
Valley Metro (Greater Roanoke Transit Company)

Transit Development Plan:

Fiscal Years 2010-2015

Prepared for:



Prepared by:



Under Contract to:



September 2009

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1.0 OVERVIEW OF VALLEY METRO TRANSIT

1.1 History

The Greater Roanoke Transit Company (GRTC), known locally as Valley Metro, is a private, non-profit, public service organization wholly owned by the City of Roanoke. Operations began in 1975 when what had been a privately owned transit system – the Roanoke City Lines – went public.

1.2 Governance Structure

The Valley Metro Board of Directors consists of various elected officials and staff from the City of Roanoke. The Board meets monthly.

Valley Metro Board

President
Vice President
Board Members
Vice President of Operations
Assistant Vice President of Operations
Secretary
Treasurer
Legal Counsel

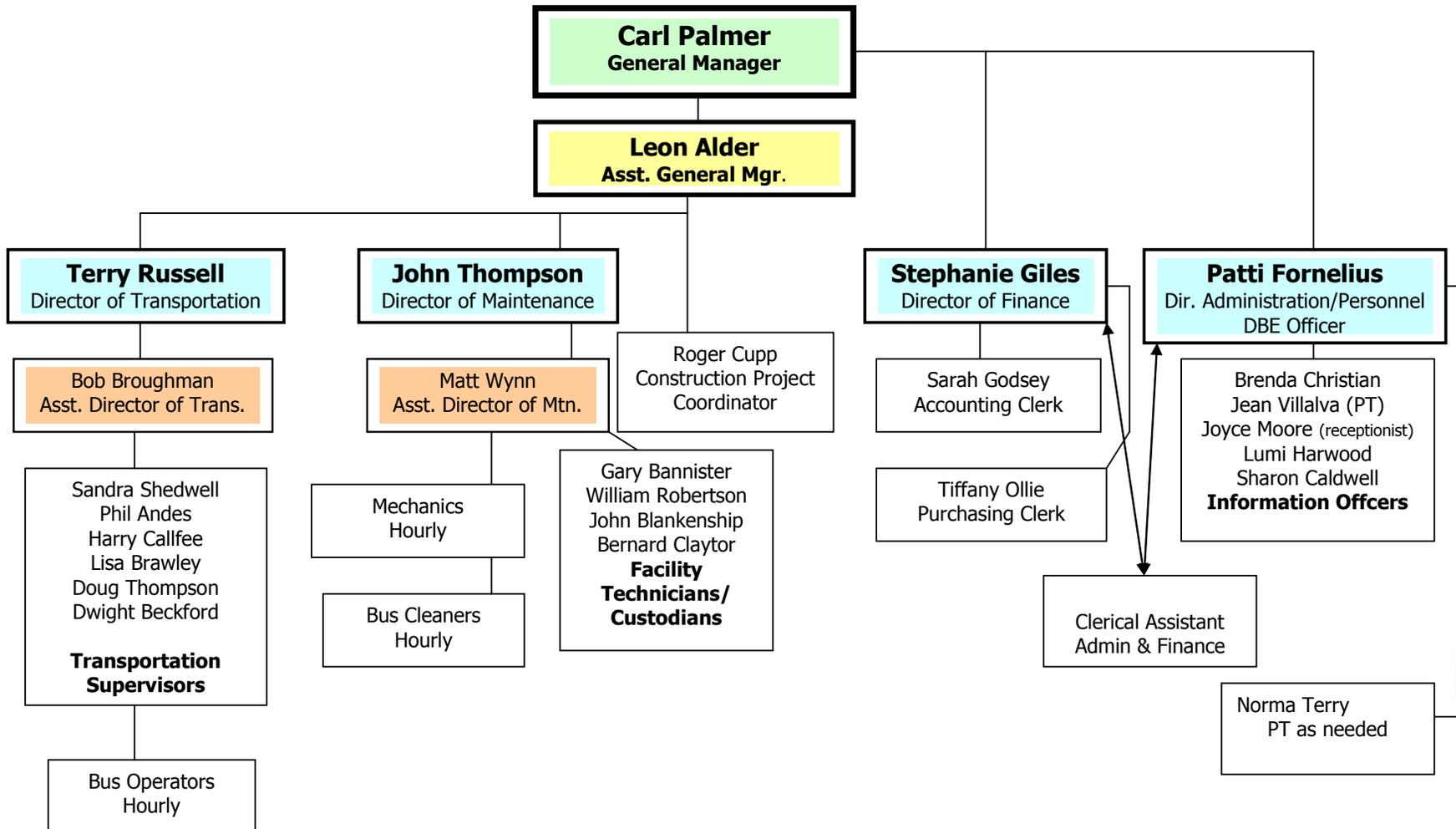
City of Roanoke

Mayor
Vice Mayor
City Council Members
City Manager
Assistant City Manager
City Clerk
Director of Finance
City Attorney

1.3 Organizational Structure

Valley Metro is managed by a General Manager, Assistant General Manager and four Directors (Transportation, Maintenance, Finance and Administration). The Director of Administration also serves as the DBE Officer as shown in the organizational chart in Figure 1-1. The General Manager and Assistant General Manager are employees of First Transit Management Services and are provided through a contract with GRTC. The remaining staff includes Directors, Supervisors and all Bus Operators and Maintenance employees, all of which are employed by the Southwestern Virginia Transit Management Company, Inc. In addition, Bus Operators and Mechanics are represented by ATU Local 1493 for collective bargaining.

**Figure 1-1
Southwestern Virginia Transit Management Company
Organization Chart 2009**



1.4 Transit Services Provided and Areas Served

Valley Metro provides a comprehensive range of transportation services to the residents of the greater Roanoke Valley area. These offerings include bus service along fixed routes, special services for the disabled, commuter service to the New River Valley and special event shuttle buses. Besides the City of Roanoke, Valley Metro provides contracted fixed-route service to the City of Salem and Town of Vinton. In all, Valley Metro provides service within a 60 square mile area to a population of 127,440 residents including the City of Salem (14.6 sq. miles and 24,747 population) and the town of Vinton (3.2 sq. miles and 7,782 population).¹

Transit service operates six days a week (Monday-Saturday) from approximately 5:45 a.m. until 8:45 p.m. and is provided by 32 fixed-routes. All routes operate hourly; however, select routes with high ridership demand operate at 30-minute weekday peak frequency (6:15-9:15 a.m. and 3:45-6:45 p.m.). There is no Sunday or holiday service.

Downtown Roanoke also features The Star Line – a new downtown circulator using a replica trolley-style vehicle. The trolley runs along the Jefferson Street corridor between Downtown Roanoke and the Carillon Roanoke Memorial Hospital. The service is free and operates weekdays from 7:00 a.m. until 7:00 p.m. Service is operated at 10 minute frequencies between 7 a.m. and 7 p.m. with extra service operated between 10 a.m. and 2 p.m. resulting in 7 minute frequencies during this period.

Valley Metro's paratransit service (STAR – Specialized Transit Arranged Rides) is operated by RADAR, a non-profit corporation that provides rural and specialized transit for the physically and mentally disabled as well as transportation disadvantaged individuals in the Greater Roanoke Valley. STAR is available to all qualifying individuals within the City of Roanoke and Town of Vinton, regardless of their proximity to a fixed-route. Passengers in the City of Salem are required to be within $\frac{3}{4}$ mile of a fixed-route to use the paratransit service.

1.5 Fare Structure

Valley Metro buses accept cash fares as well as pre-purchased fare media. Free transfers for cash-paying customers who require more than one bus to complete a trip are also provided. Transfers are only valid for up to 30 minutes after the bus reaches its final destination. Discounted fares are available for Medicare card holders, persons age 65 or older and/or disabled persons, with proper discount fare eligibility identification. Students age 18 and under ride free, subject to the following conditions: Students 15 - 18 must show a valid High School issued photo ID or Valley Metro Student Photo ID. Children age 10 and younger must be accompanied by a paying adult passenger. Table1-1 outlines Valley Metro's fare structure.

¹ Source: 2007 National Transit Database and Valley Metro Transit

**Table 1-1
Valley Metro Fare Structure**

	Adults	Seniors & Disabled	Students
One-way fare	\$1.50	\$.75	Free
Transfers	Free	Free	N/A
Monthly Pass (unlimited rides)	\$48.00	\$24.00	N/A
Weekly Pass (unlimited rides)	\$14.00	\$7.00	N/A
Star Line Trolley	Free	Free	Free
STAR one-way fare	N/A	\$3.00	N/A
STAR Monthly Pass (unlimited fixed route and paratransit rides)	N/A	\$96.00	N/A

1.6 Vehicle Fleet

Valley Metro owns and maintains 42 heavy-duty fixed-route buses and four replica trolleys as well as twelve paratransit vehicles that are operated by RADAR. In addition to the buses, Valley Metro maintains a non-revenue fleet of 10 vehicles consisting of trucks, vans, sport-utility vehicles and a car. Tables 1-2, 1-3 and 1-4 identify Valley Metro's fleet composition.

**Table 1-2
Valley Metro Fixed-Route Revenue Fleet**

Vehicle ID #	Year	Make	Seated Capacity	Number of Vehicles
0101-0110	2001	Gillig	37	10
0401-0410	2004	Gillig	37	10
0411-0414	2004	Glaval	23	4
0601-0618	2006	Gillig	37	18
0701	2007	ABC	23	1
0801-0804	2008	Double K Trolley	39	4
Total Fleet				47

**Table 1-3
STAR Paratransit Revenue Fleet (Operated Under Contract by RADAR)**

Vehicle ID #	Year	Make	Number of Vehicles
9, 27	2004	Ford	2
42	2005	Ford	1
33, 62-66	2006	Ford	6
67, 68	2007	Ford	2
69	2009	Ford	1
Total Fleet			12

**Table 1-4
Valley Metro Non-Revenue Fleet**

Vehicle ID #	Year	Make	Model	Number of Vehicles
Unit 9	1993	Chevy	Kodiak Truck	1
Unit 5	2002	Ford	Explorer	1
Units 7 & 8	2003	Ford	F-250 Truck	2
Unit 4	2004	Chevy	Van	1
Unit 3	2005	Chevy	Van	1
Unit 6	2005	Ford	Expedition	1
Unit 10	2005	Ford	Taurus	1
Unit 2	2008	GMC	SUV	1
Unit 1	2009	Ford	Van	1
Total Fleet				10

1.7 Facilities

Maintenance 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 of 46 buses.

Downtown Transit Center Facility

The Campbell Court Transportation Center is located at 17-31 West Campbell Avenue and is situated in the heart of the downtown Roanoke business and shopping districts. The facility features restored nineteenth century facades to include a transportation center, parking garage and office/retail space. On the ground level, Valley Metro's Transportation Center provides passenger information, ticket sales, and an indoor lobby for transit patrons. The terminal serves as a central hub for transfer between Valley Metro buses or other modes of transportation. A Greyhound bus station is also located in the terminal. The facility also features a 104-space parking garage for private vehicles with parking available at monthly rates. The remainder of the first level, the second level, and the third level are leased to a variety of retail, restaurant, and business establishments.

The Greater Roanoke Transit Company owns Campbell Court. The GRTC Board of Directors governs the policies and operational procedures of the facility, as well as approval of all tenants.

1.8 Transit Security Program

To establish the importance of security and emergency preparedness in all aspects of the organization, the Greater Roanoke Transit Company (GRTC) has developed a System Security and Emergency Preparedness (SSEP) Program Plan. This SSEP Program Plan outlines the process to be used by GRTC to make informed decisions that are appropriate for operations, passengers, employees and communities regarding the development and implementation of a comprehensive security and emergency preparedness program.

Both the Roy Z. Meador Operations, Maintenance and Administrative Facility and Campbell Court Transportation Center are equipped with surveillance cameras that monitor all areas, both public and employee restricted, and archives the video electronically for several months, should

the need arise at a later date to review the video collected. Both facilities are also equipped with burglar and intrusion detection alarms as well as fire alarms and sprinkler system. All of Valley Metro's fixed-route buses are equipped with video monitoring cameras.²

1.9 Public Outreach

Public Outreach is conducted and documented via Public Hearings whenever a major service reduction or fare adjustment is proposed. The public is also given the opportunity to provide comments at the designated time during each Board meeting.

² Source: GRTC System Security and Emergency Preparedness Plan – January 2005

2.0 GOALS, OBJECTIVES AND STANDARDS

Valley Metro currently has no defined Goals, Objectives and Standards to steer its short term and long term activities. While there are best practices that are employed daily, none of these have been documented or formalized except for the Mission Statement and strategies shown below. This chapter of the TDP is designed to acknowledge those activities and build upon them to create a longer range vision for system-wide transportation improvement.

Greater Roanoke Transit Company (Valley Metro) Mission Statement:

The Greater Roanoke Transit Company will provide quality public transportation and downtown parking to our customers in a safe, convenient, reliable, affordable and environmentally responsible manner. We strive to enhance the quality of life for all that live, work and visit here by continuously improving to meet our customers' needs, maintaining a stable, highly motivated work force and using our resources wisely.

This mission will be achieved through the following strategies:

1. *Planning – Planning will enable GRTC to identify the ever changing needs of the Roanoke area and to develop strategies to meet those needs.*
2. *Productivity – Productivity will enable GRTC to maximize the quality and quantity of services provided.*
3. *Image – Image will enable GRTC to maintain and attract additional patronage of services.*
4. *Stability – Stability will enable GRTC to consistently meet its service obligations.*

2.1 TDP Goals and Objectives

Goal 1 – Provide a safe, secure and integrated transportation system that reflects the diverse needs of the Roanoke community.

- 1.1 Maintain current levels of service and expand service hours on existing routes when warranted
 - Develop an annual service improvement plan based on findings from the Performance Monitoring Program outlined in Section 2.2 of this TDP.
- 1.2 Identify and address transportation needs of transit-oriented populations in Roanoke
 - Estimate population density for areas determined to have high transit orientation

using the most recent available census data

- 1.3 Ensure staff has the procedural tools available to address system security issues and emergencies
 - Review annually and update (as necessary) the System Security and Emergency Preparedness Plan
- 1.4 Promote alternative options for passengers who are not able to be served by traditional fixed-route transit
 - Coordinate with ridesolutions (ridershare program for region)
 - Continue to coordinate and support bicycle and pedestrian program with the RVAMPO.

Goal 2 – Engage the community and expand customer outreach

- 2.1 Distribute schedule and system information in public places throughout the service area for residents and visitors
 - Expand the distribution of system information and route schedules, particularly when extensive route changes are made. Place public service announcements and promotional advertisements in newspapers.
 - Increase the number of areas where schedules are displayed
- 2.2 Develop an ongoing public involvement process through surveys, discussion groups and public workshops and interviews with passengers and drivers
 - Maintain complaint tracking procedure and response system and seek opportunities for improved customer response
- 2.3 Pursue marketing and advertising opportunities through community associations and clubs
 - Develop a comprehensive mailing list of community associations and clubs
 - Proactively seek opportunities to present an overview of the services provided by Valley Metro

Goal 3 – Improve operating efficiency, integrating technology where applicable

- 3.1 Develop and maintain an ongoing performance monitoring program as identified in Section 2.2 of this TDP

- Record and monitor monthly transit operations statistics and compile monthly report
- 3.2 Evaluate the potential for incorporating advanced technologies
- Identify customer and agency technology needs by conducting a Needs Assessment and develop plan for facilities and equipment

Goal 4 – Improve service delivery

- 4.1 Maintain On-Time Performance of 90%
- Continue and improve driver training program
 - Estimate percent of trips on-time based on Valley Metro’s current On-Time Performance Standard
- 4.2 Investigate the need for other service opportunities such as specialized fixed-route bus service and park & ride services
- In areas with a potential for park & ride service, obtain travel behavior characteristics of workers

Goal 5 – Improve the customers’ transit experience

- 5.1 Maintain vehicle replacement program
- Update vehicle replacement program on an annual basis
- 5.2 Expand the passenger shelter program
- Add new shelters annually in areas where utilization is projected to be highest (dependent on FTA Grant availability)

Goal 6 – Improve coordination between transportation, land use and economic development activities.

- 6.1 Continue coordination and consistency with local, regional and commonwealth plans for the future provision of public transit in Roanoke
- Review relevant local, regional and commonwealth plans as they are prepared and provide comments as appropriate
- 6.2 Coordinate public transit efforts with social service agencies

- Continue to work with social agencies staff to monitor potential number of clients needing transportation
 - Educate staff of social service agencies regarding how to use Valley Metro so this information can be relayed to clients
- 6.3 Support land development regulations that encourage transit-friendly development
- Work with county and city staffs to pursue revisions to Land Development Regulations that are more conducive to transit use
- 6.4 Support incentives for developers and major employers to promote public transportation
- Discuss opportunities with county and city to provide impact fee credits to developers who are offering transit amenities and to transit-oriented development in general
- 6.5 Support improved connectivity of sidewalks and bicycle facilities along existing and future public transportation corridors
- Evaluate the availability of sidewalk and bicycle facilities at major bus stops
 - Submit sidewalk and bicycle facility priorities to the Roanoke Valley/Alleghany Regional Planning Commission and other local jurisdictions for consideration in their annual work program as well as for other funding opportunities

2.2 Performance Standards

Performance standards are used to measure the efficiency and effectiveness of transit service. Currently, Valley Metro reports the following operating statistics on a monthly basis:

- System-wide Daily Ridership
- Percentage of Revenue Hours to Pay Hours
- Percentage of Revenue Miles to Total Miles
- Accidents per 100,000 Miles
- Customer Complaints per Day

While these statistics provide a means of identifying run cut efficiency and customer satisfaction, outside of System-wide Daily Ridership they do not offer a measure of service productivity. Four industry-standard performance measures are being recommended in addition to those currently in use. These standards will allow Valley Metro to compare their performance

with peers from across the country as well as other properties throughout the commonwealth. The recommended performance standards are:

- Passengers per Revenue Hour
- Passengers per Revenue Mile
- Operating Cost per Passenger Trip
- Farebox Ratio (Farebox Revenue/Total Expenses)

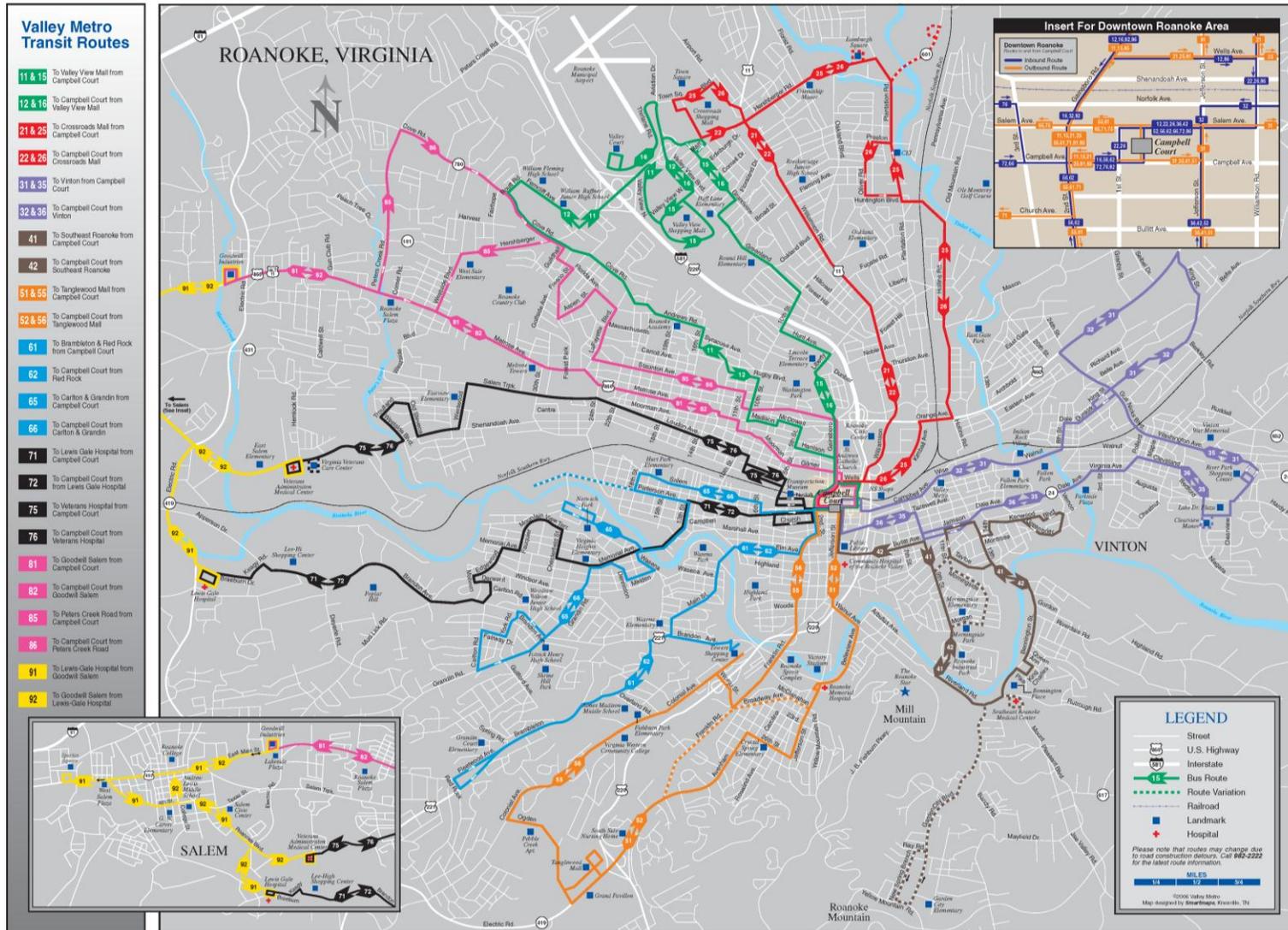
Ideally, these four performance criteria would be collected and calculated on a route-level basis and be reported separately for weekday and Saturday service. Chapter 3 includes a peer evaluation of these performance standards as well as several others that can be used for benchmarking.

3.0 SERVICE AND SYSTEM EVALUATION

As previously noted in Chapter 1 of this TDP, Valley Metro provides fixed route service and demand-response STAR service. In addition, Valley Metro provides specialized services to include the Star Line Trolley, Smart Way bus (linking Roanoke with New River Valley) and seasonal express services to Ferrum, Hollins and Roanoke Colleges. Fixed route service is provided from approximately 5:45 a.m. to 8:45 p.m. The system is radial in nature, with all routes (except Salem Routes 91 & 92) converging on the Campbell Court Transit Center in downtown Roanoke. With the exception of Routes 31 & 32, 35 & 36 and 91 & 92, all Valley Metro routes operate at 30-minute peak/60-minute off-peak frequencies. The before-mentioned routes operate at 60-minute frequency throughout the day. All routes operate at 60-minute frequency on Saturdays. There is no Sunday service provided. All routes are allocated 60 minutes to complete a round trip (30 minutes outbound, 30 minutes inbound), thus requiring 16 buses to meet base service levels and 29 buses to meet peak service levels. Figure 3-1 depicts Valley Metro's fixed route transit network. Figure 3-2 depicts the Star Line Trolley service in Downtown Roanoke and Figure 3-3 shows Valley Metro's SmartWay commuter service between Downtown Roanoke and Blacksburg.

Valley Metro's ADA mandated paratransit service is called STAR (Specialized Transit – Arranged Rides) and is contracted through RADAR, the region's disabled and disadvantaged transportation provider. Trips on STAR must be scheduled at least one day in advance and passengers must meet eligibility requirements.

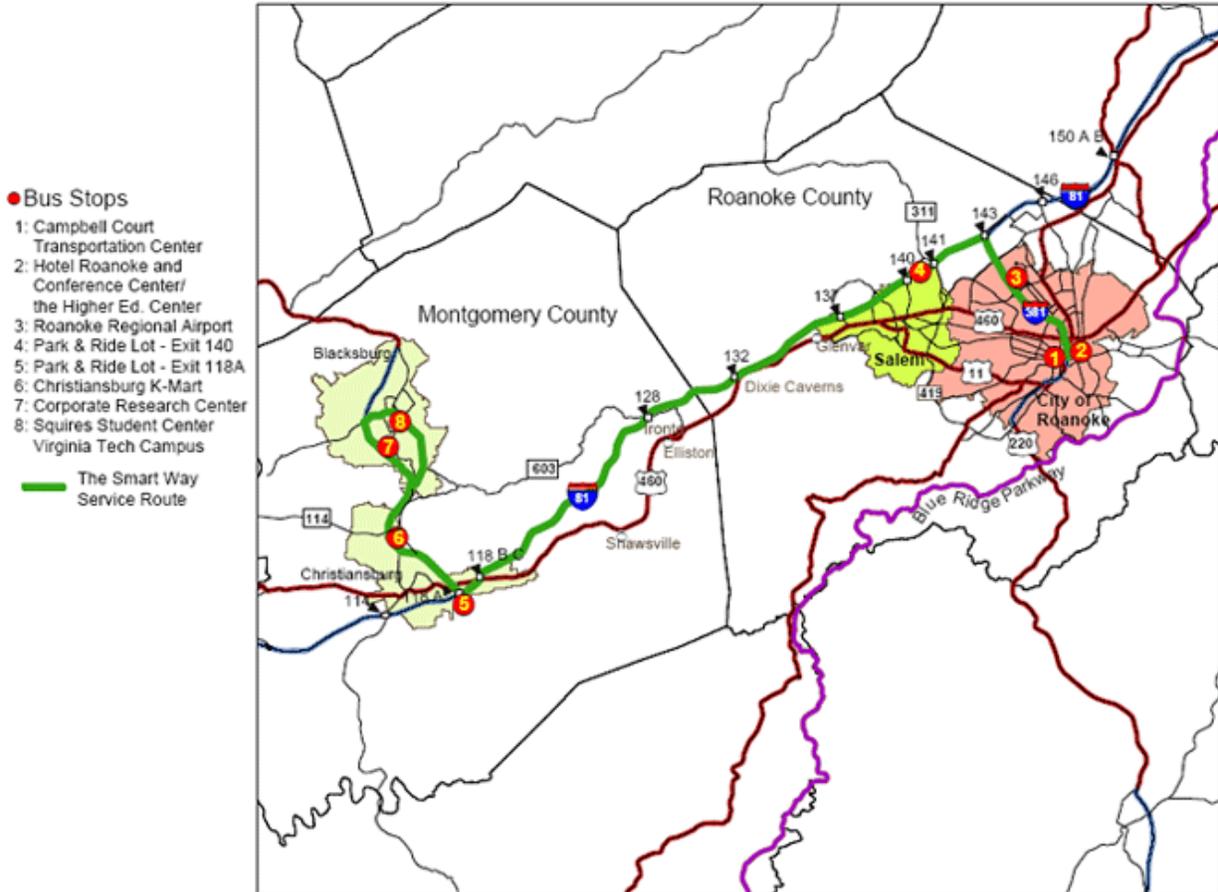
**Figure 3-1
Valley Metro Fixed Route System Map**



**Figure 3-2
Star Line Trolley Downtown Circulator**



**Figure 3-3
SmartWay Commuter Service to Blacksburg**



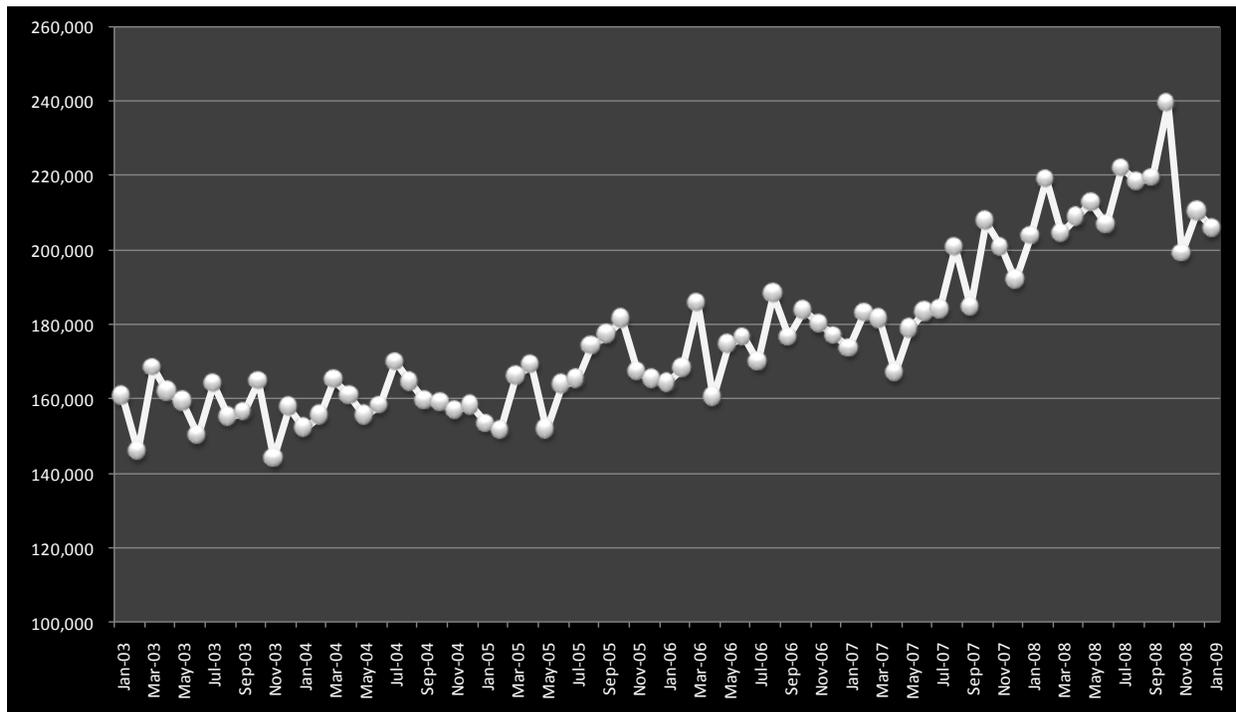
3.1 Existing Service Analysis

Existing ridership performance was conducted by using ridership data collected by the GFI electronic farebox. While the ridership data is collected by day and route, the current GFI reporting capabilities are somewhat limited. The following sections attempt to build on the available ridership data and offer recommendations for enhanced reporting and performance analysis.

