Transit Development Plan

Bristol Virginia Transit

FISCAL YEARS 2016 – 2021

Connetics Transportation Group

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DRPT
Virginia Department of Rail and Public Transportation

BRISTOL VIRGINIA TRANSIT

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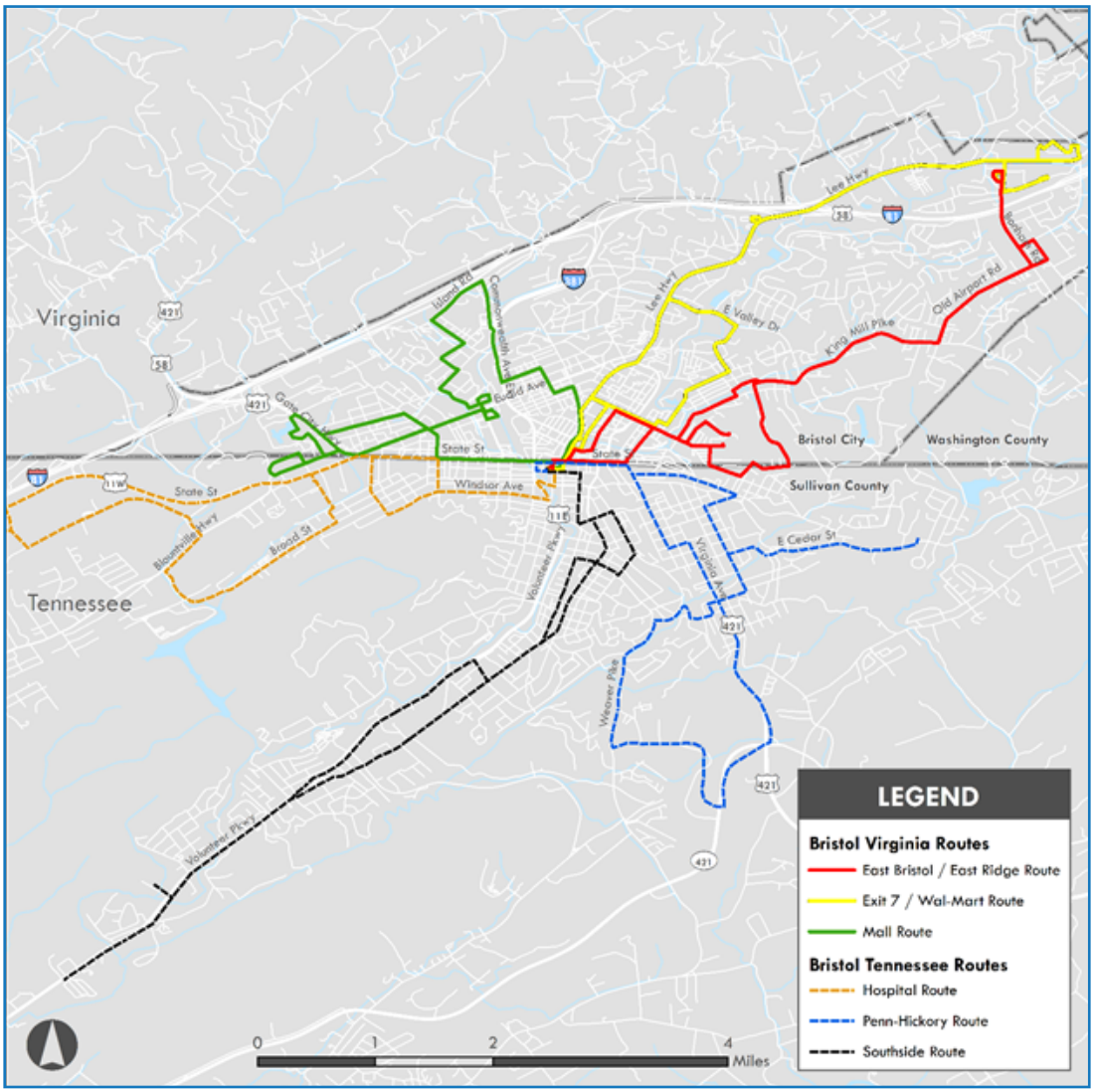
1.1 HISTORY

Bristol Virginia Transit (BVT) serves Bristol, VA, a city in western Virginia bordering the Tennessee line. The single metropolitan is composed of Bristol, VA and Bristol, TN, and therefore has its own government and separate transit system. These cities are part of an area known as the "Tri-Cities", which is a combined statistical area (CSA) that includes Johnson City, Kingsport, and Bristol. State Street runs through the downtown of Bristol and is the state line. In 2010, Bristol, VA, had an estimated population of 17,835, while Bristol, TN, had an estimated 26,702 yielding a total population of 44,537. Because the metropolitan area is divided by the state line, the public transportation responsibilities are shared between the two states. The bus systems, however, are well coordinated and operate on synchronized schedules and accept transfers at a reduced rate.

Public transportation first operated as a bus service for the city in the 1930's. Currently, Bristol Virginia Transit and Bristol Tennessee Transit (BTT) each provide three fixed-routes that converge at the Downtown Transfer Center located just South of State Street in Tennessee, as shown in Figure 1-1.

Figure 1-1 Bristol Virginia Transit and Bristol Tennessee Transit Routes



The transfer center is well situated downtown, within a short walk from the State Street Farmer's Market, Greyhound services, Bristol Chamber of Commerce, and the Bristol Tennessee Police Department, among many other downtown amenities. In addition to the fixed-route service, the BVT and BTT also provide point-to-point van service for those with disabilities, transportation for the elderly, and job access programs.

Recently, BVT has needed to change its funding revenue just as the commercial landscape in the city has. Funding has been secured for a fourth route, which plans to start service coinciding with the opening of The Falls development near Exit 5, close to Interstate 81 along Lee Highway. Bus shelters also are planned for the new development. In the summer of 2015, BVT experienced its first fare increase in history, increasing from $0.60 to $1.00.

1.2 GOVERNANCE

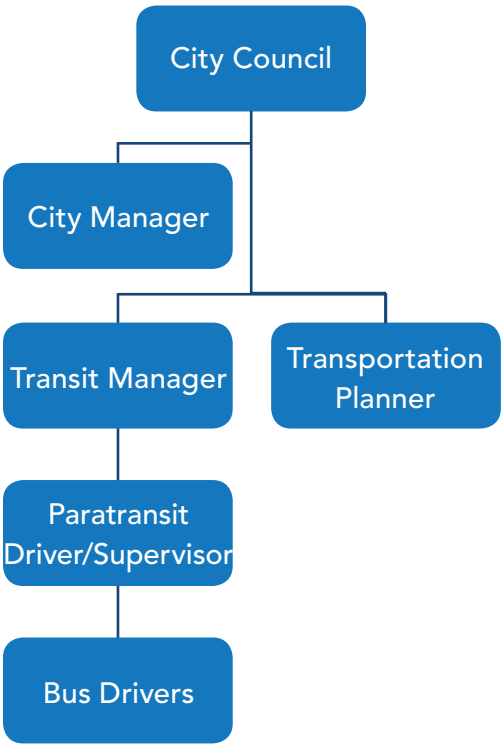
The City of Bristol has a council/manager form of government. On July 1 of each year, the city council has an organizational meeting to appoint the following officials who meet the second and fourth Tuesday each month at City Hall.

Governance	
Mayor	Archie Hubbard
Vice Mayor	Bill Hartley
City Manager	Tabitha Crowder
City Attorney	Pete Curcio
City Clerk	Pamela Venable

1.3 ORGANIZATIONAL STRUCTURE

BVT is administered as a city governmental service, governed by a city council made up of five elected members, outlined in Figure 1-2. The city also employs a city manager, transit manager, and transportation planner. The transit manager handles day-to-day operations, while administrative business is handled by staff within the Community Development/ Planning Department.

Figure 1-2. Bristol Transit Organizational Chart



1.4 TRANSIT SERVICES PROVIDED AND AREAS SERVED

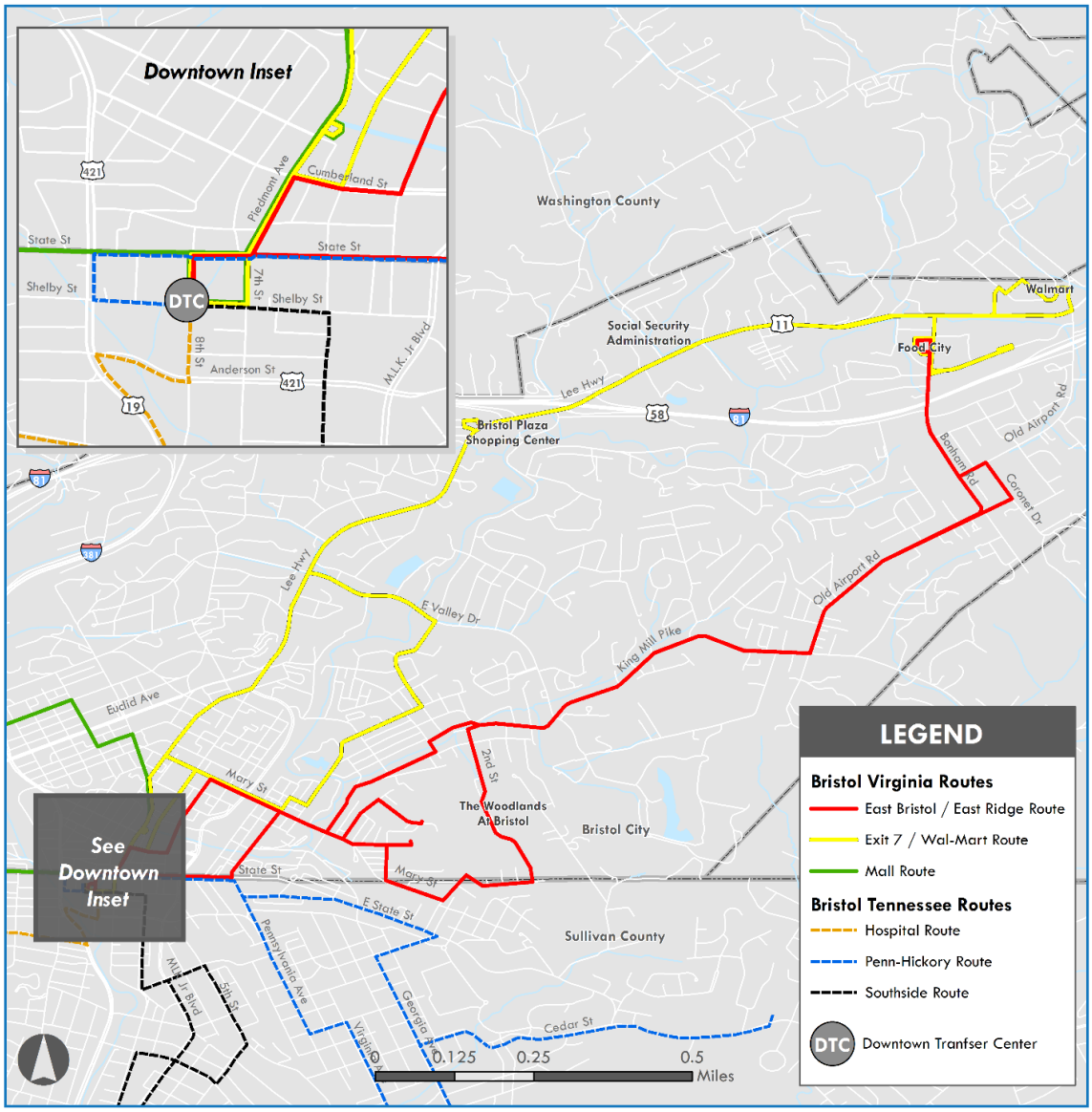
The area served by BVT includes Bristol, VA city limits with three routes that cover more than 400 miles a day, as shown in Figure 1-1. Service operates hourly from 7:15 a.m. until approximately 6:00 p.m. BVT coordinates with BTT to connect services at the Downtown Transfer Center every hour so that transferring between systems may occur without excessive wait times. The East Bristol/East Ridge Route operates during peak hours only, while the Mall Route and the Exit 7/Walmart Route each run all-day. Drivers will respond to requests for minor deviations along the route to accommodate rider's needs. In addition to these services, BVT has American Disabilities Act (ADA) services for those who are unable to use the fixed-route service. In accordance with the Federal Transit Administration (FTA) regulations, BVT provides point-to-point rides to those who qualify via certification as specified by ADA guidelines. BVT provides necessary forms to those individuals.

The peak vehicle requirements for each route is one vehicle. Two of the buses in the fleet are equipped with bicycle racks. A handful of bus stop signs exist along the routes, although these have not been updated. Passengers typically flag down the buses for pickup and simply vocalize their drop-off preferences. Buses pull up to the front of stores and businesses to pick up and drop off riders, as shelters/amenities are not currently available. The Falls development along Lee Highway will include a total of 1.5 million square feet of retail space including an 85,000 square foot Cabela's.

East Bristol/East Ridge Route

The East Bristol route, shown below in Figure 1-3 along with the Walmart route, begins service from the Downtown Transfer Center and travels northeast through downtown to Lee Street and Mary Street. East Bristol/East Ridge Route then travels to the Food City via along Kings Mill Pike and Old Airport Road to connect to the Exit 7/Walmart Route. The Old Airport Industrial Park is also served by this route. On the inbound trip this route serves multifamily housing on 2nd Street and Eastridge Road. The total length for

Figure 1-3. East Bristol/East Ridge Route and Exit 7/Walmart Route



the route is 13.0 miles. The East Bristol-East Ridge route is the only BVT route that does not operate continuously throughout the day. Service is provided weekdays from 7:15 a.m. to 10:00 a.m., and from 2:15 p.m. to 6:00 p.m.

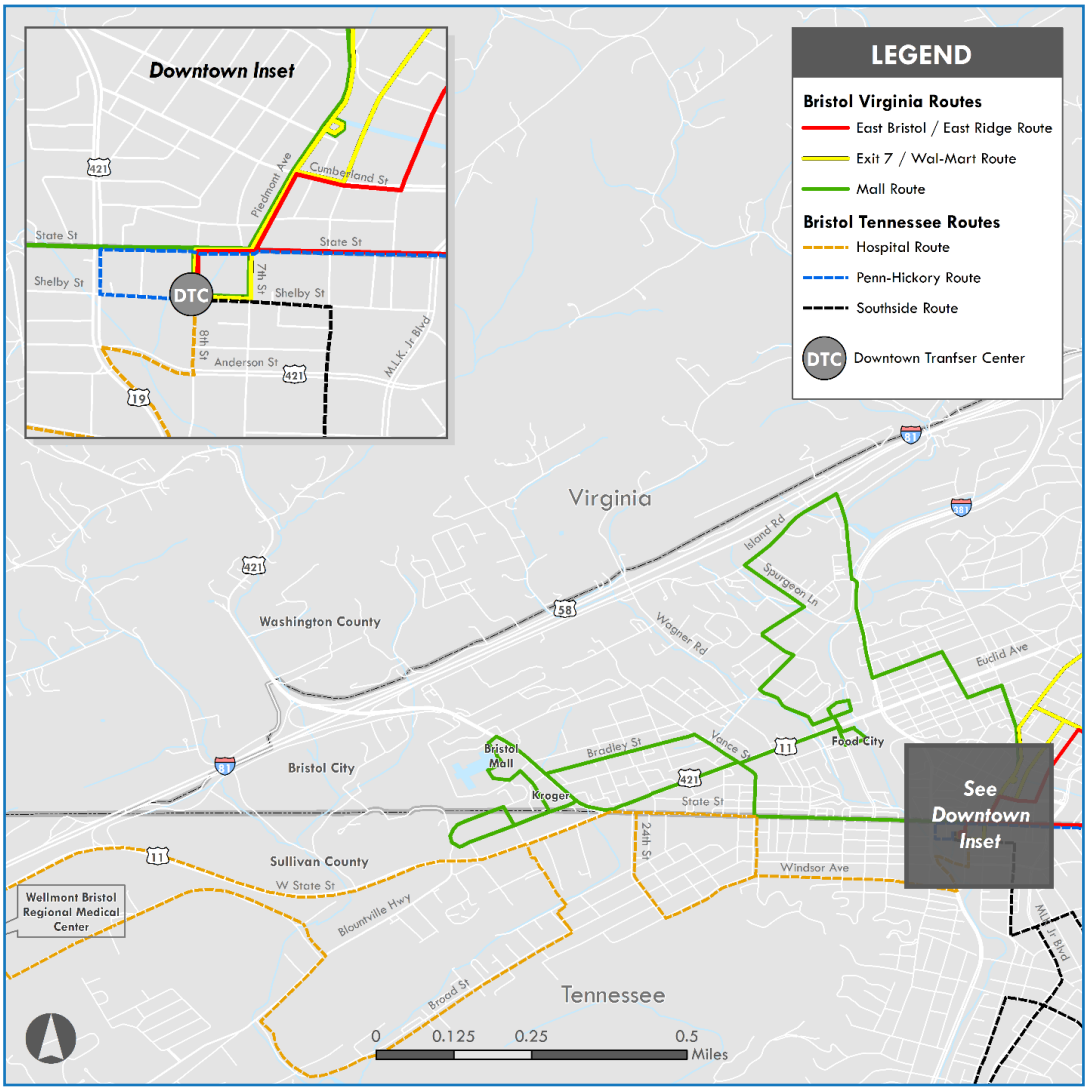
Exit 7/Walmart Route

This route, shown in Figure 1-3, provides service from downtown to the northeast along the Lee Hwy corridor Walmart. It is the longest route in BVT, at 13.6 miles long. Along the alignment the Exit 7/Walmart Route serves the businesses and services along Lee Hwy, including Bristol Plaza Shopping Center and the Social Security Administration Building. A connection with the East Bristol – East Ridge Route occurs on Bonham Rd at Food City, at which the route continues to Walmart. Any continuation of this route does not occur because city limits fall short of the Target in the Highlands Shopping Center. This route tends to experience high ridership, which may contribute to late arrivals at the Downtown Transfer Center. The Exit 7/Walmart Route is in operation weekdays from 7:15 a.m. to 6:00 p.m.

Mall Route

The Mall Route, shown below in Figure 1-4, begins at the Downtown Transfer Center and travels along State Street, where much of the development is commercial and relatively pedestrian friendly with continuous sidewalks. There is additional small-scale commercial activity along Gate City Highway before getting to the Bristol Mall. The mall has seen a decrease in tenants

Figure 1-4. Mall Route



in recent years, and was sold at auction in August of 2015, making the future of this property uncertain. The Mall Route then passes by Kroger before heading east to Food City and Euclid Avenue Shopping Center. The route then passes through several low-density neighborhoods on the southern side of I-81 and then travels down Commonwealth Avenue Extension and Piedmont Avenue on its route back to the Downtown Transfer Center. The total route length is 10.2 miles. Service for this route runs from 7:15 a.m. to 6:00 p.m., and only operates on weekdays.

1.5 FARE STRUCTURE

Fare may be paid on-board the buses into a fare box, which may be cash or pre-paid fare media. On July 1, 2014 adult fares increased from $0.60 to $1.00. This represents the first fare increase in BVT history. A reduced rate of $0.50 for fares is available to senior citizens, citizens with disabilities, and Medicare cardholders from 10:00 a.m. until 2:00 p.m. Transfers cost $0.10, including transfers from BTT. Children younger than six years of age are permitted to ride BVT free of charge. Table 1-1 shows a summary of the current fare structure.

1.6 FLEET

BVT owns and maintains a total of five revenue vehicles. Four of these vehicles are light-duty buses used for the fixed-route service and one van is used for paratransit service. The peak pullout requirement of the service is three buses (one bus per route), which enables BVT to keep one spare vehicle. The useful life for each of the vehicles is 4 years or 100,000 miles. Details for each of the vehicles is shown in Table 1-2.

1.7 EXISTING FACILITIES

BVT conducts administrative tasks, such as grant applications and analytical tasks a quarter mile north of State Street at the City of Bristol's main office, located at 300 Lee Street. The major facility for staging and transfers at the Downtown Transfer Center in the 800 block of Shelby Street. A limited number of parking spaces also are available at this location. The day-to-day operations are accomplished at 2103 Shakesville Road with the Public Works Department. Storage, maintenance, and fueling of BVT and other City of Bristol vehicles also occurs here.

1.8 TRANSIT SECURITY PROGRAM

The level of security-related incidents and potential threats do not warrant the additional expense. BVT trains drivers and supervisors on security issues. BVT conducts background checks on new employees and updates security features on new vehicle procurements. BVT coordinates with local emergency management services and is integrated into the city's Disaster Preparedness and Hazard Mitigation Plan. The Shakesville Road maintenance facility is well lit at all hours, and is a shared facility that is frequented by police and other personnel. The proximity of the police department just south of the Downtown Transfer Center provides additional security.

Table 1-1. Bristol Virginia Transit Fare Structure

Fare Category	Fare
Adults	$1.00
Senior citizens	$0.50
Citizens with disability	$0.50
Medicare cardholders	$0.50
ADA paratransit	$2.00
Transfer	$0.10
Children under 6 years old	Free

Table 1-2. Bristol Virginia Transit Revenue Fleet

Vehicle Make	Year Manufactured	Seating
Ford Van	2006	10
Ford Bus Supreme	2008	19
Chevrolet Supreme Bus	2011	19
Chevrolet Van (Bus)	2012	19
Chevrolet Van (Bus)	2012	19

1.9 INTELLIGENT TRANSPORTATION SYSTEMS (ITS) PROGRAM

BVT has not made capital investments in ITS because the rural nature and scale of the system has not yet warranted the additional expense. Computer aided dispatch (CAD) and scheduling software are most useful on larger systems with more complicated routes and would not bring significant enhancements to the system. Automated vehicle locator (AVL) systems, also known as vehicle telemetry, may provide additional safety support in the case of an emergency. Information displays and real time arrival may contribute to a better experience for riders, although the schedules are straight-forward so the monetary cost may outweigh the benefit.

1.10 DATA COLLECTION, RIDERSHIP, AND REVENUE REPORTING METHODOLOGY

Each bus is currently equipped with cash fareboxes to collect fares onboard controlled by drivers. However, plans to replace this system have been developed and will be implemented when funds become available. This will come in the form of a new bus that has an electronic fare system and retrofitting current buses with electronic fare system upgrades. Counting of passengers is currently completed manually by drivers and later entered into electronic spreadsheets for record keeping. When necessary, the data is then submitted through the Online grant administration (OLGA).

1.11 PUBLIC OUTREACH

Public hearings are held only when a reduction of service or increase in fare is in consideration. In addition, public opinion of transit service may be voiced at designated times during city council meetings.

CHAPTER 2:
GOALS, OBJECTIVES, AND STANDARDS

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This chapter begins with a summary of transit-related goals and objectives from Bristol's existing Comprehensive Plan (Section 2.1) and the current Bristol Metropolitan Planning Organization (MPO) 2035 Long-Range Transportation Plan (LRTP) (Section 2.2). In Section 2.3, a set of goals are identified to reflect the ongoing aspirations of the agency and current challenges. Where necessary, objectives are outlined as criteria for accomplishing each goal and to provide employees specific plans to maintain and improve a successful transit system. Finally, the current set of performance standards for the system are presented in Section 2.4.

2.1 TRANSIT-RELATED GOALS AND OBJECTIVES FROM THE CITY'S COMPREHENSIVE PLAN

The following goals, objectives, and implementation strategies are adopted from Chapter 14 of the city's 2002 Comprehensive Plan based on the applicability to transit within the city.

Goals

- Serve the community by providing a transportation system that moves people and goods safely and efficiently
- Provide public transportation that is convenient and accessible for all residents

Objectives

- Stress energy conservation through highway design and by encouraging alternative forms of transportation such as mass transit and bicycling
- Actively pursue and place emphasis on a passenger rail service to the area

Implementation Strategies

Work to improve public transit by:

- Creating more stops
- Extending service to weekends and hours during the week
- Extending marketing campaign
- Mark transit stops more clearly
- Increasing number of paratransit vehicles
- Finding alternative sources of funding for transit
- Working with Tennessee to establish a system to make each city's tokens interchangeable
- Coordinating routes with tourist events
- Improving regional transit to other cities in Tri-Cities

Downtown Transit-Related Goals & Objectives

Goal

- Provide adequate transit service to the downtown area

Objective

- Review the use of current downtown transit routes and evaluate the need for changes

Implementation Strategies

- Provide better public transportation to and from public parking lots that may be several blocks from downtown
- Provide a transit route to Randall Street, specifically the train station area once the train station becomes operational

In addition to the goals, objectives, and strategies identified in Chapter 14 of the Comprehensive Plan, the following additional implementation strategies to improve transit were chosen from Chapter 15 of the same document.

Work to improve public transit by:

Creating more stops

- Design and reprint new brochures
- Acquire signage for new stops
- Extending service to weekends and hours during the week
- Labor and operating cost for extended time

Extending marketing campaign

- Short term: increase distribution of schedules and improve communication with social services
- Long term: weather proof schedule posters located at stops

Marking transit stops more clearly

- Short term: increase marketing information

Increasing number of paratransit vehicles

- Research possible grant funds
- Capital for operations and labor

Finding alternative sources of funding for transit

- Explore program grants/demo grants
- Charter transit for non-operation hours
- Advertising on buses
- Coordinate with other agencies to "share" funds

Working with Tennessee to establish a system to make each city's' tokens interchangeable

- Determine the source of payment for tokens
- Create a token exchange program

Adding a Virginia route that will go to the hospital

- Operation and labor cost
- May be remedied with token exchange program

Coordinating routes with tourist events

- Charter system

Improving regional transit to other cities in Tri-Cities.

2.2 TRANSIT-RELATED GOALS AND OBJECTIVES FROM THE MPO'S LRTP

Transit-related goals and objectives from the MPO's 2035 LRTP include:

- System Efficiency and Maintenance
- Economic Development
- Environmental Quality and Livable Communities
- Mobility
- User Safety and Security

These goals are further elaborated below.

System Efficiency and Maintenance

- Develop and maintain a transportation system to move people and goods at the most effective level of public and private cost

Objectives:

- Maintain the efficiency and effectiveness of the existing transportation system
- Maximize the cost-effectiveness of transportation investments
- Select and program projects based on identified need and effectiveness

Planning Factors Addressed:

- Promote efficient system management and operation
- Emphasize the preservation of the existing transportation system

Economic Development

- Provide transportation resources to support economic growth and strengthen the local economy

Objectives:

- Enhance the transportation access to commercial and industrial areas
- Increase the accessibility options for freight movement

- Promote downtown revitalization and infill development
- Provide employment centers with adequate access to labor through affordable, multi-modal transportation options

Planning Factors Addressed:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
- Increase the accessibility options available to people and freight
- Promote consistency between transportation improvements and state and local planned growth and economic development patterns

Environmental Quality and Livable Communities

- Develop a transportation system to preserve and enhance the natural environment and improve quality of life

Objectives:

- Minimize adverse environmental impacts of the urban transportation system
- Reduce vehicle emissions and promote activities that reduce greenhouse gases
- Coordinate and improve the provision of transportation facilities with land development activities to promote livable communities

Planning Factors Addressed:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
- Protect and enhance the environment, promote energy conservation, and improve quality of life

Mobility

- Develop a transportation system that provides an opportunity for a choice of mode for the movement of people and goods

Objectives:

- Develop a transportation system that is accessible to all users
- Encourage the development of bicycle facilities, sidewalks, and greenways
- Enhance the connectivity of the transportation system
- Maintain an efficient and cost effective public transportation system

Planning Factors Addressed:

- Increase the accessibility options available to people and freight
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight

User Safety and Security

- Develop a transportation system for the movement of people and goods, which is safe and provides security for users of any mode

Objectives:

- Reduce transportation related accidents, injuries, and fatalities
- Minimize bicycle, pedestrian, rail, and motor vehicle conflicts
- Promote safety in the design and construction of highways, bicycle/pedestrian links, and other modes
- Work with state and local agencies to develop a transportation system that is secure for all users

Planning Factors Addressed:

- Increase the safety of the transportation system for motorized and non-motorized users
- Increase the security of the transportation system for motorized and non-motorized users

2.3 TRANSIT DEVELOPMENT PLAN (TDP) GOALS, OBJECTIVES, AND IMPLEMENTATION STRATEGIES

In light of the city's Comprehensive Plan and the MPO's LRTP transit-related goals and objectives, a set of TDP goals and objectives are detailed below. Following each set of goals and objects are implementation strategies meant to guide the effort needed to accomplish the specific targets. Future Comprehensive Plan's and the MPO's LRTP should align with the following set of goals and objects as well, to ensure a collective movement in achieving these ambitions.

GOAL 1:

Provide Safe and Reliable Fixed-Route and Demand Responsive Services that Meets the Transportation

Objective 1.1

- Provide transit service connections between residential areas and commercial areas with jobs, education, shopping, and medical services.

Implementation Strategies:

Objective 1.1 is to be accomplished through the following minimum activities:

- Documentation and recording of customer service requests
- Work on a regular basis with the City Planning and Economic Development staff to identify planned new developments that may warrant transit service
- Survey riders at least once every 5 years to determine rider service needs
- Conduct periodic ride check surveys to monitor boarding and alighting activity
- Coordinate closely with Bristol, TN transit staff to provide comprehensive transit coverage to important destinations in both cities

Objective 1.2

- Provide easily identifiable stop locations along routes and passenger shelters when warranted.

Implementation Strategies:

Objective 1.2 is to be accomplished through the following minimum activities:

- Secure funding for a new bus and shelters that will be used with a new transit route
- Review survey data to determine ridership activity at stops and evaluate potential improvements for new passenger shelters, additional stops locations, route alignment changes, and new and/or extended sidewalks
- Establish safe bus stop locations when modifying an existing alignment or implementing new service
- Work with City Public Works staff in the improvement of sidewalks at stops with high ridership activity
- Acquire new and improved signage to increase the visibility of existing stops

GOAL 2:

Market Existing Transit Services

Objective 2.1

- Actively market transit services as a travel option within the City of Bristol, VA.

Implementation Strategies:

Objective 2.1 is to be accomplished through the following minimum activities:

- Periodically reprint or redesign BVT's/BTT's brochure for users of the combined transit system (i.e., Catch the Bus!)
- Distribute the BVT/BTT brochures at locations around the community for patron use
- Timely updates of the transit information on the city's web site
- Participate in community events to promote public transportation

- Maintain a mailing list of organizations and social service agencies that represent markets with high ridership potential and provide service information to those organizations and agencies
- Create additional marketing materials

Objective 2.2

Explore potential demand for expanding transit service to other cities in the region.

Implementation Strategies:

Objective 2.2 is to be accomplished through the following minimum activities:

- Coordinate with other transit agencies to discuss the creation of a more regional network
- Continue service coordination activities with BTT
- Explore likely transit demand, service options, and potential funding sources for service expansion to Abingdon and other destinations within Washington County
- Coordinate with Bristol, TN, Bristol MPO, and Sullivan County staff regarding potential regional transit service needs to Kingsport and Johnson City

GOAL 3:

Deliver Fixed Route and Demand Responsive Services in a Cost-Effective Manner

Objective 3.1

- Maintain a system wide farebox recovery ratio (farebox revenues/total operating expenses) that meets or exceeds standards identified in Section 2.4.

Implementation Strategies:

Objective 3.1 is to be accomplished through the following minimum activities:

- Record and monitor trends in passenger trips by route
- Record and monitor monthly transit operations expenses and farebox revenues
- In coordination with BTT, investigate potential to increase fares as a means to improve the system farebox recovery ratio to 10 percent
- Work with BTT to establish a system of interchangeable tokens

Objective 3.2

- Achieve system wide fixed-route ridership levels that meet or exceed standards identified in Section 2.4

Implementation Strategies:

Objective 3.2 is to be accomplished through the following minimum activities:

- Maintain and monitor monthly ridership reports for fixed-route and demand-response service, with ridership reported on a route basis for fixed-routes
- Implement corrective measures if ridership falls below established standards more than 2 months in a row. Such corrective measures may include: route alignment, service frequency, and span of service adjustments and/or fare adjustments.

GOAL 4:

Deliver Fixed Route and Demand Responsive Services in a Safe Manner

Objective 4.1

- Ensure that transit service operators maintain an accident rate of less than the standard identified in Section 2.4

Implementation Strategies:

Objective 4.1 is to be accomplished through the following minimum activities:

- Maintain a training program for new employees
- Review operating policies and procedures at least once a year and update as necessary. Review those policies and procedures as part of all training efforts with new staff. Also review with existing staff at least once every 2 years.

Objective 4.2

- Ensure that an adequate fleet of vehicles is maintained for the fixed-route and demand-responsive services

Implementation Strategies:

Objective 4.2 is to be accomplished through the following minimum activities:

- Identify the need for replacement vehicles based on industry standards for defined useful life of vehicles

GOAL 5:

Provide Transit Services that are Accessible to Citizens

Objective 5.1

- Provide transit services that are accessible to all population groups within the City of Bristol, VA

Implementation Strategies:

Objective 5.1 is to be accomplished through the following minimum activities:

- Comply with the applicable requirements of the ADA
- Provide the ADA-eligible population with paratransit service that is comparable to service provided by the fixed-route system;

2.4 SERVICE PERFORMANCE STANDARDS

This TDP work effort also has identified the following service standards that are to be monitored on a monthly basis by BVT's administrative staff.

1. Ridership Service Productivity Measures

Monthly system-wide fixed-route ridership should maintain levels equivalent to eight passenger trips per revenue bus-hour. Corrective measures should be investigated if ridership on BVT's fixed-route system and/or demand-response system fall below the levels identified above for 3 months in a row.

