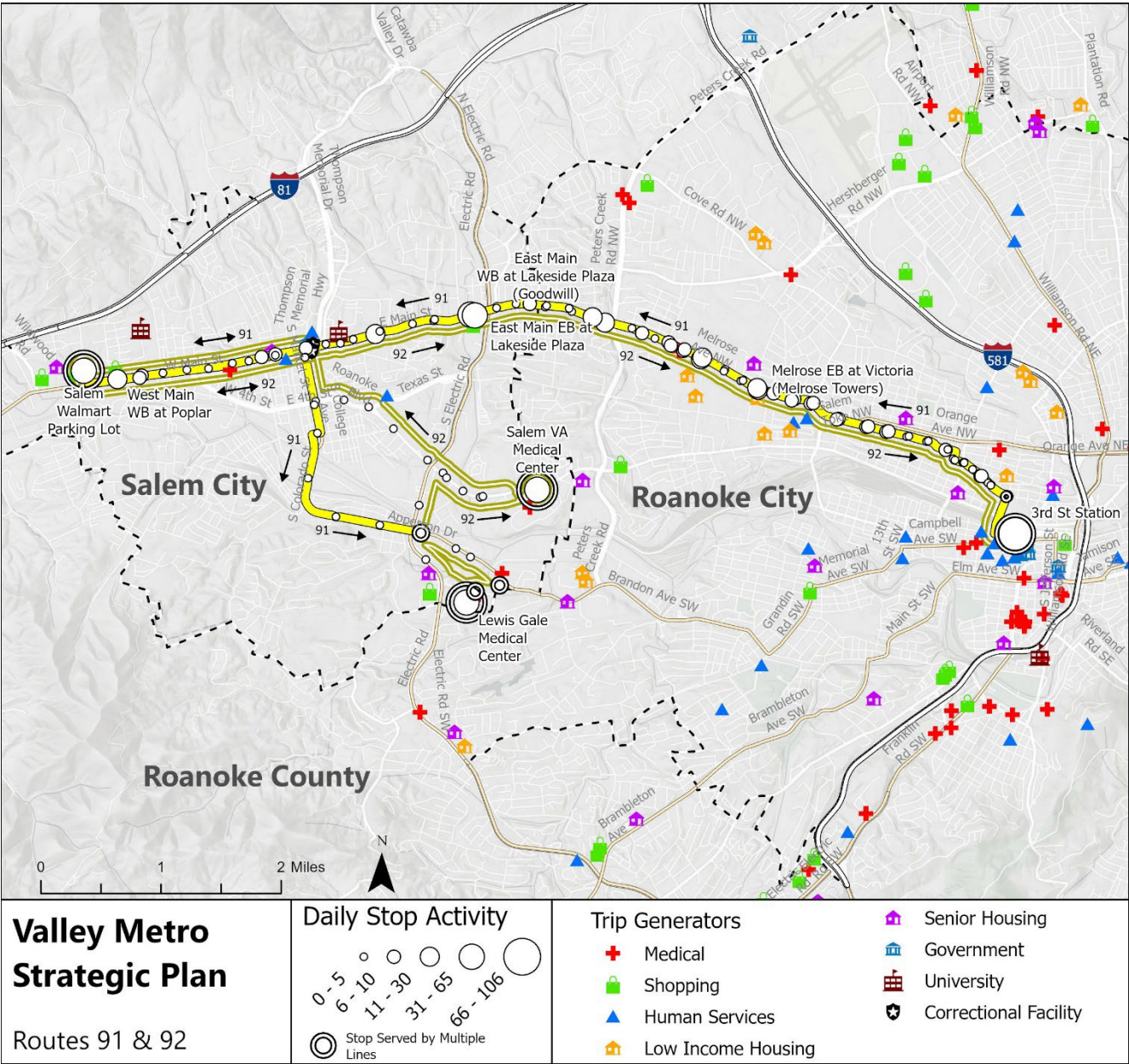
Major trip generators in the City of Salem include Longwood Park, Roanoke College, Salem Public Library, Salem Farmer's Market, Salem High School, the James I Moyer Sports Complex, East Salem Elementary School, and the Arnold R. Burton Center for Arts and Technology, as well as numerous businesses and governmental facilities including the Virginia Department of Transportation's Salem District Office, the Roanoke County Courthouse, and Salem City Hall.

Highest Activity Stops

For the 91/92 pair the highest activity stops are Third Street Station, LewisGale Medical Center, Salem VA Medical Center, Salem Walmart, Electric Road/East Main, Lakeside Plaza, and Melrose Towers. The Melrose corridor (Roanoke), turning into the Main Street corridor in Salem, is a high ridership corridor for the routes. Prior to the pandemic, the Melrose corridor was also served by Route 81, which helped help alleviate crowding.

The route profile for Routes 91/92 is provided in Figure 2-27.

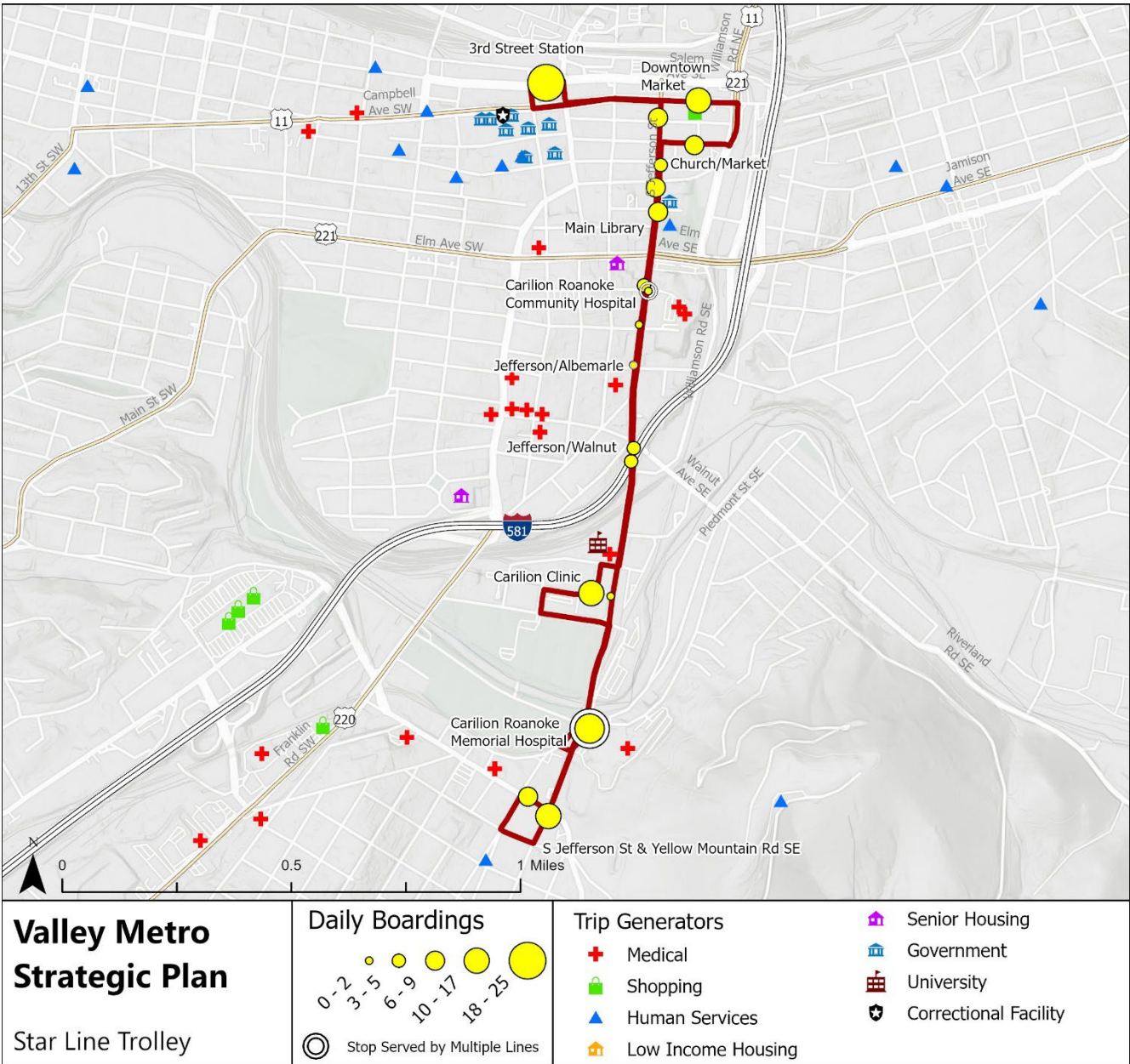
Figure 2-27: Route Profile – 91 and 92



Star Line Trolley

The Star Line Trolley connects Downtown Roanoke to South Roanoke by way of Jefferson Street. Key locations along the route include the Roanoke City Market Building, Center in the Square, Carilion Administrative Services, Elmwood Park, downtown Roanoke Library, Carilion Clinic Community Care, Jefferson College of Health Sciences, Virginia Tech-Carilion Research Institute and Medical School, the River's Edge Sports Complex, Carilion Memorial Hospital and Carilion Clinic, Crystal Spring Medical Center, and numerous other businesses and medical offices. As shown in Figure 2-28, the highest ridership stops are the 3rd Street Station and the Carilion Memorial Hospital.

Figure 2-28 – Star Line Trolley



Smart Way Commuter and Smart Way Express

The Smart Way Bus is a commuter service that connects the Roanoke Valley and the New River Valley areas. In addition to Virginia Tech's main campus and downtown Roanoke, primary destinations include Christiansburg; the Virginia Tech Corporate Research Center; I-81 Exit 118 and Exit 140 park and ride lots; and the Roanoke-Blacksburg Regional Airport.

The Smart Way Bus service provides transfers that connect riders to other transit services in the region such as: Blacksburg Transit; Radford Transit; and Valley Metro's fixed route system. The Smart Way Bus also provides connections to Greyhound and the Virginia Breeze, as well as to Amtrak.

The Smart Way Express connects the Virginia Tech main campus in Blacksburg with the Virginia Tech Carilion School of Medicine and Research Institute (VTCRI) on the Roanoke campus. The service is fare-free for anyone with a valid ID from Virginia Tech, Carilion Clinic, Virginia Tech Carilion School of Medicine or Research Institute, or Jefferson College of Health Sciences. General public riders pay \$4.00 per trip.

Highest Activity Stops

For the Smart Way Commuter route, the highest activity stops are the Virginia Tech Squires Center and the Roanoke-Blacksburg Regional Airport. For the Smart Way Express, the highest activity stops are the Route 118 Park and Ride Lot, and VTC.

The route profiles for these two routes are shown in Figures 2-29 and 2-30.

Figure 2-29: Smart Way Commuter Route Profile

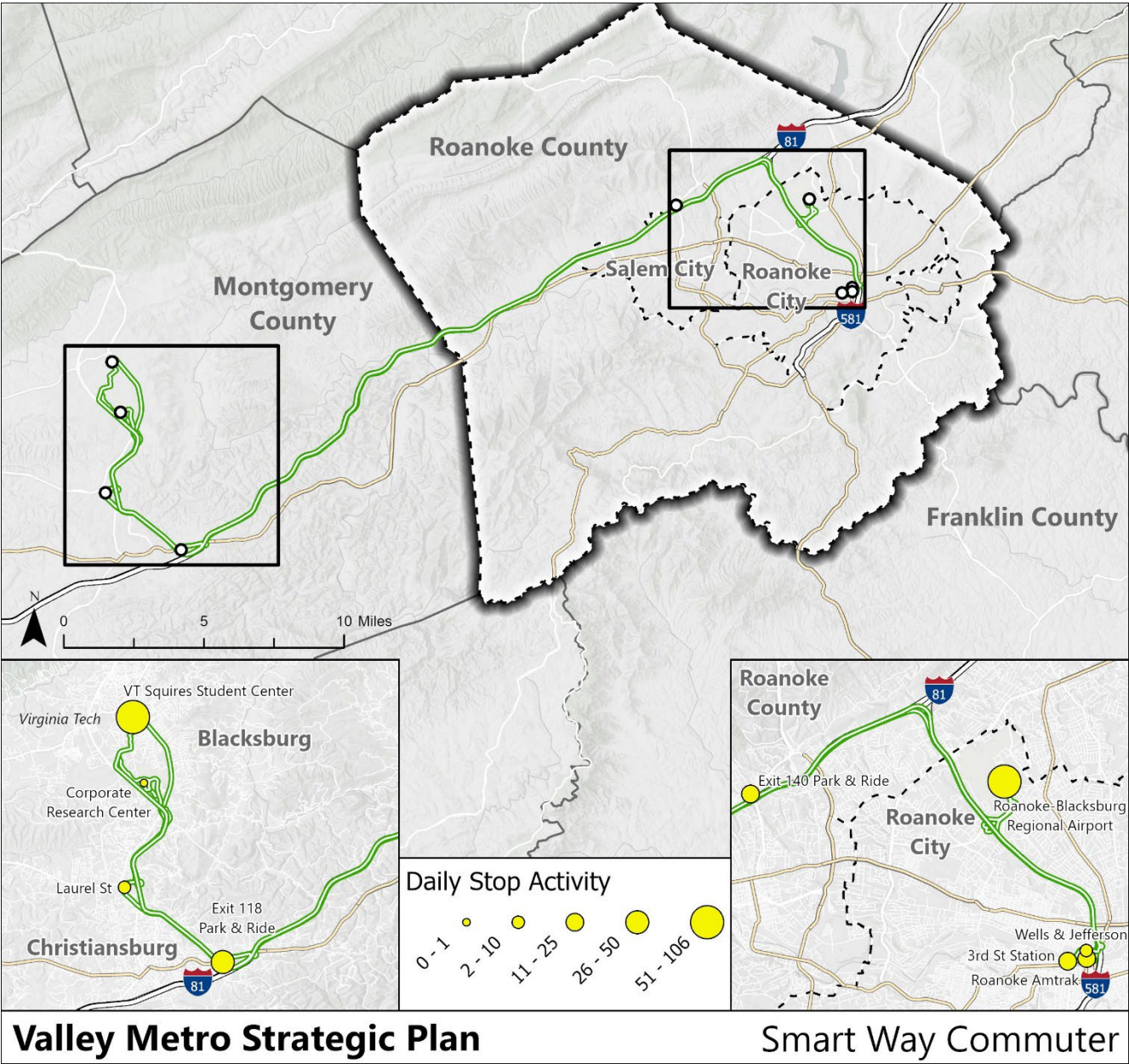
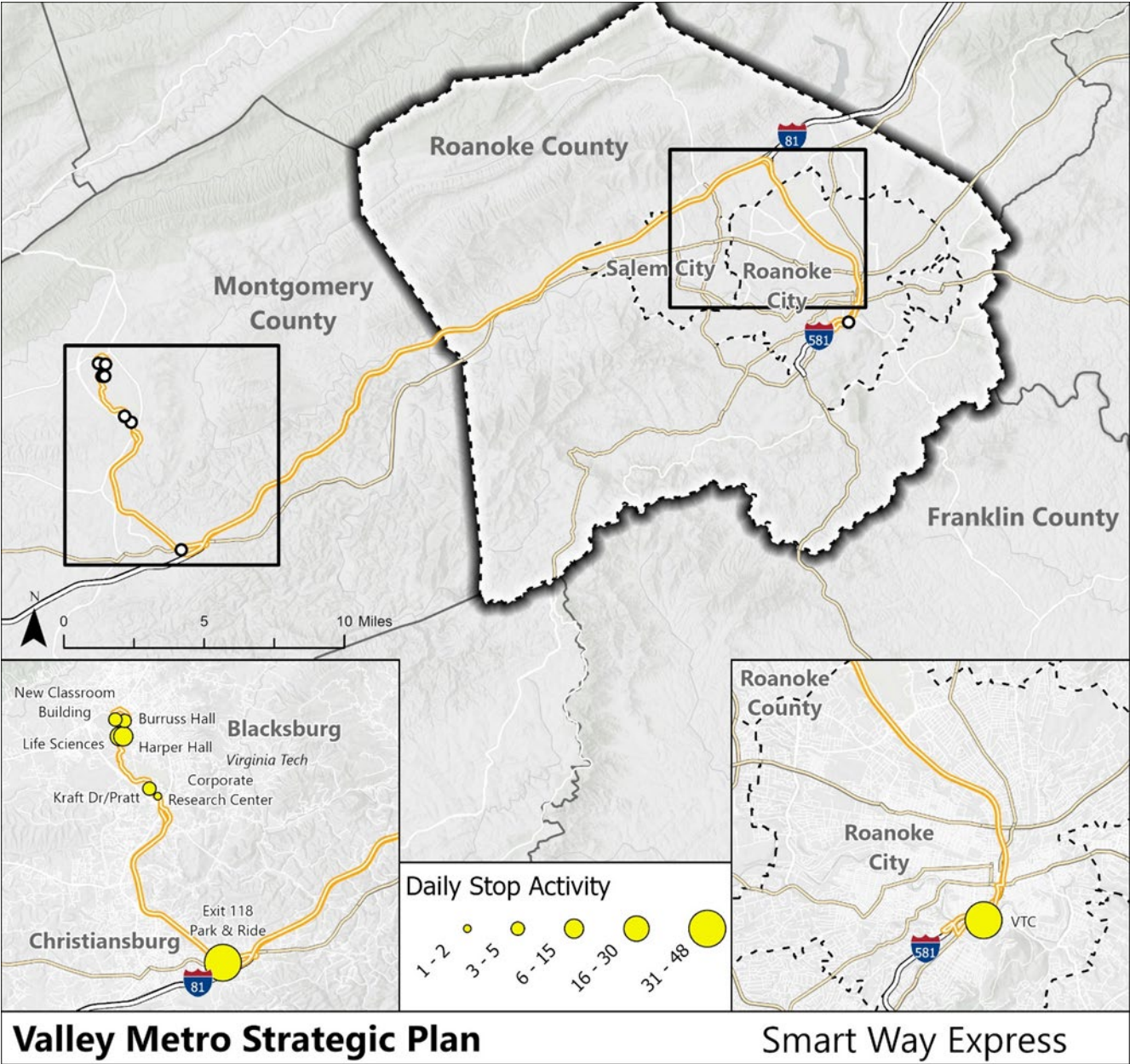


Figure 2-30: Smart Way Express Route Profile



Operating and Network Efficiency Evaluation

Operating Efficiency

Valley Metro's fixed routes provided an average (mean) of 16.7 passenger trips per revenue hour in FY2023. This is about 13.4% lower than the pre-pandemic 2017 metric of 19.3 trips per revenue hour (National Transit Database – 2017). The ridership decline during the same period was 35%, which means that Valley Metro's curtailment of 30-minute frequency was a sound decision in terms of system productivity though riders have expressed a desire to return to 30-minute frequency.

Peer data collected from the National Transit Database (NTD) data for selected agencies show that other medium sized cities in Virginia and North Carolina experienced more dramatic dips in productivity, as shown in the NTD comparison of 2017 data and 2022 data. The dip in productivity for these systems ranged from 19% (Blacksburg) to 74% (Lynchburg). Note that the 2022 data for Valley Metro had the incorrect number of revenue hours, so it was not used. These data are shown in Table 2-39.

Table 2-39: Peer System Productivity – FY2017 and FY2022

	2017		2022	
System	FR Vehicles in Service	FR Passengers/ Revenue Hour	FR Vehicles in Service	FR Passengers/ Revenue Hour
City of Asheville, NC	17	31.2	19	14.8
Blacksburg Transit	32	46.3	32	37.7
Charlottesville Area Transit	23	22.4	19	15.5
Greater Lynchburg Area Transit	32	25.9	14	6.8
Valley Metro	35	19.3	24	*

SOURCE: NATIONAL TRANSIT DATABASE

While a full analysis of revenue versus non-revenue miles and hours was not conducted, the excess of either is not generally an issue for Valley Metro, as the administrative and operating facility is located just 1.2 miles away on Campbell Avenue, SE.

Network Evaluation

The Valley Metro fixed route network is a hub and spoke network that allows passengers to connect from one part of the service area to another via downtown Roanoke. While this system can be cumbersome, the topography, road network, and train tracks within the City of Roanoke allow for limited additional cross-town connections. The O-D data collected for this TSP indicated that 47% of the riders make no transfers for their transit trip, while 52% make one transfer.

While a wholesale change away from a hub-and-spoke approach is not likely to be feasible, there are some opportunities for improved cross-city connectivity, as well as more focused local services, and these are discussed in Chapter 3.

Trip Patterns

The origin-destination data collected via the on-board survey provided a vast repository of statistically significant data concerning the trip patterns of the riders. The study team used the data to develop several maps that graphically depict these patterns. Each of these maps displays a different nuance to the ridership patterns of Valley Metro riders.

The first set of maps display the heat maps of origins and destinations, overlaid with the Valley Metro fixed route network. Four maps were generated: weekday destination; weekday origin; weekend destination; and weekend origin.

As shown in Figures 2-31 and 2-32, the highest use areas on weekdays correspond with the major centers of commerce (downtown Roanoke, Blacksburg, Valley View, the hospital complex area, downtown Salem, Towers Shopping Center, Tanglewood, downtown Vinton), as well as concentrated multi-family housing areas (the Melrose Avenue corridor, the housing areas along Bennington St. SE, Mountainview Terrace, and Gainsboro).

It is also interesting to note that there are several origin and destination areas reported by riders that are at least a mile from Valley Metro stops. These include (in clockwise order): Willow Green, Hollins, Oldfields, Bonsack, the Mill Mountain area, Southern Hills, the Hunting Hills Country Club, Cave Spring, and Poages Mill.

Weekend ridership was heavily focused on the Valley View area, with other lesser concentrations located in downtown Roanoke, and Blacksburg. Weekend origin and destination areas reported by riders that are at least a mile from Valley Metro stops include Bennett Springs, Brushy Mountain, North Lakes, an area southwest of La Bellevue, Bonsack, an area southeast of the Kenwood neighborhood, an area west of the Hidden Valley Country Club. The weekend heat maps are shown in Figures 2-33 and 2-34.

Figure 2-31: Heat Map of Weekday Trip Destinations on Valley Metro

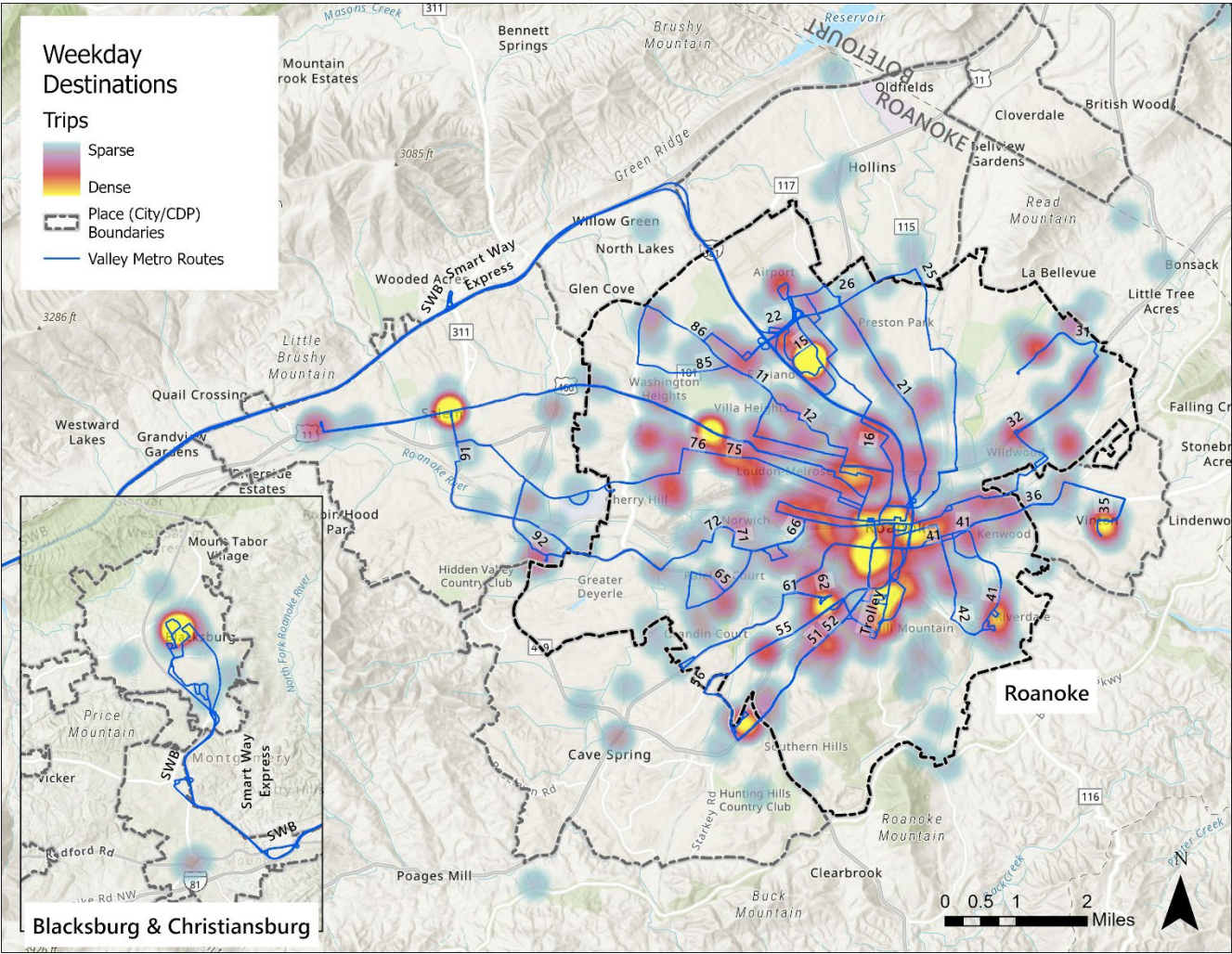


Figure 2-32: Heat Map of Weekday Trip Origins on Valley Metro

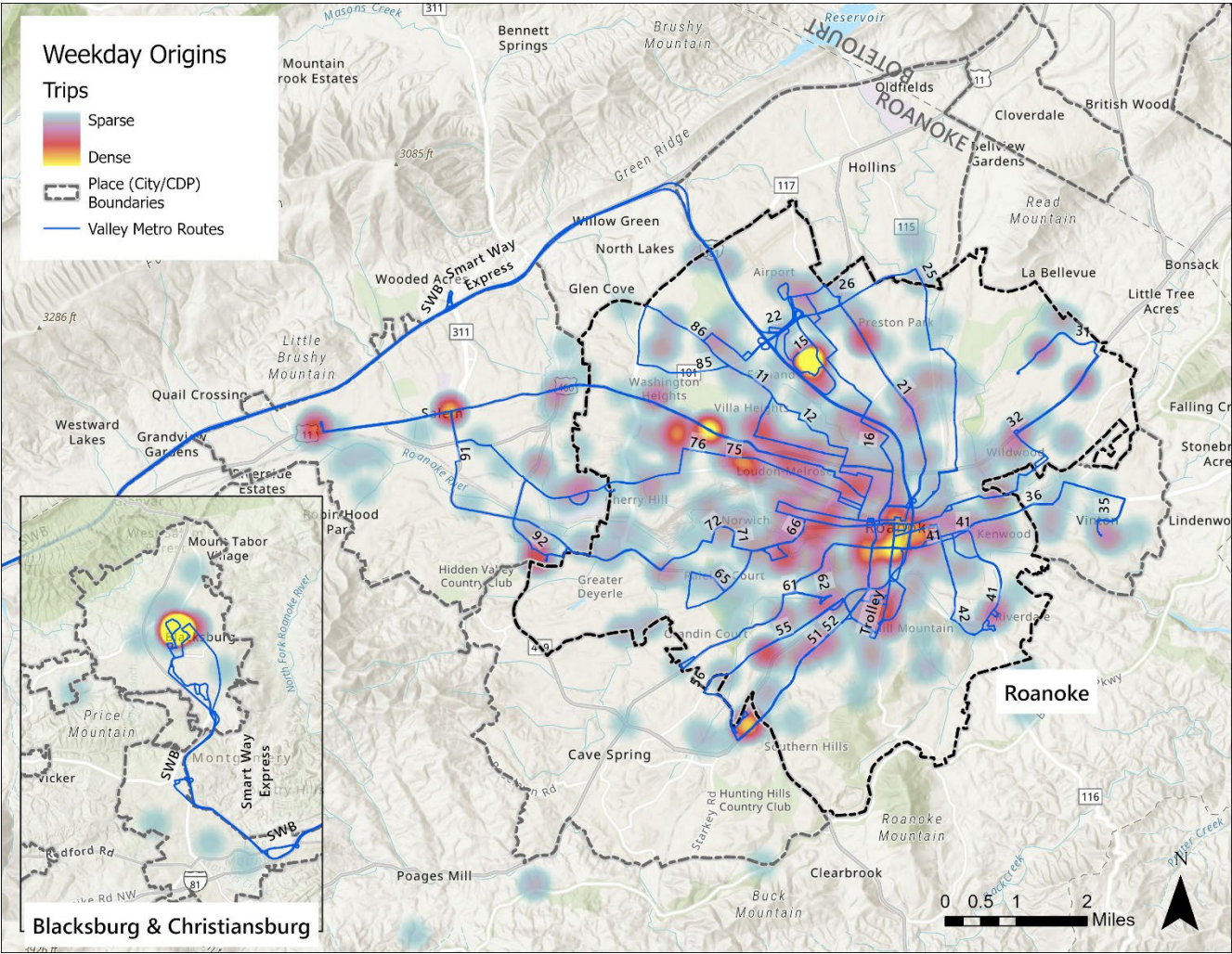


Figure 2-33: Heat Map of Weekend Trip Destinations on Valley Metro

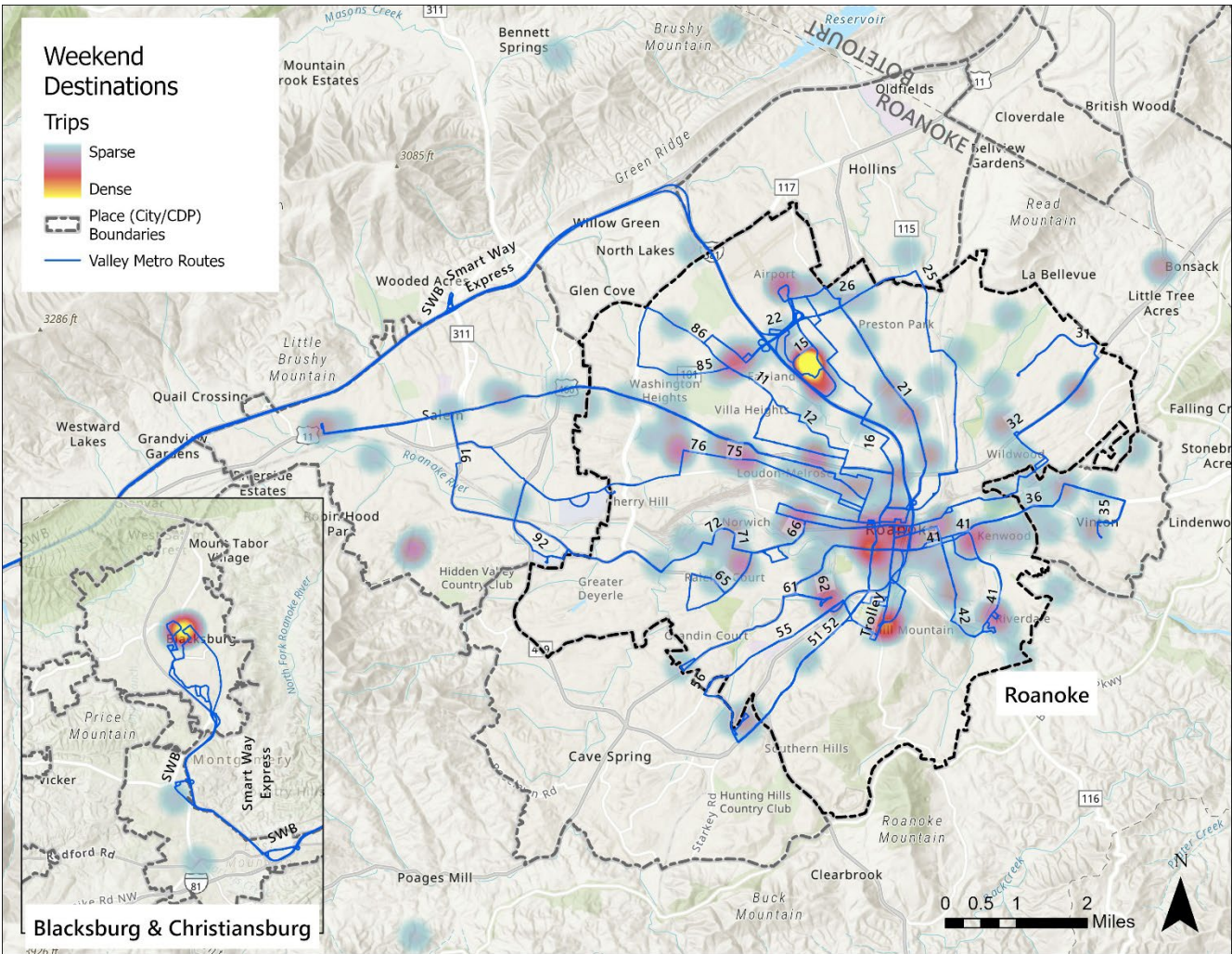
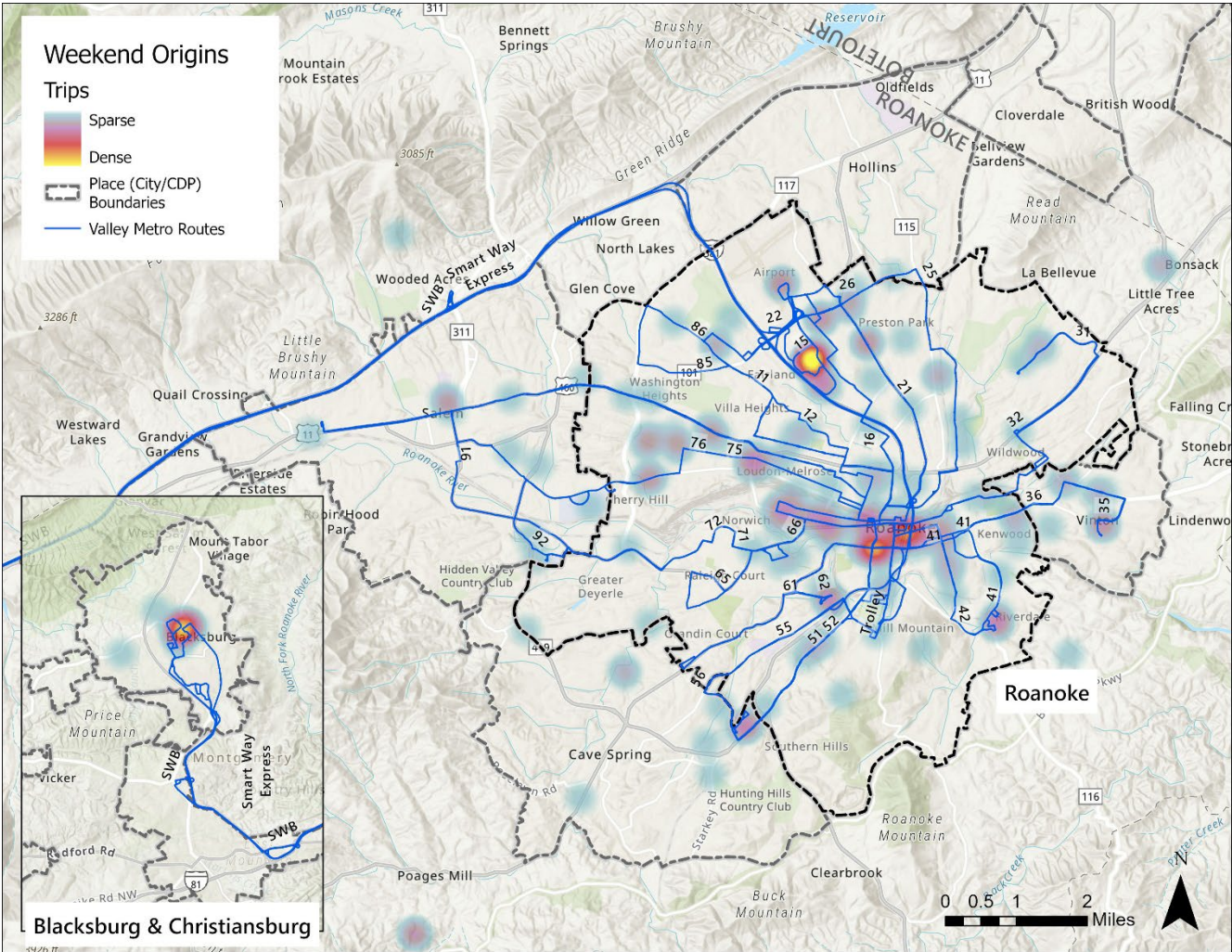