System-Wide Fixed-Route Ridership

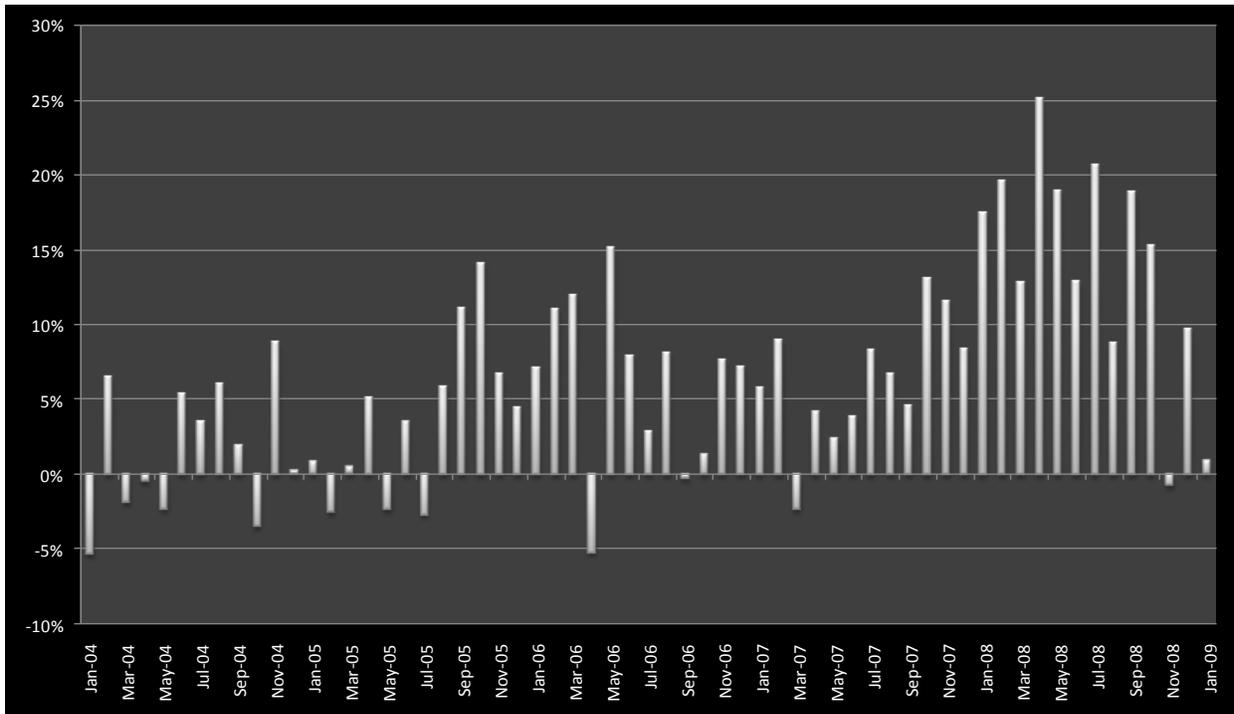
Monthly fixed-route ridership was examined over a five-year period beginning in January 2003 through January 2009. As shown in Figure 3-4, Valley Metro has experienced a significant increase in overall ridership, particularly over the past two years. In fact, October 2008 was a record ridership month with 239,537 riders. This trend can be attributed to a number of factors including gasoline prices and free student fares. There is no known reason for the sharp decline in November 2008 though there is speculation that the economic recession may have impacted employment and/or recreational trips.

**Figure 3-4
System-Wide Monthly Ridership**



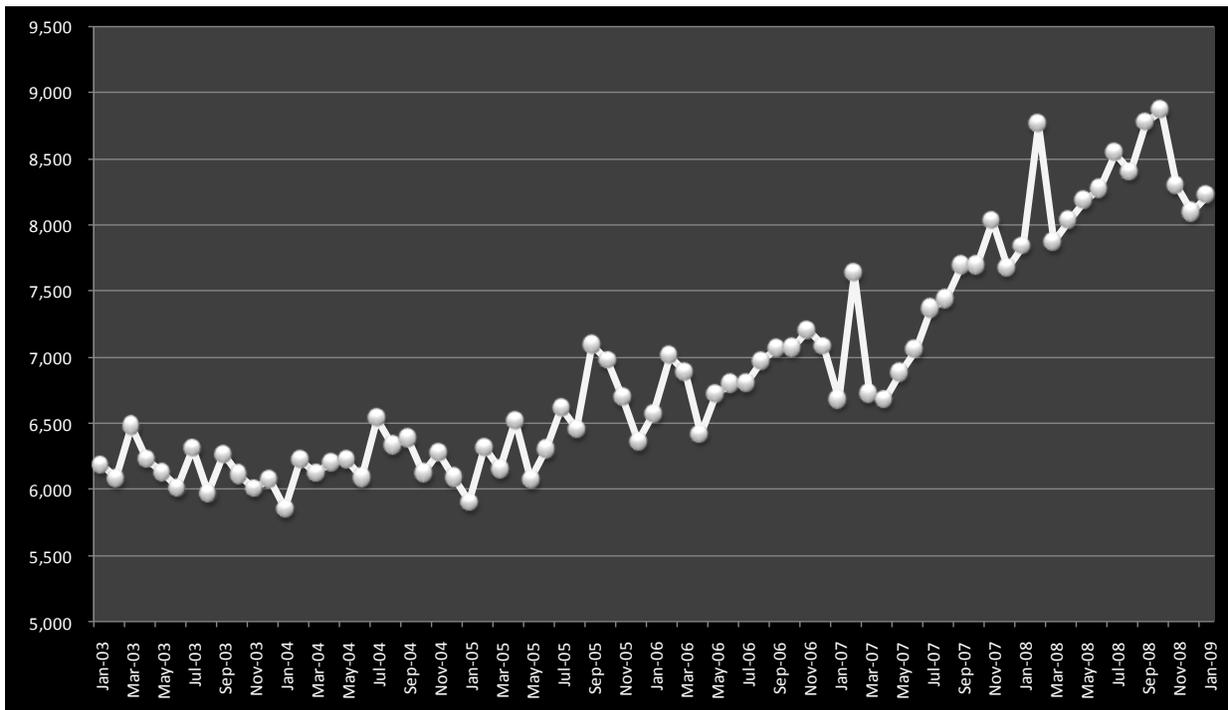
Monthly ridership was also compared to the same month of the previous year (i.e. January 2004 compared to January 2003). This type of comparison is typical amongst transit agencies as ridership patterns tend to be cyclical with school calendars, seasonal changes, etc. Figure 3-5 depicts the percentage change in monthly ridership when compared with the same month of in the prior year. For the most part, Valley Metro experienced increases. Increases greater than 10% became more prominent in 2008 with some months exceeding 20%.

Figure 3-5
Monthly Ridership Percentage Change from Previous Year



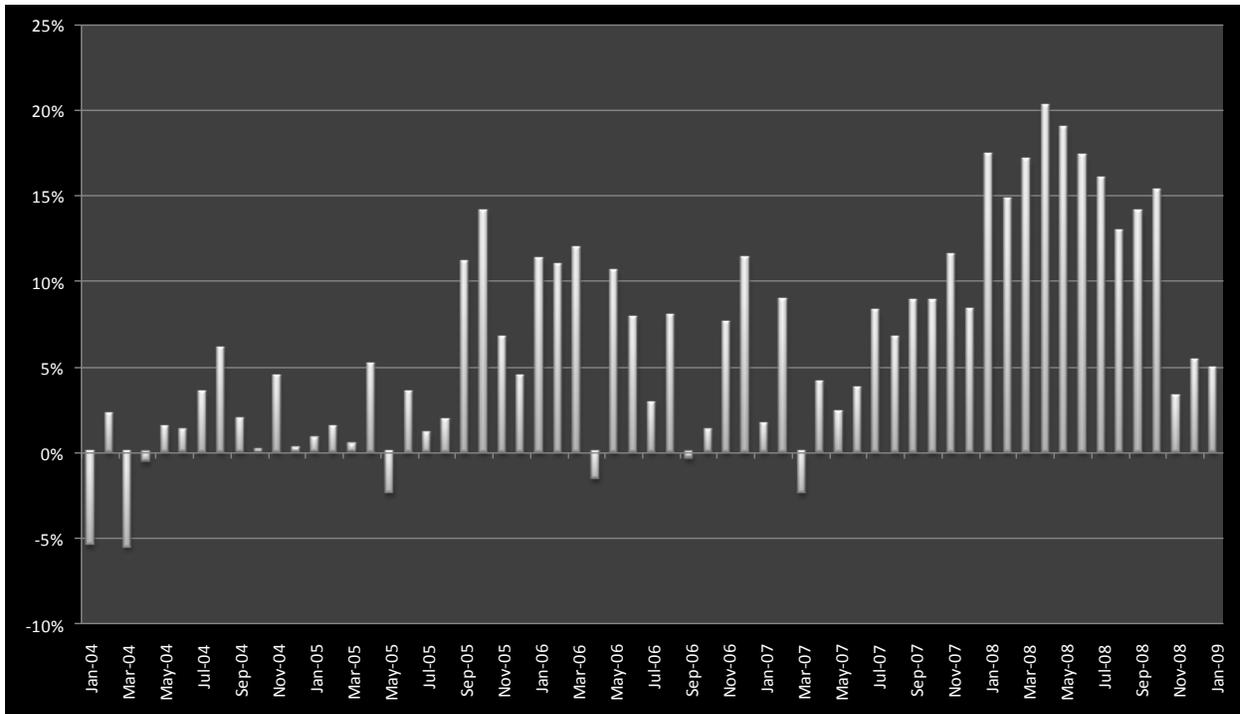
Daily ridership was also calculated by dividing the number of service days for each month into the monthly ridership for the same month. Due to GFI's reporting limitations, weekday and Saturday ridership could not be segregated for this analysis. Figure 3-6 shows the calculated daily system-wide ridership for Valley Metro fixed-route service over the five-year analysis period. As shown in the monthly analysis, daily ridership is also on a steady increase. February 2007 and February 2008 experienced unusually high daily ridership when compared to other months though it is unclear why this may be occurring.

**Figure 3-6
System-Wide Daily Ridership**



Daily ridership was also compared to the same month of the previous year as shown in Figure 3-7. In all but seven instances, ridership reflected an increase over the same month of the prior year. Beginning in 2008, increases of 10% or greater were regular occurrences. Those double-digit increases tend to subside in the most recent months. Nonetheless, that growth has sustained and there has been no noted decrease in daily ridership since March 2007.

Figure 3-7
Daily Ridership Percentage Change from Previous Year

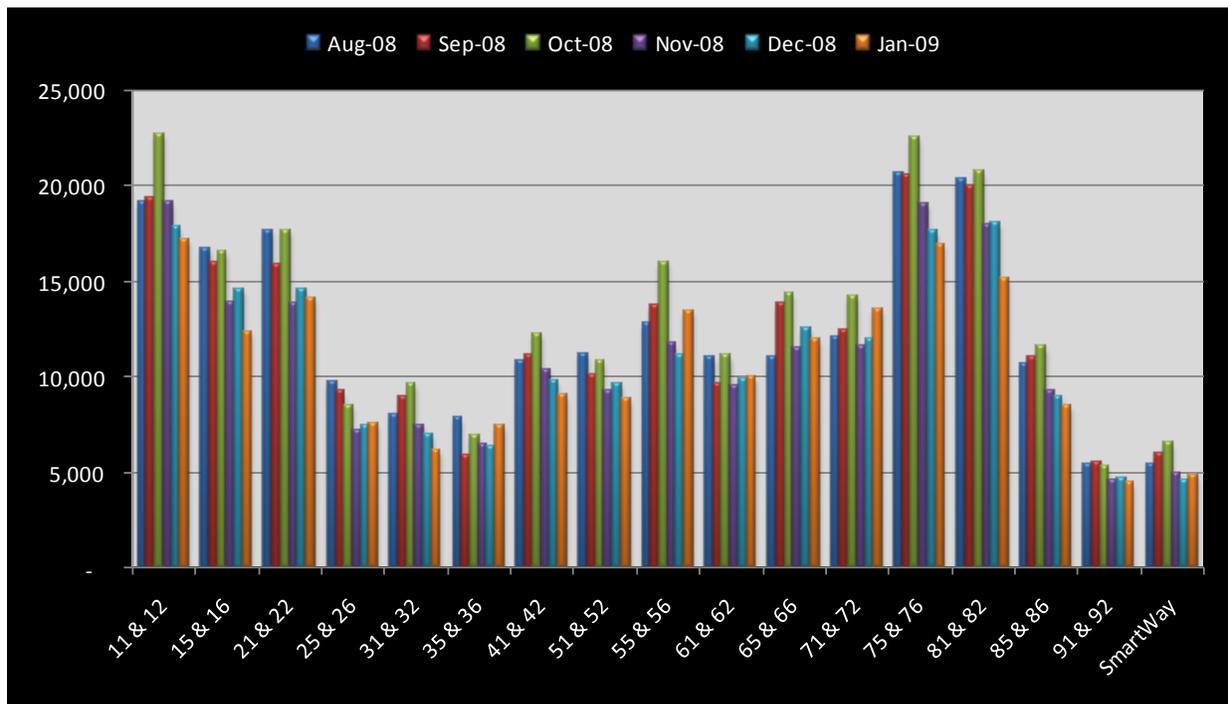


Route-Level Ridership

Valley Metro uses a unique nomenclature to identify its fixed routes. Outbound routes (routes originating from Campbell Court) end in either a "1" or a "5". Inbound routes (routes operating toward Campbell Court) end in either a "2" or a "6". The first digit of a route represents the area/corridor served. Thus, Route 11 operates outbound to Valley View Mall via Cove Road; Route 12 operates inbound from Valley View Mall via Cove Road. For the purpose of this analysis, outbound routes will be paired with their inbound counterpart for productivity scoring.

Monthly route-level ridership has been tracked for the most recent six months (August 2008 through January 2009) and displayed in Figure 3-8. Of the 17 route pairings, Routes 11 & 12, 75 & 76 and 81 & 82 consistently carry the highest number of passengers. Routes 91 & 92 and the SmartWay service consistently carry the fewest number of riders. However, it is important to note that the SmartWay service is a limited-stop regional commuter service that operates fewer daily trips than the other fixed-routes. More quantifiable productivity measures will be assessed later in this section.

Figure 3-8
Monthly Ridership by Route Pairing



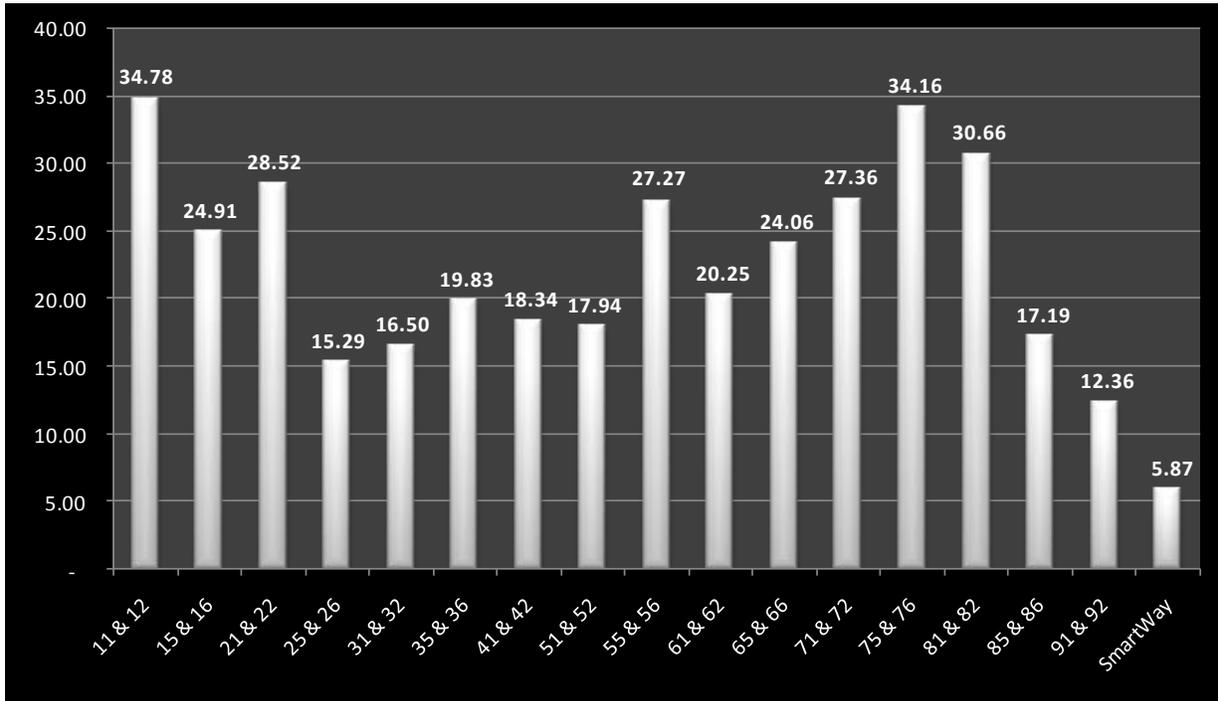
Ridership data for January 2009 has been combined with Valley Metro’s daily ridership statistics to create several performance measures. These measures are industry standards and may be used to compare Valley Metro’s individual route performance with peers across the state and region.

The first measure is Passengers per Revenue Hour (see Table 3-1 and Figure 3-9). The system-wide average is 21.70 passengers per revenue hour. Routes 11 & 12 perform the highest with 34.78 passengers per revenue hour. Routes 75 & 76 also performed strongly showing 34.16 passengers per revenue hour. The SmartWay commuter service ranked the lowest with only 5.87 passengers per revenue hour (22% of the system average). However, this route operates as a regional express service with limited stops, making passenger turnover minimum. By design, the SmartWay service will perform lower than traditional fixed-routes. Routes 91 & 92 also performed lower with 12.36 passengers per revenue hour (56% of the system average).

**Table 3-1
Passengers per Revenue Hour**

Performance Ranking	Route	January 2009 Passengers per Revenue Hour
1	11 & 12	34.78
2	75 & 76	34.16
3	81 & 82	30.66
4	21 & 22	28.52
5	71 & 72	27.36
6	55 & 56	27.27
7	15 & 16	24.91
8	65 & 66	24.06
9	61 & 62	20.25
10	35 & 36	19.83
11	41 & 42	18.34
12	51 & 52	17.94
13	85 & 86	17.19
14	31 & 32	16.50
15	25 & 26	15.29
16	91 & 92	12.36
17	SmartWay	5.87
System Average		21.70

**Figure 3-9
Passengers per Revenue Hour**

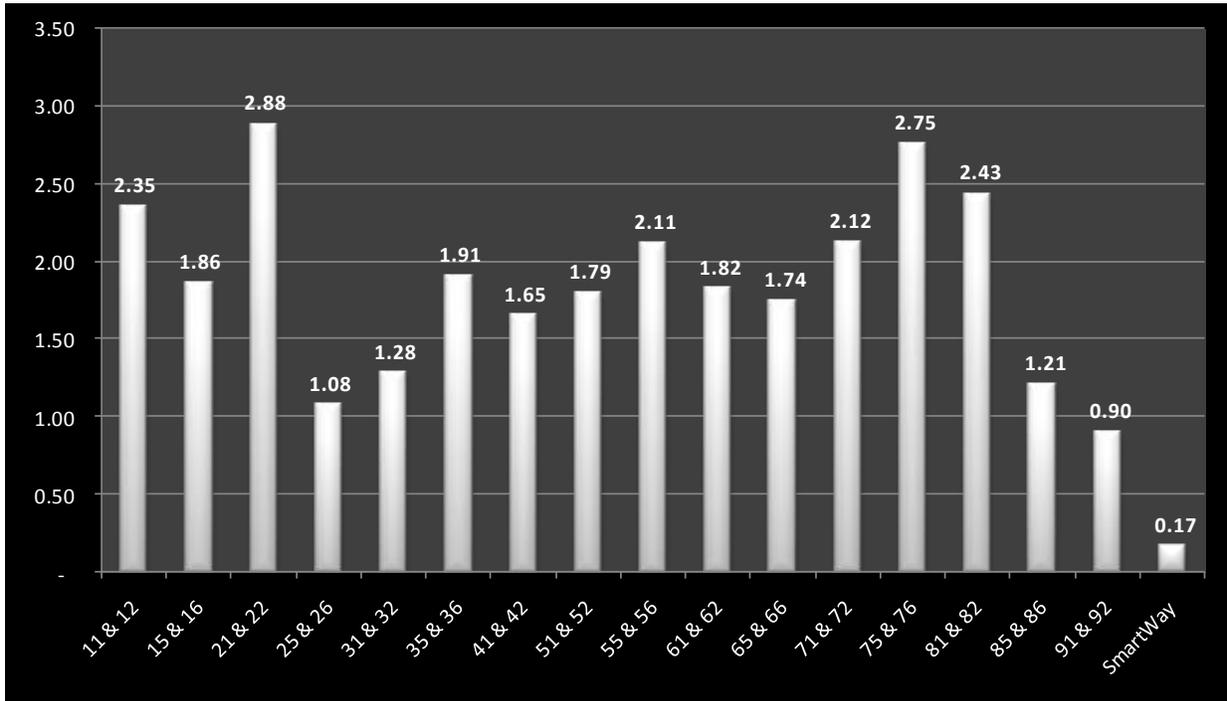


The second performance measure being reviewed is Passengers per Revenue Mile (see Table 3-2 and Figure 3-10). The system-wide average is 1.47 passengers per revenue mile. Routes 21 & 22 perform the highest with 2.88 passengers per revenue mile. Routes 75 & 76 also performed strongly showing 2.75 passengers per revenue mile. The SmartWay commuter service ranked the lowest with only 0.17 passengers per revenue mile (12% of the system average). However, this route operates as a regional express service with limited stops, making passenger turnover minimum. By design, the SmartWay service will perform lower than traditional fixed-routes. Routes 91 & 92 also performed lower with 0.90 passengers per revenue mile (61% of the system average).

**Table 3-2
Passengers per Revenue Mile**

Performance Ranking	Route	January 2009 Passengers per Revenue Mile
1	21 & 22	2.88
2	75 & 76	2.75
3	81 & 82	2.43
4	11 & 12	2.35
5	71 & 72	2.12
6	55 & 56	2.11
7	35 & 36	1.91
8	15 & 16	1.86
9	61 & 62	1.82
10	51 & 52	1.79
11	65 & 66	1.74
12	41 & 42	1.65
13	31 & 32	1.28
14	85 & 86	1.21
15	25 & 26	1.08
16	91 & 92	0.90
17	SmartWay	0.17
System Average		1.47

Figure 3-10
Passengers per Revenue Mile

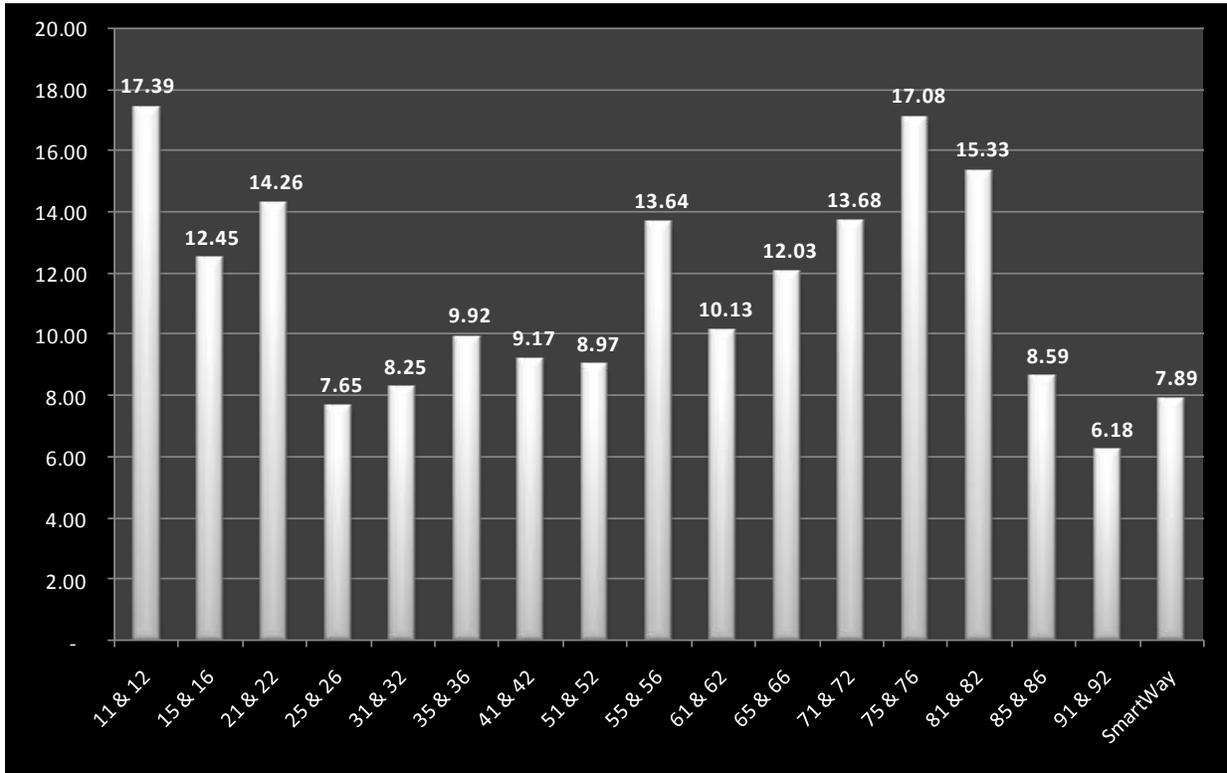


The next performance measure is Passengers per Trip (see Table 3-3 and Figure 3-11). Normally, this measure would not be followed so closely because trip lengths vary from route to route. However, all Valley Metro routes (with the exception of SmartWay) operate with the same round trip running time and very similar trip lengths. As such, they can be fairly compared to one another. The system-wide average is 11.57 passengers per trip. Routes 11 & 21 perform the highest with 17.39 passengers per trip. Routes 75 & 76 also performed strongly showing 17.08 passengers per trip. Routes 91 & 92 ranked the lowest with only 6.18 passengers per trip (53% of the system average). Routes 25 & 26 also performed lower with 7.65 passengers per trip (66% of the system average).