2. Cost Effectiveness Measures

BVT's farebox recovery ratio (farebox revenues as a percentage of operating expenses) shall remain no less than five percent. Corrective measures should be investigated if the farebox recovery ratio falls below this standard for 3 months in a row.

3. Vehicle Maintenance Performance Measures

- *Bus Preventive Maintenance Inspections* – Preventive maintenance shall be conducted on the transit fleet per vehicle manufacturer recommendations.
- *Revenue Vehicle Failures* – Bristol should maintain a standard of no more than 0.15 revenue vehicle failures per 1,000 revenue bus-miles of service

CHAPTER 3:
SERVICE AND SYSTEM EVALUATION

CHAPTER 3: SERVICE AND SYSTEM EVALUATION

The following sections in this chapter of the TDP investigates and evaluates the current service operating in Bristol, VA. A variety of methods and metrics are used to accomplish the service and system evaluation, beginning with an analysis of ridership and service characteristics of the previous fiscal year. Immediately following is a retrospective analysis of the system, revealing trends from fiscal years 2010 to 2015. Data from six peer transit systems are gathered and analyzed in a peer analysis section. A variety of surveys and focus groups follow, including onboard surveys and interviews with key regional stakeholders, transit system users, and non-users. Land-use changes relevant to the transit system also are addressed. After that, the services are compared to the service standards described in Chapter 2. Chapter 3 concludes with any noted deficiencies in the most recent Title VI report and the FTA Triennial review, as well as deficiencies in equipment and facilities.

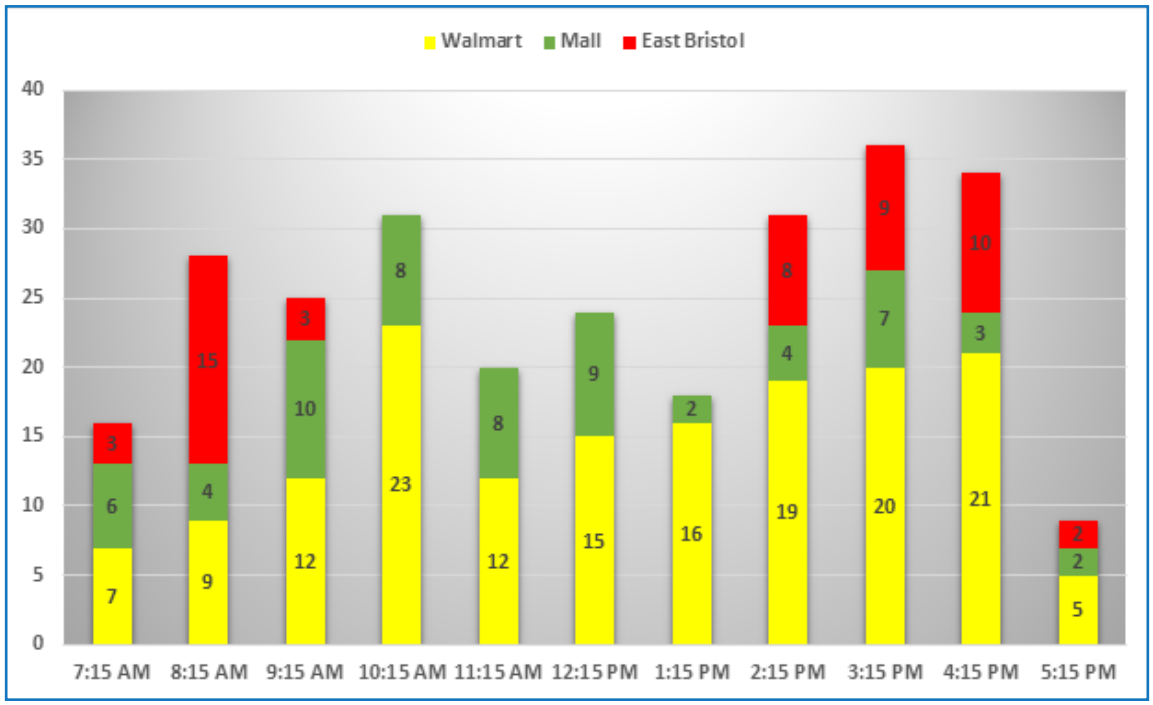
3.1 EXISTING SERVICE ANALYSIS

Transit service in the form of three fixed-routes and demand-response service covering the city of Bristol, VA is detailed in Chapter 1, including a system map in Figures 1-1. Individual routes are described and shown in Figures 1-3 and 1-4 detailing the alignment in the downtown area. Service runs from approximately 7:15 a.m. until 6:00 p.m. on weekdays only. Service is operated at 60-minute headways on a pulse system that schedules coordinated departures from the Downtown Transfer Center at 15 minutes past the hour, every hour. The Mall Route and the Exit 7/Walmart Route each operate hourly service all day, while the East Route operates morning and afternoon periods from 7:15 a.m. to 10:00 a.m. and from 2:15 a.m. to 6:00 p.m. The fixed-route service operates with minor deviations from the alignment to accommodate rider requests at the driver's discretion. The flexibility of the route accommodating individual requests is provided to reduce the need for relatively expensive demand-response service.

Ridership Inventory Analysis

A ridership inventory of all three fixed-routes was completed for the fixed-route service from September 14th through 16th, 2015 to gain insights into ridership levels by trip. Figure 3-1 shows the ridership data gathered during this time, separated by trip and

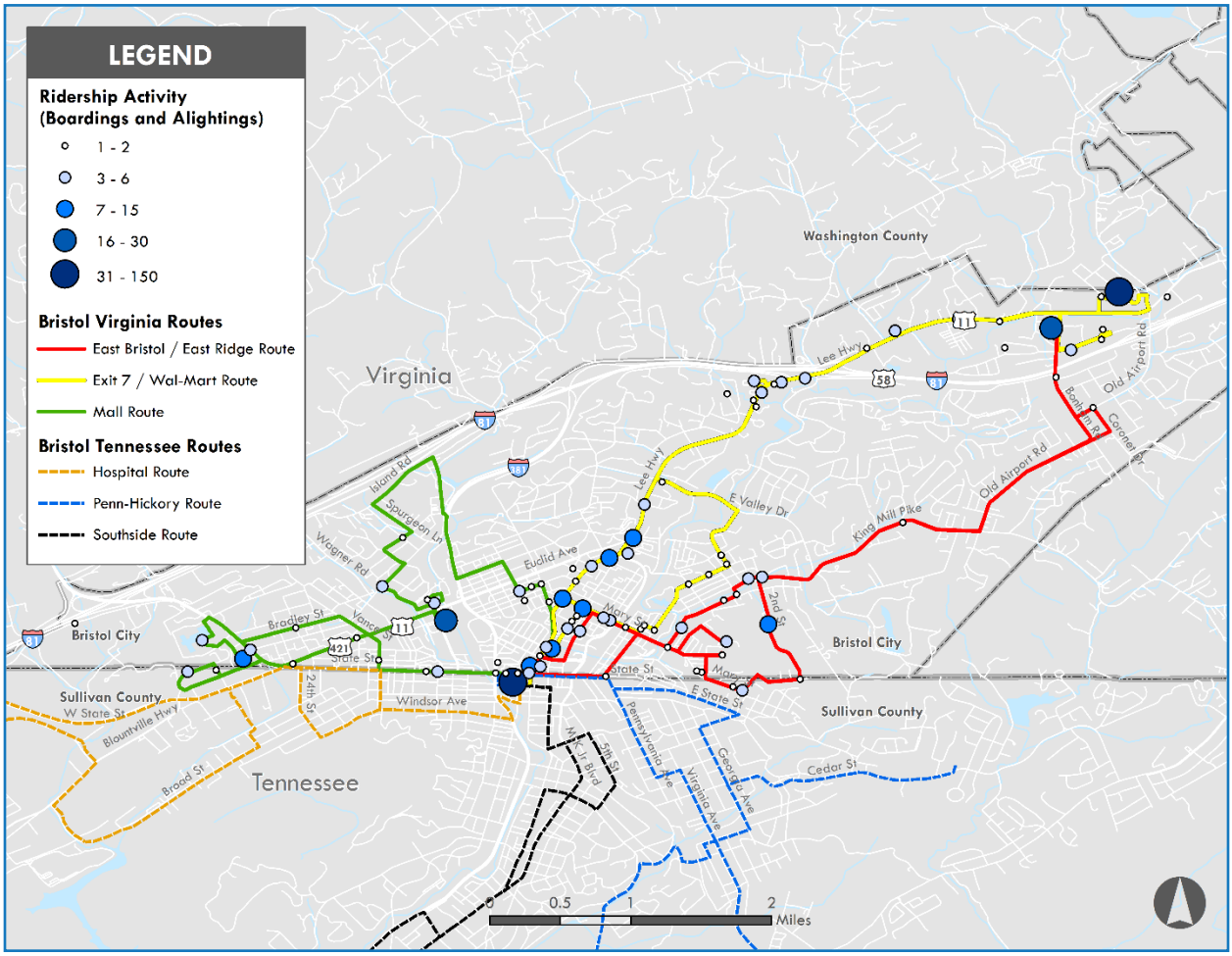
Figure 3-1. Fixed Route Ridership (Boardings) from Ridership Inventory



route. The busiest time of day for BVT was the 3:15 p.m. and 4:15 p.m. trips, which had a total of 36 and 34 riders, respectively. Overall, the ridership appears to have a clear a.m. peak and p.m. peak. The a.m. peak is relatively late in the morning, starting the second trip of the day at 8:15 a.m., and lasting through the 10:15 a.m. trip. The p.m. peak begins with the 2:15 p.m. trip and ends with the 4:15 p.m. trip. However, much of the peak orientation of the ridership may be accounted for in the decrease in service during non-peak hours. The East Bristol Route does not run during the 10:15 a.m. trips through the 1:15 p.m. trips, which appears to contribute to the decrease in ridership. The Walmart route ridership surges during the first trip that the East Bristol route discontinues service, occurring at 10:15 a.m. The lowest ridership occurs during the last trip of the day, at 5:15 p.m. This is true not only on the system level, but for each individual route.

Boardings and alightings during the 3-day ridership inventory study were geocoded and mapped using ESRI's ArcMap spatial analysis program to show geographic patterns of ridership in the system. Figure 3-2 shows combined ridership from the fixed-routes, with larger and darker data points representing greater ridership activity. The greatest number of boardings and alightings during the study period occurred at the Downtown Transfer Center, with 146 total. The second most occurred at Walmart, with 75 total boardings and alightings. After the Downtown Transfer Center and Walmart, the stop activity drops off significantly, with each of the Food City's recording 20 and 19 boardings and alightings. Overall, many of the areas with the most activity appear to be concentrated along the Lee Highway corridor from downtown to East Valley Drive and along Mary Street southwest to Downtown. Throughout the 3-day study period, there were several instances of rider

Figure 3-2. System-wide Stop Activity from Ridership Inventory

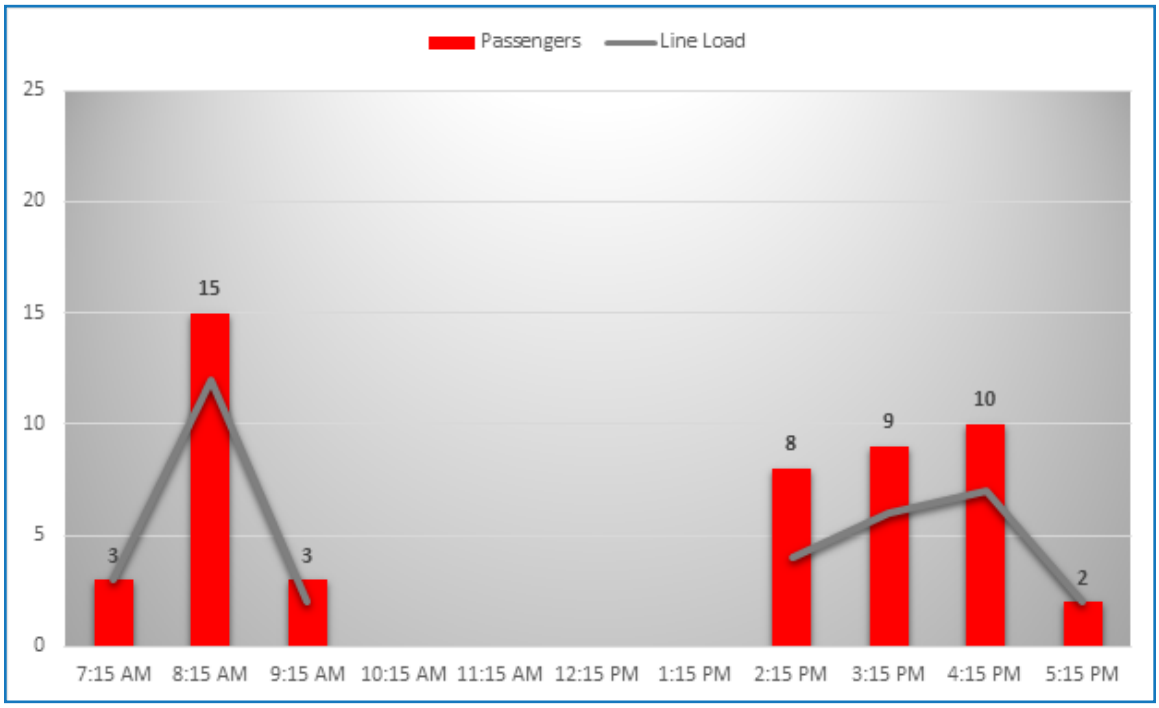


requests for deviations from normal route alignment. Each route experienced a request that necessitated a significant deviation from the alignment. Examples include a trip to Wellmont Medical Associates on Island Road with the Mall Route, a residence on Lawndale Drive on the Walmart Route, and a residence on Robin Circle with the East Bristol Route. Each of these deviations present challenges to the drivers, specifically to maintain on-time performance. These challenges are especially problematic in the case of the Walmart Route, which frequently struggles to maintain the hourly schedule.

East Bristol/East Ridge Route

Ridership on the East Bristol Route is shown by time of day in Figure 3-3 below. The midday period also is shown to illustrate the large part of the day where the East Bristol route does not operate. This route has an average of 7.1 riders per trip. The greatest ridership occurs during the 8:15 a.m. trip with 15 boardings during an otherwise inactive morning period. The afternoon has strong ridership until the route experiences its lowest ridership of two riders on last trip at 5:15 p.m., when all three routes experience low ridership. The line load shown in Figure 3-3 reveals that this route does not suffer from overcrowding issues, with a maximum line load of 12 during the study period.

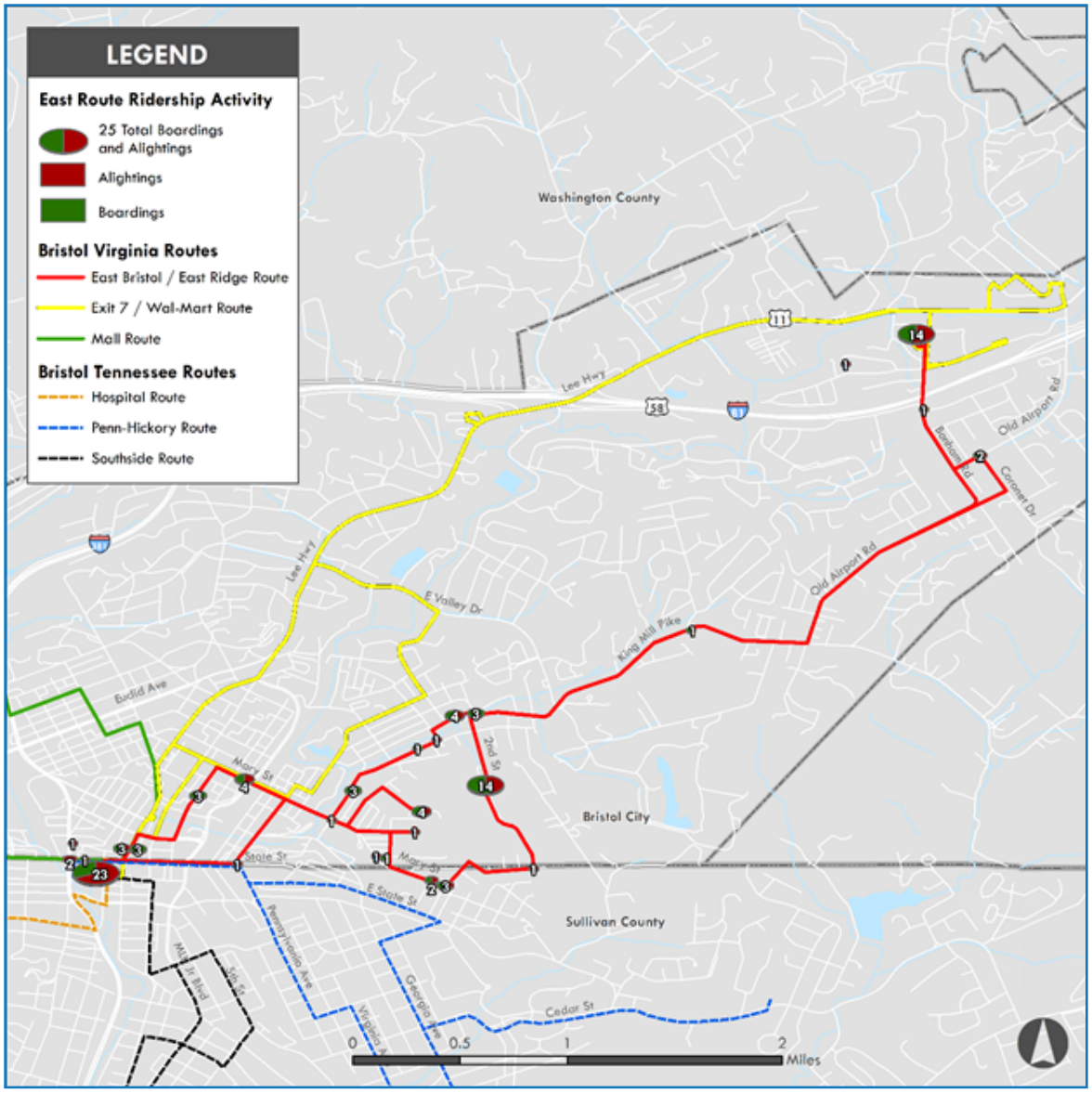
Figure 3-3. East Bristol/East Ridge Route Ridership (Boardings) from Ridership Inventory



The next most active location after the Downtown Transfer Center, was the Food City off of Bonham Road and the multifamily housing complex. The Woodlands at Bristol had relatively high ridership activity, each with 14 boardings and alightings

Stop activity on the East Bristol route is shown geographically in Figure 3-4, revealing the most active areas along the route. The most active location was the Downtown Transfer Center with 23 total boardings and alightings. The next most active location after the Downtown Transfer Center, was the Food City off of Bonham Road and the multifamily housing complex. The Woodlands at Bristol had relatively high ridership activity, each with 14 boardings and alightings. Nearly all of the remaining ridership was observed between 2nd Street and the downtown area. Specific locations include the Eastridge Apartments, Harbor Landing apartments, and residences along Mary Street. Although the King Mill Pike and Old Airport Road segments have almost no ridership, they serve as the most direct path connecting this area to the Food City on Bonham Road.

Figure 3-4. East Bristol/East Ridge Route Stop Activity from Ridership Inventory

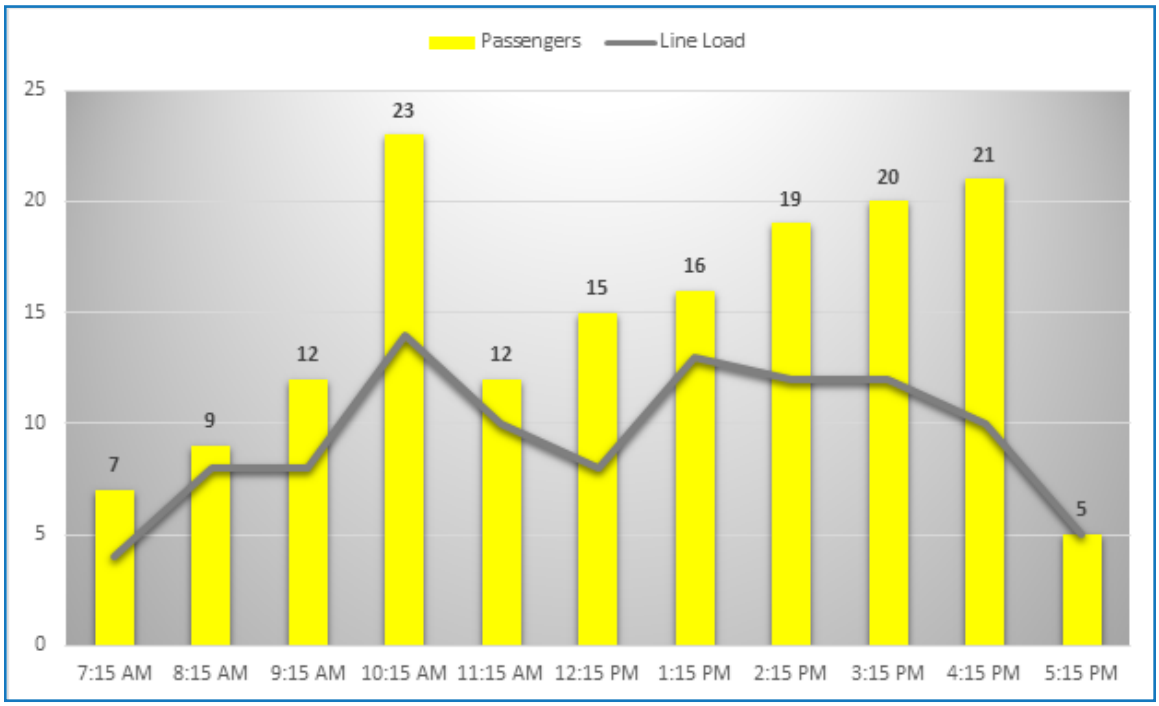


Exit 7/Walmart Route

The ridership inventory corroborated FY 2015 ridership values that indicated that the Exit 7 – Walmart Route has the greatest ridership in the BVT system. Figure 3-5 shows the ridership throughout the day by trip via the ridership inventory data, which has an average ridership of 14.5 riders per trip. Aside from the 10:15 a.m. trip anomaly, a steady increase in ridership is seen throughout the day culminating in the greatest ridership on the 4:15 trip with 21 boardings. The 10:15 a.m. trip is an irregularity from the rest of the day, possibly related to the decreased service at this time resulting from the cessation of the East Bristol route. The lowest ridership occurs on the last trip of the day, at 5:15 p.m. with only five riders. While the ridership on the Walmart route is relatively high through a significant portion of the day, the line load data show that the bus does not quite reach maximum occupancy. The maximum line load during the ridership inventory is 14, which is very close but not at standing room only.

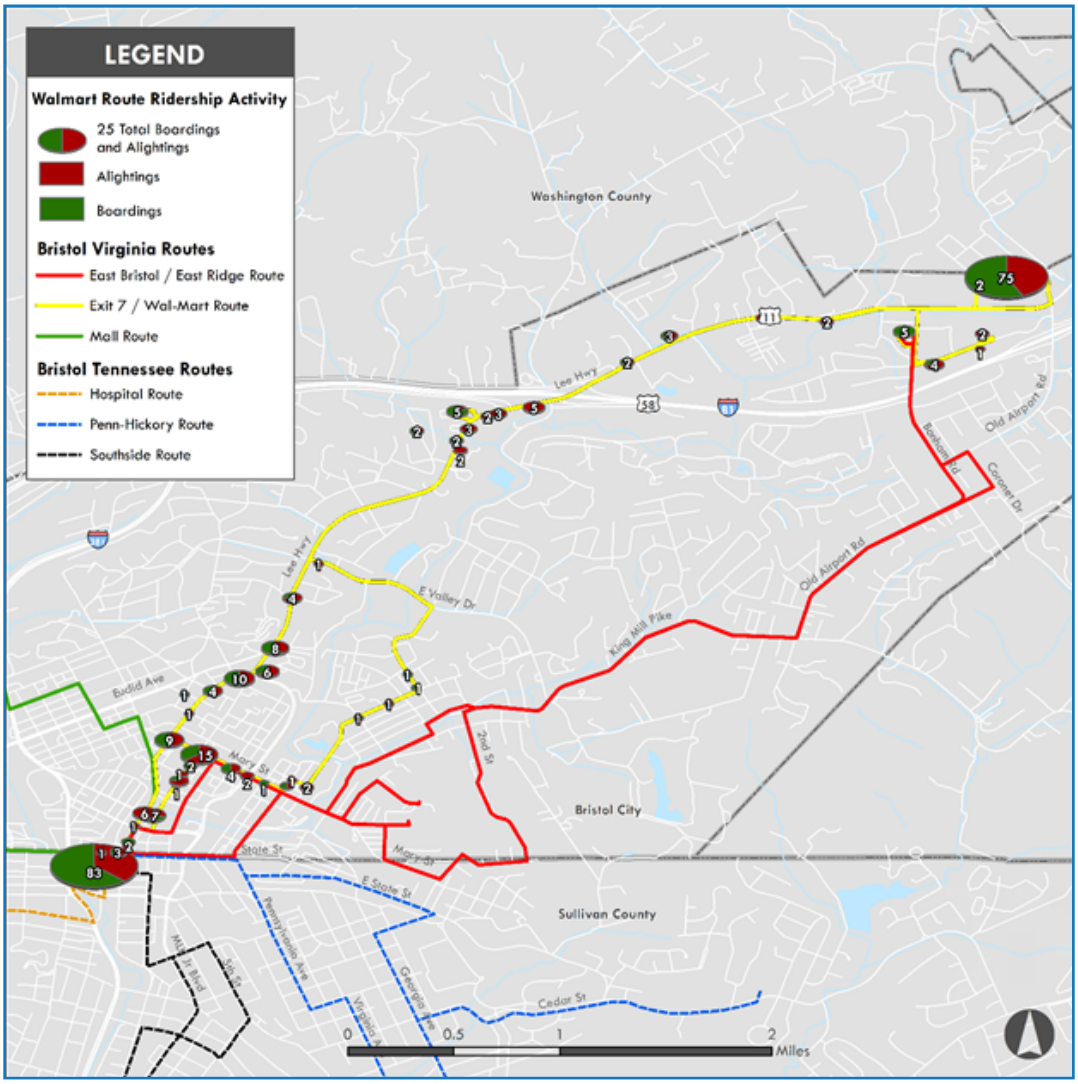
The ridership inventory corroborated FY 2015 ridership values that indicated that the Exit 7 – Walmart Route has the greatest ridership in the BVT system

Figure 3-5. Exit 7 – Walmart Route Ridership (Boardings) from Ridership Inventory



The ridership inventory for the Exit 7 – Walmart route is shown cartographically in Figure 3-6. There were a total of 83 boardings and alightings at the Downtown Transfer Center, which was the most active point location in the system. The Walmart in northeaster Bristol off of Exit 7 observed the second highest activity, with 75 boardings and alightings. Aside from these two locations, the highest stop activity was seen along Mary Street, specifically at Moore Street, along the Lee Highway corridor at the Moore Street and Oakview intersection and the commercial activity at Exit 5.

Figure 3-6. Exit 7/Walmart Route Stop Activity from Ridership Inventory



Mall Route

Described in Chapter 1 and shown in Figure 1-4, the Mall Route runs from the Downtown Transfer Center to the west to serve the Bristol Mall, Kroger, and Food City. As in the previous two route sections, Figure 3-7 shows the results from the ridership inventory. Although the Mall route runs the same operating hours as the Walmart route, from 7:15 until 6:15, the ridership is consistently much lower with an average of 5.7 riders per trip. The greatest ridership occurs during the 9:15 a.m. trip, with seven riders. Again,

The greatest ridership activity occurred at the Downtown Transfer Center, with 40 boardings and alightings. Otherwise, the greatest ridership activity was generated by the grocery stores

the lowest ridership is seen on the last trip of the day at 5:15 p.m. with only two riders. The line loads throughout the day do not suggest that crowding is, or could be, an issue.

Figure 3-7. Mall Route Ridership (Boardings) from Ridership Inventory

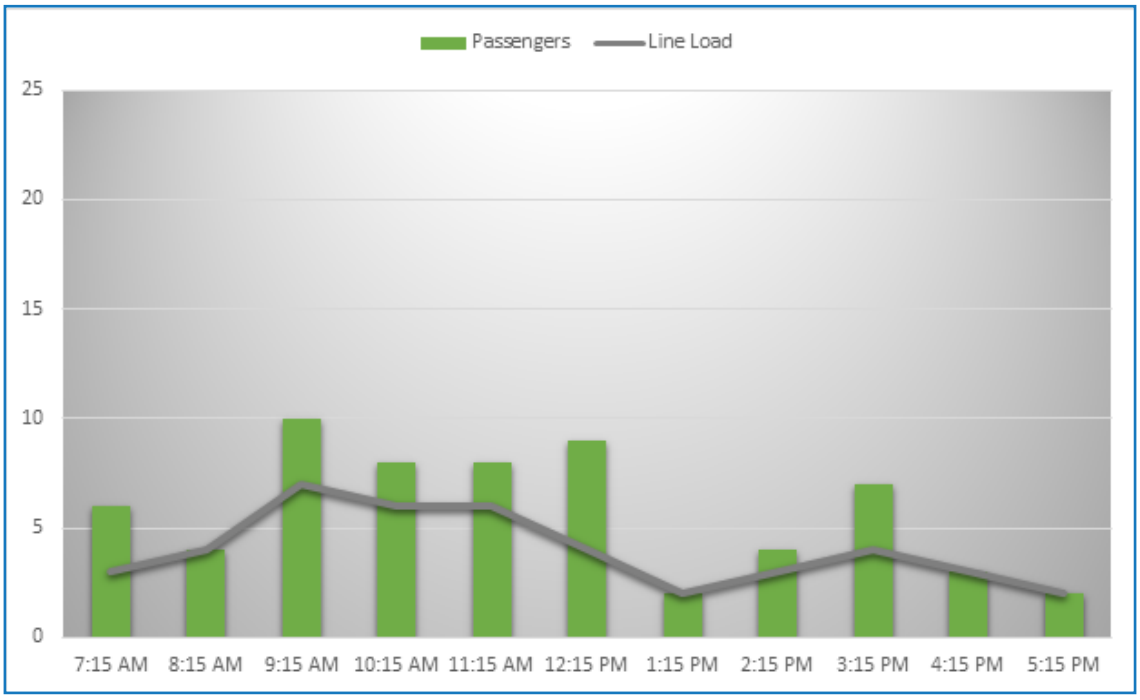
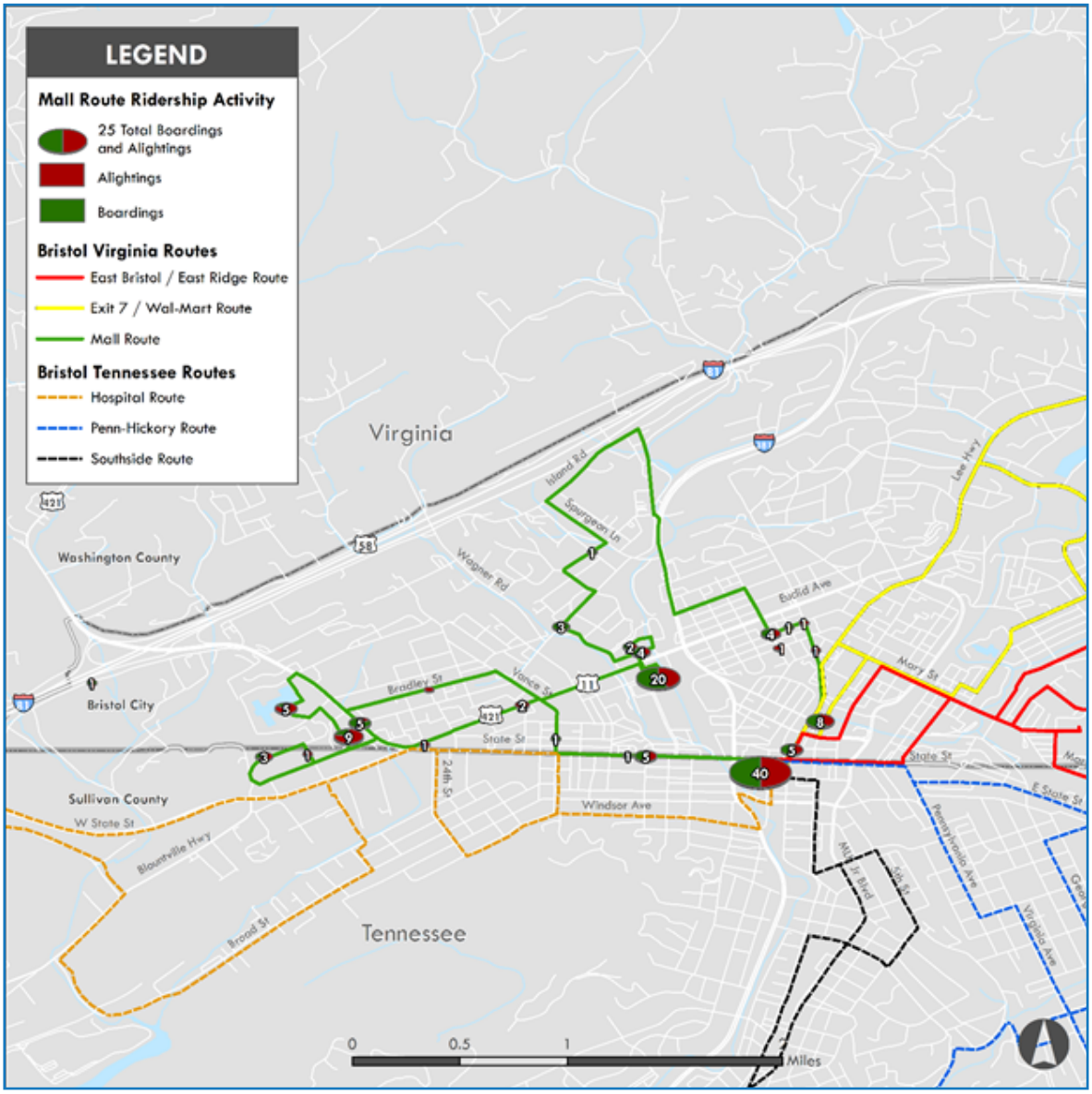


Figure 3-8 shows the ridership inventory data cartographically, showing the geographic distribution of trips along the Mall route. The greatest ridership activity occurred at the Downtown Transfer Center, with 40 boardings and alightings. Otherwise, the greatest ridership activity was generated by the grocery stores. The Food City on Euclid Avenue had the second highest activity on the route, with 20 boardings and alightings, while the Kroger on Gate City Highway had nine boardings and alightings. The Bristol Mall generated a modest amount of ridership activity. Bradley Street did not see any ridership activity and much of the alignment through the neighborhoods north of Randolph Street and west of Commonwealth Avenue was inactive.