Figure 2-34: Heat Map of Weekend Trip Origins on Valley Metro



The study team also developed linear heat maps to see if there were strong connections between points that could suggest the need for additional direct routes that do not go through downtown. These maps are somewhat hard to follow but suggest that the primary O-D corridors within the City are well connected. The areas on the fringes of the city could benefit from some cross-town connections, but the volume of trips is relatively small.

Linear heat maps depicted by trip purpose were also developed for analysis. These maps use the same dataset as the primary linear heat maps but use the trip purposes provided via the on-board survey responses associated with each O-D pair. These maps show the variety of trips taken on Valley Metro and the breadth of the service provided.

The linear heat maps are provided in Figures 2-35 through 2-39.

Figure 2-35: Regional Weekday Linear Heat Map

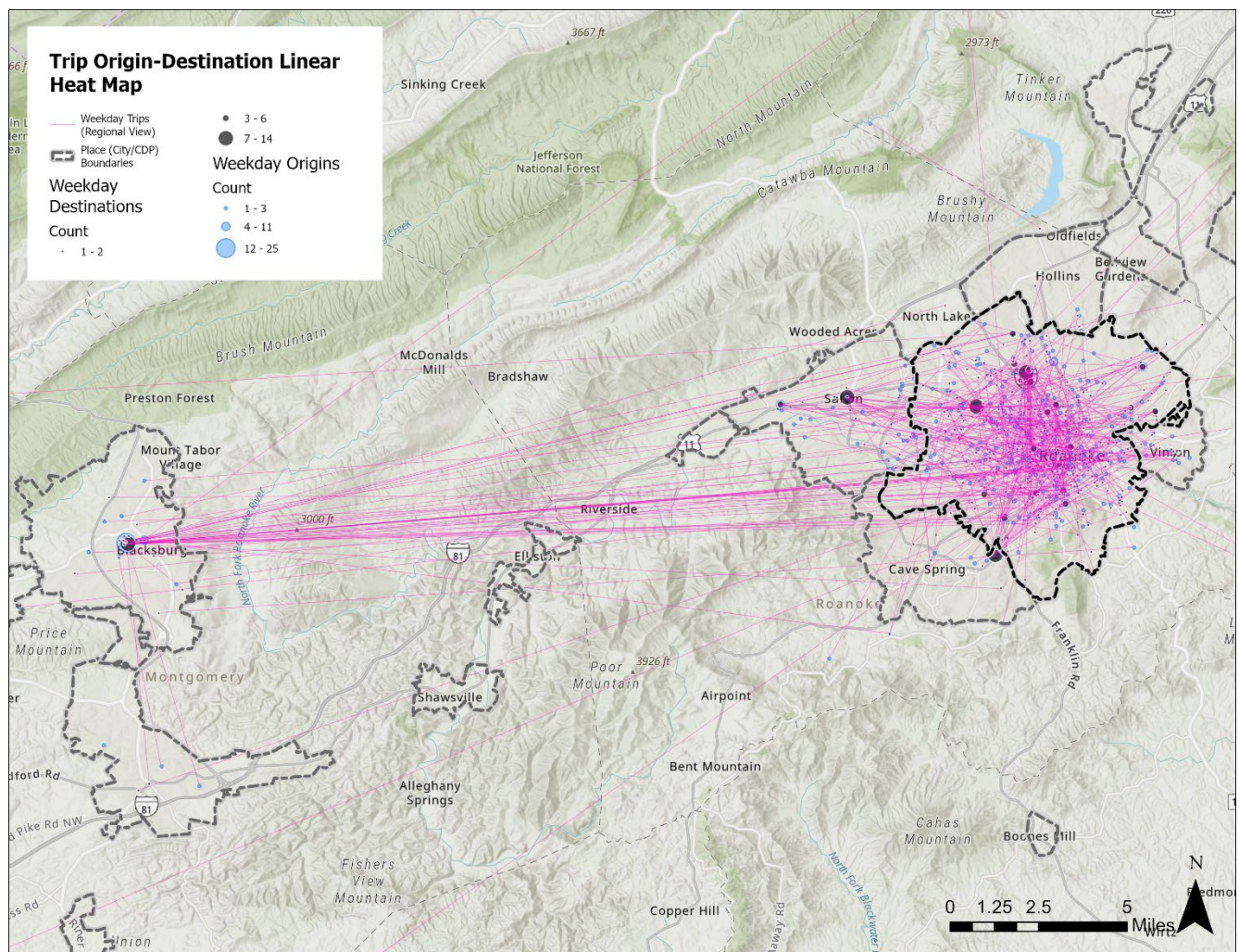


Figure 2-37: Regional Weekend Linear Heat Map

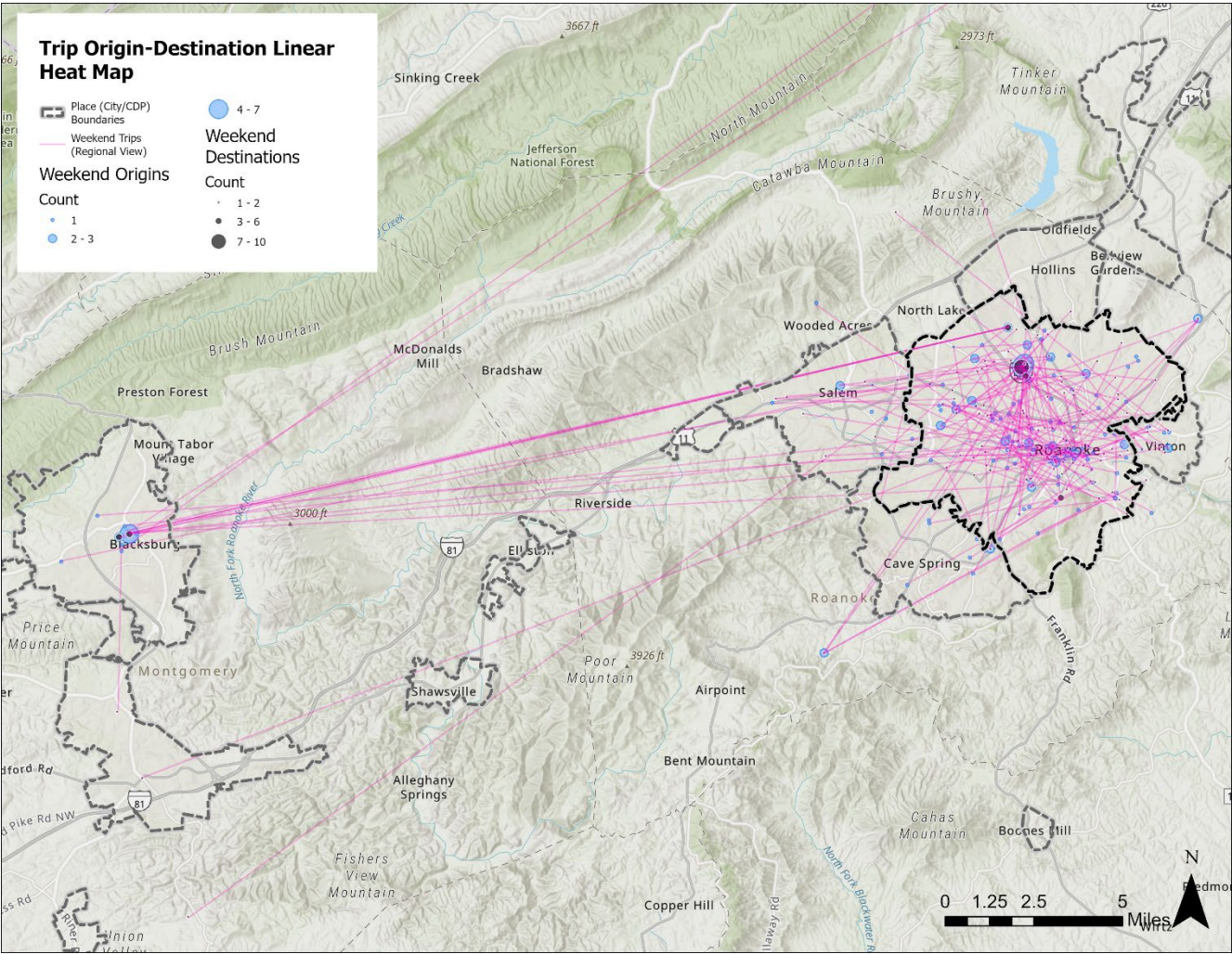


Figure 2-38: Regional Weekday Heat Map by Trip Purpose

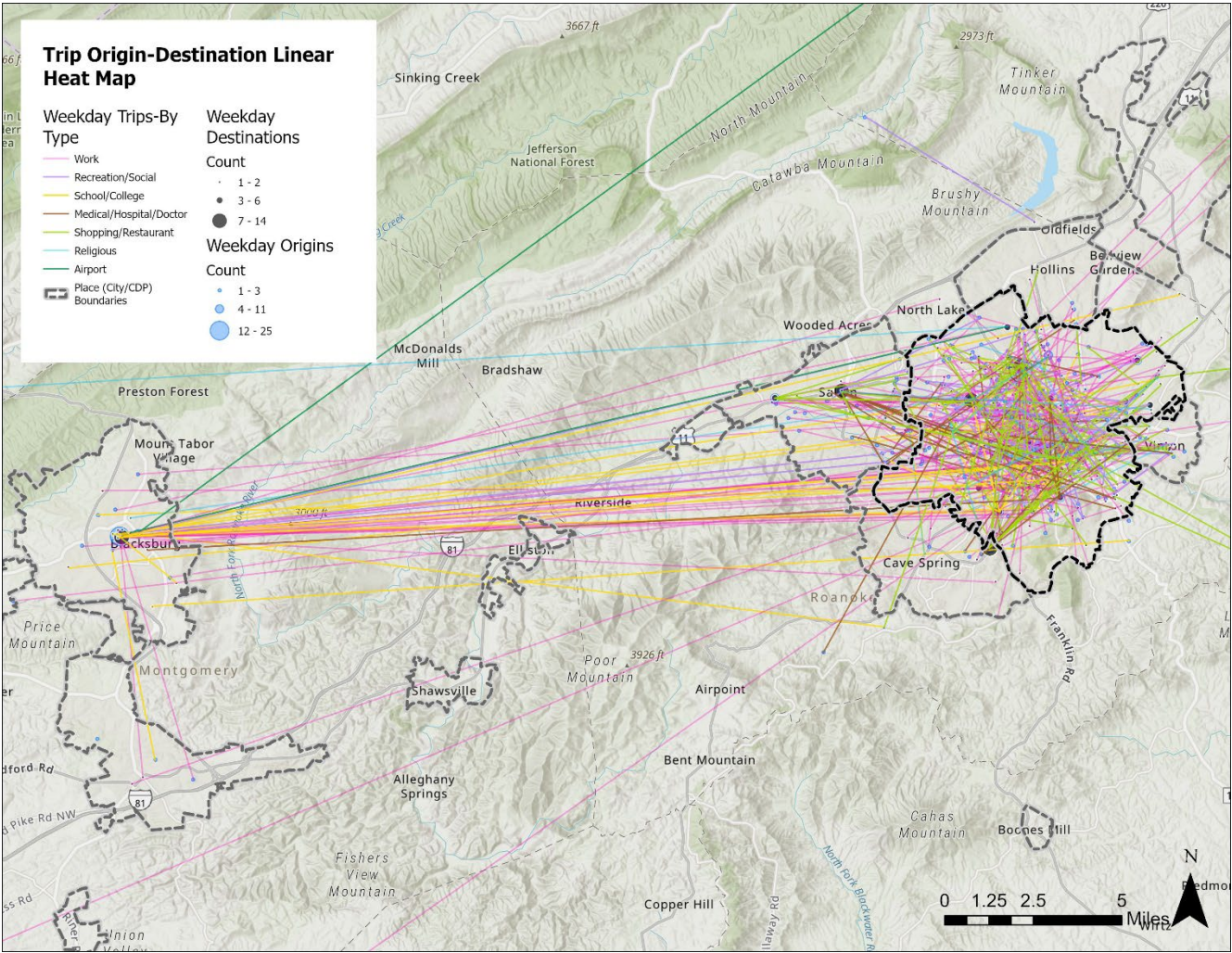
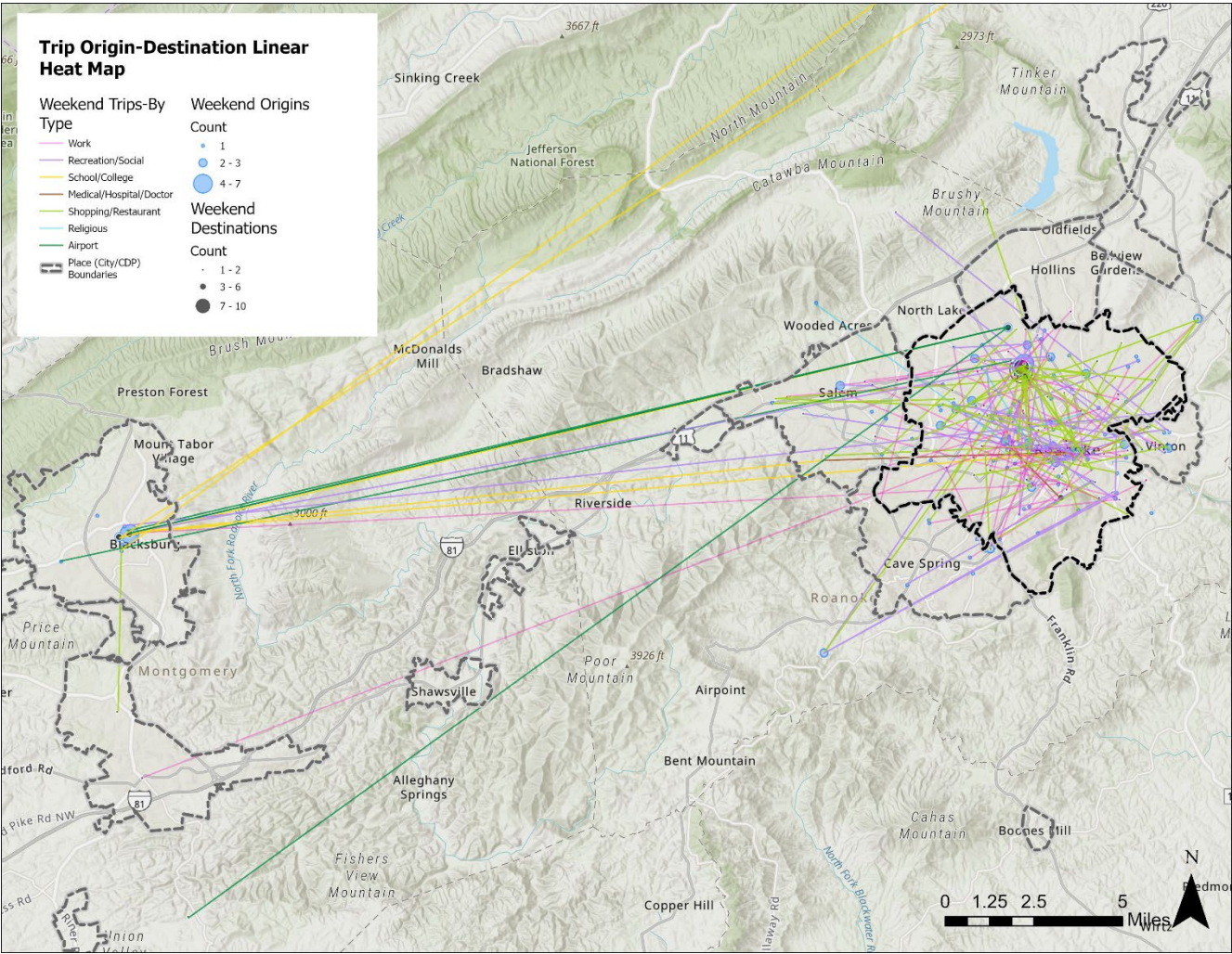


Figure 2-39: Regional Weekend Linear Heat Map by Trip Purpose



Analysis of Opportunities to Collaborate with Other Agencies and Stakeholders

As discussed in Appendix A of Chapter 1, Valley Metro is a non-profit, public service organization that is owned by the City of Roanoke. Additional jurisdictions that participate in the organization include the City of Salem and the Town of Vinton. There is one non-jurisdictional board member from a major local human service agency whose clients use the system (Blue Ridge Independent Living Center).

Valley Metro has a close working relationship with the Roanoke Valley-Alleghany Regional Commission (RVARC), with the commission providing long-range transit planning, as well as special projects for the Roanoke Valley. The agencies have been working together to help improve bus stop accessibility within the Valley Metro service area. RVARC also provides staff support for the Roanoke Valley Transportation Planning Organization (TPO), which manages federal transportation funds for the region and develops key transportation planning documents. The RVARC focuses on planning for all modes and manages RIDE Solutions, the region's transportation demand management program. A staff member from the RVARC serves on Valley Metro's TPAC.

Valley Metro also has a working relationship with RADAR, the nonprofit human service and public transportation organization that provides ADA paratransit services and MetroFLEX for Valley Metro, under contractual agreements. RADAR previously was the contractor for CORTAN, Roanoke County's demand-response service for senior citizens and people with disabilities.

Roanoke County does not participate with Valley Metro. Without the County playing a more active role with Valley Metro, it will be difficult to expand services to some of the areas within the County that are adjacent to the City of Roanoke, where fixed route public transportation need has been established through this TSP process and prior transit planning efforts. This is the single most important relationship opportunity that needs to be addressed during the ten-year TSP planning horizon.

Opportunities for Improvement

The data and information collected and analyzed within Chapter 2 is comprehensive and supports a number of recommendations that were developed through the Roanoke Valley Transit Vision Plan and the 2018 Transit Development Plan and Comprehensive Operational Analysis. A few additional opportunities have also presented themselves during this current planning process. The following opportunities for improvement will be further explored in Chapter 3:

- A return to 30-minute frequencies on core routes
- A new cross-town route – the Brandon Avenue Connector
- A new route in the Salem area
- Service to nearby areas in Roanoke County – Electric Road Corridor, Cave Spring, Hollins/Peters Creek, Plantation Road, Glenvar, Bonsack, Tanglewood area.
- Potential expansion of hours and/or service areas for MetroFLX

- Improvements to the Valley Metro website
- The development of satellite transit centers
- New bus stop signs
- Continued bus stop improvements

Note that any improvements in Roanoke County are dependent upon their involvement with Valley Metro.

Chapter 3

Planned Improvements and Modifications

Introduction

The focus of Chapter 3 is to describe and prioritize the planned service and capital improvements for Valley Metro over the ten-year planning horizon covered through the TSP. Guidance from DRPT indicates that these improvements should be financially constrained, meaning that funding for them is reasonably expected to be available for implementation. Given the recent increases in costs for Valley Metro and most transit agencies across Virginia and the nation, it may be a challenge to implement significant new services, though needs have been identified as far back as the Roanoke Valley Transit Vision Plan (2016).

Service improvements are discussed first, followed by infrastructure improvements. Several of the proposed improvements were originally outlined in the comprehensive 2016 Roanoke Valley Transit Vision Plan. For each project, we have included a statement that indicates whether the improvement falls into the short term, medium term, or long-term category. The prioritization of the projects is primarily financially driven.

Service Improvements

The first two potential improvements are those geared to improving access within the current Valley Metro service footprint, meeting needs that current riders rated as the most important.

Expand MetroFLX Hours

The passenger survey data indicated that the most important potential improvement for the riders would be “longer hours of service on existing Valley Metro routes.” The passenger survey effort was completed in December, prior to the implementation of MetroFLX. The addition of MetroFLX service in the evenings, Monday through Saturday, and on Sundays has greatly improved the span of transit service for riders. During the open house event at the Third Street Station, the study team heard that there was also a need for service earlier in the morning to accommodate jobs that start at 6:00 a.m. This could be accommodated through MetroFLX, rather than having the full bus network in operation for a relatively low number of riders.

The concept would be to add MetroFLX availability, starting with Monday through Friday, from 4:30 a.m. to 7:00 a.m. For this improvement, we will assume that four vehicles would be assigned to the service, for a total of 10 revenue hours per service day. Assuming Monday through Friday, this would equate to

50 hours per week and 2,600 revenue hours per year. ***This improvement is scheduled for the short term.***

Potential Effects of Improvement

Adding early morning hours for MetroFLX will allow riders to access early morning job opportunities, medical appointments, and other travel needs. Using MetroFLX to fill this need would likely be a cost-effective solution to offering these early morning hours.

Operating and Capital Expenses

The costs associated with adding 2,600 revenue service hours through the MetroFLX contractor are estimated to be \$234,000 annually (using \$90 per revenue hour). The same vehicles that are currently used in the evenings could be used for the service, with no additional capital required.

Ridership Estimate

Assuming a productivity of 2.5 passenger trips per revenue hour, the annual ridership would be about 6,500 annual passenger trips.

Return to 30 Minute Frequency for Highest Productivity Routes

Rider and non-rider opinions, as well as stakeholder opinions, indicated a desire for more frequent service. Prior to the pandemic, Valley Metro provided 30-minute service during “peak” times of the service day on 12 of the route pairs that were in operation at the time (11/12, 15/16, 21/22, 25/26, 51/52, 55/56, 61/62, 65/66, 71/72, 75/76, 81/82 (no longer in operation); and 85/86). While this level of 30-minute service may not be attainable or appropriate from a productivity standpoint, it would be helpful for riders to re-institute 30-minute service for key ridership corridors.

Using the FY2023 productivity data, the following route pairs have the highest productivity:

- 15/16 – combined productivity of 20.2 passenger trips per revenue hour
- 21/22 – combined productivity of 20 passenger trips per revenue hour
- 35/36 - combined productivity of 23.1 passenger trips per revenue hour
- 91/92 - combined productivity of 20.6 passenger trips per revenue hour

The other route pairs with productivity above the fixed route average of 16.7 passenger trips per revenue hour are:

- 61/62 – combined productivity of 17.2 passenger trips per revenue hour
- 65/66 - combined productivity of 17.3 passenger trips per revenue hour
- 75/76 - combined productivity of 16.9 passenger trips per revenue hour

The concept for this improvement is to add 30-minute service for the highest ridership service periods, which for Valley Metro is not the traditional morning and afternoon peaks. For the purposes of pricing the proposal, we will assume an eight-hour period of peak service. Ridership by time-of-day data from April 2024 indicated that the highest ridership period is between 9:00 a.m. and 5:00 p.m., and that period should be considered for 30-minute frequency. Given the significantly lower ridership on Saturdays, this improvement is planned for Monday-Friday. ***Improving the frequency of service has been prioritized as a medium-term project.***

Potential Effects of Improvement

Providing 30-minute frequencies will improve the convenience of riding Valley Metro for riders who are served by the routes on which it is implemented. While initially it may reduce productivity, as the same pool of riders will be split among more vehicle trips, 30-minute frequency will likely induce additional demand from both current riders and potential new riders. It will take a marketing effort to explain which routes have 30-minute service, and further why these routes were chosen.

Operating and Capital Expenses

The additional operating expenses required to provide 30-minute service on the four route pairs that produce greater than 20 passenger trips per revenue hour are significant, as the improvement will add 40 revenue service hours per operating day. Assuming that this improvement will be implemented for 8 hours per operating day and on weekdays only, the total added annual vehicle revenue hours would be 10,200. The total annual operating expenses would be about \$1 million, assuming the fully allocated cost of \$98.14 per hour. Note that this estimate is on the high side, as it uses fully-allocated costs, rather than marginal costs.

Valley Metro currently has a large enough fleet to accommodate adding frequency on these four route pairs (five vehicles), as the system provided 30-minute service prior to the pandemic on 12 route pairs.

Ridership Estimate

Productivity on the “off” cycle vehicle trips will likely be somewhat lower than that seen on the vehicle trips that meet all routes (00:15 past the hour). Assuming that productivity on the off-cycle vehicle trips is about 75% of the system average, the total annual ridership increase should be about 127,755 passenger trips.

Brandon Avenue Connector

This potential new route is a holdover from the Transit Vision Plan, as well as the 2018 TDP. The concept is to provide improved connectivity in the Southwest quadrant of the City of Roanoke by offering a route that travels through the Brandon Avenue corridor to connect several existing routes as well as the medical activity nodes. The origin-destination data presented in Chapter 2 also showed a fair number

of trip pairs showing this travel pattern. This route would also help riders from Southwest Roanoke access the Carilion area directly.

The route would originate at the Carilion Roanoke Memorial Hospital and terminate at the LewisGale Medical Center. The Transit Vision Plan suggested that the route be numbered Route 1 (outbound) and Route 2 (inbound). The route is 6.1 miles each way, which would allow one bus to complete the paired cycle in one hour. The route would travel as follows:

Outbound (Route 1)

- Carilion complex
- Right on McClanahan to Brandon Avenue
- Left on Colonial Avenue, serving the Towers Shopping Center stop
- Right on 23rd Street
- Left on Brandon Avenue to Apperson
- Left on Keagy
- Right on Braeburn to EOL at LewisGale

Inbound (Route 2)

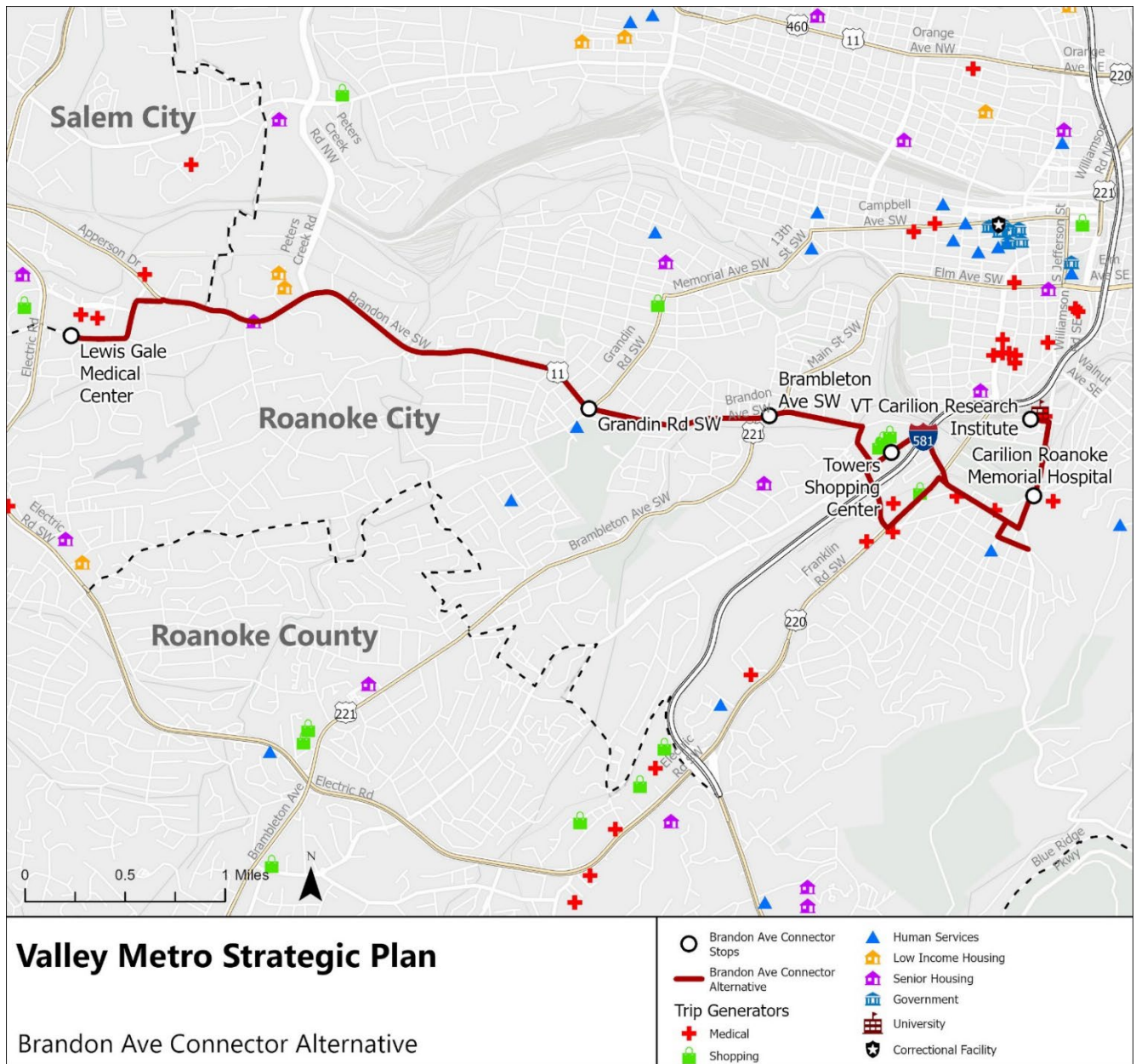
- LewisGale Medical Center
- Right on Braeburn
- Left on Keagy
- Right on Brandon Avenue
- Right on Colonial Avenue
- Left on Wonju
- Left on Franklin
- Right on McClanahan
- Left on Jefferson to Carilion Complex

The route would connect the following current routes:

- Star Line Trolley
- Routes 51/52
- Routes 55/56
- Routes 61/62
- Routes 65/66
- Routes 71/72
- Routes 91/92

The timing of the route will need detailed study to determine the best approach to reduce duplication on the shared segments, while promoting connectivity. A map of the route is provided in Figure 3-1.

