# TRANSIT DEVELOPMENT PLAN FOR BAY TRANSIT

BAY TRANSIT
A DIVISION OF BAY AGING

Submitted by:

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# Contents

# CHAPTER 1: SYSTEM OVERVIEW

## 1.1. Introduction

A Transit Development Plan (TDP) is a short-range transit plan that outlines the recommended operational changes and initiatives that a service provider intends to implement over the course of a ten-year planning horizon. The plan estimates what transit resources will be needed to implement the recommendations and identifies what funding opportunities are likely to be available.

The Virginia Department of Rail and Public Transportation (DRPT) requires that any public transit operator receiving state funding complete either a Transit Strategic Plan (TSP) or a TDP, based on the size and services provided by the agency. Transit operators not subject to TSP requirements must complete a new TDP at least once every ten years and develop a mid-cycle update at least every five years. DRPT provides a set of TDP requirements that form the basis of the planning effort. DRPT recently changed the TDP guidelines to increase the planning horizon from six years to ten years.

The 2024 Bay Transit TDP follows the agency's most recently completed TDP from 2016, which provided service plans for FY2016 through FY2021. This TDP update will assess Bay Transit's current service performance and demographic trends through FY2023 and offer transit solutions for the agency to follow for FY2024-FY2033.

## 1.2. History

Bay Transit, the public transportation division of Bay Aging, is dedicated to serving all communities located in the Middle Peninsula and Northern Neck area. As the only public transportation service operating across the region, Bay Transit caters to people of all ages and abilities not only located in the region, but also to the counties of New Kent and Charles City.

Bay Transit began providing service in 1996 with a single demand responsive vehicle operating two days a week in Gloucester County, Virginia. Bay Transit has since expanded to a fleet of 73 active vehicles, composed of 64 cutaway shuttle vehicles and three trolleys. The agency offers transit service in 12 counties, providing more than 140,000 annual rides. Much of Bay Transit's ridership is demand responsive service (approximately 80 percent); however, the agency does operate other transit modes to provide more localized service in specific areas. Overall, Bay Transit currently operates the following transit modes:

- Demand responsive
- Microtransit
- Deviated fixed-route transit
- Seasonal trolley service
- Paratransit

Bay Transit's microtransit service, launched in 2021, is the most recent addition to the agency's service offerings. Starting with only one vehicle through a partnership with third party transit operator Via Transportation, Inc.,[1] Bay Transit offers customers a shared ride service that picks and drops them off at their desired locations within a set service zone.

## 1.3. Governance

Bay Transit operates as a division of Bay Aging, a multifaceted organization dedicated to serving the needs of older adults and individuals with disabilities across several counties in Virginia since 1978. As the transportation arm of Bay Aging, Bay Transit plays a crucial role in fulfilling the organization's mission to enhance the quality of life for these populations.

The governance and strategic direction of Bay Transit are closely aligned with Bay Aging through the oversight provided by the Bay Aging Board of Directors (**Table 1**). The Bay Aging Board of Directors is comprised of 15 directors, four of which are elected to officer positions. Ten members of the voluntary Board are appointed by their respective county's Board of Supervisors, while the citizens of the Middle Peninsula and Northern Neck elect five at-large members. Each director serves a term of five years. The Board meets every 2 months.

**Table 1: Bay Aging Board of Directors**

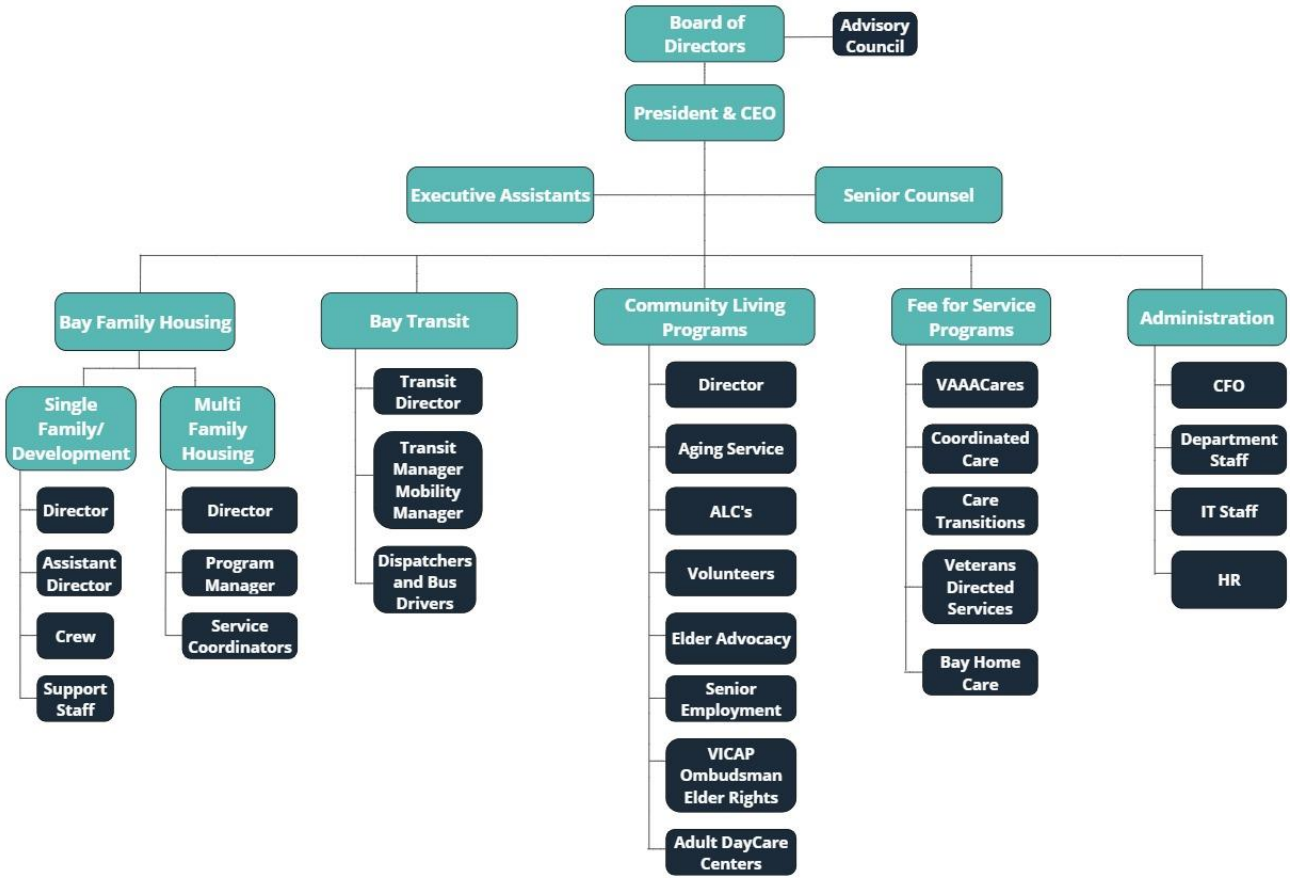
| Name | Title | Appointment |
|---|---|---|
| **Jimmie Carter** | | at-large |
| **Barry L. Gross, M.D.** | Chair | at-large |
| **Stanley Clarke** | Recording Secretary | Essex County |
| **Vera Lee** | | Lancaster County |
| **Jeanne Hockaday** | | Gloucester County |
| **Bill Doyle** | | at-large |
| **Cynthia Talcott** | | Richmond County |
| **Lynda Smith** | Treasurer | Mathews County |
| **Reverend Maria Harris** | | King William County |
| **Ben Owen** | | King and Queen County |
| **James "Jim" Dudley** | | at-large |
| **Bruce Craig** | | Northumberland County |
| **Donna Cogswell** | | Westmoreland County |
| **Belinda Johnson** | | at-large |
| **Robert Wilbanks** | Vice-Chair | Middlesex County |

[1] https://ridewithvia.com/

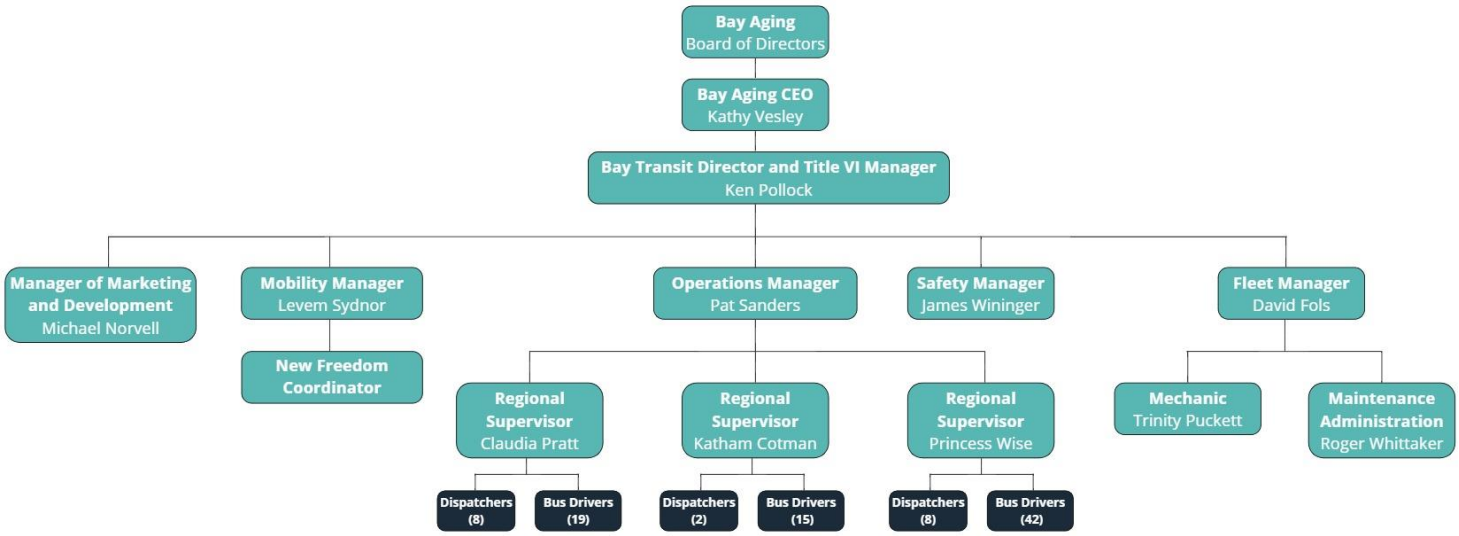
## 1.4. Organizational Structure

Bay Transit, as a division of Bay Aging, has a structured organizational hierarchy designed to ensure effective management and operation of its transportation services. The organization includes several key positions, each with specific responsibilities that contribute to the overall success of Bay Transit. The President and CEO of Bay Aging oversees all divisions of Bay Aging, including Bay Transit. This position is also responsible for creating and maintaining the agency's strategic vision, organizational leadership, and overall management. The Transit Director and Title VI Manager manages daily operations at the agency and develops and implements transportation policies and programs. The Operations Manager, Fleet Manager, Safety Manager, Mobility Manager, and Marketing and Public Relations Manager all report to the Transit Director and Title VI Manager. The Operations Manager oversees three regional supervisors who, in turn, manage a total of 76 Bus operators and 18 dispatchers. **Figure 2** and **Figure 1** provide an overview of the organizational structure for Bay Transit and Bay Aging.

### Figure 2: Bay Aging Organizational Chart




### Figure 1: Bay Transit Organization Structure



## 1.5. Transit Services Provided and Areas Served

The Bay Transit service area spans almost 3,000 square miles in a primarily rural and coastal region, providing service across 12 counties (**Figure 3**):

- Charles City County
- Essex County
- Gloucester County
- King and Queen County
- King William County
- Lancaster County
- Mathews County
- Middlesex County
- New Kent County
- Northumberland County
- Richmond County
- Westmoreland County

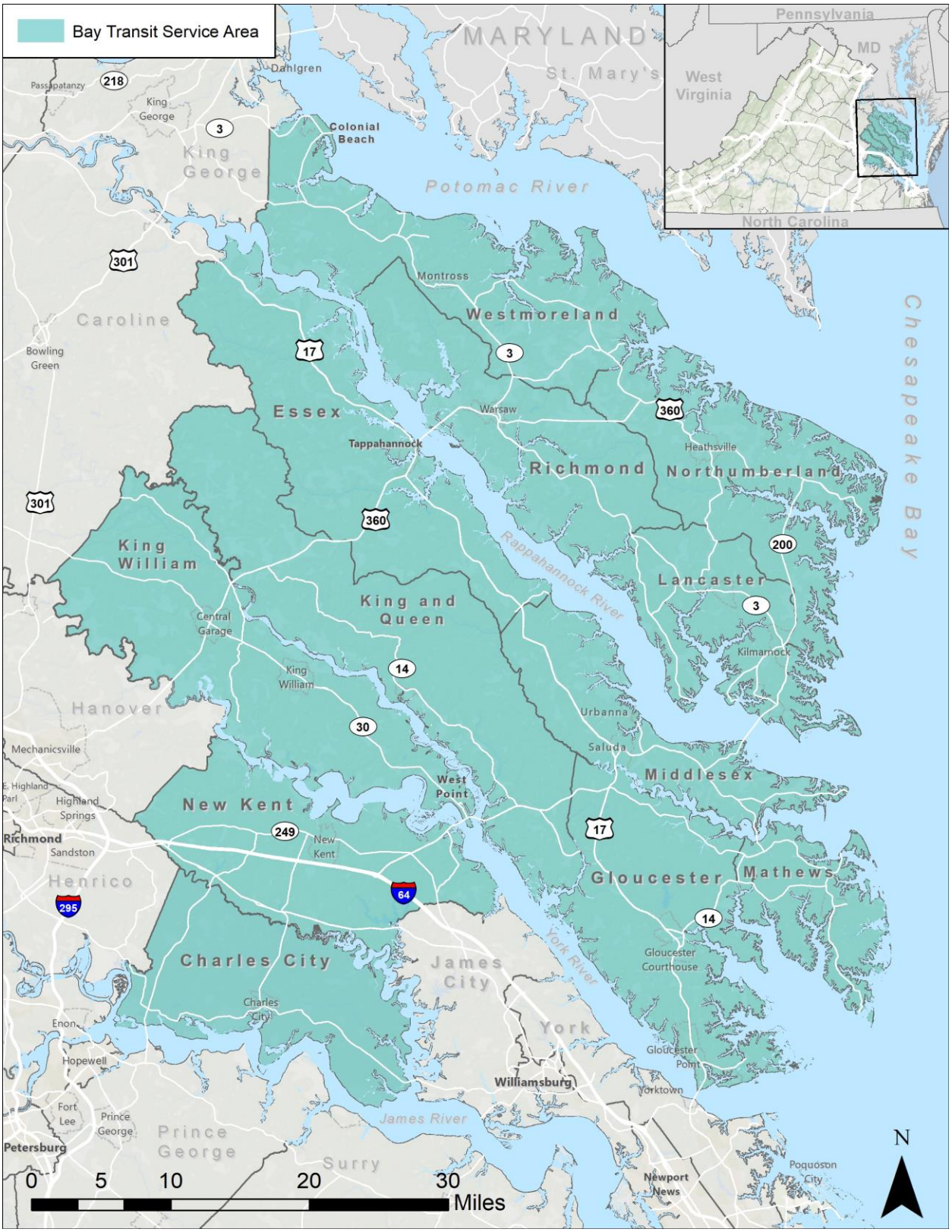
Currently Bay Transit offers five types of service: demand-response, microtransit, deviated fixed route, seasonal trolleys, and paratransit services. Bay Transit offers demand responsive services for the public—and the New Freedom Mobility Management, a paratransit service for eligible passengers—within its entire service area. The agency also offers other services in the following localized areas:

- The Bay Transit Express, a microtransit service in Gloucester County operating from the Courthouse area to Gloucester Point.
- A seasonal (summer) trolley service in Colonial Beach and Urbanna.
- The Rivah Ride, a deviated-fixed route for the Town of Tappahannock.
- The Paper Trail, a deviated-fixed route for the town of West Point.
- MedCarry, a demand-responsive service for medical appointments in the Northern Neck and Middle Peninsula.

Previously, Bay Transit offered a few services that have been discontinued. Those services include:

- The Neck Connect, a deviated-fixed route from Montross in Westmoreland County to Warsaw in Richmond County.
- The Courthouse Circulator, a deviated-fixed route in the Gloucester Courthouse region.
- Kilmarnock Trolley, a trolley between the towns of Kilmarnock, Irvington, and White Stone.
- The HiveXpress, a deviated fixed-route service operating from Gloucester Point to the Gloucester Courthouse area.

**Figure 3: Bay Transit Service Area**



## *Demand-Responsive Services*

Bay Transit's current demand-responsive and microtransit services are further described in **Table 2**.

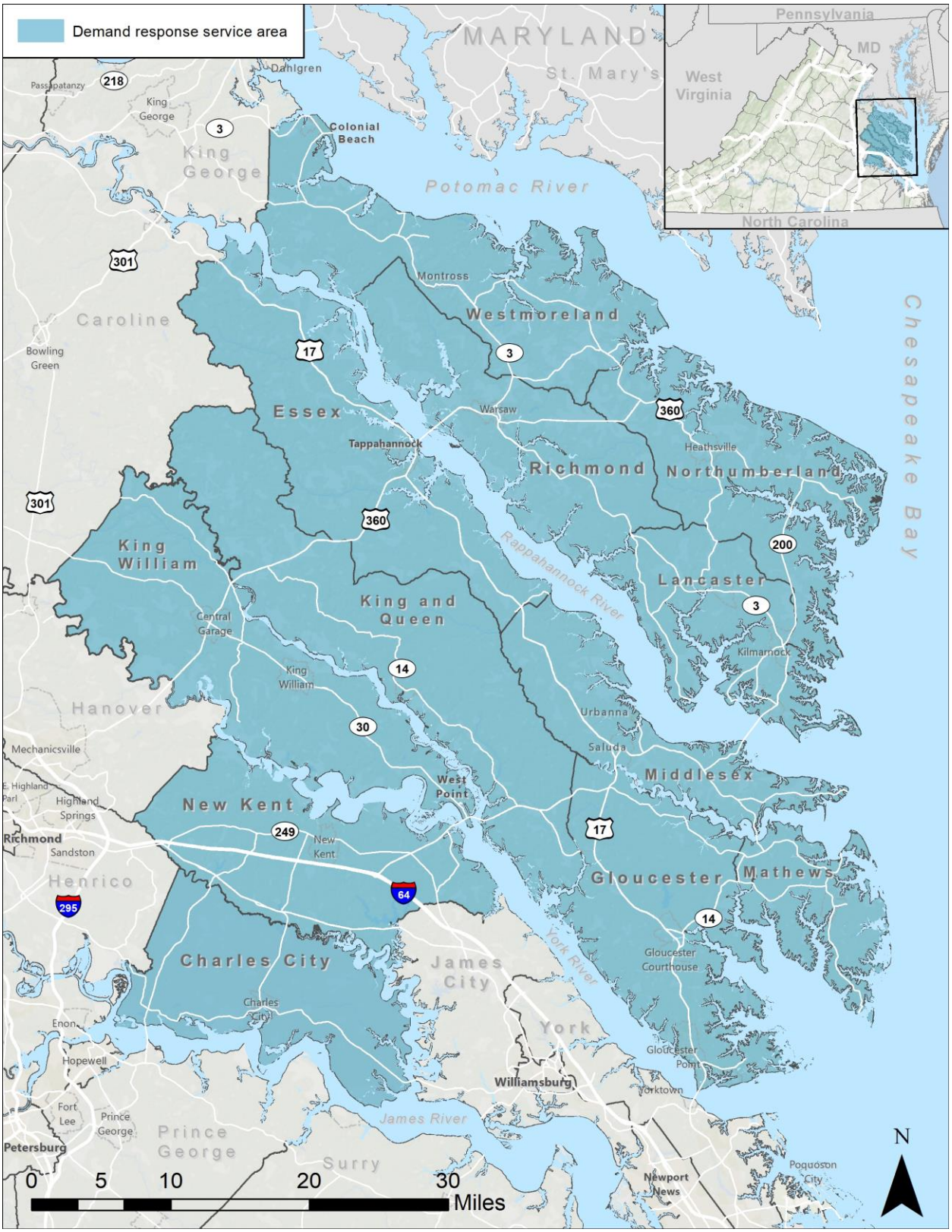
**Table 2: Bay Transit Demand-Responsive Services**

| | Demand Responsive Service | New Freedom Mobility Management | Bay Transit Express | MedCarry |
|---|---|---|---|---|
| **Service Type** | Demand-Responsive | Demand-Responsive Paratransit | Microtransit | Demand Responsive for Medical Appointments |
| **Service Description** | Door-to-door demand-responsive service | Demand-responsive paratransit service for seniors and those with disabilities | Shared ride service | Non-emergency medical transportation for persons 60 and older |
| **Location** | Entire service area | Entire service area and select areas beyond the service area | Gloucester Courthouse to Gloucester Point | Northern Neck and Middle Peninsula |
| **Service Hours** | Monday-Friday: 6:00AM-6:00PM | Daily: 5:00AM-7:00PM | Monday-Friday: 8:00AM-5:00PM | Temporarily paused |
| **Scheduling** | Reservations required at least 24-hours in advanced, which can be made Monday through Friday, 6:00AM-6:00PM | Reservations required at least 72-hours in advanced | Through a mobile app or by calling the Bay Transit Gloucester office | Reservations required at least 48-hours in advanced |
| **Fares** | $2.00 base fare (with exceptions for certain locations) | $5.00 for round trips of fewer than 50 miles; $10.00 for round trips of greater than 51 miles | $1.00 per trip | $5.00 for round trips of fewer than 50 miles; $10.00 for round trips of greater than 51 miles |

### DEMAND-RESPONSIVE

The Bay Transit demand responsive area covers the entire twelve-county Bay Transit service area, providing door-to-door service from Mondays to Fridays, 6:00am to 6:00pm (**Figure 4**). Riders are required to call the Bay Transit Ride Line at least 24-hours in advance. The base fare is $2.00 with exceptions for certain locations.

**Figure 4: Bay Transit Demand Responsive Service Area**



## NEW FREEDOM MOBILITY MANAGEMENT

New Freedom Mobility Management is a Bay Transit service designed to help seniors and people with disabilities enjoy important social and recreational events, while also providing service for medical appointments, work, and shopping. In certain instances, the service may be able to assist customers even if their appointment is outside of the Bay Transit service area and/or service hours. Eligible customers include riders who are at least 60 years of age or those with a disability no matter the age (short-term and long-term disabilities apply). While Medicaid recipients are not eligible for medical transportation, they may be eligible for non-medical transportation. Appointments must be made at least 72 hours in advance.

## MEDCARRY

MedCarry provides non-emergency medical transportation to persons 60 years and older that live in the Northern Neck and Middle Peninsula. As MedCarry depends on volunteers and donations to provide and maintain the service, MedCarry has been temporarily on pause as of this report. 48-hour notice is required for all trip requests. The fee for this service is just $5.00 for a 50-mile round trip or less, and $10.00 for a round trip 51-miles and more.

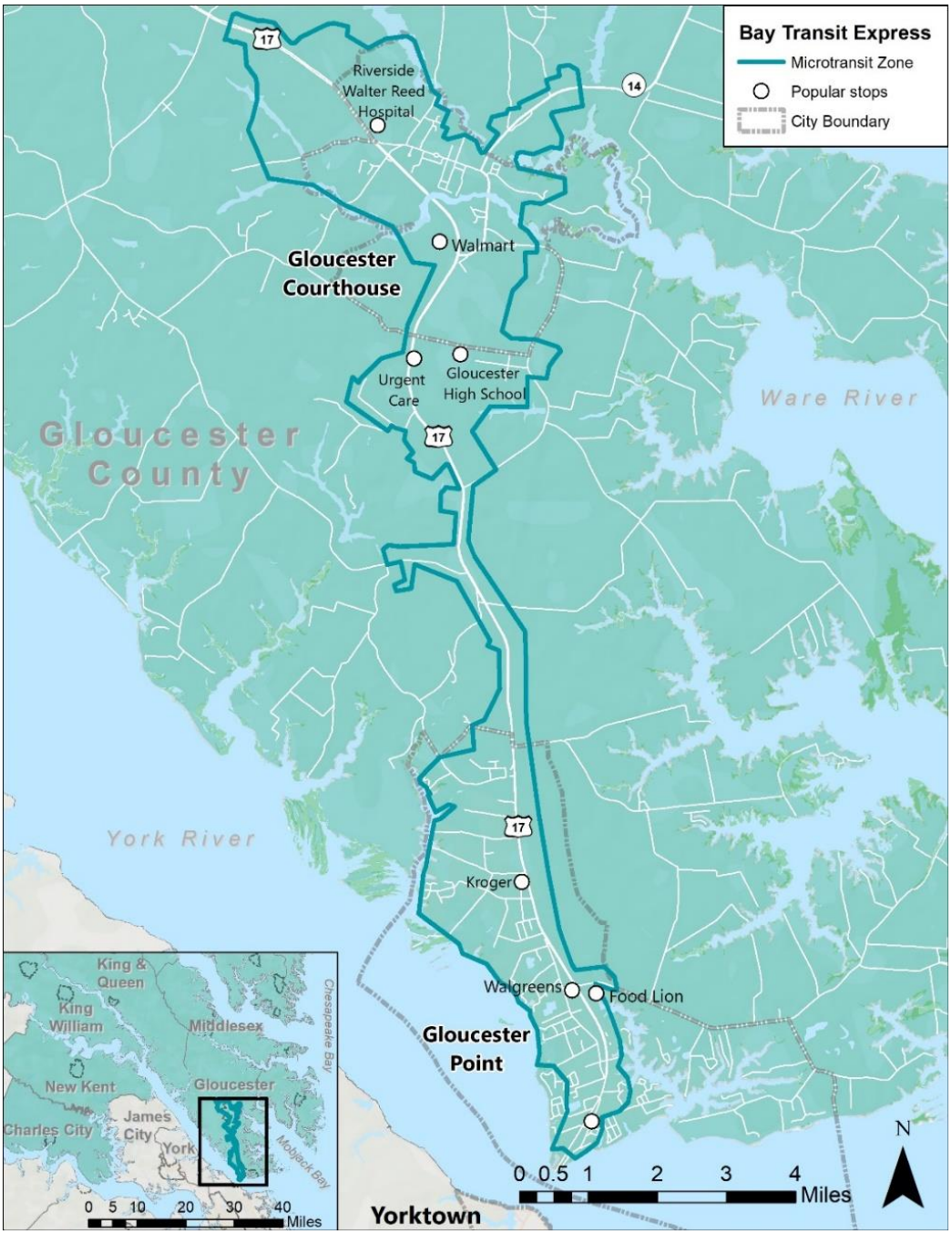
## BAY TRANSIT EXPRESS

Bay Transit Express is Gloucester Courthouse's first-ever microtransit route. The service was launched as a pilot in June 2021 in a ten-square mile region in the Gloucester Business District. After a strong public response, Bay Transit applied for and was rewarded a demonstration grant to expand the microtransit zone to approximately 20 square miles and continues to operate today. Riders can use the Bay Transit Express app to select an on-demand trip within the designated travel zone **(Figure 5**).

Customers may have to travel a short distance to be picked up in order to maximize the efficiency of the service while minimizing trip durations for all customers. After the app confirms a ride option with the rider, a driver will be notified of the needed pick up.

Service is offered Monday through Friday between 8:00 a.m. and 5:00 p.m., with each trip costing $1.00 per passenger. Trips may be paid by either credit/debit card or cash on-board (exact change required). Previously, Bay Transit operated two buses providing route-deviation service between Gloucester Courthouse and Gloucester Point, branded as the HiveXpress; however, this deviated-fixed route service ceased operations in October 2022 upon the expansion of the Bay Transit Express service area).

**Figure 5: Bay Transit Express Microtransit Zone**



## *Fixed-Route Services*

The Bay Transit fixed route services include deviated fixed-route options in Tappahannock and West Point, and seasonal summer trolleys in Colonial Beach and Urbanna. These services are described in **Table 3**.

**Table 3: Bay Transit Fixed-Route Services**

| | Rivah Ride - Tappahannock | West Point - Paper Trail | The Osprey | The Pearl |
|---|---|---|---|---|
| **Service Type** | **Deviated Fixed-Route** | **Deviated Fixed-Route** | **Seasonal (summer) Trolley** | **Seasonal (summer) Trolley** |
| **Service Description** | Deviated fixed route buses follow a set schedule but can deviate up to ¾ a mile off route for riders with an advance reservation. | | Seasonal summer trolley service | |
| **Location** | Tappahannock | West Point | Colonial Beach | Urbanna |
| **Service Hours** | Monday to Friday: 7:00AM–4:00PM | Monday to Friday: 10:00AM–2:00PM | Saturdays and Sundays: 11:00AM–7:00PM<br><br>On select holiday weekends (Memorial Day, July 4th Holiday, and Labor Day), service runs on Mondays as well. | Regular Schedule Fridays: 12:00PM–9:00PM; Saturdays: 10:00AM–9:00PM; Sundays: 10:00AM–3:00PM<br><br>On select holiday weekends (Memorial Day, July 4th Holiday, and Labor Day), service runs on Monday and Thursday as well.<br><br>Thursday 07/04/24: 12:00AM–9:00PM; Monday (5/27/24): 10:00AM–3:00PM |
| **Fare Structure** | To request a deviation, riders must make a reservation in advance by calling the Bay Transit Ride Line. | | Free (Fares are underwritten by the Colonial Beach Chamber of Commerce and the Bethpage Camp – Resort in Urbanna[2]). | |

[2] The free fares are contingent on buy-in from these jurisdictions. Without the supplemental funding a $1.00 fare would be instated.

### RIVEH RIDE – TAPPAHANNOCK

The Rivah Ride – Tappahannock route is a deviated fixed-route service, which is shown in **Figure 6**. The route was implemented in 2015 after the town of Tappahannock agreed to contribute a local match option to fund the route. Currently, VCU Health Hospital is the primary funder of this service. The route serves the VCU Health Hospital Emergency Room on its southern end, operating onto Highway 17 / Church Lane to serve shopping centers such as the Essex Square Shopping Center and the White Oaks Shopping Center, as well as big box retailers including Lowe's and Walmart. The route continues via Highway 17 / Tidewater Trail to serve the Tappahannock Town Center, the local post office, the library, and several multifamily apartments, including the Derbyshire and Tanyard Apartments, and the Fox Chase Apartments. Service is offered weekdays only, between the hours of 7:00 a.m. and 4:00 p.m.

While downtown Tappahannock has a connective pedestrian experience, the south side of the route does lack consistent pedestrian connectivity and sidewalks. The route does not offer bus shelters or seating at any stop, except at the VCU Hospital. Several of the bus stops have Bay Transit bus stop signs, such as at the library and Walmart; however, most stops do not provide a visible sign.

### WEST POINT – PAPER TRAIL

The West Point – Paper Trail is a deviated fixed-route service illustrated in **Figure 7**. On the north end of the route, the Paper Trail serves several multifamily apartments and homes, including the Academy Apartments, the King William Apartments, and the New Delaware Townhouses, as well as the West Point Square Shopping Center. It continues south along King William Avenue to serve the YMCA, Dollar General, and Food Lion. As the route continues southbound on Main Street it serves a family medicine practice, Rite Aid, a bank, and West Point Station, which includes the public library. Afterwards, the bus continues south via Lee Street. The route loops back north at Lee Street and 4th Street, turning right onto Main Street, where it serves multiple stops before terminating at Food Lion.

While sidewalk and pedestrian infrastructure is limited or absent, particularly in the northern segments of the route (near Academy Apartments), the infrastructure does improve further south on Main Street, particularly past 14th Street where there are expanded sidewalks and crosswalks. There are no bus stop signs, shelters, or benches along the route.

**Figure 6: Rivah Ride – Tappahannock**

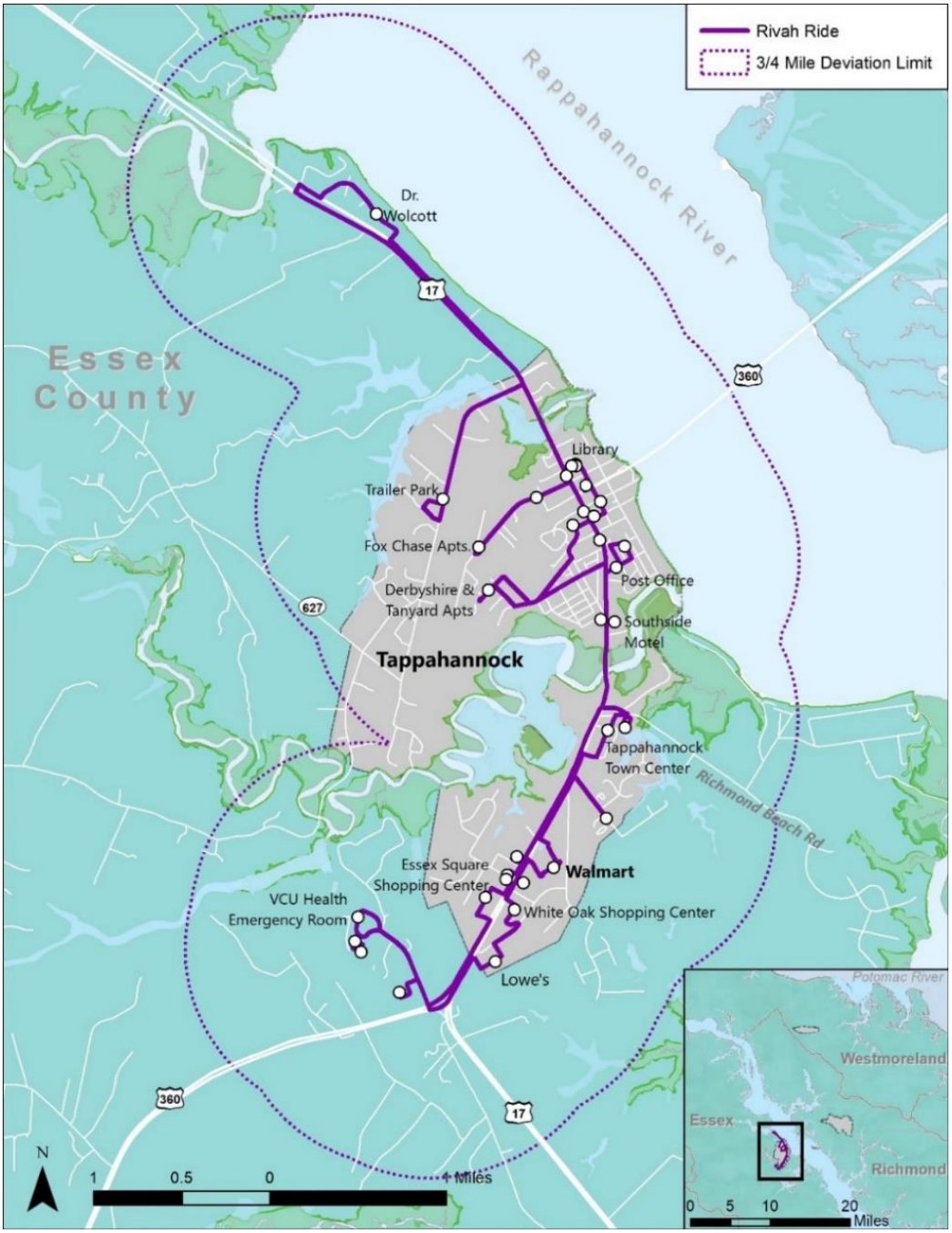


**Figure 7: West Point – Paper Trail**

## THE OSPREY (COLONIAL BEACH TROLLEY)

The Osprey is a trolley service that operates in Colonial Beach. The Osprey is a free service funded by federal 5311 Rural Operating Funds (50 percent), a local match from Colonial Beach (25 percent), and DRPT (25 percent), and a $2,000 per year sponsorship donation from the Colonial Beach Chamber of Commerce to keep the trolley fare free. This route, displayed in **Figure 8** begins at North Irving Avenue and Hawthorn.

The route then serves the Colonial Beach Town Pier before traveling southbound on the peninsula via Irving Avenue connecting hotels and Castlewood Park. The route then returns north along Monroe Bay Avenue connecting restaurants and the marina to Colonial Avenue, serving Colonial Plaza and Beachgate Shopping Centers. Lastly the trolley heads north along McKinney Boulevard serving multifamily apartments and terminates at the Wilkerson Restaurant. The route then returns to the center of Colonial Beach, stopping at Torrey Smith Park before returning to North Irving Avenue and Hawthorn.

The trolley is a summer service that runs from Memorial Day through Labor Day. Regular service runs from 11:00 a.m. until 7:00 p.m. on Saturdays and Sundays. Service includes Mondays on Memorial Day Weekend, July 4th, and Labor Day Weekend. The trolley requires one bus to operate at 60-minute frequencies. Riders can visit Monroe's Birthplace Park and Museum by request (about 20 minutes southwest from Colonial Beach.

Colonial Beach has a gridded street network that is well connected with sidewalks in most areas.

## THE PEARL (URBANNA TROLLEY)

The Pearl is a route is designed for visitor use, connecting the large tourist population at the Bethpage Camp Resort to the town of Urbanna in Middlesex, VA (**Figure 8**). The Pearl is funded by federal 5311 Rural Operating Funds (50 percent), a local match from the town of Urbanna (25 percent) and DRPT (25 percent), and an annual sponsorship donation of $1,500 from Bethpage Camp Resort that keeps the trolley fare free.

Annual service runs from Memorial Day to Labor Day, with holiday hours during the weekends and the July 4th weekend. The trolley operates on:

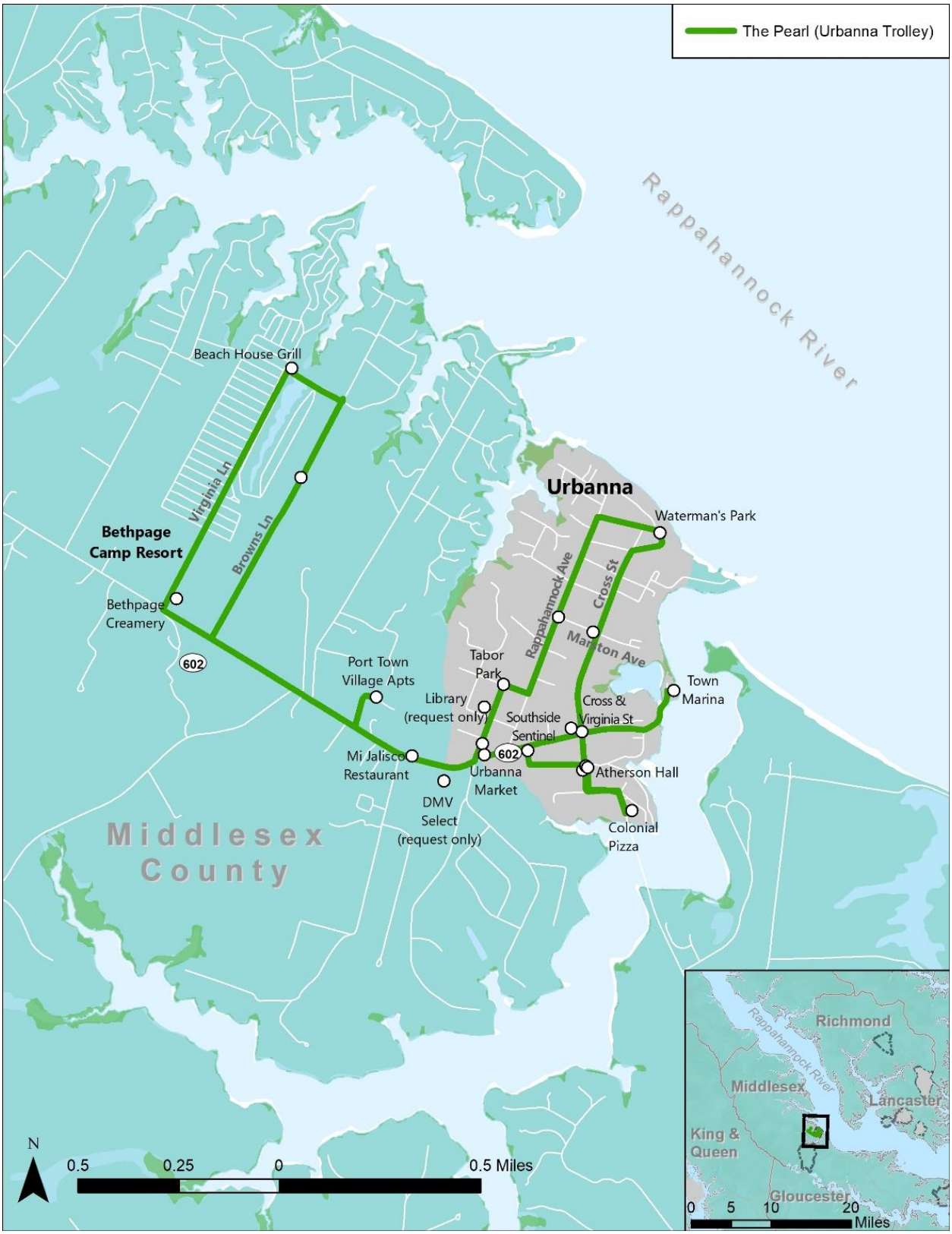
- Thursday: 12:00 p.m. to 9:00 p.m. (Independence Day weekend only)
- Friday: 12:00 p.m. to 9:00 p.m.
- Saturday: 10:00 a.m. to 9:00 p.m.
- Sunday: 10:00 a.m. to 3:00 p.m.
- Monday: 10:00 a.m. to 3:00 p.m. (Memorial Day weekend only)

The Urbanna Trolley requires one bus to operate at 30-minute frequencies. Riders can visit the public library on select days (Friday 12:00 p.m.–5:00 p.m. and Saturday 10:00 a.m.–2:00 p.m) and the DMV Select on Fridays from 12:00 p.m.–4:00 p.m.

There are no bicycle accommodations present for this route and no sidewalks present connecting the Camp Resort to the town center. The central street of Urbanna and Virginia Street have sidewalks on both sides of the street.

**Figure 8: The Osprey (Colonial Beach Trolley)**

**Figure 9: The Pearl (Urbanna Trolley)**



## 1.6. Fare Structure and Collection

The base fare for Bay Transit's demand-response service costs $2.00 for a single ride, but certain exceptions apply (**Table 4**). Discount tickets can be purchased at a price of $12.00 for 10 tickets for general public rides. Customer also have the option to purchase 10 tickets for the Colonial Beach in town rides for $8.00.

**Table 4: Bay Transit Fare Structure**

| Service Type | Location | Days / Time | Price |
|---|---|---|---|
| **Demand-Response** | Entire service area | Monday-Friday: 6:00AM-6:00PM | $2.00 per ticket<br>$12.00 for ten tickets |
| | Colonial Beach | Monday, Wednesday and Friday: 8:00AM-3:00PM | $1.00 per ticket (in and around town limits)<br>$8:00 per 10 tickets (one-way) |
| | Dahlgren | Monday-Friday: 6:00AM-8:00AM 3:00PM-5:00PM | $3.00 (one-way) |
| | Spotsylvania Mall (from Colonial Beach) | Thursday: 8:00AM-3:00PM | $4.00 (one-way) |
| | New Freedom Mobility Management (0–50-mile trip) | Daily: 5:00AM-7:00PM | $5.00 per customer (one-way) |
| | New Freedom Mobility Management (51–90-mile trip) | Daily: 5:00AM-7:00PM | $10.00 per customer (one-way) |
| **Microtransit** | Gloucester County | Monday -Friday: 8:00AM-5:00PM | $1.00 per trip |
| **Deviated Fixed-Route** | Rivah Ride – Tappahannock | Monday-Friday: 7:00AM-4:00PM | $1.00 per boarding |
| | West Point – Paper Trail | Monday-Friday: 10:00AM-2:00PM | $1.00 per boarding |
| **Seasonal Trolley** | Colonial Beach | Seasonal (summer) | Free |
| | Urbanna | Seasonal (summer) | Free |

To ensure transparency and accuracy in fare collection, Bay Transit follows a strict Fare Reconciliation Procedure. When riders board the bus, drivers collect the fare. At the end of their shift, drivers reconcile the total fares received with the number of riders on their manifest. The dispatcher then confirms the number of tickets, cash, and free riders before the driver secures the collected fares in a locked mailbox. At least once a week, a supervisor or designated individual retrieves the money bag, reconciles the associated paperwork, and prepares a deposit slip, noting the county where the money was collected. The supervisor or designee signs a cash balance form to indicate they prepared the deposit, and a second employee

verifies the deposit by counting the checks and money, adding their signature to the form. A third employee takes the deposit to the bank and signs the cash balance form to confirm the deposit has been made accurately. All funds must be deposited at least weekly and on the last working day of the month, ensuring that each deposit is verified by three different signatures.

## 1.7. Fleet

Bay Transit owns a total of 73 revenue vehicles, with 68 of those dedicated to demand-responsive services (**Table 5**). Of the 73 total revenue vehicles, 64 are cutaways, six are passenger vans, and three are buses. The average age of Bay Transit's revenue fleet is six years. Bay Transit currently owns twelve vehicles classified as non-revenue vehicles (Appendix A contains the complete listing of Bay Transit's revenue and non-revenue vehicles).

Among the cutaway vehicles, 62 are currently active and are Americans with Disabilities Act of 1990 (ADA) compliant; the two remaining vehicles are currently out of service. Six of the cutaways are reserved as spare vehicles; these vehicles are subject to relocation as needed and are crucial given the long distances that vehicles must travel. All six passenger vans and the three buses are each active and ADA compliant.