**Table 3-3
Passengers per Trip**

Performance Ranking	Route	January 2009 Passengers per Trip
1	11 & 12	17.39
2	75 & 76	17.08
3	81 & 82	15.33
4	21 & 22	14.26
5	71 & 72	13.68
6	55 & 56	13.64
7	15 & 16	12.45
8	65 & 66	12.03
9	61 & 62	10.13
10	35 & 36	9.92
11	41 & 42	9.17
12	51 & 52	8.97
13	85 & 86	8.59
14	31 & 32	8.25
15	SmartWay	7.89
16	25 & 26	7.65
17	91 & 92	6.18
System Average		11.57

**Figure 3-11
Passengers per Trip**

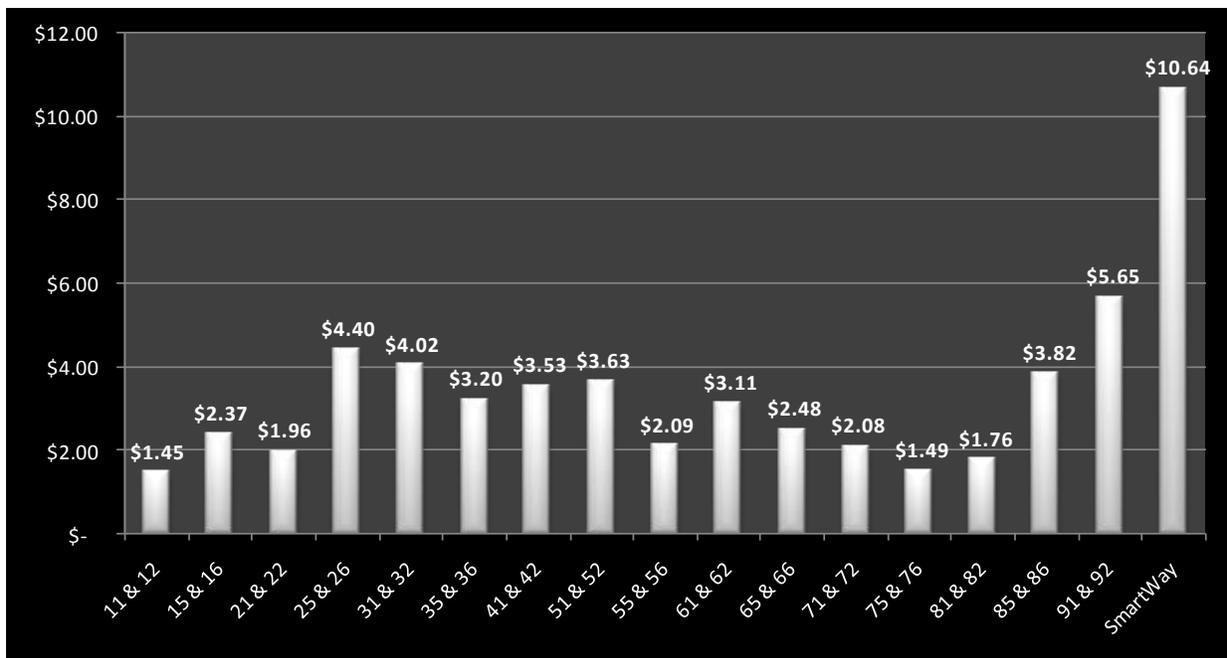


The next two performance measures determine route level cost-effectiveness. The first is Subsidy per Passenger. This measure is derived by taking the calculated cost of each route and deducting the revenue generated for that same route. In this case, cost was calculated by multiplying Valley Metro's cost per revenue hour (from FY09 Budget - Total Budget/Total Revenue Hours=\$80.66) with the number of revenue hours allocated to each route. Each route's revenue is then calculated using the month's average fare (supplied by Valley Metro in the monthly Passenger Rides & Revenue report) and multiplying it times the number of monthly boardings recorded by the GFI farebox. It important to note that SmartWay charges a premium fare for its service, thus farebox revenues must be calculated separately for this measure. Using this methodology, Routes 11 & 12 and 75 & 76 have the lowest subsidy per passenger with subsidies of \$1.45 and \$1.49 respectively. Routes 91 & 92 (\$5.65) as well as the SmartWay service (10.64) have the highest Subsidy per Passenger. The system-wide average Subsidy per Passenger is \$2.94 (when excluding SmartWay). Table 3-4 and Figure 3-12 identify and compare Subsidy per Passenger for Valley Metro fixed-route service.

**Table 3-4
Subsidy per Passenger**

Performance Ranking	Route	January 2009 Subsidy per Passenger
1	11 & 12	\$1.45
2	75 & 76	\$1.49
3	81 & 82	\$1.76
4	21 & 22	\$1.96
5	71 & 72	\$2.08
6	55 & 56	\$2.09
7	15 & 16	\$2.37
8	65 & 66	\$2.48
9	61 & 62	\$3.11
10	35 & 36	\$3.20
11	41 & 42	\$3.53
12	51 & 52	\$3.63
13	85 & 86	\$3.82
14	31 & 32	\$4.02
15	25 & 26	\$4.40
16	91 & 92	\$5.65
17	SmartWay	\$10.64
System Average		\$2.94

**Figure 3-12
Subsidy per Passenger**

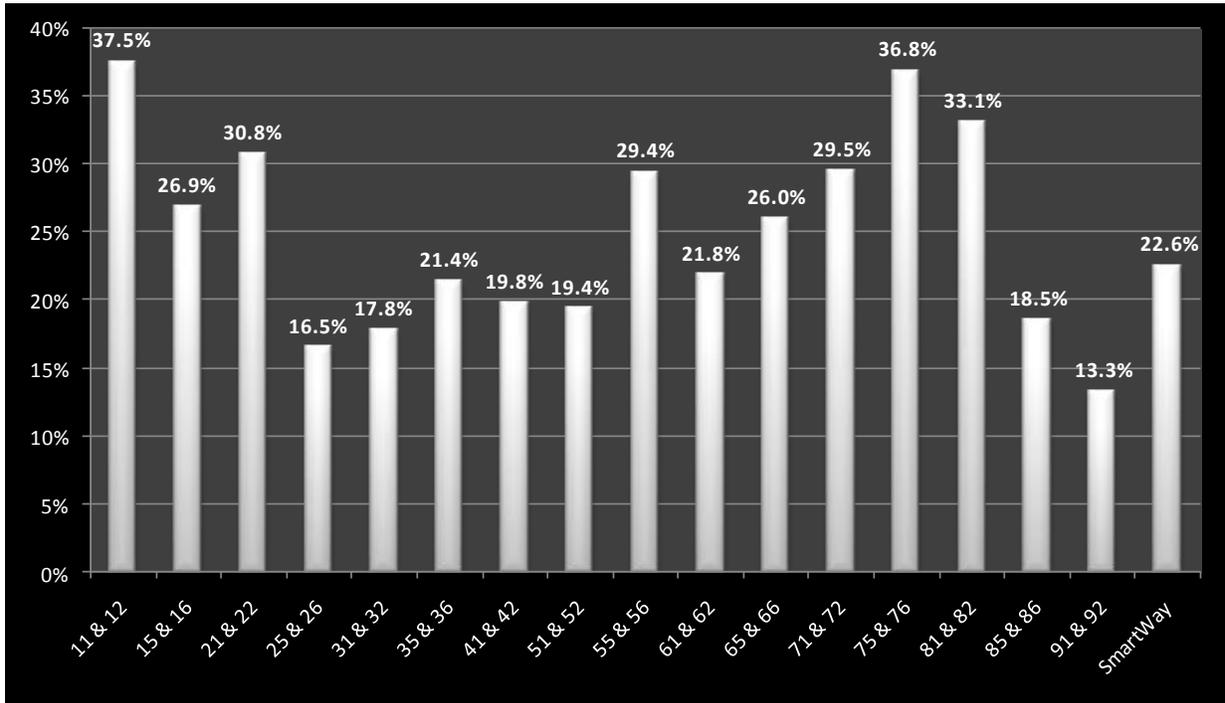


The final route performance measure to be analyzed is Percentage of Farebox Recovery. This is calculated by deriving a percentage of farebox revenue received as compared to each route's cost. In this analysis, Routes 11 & 12 and 75 & 76 were again top performers with 37.5% and 36.8% of their costs being recovered through passenger fares. The lowest performers were Routes 91 & 92 with 13.3% and Routes 25 & 26 with 16.5%. The system-wide average Farebox Recovery is 25.0%. Table 3-5 and Figure 3-13 identify and compare Farebox Recovery rates for Valley Metro fixed-route service.

**Table 3-5
Percentage of Farebox Recovery**

Performance Ranking	Route	January 2009 Percentage Farebox Recovery
1	11 & 12	37.5%
2	75 & 76	36.8%
3	81 & 82	33.1%
4	21 & 22	30.8%
5	71 & 72	29.5%
6	55 & 56	29.4%
7	15 & 16	26.9%
8	65 & 66	26.0%
9	SmartWay	22.6%
10	61 & 62	21.8%
11	35 & 36	21.4%
12	41 & 42	19.8%
13	51 & 52	19.4%
14	85 & 86	18.5%
15	31 & 32	17.8%
16	25 & 26	16.5%
17	91 & 92	13.3%
System Average		25.0%

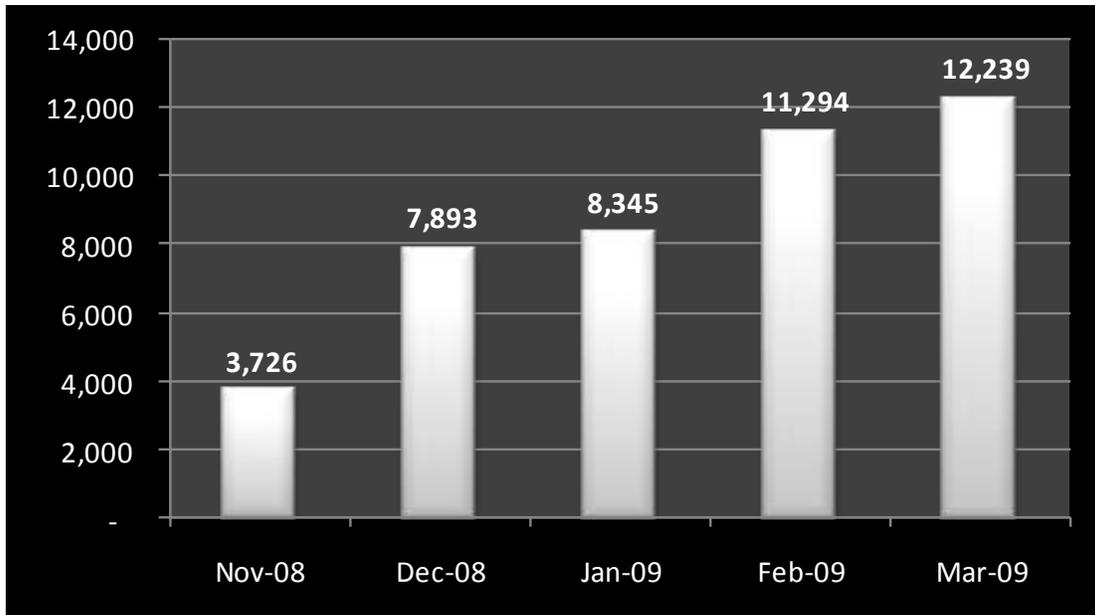
Figure 3-13
Percentage of Farebox Recovery



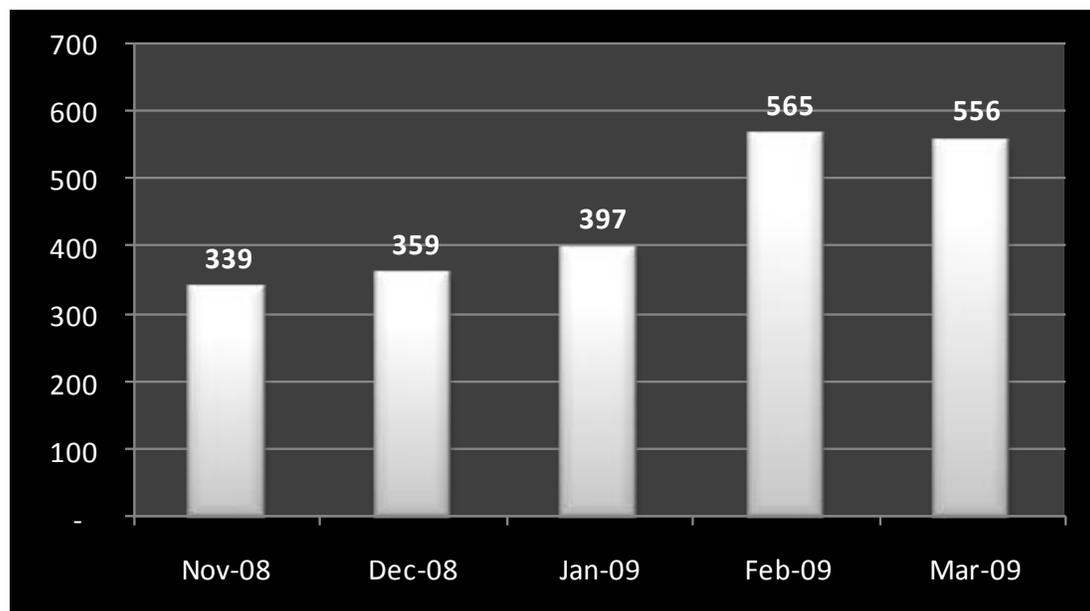
Star Line Trolley

Introduced in November 2008, the Star Line Trolley is still in its infancy and thus, has little ridership trend data for analysis. However, ridership on the downtown circulator has been promising as shown in Figures 3-14 and 3-15 below.

**Figure 3-14
Star Line Trolley Total Monthly Ridership**



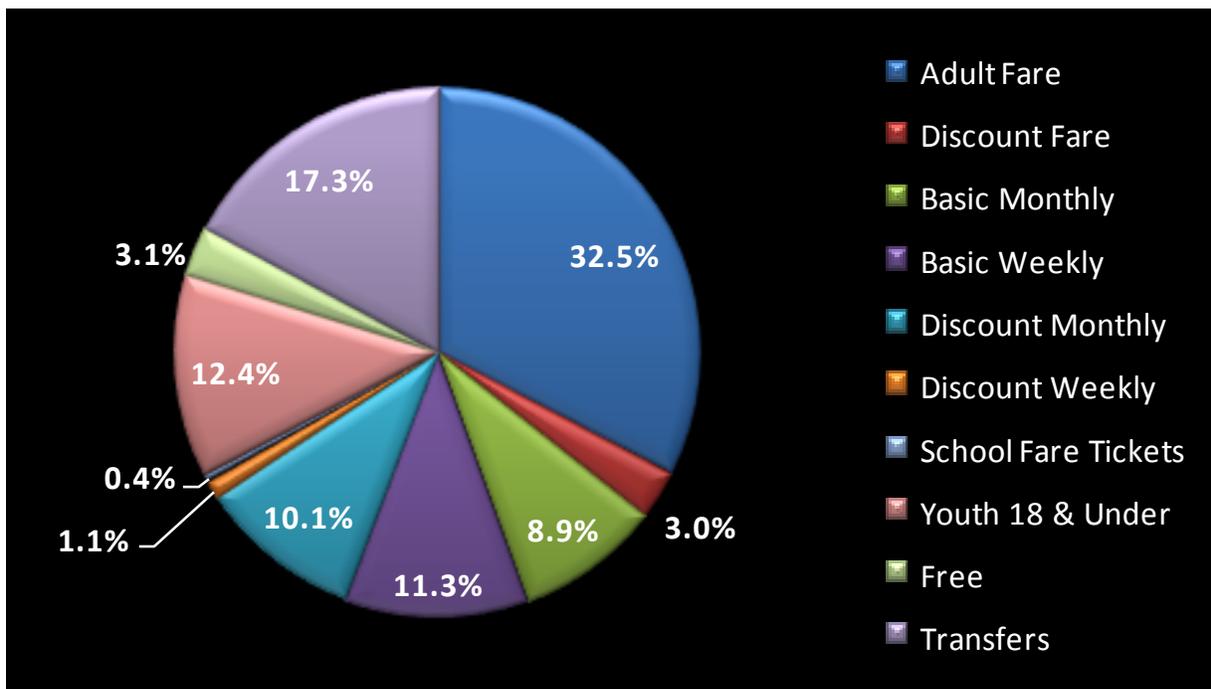
**Figure 3-15
Star Line Trolley Average Daily Ridership**



Fare Distribution

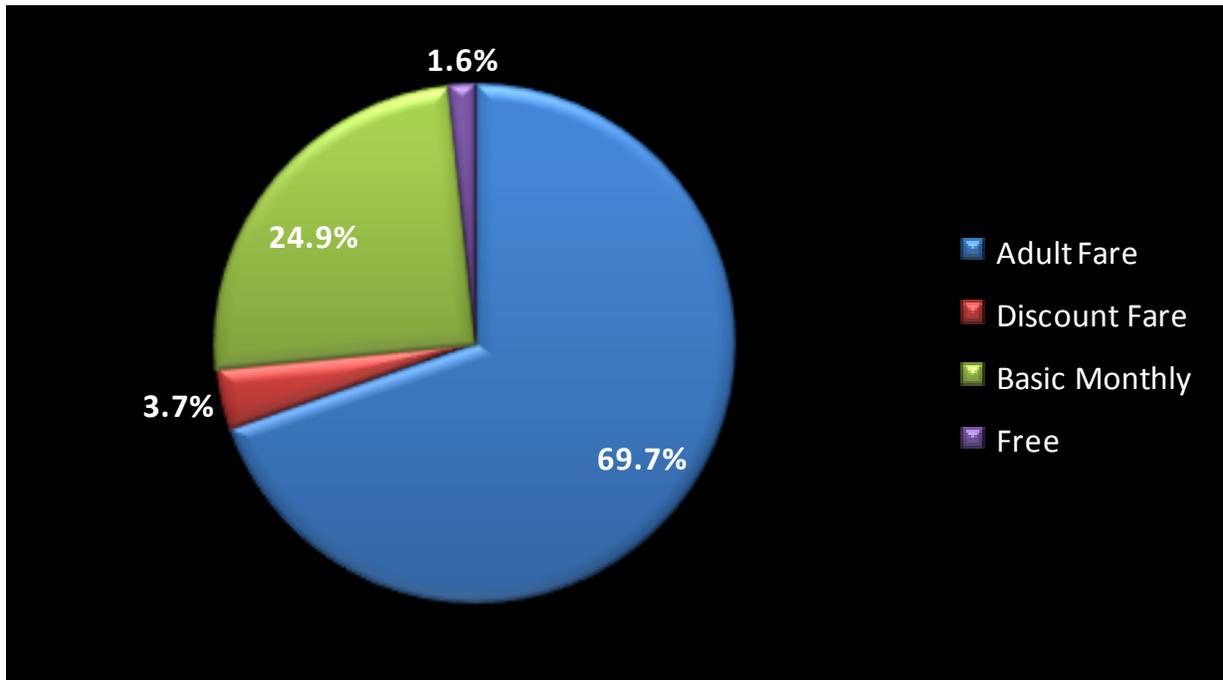
Ridership distribution amongst fare categories have been analyzed as part of this TDP. Valley Metro offers multiple fare options including discounted fares for seniors and free rides for students. Monthly and weekly fare media are also available. Figure 3-16 identifies ridership distribution for Valley Metro's fixed-route service in January 2009. SmartWay ridership and fares are calculated separately and are shown in Figure 3-17.

Figure 3-16
Fixed Route Ridership Distribution by Fare Type



Adult cash fares account for nearly one-third of all fixed-route riders. Transfers are the second highest fare group with 17.3% of all boardings. Monthly and weekly passes generate more than 20% of Valley Metro's ridership. Discounted fares (senior fares) tend to favor monthly passes (10.1%) over daily cash fares (3.0%) or weekly passes (1.1%). Overall, discounted riders account for nearly 15% of all riders. Free student riders also comprise a significant number of Valley Metro's passengers with 12.4% of overall ridership.

Figure 3-17
SmartWay Ridership Distribution by Fare Type



SmartWay offers fewer fare options due to its premium fare structure. Adult cash fares account for the majority of riders at 69.7%. Nearly 25% of the riders utilize monthly passes. Free and discounted fares are very low as compared to the remaining fare types.

3.2 Historical Performance Evaluation

National Transit Database (NTD) information was collected for the past 5 years (FY 2003 through 2007) to determine pertinent ridership, service effectiveness and cost effectiveness trends for Valley Metro. Table 3-6 presents annual ridership, service-hours and resulting riders per revenue service-hour over the past five years. This performance measure provides an indication of service effectiveness. As shown in this table, fixed-route service effectiveness has experienced a slight increase over the past 5 years. Service effectiveness for demand response, however, has shown a slight decrease in productivity.

**Table 3-6
Service Effectiveness Historical Trends**

Year	Passenger Trips		Revenue Hours		Pass/Rev Hour	
	MB	DR	MB	DR	MB	DR
2003	1,913,318	35,225	99,376	32,739	19.25	1.08
2004	1,887,571	38,410	99,717	36,502	18.93	1.05
2005	1,923,317	41,959	107,298	38,448	17.93	1.09
2006	2,023,169	45,048	103,672	42,212	19.52	1.07
2007	2,143,146	46,085	104,639	45,523	20.48	1.01

Table 3-7 provides a historical perspective of cost-effectiveness trends. This table presents passenger trips, annual O&M costs, and resulting cost per unlinked passenger trip for both fixed route and demand response service. The cost figures presented in this table are unadjusted for inflation. The cost per passenger trip for fixed route service has decreased by 15% from 2003 to 2007. The cost per passenger trip for demand response service has also decreased by 29%.

**Table 3-7
Cost-Effectiveness Historical Trends**

Year	Passenger Trips		O&M Costs		O&M/Pass Trip	
	MB	DR	MB	DR	MB	DR
2003	1,913,318	35,225	\$ 4,661,638	\$ 539,491	\$ 0.41	\$ 0.07
2004	1,887,571	38,410	\$ 4,985,780	\$ 623,201	\$ 0.38	\$ 0.06
2005	1,923,317	41,959	\$ 5,534,724	\$ 723,998	\$ 0.35	\$ 0.06
2006	2,023,169	45,048	\$ 5,987,860	\$ 796,158	\$ 0.34	\$ 0.06
2007	2,143,146	46,085	\$ 6,187,868	\$ 889,210	\$ 0.35	\$ 0.05

NTD data was also used to determine Valley Metro's service efficiency trends. Table 3-8 presents annual O&M costs, annual revenue hours, and the resulting cost per revenue hour for fixed route and demand response service. The cost figures presented in this table are unadjusted for inflation. The cost per revenue-hour for fixed-route service has increased 26% from 2003 to 2007. Costs for demand response service have increased by 41 percent. Inflation has risen by 12% over this same time period.

**Table 3-8
Service-Efficiency Historical Trends**

Year	O&M Costs		Revenue Hours		O&M/Rev Hour	
	MB	DR	MB	DR	MB	DR
2003	\$ 4,661,638	\$ 539,491	99,376	32,739	\$ 46.91	\$ 16.48
2004	\$ 4,985,780	\$ 623,201	99,717	36,502	\$ 50.00	\$ 17.07
2005	\$ 5,534,724	\$ 723,998	107,298	38,448	\$ 51.58	\$ 18.83
2006	\$ 5,987,860	\$ 796,158	103,672	42,212	\$ 57.76	\$ 18.86
2007	\$ 6,187,868	\$ 889,210	104,639	45,523	\$ 59.14	\$ 19.53

3.3 Peer Review Analysis

A peer review analysis was conducted as part of this TDP work effort to determine if Valley Metro's service effectiveness, cost effectiveness and service efficiency characteristics are in-line with peer agencies. Five agencies were selected as peer systems in this analysis.

- CamTran (Johnstown, PA)
- CAT (Harrisburg, PA)
- KVRTA (Charleston, WV)
- Rabbitransit (York, PA)
- RRTA (Lancaster, PA)

These properties were selected based on the following criteria:

- Contiguous to VA or within FTA Region 3 (NC, KY, MD, TN, WV plus DE & PA)
- Minor or no College/University Population
- Population/Population Density
- Vehicles Operated in Maximum Service
- Revenue Service Hours Operated
- Passenger Trips Provided

FY 2007 National Transit Database (NTD) data was used for the peer analysis. Appendix A at the end of this report presents a Technical Memorandum with detailed findings from this peer analysis.

In general, Valley Metro's ridership, service and financial characteristics did not differ significantly from the peer systems. Key findings were as follows:

- **Vehicle Utilization:** Valley Metro's fleet size and peak utilization was similar to the peer average. Valley Metro did run more revenue hours and revenue miles per peak vehicle than the peer average, despite only operating Monday through Saturday.
- **Service Supplied:** Valley Metro operates slightly fewer revenue-hours and revenue-miles per capita than the peer average. This is due in part to the peer systems operating on Sundays when Valley Metro does not. Valley Metro also operates slightly fewer revenue hours and revenue miles per square mile than the peer average.
- **Service Productivity:** Valley Metro's service productivity was similar to the peer systems when compared on a revenue hour basis. It was slightly higher on a revenue mile and per capita basis.
- **Cost Efficiency:** Valley Metro's cost efficiency characteristics were also similar to the peer systems. Valley Metro was more cost effective on a passenger trip, revenue mile basis and a revenue hour basis.
- **Vehicle Maintenance Performance:** Valley Metro had a lower rate of revenue vehicle failures than the peer average. Much of this can be attributed to their relatively young fleet.
- **Farebox Revenues:** Valley Metro did slightly better than its peer systems with regards to farebox recovery for fixed route service. Fixed route service for Valley Metro had a farebox recovery rate of 25% vs. 24% for the peer systems. However Valley Metro's STAR did significantly worse than its peer systems with regards to farebox recovery for demand response service. The demand response service for Valley Metro had a farebox recovery of 12% vs. 34% for the peer systems.
- **Source of O&M Funds:** Valley Metro had similar characteristics to the peer systems with regards to the percent of funding generated by local sources. Valley Metro had significantly less funding from State sources. The peer systems, however, had a smaller portion of operations funded from federal sources.
- **Source of Capital Funds:** Valley Metro's funding sources for capital funds was also fairly similar to the peer systems.

3.4 On-Board Survey Findings

An on-board transit rider survey was also conducted as part of the TDP process. Specifically, results from this rider survey were used to determine rider characteristics, trip-making characteristics and perceptions regarding quality of transit services and future needs. Individual transit rider survey forms were prepared for Valley Metro's fixed route service and Star Line Trolley service. All surveys were conducted during the week of February 9 through 13, 2009. Bus Operators encouraged passengers to complete the surveys as they boarded each bus. Survey questions were developed and reviewed with Valley Metro's staff prior to administration. Each survey instrument asked patrons to respond to several questions pertaining to:

- Their socioeconomic status;
- General characteristics of the trip they were making at the time of the survey such as trip purpose, origin and destination;
- Perceptions regarding Valley Metro's existing service; and
- Perceptions regarding needed improvements.

Appendix B at the end of this report presents a Technical Memorandum with detailed findings from the on-board transit rider survey.

Using survey results presented in the prior section, the typical Valley Metro Transit rider (for both fixed route and Star Line) is as follows:

- Female
- Over 30-years old
- A Caucasian
- At least a High School Graduate (fixed route only)
- Fixed Route has a household income under \$20,000, while Star Line has a household income over \$50,000
- Uses Valley Metro's service at least 2-3 days a week
- Uses transit for work or shopping trips
- Rides transit because they don't have a car

There are some slight differences in rider profiles between fixed route and Star Line riders. The majority of the Star Line riders have a household income of over \$50,000 (44%) while the

majority of the Fixed Route patrons have an income of under \$20,000(68%). The fixed route riders are predominantly using the service for home-work trips and less for social/recreational than Star Line riders. The fixed route service received favorable ratings (very good or good) for most service categories such as areas served and cost of the bus fare. The lowest fixed route rating was for hours of bus service (46% rated hours of fixed route bus service as very good or good with the remaining 54% rating it as okay, poor or very poor). The Star Line survey asked its patrons how satisfied they were with the overall performance. Approximately 96% were very satisfied or somewhat satisfied with the service.

When asked about potential service improvements, fixed route respondents rated all five potential categories as either very important or somewhat important (security, expanded service outside of city, late evening service, more direct bus routing and more frequent service). Late evening fixed route service received slightly more requests than the other categories. Star Line respondents indicated longer service hours and an increase in bus safety as factors that needed to be addressed.

3.5 Public Outreach Efforts

On February 26 and 27, 2009 a series of meetings were held to gather public input on Valley Metro's current services as well as solicit thought regarding future transit needs in Greater Roanoke. The meetings and their locations were as follows:

- Roanoke Valley Alleghany Regional Commission – February 26, 2009, 3:00 p.m. - 4:00 p.m.
- Valley Metro Campbell Court Transit Center – February 27, 2009, 9:00 a.m. - 11:00 a.m.
- Valley Metro Operations Base – February 27, 2009, 11:30 a.m. - 1:30 p.m.

Each meeting operated under a slightly different format, tailored for the meeting environment and audience. The first meeting was conducted at the regularly scheduled meeting of the Roanoke Valley Alleghany Regional Commission. Notice of the meeting was included as part of the commission's regularly posted agenda and advertising process. The consultant provided a brief presentation outlining the purpose and timeline of the TDP (see Appendix C). The session was then opened up for questions and input. Input received from the Roanoke Valley Alleghany Regional Commission included:

- A desire to see some level of transit participation from Unincorporated Roanoke County. Much of the area's development has occurred outside of the City's boundaries. Patrons have difficulty accessing employment and/or housing because one or the other falls outside of Roanoke's city limits and remains unserved. Specific areas mentioned include SR 419, North Plantation Road and Blue Hills Industrial Park.
- A desire to see improved convenience for transit pass purchases. Specifically, there was a request to allow online pass purchases as well as accommodate credit card purchases

at Campbell Court. Partnerships with major employers to provide more streamlined pass purchases were also suggested.