This improvement has been prioritized as a long-term project.

Figure 3-1: Brandon Avenue Connector

Potential Effects of Improvement

This new route will provide a more direct connection for people traveling through southwest Roanoke to/from the LewisGale area. Riders will not need to travel downtown and back out via the existing routes. This route will also connect to the 91/92 for access to/from Salem. Given that this route will not make a timed connection at Third Street Station, the ridership may be lower than the system average.

Operating and Capital Expenses

The costs associated with adding a route that operates during the same revenue service hours as the fixed route network (5:45 a.m. to 8:45 p.m., Monday through Saturday) are about \$456,350 annually. An additional vehicle would likely be available from Valley Metro's existing fleet.

Ridership Estimate

If the route performed about 15% below the system mean of 16.7 passenger trips per revenue hour, the total annual passenger trips for the route would be about 65,565.

Route 93

The Route 91/92 pair currently connects downtown Roanoke to Salem via the Melrose Avenue corridor. Salem's East and West Main Street is served as far west as the Salem Walmart. The route also travels south and east to serve the Moyer Sports Complex, the LewisGale Hospital, and the Salem, VA Medical Center. The concept for Route 93, as presented in the 2018 COA, is to split off the portion of Route 91/92 that is south of Main Street. These route segments would be served by a new 93 route, which would free up the 91/92 to extend further west toward Glenvar.

It is proposed that the route have a timed transfer with Route 91/92 at the Walmart in Salem at :55 after the hour, between the hours of 6:55 a.m. and 7:55 p.m. Route 93 would operate Monday through Saturday, similar to the current fixed route network. The early morning commuter patterns for Route 91/92 could remain the same, with Route 93 starting service at 6:55 a.m. ***This improvement has been prioritized as a long-term project.***

Potential Effects of Improvement

Splitting off the route segments that are south of Main Street will streamline travel for Salem area riders who use the bus to travel to and from Walmart, as well as traveling anywhere west of College Avenue to/from Roanoke. Riders will not have to travel to the medical centers before heading east into Roanoke. This change will also provide more time for the 91/92 to meet travel needs that are west of Walmart, potentially to the Glenvar Library. This change will likely improve productivity for the 91/92. A map of the proposed Route 93 is provided in Figure 3-2 and the revised map for the 91/92 is provided in Figure 3-3.

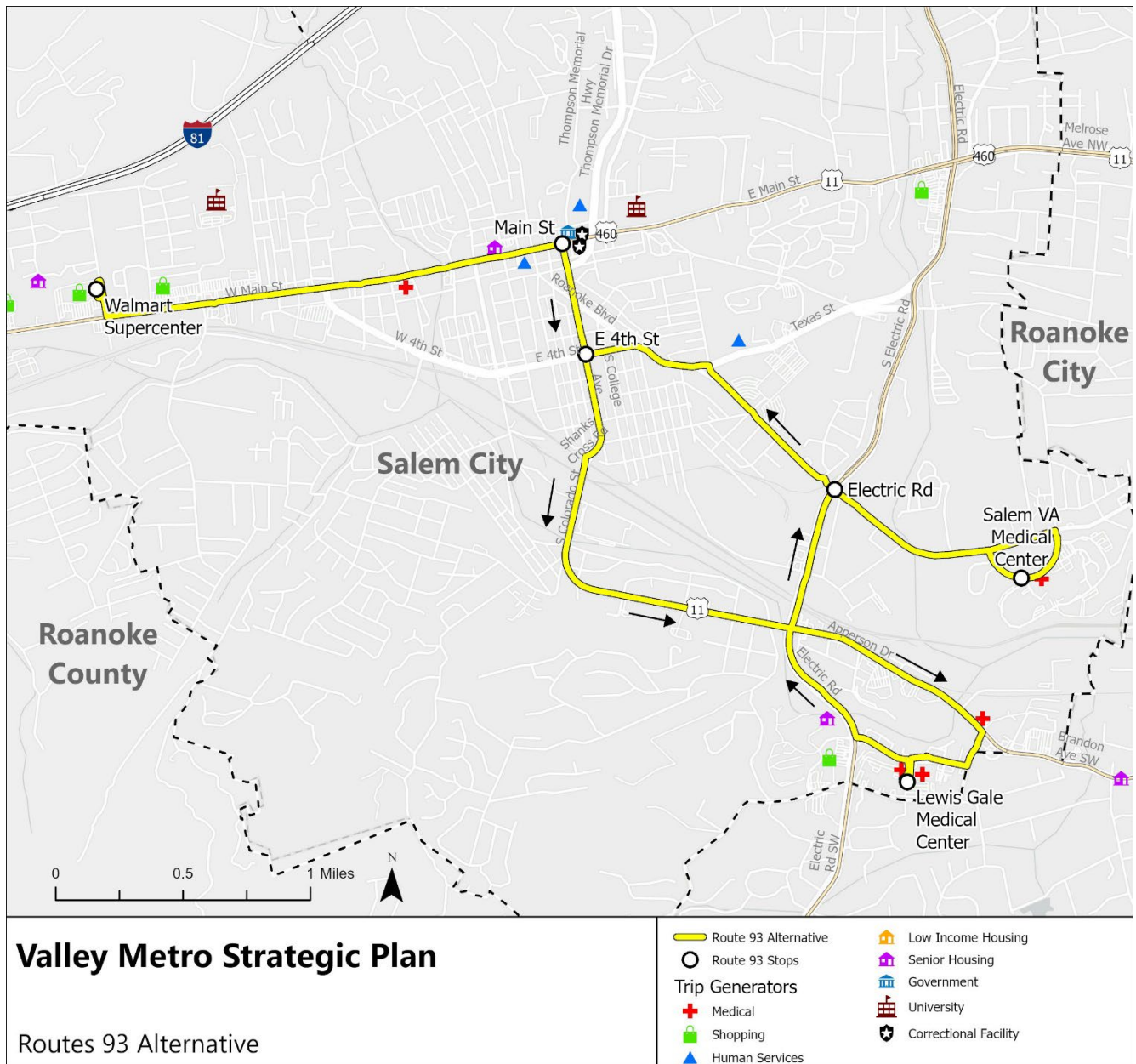
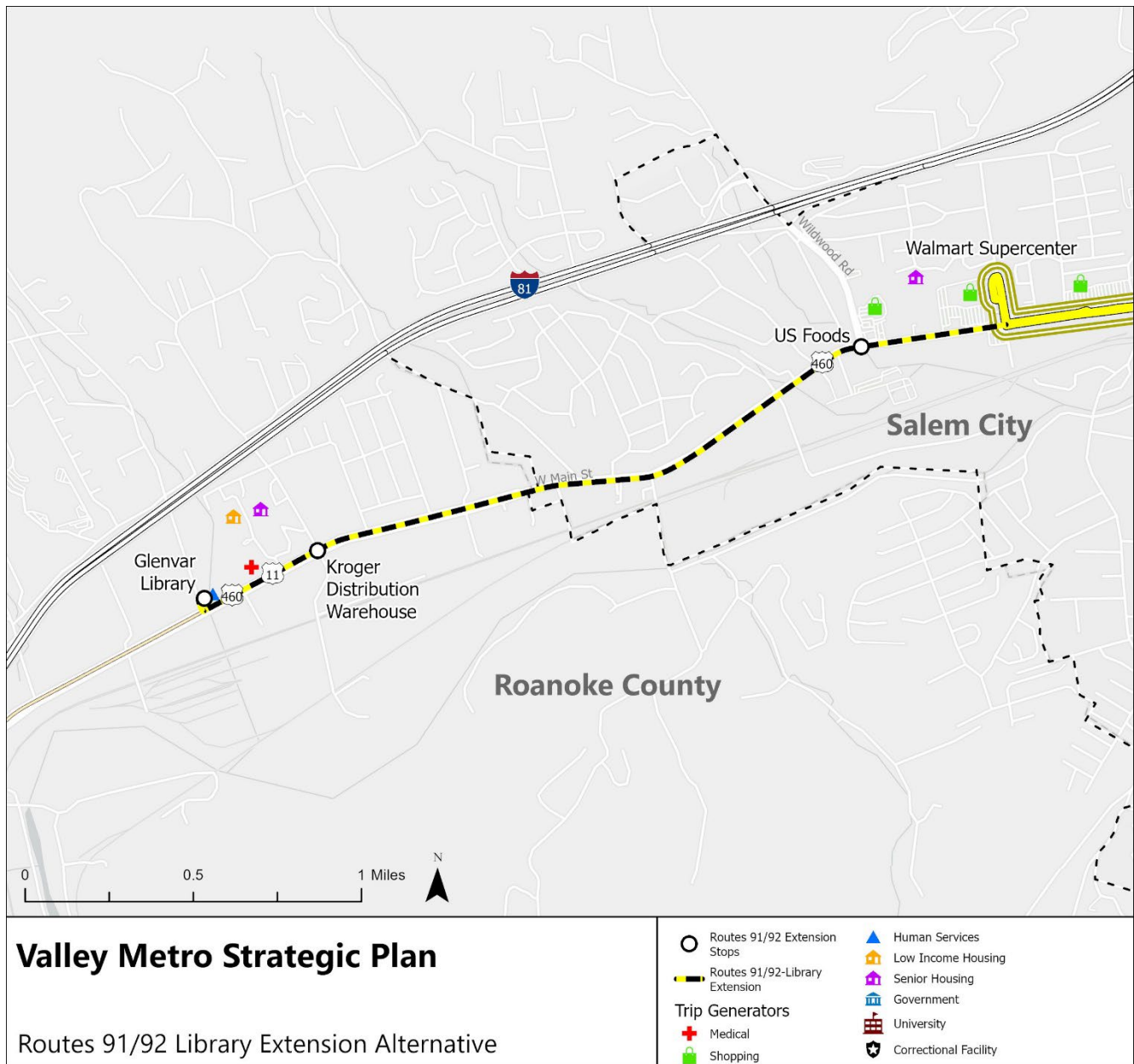
Figure 3-2: Route 93

Figure 3-3: Revised Route 91/92 West of Salem

Operating and Capital Expenses

With a span of service of 13 hours per day, six days per week, the estimated annual revenue hours are 4,030 and the estimated annual operating costs are \$395,500. An additional vehicle would likely be available from Valley Metro's existing fleet.

Ridership Estimate

Productivity on the proposed Route 93 is likely to be significantly lower than that seen on the 91/92, as the 91/92 serves the very busy Melrose Avenue corridor. For this route we are estimating that productivity will be about 25% below the system mean, or about 12.5 passenger trips per revenue hour. This would produce about 50,500 passenger trips annually.

Electric Road Corridor – Routes 4/5

The Electric Road corridor route (Route 4) is proposed to originate at Tanglewood Mall and travel north along Electric Road (Virginia Route 419) to terminate at Salem VA Medical Center. This route would connect with Routes 51/52; 55/56; 61/62; 71/72; 75/76; and 91/92 (or new 93) and would also serve a number of existing and new transit origins and destinations. This route would provide connecting service for riders so that they would not have to travel to Downtown Roanoke to connect to several travel corridors west of Downtown Roanoke. Route 5 would be the return trip, originating at the Salem VA Medical Center and terminating at Tanglewood Mall.

Routes 4/5 together would be about 16 miles round trip, which is close to the maximum feasible for one bus to accomplish in one hour. It would likely be feasible given that there are many segments along the route that do not have origins and destinations and would likely have higher operating speeds. The proposed route is provided as Figure 3-4. This route is inter-jurisdictional, serving parts of the Cities of Roanoke and Salem, as well as Roanoke County. This corridor was discussed within the Transit Vision Plan. As an inter-jurisdictional route, Roanoke County and the City of Salem would need to be involved with the planning and financing of the route. ***Given the need to collaborate with the County to implement this route, it has been categorized as a long-term project.***

Potential Effects of Improvement

Providing transit service in this developing corridor would open up employment opportunities for transit riders, as well as provide access to a number of new origins and destinations such as the businesses and services in Cave Spring, at or near the intersection of Electric Road and Brambleton (Goodwill, Kroger, Walgreens, USPS office), and various medical offices along Electric Road, multi-family houses and businesses adjacent to the intersection of Grandin Road and Electric Road, which is the subject of the County's Oak Grove Center Redevelopment Plan. The area south of Grandin Road and east of Electric Road also has relatively high population density.

Operating and Capital Expenses

The costs associated with adding a route that operates during the same revenue service hours as the fixed route network (5:45 a.m. to 8:45 p.m., Monday through Saturday) are about \$456,350 annually. An additional vehicle would likely be available from Valley Metro's existing fleet. It will also be necessary to provide ADA complementary paratransit for the corridor served by the route for origins and destinations that are not already covered through the existing service area. Given that we have used the fully-allocated costs for the improvement and there is ADA coverage fairly close to the corridor, we have not added expenses for ADA paratransit for the TSP budget, but this may need to be re-visited upon implementation.

Ridership Estimate

As with the two other potential new fixed routes, ridership on the Electric Road Corridor route is likely to be a bit lower than the system average, as the route does not make a timed connection with the full route network and serves an area with generally lower population density than the Roanoke City core corridors. The estimated annual ridership for the Electric Road Corridor route is 61,845 passenger trips.

MetroFLX Service for Hollins/Peters Creek/Plantation Road

The 2018 TDP developed a fixed route for this area, using a three-legged, somewhat awkward route design. Given the variety of potential origins and destinations, unknown demand, and lack of a clear choice for a linear route design, it makes sense to test the demand for service in this area by implementing service via MetroFLX. A MetroFLX zone could be developed that provided service within this area and brought riders to and from the closest fixed route stops, likely the trip ends for the 11/12; 15/16; 21/22; 25/26 route pairs.

Potential Effects of Improvement

Transit needs have been identified in this area, which is north of the City of Roanoke and south of I-81, in several past planning efforts. There are some significant origins and destinations, including Hollins University, the Goodwill Store and Distribution Center, Valleypointe Center (Department of Motor Vehicles is located here), and the developing Wood Haven Technology Park. Offering service via MetroFLX would test the demand for service to see if a fixed route would be viable and further, which areas show the most demand for service. Note that these areas are in Roanoke County, so input and financial support from the County would be necessary for implementation. Discussions with Hollins University would also be needed. ***Given the need to collaborate with the County to implement this route, it has been categorized as a long-term project.***

Operating and Capital Expenses

Preliminary hours for this service are Monday through Friday from 7:00 a.m. to 7:00 p.m., with one vehicle in service. The costs associated with this level of service through the MetroFLX contractor are estimated to be \$275,400 annually (using \$90 per revenue hour). The same vehicle fleet that is currently used in the evenings could be used for the service, with no additional capital required.

Ridership Estimate

Assuming a productivity of 2.5 passenger trips per revenue hour, the annual ridership would be about 7,650 annual passenger trips.

Infrastructure, Fleet, and Technology Improvements

Valley Metro has made significant transit infrastructure improvements since the 2018 TDP, including:

- The planning, design, and construction of the Third Street Station,
- Fixed route bus replacement program,
- Electric bus planning,
- Bus stop improvements – twelve new shelters have been installed, and
- Technology – real time bus information and electronic information screens.

For the upcoming ten-year period, the infrastructure projects will focus on continued bus stop improvements, as well as improved technology, mobile ticketing, and website upgrades. Valley Metro is also exploring fleet electrification, with three electric vehicles along with the associated infrastructure expected to come online in November 2024. These projects are further discussed below.

Bus Stop Improvements

Valley Metro stakeholders indicated that bus stop improvements are important for riders. There are three projects discussed for the TSP that focus on improving bus stop infrastructure. These are: additional shelters and pedestrian accessibility infrastructure; new bus stop signs; and the development of satellite transit centers at major passenger stops.

Shelters and Pedestrian Accessibility Infrastructure

Valley Metro has been working to provide additional passenger waiting shelters over the past several years. There are currently 63 shelters in the fixed route system, with approximately 30 of these owned by Valley Metro. Valley Metro has added 12 new shelters since the 2018 TDP and three are currently under development (Jamison westbound at 6th and 13th, and Jamison eastbound at 14th). The focus of this project is to continue with these efforts, with an emphasis on providing shelter at stops that have high passenger boardings and do not have viable shelter options.



Valley Metro maintains a bus stop inventory that includes several key data points regarding each stop, including boarding tier (very high, high, medium, low, and very low), accessibility notes, and several other items. According to the inventory, there are still 121 stops that fall into the “very high” boarding category that do not have passenger waiting shelters. Some of these stops are located close to one another along busy corridors, so there is the possibility of developing some kind of criteria such that a shelter is provided every “x” distance through the corridor. This type of criteria could also take into consideration other factors such as the ability to obtain an easement, and the availability of sidewalks/curb ramps and/or the ability to install them to/from the shelters. The Roanoke Valley Alleghany Regional Commission is currently working on a bus stop improvement planning study for Valley Metro, the results of which can provide additional guidance for prioritizing future new shelters.

It should be noted that pedestrian accessibility to and from shelters is often a major issue when considering additional shelters and each of the jurisdictions served by Valley Metro is responsible for sidewalk infrastructure. Adding sidewalk infrastructure can add significantly to the construction cost for shelters. ***Continuing to improve bus stop and pedestrian amenities is a short, medium, and long term project.***

Cost

It has been our experience that the cost to provide additional shelters and the associated pedestrian infrastructure varies considerably from site to site. For this project, we would recommend that Valley Metro include a capital budget line item each year for bus stop shelters and pedestrian infrastructure. The proposed amount of \$100,000 per year could represent one very expensive project, or up to five small projects.

Bus Stop Signs

The Valley Metro fixed route network has about 850 stops. The condition of the bus stop signs varies from good to poor to needs replacement. The focus of this project is to replace all the bus stop signs with new ones that include the bus stop ID, as well as the route(s) served, and a QR code that links to the route and schedule information for that particular stop. The Valley Metro information number would also be included on the signs. An example of this type of sign from the Muskegon Area Transit System is provided in Figure 3-5.

The purpose of this project is two-fold: 1) to provide route and schedule information at each stop; and 2) to improve the aesthetics of the bus stops by having fresh new signage. Installing new bus stop signs is a fairly inexpensive way to freshen up the image of the system while also providing vital transit information for riders. ***This project is a short-term priority for Valley Metro.***

Figure 3-5: Example of Bus Stop Sign with Information



Cost

The cost to purchase and install new bus stop signs is estimated to be about \$200 per sign, including labor. There may also be a need for new poles at some stops. The total cost for this project is estimated to be about \$187,000, which includes \$200 per sign and a ten percent contingency for new poles where needed.

Fleet Electrification

Valley Metro will be testing the concept of electric vehicles in the near-term, with three electric vehicles and the associated charging infrastructure expected to be online in November of 2024. This first foray into electrification will help the agency decide whether to pursue a zero-emission transition plan in the future, in keeping with the federal climate change mitigation goals outlined by the FTA and the Federal Highway Administration (FHWA). The vehicles and infrastructure have already been ordered. Valley Metro may also wish to pursue other low to no emission options as they become available.

Satellite Transit Centers – Valley View and Tanglewood

Another infrastructure concept that was discussed within the Transit Vision Plan as well as the 2018 TDP was the idea of creating satellite transit centers for locations where multiple bus routes meet for transfer opportunities. These satellite centers would have more amenities than a single bus stop, and fewer amenities than Third Street Station. Amenities could include a larger sheltered area, more seating than a single shelter, an information kiosk, a trash can, lighting, and a bus pull off area for staging. Depending upon the specific site and Valley Metro needs, a small building and restrooms could also be included.

The two preliminary locations of Valley View Mall and Tanglewood were chosen because they both have high levels of transit boardings, low levels of transit amenities, and are either currently in the process of re-developing, or will likely soon be. Both locations could also be future anchor locations between Valley Metro's current network and future expansion routes into Roanoke County. ***The addition of satellite transit centers is a long-term priority for Valley Metro.***

Cost

The cost for satellite transit centers is dependent upon the size chosen, as well as whether a building and restrooms are included. A similar project for the Williamsburg Area Transit Authority (WATA), to include a small building and restrooms, was budgeted at \$2.7 million. The scope of the WATA project is likely larger than what would be needed for Valley View and Tanglewood.

Technology Improvements

Website

The current website for Valley Metro provides valuable information for riders and the public. Critical information is provided, but other sections of the website are outdated and need to be refreshed. The concept for this potential project is to contract with a web creation firm to refresh the site and keep it current. Valley Metro has a contractual relationship with 5points Creative, which does provide some of these services and could potentially complete these improvements. ***This is a short-term priority for Valley Metro.***

Cost

The cost for website work varies considerably depending upon several variables, including whether the site needs to be secure enough to take payments. This may be a feature to consider for Valley Metro in the future. For planning purposes, we have assigned a budget of \$30,000 for site refreshment and \$12,000 annually for updating the site.

MetroFLX App

In January 2024, Valley Metro launched the MetroFLX service, which provides demand response service within the Valley Metro fixed route service area Monday through Saturday from 8:45 p.m. to 12:45 a.m. and on Sundays from 9:00 a.m. to 6:00 p.m. While the service is branded as “microtransit,” the on-demand mobile application features that are typically associated with providing microtransit services have not yet been implemented. Valley Metro chose to start the service without the technology features to test the demand for service prior to investing in the technology.

The focus of this potential improvement is to purchase the software needed to offer a true microtransit service, whereby customers can use a mobile application to schedule on-demand rides. ***This is a medium priority for Valley Metro,*** to be implemented as the program transitions from pilot to permanent, assuming it continues its successful trajectory.

Cost

The cost to purchase microtransit application software is about \$200,000.

Mobile Ticketing

Transit systems throughout Virginia and the country have increasingly been moving toward accepting electronic payment for fares. Currently Valley Metro riders can purchase fare media using credit cards at the Third Street Station but need cash to pay onboard the bus if they do not have a pass. This alternative focuses on implementing a mobile ticketing system for the fixed routes.

A mobile ticketing system allows riders to pay for their trip using an application on their mobile devices and then showing the proof of payment upon boarding. Agencies can have the drivers visually identify the mobile application proof of payment or there can be a scanner in place.

Options for mobile ticket applications include those that are used for multiple transit agencies, with no upfront costs (such as Token Transit) to those that develop an application specific to the transit agency. VMGO, Valley Metro's mobile information application may have the capability to add mobile ticketing, and this option should be explored.

Token Transit recoups its investment through a ten percent fee for each mobile ticket transaction. Other programs may have different payment scenarios. ***This is a short-term priority for Valley Metro.***

Cost

If a proprietary application is used, the development costs are likely to be between \$25,000 and \$30,000. There are also ongoing monthly fees. If Token Transit is used, there are no upfront costs, and the fees are 10% of the value of the mobile tickets purchased.

Ticket validators can be purchased for between \$600 and \$2,000 each, depending upon the complexity of the unit. For the higher end units, there are also installation expenses of \$1,500 per unit, and ongoing data fees. The higher end units are more sophisticated and can handle other types of fare media also. Assuming a mid-range cost for the validators, the capital cost estimate associated with purchasing them for the fixed route fleet is \$51,000.

Farebox Replacement

Valley Metro indicated that the current farebox vendor will no longer be supporting the fareboxes that are in place at the agency. They were purchased in 2015. We have assigned a placeholder for new fareboxes, as it may be necessary to replace them as vendor support diminishes. The estimated cost to replace the fareboxes for the fixed route and Smart Way fleet is \$1 million.

Organizational Discussion

As noted in the Vision Plan and the prior TDP, there are several growth areas in the region that are located outside of the Cities of Roanoke and Salem and the Town of Vinton. Some of these areas could likely support fixed route services and include some key regional destinations. Expansion of Valley Metro fixed route services into areas of the County that are adjacent to the current Valley Metro service network will require that Roanoke County become a member of the Greater Roanoke Transit Company, with an agreed upon financial contribution, level of service, and Board representation. It should be noted that these areas are within the Roanoke Urban area and are eligible for federal funding assistance through the Section 5307 program. GRTC is the designated recipient of these funds.

Thus far the County has not shown interest in becoming a GRTC member, but this may change as portions of the County become more urbanized in character and residents desire transit options.

Summary of Planned Improvements

The planned improvements for Valley Metro include options to provide more convenient travel options within the existing route network, as well as potential new services, and improved infrastructure and technology. Valley Metro is a mature transit program and currently meets the most critical transit needs within the Cities of Roanoke and Salem, and the Town of Vinton. As such, service additions are not likely to be as productive as the current network, because geographic areas and time periods with the highest level of transit demand are already served.

Table 3-1 provides a summary of the potential transit improvements for the ten-year TSP planning period. The TSP protocol calls for an annual review, so changes can be made to the plan each year as needed.

Table 3-1: Summary of TSP Improvements

Service and Capital Improvement Proposals	Total Annual Costs - FY24 Dollars	Capital Costs	Implementation
Operating:			
Expand MetroFLX hours to early morning	\$234,000	\$0	Short
30-minute frequency for four route pairs (1)	\$1,000,000	\$0	Medium
Brandon Avenue Connector (1)	\$456,350	\$0	Long
Route 93 Salem (1)	\$395,500	\$0	Long
Electric Road Corridor (1) (2)	\$456,350	\$0	Long
MetroFLX for Hollins/Peters Creek/Plantation Road Area (2)	\$275,400	\$0	Long
Subtotal Operating	\$2,817,600	\$0	
Capital/Infrastructure/Technology:	Total Annual	Total Capital Cost	
Bus Stop Improvements:			
Additional Shelters and Benches		\$1,000,000	Short
New Bus Stop Signs		\$187,000	Short
Satellite Transit Centers		TBD	Long
Website Improvements	\$12,000	\$30,000	Short
Mobile Ticketing (3)		\$81,000	Short
MetroFLX Application		\$200,000	Medium
New Fareboxes		\$1,000,000	Medium
Subtotal Capital/Infrastructure/Technology	\$12,000	\$2,498,000	
Total Cost of All Potential TSP Proposals	\$2,829,600	\$2,498,000	

(1) Assumes that vehicles are available from Valley Metro's existing fleet.

(2) Service in Roanoke County is dependent upon their interest and involvement.

(3) Depending upon the arrangement, there may be ongoing data expenses.

Chapter 4

Implementation Plan

Introduction

The Implementation Plan for the Transit Strategic Plan (TSP) provides an overview of the assets needed to maintain the system in a State of Good Repair (SGR), as well as to implement the service improvements outlined in Chapter 3 of the TSP. The plan focuses on Valley Metro's primary assets, including rolling stock, facilities, passenger amenities, and technology. Information used to develop the plan was gathered from Valley Metro's budget documents, vehicle and equipment inventories, the prior Transit Development Plan (TDP), and the Virginia Department of Rail and Public Transportation's (DRPT) group Transit Asset Management (TAM) Plan.

Asset Management

Under the Federal Transit Administration's (FTA) Transit Asset Management (TAM) program, Valley Metro is characterized as a Tier II transit provider, as the authority operates 100 or fewer vehicles. As a Tier II agency, Valley Metro can develop its own TAM plan or participate in a group TAM plan. Valley Metro has chosen to participate in DRPT's group plan.

As stated in DRPT's group plan, the purpose of the plan is to aid DRPT and the participating agencies in achieving and maintaining a State of Good Repair (SGR), which is defined as "the condition in which a capital asset is able to operate at a full level of performance." This is further defined as:

- "Able to perform its designated function,
- Does not present a known and unacceptable safety risk, and
- Its lifecycle investments have not been met or recovered."¹

DRPT's group plan integrates its MERIT (Making Efficient and Responsible Investments in Transit) process, which is the performance-based process that DRPT uses to allocate state transportation funds to projects. The MERIT scoring process for SGR (for vehicles) consists of an Asset Condition Score (age and mileage, up to 60 points) and a Service Impact Score (operating efficiency, frequency, travel time, and/or reliability; accessibility and/or customer experience, and safety/security, up to 40 points). These two scores form the SGR technical score of up to 100 points.

DRPT's TAM plan discusses both useful life benchmarks (ULBs) and useful life standards (UL) when assessing the life cycle of assets. The ULB is "the expected lifecycle of capital asset for particular transit

¹ Virginia Group Tier II Transit Asset Management Plan, DRPT, Adopted September 23, 2022, page 5.

providers' operating environment or the acceptable period of use in service for that operating environment."² ULBs are generally longer than useful life standards, which typically include values that represent the earliest point at which an asset can be replaced. DRPT's TAM plan indicates that the ULBs are considered the maximum age at which vehicles would meet SGR. Both benchmarks are included within the presentation of the Valley Metro's vehicle assets.

Valley Metro Assets

Valley Metro's assets can be categorized into the following areas:

- Revenue and Non-Revenue Vehicles
- Maintenance and Operations Facilities
- Passenger Facilities and Infrastructure
- Technology Systems
- Equipment

This section describes Valley Metro's assets, needs, and policies for the routine replacement, renovation, and expansion of each of these asset classes over the life of the TSP.

Revenue and Non-Revenue Vehicle Policies

A detailed inventory of Valley Metro's existing fleet is provided as part of Appendix A. Valley Metro's fleet is comprised of the following vehicles:

- 34 heavy duty Gillig transit buses, with seated capacities of 31 passengers and total capacities of 56 passengers.
- 7 Freightliner trolley replicas with capacities of between 26 and 38 passengers
- 8 MCI over the road coaches used for Smart Way services.
- 12 paratransit vehicles, ten of which are housed at RADAR.
- 10 service vehicles.

Valley Metro is also scheduled to receive three electric buses and associated infrastructure in 2024. This will add three heavy-duty vehicles to the fleet. This electrification pilot will allow Valley Metro to decide whether to pursue a zero-emission transition plan.

An overview of Valley Metro's vehicle fleet, including both ULBs and ULs is provided in Table 4-1. The ULBs and the ULs are taken from the DRPT Group TAM Plan.

² Virginia Group Tier II Transit Asset Management Plan, DRPT, Adopted September 23, 2022, page 12.

Table 4-1: Valley Metro Fleet Summary and Useful Life Information

Fleet Type	Existing Primary Vehicle Type	Minimum Service Life	Minimum Service Miles	Useful Life Benchmark (ULB)	Estimated Cost (FY2025)
Valley Metro Fixed Route Vehicles	Gillig 30–40-foot buses	12	500,000	14	\$700,000
Over the Road Coaches	MCI 54-passenger coaches	12	500,000	14	\$925,000
Star Line Trolley	Freightliner Trolleys	10	350,000	10	\$600,000
ADA Paratransit	Ford and Chevrolet BOC	4 - 7	100,000 to 200,000	8-10	\$180,000
Non-Revenue/Support	Ford Explorer, F-250, F-350, GMC Acadia	4	100,000	8	\$52,000

As discussed in Chapter One, Valley Metro has been able to embark on a multi-year effort to replace aging revenue fleet vehicles. The GRTC Bus Replacement and Rebuild program was funded through the the Regional Surface Transportation Program. Valley Metro also replaced vehicles with the assistance of VW settlement funds, traditional federal funds, and state funds. Since 2018, Valley Metro has been able to replace 35 vehicles, bringing the average fixed route fleet age down to 6.3 years. For the period covered by the TSP, continued revenue vehicle replacement as indicated through useful life benchmarks is included.