**Table 5: Fleet Vehicles by Year**

| Year | Vehicle Make | Vehicle Model | Vehicle Count |
|---|---|---|---|
| **2024** | FRD - Ford Motor Corporation | StarCraft Allstar | 5 |
| **2023** | FRD - Ford Motor Corporation | StarCraft Allstar | 5 |
| **2021** | FRD - Ford Motor Corporation | StarCraft Allstar | 8 |
| **2021** | FRD - Ford Motor Corporation | Transit Van | 3 |
| **2019** | FRD - Ford Motor Corporation | StarCraft Allstar | 5 |
| **2019** | FRD - Ford Motor Corporation | Transit 350 | 4 |
| **2018** | FRD - Ford Motor Corporation | StarCraft Allstar | 8 |
| **2017** | STR - StarCraft | ALLSTAR | 8 |
| **2016** | ARB - Arboc Mobility LLC | Chevrolet 4500 | 1 |
| **2016** | STR - StarCraft | Ford E450 | 8 |
| **2015** | STR - StarCraft | Ford E450 | 6 |
| **2014** | FRD - Ford Motor Corporation | Ford Allstar | 1 |
| **2014** | FRD - Ford Motor Corporation | Ford Braun | 2 |
| **2014** | GMC - General Motors Corporation | VAN 1 GMC SAVANA VAN | 1 |
| **2014** | STR - StarCraft | Ford E450 | 4 |
| **2010** | FRD - Ford Motor Corporation | Ford Trolley | 1 |
| **2010** | SPC - Startrans (Supreme Corporation) | 2010 Ford Supreme BOC 15 Pass w/lift | 1 |
| **2010** | SPC - Startrans (Supreme Corporation) | Supreme Classic American Trolley | 1 |
| **2006** | FRC - Freightliner Corporation | Freightliner (BOC trolley) | 1 |
| | | **Total** | **73** |

The agency has been able to acquire most of its fleet through the Rural Area Formula Program (RAFP).

## 1.8. Existing Facilities

Bay Transit currently has two facilities that support its transit operations across the Northern Neck and Middle Peninsula regions.

**Figure 10 - Northern Neck Transit Facility**

The Northern Neck Transit Facility in Warsaw, Virginia, opened in 2010. It spans 11,000 square feet and houses transit operations and dispatch activities. The facility includes a fleet maintenance shop with two vehicle bays, providing essential maintenance services to keep the fleet in optimal condition. Additionally, the facility supports propane fueling for transit vehicles, ensuring efficient and environmentally friendly operations. This site serves as a central hub for managing the Northern Neck's transit needs, including coordinating services across multiple counties.

**Figure 11 - Middle Peninsula Regional Transit Facility**

Located in the Gloucester Courthouse area, Middle Peninsula Regional Transit Facility opened in early 2015. Encompassing approximately 20,000 square feet spread over two stories, the facility features office and administrative spaces, and two maintenance bays capable of servicing four buses simultaneously. It also includes additional areas for dispatch and scheduling operations, along with a large training room. This space not only caters to staff training needs but is also available for use by public entities and local government organizations. This facility was designed with energy efficiency in mind and has been certified as a LEED Gold building[3] by the U.S. Green Building Council. It serves as a critical point for managing transit services across the Middle Peninsula, including Gloucester County, Mathews County, King and Queen County, and King William County, as well as the Town of West Point. Like the Northern Neck facility, it also supports propane fueling.

In addition to these primary facilities, Bay Transit maintains a smaller office in New Kent County and leases several properties throughout its service area for vehicle storage, ensuring comprehensive coverage and support for its extensive public transportation network.

[3] The LEED rating system encompasses four distinct levels of certification: LEED Certified: 40-49 points. Silver Certification: 50-59 points. Gold Certification: 60-79 points. Platinum Certification: 80+ points.

## 1.9. Facility Renovations

Over the past four years, Bay Transit has received funds from three different grants totaling $100,000 and $150,000 from the Renovation/Rehab Grant for renovations and rehabilitations of its facilities. Bay Transit has spent $200,000 on facility renovations so far and is currently in the process of allocating the remaining $50,000 to complete more upgrades this year.

The Northern Neck Transit Facility has had extensive renovations to enhance its functionality and efficiency. The updates include the installation of new carpets throughout the facility and three new HVAC units, along with the replacement of their respective thermostats. The facility's roof was repaired to ensure structural integrity. The automatic doors received new closer controls and power supplies. Landscaping across the property was improved, including the cleaning of the storm water retention pond and updates to the pond to help minimize erosion issues. Finally, the parking lot was repaved to provide a smoother and safer surface for vehicles.

The Middle Peninsula Regional Transit Facility has also experienced significant, including the replacement and extension of the boiler chimney to ensure better ventilation and efficiency. The property's landscaping was enhanced, and the storm water retention pond was cleaned out to prevent flooding and maintain environmental standards. The entire facility was power washed, giving it a refreshed and clean appearance. The parking lot was repaved to provide a smoother surface for vehicles, and a sidewalk was extended to connect the facility to the new senior apartments complex, improving accessibility for residents.

## 1.10. Transit Security Program

Bay Transit has implemented a comprehensive Transit Security Program aimed at enhancing the safety and security of its employees and passengers. As part of this program, significant upgrades were made to the Northern Neck Transit Facility and the Middle Peninsula Regional Transit Facility. At the Northern Neck Transit Facility, maintenance improvements included upgrading the shop lighting and enhancing the parking lot lighting to ensure a well-lit and secure environment for Bay Transit's employees. Similarly, at the Middle Peninsula Regional Transit Facility, the parking lot lighting was repaired to improve visibility and safety for both staff and visitors. These upgrades are crucial steps in Bay Transit's ongoing commitment to providing a safe and secure transit experience for everyone.

In addition to the facility improvements, Bay Transit has also focused on enhancing security measures for customers. During the COVID-19 pandemic, several upgrades were made to ensure the safety and health of passengers, including increased sanitation procedures. While Bay Transit has not experienced significant issues with violence in its 25 years of service, it is currently in the process of developing a system-wide security plan to address potential future threats.

## 1.11. Intelligent Transportation Systems Program

As a result of addition of microtransit services (i.e., Bay Transit Express), Bay Transit launched its first mobile app for iPhone and Android in 2021. Through a partnership with VIA, Gloucester County residents that own a smartphone now have the option to book trips themselves without having to contact an agent 24-hours earlier. The mobile app also provides real time information on current drivers, allowing customers to choose the ride option that works best for them, as well as the specific location where to meet the vehicle. This allows customers to have direct communication with the service operator, relieving workload for Bay Transit's agents.

While the Bay Transit Express employs VIA as its vendor for the mobile app and service scheduling needs, Bay Transit uses RouteMatch's scheduling and dispatching software for its other transit services, except for the seasonal trolleys, which utilizes a paper system. With the success and growth of its innovative microtransit service, Bay Transit is interested in deploying integrated Intelligent Transportation System (ITS) solutions to streamline operations and allow its staff to schedule and dispatch transit vehicles for all its transit services. Bay Transit has recently concluded the process of procuring and new automated scheduling software and selected CTS as its new provider. The agency started training deployment on July 2024 and is expecting to complete its implementation plan by January 2025.

## 1.12. Data Collection, and Ridership and Revenue Reporting Methodology

Bay Transit employs various methodologies for ridership data collection across its service types. For deviated-fixed routes and trolley services, drivers manually count ridership. Demand responsive services rely on call-center dispatch agents who book trips and maintain accurate records of total trips booked and completed, utilizing RouteMatch software. Bay Transit will continue to employ automated software for dispatching and trip assignments and plans to transition to the new scheduling software (CTS Software) by January 2025. The new system will continue to enable the automatic collection of ridership data, fares, and passenger information, consolidating all data into a single database.

Bay Transit Express has its own ridership data collection tool through Bay Transit Express mobile app. The mobile app not only allows users to book rides directly, but also allows Bay Transit a comprehensive analytics suite and dashboards that can be accessed on demand. Recognizing that some customers may not have access to a smartphone, Bay Transit continues to offer the option of booking trips through an agent. In such cases, the agent records the trip data, which is then populated into the system, ensuring all ridership data is accurately captured. Additionally, the app facilitates fare collection by allowing customers to pay for their trips in advance using a credit or debit card. Fare collection data is also recorded and included in the overall analytics.

Key performance indicators (KPIs) such as ridership and operational data are recorded daily and reported monthly to both NTD and DRPT. Financial and asset management data is reported quarterly. At the end of

each operational day, data from manual counts, Routematch and VIA is uploaded and reconciled within the central system to ensure consistency with recorded passenger counts. Monthly and annual reports are generated to provide detailed insights into revenue trends, which are then reviewed and audited to verify accuracy.

## 1.13. Public Outreach

Bay Transit is deeply committed to community outreach; the organization actively engages with community members to understand their transportation needs and preferences. Through customer surveys Bay Transit gathers valuable feedback that informs service improvements and expansions. To communicate service changes or fare increases, Bay Transit typically holds public hearings where attendees can review information and leave recorded feedback.

Another way that Bay Transit gathers data is through the Bay Aging Community Needs Assessment, with the most recent effort completed in May 2022. This document identifies and evaluates the specific needs and priorities of the community, for both Bay Aging and Bay Transit. This assessment involves collecting data from a variety of sources, including surveys, focus group meetings, one-on-one interviews, and public engagements. For Bay Transit, the insights gained from Bay Aging's community needs assessment are invaluable in shaping its public outreach and service delivery strategies. The last assessment highlighted the need to expand service hours for demand-responsive services outside of Gloucester County.

In addition to gathering feedback, Bay Transit places a strong emphasis on education and awareness. The organization conducts outreach campaigns to inform residents about available services, schedules, and how to use the transit system effectively. These campaigns include distributing informational materials and utilizing social media and local media outlets to reach a broader audience.

Bay Transit's Art in Transit program is an innovative initiative that enhances the cultural experience of public transportation while engaging the local artisan community. This initiative fosters community engagement, supports the local art scene, and rebrands public transportation as a culturally enriching experience. Art installations at bus stops, transit stations, and inside buses reflect the area's cultural and historical heritage, promoting local pride and educational opportunities. The Art in Transit program is closely tied to Bay Transit's public outreach efforts, serving as a creative platform to engage residents and raise awareness about the transit services available to them.

## 1.14. Regional Stakeholders and Partnerships

Bay Transit's current relationship with local stakeholders and partners represent a crucial asset to help the agency promote their service as well. Bay Transit has invested in further developing these relationships over the past 5 years and now has found several regional partners that will help bring awareness of their services to the public. Such is the case of VCU Health Tappahannock hospital that helps by transit advertising its services to its patients as well as supporting helping Bay Transit engaging with local businesses.

Bay Transit also collaborates with local organizations, schools, and businesses to extend its reach and support community initiatives. Partnering with senior centers, disability advocacy groups, and healthcare providers, Bay Transit ensures that vulnerable populations have access to essential services. These partnerships often include joint events, sponsorships, and coordinated efforts to enhance community well-being.

## *Charles City County*

Located in the greater Richmond area, Charles City County aims to enhance accessibility to Richmond for its residents. The county is developing a new comprehensive plan and is interested in establishing a partnership between GRTC, Bay Transit, and the county to improve connectivity between Richmond and strategic locations such as the Charles City Courthouse. Additionally, the county seeks to enhance connectivity for Roxbury.

Despite the availability of Uber/Lyft services, the county is seeking more affordable options for its aging population, who need better access to medical services. In terms of innovation, a dedicated medical transport system for appointments would benefit elderly residents, who currently face challenges traveling to Richmond, Tri-cities, and other areas for medical services. A fixed route with clear schedules connecting the county with the VCU urgent care clinic in New Kent would also be advantageous.

Although the interviewed stakeholder mentioned that there is no current direct relationship between Bay Transit and the County, constituents have noted that Bay Transit is responsive and efficient in handling trip requests. The county has also identified a general lack of awareness about Bay Transit's services and fee structure. To address this, the county suggested including a link to Bay Transit's website on the county's website to increase awareness among residents. The county is also looking to enhance communication with Bay Transit, recognizing significant potential for future partnerships.

## *Gloucester County*

Gloucester County and Bay Transit share a close and collaborative relationship. The county administrator, highlighted the regular communication they have, including quarterly reports and shared marketing efforts. Examples of their partnership include joint initiatives like working together on a grant to improve a bus stop at one of the main Senior Centers in the area and collaborating on projects such as the Bay Transit Express service and its predecessor, the HiveXpress route. Gloucester County values Bay Transit's attention to their input, which is considered and applied effectively in various projects.

Addressing the transportation needs of the growing aging population in the county is a shared priority. Unlike other localities on the peninsula, Gloucester County is experiencing rapid growth, making it one of the fastest-growing regions in Virginia. This growth is also bringing in more residents, often from demographic groups not typically associated with rural areas. As the population ages, there will be an increasing demand for transit services, particularly those that cater to the needs of senior residents. Bay Transit is already working with the county to address future transit needs of its growing elderly population.

In terms of innovation, Bay Transit is also traying to keep up with current trends. One significant area of focus is the development of electric vehicle (EV) charging infrastructure. With the growing popularity of EV, particularly among residents at places like Daffodil Gardens Apartments, there is a pressing need for public EV charging stations in the county. Currently, the only available charging stations are at local car dealerships. Recognizing this gap, Bay Transit is poised to install the first public EV charging stations in the county, although the exact location is yet to be determined.

Enhancing pedestrian and biking access is another key focus, driven by a statewide concern over pedestrian fatalities. The county has received federal funds to support these initiatives, highlighting their commitment to improving overall mobility. The county is particularly interested in implementing clear signage and leveraging technological advancements, such as AI, as it is expected that in 10 years senior population will all be smart phone savvy.

Regarding the quality of service, Gloucester County residents are quite satisfied. The county administrator noted a lack of complaints from constituents, highlighting Bay Transit's reputation for being customer-friendly and the appreciation customers have for their drivers. While residents are content with the current level of service, the county administrator expressed interest in extending service hours and expanding weekend services to better meet the community's needs.

## *Town of Kilmarnock*

Historically, the town led a trolley program for several years with Bay Transit, but for the past two years, the town has been more of a supportive observer, with no active programming involving Bay Transit. However, the town is extremely interested in exploring microtransit services. This interest was initially discussed over a year ago, and the town is eager to consider a business model and service model that would be funded by tax dollars, seeing microtransit as a good fit for the town's retail and medical base.

The town serves as a centralized hub for goods and services, housing a hospital, Walmart, various stores, an elementary school, nursing homes, and federally sponsored housing, including Bay Aging housing. With a significant concentration of services, Kilmarnock remains a focal point for residents within a five- to ten-mile radius who consider it their home. As a crucial provider for the broader community, the town stands to benefit significantly from exploring a partnership with Bay Transit. Such a collaboration could better serve the town's extensive needs while providing Bay Transit with an opportunity to expand its services in the area.

The current perception of Bay Transit's service is positive, with users finding it amazing. However, it is not widely recognized within the community. It is often seen as a service for low-income individuals, Medicaid recipients, or seniors without transportation, rather than a general transportation solution. This perception is linked to Bay Transit's historical association with Bay Aging, which serves a specific socioeconomic group. There is a need to rebrand Bay Transit as a comprehensive transportation solution for the broader community. The town recognizes the importance of connecting residents, especially those who are dependent on others for transportation, to local businesses and services.

To attract a broader user base, traditional outreach methods such as flyers in community centers, social clubs, post offices, and hospitals, as well as engagement with church groups, are recommended. Education on microtransit services, which are likened to Uber, is crucial, especially considering the town's older demographic with a median age of 58+. Many in this age group may struggle with digital platforms and require more straightforward communication. Ensuring that the transit service is reliable and offers a pleasant experience is essential. There is a challenge in converting car owners, who view their vehicles as a symbol of independence, to transit users. Expanding the user base beyond those without cars is necessary to make the service financially sustainable.

In terms of innovation, the town identified a growing need for goods and services delivery, comprehensive medical transportation, and connectivity to areas like Richmond, Newport News, and Gloucester. Although some of these areas are outside of Bay Transit's geographic footprint, exploring partnerships with other transit systems could enhance service reach. Addressing these needs would help individuals who lack transportation options and currently rely on friends or family for medical visits or other essential services.

Bay Transit's "Art in Transit" program creatively engages the artisan community, effectively branding and authentically representing the region. To enhance this, Bay Transit could connect artisans who do not use the service with the user community, fostering engagement and awareness. By combining this artistic outreach with practical expansions like goods delivery and medical transportation, Bay Transit can innovate while meeting essential community needs.

## *Northern Neck Planning District Commission*

The Northern Neck Planning District Commission (NNPDC) actively supports Bay Transit by promoting its services to ensure residents are aware of the available transportation options. NNPDC is a member of the Commuter Assistance Programming, which encourages residents to take more transit and rideshare.

Bay Transit's collaboration with local organizations like the Northern Neck Boys and Girls Club highlights its commitment to supporting disadvantaged populations. By arranging transportation for children to get home safely (last-mile ride), Bay Transit plays a crucial role in the community, especially for those without access to personal vehicles. This service is vital for various groups in the area, including disadvantaged individuals, the formerly incarcerated, and people with disabilities.

The Northern Neck region is actively seeking solutions to boost tourism by improving connectivity with urban areas like Richmond and Washington D.C. Many visitors access the region by boat, creating a challenge in linking the marina to downtown businesses to enhance the local economy. For residents, smaller demand-responsive vehicles for rural areas would be highly beneficial. Additionally, forming partnerships to provide residents with options to connect to VRE and Amtrak train stations in Fredericksburg is another priority identified by the Commission.

Service for seniors in the Northern Neck region is adequate, but there are opportunities for improvement. A real-time app to locate nearby buses, rather than requiring bookings 24-hours in advance, would be beneficial. Additionally, with numerous dollar stores being built, there is a need for the region to collaborate

with Bay Transit to create shelters or safe waiting areas at these locations. Enhancing connectivity for tourists arriving by boat is also important, as the area lacks Uber and Lyft services. A small, fee-based transportation service on popular nights could facilitate tourist access to shopping and dining, boosting the local economy, especially given the absence of rental car options.

Communication between Bay Transit and the commission is multifaceted and effective. As a member of regional rail resiliency group, the commission receives monthly updates. Bay Transit Facebook is particularly useful and excels in providing timely updates on commuter services, which helps keep the community informed. However, there is a concern about reaching underserved communities, as it is unclear if these updates effectively reach those populations.

## *Rappahannock Community College*

Bay Transit has established a two-fold partnership with Rappahannock Community College (RCC). The college's foundation subsidizes free Bay Transit rides for students through annual unrestricted donor contributions, averaging $2,000 per year. Additionally, for the past two years, Bay Transit and RCC's foundation have collaboratively offered scholarships—currently supporting up to three students annually—with each party contributing $1,000 per student. Bay Transit tracks student usage and bills the college monthly.

The overall health of the Bay Transit system is praised for its professional management and substantial community impact, particularly in getting students to class. However, there are challenges, such as serving students in counties outside the service region and a need for more routes and buses to accommodate all students. There is a particular issue with early class times, such as classes that start at 8:30 a.m., where students living 45 minutes away struggle because Bay Transit does not operate early enough to accommodate their schedule.

Other suggestions for improvements include investing in EV, expanding fixed-route bus routes, and enhance demand-responsive services, which sometimes faces limitations in availability. Improving communication with the Dean of Student Services was also suggested.

## *VCU Health Tappahannock Hospital*

VCU Health Tappahannock Hospital and Bay Transit share a longstanding and collaborative partnership that significantly enhances transportation access to health care from the six counties that they serve. VCU Health Tappahannock provides funding for Bay Transit's Rivah Ride service, and in turn, Bay Transit provides local advertising for VCU. VCU and Bay Transit's sponsorship agreement (March 2024) allows the agency to expand the service hours of the Rivah Ride deviated fixed-route bus from one hour to nine hours per day, Monday through Friday from 7:00 a.m. until 4:00 p.m. VCU Health's three-year commitment helps ensure the Rivah Ride is available throughout the day, improving access to the hospital and across Tappahannock.

However, River Ride primarily serves other purposes such as grocery trips, the demand responsive service is crucial for medical appointments. To further support patients, VCU Health Tappahannock is exploring more sponsorship opportunities and patient vouchers to encourage the use of Bay Transit demand responsive services. There are also ongoing discussions about expanding current sponsorship for New Freedom service so patients can access downtown hospitals for specialized services not available locally.

Patients from VCU Health Tappahannock Hospital have an incredibly positive perception of Bay Transit's service and responsiveness. The organization is praised for being highly responsive, as demonstrated by their quick action to install a bus stop for the Rivah Ride route to prevent people from waiting in the rain. Patients report no complaints and appreciate the reliability and affordability of the service, noting that buses are punctual, and drivers meet their obligations. Bay Transit is especially valued by seniors and people with disabilities, with well-paid and friendly local drivers who know the community and engage positively with patients. Communication with Bay Transit is also excellent, with prompt responses to emails and a willingness to meet and collaborate, including participation in the local Chamber of Commerce. The hospital staff recognizes the importance of local support, and the extensive services Bay Transit provides, highlighting the need for greater community awareness and involvement.

## *Warsaw-Richmond County Chamber of Commerce*

The Warsaw-Richmond County Chamber of Commerce has had a fruitful partnership with Bay Transit, characterized by mutual promotion and collaboration. In the past, Bay Transit provided an in-kind shuttle service for the annual Warsaw Fest, which was a valuable resource for the event, assisting 100-200 attendees with reduced mobility. Unfortunately, this year the Chamber had to seek alternative transportation solutions due to changes in sponsorship arrangements. Despite this, The Warsaw-Richmond County Chamber of Commerce continues to support Bay Transit by promoting the agency’s services at its meetings, creating opportunities for Bay Transit to engage with local businesses to help identifying new local funding sources. The Chamber also actively promotes Bay Transit services through advertisements and social media.

The overall health of Bay Transit’s system is viewed positively by the Chamber of Commerce; however, some challenges need to be addressed. Some of these issues—including Richmond County's vast area, the 24-hour advance booking requirement for the demand responsive service, and changes to current fixed-route services—make it difficult for residents to regularly rely on transit. The dispersed nature of the fixed-routes and the lack of bus stops and infrastructure further complicate accessibility, leaving many unaware of where and how to access Bay Transit services. Additionally, there is a significant need for transportation across the bridge connecting Warsaw to Tappahannock, as well as the implementation of weekend services between these locations to better serve the community.

On a positive note, Bay Transit provides excellent service to seniors and disabled customers, with no complaints reported. Communication with the community is strong, bolstered by a board member who keeps the county well-informed of Bay Transit's activities and updates.

## 1.15. Coordination with Other Transportation Providers in the Area

Within the Hampton Roads Regional Transit Vision Plan's long-term recommendations by 2035, there is an express bus corridor recommendation (which would be provided by Hampton Roads Transit) connecting Gloucester Courthouse to the Oyster Point area of Newport News.

Outside of the twelve-county region, residents can connect with Amtrak intercity rail and intercity bus service (such as Greyhound and Virginia Breeze) in Fredericksburg or Richmond.

Customers using the New Mobility Freedom paratransit service can be dropped off at various transit points outside of the Bay Transit service area (GRTC in Richmond, FXBGO! in Fredericksburg and WATA in Williamsburg).

In addition to Bay Transit, there are multiple other public, private, and non-profit human service transportation providers in the Bay Transit region identified by the local Coordinated Human Service Mobility Plan (CHSM). These providers are included below.

## 1.16. Public Carpool or Vanpool Service

### *Northern Neck Commuter Services*

This free service is for residents, workers, commuters, and tourists in Virginia's Northern Neck peninsula (Lancaster, Northumberland, Richmond, and Westmoreland Counties). The service connects customers through the ConnectingVA mobile app to carpools and vanpools. The service is available 24 hours per day, seven days per week online or between 8:30 a.m. and 5:30 p.m. by phone. Currently, there are more than 200 drivers and riders in the database. Commute trips are available to Northern Virginia, Washington D.C., Newport News, Norfolk, Hampton, Fredericksburg, and the City of Richmond.

## 1.17. Human Service and Non-Emergency Medical Transportation Services

#### VA DEPT. REHABILITATIVE SERVICES

The department provides services for persons with disabilities who want to work. Two vehicles are available for demand responsive service for employment related transportation in the Middle Peninsula and Northern Neck.

#### COLONIAL TRANSIT

Provides non-emergency medical transportation to the general public for residents in Williamsburg and the Middle Peninsula. Two vehicles are available.

### CROCKETT CARRIERS

Provides all ambulatory transportation services to the general public for residents in the Middle Peninsula and Northern Neck. Four vehicles are available.

### DART TRANSPORTATION

Provides ambulatory transportation service to the general public for residents in the Northern Neck and Richmond. Four vehicles are available.

### DOGGETT TRANSPORT

Provides non-emergency medical transportation services to the general public for residents in the Northern Neck. There are 20 vehicles available.

## 1.18. Charter Services

### VIRGINIA RIDES

Provides safe and reliable transportation services for private events, schools, summer camps, and collegiate and minor league sports organizations.

### NEWTON BUS SERVICE

Provides commuter services to the Peninsula area and charter services to locations elsewhere.

## 1.19. Taxi Services

Frazier Transportation Gloucester/King William Counties
Metrotec Taxi Northern Neck, Middle Peninsula, New Kent, Charles City Counties
Yellow Cab Newport News

### VILLAGE MED-TRAN INC

Gloucester, Middlesex, Matthews Counties

# CHAPTER 2: GOALS, OBJECTIVES, AND SERVICE DESIGN STANDARDS

## 2.1. Bay Transit Mission and Vision

Bay Transit's mission is that every resident in the Northern Neck and Middle Peninsula regions of Virginia must be assured accessible and safe transportation to the local destination of their choice without regard for disability, age, or economic status. Their vision is to be the leading transit provider, promoting independence and mobility for all community members, particularly those who are elderly or have disabilities.

Bay Transit operates under the umbrella of Bay Aging, whose mission is to provide the programs and services people of all ages need to live independently in their communities. Bay Transit's services align seamlessly with this mission by providing essential transportation options that promote independence and facilitate access to critical services, directly contributing to Bay Aging's overall goals. Consequently, Bay Transit developed its goals and objectives for the next five years within the framework of Bay Aging's Strategic Plan for 2023-2028. The strategic plan includes biannual status updates, with the most recent update completed in March 2024. These updates occur in March and September each year, ensuring continuous alignment and progress towards their shared mission.

## 2.2. Bay Transit Goals and Objectives

### Goal 1: Adapt, strengthen, and expand traditional programs to better meet/serve the needs of clients in the region.

**Objective 1.1:** *Expand microtransit service beyond Gloucester over the next 5 years*.

Bay Transit intends to grow its current microtransit (i.e., on-demand) service offerings. This objective is to be accomplished through engaging with different stakeholders in the area and having discussions on current transit needs at least once a year. Bay Transit aim is to expand microtransit service to one additional town per year.

In the first quarter of 2024, Bay Transit met with the Town of West Point and began planning to implement microtransit service within the current calendar year. The Town of Kilmarnock has also expressed interest in exploring microtransit services as the service could be a good fit for the town's retail and medical needs.

**Objective 1.2:** *Utilize current and emerging technology to comingle demand-response and microtransit transportation throughout the entire service area, including real-time scheduling.*

Bay Transit will make demand-response and microtransit services more efficient to operate. This objective will be accomplished by transitioning to a new, automated scheduling software that has the capability to allow dispatchers to schedule trips for both service types.

Bay Transit's intention is to make real-time scheduling and on-demand rides available to the residents of all twelve counties in the service area over the next three years. During the first quarter of the year, the agency disseminated an RFP for a new automated scheduling software. The winning vendor, TripMaster by CTS Software, was selected in May. Training sessions on the new transit scheduling software began in July 2024 and implementation completion is expected by January 2025.

**Objective 1.3:** *Expand number of trip opportunities for New Freedom riders.*

Bay transit intends to offer more than two rides per month to eligible customers. This objective will be accomplished through the expansion of grant funds, local matching funds, and by having dedicated drivers and vehicles for this service.

Thanks to the generosity of the Bay Aging Foundation, Bay Transit is now able to offer more than two rides per New Freedom customer per month. The agency will continue working to get more funding for New Freedom to continue and the expantion of this critical service.

**Objective 1.4:** *Reestablish the MedCarry volunteer driver program.*

Bay Transit hopes to reestablish the MedCarry volunteer driver program by recruiting and retaining volunteers. Incentives will be increased, including higher reimbursements for fuel and/or travel expenses and discounts or free services (i.e., discounts on local services, free transit passes, or other perks) which could bolster the recruitment and retention of MedCarry volunteers. Bay Transit is planning to begin recruitment this fall.

### Goal 2: Expand programs with unencumbered revenues to support programs and services that provide for critical needs in the region.

**Objective 2.1:** *Increase non-emergency medical trips through Modivcare.*

Bay Transit aims to increase the number of Modivcare clients and trips serviced by 15 percent in 2025. However, progress has been hindered by a lack of available vehicles to expand the service. To address this, Bay Transit is actively seeking to boost donations and generate an operational surplus to invest in acquiring new vehicles, thereby enabling the expansion of services to meet growing demand.

**Objective 2.2:** *Develop transportation contracts with Managed Care Organization (MCO's), Veteran's Offices, Department of Social Services, Department of Health, and human services providers.*

Bay Transit is actively looking to increase partnerships with regional stakeholders, as this will not only allow them to tap into a new source of revenue but help bring more awareness of Bay Transit's services to the region. To accomplish this objective, Bay Transit is aiming to at least have one new contract signed per year with a partner program.

As of summer 2024, contracts have been developed with Gloucester County for opioid treatment access and with the Boys and Girls Club of the Northern Neck for transportation to home from after school activities in Richmond County.

**Objective 2.3:** *Start up private charter transportation company.*

Bay Transit has identified gaps in its current service area and is considering launching a private transportation company to address these gaps within the next five years. To achieve this objective, the agency plans to evaluate the feasibility and upfront costs, conduct thorough market research, and explore various funding options. This strategic approach aims to ensure that the new transportation service effectively meets the needs of the community while being financially sustainable. This is a long-range goal.

### Goal 3: Strengthen infrastructure to maintain viability for the next decade. (IT, staffing, administration, revenue generation).

**Objective 3.1:** *Purchase fuel efficient vans and zero emission vehicles to replace larger body-on-chassis vehicles.*

Bay Transit is committed to modernizing its fleet and reducing emissions. The agency aims to acquire over 35 low or zero-emission vehicles through grants from the Federal Transit Administration (FTA) and the Virginia Department of Rail and Public Transportation (DRPT). In 2024, Bay Transit received five new Ford Cutaways equipped with gas engines. New fuel-efficient Ford Transit vans have been ordered, but their delivery has been delayed due to supply chain issues. Additionally, Bay Transit is currently participating in a pilot study with DRPT to develop a comprehensive electric vehicle (EV) transition plan tailored for their operations. This plan will serve as a strategic guide for integrating electric vehicles into their fleet. Due to range limitations with current EV vehicles this project is on hold until the vehicles can better meet Bay Transit's service requirements

**Objective 3.2:** *Install infrastructure for charging and maintaining electric zero emission vehicles.*

To achieve this goal, the agency is conducting thorough due diligence, planning, and budgeting. They are actively seeking grant funding through the DRPT, the Federal Transit Administration (FTA), and other entities to finance the purchase and installation of the necessary infrastructure. Currently, the only available charging stations are at local car dealerships. Recognizing this gap, Bay Transit is poised to install the first public EV charging station in the county, although the exact location is yet to be determined.

### Goal 4: Increase community awareness of Bay Transit programs and impact. (Marketing, community outreach, education).

**Objective 4.1:** *Develop messaging for stakeholders and the public to show the value of public transportation.*

Bay Transit has historically struggled with bringing awareness to the public about the level and quality of its service. The agency is currently working with regional partners to conduct outreach campaigns to inform residents and regional stakeholders about the benefits and importance of public transit, distributing

informational materials, leveraging social media, and initiatives that foster community engagement, such as their “Art in Transit” judged competition. Bay Transit is hoping to increase the use of public transportation by 15 percent in the next three years. So far data shows a slight increase in ridership (three percent) from FY22.

**Objective 4.2:** *Identify and expand partnerships with local businesses and health organizations.*

Enhancing partnerships with local organizations is a strategic priority for Bay Transit, as these collaborations can significantly improve funding opportunities, expand service reach, and bolster community support and engagement. Bay Transit aims to increase its partnerships by ten percent annually. Demonstrating notable progress towards this goal, in March 2024, Bay Transit formed a new partnership with Virginia Commonwealth University (VCU) Health Tappahannock Hospital. This collaboration, financially supported by VCU Health, extends the Rivah Ride bus service hours to nine hours daily, from 7:00 a.m. to 4:00 p.m., Monday through Friday. This expansion enhances accessibility for patients, employees, and volunteers in the Tappahannock area, reflecting Bay Transit's commitment to improving public transportation and community connectivity.

Additionally, Bay Transit has a partnership with Rappahannock Community College (RCC) to provide free rides to students commuting to and from RCC campuses, with fares covered by the RCC Educational Foundation. The Foundation also supports Bay Transit employees and their family members by matching up to $1,000 in college scholarships per student. These partnerships underscore Bay Transit’s dedication to making education and healthcare more accessible, while also fostering strong community ties and supporting local development.

## 2.3. Service Performance Standards

Although this section is called "service performance standards" per DRPT guidelines, these metrics act more like guidelines. The purpose of these guidelines is to provide a framework for improving service quality and operational efficiency rather than serving as strict performance mandates. Consequently, while agencies are encouraged to strive towards these benchmarks, their funding and support from DRPT will not be contingent upon achieving these specific targets.

Bay Transit is dedicated to providing reliable and efficient service to its customers. To achieve this, the agency adheres to recommended standards designed to enhance service quality and operational performance. These guidelines help ensure that Bay Transit meets the needs of the community effectively while maintaining high levels of service consistency and efficiency.

### PASSENGER TRIPS

Bay Transit aims to increase overall ridership by fifteen percent over the next three years through an annual increase of four to six percent. Historically, the system's ridership has grown by an average of five percent annually from FY21 to FY23, culminating in a 15 percent increase over this period. When breaking down ridership by service type, this target appears achievable for on-demand services. However, as microtransit services expand, deviated fixed-route services seem to be declining. To ensure consistent

comparisons, a more reliable metric is passenger trips per revenue hour. The following targets outline the levels Bay Transit should aim to maintain for passenger trips per revenue hour over the next five fiscal years for each service type:

- **Demand Response:** 2.01 passenger trips per revenue hour
- **Deviated Fixed Route:** 2.68 passenger trips per revenue hour
- **Microtransit:**[4] 2.50 passenger trips per revenue hour

## VEHICLE PREVENTIVE MAINTENANCE

Compliance with preventive maintenance schedules for vehicles is crucial for transit agencies to ensure safety, reliability, and longevity of their fleet. Regular maintenance helps prevent unexpected breakdowns, reduces repair costs, and maintains optimal vehicle performance. It also ensures compliance with federal and state regulations, enhancing passenger safety and service quality.

Most of Bay Transit fleet is comprised of cutaway vehicles, some vans and a few buses, with Ford as the typical manufacturer. Preventive maintenance can vary depending on the specific model and usage, but here are some general guidelines typically recommended by Ford:

- **Every 5,000-7,500 miles**: Oil and filter change, tire rotation, brake inspection, fluid level checks.
- **Every 15,000 miles:** Replace cabin air filter.
- **Every 30,000 miles**: Replace engine air filter, inspect fuel system, and coolant system.
- **Every 60,000 miles:** Replace spark plugs, inspect suspension and steering components.
- **Every 100,000 miles:** Replace coolant, inspect accessory drive belts.

## MEAN DISTANCE BETWEEN FAILURES

Mean Distance Between Failures (MDBF) metric measures the average distance a vehicle travels between mechanical failures. In this context, "vehicle failures" are defined as instances where a vehicle experiences a breakdown or malfunction that necessitates its removal from service for immediate repair. This includes any mechanical, electrical, or other operational issues that prevent the vehicle from completing its scheduled service or require unscheduled maintenance, thereby affecting its reliability and availability for transit operations.

Bay Transit began collecting vehicle breakdown data in 2022, with the total number of failures per 100,000 miles never exceeding 1.51 breakdowns across the entire system. FY24 data looks even more promising, with the current rate at 0.58 breakdowns per 100,000 miles. The agency aims to maintain a standard of no more than 1.51 annual breakdowns per 100,000 miles. However, given the strong performance in FY24, and the planned acquisition of over 35 new low or zero-emission vehicles (ZEV) which will reduce the fleet's average age (as outlined in Objective 3.1), it is recommended to review and potentially lower this

[4] Only FY22 and FY23 where analyzed as service officially launched in FY22

standard. Bay Transit should consider adjusting the target to 1.20 breakdowns per 100,000 miles to reflect these improvements.

### PREVENTABLE INCIDENTS

A preventable accident is an incident that occurs due to the failure of the transit vehicle operator to take reasonable action to avoid it. In other words, it is an accident where the operator did not do everything they reasonably could to prevent the collision or incident from happening.

Bay Transit's annual records for preventable incidents have remained consistently low since FY18, with the total number of incidents never reaching double digits annually. Although preventable incidents are not a major issue for the system, it is recommended that the agency aspire to never exceed 0.35 preventable incidents per 100,000 revenue miles. This target is based on current performance and will help ensure the continuation of the current downward trend in preventable incidents.

### CUSTOMER COMPLAINTS

This metric ties back to Goal 4, which is to bring awareness to the impact of Bay Aging Programs, specifically Bay Transit services. There's no better publicity than positive reviews and a general sense of satisfied customers. Recent feedback indicates that Bay Transit is responsive and efficient in handling trip requests, with quality of service rated highly. The lack of complaints from constituents underscores Bay Transit's reputation for being customer-friendly and the appreciation customers have for their drivers. To maintain this positive trend, Bay Transit should ensure that customer complaints do not exceed four complaints per 10,000 passenger trips,[5] which was the rate for FY21 to FY23.

### OPERATING COST

Although Bay Transit has not yet established specific standards for operating costs, the goals outlined in Bay Aging Strategic Plan 2023-2028 emphasize the importance of increasing funding sources and accessing new revenue streams. Controlling or reducing operating costs allows Bay Transit to allocate more funding and unencumbered revenue towards expanding services. To achieve this, the agency should focus on maintaining or reducing the cost per revenue hour for each of its services. By doing so, Bay Transit can ensure sustainable growth and continue to meet the critical transportation needs of the community:

- **Demand Response:** $82.03 per revenue hour
- **Deviated Fixed Route:** $73.87 per revenue hour
- **Microtransit:**[6] $35.80 per revenue hour

The agency should maintain or reduce the following cost per revenue mile for each of its services:

- **Demand Response:** $3.37 per revenue mile

[5] Bay Transit does not separate complaints & compliments by service type
[6] Only FY22 and FY23 where analyzed as service officially launched in FY22

- **Deviated Fixed Route:** $3.17 per revenue mile
- **Microtransit:**[7] $2.59 per revenue mile

## FARE RECOVERY RATIO

Bay Transit should aim for a farebox recovery ratio of three percent for the overall system. This target aligns with Bay Aging's Strategic Plan Goal 2, which is to expand programs with unencumbered revenues to support critical needs in the region. By achieving and maintaining a three percent farebox recovery ratio, Bay Transit can generate a modest but significant portion of its operating costs from fare revenues. This financial performance will contribute to the agency's ability to allocate more unencumbered funds towards expanding and enhancing essential services. Ensuring a steady stream of revenue through fares will help Bay Transit support its mission to meet the critical transportation needs of the community while also adhering to Bay Aging's broader goal of sustaining and growing impactful programs across the region.

## ON TIME PERFORMANCE

Bay Transit maintains stringent on-time performance standards to ensure reliable and efficient service across its various service types. These standards are crucial for maintaining punctuality and dependability, which are essential for customer satisfaction and operational efficiency.

- **Demand Response:** 10 minutes before to 15 minutes after the scheduled pick-up/departure time.
- **Deviated Fixed Route:** 0 minutes before to 3 minutes after the scheduled stop time.
- **Microtransit:** Up to 6 minutes after the scheduled pick-up time

[7] Only FY22 and FY23 where analyzed as service officially launched in FY22

# CHAPTER 3: SERVICE EVALUATION

## 3.1. Introduction

This chapter of the Transit Development Plan (TDP) is a description and analysis of the recent performance of Bay Transit, including trends, peer comparisons, recent ridership data, and results of a customer and driver surveys conducted in June and July 2024.

The review of existing service includes a general description of operating statistics, performance evaluation, and trends offer a detailed examination of Bay Transit's operational performance. The peer review combines all service types to provide system wide performance metrics and provides an opportunity for Bay Transit to determine how their operating statistics compare to similar peer transit agencies.

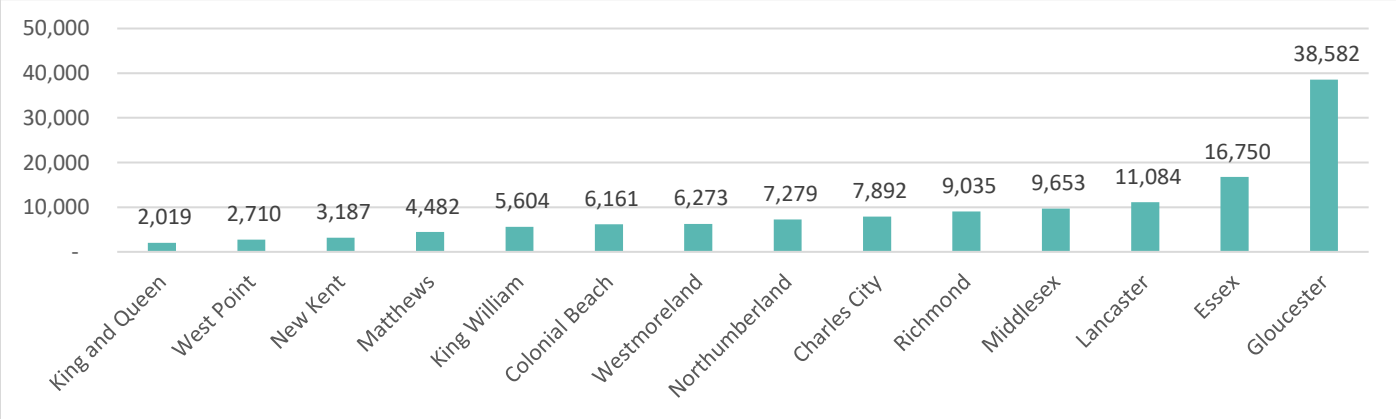
## 3.2. Service Performance – Current and Trends

### *Current Systemwide Performance – FY 2023*

**Figure 12** illustrates ridership levels by county for FY 2023, during which Bay Transit served a total of 130,711 riders. Gloucester County accounted for the largest share, with 38,582 rides, representing just under 30 percent of the total ridership. Despite not being the largest county by area, Gloucester has the highest population density among the counties served by Bay Transit, functioning as a key retail and medical hub for the region. Additionally, the presence of Bay Transit Express (Microtransit service) further contributes to the high ridership in Gloucester County. These factors collectively explain why Gloucester's ridership significantly surpasses that of other counties.

Other notable service areas include Essex, with 16,750 rides accounting for 13 percent of the total, and Lancaster, with 11,084 rides making up 8.5 percent. King and Queen County had the lowest ridership levels at 1.5 percent, followed by West Point at 2.1 percent and New Kent at 2.4 percent.

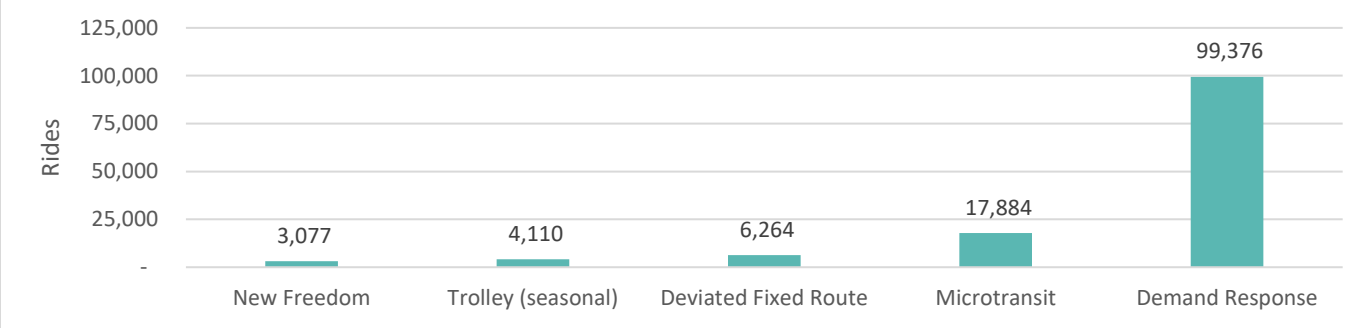
**Figure 12: Total Rides by County - FY 2023***




*Totals used in this table are from data provided by Bay Transit.

**Figure 13** shows ridership levels by mode in FY 2023. Demand Response rides comprised 76 percent of Bay Transit's total rides, a significant portion of the total number of rides for the year. Microtransit was the second most common mode, making up just under 14 percent of the total services provided. The deviated fixed route, seasonal trolley, and New Freedom Rides make up a small portion of Bay Transit's total riders, ten percent if combined.

**Figure 13: Rides by Mode - FY 2023***




*Totals used in this table are from data provided by Bay Transit.

While ridership is a crucial metric for assessing systemwide performance, it is not the sole indicator of a transit system's success. Efficiency and reliability are essential aspects that contribute to building riders' trust and ensuring a high level of service. Consequently, transit agencies must consistently monitor various performance indicators. In addition to tracking ridership, it is vital to measure metrics such as revenue miles and hours, passenger trips per revenue mile and revenue hour, operating cost per revenue mile, hour, and trip. Safety metrics, including preventable incidents per 100,000 revenue miles and breakdowns per 100,000 revenue miles, as well as customer satisfaction indicators like complaints per 10,000 passenger trips, are also important. By keeping a close eye on these factors, Bay Transit will continue delivering the high-quality service that its customers value.

**Table 6** provides an overview of revenue miles and hours by mode, highlighting that demand response services constitute most of the service (revenue miles and hours).

**Table 6: System Wide Performance Measurements, FY 2023***

| Transportation Services | Passenger Trips | Revenue Miles | Revenue Hours | System Wide | | |
|---|---|---|---|---|---|---|
| | | | | Percent of Passenger Trips | Percent of Revenue Miles | Percent of Revenue Hours |
| Demand Response and New Freedom | 102,453 | 1,226,742 | 51,099 | 78% | 88% | 84% |
| Microtransit | 17,884 | 126,148 | 6,724 | 14% | 9% | 11% |
| Deviated Fixed Route and Fixed Route (Trolley) | 10,374 | 34,950 | 3,131 | 8% | 3% | 5% |
| Total | **130,711** | **1,387,840** | **60,954** | | | |

*Totals used in this table are from data provided by Bay Transit.

