EVOLVING WATA
TRANSIT STRATEGIC PLAN

Transit Strategic Plan (TSP) for the Williamsburg Area Transit Authority (WATA)

Final Report

Fiscal Years 2024 - 2034

Prepared for WATA
JUNE 2024

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Table of Contents

1 System Overview and Strategic Vision

This chapter provides an overview of the Williamsburg Area Transit Authority (WATA) transit system and a description of WATA's strategic vision.

Vision: **"*Evolving public transit to meet the goals of our community, connect people, grow our economy, and improve our quality of life.*"**

Mission: **"*WATA provides safe, reliable, and accessible transit services to the diverse population of residents and tourists of the Historic Triangle.*"**

Values

- **Safety**
- **Friendly Service**
- **Reliability**
- **Teamwork**
- **Communication**

1.1 System Overview

1.1.1 Services Provided and Areas Served

WATA is a regional transit authority serving the urbanized area of Williamsburg, Virginia. The WATA service area includes the City of Williamsburg, James City County, York County, and a portion of Newport News.

This TSP was created during and after the Covid-19 pandemic. There were different "existing" transit systems during the development phase of this TSP, one that operated through the end of 2019 which is referred to as the "Pre-Covid" network, and one that operated in 2023 at time of writing.

2019 Fixed Routes

As of 2019, pre-Covid, WATA operated a network of fixed routes complemented by demand response services for those with disabilities:

- Route 1 Lee Hall
- Route 2 Richmond Road
- Route 3 Merrimac Trail
- Route 4 Longhill Road
- Route 5 Monticello
- Route 6 Jamestown
- Route 7 Mooretown Road
- Route 8 William & Mary
- Route 9 Toano
- Route 11 Lackey
- Route 14 Trolley
- Americans with Disabilities Act (ADA) Complementary Paratransit

There are two additional services that WATA didn't operate but were reported to NTD through WATA. These are the Colonial Williamsburg Shuttle and the Yorktown Trolley. Since WATA doesn't operate these services directly, they are mentioned in this overview but not in the remainder of the document.

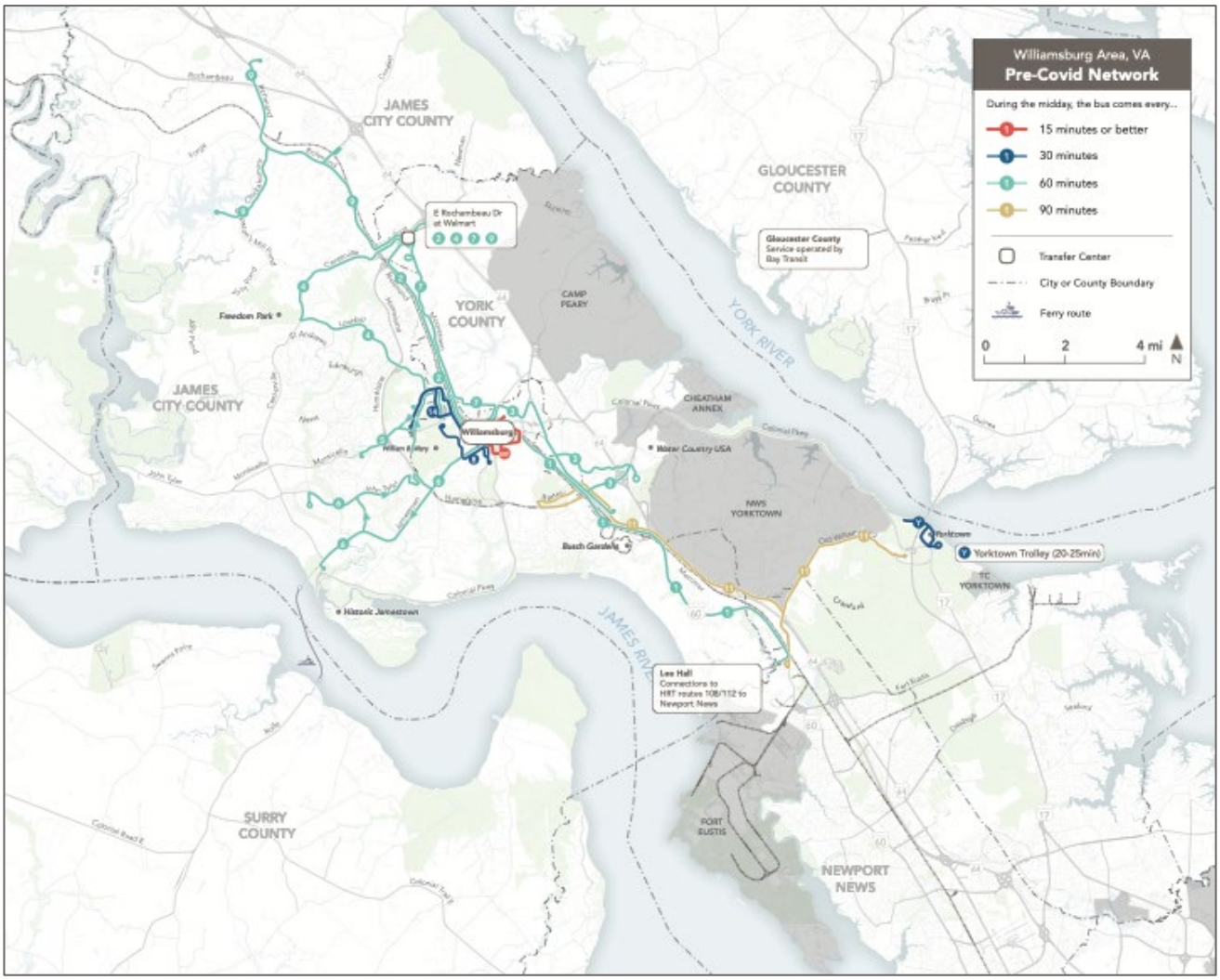


Figure 1: The 2019 pre-Covid WATA fixed route network. Routes are color-coded based on their midday frequency (the number of minutes between arriving buses)

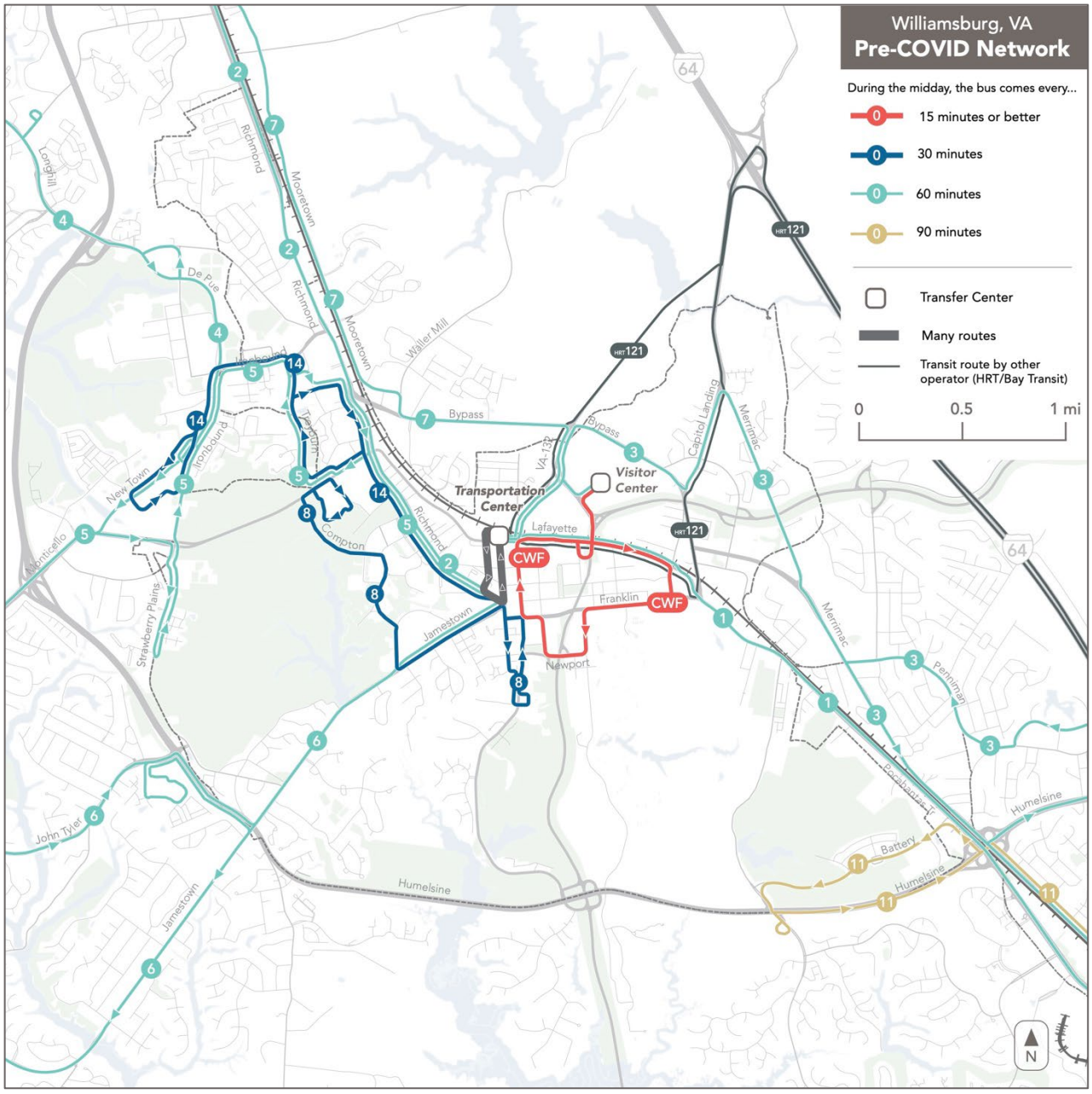


Figure 2: The 2019 pre-Covid WATA fixed route network in the center of the City of Williamsburg.