The statewide TAM Plan (2022) indicated that Valley Metro had nine service vehicles that were past their useful life. For FY25, DRPT's Statewide Six-Year Improvement Program (SYIP) includes the replacement of two of these support vehicles. The continued replacement of this sector of Valley Metro's fleet is included within the ten-year capital plan.

Maintenance and Operations Facilities Policies

DRPT's group TAM plan includes condition assessments of passenger stations, parking facilities, administrative buildings, and exclusive use maintenance facilities. The scale used to assess facilities is called the "TERM (Transit Economic Requirements Model) Scale," with values between 5 (excellent) and 1 (poor). A value of 3.0 or above indicates a State of Good Repair.³ Valley Metro's Roy Z. Meador Operations, Maintenance and Administrative Facility is in a State of Good Repair according to DRPT's TAM Plan.

³ Facility Condition Assessment Guidebook, FTA, USDOT, undated, page 9.

Passenger Facilities and Infrastructure Policies

As previously discussed, the most significant infrastructure project for Valley Metro over the last several years has been the planning, development, and construction of Third Street Station, which fully opened in June 2023. The Third Street Station serves as the primary transfer point for the fixed route network, as well as providing a customer service center, electronic information kiosks, public restrooms, a driver break room and staff restrooms, a conference room, vending machines, and a Greyhound stop. This facility replaced the aging Campbell Court facility, which was located on the first floor of a public parking garage. Third Street Station has been well-received by riders and has also won design awards. As a new facility, Third Street Station should remain in the “excellent, 5” TERM category for the planning period covered by the TSP. It is equipped with the infrastructure necessary to support electric vehicles.

Valley Metro has been working with its municipal partners to provide additional shelters, improve existing shelters and stops, and improve pedestrian connections to bus stops. Additional shelters and stop improvements are included for each year of the TSP. DRPT’s group TAM plan includes assessments of passenger facilities but does not assess individual bus stops.

The TSP includes a discussion of the potential to construct satellite passenger facilities in the Valley View and Tanglewood areas. While these facilities will not be nearly as large or have as many amenities as Third Street Station, they will be considered passenger facilities for the purposes of DRPT’s TAM Plan. SGR policies will apply to these facilities as they are constructed.

Technology and ITS Policies

Valley Metro currently uses the VMGO app, developed by GMV Syncromatics to provide real-time transit information for the fixed route, Smart Way, and Star Line services. APCs are used to collect a variety of vital service statistics.

For the TSP period, the plan calls for the introduction of mobile ticketing as well as the introduction of an application for MetroFLX. Valley Metro will need to explore whether GMV Syncromatics can support these additional features, or if a different vendor will be needed.

Valley Metro indicated that the current farebox vendor will no longer be supporting the fareboxes that are in place at the agency. They were purchased in 2015. We have assigned a placeholder for new fareboxes, as it may be necessary to replace them as vendor support diminishes.

The TSP also includes the routine replacement of computer hardware and software so that Valley Metro’s staff can work as efficiently as possible as updated systems emerge. Website improvements have also been categorized in the technology sector of the plan.

Equipment

Valley Metro conducts vehicle maintenance in-house. As such, there is an ongoing need for replacement equipment. For FY2025, Valley Metro has a need for new shop equipment that is valued at about \$170,000. This equipment is being funded through state (68%) and local (32%) funds. Valley Metro has also identified a need to purchase a street sweeper for the Third Street Station.

Capital Implementation Plan

The purpose of the Capital Implementation Plan is to outline Valley Metro's capital needs over the life of the TSP. The plan includes State of Good Repair replacements needs, as well as the capital needs required to implement the system expansions outlined in Chapter 3.

Vehicles

This section presents the details of the vehicle replacement and expansion plan, including vehicle useful life standards and estimated costs. A vehicle replacement and expansion plan is necessary to maintain a high-quality fleet and to dispose of vehicles that have reached their useful life. The capital program for vehicles was developed by applying FTA/DRPT vehicle replacement standards to the current vehicle fleet which is documented in Appendix A.

For this planning period, we are only highlighting a vehicle replacement plan and not an expansion plan. Valley Metro currently has 34 vehicles available for the fixed route services (not including the Smart Way service or the Star Line trolley), as well as an expected additional three electric vehicles. This fleet size was based on the pre-pandemic service schedule that included 30-minute frequency on ten routes, as well as a route that is no longer in service (81/82 pair). Valley Metro currently needs 16 vehicles for maximum fixed route service, leaving 18 vehicles available, plus the electric vehicles, to provide a spare ratio and to provide availability for expansion.

Vehicle Replacement Plan – Baseline Estimate

Table 4-2 provides the existing fleet inventory by vehicle class with the estimated number of vehicles per class that will need to be replaced each year. The operating condition of the vehicles and the availability of funding will dictate the actual replacement year. In addition to helping Valley Metro and DRPT plan future fleet needs, this vehicle replacement plan will also feed DRPT's transit asset management plan (TAM), which is an FTA-required plan that must include an asset inventory, condition assessments of inventoried assets, and a prioritized list of investments to improve the state of good repair of its capital assets.⁴ The TAM requirements establish state of good repair standards and four state of good repair performance measures.

⁴ Federal Register, Volume 81, No. 143, Tuesday July 26, 2016, Rules and Regulations, DOT, FTA, 49 CFR Parts 625 and 630, Transit Asset Management; National Transit Database.

Table 4-2: Valley Metro Vehicle Replacement Schedule

Type of Vehicles	# in Current Fleet	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
Fixed Route - 35-40 ft. buses- diesel	34		5	4			4	5	5	4	4
Rubber Tired Trolleys	7					6				1	
Over the Road Coaches	8				4			1			
Paratransit Vehicles	12		3	3	3	3				3	3
Fixed Route - 35-40 ft. buses- electric (1)	3										
Service Vehicles	10	2	1	2	2				3		
Total Vehicles	74	2	9	9	9	9	4	6	8	8	7

(1) If electric vehicles are a good fit, they may replace some of the diesel vehicles

Estimated Vehicle Costs

The estimated vehicle replacement costs are presented in Table 4-3. These costs are based on current costs for the various vehicle classes. Vehicle costs have risen significantly over the past several years, particularly in the body-on-chassis category.

For future years, a 3% inflationary factor was applied each year. These cost estimates were used to develop the capital budget, which is included within the Financial Plan in Chapter 5. All revenue service vehicles purchased will be lift- or ramp-equipped.

Table 4-3: Estimated Costs of New Vehicles

Fiscal Year	Heavy-Duty Transit Vehicle	Over the Road Coach	Electric Vehicle and Charger	Rubber-Tired Trolley	14 Passenger Cutaway	Support Vehicles
2024	\$700,000	\$925,000	\$950,000	\$600,000	\$180,000	\$52,000
2025	\$721,000	\$952,750	\$978,500	\$618,000	\$185,400	\$53,560
2026	\$742,630	\$981,333	\$1,007,855	\$636,540	\$190,962	\$55,167
2027	\$764,909	\$1,010,772	\$1,038,091	\$655,636	\$196,691	\$56,822
2028	\$787,856	\$1,041,096	\$1,069,233	\$675,305	\$202,592	\$58,526
2029	\$811,492	\$1,072,329	\$1,101,310	\$695,564	\$208,669	\$60,282
2030	\$835,837	\$1,104,498	\$1,134,350	\$716,431	\$214,929	\$62,091
2031	\$860,912	\$1,137,633	\$1,168,380	\$737,924	\$221,377	\$63,953
2032	\$886,739	\$1,171,762	\$1,203,432	\$760,062	\$228,019	\$65,872
2033	\$913,341	\$1,206,915	\$1,239,535	\$782,864	\$234,859	\$67,848
2034	\$940,741	\$1,243,123	\$1,276,721	\$806,350	\$241,905	\$69,884

Facilities

As discussed in Chapter 3, there is interest in developing satellite passenger facilities to provide a higher level of passenger and driver amenities for locations that are not downtown. The two locations chosen may in the future serve as route origins for cross-town routes or for routes that serve developing areas of Roanoke County. The Valley View Mall area and the Tanglewood development have been identified as locations where satellite passenger facilities would be appropriate and serve to build supportive infrastructure for future route expansions.

The estimated costs by year to design and build these facilities are provided in Table 4-4.

Table 4-4: Facility Design and Construction Expenses and Schedule

Project	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
Tanglewood Transfer Facility									\$1,830,053	
Valley View Transfer Facility							\$1,725,000			
Total Facility Capital Expenses	\$0	\$0	\$0	\$0	\$0	\$0	\$1,725,000	\$0	\$1,830,053	\$0

Other Capital

There are several other capital improvements scheduled for implementation over the life of the TSP. The estimated costs and implementation years are shown in Table 4-5. The full capital budget is provided in Chapter 5.

Table 4-5: Other Capital Improvements

Project	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
Shop Equipment	\$170,000	\$175,100	\$180,353	\$185,764	\$191,336	\$197,077	\$202,989	\$209,079	\$215,351	\$221,811
Street Sweeper for Third Street Station		\$125,000								
Bus Stop Amenities	\$100,000	\$103,000	\$106,090	\$109,273	\$112,551	\$115,927	\$119,405	\$122,987	\$126,677	\$130,477
New Bus Stop Signs		\$192,610								
Website Improvements	\$30,000									
Mobile Ticketing		\$83,430								
MetroFLX Application			\$200,000							
New Fareboxes			\$1,000,000							
ADP Hardware/Software	\$50,000	\$51,500	\$53,045	\$54,636	\$56,275	\$57,964	\$59,703	\$61,494	\$63,339	\$65,239
Total	\$350,000	\$730,640	\$1,539,488	\$349,673	\$360,163	\$370,968	\$382,097	\$393,560	\$405,366	\$417,527

Chapter 5

Financial Plan

Introduction

This chapter provides a financial plan for funding existing and proposed Valley Metro services for the TSP's ten-year planning period. The projects indicated in Years 1-3 should be considered short-term, those in Years 4-7 are considered mid-term, and those planned for years 8 through 10 should be considered long-term projects. The financial plan addresses both operations and capital budgets, focusing on the project and capital recommendations that were highlighted in Chapter 3, and the implementation schedule and capital needs highlighted in Chapter 4.

It should be noted that over the course of the ten-year period there are a number of unknown factors that could affect transit finance, including: the future economic condition of the Valley Metro partners; the availability of funding from the Federal Transit Administration; and the availability of funding from the Commonwealth Transportation Fund.

Operating and Maintenance Expenses

Several assumptions used in developing the operating cost estimates are described in this section. The FY2025 – FY2034 budgets are based on the FY2025 budget and the projects that are scheduled for implementation during the TSP planning period. The projected cost per revenue hour and the operating costs to maintain the current level of service between FY2026 and FY2034 assume a 3% annual inflation rate. The base operating budget for FY2025 is \$14,883,161. This budget represents the expenses for the Valley Metro fixed route services, the Star Line Trolley, STAR, MetroFLX, and Smart Way services.

The first section of the ten-year budget shows the inflationary cost increases associated with the level of service currently provided by Valley Metro. Applying a three percent per year inflation rate to the current annual operating costs will result in a cost increase of about \$4.5 million by 2034.

The second section of the ten-year budget shows the operating costs that are associated with the three phases of improvements developed for the TSP. The first phase increases the annual operating expenses by about \$250,000 and reflects the addition of early morning hours for MetroFLX. The second phase includes 30-minute frequency on the core routes and increases the annual operating costs by about \$1.1 million annually. The third phase adds the Brandon Avenue Connector, the Route 93 in Salem, MetroFLX for the Hollins/Peters Creek area, and the Electric Road Corridor Route. The third phase totals about \$2 million annually.

If all services are implemented, the total annual operating budget will be about \$23 million in FY2034. There is not a need for expansion vehicles, given the current spare ratio.

Funding Sources for Operations

Revenue

Valley Metro primarily generates revenue through the farebox and advertising. On occasion Valley Metro will also generate revenue through the sale of vehicles that have reached the end of their useful life or through insurance proceeds. Other revenue includes investment income and miscellaneous income. Prior to the move away from Campbell Court, Valley Metro also generated parking income and rental income.

Farebox revenue is budgeted at \$1,381,972 for FY2025. This includes fare revenue on all services and represents 9.3% of the total expected operating expenses for the year. For the TSP budget, the farebox recovery rate of 9.3% was carried through as the services are improved.

Advertising revenue for FY2025 is budgeted to be \$180,000. Miscellaneous and investment income total \$17,300 for the year. Applying the revenue sources to the total budget leaves a net deficit of \$13,303,889 for FY2025.

Federal Funding

Valley Metro receives a significant amount of grant funding from the Federal Transit Administration (FTA). In FY2025, federal grant funding to support operations, maintenance, and planning is budgeted to be \$5,735,346. These funds are from FTA's Section 5307 Urbanized Area Formula Grant Program and FTA's Section 5311 Formula Grants for Rural Areas Program. The Section 5307 funding is used to help support the fixed route network and ADA paratransit, and the Section 5311 funding is used to help support the Smart Way services.

Federal funding currently comprises 43.1% of the net deficit for Valley Metro. This ratio is carried through for the ten-year budget, but it may need to be re-evaluated if this level of federal support is not available as the operating expenses grow.

State Funding

State operating funds are provided through DRPT’s MERIT program. In FY2025, Valley Metro is expected to receive \$3,673,203 through this program. MERIT funds are awarded through a performance-based formula, which considers the size of the agency relative to other agencies across Virginia, as well as performance trends. These funds comprise about 27.6 % of Valley Metro’s expected net operating deficit for FY2025. State funding is potentially available to help with up to 30% of the net deficit, but it is not a given that this level of funding will be available.

For the TSP budget, it is assumed that state operating funds will continue to be available at the 27.6% level, though this will need to be evaluated for each of the three phases of improvements.

TRIP Funding

Valley Metro could potentially apply for funding through DRPT’s TRIP program (Transit Ridership Incentive Program) to help with the implementation of multi-jurisdictional routes (i.e., any of the proposed new routes that include Roanoke County and Salem). This program is intended to create more accessible, safe, and regionally significant transit networks. The TRIP funds can be up to five years and start at up to 80% of the project cost, phasing out by 20% each year¹. These funds would be helpful for Valley Metro’s potential expansions, as the traditional federal and state programs are based on past performance. This means that the expansions need to be in place prior to being able to access the state and federal funds to support them. We have put a line-item placeholder for TRIP funding in the TSP budget and it can be updated as appropriate each year.

Local Funding

Local funding to help support Valley Metro’s operations is provided by the Cities of Roanoke and Salem, and the Town of Vinton. In addition, Virginia Tech and the New River Valley Metropolitan Planning Organization contribute funding for the Smart Way services and the Carilion Foundation and Downtown Roanoke Inc. help support the operation of the Star Line Trolley. Local funding makes up the balance of the net deficit after applying the federal and state funding amounts.

The local funding amounts from each of the local funding partners for FY25 are as follows:

- City of Roanoke: \$3,129,308
- City of Salem: \$246,000
- Town of Vinton: \$85,000
- Carilion Foundation: \$63,000
- Downtown Roanoke, Inc.: \$31,304
- Virginia Tech: \$259,728
- New River Valley MPO \$81,000

¹ DRPT, Transit and Commuter Assistance Grant Application Manual, “Blue Book,” application guidance for FY2025.

For FY2025, local funding represents about 29.3% of the total net deficit. While this same percentage is used going forward, the local partners should be prepared to pay a higher share if federal and state funds do not increase in proportion to Valley Metro's planned improvements.

In addition, it is understood that the local funding partners are not committing to these operating funding levels, but that they are planning estimates. Specific funding amounts for each year will be determined during the annual budget process and informed by the level of federal and state funds that are available.

Tables 5-1 and 5-2 provide a financial plan for the operation of Valley Metro's services under the ten-year plan. Table 5-1 provides operating cost estimates, and Table 5-2 identifies the funding sources associated with these service projects.

Table 5-1: Valley Metro - TSP Annual Operating Cost Estimates

Projects	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034
Projected Operating Expenses										
Current Level of Service	\$14,883,161	\$15,329,656	\$15,789,546	\$16,263,232	\$16,751,129	\$17,253,663	\$17,771,273	\$18,304,411	\$18,853,543	\$19,419,149
Total Revenue	123,137									
Service Hours										
TSP Improvements										
Fully Allocated Cost Per Hour	\$120.87	\$124.49	\$128.23	\$132.07	\$136.04	\$140.12	\$144.32	\$148.65	\$153.11	\$157.70
Expand MetroFLX to early mornings		\$241,020	\$248,251	\$255,698	\$263,369	\$271,270	\$279,408	\$287,790	\$296,424	\$305,317
30-minute frequency on core routes				\$1,092,727	\$1,125,509	\$1,159,274	\$1,194,052	\$1,229,874	\$1,266,770	\$1,304,773
Brandon Avenue Connector							\$544,906	\$561,253	\$578,091	\$595,433
Route 93 Salem							\$466,690	\$480,691	\$495,111	\$509,965
MetroFLX for Hollins/Peters Creek Area (1)								\$338,707	\$348,868	\$359,335
Electric Road Corridor Route (1)									\$578,091	\$595,434
Total Additional Services		\$241,020	\$248,251	\$1,348,425	\$1,388,878	\$1,430,544	\$2,485,056	\$2,898,315	\$3,563,356	\$3,670,256
Total Projected Operating Expenses	\$14,883,161	\$15,570,676	\$16,037,796	\$17,611,657	\$18,140,007	\$18,684,207	\$20,256,329	\$21,202,726	\$22,416,899	\$23,089,406
% Change Year by Year		5%	3%	10%	3%	3%	8%	5%	6%	3%

(1) Any services operated in Roanoke County are dependent upon the County's interest and participation.

Table 5-2: Valley Metro TSP – Operating Revenue and Funding Source Estimates

Anticipated Revenue and Subsidies	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034
All Fares (1)	\$1,381,972	\$1,448,073	\$1,491,515	\$1,637,884	\$1,687,021	\$1,737,631	\$1,883,839	\$1,971,854	\$2,084,772	\$2,147,315
Advertising	\$180,000	\$185,400	\$190,962	\$196,691	\$202,592	\$208,669	\$214,929	\$221,377	\$228,019	\$234,859
Mis. Revenue and Investment Income	\$17,300	\$17,819	\$18,354	\$18,904	\$19,471	\$20,055	\$20,657	\$21,277	\$21,915	\$22,573
Subtotal, Revenue	\$1,579,272	\$1,651,292	\$1,700,831	\$1,853,479	\$1,909,084	\$1,966,356	\$2,119,425	\$2,214,508	\$2,334,705	\$2,404,746
Net Deficit	\$13,303,889	\$13,919,384	\$14,336,965	\$15,758,178	\$16,230,923	\$16,717,851	\$18,136,904	\$18,988,218	\$20,082,193	\$20,684,659
Federal Funds	\$5,735,346	\$5,999,254	\$6,179,232	\$6,791,775	\$6,995,528	\$7,205,394	\$7,817,006	\$8,183,922	\$8,655,425	\$8,915,088
State Funds	\$3,673,203	\$3,841,750	\$3,957,002	\$4,349,257	\$4,479,735	\$4,614,127	\$5,005,785	\$5,240,748	\$5,542,685	\$5,708,966
Potential Future TRIP funds (2)		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Local Funds	\$3,895,340	\$4,078,380	\$4,200,731	\$4,617,146	\$4,755,660	\$4,898,330	\$5,314,113	\$5,563,548	\$5,884,083	\$6,060,605
Subtotal, Subsidies	\$13,303,889	\$13,919,384	\$14,336,965	\$15,758,178	\$16,230,923	\$16,717,851	\$18,136,904	\$18,988,218	\$20,082,193	\$20,684,659
Total Projected Operating Revenue and Subsidies	\$14,883,161	\$15,570,676	\$16,037,796	\$17,611,657	\$18,140,007	\$18,684,207	\$20,256,329	\$21,202,726	\$22,416,899	\$23,089,406

(1) THE FAREBOX RECOVERY ESTIMATE IS 9.3% OF THE TOTAL OPERATING EXPENSES.

(2) VALLEY METRO COULD APPLY FOR TRIP FUNDS THROUGH DRPT TO HELP DEFRAY THE INITIAL COSTS FOR THE TSP SERVICE IMPROVEMENTS. IT IS NOT A GIVEN THAT THESE FUNDS WILL BE AVAILABLE OR AT WHAT LEVEL.

Capital Expenses and Funding Sources

Federal

Federal funding to support Valley Metro's capital expenses is typically comprised of the following programs:

- FTA's Section 5307 Urbanized Area Formula Grant
- FTA's Section 5309 Capital Investment Grants (discretionary)
- FTA's Section 5311 Formula Grants for Rural Areas
- FTA's Section 5339 Grants for Bus and Bus Facilities (formula and competitive)
- Flexible Surface Transportation Program (STP-flex)
- Regional Surface Transportation Program (RSTP)

Some of these funds are accessed directly from the FTA, while others flow through DRPT or the Roanoke Valley Alleghany Regional Commission.

State

DRPT has implemented a capital assistance prioritization process that allows the agency to allocate and assign limited resources for projects that are deemed the most critical.² DRPT's capital program now classifies, scores, and prioritizes projects into the following categories:

- **State of Good Repair (SGR).** This category includes projects and programs that replace or rehabilitate existing assets, excluding major capital construction projects with a total cost of over \$3 million. The state match for SGR is up to 68%.
- **Minor Enhancement (MIN).** This category includes projects and programs to add capacity, new technology, or a customer facility, and meet the following criteria:
 - Total project cost of less than \$3 million; or
 - Vehicle expansion of not more than 5 vehicles or 5% of the existing fleet size, whichever is greater.
 - The state match is up to 68 percent.
- **Major Expansion (MAJ).** This category includes projects or programs that add, expand, or improve service with a cost exceeding \$3 million or, for expansion vehicles, and increase of greater than 5 vehicles or 5% of fleet size, whichever is greater. The state match is up to 50 percent.

² DRPT, Making Efficient Responsible Investments in Transit (MERIT), Capital Assistance – Program Prioritization, FY 23 Technical Documentation.

Typically, these programs are used in combination with federal funding and the match rate is 80% federal; 16% state; and 4% local. If only state funds are used the matching rate is 68% state and 32% federal.

Table 5-3 provides the ten-year TSP financial plan for vehicle replacements under the SGR category. These budgets are based on the vehicle prices outlined in Chapter 4. Note the 35–40-foot category of fixed route buses assumes the current models, which are diesel. This may change over the course of the TSP period, as Valley Metro tests the concept of electric vehicles. The first electric vehicles are due to come into service in November 2024. There is a placeholder in Table 5-3 for electric vehicles, but none would need to be replaced during the TSP period.

Table 5-4 provides the ten-year budget for facilities and Table 5-5 provides the ten-year budget for passenger amenities, technology, and other capital items.

Table 5-3: Valley Metro TSP Capital Budget – State of Good Repair – Vehicle Replacement

Vehicle Replacements	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034
Fixed Route - 35-40 ft. buses		\$3,713,150	\$3,059,636			\$3,343,348	\$4,304,560	\$4,433,695	\$3,653,364	\$3,762,964
Trolleys					\$4,173,384				\$782,864	
Over the Road Coaches				\$4,164,384			\$1,137,633			
Paratransit - Body-on-chassis		\$572,886	\$590,073	\$607,776	\$626,007				\$704,577	\$725,715
Fixed Route Electric Buses										
Service Vehicles	\$100,000	\$55,167	\$113,644	\$117,052				\$197,616		
Sub-Total Replacement Vehicles	\$100,000	\$4,341,203	\$3,763,353	\$4,889,212	\$4,799,391	\$3,343,348	\$5,442,193	\$4,631,311	\$5,140,805	\$4,488,679
Total SGR Expenses	\$100,000	\$4,341,203	\$3,763,353	\$4,889,212	\$4,799,391	\$3,343,348	\$5,442,193	\$4,631,311	\$5,140,805	\$4,488,679
Anticipated Funding Sources - Current Federal/State/Local Matching Ratios										
Federal	\$80,000	\$3,472,962	\$3,010,682	\$3,911,370	\$3,839,513	\$2,674,678	\$4,353,754	\$3,705,049	\$4,112,644	\$3,590,943
State	\$16,000	\$694,592	\$602,136	\$782,274	\$767,903	\$534,936	\$870,751	\$741,010	\$822,529	\$718,189
Local	\$4,000	\$173,648	\$150,534	\$195,568	\$191,976	\$133,734	\$217,688	\$185,252	\$205,632	\$179,547
Total Funding	\$100,000	\$4,341,203	\$3,763,353	\$4,889,212	\$4,799,391	\$3,343,348	\$5,442,193	\$4,631,311	\$5,140,805	\$4,488,679

Notes:

The budget numbers are based on useful life criteria, estimated prices, and typical funding ratios (80% fed; 16% state; 4% local)

For capital purchases where federal funding is not available and state funds are used the matching rate is 68% state and 32% local

Table 5-4: Valley Metro TSP Capital Budget – Facilities

Project	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034
Tanglewood Transfer Facility									\$1,830,053	
Valley View Transfer Facility							\$1,725,000			
Total Facility Capital Expenses	\$0	\$0	\$0	\$0	\$0	\$0	\$1,725,000	\$0	\$1,830,053	\$0
Anticipated Funding Sources										
Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$1,380,000		\$1,464,042	\$0
State	\$0	\$0	\$0	\$0	\$0	\$0	\$276,000		\$292,808	\$0
Local	\$0	\$0	\$0	\$0	\$0	\$0	\$69,000		\$73,202	\$0
Total Funding	\$0	\$0	\$0	\$0	\$0	\$0	\$1,725,000	\$0	\$1,830,053	\$0

Table 5-5: Valley Metro TSP Capital Budget – Passenger Amenities, Technology, and Other Capital

Project	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034
Shop Equipment	\$170,000	\$175,100	\$180,353	\$185,764	\$191,336	\$197,077	\$202,989	\$209,079	\$215,351	\$221,811
Street Sweeper for Third Street Station		\$125,000								
Bus Stop Amenities	\$100,000	\$103,000	\$106,090	\$109,273	\$112,551	\$115,927	\$119,405	\$122,987	\$126,677	\$130,477
New Bus Stop Signs		\$192,610								
Website Improvements	\$30,000									
Mobile Ticketing		\$83,430								
MetroFLX Application			\$200,000							
New Fareboxes			\$1,000,000							
ADP Hardware/Software	\$50,000	\$51,500	\$53,045	\$54,636	\$56,275	\$57,964	\$59,703	\$61,494	\$63,339	\$65,239
Total	\$350,000	\$730,640	\$1,539,488	\$349,673	\$360,163	\$370,968	\$382,097	\$393,560	\$405,366	\$417,527
Anticipated Funding Sources										
Federal	\$144,000	\$584,512	\$1,231,590	\$279,738	\$288,130	\$296,774	\$305,677	\$314,848	\$324,293	\$334,022
State	\$115,600	\$116,902	\$246,318	\$55,948	\$57,626	\$59,355	\$61,135	\$62,970	\$64,859	\$66,804
Local	\$90,400	\$29,226	\$61,580	\$13,987	\$14,407	\$14,839	\$15,284	\$15,742	\$16,215	\$16,701
Total Funding	\$350,000	\$730,640	\$1,539,488	\$349,673	\$360,163	\$370,968	\$382,097	\$393,560	\$405,366	\$417,527

Notes:

For FY25, the shop equipment is budgeted for 68% state and 32% local. The other items for FY25 are budgeted at 80% federal and 20% local.

For FY26 and beyond the matching ratios are budgeted for 80% federal, 16% state, and 4% local.

These ratios may differ each year, depending upon the availability of state and federal funds.

Appendix A

Agency Profile and System Overview

History

Public transportation in the Roanoke Valley has a long history, beginning with a railway streetcar service that began operation in 1888 using four mule-pulled cars and two miles of track.¹ This system evolved into the Roanoke Railway and Electric Company (RR&E), which expanded considerably through the early 1900's, with as many as 50 cars in operation and 30 miles of track by 1925.²

From 1925 to 1928, the Safety Motor Transit Company (SMT) operated the first bus service in the region, in direct competition with the RR&E. Seven bus routes were operated in Roanoke City, totaling 23 route miles. When SMT's revenue failed to keep up with the expenses of operating the fleet, the bus system was acquired by RR&E.

Between the Great Depression in 1929 and the end of Roanoke's streetcar era in 1948, RR&E gradually made the transition from streetcar service to bus service, like the experience in many U.S. cities. Bus transit service remained popular and economically viable through the 1950's and into the 1960's. During the 1960's the viability of privately operated and funded public transportation began to decline as Roanoke City Lines took over the local and regional bus service in the Roanoke Valley. As ridership and revenue continued to decline, Roanoke City Lines was dissolved. The Greater Roanoke Transit Company (GRTC) was formed in 1975 to take over the provision of public transportation in the City of Roanoke. GRTC, doing business as Valley Metro, is owned by the City, and overseen by a Board of Directors.

The following are some significant dates in Valley Metro's history:

- 1975 – Formed to provide public transportation in the City of Roanoke.
- 1983 – Opening of Campbell Court Transportation Center as the main bus transfer location.
- 2004 - Implementation of the first Smart Way service between the New River Valley and Roanoke.
- 2008 – Implementation of the Star Line Trolley Service.
- 2011 – Implementation of the Smart Way Connector service between Roanoke and the Lynchburg Amtrak station.
- 2016 – Completion of the Roanoke Valley Transit Vision Plan.

¹ Roanoke Transit Vision Plan, Background and Existing Conditions, page 1.

² Ibid

- 2017 – Amtrak resumes passenger service to Roanoke, after an almost 40-year gap in service. The new Amtrak platform is located at 55 Norfolk Avenue, SW. Valley Metro discontinues the Smart Way Connector to the Lynchburg Amtrak Station.
- 2018 – Valley Metro begins the phased replacement of 35 vehicles through the Bus Replacement and Rebuild Program.
- 2020 – The Covid-19 Pandemic causes a significant decrease in ridership. Valley Metro adjusts service to meet demand, eliminating the 30-minute peak frequencies.
- 2022 – Amtrak adds a second daily departure from Roanoke.
- 2023 – Valley Metro completes the construction of the Third Street Station. The new station replaces Campbell Court as the Valley Metro’s downtown hub and includes a customer service center and a Greyhound stop.
- 2024 – Valley Metro implements MetroFLX

Governance

Valley Metro is a private, non-profit, public service organization that is owned by the City of Roanoke. The seven members of the Board of Directors serve one-year terms and are appointed annually by the Roanoke City Council. The current members are:

- Joseph L. Cobb, Vice-Mayor, City of Roanoke
- Dwayne D’Ardenne, Manager, Transportation Division, City of Roanoke
- Karen Michalski-Karney, Executive Director, Blue Ridge Independent Living Center
- Matthew Crookshank, Human Services Administrator, City of Roanoke
- Maxwell Dillon, Planner I, City of Salem
- Vivian Sanchez-Jones, Council Member, City of Roanoke
- Andrew Keen, Treasurer/Finance Director, Town of Vinton

The composition of the GRTC Board is as follows: not less than seven members; two members of Council, two staff members, one physically challenged representative; one Citizen at Large, and one regional representative to be rotated between Town of Vinton and City of Salem for a two-year period.

The General Manager and the Assistant General Manager for Valley Metro are employees of Transdev, through a contractual agreement with the City of Roanoke. All other Valley Metro staff members are employees of the Southwestern Virginia Transit Management Company, Inc., which is a subsidiary of Transdev. The Transdev management team reports to the Board of Directors as well as to the assistant city manager, who serves as a liaison.

Transit Passenger Advisory Committee (TPAC)

In 2019, Valley Metro established a Transit Passenger Advisory Committee (TPAC). The purpose of the committee is to provide advice to the Valley Metro Board and staff regarding transit services, facilities, plans, and policies. TPAC also provides a forum for people to comment on transit issues and services. TPAC served in an advisory capacity for the TSP process.