Table **7** presents the FY2023 system-wide performance measurements, focusing on productivity, cost efficiency, and service quality. Among the transportation modes, deviated fixed route and fixed route services demonstrated the highest productivity, achieving 0.3 passengers per revenue mile and 3.31

passengers per revenue hour. Regarding cost efficiency, the Microtransit service, known as Bay Transit Express, emerged as the most cost-effective option. It significantly reduced costs, averaging a 60 percent reduction in cost per trip, revenue mile, and revenue hour compared to demand response services and the New Freedom program. This highlights the efficiency and economic advantages of Microtransit services over other types of transit service.

**Table 7: System Wide Performance Measurements, FY 2023***

| Transportation Services | Productivity | | Cost Efficiency | | | Service Quality |
|---|---|---|---|---|---|---|
| | Passenger Trips per mile | Passenger Trips per Revenue Hour | Cost per Passenger Trip | Cost per Passenger Mile | Cost per Passenger Hour | Speed |
| Demand Response and New Freedom | 0.08 | 2.00 | $ 40.77 | $ 3.61 | $ 86.58 | 24 |
| Microtransit | 0.14 | 2.66 | $ 13.33 | $ 1.86 | $ 34.21 | 19 |
| Deviated Fixed Route and Fixed Route (Trolley) | 0.30 | 3.31 | $ 30.83 | $ 3.51 | $ 81.61 | 11 |

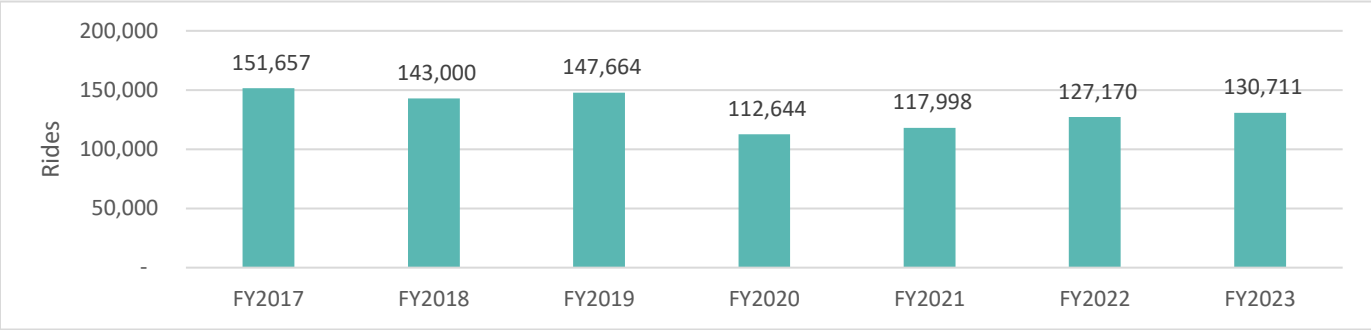
*Totals used in this table are from data provided by Bay Transit.

Although Bay Transit does not disaggregate safety and customer compliance data by specific service types, the agency diligently tracks this information annually. For FY2023, the agency reported 1.51 breakdowns per 100,000 revenue miles and 0.92 complaints per 10,000 rides. These figures indicate that Bay Transit's overall performance in terms of safety and customer satisfaction remains high. The breakdown frequency is expected to decrease further as Bay Transit progresses in its transition to low- and zero-emission vehicles, which will enhance both reliability and service quality. While severe post-COVID supply chain disruptions impacted the agency until FY2023, improvements have been seen in FY2024. The agency acquired ten new vehicles in the past fiscal year and expects to receive two more in the coming months, which should also positively impact the breakdown rate. The next section will explore the positive trends observed in these three key metrics.

## *Systemwide Performance Trends – FY2017 - F 2023*

**Figure 14** displays yearly Bay Transit's total ridership levels from FY 2017- FY 2023. This data shows the direct impact COVID-19 had on ridership levels, not unlike other public transit agencies across the United States. Before FY 2020, ridership levels hovered around 140,000. However, the pandemic brought a significant decrease in ridership due to restrictions related to health concerns. The one year drop from 147,664 in FY 2019 to 112,644 in 2020 represented a significant decline in ridership. However, ridership has steadily increased in the three years since. In FY 2023, ridership levels surpassed 130,000 for the first

**Figure 14: Yearly Ridership - FY 2017 to FY 2023***




*Totals used in this table are from ridership data provided by Bay Transit.

time since FY 2019. Although not currently back to pre-COVID levels, current trends suggest that ridership levels may eventually reach back.

Trends by service type are consistent with the values displayed for the overall service. However, it is notable how the launch of Bay Transit Express in 2021 has led to exponential growth over the last three years, while other services may be struggling to retain customers. **Table 8** includes variance calculations between FY 2021 and FY 2023, reflecting the recovery trends post-pandemic and the introduction of the microtransit service in 2021.

**Table 8: Rides by Service Type, FY 2023***

| Transportation Services | FY17 | FY18 | FY19 | FY20 | FY21 | FY22 | FY23 | FY21-FY23 Variance |
|---|---|---|---|---|---|---|---|---|
| Demand Response | 126,367 | 117,431 | 120,483 | 96,054 | 96,692 | 102,301 | 99,376 | 3% |
| Deviated Fixed Route | 17,225 | 17,172 | 16,185 | 12,773 | 15,407 | 12,627 | 6,264 | -59% |
| Trolley (seasonal) | 3,584 | 3,901 | 6,436 | 26 | 1,950 | 3,646 | 4,110 | 111% |
| Microtransit (Bay Transit Express) | - | - | - | - | 692 | 5,329 | 17,884 | 2484% |
| New Freedom | 4,481 | 4,496 | 4,560 | 3,791 | 3,257 | 3,267 | 3,077 | -6% |
| Total Rides | 151,657 | 143,000 | 147,664 | 112,644 | 117,998 | 127,170 | 130,711 | 11% |

*Totals used in this table are from ridership data provided by Bay Transit.

From fiscal year 2021 to fiscal year 2023, monthly ridership typically peaked during the summer months, particularly in August. This trend is likely driven by the seasonal trolley routes offered exclusively from May to September. Conversely, ridership levels were at their lowest during the winter months, especially in February. Despite these seasonal fluctuations, overall ridership levels remained relatively consistent throughout the year due to the steady demand from transportation disadvantaged individuals and individuals with disabilities, who rely on transit services year-round.

Similarly to the prior section, the following tables examine fiscal years 2021 to 2023 to identify trends over time for passenger-based and cost-based statistics in addition to ridership. Focusing on these years captures the post-pandemic recovery phase and highlights how various factors have evolved. Key metrics

such as revenue miles and hours, passenger trips per revenue mile and revenue hour, and operating costs per revenue mile, hour, and trip were analyzed. Additionally, safety metrics, including preventable incidents per 100,000 revenue miles and mean distance between failures, as well as customer satisfaction indicators like complaints per 10,000 passenger trips, were considered.

**Table 9** presents system-wide service trends over the last three fiscal years. Overall, Bay Transit's revenue miles and hours have increased by three percent and five percent, respectively. However, when examining the data by service type, the microtransit service has shown the most significant growth. This growth is attributed to the expansion of the Bay Transit Express service area, which doubled the number of customers by the end of 2022. The service has successfully attracted new customers while retaining a growing number of existing riders, largely due to its lower fare, short wait times, and the ease of booking a ride.

**Table 9: System Wide Revenue Miles and Revenue Hours FY 2021 – FY 2023**

| Transportation Services | Revenue Miles** | | | Revenue Hours** | | | Variance Revenue Miles* | Variance Revenue Hours* |
|---|---|---|---|---|---|---|---|---|
| | FY21 | FY22 | FY23 | FY21 | FY22 | FY23 | | |
| Demand Response and New Freedom | 1,243,221 | 1,261,767 | 1,226,742 | 51,176 | 51,046 | 51,099 | -1.33% | -0.15% |
| Microtransit | - | 25,927 | 126,148 | - | 2,280 | 6,724 | 386.55% | 194.91% |
| Deviated Fixed Route and Fixed Route (Trolley) | 99,409 | 107,384 | 34,950 | 7,066 | 7,177 | 3,131 | -64.84% | -55.69% |
| Total | 1,342,630 | 1,395,078 | 1,387,840 | 58,242 | 60,503 | 60,954 | 3% | 5% |

*Microtransit Service variance is calculated by comparing FY 2022 and FY 2023. Data for FY 2021 was not available as during FY 2021 the service was in the initial stage of its pilot phase.
** Total revenue miles and revenue hours used in this table are from financial summaries provided by Bay Transit.

Another positive outcome of this service expansion is that, despite a significant increase in revenue mileage (with a 31 percent decrease in passenger trips per mile from FY 2022 to FY 2023), the service has become more productive. This is evidenced by a 14 percent increase in passenger trips per hour, as shown in **Table 10**. Factors contributing to this productivity include route optimization, fleet improvements leading to higher speeds, and the implications of service expansion in a rural area. Lower operating costs when compared to other service modes as shown in **Table 11,** is another benefit to this service mode. **Table 11** also shows that the service could reduce its cost significantly per revenue mile and hour, nineteen and nine percent, respectively.

The minor decrease in the overall revenue miles and hours for the Demand Response services may be attributed to the decrease in riders experienced by New Freedom service. Previously, the number of trips this service could provide was limited by available funding. As a result, despite ongoing demand, the number of trips was constrained by funding levels. However, in fiscal year 2024, Bay Transit received additional funding from the Bay Aging Foundation, allowing the agency to meet current trip demand. Ridership for this service is expected to continue rising as FY2024 progresses. **Table 10** shows, although demand response service experiences a more pronounced increase from FY 2021 to FY 2022, the overall variance over the last three fiscal years was an increase of three percent.

### Table 10: Passenger based operating statistics for FY 2021 – FY 2023

| Transportation Services | Passenger Trips Per Mile | | | Passenger Trips per Hour | | |
|---|---|---|---|---|---|---|
| | FY21 | FY22 | FY23 | FY21 | FY22 | FY23 |
| Demand Response and New Freedom | 0.08 | 0.08 | 0.08 | 1.95 | 2.07 | 2.00 |
| Microtransit | - | 0.21 | 0.14 | - | 2.34 | 2.66 |
| Deviated Fixed Route and Fixed Route (Trolley) | 0.17 | 0.15 | 0.30 | 2.46 | 2.27 | 3.31 |

*Microtransit Service variance is calculated by comparing FY 2022 and FY 2023. Data for FY 2021 was not available as during FY 2021 the service was in the initial stage of its pilot phase.
** Total revenue miles used in this table are from Financial Summaries provided by Bay Transit.

### Table 11: Cost based operating statistics for FY 2021 – FY 2023

| Transportation Services | Cost Per Trip | | | Cost Per Mile | | | Cost Per Revenue Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | FY21 | FY22 | FY23 | FY21 | FY22 | FY23 | FY21 | FY22 | FY23 |
| Demand Response and New Freedom | $ 32.73 | $ 36.89 | $ 40.77 | $ 3.00 | $ 3.51 | $ 3.61 | $ 72.84 | $ 86.68 | $ 86.58 |
| Microtransit | - | $ 16.37 | $ 13.33 | - | $ 3.32 | $ 1.86 | - | $ 37.39 | $ 34.21 |
| Deviated Fixed Route and Fixed Route (Trolley) | $ 29.64 | $ 34.96 | $ 30.83 | $ 2.77 | $ 3.24 | $ 3.51 | $ 63.98 | $ 76.02 | $ 81.61 |

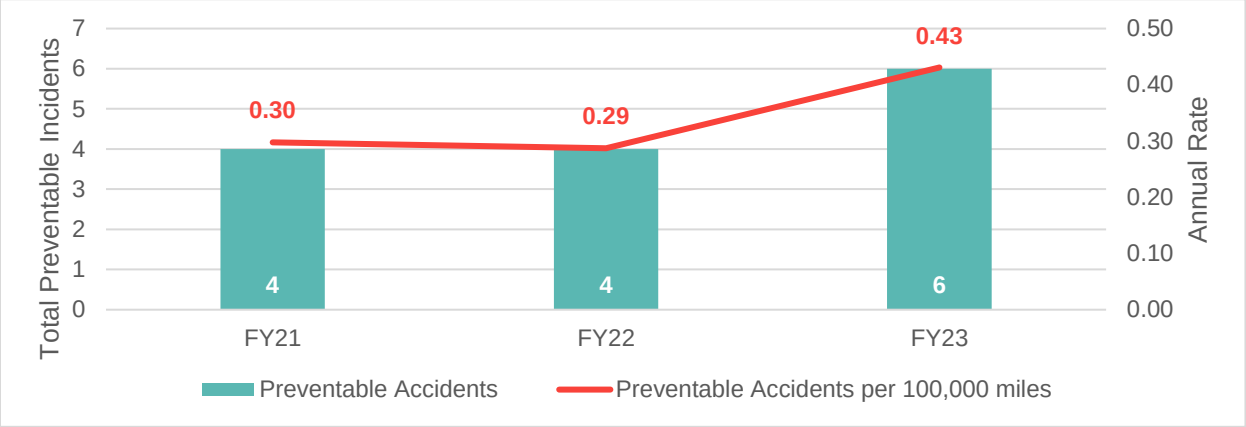
*Microtransit Service variance is calculated by comparing FY 2022 and FY 2023. Data for FY 2021 was not available as during FY 2021 the service was in the initial stage of its pilot phase.
** Total revenue miles used in this table are from Financial Summaries provided by Bay Transit

Although FY 2023 saw a 48 percent increase in preventable incidents per 100,000 miles as

**Figure** 15 shows, the total annual counts of these incidents have remained consistently low over the past three fiscal years, never reaching double digits. Since Bay Transit began tracking breakdown data in FY 2022, the metric for breakdowns per 100,000 miles has never exceeded 1.51[8] across the entire system. FY 2024 data appears even more promising, with the current rate at 0.58 breakdowns per 100,000 miles. Overall, preventable incidents and breakdowns have not been significant issues for the Bay Transit system during this period. As noted earlier, breakdowns are expected to continue declining as new vehicles arrive, following the resolution of supply chain disruptions.

[8] Total revenue miles used in the calculation of this metric are from numbers reported to NTD.

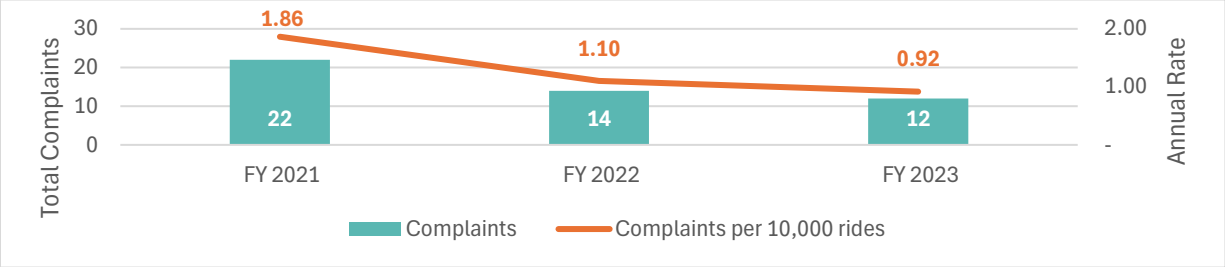
**Figure 15: Preventable Incident per 100,000 miles FY 2021 – FY 2023***




*Total revenue miles used in the calculation of this metric are from numbers reported to NTD.

Customer complaints per 10,000 rides have shown a significant downward trend over the last three fiscal years, as illustrated in **Figure 16** The most notable decline occurred between FY 2021 and FY 2022, with a decrease of 41 percent. Overall, there was a 51 percent drop in complaints over the three-year period. This substantial reduction in complaints highlights Bay Transit's strong reputation for customer-friendly service and the high level of appreciation customers have for their drivers.

**Figure 16: Complaints per 10,000 Rides for FY 2021 – FY 2023***




*Total annual rides used in the calculation of this metric are ridership data provided by Bay Transit.

## 3.3. Demand-Response Origins and Destinations

Data from Bay Transit's reservations and itinerary planning software was examined for a one-month period (October 2023) to identify patterns in cross-jurisdictional trips. Figure **17** identifies cross-jurisdictional travel within that month. The most common trips were between Richmond and Essex counties, accounting for 477 trips or 14 percent of the total. Following closely, Charles City and New Kent counties had 465 cross-jurisdictional trips, representing 13 percent. Other significant cross-jurisdictional travel occurred in West Point and King William with 380 trips (11 percent), Matthews and Gloucester with 334 trips (ten percent), and Northumberland and Lancaster with 288 trips (eight percent). It is important to note that counties provide varying levels of local funding support for Bay Transit, which likely contributes to the higher levels of cross-jurisdictional travel. Local funding considerations are a key driver of resource allocation, particularly in terms of buses and operators. For instance, New Kent and Charles City counties share the

cost of three buses that operate between both areas, making it unsurprising that cross-jurisdictional trips between these two counties ranked second when compared to other regions.

**Figure 17: Demand-Response Cross-Jurisdictional Trips (October 2023)**

| Origin | Charles City | Colonial Beach | Essex | Fredricksburg | Gloucester | Hanover | Henrico | James City | King & Queen | King George | King William | Lancaster | Mathews | Middlesex | Kew Kent | Newport News | Northumberland | Richmond City | Richmond Co. | Spotsylvania | Stafford | Westmoreland | West Point | York | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Charles City | | | | | | 1 | | | | | | | | | 241 | | | | | | | | | | 242 |
| Colonial Beach | | | | 2 | | | | | | 67 | | | | | | | | | 58 | 1 | | 41 | | | 169 |
| Essex | | | | 1 | | 4 | | | 7 | | | 1 | | | | 1 | | 220 | | | | 3 | | | 237 |
| Fredricksburg | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Gloucester | | | | | | | | 2 | 26 | | 2 | 28 | 158 | 67 | | 3 | | 1 | | | | 1 | 11 | 1 | 300 |
| Hanover | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Henrico | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| James City | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| King & Queen | | | 9 | | 61 | | | 1 | | | 93 | | | | | | | 1 | | | | | 41 | | 206 |
| King George | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| King William | | | 4 | | 2 | 7 | 3 | | 75 | | | | | | | | | | | | | | 182 | | 273 |
| Lancaster | | | 1 | | 30 | 1 | 1 | 1 | | | | | | 43 | | | 134 | | 22 | | | 2 | | | 235 |
| Mathews | | | | | 176 | | | | | | | | | | | | | | | | | | | | 176 |
| Middlesex | | | | | 62 | | | 1 | | | | 38 | 1 | | | | | 2 | | | | | | | 104 |
| Kew Kent | 224 | | | | 5 | 2 | 3 | 1 | | | | | | | | | | 1 | | | | | 13 | | 249 |
| Newport News | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Northumberland | | | 1 | | | 1 | 2 | | | | | 154 | | | | | | 1 | 105 | | | 5 | | | 269 |
| Richmond City | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Richmond Co. | | 55 | 257 | | | 2 | 4 | | 1 | | | 21 | | | | | 107 | 5 | | | | 100 | | | 552 |
| Spotsylvania | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Stafford | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| West Point | | | | | 12 | | | | 40 | | 198 | | | | 13 | | | 1 | | | | | | 1 | 265 |
| Westmoreland | | 58 | | 2 | 1 | 2 | | | | 20 | | 2 | | | | | | 1 | 115 | 2 | 2 | | | | 205 |
| York | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Total | 224 | 113 | 272 | 5 | 349 | 20 | 13 | 6 | 149 | 87 | 293 | 244 | 159 | 110 | 254 | 4 | 241 | 233 | 300 | 3 | 2 | 152 | 247 | 2 | 3482 |

Source: Bay Transit.

## 3.4. Peer Review Analysis

Peer review analysis is another helpful tool to evaluate the transit system's performance in addition to the retrospective analysis. The previous Bay Transit TDP included Four County Transit, Mountain Empire Transit (MEOC), and JAUNT. This report included both Four County and Mountain Empire Transit and adds in RADAR. These peer agencies operate with similar resources and comparable populations, and each are systems within the State of Virginia. This is to account for state-specific funding rules and procedures that could affect the financial and operational metrics used in the section. **Table 12** displays data from FY 2022 gathered internally and from the Rural Integrated National Transit Database (iNTD) and datasets provided by Bay Transit. FY 2022 has the latest data gathered from peer agencies in the iNTD.

**Table 12: Service Area and Service Supplied (Peer Analysis)**

| Operating Statistics | MEOC | Four County Transit | RADAR | Peer Average | Bay Transit |
|---|---|---|---|---|---|
| Service Area Population | 83,596 | 100,490 | 397,913 | 194,000 | 173,655 |
| Service Area Size | 1375 | 1827 | 2367 | 1997 | 2417 |
| Service Area Population Density | 60 | 55 | 161 | 92.16 | 65 |
| Annual Revenue Miles | 665,219 | 648,176 | 317,309 | 543,568 | 1,395,078 |
| Annual Revenue Hours | 40,492 | 31,325 | 18,234 | 30,017 | 60,503 |
| Annual Passenger Trips | 112,975 | 106,986 | 56,904 | 92,288 | 127,170 |
| Passengers per Revenue Mile | 0.17 | 0.17 | 0.18 | 0.17 | 0.09 |

| Operating Statistics | MEOC | Four County Transit | RADAR | Peer Average | Bay Transit |
|---|---|---|---|---|---|
| Passengers per Revenue Hour | 2.79 | 3.42 | 3.12 | 3.11 | 2.10 |
| Revenue Miles per Capita | 7.96 | 6.45 | 0.80 | 5.07 | 8.03 |
| Revenue Hours per Capita | 0.48 | 0.31 | 0.05 | 0.28 | 0.35 |

Source: NTD FY 2022 Data and financial summaries provided by Bay Transit

## Service Area and Service Supplied

Bay Transit differs from its peer agencies primarily due to its larger service area population and service area size of 12 distinct counties. Despite this broader reach, the population density within Bay Transit's service area is comparable to that of MEOC and Four County Transit. RADAR has a notably larger population density due to Roanoke city and county. Outside of Roanoke, the service area is very similar to Bay Transit's.

Given its extensive service area, it is unsurprising that Bay Transit's revenue miles are double those of the second highest revenue mileage service, MEOC. When analyzed by revenue hours, Bay Transit also leads by a margin of 20,000 hours, with other agencies averaging 30,017 revenue hours, as shown in **Table 12**. This substantial number of revenue hours can be attributed to the significant portion of Bay Transit's operations dedicated to its demand response service, which serves 12 counties and results in longer trip distances.

Bay Transit stands out with the highest number of passenger trips among the four agencies, totaling 127,170, compared to the peer average of 92,288. While Bay Transit leads in overall trips, it currently has lower passenger trips per revenue hour and mile. The other three agencies have nearly identical passengers per revenue mile at 0.17 and 0.18, which is higher than Bay Transit's 0.09. Additionally, Bay Transit's 2.10 passengers per revenue hour is below the peer average of 3.11. These metrics reflect Bay Transit's extensive reach and service coverage. With 76 percent of its rides provided by demand response services, Bay Transit excels in serving a large, dispersed area, but this also presents challenges in achieving the same efficiency levels as other rural systems. While RADAR serves an even larger area, it is important to note that most of its service consists of deviated fixed routes, which typically result in lower mileage and fewer service hours due to the nature of the service when compared to demand response.

## Cost Efficiency

**Table 13** evaluates Bay Transit alongside three peer agencies, highlighting differences in operating costs and efficiency. Bay Transit incurs higher operating costs than the other agencies, which operate in most cases at less than half of Bay Transit's expenses due to their significantly smaller service areas. Bay Transit has the highest cost per passenger trip, cost per vehicle revenue hour, and subsidy per passenger but the second-lowest cost per vehicle revenue mile.

Internally, Bay Transit's costs have risen significantly since the previous Transit Development Plan, with the cost per passenger trip increasing from just under $19.00 in FY 2014. This suggests a need to reassess

cost controls and emphasizes the importance of acquiring more fuel-efficient vehicles to manage rising expenses, aligning with Bay Transit's current objective 3.1 outlined in Chapter 2. One noteworthy trend among peer agencies is the elimination of fares, as seen with MEOC and Four County Transit. These agencies found minimal revenue impact from eliminating fares, which boosted ridership and operational efficiency. Bay Transit, with a farebox recovery ratio of just two percent in FY 2022, might consider a similar approach to enhance ridership. However, this shift may not be easy to implement, as it would require the agreement of the twelve counties Bay Transit serves to provide additional local funding to compensate for lost fare revenue.

**Table 13: Cost Efficiency (Peer Analysis)**

| Operating Statistics | MEOC | Four County Transit | RADAR | Peer Average | Bay Transit |
|---|---|---|---|---|---|
| Annual Operating Cost | $2,109,423 | $ 2,099,902 | $1,046,185 | $1,751,837 | $4,488,720 |
| Cost per Passenger Trip | $18.67 | $19.63 | $18.39 | $18.89 | $35.30 |
| Cost per Vehicle Revenue Mile | $3.17 | $3.24 | $3.30 | $3.24 | $3.22 |
| Cost per Vehicle Revenue Hour | $52.09 | $67.04 | $57.38 | $58.84 | $74.19 |
| Farebox Revenue | $0 | $0 | $0 | $0 | $78,900 |
| Farebox Recovery Ratio | 0% | 0% | 0% | 0% | 2% |
| Subsidy per Passenger Trip | $18.67 | $19.63 | $18.39 | $18.89 | $34.72 |

Source: NTD FY 2022 Data and financial summaries provided by Bay Transit

## 3.5. Financial analysis

### *Funding Sources*

Due to the impact of COVID-19, FY21 totals were significantly affected, particularly in terms of passenger fare revenue and other income sources. Revenue to help offset Bay Transit's operating expenses primarily comes from passenger fares, which has accounted for two to three percent of the total operating expenses over the last two fiscal years. Additional revenue sources include advertising, leased space and contributions which together with fare revenue contribute three to four percent to the overall operating budget. The remaining deficit is covered by federal, state, and local funding. Over the last three fiscal years, federal funding has included FTA Formula Grants for Rural Areas (5311), CARES Act Rural Area Program Funds (5311), American Rescue Plan Act of 2021 Rural Area Program Funds (5311), and the USDOT Mobility Innovation Program. Bay Transit's funding sources for operating expenses are further explained in **Table 14** below.

**Table 14: FY 2021-FY2023 and Funding Sources for Bay Transit**

| Operating Revenue | FY21 Actual | FY22 Actual | FY23 Actual |
|---|---|---|---|
| Passenger Fares | $3,506 | $78,900 | $132,407 |
| Other Revenue | $35,055 | $36,616 | $33,993 |
| **Subtotal Operating Revenue** | **$38,561** | **$115,516** | **$166,400** |
| **Federal, State, Local Funds** | **FY21 Actual** | **FY22 Actual** | **FY23 Actual** |
| Federal | $3,415,089 | $2,246,428 | $2,261,028 |
| State | $188,718 | $1,253,432 | $1,340,733 |
| Local | $141,383 | $891,939 | $1,006,997 |
| **Total Operating Funding** | **$3,745,190** | **$4,391,799** | **$4,608,758** |
| **Total Revenue and Funding** | **$3,783,751** | **$4,507,315** | **$4,775,158** |
| **Total Operating Expenses** | **$3,721,387** | **$4,488,720** | **$4,543,502** |

Source: Bay Transit

## *Operating Budget*

**Table 15** provides Bay Transit's operating budgets and actual expenditures for fiscal years 2021 through 2023. The data reveals that expenses increased by 20.6 percent in fiscal year 2022 but saw a more modest rise of only 1.2 percent from fiscal year 2022 to fiscal year 2023. This significant initial increase followed by a stabilization can be attributed to the time it took for agencies to recover and stabilize operations post-COVID-19. An additional factor driving the rise in expenses was the increase in hourly wages for bus operators, which rose from $10 to $16 per hour during the post-COVID staffing challenges. The more moderate increase in FY 2023 expenses may be due to reduced overtime pay as staffing levels returned to more sustainable levels.

**Table 15: FY2021-FY2023 Operating Budget**

| Expense Description | FY21 Actual | FY 22 Actual | FY23 Actual |
|---|---|---|---|
| Salaries & Wages | $1,835,435 | $2,226,082 | $2,380,557 |
| Fringe Benefits | $270,349 | $398,371 | $368,491 |
| Education & Training | $0 | $323 | $1,021 |
| Materials and Supplies | $554,081 | $796,070 | $732,015 |
| Travel | $174 | $3,794 | $2,262 |
| Communication Services | $66,906 | $69,593 | $69,722 |
| Utilities | $18,688 | $16,564 | $21,504 |
| Contracted Repairs & Maintenance | $361,414 | $48,976 | $68,983 |
| Advertising & Promotion Media | $7,277 | $10,870 | $9,070 |
| Obligations and Services (Other) | $5,666 | $4,671 | $7,217 |

| Expense Description | FY21 Actual | FY 22 Actual | FY23 Actual |
|---|---|---|---|
| Rent | $23,791 | $16,778 | $18,803 |
| Service & Maintenance Contracts | $26,333 | $54,981 | $76,470 |
| Insurance | $135,783 | $126,366 | $126,572 |
| Indirect Costs | $372,133 | $446,420 | $473,261 |
| Professional Services | $13,256 | $9,920 | $ 3,907 |
| Other Fixed Charges | $28,951 | $40,182 | $38,169 |
| Purchased Transportation Services | $0 | $211,380 | $138,525 |
| Equipment Purchase | $4,633 | $19,275 | $13,937 |
| Special Trip Van Use | $ -3,483 | $-11,897 | $ -6,984 |
| Total Operating Expenses | $3,721,387 | $4,488,720 | $4,543,502 |

### *Capital Budget*

Most of Bay Transit's capital expenses from FY2021 to FY2023 were allocated to vehicle expenses, encompassing both the cost of vehicle replacements and the costs associated with putting these vehicles into service. The budget detailed **Table 16** provides a comprehensive breakdown of the funding sources allocated for these purposes. Besides vehicle-related expenses, other capital investments included facility renovations at the Northern Neck and Middle Peninsula Regional Transit Facilities, as well as the acquisition of new automated scheduling software. The facility renovations included a range of improvements, such as repairing the roof in Warsaw, installing new carpets and HVAC units, enhancing landscaping, and repaving parking lots.

**Table 16: Bay Transit Vehicle Expenses – FY 2021 – FY 2023**

| Fiscal Year | Federal | State | Local | Total |
|---|---|---|---|---|
| **2021** | $547,489 | $0 | $0 | $547,489 |
| **2022** | $111,446 | $22,289 | $5,572 | $139,307 |
| **2023** | $222,890 | $44,578 | $11,144 | $278,612 |

Source: Bay Transit

## 3.6. Outreach Efforts

Three outreach efforts were conducted during the development of this TDP to assess the community's sentiments regarding Bay Transit's service. The surveys targeted three key groups: regional stakeholders, vehicle drivers, and current customers, ensuring a comprehensive understanding of the perspectives and needs of different segments of the community.

## *Regional Stakeholders*

Following DRPT guidelines, the project team conducted engagement with seven stakeholders recommended by Bay Transit. On average the phone interviews were 30 minutes long and took place between May and July 2024.

The stakeholders selected for engagement included Charles City County, Gloucester County, Town of Kilmarnock, Northern Neck Planning District Commission, Rappahannock Community College, VCU Health Tappahannock Hospital and Warsaw-Richmond County Chamber of Commerce. Bay Transit recommended these stakeholders primarily due to their current partnerships and relevance for residents in the region.

The main findings can be summarized into six key topics:

### SERVICE AWARENESS AND PERCEPTION

- **Rebranding Needs**: There is a need to rebrand Bay Transit as a comprehensive transportation solution for the broader community. The current perception is that it primarily serves low-income, transportation disadvantaged individuals, Medicaid recipients, or seniors.
- **Outreach and Education**: Traditional outreach methods, such as flyers in community centers and engagement with church groups, were recommended to help educate and access potential customers unfamiliar with social media about the full range of services offered by Bay Transit. Stakeholders also suggested using existing venues such as social gatherings at senior centers for this purpose.

### SERVICE EXPANSION AND COVERAGE

- **Microtransit Expansion**: Stakeholders highlighted the need to expand the microtransit service beyond Gloucester, especially to serve VCU Health Tappahannock Hospital and other medical centers. This expansion would enhance access to essential healthcare services for residents in surrounding areas.
- **Level of Service**: There is a strong demand for expanding service hours and adding weekend services to better meet community needs. This includes providing reliable transportation options during weekends to accommodate the schedules of all residents, particularly those who work or have commitments on weekends. Weekend service could also eventually translate to increased tourism in the area, particularly during summertime.
- **Connectivity Improvements**: There is a need for better connectivity to urban centers and transportation hubs. Stakeholders suggested partnerships to connect to VRE and Amtrak stations, enhancing service reach.

### ACCESSIBILITY AND CONVENIENCE

- **Operational Improvements**: Stakeholders emphasized the need for earlier and more frequent services to accommodate schedules, particularly for students and patients. Extending service hours and expanding weekend services were also recommended.

- **Infrastructure Enhancements**: Improving infrastructure at bus stops, such as real-time tracking apps and safe waiting areas, was highlighted as a critical need. This includes creating shelters at new Dollar Stores and enhancing pedestrian and biking access.

#### SUPPORT FOR DISADVANTAGED POPULATIONS

- **Essential Services**: Bay Transit is vital for transportation disadvantaged individuals, including those without personal vehicles, the elderly, people with disabilities, and the formerly incarcerated. Stakeholders stressed the importance of maintaining and enhancing these services.
- **Community Partnerships:** Collaborations with local organizations, like the Northern Neck Boys and Girls Club, demonstrate Bay Transit's commitment to supporting vulnerable populations by providing essential transportation.

#### INNOVATION AND SUSTAINABILITY

- **Adopting EV Technology**: There is a push towards adopting electric vehicles and developing public EV charging infrastructure. Bay Transit is poised to install the first public EV charging stations in Gloucester County.
- **Exploring New Services**: Stakeholders suggested exploring partnerships for medical transportation and goods delivery to address community needs, such as providing transportation for medical appointments and enhancing service to areas outside Bay Transit's current footprint.

#### COMMUNICATION AND COLLABORATION

- **Effective Communication**: While Bay Transit has been praised for its responsiveness and collaboration, continuous improvement in outreach efforts, especially to underserved communities, is necessary. Including Bay Transit information on county websites was recommended to increase awareness.
- **Stakeholder Engagement**: Regular communication with stakeholders through quarterly reports, shared marketing efforts, and participation in local chambers of commerce has been effective. Enhanced communication with academic institutions and healthcare providers was also suggested.

## *On-Board Survey Findings*

An on-board survey of riders was conducted between June 17, 2024, and June 28, 2024, across Bay Transit services, yielding a total of 132 completed surveys. Two surveys were created: one for New Freedom, Bay Transit Express, and Advance Reservation service, and the other for The Rivah Ride–Tappahannock, and West Point–Paper Trail, yielding 127 completed surveys and five completed surveys, respectively. Answers breakdown for each of the questions can be found in Appendix A. What follows are topline results of this survey effort.

## MODE USE

- **Frequency of Use:** On average, the highest proportion of riders (34 percent) use Bay Transit services three to four days per week, closely followed by nearly three in ten riders who use the service either 5 days per week or one to two days per week (28 percent for each).
- **Alternative Mode:** In the absence or unavailability of Bay Transit services, nearly one-half of riders would have been driven by someone (49 percent), while about three in ten riders would not have been able to make the trip (31 percent).

## BAY TRANSIT RATINGS

- **Overall Satisfaction:** When asked to rate Bay Transit overall, on a scale from 1-10, the majority of riders gave an eight to ten rating (80 percent).
- **Satisfaction with Attributes of Transit:** The majority of riders were satisfied with Bay Transit across all measures (71 percent to 83 percent rating an eight to ten out of ten). Bay Transit being a low-cost travel option, taking you where you want to go, and being easy to understand how to use received the most eight to ten ratings (83 percent, 81 percent, and 81 percent, respectively) while Bay Transit communicating delays, cancellations, or changes in service received the fewest (71 percent).
- **Likelihood to Recommend:** Eight in ten riders are considered to be promoters of Bay Transit (82 percent), being very likely to recommend to their friends and family. This results in Bay Transit having a high Net Promotor Score (NPS) of 80.
- **Satisfaction with Customer Service:** Bay Transit received high ratings from riders on customer service when reserving a trip over the phone, with the majority of riders rating their satisfaction an eight to ten (82 percent).
- **Transportation Needs:** Bay Transit was rated highly when it comes to meeting their riders' transportation needs, with more than nine in ten riders agreeing Bay Transit met their needs (92 percent rating eight to ten).
- **Comparison to Other Public Transit:** Nearly seven in ten riders found Bay Transit's services to be better than other public transportation that they have used (69 percent rating eight to ten).

## TRIP PURPOSE

- **Common Purposes:** Riders use Bay Transit services for a diverse range of purposes. More than half of riders (64 percent) commute either to or from work (60 percent) and/or school (five percent). This is followed by four in ten riders using Bay Transit for shopping (42 percent) and medical or mental health needs (41 percent). Infrequent riders (those who ride two days per week or less) are more likely to ride Bay transit to go shopping or for medical or mental health needs than frequent riders (those who ride three to five days per week) (55 percent compared to 32 percent, and 57 percent compared to 30 percent, respectively).
- **Likelihood to use for New Purpose**: Almost five in ten riders that do not currently use Bay transit for medical or mental health needs (48 percent) said they would start to use Bay Transit for this purpose if the option was available to them. This is followed by 44 percent of riders who do not currently use Bay Transit for work related activities and 40 percent of riders who do not use it for personal errands/religious, community, or senior centers that would use it if the option was made available for these purposes.

### AWARENESS

- **Awareness about Bay Transit Express:** Riders were asked if they were aware of Bay Transit Express Rideshare. Two-thirds of riders were at least somewhat aware, while 24 percent of riders were not aware. Although this is expected as this service is only currently available for Gloucester County.

## *Driver Survey Findings*

The Bay Transit Driver Survey is designed to gather valuable insights from bus operators regarding various aspects of Bay Transit services. Six questions were asked to collect feedback from operators on the customer experience and perceived customer needs. 51 survey responses from bus operators were returned. Survey responses from operators on what customers like the most about Bay Transit's services are displayed in **Figure B3** in **Appendix B**. Customers main complaints answers can be found in **Figure B4** and drivers' answers on their perception on busiest time bands in the day can be found in **Figure B5**.

### WHAT CUSTOMERS LIKE THE MOST

The first question asks, "What do customers like the most about Bay Transit?", which identifies the key strengths of Bay Transit as perceived by its operators who interact daily with customers. This question helps in understanding which aspects of the service, particularly low-fare service, customer service, bus operators, and service reliability, are most appreciated by the passengers, which enables Bay Transit to maintain and further enhance these features.

- **Low-fare service**: This stands out as the most appreciated aspect of Bay Transit, with an overwhelming 35 respondents (68 percent) ranking it as the most liked option. This indicates that affordability is a primary factor driving customer satisfaction. Additionally, it was ranked second three times, third four times, and least common seven times. The consistent high ranking underscores the importance of maintaining low fares.
- **The bus operators** were the second most appreciated feature, with 5 respondents (10 percent) ranking them as the most liked aspect of Bay Transit's service. Many respondents also placed them as the second or third most common aspect, with 14 and 15 mentions, respectively. This suggests that overall, customers have positive customer service and transit experiences with their bus operators but that some operators view their role as less favorable compared to the other aspects of Bay Transit's services.
- **Service reliability** was ranked as the most liked by 7 respondents (14 percent), showing a moderate level of importance. It was often placed as the second most common aspect with 15 mentions, and third most common with 9 mentions. This indicates that service reliability is not perceived by operators as the most notable aspect of Bay Transit's services compared to the experience with bus operators or receiving low-fare service.
- **Customer service** was ranked as the most liked by four respondents (eight percent), indicating it is the top priority for a small segment of the user base. It was more frequently placed as the third or least liked aspect, with 15 and 20 mentions, respectively. This suggests that customer service might be considered a less essential or favored aspect of the customer experience compared to bus operators who play a more customer-facing role.

## WHAT CUSTOMERS COMPLAIN ABOUT THE MOST

The next question, "What do customers complain about the most?" seeks to uncover the primary areas of dissatisfaction among Bay Transit's customers, as perceived by bus operators. By ranking complaints regarding wait time, scheduling, cleaner buses, and service hours, this question provides insights into the areas that would benefit from more immediate attention and improvement to enhance the overall customer experience. Survey responses from operators on what customers complain about the most regarding Bay Transit's services are displayed in **Figure B4** in **Appendix B.** Below are summaries of the rankings given by respondents.

- **Cleaner Buses:** This emerged as the most common complaint by a significant margin, with 18 respondents (35 percent) ranking it as their top issue. This indicates a strong dissatisfaction with the cleanliness of the buses. However, it was rarely ranked second (mentioned one time) and was ranked third by five respondents. Notably, it was ranked fourth (least common) by 21 respondents, suggesting a more polarized view on this issue where it is either the top priority or the least of concerns.
- **Scheduling issues:** The most common complaint of 13 respondents (25 percent), making it the highest-ranked complaint overall. It was ranked second by 10 respondents and third by another 10, showing a consistent level of concern across operators. The fact that it was ranked fourth (least common) by 11 respondents suggests that while scheduling is a critical issue for many, it is not a concern for all users. The frequency of high-rank responses for scheduling aligns with the mixed responses to Customer Service in Question 1; indicating that operators are aware of customers who have expressed dissatisfaction with scheduling.
- **Wait times:** Identified as the most common complaint by eight respondents (16 percent), making it a significant issue for some users. It was ranked second by 11 respondents and third by another 13, indicating that it is a frequent concern. However, it was also ranked fourth (least common) by eight respondents, aligning with the mixed ranking of "Service Reliability" in Question 1. The consistent presence of wait time in the top three rankings highlights it as a key area for improvement.
- **Service Hours:** Ranked as the most common complaint by six respondents (12 percent). It was ranked second by eight respondents, third by 13 respondents, and fourth (least common) by 12 respondents. Additionally, it was mentioned 12 times in the "Others" category. This distribution suggests that while service hours are a concern for some users, they are not the main issue for most respondents. The relatively high number of "Others" mentions indicates that customers have varied opinions about Bay Transit's service hours.

## LOCATIONS THAT CUSTOMERS HAVE REQUESTED SERVICE WHERE THERE IS A NEED

This question asked operators "Please describe any locations or destinations beyond the current Bay Transit service zones and routes where people have requested to go or where you know there is a transit service need." The responses underscore a significant demand for expanding transit services to critical regional destinations and residential areas that are currently underserved.

- **Williamsburg, Richmond, and Norfolk:** A consistent theme in the responses was the frequent request for routes to these cities were repeatedly mentioned as key destinations, reflecting their

importance as economic, educational, and recreational hubs. Specific mentions of "Williamsburg," "Richmond area," and "Norfolk" highlight a clear and persistent need for improved regional connectivity.

- **Employment hubs and shopping areas:** Operators reported numerous requests for routes that facilitate daily commutes, with comments such as "From home to work," "Jobs at Monticello," and "Richmond area jobs." This feedback indicates a significant gap in the current service for those traveling to and from work, suggesting that Bay Transit should develop routes that better link residential areas with major employment centers to support the working population's daily travel needs.
- **Shopping centers and health facilities:** There were frequent requests for routes to these general locations such as "Mall," "Medical centers," and "Shopping areas" being mentioned. For example, one operator noted, "Some ask about going to Richmond area," pointing to the necessity for routes that support both essential and non-essential travel.

## SERVICE RECOMMENDATIONS

The next question asked, "Please list any services that should be structured differently and what changes you would recommend." The responses provided detailed and varied suggestions aimed at improving service efficiency, passenger satisfaction, and operational reliability.

- **Better scheduling and more reliable timing of services:** This was a prominent theme in the feedback. Several operators emphasized the importance of adhering to schedules and improving communication from dispatchers. Comments such as "Better scheduling from the dispatcher" and "Scheduling drivers properly" highlight a perceived gap in the current scheduling system that could be addressed to ensure buses run on time and avoid delays. As noted in Chapter 1, Bay Transit is currently in the early stages of implementing a new scheduling system. The full rollout of this software, expected in January 2025, is anticipated to resolve these issues.
- **Improved communication tools and protocols:** One operator suggested implementing "better communication with dispatchers" to avoid confusion and enhance coordination. This could involve leveraging advanced dispatch systems or real-time communication technologies to streamline operations and reduce misunderstandings.
- **Enhancing service hours of availability:** Multiple operators recommended extending service hours to accommodate the needs of passengers traveling during early morning or late evening hours. One response highlighted this need with the suggestion to "Extend hours, especially on weekends." This indicates a demand for more flexible service hours to better serve passengers outside of standard operating times.
- **Route adjustments to better serve high-demand areas and reduce redundancy:** Specific suggestions included creating "more direct routes" and ensuring buses are scheduled to cover areas with high passenger requests. For example, one operator mentioned the need for "more buses to Mechanicsville," reflecting a demand for connecting service to Richmond's surrounding areas.
- **Improving the physical condition and cleanliness of buses:** Several Operators suggested that "cleaner buses" would enhance the passenger experience and potentially increase ridership. This includes regular maintenance and cleaning protocols to ensure a pleasant and hygienic environment for passengers.
- **Supporting drivers with adequate resources and training:** Comments like "Training for drivers on customer service" and "Making sure drivers know the routes well" indicate a need for ongoing

professional development to ensure drivers are well-equipped to provide high-quality service and handle passenger interactions effectively.