In the 2019 network, there are eleven WATA routes, the Colonial Williamsburg Shuttle, and the Yorktown Trolley. Most routes in the network run every 60 minutes. The routes cover areas throughout most of Williamsburg as well as parts of James City County and York County.

Most routes radiate out from the Transportation Center. In the north, Routes 2, 4, 7, and 9 cover different corridors and connect at the Walmart. Route 9 begins at the Walmart and provides coverage in low density areas farther north in James City County. Route 5 provides service through New Town and into Monticello Marketplace.

Route 6 goes to Jamestown providing coverage to Williamsburg Crossing, Colonial Square, and Jamestown High School on the way. Route 3 provides service north and east of the rail

tracks along Capitol Landing Road and Merrimac Trail. Route 1 provides service to the southeast along Pocahontas Trail to Lee Hall.

The only frequent route (running every 15 minutes) is the Colonial Williamsburg Shuttle. There are two routes that run every 30 minutes: Route 8 and Route 14. Route 14 runs every 30 minutes through High Street and New Town. Route 8 is intended to provide service to William & Mary. It runs every 30 minutes and provides service to several destinations on campus, but it doesn't go to a transfer location, e.g., the Transportation Center and Walmart, like all other WATA routes.

Route 11 is the least frequent service with a bus coming every 90 minutes. It connects to Lee Hall and gets to the edge of Yorktown but doesn't connect to the trolley. The Yorktown trolley runs every 20-25 minutes.

Every other route runs every 60 minutes and connect at either the Transportation Center or Walmart. Routes 1, 3, 5, 6, and 14 connect at the Transportation Center, Routes 4 and 9 connect at the Walmart, and Routes 2 and 7 connect at both. 60-minute routes that reach the Transportation Center or Walmart are scheduled to arrive at the same time to facilitate timed transfers.

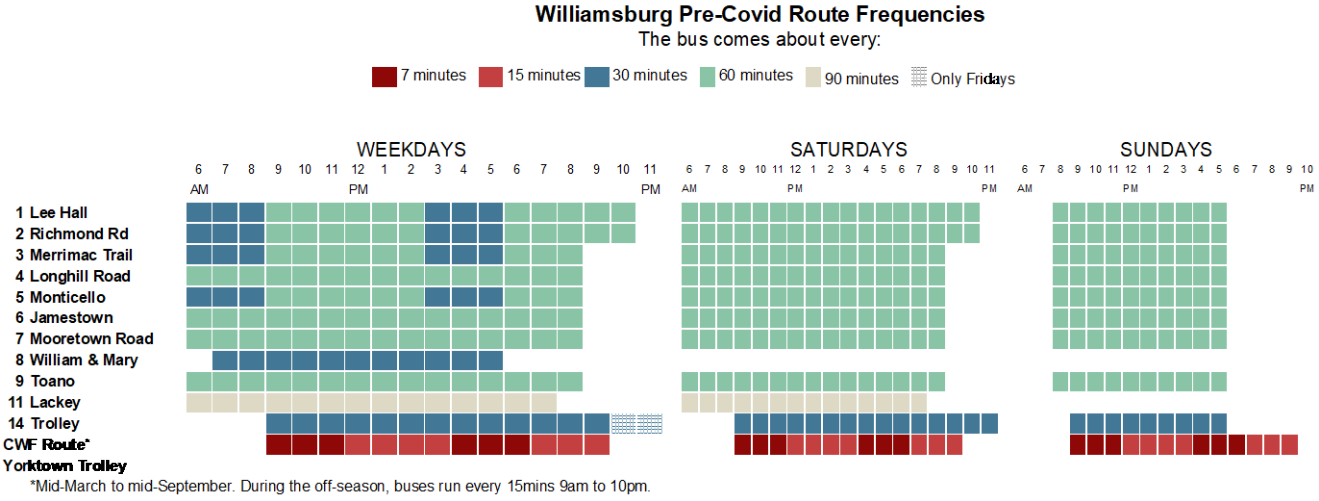


Figure 3: The 2019 pre-Covid WATA fixed route frequencies and hours of service.

The table above summarizes each route's frequency (how often a bus on the route comes) and span of service (what days and what durations the route operates). Each hour a route operates is shown by a single block, colored roughly according to the frequency offered in that period. From left to right, the columns of blocks show service for each route during weekdays, Saturdays, and Sundays, respectively.

Most WATA routes in the 2019 network run every 60 minutes. For most routes, the frequency is consistent throughout the day. But there are five routes that run more frequently during the peak periods (6-9am and 3-6pm, based on departure times). Routes 1, 2, 3, and 5 run every 60 minutes throughout most of the day and on the weekends, but they run every 30 minutes during the peak hours (6am-9am and 3pm-6pm, based on departure times). The Colonial Williamsburg Shuttle runs more frequently during their peak tourist periods. Route 8 runs every 30 minutes but only 7am to 5pm on weekdays.

MostWATA routes run from 6am to 9pm Monday – Saturday, exceptRoutes 1 and 2 which run until 11pm. All WATA routes run 8am to 6pm on Sundays. Trolley Route 14 and the Colonial Williamsburg Shuttle start and end later than other routes.

The Yorktown Trolley is marketed to run every 20-25 minutes, but it is clear from online live information that they sometimes run with frequencies of up to 10 minutes. The Yorktown Trolley has very limited spans, only running 11am to 5pm daily.

2023 Fixed Routes

In 2023, WATA operated a different network than what is shown in the maps and the frequency graphic above, having made major cuts during the pandemic, not all of which have been restored at time of writing.

By 2023, WATA was running these routes:

- Route 1 Lee Hall
- Route 2 Richmond Road
- Route 3 Merrimac Trail
- Route 4 Longhill Road
- Route 5 Monticello
- Route 6 Jamestown
- Route 7 Mooretown Road
- Route 8 William & Mary
- Route 9 Toano
- Route 11 Lackey
- Route 12 Ironbound
- Route 15 Colonial
- ADA Complementary Paratransit

The Yorktown Trolley isn't operated by WATA but is reported to NTD through WATA. This service is mentioned in this overview but not in the remainder of the document.

The 2023 network is the network described as "existing" as it was the current network when the analysis was performed for this TSP. It reflects service reductions made during the pandemic, with some but not all services restored.

It is shown in the map below, and the frequency graphic on the following page. It forms the basis for the planned improvements shown in Chapter 3.