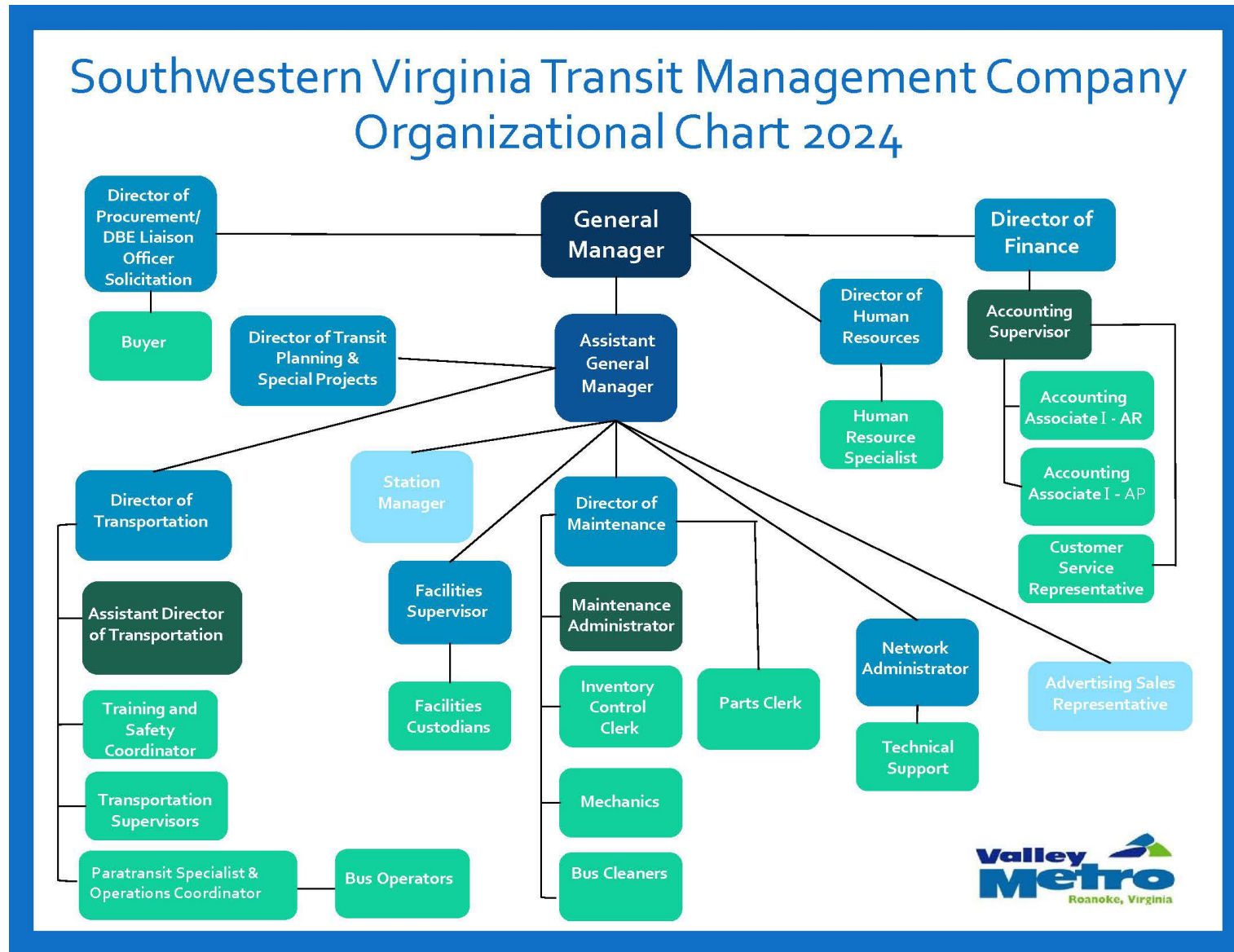
TPAC members are appointed by the GRTC Board of Directors. An application is available on the Valley Metro website for interested candidates. The charter indicates that there can be up to nine members on the committee, with the following composition: one representative from the City of Salem; one representative from the Town of Vinton, four representatives from the City of Roanoke, one representative from the business community; one representative from the STAR passenger/disabled community; and one Roanoke Valley-Alleghany Regional Commission staff member. There are currently eight members who represent various transit rider constituencies. The current members are:

- Chris Andrews
- Steve Grammar
- Laura Hartman
- Monique Janelle
- Cole Keister
- Sean McGinnis
- Alison Stinnette
- Hope Trachtenberg-Fifer

Organizational Structure

The organizational structure of Valley Metro is shown in Figure A-1.

Figure A-1: Valley Metro Organizational Chart



Contracted Services

As discussed above, the management and operations of Valley Metro is contracted to TransDev. The last procurement process conducted to hire TransDev occurred in 2019. The contract will be up for renewal or re-bid in 2025.

ADA paratransit service (STAR) service is operated by RADAR under a contractual agreement. The last procurement process to hire RADAR occurred in 2018. The contract will be up for renewal or re-bid in 2024.

MetroFLX is also operated by RADAR under a contractual agreement. The MetroFLX contract is for two years and began in January 2024. The first year of the contract allows for up to \$900,000 in costs and the second year allows for up to \$931,500 in costs.

Union Representation

Bus operators and mechanics at Valley Metro are represented by the Amalgamated Transit Union, Local 1493. The current three-year contract was ratified in January 2023.

Services Provided and Areas Served

Valley Metro is the primary public transportation provider for the urban areas of the Roanoke Valley. Valley Metro services include fixed route, specialized transportation for individuals with disabilities, and special event shuttles. Valley Metro also operates the Smart Way Bus that delivers commuter service between Roanoke and the New River Valley.

Valley Metro Fixed Route Services

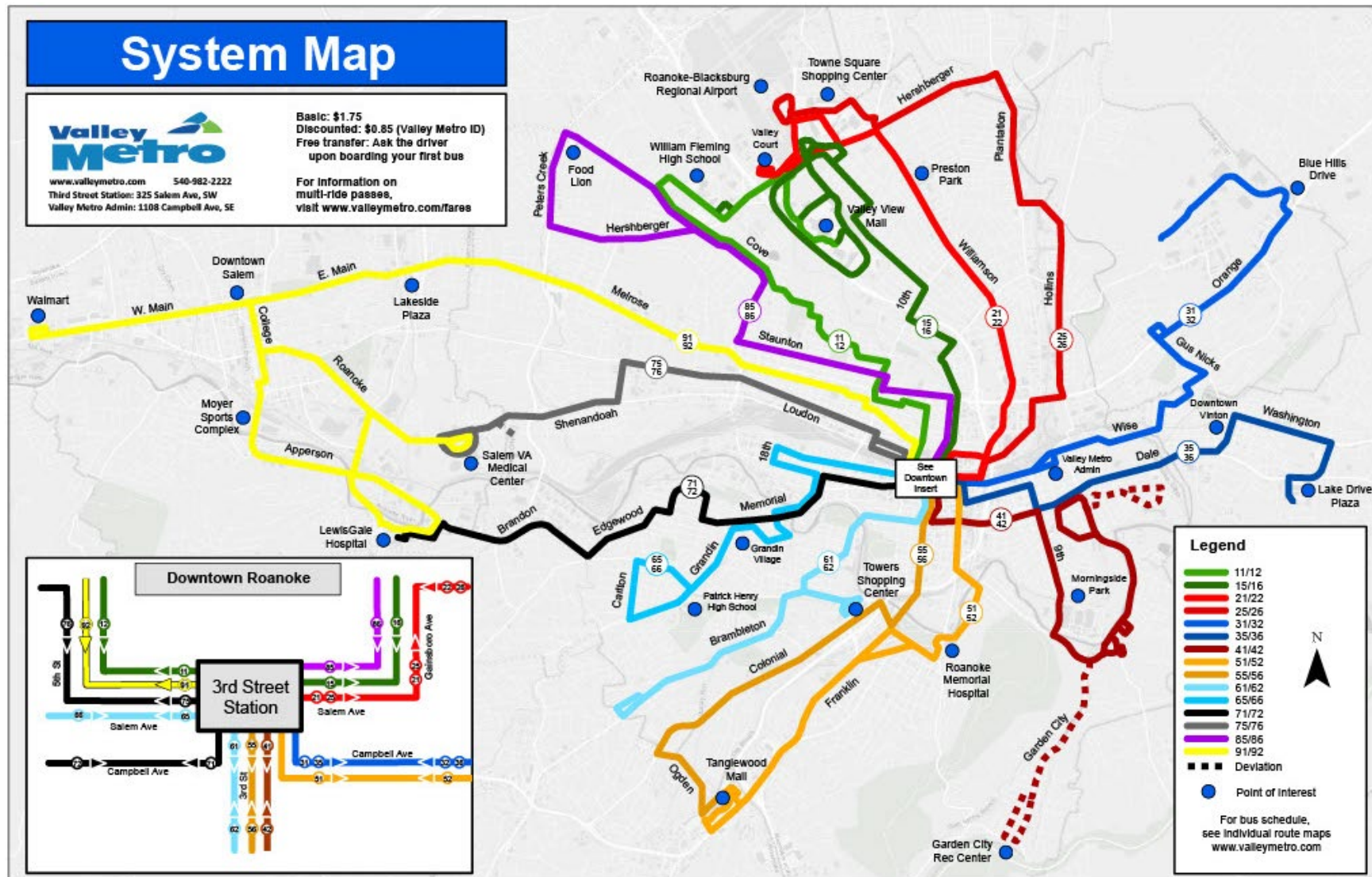
The new Third Street Station in Downtown Roanoke serves as the hub for Valley Metro's fixed route service, allowing for a "hub and spoke" style service. Each of the fixed routes has one end point at the Third Street Station and the other at another location. Except for the Routes 91/92, buses begin service at their end point at 5:45 a.m. and converge towards Third Street Station. The 91/92 begins service with one bus starting at 5:35 a.m. from Walmart in Salem to Third Street Station and the second bus starting at 6:00 a.m. from LewisGale. Valley Metro fixed route service generally operates Monday through Saturday from 5:45 a.m. to 8:45 p.m. Hourly service is provided, with buses leaving the Third Street Station at 15 minutes past the hour.

The following fixed routes are offered:

- Routes 11 and 16 – To and from Valley View Mall and Third Street Station
- Routes 12 and 15 – To and from Third Street Station and Hoback Drive Shopping Area
- Routes 21 and 22 - To and from Valley Court and Third Street Station via Williamson Road
- Routes 25 and 26 – To and from Airport and Third Street Station via Hollins Road
- Routes 31 and 32 – To and from Blue Hills Drive and Third Street Station
- Routes 35 and 36 – To and from Vinton and Third Street Station
- Routes 41 and 42 – To and from Southeast Roanoke and Third Street Station
- Routes 51 and 52 – To and from Tanglewood Mall and Third Street Station via Franklin
- Routes 55 and 56 – To and from Tanglewood Mall and Third Street Station via Colonial/Ogden
- Routes 61 and 62 - To and from Brambleton/Red Rock and Third Street Station
- Routes 65 and 66 – To and from Carleton/Grandin and Third Street Station
- Routes 71 and 72 - To and from LewisGale Medical Center and Third Street Station
- Routes 75 and 76 - To and from the Salem VA Medical Center and Third Street Station
- Routes 85 and 86 - To and from Peters Creek Road and Third Street Station
- Routes 91 and 92 - To and from Salem VA Medical Center/LewisGale Medical Center and Third Street Station via Salem

The operating statistics for each of these routes are provided in Chapter 3. Exhibit A-1 provides a system map for the Valley Metro fixed routes. This map represents the non-construction network. There is currently a long-term detour in effect as the Wasena Bridge is being replaced. This affects the 61/62 route pair that travels on Main Street SW, and Elm Avenue. For the construction period, it will use Memorial bridge instead.

Exhibit A-1: Valley Metro Fixed Routes



Downtown Roanoke

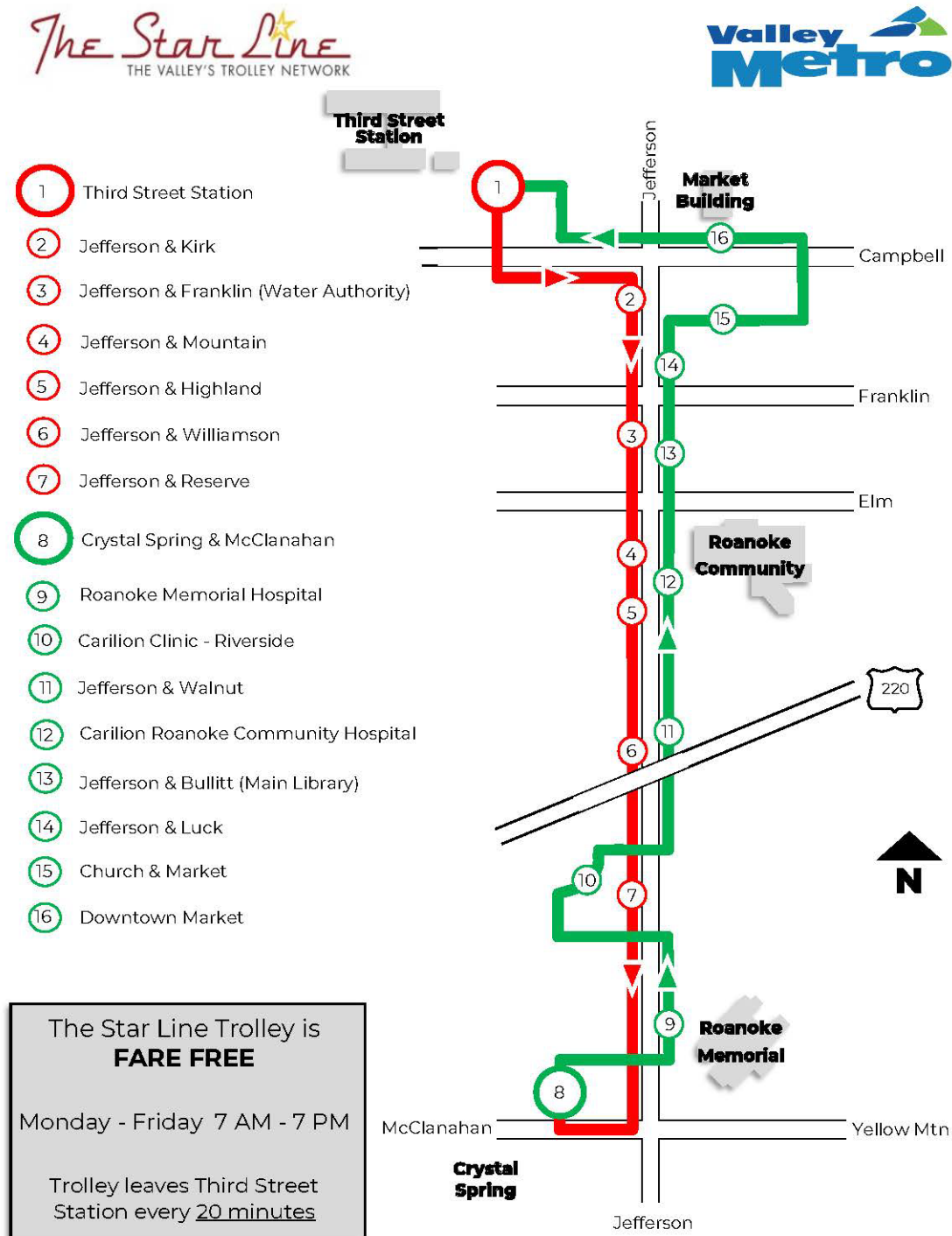


Star Line Trolley

Valley Metro operates the Star Line Trolley, which connects Downtown Roanoke with the Carilion Roanoke Memorial Hospital via Jefferson Street. The Star Line Trolley operates Monday through Friday, 7:00 a.m. to 7:00 p.m. providing service every 20 minutes. Exhibit A-2 depicts the route map for the Star Line Trolley.



Exhibit A-2: Star Line Trolley Route



Smart Way Bus and Smart Way Express

Smart Way Bus

The Smart Way Bus is a regional bus service operated by Valley Metro that links the Roanoke Valley to the New River Valley. Smart Way Bus service starts at Third Street Station in downtown Roanoke and ends at Virginia Tech Squires Student Center. The route also has stops at the Hotel Roanoke, the Roanoke Regional Airport, park and ride lots along I-81 (Exits 140 and 118A), Laurel Street in Christiansburg, the Virginia Tech Corporate Research Center, and Main Street in Blacksburg.

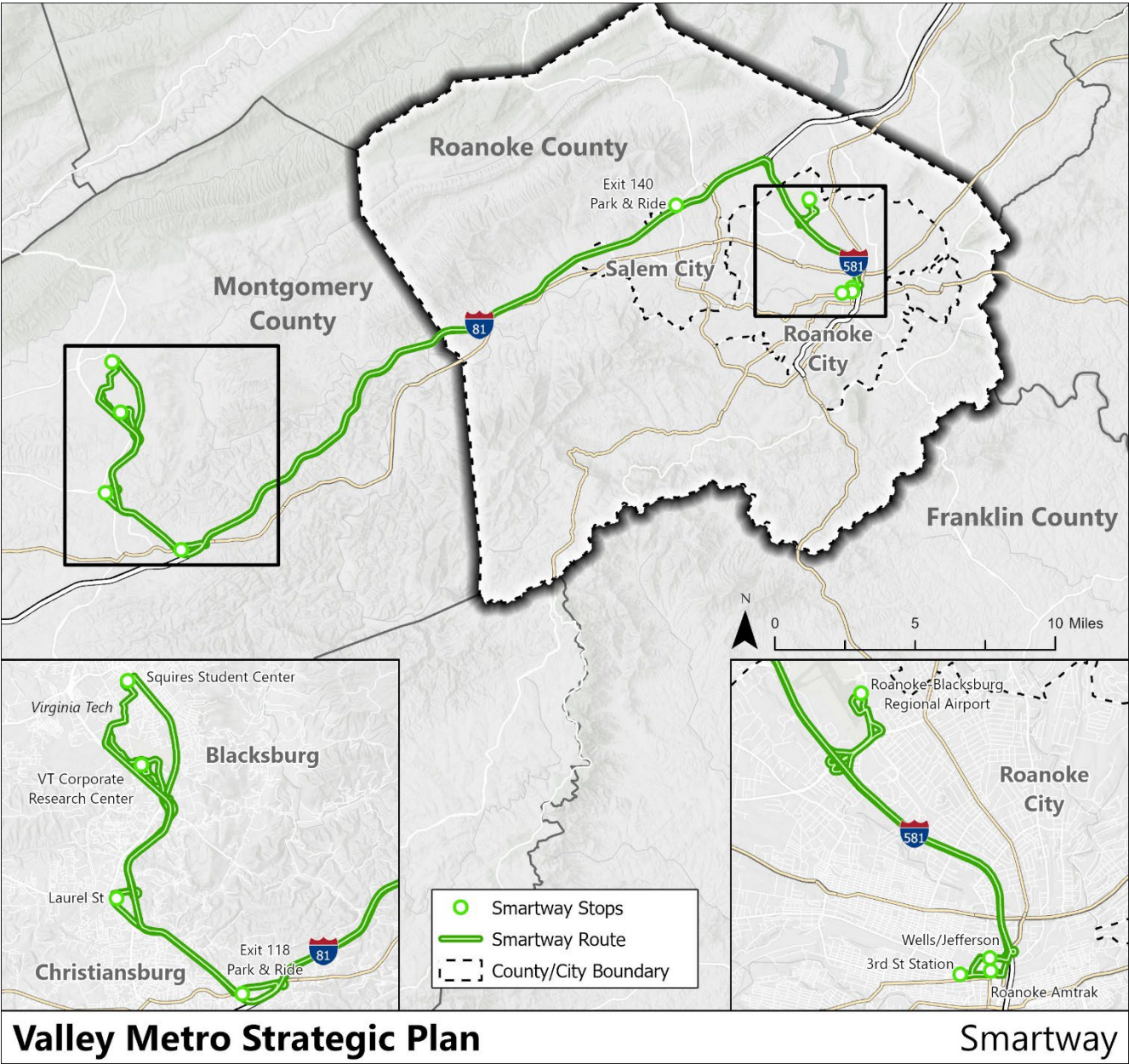
The Smart Way Bus operates on the following schedule:

- Monday through Friday between the hours of 5:00 a.m. and 11:30 p.m. including 13 trips from Blacksburg to Roanoke and 13 trips from Roanoke to Blacksburg. A 14th trip is offered on Fridays between Roanoke and Blacksburg in the evening.
- Saturdays between the hours of 6:40 a.m. and 11:20 p.m., including five trips from Blacksburg to Roanoke and five trips from Roanoke to Blacksburg.
- On Sundays there is one morning trip from Blacksburg to Roanoke and one evening trip from Roanoke to Blacksburg.

Figure A-2 shows a map of the Smart Way Bus service.

The first trip from Blacksburg in the AM and the final trip in the PM provide connections to Amtrak. The final trip from Roanoke to Blacksburg will wait for the train, if delayed. For Sunday, while anyone can ride one way, the trip is specifically scheduled to connect to Amtrak.

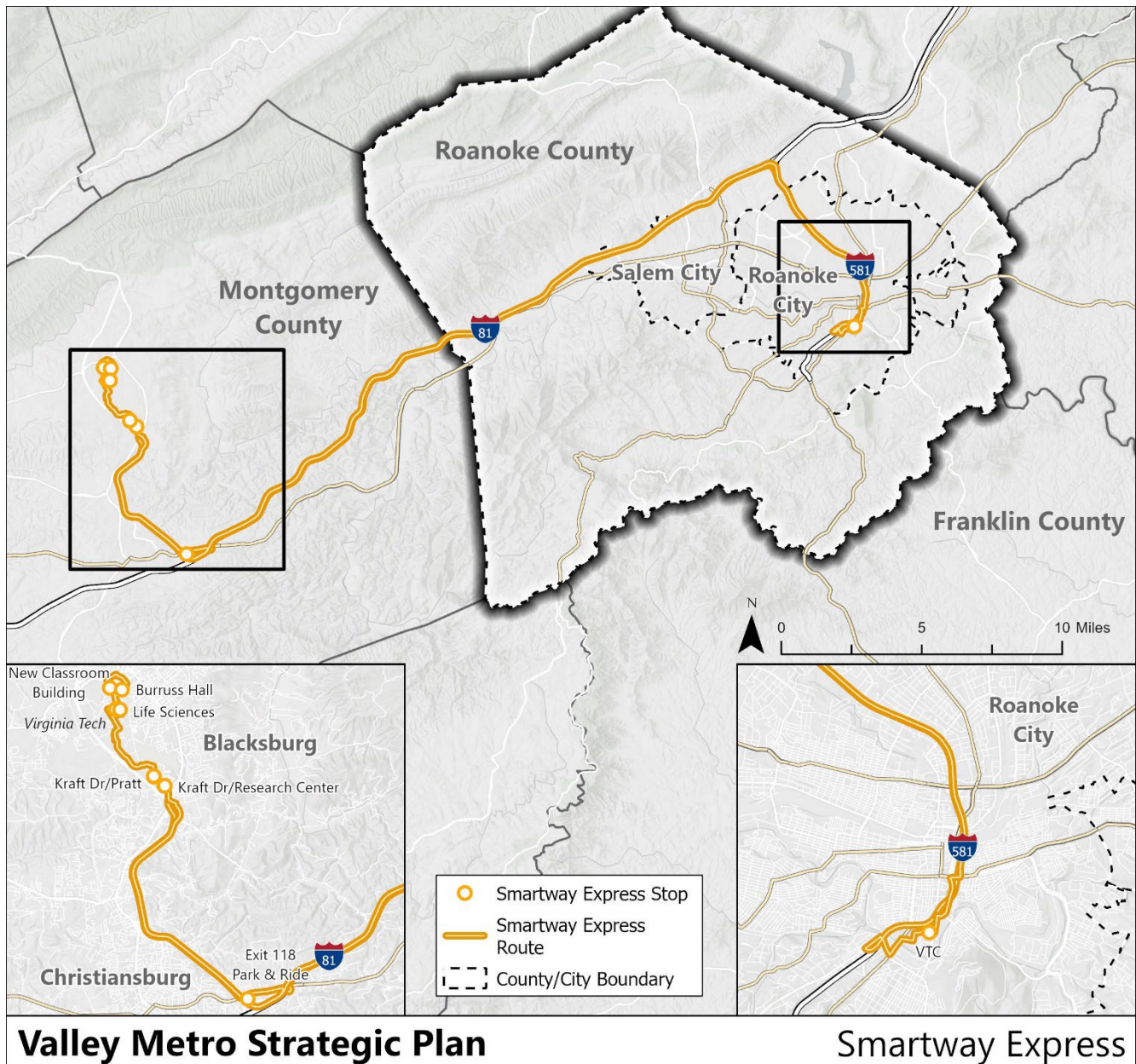
Figure A-2: Smart Way Bus Route



Smart Way Express

The Smart Way Express provides service between the Virginia Tech Carilion (VTC) Health and Technology Campus on Riverside Circle in Roanoke and Virginia Tech's main campus in Blacksburg. The Exit 118 Park and Ride in Christiansburg is also served. The Smart Way Express operates Monday through Friday, between the hours of 6:20 a.m. and 10:00 p.m. There are 10 trips from Roanoke to Virginia Tech and 11 trips from Virginia Tech to Roanoke. The route map is provided in Figure A-3.

Figure A-3: Smart Way Express Route



ADA Complementary Paratransit Service

ADA complementary paratransit service is provided by RADAR under contract to Valley Metro. The service operates as Specialized Transit – Arranged Rides (STAR) - and is available in the Cities of Roanoke and Salem and the Town of Vinton, within $\frac{3}{4}$ mile of a Valley Metro fixed route. To use the service, riders must first complete an eligibility application, which includes verification of a disability by a professional who is familiar with the applicant's disability. The application process is managed by Valley Metro.

Once approved for ADA paratransit service, riders call STAR directly to arrange their trips. Service is provided during the same days and hours as Valley Metro's fixed route services, which are Monday through Saturday, 5:45 a.m. until 8:45 p.m.

MetroFLX

MetroFLX is a new demand-response service that serves the cities of Roanoke, Salem, and the town of Vinton. Service is provided Monday through Saturday from 8:45 p.m. to 12:45 a.m., and on Sundays from 9:00 a.m. to 6:00 p.m. The purpose of the service is to provide mobility options for people after the fixed routes have stopped operating for the evening and on Sundays when there is no fixed route service. The service was initiated at the end of January 2024.

While the service is branded as microtransit, riders currently need to call to schedule trips for the next day. Trips are to be scheduled by 5:00 p.m. the day before the trip, though same day rides will be accommodated on a space available basis. MetroFLX is operated by RADAR under contract to Valley Metro and is considered to be a pilot program. If the program is successful, additional infrastructure, such as application-based real-time scheduling will be considered.

Infrastructure

Valley Metro has been actively working to provide additional passenger shelters and accessible pathways since the prior TDP. Twelve shelters have been added since 2018, for a total of 30 Valley Metro shelters. There are an additional 33 sheltered stop locations, which include a mix of shelters provided by other entities, canopies, and overhangs from businesses or roadways. The list of Valley Metro provided shelters is shown in Table A-1. Two additional shelters are in the development stage and are planned for Jamison Eastbound at 14th Street and Jamison Westbound at 6th Street.

Valley Metro works with its local municipal partners to help identify pedestrian accessibility issues that may affect bus stop locations.

Table A-1: Valley Metro Shelter Locations

ID	Stop Name	Boarding Tier	Shelter Notes
1	Campbell WB at Norfolk	Very High	Small
517	Colonial NB at VWCC	Very Low	Large
535	Colonial SB at Towers Shopping Center	Very High	Small
540	Colonial SB at VWCC	Medium	Large
783	E Main EB at Wortham	Very High	Large
846	Goodwill on Melrose (Parking Lot)	Very High	Small
434	Hardy EB at Kroger	High	Large
164	Liberty SB at Dupree	Very High	Large
105	Maiden EB at Bluemont	Very High	Small
118	McDowell WB at 6th	High	Small
858	Melrose EB at 15th	Very High	Small
804	Melrose EB at 23rd	Very High	Large
796	Melrose EB at Fentress	Very High	Small
717	Melrose WB at 23rd	Very High	Large
405	Montrose WB at 13th	Medium	Small
80	Patterson EB at 13th	Medium	Small
68	Patterson EB at 7th	Very Low	Small
441	Pollard SB at Municipal Building	Very High	Small
562	Roanoke Memorial Hospital	Very High	Large
640	Roanoke WB at Disabled American Veterans	Medium	Small
641	Roanoke WB at Hemlock		Small
656	Salem Turnpike EB at Delta	Very High	Large
75	Salem WB at 16th	Low	Large
638	Shenandoah WB at Peters Creek	High	Large
6	Third Street Station	Very High	
579	Towers Shopping Center	Very High	Small
145	Valley View Mall	Very High	Small
417	Virginia EB at PFG	Medium	Small
304	Williamson SB at Compton	Very High	Large
210	Wise WB at Indian Village	Very High	Small

Fare Structures, Payments, and Purchasing

Fare Structures

Valley Metro's base cash fare is \$1.75. While drivers do not carry cash, they do use transit change cards that are issued to riders who do not have exact change and pay more than the designated fare. Valley Metro's fares were last raised in 2017, and the STAR unlimited ride pass was raised in 2019.

The discounted fare for Medicare card holders, persons aged 65 or older, and/or persons with disabilities is \$0.85, and a Valley Metro Photo ID is required to access the discount. Riders need to apply at Valley Metro's Customer Service Center to obtain the ID card, the cost of which is \$5.00 for the original and \$10.00 for a replacement.

Free transfers are offered for passenger trips that require using more than one bus to complete. Transfers expire 30 minutes after the bus reaches the route terminus.

Daily, weekly, and monthly discount passes are available and can be purchased at the Customer Service Center at the Third Street Station. Valley Metro's full fare structure is detailed in Table A-2.

Table A-2: Valley Metro Fare Structure

Fare Category	Adults	Seniors and Medicare Card Holders	Students
Fixed route one-way cash fare	\$1.75	\$0.85	\$0.85
Transfers	Free	Free	Free
Smart Way one-way cash fare	\$4.00	\$2.00	
STAR paratransit one-way cash fare	\$3.50	\$3.50	
Star Line Trolley	Free	Free	Free
STAR Monthly Pass (1)	\$112.00	\$112.00	
24-Hour Pass- Basic	\$3.50	\$1.70	
24-Hour Pass- Smart Way	\$10.00	\$5.00	
7-Day Pass- Basic	\$16.00	\$8.00	
15-Ride Pass - Basic	\$20.00	\$10.00	
15-Ride Pass - Basic/Smart Way	\$54.00	\$27.00	
31-Day Pass- Basic	\$56.00	\$28.00	
31-Day Pass- Basic/Smart Way	\$120.00	\$60.00	

(1) unlimited fixed route and paratransit rides for riders eligible for ADA paratransit

Fare Payment and Purchasing

Cash is the only fare payment possibility onboard the vehicles; however, checks and credit cards can be used to purchase fare media at the Third Street Station. Checks can be used to purchase weekly or monthly bus passes, provided the customer has a valid and current photo identification card. Debit and credit cards can be used for ticket purchases at Third Street Station, with a minimum purchase of \$5.00. A 3% convenience fee is charged for the use of a credit or debit card.

Transit Asset Management – Existing Fleet and Facilities

Transit Asset Management Plan

Under the Federal Transit Administration's (FTA) Transit Asset Management (TAM) program, Valley Metro is characterized as a Tier II transit provider, meaning that the agency operates 100 or fewer vehicles. As a Tier II agency, Valley Metro can develop its own TAM plan or participate in a group TAM plan. Valley Metro has chosen to participate in DRPT's group plan, which can be accessed via DRPT's online data portal.

Fleet

The Valley Metro fixed route fleet as of January 2024 is listed in Table A-3. As noted in Chapter One, Valley Metro has recently completed a major fleet replacement program. The current average fleet age for the fixed route fleet is 6.3 years. The fleet age for the fixed route fleet in 2018 was 9.4 years.