- There was a suggestion to improve marketing and outreach, particularly to younger “technologically-savvy” riders. Maps and schedules should be made available electronically and outreach should target more choice riders.

The second meeting was conducted at the Campbell Court Transit Center in downtown Roanoke. This meeting was conducted in an “open house” format where the consultant team approached riders as they waited in the indoor passenger area. The meeting was advertised on-board all of Valley Metro’s buses as well as through flyers posted throughout the terminal area. This meeting generated the greatest amount of comments. Input received from patrons at the Campbell Court Transit Center was much more varied and included the following, many of which resonated from multiple customers:

Service Related Comments (# of Comments):

- Later service needed to service 3rd shift workers (last trip outbound at least 11:00 p.m.) (14)
- Sunday service (12)
- All day – same as Saturday (4)
- 7 a.m. to 3 p.m. (2)
- At least until 1 p.m.
- Until at least 6 or 7 p.m.
- 30 minute service during midday (10)
- Service to Wal Mart and Kroger on U.S. 460 (6)
- Need service from Roanoke to Rocky Mt. (5)
- Need service into County (Richfield, Cave Spring Corner, Hollins) (5)
- Routes 11, 15, 21 and 81 experience overloads during afternoon peak hours (5)
- Need service out on U.S. 220 to Wal Mart & I Hop (4)
- Need to extend service to Bedford and have Lynchburg system do the same to provide connections between the two systems (3)
- Service to S.R. 419 corridor – industrial jobs (3)

- DMV is moving in August to Valleypointe on Peters Creek Road, need to continue to serve this location (2)
- Provide better timed connections at transfer locations (2)
- Poor connection between Routes 91 and 72 at Lewis Gale Hospital
- Run service later to serve the Salem and Roanoke Civic Centers, you can get to the events but have to take cab home (2)
- Need 15 minute service frequencies on all routes all day
- Need a mall shuttle (Tanglewood to Valley View to Crossroads)
- Need crosstown service that does not require transfers at Campbell Court
- Need more service to Doctors offices
- Need service to the Goodwill on Williamson
- Put Trolley Service on Williamson Route (i.e., more frequent service as well)
- Regular bus service to the Airport
- Routes 15 & 81 arrive late at terminal, drivers won't call ahead to hold buses for transferring passengers (during midday waits can be up to 55 minutes until the next bus)
- Run later service on Holidays
- Serve Tanglewood and Valley View Malls at least until 11 p.m.
- Service into the Denton Kroger needs to be restored when the construction is completed
- Start service earlier in the morning to accommodate 6:00 a.m. employment

Capital Facilities Related Comments (# of Comments):

- Expand Campbell Court Transit Center
- Add more bathrooms (17)
- Add more passenger waiting room at bus pick-up locations (7)
- Upgrade terminal (7)
- Bus spacing is too tight – cannot deploy bike racks

- More benches and bus shelters throughout the system (13)
- Need 40 foot buses due to overloads on Routes 11, 15, 21, 65, 75 (Sat) and 81; keep 30 foot buses on lighter routes (5)
- Bus Shelters at the Valley View Mall (3)
- Need new Park & Ride and express service in Bedford
- Set-up farebox to return tickets with un-used fare and-or passes

Other Misc. Comments (# of Comments):

- Drivers are very nice (18)
- People on bus are too loud, specifically kids (6)
- Kids on bus are disrespectful and do not give seats up to elderly, women and pregnant women (4)
- Full-fare customers are resentful of free-fare students who are unruly and crowd the buses (3)
- Buses are clean (2)
- Buses are late during bad weather (2)
- No advertising of the Trolley bus – could get a bunch more riders if advertised in the areas served (2)
- #71 & #81 driver is not nice to white riders – AM time period
- Can't buy daily, weekly and monthly passes on the bus, need to be able too!
- Current fares are o.k. and should not be raised
- Customer service staff are very helpful
- Need additional Security Guards at Campbell Court Transit Center
- Need to have driver operated rear doors, not push open doors
- Seek community support for Transit through public and church organizations
- Some drivers show a poor attitude when asked to assist disabled riders
- Valley Metro staff treats riders like idiots

- Willing to pay higher fare to get more transit service – to get places & have a fuller life

The final meeting occurred at Valley Metro's operating base and was designed to garner input from Bus Operators and Valley Metro staff. This meeting was conducted as an informal roundtable which allowed the staff to interact with one another as well as the consultant team. Given the schedule timing of the meeting, Bus Operator participation was divided into two groups. The first part of the meeting gathered input from afternoon/evening shift drivers who were to begin their work day in the upcoming hour. The second part of the meeting solicited input from morning shift drivers who had just completed their work day. Both groups were well represented and participated equally. Their comments and input are as follows:

Service Related Comments (# of Comments):

- Need 30 minute service midday on Routes 11, 15, 16 and 81 (3)
- Need Mall Runs (i.e., shuttles between Malls)
- Create more crosstown Routes, less routes to Downtown – regional connectivity
- Need more circulators feeding local malls
- Shuttles to Mall from nearby areas
- Sunday service
- Later service to 11 p.m. or 12 a.m., especially Routes 21 and 81
- Run later service to Malls to serve workers, 11 p.m.
- New Service into County
- Peters Creek Road / Williamson Road
- S.R. 419
- U.S. 460 to Wal Mart
- Connect with Lynchburg System in Bedford
- Add new Sunday service at 60 minute frequencies
- Connect with Blacksburg and Lynchburg Systems
- Some peak service is underutilized
- More Trolley service

- Need service on S.R. 419 to Brambleton – at least 1.5 buses, run like the Salem service (crosstown)
- Overloads on Routes 11, 15, 75, 81, 82
- Route 11, 12, 15, and 81 run times are tight in p.m. period

Capital Facilities Related Comments (# of Comments):

- Build Park & Ride Stations at end-of-line locations with driver restroom facilities
- Bus Stops are too close together on routes, slows down bus service
- Improve parking near Campbell Court Terminal to help ease bus movements into and out of terminal
- More driver restrooms at Campbell Court Transit Center
- Need lighting at bus stops, at least higher ridership stops
- Need Shelter at Goodwill site in Salem

Other Misc. Comments (# of Comments):

- Coordinate better with City regarding street closures (2)
- Bus stops are spaced too close together and are poorly lit
- Downtown streets feeding Campbell Court are difficult to navigate and create running time problems
- Help regulate passenger movements at Campbell Court Terminal, too many distractions entering and exiting the terminal with passengers walking through drive isles, accident waiting to happen!
- Limit kids riding to specific hours, end at curfew time
- Make Campbell Court a Smoke Free area, designate smoking areas away from the Passenger boarding areas
- Need One Agency to serve all communities in the Valley
- Need to have schools train kids on how to ride the bus, also have the schools do the disciplining of kids causing problems on Valley Metro service

- Overloads are caused by excessive number of kids, causing fare paying adults to be passed up due to overloads
- Patrick Henry H.S. (#65/66)
- Signalization needed to accommodate left turns out of Campbell Court
- William Fleming H.S. (#11/12)

Despite the difference in audiences and meeting formats, many of the comments between the three meeting groups carried consistent themes. The most prevalent of those were:

- Campbell Court's facilities need to be improved for riders and drivers
- Pre-purchased bus passes need to be more easily accessible
- Service frequency needs to be better distributed to accommodate demand
- Service needs to be more regional in nature, ignorant of municipal boundaries
- Service needs to operate later in the evening to accommodate job access
- Service needs to operate on Sundays to accommodate job and recreational access
- Student ridership (free fares) has become troublesome for riders and drivers
- More transfer options outside of Campbell Court need to be made available

3.6 Facility and Equipment Characteristics

As was noted in Chapter 1 of this TDP, the Greater Roanoke Transit Company owns two facilities. The first is 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 of 46 buses.

The second facility is the Campbell Court Transportation Center located at 17-31 West Campbell Avenue. This facility features restored nineteenth century facades to include a transportation center, parking garage and office/retail space. On the ground level, Valley Metro's Transportation Center provides passenger information, ticket sales, and an indoor lobby for

transit patrons. The terminal serves as a central hub for transfer between Valley Metro buses or other modes of transportation. A Greyhound bus station is also located in the terminal. The facility also features a 104-space parking garage for private vehicles with parking available at monthly rates. The remainder of the first level, the second level, and the third level are leased to a variety of retail, restaurant, and business establishments. The Greater Roanoke Transit Company owns Campbell Court and the GRTC Board of Directors governs the policies and operational procedures of the facility, as well as approval of all tenants.

Valley Metro owns and maintains 42 heavy-duty fixed-route buses and four replica trolleys as well as nine paratransit vehicles that are operated by RADAR. The average age of Valley Metro's fixed-route revenue fleet is 4.5 years. The average age of the STAR paratransit fleet is 3.9 years. In addition to the buses, Valley Metro maintains a non-revenue fleet of 10 vehicles consisting of trucks, vans, sport-utility vehicles and a car. Tables 3-9, 3-10 and 3-11 identify Valley Metro's fleet composition.

**Table 3-9
Valley Metro Fixed-Route Revenue Fleet**

Vehicle ID #	Year	Make	Seated Capacity	Number of Vehicles
0101-0110	2001	Gillig	37	10
0401-0410	2004	Gillig	37	10
0411-0414	2004	Glaval	23	4
0601-0618	2006	Gillig	37	18
0801-0804	2008	Double K Trolley	39	4
Total Fleet				46

**Table 3-10
STAR Paratransit Revenue Fleet (Operated Under Contract by RADAR)**

Vehicle ID #	Year	Make	Number of Vehicles
22	2003	Ford	1
9, 27	2004	Ford	2
42	2005	Ford	1
33, 62-65	2006	Ford	5
Total Fleet			9

**Table 3-11
Valley Metro Non-Revenue Fleet**

Vehicle ID #	Year	Make	Model	Number of Vehicles
Unit 9	1993	Chevy	Kodiak Truck	1
Unit 6	1999	Ford	Explorer	1
Unit 5	2002	Ford	Explorer	1
Units 7 & 8	2003	Ford	F-250 Truck	2
Unit 4	2004	Chevy	Van	1
Unit 3	2005	Chevy	Van	1
Unit 2	2005	Ford	Expedition	1
Unit 10	2005	Ford	Taurus	1
Unit 1	2009	Ford	Van	1
Total Fleet				10

3.7 Title VI and Triennial Review

Valley Metro’s Title VI Program was updated in January 2008 and is in compliance with 49CFR Section 21.9(b). The Title VI Plan identifies the General Manager as the FTA’s Title VI Coordinator. The Assistant General Manager is appointed to investigate and track all Title VI complaints. The Objectives of Valley Metro’s Title VI Program are as follows:

- To ensure that the level and quality of transportation service is provided without regard to race, color or national origin.
- To identify and address, as appropriate, disproportionately high and adverse human health and environmental effects, including social and economic effects of programs and activities on minority populations and low-income populations.
- To promote the full and fair participation of all affected populations in transportation decision making.
- To prevent the denial, reduction or delay in benefits related to programs and activities that benefit minority populations or low-income populations.
- To ensure meaningful access to programs and activities by persons with limited English proficiency.

Valley Metro went through FTA’s Triennial Review Program in 2008 and was found to be in compliance in 18 of FTA’s 23 areas of requirements. Deficiencies were found in the following five areas: Procurement, Buy America, Half Fare, ADA and Safety & Security. Valley Metro has taken corrective actions for all five areas and the FTA has determined those corrective actions

to be sufficient. Copies of Valley Metro's Title VI Program and results of the most recent Triennial Review can be found in Appendix C of this TDP.

4.0 TRANSIT SERVICE AND CAPITAL NEEDS ASSESSMENT

This chapter identifies potential service and facility needs for the Valley Metro service area. Service and facility needs are identified based on the evaluation conducted in previous chapters of this TDP, stakeholder meetings and demographic analysis. The demographic analysis identifies the propensity to use transit based on household and employment densities from the Roanoke Valley Alleghany Regional Commission Long-Range Transportation Plan Update. This is followed by a financially unconstrained listing of proposed service improvements, new route concepts and facility recommendations where applicable. Cost estimates and policy implications have been identified for each proposed need.

4.1 Demographic Analysis

For mass transit to be successful there needs to be “mass” or density. Fixed route transit services are generally successful in areas with high household and employment densities. Thus, one means of identifying the need for transit is to identify areas that have attained at least the minimum densities, or thresholds sufficient to be supportive of fixed route transit service.

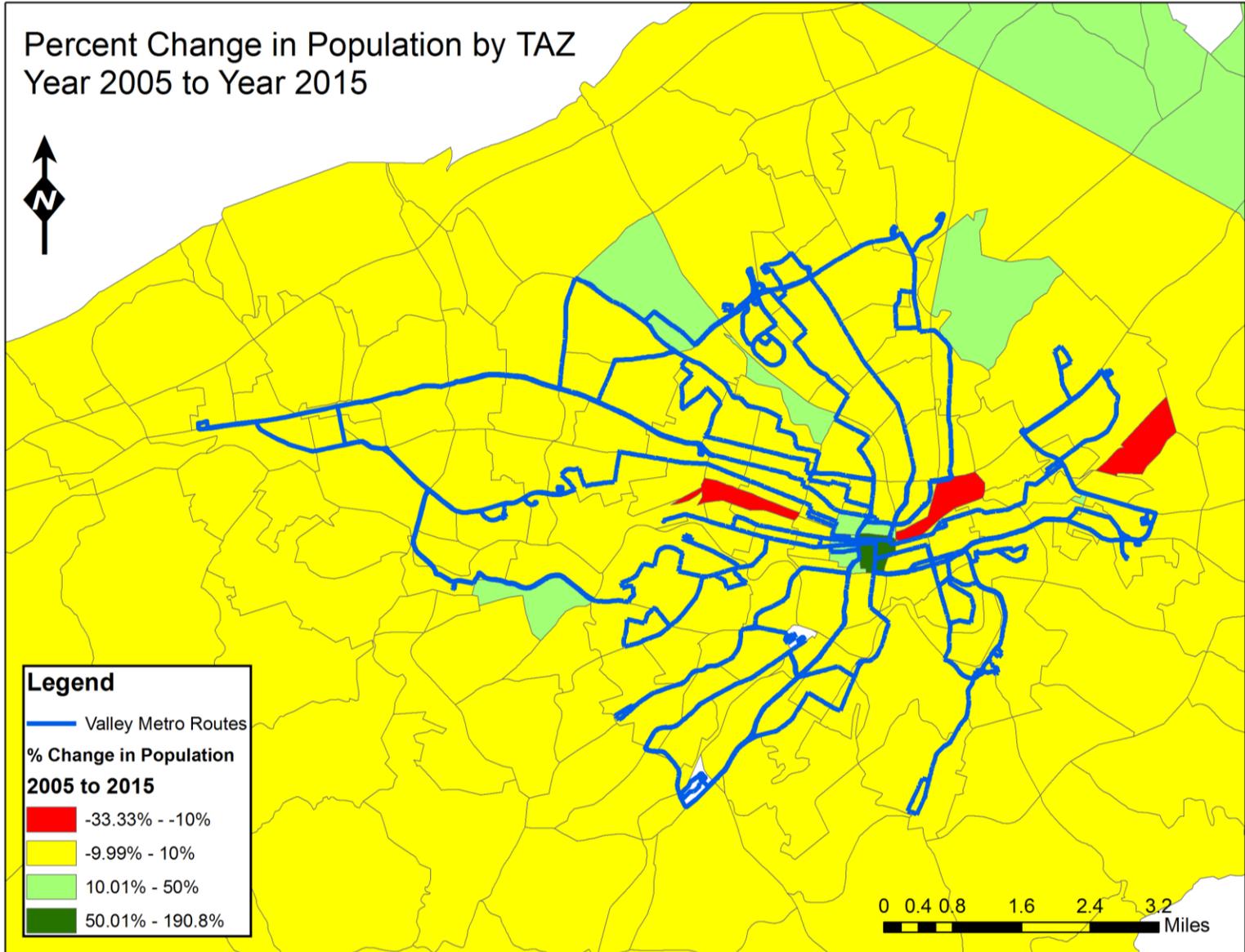
Demographic estimates and forecasts have recently been updated for the Roanoke area as part of the RVARC’s Long-Range Transportation Plan (LRTP) Update. Population and employment estimates have been prepared for the year 2005, and forecasts have been prepared for the year 2015.

The RVARC’s 2035 demographic forecasts reflect the following projected changes between 2005 and 2015:

- Population - + 7,918 (3.5% increase)
- Employment - + 9,973 (7.3% increase)

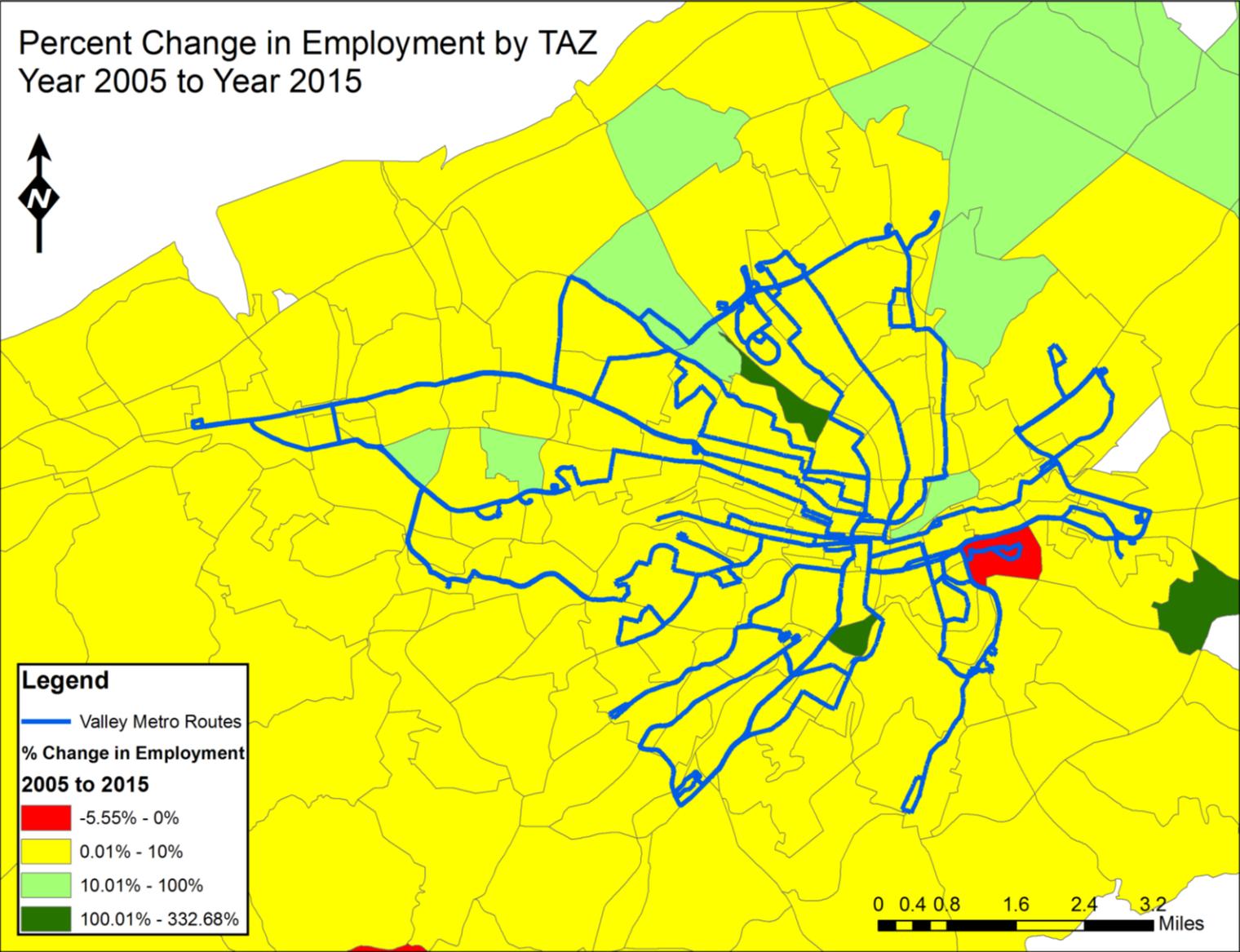
Upon closer examination, much of the population growth is projected to occur within the city limits and within close proximity to existing Valley Metro service. The highest concentrations are located in downtown Roanoke. Botetourt County to the northeast is the only area within the region that is projected to have significant population growth by 2015 with no access to transit. Figure 4-1 illustrates projected population growth levels by traffic analysis zone.

Figure 4-1



Contrary to the population growth rate in downtown Roanoke, employment growth is projected to occur outside of downtown along the I-581 corridor as well as the eastern edges of Vinton. Minor losses are noted in the Kenwood Boulevard area in eastern Roanoke. Figure 4-2 illustrates projected employment growth levels by traffic analysis zone.

Figure 4-2



As previously noted, transit propensity is often measured on the basis of population and employment densities. The Transit Capacity and Quality of Service Manual – 2nd edition (Transit Cooperative Research Program, 2003) identifies a density of three households per acre and/or four jobs per acre as thresholds to qualify as a transit-supportive environment.

Figures 4-3 and 4-4 present population densities for 2005 and 2015. Valley Metro's existing service appears to cover the most densely populated areas within their service jurisdiction. The less dense areas with coverage only seem to do so as a means of reaching more densely populated areas. Additional potential exists in areas to the north (Williamson Road) and to the southeast (Brambleton Avenue). However, these areas are in unincorporated Roanoke County and are currently unserved by Valley Metro.

Figures 4-5 and 4-6 present employment densities for 2005 and 2015. Like the household densities maps, Valley Metro's existing service seems to cover the areas with the highest employment density. In some cases, these denser areas counter some of the lighter population zones in the previous maps. Like housing, additional ridership potential exists in unincorporated areas of Roanoke County, particularly in the Cave Springs and SR 419 areas.