### BUSINESS OF EACH SERVICE HOUR

To better understand the demand patterns, this question asks operators to "rank from 0 to 5 how busy each service hour is." The analysis clearly indicates distinct peak periods during the day, particularly in the morning from 6 a.m. to 9 a.m. and in the afternoon from 3 p.m. to 5 p.m. These times were consistently ranked as 5 (most busy) by most respondents, underscoring the high demand for transit services during these hours. The full rankings for the busyness of each service hour are displayed in **Figure B5** in **Appendix B.**

- **Morning peak hours:** The morning peak from 6 a.m. to 7 a.m., saw 23 respondents (45%) ranking it as the busiest, followed by 7 a.m. to 8 a.m. with 20 respondents (39%), and 8 a.m. to 9 a.m. with 18 respondents. This trend reflects a significant rush hour likely due to early morning commutes, necessitating increased resources and service frequency to effectively manage the high passenger volumes.
- **Afternoon peak hours:** The afternoon peak from 3:00 p.m. to 5:00 p.m. was highlighted as a critical time for Bay Transit. The hour from 3:00 p.m. to 4:00 p.m. had 17 respondents (33 percent) ranking it as the busiest, while 4:00 p.m. to 5:00 p.m. had 26 respondents (51 percent), marking it as one of the busiest times of the day. This period likely corresponds to the end of the workday and school day, requiring a robust service schedule to accommodate the high number of passengers and ensure timely transit.
- **Midday periods:** The midday period, from 10:00 a.m. to 2:00 p.m. showed moderate activity, with balanced busyness levels. Specifically, from 10:00 a.m. to 11:00 a.m., six respondents ranked it as the busiest, increasing to nine respondents for both the 11:00 a.m. to 12:00 p.m. and 12:00 p.m. to 1:00 p.m. periods, and continuing with nine respondents for 1:00 p.m. to 2:00 p.m. This steady demand throughout the mid-day hours suggests a consistent need for transit services, although less intense than during peak hours. Additionally, early morning and late evening hours, such as 5:00 p.m. to 6:00 p.m. with 15 respondents ranking it as the busiest, and 9:00 a.m. to 10:00 a.m. with 11 respondents, indicate specific times where sufficient service coverage is still necessary to manage passenger flow effectively.

Given these findings, Bay Transit should prioritize optimizing schedules and allocating additional resources during the identified peak times to enhance service efficiency and meet passenger needs effectively. This includes increasing the frequency of buses, improving coordination between services, deploying more drivers and support staff during peak times, and providing real-time updates on bus schedules and delays. By implementing these measures, Bay Transit can better manage the high passenger volumes during peak periods, ensuring a more efficient and satisfactory transit service for all users.

### ADDITIONAL SUGGESTIONS

Finally, the survey concludes with a question inviting additional suggestions or feedback: "Please list any other solutions or thoughts to improve public transportation in the Bay Transit service region." This open-

ended question provides an opportunity for bus operators to voice any ideas, concerns, or observations that might not be covered by the previous questions.

- **Extended service hours:** This was a prominent theme, particularly in the early mornings and late evenings, to better accommodate passengers who rely on public transit for commuting to work or other activities outside current operating times. Comments such as "Extend hours, especially on weekends" and "Need more early morning and late evening buses" highlighted this need.
- **Improved cleanliness and maintenance of buses:** Operators suggested implementing regular cleaning schedules and maintenance protocols to ensure a pleasant travel environment for passengers, with comments like "Regular cleaning of buses" and "Improve bus maintenance and cleanliness".
- **Better communication and scheduling practices:** Improving coordination between dispatchers and drivers was a common suggestion, with comments such as "Better communication with dispatchers" and "Improve scheduling to avoid delays" indicating areas where efficiency could be enhanced.
- **Creating more direct and efficient routes:** This was another frequent recommendation. Operators suggested that reducing redundant stops and creating more direct routes to popular destinations would streamline services and minimize travel time for passengers, as reflected in feedback like "more direct routes to popular destinations."
- **Incorporating technologies and amenities:** Operators suggested adding real-time tracking and Wi-Fi on buses and implementing mobile payment options. Comments such as "Install Wi-Fi on buses" and "Use real-time tracking to update passengers on bus locations" show a desire to modernize the transit system and offer these conveniences to passengers.
- **Underserved locations:** Operators mentioned specific places that could benefit from new or extended routes, such as "adding routes to underserved areas" and "extending services to more rural locations," indicating a need to improve accessibility for a larger population.
- **Enhanced driver training and support:** Suggestions included providing ongoing training in customer service and route knowledge to ensure high service standards, with comments like "Provide regular training for drivers" and "Ensure drivers are familiar with all routes." Additionally, specific operational suggestions, such as enforcing rules regarding no-shows to optimize scheduling and reduce inefficiencies, were mentioned. One operator noted, "Enforce rules regarding no-shows to avoid unnecessary delays."

## 3.7. Land Use Plans

Bay Transit provides transit to a service area spanning 12 counties: Charles City, Essex, Gloucester, King and Queen, King William, Lancaster, Mathews, Middlesex, New Kent, Northumberland, Richmond, and Westmoreland. In addition, Bay Transit offers some fixed-route services in West Point and Tappahannock, as well as seasonal trolley service in Colonial Beach and Urbanna. Each of these jurisdictions has comprehensive plans that include summaries of existing and planned future land uses. These future land use plans include discussions of planned or desired development that may eventually benefit from transit access. Generally, there is an effort among these counties to identify and encourage more compact, mixed-use development in designated “villages” or areas where there is existing development and supported public infrastructure to facilitate growth, while minimizing sprawl in rural areas of the county. Some plans

have not been updated in ten years (Charles City, Lancaster, Middlesex, Richmond) and are due for an update.

## *Charles City County*

Charles City County most recently updated its Comprehensive Plan in 2014. Eighty percent of the existing land in Charles City County is either undeveloped or used for agriculture or forestry; with a large portion of the undeveloped land under single tract ownership. The county is planning to ensure these tracts, if developed, are master planned in a comprehensive manner sensitive to the quality-of-life requirements of County citizens. Most commercial and industrial development is in the western part of the county, clustered along major roads or along the Chickahominy and James Rivers. Residential development within the county consists mostly of single-family housing; but between 2000 – 2012, one–third of building permits were for manufactured homes. The plan prioritizes preserving the rural character of the county by containing future development within defined growth centers, thereby relieving development pressure on existing agricultural and forested lands. The largest growth centers are designated for the communities of Roxbury (which contains the County's industrial center) and Charles City Courthouse (the governmental and public educational center), with five smaller growth areas located elsewhere across the county. High density single family and multi-family housing is anticipated in the Courthouse area. Overall, the plan prescribes that 85 percent of upcoming residential development, including multi-family units, be confined to the plan's designated growth centers. Commercial development discussions in the plan focus on growing the local tourism industry. The county is known for its abundance of historic and archeological resources and plans to finish conducting an intensive study of its historic resources before the next revision of the Comprehensive Plan.

## *Essex County*

Essex County last adopted an updated Comprehensive Plan in 2015. More than ninety percent of the existing land in Essex County is either undeveloped or used for forestry or agriculture. Most commercial development in the county is clustered near the Town of Tappahannock, with residential development scattered throughout the county. The most recent residential development has come in the form of mobile homes. The plan focuses on limiting growth largely to areas near Tappahannock, since this is where most development is occurring. Beyond this, the plan breaks down the county's land area into eight planning districts including the Town of Tappahannock. "Rural Residential Districts" which make up ten percent of the county's land area, are intended to accommodate between fifteen and twenty-five percent of County growth over a twenty-year period at a low density, rural residential scale. Meanwhile, "Rural Service Centers", small pockets of limited commercial developments, provide basic levels of support services to residents and are located along US Route 17 and US Route 360. Most future County development is planned in designated "Development Service Districts" (two percent of the county's land area) surrounding Tappahannock, where public sewer services are in place or planned. Planned residential or Planned Unit Developments (PUDs) will be limited to Development Service Districts, where public benefits in the form of

highway improvements, or other provisions such as affordable housing, are provided in exchange for higher densities. County owned landfill property, about 700 acres, is included in a "Deferred Development Service District" where development is not planned for the near future, but which could provide a site for a future industrial area not available elsewhere.

## *Gloucester County*

Gloucester County updated its Comprehensive Plan in 2016, covering a twenty-year period until 2036. Most existing residential and commercial development in Gloucester County is concentrated along US Route 17, Main Street or in Gloucester Village. Commercial strip development is typical along US Route 17 south of Gloucester. The highest residential concentrations are in the Court House and Gloucester Point areas. The Highway Corridor Development District (revised in 2014 to include parcels adjacent to the US Route 17 corridor between the Court House and Gloucester Point) has areas zoned for higher density commercial and residential development as public water and sewer are available. Current development along US Route 17 features many strip developments with undeveloped or vacant land interspersed within, creating a linear development pattern between the Court House and Gloucester Point. Gloucester Point, the most densely populated region of the County, and the Court House are identified as Village Development Areas (VDA's) designated for higher density development due to proximity of public infrastructure and transportation facilities. While Gloucester Point/Hayes area is the most densely populated center within the County, it is mostly residential as most commercial development has occurred along US Route 17.

The "Development District" (much of Gloucester Point and US Route 17) coincides with areas expected to be served by public utilities within the next 20 years as funding becomes available and is currently planned to be the County's principal population, service and employment center. Growth in this district is intended to discourage residential sprawl into the County's rural areas. "Rural Service Centers" are designated areas located at some roadway intersections where concentrated development can occur in the County's rural regions. These regions can be zoned as Cluster Districts with low density residential development and light commercial/industrial uses serving local community functions and residents outside the Development District. Complimentary residential and mixed-use development through Planned Unit Developments might also be supported. There are also Rural Countryside districts which contain low-density residential development, and Suburban Countryside districts in the county's western and northeastern parts, which contain residential development at higher densities.

## *King and Queen County*

King and Queen County updated its Comprehensive Plan in 2019. The plan covers a ten-year period up to 2030. It notes the 2006 Plan was deficient in providing growth management strategies to adequately address sustainable economic development areas. In the 2019 plan, emphasis has been placed on smart growth principles, promoting a mix of residential, commercial, and economic development uses. The plan

notes the county is relatively small, less than 7,000 in the 2010 census, and continues to grow very slowly, with no towns or significant concentrations of people. However, there is rapid growth from adjacent counties which might impact King and Queen. Agricultural lands, logging and farming industries make up most of the land in King and Queen County. The residential districts are generally waterfront communities or found within minor or major subdivisions. Commercial areas are encouraged along economic development hubs (zoned as a special overlay district) at Route 360 and Route 33 Corridor, St. Stephens Church, Shacklefords, Shacklefords Fork, Mattaponi/Airport Road and York River Road.

## *King William County*

King William County updated its Comprehensive Plan, "Blueprint 2041" in 2022. The county has grown by nearly 12 percent in the past ten years, which is faster than every peer county in the region, as well as the Richmond metro. While citizens emphasized the importance of maintaining the rural character of the county, the plan encourages mixed-use residential and commercial growth in "planned villages" than enabling "residential sprawl" throughout the County to conserve the rural landscape. Planners used "development character districts" to formulate a Future Land Use Map, which includes Central Garage is as a growth area. Central Garage is being positioned as a major center for business and development with future updated development regulations to allow for more dense commercial buildings and mixed land uses. Other potential key projects described in the Plan include the Route 360 Corridor (a key gateway corridor), a new business village at King William Courthouse Village (which has been a center or social and government activity) and improving Commerce Park (a business park in the Manquin area). Lower cost of housing and the proximity to the Richmond metro area has resulted in nearly 90 percent of county residents commuting outside of King William County each day for work. The plan notes that there is opportunity and need for more industrial and commercial development in the area, as growing residential "bedroom" communities do not sufficiently pay associated bills for public service (utilities, schools, public safety, etc.). Currently, business and industrial districts account for less than one percent along the US Route 360 Corridor near Manquin and Central Garage.

## *Lancaster County*

Lancaster County last updated its Comprehensive Plan in 2013. The plan included several provisions for development, such as limiting the extent of sprawl and 'checkerboard development' in existing agricultural and open lands and encouraging clustering of development and higher density residential or commercial development to existing villages and towns within the county. The county's listed objectives include the investigation of a Purchase of Development Rights program (PDR) and Transfer of Develop Rights (TDR) program to direct development away from farm and forestland and toward developed areas. The county's largest primary and existing growth areas identified for future development are designated as a "Planned Growth Area" (PGA) and have high levels of existing public infrastructure. The PGA covers the space between the towns of Kilmarnock, Irvington, and White Stone, along with designated rural villages nearby. Higher density residential and commercial activity, along with new investments to public infrastructure and

community services will first be directed to the PGA. Other smaller planned growth areas in rural villages exist, including Lively, which has a rural village designation. The villages of Lancaster, Morattico, and Weems also qualify for planned growth area status.

## Mathews County

Matthews County last amended its Comprehensive Plan in 2018, which was first adopted in 2011. The plan covers twenty years up to 2030. The County is home to about 8,978 residents (2010 census) and is a popular destination for seasonal visitors and retirees. About 50 percent of the land in Mathews County is either undeveloped or used for agriculture, with most of this land located in the central portion of the county. Single-family residential development lines the county's extensive shoreline, while commercial and industrial development are concentrated around State Route 14 and State Route 198. Key planning recommendations include increasing diversity of housing types including age-restricted and workforce housing, mixed use housing with ground-floor retail uses and cluster development housing. The plan confines most development to the areas in and around Mathews Village, several smaller village "hamlets" and highway crossroads, and in small waterfront business districts along the county coastline. Village hamlets allow and encourage compact and mixed-use development (with housing above commercial uses) that serve locals. The plan designates the communities of Hudgins, Gwynn's Island, and Cobbs Creek as hamlets. Hudgins is described as an interesting opportunity for mixed uses because of the unique pedestrian scale of the community. Residential development continues around the waterfront, which requires planning in anticipation of shoreline erosion and increased sea level rise concerns.

## Middlesex County

Middlesex County last updated its Comprehensive Plan in 2009, which was first adopted in 2001. Existing residential development in Middlesex County is mostly along the county coastline, while commercial development is largely confined to corridors along US Route 17 and State Route 33. The future land use map highlights three sub-areas of the County; Deltaville, Saluda/Urbanna, and Topping/Hartfield as areas where much of the county's historic development has occurred and which can accommodate the county's growth needs to 2030 and beyond. The plan includes provisions for mixed-use residential, commercial development and residential development with a variety of housing styles in areas along the Rappahannock River near Urbanna and Water View. These areas are now zoned "Village Community." Future planned commercial development is largely in the same location as existing development, but the development is organized in nodes near existing developed areas and major highway intersections rather than in the existing strip development configuration.

## New Kent County

New Kent County last adopted its Comprehensive Plan in 2012, and last updated the plan in 2019. Most residential development is in the western and central portions of New Kent County. Commercial development is largely confined to areas around Bottoms Bridge, Providence Forge, and Eltham, all of

which are complemented by nearby residences. New Kent Courthouse is emerging as the county's first designated "Village" area, with land designated for mixed-use development. Other mixed-use centers emerged at the Kentland development surrounding Colonial Downs, at Patriot's Landing in Bottoms Bridge, and in the Farms of New Kent. A corridor of land along State Route 33 is identified as the primary focus for future business and industrial development within the county. The plan also permits smaller-scale development at crossroads locations farther away from village centers.

## *Northumberland County*

Northumberland County last adopted its Comprehensive Plan in 2016. More than 80 percent of the land in Northumberland County is either vacant or dedicated to agriculture or forestry. Much of this undeveloped land is in the central and southwestern portions of the county, away from major roadways. Existing development is concentrated along roads and the county waterfront. Newer upscale residential developments are found near or on the shorelines while more modest developments including mobile and manufactured units are found throughout other rural areas of the County. One strategy from the county is to strengthen the "Village" concept to encourage more clustering of higher intensity uses, including small businesses and industries. This can be done by establishing development guidelines to direct growth to areas with few constraints and better manage growth along the shoreline, which would help preserve the rural nature of the county and sensitive environmental areas, while preventing sprawl along the primary highway corridors. Nine locations are identified for recognition as villages: Village, Callao, Lottsburg, Heathsville, Lilian, Burgess, Wicomico Church, Reedville and North Kilmarnock, all of which are on US Route 360, the primary transportation and commercial corridor. The Comprehensive Plan addresses each village with a plan to improve village infrastructure, mobility needs, public infrastructure and other needs to encourage village development. Commercial development is located more along primary highways throughout the county and in higher concentrations near the designated development centers of Callao, Heathsville, and Burgess, all of which have the potential to serve as a "town center" and are planned to be primary commercial hubs of the County.

## *Richmond County*

Richmond County last adopted its Comprehensive Plan in 2013. The plan directs most future growth toward the existing developed area around the Town of Warsaw, specifically prioritizing the preservation of the county's prime farmland. As part of this strategy, the County Board acquired 57 acres in Warsaw to develop "Commerce Park," which is zoned for industrial and manufacturing uses. Commerce Park serves as the primary hub for business and commerce in both Warsaw and Richmond County and includes Bay Transit's Northern Neck Transit Facility. The County also purchased 85 acres adjoining Commerce Park for development of a multi-functional community park. The plan permits limited commercial land use in several other villages (Farnham, Haynesville, Mulch, Newland, Sharps, and Village) and rural crossroads areas throughout the county. Residential development areas are largely confined to locations along secondary highways near US Route 360, east of Warsaw, with other developments prescribed within and adjacent to

Warsaw and on some parts of the county's shoreline. There is a potential for high-density residential development in Warsaw and limited high-density pockets in rural villages.

## *Westmoreland County*

The county last adopted its Comprehensive Plan in 2017. Westmoreland County is a rural location largely composed of waterfront communities. Agricultural land use is at about 42 percent of the county. Residences and businesses are located throughout the county, but most are in and around the Towns of Montross and Colonial Beach, or in other small community centers. Twenty-seven percent of the residences in the county are only used seasonally or recreationally, which is far above the state average (1.9 percent) and a jump in the county from the 18 percent in the 2000 Census. Commercial uses are primarily in Colonial Beach in Montross but are also found near town boundaries including Coles Point, Hague, Kinsale, Monroe Hall, Carmel Church and Oak Grove. Industrial development is spread across the county, with the larger sites including Colonial Beach Commerce Park and several other developments near the communities of Leedstown and Maple Grove. The plan prioritizes retaining the county's rural character while incorporating scattered industrial uses. The plan designates 'Primary Growth Areas' outside the Towns of Colonial Beach and Montross. These areas permit moderate-density residential, retail, office, and light manufacturing land uses. Other 'Secondary Growth Areas' contain similar uses but at lower densities. These areas compose the centers of county communities.

## *Town of Colonial Beach*

The town last adopted its Comprehensive Plan in 2020. Residential development primarily consists of single-family homes with isolated higher density developments scattered throughout town. The Monroe Point neighborhood, the gateway to the town for those traveling on State Route 205, and the most recently developed section in town, is zoned to have a multi-family unit area and currently has a mixed-use development with town homes. A short-term goal is to expand the housing stock with more affordable housing for the workforce and aging population. There is a need in the Town for senior facilities, senior housing and healthcare services. The Town is also developing a plan to secure historic designation for its downtown, marinas and other neighborhoods with the goal of attracting developers and businesses to expand the downtown area. Of the Town's total land area, about 30 percent remains undeveloped. Most of this land can be found in the Classic Shores neighborhood and north and western parts of Colonial Beach. Potomac Crossing is mentioned as a potential site for mixed-income and mixed-use development. Colonial Beach is planning to work with Westmoreland County to annex land adjacent to Potomac Crossing that buffers Enterprise Zones. Commercial activity is found primarily on a six-block segment of Colonial Avenue and the Beachgate Shopping Center. While there are some older blighted areas on the Colonial Avenue corridor, the existing area is being encouraged for redevelopment through a Revitalization Plan. Residential properties in the area have been converting into office and retail functions.

## Town of Kilmarnock

The town last adopted its Comprehensive Plan in 2019. The town's goals include maintaining the Town's position as a major business, community service and visitor serving center for residents and the region, while maintaining the historic small-town identity of the downtown area. Ongoing implementation of the Town's Downtown Revitalization Plan includes ensuring the community is "pedestrian friendly," with improvements to the streetscape and adjustments to on-street parking. The "Steptoe's Overlay District" allows for flexibility in terms of off-street parking requirements to encourage more business development and to preserve the character of the Town's original trade center. Housing goals include a range of affordable housing styles that incorporate open space and amenities in pedestrian-oriented settings. Single family residences are the predominant type of residence in the town with 585 homes, with the next category as multi-family residential which are often classified as a senior citizen or caretaker unit. Other approved developments that will increase population include a 128-unit medium-density development at Crossroads at the Chesapeake, Kilmarnock Glen, a PUD approved for 423 units, and Mercer Place which provides housing for the workforce such as teachers. About 40 percent of the land in town is vacant and developable, most of which can be constructed with housing. If housing is constructed with the same density of roughly 2 people per acre, the comprehensive plan projects a potential increase of up to 1,754 people or double the existing town population. The Northumberland County comprehensive plan includes a conceptual plan for the "Village of North Kilmarnock" PUD which is adjacent to the Town of Kilmarnock and could grow into a small commercial hub with mixed-use development in the future. In addition, the Lancaster County comprehensive plan notes the PGA between the towns of Kilmarnock, White Stone and Irvington where higher density residential and commercial activity will be directed.

## Town of Urbanna

The town last adopted its Comprehensive Plan in 2012. Existing land use is mostly single family residential, but there has been an increase in vacation/second homes, retirement homes, and multi-family condominium developments constructed in the vicinity. There are currently four multi-family developments in the Town. The plan anticipates an increase in home designs aimed toward senior citizens and those with disabilities, and active living and assisted care communities. Commercial space is confined to the two-block space within the downtown historic district. However, many working adults have relocated outside of Urbanna to be closer to employment centers. Staff estimates that the population grows to around 1,000 people during the summer (twice the year-round population). Goals for the future include retaining low-density residential development outside of Town, concentrating commercial development to serve the population along major arterial streets, diversifying the economic base, and encouraging higher-density, mixed use waterfront development (while protecting environmentally sensitive areas). A significant amount of new growth in the Urbanna area is found outside the town limits. A recreational vehicle campground (zoned medium-density residential) located right outside of town is connected to the seasonal trolley and is important to future residential development and Urbanna's economy. Only about 10 percent of land in the Town is vacant and developable due to environmental constraints.

### *Town of West Point*

The town last adopted its Comprehensive Plan in 2019. Existing land use is mostly single-family residential, but the plans goals include the importance of providing a balanced distribution of housing types and affordable housing for elderly, low and moderate income by maintaining zoning and building codes that will not prohibit such development. Currently the Town has plans for two new subdivisions (Magnolia Meadows and Pointers subdivision). Other goals for the future include supporting the Town's tourism base while encouraging waterfront development that is consistent with efforts to protect its natural resources. The Town has formed a Waterfront Mixed-Use District to provide waterfront development opportunities while protecting and enhancing shoreline resources. In addition, a Mixed-Use Corridor District along King William Avenue Corridor (where future commercial development is being focused) will help advance pedestrian-scaled, mixed-use neighborhoods and commercial areas. An Economic Corridor Overlay District will support 14th Street (Rt. 33) with uniform development standards to encourage a mix of land uses and enhance the corridor's appearance and connections with the historic district. West Point plans to appeal to new businesses to promote the future development of an industrial park.

## 3.8. Demand-Response Origins and Destinations

Data from Bay Transit's reservations and itinerary planning software was examined for a one-month period (October 2023) to identify patterns in cross-jurisdictional trips. Figure **18** identifies cross-jurisdictional travel within that month. The most common trips were between Richmond and Essex counties, accounting for 477 trips or 14 percent of the total. Following closely, Charles City and New Kent counties had 465 cross-jurisdictional trips, representing 13 percent. Other significant cross-jurisdictional travel occurred in West Point and King William with 380 trips (11 percent), Matthews and Gloucester with 334 trips (ten percent), and Northumberland and Lancaster with 288 trips (eight percent). It is important to note that counties provide varying levels of local funding support for Bay Transit, which likely contributes to the higher levels of cross-jurisdictional travel. Local funding considerations are a key driver of resource allocation, particularly in terms of buses and operators. For instance, New Kent and Charles City counties share the cost of three buses that operate between both areas, making it unsurprising that cross-jurisdictional trips between these two counties ranked second when compared to other regions.

**Figure 18: Demand-Response Cross-Jurisdictional Trips (October 2023)**

| | | Charles City | Colonial Beach | Essex | Fredricksburg | Gloucester | Hanover | Henrico | James City | King & Queen | King George | King William | Lancaster | Mathews | Middlesex | Kew Kent | Newport News | Northumberland | Richmond City | Richmond Co. | Spotsylvania | Stafford | Westmoreland | West Point | York | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Origin | Charles City | | | | | | 1 | | | | | | | | | 241 | | | | | | | | | | 242 |
| | Colonial Beach | | | | 2 | | | | | | 67 | | | | | | | | | 58 | 1 | | 41 | | | 169 |
| | Essex | | | | 1 | | 4 | | | 7 | | | 1 | | | | 1 | | 220 | | | | 3 | | | 237 |
| | Fredricksburg | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Gloucester | | | | | | | | 2 | 26 | | 2 | 28 | 158 | 67 | | 3 | | 1 | | | | 1 | 11 | 1 | 300 |
| | Hanover | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Henrico | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | James City | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | King & Queen | | | 9 | | 61 | | | 1 | | | 93 | | | | | | | 1 | | | | | 41 | | 206 |
| | King George | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | King William | | | 4 | | 2 | 7 | 3 | | 75 | | | | | | | | | | | | | | 182 | | 273 |
| | Lancaster | | | 1 | | 30 | 1 | 1 | 1 | | | | | | 43 | | | 134 | | 22 | | | 2 | | | 235 |
| | Mathews | | | | | 176 | | | | | | | | | | | | | | | | | | | | 176 |
| | Middlesex | | | | | 62 | | | 1 | | | | 38 | 1 | | | | | 2 | | | | | | | 104 |
| | Kew Kent | 224 | | | | 5 | 2 | 3 | 1 | | | | | | | | | | 1 | | | | | 13 | | 249 |
| | Newport News | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Northumberland | | | 1 | | | 1 | 2 | | | | | 154 | | | | | | 1 | 105 | | | 5 | | | 269 |
| | Richmond City | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Richmond Co. | | 55 | 257 | | | 2 | 4 | | 1 | | | 21 | | | | | 107 | 5 | | | | 100 | | | 552 |
| | Spotsylvania | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Stafford | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | West Point | | | | | 12 | | | | 40 | | 198 | | | | 13 | | | 1 | | | | | | 1 | 265 |
| | Westmoreland | | 58 | | 2 | 1 | 2 | | | | 20 | | 2 | | | | | | 1 | 115 | 2 | 2 | | | | 205 |
| | York | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Total | 224 | 113 | 272 | 5 | 349 | 20 | 13 | 6 | 149 | 87 | 293 | 244 | 159 | 110 | 254 | 4 | 241 | 233 | 300 | 3 | 2 | 152 | 247 | 2 | 3482 |

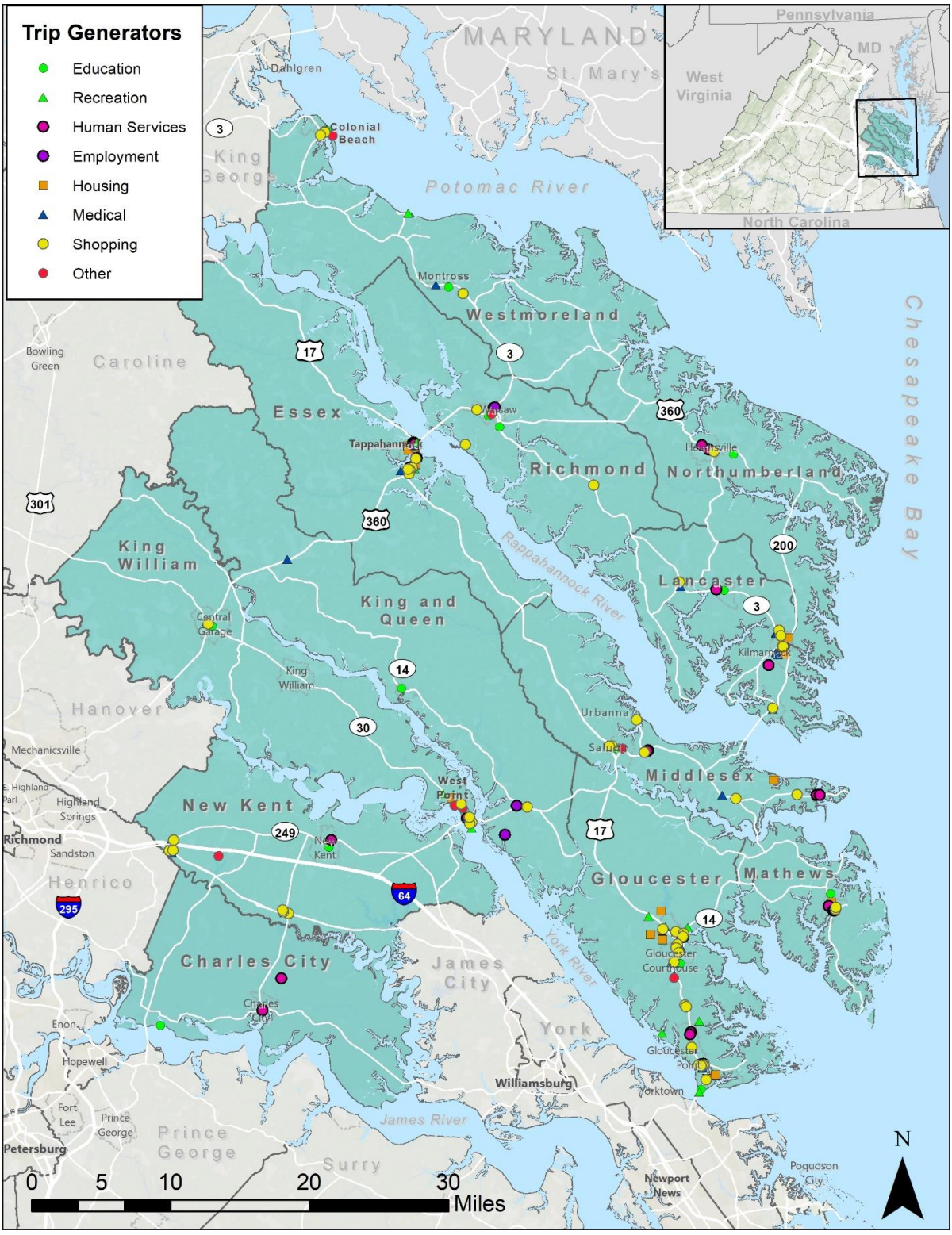
Source: Bay Transit.

## 3.9. Trip Generators

Identifying major trip generators in the service area indicates where transit services may be most needed and where are likely destinations for current transit service. Trip generators attract transit demand and include common origins and destinations such as multi-unit housing, medical facilities, educational facilities, shopping centers and employment centers.

**Figure** 19 displays the major trip generators in the service area. The full list of trip generators on this map can be found in Table C1 in Appendix C.

## Figure 19: Trip Generators in Service Area



### *Trip Generator Categories*

**Education:** The Education category includes post-secondary centers and major elementary, middle and high schools. Post-secondary centers may attract students who do not have automobile access. Other schools double as not only a major trip generator for students, but faculty who may not have car access.

**Housing:** The Housing category includes apartment complexes, as well as low-income housing concentrations like mobile home parks. The high density of people living in an area is one reason for including apartment complexes. Another reason for including these and not single-family subdivisions is the higher likelihood that residents need to use public transportation.

**Human Services:** Human Services includes many different government offices, such as social services, libraries and pharmacies. Some of the services, such as Goodwill may attract residents who do not have automobile access and provide them with necessary resources.

**Medical:** Medical services include urgent care, hospitals and clinicians. The services are often used by the senior population, who are the primary demographic for Bay Transit.

**Other:** The other category includes trip generators not captured in the other categories and include other potential areas of interest like museums and major employers.

**Recreation:** Includes parks and other natural viewpoints in the area. For those that do not have personal vehicle access, Bay Transit's services may be the only way to reach these places that may be slightly off main roads and access points.

**Shopping:** Includes grocery stores and other commercial centers. Access to fresh and affordable groceries is essential for good health and survival, and many of Bay Transit's top destinations are Walmart and Food Lion.

**Employment Centers:** Employment centers, job assistance or job training centers are important resources for residents and Bay Transit riders. Over half of all trips taken on Bay Transit are for commuting purposes. Many employment centers overlap with other trip generators such as shopping centers and education or medical facilities as well.

## 3.10. Title VI and Triennial Review

A Rural Public Transit Compliance Review was completed on January 26, 2023, to report the compliance of the system regarding current laws and regulations. The report states that one issue was found in procurement procedures. Corrective action took place on this issue. The report also recommended that if Bay Transit goes fare free for longer than 6-months that they perform a fare change equity analysis (Title VI).

## 3.11. Potential Future Transit Service Needs

The following bullets summarize the most relevant high-level recommendations for Bay Transit, identifying future needs based on an in-depth analysis of existing conditions, customer surveys, driver surveys, and feedback from local stakeholders. By synthesizing data from these diverse sources, this TDP aims to provide the baseline for developing a strategic guidance that addresses the current challenges and anticipates future demands. The recommendations focus on enhancing service efficiency, expanding coverage, improving customer satisfaction, and integrating innovative solutions to ensure Bay Transit continues to meet the evolving needs of the community effectively. These insights will help shape the Service and Capital Improvement Plan.

### *Service Expansion and Connectivity*

- **Fixed Route and Demand-Response Optimization**: The trip demand for demand-response trips suggests potential for a limited fixed route between Richmond, Central Garage, Tappahannock, New Kent, and Charles City. The highest number of demand-response trips are between Richmond and Essex County, likely originating from Tappahannock, the largest city in the county. The second highest number of demand-response trips are between Charles City and New Kent. Despite the high number of demand-response trips between some of these locations, this is unlikely to provide a sufficient critical mass of riders in the next five-year horizon to support a new deviated fixed-route, which would require more sustained long-term funding or a potential partnership with another organization or transit agency. However, there is a strong base of existing ridership with the Rivah Ride route in Tappahannock, whose riders have been requesting service to Warsaw, about 8 miles northeast across the Rappahannock River. Bay Transit could pilot a limited (2-3 times a week) deviated fixed route between Tappahannock and Warsaw (possibly in partnership with the Rappahannock Community College) to reduce some demand-response services in these areas and free up capacity in other parts of the Bay Transit service area.
- **Hampton Roads Express Bus Corridor**: The Hampton Roads Regional Transit Vision Plan's long-term recommendations include establishing an express bus corridor connecting Gloucester Courthouse to the Oyster Point area of Newport News. While this could reduce reliance on Bay Transit's demand-response services in Gloucester County, it also presents an opportunity to explore new partnerships with neighboring transit systems. Bay Transit should explore this potential partnership as such collaborations could enhance connectivity with areas outside Bay Transit's current service region, improving regional access and offering a more integrated transportation network.
- **Charles City Connectivity:** Charles City is developing a comprehensive plan and is interested in partnering with GRTC (Greater Richmond Transit Company) and Bay Transit to enhance connectivity between Richmond and key locations, such as the Charles City Courthouse and Roxbury. Bay Transit should explore this potential partnership as this collaboration could provide Bay Transit with an opportunity to secure new local funding sources, while also expanding its service offerings, such as potential microtransit service, and strengthening regional transportation links.
- **Northern Neck Region Connectivity**: Northern Neck residents would benefit from a service connecting them to the Virginia Railway Express and Amtrak train stations in Fredericksburg, a priority identified by the Northern Neck Planning District Commission. Additionally, a small fee-based

transportation service on popular or peak nights and weekends could compensate for the lack of Uber and Lyft services and foster tourism in the area. The region increases the number of visitors and connectivity options for visitors that access the area by boat. The region is interested in increasing connectivity to the marina and the downtown business to enhance local economy. Bay Transit should explore the possibility of expanding the level of service hours to the Northern Neck region.

- **Warsaw to Tappahannock Bridge Transportation**: According to the Warsaw County Chamber of Commerce, there is a significant need for transportation across the bridge connecting Warsaw to Tappahannock and for implementing weekend services between these locations. Bay Transit should consider expanding service hours of its demand response service.
- **Promote Expanded Use for New Purposes:** Nearly half of the riders surveyed do not currently use Bay Transit for medical or mental health needs expressed interest in doing so if the option were available. Bay Transit should explore ways to expand and promote services for medical, work-related, and personal errands, particularly to the infrequent riders who are more likely to use transit for these purposes.

## *New Microtransit Services and Converting to Microtransit*

- **West Point Microtransit Pilot**: Bay Transit has been in discussion with the town to transition the existing "Paper Trail" trolley to microtransit in December 2024, including discussion about the service area and service hours. The current plan is to run microtransit service similar to the Bay Transit Express microtransit service in Gloucester County, using TripMaster's microtransit module. The app will be branded "Bay Transit 4U". Bay Transit should continue assessing the costs associated with implementing a microtransit program and continue discussions with the town regarding potential long-term funding opportunities.[9]
- **New Kent and Charles City County Microtransit Pilot**: Bay Transit is currently exploring microtransit in these counties and is requesting proposals from consultants to produce an assessment of the options and costs for implementing a microtransit program.
- **Kilmarnock Microtransit Pilot:** While the Kilmarnock Trolley was discontinued due to low ridership, there is strong interest in exploring a microtransit service model funded by local tax dollars. Bay Transit should assess the costs associated with implementing a microtransit program and initiate discussions with the town regarding potential funding opportunities. This proactive approach could pave the way for a tailored, community-supported transit solution that better meets the needs of Kilmarnock residents.
- **King & Queen County Microtransit Pilot**: As one of the most rural counties in the Bay Transit service area, microtransit could be a welcome addition to county residents, some of whom use Bay Transit's demand-response service to access essential medical services, shopping and other destinations which have limited locations in the county, and which could be a good fit for a microtransit zone. Bay Transit should initiate discussions with the county regarding potential costs and funding opportunities for service along key corridors such as Route 33 or Route 360.
- **Gloucester County Service Improvements**: Given the increasing population and demand in Gloucester County, Bay Transit Express should consider expanding the service hours of its microtransit

[9] Since this chapter was written the West Point Microtransit service was officially launched on December 2, 2024.

service by expanding weekend hours and weekday operating hours. The county is already expanding its microtransit zone to reach more destinations and riders.

## Service Improvements for Specific Groups

- **Rappahannock Community College Students:** In Warsaw, Rappahannock Community College students would benefit from an expanded deviated fixed-route and increased service capacity. Bay Transit should assess the feasibility and costs of increasing demand-response service capacity, , particularly during peak hours to better ensure students are able to receive a ride before and after classes. This adjustment would enhance accessibility and ensure that students can reliably reach their classes or return home within a predictable timeframe.
- **Shelters and Safe Waiting Areas:** Passengers in the Northern Neck region would greatly benefit from improved infrastructure at popular pickup locations. Bay Transit currently has bus shelters in fifteen locations throughout the service area including the Food Lion parking lot in Warsaw, the NNPDC, Thomas' Store, and Rappahannock Community College. Most of the Rivah Ride stops also have signs branded with VCU Health Tappahannock Hospital, which is a main funder of service. Bay Transit should continue engaging in discussions with the Northern Neck Planning District Commission to explore further collaboration opportunities with regional stakeholders for building low-cost seating, more shelters or safe waiting areas at these key locations. While Bay Transit may be shifting away from deviated fixed-route services in some areas towards more door-to-door or microtransit service, providing safer, more accessible, comfortable and more visible waiting areas along key destinations in the network will welcome more riders to use Bay Transit's services, especially older adults or individuals with disabilities.

## Increasing Awareness in the Community

- **Rebranding and Expanding Perception**: Bay Transit is currently perceived primarily as a service for the transportation disadvantaged, including low-income individuals, Medicaid recipients, or seniors. Bay Transit should work to develop a marketing strategy that will rebrand its service as a comprehensive transportation solution that serves the entire community.
- **Community Outreach:** It is recommended for Bay Transit to continue making use of traditional outreach methods, such as distributing flyers in community centers, social clubs, civic organizations, post offices, hospitals, and engaging with church groups, to increase visibility. This would be crucial for older residents who may struggle with digital platforms.
- **Innovative Marketing Strategies:** To attract a broader user base, Bay Transit could continue exploring and expanding on innovative marketing strategies, such as community events, partnerships with local businesses, or targeted advertising campaigns, to reach potential users who may not be aware of the service.

## Enhance Communication of Service Changes

- **Improve Communication on Delays and Cancellations**: Although overall satisfaction with Bay Transit is high, the communication of delays, cancellations, or service changes received lower satisfaction scores. Implementing real-time communication tools, such as mobile notifications or a dedicated service update section on the website, could improve rider satisfaction in this area.

## *Leverage High Satisfaction to Expand User Base*

- **Capitalize on High Net Promoter Score (NPS):** With an NPS of 80, the majority of riders are likely to recommend Bay Transit to others. Bay Transit should leverage this strong customer satisfaction by encouraging riders to refer friends and family, possibly through a referral program that offers incentives for bringing in new riders.

## *Service Quality Improvements*

- **Enhance Bus Cleanliness and Maintenance**: Bay Transit should prioritize regular cleaning and maintenance of buses to address the most common customer complaint. Implement a structured cleaning schedule and maintenance protocol to ensure buses are consistently clean and in good condition.
- **Improve Scheduling and Communication:** Focus on better scheduling and communication between dispatchers and drivers. Implement advanced scheduling systems and real-time communication tools to minimize delays and ensure that buses run on time.
- **Optimize Route Efficiency:** Reevaluate and streamline bus routes to create more direct paths to popular destinations, reducing redundant stops and minimizing travel time for passengers. This could include developing new routes to connect residential areas with major employment hubs and shopping centers, as well as adjusting current routes to better serve high-traffic areas.
- **Incorporate Technology and Modern Amenities:** Modernize the transit system by incorporating technologies such as real-time tracking, Wi-Fi on buses, and mobile payment options. These features would enhance the convenience and appeal of Bay Transit services, attracting more users and improving overall customer satisfaction.

## *Training*

- **Support Drivers with Training and Resources**: Provide ongoing training for drivers focused on customer service, route knowledge, and operational efficiency. Ensure that drivers are well-equipped to deliver high-quality service and handle passenger interactions effectively. Additionally, enforce rules regarding no-shows to optimize scheduling and reduce operational inefficiencies.

# CHAPTER 4: PLANNED IMPROVEMENTS AND MODIFICATIONS

## 4.1. Introduction

Chapter 4 outlines planned service improvements in response to the opportunities for improvement identified in Chapter 3 of this TDP. Planned improvements are designed to improve performance and quality and expand the availability of Bay Transit services. This chapter will review key market indicators that support transit expansion, and outline service, capital, and policy recommendations.

## 4.2. Demographic Analysis of Existing Population

This chapter will begin by exploring the existing and historical population trends of the Bay Transit service area, followed by key demographic characteristics, which highlight the necessity for enhancing transit services. The goal is to ensure that Bay Transit can equitably serve populations that may be more reliant on public transportation. This analysis focuses on the following demographic groups:

- **Senior Citizens**: As part of Bay Aging, Bay Transit should continue focusing on serving the growing senior population, especially as many older adults may no longer drive. Service enhancements like paratransit, demand-response services, and more accessible vehicles could be prioritized in areas with high concentrations of senior residents.
- **Low-Income Households**: Transportation costs can be a significant burden on low-income residents. Identifying areas with high concentrations of low-income households will highlight areas where affordable transit access could enhance job opportunities, access to social services, and participation in education or training programs.
- **Minority Populations**: Historically underserved and disproportionately impacted by limited transportation options, minority communities might benefit from increased service frequency and new routes. This is particularly relevant in areas where there may be language barriers or fewer resources for personal transportation.
- **Youth**: Youth rely heavily on transit for school, recreational activities, and after-school employment. Targeting areas with significant youth populations, especially in communities without safe walking or biking infrastructure, will justify improvements like frequency increases or bus stop improvements near schools.
- **Zero-Car Households**: Households without access to a vehicle depend entirely on public transportation. High-density areas with zero-car households can be prioritized for service expansion, including introducing new routes or introducing weekend and evening service to cater to the needs of workers or those traveling for basic needs.
- **Disability Status**: Individuals with disabilities require accessible and reliable transit options. Evaluating the geographic distribution of disabled individuals will help identify the need for expanded paratransit services or improvements.

## *Existing and Historical Trends*

**Table 17** highlights the overall population in each county of the service area, based on the 2022 American Community Survey (ACS). The table shows that Bay Transit has a very large service area of about 2,664 square miles, with a population of about 174,655. The average population density is only 65 people per square mile, indicating that the service area is mainly rural. **Figure 20** displays the historical population trends by county. **Figure D1** in **Appendix D** displays the regional population density per acre. The map shows that Gloucester County is the most densely populated county in the region, particularly around Gloucester Point, the southernmost part of the county, and the Gloucester Courthouse region. Other census tracts with above average population density for the region includes West Point in King William County, the Kilmarnock/White Stone/Irvington area in Lancaster County, and Colonial Beach in Westmoreland County.