Table A- 3: Fixed Route Fleet

Year	Bus #	Make	Passenger Capacity	Location	Condition	Earliest Replacement Year	Age
2014	1401	Gillig	31/56	Admin Bldg	Good	2026	10
2014	1402	Gillig	31/56	Admin Bldg	Good	2026	10
2014	1403	Gillig	31/56	Admin Bldg	Good	2026	10
2014	1404	Gillig	31/56	Admin Bldg	Good	2026	10
2014	1405	Gillig	31/56	Admin Bldg	Good	2026	10
2014	1406	Gillig	31/56	Admin Bldg	Good	2026	10
2014	1407	Gillig	31/56	Admin Bldg	Good	2026	10
2014	1408	Gillig	31/56	Admin Bldg	Good	2026	10
2014	1409	Gillig	31/56	Admin Bldg	Good	2026	10
2018	1801	Gillig	31/56	Admin Bldg	Good	2030	6

Year	Bus #	Make	Passenger Capacity	Location	Condition	Earliest Replacement Year	Age
2018	1802	Gillig	31/56	Admin Bldg	Good	2030	6
2018	1803	Gillig	31/56	Admin Bldg	Good	2030	6
2018	1804	Gillig	31/56	Admin Bldg	Good	2030	6
2019	1901	Gillig	31/56	Admin Bldg	Good	2031	5
2019	1902	Gillig	31/56	Admin Bldg	Good	2031	5
2019	1903	Gillig	31/56	Admin Bldg	Good	2031	5
2019	1904	Gillig	31/56	Admin Bldg	Good	2031	5
2019	1905	Gillig	31/56	Admin Bldg	Good	2031	5
2019	1906	Gillig	31/56	Admin Bldg	Good	2031	5
2019	1907	Gillig	31/56	Admin Bldg	Good	2031	5
2019	1908	Gillig	31/56	Admin Bldg	Good	2031	5
2019	1909	Gillig	31/56	Admin Bldg	Good	2031	5
2019	1910	Gillig	31/56	Admin Bldg	Good	2031	5
2020	2001	Gillig	31/56	Admin Bldg	Good	2032	4
2020	2002	Gillig	31/56	Admin Bldg	Good	2032	4
2020	2003	Gillig	31/56	Admin Bldg	Good	2032	4
2020	2004	Gillig	31/56	Admin Bldg	Good	2032	4
2020	2005	Gillig	31/56	Admin Bldg	Good	2032	4
2020	2006	Gillig	31/56	Admin Bldg	Good	2032	4
2020	2007	Gillig	31/56	Admin Bldg	Good	2032	4
2020	2008	Gillig	31/56	Admin Bldg	Good	2032	4
2023	2301	Gillig	31/56	Admin Bldg	New	2025	1
2023	2302	Gillig	31/56	Admin Bldg	New	2025	1
2023	2303	Gillig	31/56	Admin Bldg	New	2025	1
2019	1921	Freightliner	26	Admin Bldg	Good	2029	5
2019	1922	Freightliner	26	Admin Bldg	Good	2029	5
2019	1923	Freightliner	26	Admin Bldg	Good	2029	5
2019	1924	Freightliner	26	Admin Bldg	Good	2029	5
2019	191	Freightliner	38	Admin Bldg	Good	2029	5
2019	192	Freightliner	38	Admin Bldg	Good	2029	5
2022	211	Freightliner	38	Admin Bldg	Good	2032	2
2010	0901	MCI	54	Admin Bldg	Good	2022	14
2010	0902	MCI	54	Admin Bldg	Good	2022	14
2010	0903	MCI	54	Admin Bldg	Good	2022	14
2010	0904	MCI	54	Admin Bldg	Good	2022	14
2023	2201	MCI	54	Admin Bldg	New	2035	1
2023	2202	MCI	54	Admin Bldg	New	2035	1
2023	2203	MCI	54	Admin Bldg	New	2035	1
2011	20	FORD	16	Admin Bldg	Good	2016	13
2012	19	CHEVY	12	Admin Bldg	Good	2017	12
2017	1701	MCI	54	Admin Bldg	Good	2029	7

In addition to the 51 fixed route vehicles, there are also ten vehicles owned by GRTC and used by RADAR to provide ADA complementary paratransit service. Valley Metro also has ten non-revenue service vehicles. These vehicles are shown in Tables A-4 and A-5.

Table A-4: Paratransit Vehicles Owned by Valley Metro and Used by RADAR

Year	Bus#	Make	Type	Location	Condition	Earliest Replacement Year	Age
2016	12	FORD	BOC	RADAR	Good	2021	8
2011	14	FORD	BOC	RADAR	Good	2016	13
2012	16	Chevrolet	BOC	RADAR	Good	2017	12
2016	21	FORD	BOC	RADAR	Good	2021	8
2016	22	FORD	BOC	RADAR	Good	2021	8
2020	23	FORD	BOC	RADAR	Good	2025	4
2019	24	FORD	BOC	RADAR	Good	2024	5
2019	25	FORD	BOC	RADAR	Good	2024	5
2019	26	FORD	BOC	RADAR	Good	2024	5
2019	27	FORD	BOC	RADAR	Good	2024	5

Table A-5: Service Vehicles

Year	Unit #	Make	Model	Location	Condition	Age
2022	UNIT 1	FORD	EXPLORER	Admin Bldg	Good	2
2011	UNIT 2	FORD	EXPLORER	Admin Bldg	Good	13
2017	UNIT 3	FORD	EXPLORER	Admin Bldg	Good	7
2017	UNIT 4	FORD	EXPLORER	Admin Bldg	Good	7
2022	UNIT 5	FORD	EXPLORER	Admin Bldg	Good	2
2022	UNIT 6	FORD	EXPLORER	Admin Bldg	Good	2
2013	UNIT 7	FORD	F-350	Admin Bldg	Good	11
2013	UNIT 8	FORD	F-350	Admin Bldg	Good	11
2008	UNIT 10	GMC	ACADIA	Admin Bldg	Good	16
2008	UNIT 11	FORD	F-250 TRUCK	Admin Bldg	Fair	16

Facilities

Operations Facility

Valley Metro is headquartered in the Roy Z. Meador Operations, Maintenance and Administrative Facility, located at 1108 Campbell Avenue, S.E. The two-level facility houses management offices and the transportation, administrative and maintenance departments. The 70,000 square foot facility features a shop and garage area on the second level, which is accessed by ramps on either side of the building. All bus repair, paint/bodywork and engine rebuilding is completed in this facility. The administrative, transportation, and maintenance offices are located on the second level, as are the dispatch center, conference rooms and employee lounge and recreation area. The first level of the building features a service area with automatic bus wash and indoor parking for the fleet.

Third Street Station

As highlighted in Chapter One, the Third Street Station is Valley Metro's primary hub for the fixed route services. The new facility opened in June 2023, replacing Campbell Court. The Third Street Station includes the following features:

- A primary building with a passenger waiting area, information booth, restrooms, a driver break room, and a conference room.
- A secondary building that houses Valley Metro's Customer Service Center.
- Open air designated transit vehicle platforms for the fixed routes, Smart Way, and Greyhound.
- Digital information screens.
- Push button and real-time information

According to the results of a passenger survey conducted in December 2023, the riders are highly satisfied with the new station.

Transit Security Program

Valley Metro's security program includes staffing and equipment/technology elements. Security for the Third Street Station is provided by armed security guards. Facilities and vehicles are equipped with surveillance cameras. In addition, the administrative facilities are locked, with staff access provided via proximity cards. Drivers have access to panic buttons that are linked to the fleet tracking software to alert dispatch.

Fares are secured on-board the vehicles via a locked vault that is pulled at the end of the service day and emptied into a master vault at Valley Metro. The fares are counted twice a week and transported by armored car and deposited directly into GRTC's account.

Intelligent Transportation Systems Programs

ITS programs in public transportation encompass a broad range of communication-based information and electronics technologies that serve to improve safety, efficiency, and service, through the use of real-time information. Since the 2018 TDP, Valley Metro has implemented a range of integrated ITS, including the following:

- The automation of driver processes using mobile data terminals
- Annunciators
- Automatic Vehicle Location (AVL) and real-time transit information through the VMGO application
- Information screens on board the buses and at the Third Street Station
- Automatic passenger counters (APCs)

Additional technologies used at Valley Metro include electronic fareboxes, general transit feed specification (GTFS, used for Google Transit), and fleet software.

Data Collection and Ridership/Reporting Method

Ridership data is collected from the farebox. Drivers classify riders by fare type on the farebox as they board. Fareboxes are manually probed at the maintenance and administrative facility daily to transfer data to a vendor database. Ridership reports are generated from the database monthly and processed/formatted in a spreadsheet.

Valley Metro also uses APCs to verify the data collected via the farebox. APCs are also now being used for route level data and sampling.

Revenue miles are collected from hubometers and entered into a Zonar fleet management system during pre/post –trip driver inspection. Data concerning revenue hours are collected from a scheduling spreadsheet and adjustments are made at the end of the month for service disruptions.

Coordination with Other Transportation Service Providers

Valley Metro's Third Street Station provides a multi-modal opportunity for riders, as Greyhound uses the station. In addition, select Smart Way trips directly serve the Amtrak station, which is located at 55 Norfolk Avenue, SW (about three blocks east of the Third Street Station). Valley Metro works closely with the RADAR, with RADAR operating ADA paratransit and MetroFLX for Valley Metro under contractual arrangements. In addition to the contractual work for Valley Metro, RADAR also provides transit services for several rural communities in the region. Valley Metro's Smart Way services also provide connectivity to Blacksburg Transit and Radford Transit in the New River Valley.

Appendix B

Origin & Destination Report

Background and Purpose

In December of 2023, Valley Metro conducted an origin and destination (O-D) survey as part of a larger strategic plan. The interviewers administered intercept surveys, conducted via tablet computers, asking riders questions specific to their current trip, as well as additional sociodemographic questions. In total, 884 surveys were completed during the fielding period of December 1st to December 10th.

Origin and destination surveys can provide detailed information about travel patterns within the Valley Metro system, including origin to destination trip data, boarding and alighting stops, modes of access and egress, number of transfers and transfer points, and fare payment method. Additionally, findings from O-D surveys can help Valley Metro make decisions and service changes while ensuring rider populations protected under Title VI of the Civil Rights Act of 1964 are not negatively impacted.

This document summarizes the findings of this survey. Specifically, it will review:

- **Summary of Findings**, including the entirety of the survey in total and broken out by mode (weekday and Saturday service), and key questions by demographic categories;
- **Methodology**, including the timeline and process from launch to reporting, covering survey and sampling plan development, training procedures, data collection, and weighting and data processing;
- **Appendix 1**, a copy of the final intercept questionnaire;
- **Appendix 2**, a copy of the sampling plan;
- **Appendix 3**, a detailed outline of the weighting plan with the final weighting tables.
- **Appendix 4**, maps displaying common origin and destination locations by daypart.

Summary of Findings

This section summarizes the results of the O&D survey conducted from December 1st to December 10th of 2023. All statistics, unless otherwise stated, represent responses weighted up to average ridership during the fielding period. The majority of these findings will be represented by day of week, separating results by total, weekday, and weekend.

Due to rounding, all columns may not add up to exactly 100 percent. Please note that in cases of a small base (n<40), statistical significance is not shown.

Trip Characteristics

Customers were asked about their origins and destinations on the trip where they were intercepted. Roughly half of all trips began at home (48%). A similar portion of trips began at home across both weekday and Saturday travel (48% compared to 47%). Doctor, medical service, or hospital (non-work purposes) was significantly more common among weekday riders when compared to Saturday riders (5% compared to 1%). Shopping/Restaurant was significantly more common among Saturday riders with nearly two in ten (19%) reporting this origin on Saturdays compared to one in ten (10%) on weekdays.

Table B-1: Origin Type

Where are you coming from now? (Q1)	Total (A) (n=883)	Weekday (B) (n=653)	Saturday (C) (n=230)
Home	48%	48%	47%
Work	22%	22%	20%
Shopping/Restaurant	11%	10%	19% ^B
Recreation/Social	7%	7%	7%
Doctor, Medical service, or Hospital (non-work only)	5%	5% ^C	1%
School/College (Student Only)	3%	3%	2%
Religious/Community	2%	2%	<1%
Errands/Personal business	1%	1%	<1%
Hotel/Motel	<1%	<1%	1%
Airport (passengers only)	<1%	<1%	<1%
Sporting or Special event	<1%	<1%	-
Other	1%	1%	1%

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Home was also the most common destination, with an equal proportion of weekday and Saturday riders (39%) reporting home as their destination. Again, shopping/restaurant was a significantly more common destination among Saturday riders compared to weekday riders (27% versus 14%), with doctor, medical service, or hospital, religious/community, and errands/personal business all being more common destinations among weekday riders.

Table B-2: Destination Type

What type of place is your final destination on this one-way trip? (Q8)	Total (A) (n=877)	Weekday (B) (n=650)	Saturday (C) (n=227)
Home	39%	39%	39%
Work	22%	23%	17%
Shopping/Restaurant	16%	14%	27% ^B
Recreation/Social	9%	8%	13%
Doctor, Medical service, or Hospital (non-work only)	5%	5% ^C	1%
School/College (Student Only)	3%	3%	<1%
Religious/Community	3%	3% ^C	1%
Errands/Personal business	2%	3% ^C	<1%
Airport (passengers only)	<1%	<1%	<1%
Hotel/Motel	<1%	<1%	-
Sporting or Special event	<1%	<1%	<1%
Other	<1%	<1%	1%

Base=Those answering

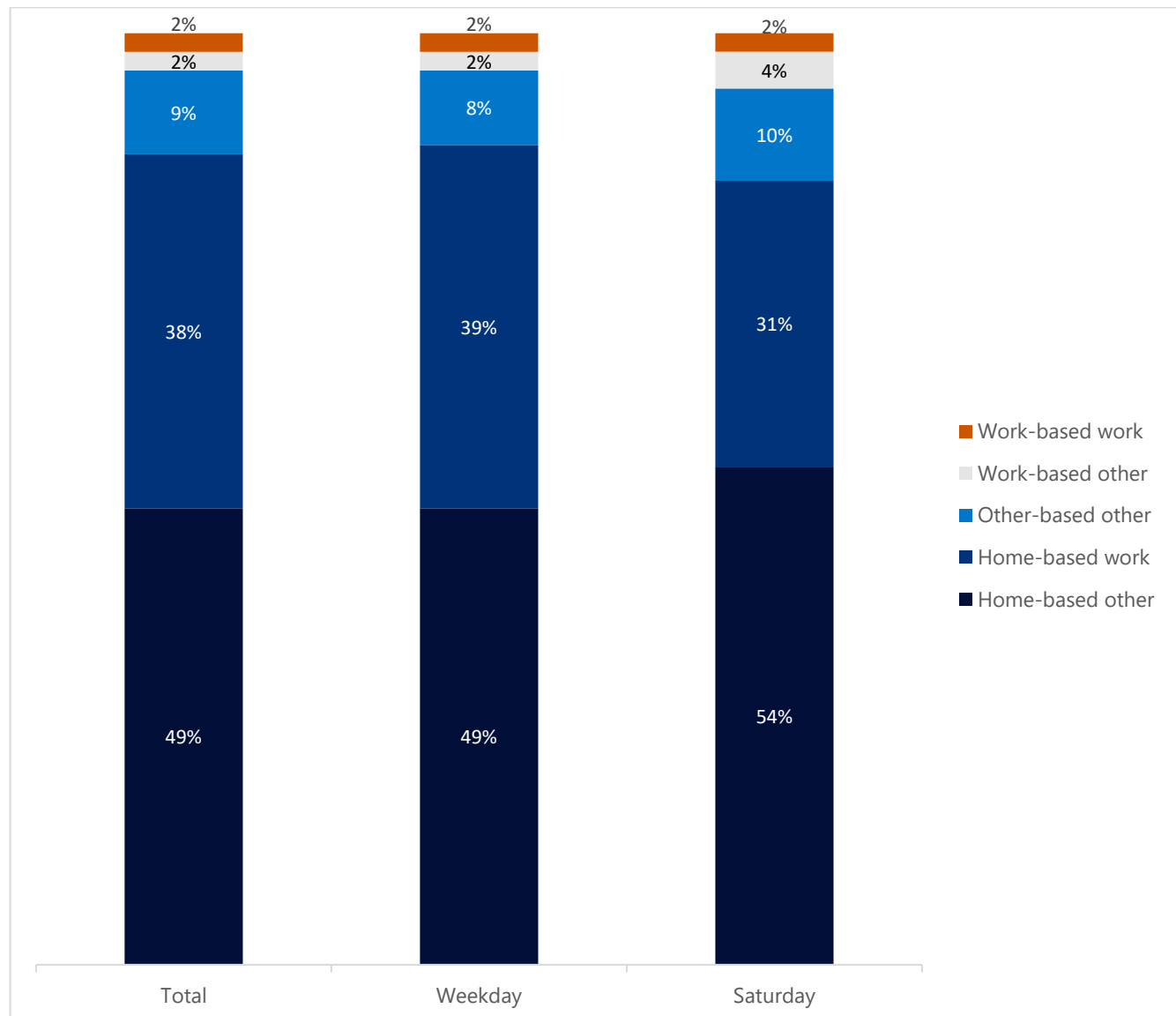
Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Trips were categorized by their combined origin and destination into the following categories:

- Home-Based Work – trips that have an O-D combination of home and work;
- Home-Based Other – trips that have an O-D combination of home and another location;
- Work-Based Work – trips that have an O-D combination of work and another work or job related location;
- Work-Based Other – Trips that have an O-D combination of work and another location; and
- Other-Based Other – Trips that have an O-D combination of two non-work, non-home locations.

Approximately half of all trips were home-based other (49%), with home-based work making up the majority of remaining trips (38%). Those without access to a car were significantly more likely to make home-based other trips compared to those with cars (52% compared to 40%). Older riders (65+) were also more likely to make home-based other trips (76% compared to 46% of those 35-64 and 48% of those under 35). This aligns with younger riders making many more home-based work trips (37% of riders under 35 and 42% of riders 35-64 compared to 20% of riders over 65).

Figure B-1: Trip Type



Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Riders were asked how often they use the Valley Metro system as well as each individual service provided by Valley Metro. Riders used the system nearly five days a week (4.5) on average. Those surveyed on weekend trips were more likely to ride one to four days a week (41% compared to 33% of weekday trips). Weekday riders were significantly more likely to report using the system five days per week (29% compared to 16% of weekend riders). This could be due to weekday riders being more likely to use the system for their daily commute to school or work. This is also supported by riders making home-based work trips being significantly more likely to report using the system at least five days per week (76% compared to 48% of home-based other and 52% of other-based other trips). Low-income riders averaged significantly more days of use compared to non-low-income riders (4.6 days compared to 4.3).

Table B-3: Frequency of Use

How frequently do you ride Valley Metro (Q12)	Total (A) (n=869)	Weekday (B) (n=646)	Saturday (C) (n=223)
Average (Days per week)	4.5	4.5	4.3
Fixed route service (Q20A)	(n=865)	(n=640)	(n=225)
Net: Used	95%	95%	97%
Average	4.3	4.3	4.2
Smart Way (Q20B)			
Net: Used	20%	20%	18%
Average	0.2	0.2	0.2
Paratransit (S.T.A.R.) (Q20C)			
Net: Used	3%	3%	8% ^B
Average	0.1	<0.1	0.1
Trolley (Q20D)			
Net: Used	38%	39%	35%
Average	0.5	0.5	0.3

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Q20: How often do you ride the following services?

On how riders would have made their trips if Valley Metro were not available, rideshare (such as Uber or Lyft) was the most common alternate trip mode, with one in three riders reporting this as the way that they would make this trip if Valley Metro not available (33%). **Nearly one in four riders (23%) reported that they would not make this trip were Valley Metro not available.** Weekday riders were significantly more likely to report that they would drive if Valley Metro was not available (4% compared to only 1% of weekend riders). Weekend riders were significantly more likely to report that they would not have made this trip were Valley Metro not available.

Table B-4: Alternate Trip Mode

If Valley Metro had not been available today, how would you have made this trip? (Q11)	Total (A) (n=859)	Weekday (B) (n=637)	Saturday (C) (n=222)
Would not make this trip	23%	22%	32%^B
Rideshare service such as Uber, Lyft, or taxi	33%	31%	42% ^B
Walk	20%	21% ^C	11%
Ride with someone to your final destination	19%	19%	15%
Drive a vehicle directly to your final destination	4%	4% ^C	1%
Bike or scooter to your final destination	2%	2%	<1%
Some other way	<1%	<1%	-

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Access and Egress to Transit

Riders were overwhelmingly likely to report walking as their mode of access to Valley Metro, with nearly nine in ten (88%) reporting walking only. Of those who walked, the average walking distance to Access transit was 0.3 miles.

Table B-5: Mode of Access

How did you get from your origin to the first bus on this one-way trip? (Q3)	Total (A) (n=884)	Weekday (B) (n=654)	Saturday (C) (n=230)
Walked only	88%	88%	90%
Walking distance (miles)	0.3	0.3 ^C	0.2
Amtrak or intercity bus	5%	5% ^C	2%
Rode with someone	3%	3%	2%
Drove a car	2%	2% ^C	<1%
Personal bicycle or scooter	1%	1%	<1%
Bike/Scooter distance (miles)	1.3*	1.3*	5.0*
Mobility aid (cane, walker, wheelchair, etc.)	1%	<1%	3% ^B
Mobility aid distance (miles)	0.3*	0.3*	0.3*
Rideshare service such as Uber, Lyft or taxi	<1%	<1%	1%
Bikeshare or scootershare	<1%	<1%	-
Bike/Scootershare distance (miles)	3.0*	3.0*	-
Other	1%	1%	2%

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

*Caution, extremely small base

Distances reported as average distance in miles

Distance bases Walk=729, 542, 187; Bike/Scooter=6, 5, 1; Mobility Aid=4, 1, 3; Bikeshare/Scootershare=1, 1, 0

Walking was also the most common mode of egress as well, with over nine in ten (92%) riders reporting walking to their final destination after getting off the bus. Similarly to modes of access, those who walked after getting off the bus specified an average of 0.2 miles.

Table B-6: Mode of Egress

When you get off your final bus, how will you get to your destination? (Q10)	Total (A) (n=876)	Weekday (B) (n=650)	Saturday © (n=226)
Walk only	92%	91%	96% ^B
Walking distance (miles)	0.2	0.2	0.2
Amtrak or intercity bus	3%	3% ^C	<1%
Ride with someone	2%	2%	1%
Personal bicycle or scooter	1%	1%	1%
Bike/Scooter distance (miles)	2.0*	1.9*	5.0*
Drive a car	1%	1%	<1%
Mobility aid (cane, walker, wheelchair, etc.)	1%	1%	2%
Mobility aid distance (miles) ¹	0.3*	0.3*	0.3*
Rideshare service such as Uber, Lyft or taxi	1%	1%	<1%
Other	<1%	<1%	1%

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

*Caution, extremely small base

Distance bases Walk=756, 559, 197; Bike/Scooter=7, 6, 1; Mobility Aid=5, 3, 2

¹The average distance traveled by mobility aid (0.3 miles) being slightly longer than the average distance walking (0.2 miles) may seem counterintuitive, this may be due to the small number of riders responding to the survey who use mobility aids.

Transfers

Riders were split, with approximately half (47%) reporting riding only one bus, and 52% reporting making one transfer. Note that the below table is reported as buses used, rather than transfers made. This means that corresponding inbound and outbound routes (e.g. routes 11 and 16) are counted as one route with no transfers when they are paired together in a trip chain.

Table B-7: Number of Routes taken

How many buses will you take to get to your final destination? (Q4)	Total (A) (n=882)	Weekday (B) (n=654)	Saturday (C) (n=228)
1	47%	47%	40%
2 (one transfer)	52%	51%	60% ^B
Net: 3 or more (2+ transfers)	2%	2% ^C	-

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Corresponding inbound and outbound routes (i.e., 11 and 16) counted as one route.

Transit Reliance

Transit reliance is the level of reliance on public transportation that an individual has in order to travel. The questions used to determine transit reliance for this study were:

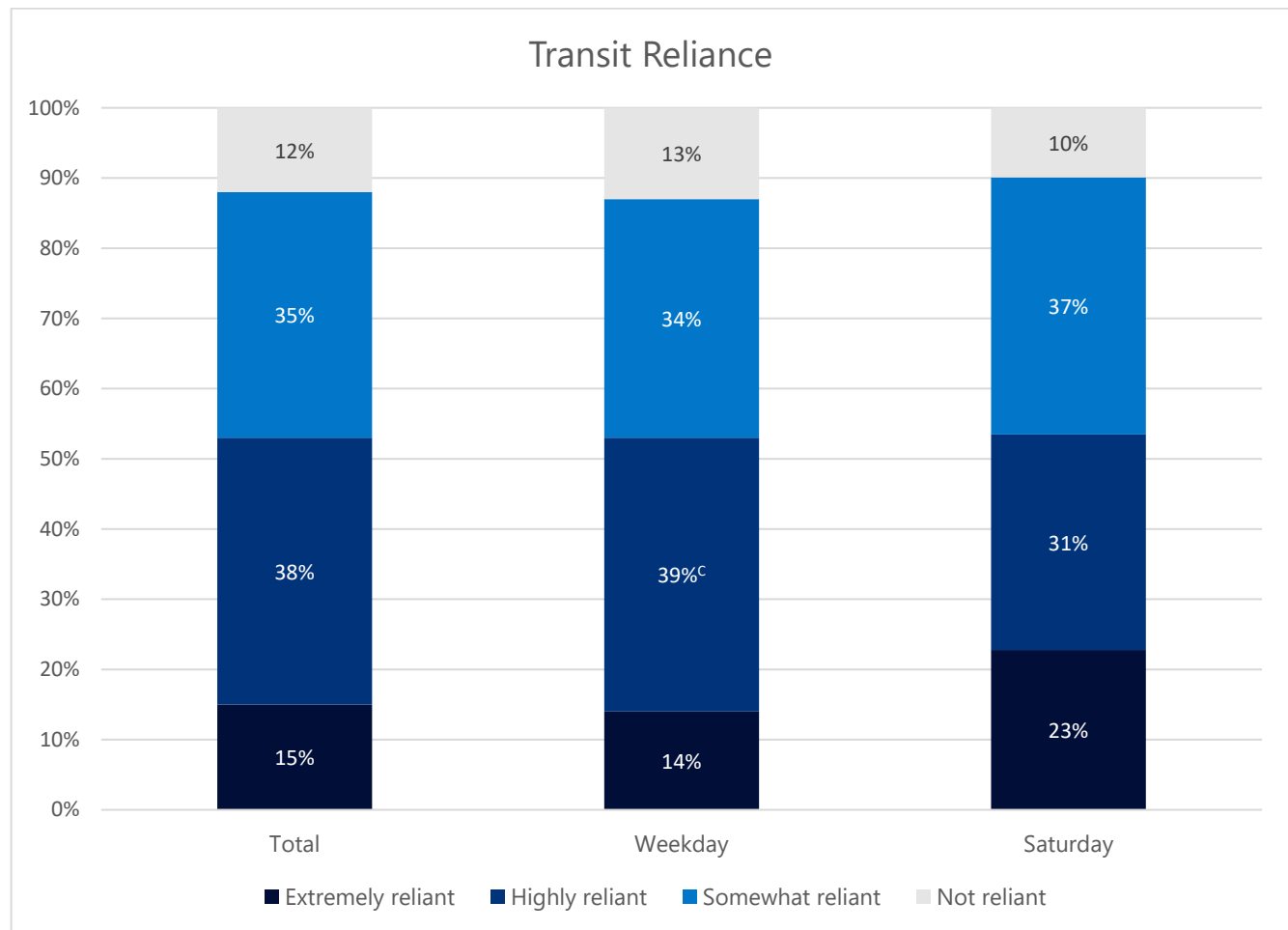
- Q11, "If Valley Metro had not been available today, how would you have made this trip?";
- Q21, "Do you have access to a car or motorcycle you could have used to make this trip?"; and
- Q22, "Do you have a valid driver's license?"

Depending on the responses to these questions, riders were categorized as being either Extremely Reliant, Highly Reliant, Moderately Reliant, or Not Reliant on public transit. These were defined as:

- **Extremely Reliant** – Would not have made this trip if Valley Metro was not available;
- **Highly Reliant** – Would have made the trip another way if Valley Metro was not available, but do not have a valid driver's license;
- **Moderately Reliant** – Do have a valid driver's license, but do not have access to a working vehicle; and
- **Not Reliant** – Would have driven themselves were Valley Metro not available.

Weekday riders were significantly more likely to be classified as “Highly Reliant,” with nearly four in ten (39%) receiving this distinction, compared to around three in ten Saturday riders (31%). Older riders (65+) were the most likely to be considered “Extremely Reliant” (27% compared to 12% and 11% of trips made by those under 35 and those age 35 to 64.)

Figure B-2: Transit Reliance



Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Levels of transit reliance are defined as follows:

Extremely: Q11(96) and Q21(02) and Q22(02)

Highly: Q11(02-96) and Q22(02) and Q21(02)

Moderately: Q11(02-96) and [Q21(01) or Q22(01)]

Not: Q21(01) and Q22(01)] or Q11(01)

Trip Demographics

Fewer than two in ten (16%) of riders report having access to a vehicle. A larger portion (42%) report having a valid driver's license, though this is still the minority.

Table B-8: Vehicle Access/Driver's License

Do you have access to a car or motorcycle you could have used to make this trip? (Q21)	Total (A) (n=839)	Weekday (B) (n=625)	Saturday (C) (n=214)
Yes	16%	17%	14%
No	84%	83%	86%
Do you have a valid driver's license? (Q22)	(n=837)	(n=625)	(n=212)
Yes	42%	42%	42%
No	58%	58%	58%

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

The majority of riders identify as either white (48%) or black (45%) with a small portion reporting other races.

Table B-9: Race/Ethnicity

What is your race or ethnicity? (Q31)	Total (A) (n=821)	Weekday (B) (n=612)	Saturday (C) (n=209)
Caucasian or white	48%	49%	44%
African American or Black	45%	45%	47%
Hispanic or Latino	3%	3%	5%
Asian	3%	2%	4%
Middle Eastern/North African	1%	1%	1%
American Indian/Alaska Native	1%	1%	-
Native Hawaiian or other Pacific Islander	<1%	<1%	-
Other	<1%	-	1%

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Top Mentions

The median income of riders is \$19,400, with nearly four in ten (38%) reporting having an income of less than \$15,000 dollars. Weekend riders had considerably lower incomes, with a significantly greater portion reporting the lowest income category, and a mean nearly \$6,000 lower than weekday riders.

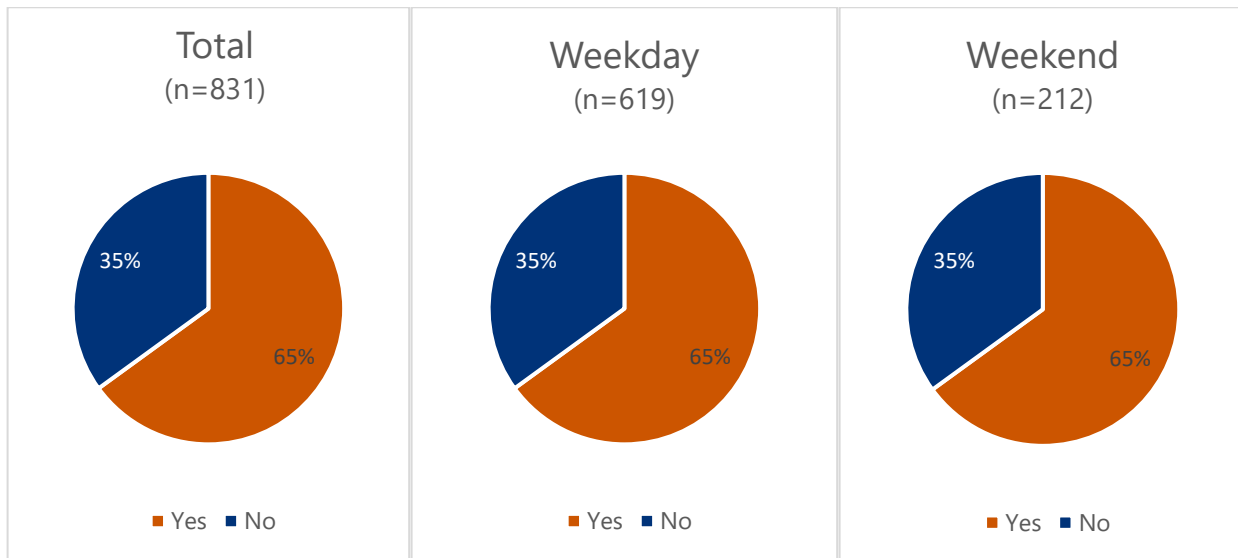
Table B-10: Income

Which of the following best describes your total annual household income in 2022 before taxes? (Q35)	Total (A) (n=582)	Weekday (B) (n=439)	Saturday (C) (n=143)
Less than \$15,000	38%	36%	50% ^B
\$15,000 to less than \$20,000	14%	14%	12%
\$20,000 to less than \$25,000	12%	12%	10%
\$25,000 to less than \$30,000	11%	11%	9%
\$30,000 to less than \$35,000	7%	7%	5%
\$35,000 to less than \$40,000	4%	4%	8%
\$40,000 to less than \$45,000	3%	3%	2%
\$45,000 to less than \$50,000	4%	4% ^C	<1%
\$50,000 to less than \$75,000	3%	3%	2%
\$75,000 to less than \$100,000	2%	2%	1%
\$100,000 to less than \$150,000	1%	1%	1%
\$150,000 to less than \$200,000	1%	1%	-
\$200,000 or more	1%	1%	<1%
Average	\$26.8K	\$27.5K	\$20.9K
Median	\$19.4K	\$19.8K	\$15K

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Riders were identified as low-income based on their area of residence, household size, and income. ZIP codes with an above average population of low-income residents, relative to the Valley Metro service area, were designated as low income. This included ZIP codes where low-income residents make up more than 14.1% of the total population. Among Weekday and weekend riders, approximately two in three (65%) are defined as low-income.