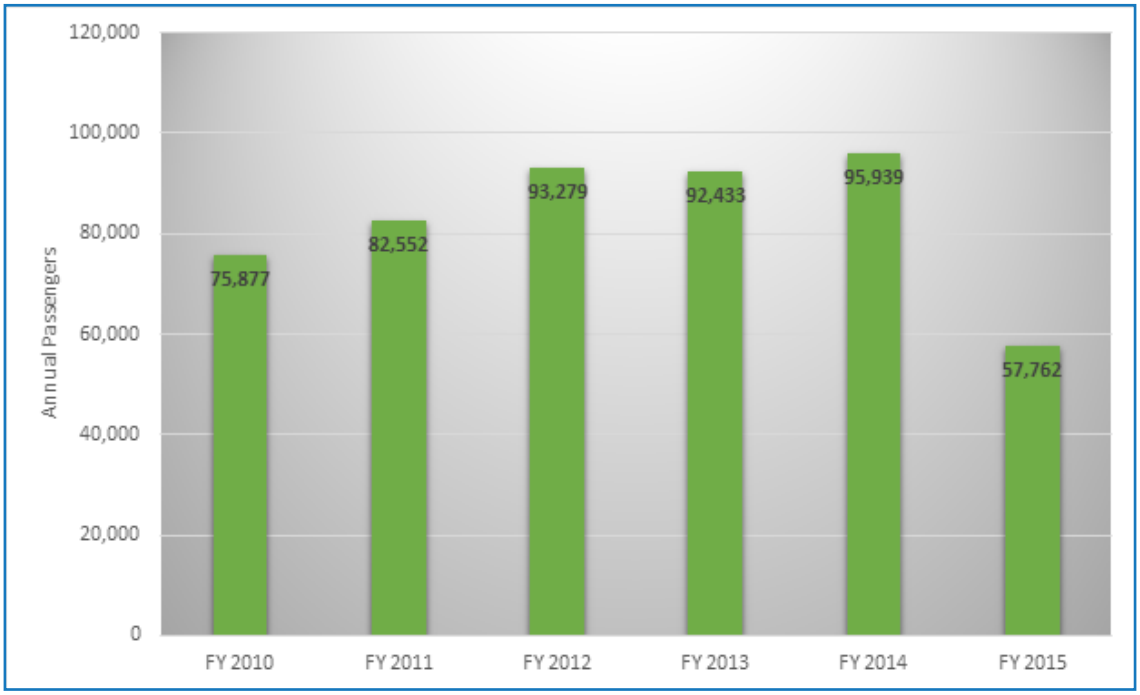
Figure 3-8. Mall Route Stop Activity from Ridership Inventory



3.2 RETROSPECTIVE PERFORMANCE EVALUATION

Total fixed-route ridership from fiscal year 2010 through 2015 is shown graphically in Figure 3-9 below. The greatest ridership occurred in FY 2014, with 95,939 passengers. Overall, BVT has increased ridership most years, with a small drop in ridership from FY 2012 to FY 2013, and then a very large decrease in ridership from FY 2014 to FY 2015. The ridership decrease from FY 2014 to FY 2015 was dramatic, with a loss of 38,177 riders. This decrease in ridership coincides with the fare increase in July 2014, the first month in FY 2015.

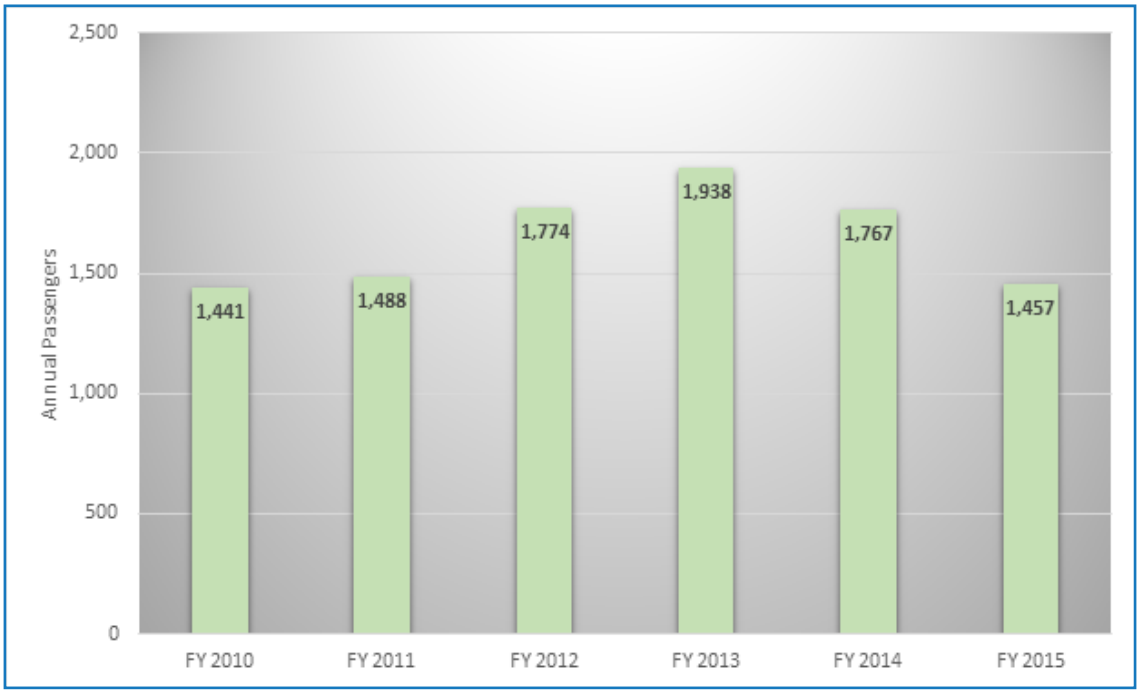
Figure 3-9. Annual Fixed Route Ridership



Annual demand-response ridership during the past 6 years shows similar trends as fixed-route ridership, shown in Figure 3-10. In general, ridership increased year over year until FY 2014, which saw a decrease of 171 riders. The trend of decreasing ridership continued in FY 2015, which saw a decrease of 310 riders, the largest decrease over this period. It is important to note that these figures are much smaller in scale relative to the fixed-route services. The total ridership generated from demand-response services represents a relatively small percentage of the system ridership. Throughout the study period, the largest percentage of ridership coming from demand-response occurred in FY 2015, with only 2.4%. This reflects the overall strategy of BVT to accommodate riders by making deviations with the fixed-route service, rather than use demand-response services.

Throughout the study period, the largest percentage of ridership coming from demand-response occurred in FY 2015, with only 2.4%. This reflects the overall strategy of BVT to accommodate riders by making deviations with the fixed-route service, rather than use demand-response services

Figure 3-10. Annual Demand Response Ridership



For a more in depth look at the decrease in ridership, Figure 3-11 shows fixed-route service ridership during 24 months, from July 2013 to June 2015. The month with the greatest ridership occurred the second month, August 2013, with 9,061 total riders, while the lowest ridership occurred in the 20th month. Overall, the ridership has been decreasing over the 2-year time period, with the lowest 12 months all occurring in the second year. A sharp decrease in ridership occurred in July of 2014, which was the start of FY 2014. The sharp decrease in ridership appears to have occurred as a direct result of the increase in fares, which occurred in the same month. Moreover, the decrease in ridership appears to have remained throughout the year, with only a slight increasing trend towards the end of FY 2015.

Figure 3-11. Monthly Fixed Route Ridership

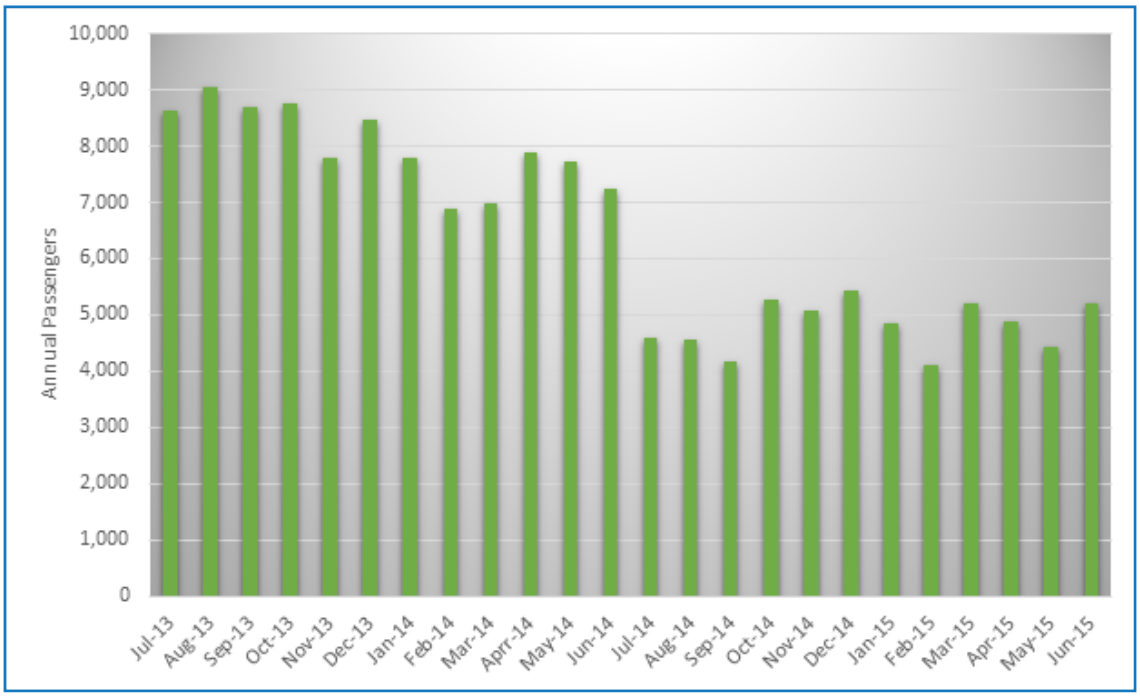
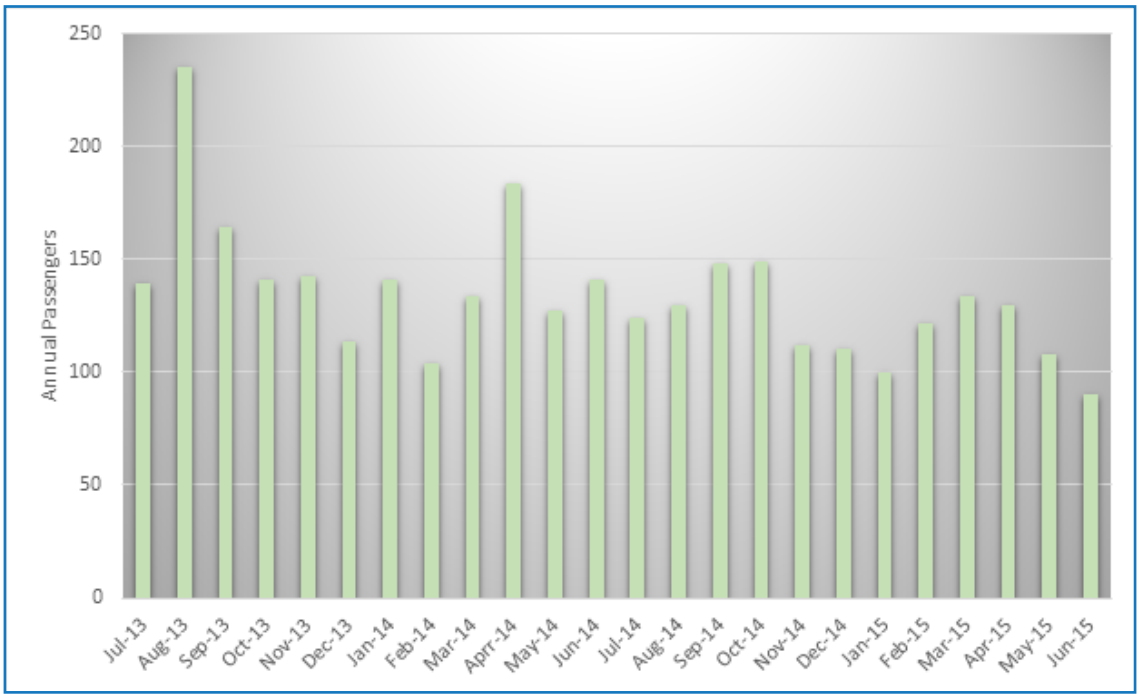


Figure 3-12 reveals the same 24-month period ridership for demand-response. The overall trend of the demand-response service shows that this type of service has decreased as well. However, the month to-month data also show that this decrease is not as severe as the decrease in ridership in the fixed-route service.

Figure 3-12. Monthly Demand Response Ridership



3.3 PEER REVIEW ANALYSIS

A review of several peer agencies of similar sizes and services are provided in this section to gauge the effectiveness of BVT's costs and services. The previous TDP had identified six peer systems from Virginia, Tennessee, Kentucky, Ohio, and Georgia and made comparisons to BVT's data. Information from the same six systems were obtained with updated data, which provides a greater historical perspective when combined with the previous TDP. The following peer transit systems for FY 2013 were used in this analysis:

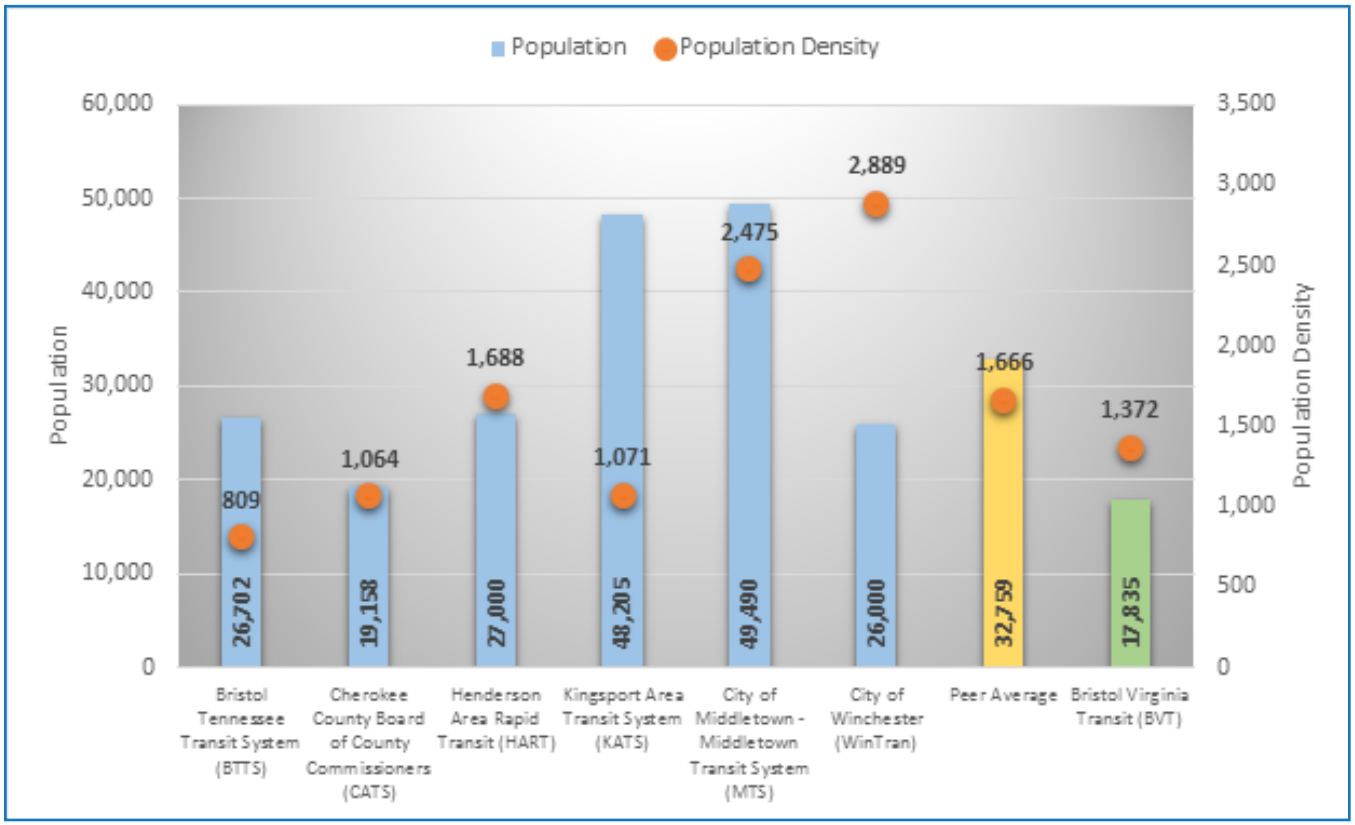
- Bristol Tennessee Transit (BTT), Bristol, Tennessee
- Cherokee County Board of Commissioners (CATS), Cherokee, Georgia (this has changed from City of Canton Transit)
- Henderson Area Rapid Transit (HART), Henderson, Kentucky
- Kingsport Area Transit Service (KATS), Kingsport, Tennessee
- Middletown Transit System (MTS), Middletown, OH
- Winchester Transit (WinTran), Winchester, Virginia

Service Area

Shown in Figure 3-13, BVT has the smallest total population out of all the peer systems (17,835), but also has one of the smallest service areas (13 square miles), yielding a population density comparable to many of the systems (1,372 people per acre). Also, BVT is uniquely situated on a state line with a large population on the Tennessee side, which increases the number of riders via connecting at the Downtown Transfer Center. Considering the unusual circumstance of the Virginia-Tennessee state line bisecting the city of Bristol, the peer systems appear to have reasonably similar characteristics for conclusions to be drawn from a peer analysis.

Considering the unusual circumstance of the Virginia-Tennessee state line bisecting the city of Bristol, the peer systems appear to have reasonably similar characteristics for conclusions to be drawn from a peer analysis

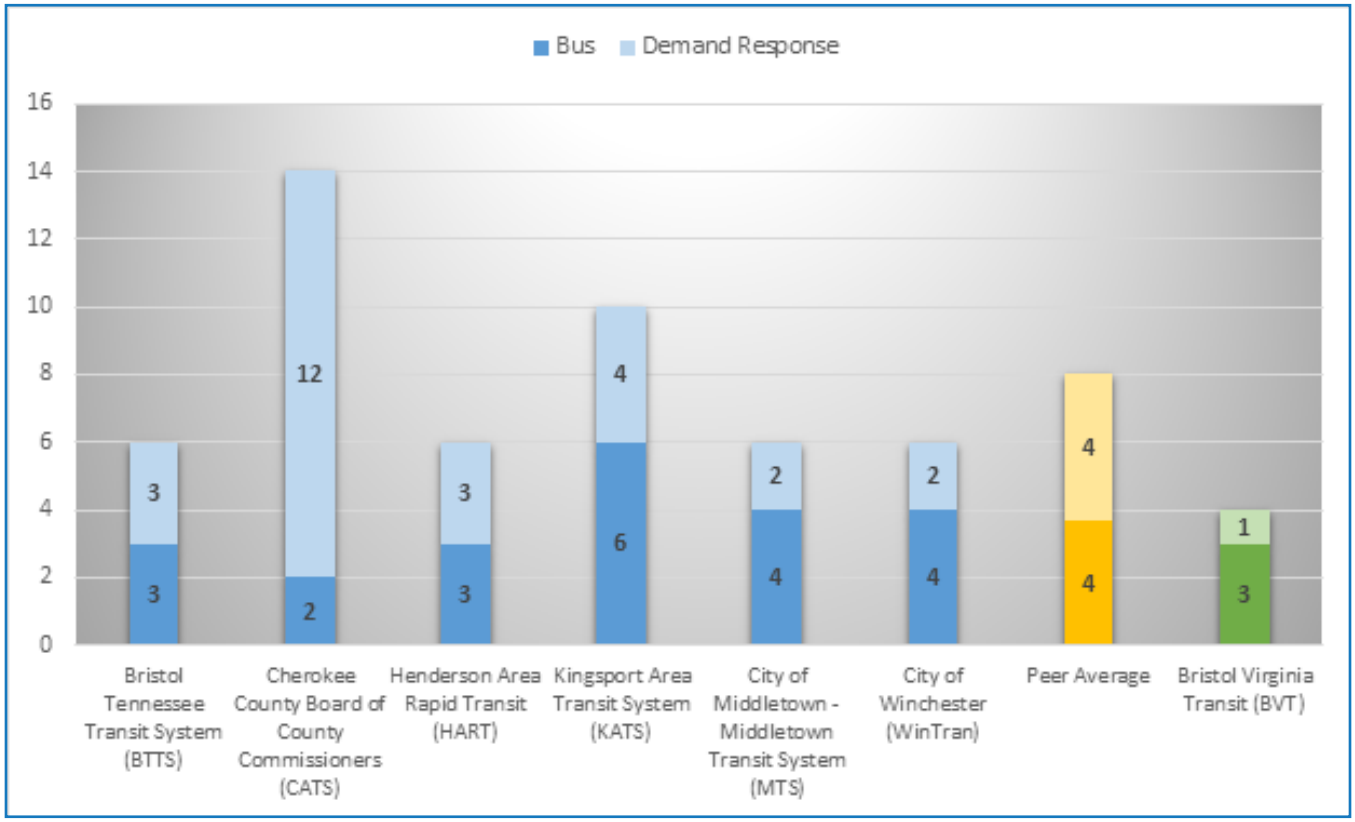
Figure 3-13. Population of Bristol and Peer Systems



Vehicle Utilization

BVT requires a total of three buses for the fixed-route service, with one additional bus for demand-response. The number of peak vehicles needed for fixed-route and demand-response service is shown in Figure 3-14. The system with the greatest need for fixed-route buses is KATS, requiring a total of six buses, while the system with the least demand for fixed-route is CATS, requiring only two buses. The average number of fixed-route buses is four. For demand-response, CATS requires 12 vehicles, which represents the greatest need in this category, while multiple systems only need two demand-response vehicles. BVT represents the lowest need for demand-response, with only one. The abnormally low number of demand-response vehicles is a product of operating the fixed-route service as deviated fixed-route. While there are consequences for running a fixed-route service that accommodate rider's requests for deviations to the route, it appears to reduce the need for expensive demand-response vehicles.

Figure 3-14. Peak Vehicle Summary of BVT and Peer Systems



Service Supplied

Annual revenue hours and revenue miles for BVT and peer systems are shown in Tables 3-1 and 3-2. The annual revenue hours and miles for BVT are much lower than the peer average, which was 9,016 hours and 110,070 miles compared to the average of 19,099 hours and 243,004 miles. The disparity in revenue hours is primarily accounted for in the demand-response category, which accounts for only 1,546 hours compared to an average of 8,345. A similar disparity occurs in annual vehicle miles, where demand-response miles accounts for only 11,691 in BVT, compared to the peer average of 91,450. When accounting for the service area with the metrics of revenue hours per square mile of service area and revenue miles per square mile of service area, BVT is very close to the peer average for fixed-route and below average for demand-response.

To account for the relatively low number of vehicles needed for service in BVT, Figures 3-15 and 3-16 show the revenue hours and revenue miles per peak vehicles of each of the systems. Using these metrics, BVT appears to have slightly lower values than the peer systems, indicating that there is less service offered in terms of hours and miles when accounting for the number of buses used. Table 3-3 lists the operating hours of each of the systems, showing that several of the systems operate additional hours on Saturday, while BVT only operates Monday through Friday. The lack of weekend service reduces the number of revenue hours and miles annually, and reduces the revenue hours and miles per peak vehicle shown in Figures 3-15 and 3-16. Additionally, the East Bristol Route does not operate during non-peak hours, reducing the total number of revenue hours and miles.

Table 3-1. BVT and Peer System Revenue Hours

Transit Agency	Annual Revenue Vehicle Hours		
	Bus	Demand Response	Total
Bristol Tennessee Transit Systems	8,312	8,190	16,502
Cherokee County Board of Commissioners	3,500	16,315	19,815
Henderson Area Rapid Transit	10,234	7,520	17,754
Kingsport Area Transit Service	15,060	10,748	25,808
Middletown Transit System	13,968	3,160	17,128
Winchester Transit	13,453	4,136	17,589
Peer Average	*10,755*	*8,345*	*19,099*
Bristol Virginia Transit	*7,470*	*1,546*	*9,016*

Table 3-2. BVT and Peer System Revenue Miles

Transit Agency	Annual Revenue Vehicle Miles		
	Bus	Demand Response	Total
Bristol Tennessee Transit Systems	108,081	94,052	202,133
Cherokee County Board of Commissioners	59,848	249,568	309,416
Henderson Area Rapid Transit	157,041	58,700	215,741
Kingsport Area Transit Service	213,175	86,761	299,936
Middletown Transit System	206,101	25,920	232,021
Winchester Transit	165,079	33,699	198,778
Peer Average	*151,554*	*91,450*	*243,004*
Bristol Virginia Transit	*98,379*	*11,691*	*110,070*

Figure 3-15. Revenue Hours per Peak Vehicle for BVT and Peer Systems

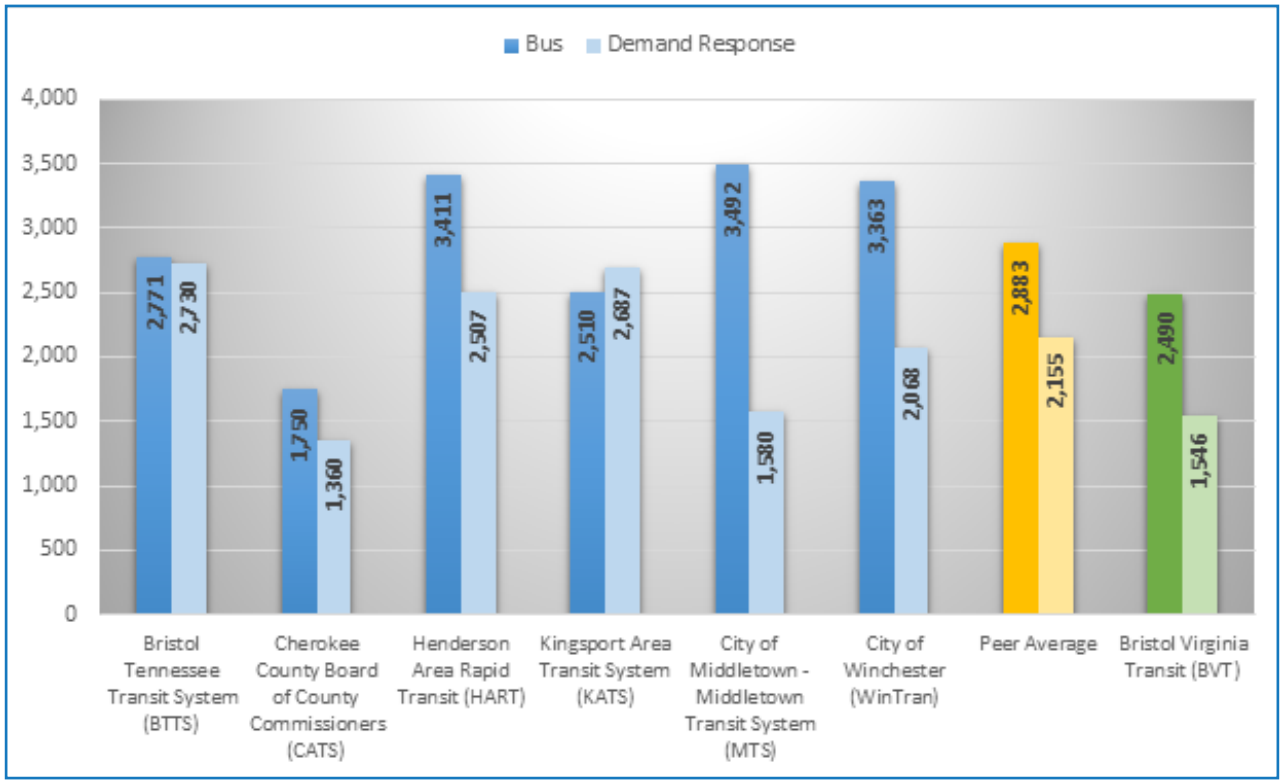
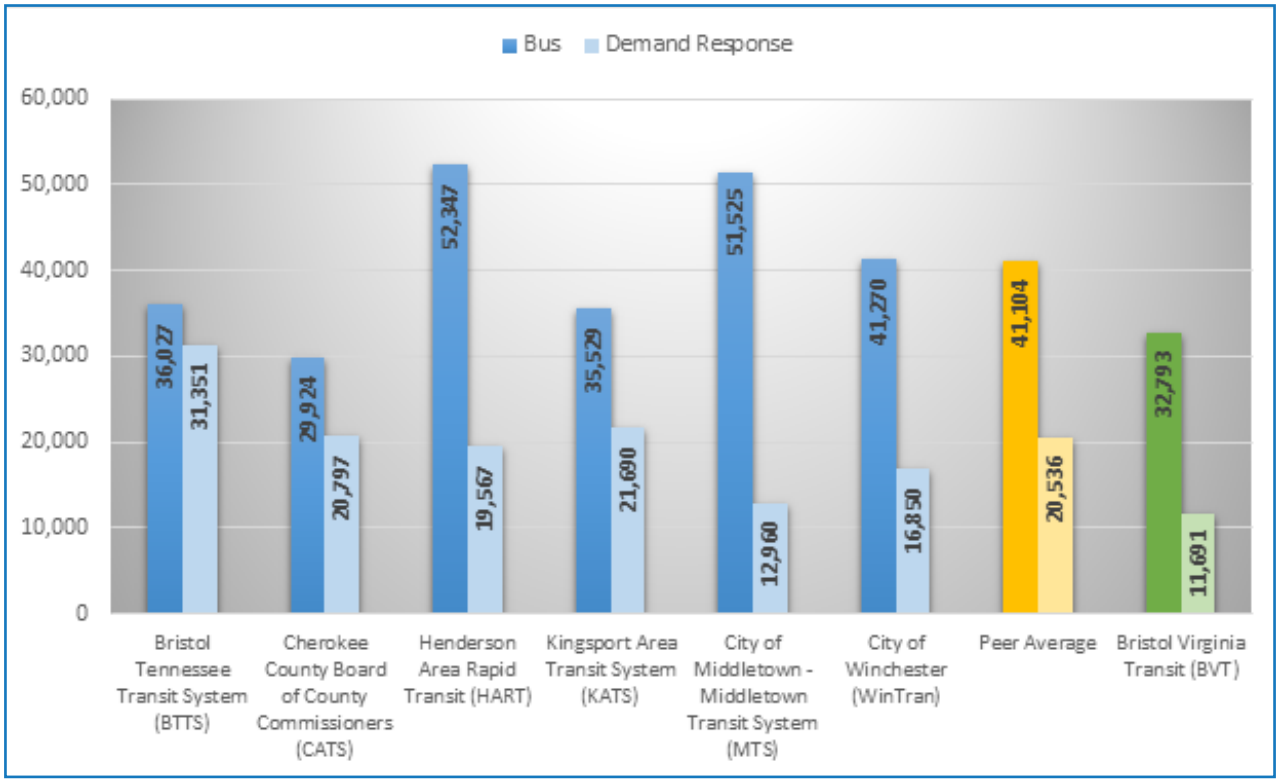


Figure 3-16. Revenue Miles per Peak Vehicle for BVT and Peer Systems



Ridership

Ridership was analyzed in annual passenger trips, passenger trips per capita, passenger trips per revenue hour, and passenger trips per revenue mile. In annual trips, BVT has average passenger trips for fixed-route service with 98,379 compared to the average of 115,354, shown in Table 3-4. The demand-response service has annual ridership of 1,932, which is much lower than the average of 23,619. This is unsurprising because of the relatively low number of demand-response service. When controlling for the population within the service area, BVT compares favorably to the peer systems by having the greatest passenger trips per capita of 5.5 for fixed-route, shown in Figure 3-17. Conversely, the demand-response service has the lowest passenger trips per capita, with 0.1. BVT also has favorable comparison to its peers for passenger trips per revenue hour and revenue mile for the fixed-route service, with much better performance than the peer average in both categories shown in Figures 3-18 and 3-19. The same trend of less than average demand-response service is also true, where BVT has less ridership in both metrics. The consistent trend of high ridership fixed-route service and low ridership demand-response is by design, as the fixed-route deviates to accommodate riders who live or work off of the fixed-route alignment. These deviations are done at the discretion of the drivers.