Figure 4-3

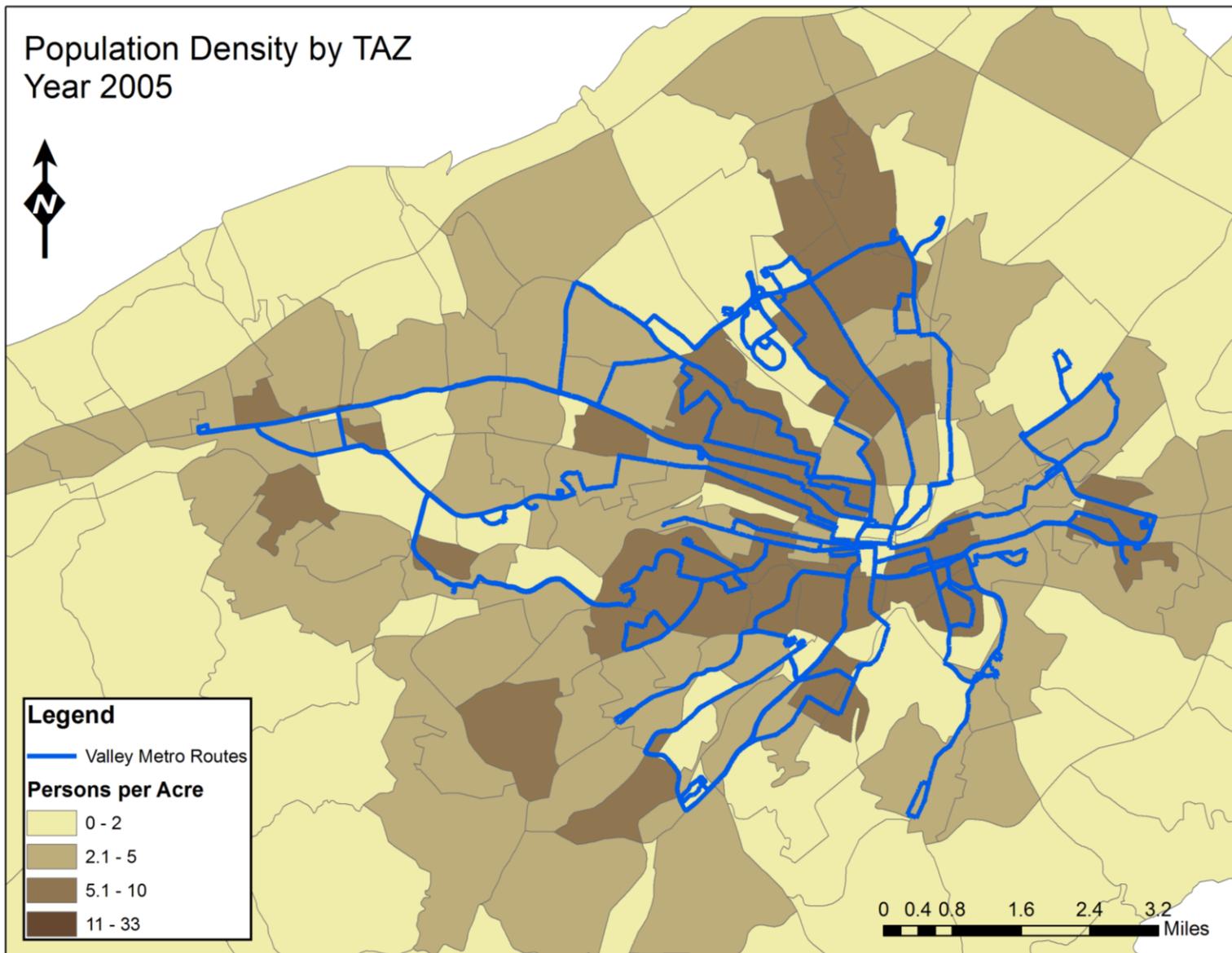


Figure 4-4

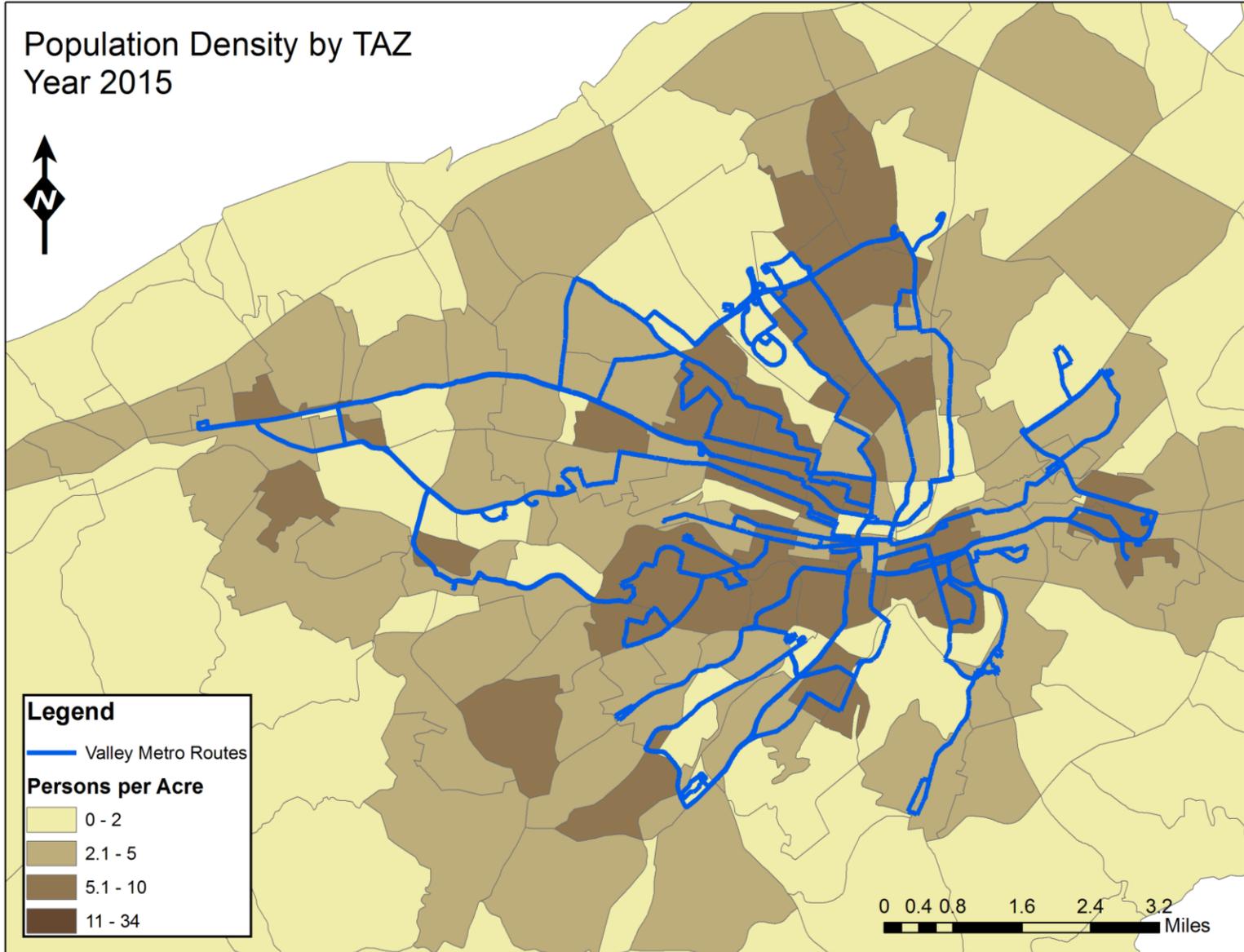


Figure 4-5

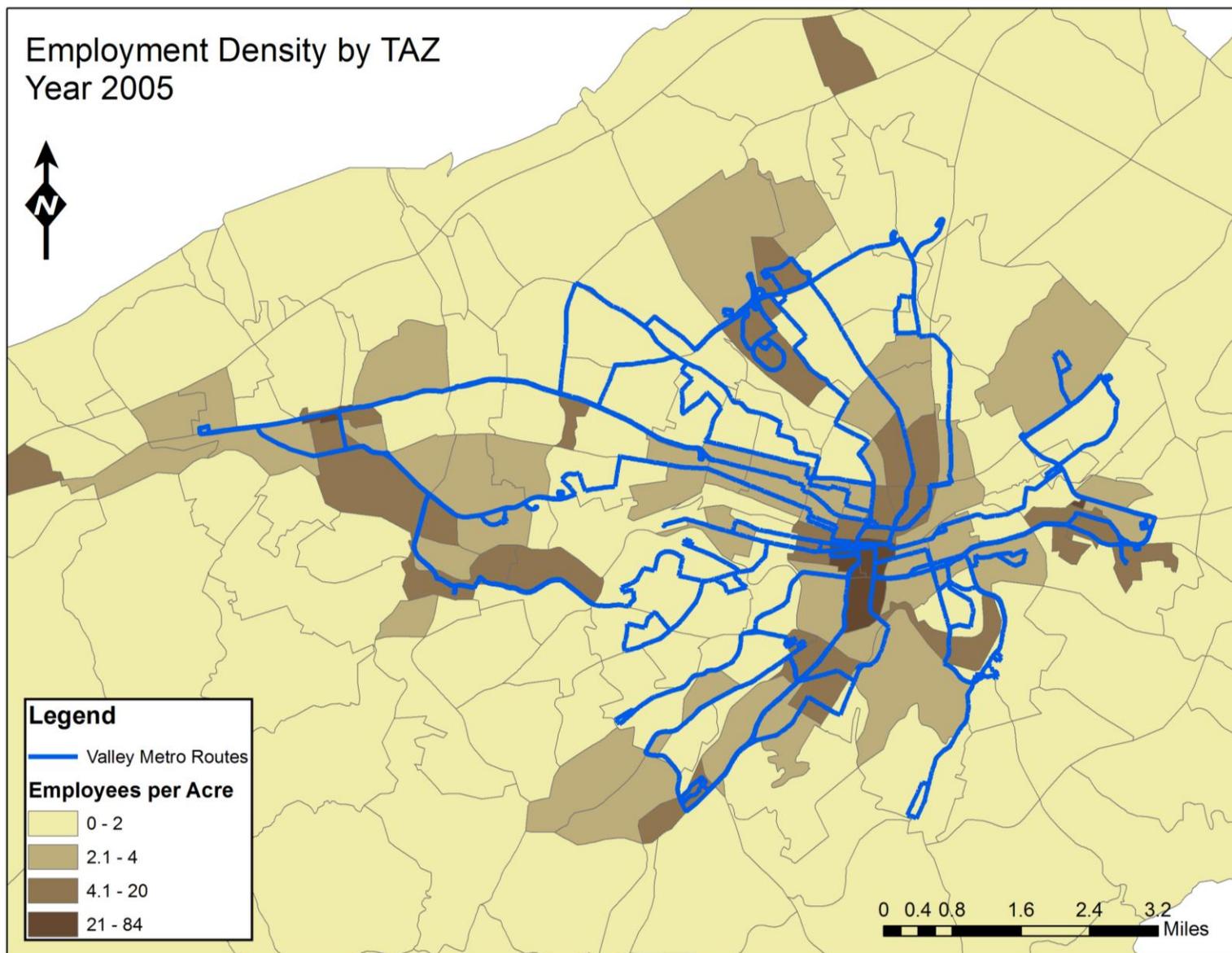
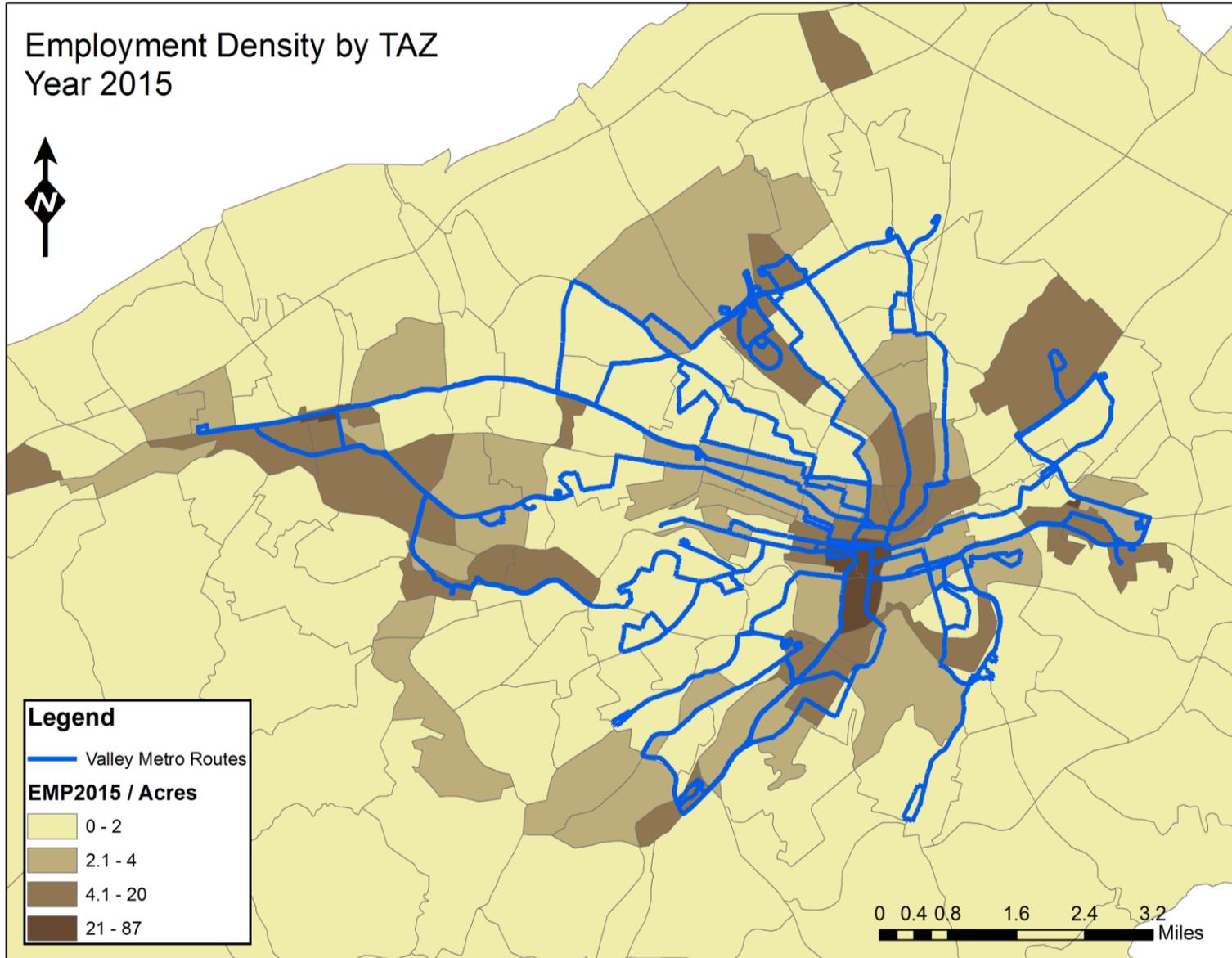


Figure 4-6



In addition to population and employment densities, the propensity to use transit is influenced by other factors such as availability of an automobile, income and age. Minority populations have also been identified as part of this demographic analysis to ensure full compliance with federal Title VI regulations as service and facility needs are developed.

As mentioned earlier in this chapter, household density is key to modeling a strong transit network. Typically, three households per acre or higher is the appropriate threshold to strive for. Figure 4-7 identifies this measure for greater Roanoke based on the 2000 census data. Areas with the highest densities include those served by Routes 51 & 52, 55 & 56, 61 & 62, 65 & 66, and 71 & 72.

Areas with annual household incomes lower than \$10,000 are shown in Figure 4-8. These areas are primarily focused to the west of downtown Roanoke and just north of the areas with high household density described in the previous paragraph. These areas are primarily served by Routes 11 & 12, 15 & 16, 65 & 66, 71 & 72, 75 & 76, 81 & 82 and 85 & 86.

Households with no vehicle access are illustrated in Figure 4-9. As expected, these areas correspond directly with the low income household densities described in the previous paragraph. These areas are primarily served by Routes 11 & 12, 15 & 16, 31 & 32, 35 & 36, 65 & 66, 71 & 72, 75 & 76, 81 & 82 and 85 & 86.

Similarities with low income and zero-automobile households also carry over into the minority population map shown in Figure 4-10. Minority populations tend to be included in most of the low income and zero-automobile households as well as the adjacent census tracts, consuming much of the western and northwestern portions of Roanoke. Minority populations in Roanoke are primarily served by Routes 11 & 12, 15 & 16, 65 & 66, 71 & 72, 75 & 76, 81 & 82 and 85 & 86.

Student-age population (ages 5-17) is distributed through much of Roanoke with the strongest densities mirroring the households with zero automobile access as shown in Figure 4-11. More notable is the areas with lower student age densities. These areas seem to be concentrated immediately to the city's north side as well as to the south and southwest. Areas with the highest concentration of student-age population are served primarily by Routes 11 & 12, 15 & 16, 31 & 32, 35 & 36, 65 & 66, 71 & 72, 75 & 76, 81 & 82 and 85 & 86.

Senior population is the last demographic to be reviewed. Figure 4-12 identifies only one area near the Veterans Care Center and Hospital with a high 65+ population. The facilities and surrounding residential areas are served by Routes 75 & 76 and 91 & 92.

Figure 4-7

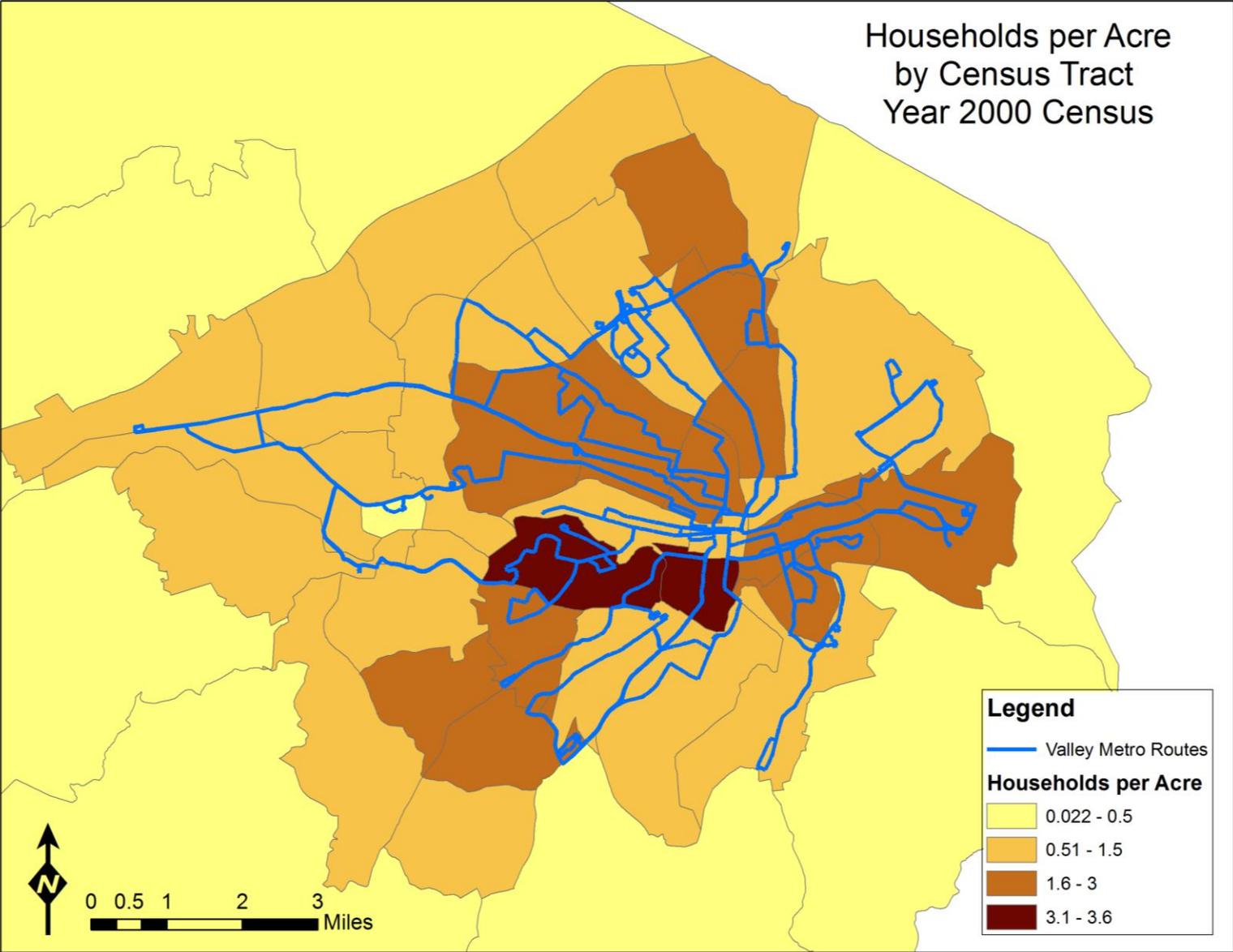


Figure 4-8

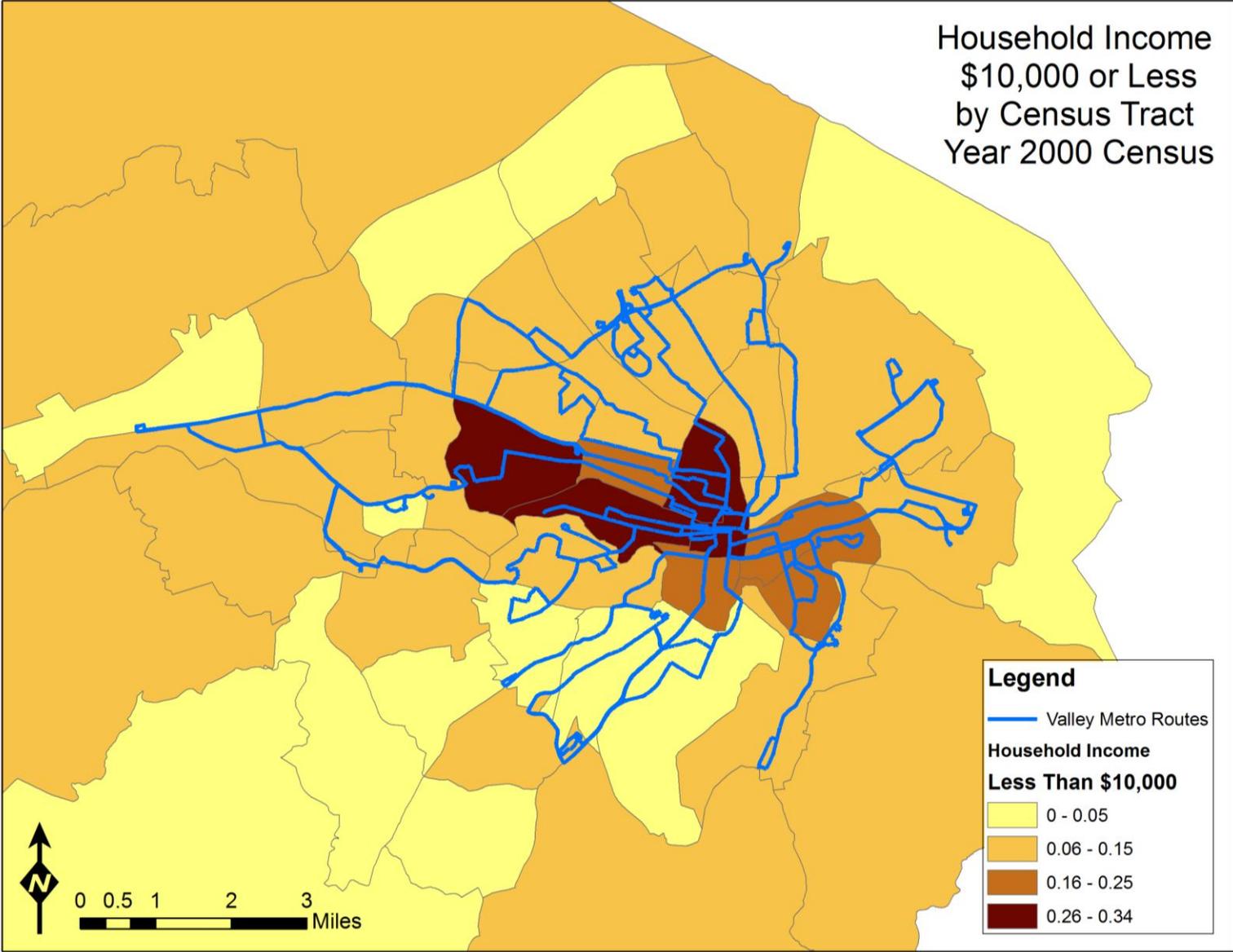


Figure 4-9

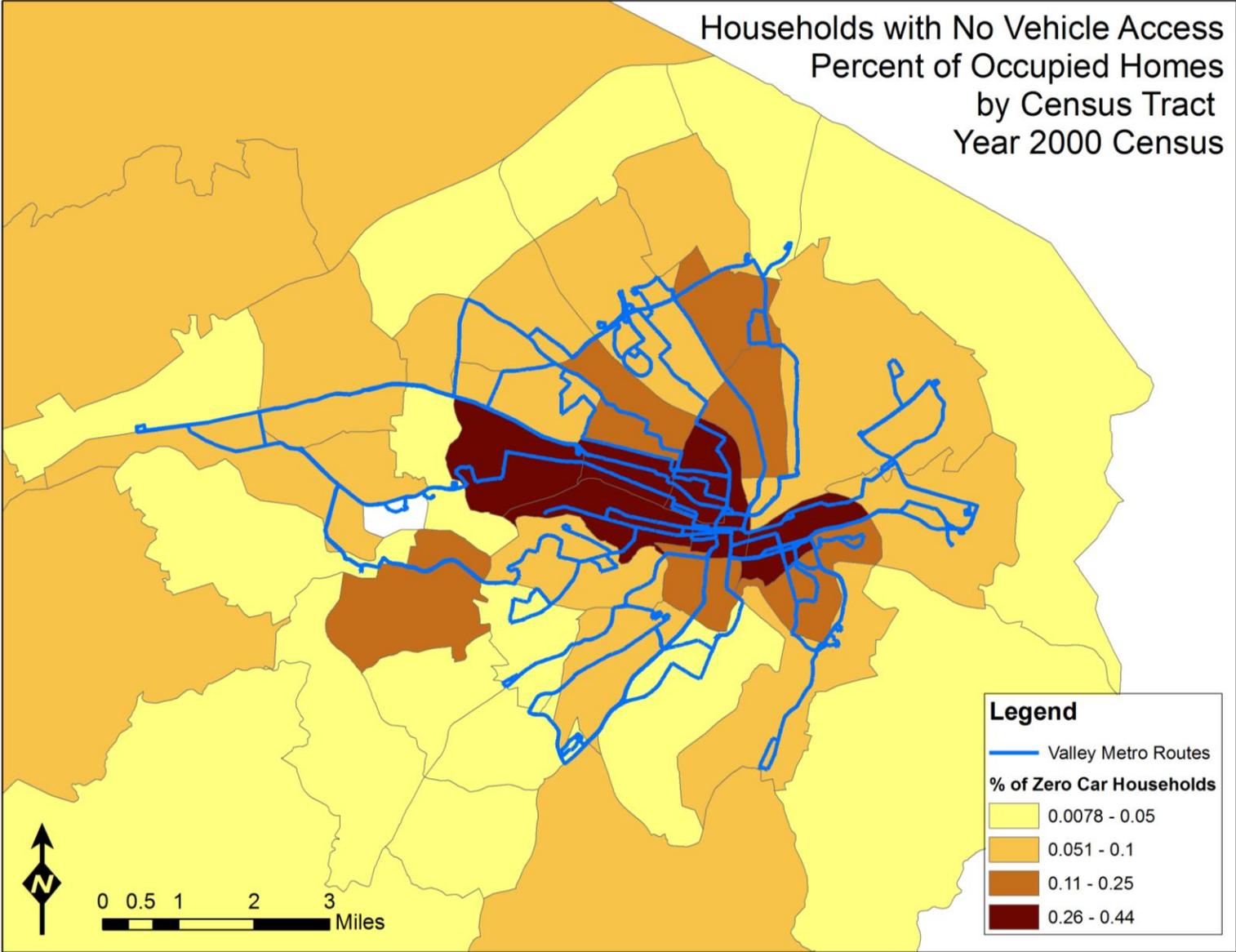


Figure 4-10

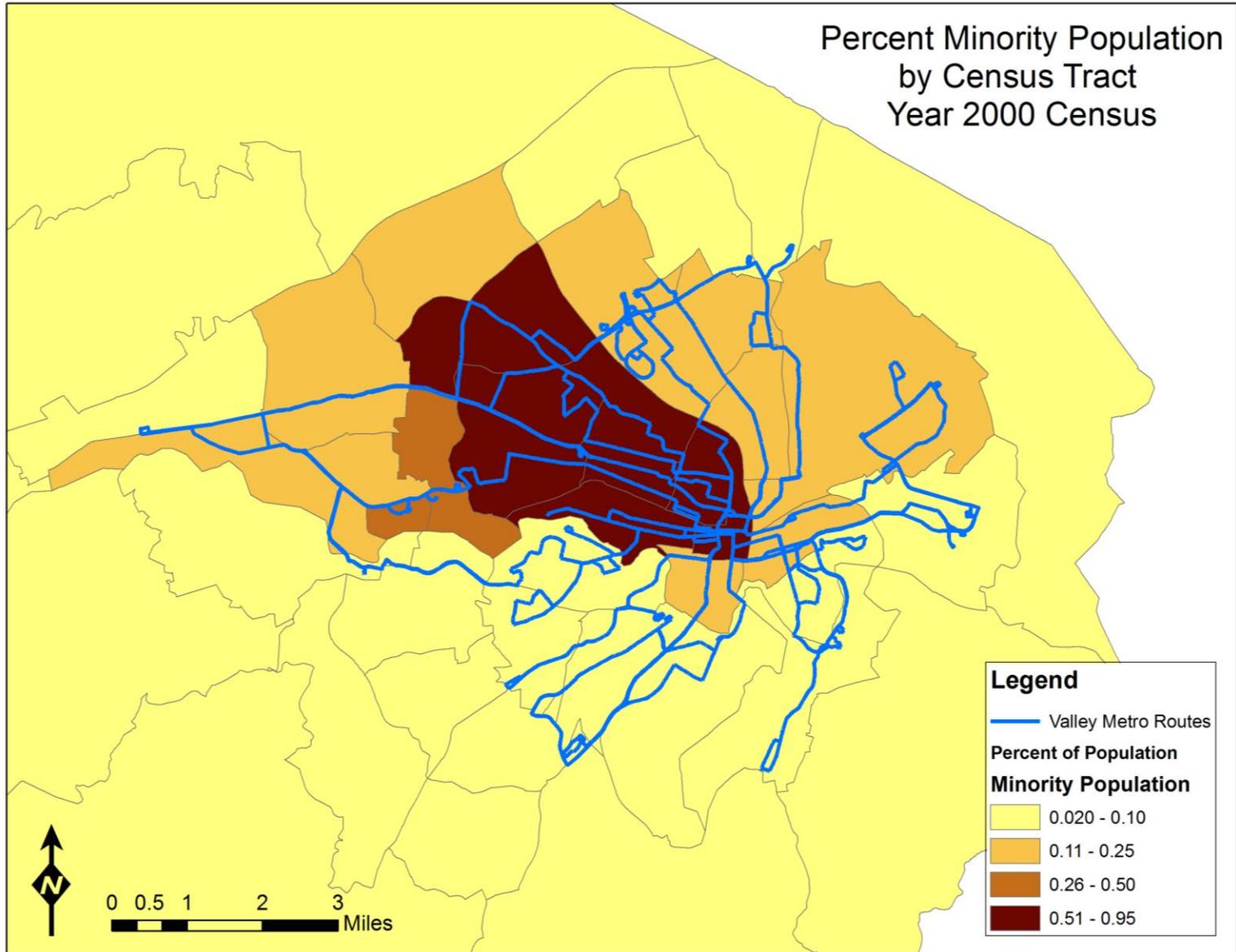


Figure 4-11

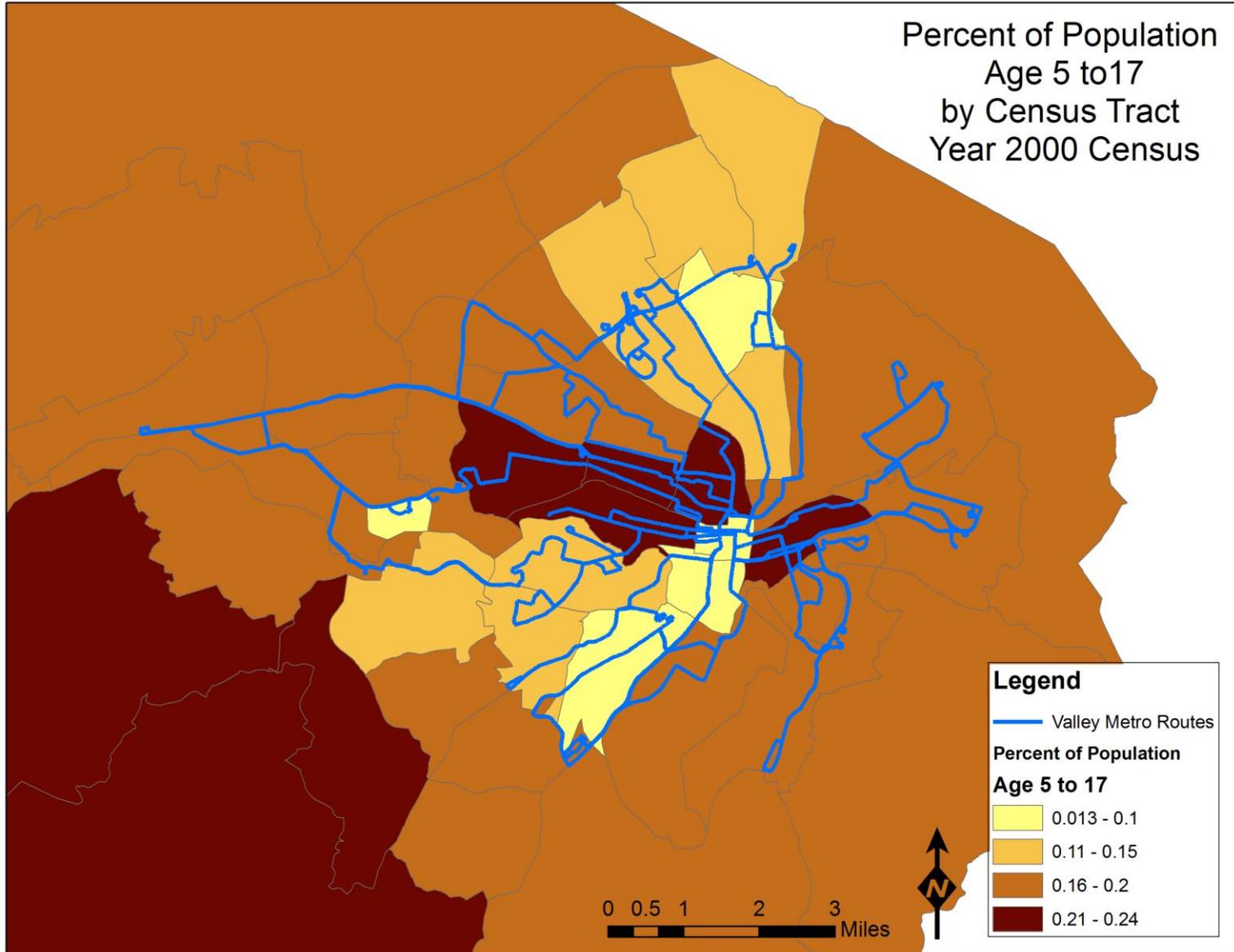
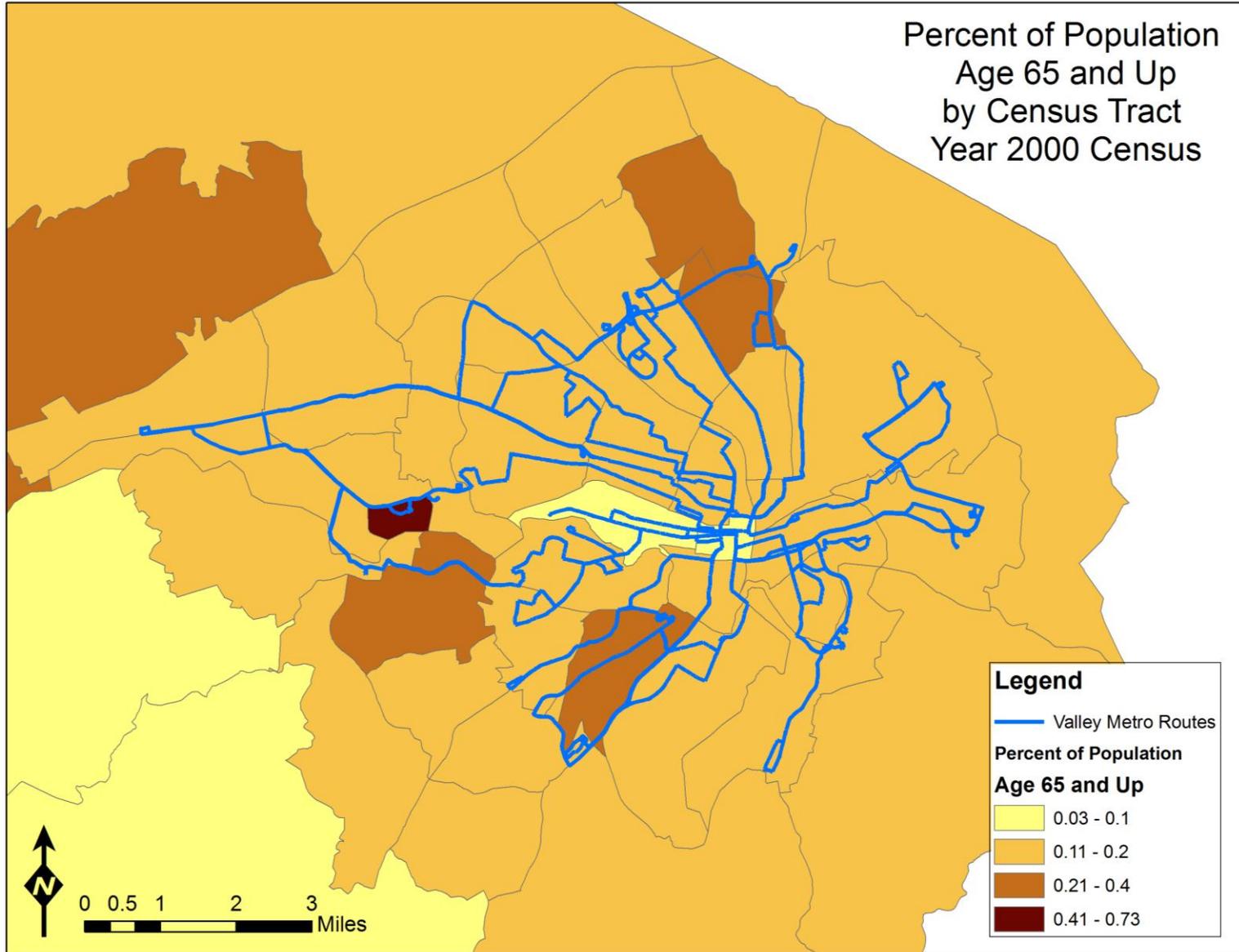