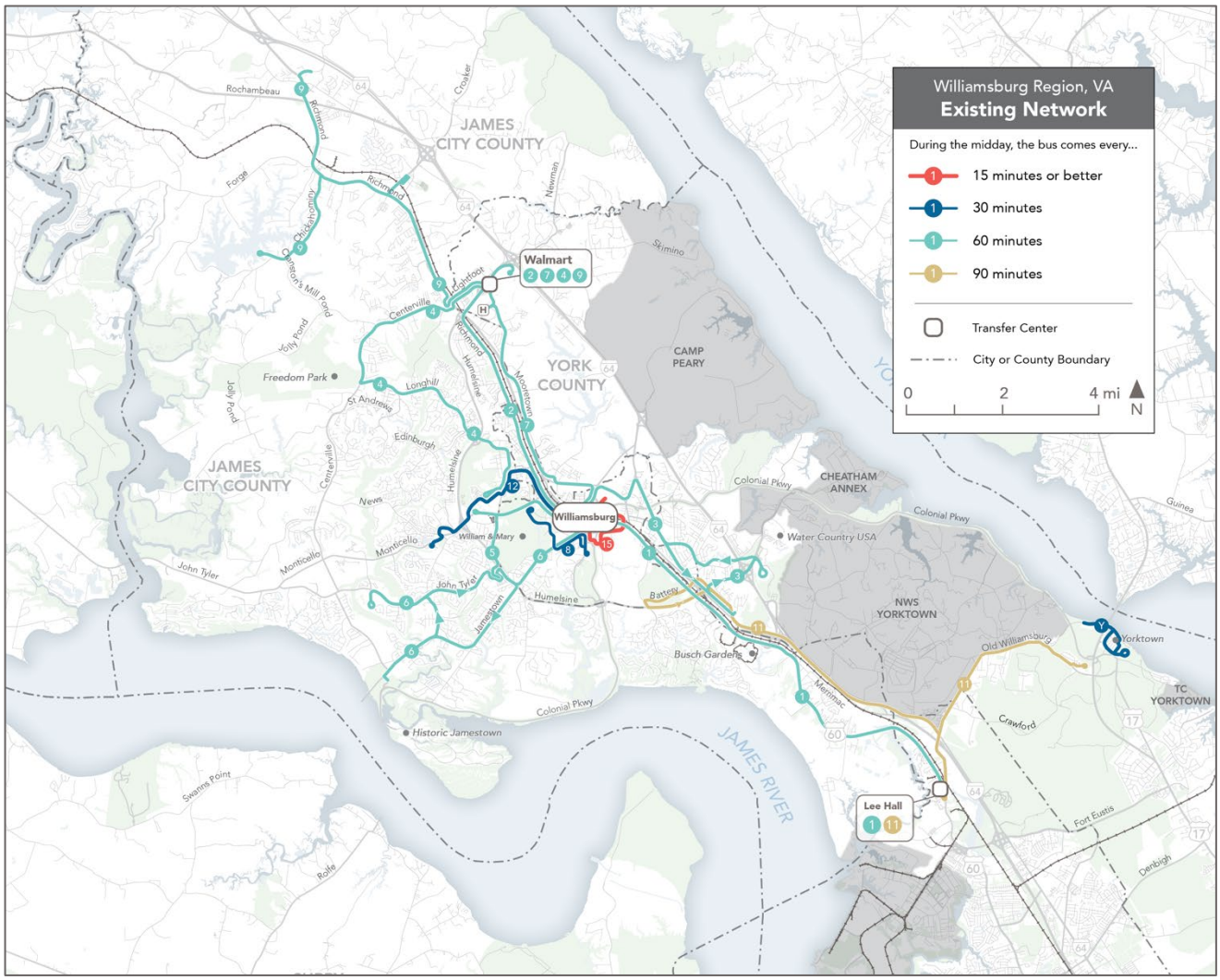


Figure 4: The WATA fixed route network in 2023. Route 14 stopped running between 2019 and 2022, but restored as Route 12 Ironbound in 2023.

At the regional level, routes and all-day frequencies remained the same. Route 14 was replaced by Route 12, and Route 5 was modified to reduce duplication.

The table below shows the spans and frequencies for the service that WATA ran in 2023. Since May 1st, 2024, WATA is running peak hour service on Routes 1 and 2, but there is still no additional service running on Routes 3 or 7.

In addition, spans are slightly shorter. Routes 1 and 2 were running until 11pm on weekdays and Saturday, but now they are only running until 9pm like all other routes. And while every regular WATA route was running until 6pm on Sunday, they are now only running until 6pm.

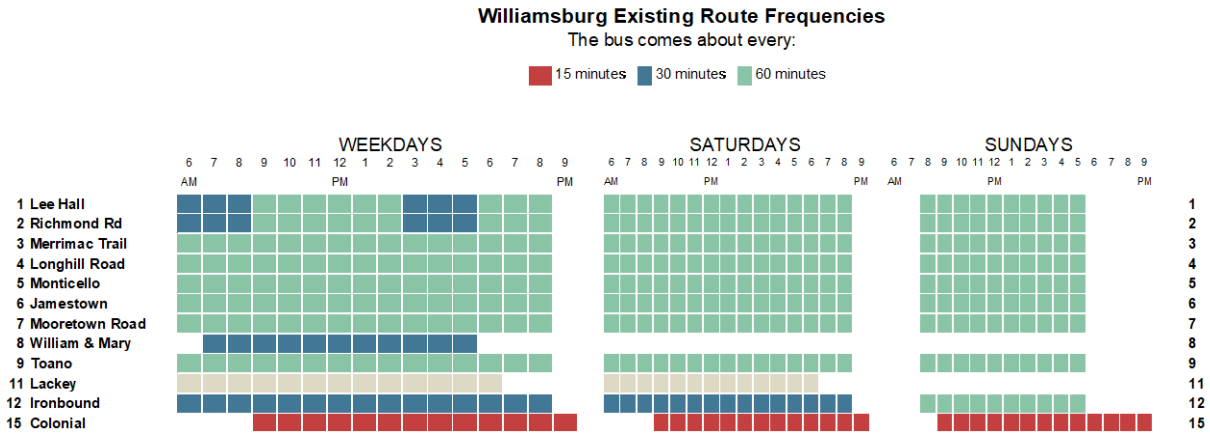


Figure 5: The 2023 WATA fixed route frequencies and hours of service.

ADA Paratransit

WATA provides door-to-door ADA complementary paratransit service for people who are unable to use fixed route buses due to disability. As required by the Americans with Disabilities Act, ADA complementary paratransit service is provided within ¾-mile of the fixed routes and during the same days and hours.

In order to schedule rides on ADA paratransit service, individuals must complete an eligibility application. WATA categorizes applicants into the following four categories:

1. Fully Qualified,
2. Partially Qualified,
3. Not Qualified, or
4. Conditionally Qualified.

Eligibility may last up to three years. Once eligibility is determined, customers can schedule trips on the service. All originating trips must be scheduled by 5pm the day before the requested trip, with return trips permitted to be scheduled as will-calls.

Fares

WATA's current (2023) fare structure and fare prices are given in the following table:

One-Ride Standard Fare	$1.50
All-Day Standard Fare	$3.00
Multi-Day Passes	Price varies
One-Ride Reduced Fare	$0.75 with ID
One-Ride WJCC/York Students Fare	$0.75 with Student ID
Children	Free
William & Mary Fare	Free with ID

Reduced Fares are available to those over the age of 64, Medicare customers and people with certain disabilities. Reduced Fare ID cards are issued by WATA to eligible people.

Regional and Long-Distance Connections

Regional and interstate service are available in the center of Williamsburg, at the Transportation Center *WTC):

- Long-distance commercial bus service is provided by Greyhound (one time per day) and Flixbus (4 times per day)
- Neighboring Hampton Roads Transit (HRT) provides 2 trips per day between HRT's Newport News Transfer Center and the WTC, weekdays only
- Amtrak's Northeast Regional train service (4 times per day)

In the past HRT provided more routes with more daily trips to and from Williamsburg.

1.1.2 Current/Recent Initiatives

During the pandemic WATA struggled, like most US transit agencies, to fully staff its bus service. As pandemic conditions eased, WATA made small changes to some of its routes to adjust to new ridership patterns, act on new partnerships, work within the available team of bus drivers.

- What was previously Route 14 was removed from service. However, in 2023, it was reinstated as the new Route 12 Ironbound. It was made more linear and was lengthened into new neighborhoods.
- In 2023, operation of the Colonial Williamsburg Foundation (CWF) bus service was shifted to WATA, and the route is now called Route 15 Colonial.

Other initiatives include:

- A new maintenance, administration and operations facility has been in planning for more than ten years. At time of writing, design work is complete, and construction is soon to begin.
- Land has been purchased and design work begun for a northern transfer center. This will replace the Walmart transfer location, support passenger transfers between buses, and provide bus drivers a break facility at the end of long routes.
- Automated Passenger Counters (APCs) will improve data collection about ridership and to save staff time collecting and processing data for reporting to the federal government.
- A new AVL system will improve the accuracy and availability of real-time information for passengers, while also supporting better supervision and support for service operations.
- A new funding partnership has been established to determine the local contribution from each of jurisdiction.
- A new mobile ticketing program is pending contract.
- Currently ordering new BoCs and support vehicles and acquiring control of 10 CNG buses from Colonial Williamsburg Foundation when WATA started running Route 15 Colonial.
- Some bus stop improvements, including new shelters.

1.2 Strategic Vision

1.2.1 Challenges and Choices

This TSP tackles some particular challenges and choices. Some of them existed at the time of the last full TDP (in 2016) while others have arisen since then.

Service

- Falling ridership even before the pandemic
- Sprawling development which is costly to serve
- Suburbanization of poverty, which increases the need for service in areas that are costly to serve
- A need for increased frequencies on routes in busy areas
- New development areas without service and without identified funding for service
- A lack of regional services to other Virginia cities
- A need for a northern transit center where passenger connections can be made and bus operators can take breaks
- An increase in paratransit demand and cost
- Lack of ADA eligibility screening

Infrastructure

- Bus stop improvements especially where numerous passengers board
- Improved lighting
- Improved bus stop maintenance and cleaning
- Better ADA accessibility for fixed route stops
- Pedestrian safety improvements near busy stops

1.2.2 Goals and Objectives

Goal 1: Service. Safe, reliable, and accessible service that grows and adapts with the community.