**Table 17: Total Population and Population Density**

| County | Area (Sq. Miles) | Total Population | Population Density (Per Sq. Mile) |
|---|---|---|---|
| Charles City | 204 | 6,760 | 33.1 |
| Essex | 276.4 | 10,602 | 38.4 |
| Gloucester | 253.3 | 38,875 | 153.5 |
| King and Queen | 324.4 | 6,681 | 20.6 |
| King William | 285.2 | 17,845 | 62.6 |
| Lancaster | 150 | 10,866 | 72.4 |
| Mathews | 103.1 | 8,537 | 82.8 |
| Middlesex | 142.3 | 10,738 | 75.5 |
| New Kent | 225 | 23,296 | 103.5 |
| Northumberland | 216.4 | 12,007 | 55.5 |
| Richmond | 206.1 | 8,968 | 43.5 |
| Westmoreland | 277.7 | 18,480 | 66.5 |
| **Total** | **2,664** | **173,655** | **65.2** |

Source: 2022 ACS, 5-Year Estimates

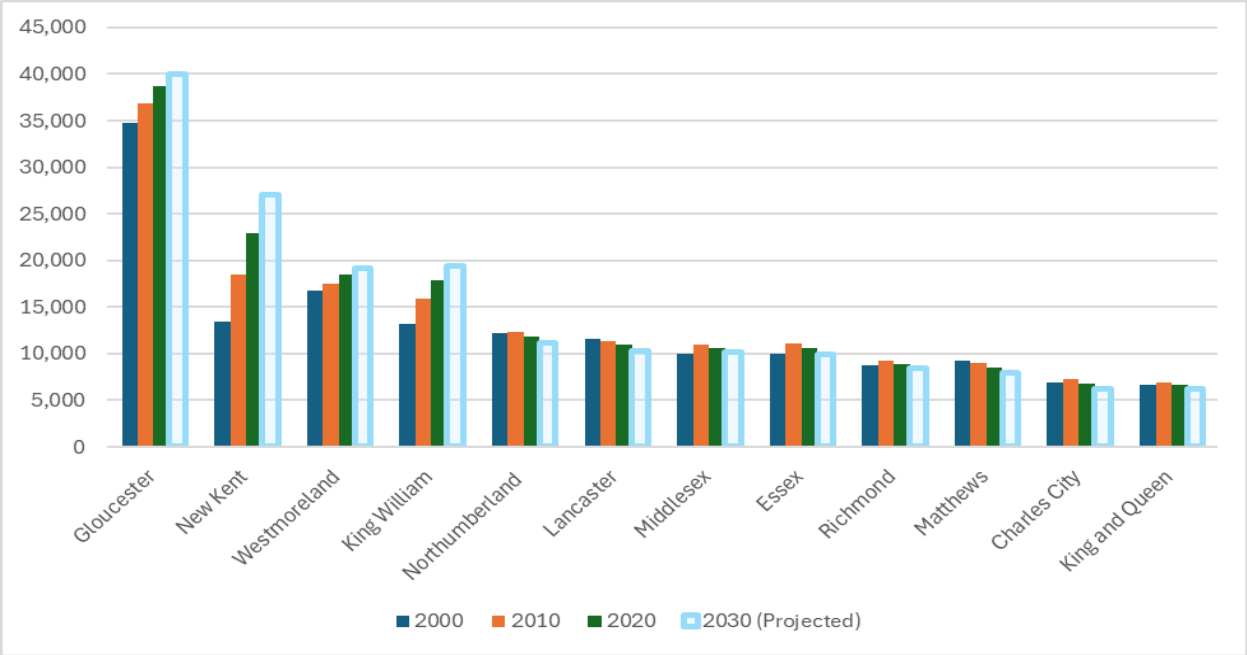
**Table 18** displays the historical population trends in the overall Bay Transit Service area, where the population has grown 13% between 2000 and 2020. Most of this growth occurred from 2000-2010, as the population grew just 3% overall from 2010-2020. This growth also lags behind the state, which saw a 25% increase in the prior two decades. New Kent County saw the highest levels of growth in both decades at 37% and 25% respectively; growing it's population by 70% between 2000 – 2020, which is nearly double the rate of the county with the second-highest population percentage growth (King Willliam). This makes New Kent County the second most populous county in the service area, only behind Gloucester County which had 38,711 citizens as of 2020. King William (35%) and Westmoreland (11%) also recorded double digit growth between the two decades. While there was growth in some population areas, most counties in the service area experienced population stagnation or a slight decline. Matthews County lost 7% of its population over the prior two decades, while Lancaster, (-6%) Northumberland (-3%) and Charles City (-2%) also saw population decline.

**Table 18: Historical Population Trends**

| County | 2000 | 2010 | 2020 | Change from 2000-2010 | Change from 2010-2020 | Change from 2000-2020 |
|---|---|---|---|---|---|---|
| Virginia | 7,078,515 | 8,001,024 | 8,631,393 | 13% | 8% | 22% |
| Charles City | 6930 | 7255 | 6773 | 5% | -7% | -2% |
| Essex | 9989 | 11,151 | 10,599 | 12% | -5% | 6% |
| Gloucester | 34,780 | 36,858 | 38,711 | 6% | 5% | 11% |
| King and Queen | 6630 | 6945 | 6608 | 5% | -5% | 0% |
| King William | 13,146 | 15,935 | 17,810 | 21% | 12% | 35% |
| Lancaster | 11,567 | 11,391 | 10,919 | -2% | -4% | -6% |
| Mathews | 9207 | 8978 | 8533 | -2% | -5% | -7% |
| Middlesex | 9932 | 10959 | 10,625 | 10% | -3% | 7% |
| New Kent | 13,462 | 18,429 | 22,945 | 37% | 25% | 70% |
| Northumberland | 12,259 | 12,330 | 11,839 | 1% | -4% | -3% |
| Richmond | 8809 | 9254 | 8923 | 5% | -4% | 1% |
| Westmoreland | 16,718 | 17,454 | 18,477 | 4% | 6% | 11% |
| **Total** | **153,429** | **166,939** | **172,762** | **9%** | **3%** | **13%** |

Source: U.S. Census

**Figure 20: Historical Population Trends by County, 2000 – 2020 and Beyond**




More recent population projections (**Table 19**) reflect much of what the historical population levels suggest. There is a 3% increase in population levels in the region overall since 2018, mainly due to the growth in New Kent (10%), Westmoreland (5%), King William (8%) and Gloucester (5%). Smaller jurisdictions such as Charles City, Essex, King and Queen, Matthews, and Northumberland all declined in population. Lancaster, Middlesex, and Richmond Counties had flat growth. Bay Transit should look to and anticipate demand changes based on the population changes, especially in fast growing counties.

**Table 19: Recent Population Trends**

| County | 2018 | 2022 | % Change |
|---|---|---|---|
| Virginia | 8,517,685 | 8,683,619 | 2% |
| Charles City | 6995 | 6760 | -3% |
| Essex | 11,036 | 10,602 | -4% |
| Gloucester | 37,161 | 38,875 | 5% |
| King and Queen | 7052 | 6681 | -5% |
| King William | 16,497 | 17,845 | 8% |
| Lancaster | 10,804 | 10,866 | 1% |
| Mathews | 8766 | 8537 | -3% |
| Middlesex | 10,717 | 10,738 | 0% |
| New Kent | 21,103 | 23,296 | 10% |
| Northumberland | 12,223 | 12,007 | -2% |
| Richmond | 8878 | 8968 | 1% |
| Westmoreland | 17,638 | 18,480 | 5% |
| **Total** | **168,870** | **173,655** | **3%** |

Source: 2022 ACS, 5-Year Estimates

Future population projections by the Weldon Cooper Center show population projections over the next three decades. **Table 20** shows population projections up to 2030, 2040, and 2050, and projects the service area will gain over 2,000 residents by 2030 and 15,000 residents by 2050, indicating limited growth in the area (1% growth). The future population levels reflect current trends of growth in urban areas, with decline in some of the more rural counties. Gloucester (3%), King William (9%) and New Kent (16%) counties are projected to have the highest levels of population growth over the next 30 years. The Middle Peninsula region is expected to see flat to minor population growth, while the Northern Neck region should prepare for a slight population decline (-2%). The Richmond Region will see the largest increase (1%), due to the expected boom in New Kent County. Overall, the service area's population projections are expected to show just a minor increase (1% up to 2050) and lag state population levels overall (5% increase by 2050).

**Table 20: Recent Population Trends**

| County | 2022 Pop. | 2030 Projected Pop. | 2040 Projected Pop. | 2050 Projected Pop. | 2022-2030 Change | 2022-2030% Change |
|---|---|---|---|---|---|---|
| **PDC 18 – Middle Peninsula** | | | | | | |
| Essex County | 10,602 | 9,903 | 10,057 | 10,362 | -699 | -7% |
| Gloucester County | 38,875 | 39,983 | 41,329 | 43,295 | 1,108 | **3%** |
| King and Queen County | 6,681 | 6,181 | 6,079 | 6,068 | -500 | -7% |
| King William County | 17,845 | 19,403 | 21,414 | 23,746 | 1,558 | **9%** |
| Mathews County | 8,537 | 7,972 | 7,522 | 7,185 | -565 | -7% |
| Middlesex County | 10,738 | 10,143 | 10,335 | 10,682 | -595 | -6% |
| ***PDC 18 Total*** | ***93,278*** | ***93,585*** | ***96,736*** | ***101,338*** | ***307*** | ***0%*** |
| **PDC 17 – Northern Neck** | | | | | | |
| Lancaster County | 10,866 | 10,297 | 9,826 | 9,502 | -569 | -5% |
| Northumberland County | 12,007 | 11,185 | 10,813 | 10,603 | -822 | -7% |
| Richmond County | 8,968 | 8,469 | 8,400 | 8,457 | -499 | -6% |

| County | 2022 Pop. | 2030 Projected Pop. | 2040 Projected Pop. | 2050 Projected Pop. | 2022-2030 Change | 2022-2030% Change |
|---|---|---|---|---|---|---|
| Westmoreland County | 18,480 | 19,220 | 19,804 | 20,683 | 740 | **4%** |
| ***PDC 17 Total*** | ***50,321*** | ***49,171*** | ***48,843*** | ***40,788*** | ***-1150*** | ***-2%*** |
| **PDC 15 – Richmond Region** | | | | | | |
| Charles City County | 6,760 | 6,200 | 6,033 | 5,957 | -560 | -8% |
| New Kent County | 23,296 | 27,067 | 31,340 | 36,081 | 3,771 | **16%** |
| ***PDC 15 Total*** | ***30,056*** | ***33,267*** | ***37,373*** | ***42,038*** | ***3,211*** | ***11%*** |
| **Service Area Total** | **173,655** | **176,023** | **182,952** | **192,621** | **2,368** | **1%** |
| **Virginia Total** | **8,683,619** | **9,129,002** | **9,759,371** | **10,535,810** | **445,383** | **5%** |

Source: University of Virginia Weldon Cooper Center for Public Service. (2022). Virginia Population Projections. Retrieved from https://coopercenter.org/virginia-population-projections

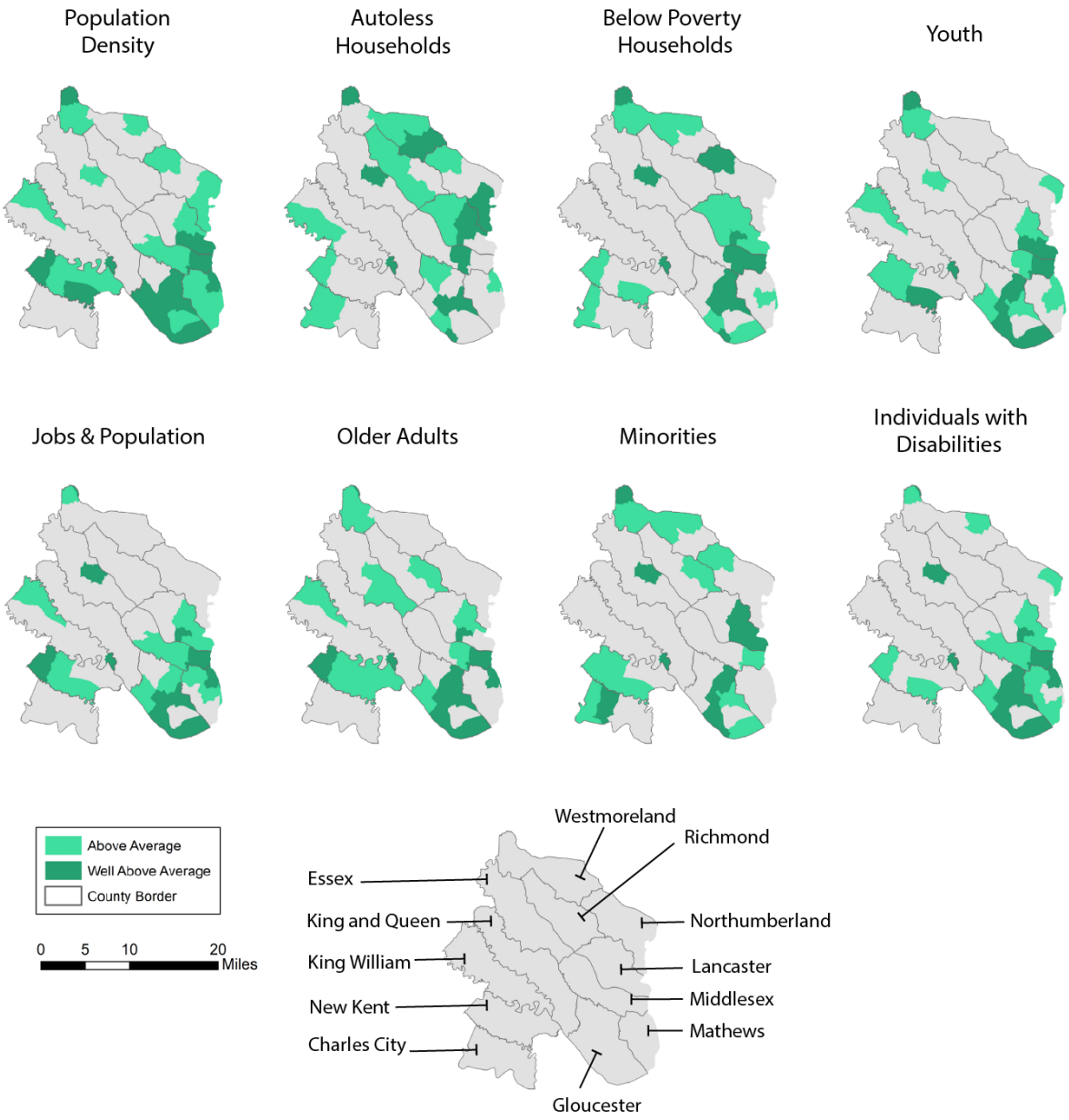
Overall population levels only tell part of the story. The subsequent sections will review each demographic group (senior citizens, low-income households, minority populations, youth, zero-car households, individuals with disabilities) at the Census tract level (accounting for population density) using the latest 2022 ACS 5-Year Estimates. This analysis highlights the extent to which people who may need public transportation are served by the current transportation network.

## *Demographics Summary*

Figure 21 displays the density of selected demographic groups, with the darkest areas representing the highest concentrations of that demographic. The maps of all the demographic groups show the following:

- The Northern Neck region has a high concentration of auto less households, below poverty households and minority populations (specifically in Westmoreland County). This includes the northern tip of the county (the Colonial Beach region), which has a greater concentration of all selected demographic groups.
- The Middle Peninsula region overall tends to have a lower population density and concentration of most of the selected demographics except for the Towns of Tappahannock and West Point, as well as Lancaster, Middlesex and Gloucester Counties. A higher concentration of the selected demographic groups appears around the eastern coast of the service area where there is higher population density.
- The Richmond region, which includes New Kent County, has census tracts that are well-above average with population density and has above-average concentrations of most of the selected demographic groups, particularly older adults and youth. Charles City has a lower population density but does have higher concentrations of auto less households, minorities, and below poverty households.

Figure 21: Density of Demographic Groups



## OLDER ADULTS

With many older adults using Bay Transit as a primary or secondary source of transportation, it is important to understand the population levels of that group heading into the future. Older adults are defined as people over the age of 65. These individuals may scale back their use of personal vehicles as they age, while relying more on public transportation compared to those in other age brackets. Despite slow growth or population decline in many counties, the older adult population has rapidly increased throughout the service area. **Table 21** displays the counties with the greatest percentage of older adults as a share of the total population are in Lancaster (39.4%), Northumberland (36.8%) and Middlesex (33.6%) Counties. The counties with the highest densities of older adults are in Gloucester (30), Lancaster (28.5), Mathews (25.4) and Middlesex (25.3) counties. These counties have a significantly higher density than the average density of older adults by county (15.7).

**Table 21: Regional Older Adult Population**

| County | People per Square Mile | Count | Percentage of Total Population |
|---|---|---|---|
| Charles City | 8.5 | 1731 | 25.6% |
| Essex | 9.0 | 2490 | 23.5% |
| Gloucester | **30.0** | 7602 | 19.6% |
| King and Queen | 4.6 | 1491 | 22.3% |
| King William | 10.2 | 2923 | 16.4% |
| Lancaster | **28.5** | 4277 | **39.4%** |
| Mathews | **25.4** | 2623 | 30.7% |
| Middlesex | **25.3** | 3604 | **33.6%** |
| New Kent | 18.7 | 4200 | 18.0% |
| Northumberland | 20.4 | 4423 | **36.8%** |
| Richmond | 8.7 | 1796 | 20.0% |
| Westmoreland | 17.1 | 4757 | 25.7% |
| **Total** | **15.7** | **41,917** | **5.7%** |

Source: 2022 ACS, 5-Year Estimates, Table S0101

**Table** 22 displays the population growth projections of adults that are 65 years of age and older up to 2030, 2040 and 2050 by county and grouped by Virginia's Planning District Commissions (PDCs). The older adult population is expected to continue to grow into the next decade, before stagnating into 2040 and 2050. Between 2020 – 2030, PDC 15 (Charles City and New Kent Counties) is projected to have the greatest increase (25%) in the older adult population primarily due to New Kent County. PDC 17 (Northern Neck) will have a minor increase (5%) in the older adult population, with Westmoreland County having the most growth (10.8%). Meanwhile, PDC 18 (Middle Peninsula) will overall have a moderate increase in the senior population (12.7%), mostly due to Gloucester County and King William County (both projected to have more than a 20% increase in the older adult population).

**Table 22: Regional Older Adult Population**

| County | 2000 | 2010 | 2020 | % Change 2020-30 | 2030 Proj. | 2040 Proj. | 2050 Proj. |
|---|---|---|---|---|---|---|---|
| **PDC 18 – Middle Peninsula** | | | | | | | |
| **Essex County** | 2,235 | 2,757 | 3,510 | 6.1% | 3,723 | 3,728 | 2,686 |
| **Gloucester County** | 5,656 | 7,841 | 11,254 | **20.3%** | 13,544 | 13,654 | 14,461 |
| **King and Queen County** | 1,415 | 1,685 | 2,240 | 6.1% | 2,377 | 2,303 | 2,260 |
| **King William County** | 2,050 | 2,890 | 4,293 | **21.8%** | 5,227 | 5,365 | 5,698 |
| **Mathews County** | 2,650 | 3,071 | 3,468 | 0.8% | 3,495 | 3,127 | 2,864 |
| **Middlesex County** | 2,896 | 3,755 | 4,443 | 2.7% | 4,562 | 4,289 | 4,384 |
| ***PDC 18 Total*** | ***16,902*** | ***21,999*** | ***29,208*** | ***12.7%*** | ***32,928*** | ***32,466*** | ***32,353*** |
| **PDC 17 – Northern Neck** | | | | | | | |
| **Lancaster County** | 4,130 | 4,590 | 5,293 | 0.4% | 5,316 | 4,824 | 4,676 |
| **Northumberland County** | 4,243 | 4,934 | 5,662 | 0.4% | 5,686 | 5,163 | 4,868 |
| **Richmond County** | 1,985 | 2,200 | 2,457 | 6.8% | 2,623 | 2,517 | 2,527 |
| **Westmoreland County** | 4,291 | 4,991 | 6,524 | **10.8%** | 7,226 | 6,968 | 7,225 |
| ***PDC 17 Total*** | ***14,649*** | ***16,715*** | ***19,936*** | ***4.6%*** | ***20,851*** | ***19,472*** | ***19,296*** |
| **PDC 15 – Richmond Region** | | | | | | | |
| **Charles City County** | 1,207 | 1,672 | 2,423 | 11.4% | 2,699 | 2,559 | 2,501 |
| **New Kent County** | 1,855 | 3,178 | 6,240 | **29.9%** | 8,104 | 8,751 | 9,685 |
| ***PDC 15 Total*** | ***3,062*** | ***4,850*** | ***8,663*** | ***24.7%*** | ***10,803*** | ***11,310*** | ***12,186*** |
| **Service Area Total** | **34,613** | **43,564** | **57,807** | **11.7%** | **64,582** | **63,248** | **63,835** |

Source: University of Virginia Weldon Cooper Center for Public Service. (2022). Virginia Population Projections. Retrieved from https://coopercenter.org/virginia-population-projections

**Figure 2D** in **Appendix D** displays the volume of older adults who are 65 years of age and older. Census tracts with the highest density of older adults appear primarily in the southeast portion of the study area, particularly Gloucester County and parts of Middlesex and Mathews County adjacent to the coast. Additionally, higher concentrations of older adults reside near Kilmarnock in Lancaster County, the Town of Tappahannock in Essex County, West Point and western New Kent County.

## LOW-INCOME POPULATION

**Table 23** displays the regional low-income population by county. For the purposes of this TDP, low-income is defined as a household with a total income of less than $25,000 annually. These individuals face financial hardships that make owning and maintaining a personal vehicle difficult. For this segment of the population, public transportation may be the more economical choice. The service area as a whole has 9,954 low-income households, with about 3.7 households per square mile designated low-income, or 5.7% of the total population. Counties with the highest percentage of low-income (households are in Westmoreland County (17.5%), Gloucester (13.3%), Essex (10.4%) Northumberland (10.1%), and Lancaster (9.6%). Among these counties, Lancaster, Westmoreland and Gloucester have the highest density of low-income households per square mile.

Compared to the 2016 ACS 5-Year Estimates), the overall low-income population in the study area decreased from 13,224 households to 9,954. Notably, Gloucester County's low-income population decreased from 2,366 to 1,322 (a decrease of 45%); the county's low-income population as a percentage of the total population is now the second highest among all counties (13.3%) behind Westmoreland County (17.5%).

**Table 23: Regional Low-Income Population**

| County | Households per Square Mile | Count | Percentage of Total Population |
|---|---|---|---|
| **Charles City** | 2.8 | 564 | 6% |
| **Essex** | 3.7 | 1,030 | **10.4%** |
| **Gloucester** | **5.2** | 1,322 | **13.3%** |
| **King and Queen** | 1.7 | 543 | 5.5% |
| **King William** | 2.4 | 696 | 7% |
| **Lancaster** | **6.4** | 953 | 9.6% |
| **Mathews** | 3.3 | 344 | 3.5% |
| **Middlesex** | **5.3** | 750 | 7.5% |
| **New Kent** | 2.7 | 607 | 6.1% |
| **Northumberland** | 4.6 | 1,004 | **10.1%** |
| **Richmond** | 2 | 402 | 4% |
| **Westmoreland** | **6.3** | 1,739 | **17.5%** |
| **Total** | **3.7** | **9,954** | **5.7%** |

Source: 2022 ACS, 5-Year Estimates, Table S1901

**Figure D3** in **Appendix D** displays the regional density of low-income households by county. The coastal areas (particularly Westmoreland, Northumberland, Lancaster and Middlesex counties) generally have higher concentrations of low-income households. Higher concentrations of low-income households are also found in Essex County (specifically around Tappahannock) as well as much of Gloucester County, and West Point.

## MINORITY POPULATION

**Table** 24 displays the regional minority population by county. Minority residents include residents who identified as Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, another race, or identified with two or more races. The service area has about 45,897 minority residents, or about 26.4% of the population. The counties with the highest percentage of minorities are Charles City (55.57%), Essex (42.8%) and Richmond (39.2%). Three counties have a higher density of minority populations but a lower overall percentage (Westmoreland, Gloucester and Lancaster).

**Table 24: Regional Minority Population**

| County | Minority Persons per Square Mile | Count | Percentage of Total Population |
|---|---|---|---|
| **Charles City** | 18.4 | 3762 | **55.7%** |
| **Essex** | 16.4 | 4534 | **42.8%** |
| **Gloucester** | **23.7** | 6008 | 15.5% |
| **King and Queen** | 6.8 | 2209 | 33.1% |
| **King William** | 13.2 | 3765 | 21.1% |
| **Lancaster** | **23.7** | 3562 | 32.8% |
| **Mathews** | 10.9 | 1125 | 13.2% |
| **Middlesex** | 15.9 | 2259 | 21.0% |
| **New Kent** | 21.5 | 4832 | 20.7% |
| **Northumberland** | 16.4 | 3555 | 29.6% |
| **Richmond** | 17.0 | 3512 | **39.2%** |
| **Westmoreland** | **24.4** | 6774 | 36.7% |
| **Total** | 17.2 | 45,897 | 26.4% |

Source: 2022 ACS, 5-Year Estimates, Table B01001A

**Figure D4** in **Appendix D** displays the regional density of minority populations by county. The highest concentrations of minority populations are found in eastern Lancaster County, Gloucester County, western Charles City County and the Towns of Colonial Beach, Tappahannock, West Point.

## YOUTH POPULATION

**Table 25** displays the regional density of the youth population by county. For the purposes of this TDP, youths and teenagers are classified as those under the age of 19, who cannot drive, do not have an automobile available and appreciate the continued mobility from public transportation. The service area has about 35,475 youth residents or 20.4% of the population. The counties with the highest percentage of youth as a share of the county's population are King William (26.3%), Essex (21.6%) and Gloucester (21.6%). The counties with the highest densities of youth residents are Gloucester, New Kent, and King William.

**Table 25: Regional Youth (Under 19) Population**

| County | Youths per Square Mile | Count | Percentage of Total Population |
|---|---|---|---|
| Charles City | 5.9 | 1202 | 17.8% |
| Essex | 8.3 | 2293 | **21.6%** |
| Gloucester | **33.1** | 8381 | **21.6%** |
| King and Queen | 4.0 | 1311 | 19.6% |
| King William | **16.5** | 4698 | **26.3%** |
| Lancaster | 12.2 | 1828 | 16.8% |
| Mathews | 14.6 | 1502 | 17.6% |
| Middlesex | 13.1 | 1863 | 17.3% |
| New Kent | **21.7** | 4880 | 20.9% |
| Northumberland | 9.4 | 2031 | 16.9% |
| Richmond | 8.3 | 1709 | 19.1% |
| Westmoreland | 13.6 | 3777 | 20.4% |
| **Total** | **13.3** | **35,475** | **20.4%** |

Source: 2022 ACS, 5-Year Estimates, Table S0101

**Figure D5** in **Appendix D** displays the regional density of the youth population by county. The highest concentrations of youth populations are found in eastern Lancaster and Middlesex County, Gloucester County, southeastern New Kent County and the Towns of Colonial Beach and West Point.

## ZERO-CAR HOUSEHOLDS

**Table 26** displays the regional density of the zero-car household population by county. Households without a personal vehicle are more likely to depend on public transit than households with access to a vehicle. The vast majority of households in the Bay Transit service area have at least one vehicle. Just three counties have more than 2 percent of its households without access to a personal vehicle: Charles City (2.8%), Westmoreland (2.6%) and Essex (2.1%). Overall, just 1.4% of the entire service area population have households without a personal vehicle.

**Table 26: Regional Zero-Car Household (ZCHH) Population**

| County | ZCHH per Square Mile | Count | Percentage of Total Population |
|---|---|---|---|
| **Charles City** | 0.91 | 186 | **2.8%** |
| **Essex** | 0.82 | 227 | **2.1%** |
| **Gloucester** | 1.42 | 359 | 0.9% |
| **King and Queen** | 0.35 | 113 | 1.7% |
| **King William** | 0.78 | 223 | 1.3% |
| **Lancaster** | 1.41 | 212 | 1.9% |
| **Mathews** | 0.20 | 21 | 0.3% |

| County | ZCHH per Square Mile | Count | Percentage of Total Population |
|---|---|---|---|
| **Middlesex** | 0.92 | 131 | 1.2% |
| **New Kent** | 0.56 | 127 | 0.6% |
| **Northumberland** | 1.02 | 220 | 1.8% |
| **Richmond** | 0.86 | 178 | 2% |
| **Westmoreland** | 1.72 | 477 | **2.6%** |
| **Total** | **0.93** | **2474** | **1.4%** |

Source: 2022 ACS, 5-Year Estimates, Table B08201

**Figure D6** in **Appendix D** displays the regional density of the zero-car household population by county. The highest concentrations of these households are found in eastern Lancaster and Northumberland counties; parts of Middlesex, Gloucester and Westmoreland Counties; and the areas around the Towns of Colonial Beach, Tappahannock and West Point.

## INDIVIDUALS WITH DISABILITIES

**Table 27** displays the regional density of individuals with disabilities by county. The counties with the highest percentage of individuals with disabilities as a share of the total population are Charles City (19.2%), Mathews (17.4%), Lancaster (14%). Gloucester County has the highest density of individuals with disabilities (25.9 people per square mile), followed by Mathews (17.4) and Lancaster (14).

**Table 27: Regional Population of Individuals with Disabilities**

| County | Persons with Disabilities per Square Mile | Count | Percentage of Total Population |
|---|---|---|---|
| **Charles City** | 6.3 | 1294 | **19.2%** |
| **Essex** | 6.4 | 1762 | 16.8% |
| **Gloucester** | **25.9** | 6561 | 16.9% |
| **King and Queen** | 3.1 | 1008 | 15.1% |
| **King William** | 7.9 | 2254 | 12.6% |
| **Lancaster** | **14** | 2103 | **19.8%** |
| **Mathews** | **17.4** | 1792 | **21.2%** |
| **Middlesex** | 12.5 | 1777 | 17.1% |
| **New Kent** | 10.7 | 2413 | 10.7% |
| **Northumberland** | 8.3 | 1791 | 14.9% |
| **Richmond** | 5.9 | 1208 | 16.4% |
| **Westmoreland** | 11.3 | 3143 | 17.2% |
| **Total** | **10.8** | **27106** | **15.9%** |

Source: 2022 ACS, 5-Year Estimates, Table S1810

**Figure D7** in **Appendix D** displays the regional density of individuals with disabilities by county. The highest concentrations of these households are found in eastern Middlesex and Mathews Counties, much of Gloucester County, and the Towns of Colonial Beach, Tappahannock, West Point and Irvington (south of Kilmarnock).

## 4.3. Service Analysis

Demand Response trips made up the majority (76%) of 2023 transit trips, followed by microtransit with 13 percent. Furthermore, Gloucester and Essex counties made up the greatest share of transit trips in 2023 with 30 percent, and 13 percent of the total ridership, respectively. Overall ridership is still down 11 percent from 2019 (pre COVID) levels. Deviated fixed route has recovered the least, with 2023 ridership totals still 61 percent below 2019. Some of the lost ridership can be seen in the new microtransit service being offered in Gloucester County starting in 2021. These trends indicate that the Bay Transit's residents are more inclined to use curb-to-curb or door-to-door transit options which could also reflect the mobility of the aging population.

### *Gloucester Case Study*

Gloucester County has unique demographics compared to other counties in the Bay Transit service area. Given the success of microtransit service in Gloucester County, the following key points about Gloucester County are important to understanding how new microtransit services are expected to perform.

- Historic population growth and projected growth: Gloucester County is projected to grow 3% over the next 30 years. Only King William and New Kent have higher projected growth rates.
- Median age (younger): The median age is 44.3, which is lower than all counties except for King William (40.8) and New Kent (43.2).
- Median Income (higher): The median household income is $83,750 which is higher than all counties except for New Kent ($113,120).
- Diversity (share of minorities) (lower): Minorities make up a lower percentage of the total population (15.5%) compared to all other counties except for Mathews County (13.2%).
- Population density: The County has the highest population density in the service area (153.5 people per square mile). New Kent County has the second-highest population density (103.5 people per square mile).
- Job density: The census tracts with some of the highest job densities are in Gloucester County. The census tract with the highest job density makes up Colonial Beach which has 3.7 jobs per acre. The census tract with the second-highest job density is the Gloucester Point census tract which has 1.4 jobs per acre. The third-most job-dense census tract is in West Point which has 0.84 jobs per acre. The fourth-most job-dense census tract makes up the Gloucester Courthouse area which has 0.62 jobs per acre. In addition, three other census tracts in Gloucester County have a job density that is well above the average job density of 0.3 jobs per acre.

## 4.4. Challenges and Opportunities

The following section outlines the challenges and opportunities that were identified for service expansion or modification. These key takeaways were driven by 1) agency goals and objectives, 2) stakeholder input, and 3) a high-level service and market analysis.

| Challenge / Opportunity | Driver |
|---|---|
| Expand microtransit service beyond Gloucester over the next 5 years (Objective 1.1) | Agency Goals and Objectives |
| Expand number of trip opportunities for New Freedom riders (Objective 1.3) | Agency Goals and Objectives |
| Pilot a limited fixed route trip between Tappahannock and Warsaw to account for demand. Consider a partnership with Rappahannock Community College to reduce some demand response services in these areas and free up capacity in other parts of the Bay Transit service area. | Stakeholder Input |
| Expand demand response service hours during:<br>• Peak hours for Rappahannock Community College students to ensure students receive a ride before and after classes.<br>• Consider adding another vehicle to these peak times to accommodate more trip requests.<br>• Peak periods, particularly on the weekend, between Tappahannock and Warsaw | Stakeholder Input |
| Pilot an express bus (in partnership with Hampton Roads Transit) connecting Gloucester Courthouse to the Oyster Point area of Newport News | Stakeholder Input |
| Facilitate a partnership between Bay Transit, Charles City County and Greater Richmond Transit Company to enhance connectivity and service offerings (such as microtransit) between Richmond and key locations | Stakeholder Input |
| Pilot new service offerings in the Northern Neck region such as a limited fixed route to the Fredericksburg Amtrak & VRE station, longer service hours, and a small fee-based service during popular or peak periods to support residents and visitors who access marina or downtown areas by boat | Stakeholder Input |
| Expand collaboration with Northern Neck Planning District Commission and regional stakeholders for building low-cost seating, shelters or safe and visible waiting areas at key locations | Stakeholder Input |
| Expand and promote services specifically for medical, work-related and personal errand trips | Stakeholder Input |
| Costs have risen and need to be offset by optimizing service or increasing ridership | Service Analysis |
| Ridership, especially on deviated fixed route services, have not fully recovered from COVID-19 impacts | Service Analysis |
| Microtransit is the most cost-effective service that the agency delivers and should be expanded to replace less effective services | Service Analysis |
| Since the launch of the microtransit service, it has had exponential growth (a 248% increase) between FY21 – FY23, while other services have struggled to retain customers. | Service Analysis |

| Challenge / Opportunity | Driver |
|---|---|
| This is attributed to the expansion of the Bay Transit Express service area which doubled the number of customers by the end of 2022. In addition, the service has become more productive by 14% since FY22 due to factors including route optimization and fleet improvements leading to higher speeds. In contrast, between FY21 – FY23, demand response service has grown by 3% while deviated fixed route service decreased by 59% (largely due to service cuts). | |
| Bay Transit's costs per passenger trip have risen significantly from just under $19.00 in FY 2014 to $35.30 in FY 2022. In FY 2022, costs are nearly double the nearly $19.00 average of three peer transit agencies | Service Analysis |
| In FY 2022, Bay Transit's passengers per revenue mile (0.09) are about half of the peer average (0.17) | Service Analysis |

## 4.5. Transit Service Recommendations

Service recommendations reflect the key takeaways from the service analysis and from stakeholder input. Not every suggestion that was heard during stakeholder engagement is feasible in the horizon of this TDP. The following is a summary list of all service recommendations considered for this project:

- Implement More Microtransit Services
- Tappahannock - Warsaw Limited Deviated Fixed-Route
- Expand Demand-Response Service Hours for Tappahannock Area
- Warsaw – Richmond Limited Deviated Fixed-Route
- Gloucester Courthouse – Newport News Express Bus
- Tappahannock - Fredericksburg Limited Deviated Fixed-Route
- Expand Demand-Response Vehicles Dedicated for Northern Neck

This section provides an overview of the service changes that are recommended for implementation in the next five years, following the adoption of this TDP.

Bay Transit is building on the popularity and growth of the "Bay Transit Express" microtransit service in Gloucester County by starting the process of implementing microtransit services to municipalities in its service area and replacing existing or previous deviated-fixed route services. The following areas in Bay Transit's service area have potential for a microtransit pilot:

- Tappahannock
- Colonial Beach
- Kilmarnock
- Urbanna
- New Kent & Charles City County (transit feasibility study in process)
- West Point ( started in December 2024)

## *Replace Tappahannock's Rivah Ride with Microtransit Pilot*

The Town of Tappahannock should replace its deviated fixed-route service (the Rivah Ride) with a pilot microtransit service zone that would serve the town's current limits. **Figure 22** displays the approximate proposed Tappahannock microtransit zone. This zone would extend slightly beyond the current ¾ mile deviation limit of the current route, including areas south of the VCU Health Hospital. **Table 28** summarizes the analysis of a Tappahannock microtransit pilot while **Table 29** summarizes its service characteristics.

### Table 28: Summary of Tappahannock Microtransit Pilot Analysis

| Benefits | Costs and Considerations |
|---|---|
| Established ridership base that is familiar with deviated fixed-route service.<br><br>Expanded service zone.<br><br>Potentially higher trip efficiency. | High initial investment; dedicated vehicle required.<br><br>Existing riders will need to be familiarized with microtransit app and scheduling.<br><br>Savings from discontinuing Rivah Ride: -$121,680<br>Estimated Annual Operating Costs ($ FY25): $76,973<br>Net CostsSavings: -$44,708 |

### Table 29: Service Characteristics of Tappahannock Microtransit Pilot

| Service characteristics | |
|---|---|
| Operating days/week | 5 days/week |
| Span of service | 7:00 am – 4:00 pm |
| Service area size | 5 sq. miles |

**Figure 22: Tappahannock Microtransit Zone**

## *Microtransit Pilot in Kilmarnock*

### OPTION 1: PILOT A MICROTRANSIT ZONE WITHIN KILMARNOCK TOWN BORDERS

Setup a microtransit service zone within Kilmarnock's town borders. Bay Transit previously served the towns of Kilmarnock, Irvington and White Stone with the seasonal Kilmarnock Trolley with funding from these towns and DRPT. **Figure 23** displays the approximate proposed Kilmarnock microtransit zone. **Table 30** summarizes the analysis of a Kilmarnock microtransit pilot.

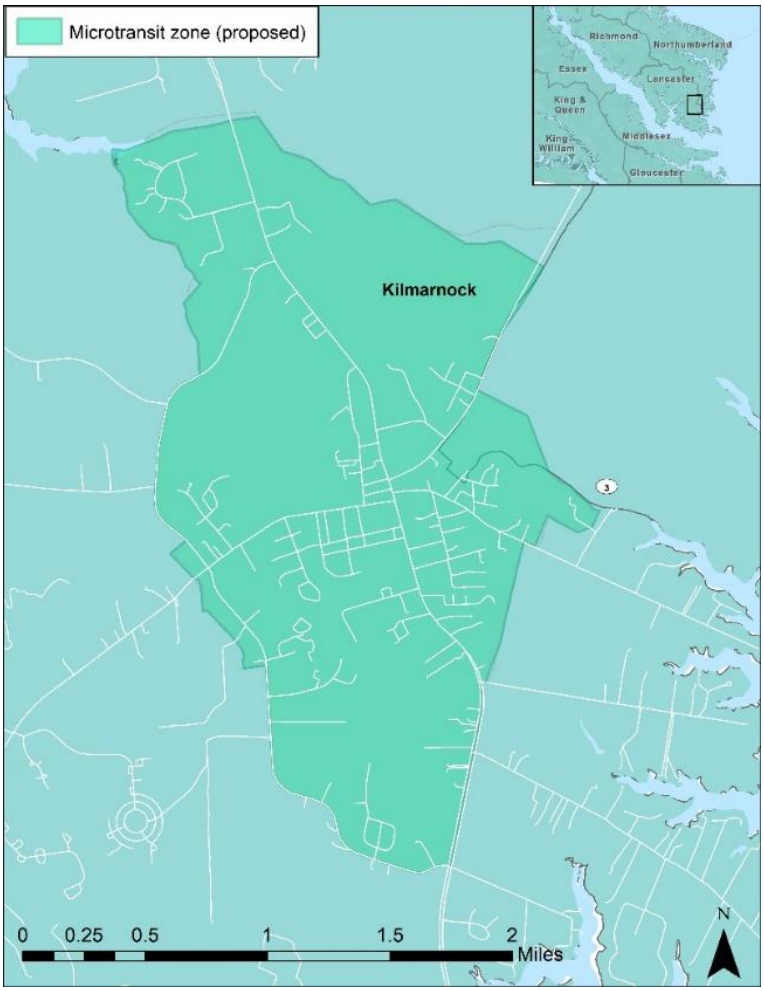
**Table 30: Summary of Kilmarnock Microtransit Pilot Analysis**

| Benefits | Costs and Considerations |
|---|---|
| Provides transit service in area which currently has no transit.<br><br>Meets some existing demand; Residents in Kilmarnock were previously served by a seasonal trolley.<br><br>A successful pilot in Kilmarnock could justify expansion to nearby towns or points of interest. | High initial investment; new dedicated vehicle needed.<br><br>Funding and support needed from Town of Kilmarnock or Lancaster County.<br><br>Kilmarnock's population is 1,443 (2023) and has slow growth, but is the biggest town in Lancaster County.<br><br>**Estimated Annual Operating Costs ($ FY25): $76,973** |

**Table 32: Service characteristics of Kilmarnock / Lancaster County Microtransit Pilot**

| Service characteristics | |
|---|---|
| Operating days/week | 5 days/week |
| Span of service | 7:00 am – 4:00 pm |
| Service area size (Option 1) | 3.4 sq. miles |
| Service area size (Option 2) | 7.5 sq. miles |

**Figure 23: Kilmarnock Microtransit Zone (Option 1)**




## OPTION 2: PILOT A MICROTRANSIT ZONE INCLUDING KILMARNOCK, IRVINGTON AND WHITE STONE

Pilot a microtransit service zone between the town borders of Kilmarnock, Irvington, and White Stone.

**Figure** 24 displays the approximate proposed microtransit zone. Before this is done, microtransit service could be piloted in the town of Kilmarnock before potentially expanding to Irvington, White Stone or other areas. **Table 31** summarizes the analysis of a Kilmarnock microtransit pilot while **Table 32** summarizes the service characteristics for Option 1 and 2.

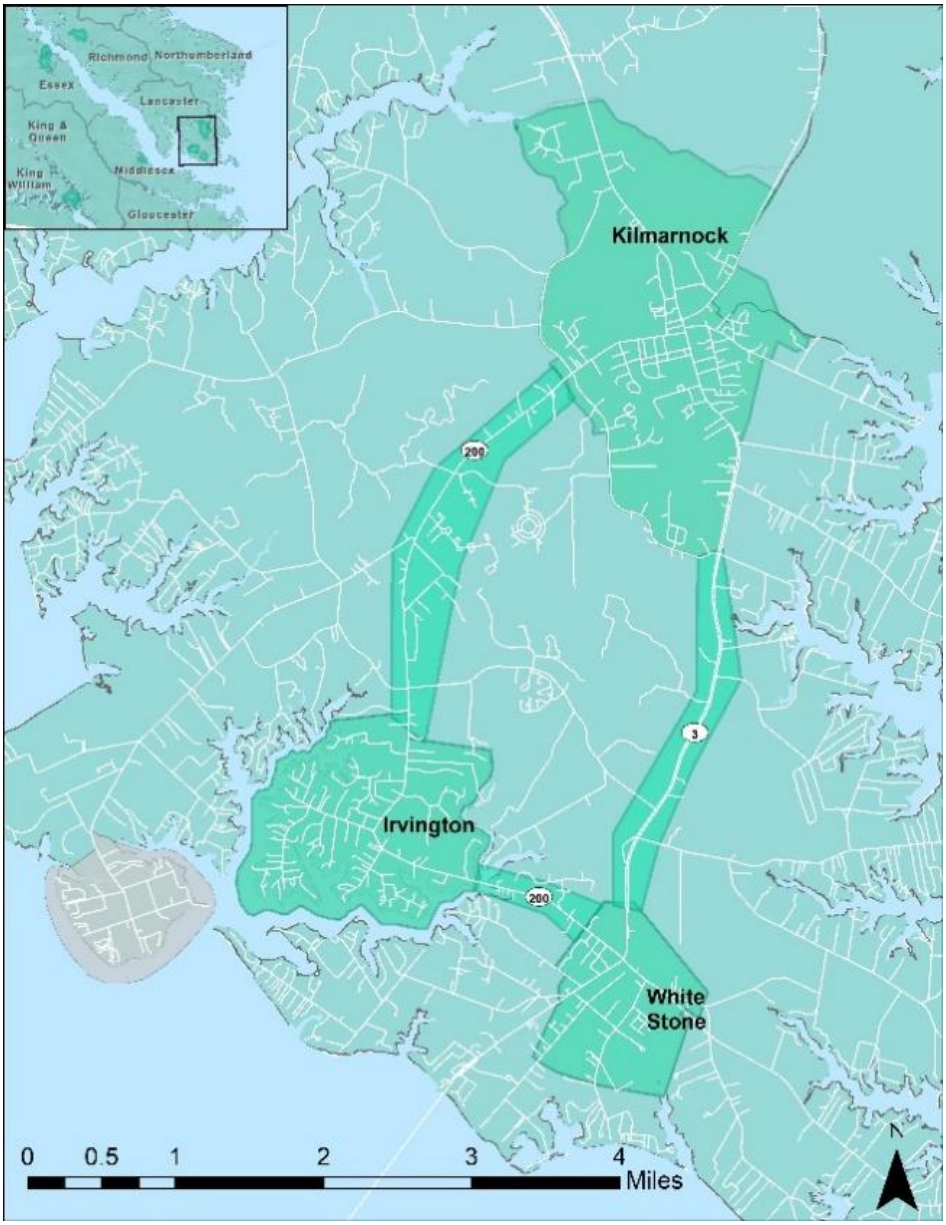
**Table 31: Summary of Kilmarnock Microtransit Pilot Analysis**

| Benefits | Costs and Considerations |
|---|---|
| Same as Table 13.<br><br>Expands the service area to other areas of Lancaster County | Same as Table 13.<br><br>Low population in region's towns: Irvington (pop. 472), White Stone (pop. 381).<br><br>**Estimated Annual Operating Costs ($ FY25): $307,890** |

### Table 32: Service characteristics of Kilmarnock / Lancaster County Microtransit Pilot

| Service characteristics | |
|---|---|
| Operating days/week | 5 days/week |
| Span of service | 7:00 am – 4:00 pm |
| Service area size (Option 1) | 3.4 sq. miles |
| Service area size (Option 2) | 7.5 sq. miles |

### Figure 24: Lancaster County Expanded Microtransit Zone (Option 2)



## *Microtransit Service in Colonial Beach*

### OPTION 1: PILOT YEAR-ROUND MICROTRANSIT SERVICE WITH TROLLEY SERVICE IN COLONIAL BEACH

Pilot a year-round microtransit zone in Colonial Beach three days a week. During the summer, the service would run on weekdays (8am – 4pm) while the trolley continues running as planned during the weekends. The service zone would extend slightly beyond the trolley's service zone in the north. In the south, the service zone would extend along James Monroe Highway, serving the southern Colonial Beach neighborhoods about 10 minutes south of the Town Pier, as well as serving Monroe Hall, and the Monroe Bay campground **Figure 25** displays the proposed microtransit zone. **Table 33** summarizes the analysis of a Colonial Beach microtransit pilot while **Table 35** summarizes its service characteristics.