Figure 4-12



4.2 Service and Facility Needs

The TDP up to this point has included an analysis of existing ridership, service and cost characteristics, a peer agency review and a survey of Valley Metro's riders. Meetings were also conducted with the Roanoke Valley Alleghany Regional Commission and Valley Metro Operations staff as well as an open house for riders and the general public to submit input regarding service and facility needs. Conclusions drawn from these TDP work tasks and input received from riders and stakeholder groups have been used to determine the following potential service and facility needs.

Service Needs

1. Later Evening Service (Select Routes)

Currently, all Valley Metro fixed-route services (except routes 91 & 92) end at 8:45 p.m. with the last trip departing Campbell Court at 8:15. However, many of the area's employers operate well beyond these hours. Valley View and Tanglewood malls are typically open until 9:00 p.m.; even later during the holiday shopping period. Other retail outlets such as Wal-Mart as well as the area's hotels and hospitals operate around the clock. During the public outreach process, later evening service was the top request by customers. The recommendation is to introduce 3.5 additional hours of evening weeknight and Saturday service on Routes 11/12, 15/16, 21/22, 55/56, 65/66, 71/72, 75/76 and 81/82 (see Figure 4-13). These routes have been identified based on consistently strong performance and proximity to major employers and/or affordable housing. The extended evening service would add three hourly outbound departures from Campbell Court at 9:15, 10:15 and 11:15 p.m. Four additional inbound departures to Campbell Court would also be added at 8:45, 9:45, 10:45 and 11:45 p.m.

2. Sunday Service (Select Routes)

Valley Metro service presently operates on weekdays and Saturdays. There is no Sunday service provided. However, the second most-requested service improvement cited by customers during the public outreach process was Sunday service. Much of Roanoke's employment in the retail and service industries requires employee availability seven days a week. With no transit offered on Sundays, securing employment may be particularly challenging for residents who do not own a car or have no dependable transportation source. The recommendation is to introduce Sunday service on Routes 11/12, 15/16, 21/22, 55/56, 65/66, 71/72, 75/76 and 81/82 (see Figure 4-14). These routes have been identified based on consistently strong performance and proximity to major employers and/or affordable housing. The Sunday service would operate from 6:45 a.m. (one hour later than current service start) until 8:15 p.m. (30 minutes earlier than current end times).

3. 30-Minute Weekday Midday Service (Select Routes)

During the outreach process, Valley Metro's bus operators and passengers identified routes that experience consistent crowding during the midday hours when service frequencies are reduced

to hourly. To mitigate these concerns, the recommendation is to improve weekday midday service to every thirty minutes on five of Valley Metro's busiest route pairings – Routes 11/12, 15/16, 21/22, 75/76 and 81/82 (see Figure 4-15).

4. New East-West Star Line Trolley

Since its inception in November 2008, the Star Line Trolley has experienced ridership growth beyond expectations. Its success has also resulted in requests from businesses and major employers in downtown Roanoke to create a similar service that is more east-west oriented along Campbell Avenue. The proposal is to create a new Trolley Line, connecting Market Square to the Federal Building on Franklin Road via the Campbell Avenue corridor (see Figure 4-16). Service would operate Monday through Friday at 10-minute frequency. Like the current Star Line trolley, midday frequency would increase to seven minutes between 10:00 a.m. and 2:00 p.m.

5. Service to Unincorporated Roanoke County

Many of the service requests received during the input process were related to needs outside of Roanoke's city limits. Currently, Roanoke County does not participate in funding Valley Metro's operations. Thus, they are not included in their service portfolio. However, the general public showed a great deal of frustration as their day-to-day activities are not confined to the municipal boundaries of the city. Housing, education, medical and shopping locales are a mixture of incorporated and unincorporated origins and destinations. Likewise, the transit system (much like the area's road network) needs to be structured in a way that accommodates these travel demands.

- **Franklin Road Wal-Mart (South US 220)**

A Wal-Mart Supercenter is located just south of the City's boundaries off of US 220. The closest Valley Metro services are Routes 51 & 52, which currently terminate at the Tanglewood Mall. The recommendation is to add a route deviation to these two routes (51 outbound, 52 inbound) that would serve the Wal-Mart and the surrounding businesses (see Figure 4-17).

- **Valley View Mall to new DMV (Peters Creek Road & Valleypointe Parkway)**

In August 2009, the Virginia DMV's Roanoke Driver's License office will be moving from their current location in Crossroads Mall to a new site near the junction of Peters Creek Road and I-581. This new location is outside of the Roanoke city limits and has no nearby transit service available. A new route is recommended – not only to serve the DMV, but also to meet service demand to the Hollins community as received by passengers during the public outreach process of the TDP (see Figure 4-18). The new route would be anchored at the Valley View Mall, providing access to the varied employment and shopping opportunities of the mall and adjacent Wal-Mart. From the mall, the route would serve the Town Square Kroger and Crossroads Mall before heading to Williamson Road. The route would continue north on Williamson Road and the west on Peters Creek Road until terminating at the new DMV office on Valleypointe Parkway. Inbound service would return to Valley View Mall

using a reversal of the before-mentioned outbound routing. Initial service is recommended to operate at 60-minute frequency, Monday through Friday between 5:45 a.m. and 8:15 p.m. Saturday service could be added at a later date as demand dictates.

- **US 460/Bonsack (Wal-Mart & Kroger)**

A Wal-Mart Supercenter and relocated Kroger have been added to the northeastern quadrant of unincorporated Roanoke County. The Wal-Mart is located at the intersection of US 460 and US 220 in Bonsack. The new Kroger is located approximately midway between King Street and the new Wal-Mart. Both facilities are unserved by transit. In order to effectively serve both sites, an extension of Routes 31, 32, 35 & 36 is recommended, bringing the terminus of the four routes to the new Wal-Mart (see Figure 4-19).

- **Cave Spring Kroger (Brambleton Avenue & SR 419)**

A Kroger grocery and shopping center are located approximately one mile southeast of the current terminus of Routes 61 & 62. However, they are also located just beyond the Roanoke City Limits, and thus do not receive transit services. An extension of Routes 61 & 62 is recommended to connect residents with day-to-day shopping trips (see Figure 4-20).

6. Regional Service to Bedford/Lynchburg

Valley Metro's SmartWay service has proven to be a successful and viable means of connecting two neighboring communities with express transit service. In fact, the RVARC Long Range Plan includes expansion of the existing Park & Ride plus an additional facility to support this growth in ridership. During the public outreach process, Bedford and potentially Lynchburg were cited as cities with strong prospects for SmartWay service. A number of service options exist that could be implemented in phases as funding and ridership demands dictate. The first option is to provide service between Roanoke and Bedford at two-hour frequency. The second would be to operate the same service at hourly intervals. The third and fourth options extend the Roanoke-Bedford service to Lynchburg at two-hour frequency (Option 3) or hourly frequency (Option 4). Of the four options, service to Lynchburg at two-hour frequency (Option 3) is preferred for initial implementation (see Figure 4-21). This option would also link Roanoke to expanded passenger train service between Lynchburg and Washington DC via AMTRAK.

7. Express Service between Fincastle/Roanoke

As shown earlier in the demographic analysis, Botetourt County is home to some of the fastest growing bedroom communities in the region. As such, there is an increase in daily work trips between Fincastle, Daleville and downtown Roanoke. A new express service is proposed to operate between Fincastle and Daleville via US 220 (see Figure 4-22). The final stop before Roanoke would be at Interstate 81 to serve a planned Park & Ride facility as identified in the RVARC's Long Range Plan. From there, the bus would travel express to downtown Roanoke via Interstates 81 and 581. For initial service, four morning inbound trips and four afternoon outbound trips are recommended on weekdays at 30-minute frequency.

8. Express Service between Valley View/Roanoke/Tanglewood

Valley View and Tanglewood malls are two of Roanoke's largest activity centers and economic generators. Besides a variety of shopping options, both sites feature a multitude of employment opportunities. However, both malls are also situated at the end of their respective fixed-routes. This results in passengers having to ride the entire 30-minute length of the route to reach one of the malls. A new express service linking Valley View, Campbell Court and Tanglewood is proposed to provide more direct trips, particularly between routes that connect at the Campbell Court Transit Center (see Figure 4-23). Initial service is recommended to operate at 30-minute peak and 60-minute off-peak frequency, Monday through Friday between 5:15 a.m. and 8:45 p.m. Saturday service would operate between 5:15 a.m. and 8:45 p.m. at 60-minute frequency.