Figure B-3: Low Income

Base=Those answering

The average household size across all trips surveyed was 2.3 people. Smaller households were more common among older riders, with nearly seven in ten (69%) of riders over 65 reporting living alone, compared to less than half (46% of those 35-64 and 25% of those under 35).

Table B-11: Household Size

Including yourself, how many people live in your household? (Q25)	Total (A) (n=813)	Weekday (B) (n=611)	Saturday (C) (n=202)
1	43%	42%	47%
2	28%	27%	29%
3	11%	11%	7%
4	9%	9%	8%
5	4%	4%	4%
6	3%	3%	1%
7+	3%	3%	4%
Average	2.3	2.3	2.2
Median	2.0	2.0	2.0

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

More than one in four (28%) of riders reported having a disability. Among these, the most commonly used mobility devices were support canes and walkers (3% each).

Table B-12: Disability/Mobility Devices

Do you consider yourself to have a disability? (Q36)	Total (A) (n=824)	Weekday (B) (n=614)	Saturday (C) (n=210)
Yes	28%	27%	34%
No	72%	73%	66%
Do you use mobility devices when riding? (Q37) ¹	(n=813)	(n=609)	(n=204)
Support cane	3%	4%	1%
Walker	3%	3%	3%

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

¹Top Mentions

The overwhelming majority of riders speak English very well. Even among those who report primarily speaking a language other than English at home, over eight in ten (81%) report speaking English “very well.”

Table B-13: English Proficiency/Primary Language

How well do you speak English? (Q28)	Total (A) (n=829)	Weekday (B) (n=618)	Saturday (C) (n=211)
Very well	99%	99%	98%
Well	1%	1%	1%
Not well	<1%	-	<1%
Not at all	<1%	<1%	-
Do you predominantly speak a language other than English? (Q26)	(n=826)	(n=616)	(n=210)
English	93%	93%	93%
Spanish (including all dialects)	3%	3%	2%

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Top mentions

Fewer than one in ten riders (6%) are armed forces, military, or veterans. The proportion is significantly higher among older riders (65+), with around one in six (16%) reporting veteran status.

Table B-14: Military Status

Are you in the armed forces, military, or a veteran? (Q38)	Total (A) (n=822)	Weekday (B) (n=612)	Saturday (C) (n=210)
No	94%	94%	96%
Net: Yes	6%	6%	4%
Yes; Retired/Veteran	6%	6%	4%
Yes; Active military	<1%	<1%	-

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Riders tended to skew slightly male, with over half (53%) identifying as male. This came from older riders being more heavily male (54% of riders 35-64, and 65% of riders 65+). Younger riders were significantly more likely to identify as female, with over half (53%) of riders under 35 identifying as female.

Table B-15: Gender

What is your gender identity? (Q32)	Total (A) (n=826)	Weekday (B) (n=614)	Saturday (C) (n=212)
Female	46%	46%	49%
Male	53%	53%	50%
Non-binary	1%	1%	1%

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Nearly nine in ten (89%) riders report owning a smartphone. Nearly all (98%) of riders under 35 report owning a smartphone, and 88% of those 35 to 64, compared to less than eight in ten (79%) riders over 65. Riders between 35 and 64 were in the middle with nearly nine in ten owning smartphones (88%).

Table B-16: Smartphone Ownership

Do you own a smartphone? (Q23)	Total (A) (n=838)	Weekday (B) (n=626)	Saturday (C) (n=212)
Yes	89%	89%	89%
No	11%	11%	11%

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Approximately one in ten riders (11%) is a student. Of these students, over nine in ten (92%) are college or university students.

Table B-17: Student Status

Are you currently a student? (Q29) ¹	Total (A) (n=835)	Weekday (B) (n=622)	Saturday (C) (n=213)
Yes	11%	12%	9%
No	89%	88%	91%
If so, what is your student status? (Q29A) ²	(n=51)	(n=38)*	(n=13)*
Student in college/university/community college	92%	93%	91%
Student in vocational/trade/school/other	7%	7% ^C	-
Student in K-12 th grade	1%	-	9%

¹Base=Those answering

²Base=Students

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

*Caution, small base

The average age of Valley Metro riders is 45.6 years old, with 45-54 also being the most commonly reported age group (22%). Male riders had a significantly higher average age with an average of 47.8 years old compared to female riders' 43.8 years old.

Table B-18: Age

What is your age? (Q33)	Total (A) (n=822)	Weekday (B) (n=613)	Saturday (C) (n=209)
16-17 ¹	1%	1%	1%
18-24	11%	11%	8%
25-34	16%	16%	14%
35-44	18%	19%	16%
45-54	22%	22%	24%
55-64	20%	19%	26%
65-74	10%	10%	9%
75+	1%	1%	1%
Average	45.6	45.4	47.1
Median	46.7	46.4	48.9

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

¹Note that riders under 18 are often underrepresented in onboard surveys as there are limitations with surveying children.

Fares

Customers were asked what method of payment they use in order to access Valley Metro. The majority of riders (53%) reported paying cash. Saturday riders were significantly more likely to use 31-day passes compared to weekday riders, with nearly three in ten (28%) Saturday riders compared to under two in ten (19%) weekday riders reporting this payment method.

Table B-19: Fare Payment Method

What fare payment method was used for this one-way trip? (Q13)	Total (A) (n=867)	Weekday (B) (n=643)	Saturday (C) (n=224)
Cash	53%	52%	56%
31-Day pass	20%	19%	28% ^B
7-Day pass	10%	9%	11%
No fare (fare free service)	6%	6% ^C	1%
Net: Student/Carillion ID	6%	7%	3%
Student ID (including Virginia Tech ID)	4%	4%	3%
Student ID (including Roanoke Public School ID)	3% ^C	3%	-
Virginia Tech Carillion ID	<1%	<1%	-
15 Trip pass	3%	3% ^C	1%
Faculty ID	1%	1%	-
Senior Discount (not specific)	<1%	1%	-
24-Hour pass	<1%	<1%	-
Other	1%	1%	1%

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Nearly three in four riders (73%) reported paying a full fare. Those making work-based trips were also significantly more likely report having paid a full fare (84% to 91% of work-based trips compared to 49% to 63% of non-work-based trips).

Table B-20: Fare Type

What type of fare was this? (Q14)	Total (A) (n=745)	Weekday (B) (n=529)	Saturday (C) (n=216)
Regular/Full fare	73%	73%	71%
Discounted fare	24%	24%	26%
Roanoke Public School student	<1%	<1%	-
Did not pay a fare	3%	3%	2%

Base=Those who paid a fare and not Smart Way and answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Two in three riders (67%) reported having ever purchased a pass. Younger riders (under 35) were significantly more likely to report never having purchased a pass (47% compared to 29% of those 35 to 64 and 28% of those 65 and up). Those who use Valley Metro for work were more likely to report having purchased a pass, with at least seven in ten doing so (71% of home-based work and 79% work-based work compared to 52% other-based-other).

Table B-21: Pass Purchase

Have you ever purchased a Valley Metro Pass? (Q15)	Total (A) (n=865)	Weekday (B) (n=642)	Saturday (C) (n=223)
Yes	67%	66%	68%
No	33%	34%	32%

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Satisfaction

Riders were asked a series of questions about their use of and satisfaction with Valley Metro services. First, they were asked what element of Valley Metro service they would most like to see improve in the future. They were given an option of longer hours of service for existing routes, more frequent service for existing routes, or service to additional geographic areas. The majority of riders (63%) reported preferring longer hours of service for existing routes. Those with access to cars were significantly more likely to prefer more frequent service to those without (44% compared to 28%), while those without access to cars were significantly more likely to prefer longer hours of service (66% compared to 50%).

Table B-22: Preferred Service Improvements

If Valley Metro were to improve service, please indicate which improvement would help you most. (Q18)	Total (A) (n=866)	Weekday (B) (n=643)	Saturday (C) (n=223)
Longer hours of service for existing Valley Metro routes	63%	64% ^C	53%
More frequent service for existing Valley Metro routes	31%	30%	39% ^B
Net: Service to additional areas	7%	7%	8%

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Multiple Responses Accepted

Top ,mentions

The most common sources of information regarding Valley Metro service were screens onboard buses or at bus stations (39%), the Valley Metro website (36%), and the VMGO app (27%). Younger riders (under 35) were significantly more likely to make use of the VMGO app (38% compared to 25% of those 35 to 64 and 15% of those 65 and older), while older customers were significantly more likely to report reading screens on buses or at stations (58% of 65 and older riders and 40% of 35-64 riders compared to 26% of riders under 35).

Table B-23: Valley Metro News Source

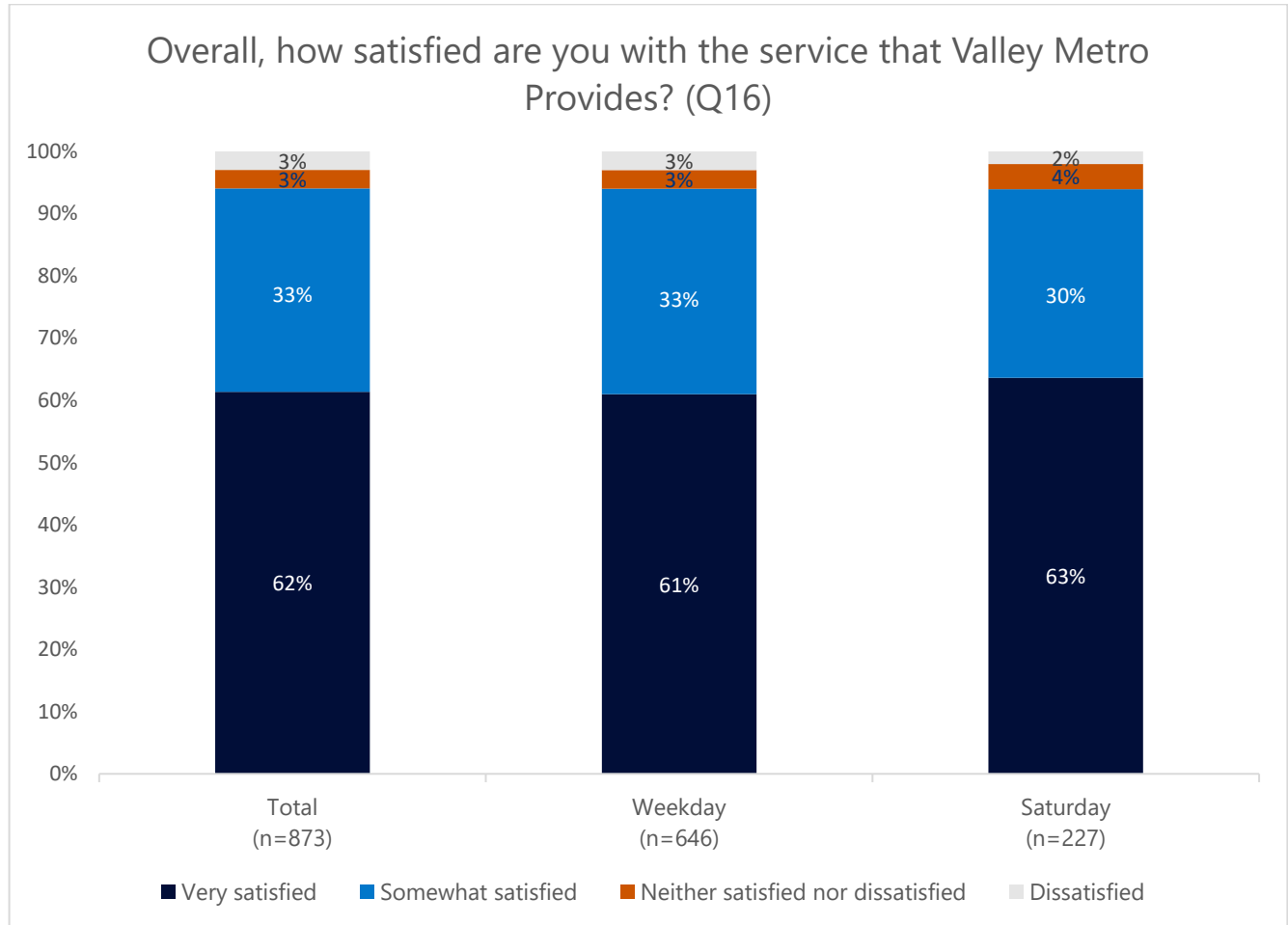
How do you get updates or news about Valley Metro? (Q19)	Total (A) (n=790)	Weekday (B) (n=592)	Saturday (C) (n=198)
Screens onboard buses or at bus stations	39%	39%	36%
Valley Metro website	36%	36%	35%
VMGO app	27%	28% ^C	18%
Social media	9%	10%	5%
Valley Metro phone line	7%	7%	9%
Television	5%	5%	5%
Word of mouth	3%	3% ^C	1%
Newspaper	2%	2%	4%
Google/Google Maps	1%	1%	1%
Just know/Ride regularly	1%	<1%	2%
Phone (not specific)	<1%	-	1%
Other	<1%	<1%	-

Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Over nine in ten riders reported being satisfied with the service that Valley Metro provides. Over six in ten (62%) reported being “very satisfied” with service. Those who made one transfer were significantly more likely to report being “very satisfied” than those who made none (67% compared to 56%). This may be due to the fact that those who made one transfer were also more likely to report using Valley Metro five or more days per week, so it may be a product of familiarity with the system.

Figure B-4: Overall Satisfaction

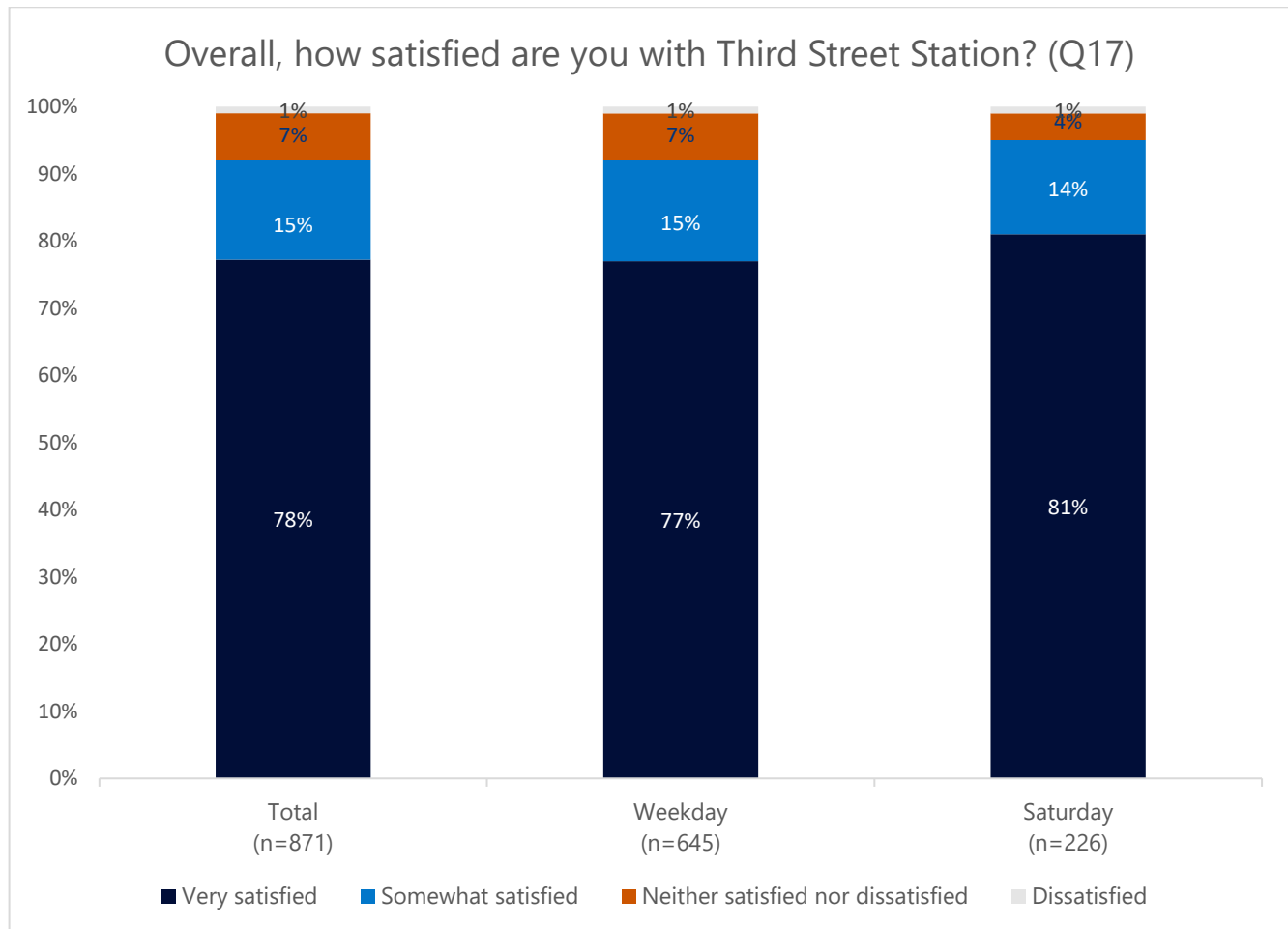


Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Levels of satisfaction with Third Street Station are high, with over nine in ten (92%) again reporting being satisfied. Those without access to a car were significantly more likely to report being satisfied with Third Street Station (94% compared to 85%).

Figure B-5: Third Street Station Satisfaction



Base=Those answering

Superscript letters (e.g., B, or C) indicate that the labeled percentage is significantly higher than the percentage in the corresponding segment (i.e., B for Weekday, C for Saturday.)

Methodology

The interviewer administered survey was developed by both Valley Metro staff and the research team. It contained 39 questions and took approximately ten minutes to complete. The survey was conducted in both English and Spanish and was conducted entirely through a tablet with assistance from the interviewer.

In order to capture short trips, where an interviewer would not have time to conduct the full survey, the survey was also converted to web and paper formats. The paper survey allowed customers to complete the survey after leaving the bus and was marked with pre-paid postage. Once the survey was completed, it could be dropped into any USPS mailbox for delivery to the research team. In total, 300 English paper surveys and 175 Spanish surveys were printed (475 printed surveys in total) for interviewer use to capture these short trips if it was not possible to complete a tablet survey. Additionally, the web version allowed customers to use a unique ID from the paper copy of the survey to complete the survey online via a QR code or shortlink, both printed on the paper survey. This unique ID allowed the research team to link paper and web surveys back to the trip on which they were distributed.

The survey covered the following key topics:

- Trip origin and destination,
- Mode of access and egress,
- Number of transfers and trip chain information,
- Fare payment information,
- Frequency of Valley Metro use,
- Transit reliance,
- Demographics and Title VI information.

Once the survey was completed, customers were invited to enter a drawing to win a Valley Metro Pass as a thank you for participating. This incentive was also advertised by interviewers to help improve response rates.

The survey was programmed to minimize invalid responses, such as invalid routes, out-of-range responses, or illogical responses. For example, route questions included a drop-down list of all possible routes, and stop questions included a drop-down list of all possible stops limited by the route taken, reducing invalid responses.

For questions where an address was needed, the tablet-based survey incorporated an online mapping feature, allowing address data to be collected in a cleaner and more efficient manner. For web, this feature was also available. For paper surveys, they were asked to provide an address or nearest intersection manually, which was then entered into the data through the online mapping feature by the research team. This allowed the team to collect more precise geocoding data in real time, rather than relying on riders' ability to provide accurate addresses or intersections in writing.

Sampling Plan

A sampling plan was designed based on ridership from January to determine how many completes would be needed by each route and by each Daypart (Weekday, Saturday), and the estimated number of shifts needed to collect those completes. Additionally, once the sampling plan was approved, the research team further divided the weekday quotas by time period (Morning, Midday, Afternoon, and Evening), to ensure responses were representative of a typical weekday.

The sampling plan is located in **Appendix 2: Sampling Plan**.

Survey Methodology

Survey data was collected between December 1st, 2023 and December 10th, 2023. Interviewers boarded buses and conducted surveys via the tablet-based intercept survey, or handed out paper surveys to those who were taking a short trip. A copy of the survey used can be found in **Appendix 1: Survey Tool**.

Data Cleaning and Quality Control

Data Cleaning

The survey team reviewed the intercept data daily, reviewing the previous day's data to identify outliers or errors, and worked with interviewers to correct user errors and improve the quality of incoming data. Additionally, these datafiles were used to track completes towards the quotas set by the sampling plan, ensuring that no routes or time periods were under quota.

Due to the mapping software used in the intercept study, it was possible to verify the geocoded location of the origins, destinations, and boarding and alighting stations. Interviewers were instructed to include the city and state when entering these addresses, to ensure the locations were accurate.

Supervisors also reviewed this geocoded data to ensure there were no outliers. Following the end of data collection, initial tabs were run to examine the data in total and identify any remaining outliers or entry errors.

Survey Expansion

In order to adjust the data to be representative of the system as a whole, expansion weights were created and applied to each record to make them representative of the system at the route and daypart (Weekday and Saturday by time period) levels. These weights were calculated using ridership during the fielding period provided by Valley Metro. A full explanation of the process and the final weights can be found in **Appendix 3: Weighting Methodology**.

Data Limitations

While the data collected has valuable use to Valley Metro, there are several limitations to be aware of. Firstly, while customers in the intercept study were not given an explicit opportunity to opt out of questions, if they refused to answer, interviewers were instructed to move on in order to collect as much information as possible without alienating the respondent. Additionally, for paper or web surveys, participants could opt out of questions they did not feel comfortable answering. As a result, response rates vary by question. The same weights were applied to all responses in a survey, such that the weighted sums of a specific question do not necessarily equal the weighted sum of trips the survey represents. Because of this, percentages provide a more accurate reflection of what the data represents, rather than the absolute total weighted counts.

Additionally, due to differing response rates, the standard error varies from question to question and from segment to segment. The systemwide standard error is 3.3 percentage points at the 95% confidence level, but that will increase for individual questions or segmented analyses with smaller base sizes.

Lastly, although efforts were taken to reduce bias as much as possible, there are still likely some underrepresented groups in the sample. For example, the survey team has limited ability to gather surveys from minors, so statistics for riders under 18 years of age are not representative of the rider population.

Margins of Error by Jurisdiction All Day

		40%	30%	20%	10%	1%
		or	or	or	or	or
If the percentage found is around:	<u>50%</u>	<u>60%</u>	<u>70%</u>	<u>80%</u>	<u>90%</u>	<u>99%</u>

Then, the standard error, in percentage points would be:

Total Sample (n=884)	±3.3	±3.2	±3.0	±2.6	±2.0	±0.7
Weekday (n=654)	±3.8	±3.8	±3.5	±3.1	±2.3	±0.8
Saturday (n=230)	±6.5	±6.3	±5.9	±5.2	±3.9	±1.3

Final Survey Totals

In total, 884 surveys were completed. Qualified intercept responses are defined as surveys that are fully completed. Qualified partial intercept responses are defined as surveys that meet the minimum question threshold to be counted as "complete", that is that they have finished the trip chain questions and reached Q8. An unqualified partial intercept response started the survey but did not reach the minimum question threshold. Below is a breakdown of the completed surveys.

Total completes	Total	Weekday	Saturday
Morning	153	153	
Midday	200	200	
Afternoon	232	232	
Night	69	69	
Saturday	230		230
Total	884	654	230

Route Totals	Total	Weekday	Saturday
11	22	14	8
12	16	16	-
15	27	27	-
16	12	6	6
21	29	22	7
22	23	16	7
25	20	15	5
26	11	8	3
31	44	37	7
32	18	17	1
35	52	37	15
36	32	23	9
41	35	25	10
42	15	7	8
51	17	17	-
52	23	16	7
55	23	12	11
56	15	15	-
61	23	16	7
62	17	13	4
65	15	10	5
66	15	12	3
71	30	21	9
72	19	15	4
75	46	34	12
76	33	26	7
85	35	15	20
86	23	14	9
91	53	38	15
92	28	19	9
Smart Way Express	39	39	-
Smart Way Commuter	50	28	22
Star Line Trolley	24	24	-
Total	884	654	230

Appendix

Appendix 1: Survey Tool



WBA Research
23-144

Valley Metro 2023 O&D Rider Survey

Please take a few minutes to help Valley Metro plan for your transit needs by completing this survey regarding your ONE-WAY TRIP today. IF you complete this survey you can be entered into a random drawing to receive **one of five 31-Day Valley Metro Passes**. All personal information will be kept strictly confidential and WILL NOT be shared or sold.

INTERVIEWER: Enter trip ID: _____

INTERVIEWER: Enter your name: _____

Confirmation screen for interviewer “You are on **[Route]**, block **[block number]** at **[times of trip]**. Before you proceed, is this correct?”

GETTING TO PUBLIC TRANSIT

Q1. Where are you **COMING FROM NOW?** This is the starting place of this one-way trip you are taking now. **READ IF NECESSARY:** An example of a one-way trip is going from home to work, even if you have to change buses. Your return trip home would be a different one-way trip. **(READ LIST. ACCEPT ONE RESPONSE ONLY.)**

- 01 Home
- 02 Work
- 03 Recreation/Social
- 04 School/College (student only)
- 05 Doctor, medical service, or hospital (non-work only)
- 06 Shopping/Restaurant
- 07 Religious/Community
- 08 Airport (passengers only)
- 09 Sporting or special event
- 95 Other (**specify**)
- 98 **DO NOT READ:** Refused

PROGRAMMING NOTE: IF RESPONDENT REFUSED Q1, INSERT “the place you are coming from” INSTEAD OF “your [INSERT Q1]” IN SUBSEQUENT QUESTIONS.

- Q2. What is the **EXACT ADDRESS** or nearest intersection of your **[INSERT Q1]**?
*You can identify the nearest intersection, landmark, or address by dragging the marker to the map or entering the address manually in the provided text field and hit the search button. To enter a business name, type the name and then the **city and state** where it is located.*

IF Q1(01), SHOW: 97 I do not have a home address

98 DO NOT READ: Refused

- Q3. How did you get **FROM** your **[INSERT Q1]** to the **FIRST BUS** on THIS ONE-WAY TRIP? (**READ LIST IF NECESSARY. MULTIPLE RESPONSES ACCEPTED, EXCEPT 01. INTERVIEWER NOTE: RESPONSE SHOULD NOT BE A BUS EXCLUDING INTERCITY BUSES.**)

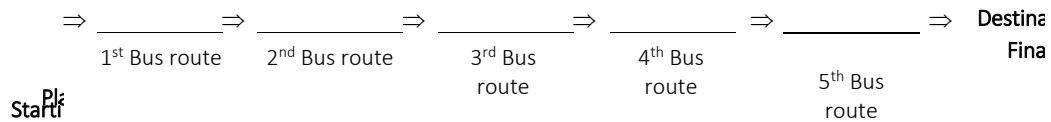
- 01 Walked only: _____miles **OR** _____blocks
- 02 Mobility aid (cane, walker, wheelchair, etc.): _____miles **OR** _____blocks
- 03 Drove a car
- 04 Rode with someone
- 05 Personal bicycle or scooter: _____miles **OR** _____blocks
- 06 Bikeshare or scootershare: _____miles **OR** _____blocks
- 07 Rideshare service such as Uber, Lyft, or Taxi
- 08 Amtrak or intercity bus
- 95 Other (**specify**)
- 98 **DO NOT READ:** Refused

RIDING PUBLIC TRANSIT

- Q4. How many buses will you take to get to your FINAL DESTINATION? Please include the bus you are on currently.
- 01 One
 - 02 Two
 - 03 Three
 - 04 Four
 - 05 Five or more
 - 98 **DO NOT READ:** Refused

THOSE WHO WILL TRANSFER [Q4(02-05)], ASK Q5. IF Q4(01,98), FORCE IN CURRENT ROUTE AS Q5_1.

Q5. Including this bus, **LIST ALL** of the BUS ROUTES in the **EXACT ORDER** you will use them to make THIS ONE-WAY TRIP: (PROGRAMMING NOTES: FOR THOSE WHO DO NOT TRANSFER [Q4(01)], INSERT BUS ROUTE IN 1st BASED ON TRIP ID. IF Q4(02), Q5 HAS TWO BOXES; IF Q4(03), Q5 HAS THREE BOXES; IF Q4(04), Q5 HAS FOUR BOXES; IF Q4(05), Q5 HAS SIX BOXES BUT CAN LEAVE SIXTH BOX BLANK. IF Q5 DOES NOT CONTAIN BUS FROM TRIP ID, DISPLAY ERROR MESSAGE.)



ASK EVERYONE:

Q6. What is the stop or station where you **BOARDED** [Q5_1]?
[DROP DOWN LIST OF STOPS BASED ON 1st BUS ROUTE IN Q5. INCLUDE DON'T KNOW.]

ASK IF THIS BUS ROUTE IS NOT Q5_FIRST:

Q6A. What is the stop or station where you **BOARDED** this bus?
[DROP DOWN LIST OF STOPS BASED ON CURRENT BUS ROUTE FROM TRIP ID. INCLUDE DON'T KNOW.]

GETTING OFF PUBLIC TRANSIT

ASK IF THIS BUS ROUTE IS NOT Q5_LAST:

Q7. What is the stop or station where you will **GET OFF** this bus?
[DROP DOWN LIST OF STOPS BASED ON CURRENT BUS ROUTE FROM TRIP ID. INCLUDE DON'T KNOW.]

ASK EVERYONE:

Q7A. What is the stop or station where you will **GET OFF** [Q5_LAST]?
[DROP DOWN LIST BASED ON LAST BUS ROUTE IN Q5. INCLUDE DON'T KNOW.]

ASK EVERYONE:

Q8. What TYPE OF PLACE is your **FINAL DESTINATION** on THIS ONE-WAY TRIP? (READ LIST. ACCEPT ONE RESPONSE ONLY.)

- 01 Home
- 02 Work
- 03 Recreation/Social
- 04 School/College (student only)
- 05 Doctor, medical service, or hospital (non-work only)
- 06 Shopping/Restaurant
- 07 Religious/Community
- 08 Airport (passengers only)
- 09 Sporting or special event
- 95 Other (specify)
- 98 **DO NOT READ:** Refused

PROGRAMMING NOTE: IF RESPONDENT REFUSED Q8, INSERT “the place you are going to” INSTEAD OF “your [INSERT Q8]” IN SUBSEQUENT QUESTIONS.

Q9. What is the address or nearest intersection of your [INSERT Q8]? *This is not your final station or bus stop.*

*You can identify the nearest intersection, landmark, or address by dragging the marker to the map or entering the address manually in the provided text field and hit the search button. To enter a business name, type the name and then the **city and state** where it is located.*

IF Q8(01), SHOW: 97 I do not have a home address

98 DO NOT READ: Refused

Q10. When you GET OFF [Q5_LAST], how will you get to your [INSERT Q8]? (READ LIST IF NECESSARY. MULTIPLE RESPONSES ACCEPTED, EXCEPT 01. INTERVIEWER NOTE: RESPONSE SHOULD NOT BE A BUS EXCEPT FOR AN INTERCITY BUS.)

- 01 Walk only: ____ miles **OR** ____ blocks
- 02 Mobility aid (cane, walker, wheelchair, etc.): ____ miles **OR** ____ blocks
- 03 Drive a car
- 04 Ride with someone
- 05 Personal bicycle or scooter: ____ miles **OR** ____ blocks
- 06 Bikeshare or scootershare: ____ miles **OR** ____ blocks
- 07 Rideshare service such as Uber, Lyft, or Taxi
- 08 Amtrak or intercity bus
- 95 Other (**specify**)
- 98 **DO NOT READ:** Refused

TRIP INFORMATION

Q11. If Valley Metro had not been available today, how would you have made this trip? (READ LIST IF NECESSARY. ACCEPT ONE RESPONSE ONLY.)