**Table 33: Option 1: Colonial Beach Microtransit Pilot Analysis**

| Benefits | Costs and Considerations |
|---|---|
| Established ridership base that is familiar with trolley service.<br><br>Would serve year-round residents or visitors not currently served outside of the summer trolley's operating hours.<br><br>Expanded service zone including Monroe Bay campgrounds, Monroe Hall and southern Colonial Beach neighborhoods.<br><br>Potentially higher trip efficiency. | High initial investment; dedicated vehicle required (different vehicle type than existing trolley service)<br><br>Existing riders will need to be familiarized with microtransit app and scheduling.<br><br>**Estimated Annual Operating Costs ($ FY25): $37,357**<br>**Costs with Trolley Operations ($FY25): $61,452** |

### OPTION 2: PILOT YEAR-ROUND MICROTRANSIT SERVICE TO REPLACE TROLLEY SERVICE IN COLONIAL BEACH

Pilot a year-round microtransit zone in Colonial Beach three days a week which would fully replace the summer trolley service. Similar to Option 1, the service zone would extend slightly beyond the trolley's service zone in the north. In the south, the service zone would extend along James Monroe Highway, serving the southern Colonial Beach neighborhoods about 10 minutes south of the Town Pier, as well as serving Monroe Hall, and the Monroe Bay campground. (**Table 34**)

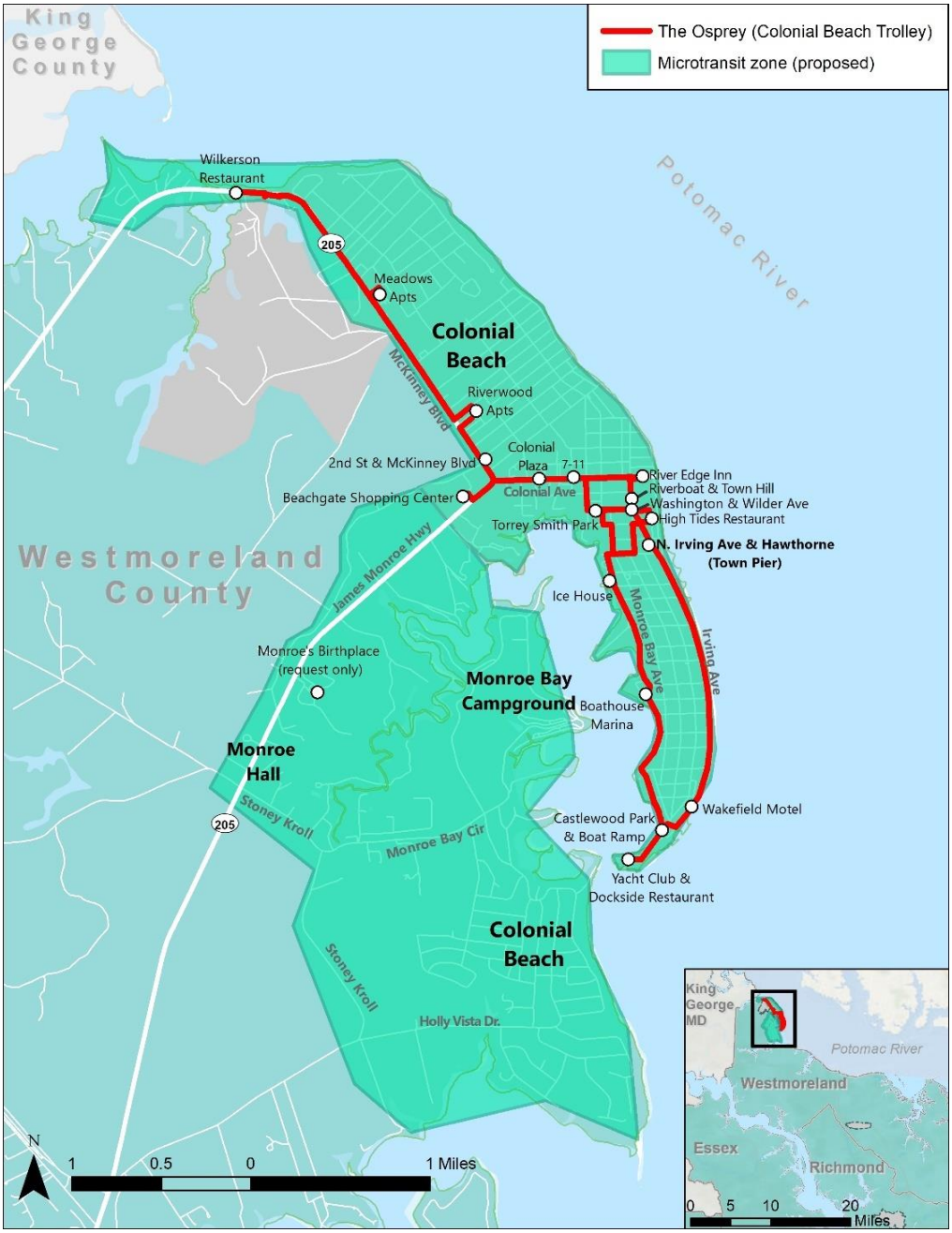
**Table 34: Option 2: Colonial Beach Microtransit Pilot Analysis**

| Benefits | Costs and Considerations |
|---|---|
| Established ridership base that is familiar with trolley service.<br><br>Would serve year-round residents or visitors not currently served outside of the summer trolley's operating hours.<br><br>Expanded service zone including Monroe Bay campgrounds, Monroe Hall and southern Colonial Beach neighborhoods.<br><br>Potentially higher trip efficiency. | High initial investment; dedicated vehicle required (different vehicle type than existing trolley service)<br><br>Existing riders will need to be familiarized with microtransit app and scheduling.<br><br>**Estimated savings from trolley service: $24,095**<br>**Estimated Annual Operating Costs ($ FY25): $71,157**<br>**Net Costs : $47,061** |

### Table 35: Service Characteristics of Colonial Beach Microtransit Pilot

| Service characteristics | |
|---|---|
| Operating days/week (Option 1) | 3 days a week |
| Operating days/week (Option 2) | 5 days a week |
| Span of service | 8:00 am – 4:00 pm |
| Service area size | 4.7 sq. miles |

### Figure 25: Colonial Beach Microtransit Zone

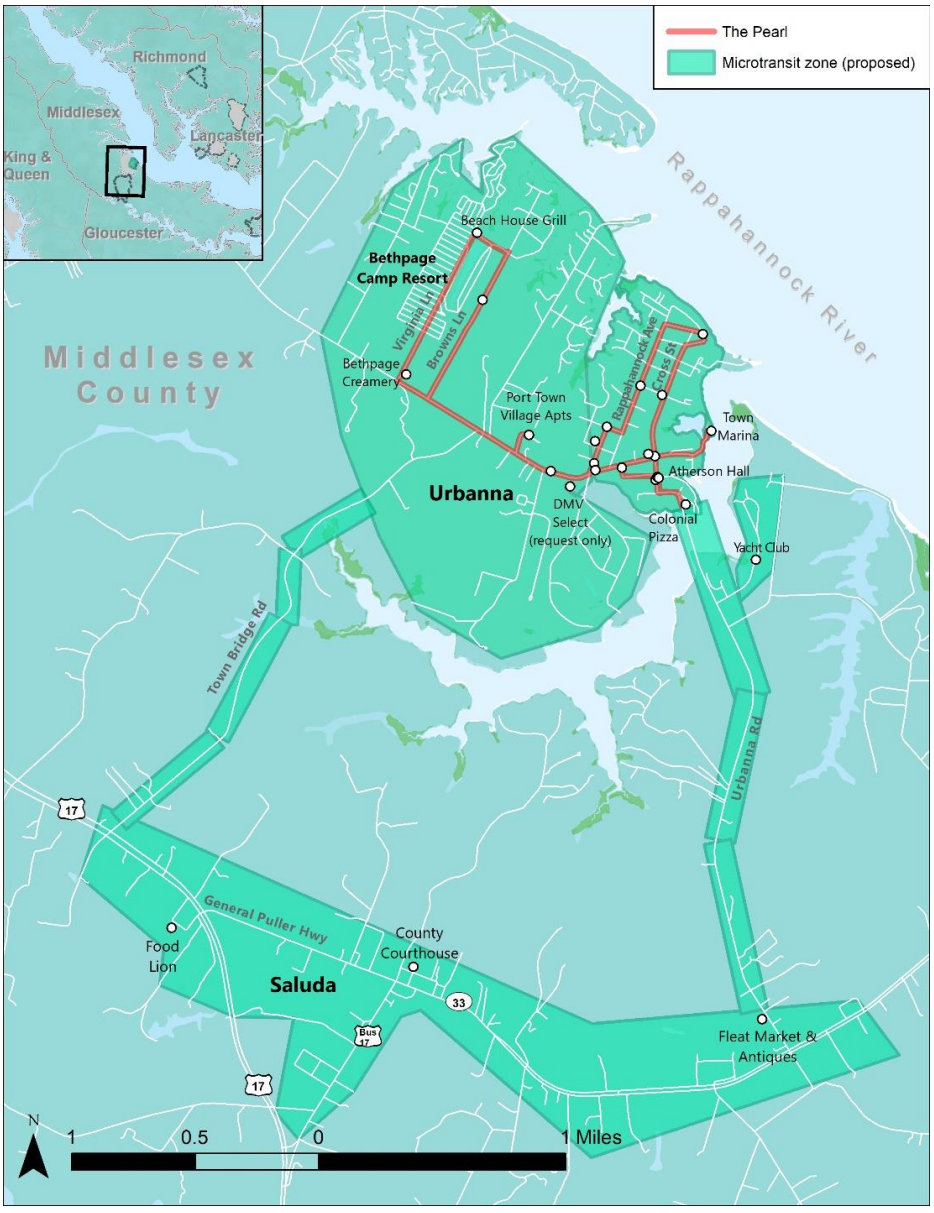


## *Microtransit Pilot in Urbanna*

**OPTION 1: PILOT A MICROTRANSIT ZONE IN URBANNA AND SALUDA DURING THE SUMMER**

Replace the current seasonal trolley route (The Pearl) with a seasonal pilot microtransit service zone that would serve the town's current limits as well as areas west and east of Urbanna including the Bethpage Camp Resort, the Urbanna Harbor Yacht Club and the Town of Saluda about 8-10 minutes south. This proposed zone would approximately triple the town's existing transit service area. **Figure 26** displays the approximate proposed Urbanna microtransit zone. Microtransit service could be piloted during the summer season in place of the trolley. **Table 36** summarizes the analysis of an Urbanna microtransit pilot while **Table 38** summarizes its service characteristics.

**Figure 26: Urbanna Microtransit Zone**



### Table 36: Urbanna Seasonal Microtransit Pilot Analysis

| Benefits | Costs and Considerations |
|---|---|
| Established ridership base that is familiar with seasonal deviated fixed-route trolley service.<br><br>Expanded service zone including key destinations in Town of Saluda such as a Food Lion, park and ride, post office, and courthouse.<br><br>Potentially higher trip efficiency. | High initial investment; dedicated vehicle required (different vehicle type than existing trolley service)<br><br>Existing riders will need to be familiarized with microtransit app and scheduling.<br><br>Locals can generally walk to their destinations in-town.<br><br>Buy-in and funding needed from Urbanna (pop. 503) and the Town of Saluda (pop. 602) which have low populations.<br><br>Funding the trolley is already a challenge.<br><br>**Savings from discontinuing Trolley service ($ FY25): $18,362**<br>**Estimated Annual Operating Costs ($ FY25): $7,697**<br>**Net Savings: $10,665** |

## OPTION 2: PILOT A YEAR-ROUND MICROTRANSIT ZONE IN URBANNA AND SALUDA 5 DAYS A WEEK

Pilot a microtransit service zone (same as Option 1) but operate it five days a week, year-round, in addition to the weekend summer service provided by the Trolley. **Table 37** summarizes the analysis of a limited year-round Urbanna microtransit pilot, while **Table 38** provides the likely operating characteristics for the pilot service. If service is successful, consider expanding to 5 days a week.

### Table 37: Urbanna Year-Round Weekday Microtransit Pilot Analysis

| Benefits | Costs and Considerations |
|---|---|
| Provides transit service to town residents and camp visitors during the weekdays, and all year round.<br><br>Provides access to Saluda residents and amenities<br><br>Having both a weekend trolley and weekday microtransit could increase the appeal to visitors and residents. | Same as Option 1<br><br>Operates 5 days a week year round which is a much higher cost than what operates today<br><br>**Estimated Annual Operating Costs ($ FY25): $71,157**<br>**Costs with Trolley Operations ($FY25): $89,519** |

### Table 38: Service characteristics of Urbanna Microtransit Pilot

| Service characteristics | |
|---|---|
| Span of service (Option 1) (summer only) | Fridays 12:00 pm – 9:00 pm<br>Saturdays: 10:00 am – 9:00 pm<br>Sundays: 10:00 am – 3:00 pm |
| Span of service (Option 2) (year-round) | 5 days a week, 8:00 am – 4:00 pm |
| Service area size | 4 sq. miles |

## *More Transit Options for Tappahannock and Warsaw*

### OPTION 1: TAPPAHANNOCK - WARSAW LIMITED DEVIATION FIXED-ROUTE

Pilot a limited deviated-fixed route between Tappahannock and Warsaw. According to the Warsaw County Chamber of Commerce, there is a significant need for transportation access across the bridge to Tappahannock and for implementing weekend services between these locations. Consider a partnership with Rappahannock Community College to subsidize the costs and to reduce some demand response services in these areas while freeing up demand response capacity in other parts of the Bay Transit service area. The potential route would serve residents living in Tappahannock and Warsaw as well as Rappahannock Community College students during early morning and late afternoon peak periods**. Figure 27** displays the proposed Tappahannock-Warsaw limited fixed-route pilot. **Table 39** summaries the analysis of this pilot, while **Table 40** provides the operating statistics.

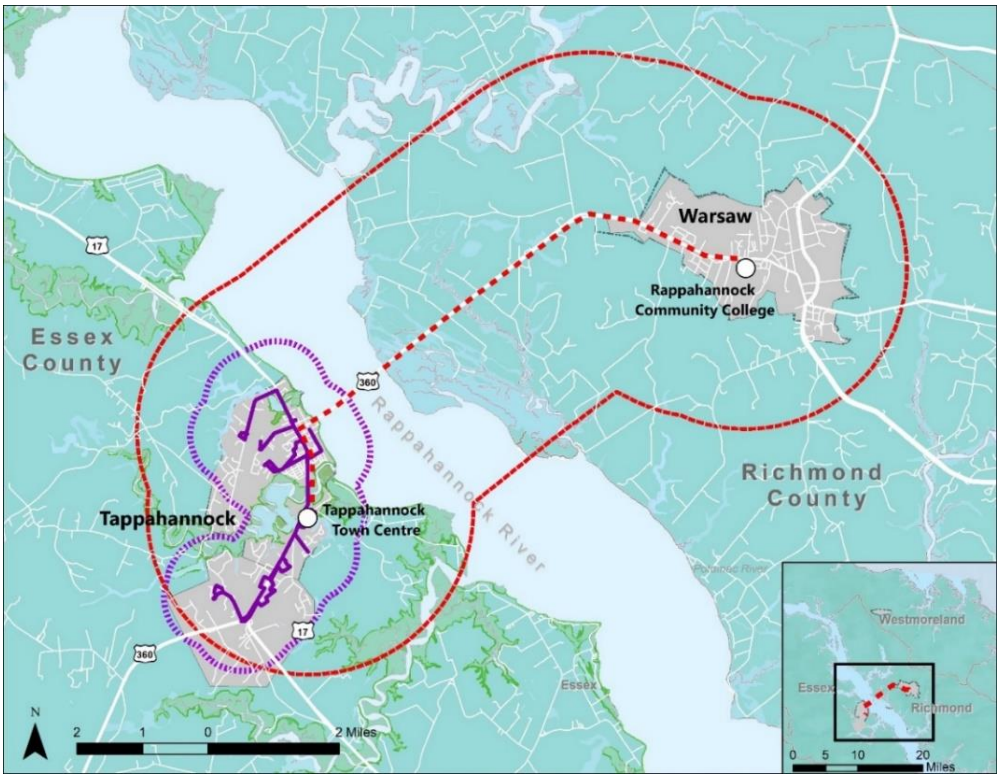
**Table 39: Summary of Tappahannock-Warsaw Limited Fixed-Route Analysis**

| Benefits | Costs and Considerations |
|---|---|
| Meet existing demand for regular and reliable service between two towns only two miles apart.<br><br>Provides more service for community college students who need to get to class early in the morning or after class.<br><br>Can provide service on weekends. | High initial investment; new dedicated vehicle needed.<br><br>Funding and support needed from local towns and/or counties.<br><br>Additional funding and buy-in from Rappahannock Community College or other partners will help sustain the route.<br><br>**Estimated Annual Operating Costs ($ FY25): $59,412** |

**Table 40: Operating Statistics for Tappahannock - Warsaw Limited Fixed-Route**

| Route characteristics | |
|---|---|
| **One-way route miles** | 7.6 miles |
| **Cycle time** | 35 minutes |
| **AM Trips** | 5 |
| **PM Trips** | 5 |
| **Vehicles needed** | 1 |
| **Hours proposed (6 months)** | 364 |
| **Horus proposed (1 year)** | 728 |

**Figure 27: Tappahannock-Warsaw Limited Deviated Fixed-Route**




## OPTION 2: EXPAND DEMAND-RESPONSE SERVICE CAPACITY FOR TAPPAHANNOCK AND WARSAW AREA

Allocating an additional bus to serve this region during morning and evening peak evening hours will be helpful for students who are trying to arrive at class or return from school to their homes. **Table 41** summarizes the analysis for expanding the demand response service hours for the Tappahannock and Warsaw area.

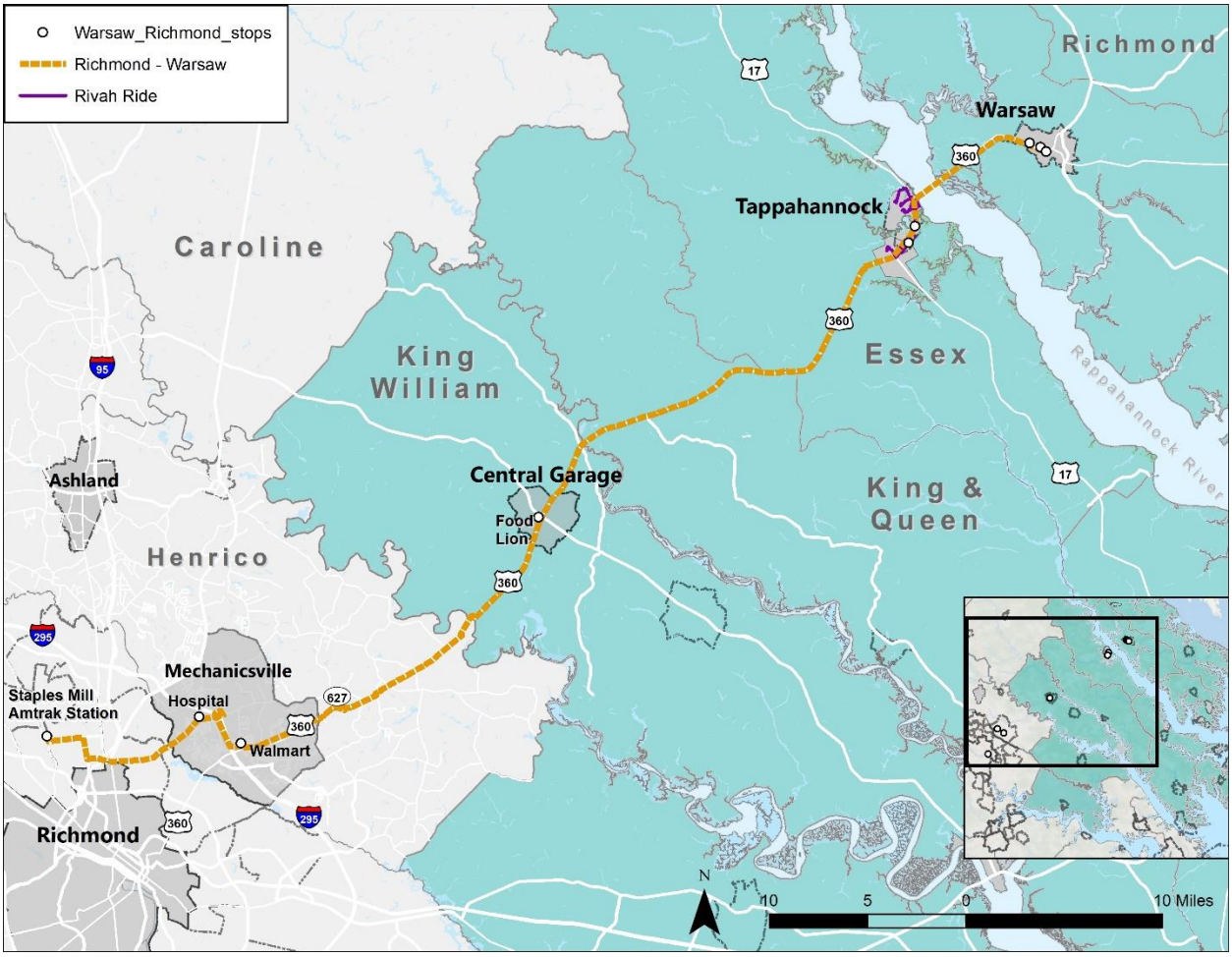
**Table 41: Summary of Demand Response Service Hours Expansion for Tappahannock and Warsaw Area Analysis**

| Benefits | Costs and Considerations |
|---|---|
| Provides more regular and reliable service for residents, especially for Rappahannock Community College students and commuters who live close by. | Requires a new dedicated vehicle or vehicle diverted from other areas.<br><br>**Estimated Annual Operating Costs ($ FY25): $194,805** |

## *Warsaw - Richmond Limited Deviation Fixed-Route*

Pilot a limited deviated fixed route between Warsaw and Richmond. Consider expanding the existing partnership with VCU Health Tappahannock Hospital or initiating a partnership with Bon Secours Memorial Regional Medical Center in Mechanicsville and Rappahannock Community College to subsidize the costs. This route would help reduce some demand response services in these areas while freeing up demand response capacity in other parts of the Bay Transit service area. The potential route would serve residents living in Tappahannock, Warsaw, and Central Garage. The proposed endpoint is the Staples Mill Amtrak Train Station which is served by Amtrak. This route could also stop at the planned GRTC Pulse (BRT) station at the Brookhill Azalea Shopping Center, which could transfer riders to downtown Richmond and the VCU Medical Center. **Figure 28** displays the proposed Warsaw – Richmond pilot. **Table 42** displays the analysis of a Warsaw – Richmond limited fixed-route pilot. **Table 43** details the estimated operating statistics for the recommended service.

**Figure 28: Warsaw - Richmond Limited Deviated Fixed Route**



### Table 42: Summary of Analysis for Warsaw-Richmond Limited Fixed-Route

| Benefits | Costs and Considerations |
|---|---|
| Provides more affordable and reliable transit option for area residents to Mechanicsville and Richmond. | High initial investment; new dedicated vehicle needed.<br><br>Funding and support needed from local towns and/or counties.<br><br>**Estimated Annual Operating Costs ($ FY25): $76,387** |

### Table 43: Operating Statistics for Warsaw-Richmond Limited Fixed-Route

| Route characteristics | |
|---|---|
| One-way route miles | 57.3 miles |
| Cycle time | 180 minutes |
| AM Trips | 1 |
| PM Trips | 1 |
| Vehicles needed | 1 |
| Hours proposed (6 months) | 468 |
| Horus proposed (1 year) | 936 |

## *Gloucester Courthouse – Newport News Express Commuter Bus*

Pilot an express commuter bus (in partnership with Hampton Roads Transit) connecting Gloucester Courthouse to the Oyster Point area of Newport News. The Hampton Roads Regional Transit Vision Plan described this potential route as a long-term express bus corridor recommendation by 2035 (and which would be provided by Hampton Roads Transit). **Figure 29** displays the proposed Gloucester Courthouse – Newport News pilot. **Table 44** displays the summary of the Gloucester Courthouse – Newport News Express Commuter Bus analysis, while **Table 45** provides the operating data for the express service.

**Figure 29: Gloucester Courthouse - Newport News Limited Deviated Fixed Route**

**Table 44: Summary of Analysis for Gloucester Courthouse - Newport News Express Commuter Bus**

| Benefits | Costs and Considerations |
|---|---|
| Provides a more affordable and reliable commute option for area residents to Newport News.<br><br>Meets demand to access regional Amtrak service and Richmond.<br><br>Rappahannock Community College has a welding class which is a pipeline for shipyard jobs. | High initial investment; new dedicated vehicle needed.<br><br>Funding and support needed from Gloucester cities and/or the county and Hampton Roads Transit.<br><br>Bay Transit could provide first or last-mile feeder service.<br><br>**Estimated Annual Operating Costs ($ FY25): $67,900** |

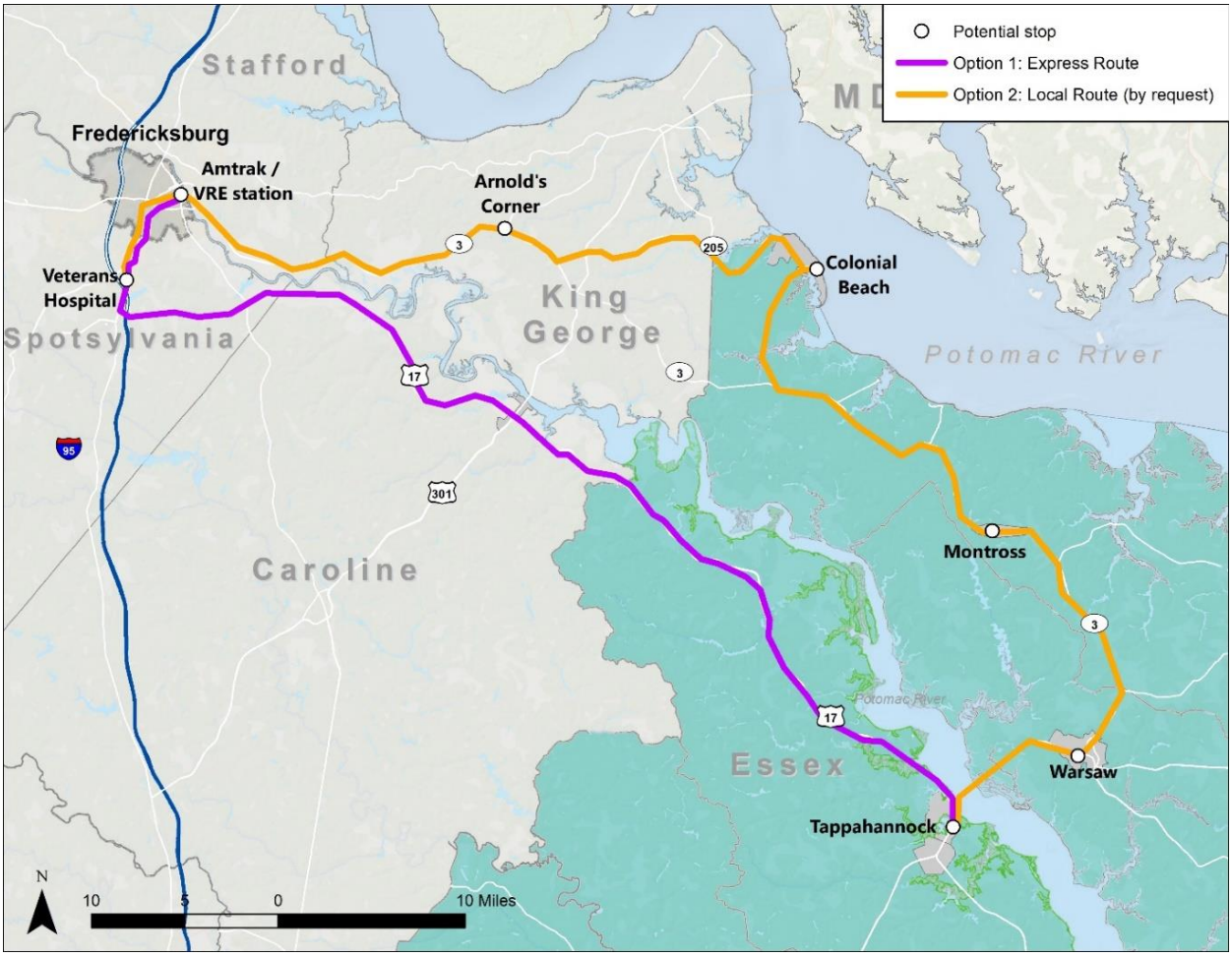
**Table 45: Operating Statistics for Gloucester Courthouse – Newport News Deviated Limited Fixed-Route**

| Route characteristics | |
|---|---|
| One-way route miles | |
| Cycle time | 120 |
| AM Trips | 2 |
| PM Trips | 2 |
| Vehicles needed | 1 |
| Hours proposed (6 months) | 416 |
| Hours proposed (1 year) | 832 - 782 |

## *Tappahannock - Fredericksburg Limited Deviation Fixed Route*

Pilot new service offerings in the Northern Neck region including a limited fixed route to the Fredericksburg Amtrak & VRE station, and longer service hours. Northern Neck residents have expressed interest in service offerings to Fredericksburg, particularly the Amtrak / VRE station which can access Washington D.C., Richmond and other major cities in the Northeast region. A second potential stop in Fredericksburg is the new Veterans Affairs Health Center (expected to open in March 2025) which will be the largest privately owned VA Medical Center in the country. Bay Transit can explore a partnership with the facility as well as neighboring King George County to fund a pilot route once a week and expand the frequency if the demand for the service grows. Riders arriving in the morning in Fredericksburg will have two hours before the bus returns to Tappahannock. **Figure** 30 displays two potential options for a limited deviated fixed-route pilot.

**Figure 30: Tappahannock - Fredericksburg Route Options**




## OPTION 1: EXPRESS TAPPAHANNOCK – FREDERICKSBURG ROUTE

Option 1 is an express trip which would take approximately 1 hour one-way between Tappahannock Town Centre and the Fredericksburg Amtrak/VRE Station. **Table 46** displays the analysis of the proposed express route, while **Table 47** displays its service characteristics.

**Table 46: Summary of Analysis for Express Tappahannock - Fredericksburg Pilot Route**

| Benefits | Costs and Considerations |
|---|---|
| Provides regular express service for residents to Amtrak station, Fredericksburg and VA Health Center.<br><br>Meets demand for service to Fredericksburg. | High initial investment; new dedicated vehicle needed.<br><br>Funding and support needed from counties or from Veterans Affairs Health Center in Fredericksburg.<br><br>**Estimated Annual Operating Costs ($ FY25): $16,975** |

**Table 47: Operating Statistics for Express Fredericksburg Limited Fixed-Route**

| Route characteristics | |
|---|---|
| One-way route miles | 53 |
| Cycle time | 120 minutes |
| AM Trips | 2 |
| PM Trips | 2 |
| Vehicles needed | 1 |
| Hours proposed (6 months) | 104 |
| Hours proposed (1 year) | 208 |

## OPTION 2: LOCAL ROUTE TAPPAHANNOCK – FREDERICKSBURG ROUTE

Option 2 is a "local" trip which would take approximately 2 hours one-way and potentially stop at several places including Rappahannock Community College in Warsaw, Montross, Colonial Beach and Arnold's Corner before reaching Fredericksburg. Riders should request a pick-up or drop-off for a vehicle to serve the stop. **Table 48** displays the analysis of this local route; **Table 49** shows the operating statistics for the local option.

### Table 48: Summary of Analysis for Local Tappahannock - Fredericksburg Pilot Route

| Benefits | Costs and Considerations |
|---|---|
| Provides service for residents to regional towns including Fredericksburg and VA Health Center.<br><br>Meets demand for service to Fredericksburg.<br><br>There is existing demand. Bay Transit provides service from Colonial Beach to Fredericksburg twice a week. | High initial investment; new dedicated vehicle needed.<br><br>Funding and support needed from Northern Neck towns, counties or from Veterans Affairs Health Center in Fredericksburg.<br><br>**Estimated Annual Operating Costs ($ FY25): $33,950** |

### Table 49: Operating Statistics for Local Fredericksburg Limited Fixed-Route

| Route characteristics | |
|---|---|
| One-way route miles | 78.6 miles |
| Cycle time | 240 minutes |
| AM Trips | 1 |
| PM Trips | 1 |
| Vehicles needed | 1 |
| Hours proposed (6 months) | 208 |
| Hours proposed (1 year) | 416 |

## *Expand Demand-Response Service for Northern Neck*

### OPTION 1: PILOT ADDING 1 ADDITIONAL DEMAND RESPONSE VEHICLE

Pilot adding 1-2 additional demand-response vehicles in the Northern Neck during popular or peak periods to support residents and visitors who wish to access one of the marinas or downtown areas by boat. For example, an additional vehicle could serve residents arriving by boat during the summer on Thursdays – Fridays as well as the weekend. The counties with the most probable need for expanded service are Lancaster or Westmoreland County. Currently, 1.5 demand response buses operate in Lancaster and Westmoreland Counties, while 2 operate in Richmond and Northumberland Counties. **Table 50** displays the analysis of expanding demand response service in the region. **Table 51** details the likely operating statistics for the demand responsive service.

**Table 50: Summary of Expanding Demand-Response Service for Northern Neck Analysis (1 additional vehicle)**

| Benefits | Costs and Considerations |
|---|---|
| Meets demand from residents and visitors to have some transit service instead of costlier option of renting or driving their own personal vehicle.<br><br>Expands service to potentially weekends. | More feedback from area residents is needed to identify peak periods and areas of highest demand.<br><br>Funding and support is likely needed from regional towns with the highest demand from residents for expanded service.<br><br>Consider raising ride fees to ride to offset operating costs.<br><br>**Estimated Annual Operating Costs ($ FY25): $90,043** |

**Table 51: Service characteristics of 1 additional Demand Response Vehicle for Northern Neck**

| Service characteristics | |
|---|---|
| Operating days/week | 4 days/week |
| Span of service (peak period) | 1:00 pm – 6:00 pm |
| Vehicles needed | 1 |
| Hours proposed (3 months) | 260 |
| Hours proposed (1 year) | 1040 |

### OPTION 2: PILOT ADDING 2 ADDITIONAL DEMAND RESPONSE VEHICLES

The cost required for running two vehicles during a summer / peak period is equal to running one vehicle for a twelve-month period. **Table 52** provides the service characteristics for the demand responsive option, while **Table 53** provides the analysis of expanding demand responsive service.

**Table 52: Service characteristics of 2 additional Demand Response Vehicles for Northern Neck**

| Service characteristics | |
|---|---|
| Vehicles needed | 2 |
| Hours proposed (3 months) | 520 |
| Hours proposed (6 months) | 1040 |

**Table 53: Summary of Expanding Demand-Response Service for Northern Neck Analysis (2 additional vehicles)**

| Benefits | Costs and Considerations |
|---|---|
| Meets demand from residents and visitors to have some transit service instead of costlier option of renting or driving their own personal vehicle.<br><br>Expands service to potentially weekends.<br><br>Two vehicles will decrease the wait time for passengers and allow for less time for dispatching | More feedback from area residents is needed to identify peak periods and areas of highest demand.<br><br>Funding and support is likely needed from regional towns with the highest demand from residents for expanded service.<br><br>Consider raising ride fees to ride to offset operating costs.<br><br>**Estimated Annual Operating Costs ($ FY25): $180,086** |

## 4.6. Policy and Planning Recommendations

### *Expand Collaboration with Northern Neck Planning District Commission to Build Seating and Shelters*

Expand collaboration with Northern Neck Planning District Commission and regional stakeholders for building low-cost seating, shelters or safe and visible waiting areas at key locations.

### *Expand education and outreach to new demographics*

Most of the riders on Bay Transit services are senior citizens. This is an important demographic to serve but is just one subset of demographics which are often in need of expanded transportation options. Bay Transit should continue efforts to engage with organizations that can help them capture more riders from other demographics like the youth population, and low-income adults. The agency is currently working with the local Girls and Boys club to educate the youth about the services available. These efforts will be critical to the sustainability of transit services and ensuring consistent ridership for years to come.

# CHAPTER 5: IMPLEMENTATION PLAN

## 5.1. Introduction

The implementation plan for this TDP update provides strategic enhancements which are aligned with the evolving needs of the community and newly set agency goals. This section outlines a comprehensive roadmap to operationalize the goals, objectives, and recommended actions identified in prior chapters, with a specific focus on service improvements, and capital investment. By addressing both short-term and long-term transit needs, this plan aims to provide actionable steps that will advance the Bay Transit system in alignment with community needs.

Recommendations are organized into three phases that support an organized approach to project prioritization and resource allocation.[10]

- **Short-Term (1-3 Years):** These actions are geared toward projects with clear funding mechanisms and replacing or enhancing existing services.
- **Mid-Term (3-5 Years):** This phase includes actions aimed at enhancing system capacity and flexibility, with an emphasis on service and partnership expansion.
- **Long-Term (5-10 Years):** Longer-term projects focus on sustaining transit growth and exploring innovative solutions to meet evolving transit demand in the Bay Transit service area. Projects in this phase will require further study, partnerships, and funding exploration to be realized.

This TDP provides a framework for optimal years of implementation for the recommendations presented in this plan. The actual years of implementation will be dependent on local buy-in, available resources, and the results of recommended feasibility studies.

## 5.2. Short Term

Year 1 – FY2026

- Replace Rivah Ride Deviated Fixed Route Service with Microtransit Service

Year 2 – FY2027

- Implement Microtransit Service within the city limits of Kilmarnock

[10] Where applicable **bolded** options are the preferred alternative used in the implementation and financial plans.

Year 3 – FY2028

- Implement additional services in Tappahannock and Warsaw
    - Option 1: Limited Deviation Fixed Route
    - **Option 2: Expand Demand Response Service**
- Study feasibility of adding additional demand response capacity in Northern Neck communities

## 5.3. Mid Term

Year 4 – FY 2029

- Expand Microtransit Service in Kilmarnock to include Irvington and White Stone
- Study feasibility of implementing services between Warsaw and Richmond
- Optimize service in Colonial Beach
    - Option 1: Supplement trolley service with microtransit service three days a week, year-round.
    - **Option 2: replace trolley with microtransit service five days a week, year-round.**
-

Year 5 – FY2030

- Optimize service in Urbana
    - Option 1: replace trolley with microtransit service during the same service hours (Fridays, Saturdays, and Sundays during the summer)
    - **Option 2: replace trolley with microtransit service five days a week, year-round.**
- Study feasibility of services to Fredericksburg

Year 6 – FY2031

- Expand Demand Response services in Northern Neck, following outcomes of feasibility study
    - **Option 1: 1 additional vehicle**
    - Option 2: 2 additional vehicles

## 5.4. Long Term

Year 7 – FY2032

- Implement services between Warsaw and Richmond, following outcomes of feasibility study
- Study feasibility of services to Newport News from Gloucester Point

Year 8 – FY2033

- Implement services to Fredericksburg, following outcomes of feasibility study
    - **Option 1: Express**
    - Option 2: Local

Year 10 – FY2035

- Implement services between Gloucester Point and Newport News
    - Option 1: Operate Limited Deviation Fixed Route Service
    - **Option 2: Partner with HRT to jointly provide service, Bay Transit to provide first-last mile service**

# CHAPTER 6: FINANCIAL PLAN

## 6.1. Operating Expenses

Projected costs for the 10-year planning horizon of this TDP are based on existing operating costs per revenue hour of service, by service type (i.e. Deviated Fixed Route, Demand Response, and Microtransit), the estimated number of revenue hours required for each recommendation, and an assumed annual escalation of 4 percent. The share of funding sources is assumed to be consistent with existing breakdowns which includes 20 percent local, 30 percent state, and 50 percent federal contributions to cover the annual deficit (operating costs minus revenue).

In line with current partnerships and practices, Bay Transit should pursue local buy-in for any proposed service expansions and consider multiple structures for local participation including funding for vehicle procurement and maintenance, tiered fares, increased fares, fare underwriting, or subsidized operating expenses. Recommendations presented in Chapter 4 and Chapter 5 include multiple options for service that have a range of funding requirements. The 10-year financial plan, outlined in **Table 54**, reflects annual costs for the lowest cost option, where there are options, with the exception to the Kilmarnock microtransit service which assumes Option 1 in Year 2 with an expansion to Option 2 in Year 4.  Furthermore, Option 2, though it costs more to operate, was chosen for Urbana because the trolley is important to the community.

**Table 54: Estimated Operating Costs and Funding Required with Expanded Service FY26-FY35[11]**

| | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Revenue Hours** | | | | | | | | | | |
| **Demand Response** | 51,099 | 51,099 | 51,099 | 51,099 | 51,099 | 52,139 | 52,139 | 52,139 | 52,139 | 52,139 |
| **Deviated Fixed Route** | 520 | 520 | 953 | 953 | 953 | 953 | 1,889 | 2,097 | 2,097 | 2,929 |
| **Microtransit** | 10,974 | 13,224 | 13,224 | 17,554 | 19,634 | 19,634 | 19,634 | 19,634 | 19,634 | 19,634 |
| **Operating Costs** | | | | | | | | | | |
| **Total Operating Expenses** | $5,035,711 | $5,320,393 | $5,572,935 | $5,969,143 | $6,294,481 | $6,660,194 | $7,027,122 | $7,331,438 | $7,624,696 | $8,030,191 |
| **Estimated Revenue[12]** | $165,805 | $173,483 | $180,293 | $190,979 | $199,752 | $209,615 | $219,511 | $227,718 | $235,626 | $246,562 |
| **Deficit** | $4,899,905 | $5,176,910 | $5,422,641 | $5,808,164 | $6,124,729 | $6,480,579 | $6,837,611 | $7,133,720 | $7,419,069 | $7,813,629 |
| **Funding** | | | | | | | | | | |
| **Local (30%)** | $1,469,972 | $1,553,073 | $1,626,792 | $1,742,449 | $1,837,419 | $1,944,174 | $2,051,283 | $2,140,116 | $2,225,721 | $2,344,089 |
| **State (20%)** | $979,981 | $1,035,382 | $1,084,528 | $1,161,633 | $1,224,946 | $1,296,116 | $1,367,522 | $1,426,744 | $1,483,814 | $1,562,726 |
| **Federal (50%)** | $2,449,953 | $2,588,455 | $2,711,321 | $2,904,082 | $3,062,365 | $3,240,289 | $3,418,806 | $3,566,860 | $3,709,535 | $3,906,815 |

[11] Total operating costs are escalated 4% year over year from FY2025 dollars

[12] Assumes a consistent 2.7% farebox recovery ratio and $30,000 in revenue from other sources like advertising and partnerships.

## 6.2. Capital Expenses: Transit Assets and Facilities

Existing transit assets are outlined in detail in **Chapter 1, Sections 1.7 and 1.8**. There are two transit facilities where Bay Transit vehicles are stored. The Middle Peninsula Regional Transit Facility in Gloucester, opened in 2013, serves as a major hub for vehicle storage, maintenance, and operations for surrounding counties. The Gloucester facility supports the transit needs of various counties, with the potential for further expansion as operational needs grow. The Northern Neck facility in Warsaw serves as a key hub for Bay Transit's operations in the region. The facility consolidates various functions like dispatching, administrative services, and maintenance. Both transit facilities have good condition ratings greater than four (4). Transit facilities have been updated in the last three years to bring them to a state of good repair. There are no major capital needs anticipated for either facility during the 10-year planning horizon of this TDP.

The agency operates light duty transit vehicles which have a useful life benchmark of 4 years or 100,000 miles, and simulated trolley buses which have a useful life benchmark of 12 years or 500,000 miles. Some of the Bay Transit vehicles, including the trolleys, operate on limited or seasonal schedules, extending their usefulness in years. The trolley buses are not expected to need replacement within the 10-year horizon of this plan. **Figure 31** shows the number of vehicles in each age group as of FY2025. The majority (53 percent) of vehicles are 6 years or younger which is a healthy age for Bay Transit services.

**Figure 31: Bay Transit Vehicle Age Histogram**

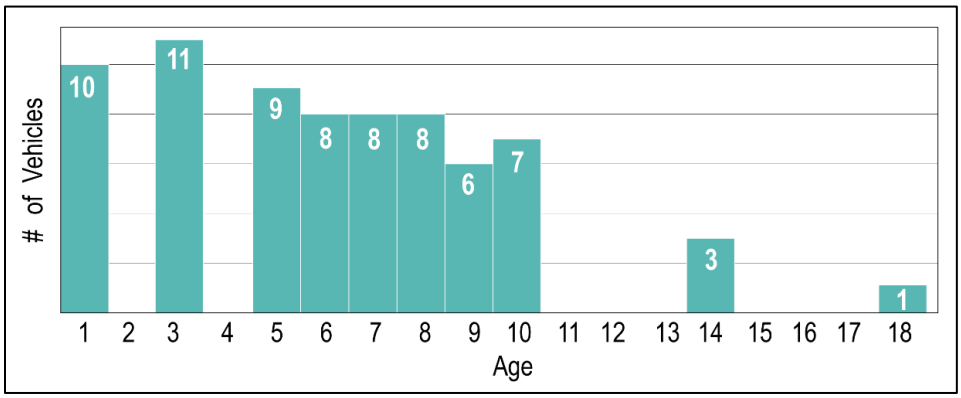



**Table 55** outlines the overall vehicle replacement and expansion plan for FY 2026 – FY 2035. Due to the demand and style of Bay Transit services, 15-passenger vehicles, which cost more to operate and maintain, are not necessary for current or planned operations. Bay Transit is making a shift to procuring smaller vehicles which are more fuel efficient and less expensive. Projected capital expenses assume that future vehicle procurements for services that use Cutaways will be 9-passenger bus on chassis or transit vans. Costs to purchase these vehicles is based on FY2025 purchase prices and escalated 4 percent annually13. Costs at the actual time of purchase may vary. This replacement schedule assumes that the agency can replace up to 25 percent of the fleet each year. This equates to around 9 vehicles until FY2031 as the fleet grows with proposed service expansion.