Figure 4-13

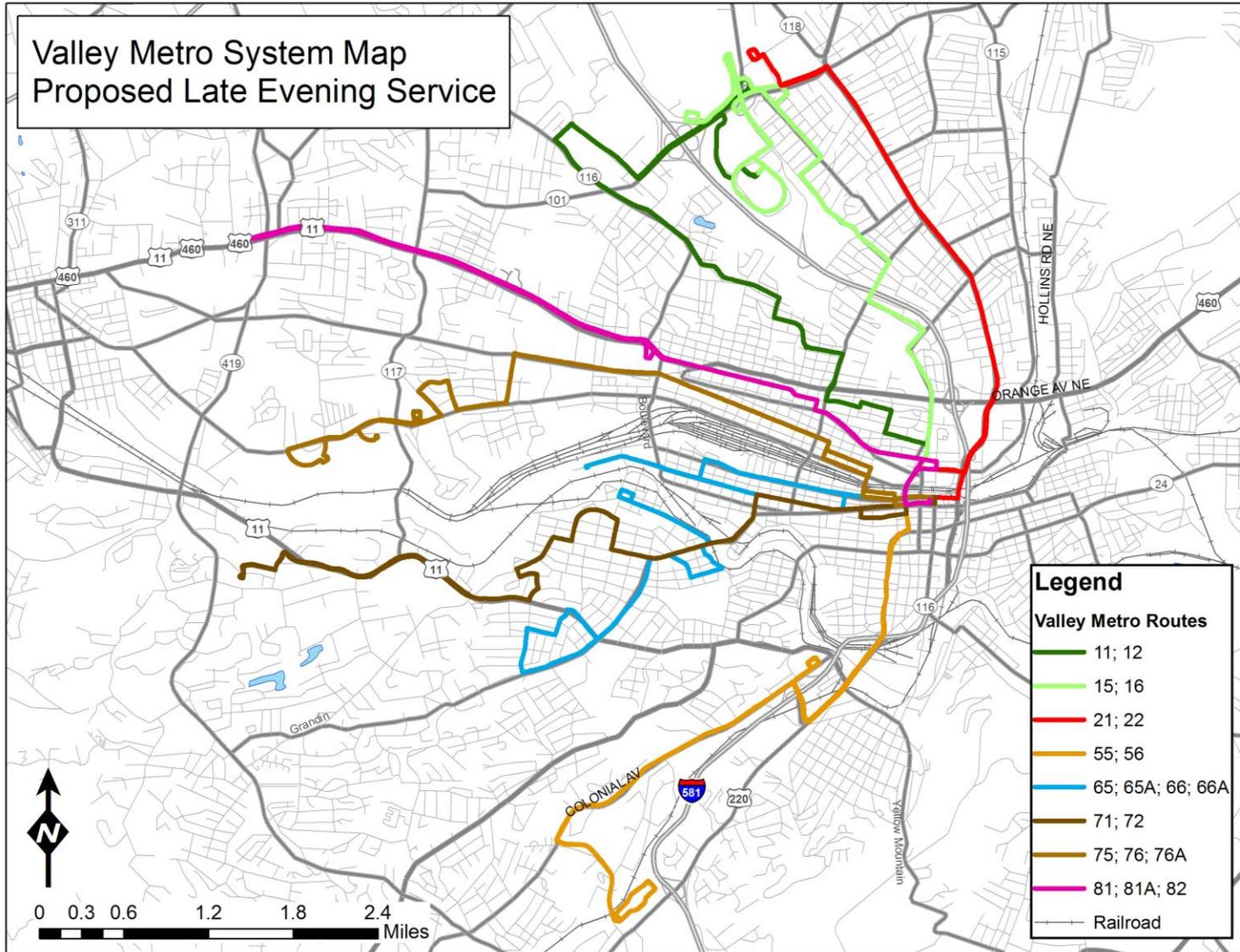


Figure 4-14

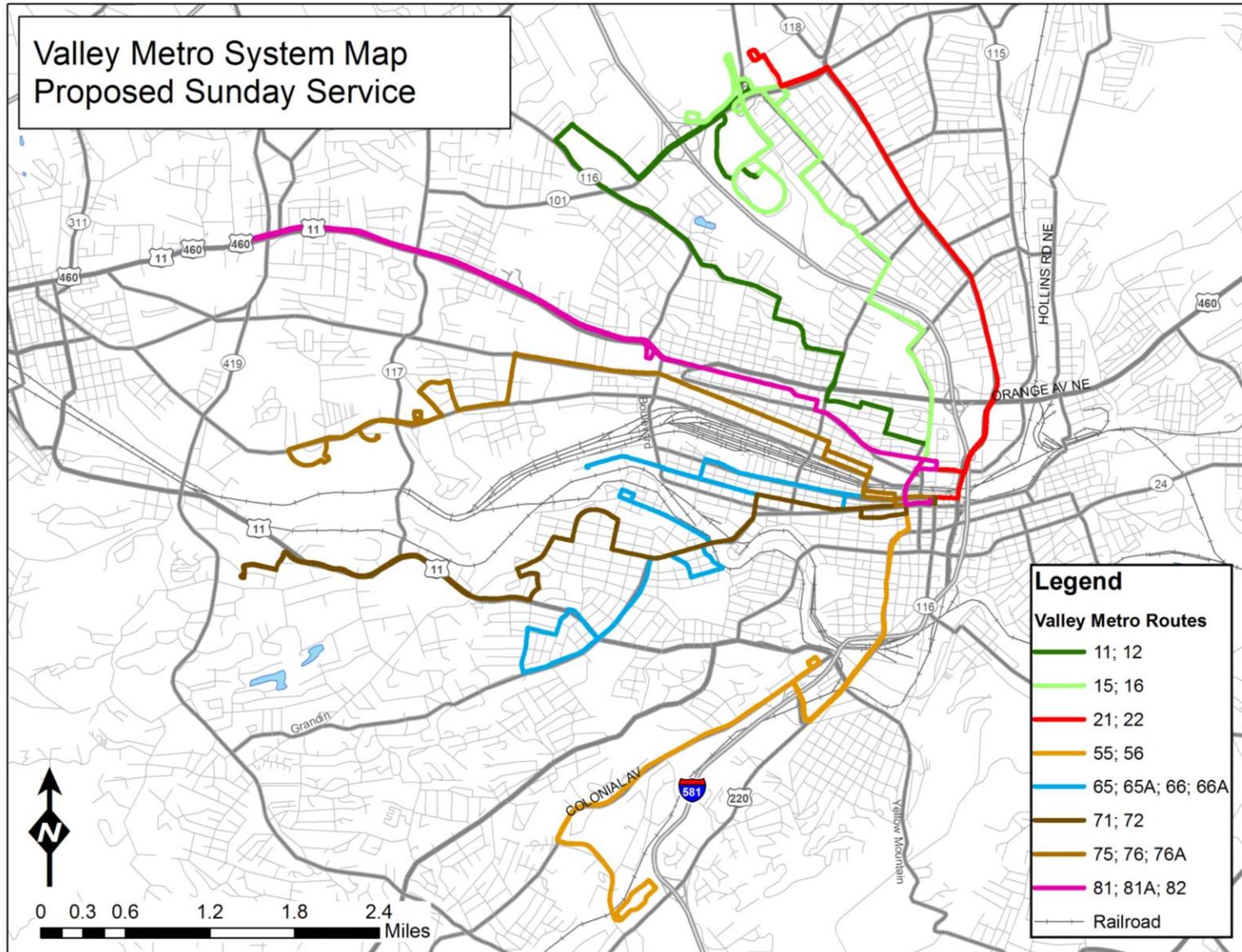


Figure 4-15

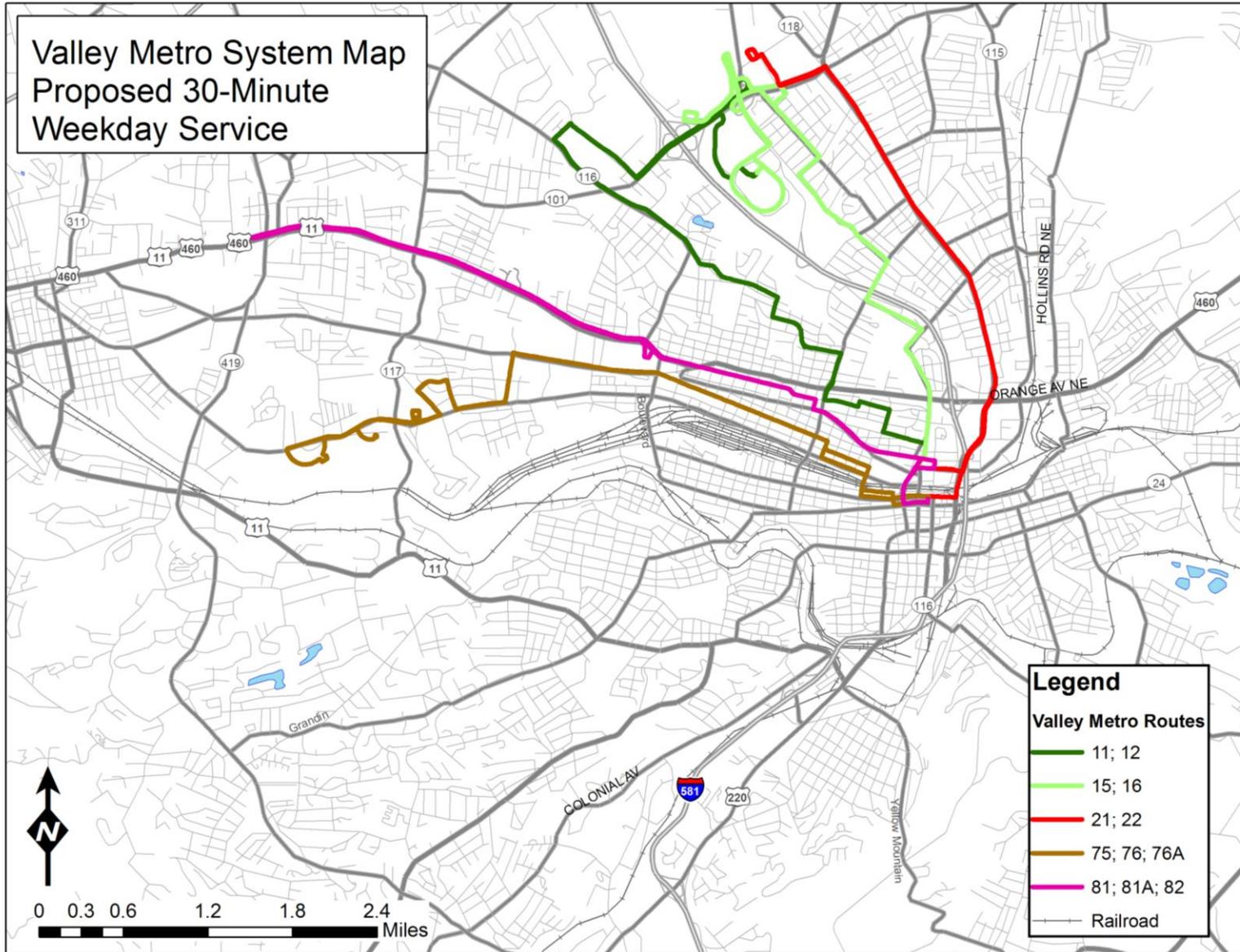


Figure 4-16



Figure 4-17

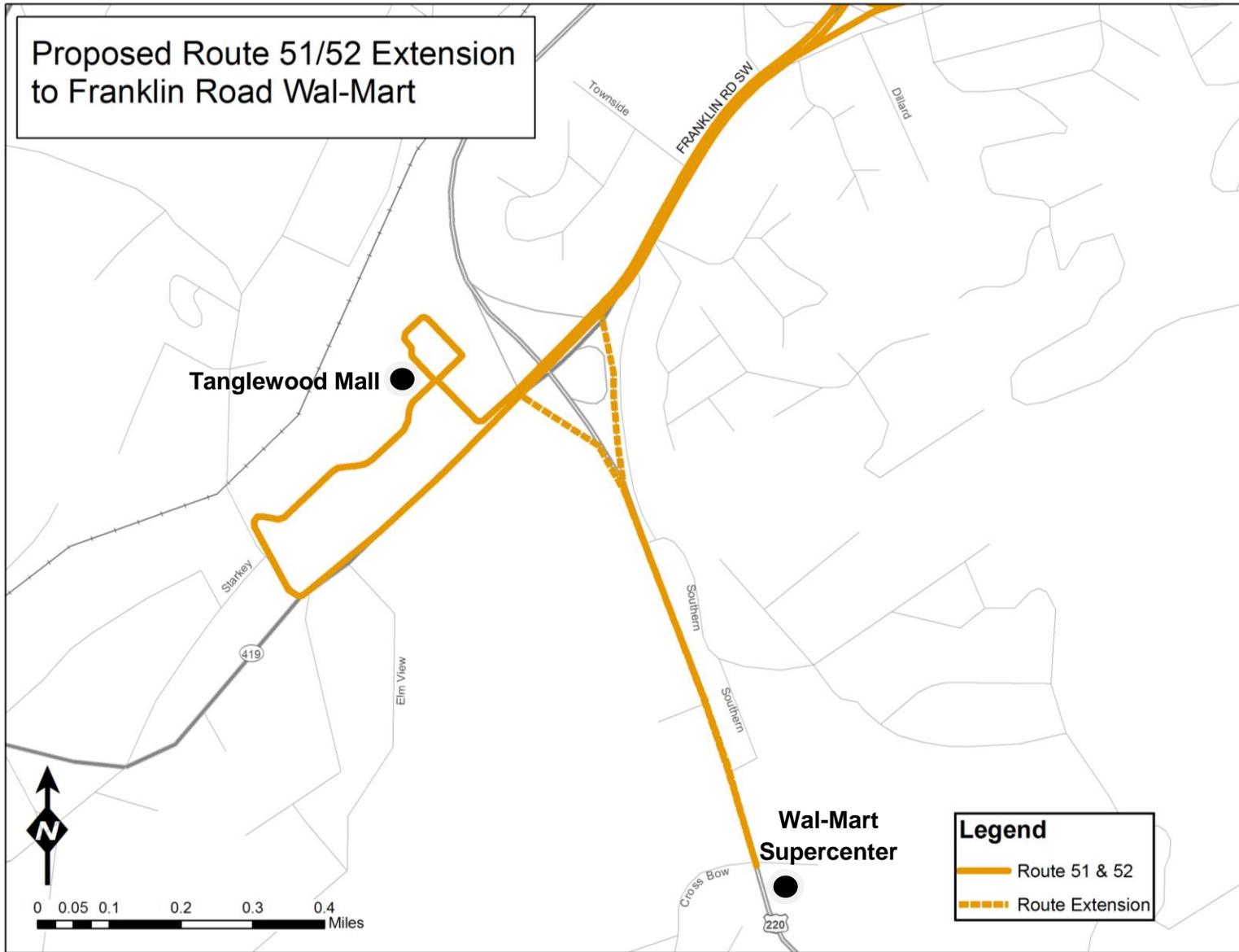


Figure 4-18

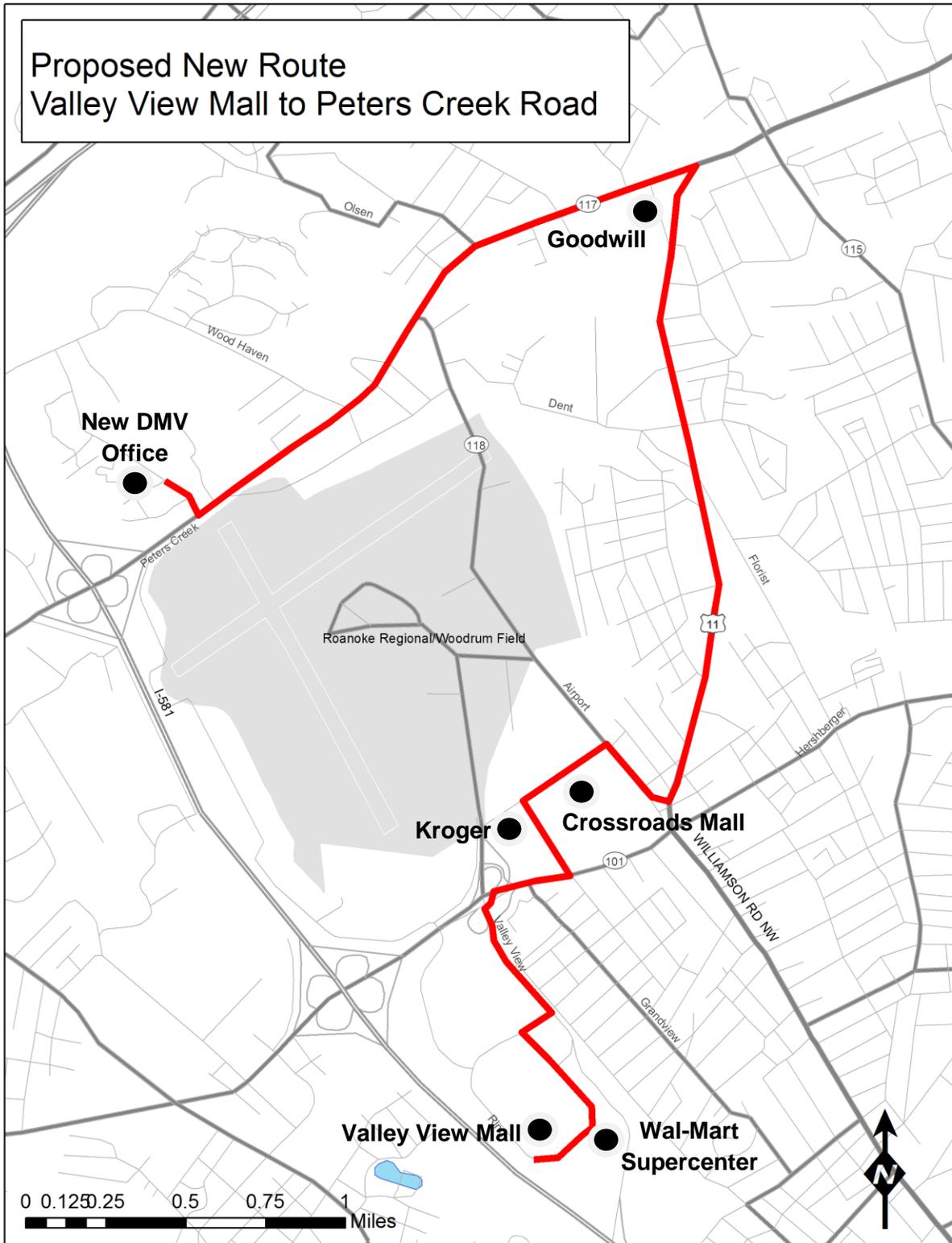


Figure 4-19

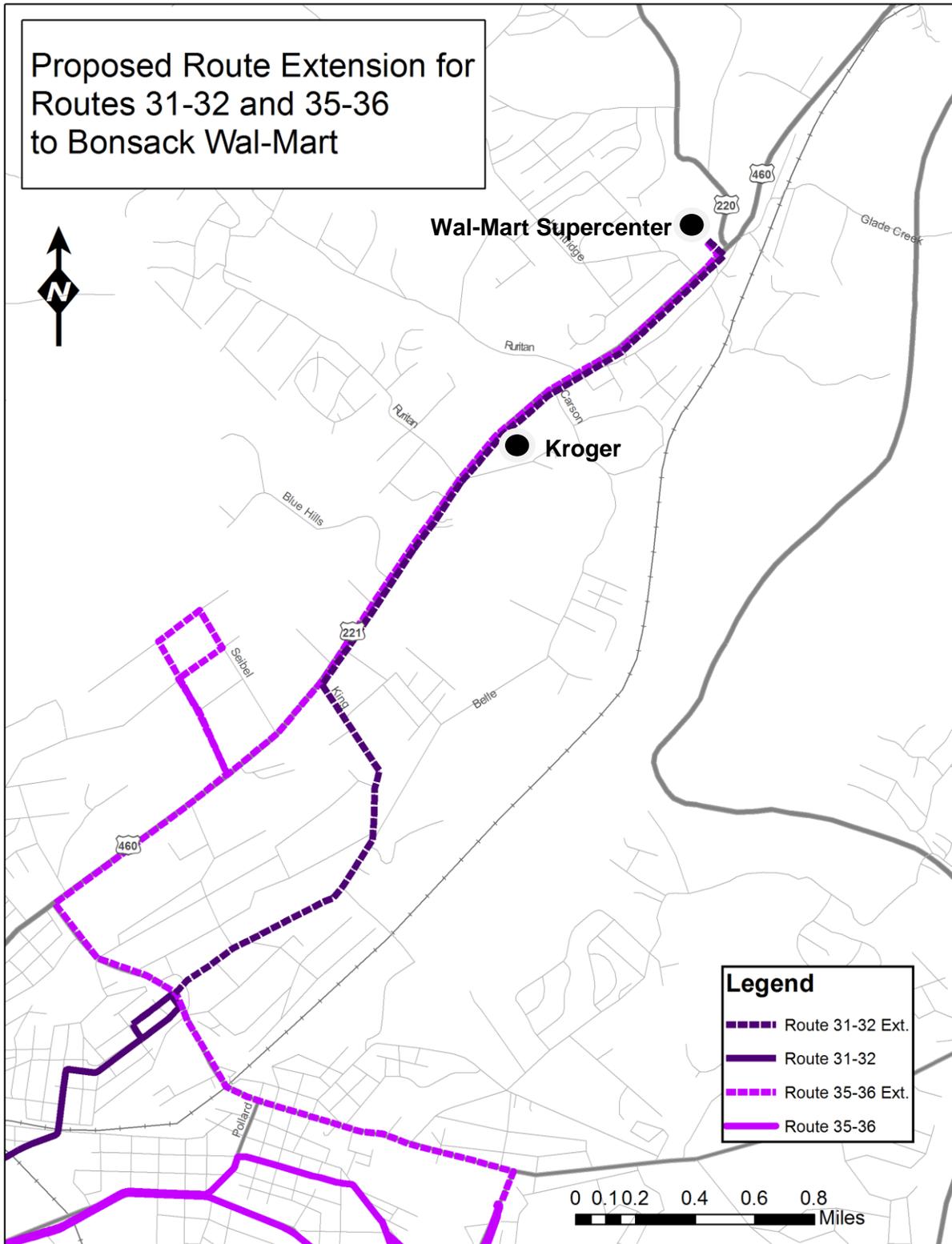


Figure 4-20

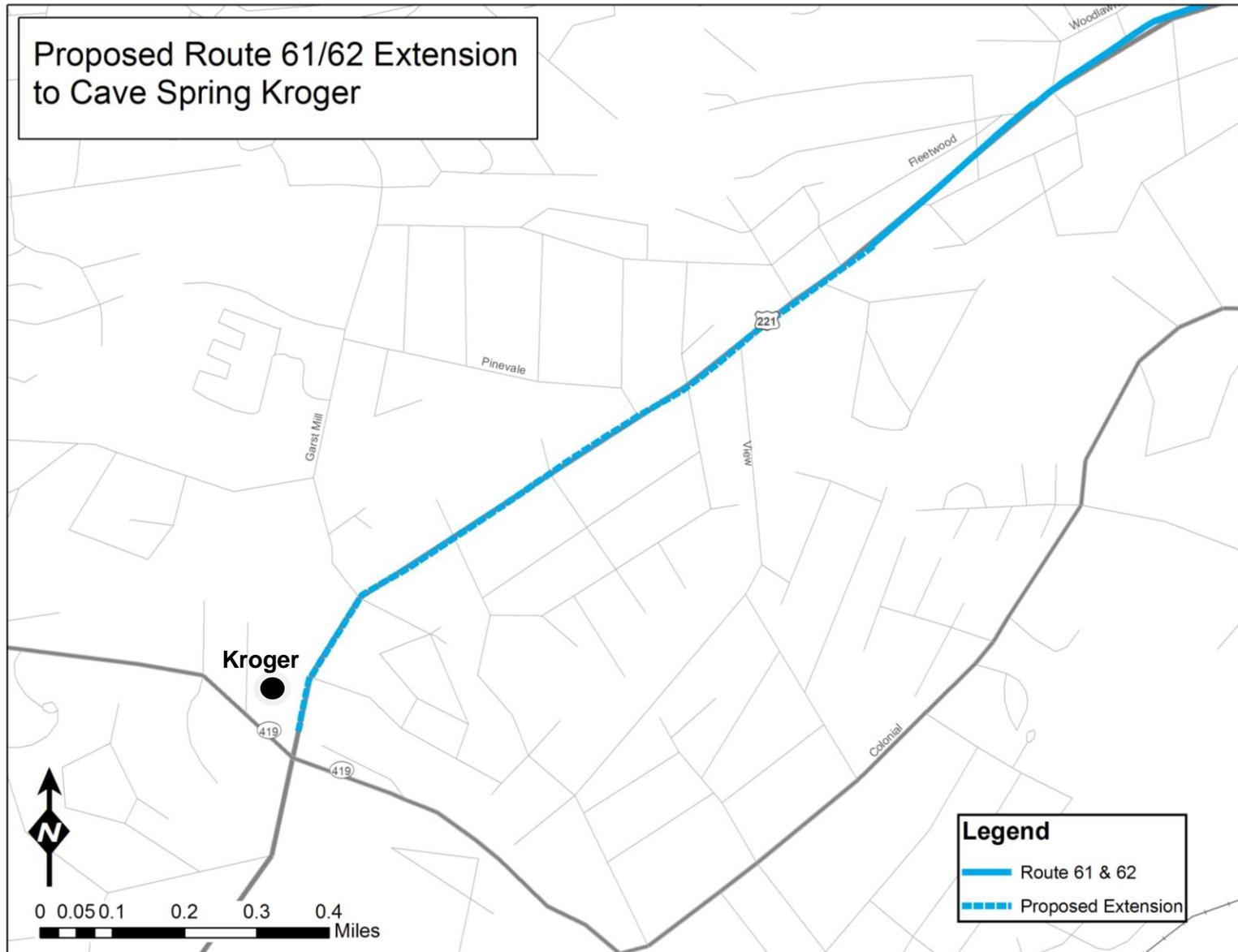


Figure 4-21

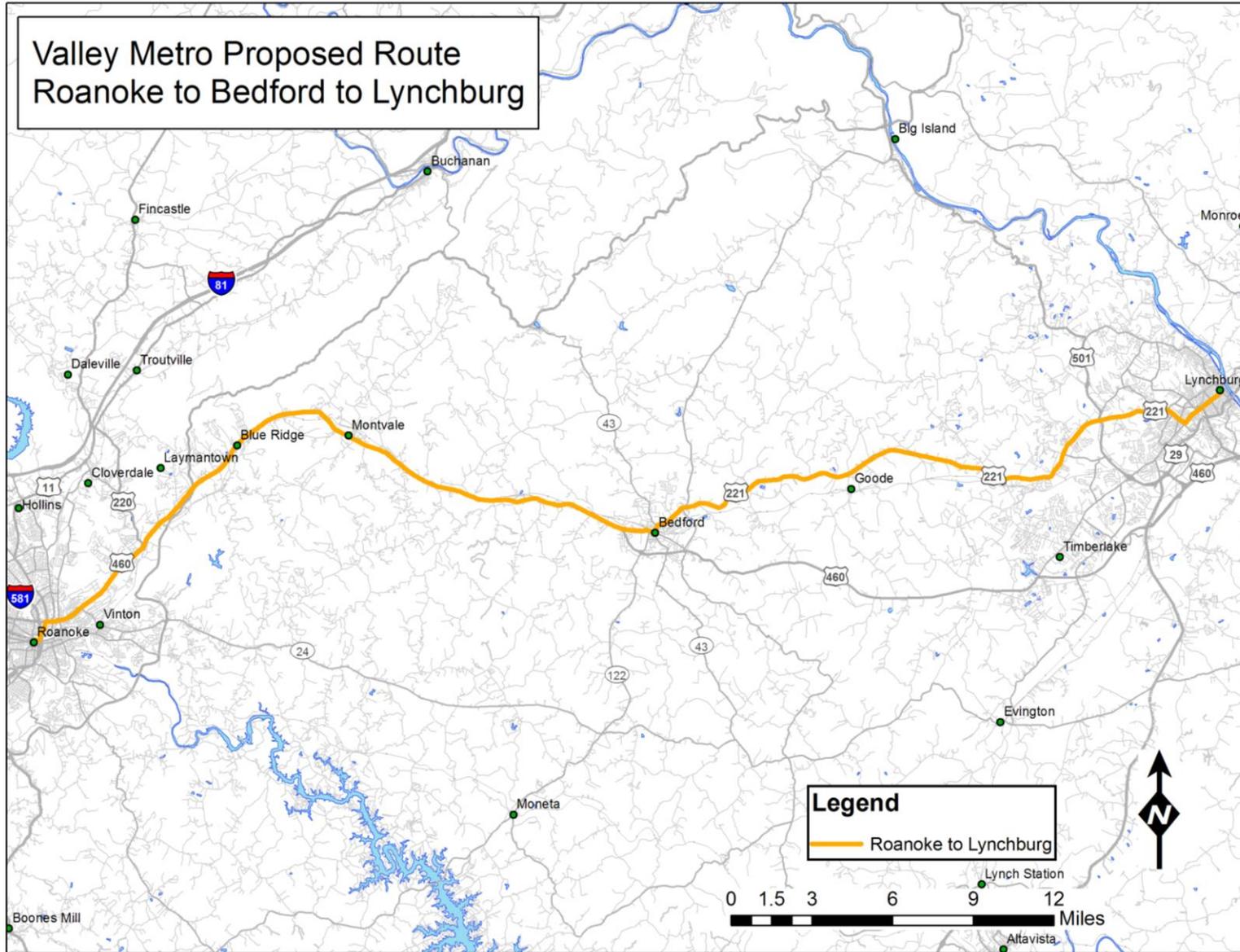
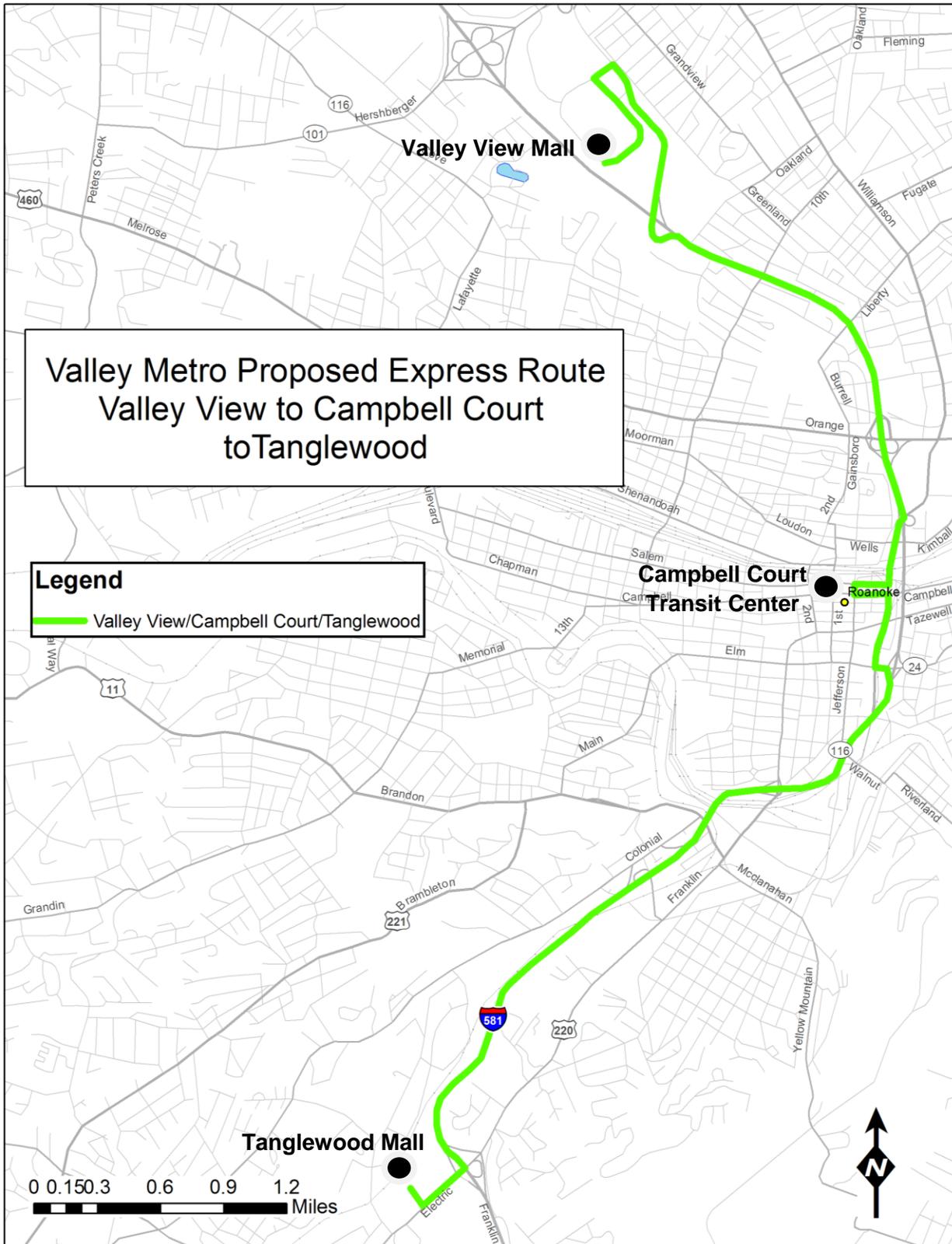


Figure 4-23



Capital Needs

1. Bus Replacement/Expansion

Chapter 3 of this TDP presented an inventory of Valley Metro's revenue fleet. The fleet is a mix of heavy-duty and medium-duty buses as well as medium-duty replica trolley vehicles. As these vehicles reach the end of their prescribed life span, replacements must be procured to ensure safe, reliable service. Service expansion also plays a role in vehicle needs. Earlier in this chapter, several service expansion options are presented, many with additional vehicle requirements. Those requirements, as well as replacement needs, are outlined in the paragraphs below and summarized in Table 4-1.

Replica Trolley Buses

Valley Metro is pleased with the relatively fast success of the Star Line Trolley. Expansion of the Star Line Trolley has been identified to include a new east-west service. The new service will require that an additional four trolleys be added to the fleet.

Over-the-Road Coaches

Given the success of the SmartWay service, Valley Metro would like to upgrade its medium-duty fleet and replace them with heavy-duty over-the-road coaches. These coaches will have a longer life span than the medium-duty buses currently in use. They are also better equipped to accommodate luggage and other large items that are more common on this longer-distance service. In FY 2011, Valley Metro projects a need for four replacement coaches for the current SmartWay service to Blacksburg and two expansion coaches for new SmartWay service to Lynchburg.

Standard 35-Foot Transit Buses

In FY 2013, the ten 35-foot Gillig buses that were placed into service in 2001 will have reached the end of their life cycle. These buses will need to be replaced. In addition, there are three service expansion proposals described earlier in this chapter that are projected for implementation in FY 2013 and will require additional buses. A total of 13 buses will need to be procured. Another seven buses are needed for additional service expansion projects with unknown implementation years. For this purchase, there is also a desire to order environmentally-friendly hybrid-electric buses.

**Table 4-1
Revenue Vehicle Replacement/Expansion Schedule**

Year	Buses
FY 2009	-
FY 2010	-
FY 2011	6 Over-the-Road Coaches
FY 2012	-
FY 2013	13 35-foot Hybrid-Electric Buses
FY 2014	-
FY 2015	-
To Be Determined Based on Availability of Operating Funds for Service Expansion	7 35-foot Hybrid-Electric Buses 4 Replica Trolleys

2. Shop Equipment

Maintaining Valley Metro’s vehicle fleet requires a diverse range of tools and equipment. These tools face day-to-day wear and tear and must be replaced and/or updated on a regular basis.

3. Replacement Vans

Valley Metro has identified the need to replace six of its paratransit vehicles. Like fixed route buses, paratransit vans must be replaced on a regular basis to ensure passenger safety and reliability; thus, these same vehicles would be replaced again during the span of this TDP.

4. Automated Data Processing Software

A need for Automated Data Processing software has been identified to support Valley Metro’s start-up of an Automated Vehicle Locator (AVL) system.

5. Farebox Equipment

With the addition of the Star Line Trolley, four new fareboxes are requested to assist with daily passenger counting. The current trolleys were delivered without fareboxes; thus this purchase will ensure consistent ridership tabulations and integration with GFI’s reporting functions. Additional fareboxes will also be needed for any expansion vehicle purchases.

6. Support Vehicles

A 2005 Ford Taurus that is used for administrative functions (banking, off-site meetings, etc.) is in need of replacement. One automobile is requested for this purpose. Future needs also include one tow truck, two pick-up trucks and three vans.

7. Maintenance Facility Expansion

With the recent expansion of services (SmartWay, Star Line Trolley, etc.), parking and maintenance space at the Valley Metro garage has become scarcer. An adjacent property provides an immediate outlet to expand the current facility and provide more overnight parking.

8. Comprehensive Operations Analysis

As outlined earlier in this TDP, the Greater Roanoke area has a high demand for improved transit services. However, the operating resources for system expansion are much more constrained. A Comprehensive Operations Analysis (COA) is recommended to ascertain where existing services are being utilized or underutilized and identify areas for reinvestment. The study would include public outreach and a full stop-level and trip-level ridecheck to provide up-to-date ridership data and support recommendations for service modifications.

9. Campbell Court Relocation

The Campbell Court transfer facility is located in the heart of downtown Roanoke and serves as the central connecting point of Valley Metro's fixed route service. The facility, however, is somewhat constrained, particularly in areas of pedestrian safety. The drive aisles are narrow and challenging for even the most skilled bus operators. Traffic access and egress in and out of the facility are also difficult, especially as the downtown area becomes more revitalized. There is a recommendation to relocate the transit facility to a site that provides greater passenger safety and vehicle movement.

10. Transit Centers

The Valley View and Tanglewood malls and their surrounding areas are some of Valley Metro's strongest destinations for employment. Their proximity to major thoroughfares also makes them natural connecting points for transit. With Campbell Court at capacity, additional outlets must be considered to accommodate a de-centralized transfer network.

11. Passenger Shelters

The addition of passenger shelters at bus stops provide an enhanced visual transit presence in the community, and provides an amenity that may encourage greater transit usage. The current shelter program at Valley Metro is relatively small. However, a more aggressive plan is anticipated.

12. Park & Ride Facilities

The RVARC has identified three Park & Ride projects in their Long Range Plan that could potentially support Valley Metro Service. The new and/or expanded lots with Valley Metro service potential are all located along the Interstate 81 corridor. The sites at exits 140 and 141 are served by SmartWay. The exit 150 project would be served by a new Fincastle express service to Roanoke.

4.3 Funding Requirements

Potential costs were identified for the service and capital needs identified above. Potential funding requirements for service expansion are based on the following assumptions:

- Later evening service on select routes will require an additional 8,596 hours and 110,397 miles annually. Additional vehicles will not be required.
- New Sunday service on select routes will require an additional 6,264 hours and 56,596 miles annually. Additional vehicles will not be required.
- Thirty-minute midday frequency on select weekday routes will require an additional 8,288 hours and 104,652 miles annually. Additional vehicles will not be required.
- The new East-West Star Line Trolley will require an additional 7,140 hours and 63,750 miles annually. Three replica trolley vehicles are required to operate the service.
- Service into unincorporated Roanoke County will require an additional 9,838 hours and 115,492 miles annually. Three 35-foot transit buses are required to operate the four proposed service expansions.
- Regional service to Bedford and Lynchburg will require an additional 8,160 hours and 224,400 miles annually. Two 45-foot over-the-road coaches are required to operate the service.
- Express service between Fincastle and Roanoke will require an additional 4,080 hours and 42,840 miles annually. Four 35-foot transit buses are required to operate the proposed service.
- Express service between Valley View, Campbell Court and Tanglewood will require an additional 5,100 hours and 44,268 miles annually. Three 35-foot transit buses are required to operate the service.

Table 4-2 identifies operating cost estimates for the service improvements described in the preceding paragraphs. Service hours, miles and peak vehicle requirements have been calculated using a combination of field observations, GIS mapping and average travel speeds for existing Valley Metro services on similar corridors. Annualization formulas assume a standard service year with 255 weekdays, 52 Saturdays and 58 Sundays/holidays. An hourly rate of \$71.55 has been applied to all services except for SmartWay which uses \$92.70 per hour. These rates were calculated based on the operating statistics supplied by Valley Metro and performance matrices outlined in Chapter 3.

Ridership projections and farebox estimates have also been calculated and provided in Table 4-3. Farebox revenues for all but the Cave Creek Kroger extension used the route-level farebox return percentages shown in Chapter 3 of this TDP. The percentage rates from the same routes (or similar routes where applicable) were applied to the gross operating cost to establish an annual farebox revenue projection. In the case of the Cave Creek Kroger extension, Route 61/62's passengers per mile were applied to the additional miles calculation to establish annual additional ridership. Then, the average fare for Routes 61/62 was applied to the annual ridership projection.

Table 4-4 identifies the estimated capital costs for the service improvements and facility needs described in the preceding paragraphs. Like the O&M cost projections, these projections are based on 2009 dollars.