- 01 Drive a vehicle directly to your final destination
- 02 Ride with someone to your final destination
- 03 Rideshare service such as Uber, Lyft, or Taxi
- 04 Bike or scooter to your final destination
- 05 Walk
- 95 Some other way (**specify**)
- 96 Would not make this trip
- 99 **DO NOT READ:** Not sure

Q12. How frequently do you ride Valley Metro? **(READ LIST.)**

- 01 Less than once a month
- 02 Less than once a week, but at least once a month
- 03 One or two days per week
- 04 Three or four days per week
- 05 Five days per week
- 06 Six or seven days per week
- 99 **DO NOT READ:** Don't know/Refused

Q13. What fare payment method was used for **THIS** one-way trip? **(READ LIST IF NECESSARY. ALLOW ONE RESPONSE ONLY.)**

- 01 Cash
- 02 7-Day pass
- 03 31-Day Pass
- 04 No fare (Fare Free Service)
- 05 **SMARTWAY TRIPS ONLY:** Student ID (Including Virginia Tech ID)
- 06 **NON-SMARTWAY TRIPS ONLY:** Student ID (Including Roanoke Public School ID)
- 07 Faculty ID
- 08 **SMARTWAY TRIPS ONLY:** Virginia Tech Carilion ID Card
- 95 Other **(specify)**
- 98 **DO NOT READ:** Don't know/Prefer not to say

THOSE WHO PAID A FARE [Q13(01-03, 05, 95) OR (07 AND NOT SMARTWAY BUS)], ASK:

Q14. What type of fare was this? **(ALLOW ONE RESPONSE ONLY.)**

- 01 Regular/Full Fare
- 02 Roanoke City Public School Student
- 03 Discounted fare
- 04 Did not pay a fare
- 95 Other **(specify)**
- 98 **DO NOT READ:** Prefer not to say

ASK EVERYONE:

Q15. Have you ever purchased a Valley Metro Pass?

- 01 Yes
- 02 No
- 98 **DO NOT READ:** Don't know/Refused

Q16. Overall, how satisfied are you with the service that Valley Metro provides?

- 05 Very satisfied
- 04 Somewhat satisfied
- 03 Neither satisfied nor dissatisfied
- 02 Somewhat dissatisfied
- 01 Very dissatisfied

Q17. Overall, how satisfied are you with Third Street Station?

- 05 Very satisfied
- 04 Somewhat satisfied
- 03 Neither satisfied nor dissatisfied
- 02 Somewhat dissatisfied
- 01 Very dissatisfied

Q18. If Valley Metro were to improve service, please indicate which improvement would help you the most?

- 01 More frequent service for existing Valley Metro routes
- 02 Longer hours of service for existing Valley Metro routes
- 03 Service to additional geographic areas **(specify)**

Q19. How do you get updates or news about Valley Metro? **(MULTIPLE RESPONSES ACCEPTED.)**

- 01 Television
- 02 Newspaper
- 03 Valley Metro Website
- 04 Social Media
- 05 VMGO App
- 06 Screens onboard buses or at bus stations
- 07 Valley Metro Phone Line
- 95 Other **(specify)**
- 99 **DO NOT READ:** Don't know/Refused

Q20. How often do you ride the following services?

		Six or seven days per week	Five days per week	Three or four days per week	One or two days per week	Less than once a week but at least once a month	Less than once a month	Never
A.	Fixed route service (Valley Metro City Bus)	06	05	04	03	02	01	98
B.	Smart Way	06	05	04	03	02	01	98
C.	Paratransit (S.T.A.R.)	06	05	04	03	02	01	98
D.	Trolley	06	05	04	03	02	01	98

ASK EVERYONE:

These last few questions are for classification purposes only.

Q21. Do you have access to a car or motorcycle you could have used to make **THIS TRIP**?

- 01 Yes
- 02 No
- 98 **DO NOT READ:** Prefer not to answer

Q22. Do you have a valid driver's license?

- 01 Yes
- 02 No
- 98 **DO NOT READ:** Prefer not to answer

Q23. Do you own a smartphone?

- 01 Yes
- 02 No
- 98 **DO NOT READ:** Prefer not to answer

RIDER INFORMATION

These questions are still for classification purposes only.

ASK IF ORIGIN OR DESTINATION IS NOT HOME [Q1(02-95) AND Q8(02-95)]

Q24. What is your home ZIP code? ____ ____ ____ ____ ____ (FORCE 5 DIGITS.)

- 01 I do not have a home address
- 98 **DO NOT READ:** Prefer not to answer

ASK EVERYONE:

Q25. Including yourself, how many people live in your household? (RANGE=1-9.)

____ number of people in household

- 10 10 or more people
- 98 **DO NOT READ:** Prefer not to answer

Q26. Do you **predominantly** speak a language other than English at home? (TURN THE TABLET TO THE RESPONDENT IF THEY DO NOT WISH TO SAY ALOUD.)

- 01 Yes
- 02 No
- 98 **DO NOT READ:** Prefer not to answer

THOSE WHO SPEAK ANOTHER LANGUAGE [Q20(01)], ASK:

Q27. Which language? (TURN THE TABLET TO THE RESPONDENT IF THEY DO NOT WISH TO SAY ALOUD.)

- 01 Spanish (including all dialects)
- 02 Arabic
- 03 Vietnamese
- 04 Chinese (including Mandarin)
- 05 Russian
- 06 French (including all dialects)
- 95 Other (**specify**)
- 98 **DO NOT READ:** Prefer not to answer

Q28. How well do you **speak** English? (TURN THE TABLET TO THE RESPONDENT IF THEY DO NOT WISH TO SAY ALOUD.)

- 04 Very well
- 03 Well
- 02 Not well
- 01 Not at all
- 98 **DO NOT READ:** Prefer not to answer

THOSE WHO DID NOT REPORT SCHOOL/COLLEGE AS ORIGIN OR DESTINATION [Q1(01-03,05-98) AND Q8(01-03,05-98)], ASK:

Q29. Are you currently a student?

- 01 Yes
- 02 No
- 98 **DO NOT READ:** Prefer not to answer

ASK STUDENTS [Q28(01)], ASK:

Q29A. Are you a current student? If so, what is your current status? (READ LIST OR TURN THE TABLET TO THE RESPONDENT IF THEY DO NOT WISH TO SAY ALOUD. ALLOW ONE RESPONSE ONLY.)

- 01 Student in K-12th grade
- 02 Student in college/university/community college
- 03 Student in vocational/technical/trade school/other
- 04 Not a student
- 98 **DO NOT READ:** Prefer not to say

ASK EVERYONE:

- Q30. What is your *current* employment status? (READ LIST OR TURN THE TABLET TO THE RESPONDENT IF THEY DO NOT WISH TO SAY ALOUD. ALLOW ONLY ONE RESPONSE. *DO NOT SHOW IF STUDENT [Q1(04) OR Q8(04) OR Q21A(01)].)
- 01 *Employed full time (30 or more hours per week)
 - 02 *Employed part time (less than 30 hours per week)
 - 03 *Retired
 - 04 *Unemployed, furloughed, or disabled
 - 05 Student, also employed
 - 06 Student, not employed
 - 95 Other (**specify**)
 - 98 **DO NOT READ:** Prefer not to answer
- Q31. What is your race or ethnicity? (READ LIST OR TURN THE TABLET TO THE RESPONDENT IF THEY DO NOT WISH TO SAY ALOUD. MULTIPLE RESPONSES ACCEPTED.)
- 01 African American or Black
 - 02 American Indian or Alaska Native
 - 03 Asian
 - 04 Caucasian or White
 - 05 Hispanic or Latino
 - 06 Native Hawaiian or other Pacific Islander
 - 07 Middle Eastern/North African
 - 95 Other (**specify**)
 - 98 **DO NOT READ:** Prefer not to answer
- Q32. What is your gender identity? (READ LIST OR TURN THE TABLET TO THE RESPONDENT IF THEY DO NOT WISH TO SAY ALOUD. MULTIPLE RESPONSES ACCEPTED.)
- 01 Female
 - 02 Male
 - 03 Non-binary
 - 95 You use a different term (**specify**)
 - 98 **DO NOT READ:** Prefer not to answer

Q33. What is your age? **(READ LIST OR TURN THE TABLET TO THE RESPONDENT IF THEY DO NOT WISH TO SAY ALOUD.)**

- 01 Under 16
- 02 16-17
- 03 18-24
- 04 25-34
- 05 35-44
- 06 45-54
- 07 55-64
- 08 65-74
- 09 75 or older
- 98 **DO NOT READ:** Prefer not to answer

Q34. What is your highest level of education? **(READ LIST OR TURN THE TABLET TO THE RESPONDENT IF THEY DO NOT WISH TO SAY ALOUD.)**

- 01 Less than high school
- 02 High school or GED
- 03 Some college credit
- 04 Associate's or technical school degree
- 05 Bachelor's or undergraduate degree
- 06 Graduate or professional degree
- 99 **DO NOT READ:** Don't know/Refused

Q35. Which of the following **BEST** describes your **TOTAL ANNUAL HOUSEHOLD INCOME** in 2022 before taxes? **(READ LIST OR TURN THE TABLET TO THE RESPONDENT IF THEY DO NOT WISH TO SAY ALOUD.)**

- 01 Less than \$15,000
- 02 \$15,000 to less than \$20,000
- 03 \$20,000 to less than \$25,000
- 04 \$25,000 to less than \$30,000
- 05 \$30,000 to less than \$35,000
- 06 \$35,000 to less than \$40,000
- 07 \$40,000 to less than \$45,000
- 08 \$45,000 to less than \$50,000
- 09 \$50,000 to less than \$75,000
- 10 \$75,000 to less than \$100,000
- 11 \$100,000 to less than \$150,000
- 12 \$150,000 to less than \$200,000
- 13 \$200,000 or more
- 98 **DO NOT READ:** Prefer not to answer

Q36. Do you consider yourself to have a disability? **(READ LIST OR TURN THE TABLET TO THE RESPONDENT IF THEY DO NOT WISH TO SAY ALOUD.)**

- 01 Yes
- 02 No
- 98 **DO NOT READ:** Prefer not to say

THOSE WHO REPORT HAVING A DISABILITY [Q36(01)], ASK:

Q37. Do you use any of the following mobility device or devices when riding? If so, please select them from the following list. *Select all that apply.* **(ALLOW MULTIPLE RESPONSES.)**

- 97 I do not use mobility devices
- 01 Manual wheelchair
- 02 Motorized wheelchair
- 03 Scooter
- 04 Braces
- 05 Prosthesis
- 06 Service / Guide animal
- 07 Support cane
- 08 Long cane (for the blind)
- 09 Crutches
- 10 Walker
- 11 Respirator / oxygen tank
- 95 Other **(specify)**
- 98 Prefer not to say

Q38. Are you in the armed forces, military, or a veteran? **(IF YES: Are you active military, reserve duty, or retired?)**

- 01 No
- 02 Yes; Active Military
- 03 Yes; Reserve/Guard Duty
- 04 Yes; Retired/Veteran
- 98 **DO NOT READ:** Prefer not to say

Q39. Please enter your name, email, and telephone number so we can send the gift card to you if you are selected. *(Participation in drawing is optional)*

Your Name

Email

Telephone Number

- 99 Do not wish to enter drawing

Thank you for your help!

Appendix 2: Sampling Plan

	Weekday								
	Morning 5:45 AM-9:14 AM		Midday 9:15 AM-1:14 PM		Afternoon 1:15 PM-6:14 PM		Night 6:15 PM and later		Total Surveys
	Ridership	Quota	Ridership	Quota	Ridership	Quota	Ridership	Quota	Weekday Total
11+16	794	4.0	1,151	5.8	1,040	5.2	241	1.2	16.1
12+15	1,448	7.2	1,919	9.6	3,025	15.1	802	4.0	36.0
21+22	1,256	6.3	1,980	9.9	2,544	12.7	744	3.7	32.6
25+26	1,106	5.5	1,132	5.7	1,702	8.5	534	2.7	22.4
31+32	1,062	5.3	1,417	7.1	1,812	9.1	506	2.5	24.0
35+36	1,236	6.2	1,878	9.4	2,597	13.0	711	3.6	32.1
41+42	1,322	6.6	1,162	5.8	2,001	10.0	547	2.7	25.2
51+56	1,177	5.9	1,619	8.1	1,697	8.5	612	3.1	25.5
52+55	659	3.3	1,101	5.5	868	4.3	145	0.7	13.9
61+62	1,143	5.7	1,290	6.5	1,823	9.1	516	2.6	23.9
65+66	1,290	6.5	1,248	6.2	1,800	9.0	620	3.1	24.8
71+72	1,271	6.4	1,170	5.9	1,851	9.3	554	2.8	24.2
75+76	1,570	7.9	1,394	7.0	2,024	10.1	563	2.8	27.8
85+86	1,176	5.9	1,097	5.5	1,297	6.5	459	2.3	20.1
91+92	2,522	12.6	3,342	16.7	4,500	22.5	1,142	5.7	57.5
Smart Way Commuter	1,112	5.3	873	4.2	1,053	5.0	603	2.9	17.3
Smart Way Express	658	3.3	381	1.9	799	4.0	160	0.8	10.0
Star Line Trolley	992	5.0	1,914	9.6	2,004	10.0	183	0.9	25.5
TOTAL	108.7		130.1		171.9		48.1		458.8

Route	Saturday						
	Morning+Midday 5:45 AM-1:14 PM		Afternoon 1:15 PM-6:14 PM		Night 6:15 PM and later		Total Surveys
	Ridership	Quota	Ridership	Quota	Ridership	Quota	Saturday Total
11+16	241	2.4	156	1.6	133	1.3	5.3
12+15							
21+22	683	6.8	557	5.6	220	2.2	14.6
25+26	241	2.4	128	1.3	82	0.8	4.5
31+32	327	3.3	237	2.4	116	1.2	6.8
35+36	497	5.0	388	3.9	164	1.6	10.5
41+42	347	3.5	260	2.6	124	1.2	7.3
51+56	359	3.6	235	2.4	92	0.9	6.9
52+55	621	6.2	354	3.5	89	0.9	10.6
61+62	200	2.0	184	1.8	55	0.6	4.4
65+66	493	4.9	301	3.0	178	1.8	9.7
71+72	457	4.6	401	4.0	160	1.6	10.2
75+76	387	3.9	289	2.9	97	1.0	7.7
85+86	1,145	11.5	958	9.6	267	2.7	23.7
91+92	381	3.8	96	1.0	107	1.1	5.8
Smart Way Commut	354	3.5	132	1.3	122	1.2	6.1
Smart Way Express							
Star Line Trolley			25	0.3			0.3
TOTAL		67.3		47.0		20.1	134.4

Appendix 3: Weighting Methodology

Expansion weights to average monthly ridership were created using the average ridership from the fielding period (December 1 through December 10, 2023). With the ridership numbers provided by Valley Metro, the research team calculated average weekly ridership for Weekdays and Saturdays on each route. This was then divided by the number of completes for that route on that day to create the initial expansion weight for each record by route and daypart.

For example, for Route 11, Third Street Station to Valley View Mall, the average weekly weekday ridership is 934.17 riders. In total, 14 surveys were completed for that route and time period. To create the weekday weights for route 11, the following equation was used:

$$\text{Average Weekly Weekday Ridership} / \text{Completes} = \text{Expansion Weight}$$

$$934.17 / 14 = 66.7262$$

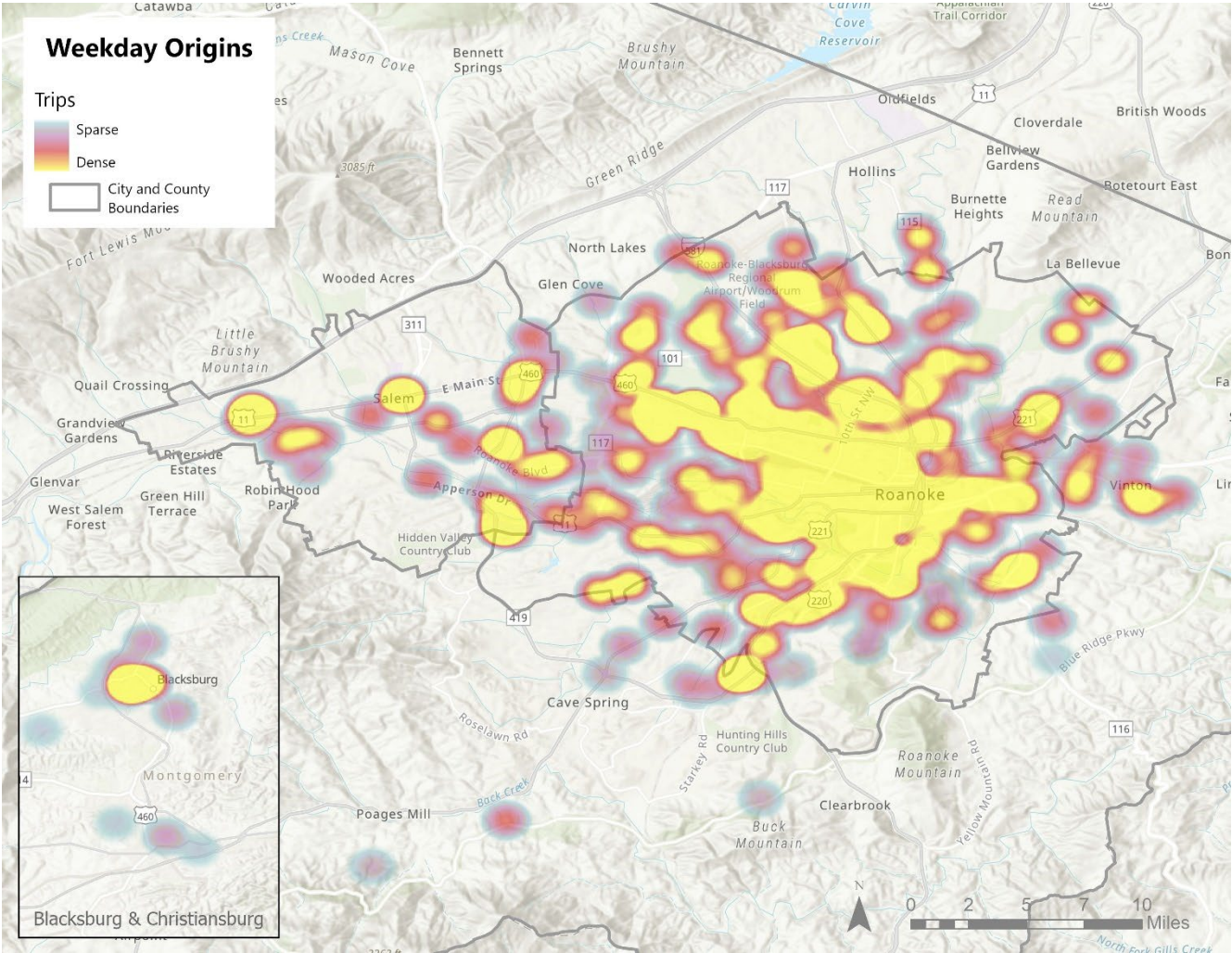
The tables showing the expansion weights are below.

Route Name	TOTAL WEEKDAY	AVG WEEKDAY	AVG WEEKLY WEEKDAY	WEEKDAY COMPLETED	WEEKDAY WEIGHT
	RIDERS	RIDERS	RIDERS	SURVEYS	
11- 3rd St Station to Valley View Mall	1121	186.83	934.17	14	66.7261905
12- Hoback to 3rd St Station	420	70.00	350.00	16	21.8750000
15- 3rd St Station to Hoback	1750	291.67	1458.33	27	54.0123457
16- Valley View Mall to 3rd St Station	726	121.00	605.00	6	100.8333333
21- 3rd St Station to Valley Court	1186	197.67	988.33	22	44.9242424
22- Valley Court to 3rd St Station	1000	166.67	833.33	16	52.0833333
25- 3rd St Station to Airport	780	130.00	650.00	15	43.3333333
26- Airport to 3rd St Station	470	78.33	391.67	8	48.9583333
31- 3rd St Station to Blue Hills	1059	176.50	882.50	37	23.8513514
32- Blue Hills to 3rd St Station	516	86.00	430.00	17	25.2941176
35 - 3rd St Station to Vinton	1398	233.00	1165.00	37	31.4864865
36 - Vinton to 3rd St Station	1029	171.50	857.50	23	37.2826087
41 - 3rd St Station to Southeast Roanoke	913	152.17	760.83	25	30.4333333
42 - Southeast Roanoke to 3rd St Station	559	93.17	465.83	7	66.5476190
51 - 3rd St Station to Tanglewood Mall	975	162.50	812.50	17	47.7941176
52 - Tanglewood Mall to 3rd St Station	719	119.83	599.17	16	37.4479167
55 - 3rd St Station to Tanglewood Mall	912	152.00	760.00	12	63.3333333
56 - Tanglewood Mall to 3rd Street Station	430	71.67	358.33	15	23.8888889
61 - 3rd St Station to Brambleton and Red Rock	726	121.00	605.00	16	37.8125000
62 - Red Rock to 3rd Street Station	745	124.17	620.83	13	47.7564103
65 - 3rd St Station to Grandin Road (PH High School)	849	141.50	707.50	10	70.7500000
66 - Grandin Road (PH High School) to 3rd St Station	762	127.00	635.00	12	52.9166667
71 - 3rd St Station to Lewis Gale Hospital	932	155.33	776.67	21	36.9841270
72 - Lewis Gale Hospital to 3rd St Station	536	89.33	446.67	15	29.7777778
75 - 3rd St Station to the Veteran's Hospital	974	162.33	811.67	34	23.8725490
76 - Veteran's Hospital to 3rd St Station	877	146.17	730.83	26	28.1089744
85 - 3rd St Station to Peters Creek Road	670	111.67	558.33	15	37.2222222
86 - Peters Creek Road to 3rd St Station	535	89.17	445.83	14	31.8452381
91 - 3rd St Station to Salem/VA Hospital	2439	406.50	2032.50	38	53.4868421
92 - Salem/VA Hospital to 3rd St Station	1746	291.00	1455.00	19	76.5789474
Smart Way Commuter	1009	168.17	840.83	28	30.0297619
Smart Way Express	577	96.17	480.83	39	12.3290598
Star Line Trolley	1279	213.17	1065.83	24	44.4097222

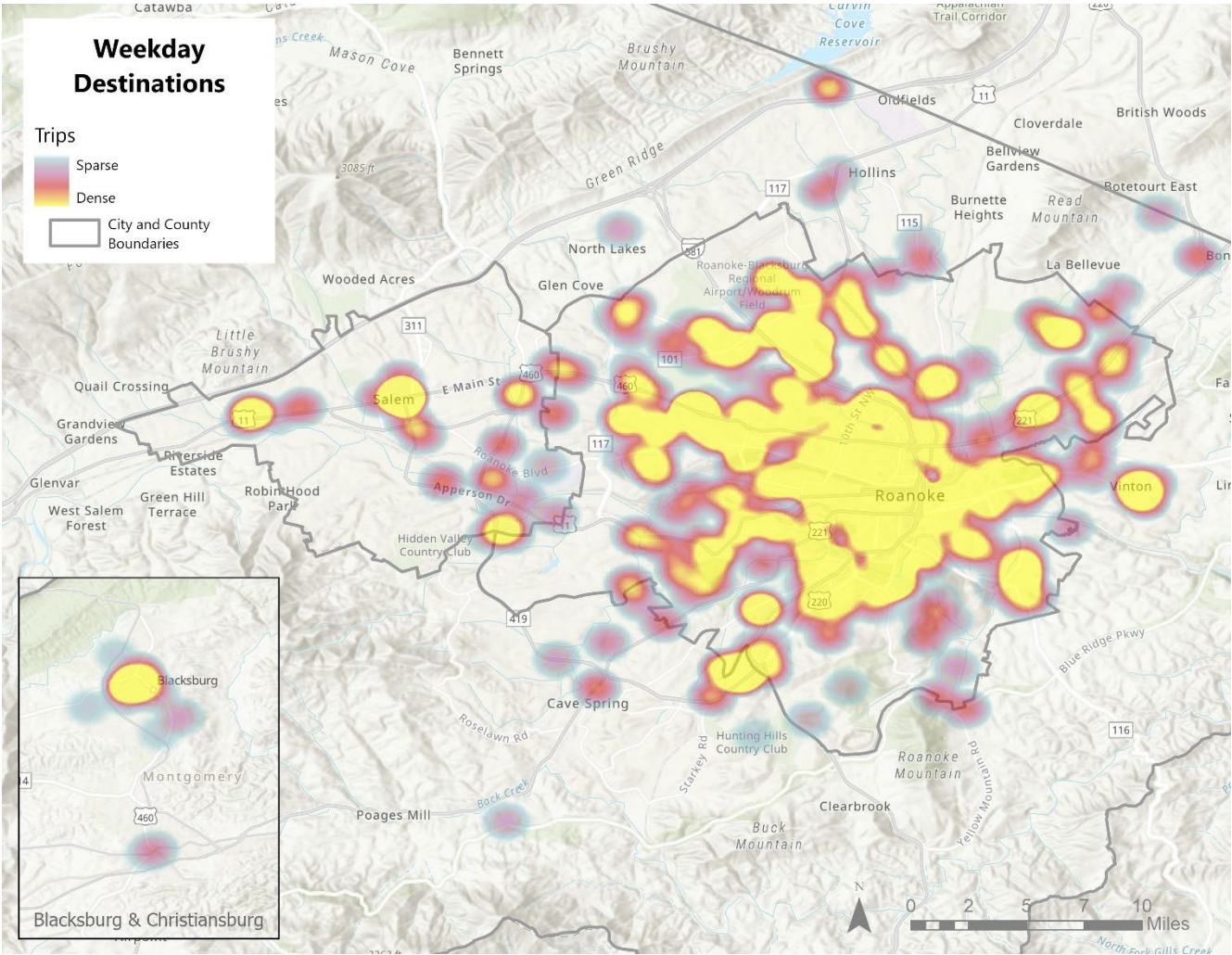
Route Name	TOTAL SATURDAY RIDERS	AVG SATURDAY RIDERS	AVG WEEKLY SATURDAY RIDERS	SATURDAY COMPLETED SURVEYS	SATURDAY WEIGHT
11- 3rd St Station to Valley View Mall	601	300.5	300.5	8	37.56250
12- Hoback to 3rd St Station	0	0	0	0	N/A
15- 3rd St Station to Hoback	0	0	0	0	N/A
16- Valley View Mall to 3rd St Station	350	175	175	6	29.16667
21- 3rd St Station to Valley Court	371	185.5	185.5	7	26.50000
22- Valley Court to 3rd St Station	227	113.5	113.5	7	16.21429
25- 3rd St Station to Airport	67	33.5	33.5	5	6.70000
26- Airport to 3rd St Station	35	17.5	17.5	3	5.83333
31- 3rd St Station to Blue Hills	208	104	104	7	14.85714
32- Blue Hills to 3rd St Station	155	77.5	77.5	1	77.50000
35 - 3rd St Station to Vinton	415	207.5	207.5	15	13.83333
36 - Vinton to 3rd St Station	275	137.5	137.5	9	15.27778
41 - 3rd St Station to Southeast Roanoke	260	130	130	10	13.00000
42 - Southeast Roanoke to 3rd St Station	137	68.5	68.5	8	8.56250
51 - 3rd St Station to Tanglewood Mall	0	0	0	0	N/A
52 - Tanglewood Mall to 3rd St Station	213	106.5	106.5	7	15.21429
55 - 3rd St Station to Tanglewood Mall	308	154	154	11	14.00000
56 - Tanglewood Mall to 3rd Street Station	0	0	0	0	N/A
61 - 3rd St Station to Brambleton and Red Rock	205	102.5	102.5	7	14.64286
62 - Red Rock to 3rd Street Station	200	100	100	4	25.00000
65 - 3rd St Station to Grandin Road (PH High School)	54	27	27	5	5.40000
66 -Grandin Road (PH High School) to 3rd St Station	47	23.5	23.5	3	7.83333
71 - 3rd St Station to Lewis Gale Hospital	246	123	123	9	13.66667
72 - Lewis Gale Hospital to 3rd St Station	168	84	84	4	21.00000
75 - 3rd St Station to the Veteran's Hospital	236	118	118	12	9.83333
76 - Veteran's Hospital to 3rd St Station	173	86.5	86.5	7	12.35714
85 - 3rd St Station to Peters Creek Road	170	85	85	20	4.25000
86 - Peters Creek Road to 3rd St Station	158	79	79	9	8.77778
91 - 3rd St Station to Salem/VA Hospital	624	312	312	15	20.80000
92 - Salem/VA Hospital to 3rd St Station	396	198	198	9	22.00000
Smart Way Commuter	170	85	85	22	3.86364
Smart Way Express	0	0	0	0	N/A
Star Line Trolley	0	0	0	0	N/A

Appendix 4: Maps

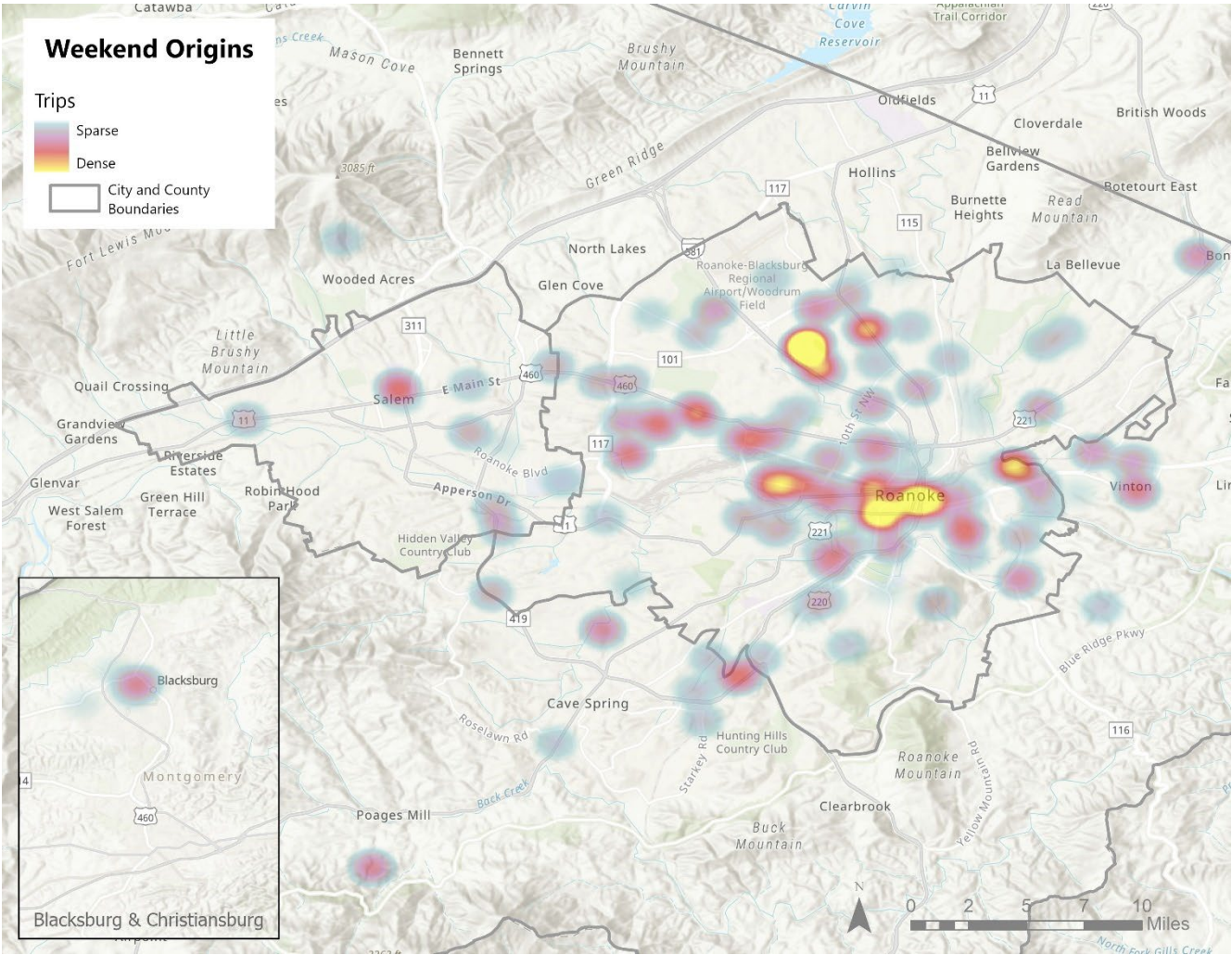
Weekday Origins



Weekday Destinations



Weekend Origins



Weekend Destinations