Table 3-3. BVT and Peer System Operating Hours

Transit Agency	Days of Service	Hours of Service
Bristol Tennessee Transit Systems	Monday – Friday	6:15 a.m. – 5:45 p.m.
Cherokee County Board of Commissioners	Monday – Friday	8:00 a.m. – 4:00 p.m.
Henderson Area Rapid Transit	Monday – Saturday	6:00 a.m. – 5:30 p.m.
Kingsport Area Transit Service	Monday – Friday	7:30 a.m. – 5:30 p.m.
Middletown Transit System	Monday – Friday	6:30 a.m. – 6:30 p.m.
	Saturday	8:30 a.m. – 4:30 p.m.
Winchester Transit	Monday – Friday	6:00 a.m. – 7:58 p.m.
	Saturday	8:50 a.m. – 4:58 p.m.
Bristol Virginia Transit	*Monday - Friday*	*6:15 a.m. – 6:00 p.m.*

Table 3-4. BVT and Peer System Revenue Miles

Transit Agency	Annual Revenue Vehicle Miles		
	Bus	Demand Response	Total
Bristol Tennessee Transit Systems	58,090	12,621	70,711
Cherokee County Board of Commissioners	27,210	50,088	77,298
Henderson Area Rapid Transit	135,940	26,386	162,326
Kingsport Area Transit Service	149,440	11,854	161,294
Middletown Transit System	206,101	25,920	232,021
Winchester Transit	115,345	14,845	130,190
Peer Average	*115,354*	*23,619*	*138,973*
Bristol Virginia Transit	*97,973*	*1,932*	*99,905*

Figure 3-17. Passenger Trips per Capita for BVT and Peer Systems

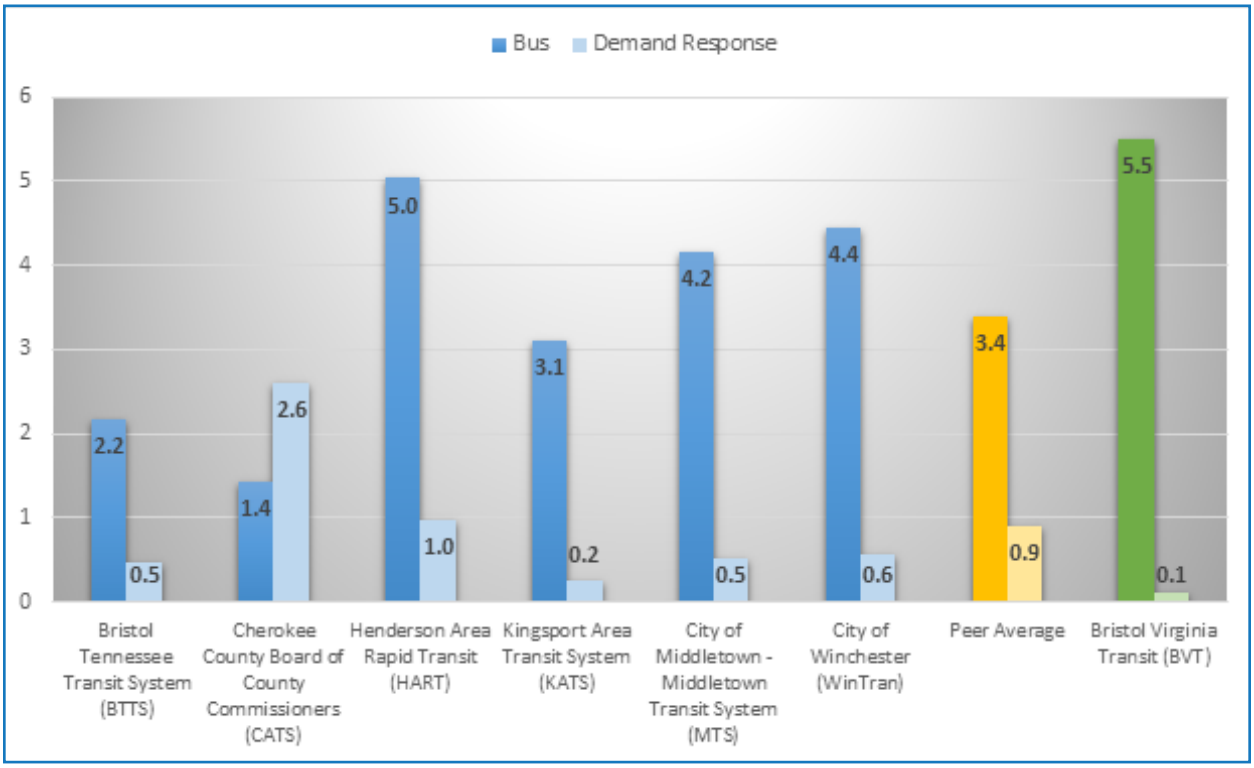


Figure 3-18. Passenger Trips per Revenue Hour for BVT and Peer Systems

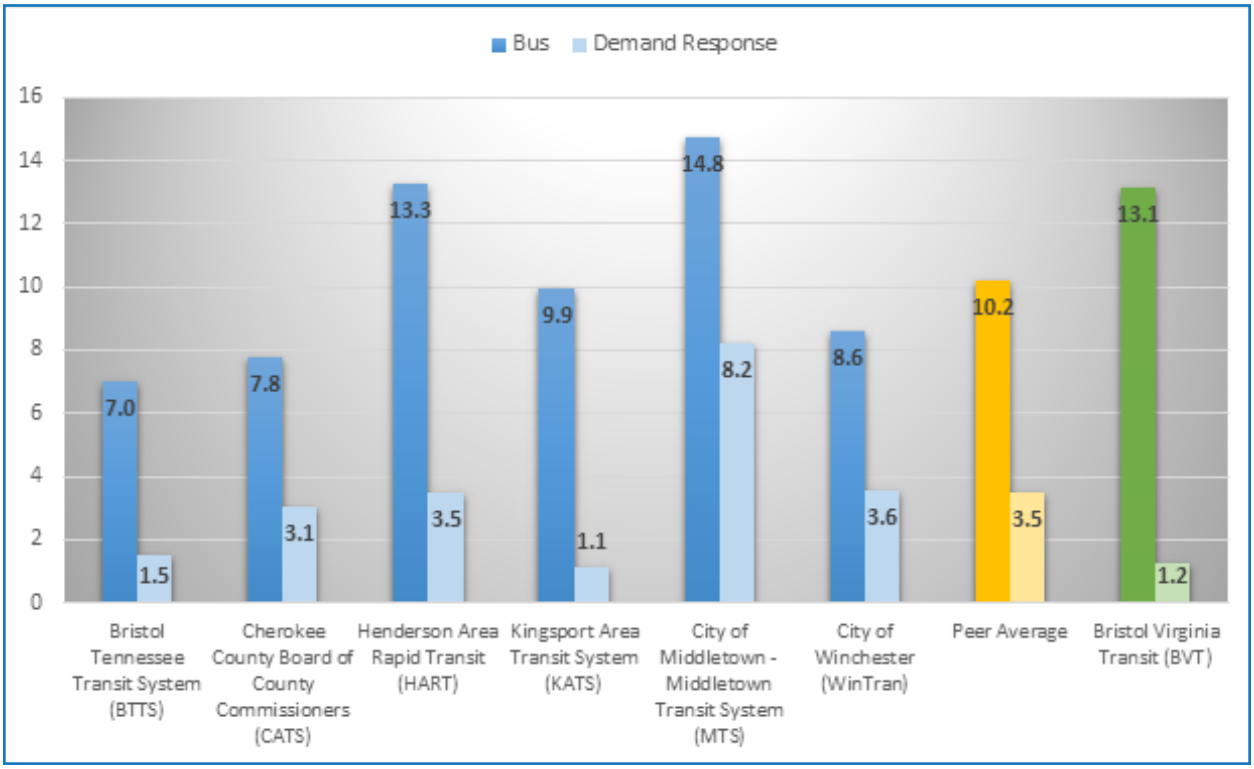
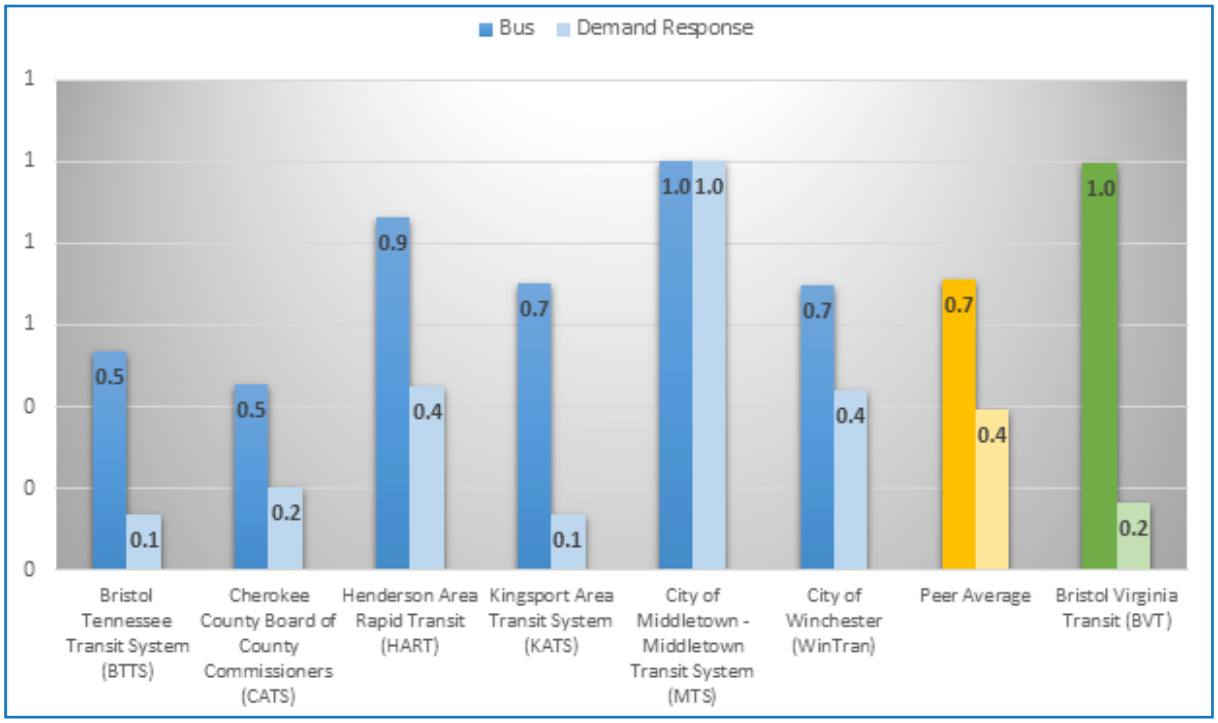


Figure 3-19. Passenger Trips per Revenue Mile for BVT and Peer Systems



Fare Structure

Overall, BVT is very close to the peer average in fare structure. The peer average is $0.93 for a base fare, which is only slightly less than BVT's base fare of $1.00. The same is true for the elderly/disabled fare peer average of $0.46 and BVT fare of $0.50. All of the other peers except for BTT do not charge a transfer fee. However, the transfer change is minimal and likely necessary because of the strong interaction with BTT. The demand-response service also is in line with the other systems, with a fare charge of $2.00 compared to the system average of $1.73.

Cost Efficiency

Several metrics enable comparisons across various units including operating cost per passenger trip, operating cost per revenue hour, operating cost per revenue mile, farebox recovery, and subsidy per passenger trip. The total operating expenses for BVT is much lower than the average for both fixed-route and demand-response shown in Table 3-5. When these costs are normalized by passenger trips, shown in Figure 3-20, BVT has cost effective values for fixed-route at the expense of demand-response. Compared to the peer systems, BVT has the lowest operating cost per passenger trip with $3.93 for fixed-route service, compared to an average of $6.12 for the peers. The demand-response service, however, is much higher than the average: $29.79 compared to only $17.43. The cost efficiency of BVT in terms of operating cost per revenue hour in Figure 3-21 shows that BVT is slightly less than average in both fixed-route service and demand-response. The comparison of operating cost per revenue mile in Figure 3-22 shows that BVT is close to the peer average for both fixed-route and demand-response. This signifies that although the demand-response service is much lower than the peers, the associated costs are proportional. The farebox recovery metric in Figure 3-23 reveals what percentage of the operating costs are recovered by collecting passenger fares. BVT has a farebox recovery of seven percent for fixed-route service, which is slightly less than the peer average of nine percent. The BVT demand-response service is the same as the peer average of four percent. The last cost efficiency measure is subsidy per passenger trip, shown in Figure 3-24. Subsidy per passenger trip shows the cost of the service that is not covered by the fares, which for BVT is less than average ($3.67 compared to the average of $5.62) for fixed-route and more than average for demand-response ($28.59 compared to the average of $16.76).

Table 3-5. BVT and Peer System Operating Expenses

Transit Agency	Annual Operating Expenses		
	Bus	Demand Response	Total
Bristol Tennessee Transit Systems	$402,807	$208,585	$611,392
Cherokee County Board of Commissioners	$124,764	$723,083	$847,847
Henderson Area Rapid Transit	$1,188,448	$297,876	$1,486,324
Kingsport Area Transit Service	$722,379	$554,272	$1,276,651
Middletown Transit System	$1,002,396	$138,890	$1,141,286
Winchester Transit	$777,238	$151,706	$928,944
Peer Average	*$703,005*	*$345,735*	*$1,048,741*
Bristol Virginia Transit	*$385,127*	*$57,548*	*$442,675*

Figure 3-20. Operating Cost per Passenger Trip for BVT and Peer Systems

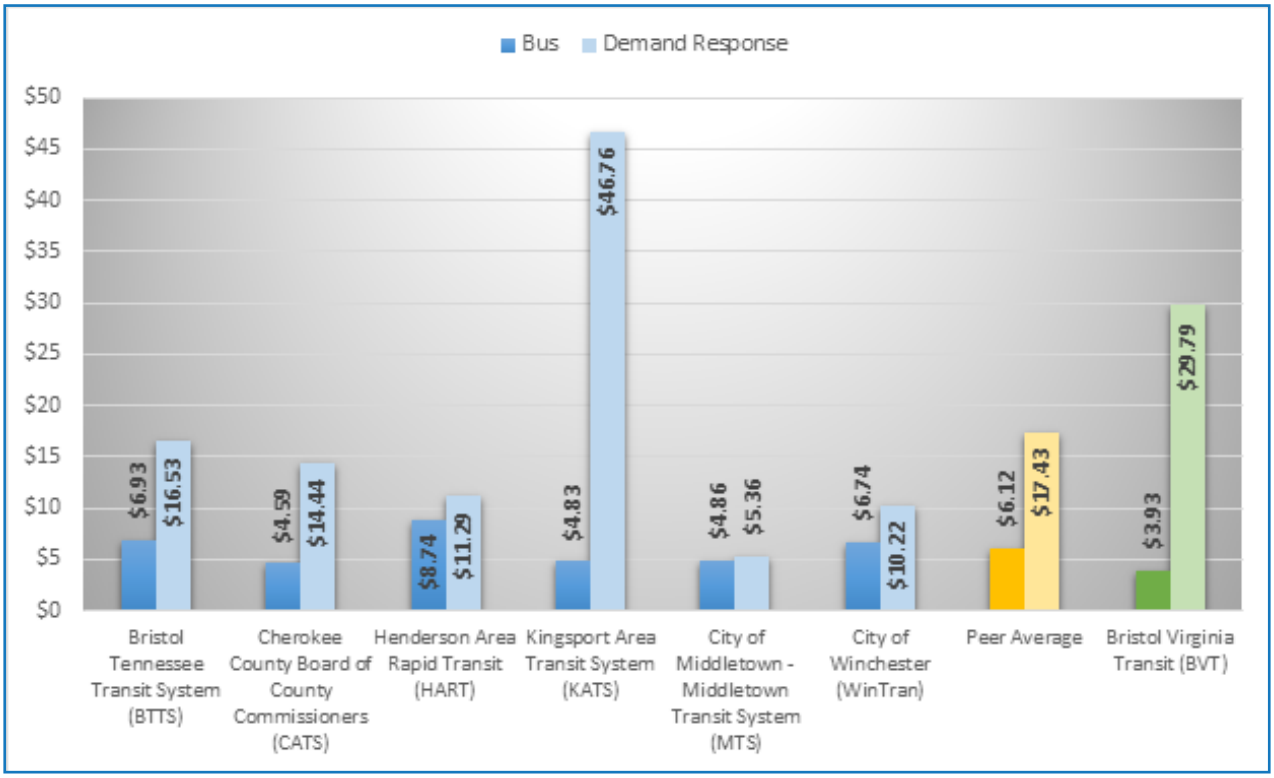


Figure 3-21. Operating Cost per Revenue Hour for BVT and Peer Systems

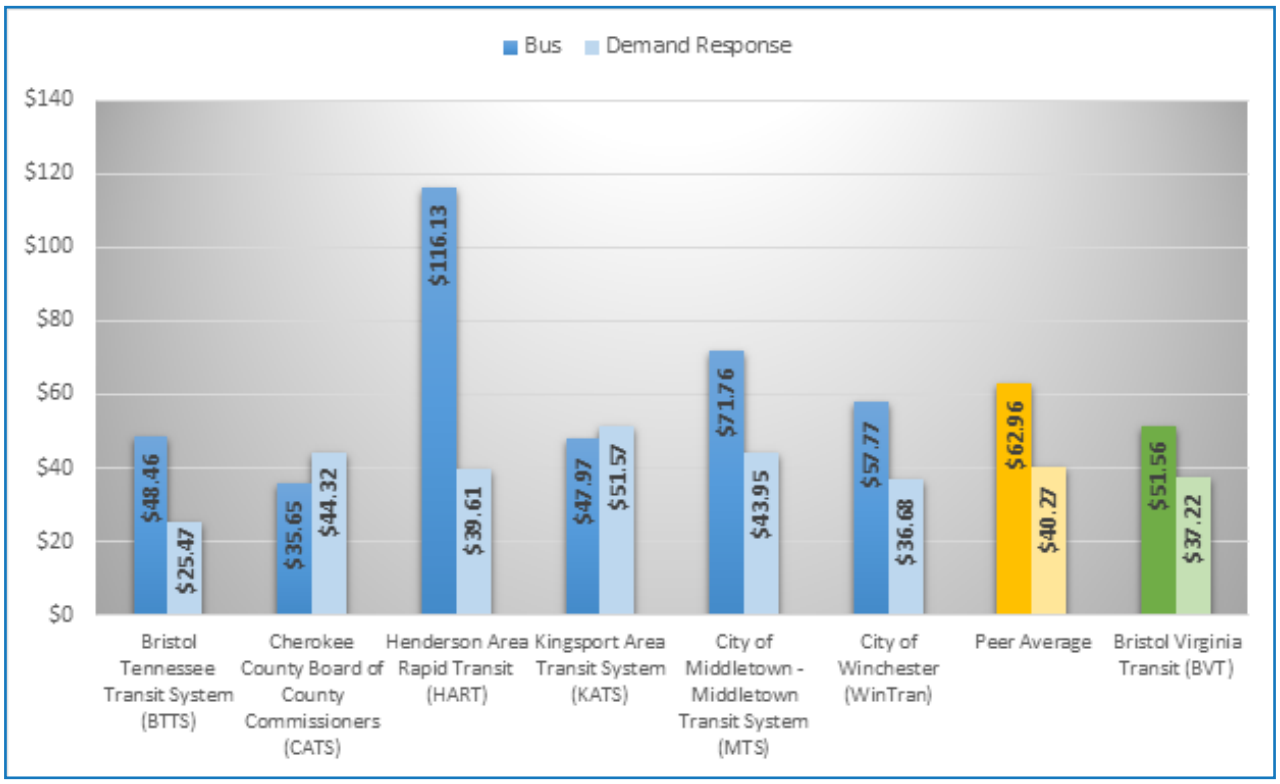


Figure 3-22. Operating Cost per Revenue Mile for BVT and Peer Systems

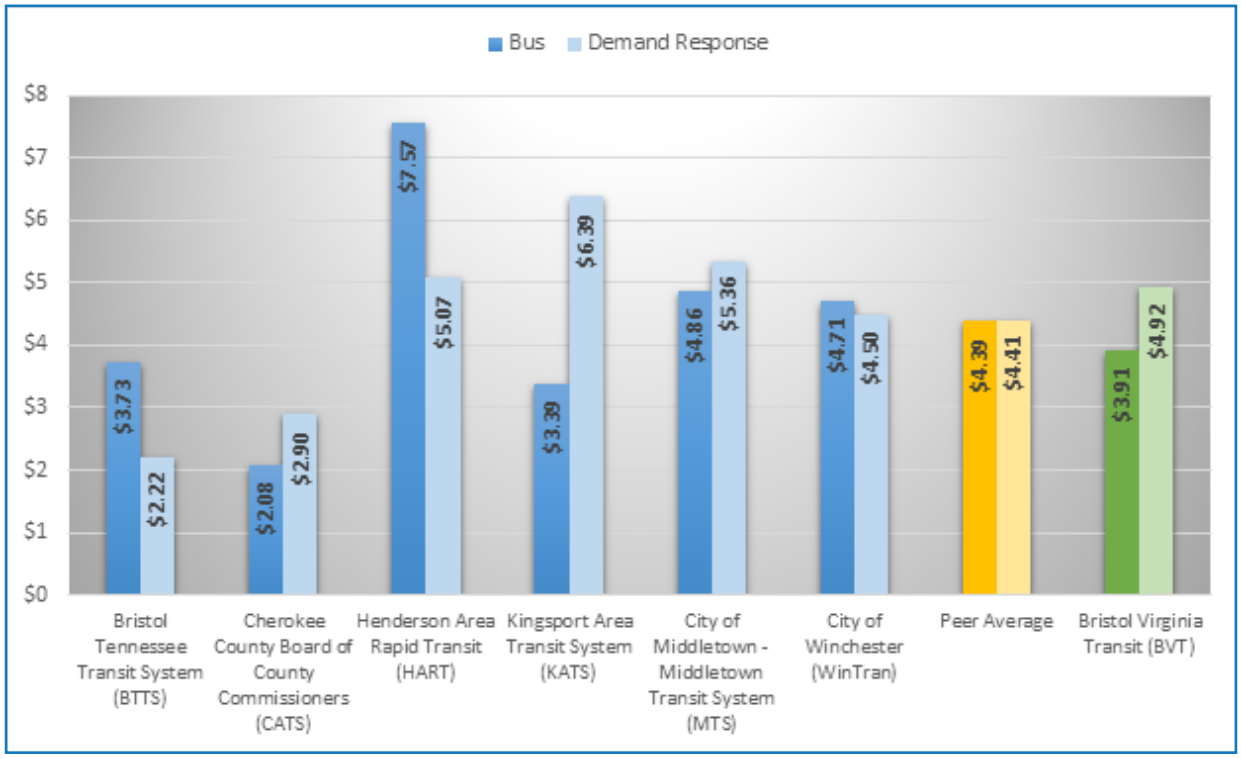


Figure 3-23. Farebox Recovery for BVT and Peer Systems

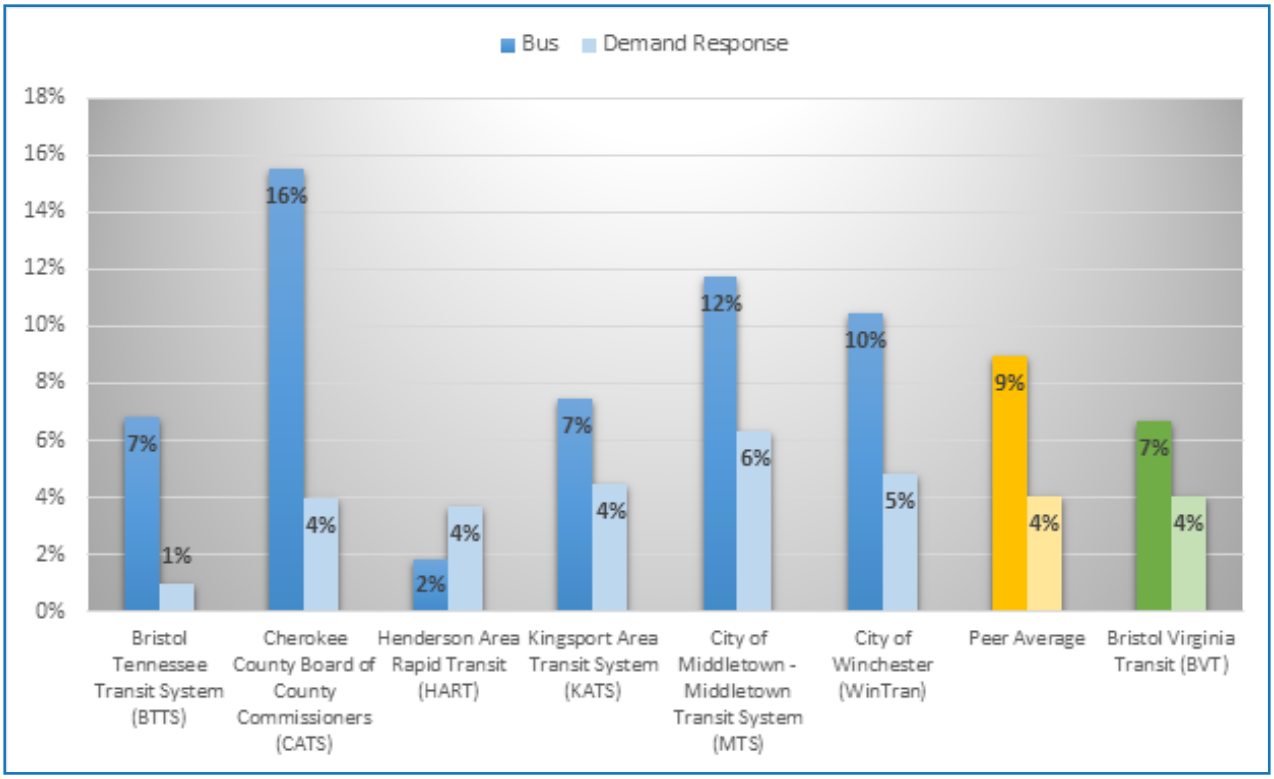
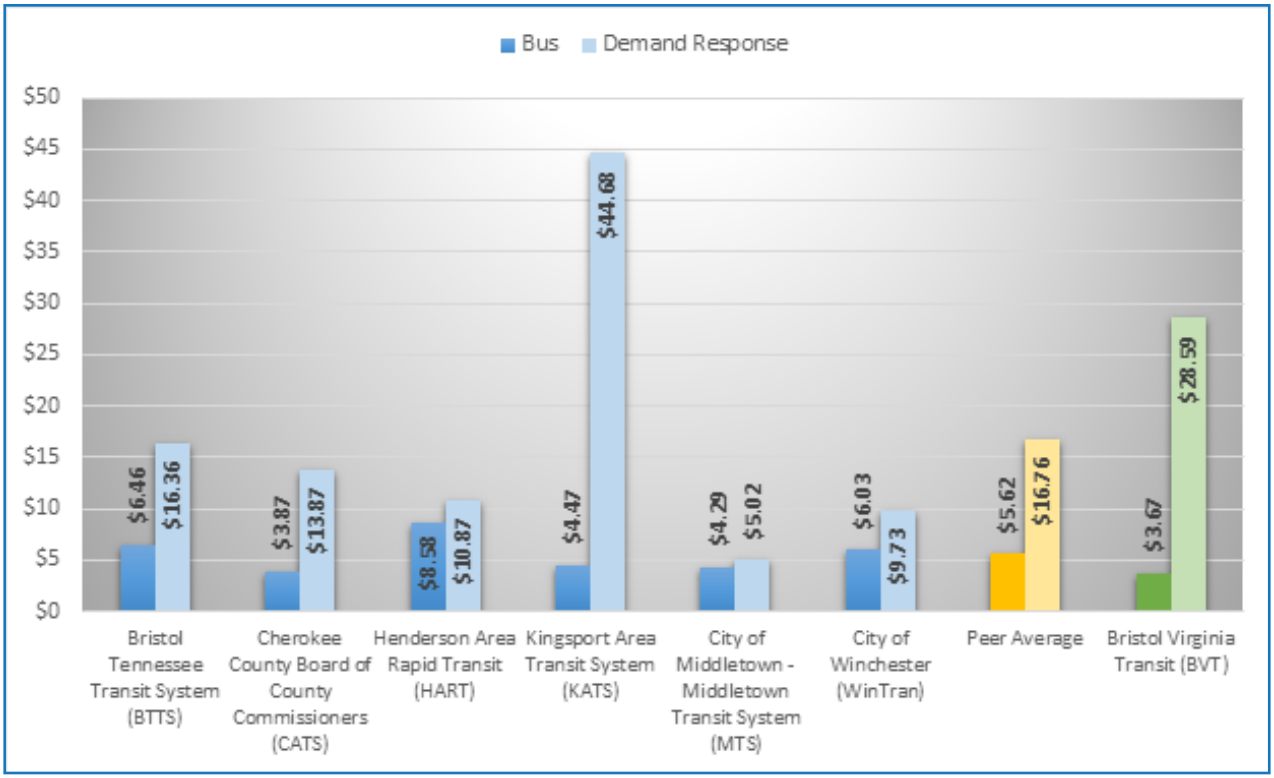


Figure 3-24. Subsidy per Passenger Trip for BVT and Peer Systems



3.4 ON-BOARD SURVEY FINDINGS

A transit rider survey was completed for BVT during the week of September 14, 2015, specifically for use in the 2016 - 2021 TDP. The results from this rider survey are being used to determine rider characteristics, trip-making characteristics, and perceptions regarding quality of transit services and future needs. This section presents the results of the survey efforts. Individual transit rider survey forms were prepared for BVT's fixed-route service, including the following sections, and an example of the survey form is included in Appendix A.

- About You – socioeconomic status
- About Your Trip – general characteristics of the trip they were making at the time of the survey such as trip purpose, origin, and destination
- Rate BVT's Service – perceptions regarding BVT's existing service
- Identify Future Service Improvement Needs – perceptions regarding needed improvements

Survey Response Rates

As previously noted, fixed-route surveys were conducted during the week of September 14, 2015. In all, 127 BVT trips were surveyed. Weekday fixed-route ridership averages approximately 220 riders per day. With the fixed-route surveys, response rates were recorded by route and time of day. Figure 3-25 shows response rates by route. Of the BVT patrons, 50% were noted on the Exit 7/Walmart Route, 33% on the Mall Route, and 17% on the East Bristol/East Ridge Route.

Figure 3-26 summarizes the responses by time of day. The blue bars relate to the number of responses per time period. The red line on the graph displays the cumulative time of day percentage.

Figure 3-25. Percentage of Fixed-Route Survey Responses by BVT Route

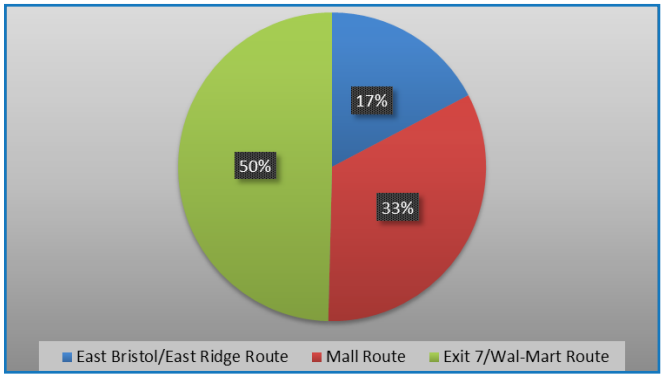
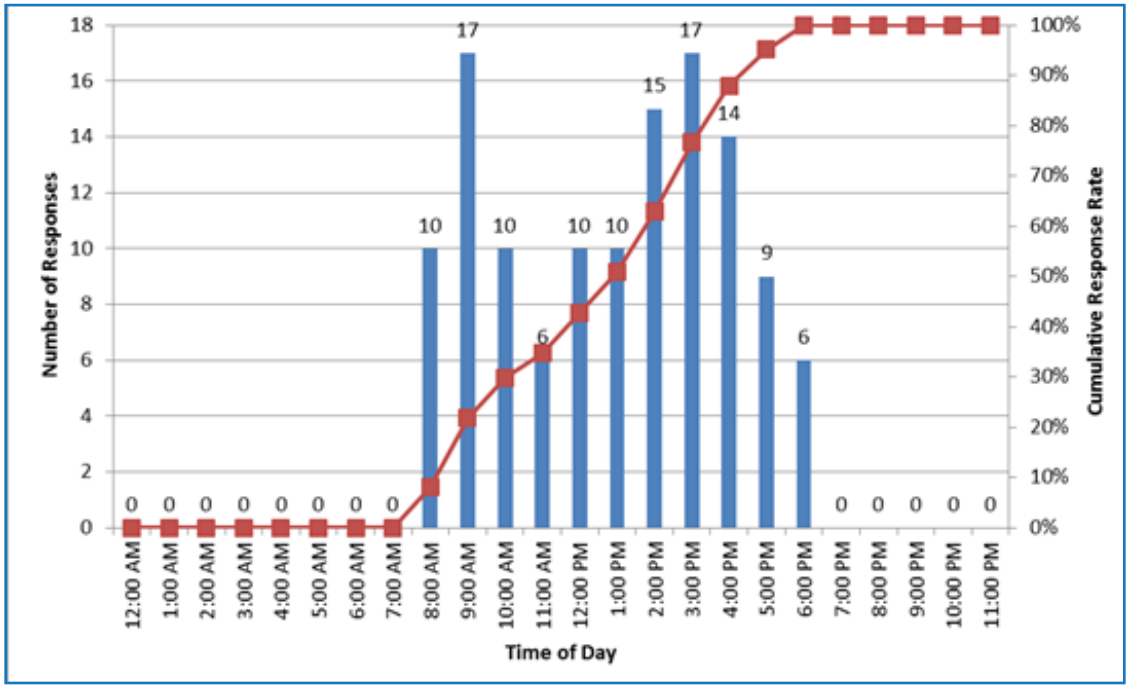


Figure 3-26. Survey Responses by Time of Day



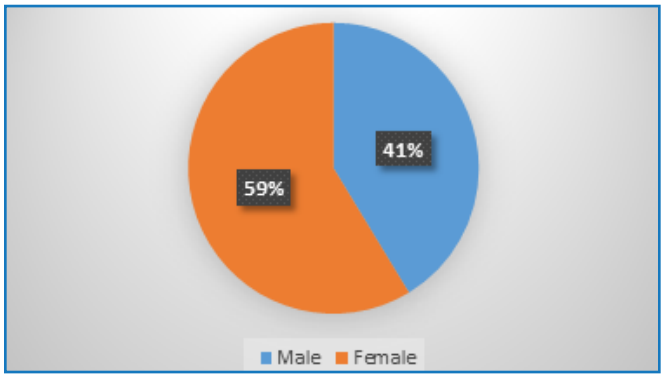
Responses to Survey Questions

Survey questions focused on the demographic characteristics of the rider (e.g. gender, age, income, etc.) are summarized in the following sections.