**Table 4-2
TDP Service Needs
Estimated Annual Operating & Maintenance Costs
(in 2009 dollars)**

Service Initiative	# Additional Peak Vehicles	Estimated Additional Daily Hours	Estimated Additional Daily Miles	# Annual Days Impacted	Estimated Additional Annual Hours	Estimated Additional Annual Miles	Estimated Annual Gross Operating Cost	Projected Farebox Revenue	Estimated Annual Net Operating Cost
Later Evening Service (Select Routes)	0	28.0	359.6	307	8,596.0	110,397.2	\$ 615,044	\$ 75,868	\$ 539,176
New Sunday Service (Select Routes)	0	108.0	975.8	58	6,264.0	56,596.4	\$ 448,189	\$ 47,660	\$ 400,529
30-Minute Weekday Midday Service (Select Routes)	0	32.5	410.4	255	8,287.5	104,652.0	\$ 592,971	\$ 87,090	\$ 505,881
New East-West Star Line Trolley	3	28.0	250.0	255	7,140.0	63,750.0	\$ 510,867	\$ 110,925	\$ 399,942
Service to Unincorporated Roanoke County									
• Franklin Road Wal-Mart (South US 220)	1	5.0	60.0	307	1,535.0	18,420.0	\$ 109,829	\$ 26,322	\$ 83,508
• Valley View Mall to new DMV (Peters Creek Road & Valleypointe Parkway)	1	14.5	173.6	255	3,697.5	44,268.0	\$ 264,556	\$ 63,210	\$ 201,346
• US 460/Bosnak (Wal-Mart and Kroger)	1	15.0	132.0	307	4,605.0	40,524.0	\$ 329,488	\$ 64,602	\$ 264,885
• Cave Spring Kroger (Brambleton Avenue & SR 419)	0	0.0	40.0	307	-	12,280.0	\$ -	\$ 19,444	\$ (19,444)
Regional Service to Bedford/Lynchburg (Four Options)									
• New Roanoke/Bedford Smartway - 120-minute Frequency Weekdays	1	16.0	456.0	255	4,080.0	116,280.0	\$ 378,216	\$ 67,762	\$ 310,454
• New Roanoke/Bedford Smartway - 60-minute Frequency Weekdays	2	32.0	912.0	255	8,160.0	232,560.0	\$ 756,432	\$ 135,523	\$ 620,909
• New Roanoke/Bedford/Lynchburg Smartway - 120-minute Frequency Weekdays	2	32.0	880.0	255	8,160.0	224,400.0	\$ 756,432	\$ 133,373	\$ 623,059
• New Roanoke/Bedford/Lynchburg Smartway - 60-minute Frequency Weekdays	4	64.0	1760.0	255	16,320.0	448,800.0	\$ 1,512,864	\$ 266,746	\$ 1,246,118
Express Service									
• Fincastle/Downtown Roanoke	4	16.0	168.0	255	4,080.0	42,840.0	\$ 291,924	\$ 48,410	\$ 243,514
• Valley View Mall/Campbell Court/Tanglewood Mall	3	20.0	173.6	255	5,100.0	44,268.0	\$ 364,905	\$ 58,067	\$ 306,838

**Table 4-3
TDP Service Needs
Estimated Ridership and Farebox Revenue
(in 2009 dollars)**

Service Initiative	# Additional Peak Vehicles	Estimated Additional Daily Hours	Estimated Additional Daily Miles	# Annual Days Impacted	Estimated Additional Annual Hours	Estimated Additional Annual Miles	Annual Ridership Projection (Hours Based)	Annual Ridership Projection (Mileage Based)	Annual Ridership Projection (Adjusted Average)	Annual Farebox Revenue Projection
Later Evening Service (Select Routes)	0	28.0	359.6	307	8,596.0	110,397.2	186,533	162,284	87,204	\$ 75,868
New Sunday Service (Select Routes)	0	108.0	975.8	58	6,264.0	56,596.4	135,929	83,197	54,781	\$ 47,660
30-Minute Weekday Midday Service (Select Routes)	0	32.5	410.4	255	8,287.5	104,652.0	179,839	153,838	100,103	\$ 87,090
New East-West Star Line Trolley	3	28.0	250.0	255	7,140.0	63,750.0	N/A	N/A	127,500	\$ 110,925
Service to Unincorporated Roanoke County										
• Franklin Road Wal-Mart (South US 220)	1	5.0	60.0	307	1,535.0	18,420.0	27,538	32,972	30,255	\$ 26,322
• Valley View Mall to new DMV (Peters Creek Road & Valleypointe Parkway)	1	14.5	173.6	255	3,697.5	44,268.0	80,236	65,074	72,655	\$ 63,210
• US 460/Bosnak (Wal-Mart and Kroger)	1	15.0	132.0	307	4,605.0	40,524.0	83,673	64,838	74,256	\$ 64,602
• Cave Spring Kroger (Brambleton Avenue & SR 419)	0	0.0	40.0	307	-	12,280.0	N/A	22,350	22,350	\$ 19,444
Regional Service to Bedford/Lynchburg (Four Options)										
• New Roanoke/Bedford Smartway - 120-minute Frequency Weekdays	1	16.0	456.0	255	4,080.0	116,280.0	23,950	19,768	21,859	\$ 67,762
• New Roanoke/Bedford Smartway - 60-minute Frequency Weekdays	2	32.0	912.0	255	8,160.0	232,560.0	47,899	39,535	43,717	\$ 135,523
• New Roanoke/Bedford/Lynchburg Smartway - 120-minute Frequency Weekdays	2	32.0	880.0	255	8,160.0	224,400.0	47,899	38,148	43,024	\$ 133,373
• New Roanoke/Bedford/Lynchburg Smartway - 60-minute Frequency Weekdays	4	64.0	1760.0	255	16,320.0	448,800.0	95,798	76,296	86,047	\$ 266,746
Express Service										
• Fincastle/Downtown Roanoke	4	16.0	168.0	255	4,080.0	42,840.0	23,950	7,283	15,616	\$ 48,410
• Valley View Mall/Campbell Court/Tanglewood Mall	3	20.0	173.6	255	5,100.0	44,268.0	29,937	7,526	18,731	\$ 58,067

**Table 4-4
TDP Facility and Capital Needs
Estimated Costs
(in 2009 dollars)**

Capital Item	Number Required	Unit Cost	Total Cost
Buses			
- 35-Foot Hybrid-Electric Coaches	20	\$530,000	\$10,600,000
- 45-Foot Over-the-Road Coaches	6	\$500,000	\$3,000,000
- Replica Trolley Coaches	4	\$220,000	\$880,000
Shop Equipment	~40	Various	\$150,000
Replacement Vans	12	\$60,000	\$720,000
ADP Software	2	Various	\$350,000
Fareboxes	13	\$15,000	\$195,000
Support Vehicles	7	Various	\$238,000
Maintenance Facility Expansion	1	\$2,500,000	\$2,500,000
Comprehensive Operations Analysis	1	\$300,000	\$300,000
Campbell Court Relocation			
- Site Location and Feasibility Study	1	\$300,000	\$300,000
- Property Acquisition	1	\$5,000,000	\$5,000,000
- Design and Engineering	1	\$3,500,000	\$3,500,000
- Final Construction	1	\$15,000,000	\$15,000,000
Transit Centers			
- Valley View	1	\$2,500,000	\$2,500,000
- Tanglewood	1	\$2,500,000	\$2,500,000
Passenger Shelters and Benches (annual allocation)	6 years	\$100,000	\$600,000
Park & Ride Facilities*			
- Interstate 81 at Exit 140 (42 space expansion)	1	\$213,600	\$213,600
- Interstate 81 at Exit 141 (new 30 space facility)	1	\$156,000	\$156,000
- Interstate 81 at Exit 150 (50 space relocation)	1	\$240,000	\$240,000

* Park & Ride facility costs based on the 2007 VDOT Cost Estimate Worksheet as shown in RVARC's 2035 LRP

5.0 SERVICE AND CAPITAL RECOMMENDATIONS

This chapter identifies the cost-feasible service and capital needs that are recommended for inclusion in the TDP time period (FY 2009 through FY 2015). An unconstrained list of potential service and capital needs were identified in the prior chapter of this TDP. Recommended improvements presented in this chapter are financially constrained, based on anticipated funding availability during the TDP time period.

5.1 Service Recommendations

Chapter 4 of this TDP identified the following potential service improvements for consideration over the TDP's time period:

- Later Evening Service (Select Routes)
- Sunday Service (Select Routes)
- 30-Minute Weekday Midday Service (Select Routes)
- New East-West Star Line Trolley
- Service to Unincorporated Roanoke County
- Regional Service to Bedford/Lynchburg
- Express Services to Fincastle, Tanglewood and Valley View

However, the financially-constrained reality of Valley Metro's operations is unlikely to allow for extensive transit service expansion. As was noted in Chapter 3, Valley Metro covers about 47% of O&M costs through fare collection and local government funding, with nearly half of this amount coming from passenger fares. The remaining 53% is funded through federal (35%) and state (18%) funding programs. Future state funding levels for operations support are presumed to remain flat at this point, with the State having recently enacted funding cuts. Given the state of the local economy, it is doubtful that Roanoke will see any additional local funding revenues available for transit in the coming year either.

Nonetheless, there has been a renewed interest in expanding transit services into unincorporated Roanoke County. As outlined in Chapter 4 of this TDP, much of the employment growth in the region has occurred in unincorporated Roanoke County. County staff has begun to recognize the shortfalls in transit connectivity and has been in discussions with Valley Metro staff to initiate a limited amount of cross-jurisdictional service. In addition, State leadership has expressed an interest in linking Roanoke with newly expanded AMTRAK service in Lynchburg. While not certain, both of these discussions could lead to additional funding opportunities that would ultimately bring these services to fruition.

Recognizing the cost savings of pooled procurement, the financially-constrained service plan intends to implement service improvements concurrent with the purchase of similarly sized and configured replacement vehicles. As such, the following service recommendations are recommended for programming (shown in 2009 dollars including farebox revenue assumptions):

FY 2009

- None

FY 2010

- None

FY 2011

- Regional Service to Bedford/Lynchburg - \$623,059 annually

FY 2012

- None

FY 2013

- Service to Unincorporated Roanoke County - \$530,295 annually

FY 2014

- None

FY 2015

- None

5.2 Capital Recommendations

This TDP has also identified the following capital improvements for consideration over the TDP's six-year time period:

- Replacement and Expansion 45-foot Over-the-Road Coaches
- Replacement and Expansion 35-foot Buses
- Replacement Vans
- Support Vehicles
- Maintenance Facility Expansion
- Campbell Court Relocation
- Satellite Transit Centers
- Passenger Shelters and Benches
- Comprehensive Operations Analysis
- Various Shop Equipment
- Fareboxes
- ADP Software

There are fewer financial constraints to implement many of the above-noted facility improvements, due primarily to anticipated funding from the American Recovery and Reinvestment Act (ARRA). The Federal Register has identified \$580,000 in potential ARRA funds for Valley Metro in FY09. Thus, capital improvements recommended for implementation during the TDP's time period are as follows (shown in 2009 dollars):

FY 2009

- Replacement Vans (6) - \$360,000
- ADP Software - \$100,000
- Fareboxes (4) - \$60,000
- Support Vehicles (1) - \$30,000
- Various Shop Equipment - \$30,000

FY 2010

- Maintenance Facility Expansion - \$2,500,000
- Replacement and Expansion 45-foot Over-the-Road Coaches (4) - \$2,000,000
- Comprehensive Operations Analysis - \$300,000
- Passenger Shelters and Benches - \$100,000
- Support Vehicles (2) - \$94,000
- Various Shop Equipment - \$20,000

FY 2011

- Expansion 45-foot Over-the-Road Coaches (2) - \$1,000,000
- Passenger Shelters and Benches - \$100,000
- Support Vehicles (2) - \$54,000
- Fareboxes (2) - \$30,000
- Various Shop Equipment - \$20,000

FY 2012

- Replacement Vans (6) - \$360,000
- ADP Software - \$250,000
- Passenger Shelters and Benches - \$100,000
- Fareboxes (6) - \$90,000
- Support Vehicles (1) - \$30,000
- Various Shop Equipment - \$20,000

FY 2013

- Replacement and Expansion 35-foot Buses (13) - \$6,890,000
- Passenger Shelters and Benches - \$100,000
- Fareboxes (3) - \$45,000
- Support Vehicles (1) - \$30,000
- Various Shop Equipment - \$20,000

FY 2014

- Valley View Area Satellite Transit Center - \$2,500,000
- Passenger Shelters and Benches - \$100,000
- Various Shop Equipment - \$20,000

FY 2015

- Tanglewood Area Satellite Transit Center - \$2,500,000
- Passenger Shelters and Benches - \$100,000
- Various Shop Equipment - \$20,000

6.0 CAPITAL IMPROVEMENT PROGRAM

This chapter of the TDP describes capital programs (vehicles, facilities and equipment) required to carry out the operations and services set forth in the TDP service and facility recommendations that were presented in the prior chapter. Many of these capital purchases are dependent on sequencing and must occur either prior or following another capital improvement item. Those occurrences are described in the following paragraphs when applicable.

6.1 Revenue Vehicle Replacement Program

As was noted in prior chapters of this TDP, Valley Metro presently operates a mixed fleet of traditional heavy-duty buses (38 units), medium-duty buses (4 units) and replica trolley buses (4 units). They also maintain a fleet of nine paratransit vans that are contracted out to RADAR. The 38 heavy-duty buses range in model years from 2001 through 2006. The following paragraphs identify Valley Metro's vehicle replacement plan through FY15. Table 6-1 also summarizes this information.

Valley Metro owns four medium-duty buses that are utilized on the regional Smartway service. While these buses are expected to operate for as long as 10 years, the high mileage associated with the Smartway service has worn these vehicles at a much faster pace. With this in mind, Valley Metro plans to transition its regional service to heavy-duty, over-the-road coaches that are better suited for the longer travel distances in FY10. Additional service expansion is also planned in FY 11, bringing the total bus procurement to six units. The anticipated per unit cost for 45-foot over-the-road coaches is \$500,000.

As part of the ARRA economic stimulus package, Valley Metro was granted six new replacement paratransit vans. It is anticipated that these vehicles will require replacement themselves in FY12. The anticipated per unit cost for paratransit vans is \$80,000.

With a recommended product life of 12 years, the 2001 model buses will also be eligible for retirement/replacement during the time span of this TDP. Their replacement, along with the purchase of three expansion vehicles, is recommended in FY13 to complement the planned service expansion initiative into unincorporated Roanoke County. The buses planned for purchase are hybrid-electric which create much lower environmental impacts. As buses are phased out of service in future years, Valley Metro plans to replace its entire fleet with clean-power technology. The anticipated per unit cost for 35-foot hybrid-electric buses is \$530,000.

**Table 6-1
Valley Metro Fixed Route Revenue Fleet
Vehicle Replacement Plan**

Vehicle ID#	Model Year	Make/Type	Vehicle Count by Fiscal Year						
			FY09	FY10	FY11	FY12	FY13	FY14	FY15
0101-0110	2001	Gillig	10	10	10	10	-	-	-
0401-0410	2004	Gillig	10	10	10	10	10	10	10
0411-0414	2004	Glaval	4		-	-	-	-	-
0601-0618	2006	Gillig	18	18	18	18	18	18	18
0801-0804	2008	Double K Trolley	4	4	4	4	4	4	4
New	2010	OTR Coach	-	4	4	4	4	4	4
New	2011	OTR Coach			2	2	2	2	2
New	2012	35-Foot Bus	-	-	-	-	13	13	13
Total Fleet			46	46	48	48	51	51	51

6.2 Facility Improvement Program

With the expansion of the revenue fleet, additional overnight parking and maintenance space is desperately needed. Valley Metro has identified property adjacent to the current maintenance facility that could provide adequate relief to existing and future needs. The property and maintenance facility upgrades to include construction are estimated at \$2.5 million and has been programmed for FY10, prior to the arrival of new expansion vehicles in FY11 and FY13.

A Comprehensive Operations Analysis (COA) has also been planned for FY10. As described in earlier chapters, this study is designed to optimize the fixed-route network and define a controlled, cost-effective means of service expansion. With operating dollars becoming scarcer, it is imperative that Valley Metro exhaust all of its underutilized resources to ensure efficient, productive services prior to any increases in fare and/or revenue generation.

As part of the COA, a review of de-centralizing the route network will also be considered. As such, this may require capital investments in property and construction to develop satellite transfer facilities. Two such facilities have been tentatively identified in the Valley View and Tanglewood Mall areas. Development of these facilities should ideally occur concurrent with the completion of the COA to ensure a swift and smooth implementation of recommendations. The Valley View transfer center has been programmed for FY14 and the Tanglewood transfer center has been programmed for FY15. Each facility is expected to cost approximately \$2.5 million for property procurement, design/engineering and construction.

7.0 FINANCIAL PLAN

The financial plan is a principal objective of the TDP. It is in this chapter that an agency demonstrates its ability to provide a sustainable level of service over the TDP time period, including the rehabilitation and replacement of capital assets. This chapter identifies potential funding sources for annual operating and maintenance costs, funding requirements and funding sources for bus purchases, and funding requirements for other capital improvements.

7.1 Operating and Maintenance Costs and Funding Sources

In FY 2009, Valley Metro's operating budget was approximately \$8.1 million. Funding sources for the FY 2009 budget were as follows:

- Federal Funds - \$2,765,711 (34%)
- State Funds - \$1,380,430 (17%)
- City Funds - \$1,471,105 (18%)
- Local Funds (City of Salem, Town of Vinton) - \$233,439 (3%)
- Farebox Revenue - \$2,254,539 (28%)

This TDP's financial plan begins with these costs and funding sources as the base year (see Table 7.1). Annual O&M costs during the TDP time period are projected to grow from \$8.1 million to just over \$12 million by FY 2015. This increase includes 4% per year inflation factor that assumes increases in labor costs (represented and non-represented), benefits, fuel/lubricants and other direct operating costs that are subject to inflationary impacts. This plan also assumes a moderate level of service expansion as outlined in Chapter 5 of this TDP.

Federal funds are assumed to increase proportionally with Valley Metro's O&M costs. As noted above, federal funds cover just over one-third of Valley Metro's annual O&M costs. This percentage is assumed to remain constant throughout the TDP time period.

The Virginia Department of Rail and Public Transportation (VDRPT) has identified \$1,335,050 in state operating assistance for Valley Metro in FY 2010 in its Transportation Improvement Program (TIP). Thus, this TDP's financial plan reflects this level of state funding assistance for FY 2010. The VDRPT has identified projected funding levels expected throughout the timeframe of this TDP. State formula assistance grants for public transportation operating expenses are awarded on the basis of the total annual amount of state funds available expressed as a percentage of the total annual amount of transit operating expenses, subject to a cap of 95% of eligible expenditures. Eligible expenditures are defined as costs of administration, fuel, tires, and maintenance parts and supplies (payroll costs of mechanics and drivers are excluded).

Projections for state operating assistance, as identified in the TDP financial plan, have been provided for planning purposes and may fluctuate up or down based on the aforementioned parameters.

City funding is also assumed to increase proportionally with Valley Metro's O&M costs. The City of Roanoke accounts for 18% of Valley Metro's annual O&M costs. This percentage is assumed to remain constant throughout the TDP time period.

Like federal and city funding, farebox revenues are also assumed to remain at a constant percentage through FY 2015. However, revenues do increase as new services are introduced, drawing new riders. No fare increase has been assumed at this time.

This leaves the balance of the O&M cost burden to be absorbed by new local sources. The new service proposals are to areas outside of Roanoke's city boundaries. Valley Metro staff has been in recent discussions with Roanoke County to invoke their participation in transit funding, thus bringing service into unincorporated Roanoke County. The hope is that those dialogues will be successful, making Roanoke County an active player in the area's transit. The new SmartWay service to Bedford and Lynchburg also has potential for new revenue draws as discussions with these two municipalities begin.

**Table 7-1
Financial Plan for Funding Annual O&M Costs
(Costs in Year of Expenditure Dollars)**

TDP Financial Plan for:	Budget						
Service O&M Costs	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Fixed Route							
Annual Service-Hours	98,500	98,500	98,500	108,338	116,934	123,198	131,485
Annual Service-Miles	1,173,322	1,173,322	1,173,322	1,288,814	1,399,211	1,455,808	1,560,460
Peak Vehicles	29	29	29	32	32	32	32
Fleet Buses	38	38	38	40	40	40	40
Spare Ratio	24%	24%	24%	20%	20%	20%	20%
Smartway							
Annual Service-Hours	5,500	5,500	13,660	13,660	13,660	13,660	13,660
Annual Service-Miles	364,320	364,320	588,720	588,720	588,720	588,720	588,720
Peak Vehicles	3	3	5	5	5	5	5
Fleet Buses	4	4	6	6	6	6	6
Spare Ratio	25%	25%	17%	17%	17%	17%	17%
Star Line Trolley Service							
Annual Service-Hours	7,650	14,790	14,790	14,790	14,790	14,790	14,790
Annual Service-Miles	132,000	195,750	195,750	195,750	195,750	195,750	195,750
Peak Vehicles	3	6	6	6	6	6	6
Fleet Buses	4	8	8	8	8	8	8
Spare Ratio	25%	25%	25%	25%	25%	25%	25%
Total Vehicle Fleet							
Peak Vehicles	35	38	40	43	43	43	43
Fleet Buses	46	50	52	54	54	54	54
Spare Ratio	24%	24%	23%	20%	20%	20%	20%
Projected O&M Costs							
Fixed Route (includes Star Line)	\$8,105,224	\$8,427,000	\$9,571,000	\$9,947,000	\$11,130,000	\$11,568,100	\$12,024,000
Base Service from previous Year	\$7,595,373	\$7,899,000	\$8,215,000	\$8,544,000	\$9,678,000	\$10,065,100	\$10,468,000
New Service			\$0	\$0	\$792,000	\$0	\$0
Smartway	\$509,851	\$528,000	\$1,356,000	\$1,403,000	\$1,452,000	\$1,503,000	\$1,556,000
Base Service from previous Year		\$528,000	\$546,000	\$1,403,000	\$1,452,000	\$1,503,000	\$1,556,000
New Service		\$0	\$810,000	\$0	\$0	\$0	\$0
Anticipated Funding Sources							
Federal	\$2,765,711	\$2,876,000	\$3,266,000	\$3,394,000	\$3,798,000	\$3,947,000	\$4,103,000
State	\$1,380,430	\$1,335,050	\$1,358,680	\$1,398,082	\$1,447,015	\$1,492,741	\$1,539,911
City	\$1,471,105	\$1,530,000	\$1,737,000	\$1,805,000	\$2,020,000	\$2,100,000	\$2,182,000
Local	\$233,439	\$341,950	\$638,946	\$582,918	\$815,407	\$810,359	\$854,089
<i>Farebox</i>	<i>\$2,254,539</i>	<i>\$2,344,000</i>	<i>\$2,570,373</i>	<i>\$2,767,000</i>	<i>\$3,049,578</i>	<i>\$3,218,000</i>	<i>\$3,345,000</i>
Total	\$8,105,224	\$8,427,000	\$9,571,000	\$9,947,000	\$11,130,000	\$11,568,100	\$12,024,000
Note: Annual O&M Costs inflated to Year-of-Expenditure Costs (4% annual increase)							

7.2 Bus Purchase Costs and Funding Sources

As noted in Chapter 6 of this TDP, there are two distinct bus purchases programmed during the time period for this TDP. Each bus purchase combines replacement and expansion bus needs to ensure maximum opportunities for volume pricing. The first bus purchase is programmed for FY 2010 and replaces the four medium-duty vehicles currently utilized on SmartWay. Two additional expansion buses are projected in FY 2011 on the Lynchburg Service. The third bus purchase occurs in FY 2013, replacing ten 2001 model 35-foot buses. Three expansion buses are also planned in this purchase.

Both bus purchases are assumed to be funded through FTA's Section 5307 Program, with 80% of the funding provided by the federal government. The remaining 20% is funded by state and local funding sources. As in past years, this TDP assumes the state and local portions to be split evenly with 10% funding by the Commonwealth of Virginia and 10% by Valley Metro. Table 7-2 outlines the bus purchase plan by fiscal year and the anticipated funding sources.

**Table 7-2
TDP Financial Plan for Funding Bus Purchases
(Costs in Year of Expenditure Dollars)**

TDP Financial Plan for: Bus Replacements	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Bus Replacements							
Standard 35' Coaches					10		
Over-the-Road 45' Coaches		4					
Bus Expansion							
Standard 35' Coaches					3		
Over-the-Road 45' Coaches			2				
Trolley Coaches							
Bus Replacement / Expansion Costs	\$0	\$2,080,000	\$1,081,600	\$0	\$8,060,325	\$0	\$0
Anticipated Funding Sources:							
Federal - ARRA	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Federal - FTA programs	\$0	\$1,664,000	\$865,280	\$0	\$6,448,260	\$0	\$0
State	\$0	\$208,000	\$108,160	\$0	\$806,033	\$0	\$0
Local	\$0	\$208,000	\$108,160	\$0	\$806,033	\$0	\$0
Note: Capital Costs inflated to Year-of-Expenditure Costs (4% annual increase)							

7.3 Capital Improvement Costs and Funding Sources

Finally, this TDP has identified the need for a variety of capital improvements throughout the system as outlined in Chapters 5 and 6. Costs for most of these improvements are based on recent purchase experiences by Valley Metro and/or other properties in the region.

In FY 2009, Valley Metro received over \$½ million in capital funds from the American Recovery and Reinvestment Act (ARRA). Those funds have been applied toward the purchase of replacement vans, ADP software, fareboxes, shop equipment and a support vehicle. FY 2010 through FY 2015 does not assume an additional ARRA funding package. However, the potential still exists where unfunded improvements in Chapter 4 may be brought forward.

Like bus purchases, the capital improvement program also assumes 80% funding participation from FTA's Section 5307 Program. The remaining 20% is funded by state and local funding sources. As in past years, this TDP assumes the state and local portions to be split evenly with 10% funding by the Commonwealth of Virginia and 10% by Valley Metro. Table 7-3 outlines the assumed annual funding apportionment.

State capital program grants from the Mass Transit Trust Funds (MTTF) are awarded to all public transportation capital projects deemed to be eligible, reasonable, and appropriate at a uniform level of state participation. The goal is to reach the maximum state share of capital expenses of 95%, but there have not been sufficient funds to support transit capital projects at this level since the Mass Transit Trust Fund was created in 1986. This level of participation or "state share" of capital project expenses is calculated by dividing the amount of state funds available for capital projects each year by the amount needed to support the non-federal share of all eligible transit capital projects for the year. Beginning in FY 2008, additional capital funds from the Transportation Capital Projects bond proceeds authorized under Chapter 896 of the 2007 Acts of Assembly have been available annually at a maximum state matching share of 80% in the Transit Capital Fund.

A total of all capital expenses, including bus purchases, is also provided at the conclusion of this table. It is important to note that capital spending has been programmed at approximately \$3 million annually. However, the large bus purchase in FY 2013 creates an unusually high capital funding. To prepare for that FY 2013, capital spending in the prior year (FY 2012) is somewhat curtailed.

**Table 7-3
TDP Financial Plan for Funding Capital Improvements
(Costs in Year of Expenditure Dollars)**

TDP Financial Plan for: Other Capital Improvements	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Shop Equipment	\$30,000	\$20,800	\$21,600	\$22,500	\$23,400	\$24,300	\$25,300
6 Replacement Vans	\$360,000			\$405,000			
ADP Software	\$100,000			\$250,000			
Fareboxes	\$60,000		\$32,400		\$52,600		
Support Vehicles	\$30,000	\$94,000	\$54,000	\$30,000	\$30,000		
Maintenance Facility Expansion		\$2,500,000					
Comprehensive Operations Analysis		\$300,000					
Valley View Area Transit Center						\$2,500,000	
Tanglewood Transit Center							\$2,500,000
Passenger Shelter & Benches		\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
<i>Total Facility Improvement Costs:</i>	<i>\$580,000</i>	<i>\$3,014,800</i>	<i>\$208,000</i>	<i>\$807,500</i>	<i>\$206,000</i>	<i>\$2,624,300</i>	<i>\$2,625,300</i>
Antipated Funding Sources:							
Federal - ARRA	\$580,000						
Federal - FTA programs	\$0	\$2,411,840	\$166,400	\$646,000	\$164,800	\$2,099,440	\$2,100,240
State	\$0	\$301,480	\$20,800	\$80,750	\$20,600	\$262,430	\$262,530
Local	\$0	\$301,480	\$20,800	\$80,750	\$20,600	\$262,430	\$262,530

Note: Capital Costs inflated to Year-of-Expenditure Costs (4% annual increase)

TDP Financial Plan for: Total Capital Expenditures	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total Capital Costs	\$580,000	\$3,014,800	\$3,452,800	\$807,500	\$8,266,325	\$2,624,300	\$2,625,300
Antipated Funding Sources:							
Federal - ARRA	\$580,000	\$0	\$0	\$0	\$0	\$0	\$0
Federal - FTA programs	\$0	\$2,411,840	\$2,762,240	\$646,000	\$6,613,060	\$2,099,440	\$2,100,240
State	\$0	\$301,480	\$345,280	\$80,750	\$826,633	\$262,430	\$262,530
Local	\$0	\$301,480	\$345,280	\$80,750	\$826,633	\$262,430	\$262,530

8.0 TDP MONITORING AND EVALUATION

This TDP has presented a thorough evaluation of Valley Metro's fixed-route service, performance measures and cost characteristics. Key elements that have been addressed in this TDP effort include:

- Development of goals, objectives and performance standards that are designed to guide future development of Valley Metro's fixed route service;
- A detailed evaluation of existing service characteristics, identifying system strengths and weaknesses;
- A peer agency review that compares Valley Metro's service and financial characteristics to other similar-sized systems in comparable communities;
- A rider survey and public outreach effort that identified existing rider satisfaction with existing services and desired improvements;
- A financially unconstrained listing of potential service and capital improvements;
- A financially constrained listing of recommended service and capital improvements, identified by year;
- Funding requirements and potential funding sources for recommended service and capital improvements.

Many of the components reflected in this TDP are processes and practices that already exist at Valley Metro but have not been formally documented. This TDP effort formalizes those processes and provides a more comprehensive look into Valley Metro's needs and plans over the next several years. It will be important maintain this TDP by closely coordinating with other transportation and land-use planning efforts, continuing to monitor service performance and providing DRPT with annual updates regarding implementation of the service and capital improvements contained within this document.

8.1 Coordination with Other Plans and Programs

The completion of this TDP is nearly concurrent with the update of the MPO Long Range Transportation Plan (LRTP). Goals and objectives from the TDP should be reviewed and incorporated into the LRTP's goals and objectives. This TDP has also identified the need for transit expansion into unincorporated Roanoke County. Lacking the presence of a regional transportation authority, the RVARC is best suited to deal with issues of jurisdictional boundaries and funding limitations. Transit service in the Roanoke Valley will best reach its

potential as a public service if its routes are driven by user need and trip paths rather than by artificial boundaries. Service to the City of Bedford and the City of Lynchburg will also require similar coordination with their respective city and county governments.

8.2 Service Performance Monitoring

This TDP has identified specific system-wide and route-level performance measures to ensure Valley Metro's service levels are appropriate and equitably distributed based on utilization. These measures should ideally be monitored monthly. However, without dedicated staffing Valley Metro may have to limit its reporting frequency to quarterly increments. Ideally, DRPT or the RVARC would be able to provide staffing support to develop and maintain a comprehensive service performance monitoring program. Once this program has been put into place, corrective measures are to be taken if substantial and sustained degradation in service performance is identified.

8.3 Annual TDP Monitoring

The DRPT will require submittal of an annual letter that provides updates to the contents of this TDP. Recommended contents of the TDP Update letter include:

- A summary of ridership trends for the past 12 months;
- A description of TDP goals and objectives that have been advanced over the past 12 months;
- A list of service and/or capital improvements (or reductions) that have been implemented in the past 12 months including identification of those that were specified in this TDP;
- An update of the TDP's list of recommended service and capital improvements (identify any additions, eliminations, changes in timeline, etc.), extending the list annually by one year to maintain a six-year planning horizon;
- A summary of current year costs and funding sources; and
- Updates to the financial plan tables presented in Chapter 7, extending the plan annually by one year to maintain a six-year planning horizon.