1.1. Increase safety and improve the passenger's experience with improved technologies.
1.2. Ensure route performance respects the time and lives of our passengers.
1.3. Demonstrate first class Customer Service.
1.4. Reduce barriers to ensure accessibility of services to all community members.

Goal 2: Infrastructure. Buses and property are well-maintained, technologically current, and meet our operational and customer needs.

2.1. Develop and execute a fleet plan ensuring buses are replaced timely and with improved operator and passenger technologies.
2.2. Monitor maintenance contract to ensure a 90% operational rate.
2.3. In coordination with municipalities, develop a comprehensive bus stop improvement plan to protect passengers from the environment, provide them comfort, and respect their dignity.
2.4. In coordination with the City of Williamsburg, improve bus space and amenities at the Williamsburg Transportation Center.

Goal 3: Workforce. Team members are well-trained, engaged, proud, and valued.

3.1. Recruit, hire, and on-board new members to ensure their smooth transition and improve our short-term retention.
3.2. Conduct annual assessments and sustainment training of operators to keep skills sharp and current.

3.3. Implement and execute a Performance Recognition program for operators and staff to recognize superior performance and build team pride.
3.4. Develop a Performance Review & Retraining program to maintain the highest standards of performance of our operators and staff, and the safety of our passengers.
3.5. Conduct forums for senior staff to receive input, concerns, and questions from operators and staff in order to improve services.
3.6. Maintain an environment of camaraderie, teamwork, and service.

Goal 4: Community Outreach. WATA is engaged with the community to understand its diverse needs and goals.

4.1. Maintain an active advisory committee formed by members of the community to assist in identifying ways to improve services.
4.2. Build a robust social media presence to promote and share activities and highlight our partnerships with other community organizations.
4.3. Present to private and public organizations throughout the Peninsula to promote WATA's services and to understand specific needs of each individual group.
4.4. Engage with schools to teach young adults how to use public transit and promote the convenience of WATA.

Ridership and Coverage Goals for Fixed Route Services

WATA has defined the two major goals for its transit system as:

- High Ridership. This goal can be served by providing frequent, all-day and all-week services, in areas where the most people and jobs are located. It is also served by providing linear and direct services, and easy transfers between routes.
- High Coverage. This goal can be served by providing long routes that cover wide geographic areas, and by providing routes in areas where coverage is particularly needed or important.

As part of this TSP process, the WATA Board of Directors set a policy for how to balance its investments to the two major categories of transit goals. One is the goal of high ridership. The other is the goal of wide geographic coverage. The policy is that WATA will work towards these goals as follows:

- In the short term, WATA will maintain the existing balance of investments in high-ridership services and services that do not attract high ridership but provide important coverage. 60% of services support a Ridership Goal and 40% of services support a Coverage Goal.
- Over the next 10 years, WATA will shift the balance so that 70% of service is towards a Ridership Goal and 30% of service is towards a Coverage Goal.

The appropriate balance of these two goals will be reviewed and updated by WATA during each TSP update. Updating these goals will involve the public, stakeholders and the WATA Board of Directors.

Fleet Electrification and Emissions Reduction

WATA is studying the feasibility of electrification of the fleet. This includes exploring the actual electrification of the fleet but also the supporting infrastructure in its facilities, the necessary charging infrastructure at route termini, and adding the needed quantity of service to

accommodate charging. Electrifying the entire fleet would require additional vehicle miles and vehicle hours, as electric vehicles require shorter scheduling blocks and/or deadhead running to reach charging stations. Therefore, it is essential to study the feasibility before committing to any additional investments in electrification. In addition, WATA is exploring other no and low emission buses through the carbon reduction program.

Emissions Reduction

WATA will work to reduce emissions from its bus fleet as well as from administrative, supervisory and maintenance vehicles. In recent years WATA has carbon reduction program funding for hybrid support.

Service Improvements

WATA's goals for improvement of technology are:

- Automated Passenger Counters (APCs) that will improve data collection about ridership and to save staff time collecting and processing data for reporting to the federal government.
- A new AVL system will improve the accuracy and availability of real-time information for passengers, while also supporting better supervision and support for service operations.

1.2.3 Service Design Standards

Setting Route Purpose

In order to apply standards to each route, WATA will need to define and/or recognize the purpose of each route. Routes can be designed to serve a Ridership or Coverage purpose. Although a single route can serve both a Ridership and a Coverage purpose, that is not the case with any routes in WATA's network.

Frequency and Span

WATA's frequency and span standards for fixed routes depend on the purpose of the route. These standards are not all currently met, but with increases in funding and necessary employees meeting these standards will be a high priority.

- For routes with a Ridership purpose, the last trip on Mondays through Saturdays should be offered between 10 and 11 pm.
- For routes with a Ridership purpose, on Mondays through Saturdays, frequency of every 30 minutes or better should be offered between 6:30 am and 6:30 pm.
- For routes with a Coverage purpose, a frequency of every 60 minutes should be offered Monday through Sunday.
- For routes with a Coverage purpose, the first trip should start between 6 and 7 am on weekdays and Saturdays, and between 8 and 9 am on Sundays. The last trips should be between 8 and 9 pm on weekdays and Saturdays. The last trip on Sundays should be between 5 and 6 pm.
- For ADA Paratransit, hours of service will match the fixed routes in that part of the ADA Paratransit service area, per the requirements set by FTA.

Fixed Route Design

To achieve the planned balance of Ridership and Coverage goals in the next 10 years, WATA will:

- Continually review performance route-by-route and consider changing the design of routes to support higher ridership or wider coverage, within the goals set by this TSP.
- Seek additional operating funding in order to invest in and improve high-ridership services first, and in coverage services secondarily.
    - Modifications to the design of services to improve its ridership potential can include:
        - Better frequencies
        - More weekend service
        - More early-morning or night service
        - Improvements to linearity and directness
        - Improvements to speed and reliability
        - Addition of bus stops at high-activity locations (such as malls, apartment buildings or hospitals) when those locations can be reached without excessive additional route distance.
        - Timing of connections between routes to support
    - Modifications to the design of services to improve its coverage can include:
        - Cutting frequencies or hours of service in order to spread service out across a larger geographic area
        - Lengthening routes into areas that are currently unserved
        - Adding loops or deviations to reach the front doors of socially-important destinations
        - Adding bus stops at socially-important locations or in places where people have difficulty walking to existing stops

WATA has a standard for bus stop spacing on its fixed routes. Routes should have an average space between stops of no less than 1/6 mile (removing highway-running segments for this calculation). There is no standard for the widest allowed spacing between stops, because WATA will need the flexibility to place stops only where they can be safely served by the bus and where passengers can safely access the bus, walk to the stop, and cross the road near the stop. It's also normal to have longer spacing based on land use and activity density.

Fixed Route Scheduling & Reliability

WATA's goal for On-Time Performance of its fixed routes will be that 90% of trips will arrive at timepoints within 0 minutes before or +5 minutes after the scheduled time.

WATA has a standard of scheduling fixed routes with 3 minutes of layover time per cycle. This supports driver breaks and protects routes from some unpredictable delays.

Efficiency

In the next section, Performance Standards, WATA's goal for its cost per revenue hour of fixed-route service is given as $104.63. The following paragraphs describe the Service Design Standards that will be used to meet those Performance Standards.

Cost Effectiveness Goals for Paratransit
ADA Paratransit is a federally-mandated service with performance standards set by the FTA. It is also highly valued by the communities WATA serves, both by people with qualifying disabilities who use the service and by their families, employers, friends, and others who benefit from their mobility and independence.

Within the standards set by FTA for Paratransit performance, WATA has little flexibility. However, WATA can control some costs through the design and management of the ADA Paratransit service. For example, screening eligibility of ADA passengers and negotiating pick-up or drop-off times with passengers when trips are requested.

Paratransit Reliability and Trip Directness
Unlike fixed routes, Paratransit service design and performance standards are set, at a minimum level, by the FTA.

Paratransit trips will be provided within an on-time performance standard of 90% of trips arriving within 60 minutes of either the pick-up point or the drop-off point, whichever was specified by the passenger when the trip was scheduled.

Paratransit customers will experience no more out-of-direction travel than is permitted by FTA guidelines.

Safety and Security
WATA has a goal to have less than one preventable accident per 100,000 miles per year.

Customer Service
WATA has a goal of producing and maintaining on its website network maps for its entire service area and for the central Williamsburg area.

Multimodal Connectivity
WATA will work with neighboring agencies to design connections between services, at the WTC and possibly at outlying connection points as well.

1.2.4 Performance Standards

Monitoring and Updating Standards
Should particular services fail to meet WATA performance standards for two consecutive quarters, WATA should review the specific route or service. During this review, WATA will either consider a change to the route's purpose (which would indicate different service design and performance standards apply); identify strategies to improve performance; or update the performance standards as warranted by changes in circumstance.