Gender

The first survey question asked patrons to identify their gender. The responses to this question can be seen in Figure 3-27. Of all the survey response, 71 riders or 59%, identified as female. Conversely, 50 patrons or 41%, identify as male. Responses suggest that a majority of BVT riders are female.

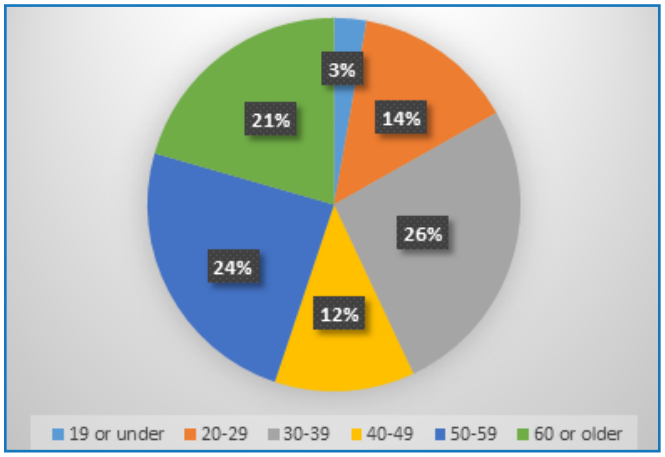
Figure 3-27. Gender of Respondents



Age

Responses to the second survey question can be seen in Figure 3-28. In general, BVT patrons fell in three age ranges: 30-39 (26%), 50-59 (24%), and 60 or older (21%). Overall, 83% of surveyed BVT riders were over 30 years old.

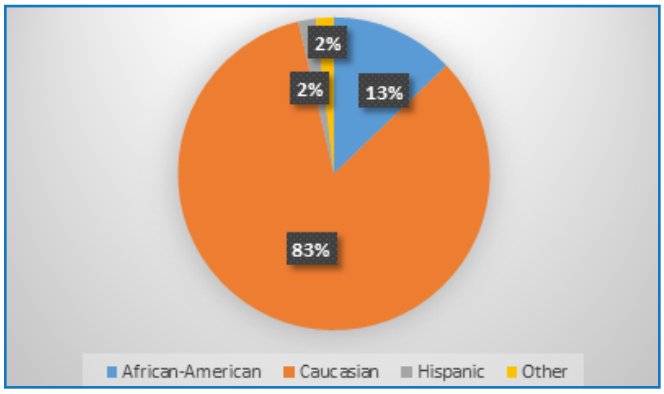
Figure 3-28. Age of Respondents



Ethnicity

The third survey question asked riders about their ethnicity. Figure 3-29 shows the results of this question. BVT riders were predominantly Caucasian (83%). Another 13% indicted African-American as their ethnicity.

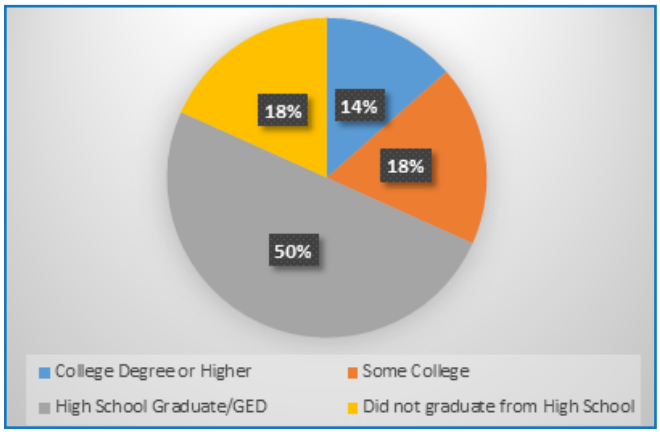
Figure 3-29. Ethnicity of Respondents



Education

Question 4 of the survey asked about the rider's level of education. Results of this survey question are summarized in Figure 3-30. Of those surveyed, 50% reported having a high school diploma or GED. Further, it was observed that 14% have a college degree or higher, 18% have some college, and 18% did not graduate from high school.

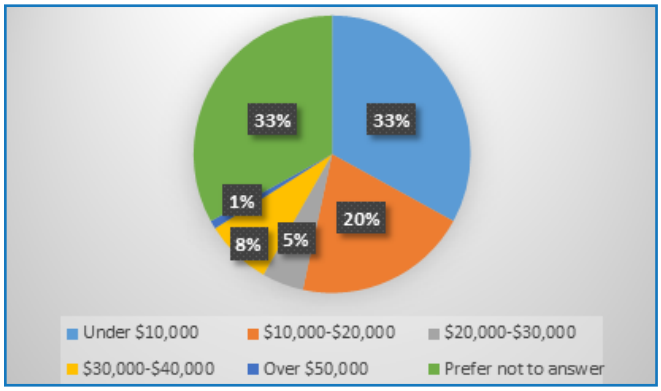
Figure 3-30. Educational Attainment of Respondents



Annual Household Income

For the fifth survey question, patrons were asked about their annual household income. It was observed that 33% of riders did not know or preferred not to answer. Another 33% earn more than $50,000 per year. This data and breakdown of the other income ranges can be seen in Figure 3-31.

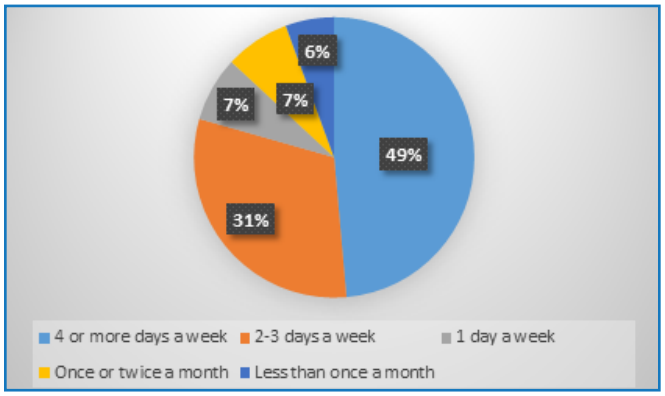
Figure 3-31. Annual Household Income of Respondents



Frequency of Use

Figure 3-32 shows the survey responses regarding how often patrons use BVT. It was recorded that 49% of patrons report riding BVT four or more days a week and 31% of patrons report riding BVT 2.3 days a week. This means 80% of riders use BVT two or more days a week and is indicative of a stable base of regular riders.

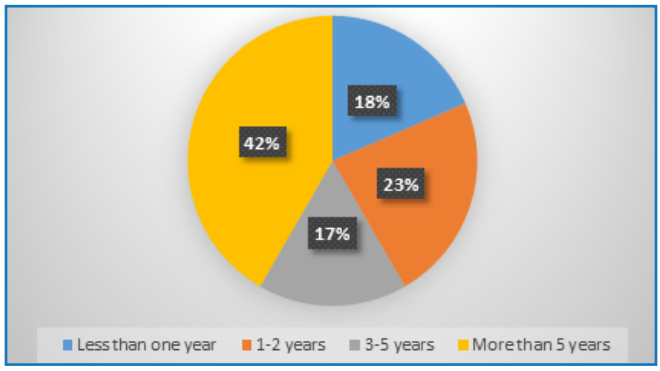
Figure 3-32. Frequency of Use by Respondents



Length of Use

Riders also were asked how long they have been using BVT; these results can be seen in Figure 3-33. Of those surveyed, 42% have been riding for more than 5 years and only 18% have been riding for less than one year.

Figure 3-33. Length of Ridership by Respondents



Trip Origins, Mode of Access, and Destinations

Figures 3-34 through 3-36 summarize respectively the trip origins, modes of access, and trip destinations from the survey. Responses indicated 61% of riders originate at their home, while 17% come from a retail location. When asked how they get to the bus, 95% of riders indicated that they walk to the bus stop. With regards to destinations, 32% of riders were taking the bus home, 28% were taking the bus to go shopping, and 20% were taking the bus to work.

Figure 3-34. Trip Origins

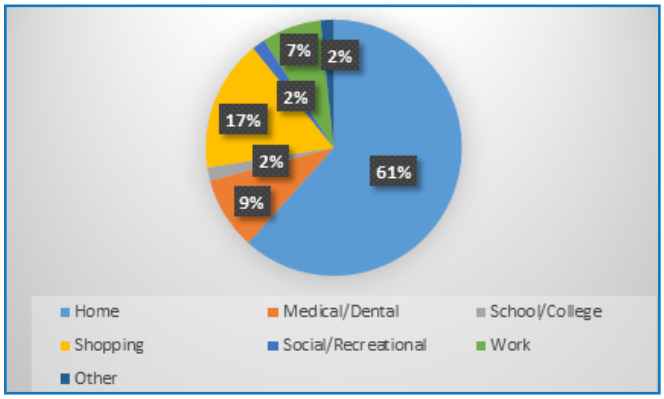


Figure 3-35. Transit Mode of Access

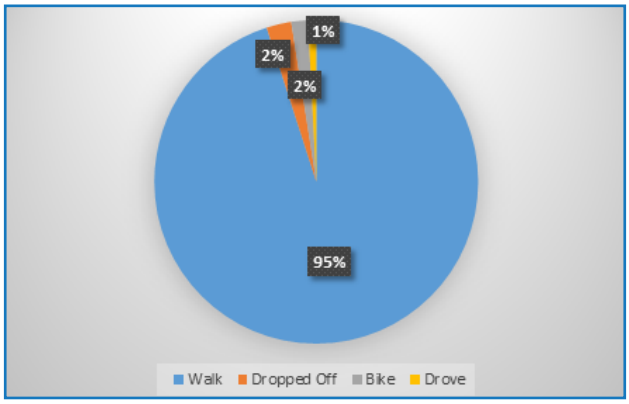
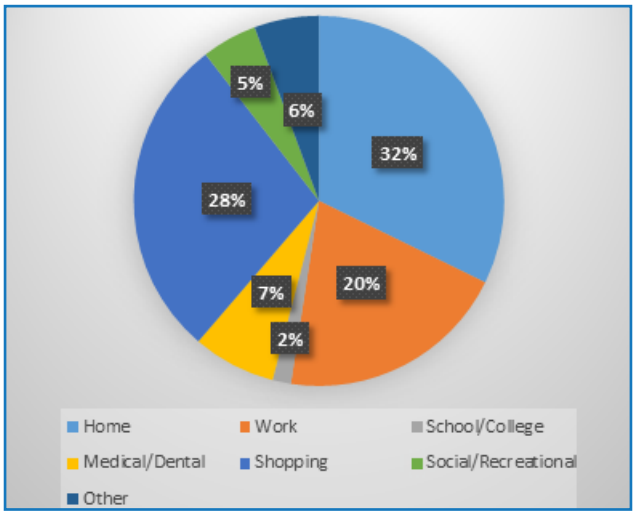


Figure 3-36. Trip Destinations



BTT Connections

Patrons were asked if the trip they were making on a BVT bus also involved a Bristol, TN bus; these responses are shown in Figure 3-37. Roughly, 77% of riders indicated they were not using a Bristol, TN route.

Bristol Reason for Riding Transit

The next question of the survey asked patrons why they ride BVT transit. The predominant response (75%) was "I don't have a car". Another 13% indicated they were riding because they have a disability or were unable to drive.

Opinion of BVT Transit Services

Survey questions 15A through 15J asked patrons to rate several qualitative aspects of BVT. Figure 3-38 reflects the responses. Rating categories ranged from very good (5) to very poor (1). The responses to each of these categories were averaged to calculate a score. These calculations resulted in scores ranging from 3.8 to 4.8. The hours of operation received the lowest score, while the courtesy and friendliness of bus drivers received the highest score. The following areas were rated by respondents:

- Frequency of bus service
- Areas that are served by bus routes
- Bus on-time performance
- Hours of bus service
- Availability of schedules and route information
- Cost of bus fare
- Sense of security on buses and at transit station
- Cleanliness of buses and transit station
- Courtesy and friendliness of bus drivers
- Overall service

Figure 3-37. Connections with BTT

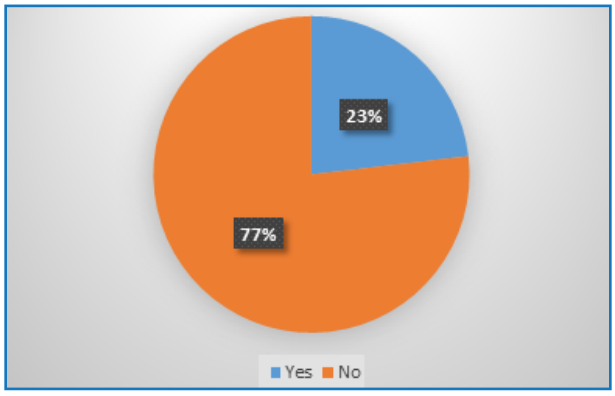


Figure 3-38. Reason for Riding Transit

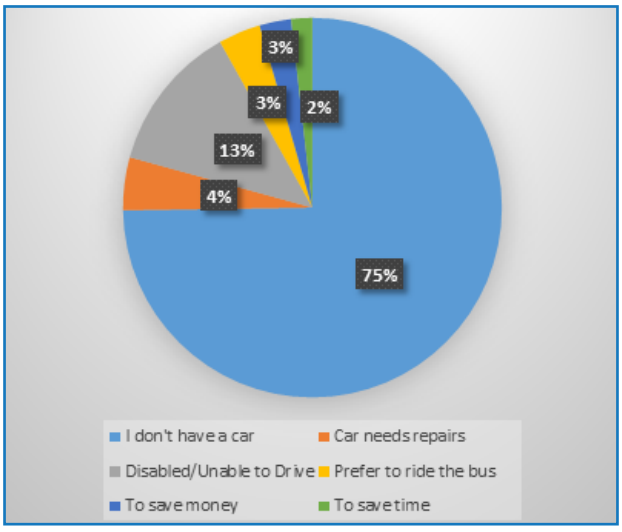
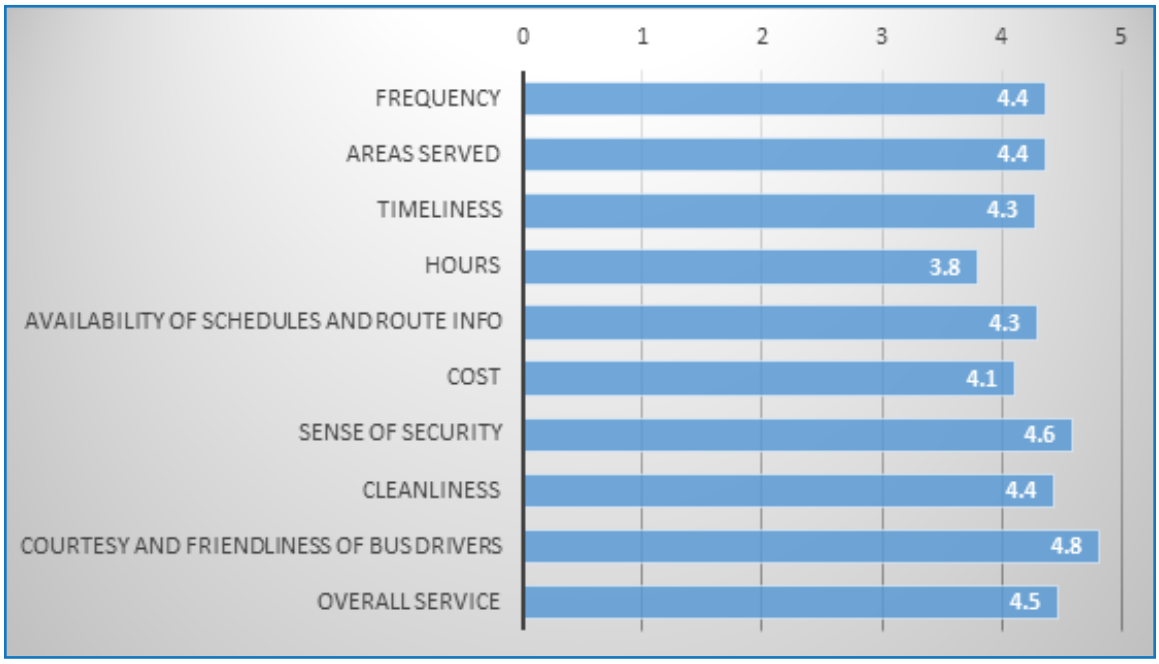


Figure 3-39. BVT Average Service Rating



Service Improvement Needs

Survey questions 16A to 16G asked respondents to rate the importance of potential improvements to the BVT system. Of these ratings, the top three improvements were: Saturday service, late evening bus service, and more frequent bus service, shown graphically in Figure 3-39. The following areas were rated by the respondents:

- More frequent bus service
- More direct bus routing to destinations
- Late evening bus service
- Better identification of bus stop locations
- Saturday service
- Service expanded outside of the city
- Improved security on buses and at the transit station

BVT received favorable ratings (very good or good) for most service categories, such as courtesy and friendliness of bus drivers and sense of security

Summary of Findings

Using survey results presented in the prior section, the typical BVT rider for fixed-route is as follows:

- Female
- Over 30 years old
- Caucasian
- At least a high school diploma
- Under $10,000 annual income
- Uses transit primarily for work or shopping trips
- Accesses bus service by walking
- Rides transit because they don't have a car

BVT received favorable ratings (very good or good) for most service categories, such as courtesy and friendliness of bus drivers and sense of security. The lowest average ratings were in the categories of hours of service and cost of bus fare.

When asked about potential improvements, respondents strongly supported the addition of Saturday service and late evening bus service, as well as more frequent service. Security improvements and better identification of bus stops did not rank as high in importance.

3.5 PUBLIC OUTREACH EFFORTS

Three public outreach efforts occurred in the development of this TDP to gauge the level of support for transit within the community. Groups targeted for the development of this section include regional stakeholders, BVT riders, and BVT non-riders.

BVT riders and community stakeholders were surveyed by phone during the week of December 14th, 2015. Riders were asked to rate the quality of various aspects of the existing transit service and to rate the importance of several potential service improvements. Additionally, riders were asked whether they had any other recommendations for improvements to the transit service. Stakeholders were asked five questions that touched on transit aspects such as route coverage areas and new service ideas. In Section 3.5, results from a non-rider survey are discussed on a variety of topics.

Regional Stakeholders

Attempts were made to contact eight community stakeholders, all of whom completed a phone interview. Surveyed stakeholder organizations included the Appalachian Independence Center, the Bristol Metropolitan Planning Organization, the office of the Mayor, The District 3 Cooperative, and the Bristol Redevelopment and Housing Authority, and the Virginia Department for the Blind and Visually Impaired. Several common themes from the stakeholder discussions emerged. Stakeholders mentioned that Bristol Virginia Tranist acts as an important social service in the community, serving many riders who are entirely transit-dependent. Many stakeholders saw extending hours later into the day on weekday evenings and providing service on weekends as very crucial for improvement of the service. Stakeholders stated that some potential riders cannot use transit as a means of commuting to work because service ends before the end of the working day for many employees. Several social services offices, including the local Department of Motor Vehicles, were identified as potential new destinations for transit service. Many stakeholders also mentioned that extending service to nearby Abingdon, Virginia and the Virginia Highands Community College campus would allow for access to additional shopping, medical care, and higher education opportunities for Bristol, Virginia residents. Several stakeholders reported concerns with transit routes not deviating the necessary distance from their routes to pick up disabled riders. The stakeholders reported that this issue is a relatively recent development.

Transit System User Focus Group

Attempts were made to contact five riders of BVT who had agreed to provide feedback at an earlier date. Three of these riders completed the phone survey. Respondents on average rated most favorably the courtesy and friendliness of the transit service's bus drivers, the service's on-time performance, and the sense of security on buses and at the transit station. Respondents rated least favorably on the existing hours of service for BVT, with multiple respondents reporting that the service ends too early in the evening. Other lowest-rated aspects of the service included the cost of bus fare, the availability of schedules, and information pertaining to the service. No single aspect received an average rating below okay. More frequent bus service, Saturday service, and service expanded to outside of the city were all deemed very important to all respondents. Multiple respondents reported a desire for transit service to the Bristol Virginia Utility company offices.

Transit System Non-User Focus Group

The BVT non-rider portion of the public outreach effort occurred at the Visioning Workshop for an update to the city's Comprehensive Plan. A total of 13 attendees responded to questions regarding their awareness and perception of the transit system.

BVT Experience

- Only one out of the 13 respondents has ridden BVT

BVT Awareness

- Perception is that BVT serves the unemployed, low income, retirees/older residents, people who cannot drive (no license or no automobile)
- The respondents were generally aware of the major locations that the service operates, specifically

Perception is that BVT serves the unemployed, low income, retirees/older residents, people who cannot drive (no license or no automobile)

the mall, Walmart and Exit 7 shopping, and the Downtown Transfer Center that connects toBTT.

- Respondents noted that the bus stops along the routes were not well marked and difficult to find. One of the repeated suggestions was to make stop locations visible and to provide stop location maps.
- The fares were noted to be reasonably priced

Reasons why respondents have not used the service

- Respondents stated that the span of service is not long enough for a full work day. This was a reason some respondents said they do not use the service. Suggested service hours are Monday through Saturday 6 a.m. until 10 p.m.
- The most common reason respondents do not ride the bus is because they have personal automobiles and therefore have no need. Another reason, although less common, was that the bus does not operate close enough to their residence or where they need to go.

Suggested Changes

- Make the service more enticing with better/more advertising and market the service to increase awareness. Make special attempts to target the youth or lower income population.
- Add tourism-based service in the form of a trolley vehicle that would serve the birthplace of Country Music Alliance, Bristol Caverns, and Bristol Motor Speedway.

3.6 LAND USE PLAN

The development of this TDP coincided with the creation of a new Comprehensive Plan for the City of Bristol, VA. The goal of the Comprehensive Plan is to provide a guide for the city's future to aid decisions on land use and development throughout the next 10 to 20 years. While the new Comprehensive Plan is not expected to be complete until the Spring of 2016 and not yet available, the current Comprehensive Plan completed in July 2002 is discussed below.

The 2002 plan shows existing land use within the town to be 41.0 percent vacant land and 29.3 percent single family residential. Large single-family residential communities are located between the downtown area and Interstate 81 and also further to the northeast of the city center. Large concentrations of commercial uses exist in the downtown area, at the nearby Bristol Mall, and along Lee Highway north of Interstate 81 between Exits 5 and 7. In the downtown area along the state border, residential, commercial, and service uses are well mixed.

Future land uses prescribed by the plan largely resemble existing ones. The plan outlines several land use trends occurring in the Bristol community and describes its intent to either assist or combat these trends. Residential development in Bristol has been converting in some areas from single family to multi-family developments. The plan advocates for the city to encourage the protection of single-family housing from this conversion as it has led to overcrowding and over-parking issues that have degraded quality of life in those areas. The plan highlights Bristol's role as a regional commercial center for the Southwest Virginia and Northeast Tennessee region and projects that the ratio of commercial land per person in the community will grow as Bristol grows further into its regional commercial role. The future land use plan allows for existing commercial development along Lee Highway to extend south along US Route 19 towards downtown Bristol and Euclid Avenue.

Potential Future Transit Service Needs

Existing transit service in the area consists of three routes which connect downtown Bristol with major destinations at the outskirts of town such as the Bristol Mall and the Exit 7 commercial area. Future land use plans designate commercial development along US Route 19 (including Lee Highway and Euclid Avenue), and while portions of this corridor are already served by different transit lines, other areas currently have no transit access. A route that travels most or all of this corridor could serve as a more complete link for residents looking to shop or do other business in town. Other areas that could but do not currently benefit from direct transit service are Virginia High School and the surrounding residential neighborhoods near Interstate 81 Exit 3.

3.7 FACILITY AND EQUIPMENT CHARACTERISTICS

As discussed in Section 1.6, BVT owns and maintains five vehicles for service. Four of the vehicles are light-duty buses with manufactured dates ranging from 2008 to 2012, which are used for the fixed-routes. The

remaining vehicle is a van used for demand-response services, manufactured in 2006.

As discussed in Section 1.7, BVT operates out of several facilities within in the city. The Public Works Department is where day-to-day operations and farebox recovery is handled, as well as vehicle storage, maintenance, and fueling. This facility is where other city vehicles are serviced as well. The City of Bristol's main office, at 300 Lee Street, is where many of the administrative tasks are completed. For revenue service, the Downtown Transfer Center serves as the connection for all three BVT routes as well as the BTT routes.

3.8 TITLE VI AND TRIENNIAL REVIEW

The FTA assessed BVT's compliance with federal requirements via a Triennial Review in FY 2014. The review was produced as a requirement of Chapter 53 of Title 49, United States Code, Section 5307, which is attached to this TDP in Appendix B. The Triennial Review examined 17 areas, of which 10 areas were in compliance. Minor deficiencies were discovered in seven areas: Financial Capacity and Financial Management, Technical Capacity, Maintenance, ADA, Procurement, Satisfactory Continuing Control, and Drug-Free Workplace/Drug and Alcohol Program. Ineligible operating expense calculations, in the review area of financial management and financial capacity, was a repeat finding. BVT took corrective action and satisfactorily resolved all deficiencies.

CHAPTER 4:

SERVICE EXPANSION PROJECT DESCRIPTIONS

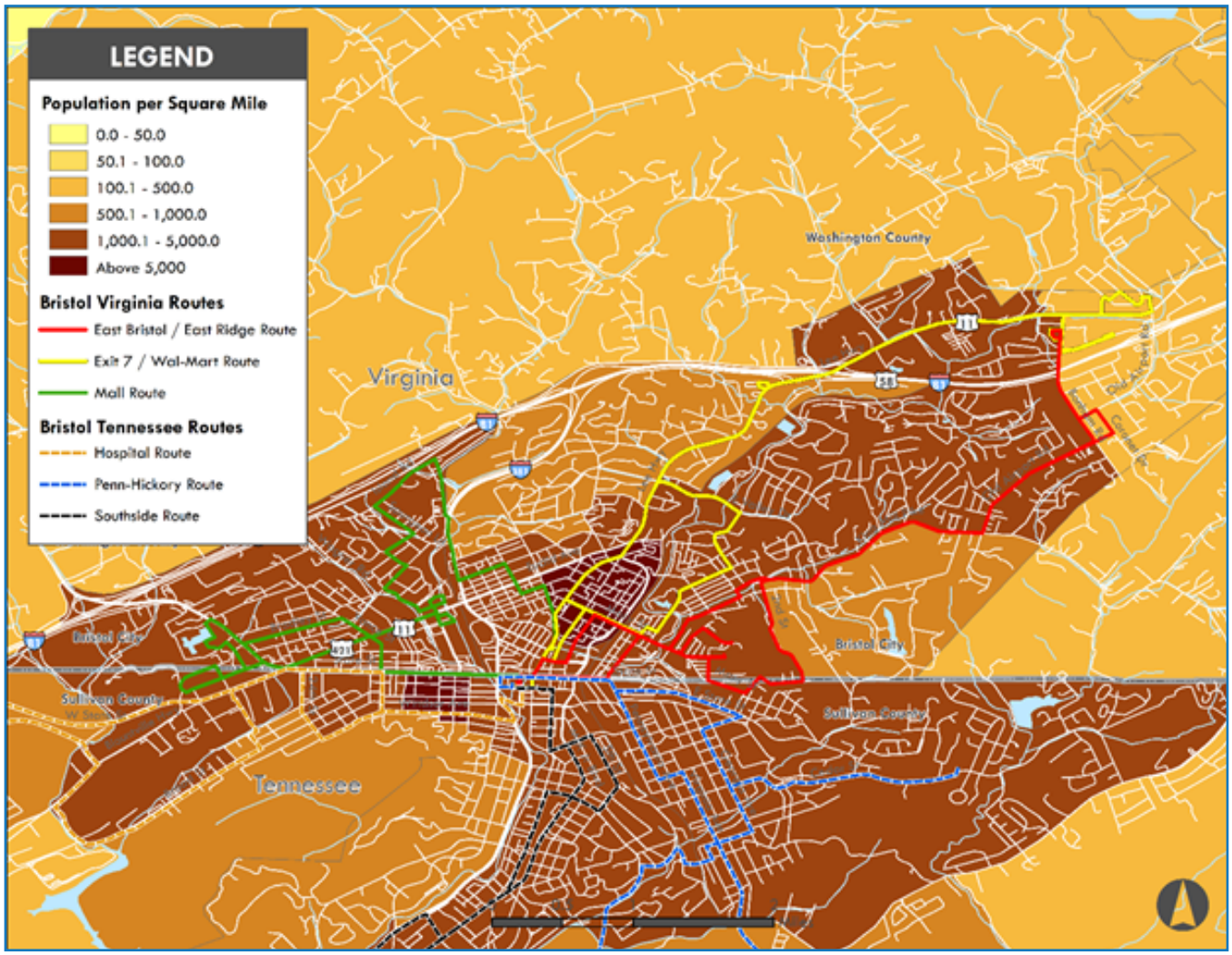
CHAPTER 4: SERVICE EXPANSION PROJECT DESCRIPTIONS

Chapter 4 identifies improvements that could be made to the system based on specific needs of the service area. First, a demographic analysis of the current population is conducted to help establish where transit demand is most likely concentrated within the service area. Additionally, population and employment projections are used to show how these areas are expected to change throughout the life of this TDP and into the future. These considerations, along with insights from previous chapters such as stakeholder input and rider interviews, help guide the recommendations for service expansion, and in some cases reduction, for BVT. Cost estimates and ridership projections also are included in the discussion of project descriptions.

4.1 DEMOGRAPHIC ANALYSIS OF EXISTING POPULATION

The location and density of population and employment are paramount in establishing and maintaining a successful transit service. Populations with key demographics and characteristics are more likely to use transit services. Moreover, when these populations are in high-density areas, the likelihood of higher ridership further increases. Identifying the locations where these specific populations reside enables transit agencies to target areas where transit will be most efficient and useful to the community. The following section uses data from American FactFinder to identify the locations where demographics are conducive to strong transit ridership.