[13] FY 2025 vehicle costs are $145,925 for 9-Passenger BOC (Cutaway) Vehicles, and $112,239 for Passenger Vans

### Table 55: 10-year Vehicle Replacement Schedule (FY26-FY35)

| | | FY2026 | FY2027 | FY2028 | FY2029 | FY2030 | FY2031 | FY2032 | FY2033 | FY2034 | FY2035 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Replacement** | Cutaway | 6 | 9 | 9 | 9 | 9 | 7 | 10 | 11 | 10 | 11 |
| | Van | 3 | | | | | 3 | | | | |
| **Expansion** | Cutaway | | 1 | 1 | 2 | 1 | 1 | 1 | 1 | | 1 |
| | Van | | | | | | | | | | |
| **Costs ($)** | **Total** | **1,260,758** | **1,578,325** | **1,641,458** | **1,707,116** | **1,775,401** | **2,087,830** | **2,112,301** | **2,396,501** | **2,076,968** | **2,160,046** |

## *Passenger Amenities*

Bay Transit currently maintains 16 transit shelters at high volume pick up and drop off locations. These assets were all installed between 2017 and 2024 and will not be beyond their useful life within the six-year horizon of this TDP. Additional shelters are not proposed for the service recommendations outlined in this TDP. Bay Transit's current policy is to install shelters at locations where there is a high volume of pick-up and drop-offs and where space allows. As new services are implemented, the agency should monitor ridership and identify locations that could warrant passenger amenities.

# APPENDIX A: ON BOARD SURVEY

An on-board survey of riders was conducted between 06/17/2024 and 06/28/2024 across Bay Transit services, yielding a total of 132 completed surveys. Two surveys were created; one for New Freedom, Bay Transit Express, and Advance Reservation service and one for The Rivah Ride – Tappahannock and West Point – Paper Trail, yielding 127 completed surveys and 5 completed surveys, respectively.

Figure A1, A2, A3 and A4 display both questionnaires used to collect feedback from customers on board. Both questionnaires were organized into two sections, the first section developed to capture customers' feedback on Bay Transit Service and the second section for customers to provide information on them. The Rivah Ride – Tappahannock and West Point – Paper Trail included additional questions for customers to provide more detailed demographic information.

Tables A1 and A2, and Figures A5 to A13 show the raw results and breakdown of customers' answers regarding their perception on Bay Transit service quality, trip frequency and purpose.

**Figure A1: On Board Survey - Bay Transit Express/New Freedom/Advance Reservation Service Questionnaire**

BAY TRANSIT
A DIVISION OF BAY AGING

**BAY TRANSIT EXPRESS/NEW FREEDOM/ADVANCE RESERVATION SERVICE**

**ON-BOARD RIDER SURVEY**

Bay Transit is working to improve service and we want to hear from you!
Please take a minute to give us your thoughts.

1. What service were you using when you received this survey? **Please select one.**
   - ❑01 Advance Reservation service
   - ❑02 New Freedom
   - ❑03 Bay Transit Express

2. How frequently do you use Bay Transit services?
   - ❑01 Less than once a month
   - ❑02 Less than once a week but at least once a month
   - ❑03 1 to 2 days per week
   - ❑04 3 to 4 days per week
   - ❑05 5 days per week

3. How satisfied are you with the following when using Bay Transit services?

| | | Very Dissatisfied | Dissatisfied | Satisfied | Very Satisfied |
|---|---|---|---|---|---|
| A | Safety from accidents | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 |
| B | Service reliability | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 |
| C | Service frequency | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 |
| D | Service speed | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 |
| E | Bay Transit taking you to where you want to go | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 |
| F | Bay Transit being easy to understand how to use | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 |
| G | Bay Transit operating when you need to travel | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 |
| H | Being a low cost travel option | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 |
| I | Bay Transit communicating delays, cancellations, or changes in service | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 |
| J | Reserving a trip | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 |
| K | Bay Transit overall | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 |

4. How satisfied are you with Bay Transit customer service representatives when reserving a trip over the phone?

| Very Dissatisfied | Dissatisfied | Satisfied | Very Satisfied | Not applicable/I reserve my trips using the mobile app (Bay Transit Express only) |
|---|---|---|---|---|
| ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | ❑99 |

5. How likely would you be to recommend Bay Transit to your friends and family?

| Not at all likely | | | | | | | | | Very likely |
|---|---|---|---|---|---|---|---|---|---|
| ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑06 | ❑07 | ❑08 | ❑09 | ❑10 |

6. For what purpose or purposes do you use Bay Transit services? ***Select all that apply.***
   - ❑01 To go to or from work
   - ❑02 Work related activities (e.g., business meetings)
   - ❑03 To go to or from school
   - ❑04 Medical or mental health needs (for you or someone you care for)
   - ❑05 Personal errands/Religious, community, or senior center
   - ❑06 Shopping
   - ❑07 Recreation (dining, entertainment, museum, park, sight-seeing, etc.)
   - ❑95 Somewhere else **(specify:)**_____

## Figure A2: On Board Survey - Bay Transit Express/New Freedom/Advance Reservation Service Questionnaire

7. How likely are you to use Bay Transit services to make each of the following trip types if the option was available?

| | | Very unlikely | | | | Very likely | Don't know/Not applicable |
|---|---|---|---|---|---|---|---|
| A | To go to or from work | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| B | For work related activities | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| C | To go to or from school | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| D | For medical or mental health needs (for you or someone you care for) | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| E | For personal errands/Religious, community, or senior center | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| F | To go shopping | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| G | For recreation trips (dining, entertainment, museum, park, sight-seeing, etc.) | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| H | For other types of trips **(specify:)**_____ | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |

8. How much do you agree or disagree that Bay Transit services meet your transportation needs?

| Strongly Disagree | | | | | | | | | Strongly Agree | Don't know/ Not sure |
|---|---|---|---|---|---|---|---|---|---|---|
| ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑06 | ❑07 | ❑08 | ❑09 | ❑10 | ❑99 |

9. How do Bay Transit services compare to other public transportation services you've used elsewhere?

❑01 Much worse
❑02 Worse
❑03 About the same
❑04 Better
❑05 Much better
❑99 Don't know/Not applicable

10. Are you aware of Bay Transit Express Rideshare service?

❑99 I received this survey on Bay Transit Express
❑01 Now aware
❑02 Have heard of the name only
❑03 Somewhat aware
❑04 Very aware

11. Is there anywhere you would like to be able to go using Bay Transit services that you currently cannot?

_____
_____
_____

12. Do you have any additional comments you would like to make about Bay Transit services?

_____
_____
_____

13. How would you have made the trip where you received this survey if Bay Transit services were unavailable? ***Select one***

❑01 Walked/Wheelchair
❑02 Drove myself
❑03 Driven by someone
❑04 Bicycle/Scooter
❑05 Other **(specify:)**_____
❑07 Would not have been able to make the trip

Thank you again for your participation in this survey. If you would like to be entered into a drawing to win a $25 gift card, please enter your name, home address, email, and telephone number so we can send the gift card to you if you are selected. **This survey is for research purposes only. Your name and all individual responses will remain confidential and will not be shared or sold.**

Full Name:_____

Address (No PO Boxes Please):_____Apt.:_____

City:_____ State:_____Zip:_____

Telephone:_____Email:_____

❑99 Do not wish to enter drawing

## Figure A3: On Board Survey – The Rivah Ride – Tappahannock/West Point – Paper Trail Questionnaire

BAY TRANSIT
A DIVISION OF BAY AGING

**THE RIVAH RIDE – TAPPAHANNOCK/WEST POINT- PAPER TRAIL**
**ON-BOARD RIDER SURVEY**

Bay Transit is working to improve service and we want to hear from you!
Please take a minute to give us your thoughts.

1. What service were you using when you received this survey? ***Please select one.***
   ❑01 The Rivah Ride – Tappahannock ❑02 West Point – Paper Trail

2. How did you get **FROM** your **STARTING PLACE** to the bus where you received this survey?
   ❑01 Walked only - # of blocks: _____
   ❑02 Mobility aid (cane, walker, wheelchair, etc.) - # of blocks: _____
   ❑03 Rode with someone
   ❑04 Drove a car
   ❑95 Other **(specify:)**_____

3. When you get off the bus where you received this survey, how will you get to your **FINAL DESTINATION**?
   ❑01 Walk only - # of blocks: _____
   ❑02 Mobility aid (cane, walker, wheelchair, etc.) - # of blocks: _____
   ❑03 Will ride with someone
   ❑04 Drive a car
   ❑95 Other **(specify:)**_____

4. How frequently do you use Bay Transit services?
   ❑01 Less than once a month
   ❑02 Less than once a week but at least once a month
   ❑03 1 to 2 days per week
   ❑04 3 to 4 days per week
   ❑05 5 days per week

5. If applicable, how satisfied are you with the following when using Bay Transit services?

| | | Very Dissatisfied | Dissatisfied | Satisfied | Very Satisfied | No opinion/Not applicable |
|---|---|---|---|---|---|---|
| A | Safety from accidents | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |
| B | Service reliability | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |
| C | Service frequency | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |
| D | Service speed | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |
| E | Bay Transit taking you to where you want to go | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |
| F | Service being close to where you live and/or want to go | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |
| G | Crowdedness onboard | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |
| H | Bay Transit being easy to understand how to use | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |
| I | Bay Transit operating when you need to travel | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |
| J | Being a low cost travel option | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |
| K | Bay Transit bus stops are easy to find | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |
| L | Bay Transit bus stops have adequate shelters | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |
| M | Being able to request a deviated trip | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | ❑99 |
| N | Bay Transit communicating delays, cancellations, or changes in service | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |
| O | Bay Transit overall | ❑01 ❑02 | ❑03 ❑04 ❑05 | ❑06 ❑07 ❑08 | ❑09 ❑10 | |

6. How likely would you be to recommend Bay Transit to your friends and family?

| Not at all likely | | | | | | | | | Very likely |
|---|---|---|---|---|---|---|---|---|---|
| ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑06 | ❑07 | ❑08 | ❑09 | ❑10 |

7. How much do you agree or disagree that Bay Transit services meet your transportation needs?

| Strongly Disagree | | | | | | | | Strongly Agree | Don't know/ Not sure |
|---|---|---|---|---|---|---|---|---|---|
| ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑06 | ❑07 | ❑08 | ❑09 | ❑10 | ❑99 |

8. How do Bay Transit services compare to other public transportation services you've used elsewhere?
   ❑01 Much worse ❑02 Worse ❑03 About the same ❑04 Better ❑05 Much better ❑99 Don't know/Not applicable

9. For what purpose or purposes do you use Bay Transit services? ***Select all that apply.***
   ❑01 To go to or from work
   ❑02 Work related activities (e.g., business meetings)
   ❑03 To go to or from school
   ❑04 Medical or mental health needs (for you or someone you care for)
   ❑05 Personal errands/Religious, community, or senior center
   ❑06 Shopping
   ❑07 Recreation (dining, entertainment, museum, park, sight-seeing, etc.)
   ❑95 Somewhere else **(specify:)**_____

## Figure A4: On Board Survey – The Rivah Ride – Tappahannock/West Point – Paper Trail Questionnaire

10. How likely are you to use Bay Transit services to make each of the following trip types if the option was available?

| | | Very unlikely | | | | Very likely | Don't know/Not applicable |
|---|---|---|---|---|---|---|---|
| A | To go to or from work | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| B | For work related activities | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| C | To go to or from school | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| D | For medical or mental health needs (for you or someone you care for) | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| E | For personal errands/Religious, community, or senior center | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| F | To go shopping | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| G | For recreation trips (dining, entertainment, museum, park, sight-seeing, etc.) | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |
| H | For other types of trips **(specify:)**_____ | ❑01 | ❑02 | ❑03 | ❑04 | ❑05 | ❑99 |

11. Are you aware of Bay Transit Express Rideshare service?
❑01 Now aware ❑02 Have heard of the name only ❑03 Somewhat aware ❑04 Very aware

12. Is there anywhere you would like to be able to go using Bay Transit services that you currently cannot?

_____

13. Do you have any additional comments you would like to make about Bay Transit services?

_____

Thank you again for your participation in this survey. If you would like to be entered into a drawing to win a $25 gift card, please enter your name, home address, email, and telephone number so we can send the gift card to you if you are selected. **This survey is for research purposes only. Your name and all individual responses will remain confidential and will not be shared or sold.**

Full Name:_____

Address (No PO Boxes Please):_____Apt.:_____

City:_____ State:_____Zip:_____

Telephone:_____Email:_____
❑99 Do not wish to enter drawing

**THESE LAST FEW QUESTIONS ARE FOR CLASSIFICATION PURPOSES ONLY**

14. How would you have made the trip where you received this survey if Bay Transit services were unavailable? ***Select one.***
❑01 Walked/Wheelchair ❑03 Driven by someone ❑95 Other **(specify:)**_____
❑02 Drove myself ❑04 Bicycle/scooter ❑97 Would not have been able to make the trip

15. What is your age?
❑01 Under 16 ❑03 18-24 ❑05 35-44 ❑07 55-64 ❑09 75 or older
❑02 16-17 ❑04 25-34 ❑06 45-54 ❑08 65-74 ❑98 Prefer not to answer

16. What is your race/ethnicity? ***Select all that apply.***
❑01 African American/Black ❑04 Caucasian/White ❑07 Multiracial
❑02 American Indian/Alaska Native ❑05 Hispanic/Latino/Spanish ❑95 Other **(specify:)**_____
❑03 Asian ❑06 Native Hawaiian or other Pacific Islander ❑98 Prefer not to answer

17. What language do you predominantly speak at home?
❑01 English ❑02 Spanish (Español) ❑03 Vietnamese (Tiếng Việt) ❑95 Other **(specify:)**_____
❑98 Prefer not to answer

18. Which of the following **BEST** describes your **TOTAL ANNUAL HOUSEHOLD INCOME** in 2023 before taxes?
❑01 Less than $10,000 ❑05 $35,000 to less than $40,000 ❑09 $75,000 to less than $100,000
❑02 $10,000 to less than $20,000 ❑06 $40,000 to less than $45,000 ❑10 $100,000 to less than $150,000
❑03 $20,000 to less than $25,000 ❑07 $45,000 to less than $50,000 ❑11 $150,000 or more
❑04 $25,000 to less than $35,000 ❑08 $50,000 to less than $75,000 ❑98 Prefer not to answer

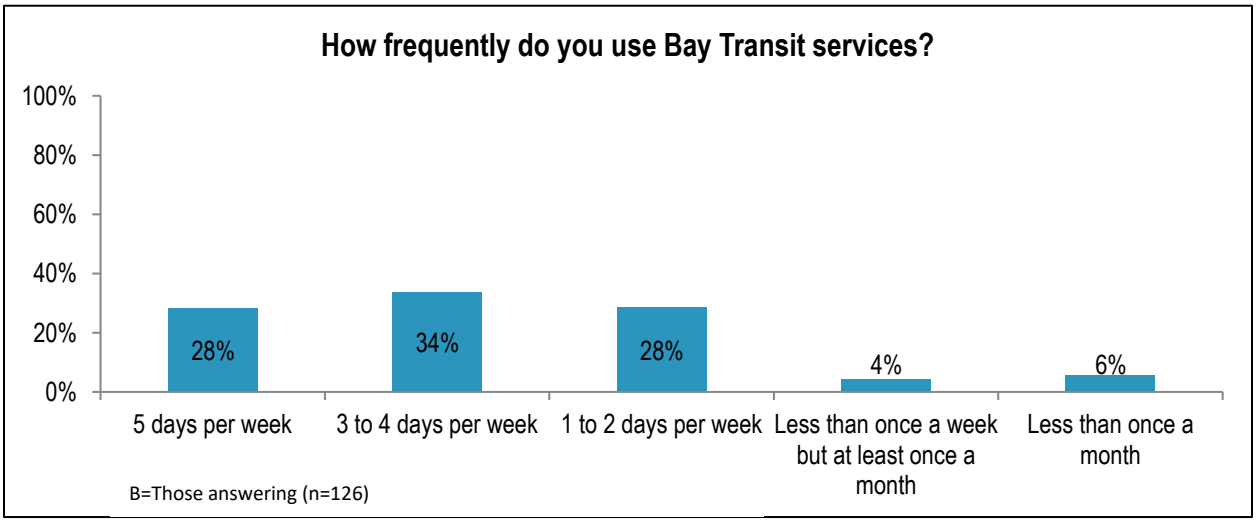
19. Do you identify as having a disability?
❑01 Yes ❑02 No ❑98 Prefer not to answer

20. Including yourself, how many people live in your household?
_____ number of people in household
❑98 Prefer not to answer

### Table A1: On Board Survey – Answers Q1

| What service were you using when you received this survey? | Total |
|---|---|
| The Rivah Ride - Tappahannock | 2 |
| West Point - Paper Trail | 3 |
| Advance Reservation service | 41 |
| New Freedom | 2 |
| Bay Transit Express | 75 |
| No answer | 9 |
| Base=Total sample (n=132) | |

### Figure A5: On Board Survey – Answers Q2




### Figure A6: On Board Survey – Answers Q14

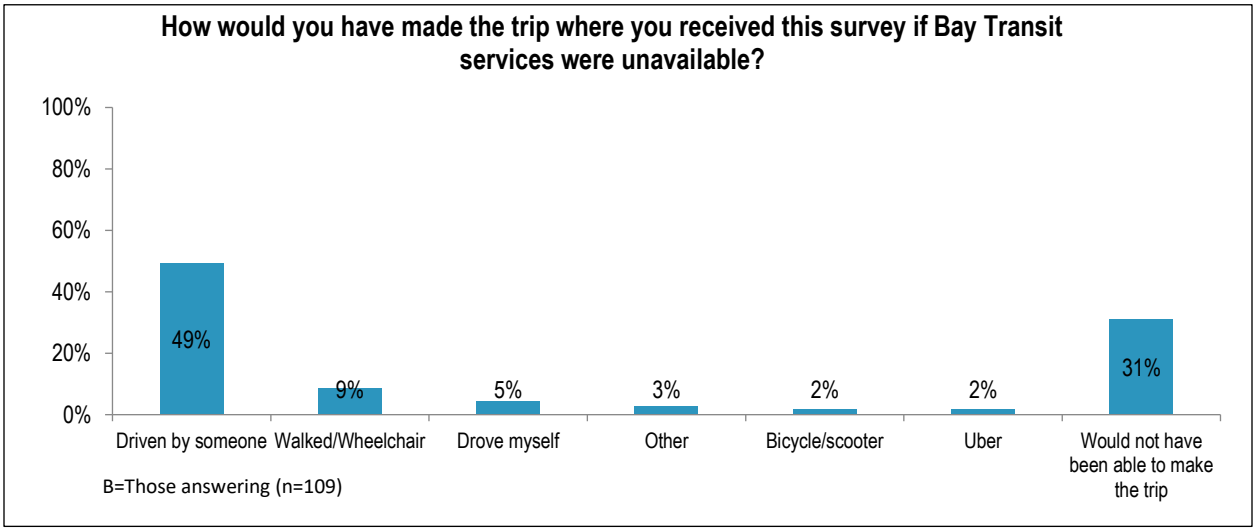
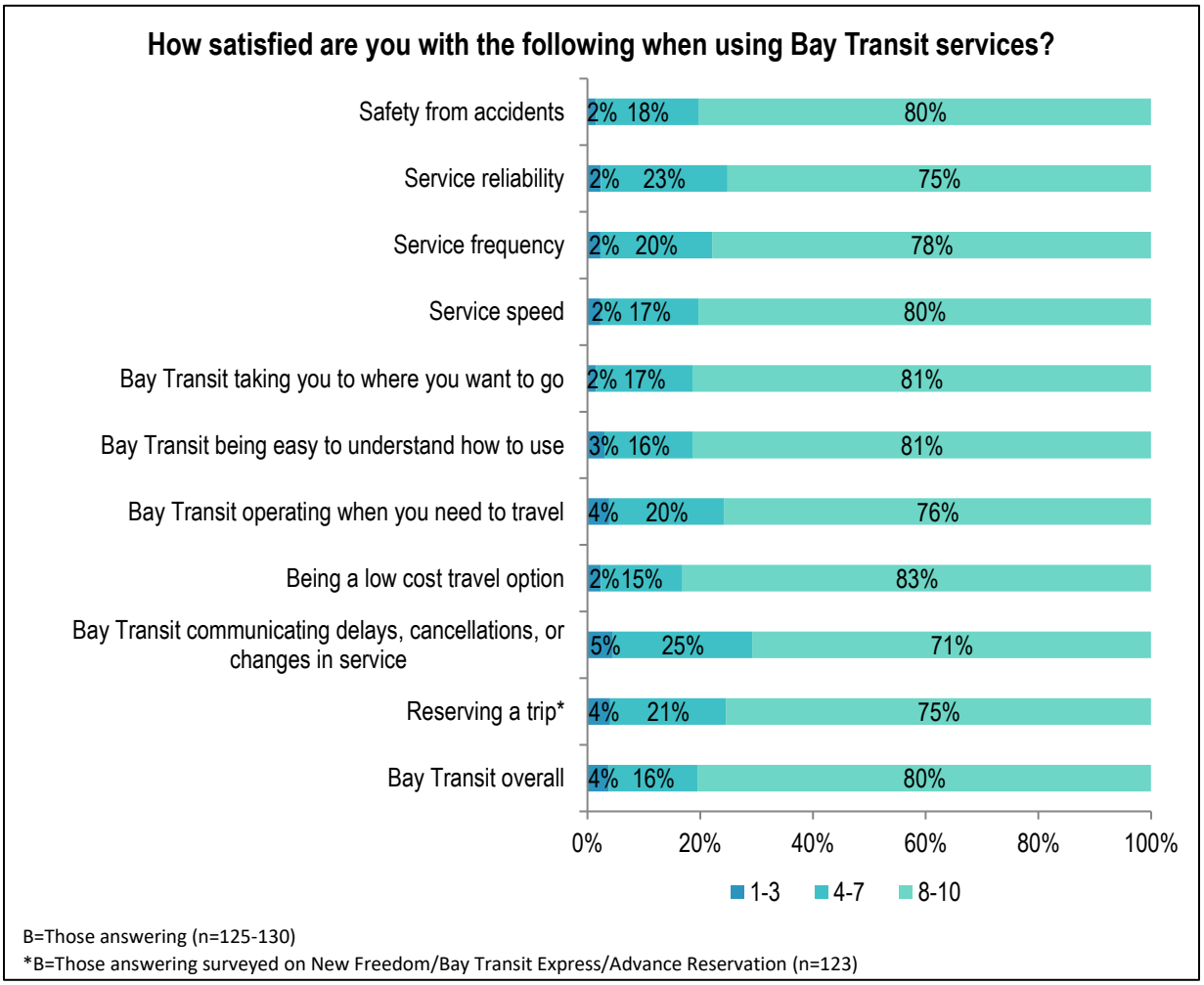


**Figure A7: On Board Survey – Answers Q3 or Q5 (depending on the Questionnaire)**




B=Those answering (n=125-130)

*B=Those answering surveyed on New Freedom/Bay Transit Express/Advance Reservation (n=123)

**Figure A8: On Board Survey – Answers Q3 for demand response and 5 for Deviated Fixed Route Service**

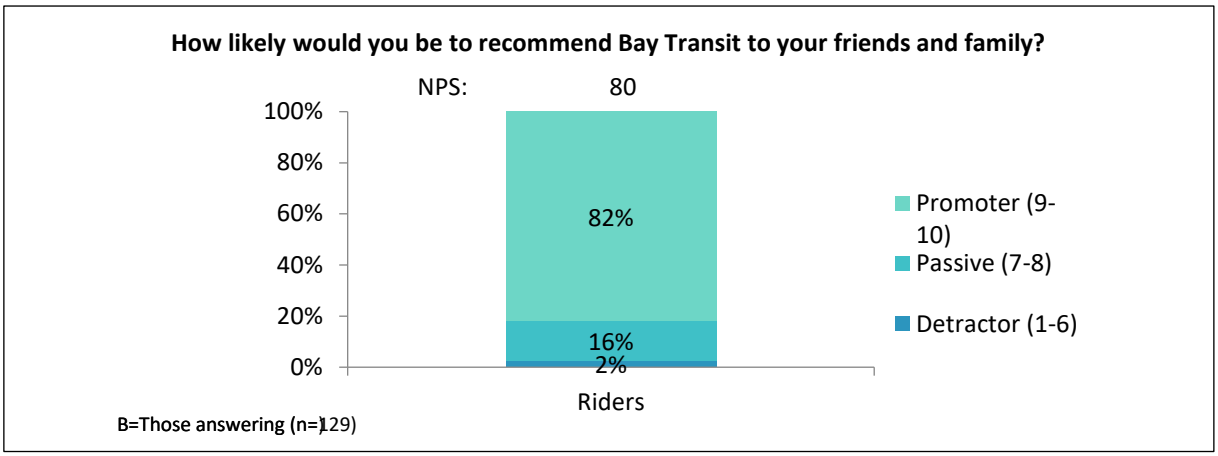



**Figure A9: On Board Survey – Answers Q4 on Demand Response Services Questionnaire**

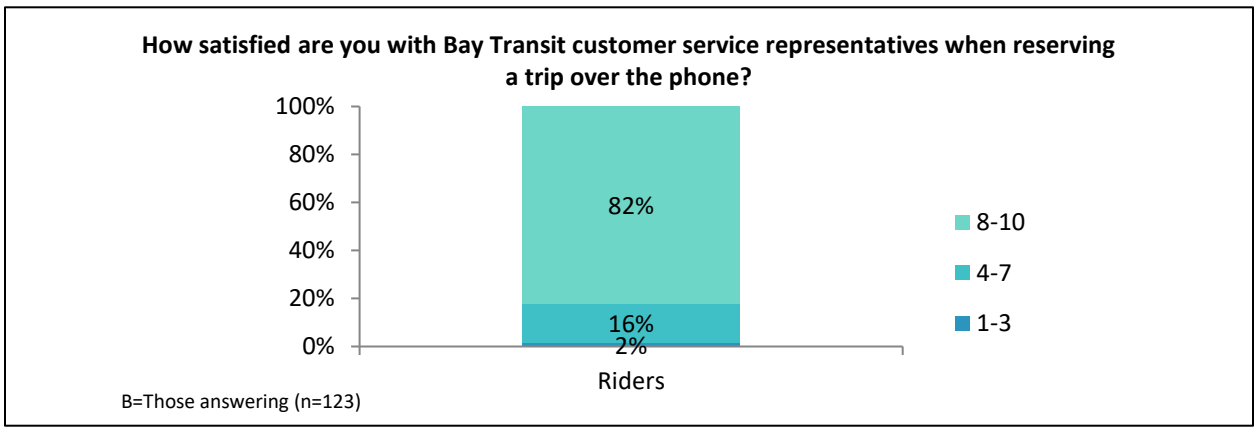
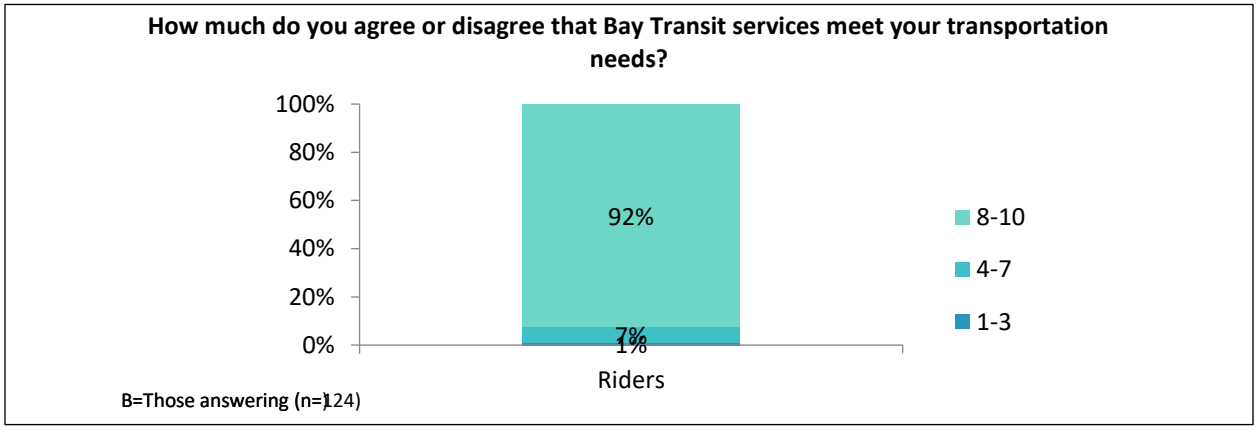
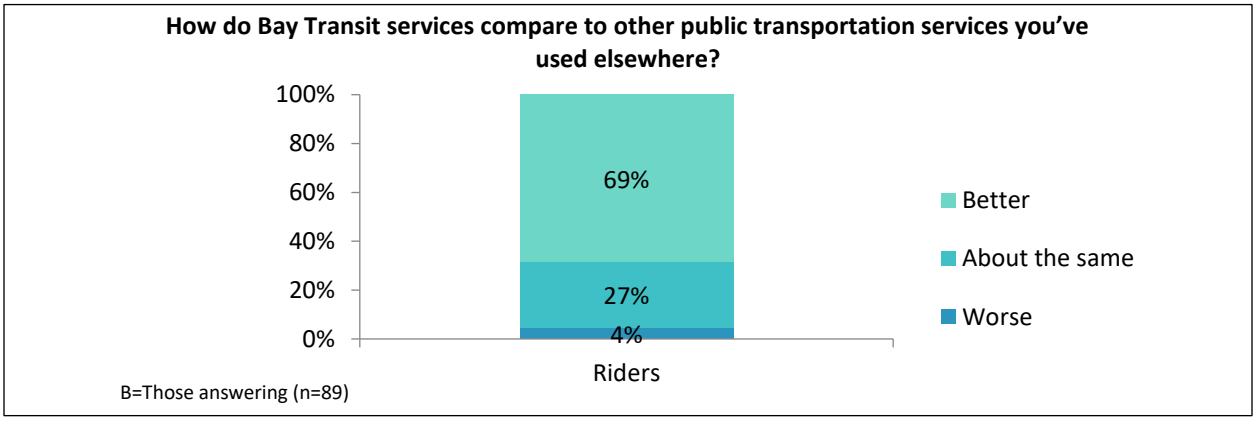



**Figure A10: On Board Survey – Answers Q7**



### Figure A11: On Board Survey – Answers Q9 or Q8 (Depending on the questionnaire)



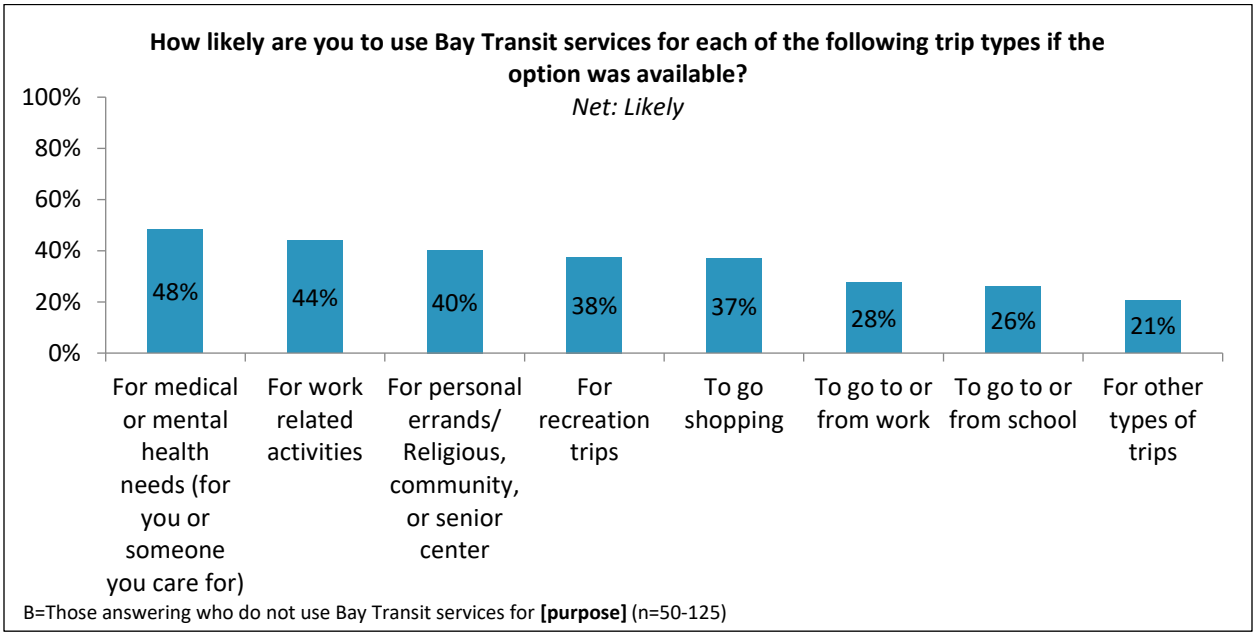

### Table A2: On Board Survey – Answers Q6 or Q9 (Depending on the questionnaire)

**For what purpose of purposes do you use Bay Transit services?**

| | Total |
|---|---|
| **Net: Commuting** | **64%** |
| To go to or from work | 60% |
| To go to or from school | 5% |
| **Shopping** | **42%** |
| **Medical or mental health needs (for you or someone you care for)** | **41%** |
| **Personal errands/Religious, community, or senior center** | **19%** |
| **Work related activities (e.g., business meetings)** | **14%** |
| **Recreation (dining, entertainment, museum, park, sight-seeing, etc.)** | **12%** |
| **Adult day break** | **2%** |
| **Somewhere else** | **2%** |

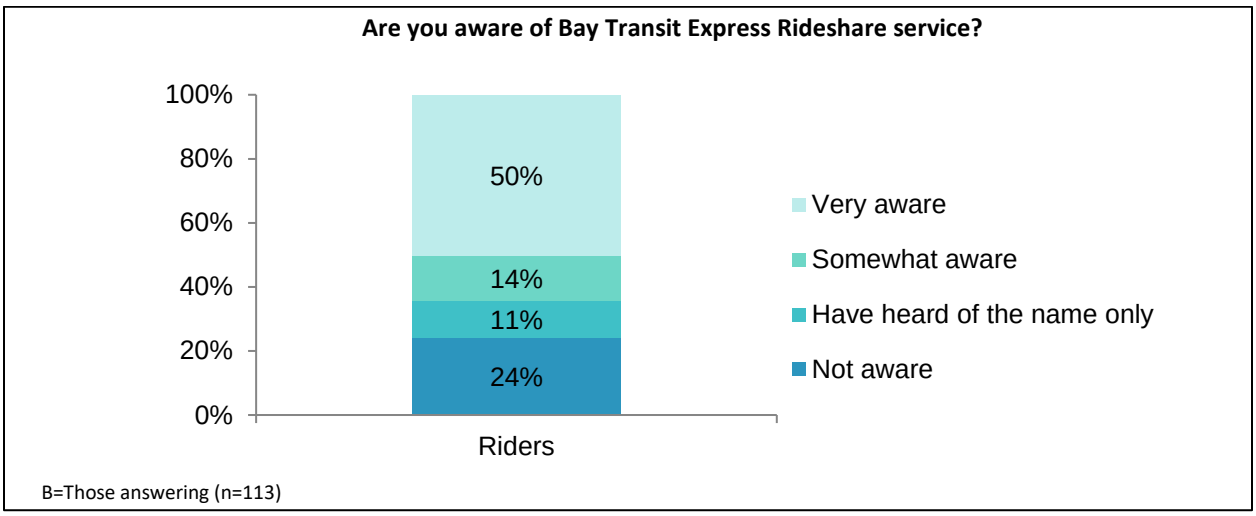
B=Those answering (n=130)
*Multiple responses accepted

**Figure A12: On Board Survey – Answers Q10 of Q7 (Depending on the questionnaire)**




B=Those answering who do not use Bay Transit services for **[purpose]** (n=50-125)

**Figure A13: On Board Survey – Answers Q11 of Q10 (Depending on the questionnaire)**




B=Those answering (n=113)

# APPENDIX B: DRIVERS SURVEY RESULTS

Drivers' surveys were conducted between 07/01/2024 and 07/12/2024 across Bay Transit services, yielding a total of 51 completed surveys. Figure B1 and B2 display the questionnaires used to collect feedback from drivers. Figure B3 and B4 show the raw results and breakdown of drivers' a response regarding their perceptions of Bay Transit customers' views on service quality, trip frequency, and purpose. Figure B5 displays services' busiest time bands throughout the day.

**Figure B1: Drivers Survey Questionnaire**

BAY TRANSIT
A DIVISION OF BAY AGING

**BUS OPERATOR SURVEY**

Bay Transit is working to improve their transit services and wants to hear from you! Please take a moment to give us your thoughts.

1.

What do customers like the most about Bay Transit? Rank options below from **1 (most common)** to **4 (least common)**:

| | |
|---|---|
| Low-fare service | _____ |
| The bus operators | _____ |
| Customer service | _____ |
| Service reliability | _____ |

Other (please explain):

What do customers complain about the most? Rank options below from **1 (most common)** to **4 (least common)**:

| | |
|---|---|
| Service hours | _____ |
| Wait time | _____ |
| Scheduling | _____ |
| Cleaner buses | _____ |

Other (please explain):

2. Please describe any locations or destinations beyond the current Bay Transit service zones and routes, but where people have requested to go or where you know there is a transit service need.

3. Please list any services that should be structured differently and what changes you recommend.

**Figure B2: Drivers Survey Questionnaire**

4. Please rank from 0 to 5 how busy each service hour is:

| Service Hour | Rank How Busy You Are from **0 (least busy)** to **5 (most busy)** |
|---|---|
| a. 6 AM to 7 AM | a._____ |
| b. 7 AM to 8 AM | b._____ |
| c. 8 AM to 9 AM | c._____ |
| d. 9 AM to 10 AM | d._____ |
| e. 10 AM to 11 AM | e._____ |
| f. 11 AM to 12 PM | f._____ |
| g. 12 PM to 1 PM | g._____ |
| h. 1 PM to 2 PM | h._____ |
| i. 2 PM to 3 PM | i._____ |
| j. 3 PM to 4 PM | j._____ |
| k. 4 PM to 5 PM | k._____ |
| l. 5 PM to 6 PM | l._____ |

Any comments:

5. Please list any other solutions or thoughts to improve public transportation in the Bay Transit service region.

**Figure B3: What Do Customers Like the Most About Bay Transit?**

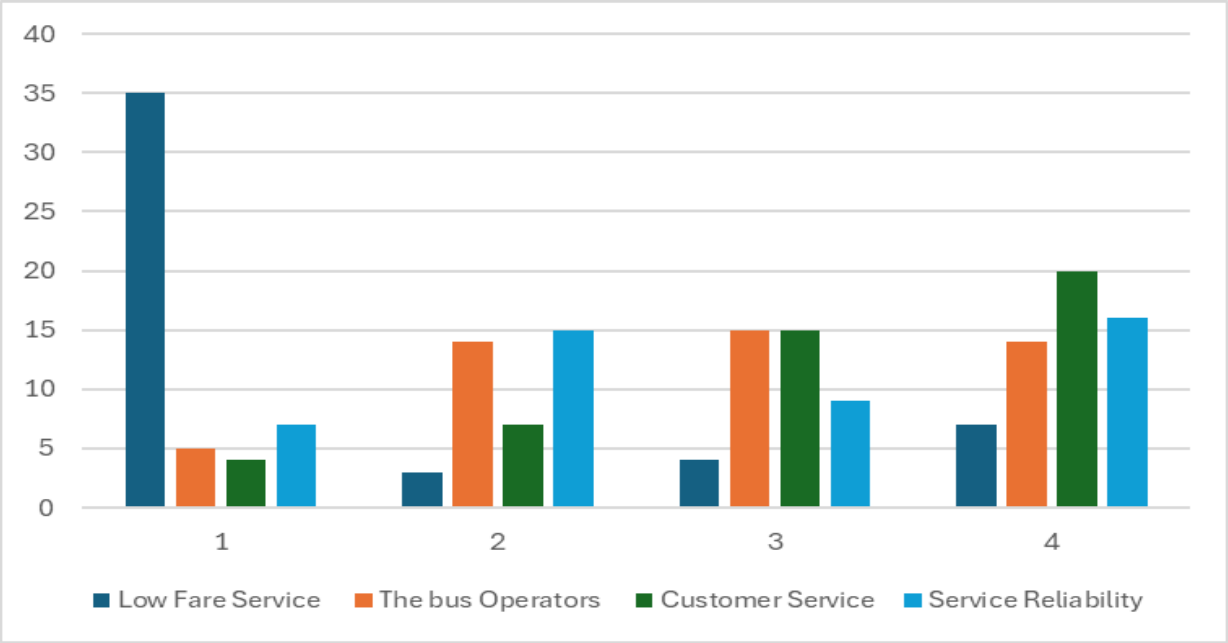



**Figure B3** illustrates the aspects of Bay Transit services that customers appreciate the most, based on a scoring system where "1" indicates the most liked aspect and "4" indicates the least liked. The results clearly show that Low Fare Service is the most favored aspect, with a significant majority of respondents assigning it a score of 1. The Bus Operators and Customer Service receive a more mixed distribution of scores, indicating moderate satisfaction among customers, with a noticeable number of respondents scoring them as 2 or 3. Service Reliability, while important, is most frequently assigned a score of 4, suggesting it is less appreciated compared to other aspects. In summary, the data reveals that while affordability is a key driver of customer satisfaction with Bay Transit, aspects such as the bus operators, customer service, and service reliability are viewed positively but not as highly valued as low fares.

**Figure B4: What Do Customers Complain the Most About Bay Transit?**

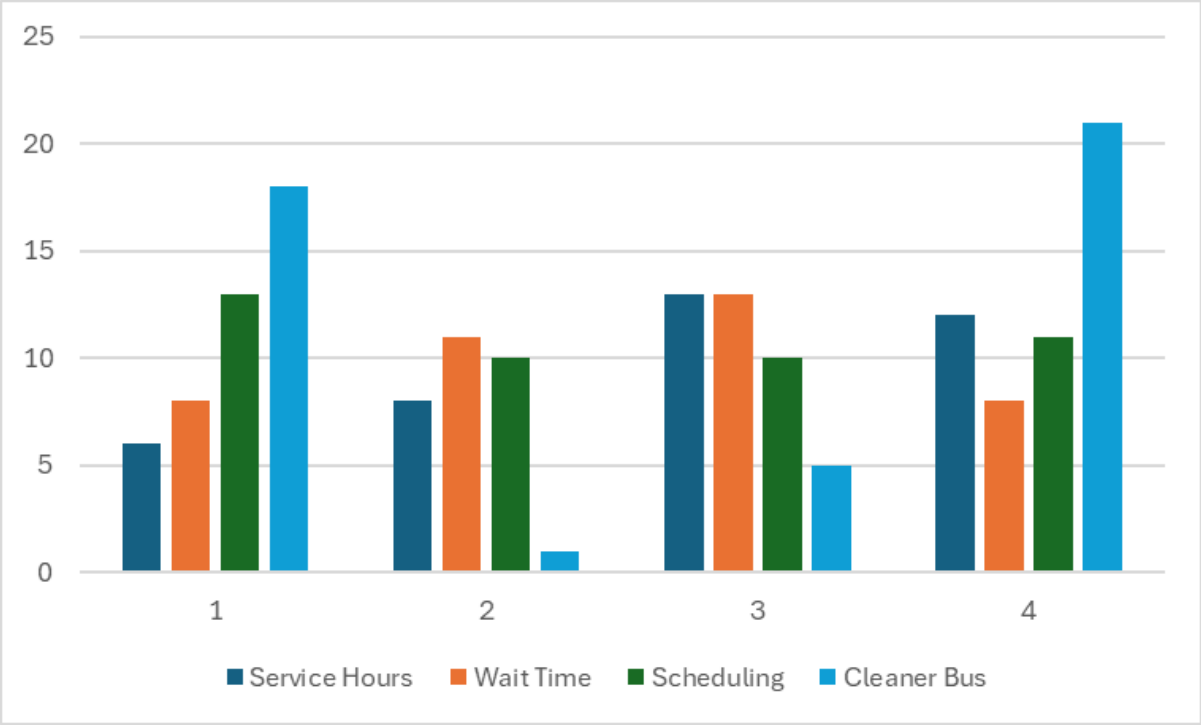



**Figure B4** highlights the aspects of Bay Transit services that customers complain about the most, based on a scoring system where "1" indicates the most common complaint and "4" indicates the least common. The data reveals that Service Hours and Cleaner Bus are the most frequent sources of dissatisfaction among customers, with a substantial number of respondents assigning these aspects a score of 1. Wait Time and Scheduling also receive notable mentions as areas of concern, with scores more evenly distributed across the categories, indicating that these issues are significant but not universally viewed as the top complaint. In summary, the chart shows that while service hours and bus cleanliness are the primary areas of dissatisfaction for Bay Transit customers, wait times and scheduling are also critical areas that require attention to improve overall customer satisfaction.