This monitoring typically takes place during WATA's annual grant preparations. The results of this regular monitoring should be shared with the WATA stakeholders and with DRPT through Board information and the annual TSP update.

Ridership relative to service

As the previous four years have demonstrated, and in fact the decade before that, transit ridership goes up and down for reasons unrelated to transit service levels, design, quality, safety or even price.

WATA cannot control ridership on its routes, but it can work to influence ridership on its routes within the range made possible by other factors including employment levels, housing prices, land use development patterns, the cost of car ownership, the cost of gas, the cost of car parking, the cost of hired car rides, road reliability, natural disasters and pandemics. Because these factors have so much influence on WATA ridership over many years, WATA may update its performance standards between TSPs to reflect what is reasonable to expect based on the factors WATA can control.

In general, routes with a Ridership purpose should attract at least 10 boardings per revenue hour on weekdays and Saturdays. If a route whose service is justified by an expectation of high ridership is not reaching that level of ridership relative to cost, then WATA service planners should consider modifying the route.

All fixed routes should attract at least 6 passengers per revenue hour of service, on average, Monday through Saturday.

There is no ridership standard for Sundays. Sunday service is important for both Ridership and Coverage goals, as it allows people to live a complete life without a car. It nearly always attracts fewer passengers than service on other days, and its productivity also tends to lag the productivity of other days during times when ridership is growing. Cutting Sunday service due to its poor productivity normally leads to drops in productivity on Saturdays and weekdays as well. Therefore, any route that can be justified for either a Ridership or Coverage purpose justifies the provision of at least minimal Sunday service.

For the same reason, there is no ridership standard by time of day. The last trip of the day on a fixed route will always attract low ridership. However, cutting it will shift the problem to what was previously the second-to-last trip of the day, since no responsible adult plans their day around the very last bus home. Whether for a Ridership or Coverage purpose, service needs to be offered across enough hours of the day to allow people to live complete lives while choosing to rely on the bus. Route productivity should always be evaluated on a whole-day basis, not on a trip-by-trip basis.

Cost Efficiency

Standards relating to cost efficiency were given earlier in the section titled “Service Design Standards.” Some content is duplicated between that section and this one because Service Design Standards and Performance Standards are closely related.

Cost efficiency describes the cost of providing service, regardless of ridership or use. WATA’s goal for its directly operated cost per revenue hour of fixed-route service is $104.63.

Cost Efficiency and Ridership standards can together be used to calculate additional measures such as Farebox Recovery or Costs per Passenger. However, as those are derived

from these simpler measures, we have focused on these simpler measures of boardings per revenue hour and cost to operate each revenue hour.

Cost Effectiveness Standards for Paratransit

Within the standards set by FTA for Paratransit performance, WATA has some flexibility to manage the costs of providing Paratransit service overall and the costs for each Paratransit ride provided.

Paratransit Reliability and Trip Directness Standards

As described above, Paratransit trips will be provided within an on-time performance standard of 90% of trips arriving within 60 minutes of either the pick-up point or the drop-off point, whichever was specified by the passenger when the trip was scheduled.

Paratransit customers will experience no more out-of-direction travel than is permitted by FTA guidelines.

Fixed Route Scheduling & Reliability

WATA's goal for On-Time Performance of its fixed routes will be that 90% of trips will arrive at timepoints within 0 minute before or +5 minutes after the scheduled time.

Coverage Standards

It is possible to set a standard for the percentage of the service area or population a transit agency should cover with fixed route service. This describes one of the important values that transit delivers in a community, which is providing at least some service close to many people and destinations.[1]

A coverage standard can be set in terms of:

- Percent of land area near service
- Percent of residents near service
    - Percent of low-income, minority, senior or young residents near service
- Percent of jobs near service
- Percent of important destinations (such as grocery stores or hospitals) near service

Coverage standards can also reference the quality of service, not simply requiring a certain amount of coverage by any minimal service, but by:

- Frequent service (for example, every 30 minutes or better)
- All-week service
- Early morning or late night service

Access Standards

Like coverage standards, access standards describe the important things that transit does in a community. Unlike coverage standards, access standards take into account travel time. Access standards start with a measurement of how many residents, jobs, etc. are near service, but then they also calculate how long it takes residents to travel to reach jobs, schools, stores, etc.

[1] In the DRPT TSP guidelines, this is described as "system accessibility."

Achievement towards any of these coverage or access standards comes from the union of transit planning, land use planning and development regulation. Transit planning alone cannot achieve any particular standard, because the land use and development inputs can "run away" from the transit system, as has happened in the US over the past fifteen years.

Coverage and access standards can be appropriate in transit systems for dense urban areas, with little "greenfield" area around the edges into which new development can sprawl away from the transit system. They can also be appropriate when the transit system is planned by the same entity that plans and controls development and land uses.

WATA has only modest control over any coverage or access achievements, because the locations of residents, jobs and important destinations are entirely beyond WATA's control. Meanwhile the transit operating cost of reaching new development can be extremely high. A coverage standard would therefore be appropriate if adopted jointly by the transit service provider as well as the land use regulators in the WATA service area. Without the commitment of both parties, it is not an actionable goal.

This is why at this time WATA will not adopt any type of coverage or access standard. However, both coverage and access measures will be used to evaluate major service changes.

Safety

WATA's safety standard is to have fewer than 1 preventable accident per 100,000 revenue miles.

2 System Performance and Operations Analysis

2.1 System and Service Data

The WATA service area includes all areas within a 3/4 mile of fixed-route services. However, WATA's area of influence also includes the rest of the City of Williamsburg, James City County, and York County. The Williamsburg urbanized area had a residential population of 94,892 in 2023, spread across 70.9 square miles, for a density of 1,338 residents per square mile.

2.1.1 Frequencies and Spans of Service

In 2023, post-Covid, service ends two hours earlier on weekday nights (at 9 pm instead of 11 pm) and three hours earlier on Saturdays (at 9 pm instead of midnight), except for the CWF Shuttle which now runs until 10 pm every night. On Sundays, the span of service is running until 6pm for all routes except Route 15, which runs until later. Frequencies by time of day are shown in the graphic below.

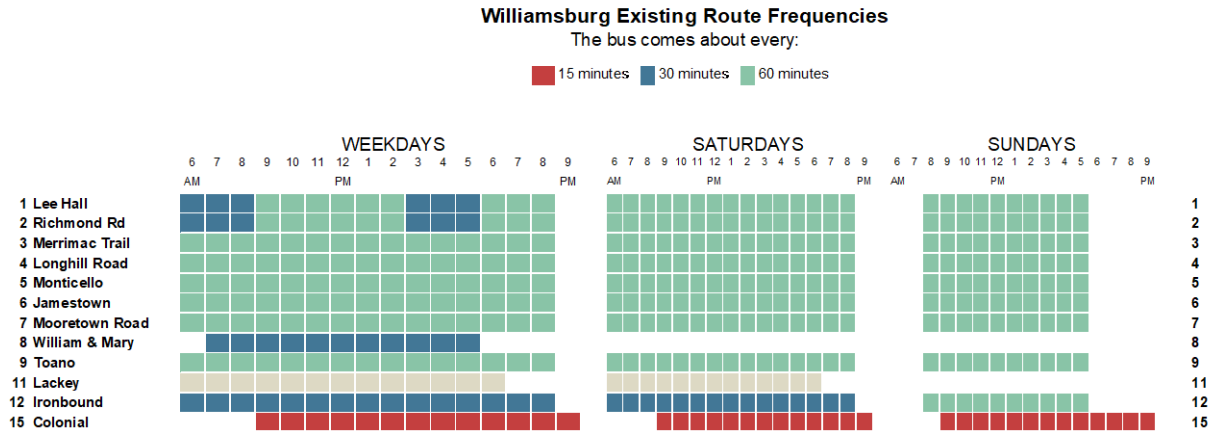


Figure 6: The 2023 post-Covid WATA fixed route frequencies and hours of service.

2.1.2 System-Level Statistics

The 2023 total operating expenditure for WATA fixed routes was $3,516,409 and for ADA Paratransit was $1,085,866. In 2023 WATA deployed 17 buses to operate its maximum level of fixed route service, and an additional 5 vehicles when meeting the maximum level of ADA Paratransit demand.

In FY23, WATA fixed routes attracted a total of 670,047 passenger boardings. This was a large drop from pre-Covid ridership which was around 842,482 annual boardings. Total boardings dropped by about 68%, but the quantity of fixed route service provided (represented by hours in service per vehicle) was cut by about 45% from 2019 to 2022 so there was considerably less service for anyone to *ride* in 2022 than there had been before the pandemic.

InFY23, WATA's ADA Paratransit service served 17,360 one-way trips. This was a large increase from pre-Covid paratransit rides, which were around 11,678. Meanwhile the quantity of paratransit service provided more than doubled from 2019 to 2022.