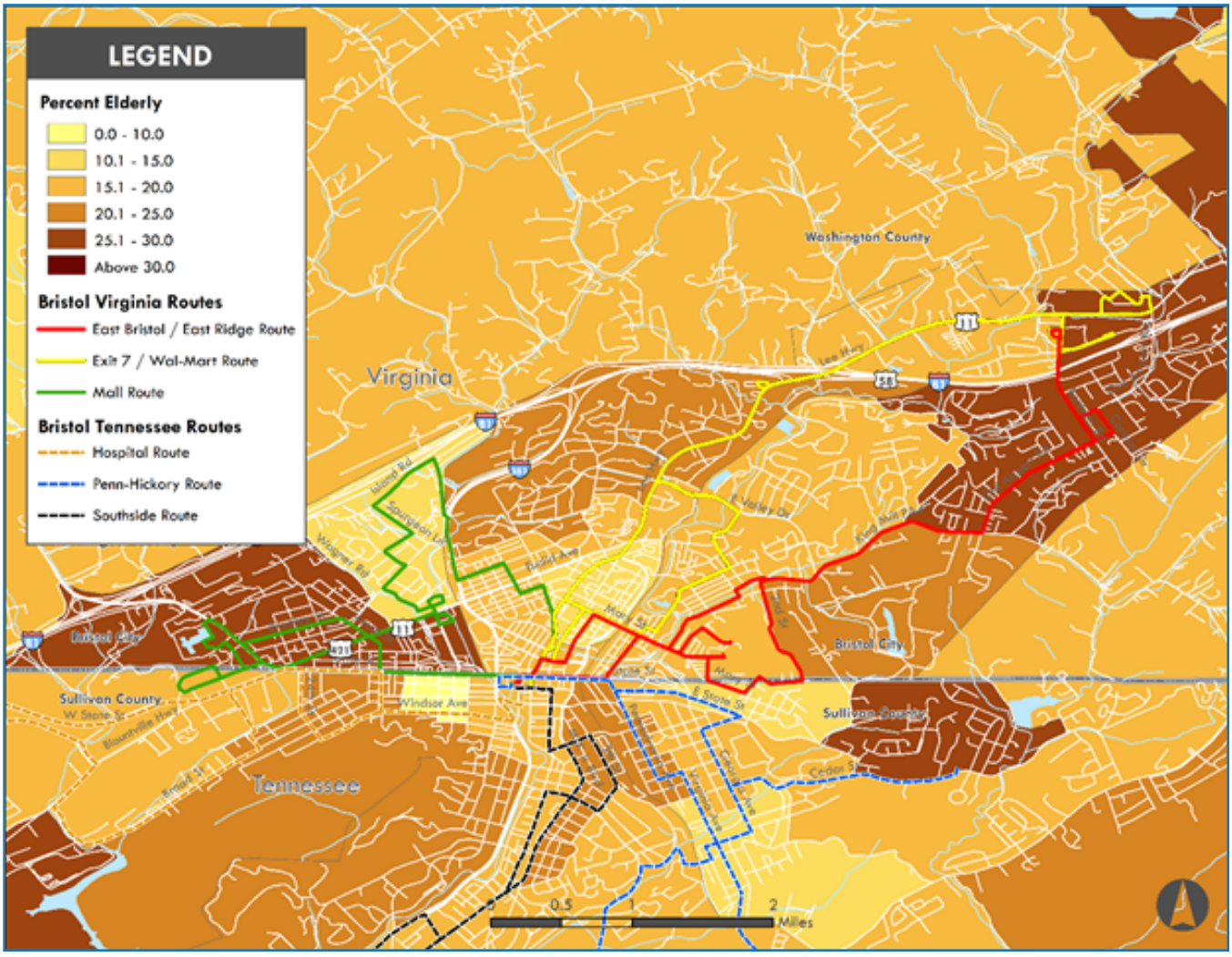
Figure 4-1. Bristol Population Density



Regional Population Density

Figure 4-1 above shows the population density of the Bristol area at the census block group level, revealing specific areas within the city that are more densely populated than others. The areas of high density generally lie within the city limit boundaries of both Bristol, VA and Bristol, TN, whereas areas farther away from downtown appear to become less and less dense. More specifically, the section of Bristol VA with the highest population density is bound by Martin Luther King Jr Blvd, Hwy 11, and Scott Street. This area has 1,806 residents over 0.34 square miles. Another location with high population density exists south of State Street and as far as Windsor Avenue and Hill Street, just to the west of the Downtown Transfer Center. Although this section of high density residential is in Tennessee, it is adjacent to Bristol, VA and impacts the BVT ridership. As shown in the population map, the large section of Bristol between the East Bristol/East Ridge Route and the Exit 7/Walmart Route has relatively high population density. Each of these routes however, do not directly penetrate much of this swath of land and instead are located on the periphery of the high population density land.

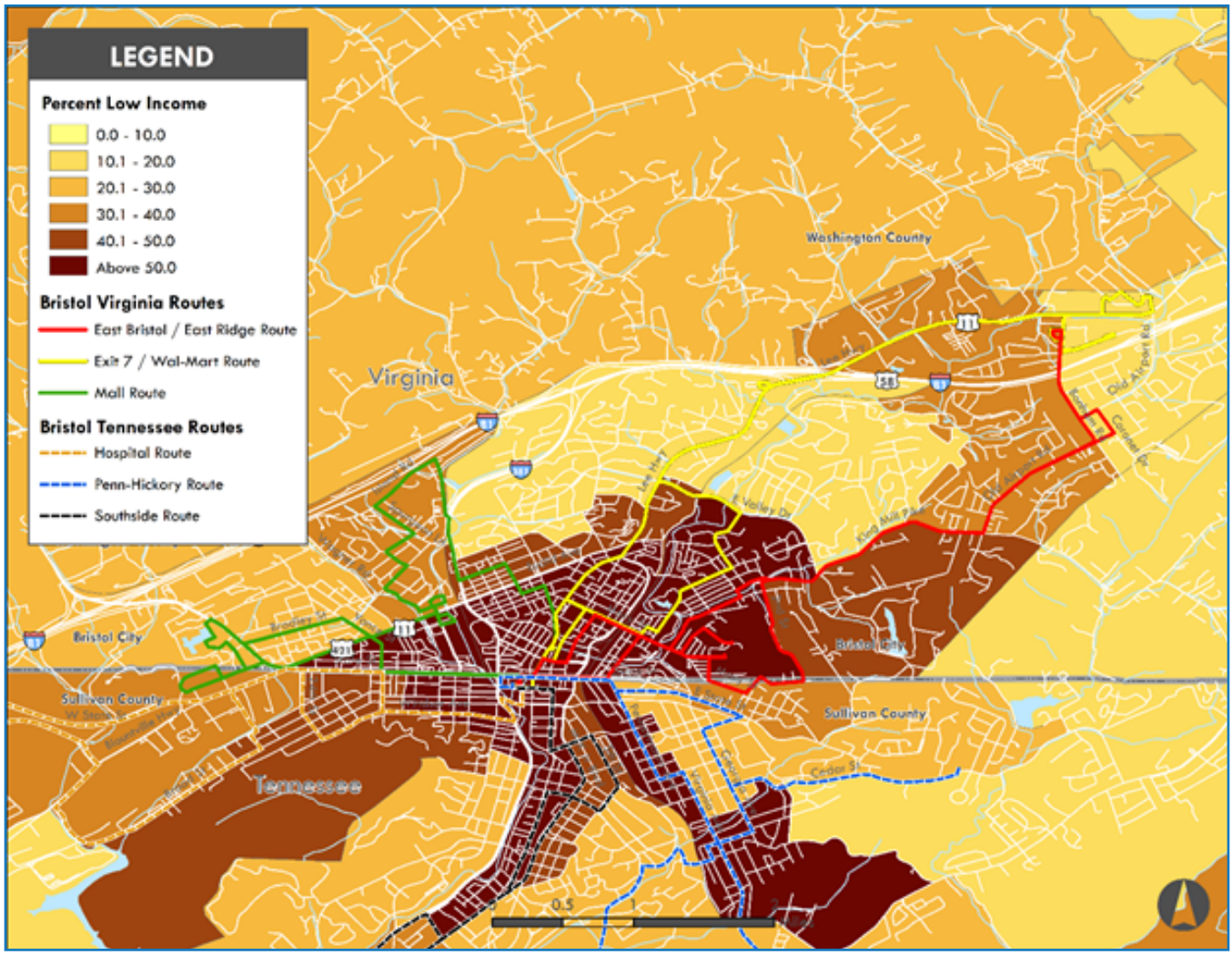
Figure 4-2. Bristol Elderly Population (65 Years of Age and Older)



Regional Elderly Population

A large demographic of a typical population whom rely on public transportation is the elderly, defined in this analysis as anyone aged 65 or older. There are areas of Bristol that have a fairly high elderly population, depicted in Figure 4-2. Areas both west and east of the city appear to have pockets of higher elderly population than those directly at or adjacent to downtown. The areas of highest elderly density are currently being served by the Mall and East Bristol Routes in Virginia as well as the Penn-Hickory Route in Tennessee. Downtown and the neighborhoods directly north and south of downtown have a disproportionately low elderly population. Interestingly, the areas with the highest population density also appear to have a low percentage of elderly.

Figure 4-3. Bristol Low Income Households

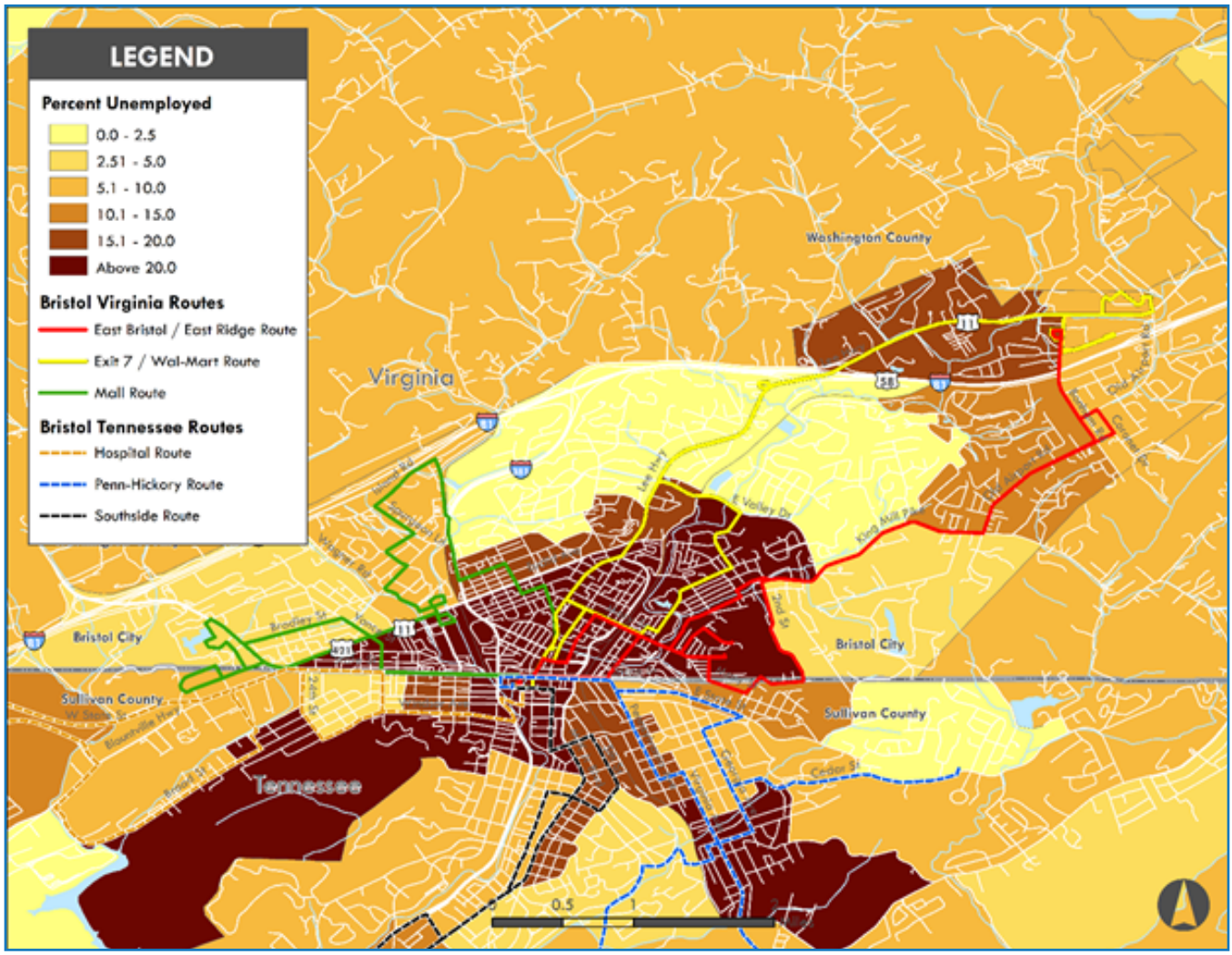


Regional Low Income Households

Another demographic group who typically rely more heavily on transit is those who earn a lower than average income. Using American Community Survey (ACS) data from 2009-2013, the city of Bristol had a median household income of $32,221 with a total of 21.0% living below poverty level. Figure 4-3 shows the percentage of low-income households as defined by the U.S. Poverty Guideline issued by the U.S. Department of Health and Human Services. For a family of four in 2015, the threshold for an average family of four is $24,250 in annual income. The closest income break identified in the ACS 5-year data was $25,000, which was therefore the break point used for showing low income in Bristol. A large portion of Bristol is in the highest percentage category of low-income households (greater than 50%). Specifically, a high proportion of low-income residents live downtown and the neighborhoods to the northeast and southwest of downtown. These areas are currently being served by the East Bristol and Exit 7 Routes in Virginia and the Hospital Route in Tennessee.

> A high proportion of low-income residents live downtown and the neighborhoods to the northeast and southwest of downtown

Figure 4-4. Bristol Unemployment



Regional Unemployment

Lastly, regional unemployment is shown in Figure 4-4 above. Unemployment is expressed as the rate of unemployed civilian population in the labor force that is 16 years of age or older. City-wide, unemployment was relatively high during the American Community Survey (ACS) study period of 2009-2013. The areas of the city near downtown and the nearby neighborhoods to the south appear to have the highest unemployment rates in the region. The areas directly north and east of downtown appear to have the lowest percent of unemployed residents.

The areas of the city near downtown and the nearby neighborhoods to the south appear to have the highest unemployment rates in the region

Table 4-1. Population and Employment Estimates for Bristol, VA and Surrounding Areas in MPO

	Population		Growth		Employment		Growth	
	2010	2020	Population	%	2010	2020	Population	%
Bristol, VA	17,479	17,570	92	0.5%	15,913	16,891	979	6.1%
Washington County, VA (part)	11,718	11,873	155	1.3%	3,919	4,024	104	2.7%
Sullivan County, TN (part)*	64,265	65,790	1,525	2.4%	28,575	30,173	1,598	5.6%
Total MPO Study Area	*93,462*	*95,233*	*1,771*	*1.9%*	*48,407*	*51,088*	*2,681*	*5.5%*

** Includes Bristol and Bluff City*

4.2 DEMOGRAPHIC ANALYSIS OF ANTICIPATED POPULATION AND EMPLOYMENT CHANGES

The Bristol MPO 2035 Long-Range Transportation Plan was used to derive population and employment projections for the city of Bristol and the surrounding area for the 2010-2020 decade. The data shows that the population growth in Bristol is very slow, as shown in Table 4-1. Throughout a 10-year period, Bristol is expected to increase by less than 100 people, which is 0.5% of the total population. Additionally, the surrounding areas of Washington County (Virginia) and Sullivan County (Tennessee) are expected to increase in population minimally. For employment throughout the same 10-year period, Bristol is projected to gain nearly 1,000 jobs. This increase in jobs is promising for the area, considering a 6.1% total increase in employment versus the modest population increase. Washington County also is expected to grow in jobs, although the total number is only 104. Sullivan County employment, however, is projected to increase by 1,598 through 2020.

4.3 PROPOSED SERVICE EXPANSION PROJECTS

The following section details the proposed changes to the BVT route structure, resulting costs and ridership impacts. Proposals to add evening service, which was requested by riders and non-riders during the TDP's public outreach effort, as well as Saturday service also is presented.

This increase in jobs is promising for the area, considering a 6.1% total increase in employment versus the modest population increase

Service Expansion Project 1: New Service Structure

BVT has operated with little to no change to its services since the previous TDP was conducted in 2009. However, several changes in development have resulted in shifts in transit demand, warranting modifications to the alignment and operating hours of the fixed-routes. Most notably, commercial development in the Exit 7 area has increased ridership on the Exit 7/Walmart route substantially, leading to challenges to on-time performance and available bus capacities. The realignment of BVT's routes seeks to streamline the services with highest demand while maintaining critical lifeline connections to senior housing, medical offices, affordable shopping, and grocery outlets. This strategy will not only involve the realignment of each of BVT's three existing routes, but also will include the addition of a new fourth route.

Exit 7/Walmart Route (renamed Moore St/Highway 11 Route) – The Exit 7/Walmart Route currently begins at the Downtown Transfer Center and travels north to serve the Lee Highway corridor to the development at Exit 7 and Walmart shopping center (see Figure 1-3). The route experiences high ridership throughout the day (see Figure 3-5), and oftentimes has difficulty maintaining scheduled run times. One reason for the poor on-time performance is the strong demand at Walmart – a major trip generator for both shopping and employment. This contributes to long dwell times for passenger boardings and alightings. The route also is slowed by deviations in the alignment, both scheduled and per on-board request.

It is recommended that the Exit 7/Walmart Route eliminate the deviations from the core alignment for a more streamlined approach. The proposed route shown in Figure 4-5 (Moore Street/Highway 11

Route) remains on Lee Highway rather than deviating to local streets such as East Valley Drive and Mary Street. Vehicle speeds along Lee Highway are typically greater than local streets. In addition, this approach reduces the revenue miles from 13.6 miles to 10.6 miles, allowing the route to be scheduled at a more reasonable speed. The crowding issues on this route also will be alleviated by additional service from the modified East Bristol/East Ridge Route and the new Old Abingdon Highway Route, discussed in the next sections. This realigned route would serve the retail development just north and east of Interstate 81 and Lee Highway. Several big box stores, including the flagship store Cabela's, have recently opened and will provide new shopping and employment opportunities for Bristol's residents. Part of this development also includes the construction of a small 10-15 car park and ride lot, which will be served by the Moore Street/ Highway 11 Route.

The operating statistics for the existing and proposed alignments of the Moore Street/Highway 11 Route are shown in Table 4-2. The recommendation retains the same revenue hours as the existing route, and therefore is expected to have the same operating costs. The ridership is expected to remain the same as well. While it could be argued that additional routes to Walmart may reduce the ridership of the Moore Street/Highway 11 Route, the improvements seen in on-time performance and travel times may entice more passengers to ride more often. It was noted in interviews with bus drivers that some trips reach capacity, forcing passengers to wait for the next trip. Keeping the line loads down to comfortable levels will ultimately improve customer satisfaction and attract more riders. Table 4-2 conservatively estimates a ridership impact of zero.

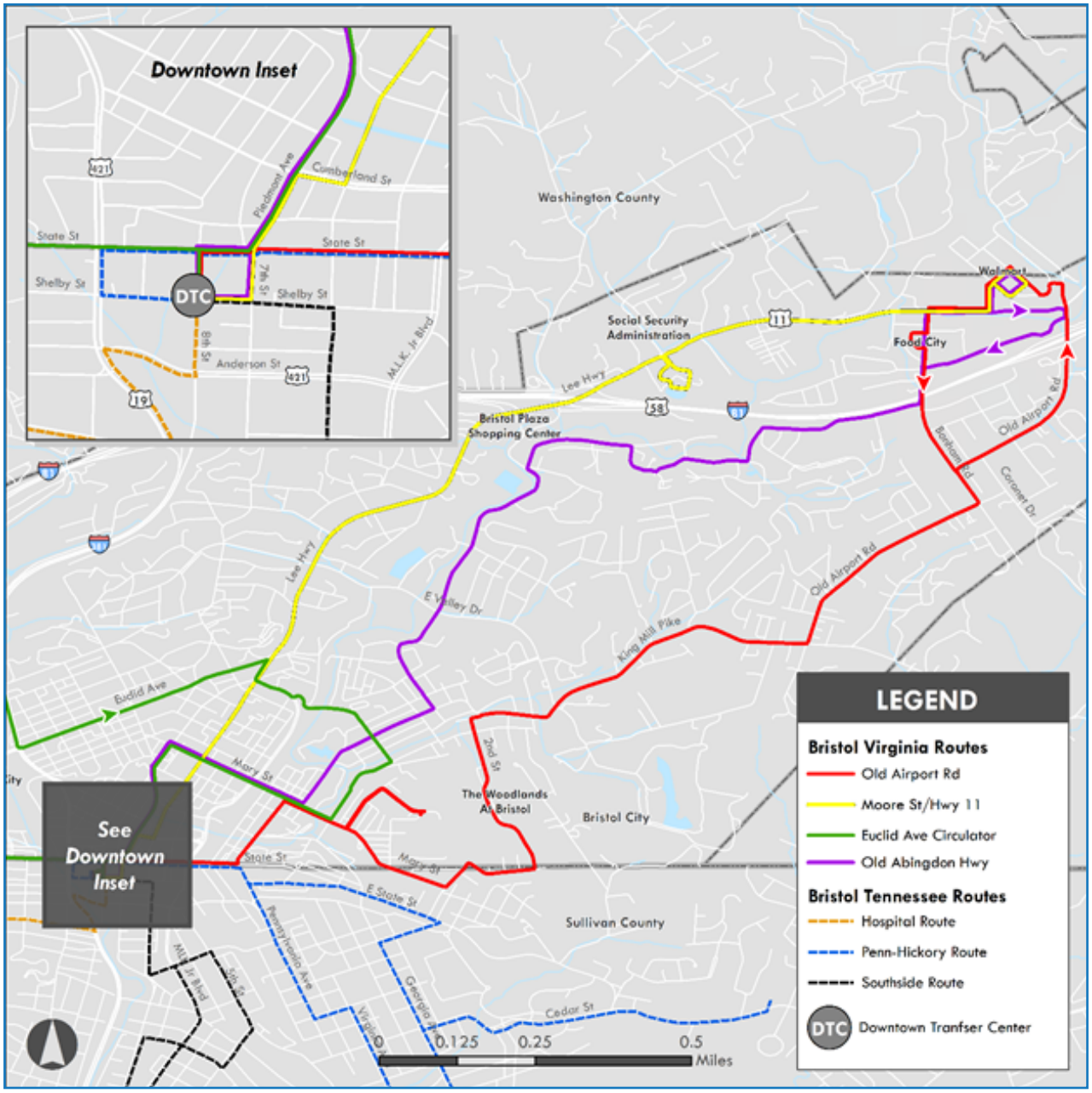
East Bristol/East Ridge Route (renamed Old Airport Road Route) – The current alignment of the East Bristol/East Ridge Route is shown in Figure 1-3, departing from the Downtown Transfer Center, serving Mary Street before traveling northeast along King Mill Pike and Old Airport Road to access the Food City off of Bonham Road. The ridership data collected in Chapter 3 (Figure 3-4) indicates that there are three stops that account for the majority of the route's activity – the Downtown Transfer Center, the Food City on Bonham Road, and the Woodlands at Bristol apartment complex.

Figure 4-5 shows the proposed alignment for the modified East Bristol/East Ridge Route, which will be called the Old Airport Road Route. Two major changes occur in the revised alignment of this route. The first involves serving 2nd Street and Mary Street in both the inbound and outbound directions rather than the outbound only. This modification provides bidirectional service to the Woodlands at Bristol apartment complex, which was one of the most active locations for boardings and alightings along the route. This change does however, require the removal of service on part of Norfolk Avenue. This section is relatively small and is still within walking distance to the Old Airport Road Route (and others) so the impact will be minimal. The second major change in the alignment includes routing service along Old Airport Road in the outbound direction to serve Walmart. This will involve a counter-clockwise loop at the northeast end of the route, returning via Bonham Road after serving the Food City. Serving Walmart with the Old Airport Road Route will provide much needed capacity relief to the current Exit 7/Walmart Route and will improve on-time performance throughout the system. Residents in East Bristol will enjoy the new access to Walmart and connectivity to other BVT routes at points outside of downtown. These changes do however, increase the revenue service miles from 13.0 to 15.3, and were only made after information from the ridership inventory showed that there was excess time in the schedule.

Table 4-2. Realignment of Exit 7/Walmart Route

	Exit 7/Walmart Route	Moore St/Hwy 11 Route	Difference
Daily Revenue Hours	10.83	10.83	0
Annual Days of Operation	255	255	0
Annual Revenue Hours	2,762	2,762	0
Annual Operating Cost	$142,435	$142,435	$0
Annual Ridership	31,866	31,866	0

Figure 4-5. Proposed Bristol Routes (Eastern Bristol)



The operating hours of the Old Airport Road Route will change from the East Bristol/East Ridge Route, which is the only route that currently does not operate during the midday hours. The ridership inventory showed that the cessation of the East Bristol/East Ridge Route at the 10:00 am hour coincided with overcrowding on the Exit 7/Walmart Route, leading to on-time performance issues. It is therefore, recommended to run the Old Airport Road Route during the midday hours to further alleviate the crowding and improve the on-time performance of the Exit 7/Walmart Route. Operating statistics for the route are shown below in Table 4-3. The additional midday service for this route will require 4.17 additional daily revenue hours, totaling 1,062 hours a year. Using the average cost per revenue hour of

Table 4-3. Realignment and Increased Service Hours of East Bristol/East Ridge Route

	East Bristol/East Ridge Route	Old Airport Rd Route	Difference
Daily Revenue Hours	6.67	10.83	4.17
Annual Days of Operation	255	255	0
Annual Revenue Hours	1,700	2,762	1,062
Annual Operating Cost	$87,652	$142,435	$54,782
Annual Ridership	11,300	18,363	7,062

fixed-route for the system of $51.56, the total increase in cost for the service would be approximately $54,800 annually. The additional hours will result in an increase in ridership. Using the current East Bristol/ East Ridge average riders per hour of 6.65, ridership is expected to increase by about 7,100 trips per year.

Old Abingdon Highway Route (new route) – Ridership in the north and eastern parts of the city as well as commercial growth have reached the point that a fourth route is warranted and recommended to improve the reliability of the transit system. The new route would replace several of the segments that are remnants of the restructuring that is recommended for the existing three routes. This would enable the existing routes to improve on-time performance while increasing the overall service available to the city. The alignment of the fourth route, also shown in Figure 4-5, travels along Piedmont Avenue before turning right onto Mary Street, serving several affordable multifamily housing developments. The route then turns left onto Fairview Street, continues on Massachusetts Avenue and then takes another left on Texas Avenue, before serving Old Abingdon Highway. The Old Abingdon Highway Route serves a large townhome community on Beaverview Drive and accesses Bonham Road via Suncrest Drive. The northeast end of the route operates in a clockwise loop, serving Food City, Walmart, and the hotels and businesses on Linden Drive before returning to Bonham Road. The total length of the Old Abingdon Highway Route is 12.7 miles.

Ridership in the north and eastern parts of the city as well as commercial growth have reached the point that a fourth route is warranted and recommended to improve the reliability of the transit system

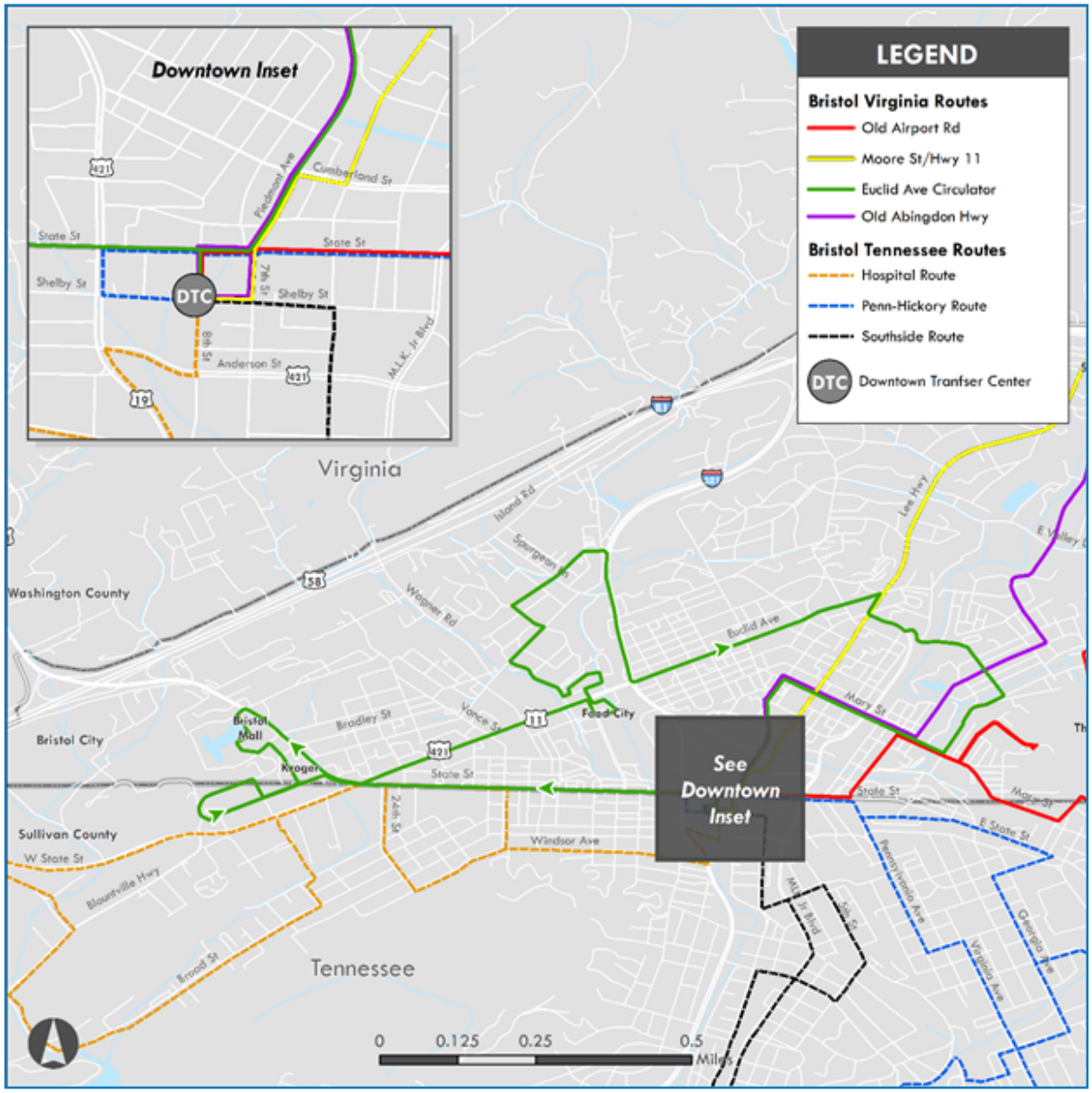
Operating statistics for the Old Abingdon Highway Route are shown in Table 4-4. The daily revenue hours will be 6.67, operating the same schedule as the current East Bristol/East Ridge Route, with peak only service. The Old Abingdon Route will consume a total of 1,700 revenue hours annually, costing approximately $87,700. The riders per hour is estimated to be the same as the current East Bristol/ East Ridge Route because of the similarities of the routes, both in terms of land use and destinations as well as the schedule and hours of operation. The ridership therefore, is estimated to be about 11,300 annually. The addition of a fourth route would require the procurement of an additional bus, costing an estimated $80,000.

Table 4-4. Addition of Old Abingdon Route

	Old Abingdon Hwy Route
Daily Revenue Hours	6.67
Annual Days of Operation	255
Annual Revenue Hours	1,700
Annual Operating Cost	$87,652
Annual Ridership	11,300

Mall Route (renamed Euclid Avenue Circulator) – The final route alignment adjustment for the new service structure is on the Mall Route, shown in Figure 4-6. The existing alignment of the Mall Route operates from the Downtown Transfer Center west along State Street to the Bristol Mall before heading east to Food City, Euclid Avenue Shopping Center, and the surrounding neighborhoods. The overall pattern of the route is a clockwise loop, operating service from 7:15 am until 6:00 pm. The ridership inventory indicates relatively low ridership throughout the day. Additionally, the uncertainly around the status of

Figure 4-6. Proposed Bristol Routes (Western Bristol)



the Bristol Mall suggests that the demand for transit service has been declining and will continue to do so. However, the ridership inventory also shows that the Food City on Euclid Avenue is a strong trip generator.

The modified route will be called the Euclid Avenue Circulator, which is a more favorable name because although the route will continue to serve the Bristol Mall, it is no longer a major destination. The neighborhood penetration along Peters Street, Bradley Street, and Vance Street are eliminated in favor of a more corridor-focused alignment along State Street and Euclid Avenue. Service on Spring Street and Island Road is eliminated due to low productivity and to enable new service to a newly constructed assisted living facility on Keys Street. Similarly, routing on Arlington Avenue, Park Street, and Fairmount Avenue is exchanged for continuous service along Euclid Avenue that reaches further east across Moore Street to Columbia Avenue, Norfolk Avenue, and Mary Street. The addition of these segments will allow riders from these neighborhoods one-seat access to the popular Euclid Food City. Given the excess time in the schedule, the route will still allow for reasonable on-demand deviations. The

Table 4-5. Realignment of Mall Route

	Mall Route	Euclid Ave Circulator	Difference
Daily Revenue Hours	10.83	10.83	0
Annual Days of Operation	255	255	0
Annual Revenue Hours	2,762	2,762	0
Annual Operating Cost	$142,435	$142,435	$0
Annual Ridership	19,023	19,900	877

Table 4-6. Addition of Evening Service

	New Service Structure	New Service Structure with Evening Service	Difference
Daily Revenue Hours	39.17	48.17	9.00
Annual Days of Operation	255	255	0
Annual Revenue Hours	9,987	12,283	2,295
Annual Operating Cost	$514,955	$633,286	$118,330
Annual Ridership	77,229	83,883	6,655

route is proposed to operate in a clockwise loop throughout the service day. The total length of the route would slightly increase from 10.2 miles to 10.7.

The operating statistics for the existing and proposed routing of the Mall Route and the Euclid Avenue Circulator are shown in Table 4-5. The proposed route would operate the same daily revenue hours as the existing service, yielding the same annual hours and associated costs. The ridership for the route however, will likely increase with the additional miles and improved service. The Euclid Avenue Circulator's service miles is 4.6% greater than the Mall Route service, and therefore the ridership is conservatively estimated to have the same percent increase. Thus, the Euclid Avenue Circulator should yield about 900 more riders a year, for a total of about 19,900.

Service Expansion Project 2: Evening Service

Table 4-6 shows the operating statistics for evening service in the case of service expansion by BVT, as defined by the previous four route structure changes in Service Expansion Project 1. Without evening service hours, the four routes would total 39.17 revenue hours a day. With evening service, daily service is increased by nine hours to accommodate three extra hours for each of the three vehicles that are operating all day service (Old Airport Road, Moore Street/Highway 11, and Euclid Avenue Circulator). The Old Abingdon Highway Route is not included in evening service because it is atypical to provide evening service on a route that does not yet have midday service. The resulting estimate in additional costs for evening service is shown in Table 4-6, which totals about $118,300 annually. Ridership per hour during the evening hours is expected to be much lower than the regular service hours. A conservative estimate for this new service would be about 37.5% of the average daytime ridership, leading to an additional 6,700 riders a year.