**Figure B5: Rank from 0-5 How Busy Each Service Hour Is**

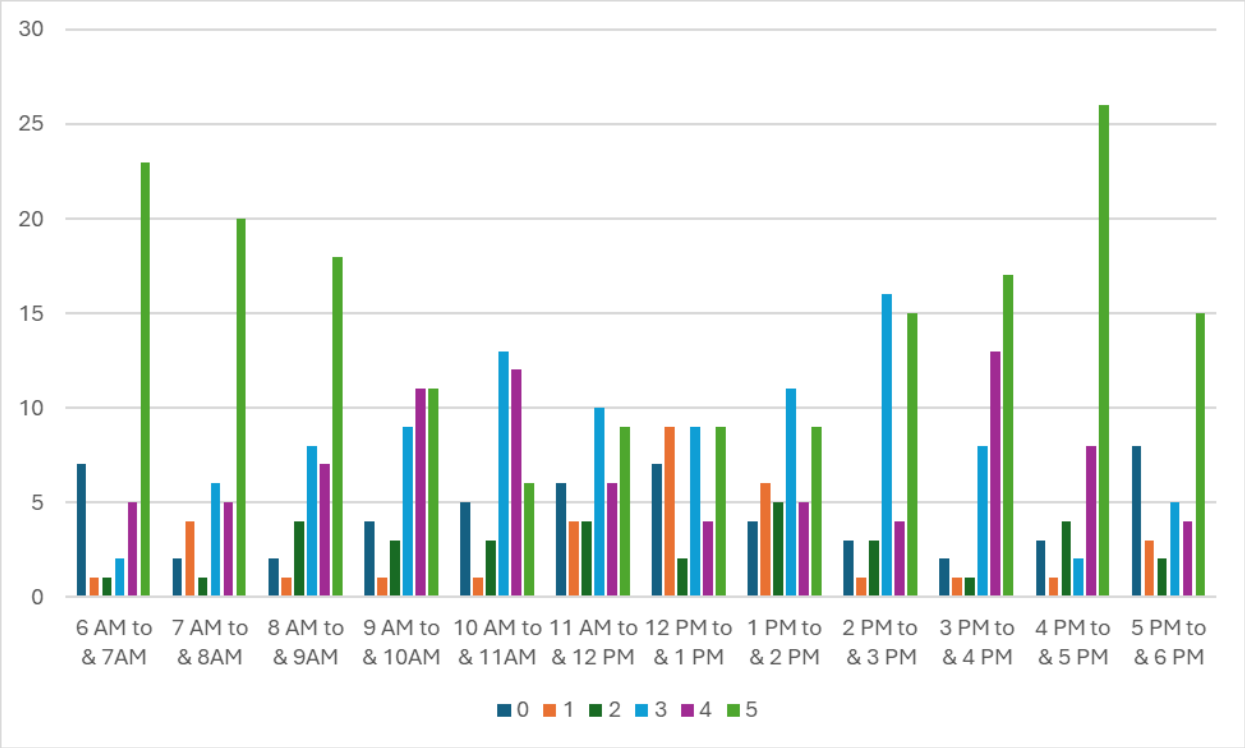



**Figure B5** shows how busy different times of the day are, based on a scale where 0 means least busy and 5 means most busy. The busiest times are from 6 AM to 9 AM and 4 PM to 5 PM, which receive the highest scores. This indicates these periods are when most activity or traffic occurs, likely reflecting typical commuter patterns. On the other hand, times like 10 AM to 1 PM are less busy, with more respondents giving them lower scores. This suggests these periods are quieter compared to the peak hours.

# APPENDIX C: TRIP GENERATORS

**Table C1** displays trip generators in the service area organized by category (Education, Housing, Human Services, Medical, Recreation, and Shopping). Each location also includes the Bay Transit route which serves the stop or its county if served by a demand response service.

### Table C1: Trip Generators in Bay Transit Service Area

| Name | Address | Category | Route or County |
|---|---|---|---|
| St Margaret's School | 444 S Water Ln, Tappahannock, VA 22560 | Education | Rivah Ride |
| Virginia Institute of Marine Sciences | 1370 Greate Rd, Gloucester Point, VA 23062 | Education | BT Express |
| Gloucester High School | 6680 Short Ln, Gloucester, VA 23061 | Education | BT Express |
| VCU Rice Rivers Center | 3701 John Tyler Memorial Hwy, Charles City, VA 23030 | Education | Charles City |
| New Kent Middle and High School | 7365 Egypt Rd, New Kent, VA 23124 | Education | New Kent |
| King William HS | 80 Cavalier Dr, King William, VA 23086 | Education | King William |
| King and Queen High School | 17024 The Trail, King and Queen Court House, VA 23085 | Education | King and Queen |
| Middlesex High School | 454 General Puller Hwy, Saluda, VA 23149 | Education | Middlesex |
| Matthews High School | 9889 Buckley Hall Rd, Mathews, VA 23109 | Education | Matthews |
| Northumberland Schools | 201 Academic Ln, Heathsville, VA 22473 | Education | Northumberland |
| Lancaster High School | 8815 Mary Ball Rd, Lancaster, VA 22503 | Education | Lancaster |
| Colonial Beach Schools | 100 1st St, Colonial Beach, VA 22443 | Education | Westmoreland |
| Westmoreland High School | 16762 Kings Hwy, Montross, VA 22520 | Education | Westmoreland |
| Rappahannock Community College | 52 Campus Dr, Warsaw, VA 22572 | Education | Richmond |
| Job Assistance Center | 1399 Centerville Rd, Shacklefords, VA 23156 | Employment | King and Queen |
| G4S International Training Inc. | 1536 International Dr, Shacklefords, VA 23156 | Employment | King and Queen |
| Virginia Career Works - Saluda | 2893 General Puller Hwy, Urbanna, VA 23175 | Employment | Middlesex |
| Love and Loyalty Recruitment Solutions | 77 S Main St Office 1, Kilmarnock, VA 22482 | Employment | Lancaster |
| Bay Consortium Workforce Development Board, Inc. | 487 Main St, Warsaw, VA 22572 | Employment | Richmond |
| Northern Neck Technical Center | 13946 History Land Hwy, Warsaw, VA 22572 | Employment | Richmond |
| Virginia Works - Warsaw | 487 Main Street, Warsaw, VA 22572 | Employment | Richmond |
| Foxchase Apartments | Foxchase Dr, Tappahannock, VA 22560 | Housing | Rivah Ride |
| Lake Drive Townhomes | 1062 Townhouse Dr, Tappahannock, VA 22560 | Housing | Rivah Ride |
| Rappahannock Apartments | 941 Winston Rd, Tappahannock, VA 22560 | Housing | Rivah Ride |
| Falls Apartments | 200 Falls Cir, Tappahannock, VA 22560 | Housing | Rivah Ride |

| Name | Address | Category | Route or County |
|---|---|---|---|
| Tappahannock Greens | 990 Winston Rd, Tappahannock, VA 22560 | Housing | Rivah Ride |
| Tanyard Apartments | 1121 Tanyard Dr, Tappahannock, VA 22560 | Housing | Rivah Ride |
| Essex Trailer Park | Tappahannock, VA 22560 | Housing | Rivah Ride |
| Tappahannock Riverside Condominium | 128 Prince St, Tappahannock, VA 22560 | Housing | Rivah Ride |
| Academy Apartments | 3720 King William Ave, West Point, VA 23181 | Housing | Paper Trail |
| King William Village Apartments | 3155 Taylor Ave, West Point, VA 23181 | Housing | Paper Trail |
| Winter's Point Apartments | 310 Winters Point Ln, West Point, VA 23181 | Housing | Paper Trail |
| Villiage Green Apartments | 7407 Village Green Ln, Gloucester, VA 23061 | Housing | BT Express |
| Deer Run Apartments | Doe Dr, Naxera, VA 23061 | Housing | BT Express |
| Woodland Pointe Apartments | 6019 Dixon Ln, Gloucester, VA 23061 | Housing | BT Express |
| River Bend Apartments | 5823 Sadlers Neck Road, Gloucester, VA 23061 | Housing | BT Express |
| Colonial Point Apartments | 7698 Colonial Point Ln, Gloucester Point, VA 23062 | Housing | BT Express |
| Dockside Condominiums | Dockside Dr, Hayes, VA 23072 | Housing | BT Express |
| Busch Park Mobile Home Park | 37 Butler Ln, Wake, VA 23176 | Housing | Middlesex |
| Cricket Hill Apartments | 21 St Ives Ct, Mathews, VA 23109 | Housing | Matthews |
| Kilmarnock Village Apartments | 89 School St, Kilmarnock, VA 22482 | Housing | Lancaster |
| Tartan Village | 112 Shamrock Ct, Kilmarnock, VA 22482 | Housing | Lancaster |
| Holly Court Apartments | 201 Wiggins Ave Apt 2i, Kilmarnock, VA 22482 | Housing | Lancaster |
| Indian Creek Apartments | 501 Southport Ln, Kilmarnock, VA 22482 | Housing | Lancaster |
| Bay Aging Apartments | 112 Shamrock Ct, Kilmarnock, VA 22482 | Housing | Lancaster |
| Mercer Place | PJ9G+HP Kilmarnock, Virginia | Housing | Lancaster |
| Essex Public Library | 117 N Church Ln, Tappahannock, VA 22560 | Human Services | Rivah Ride |
| Essex County School Board Office | 112 Cross St, Tappahannock, VA 22560 | Human Services | Rivah Ride |
| Essex County Government Offices | 305 Prince St, Tappahannock, VA 22560 | Human Services | Rivah Ride |
| Virginia DMV | 750 Richmond Beach Rd, Tappahannock, VA 22560 | Human Services | Rivah Ride |
| Essex Social Services | 772 Richmond Beach Rd, Tappahannock, VA 22560 | Human Services | Rivah Ride |
| Goodwill | 1529 Tappahannock Blvd, Tappahannock, VA 22560 | Human Services | Rivah Ride |
| Dentist West Point | 428 9th St, West Point, VA 23181 | Human Services | Paper Trail |
| Walgreen's | 345 14th St, West Point, VA 23181 | Human Services | Paper Trail |
| Walgreen's | 2418 George Washington Memorial Hwy, Hayes, VA 23072 | Human Services | BT Express |
| Rite Aid | 6908 Main St, Gloucester, VA 23061 | Human Services | BT Express |
| Habitat for Humanity | 3727 George Washington Memorial Hwy, Hayes, VA 23072 | Human Services | BT Express |

| Name | Address | Category | Route or County |
|---|---|---|---|
| Salvation Army | 7057 Linda Cir, Hayes, VA 23072 | Human Services | BT Express |
| Goodwill | 2324 George Washington Memorial Hwy, Gloucester Point, VA 23072 | Human Services | BT Express |
| Gloucester County Library-Point Branch | 2354 York Crossing Dr, Hayes, VA 23072 | Human Services | BT Express |
| Gloucester County Main Library | 6920 Main St, Gloucester, VA 23061 | Human Services | BT Express |
| Gloucester DMV Customer Service | 2348 York Crossing Dr, Hayes, VA 23072 | Human Services | BT Express |
| Charles City Courthouse | 10780 Courthouse Rd, Charles City, VA 23030 | Human Services | Charles City |
| Heritage Public Library | 10790 Courthouse Rd, Charles City, VA 23030 | Human Services | Charles City |
| Charles City Social and Recreation Center | 8320 Ruthville Rd, Charles City, VA 23030 | Human Services | Charles City |
| New Kent Municipal Offices | 12007 Courthouse Cir #202, New Kent, VA 23124 | Human Services | New Kent |
| Middlesex County Public Library Deltaville Branch | 35 Lovers Ln, Deltaville, VA 23043 | Human Services | Middlesex |
| Deltaville Community Center | 17147 General Puller Hwy, Deltaville, VA 23043 | Human Services | Middelsex |
| Middlesex Social Services Department | 2893 General Puller Hwy, Saluda, VA 23149 | Human Services | Middlesex |
| Matthews Social Services | 536 Church St, Mathews, VA 23109 | Human Services | Matthews |
| Matthews Government Offices | 89 Brickbat Rd, Mathews, VA 23109 | Human Services | Matthews |
| Matthews Memorial Library | 251 Main St, Mathews, VA 23109 | Human Services | Matthews |
| Northumberland County Government Offices | 72 Monument Pl, Heathsville, VA 22473 | Human Services | Northumberland |
| Northumberland Social Services | 6373 Northumberland Hwy # A, Heathsville, VA 22473 | Human Services | Northumberland |
| Lancaster County Government Offices | QGCM+C8 Lancaster, Virginia | Human Services | Lancaster |
| Hills Quarter Community Center | 723 Old Saint Johns Rd, Irvington, VA 22480 | Human Services | Lancaster |
| VCU Health Tappahannock Hospital | 618 Hospital Rd, Tappahannock, VA 22560 | Medical | Rivah Ride |
| Labcorp | 1413 Tappahannock Blvd Ste 2, Tappahannock, VA 22560 | Medical | Rivah Ride |
| Virginia Cardiovascular Specialists | 1396 Tappahannock Blvd B, Tappahannock, VA 22560 | Medical | Rivah Ride |
| Ledwith-Lewis Free Clinic | 317 Duke St, Tappahannock, VA 22560 | Medical | Rivah Ride |
| Hospice of Virginia | 1924 Tappahannock Blvd, Tappahannock, VA 22560 | Medical | Rivah Ride |
| TPMG West Point Family Medicine | 408 16th St, West Point, VA 23181 | Medical | Paper Trail |
| Riverside Hayes Medical Center | 2246 George Washington Memorial Hwy, Hayes, VA 23072 | Medical | BT Express |

| Name | Address | Category | Route or County |
|---|---|---|---|
| Children's Clinic | 3055 George Washington Memorial Hwy, Hayes, VA 23072 | Medical | BT Express |
| Glaucester Matthews Care Clinic | 6031 Industrial Dr, Gloucester, VA 23061 | Medical | BT Express |
| M.D. Express Urgent Care | 6567 George Washington Memorial Hwy, Gloucester, VA 23061 | Medical | BT Express |
| Riverside Hospice Care Middle Peninsula | 7358 Main St, Gloucester, VA 23061 | Medical | BT Express |
| Fresenius Medical Care | CF6H+R4 Gloucester, Virginia | Medical | BT Express |
| Dr. Frank T. West III, MD - Mobjack Medical Group | 6530 Main St, Gloucester, VA 23061 | Medical | BT Express |
| Riverside Walter Reed Hospital | 7547 Hospital Dr Ste 2300, Gloucester, VA 23061 | Medical | BT Express |
| Gloucester Vetrinary Hospital | 6666 George Washington Memorial Hwy, Gloucester, VA 23061 | Medical | BT Express |
| Velocity Urgent Care | 5659 S Pkwy Dr #100, Gloucester, VA 23061 | Medical | BT Express |
| Walgreens | 9125 Pocahontas Trail, Providence Forge, VA 23140 | Medical | New Kent |
| Kentwood Square Medical Center | 2500 New Kent Hwy, Quinton, VA 23141 | Medical | New Kent |
| Walgreens | 2207 Pocahontas Trail, Quinton, VA 23141 | Medical | New Kent |
| VCU Health Emergency Center | 2495 Pocahontas Trail, Quinton, VA 23141 | Medical | New Kent |
| King William-Dawn Community Doctors | 11814 King William Rd, Aylett, VA 23009 | Medical | King William |
| Dominion Women's Health | 142 Smithfield Rd, St Stephens Church, VA 23148 | Medical | King and Queen |
| Medicine Shoppe Pharmacy | 9893 General Puller Hwy, Hartfield, VA 23071 | Medical | Middlesex |
| Northern Neck Middlesex Free Clinic | 51 William B Graham Ct, Kilmarnock, VA 22482 | Medical | Middlesex |
| Walgreens | 573 N Main St, Kilmarnock, VA 22482 | Medical | Lancaster |
| CVS | 100 James B. Jones Mem Hwy, Kilmarnock, VA 22482 | Medical | Lancaster |
| Rappahannock General Hospital | 101 Harris Rd, Kilmarnock, VA 22482 | Medical | Lancaster |
| Riverside White Stone Family Practice | 30 Shady Ln, White Stone, VA 22578 | Medical | Lancaster |
| Bon Secours Lively Medical Center | 36 Lively Oaks Rd, Lively, VA 22507 | Medical | Lancaster |
| Walgreens | 15748 Kings Hwy, Montross, VA 22520 | Medical | Westmoreland |
| Old Dominion Grain Corporation | 3100 Southern Ave, West Point, VA 23181 | Other | Paper Trail |
| Virginia Army National Guard | 110 Thompson Ave, West Point, VA 23181 | Other | Paper Trail |
| WestRock | 1901 Main St, West Point, VA 23181 | Other | Paper Trail |

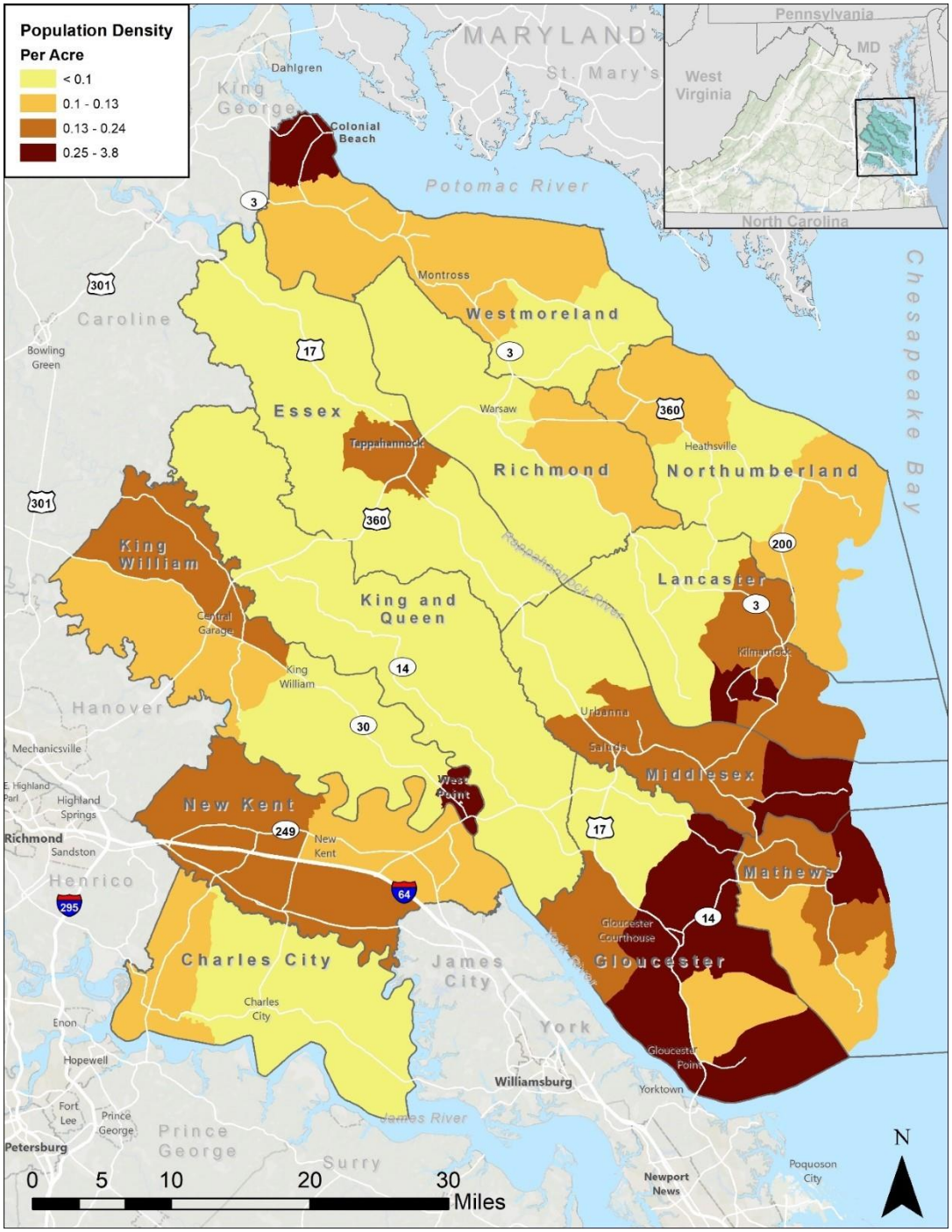
| Name | Address | Category | Route or County |
|---|---|---|---|
| Center for Archaelogy Preservation and Education | 6783 Main St, Gloucester, VA 23061 | Other | BT Express |
| Canon | 6000 Industrial Dr, Gloucester, VA 23061 | Other | BT Express |
| New Kent County Airport | 6901 Terminal Rd, Quinton, VA 23141 | Other | New Kent |
| Middlesex County Courthouse | JC44+RF Saluda, Virginia | Other | Middlesex |
| Colonial Beach Boardwalk | Beach Terrace, Colonial Beach, VA 22443 | Other | Westmoreland |
| Warsaw Main Street | 19 Main St, Warsaw, VA 22572 | Other | Richmond |
| Rappahannock River Park | Newbill Dr, Tappahannock, VA 22560 | Recreation | Rivah Ride |
| Hobbs Hole Golf Course | 1267 Hobbs Hole Dr, Tappahannock, VA 22560 | Recreation | Rivah Ride |
| Beach Park | 402 1st St, West Point, VA 23181 | Recreation | Paper Trail |
| West Point Landing | G6Q4+6G West Point, Virginia | Recreation | Paper Trail |
| West Point Country Club | 4200 Southern Ave, West Point, VA 23181 | Recreation | Paper Trail |
| Brown Park | 7461 Foster Rd, Gloucester, VA 23061 | Recreation | BT Express |
| Gloucester Point Beach Park | 1255 Greate Rd, Gloucester Point, VA 23062 | Recreation | BT Express |
| Machicomoco State Park | 3601 Timberneck Farm Rd, Hayes, VA 23072 | Recreation | BT Express |
| Woodville Park | 3904 Woodville Park Rd, Gloucester, VA 23061 | Recreation | BT Express |
| Abingdon Park | 7087 Powhatan Dr, Hayes, VA 23072 | Recreation | BT Express |
| Ark Park | 7963 Number 9 Rd, Gloucester, VA 23061 | Recreation | BT Express |
| Westmoreland State Park | 145 Cliff Road, 145 Cliff Rd, Montross, VA 22520 | Recreation | Westmoreland |
| Tappahannock Towne Center | W47R+CF Tappahannock, Virginia | Shopping | Rivah Ride |
| Walmart | 1660 Tappahannock Blvd, Tappahannock, VA 22560 | Shopping | Rivah Ride |
| Food Lion | 1856 Tappahannock Blvd, Tappahannock, VA 22560 | Shopping | Rivah Ride |
| Lowe's | 2000 Tappahannock Blvd, Tappahannock, VA 22560 | Shopping | Rivah Ride |
| Essex Square | 1629 Tappahannock Blvd, Tappahannock, VA 22560 | Shopping | Rivah Ride |
| West Point Square Shopping Center | 100 Winters St, West Point, VA 23181 | Shopping | Paper Trail |
| Three Rivers Seafood Market | 718 7th St, West Point, VA 23181 | Shopping | Paper Trail |
| West Point Commercial District | G6J3+MF West Point, Virginia | Shopping | Paper Trail |
| Horn's West Point Ace Hardware | 611 14th St, West Point, VA 23181 | Shopping | Paper Trail |
| Food Lion | 7465 Hargett Blvd, Gloucester, VA 23061 | Shopping | BT Express |
| Dollar General | 6900 Main St, Gloucester, VA 23061 | Shopping | BT Express |
| Walmart | 6819 Waltons Ln, Gloucester, VA 23061 | Shopping | BT Express |
| Aldi | 7176 George Washington Memorial Hwy, Gloucester, VA 23061 | Shopping | BT Express |
| Kroger | 7254 Hayes Shopping Ct Ctr, Hayes, VA 23072 | Shopping | BT Express |

| Name | Address | Category | Route or County |
|---|---|---|---|
| Food Lion | 2292 York Crossing Dr, Hayes, VA 23072 | Shopping | BT Express |
| Gloucester Main Street | 6505 Main St, Gloucester, VA 23061 | Shopping | BT Express |
| Horns Gloucester Ace Hardware | 7307 John Clayton Memorial Hwy, Gloucester, VA 23061 | Shopping | BT Express |
| Gloucester Exchange Shopping Center | 6904 Main St, Gloucester, VA 23061 | Shopping | BT Express |
| Home Depot | 6921 Waltons Ln, Gloucester, VA 23061 | Shopping | BT Express |
| Fox Mill Shopping Center | 6730 Fox Centre Pkwy, Gloucester, VA 23061 | Shopping | BT Express |
| Shoppes at Gloucester | 6583 Market Dr, Gloucester, VA 23061 | Shopping | BT Express |
| Lowe's | 6659 George Washington Memorial Hwy, Gloucester, VA 23061 | Shopping | BT Express |
| White Marsh Shopping Center | 4834 George Washington Memorial Hwy, Hayes, VA 23072 | Shopping | BT Express |
| White Marsh Village | 4760 George Washington Memorial Hwy, Hayes, VA 23072 | Shopping | BT Express |
| Hayes Stores Shopping Center | Hayes Shopping Ct, Hayes, VA 23072 | Shopping | BT Express |
| York River Crossing Shopping Center | 2353 York Crossing Dr, Hayes, VA 23072 | Shopping | BT Express |
| Gloucester Supply and Ace Hardware | 2384 Hayes Rd, Hayes, VA 23072 | Shopping | BT Express |
| Dollar General | 2356 George Washington Memorial Hwy, Hayes, VA 23072 | Shopping | BT Express |
| Highway 17 Shopping Center | 1767 George Washington Memorial Hwy, Gloucester Point, VA 23062 | Shopping | BT Express |
| Providence Forge Ace Hardware | 9321 Pocahontas Trail, Providence Forge, VA 23140 | Shopping | New Kent |
| Food Lion | 9030 Pocahontas Trail, Providence Forge, VA 23140 | Shopping | New Kent |
| Family Dollar | 3621 N Courthouse Rd, Providence Forge, VA 23140 | Shopping | New Kent |
| New Kent Shopping Mall/Food Lion | 2587 VA-249, Quinton, VA 23141 | Shopping | New Kent |
| Dollar General | 2375 Pocahontas Trail, Quinton, VA 23141 | Shopping | New Kent |
| Food Lion | 7300 Market Pl Dr, Quinton, VA 23141 | Shopping | New Kent |
| Central Crossing (Food Lion & Family Dollar) | 4915 Richmond Tappahannock Hwy, Aylett, VA 23009 | Shopping | King William |
| Dollar General | 3736 E Lewis B Puller Mem Hwy H, Shacklefords, VA 23156 | Shopping | King and Queen |
| Dollar General | 15718 General Puller Hwy, Deltaville, VA 23043 | Shopping | Middlesex |
| Dollar General | 10989 General Puller Hwy, Hartfield, VA 23071 | Shopping | Middlesex |
| Horn's Middlesex Ace | 2707 General Puller Hwy, Saluda, VA 23149 | Shopping | Middlesex |
| Dollar General | 126 General Puller Hwy, Saluda, VA 23149 | Shopping | Middlesex |
| Urbana Downtown District | 201 Virginia St, Urbanna, VA 23175 | Shopping | Middlesex |
| Food Lion | 183 Main St, Mathews, VA 23109 | Shopping | Matthews |

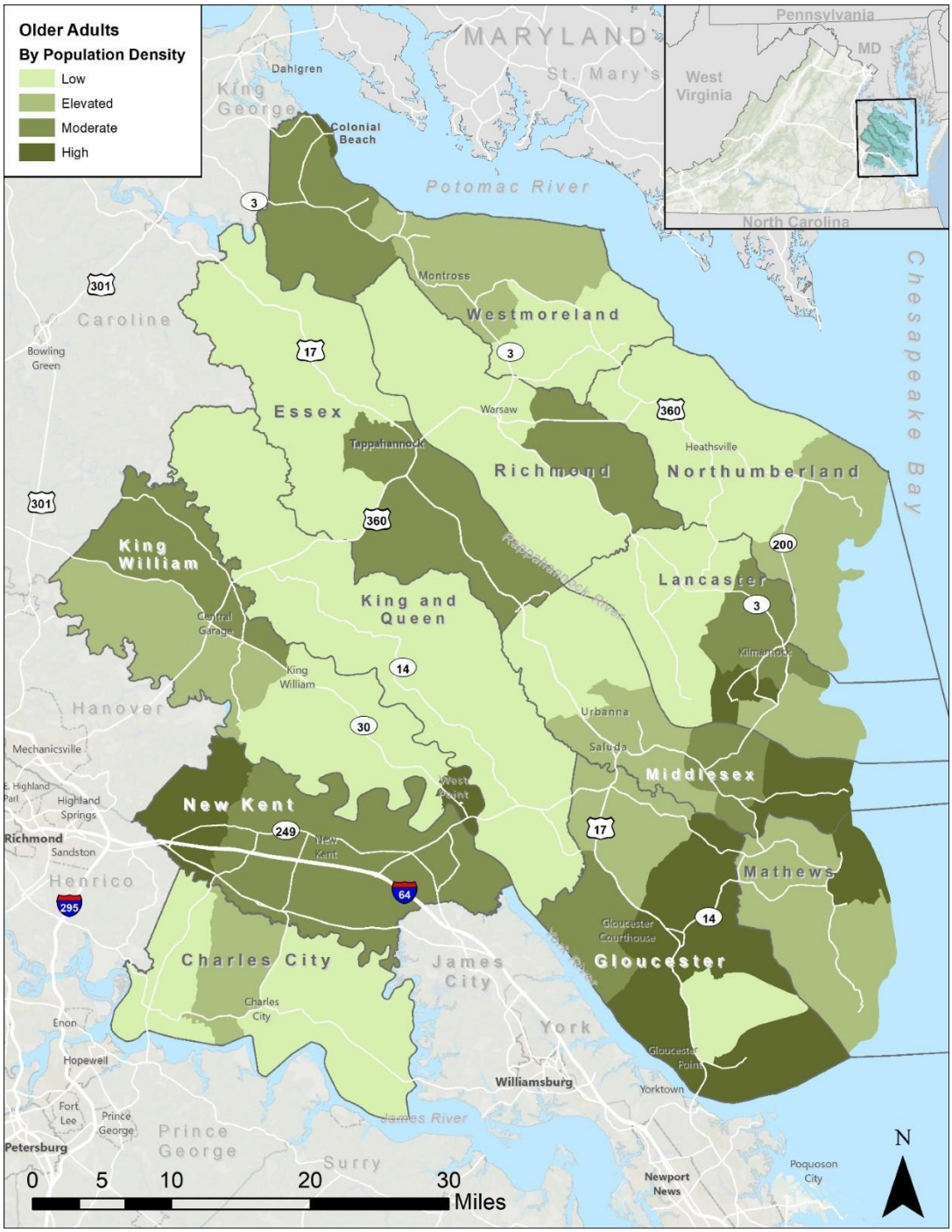
| Name | Address | Category | Route or County |
|---|---|---|---|
| Dollar General | 11000 Buckley Hall Rd, Mathews, VA 23109 | Shopping | Matthews |
| Dollar General | 4787 Jessie Dupont Memorial Hwy, Heathsville, VA 22473 | Shopping | Northumberland |
| Dollar General | 7390 Northumberland Hwy, Heathsville, VA 22473 | Shopping | Northumberland |
| Dollar General | 5236 Mary Ball Rd, Lively, VA 22507 | Shopping | Lancaster |
| Walmart | 200 Old Fair Grounds Way, Kilmarnock, VA 22482 | Shopping | Lancaster |
| Food Lion | 424 N Main St, Kilmarnock, VA 22482 | Shopping | Lancaster |
| Kilmarnock Main St | 49 S Main St, Kilmarnock, VA 22482 | Shopping | Lancaster |
| Dollar General | 930 Rappahannock Dr, White Stone, VA 22578 | Shopping | Lancaster |
| Costello's Ace Hardware Colonial Beach | 535 Euclid Ave, Colonial Beach, VA 22443 | Shopping | Westmoreland |
| Colonial Beach Shopping Mall (Dollar General) | 724H+78 Colonial Beach, Virginia | Shopping | Westmoreland |
| The Shops at Beach Gate (Food Lion) | 680 McKinney Blvd, Colonial Beach, VA 22443 | Shopping | Westmoreland |
| Food Lion and Family Dollar | 18044 Kings Hwy, Montross, VA 22520 | Shopping | Westmoreland |
| Dollar General | 5082 History Land Hwy, Farnham, VA 22460 | Shopping | Richmond |
| Food Lion | 4665 Richmond Rd, Warsaw, VA 22572 | Shopping | Richmond |
| Dollar General | 39 Sabine Hall Rd, Warsaw, VA 22572 | Shopping | Richmond |
| Food Lion | 12532 Tidewater Trail, Saluda, VA 23149 | Shopping | Middlesex |

# APPENDIX D – DEMOGRAPHICS MAPS

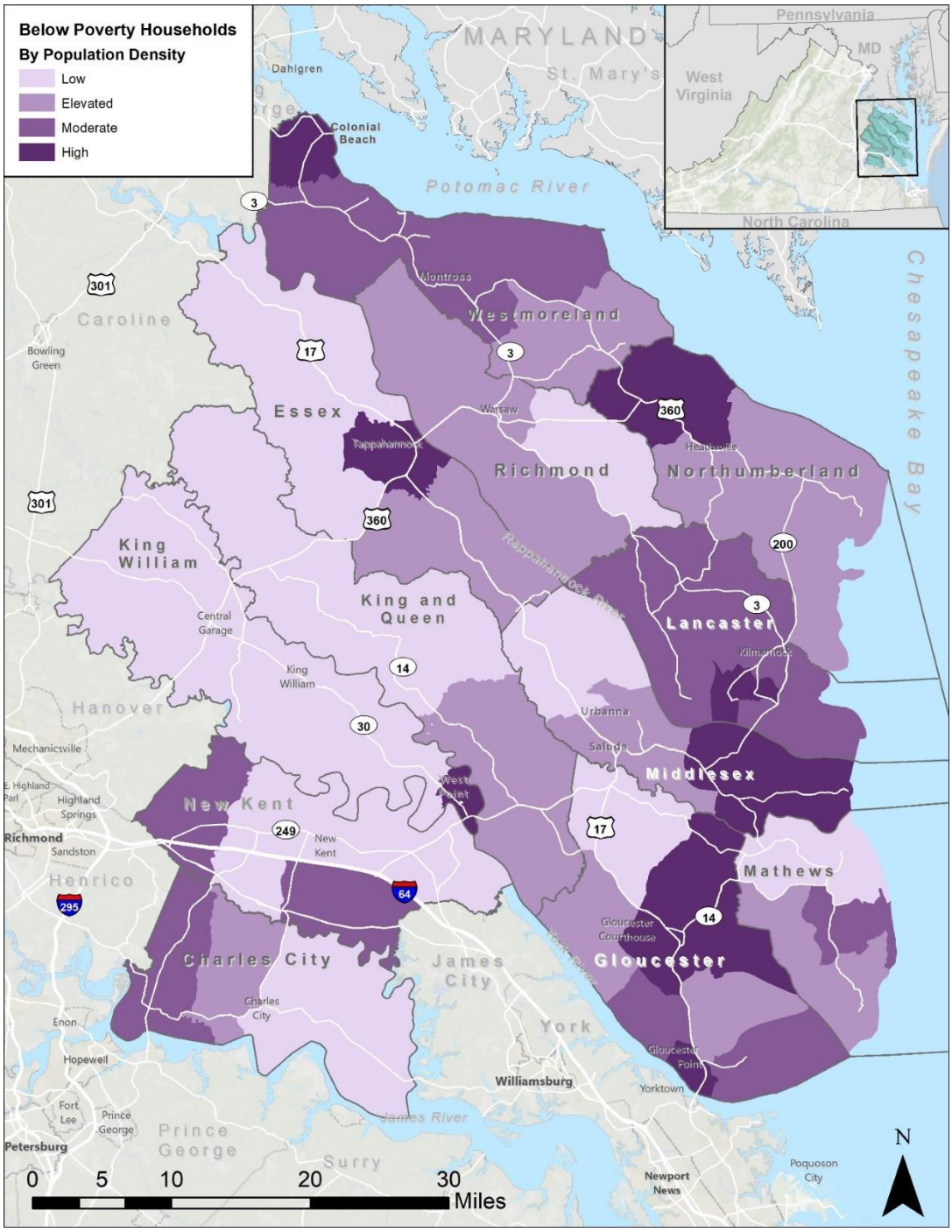
### Figure D1: Population Density of Service Area



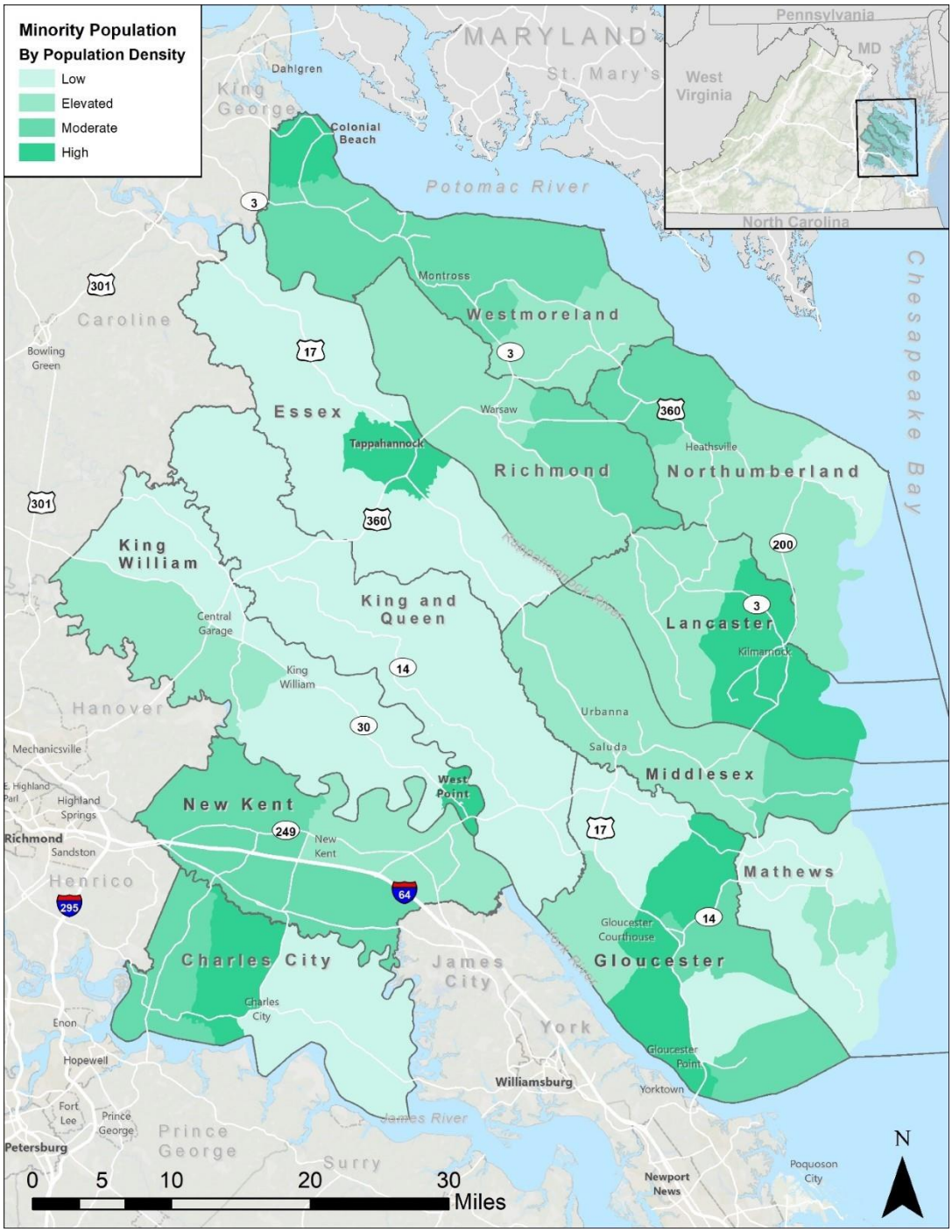
## Figure D2: Older Adult Population in Service Area



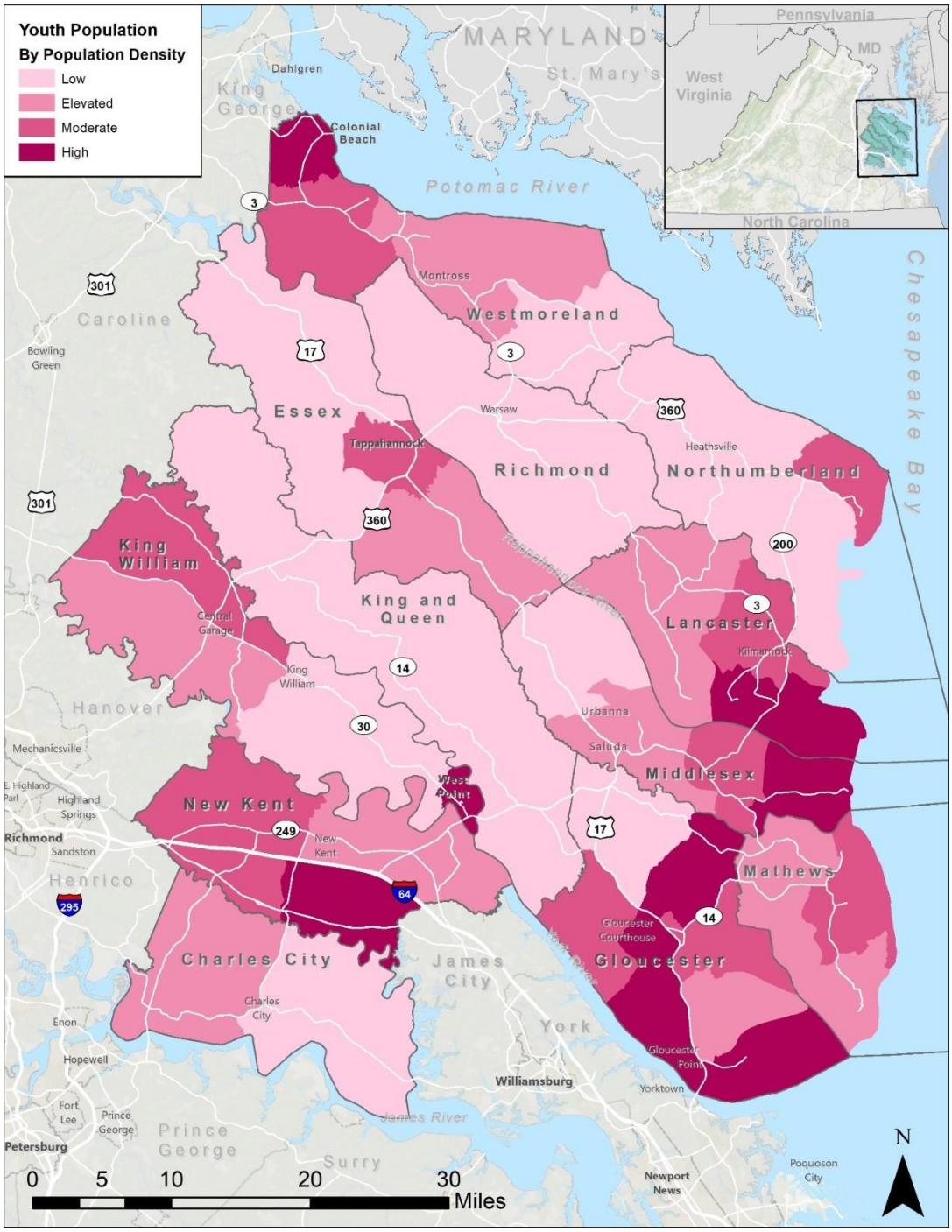
## Figure D3: Low-income Households in Service Area



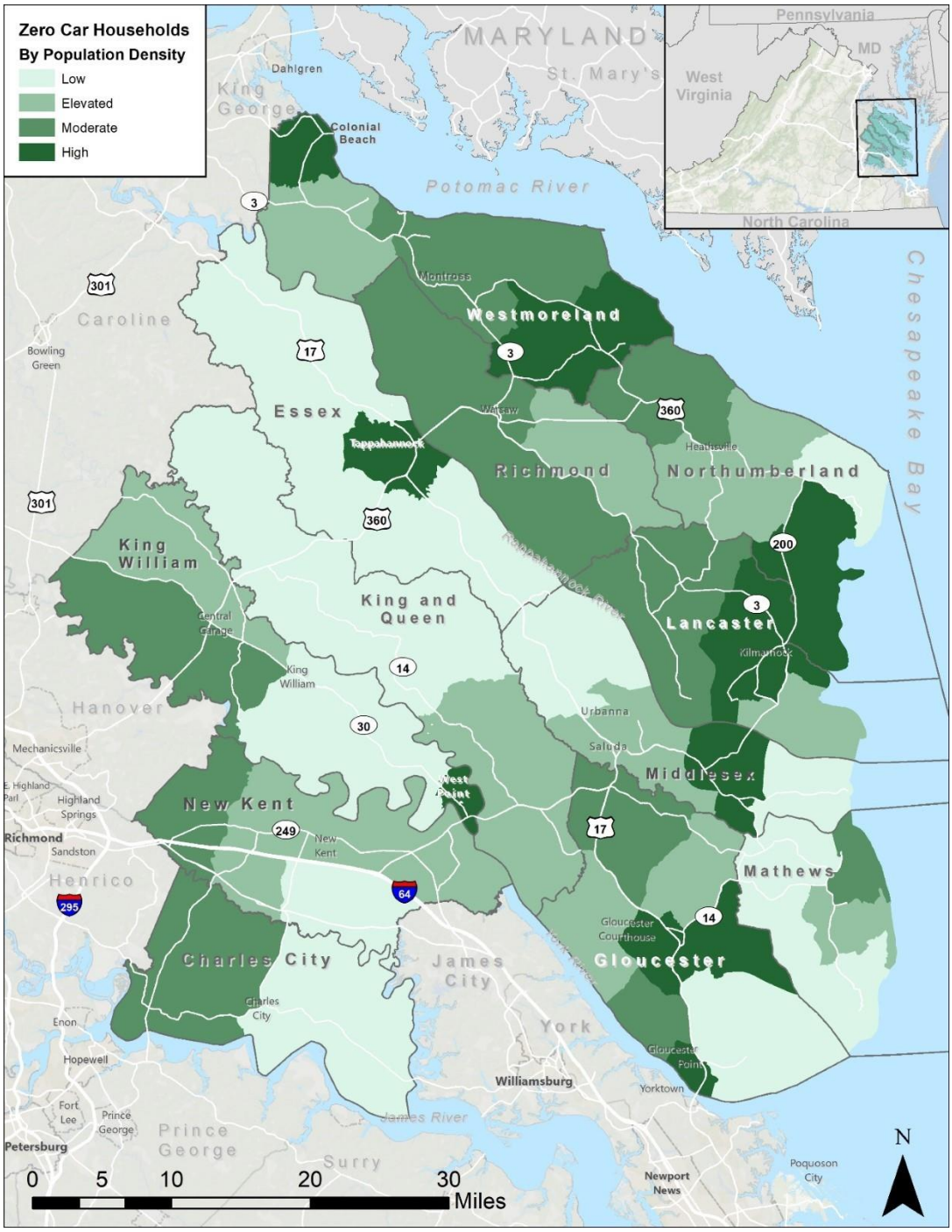
## Figure D4: Minority Population in Service Area



## Figure D5: Youth Population in Service Area



## Figure D6: Zero-car Households in Service Area



## Figure D7: Individuals with Disabilities Population in Service Area