Fixed routes	*2019*	*2023*
Boardings	842,482	670,047
Service quantity (Vehicle Revenue Hours, RH)	84,245	73,777
Productivity (boardings per RH)	25.0	14.6
Total vehicle hours (including deadhead)	87,645	73,777
Vehicles in maximum service	16	12
Service distance (Revenue Miles, RM)	1,218,670	797,889
Directional Route Mileage (sum of lengths of routes on a map)	301	181

ADA Paratransit	*2019*	*2023*
Boardings	11,678	17,360
Service quantity (Vehicle Revenue Hours, RH)	7,712	15,795
Productivity (boardings per RH)	1.5	1.1
Total vehicle hours (including deadhead)	8,925	18,759
Vehicles in maximum service	4	6
Service distance (Revenue Miles, RM)	114,440	164,261
Directional Route Mileage (sum of lengths of routes on a map)		

2.1.3 Existing Route Standards

The standards included in the 2016 WATA TDP-COA and its 2019 minor update are summarized here. Most of the measures cited in those previous documents date to the 2009 TDP. The left three columns of the table below are taken from the 2019 update of the 2016 TDP-COA, whereas the fourth column is new information.

Measure	2009 TDP Standard	2014 Actual	2022 Actual
Fixed Route Boardings per RH – peak season	23.0	19.7	14.6 (both seasons)
Fixed Route Boardings per RH – off-peak season	14.0	15.8	
Fixed Route Boardings per RM – peak season	1.3	1.2	0.84 (both seasons)
Fixed Route Boardings per RM – off-peak season	.90	.95	
Fixed Route Farebox Recovery – peak season	13%	10%	4%
Fixed Route Farebox Recovery – off-peak season	11%		
Fixed Route Operating Expenses Per Boarding – peak season	$2.82	$3.14	$6.94 (both seasons)
Fixed Route Operating Expenses Per Boarding – off-peak season	$3.70	$3.91	
ADA Paratransit Operating Expenses per Boarding	$36.00	$54.02	$62.55

RH: Revenue Hour

RM: Revenue Mile

Farebox Recovery: Percent of total operating costs covered by fares

Peak Season: April through September

Off-Peak Season: October through March

In the 2019 update of the 2016 TDP-COA, WATA set service standards in addition to those listed in the table above:

- **Frequency:** routes should be considered for 30 minute frequency if they have at least 20 boardings per revenue hour, and/or total annual ridership of 140,000 or more.
- **Span:** The highest ridership routes at the time would have their last trips between 10 pm and 11 pm.
- **Peaking**: 30-minute peak frequency should be provided between 6:30 and 9:30 am, and between 3:30 and 6:30 pm.

2.1.4 Existing Safety Standard

The most recent adopted performance standard relating to route safety is that there will be less than one preventable accident per 100,000 vehicle miles.

2.1.5 On-Board Survey Results

The 2022 Williamsburg Area Transit Authority (WATA) Transit On-Board Origin-Destination (OD) Survey data collection began on August 24th and ended September 13th, 2022. The following bullets summarize some of the results.

- Home is the top Origin (54%) and Destination (35%) place type.
- Most riders' walk (98%) to and from their first and final bus stop and over half (57%) only take one bus on their one-way trip.
- Over half (53%) of riders are using day passes or one ride fares. Almost all (91%) of riders consider WATA bus services affordable.
- Over half (57%) of riders' have been riding WATA 2 years or less and sixty percent of riders' take WATA five days a week or more.
- Sixty percent of riders make their trip without any planning since their trips are typical trips they previously made. Forty percent of riders do not receive WATA information due to their typical known trip types.
- Sixty-six percent of WATA riders do not have any working vehicles at home and fifty-three percent do not possess a valid driver's license, making them transit dependent.
- The typical WATA rider lives in a household of two persons or less (66%), are employed either full or part time (64%), between the ages of 18-34 (55%), are Black / African American (43%), and have a household income of less than $15,499 annually (42%).
- Eighty-nine percent of riders are satisfied with WATA services. Seventy percent of riders are very satisfied with WATA services.

2.1.6 Level of Support for Transit

WATA counts support from stakeholders from each jurisdiction. Throughout the planning process, WATA's Board of directives and community leaders are engaged in a continuous conversation. For the plan under this TSP, the public was also engaged through a survey. 89% of survey respondents agreed that the plan under the TSP will be better for the region overall.

2.2 Evaluation of Transit Market Demand and Underserved Areas

Transit can serve many different goals. It is not possible to excel towards all these goals at the same time. In addition, reasonable people will disagree about which of these goals is most important.

Understanding which goals matter most in the Williamsburg Area was a key step in planning for the WATA network and possible service changes, improvements, or expansions. Some possible goals for transit include:

- Economic: Transit can give businesses access to more workers, workers access to more jobs, and students access to education and training.
- Environmental: Increased transit use can reduce air pollution and greenhouse gas emissions. Transit can also support more compact development and help conserve land.
- Social: Transit can help meet the needs of people who are in various situations of disadvantage, providing them with access to support services and opportunity.
- Health: Transit can be a tool to support physical activity by walking. This is partly because most riders walk to their bus stop, but also because riders will tend to walk more in between their transit trips. The social contact people gain on transit can also contribute to positive health outcomes.
- Personal Liberty: By providing people the ability to reach more places than they otherwise would, a transit system can be a tool for personal liberty, empowering people to make choices and fulfill their individual goals.

Some of these goals are served by high transit ridership. For example, the environmental benefits of transit only arise from many people riding the bus rather than driving. The same is true of some economic and health outcomes. We call such goals "ridership goals" because they are associated with high ridership.

Other goals are served by the mere presence of transit. A bus route through a neighborhood provides residents insurance against isolation, even if few people ride it. A route may fulfill political or social obligations, for example by getting service close to every taxpayer or into every political district. We call these types of goals "coverage goals" because they are achieved by covering geographic areas with service, regardless of ridership.

High Ridership Is Not the Only Goal

If the Williamsburg Area wanted to maximize transit ridership, it would focus its network around the busiest places where the greatest numbers of people live and work. If WATA did this, it would be acting more like a business: delivering the best service in places with the most potential customers.

Businesses are under no obligation to spread their services around widely. In fact, they tend to avoid spending a lot of money to reach only a few customers. For example, McDonald's is not obliged to provide a restaurant within 1/2 mile of everyone in Virginia. If it were, then the company would have to add many additional locations. Some locations would serve just a handful of homes, and staff there would serve very few meals because there would be so few customers nearby.
People understand that less-inhabited areas will naturally have fewer McDonald's restaurants than more-inhabited areas. We don't describe this as McDonald's being unfair to places where few people live; they are just acting like a private business. McDonald's has no obligation to cover all areas with its restaurants.

Transit agencies are not private businesses. Most transit agencies decide that they do have some obligation to cover places with fewer people in them even when this would not be a "good business decision."

The officials who ultimately make public transit decisions hear their constituents say things like "We pay taxes too" and "If you cut this bus line, I will be stranded" and they decide that coverage, even in low-ridership places, is an important transit outcome. This is why transit agencies rarely act like private businesses.

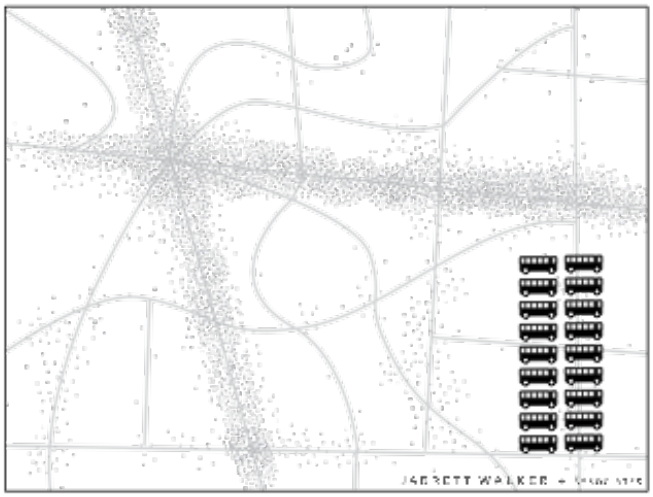
Transit agencies are often accused of failing to maximize ridership, as if that were their only goal. In fact, most agencies are intentionally operating some coverage services that are not expected to generate high ridership.

Goals in Tension

We just described why most transit agencies offer services that do not attract high ridership relative to their costs. These services provide "coverage," because their mere presence—rather than their ridership—is important and provides something that many people value.

Ridership and coverage goals are both laudable, but they lead transit planners in opposite directions. Within a fixed budget, if a transit agency wants to do more of one, it must do less of the other.

Below is an illustration of how ridership and coverage goals conflict with one another due to geometry and geography. In the fictional town at right the little dots indicate dwellings, commercial buildings, and other land uses. The lines represent roads. Most of the activity in the neighborhood is concentrated around two roads, as in many towns.