Service Expansion Project 3: Saturday Service

BVT does not currently offer weekend service. However, the public frequently requests weekend service. Table 4-7 shows the operating statistics of potential expansion of BVT to include Saturday service. Similar to the evening service shown above, the Saturday service would include only the routes that operate all day (Old Airport Road, Moore Street/ Highway 11 and Euclid Avenue Circulator). With an all day Saturday service operating from 9:15 am until 6:05

pm, the daily requirement would be 26.50 revenue hours. Assuming 52 days of Saturday service per year, the annual operating cost would be approximately $71,050. The ridership for such a service is expected to be close to 8,000 passengers a year, based on a ridership rate of 50% of typical weekday service.

Service Expansion Project 4: Old Abingdon Highway Route Midday Service

In the new service structure schedule, the Old Abingdon Highway Route operates morning service from 7:15 am to 10:05 am, and then afternoon service from 2:15 pm to 6:05 pm, Monday through Friday. To increase the hours to operate in the midday and consistently match the schedule of the other three routes, it would take an additional 4.17 revenue hours per day, shown in Table 4-8. This increases the costs of the route by almost $54,800 annually by using the average cost per revenue hour for the system. The ridership is expected to increase by about 7,100 riders under two assumptions: the ridership on this route will be similar to the East Bristol/East Ridge Route because of similarities in location, alignment, and land-use and the midday ridership is the same as the average ridership throughout the day.

Table 4-7. Addition of Saturday Service

	New Saturday Service (New Service Structure)
Daily Revenue Hours (Saturday)	26.50
Annual Days of Operation	52
Annual Revenue Hours	1,378
Annual Operating Cost	$71,050
Annual Ridership	7,992

Table 4-8. Addition of Old Abingdon Highway Route Midday Service

	Old Abingdon Hwy Route without Midday Service	Old Abingdon Hwy Route with Midday Service	Difference
Daily Revenue Hours	6.67	10.83	4.17
Annual Days of Operation	255	255	0
Annual Revenue Hours	1,700	2,763	1,063
Annual Operating Cost	$87,652	$142,435	$54,782
Annual Ridership	11,300	18,363	7,063

Table 4-9. Addition of Old Abingdon Highway Route Evening Service

	Old Abingdon Hwy Route without Evening Service	Old Abingdon Hwy Route with Evening Service	Difference
Daily Revenue Hours	10.83	13.83	3.00
Annual Days of Operation	255	255	0
Annual Revenue Hours	2,763	3,528	765
Annual Operating Cost	$142,435	$181,878	$39,443
Annual Ridership	18,363	20,269	1,907

Table 4-10. Addition of Old Abingdon Highway Route Saturday Service

	Old Abingdon Hwy Route Saturday Service
Daily Revenue Hours (Saturday)	8.83
Annual Days of Operation	52
Annual Revenue Hours	459
Annual Operating Cost	$23,683
Annual Ridership	2,290

Service Expansion Project 5: Old Abingdon Highway Route Evening Service

Table 4-9 above contrasts operating statistics of Service Expansion Project 4 with the additional hours and cost to provide evening service for the Old Abingdon Highway Route. The difference in daily revenue hours is three hours, leading to a total of 765 hours annually costing about $39,500 using the average cost per revenue hour. Ridership for the evening hours is estimated using a 37.5% projection of typical daytime ridership productivity for the Old Abingdon Highway Route, yielding an additional 1,900 riders annually.

Service Expansion Project 6: Old Abingdon Highway Route Saturday Service

The sixth and final service expansion project is the introduction of Saturday service for the Old Abingdon Highway Route, shown in Table 4-10. A schedule starting at 9:15 am running all day hourly service with buses returning at 6:05 pm would require 8.83 hours of revenue service. The added costs associated with running this service for 52 Saturdays a year would total approximately $23,700. Using a conservative approach to ridership projections, the Saturday service on the Old Abingdon Highway Route would yield approximately 2,300 riders a year. Additionally, these statistics can be added to the values in Table 4-7 to reveal the costs for Saturday service for all four routes.

CHAPTER 5: OPERATIONS PLAN

CHAPTER 5: OPERATIONS PLAN

Throughout the 6-year period of this TDP, the operations of BVT will change significantly. All three of the fixed-routes currently offered will change alignments that better reflect rider demand. Starting with the existing service, this chapter reveals the operating plans throughout the 6-year life of the TDP. The service changes are charted clearly on a year-by-year basis to show the modifications that can be reasonably expected through 2021. The operations have been planned and developed in concert with the major goals, objectives, and standards from Chapter 2, and constructed from ideas and feedback from a variety of sources earlier in this text.

Throughout the 6-year period of this TDP, the operations of BVT will change significantly. All three of the fixed-routes currently offered will change alignments that better reflect rider demand

5.1 EXISTING SERVICE OVERVIEW

BVT's existing service has not had significant realignment in years. Chapter 3 described the existing services, which includes maps and descriptions of all three fixed-routes, as well as the modest but very important demand-response service. Overall, the system ran 7,470 revenue hours and 98,379 revenue miles in FY 2015. FY 2014 observed the highest ridership in years with more than 95,000 trips. An increase in fares however led to a severe drop in ridership, totaling 57,762 in FY 2015. Through interviews with riders and drivers, as well observation of the system, operational difficulties in the form of overcrowding and poor on-time performance were identified. Upon further investigation, it was noted that the likely cause of these issues were stemming from new development around the Exit 7 area, leading to overwhelming demand for the Exit 7/Walmart Route. A large number of boardings and alightings take place at Walmart, sometimes forcing passengers to wait for the next bus. With the improvements identified in Chapter 4 and scheduled in this chapter, these operational challenges should be resolved with additional room remaining for growth.

5.2 PLANNED SERVICE

Bristol Transit is committed to delivering reliable transit services to the public that are productive and efficient. Part of that commitment is reacting to demand for transit and providing an appropriate corresponding level of service. The demand for service to the Exit 7/Walmart Route has encouraged a new streamlined version of the route called the Moore St/Highway 11 Route, shown in Figure 4-5. This will not impact the revenue service hours and

Table 5-1. Planned Service Levels for FY 2016 - FY 2021

	Service Change Impacts		
Fiscal Year	Service Description	Annual Service Hours Change	Annual Service Miles Change
2016		-	-
2017	Exit 7/Walmart Route change to Moore Street/Highway 11 Route	0	-8,387
	East Bristol/East Ridge Route change to Old Airport Road Route	1,062	19,627
	Mall Route Change to Euclid Avenue Circulator	0	1,318
	Old Abingdon Highway Route Implementation	1,700	22,670
2018	-	-	-
2019	-	-	-
2020	-	-	-
2021	-	-	-

will decrease the revenue service miles by more than 8,000 miles annually. The East Bristol/East Ridge Route will undergo changes, stretching the alignment out to Walmart to alleviate some of the overcrowding from the Exit 7/Walmart Route. Increasing the service to an all day schedule also will give more riders access to these activity centers throughout the day. The result of these changes for the East Bristol/East Ridge Route, now called the Old Airport Road Route, will be an increase of 1,020 revenue hours a year, and 19,627 miles. More details on the costs and ridership of the route change is located in Chapter 4. Low ridership and decreasing demand for service to the Bristol Mall has led to restructuring of the Mall Route as well. The new alignment, shown in Figure 4-6 as the Euclid Avenue Circulator, retains the same revenue hours, but increases the revenue miles to reach more of downtown Bristol. A fourth route will be added to the fixed-route service, as shown in Figure 4-5. The new route will initially operate during peak service only, so service hours will only increase by 1,742 annually, while service miles increase by 22,670.

Route schedules were developed to show the route times with scheduled time points that can be used for the 2017 route restructuring. Full schedules are shown for each of the routes in Appendix C. The schedules account for the approximate speed of each segment along each route, estimating the time it should take for each portion of the route to be completed. Once the restructured routes are implemented, this information should be made available at the Downtown Transfer Center, online, and onboard the buses. Table 5-2 shows a summarized route schedule, showing the start and end time for each of the routes (without the expansion of evening service). The daily route hours and miles are shown in Table 5-2.

5.3 FACILITY AND CAPITAL PROJECTS

The final section of this chapter describes the capital projects that will directly influence the operating plans. While Chapter 6 describes the capital improvement program in detail, this section is intended to offer a brief introduction to projects that coincide with the aforementioned operations plan.

Electronic Fareboxes – BVT plans to purchase and install electronic fareboxes in the existing fleet throughout the first half of the TDP lifespan. The current cash box used leads to unnecessary delays for passengers boarding the vehicles, which contributes to poor on-time performance. Replacement of these fareboxes will provide greater accountability and ridership data collection as well as improve the predictability of the buses and the overall rider experience.

Bus Stop Infrastructure – Bristol intends to purchase a series of bus stop signs and shelters to improve the visibility of the system as well as help consolidate the number of stops on a given route. The current flag stop system increases the number of times the buses must stop for passengers because passengers are free to request a stop anywhere. With a system of stops in place, the buses will make fewer stops leading to more efficient service and an improved overall experience.

Bristol intends to purchase a series of bus stop signs and shelters to improve the visibility of the system as well as help consolidate the number of stops on a given route

Table 5-2. 2017 Route Schedule Summary

Route	Start	End	Hours	Miles
Euclid Ave Circulator	7:15 AM	6:05 PM	10.83	117.4
Moore Street/Highway 11	7:15 AM	6:05 PM	10.83	116.7
Old Airport Road	7:15 AM	6:05 PM	10.83	168.0
Abingdon Highway (AM)	7:15 AM	10:05 AM	2.83	38.1
Abingdon Highway (PM)	2:15 PM	6:05 PM	3.83	50.8
Total Daily Hours & Miles			39.15	491.0

CHAPTER 6:
CAPITAL IMPROVEMENT PROGRAM

CHAPTER 6: CAPITAL IMPROVEMENT PROGRAM

This chapter presents the Capital Improvement Program (CIP) required to carry out the operations and services set forth in the Operations Plan outlined in Chapter 5 including vehicles, facilities, and equipment. The recommendations in the CIP reflect those projects for which BVT reasonably anticipates local funding to be available. Recommendations for vehicles, passenger amenities, and technology upgrades are described below.

6.1 VEHICLE REPLACEMENT AND EXPANSION PROGRAM

This section presents the vehicle replacement and expansion program, including vehicle life cycles, a replacement schedule, and costs. As noted in Chapter 1, BVT currently operates a fleet of five vehicles for its transit services. Given that all revenue service vehicles in the fleet will exceed their service life within the timeframe of this document, vehicle replacements and upgrades will be an important component of the capital program. The revenue service fleet is comprised of four cutaway body-on-chassis minibuses and one 10-passenger van. All vehicles are ADA-accessible. All cutaway minibuses are diesel-powered, and the van is gasoline-powered. Vehicle capital costs include replacement costs in the first 2 years of the TDP timeframe and vehicle phase-outs and upgrades in the subsequent 4 years.

The vehicle replacement and expansion program was developed using FTA's and the Department of Rail and Public Transportation's (DRPT) useful life policy. This policy requires a minimum of 4 years or 100,000 miles for each BVT vehicle before it becomes eligible for replacement. By this metric, all of the vehicles in the fleet will become eligible for replacement during the years covered by this TDP. The plan also is based on historical vehicle usage, the past purchasing patterns for BVT and the anticipated availability of local funds. The proceeds from a vehicle sale at the time of replacement are normally used towards the local match. BVT typically plans to purchase one new vehicle per year, and the recommended replacement schedule reflects this purchasing pattern. Table 6-1 summarizes the current inventory and recommended replacement year. A detailed vehicle inventory table can be found in Appendix D. Vehicle replacement will be important to avoid high operating costs associated with over-age vehicles and to maintain vehicle reliability.

BVT typically plans to purchase one new vehicle per year, and the recommended replacement schedule reflects this purchasing pattern

Table 6-2 provides the overall vehicle replacement and upgrade program for FY 2016 through FY 2021. Through FY 2019, new revenue service vehicles will be of similar types to those used in the current fleet, that is, ADA-accessible cutaways and vans. Beginning in FY 2020, BVT plans to upgrade its fleet at a rate of one vehicle per year from its existing cutaway fleet to a fleet of medium-duty buses similar to BTT's fleet that holds approximately 25 passengers. While

Table 6-1. Vehicle Inventory with Replacement Year Estimate

Bristol Virginia Transit Vehicle ID No.	Vehicle Type	Number of Passengers	Model Year	Total Mileage[1]	Estimated Replacement Year
1	Cutaway	19	2008	149,882	2016
2	Van	10	2006	109,010	2018
3	Cutaway	19	2011	58,500	2017
4	Cutaway	19	2012	31,237	2018
5	Cutaway	19	2012	24,489	2019

[1]Mileage information taken from DRPT OLGA database in February 2016

Table 6-2. Vehicle Program

Number of Vehicles	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total
Replacement							
Cutaway	1	1	1	1	0	0	4
Van	0	0	1	0	0	0	1
Upgrade							
Medium Bus	0	0	0	0	1	1	2
Total Vehicles	*1*	*1*	*2*	*1*	*1*	*1*	*7*
Vehicle Costs							
Replacement							
Cutaway	$80,000	$83,200	$86,528	$89,989	$0	$0	$339,717
Van	$0	$0	$43,264	$0	$0	$0	$43,264
Upgrade							
Medium Bus	$0	$0	$0	$0	$140,383	$145,998	$286,381
Total Projected Vehicle Costs	*$80,000*	*$83,200*	*$129,792*	*$89,989*	*$140,383*	*$145,998*	*$669,362*

the actual costs will vary at the time of purchase, estimates are based on unit costs of $80,000 for a cutaway, $40,000 for a van, and $120,000 for a medium-size bus in FY 2016 dollars. The unit costs for cutaways and vans are conservative estimates based upon BVT's past purchases of similar vehicles. The unit costs for medium-size buses are based on local market research. The bus cost estimates include a 4.0% annual escalation rate. The total projected vehicle cost for the 6-year CIP period is about $669,000.

6.2 MAJOR SYSTEM MAINTENANCE AND OPERATIONS FACILITIES

BVT does not anticipate any maintenance and operations facility projects throughout the time period of this TDP.

10 bus shelters are planned for installation at the more heavily-used stop locations throughout the service area

6.3 PASSENGER AMENITIES AND TECHNOLOGY

The overall program for non-vehicle capital expenses is shown in Table 6-3. BVT currently does not own or maintain any signage at any of its bus stops. The TDP anticipates the purchase and installation of 175 bus stop signs to be implemented in FY 2016. Also in FY 2016, 10 bus shelters are planned for installation at the more heavily-used stop locations throughout the service area. The total cost for sign purchase and installation is about $10,000, while the bus stop shelters cost is about $30,000 total. Both of these estimates were derived from similar project cost estimates in the state of Virginia.

Additionally, BVT plans to have on-board electronic fare collection systems in place on all of its transit vehicles in FY 2017. Because future buses will include this feature, only two of the buses will require a retrofit, which is reflected in the total cost in FY 2017 of $40,000. The cost estimate includes installation of complementary infrastructure at the bus garage such as a computer, farebox vault, and data probing system. Software costs, system design and training

Table 6-3. Non-Vehicle Capital Program

Project	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total
Bus Stop Shelters	$30,000	-	-	-	-	-	$30,000
Bus Stop Signs	$10,000	-	-	-	-	-	$10,000
On-Board Electronic Fare Collection	-	$40,000	-	-	-	-	$40,000
Total Non-Vehicle Capital Expenses	*$40,000*	*$40,000*	*-*	*-*	*-*	*-*	*$80,000*

The on-board electronic fare collection system cost includes two vehicle retrofits at $20,000 each.

costs, and testing and equipment installation costs also are included in the cost estimate. In addition to the benefits the technology upgrades will have for BVT's operations and its customers, these improvements will facilitate performance data collection and reporting for DRPT. BVT does not anticipate additional capital needs for any other passenger amenities or technology enhancements.

6.4 TOOLS AND EQUIPMENT

BVT does not anticipate any needs for additional tools and equipment.

6.5 ROUTE ENHANCEMENTS

Several route enhancements are planned for FY 2017 that involve a change in service hours. The route alignment from the existing East Bristol Route to the Old Airport Route and the addition of midday service will add an estimated $54,782 to the route's annual operating costs. However, the route will not require the purchase of any additional buses. The addition of the new Old Abingdon route requires will result in an additional $87,652 in annual operating costs. While this new service will require an additional cutaway bus for operations, this purchase has already been budgeted and therefore is not captured in this TDP. Service changes to the existing Walmart/Exit 7 and Mall routes will not have any impact on revenue hours, so capital and operating costs are assumed to remain relatively constant when compared to previous years.

CHAPTER 7: FINANCIAL PLAN

CHAPTER 7: FINANCIAL PLAN

Demonstrating the sustainability of the transit agency via a financially-feasible 6-year plan is a critical objective of the TDP. The capital and operating budgets have been examined, including expense forecasts and revenue projections by source, pivoting from the FY 2016 budget. As in the 2009 TDP, this chapter is organized into three sections: Operation and Maintenance Costs and Funding Sources (Section 7.1), Bus Purchase Costs and Funding Sources (Section 7.2), and Facility Improvement Costs and Funding Sources (Section 7.3).

7.1 OPERATION AND MAINTENANCE COSTS AND FUNDING SOURCES

The FY 2016 budget has been used as the baseline for developing revenue and expense forecasts. Proposed new service described in Chapter 5 is to take effect in FY 2017, increasing operating costs by approximately $142,400. By the end of the TDP period in FY 2021, total operating costs are projected to grow to $568,414, as a result of service increases and an assumed 2.5% per year inflation rate.

Transit operating revenue sources are:

- Federal (Section 5307 and Preventive and Maintenance funds)
- State (Mass Transit Trust Fund)
- Farebox
- City of Bristol general funds

State operating assistance funds are assumed to increase at varying rates, based on the 6-year DRPT forecast of operating assistance from the Mass Transit Fund. As shown in Table 7-1, state operating assistance is expected to increase at a higher rate than the inflation rate applied to operating costs (2.5%), with the exception of the final projected fiscal year. Federal funds are assumed to cover 50 percent of BVT's net operating deficit (operating expenditures minus state and farebox revenues).

It is important to note that the expected percent increase in the State Mass Transit Fund may not equate to the increase in funding to BVT by the state, and the exact amount of state funding will depend on several factors including a performance evaluation. Starting in 2014, Senate Bill 1140 introduced a new method for state funding allocation separated into two categories, traditional and performance-based. The traditional category is calculated using the standard used since 1987, in which operating assistance is allocated to each system based on their total operating costs relative to the total operating costs for all transit providers receiving state operating assistance. The traditional method is applied to the first $160 million in state funding, after which, a performance-based method is used.

Table 7-1. State Operating Assistance Rate Increases

Year	Annual Increase
FY 2016 to FY 2017	2.79%
FY 2017 to FY 2018	2.86%
FY 2018 to FY 2019	2.83%
FY 2019 to FY 2020	2.63%
FY 2020 to FY 2021	2.44%

The performance-based method assesses a combination of net cost per passenger (50%), customers per revenue hour (25%), and customers per revenue mile (25%). The first year that the new operating assistance formula was introduced, BVT had nearly a $22,000 reduction in state operating assistance ($106,821 in FY 2013 down to $84,992 in FY 2014). The loss represented a 20% reduction in state operating assistance. In FY 2015, the first year that the distribution of traditional and performance-based funds was available, $61,330 (64.3%) came from the traditional method while the remaining $34,054 (35.7%) came from the performance-based method. In FY 2016, BVT expects to receive $59,132 (62.72%) in traditional funding and $35,153 (37.28%) in performance-based funding.

Table 7-2. Financial Plan for Funding Annual O&M Costs (Costs in Year of Expenditure Dollars)

TDP Financial Plan for: Service O&M Costs	FY2016 (Base Year)	FY2017	FY2018	FY2019	FY2020	FY2021
Annual Revenue Hours						
Fixed Route	7,781	10,554	10,554	10,554	10,554	10,554
Demand-Response	751	751	751	751	751	751
Annual Operating Costs	$442,751	$585,185	$599,814	$614,810	$630,180	$645,935
Anticipated Funding Sources						
Federal	$148,224	$208,867	$214,796	$220,883	$227,220	$233,814
State	$94,285	$96,916	$99,687	$102,508	$105,204	$107,771
Farebox	$52,017	$70,535	$70,535	$70,535	$70,535	$70,535
Farebox Recovery Ratio	11.7%	12.1%	11.8%	11.5%	11.2%	10.9%
Estimate of Local Gov't Funding	$148,225	$208,867	$214,796	$220,884	$227,221	$233,815
Local Gov't Funding Percentage	33.5%	35.7%	35.8%	35.9%	36.1%	36.2%

1. FY 2017 service hour increase based on service plans described in Chapter 4 and 5.
2. FY 2016 O&M costs based on City of Bristol FY 2016 budget. FY 2017 O&M costs based on Chapter 4 service structure projections; FY 2018-FY2021 based on 2.5% inflation rate.
3. State funding levels known for FY 2016, after which growth is assumed consistent with DRPT's SYIP (2017=2.79%, 2018=2.86%, 2019=2.83%, 2020=2.63%, 2021=2.44%).
4. State funding identified in this table are projections and subject to change.
5. Federal funding reflects 50% of net operating deficit (operating costs, minus state and farebox revenues).
6. Farebox revenues for FY 2017 assume same average ratio per revenue-hour as FY 2016.
7. Local funding required captures remaining amount of funds required.

Table 7-2 presents a financial plan for operating and maintenance costs for the base year of FY 2016, through FY 2021. Using the percent increase of the Mass Transit Trust Fund for state funding described above, the state funding increases from $94,285 in FY 2016 to $107,771 FY 2021. Federal funds are assumed to cover 50 percent of BVT's net operating deficit through FY 2021. Historically, BVT has not realized its potential allocated funds for federal funds. In FY 2016, BVT is eligible for $220,500 in federal funds, but is only able to obtain approximately $150,000 of these funds because of the restriction of federal funds being limited to 50% of the net operating deficit.

Additional revenues from fares are also shown in Table 7-2. The FY 2017 farebox revenue projection is assumed to increase at the same rate as service growth (i.e., average fare revenue per revenue-hour is assumed to remain constant). It is anticipated that proposed service changes will increase average farebox revenues per revenue hour as services become more streamlined and reliable. For the purpose of this financial analysis, however, it is conservatively assumed to remain similar to existing metrics. No fare increase is assumed for the TDP time period.

Finally, the remaining expenses after all revenues are accounted for remain funded by the local government. FY 2016 local funding is anticipated to be approximately $148,000. The following year, FY 2017, required local funding increases by about $60,640 to nearly $209,000 as a result of the proposed service expansion.

7.2 BUS PURCHASE COSTS AND FUNDING SOURCES

The vehicle replacement and expansion program presented in Chapter 6 was used to determine total vehicle costs during the TDP lifespan, as shown in Table 7-3. The funding source distribution for BVT is based on the distribution shown in the 2016 six-year improvement plan (SYIP). As in previous years, the majority of the funding for vehicles is assumed to come from the federal government. Specifically, 80% of the funding will come from FTA's Section 5307 Program, with the remainder coming from state and local governments. Through FY 2018, the state is expected to comprise 16% of the needed capital costs, making the local requirement only 4% of the total. The state portion of the distribution is higher than the traditional 80% federal /10% state/10% local split because of the availability of state capital bonds that are reflected in the SYIP. Beginning in FY 2019, these bonds are no longer expected to be available, thus resulting in reduction in the state contribution from 16% to 10%.

Table 7-3. Financial Plan for Funding Bus Purchases (Costs in Year of Expenditure Dollars)

TDP Financial Plan for: Bus Replacements	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Vehicle Costs						
Cutaway	$80,000	$83,200	$86,528	$89,989	-	-
Van	-	-	$43,264	-	-	-
Medium Bus	-	-		-	$140,383	$145,998
Total Vehicle Costs	*$80,000*	*$83,200*	*$129,792*	*$89,989*	*$140,383*	*$145,998*
Anticipated Funding Sources						
Federal - FTA 5307 Program	$64,000	$66,560	$103,834	$71,991	$112,306	$116,798
State	$12,800	$13,312	$20,767	$8,999	$14,038	$14,600
Local Gov't Funding Required	$3,200	$3,328	$5,192	$8,999	$14,038	$14,600

1. FY 16 replacement is for 2008 model year Cutaway (BVT ID #1)
2. FY 17 replacement is for 2011 model year Cutaway (BVT ID #3)
3. FY 18 replacements are for 2006 model year Van (BVT ID #2) and 2012 model year Cutaway (BVT ID # 4)
4. FY 19 replacement is for 2012 model year Cutaway (BVT ID 5)
5. FY 20 replacement and upgrade is for Cutaway purchased in 2016
6. FY 21 replacement and upgrade is for Cutaway purchased in 2017
7. Buses purchased through FY 18 assume 80% funding through FTA Section 5307 program, 16% funding from State, and the remaining 4% funding from local government.
8. Buses purchased from FY 19-21 assume 80% funding through FTA Section 5307 program, 10% funding from State, and the remaining 10% funding from local government.

Table 7-4. Financial Plan for Funding Facility Purchases (Costs in Year of Expenditure Dollars)

TDP Financial Plan for: Funding Facility Improvements	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Anticipated Costs						
Bus Stop Shelters	$30,000	-	-	-	-	-
Bus Stop Signs	$10,000	-	-	-		-
On-Board Electronic Fare Collection	-	$40,000	-	-		-
Total Non-Vehicle Capital Expenses	*$40,000*	*$40,000*	*$0*	*$0*	*$0*	*$0*
Anticipated Funding Sources						
Federal - FTA 5307 Program	$32,000	$32,000	$0	$0	$0	$0
State	$6,400	$6,400	$0	$0	$0	$0
Local Gov't Funding Required	$1,600	$1,600	$0	$0	$0	$0

1. Facility improvement costs identified in Chapter 6 of TDP
2. Facility purchases through FY 18 assumes 80% funding through FTA Section 5307 program, 16% funding from State, and the remaining 4% funding from local government

7.3 FACILITY IMPROVEMENT COSTS AND FUNDING SOURCES

The final section of this chapter examines the funding needed for planned facility improvements outlined in the capital improvement program (see Table 7-4). The only years with planned capital costs (other than vehicles outlined in the previous section) are FY 2016 and FY 2017. Half of the costs in the TDP lifespan come from marking bus stops and installing bus shelters, with the proposed on-board electronic fare collection in FY 2017 comprising the other half. The funding source distribution for these capital costs are estimated in the same method as the vehicle costs, with 80% coming from federal, 16% coming from state, and the remaining 4% coming from the City of Bristol through FY 2018.

CHAPTER 8:
TDP MONITORING AND EVALUATION

CHAPTER 8: TDP MONITORING AND EVALUATION

The 2016-2021 TDP presented an in-depth look into BVT's service and cost characteristics. Key elements of the investigation of the transit system include:

- An overview of the transit system, complete with a history of BVT, as well as governance, organization, and service area descriptions
- Details of the current fare structure, vehicle fleet, facilities, security program, intelligent transportation systems program, data collection and reporting methodologies, and public outreach practices
- Development of a practicable set of goals, objectives, and performance standards for future transit service development guidance
- An existing service characteristics evaluation complete with identification of strengths and weaknesses
- A peer analysis comparing the service and financial characteristics of BVT to other similarly sized agencies
- Distribution of an on-board survey, resulting in the capture of BVT rider characteristics
- A ridership inventory that showed where and when passengers are using transit services, leading to a greater understanding of route performance and transit demand
- Non-rider interviews of interested citizens and regional stakeholders to help identify services that may entice new riders
- A list of potential service expansion project descriptions (including a major route restructuring) and the resulting changes in service requirements, costs, and ridership
- A 6-year operations plan that balances transit demand and projected revenue year by year
- A CIP detailing the vehicle and facility needs, constrained by financial projections
- A financial plan that demonstrates the ability of BVT to balance the needs of the system with the financial constraints of projected revenues over the 6-year TDP lifecycle.

This list represents the current and future outlook of BVT as currently assessed in 2016. In order to achieve maximum utility of the TDP, these elements must be referenced and evaluated during the TDP's 6-year lifespan. Coordination with other transportation and land-use planning efforts is necessary to ensure a successful future for public transit in Bristol. Annual updates to DRPT that report the progress of service and facility improvements as well as changes in the operating environment are of great importance so DRPT can provide needed support to BVT both financially and through transit-friendly policy.

> Coordination with other transportation and land-use planning efforts is necessary to ensure a successful future for public transit in Bristol

8.1 COORDINATION WITH OTHER PLANS AND PROGRAMS

The City of Bristol is completing a new Comprehensive Plan, which is expected to be completed in 2016. The Comprehensive Plan should be concurrent with this TDP by incorporating the goals and objectives outlined in Chapter 2. On a larger scale, the MPO that includes Bristol, VA conducts the LRTP and transportation improvement program (TIP), both of which should incorporate elements of the TDP into the next updates of these plans. On a statewide scale, the Statewide Transportation Improvement Program (STIP), the SYIP, and the statewide multimodal LRTP (VTrans2035) should provide the appropriate references to the TDP.

8.2 SERVICE PERFORMANCE MONITORING

Chapter 2 identified a set of goals, objectives, and standards that BVT should strive to maintain. Monitoring BVT's performance over time will help BVT consistently meet or exceed these goals. It is therefore critical to the long-term success of the transit system for BVT's management to regularly track its performance. In cases where performance

fails to meet the requirements in this TDP, corrective action is appropriate, which can come in the form of route realignment, changes in service frequency, and/or span of service. It is recommended that BVT create a formal reporting process to track ridership, service hours, service miles, operating costs, and capital costs. Additional performance metrics can be derived by combining these measures (ex. passengers per hour, passengers per mile, cost per passenger trip, etc.). This reporting process would be reviewed monthly by BVT and City of Bristol staff to ensure timely response to any changes in performance.

8.3 ANNUAL TDP MONITORING

In addition to the 6-year TDP, the guidelines set forth by DRPT require an annual update highlighting the recent progress in implementing recommendations. Titled the TDP Update, this document also will include any subsequent changes to the TDP. Major elements will include, but are not limited to, system expansions or reductions, new service or facilities being planning or implemented, relevant modifications in governing bodies or agency organization, fare structure changes, and other relevant changes that would impact the system or agency. More specifically, the recommended contents of the TDP Update are as follows:

- A monthly ridership summary that spans the previous fiscal year
- A description of each of the TDP goals and objectives that have advanced during the previous 12 months
- A description of any implemented service and facility improvements during the previous 12 months, including those that were identified in this TDP
- An update to the list of service and facility improvement recommendations in this TDP. This should clearly identify any planned changes of service and facility improvement timelines, as well as any improvements that are added or eliminated. Each successional update should add one year to the timeline to maintain a 6-year outlook
- A summary of the operating and capital costs and funding by source (federal, state, local). This should include actual expenses and revenues for the most recently complete fiscal year as well as the projections for the current fiscal year
- Updates to the operating and capital financial plan tables presented in Chapter 7. Each successional TDP Update should extend one year out to maintain a 6-year planning period for the financial tables.

Appendix A:
On-Board Survey Form

Dear Rider: Bristol, VA Transit is presently evaluating existing and future transit service needs. Please take a moment to complete this survey regarding your experience with Bristol, VA Transit. ***Thank you for your help.*** *Date*_____ *Route*_____ *Approximate Time*_____

About You

1. I am: ___ Male ___ Female

2. My age is:
___ 19 or under ___ 30-39 ___ 50-59
___ 20-29 ___ 40-49 ___ 60 or older

3. My ethnic background is primarily:
___ Caucasian ___ African-American ___ Asian
___ Hispanic ___ Native American ___Other

4. I education level is:
___ Did not graduate from High School
___ High School Graduate/GED
___ Some College
___ College degree or higher

5. My household's total annual income is:
___ Under $10,000 ___ $30,000-$40,000
___ $10,000-$20,000 ___ $40,000-$50,000
___ $20,000-$30,000 ___ Over $50,000
___ Prefer not to answer

6. How often do you ride Bristol, VA Transit?
___ Less than once a month ___ Once or twice a month
___ 1 day a week ___ 2-3 days a week
___ 4 or more days a week

7. How long have you been a rider on Bristol, VA Transit?
___ Less than one year ___ 1-2 years
___ 3-5 years ___ More than 5 years

About Your Trip

8. Where did your current trip begin?
___ Your home ___ Work ___ School/College
___ Shopping ___ Medical/Dental ___ Service Agency
___ Social/Recreational ___ Other _____

9. Where was that located? *(please provide address, major intersection or nearby landmark)*
_____

10. How did you get to the bus?
___ Walk ___ Bike
___ Dropped Off ___ Drove

11. Where are you going now?
___ Your home ___ Work ___ School/College
___ Shopping ___ Medical/Dental ___ Service Agency
___ Social/Recreational ___ Other _____

12. Where is that located? *(please provide address, major intersection or nearby landmark)*
_____

13. Does this trip include using a Bristol, TN route?
___ Yes ___ No

14. Why did you ride the bus today?
___ I don't have a car ___ Car needs repairs
___ To save time ___ Prefer to ride the bus
___ To save money ___ Disabled/Unable to drive

About Our Service (please circle your selection)

15. Please rate the following characteristics of Bristol, VA Transit's service:

	Very Good	Good	Okay	Poor	Very Poor	Not Sure
a. Frequency of bus service	5	4	3	2	1	NS
b. Areas that are served by bus routes	5	4	3	2	1	NS
c. Bus on-time performance	5	4	3	2	1	NS
d. Hours of bus service	5	4	3	2	1	NS
e. Availability of schedules and route information	5	4	3	2	1	NS
f. Cost of bus fare	5	4	3	2	1	NS
g. Sense of security on buses and at transit station	5	4	3	2	1	NS
h. Cleanliness of buses and transit station	5	4	3	2	1	NS
i. Courtesy and friendliness of bus drivers	5	4	3	2	1	NS
j. Overall Service	5	4	3	2	1	NS

16. How important are the following service improvements to you?

	Very Important	Somewhat Important	Not Important	Not Sure
a. More frequent bus service	3	2	1	NS
b. More direct bus routing to destinations	3	2	1	NS
c. Late evening bus service	3	2	1	NS
d. Better identification of bus stop locations	3	2	1	NS
e. Saturday service	3	2	1	NS
f. Service expanded outside of the City	3	2	1	NS
g. Improved security on buses and at the transit station	3	2	1	NS
h. Other _____	3	2	1	NS

Appendix B:
Title VI and Triennial Review Reports

Bristol Virginia Transit

Title VI Program

Approved

City Manager

6/4/15

Date

Introduction

This program reflects that Bristol Virginia Transit is committed to ensuring that its services are fully accessible to all individuals without regard to race, color, national origin, age and gender.