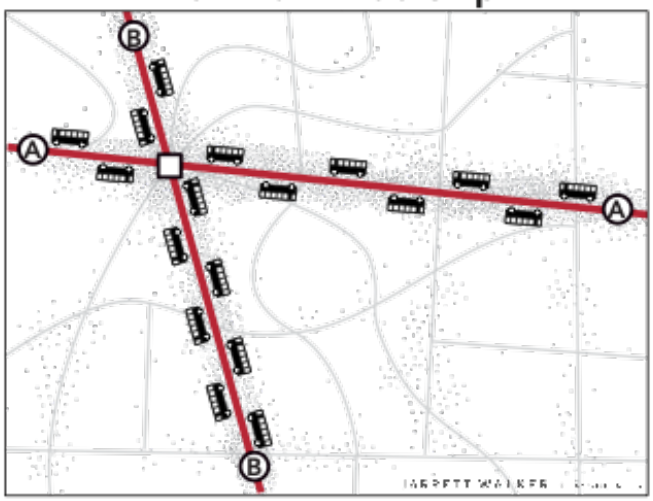
Imagine you are the transit planner working in this fictional neighborhood.

The dots scattered around the map are people and jobs.

The 18 buses are the resources the town has to run transit.

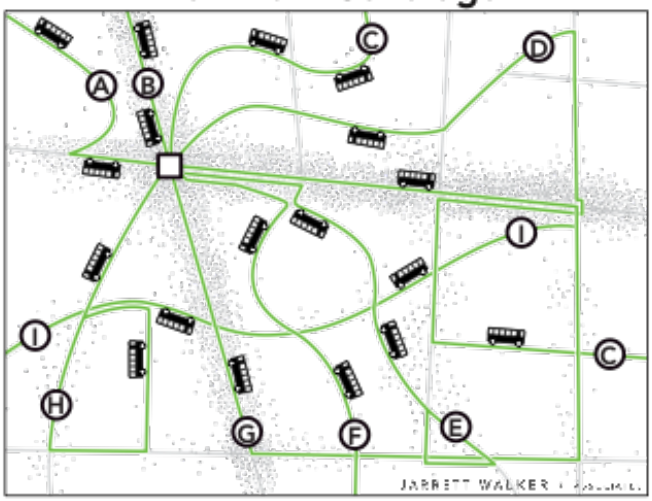
Before you can plan transit routes, you must decide: What is the purpose of your transit system?

Maximum Ridership



All 18 buses are focused on the busiest area. Waits for service are short but walks to service are longer for people in less populated areas. Frequency and ridership are high, but some places have no service.

Maximum Coverage



The 18 buses are spread around so that there is a route on every street. Everyone lives near a stop, but every route is infrequent, so waits for service are long. Only a few people can bear to wait so long, so ridership is low.

A transit agency pursuing only a ridership goal would focus service on the streets where there are large numbers of people, where walking to transit stops is easy, and where the straight routes feel direct and fast to customers. Because service is concentrated onto fewer routes, frequency is high, and a bus is always coming through the neighborhood soon. This results in a network like the one at bottom-left.

If the transit agency were pursuing only a coverage goal, on the other hand, it would spread out services so that every street had a bus route, as in the network at bottom-right. As a result, all routes would be infrequent, requiring long waits, even in the busiest places.

On a fixed budget, designing transit for both ridership and coverage is a zero-sum game. Each bus that the transit agency runs down a main road, to provide more frequent and competitive service in that market, is not running on the neighborhood streets, providing coverage. While an agency can pursue ridership and provide coverage within the same

budget, it cannot do both with the same dollar. The more it does of one, the less it does of the other.

These illustrations also show a relationship between coverage and complexity. In this imaginary neighborhood, any person could keep the very simple “high frequency” network in their head, since it consists of just two routes running in straight lines. They would not even need to consult a schedule to catch a bus. The coverage network would be harder to memorize, requiring people to consult a map (to understand the routing) and a schedule (to catch these infrequent services).

2.2.1 Transit Demand and Underserved Area Evaluation: Thinking Clearly about Transit Purpose

In this chapter, we present and discuss data that inform three major considerations in transit planning:

- Where are the strongest markets for transit, where ridership is likely to be high relative to cost?
- Where are there moderate or severe needs for transit, regardless of potential ridership and cost?
- Where do people live, work and travel who have specific Civil Rights protections?

These three types of considerations help us design a transit network that balances the competing goals of high ridership and wide coverage, according to what is appropriate for WATA.

Strong Transit Markets

In planning, “transit market” generally means the areas where demand for transit is high, and that demand can be served efficiently. In a strong transit market, high ridership can be attracted for relatively low cost to the transit agency.

The transit market is mostly defined by WHERE people are, and HOW MANY of them are there, rather than by WHO they are.

On later pages in this section, these maps help us visualize the transit market:

- Residential density
- Job density
- Activity density (the sum of residents and jobs)
- Density of low-income residents

None of these data alone tell us that a place has high ridership potential and is therefore a strong transit market. Rather, we must consider them in combination.

If you asked a transit planner to draw you a very high-ridership bus route, that planner would look mostly at densities of all residents and jobs; at the walkability of streets and neighborhoods; and at the cost of running a bus route long enough to reach them. Only secondarily would that planner look into the income or age of those residents or workers.

However, the “who” attribute that has the strongest influence on transit ridership potential is income. This is especially true in suburban areas where driving and parking cars is so easy.

Low income people are, as individuals, more likely to choose transit. That said, the density of all people—including low-income people—around a transit stop will still be the overriding factor in predicting whether that stop gets high ridership.

All else being equal, density matters more than income and age if you are trying to predict where transit will get high ridership.

This is not to say that who people are is not important. It is extremely important, especially when designing transit services to achieve a coverage goal.

Severe and Unmet Needs for Transit

We learn about transit needs by examining WHO people are and what life situation they are in.

If you asked a transit planner to draw you a route that met as many needs as possible, that planner would look at where low-income people, seniors, youth, and people without vehicles live and where they need to go.

While the densities at which these people live would matter because at higher densities a single bus stop can be useful to more people in need, the planner would still try to get the route close to even small numbers of people. In fact, the more distant and scattered people are, the more isolated they can be and the more they might need access to transit.

On the following pages, these maps help us visualize where transit needs are in the Williamsburg Area:

- Density of low-income residents
- Density of zero-vehicle households
- Density of seniors
- Density of youths

These measures cannot by themselves tell us that a person has a severe need for transit. For example, some people in a zero-vehicle household can afford to hire drivers, or rarely drive but are comfortably retired. We must consider these measures in combination to understand where in the Williamsburg Area people's needs for transit are likely to be severe.

Civil Rights

Another important set of maps in this chapter is not strictly related to need but rather to civil rights. These maps show where people of color live.

Unequal treatment on the basis of race, ethnicity, or national origin is prohibited by the Civil Rights Act of 1964. Regulations by the Federal Transit Administration require that WATA considers the benefits and burdens that people of color and people in poverty experience from transit service and in the process of planning for transit and transportation projects.

While person's race or ethnicity does not tell us directly if they need transit, or if they have a propensity to use transit, we know that there is a correlation between race and ethnicity and income and wealth. If you are a person of color in the United States, you are more likely to be low-income and less likely to own a car.

In addition, the historic impacts of segregation and discrimination have had long lasting effects on the patterns of housing, development, and investment across the region. Therefore, knowing where people of color live help us see where there are intersections between patterns of historic segregation and concentrations of people in poverty today. Providing affordable transportation options for low-income communities and communities of color is an important strategy in addressing economic insecurity, and may be an important goal, more broadly, for addressing racial and social equity goals that the community may have.

Seeing where people of color live help to see how much of the population lives in places that are dense, linear, and proximate, and would therefore be well served by a high ridership network design. It also helps us see neighborhoods that are predominately people of color that are not dense, linear, or proximate and would therefore be relatively expensive to serve but might be important to serve nonetheless as part of a coverage goal and in observance of peoples' civil rights.