Authorities

Title VI of the Civil Rights Act of 1964 provides that no person in the United States shall, on the grounds of race color or national origin, be excluded from participation in, be denied the benefits of or be otherwise subjected to discrimination under any program or activity receiving federal financial assistance.

Civil Rights Restoration Ace of 1987 broadened the scope of Title VI coverage by expanding the definition of terms "programs or activities" to include all programs or activities of Federal Aid recipients, sub recipients and consultants, whether such programs and activities are federally assisted or not.

Federal Transit Administration Civil Rights Assurance

Bristol Virginia Transit hereby certifies that as a condition of receiving Federal financial assistance under the Federal Transit Act of 1964, as amended, it will ensure that:

No person on the basis of race, color, national origin, age or gender will be subjected to discrimination in the level and quality of transportation services and transit-related benefits.

Bristol Virginia Transit will compile, maintain and submit in a timely manner Title VI information required by FTA Circular 4702.1 and in compliance with the Department of Transportation's Title VI regulation, 49 CFR Part 21.9.

Bristol Virginia Transit will make it known to the public that those persons alleging discrimination on the basis of race, color, or national origin as it relates to the provision of transportation services and transit related benefits may file a complaint with the Federal Transit Administration and/or the U.S. Department of Transportation.

Bristol Virginia Transit is responsible for ensuring that all sub recipients of FTA funds comply with all applicable federal and state regulations and program requirements.

Introduction

Bristol Virginia Transit began services to the citizens of Bristol, Virginia in 1982. Bristol Virginia Transit has prepared this Title VI report to the Federal Transit Administration, (FTA), providing for a program to ensure that transit services made available is equitably distributed, and provides equal access and mobility to any person without regard to race, color, or national origin.

This report has been prepared pursuant to Title VI of the Civil Rights Act of 1964, FTA Circular 4702.1, "Title VI Program Guidelines for Federal Transit Administration Recipients," (26 May 1988), and FTA Circular 4702.1A, dated May 13, 2007 "Title VI and Title VI-Dependent Guidelines for Federal Transit Administration Recipients, and a recent Memorandum form the FTA's Director of Civil Rights outlining Title VI Program updates requirements and paperwork reduction.

Public Transportation Service

Bristol Virginia Transit operates three fixed routes offering service throughout the urbanized area of Bristol, Virginia. All routes provide service on weekdays. There is no service on Saturdays, Sundays or on nationally recognized holidays. Routes operate between the hours of 6:00 AM and 6:00 PM.

Bristol Virginia Transit minority customers utilize the services on a daily basis. All Bristol Virginia Transit services are available to all persons without regard to race, creed, color, religion, sex, age, or ethnic background.

General Reporting Requirements

Bristol Virginia Transit has submitted its annual Title VI assurance as part of its annual Certification and Assurance submission to FTA.

Title VI Complaint Procedures

Title VI complaints against the City and Transit System are investigated by the Office of the City Manager. Procedures for filing a complaint are available to members of the public upon written request.

Record of Title VI Investigations, Complaints, or Lawsuits

Over the reporting period Bristol Virginia Transit has not received and complaints or lawsuits alleging discrimination based on violation of the American with Disabilities Act of 1990 or Title VI related issues.

There are currently no lawsuits or complaints alleging that Bristol Virginia Transit has discriminated against any one on the basis of race, color or national origin with respect to service or other transit benefits.

Recordation of Title VI Investigations, Complaints and Lawsuits

The City and Transit System maintains a list of any active investigations that allege discrimination on the basis of race, color, or national origin. This list includes the date of the investigation, lawsuit or complaint; a summary of the allegation(s); the status of the investigation, lawsuit or complaint; and actions taken by the City and Transit System or sub recipient in response to the investigation, lawsuit or complaint.

Limited English Proficiency

Bristol Virginia Transit has taken responsible steps to ensure meaningful access to the benefits, services, information and other important portions if its activities for individuals who are Limited English Proficient (LEP). The City has no formal written policy on LEP however and assessment performed by Bristol Virginia shows that it serves very few LEP persons.

Notification of Beneficiaries

The City and Transit System provides information to the public and sub recipients regarding its Title VI obligations.

Pending Applications for Financial Assistance provided by the Federal Transit Administration

Bristol Virginia Transit currently has pending applications for Section 5307 funds.

Civil Rights Compliance Review Activities

Bristol Virginia Transit's last Title VI update was approved by FTA in 2011.

Analysis of Construction Projects

Bristol, Virginia's urbanized area is under 200,000 population.

There are currently no construction projects funded with FTA funds. All future construction projects will follow guidelines in FTA Circular 4702.1A.

Public Participation

Bristol Virginia Transit relies on the Bristol Urban Area Metropolitan Planning Organization Public Participation Plan adopted October 29, 2007 and amended on December 15, 2011. This plan is available to any and all persons upon request.

Environmental Justice

On February 11, 1994, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations". The City recognizes that the goal of Environmental Justice is to ensure that any adverse human health or environmental effects of any government activities do not disproportionately affect minority or low-income populations. The City recognizes that Environmental Justice does not intend to provide preferential treatment to these populations, but rather fair treatment to all populations.

Specific to transportation, Executive Order 12898 has been issued in order to ensure that all federally funded transportation-related programs, policies, and activities that have the potential to cause adverse affects, specifically consider the effects on minority and low-income populations.

The City is committed to the value of protecting individuals from discrimination on the basis primarily of race, color and national origin in transportation programs and activities as required under Title VI of the 1964 Civil Rights Ace.

Service Standards and Policies for Fixed-Route Transit Providers

FTA Circular 4702.1B outlines additional reporting guidelines for recipients of FTA funding that operate fixed route transit service. Title VI regulations require recipients to insure that no person or group of persons shall be discriminated against with regard to the routing, scheduling, or quality of the public transportation services provided on the basis of race, color, or national origin. To ensure compliance with this requirement, all providers of fixed-route public transportation shall incorporate system-wide service standards and system-wide service policies in their Title VI Program. *(Program Note: Additional reporting requirements are identified for transit agencies operating 50 or more vehicles. Bristol Virginia Transit operates three regular weekday fixed routes in peak service and qualifies for a reduced level of reporting.)*

Effective Practices to Fulfill the Service Standard Requirement – *FTA requires all fixed route transit providers to develop quantitative standards for all fixed route modes of operation for the following service indicators.*

1. **Vehicle Load** – Vehicle load can be expressed as the ratio of passengers to the total number of seats on a vehicle. Bristol Virginia Transit will strive to maintain vehicle loads that do not exceed the vehicles achievable seating capacities for all fixed routes in service. Historically, regular weekday transit routes have had very few standing passengers. However, to ensure service quality any route consistently operating at more than 100% of its seating capacity will be evaluated to reduce overcrowding. The following vehicle load factors represent peak and off-peak hours of service.

Bristol Virginia Transit Vehicle Load Factors (Fixed Route*)

Route	Vehicle	Seated	Standing	Total	Load Factor	
Exit 7/Wal-Mart	Ford E-350	19	8	27	1.27	1
East Bristol	Chevrolet Supreme	19	8	27	1.27	1
Bristol Mall	Ford E-350	19	8	27	1.27	1

***No other modes of fixed route service are provided by Bristol Virginia Transit**

2. **Vehicle Headways** – Vehicle headway is the amount of time between vehicle frequencies on a given route and is typically measured in minutes (i.e. every 30 minutes). Bristol Virginia Transit's headways are 60 minutes for all fixed routes; therefore vehicle frequency per route is one vehicle per hour. This includes both peak and off-peak service.

   System headways have increased over the years to account for urban expansion from the city core, specifically the commercial areas at I-81 Exit 7 to the urban fringe. Although this has reduced service frequency, the headway time adjustments have been applied to all fixed routes to maintain consistency in transit schedules and transfers between routes.

3. **On-Time Performance** – On-time performance is a measure of runs completed as scheduled between route origins and destinations. Bus time performance can be impacted by various factors including traffic congestion, detours, weather, and a larger than anticipated number of boardings of passengers with accessibility needs.

   "On-time" for Bristol Virginia Transit fixed-route service is defined as vehicles departing not more than one (1) minute early or ten (10) minutes late at each published time-point. In order to provide flexibility for route deviation services, a fifteen-minute layover at the Downtown Transit Center is programmed for each route (Note: A 60-minute headway for all BVT routes consists of a 45 minute route and a 15 minute layover except for the Exit 7/Wal-Mart Route). BVT's performance objective goal is 80% or more for on-time service. Any route consistently operating at more than 15 minutes late will be evaluated for options to restore on-time performance.

4. **Service Availability** – Service availability is a general measure of the access and distribution of routes within a transit provider's service area. Bristol Virginia Transit operates a system of three fixed-routes, which provides service to commercial and residential areas as well as medical campuses and educational institutions. Approximately 75 percent of the total population of Bristol, Virginia is within ½ mile of bus service.

Effective Practices to Fulfill the Service Policy Requirement – *FTA requires all fixed route transit providers to develop quantitative policies for all fixed route modes of operation for the following service procedures.*

1. **Vehicle Assignment Policy** – Vehicle assignment refers to the process in which transit vehicles are placed in service in reference to vehicle size, age, etc. Bristol Virginia Transit maintains a fleet of four body-on-chassis buses for fixed-route

service. As such, all routes are provided service with the same vehicle type and vehicle features.

2. **Transit Amenities Policy** – Transit amenities refer to fixed items of comfort and convenience available to the general riding public. Bristol Virginia Transit does not maintain any bus shelters or stand-alone transit stops on any fixed routes. Scheduled route stops include designated facilities (i.e. commercial and medical areas); however, all routes can be boarded by passenger flag stops along the route. The Downtown Transfer Center is available to all routes and includes a waiting area, restrooms, and route information.

BRISTOL VIRGINIA TRANSIT
TITLE VI COMPLAINT FORM

Name:_____

Address:_____

Phone Number:_____(H) _____(W)

Email address:_____

Have you previously filed a Title VI Complaint with the City of Bristol, Virginia?
Yes_____ No_____

If yes give date filed:_____

Have you filed this complaint with any of the following agencies?

Transit Provider_____ Department of Transportation_____

Department of Justice_____ Equal Employment Opportunity Commission____

Federal Transit Administration_____ Other_____

Have you filed a lawsuit regarding this complaint? Yes____ No____

Name of Agency complaint filed with:_____

Contact Person:_____ Title:_____

Telephone Number:_____

On separate sheets, please describe your complaint. You should include specific details such as names, dates, times, route numbers, witnesses and any other information that would assist us in our investigation of your allegations. Please also provide any other documentation that is relevant to this complaint.

Please sign here:_____ Date:_____

Please mail your completed form to:

Director, Human Resources
Title VI Complaint
300 Lee Street
Bristol, Virginia 24201
276-645-7354

TITLE VI NOTICE TO BENEFICIARIES

The City of Bristol Virginia Transit provides services without regard to race, color, or national origin according to the provision contained in Title VI of the Civil Rights Act of 1964. To request additional information on Bristol Virginia Transit's Title VI Policy please contact 276-645-7474 to receive a copy of the City's Title VI Policy.

To file a Title VI complaint in regard to Bristol Virginia Transit please contact 276-645-7354 or email personl@bristolva.org.

LIMITED ENGLISH PROFICIENCY PLAN
Bristol Virginia Transit

This document serves as the plan for Bristol Virginia Transit (BVT) to provide services to Limited English Proficiency (LEP) individuals in compliance with Title VI of the Civil Rights Act of 1964 and Executive Order 13166: Improving Access to Service for Persons with Limited English Proficiency. The transit system has developed this Limited English Proficiency Plan to help identify reasonable steps to provide language assistance for LEP persons seeking access to BVT services. This plan details procedures on how to identify a person who may need language assistance, the ways in which language assistance may be provided, training staff, providing notice to LEP persons, and information for future updates.

FOUR FACTOR ANALYSES

In developing the LEP plan, the Bristol transit system undertook the U.S. Department of Transportation policy guidance to utilize the four factor LEP analysis for assessing language needs and determining what steps should be taken to ensure access for LEP persons. The four factors include: 1) number of LEP individuals in the service area, 2) frequency of contract with LEP individuals, 3) importance of the program, and 4) resources available and costs.

1) The number or proportion of LEP persons eligible in the service area who may be served or likely to encounter a transit program, activity, or service.

According to Census 2010 and Quick Facts 2009-2013, approximately 3.2% of Bristol's population speaks a language other that English at home. Of that population, 1.2% speaks English less than "very well". The Bristol transit service area is 1.7% Hispanic and has a total minority population of 9%. The following tables provide racial makeup and language spoken at home for the Bristol Tennessee Virginia service area.

Race and Hispanic Origin

Race and Hispanic	City of Bristol	
Total	17,436	
White	15867	91.0%
Black or African American	994	5.7%
American Indian and Alaska Native	53	0.3%
Asian	174	1.0%
Native Hawaiian and Pacific Islander	0	-
Two or more races	301	1.9%
Hispanic or Latino	297	1.7%

Source: U.S. Census Bureau, Census 2013

Language Spoken at Home

Language Spoken at Home	City of Bristol	
Population 5 years and over	16,749	
English only	16,208	98.2%
Language other than English	541	1.8%
Speak English less than "very well"	101	0.9%
Spanish	331	0.9%
Speak English less than "very well"	45	0.4%
Other Indo-European languages	77	0.3%
Speak English less than "very well"	0	0.2%
Asian and Pacific Island languages	133	0.4%
Speak English less than "very well"	56	0.3%

Source: U.S. Census Bureau, Census 2013

2) The frequency with which LEP individuals come in contact with a BVT program, activity, or service.

Bristol Virginia Transit assesses the frequency at which staff and operators have or could possibly have contact with LEP persons. This includes documenting phone inquires, request for translated documents, and surveying drivers. To date, BVT has had no requests for interpreters and no request for translated documents. Staff and drivers have had very little to no contact with LEP individuals. Currently, the frequency of contact with LEP persons associated with local public transportation services has been on a one-time basis and infrequent.

There is no large geographic concentration of any one type of LEP individuals in the transit service area and no identified social, service, professional, or leadership organizations that focuses on outreach or membership of LEP individuals.

3) The nature and importance of the program, activity, or service provided by the transit system to the community.

Public transportation can be vital to many people's lives, especially those that have no other means of transportation. A Bristol Transit ridership survey in 2006 indicated the primary trip purposes for transit customers were shopping and business, with medical trips being the second most identified trip. While Bristol Virginia Transit does provide an importation service for the community, the service is limited with no evening hours of service or weekend service available. Transit service is offered weekdays from 6:15 a.m. to 6:15 p.m., with two routes (buses) in operation in the morning and afternoon, and 3 routes (buses) in service for the mid-day hours, which tends to have the highest demand for service. ADA paratransit services are provided by one lift-equipped van and is operated citywide on a demand-response basis.

It is believed that any delay of access to information provided by BVT would not have serious implications on a LEP individual.

4) The resources available to BVT and the overall costs.

Funds available for Bristol Virginia Transit for LEP services would be derived entirely from existing operating budgets and compete with other operational requirements on an annual basis. It is anticipated that the cost of providing transit services will continue to grow, with the major potential for cost increases in the foreseeable future due to national trends, such as insurance and fuel costs.

No bilingual staff has been identified; however, oral interpreter and translation services have been established on as needed basis. BVT has also taken inventory of available organizations that the transit system could partner with for outreach and translation efforts.

LANGUAGE ASSISTANCE MEASURES

Bristol Virginia Transit's LEP program was established after review of the four factors in the DOT LEP Guidance. As a result of this analysis, the transit systems LEP process was based on the limited frequency of contact with different types of languages and the low percentage of identified LEP populations. As a public transportation agency serving very few LEP persons, the transit system does not maintain an extensive LEP plan but has taken reasonable steps to provide access to programs and activities for LEP persons.

Considering the relatively small scale of the Bristol Transit system, the small number of LEP individuals in the service area, and the limited financial resources, it is necessary to limit language aid to the most basic and cost-effective services. Language assistance measures currently available to Bristol Virginia Transit customers include:

1) Use of the Census Bureau's "I Speak Cards" by transit operators and staff to assist in identifying LEP individuals who need language assistance.
2) Several local resources are available, and maintained on file, for assistance with individuals with limited English proficiency. These include colleges and universities that provide foreign language curriculums that will provide translation services with advanced notice. In addition, the Bridge Refugee Service maintains a list of local translators.

STAFF TRAINING

It is important that staff members, especially those having contact with the public, know their obligation to provide meaningful access to information and services for LEP persons. Transit staff will be provided the LEP Plan and will be trained on procedures and protocols to follow. This information will also be part of the staff orientation process for new hires. Training topics include:

1) Understanding Title VI and LEP responsibilities;
2) Use of the "I Speak Cards";
3) How to access and use the oral interpretation services;
4) Documentation of language assistance requests.

PROVIDING NOTICE TO LEP PERSONS

In order to advise the public on their rights under Title VI, and to provide notice to LEP persons that language assistance measures are available, the following options are available and will be incorporated, as appropriate:

1) Notices indicating that language assistance is available posted at various municipal transit properties including on board vehicles.
2) Stating in documents and outreach materials that language services are available.
3) Working with community-based organizations and other stakeholders to inform LEP individuals of available services.
4) Providing statements in public notices that services are available for persons requiring special accommodations for disabilities or language assistance.

MONITORING AND UPDATING THE LEP PLAN

This plan is designed to be flexible and one that can be easily updated. At a minimum, the Bristol Virginia Transit system will follow the Title VI Program update schedule to review the LEP process. Each update should examine all plan components including:

1) How many LEP persons have been encountered?
2) What is the current LEP population in the service area?
3) Are the existing language assistance measures meeting the current needs?
4) Have available resources, such as technology, changed?
5) Were any complaints received?

DISSEMINATION OF THE LEP PLAN

Bristol Virginia Transit will post the LEP Plan on the transit page of the City of Bristol's website (www.bristolva.org). Copies the plan will be provided to any person or agency requesting a copy and LEP persons my obtain copies/translations of the plan upon request. Any questions or comments regarding this plan should be directed to Bristol Virginia Transit staff at 276-645-7384 or 276-645-7474.

Bristol Virginia Transit
LIMITED ENGLISH PROFICIENCY ASSESSMENT

Provider:	Bristol Virginia Transit
Date Completed:	May 8, 2015

1. Go to the U.S. Census website (www.census.gov) and list the racial make-up of each city or county you serve (number and percentage). (Enter the city or county name and state into the "population finder." Select "go." Select link for "fact sheet.")

City/County	White	Black or African American	American Indian or Alaska Native	Asian	Hispanic or Latino
Bristol Virginia	15,867 91.0%	994 5.7%	53 0.3%	175 1.0%	297 1.7%

2. Survey your drivers. Do they indicate that there is a need for language assistance for riders? If so, which languages?	No
3. Survey your receptionist, customer service representative, and schedule/dispatcher. Do they indicate that there is a need for language assistance for riders? If so, which languages?	No

4. Contact human service agencies. Do they indicate a need for language assistance for potential transit users? If so, which languages?

Agency	Response
Department of Social Services	No
Virginia Employment Commission	No

5. Contact local towns and cities, including the police departments. Do they indicate a need for language assistance for potential transit users? If so, which languages?	
Town/City/Department	**Response**
Police Department	Not for transit. They have Spanish to English software.
Fire Department	No

6. Contact the local school systems. Do they indicate a need for language assistance for potential transit users? If so, which languages?	
School System	**Response**
Bristol Virginia School System	No. There are no LEP in the school system using the transit for transportation to school.

7. Do the responses indicate a need for language assistance for potential transit users? If so, which languages? If yes, please prepare and submit an LEP plan.	No

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IV

230 Peachtree Street, NW
Suite 1400
Atlanta, GA 30303

June 4, 2015

Jay Detrick
City of Bristol, VA
300 Lee Street
Bristol, VA 24201

Re: Title VI Program Concurrence: City of Bristol, VA– Recipient ID: 1127

Dear Mr. Detrick,

This letter is to confirm that we received the City of Bristol's Title VI Program on May 8, 2015. This Title VI Program submission is required pursuant to Title VI of the Civil Rights Act of 1964; Title 49, Chapter 53, Section 5332 of the United States Code; and the FTA Circular 4702.1B, "Title VI Program Guidelines for Federal Transit Administration Recipients," effective October 1, 2012.

We have reviewed the program submittal and determined that it meets the requirements set out in the FTA's Title VI Circular, 4702.1B. Please plan to submit a Title VI Program by the next due date of October 1, 2017 by attaching it to your Recipient Profile in FTA's TEAM-Web. Your Title VI Program will expire 60 days after the due date, on November 31, 2017. If we have not received all required information by the time your Title VI Program expires, the City of Bristol may experience delays in processing grants or draw-down restrictions.

Thank you for your ongoing cooperation in meeting all of the FTA civil rights program requirements. A copy of this letter will be attached to your Recipient Profile in TEAM. Please contact me at (404) 865-5471 or at *Carlos.Gonzalez3@dot.gov* for any questions.

Sincerely,

Carlos A. Gonzalez

Carlos A. Gonzalez

cc: Tabitha Crowder, City Manager, City of Bristol (Electronic)
Monica McCallum, Regional Division Chief, FTA Civil Rights (Electronic)
Dr. Yvette G. Taylor, Regional Administrator, FTA Region IV (Electronic)

Appendix C:
2017 Route Schedules

APPENDIX C: 2017 ROUTE SCHEDULES

Euclid Avenue Circulator Route

		Outbound to Euclid Food City			Inbound to Downtown Transfer Center					
		Downtown Transfer Center	Kroger	Euclid Food City		Euclid Food City	Euclid Ave. & Moore St.	Moore St. & W. Mary St.	Downtown Transfer Center	
Block	From	1	2	3	Block	3	4	5	1	To
1	garage	7:15 AM	7:25 AM	7:33 AM	1	7:43 AM	7:55 AM	8:01 AM	8:05 AM	
1		8:15 AM	8:25 AM	8:33 AM	1	8:43 AM	8:55 AM	9:01 AM	9:05 AM	
1		9:15 AM	9:25 AM	9:33 AM	1	9:43 AM	9:55 AM	10:01 AM	10:05 AM	
1		10:15 AM	10:25 AM	10:33 AM	1	10:43 AM	10:55 AM	11:01 AM	11:05 AM	
1		11:15 AM	11:25 AM	11:33 AM	1	11:43 AM	11:55 AM	**12:01 PM**	**12:05 PM**	
1		**12:15 PM**	**12:25 PM**	**12:33 PM**	1	**12:43 PM**	**12:55 PM**	**1:01 PM**	**1:05 PM**	
1		**1:15 PM**	**1:25 PM**	**1:33 PM**	1	**1:43 PM**	**1:55 PM**	**2:01 PM**	**2:05 PM**	
1		**2:15 PM**	**2:25 PM**	**2:33 PM**	1	**2:43 PM**	**2:55 PM**	**3:01 PM**	**3:05 PM**	
1		**3:15 PM**	**3:25 PM**	**3:33 PM**	1	**3:43 PM**	**3:55 PM**	**4:01 PM**	**4:05 PM**	
1		**4:15 PM**	**4:25 PM**	**4:33 PM**	1	**4:43 PM**	**4:55 PM**	**5:01 PM**	**5:05 PM**	
1		**5:15 PM**	**5:25 PM**	**5:33 PM**	1	**5:43 PM**	**5:55 PM**	**6:01 PM**	**6:05 PM**	garage

Moore Street/Highway 11 Route

		Outbound to Walmart					Inbound to Downtown Transfer Center					
		Downtown Transfer Center	Moore St. & W. Mary St.	Moore St. & Euclid Ave.	Cabela's	Walmart		Walmart	Moore St. & Euclid Ave.	Moore St. & W. Mary St.	Downtown Transfer Center	
Block	From	1	2	3	4	5	Block	5	3	2	1	To
2	garage	7:15 AM	7:19 AM	7:22 AM	7:32 AM	7:39 AM	2	7:43 AM	7:58 AM	8:01 AM	8:05 AM	
2		8:15 AM	8:19 AM	8:22 AM	8:32 AM	8:39 AM	2	8:43 AM	8:58 AM	9:01 AM	9:05 AM	
2		9:15 AM	9:19 AM	9:22 AM	9:32 AM	9:39 AM	2	9:43 AM	9:58 AM	10:01 AM	10:05 AM	
2		10:15 AM	10:19 AM	10:22 AM	10:32 AM	10:39 AM	2	10:43 AM	10:58 AM	11:01 AM	11:05 AM	
2		11:15 AM	11:19 AM	11:22 AM	11:32 AM	11:39 AM	2	11:43 AM	11:58 AM	**12:01 PM**	**12:05 PM**	
2		**12:15 PM**	**12:19 PM**	**12:22 PM**	**12:32 PM**	**12:39 PM**	2	**12:43 PM**	**12:58 PM**	**1:01 PM**	**1:05 PM**	
2		**1:15 PM**	**1:19 PM**	**1:22 PM**	**1:32 PM**	**1:39 PM**	2	**1:43 PM**	**1:58 PM**	**2:01 PM**	**2:05 PM**	
2		**2:15 PM**	**2:19 PM**	**2:22 PM**	**2:32 PM**	**2:39 PM**	2	**2:43 PM**	**2:58 PM**	**3:01 PM**	**3:05 PM**	
2		**3:15 PM**	**3:19 PM**	**3:22 PM**	**3:32 PM**	**3:39 PM**	2	**3:43 PM**	**3:58 PM**	**4:01 PM**	**4:05 PM**	
2		**4:15 PM**	**4:19 PM**	**4:22 PM**	**4:32 PM**	**4:39 PM**	2	**4:43 PM**	**4:58 PM**	**5:01 PM**	**5:05 PM**	
2		**5:15 PM**	**5:19 PM**	**5:22 PM**	**5:32 PM**	**5:39 PM**	2	**5:43 PM**	**5:58 PM**	**6:01 PM**	**6:05 PM**	garage

Old Airport Road Route

Outbound to Walmart							Inbound to Downtown Transfer Center						
		Downtown Transfer Center	Eastridge Apartments	The Woodlands at Bristol Apartments	King Mill Pike & Old Airport Rd.	Walmart		Walmart	King Mill Pike & Old Airport Rd.	The Woodlands at Bristol Apartments	Eastridge Apartments	Downtown Transfer Center	
Block	**From**	**1**	**2**	**3**	**4**	**5**	**Block**	**5**	**4**	**3**	**2**	**1**	**To**
3	garage	7:15 AM	7:21 AM	7:27 AM	7:32 AM	7:39 AM	3	7:41 AM	7:48 AM	7:53 AM	7:59 AM	8:05 AM	
3		8:15 AM	8:21 AM	8:27 AM	8:32 AM	8:39 AM	3	8:41 AM	8:48 AM	8:53 AM	8:59 AM	9:05 AM	
3		9:15 AM	9:21 AM	9:27 AM	9:32 AM	9:39 AM	3	9:41 AM	9:48 AM	9:53 AM	9:59 AM	10:05 AM	
3		10:15 AM	10:21 AM	10:27 AM	10:32 AM	10:39 AM	3	10:41 AM	10:48 AM	10:53 AM	10:59 AM	11:05 AM	
3		11:15 AM	11:21 AM	11:27 AM	11:32 AM	11:39 AM	3	11:41 AM	11:48 AM	11:53 AM	11:59 AM	**12:05 PM**	
3		**12:15 PM**	**12:21 PM**	**12:27 PM**	**12:32 PM**	**12:39 PM**	3	**12:41 PM**	**12:48 PM**	**12:53 PM**	**12:59 PM**	**1:05 PM**	
3		**1:15 PM**	**1:21 PM**	**1:27 PM**	**1:32 PM**	**1:39 PM**	3	**1:41 PM**	**1:48 PM**	**1:53 PM**	**1:59 PM**	**2:05 PM**	
3		**2:15 PM**	**2:21 PM**	**2:27 PM**	**2:32 PM**	**2:39 PM**	3	**2:41 PM**	**2:48 PM**	**2:53 PM**	**2:59 PM**	**3:05 PM**	
3		**3:15 PM**	**3:21 PM**	**3:27 PM**	**3:32 PM**	**3:39 PM**	3	**3:41 PM**	**3:48 PM**	**3:53 PM**	**3:59 PM**	**4:05 PM**	
3		**4:15 PM**	**4:21 PM**	**4:27 PM**	**4:32 PM**	**4:39 PM**	3	**4:41 PM**	**4:48 PM**	**4:53 PM**	**4:59 PM**	**5:05 PM**	
3		**5:15 PM**	**5:21 PM**	**5:27 PM**	**5:32 PM**	**5:39 PM**	3	**5:41 PM**	**5:48 PM**	**5:53 PM**	**5:59 PM**	**6:05 PM**	garage

Old Abingdon Highway Route

Outbound to Walmart						Inbound to Downtown Transfer Center					
		Downtown Transfer Center	Moore St. & W. Mary St.	Beaverview Dr.& Quail Way	Walmart		Walmart	Beaverview Dr.& Quail Way	Moore St. & W. Mary St.	Downtown Transfer Center	
Block	**From**	**1**	**2**	**3**	**4**	**Block**	**5**	**3**	**2**	**1**	**To**
4	garage	7:15 AM	7:19 AM	7:31 AM	7:39 AM	4	7:40 AM	7:49 AM	8:01 AM	8:05 AM	
4		8:15 AM	8:19 AM	8:31 AM	8:39 AM	4	8:40 AM	8:49 AM	9:01 AM	9:05 AM	
4		9:15 AM	9:19 AM	9:31 AM	9:39 AM	4	9:40 AM	9:49 AM	10:01 AM	10:05 AM	garage
5	garage	**2:15 PM**	**2:19 PM**	**2:31 PM**	**2:39 PM**	5	**2:40 PM**	**2:49 PM**	**3:01 PM**	**3:05 PM**	
5		**3:15 PM**	**3:19 PM**	**3:31 PM**	**3:39 PM**	5	**3:40 PM**	**3:49 PM**	**4:01 PM**	**4:05 PM**	
5		**4:15 PM**	**4:19 PM**	**4:31 PM**	**4:39 PM**	5	**4:40 PM**	**4:49 PM**	**5:01 PM**	**5:05 PM**	
5		**5:15 PM**	**5:19 PM**	**5:31 PM**	**5:39 PM**	5	**5:40 PM**	**5:49 PM**	**6:01 PM**	**6:05 PM**	garage

Appendix D:
Vehicle Inventory

Appendix D

APPENDIX D: VEHICLE INVENTORY

Vehicle No.	Vehicle Type	Grantee	FTA Code	VIN	Vehicle Condition	Number of Passengers
1	Cutaway	Bristol VA Transit	11.12.15 - Vans	1FD4E45P98DB05474	Unknown	19
2	Van	Bristol VA Transit	11.12.15 - Vans	1FTSS34L96HA65383	Unknown	10
3	Cutaway	Bristol VA Transit	11.12.04 Bus < 30 FT	1GB6G5BL4B1144937	Unknown	19
4	Cutaway	Bristol VA Transit	11.12.04 Bus < 30 FT	1GB6G5BG3C1184740	New	19
5	Cutaway	Bristol VA Transit	11.12.04 Bus < 30 FT	1GB6G5BG0C1184078	New	19

(Continued)

Vehicle No.	Model Year	Description	Engine Type	Purchase Date	Purchased New
1	2008	2008 FORD BUS SUPREME	Diesel	7/2/2008	Yes
2	2006	2006 FORD VAN	Gasoline	10/25/2005	Yes
3	2011	*2011 Chevrolet Supreme Bus	Diesel	6/30/2011	Yes
4	2012	*2012 Chevrolet Van (Bus)	Diesel	12/20/2012	Yes
5	2012	*2012 Chevrolet Van (Bus)	Diesel	12/20/2012	Yes

(Continued)

Vehicle No.	Purchase Price	Wheelchair Accessible	Total Mileage1	Primary Route Type	Average Hours operated per week	Average Miles Traveled per week	Location of Item
1	$51,269	Yes	149,882	Urban	40	600	Bristol, VA
2	$31,617	Yes	109,010	Urban	10	240	Bristol, VA
3	$52,116	Yes	58,500	Urban	45	530	Bristol, VA
4	$70,670	Yes	31,237	Urban	45	900	Bristol, VA
5	$70,670	Yes	24,489	Urban	40	700	Bristol, VA


CTG
Connetics
Transportation
Group


Kimley»Horn


DRPT
Virginia Department of Rail and Public Transportation


BRISTOL
TRANSIT