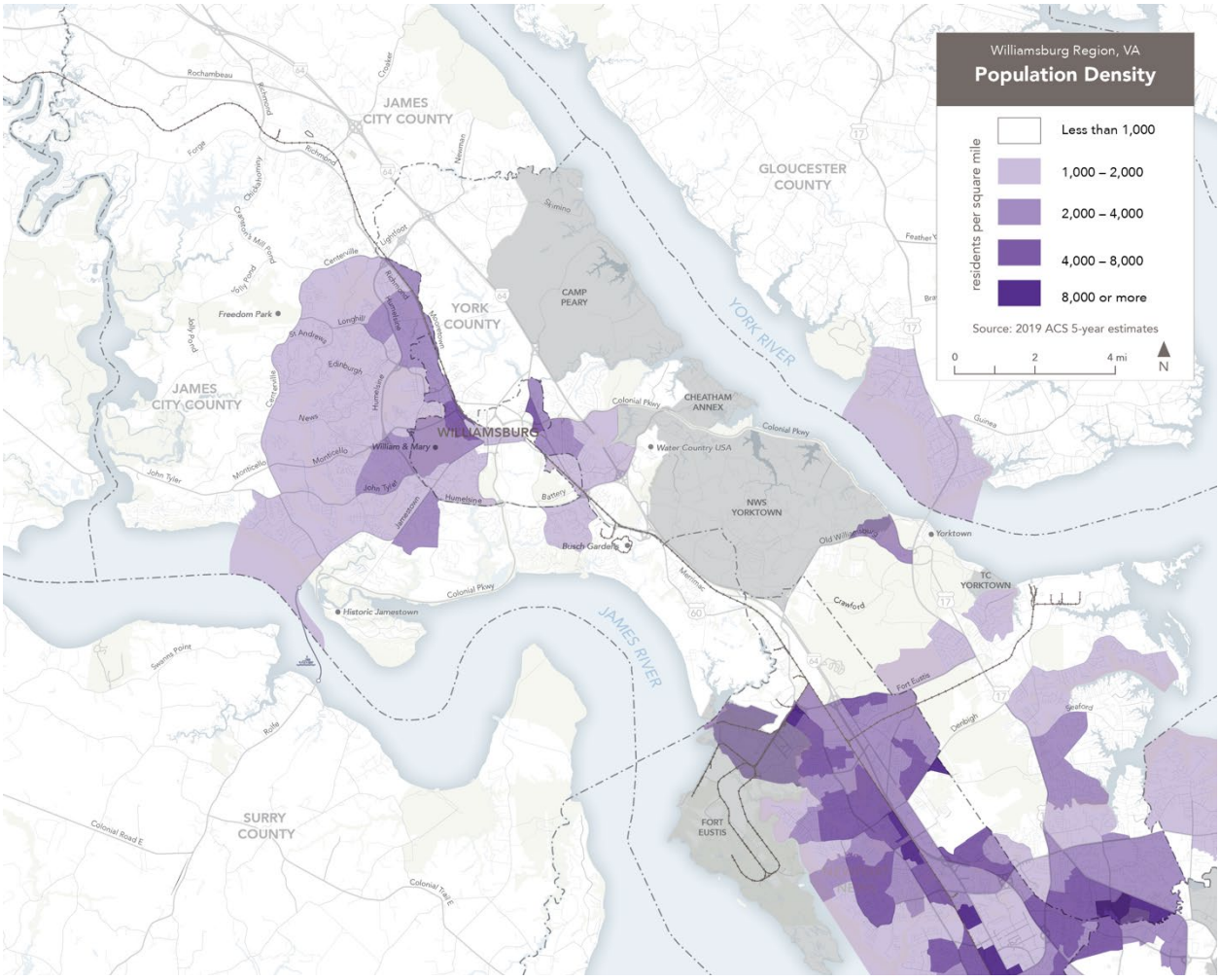
Residential Density

Residential Density is the simplest measure for public transit's ridership potential. While not all trips start or end at home, nearly everybody makes at least one trip starting or ending at home every day. Places where many people live are also destinations for others that might be visiting or caring for a family member. In addition, people that work from home will likely take various trips to and from their home throughout the day.

The map below shows the density of residents across the Williamsburg Area. Darker zones indicate higher residential density. There are dense residential developments in:

- Downtown Williamsburg, particularly along Richmond Road including William & Mary and continuing to Midtown Row, High Street, and beyond.
- Capitol Landing Road and Merrimac Trail continuing to Penniman Road; and
- Monticello Avenue around New Town continuing to News Road.

There are a few other areas farther away with some residential density, but they are harder to serve. Many of these are places have street patterns that are looping and disconnected such as the area south of Jamestown Road and Humelsine Parkway.
White areas on the map have very few residents per square mile, so transit service in these places would not yield many trips that start and end at home. Gray areas are military grounds with limited public transit access.



Job density

Job density can tell show us where people work, but it can also tell us much more. Places where many people work are often destination for many other trips including shopping, community services, health care, and more.

A workplace can be the destination for many different people throughout the day. Because of this, job density can be better at predicting ridership potential than residential density.

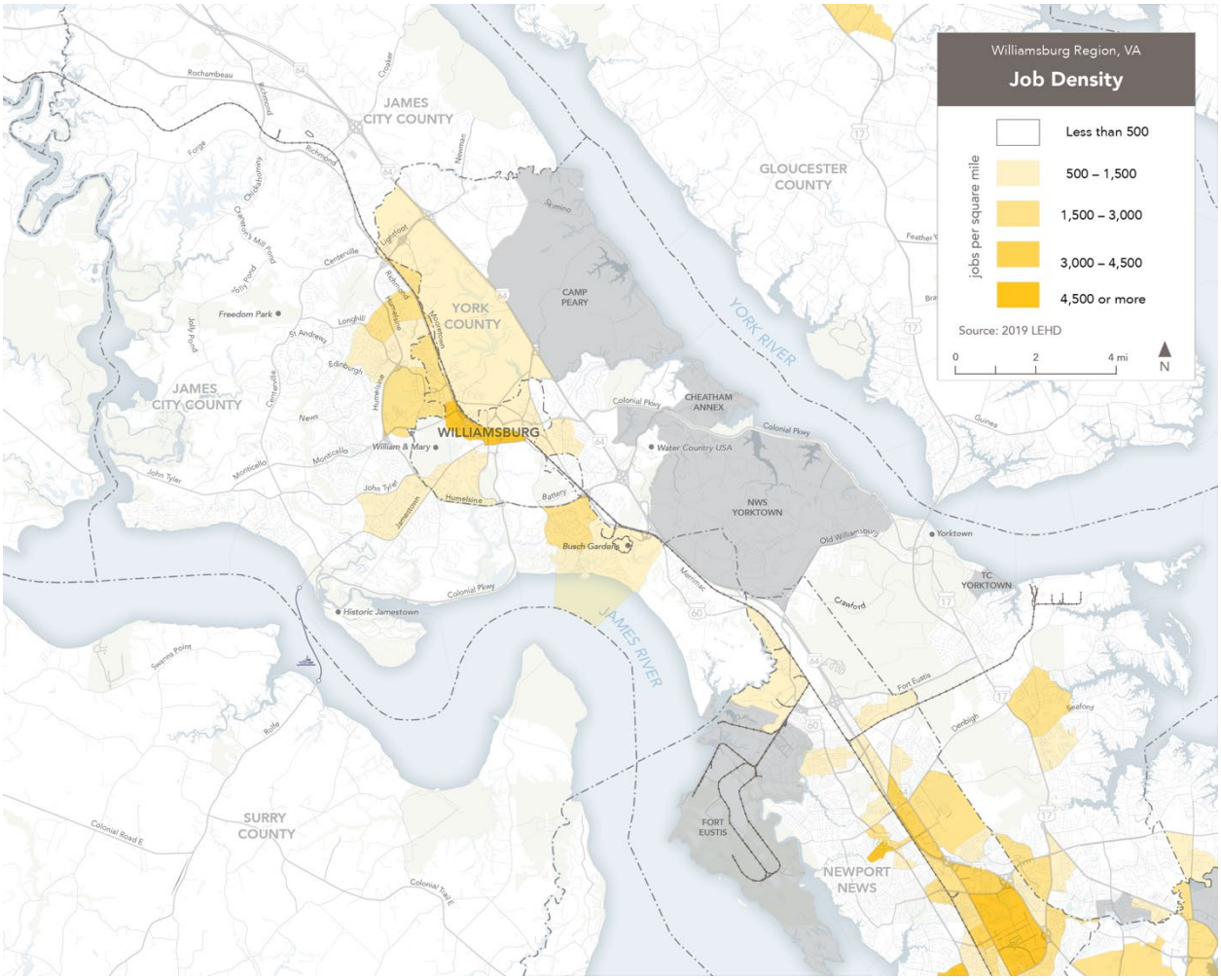
The place with the highest job density is downtown Williamsburg including William & Mary, Colonial Williamsburg, and Richmond Road. There is also significant density in these areas:

- Along Richmond Road including Midtown Row, High Street, and the Williamsburg Outlets
- In and around New Town
- Along Pocahontas Trail south of Humelsine Parkway

Like with residential density, there are other areas that have some job density but they are difficult to serve because they have street patterns that make these destinations isolated from the main road such as the Walmart on East Rochambeau Road and other strip malls nearby.

The Sentara Medical Center is also a big employment destination. (It does not stand out on this map because the Census area it is within includes large undeveloped areas, reducing the average density of jobs.) Large medical centers are often sources of all-day and all-direction

transit demand, because of how the range of employment types (doctors, nurses, administrative, custodial, food service, and other staff), multiple shifts around the clock, and the many outpatient appointments and visitors.



Mixed-activity density (residents and jobs)

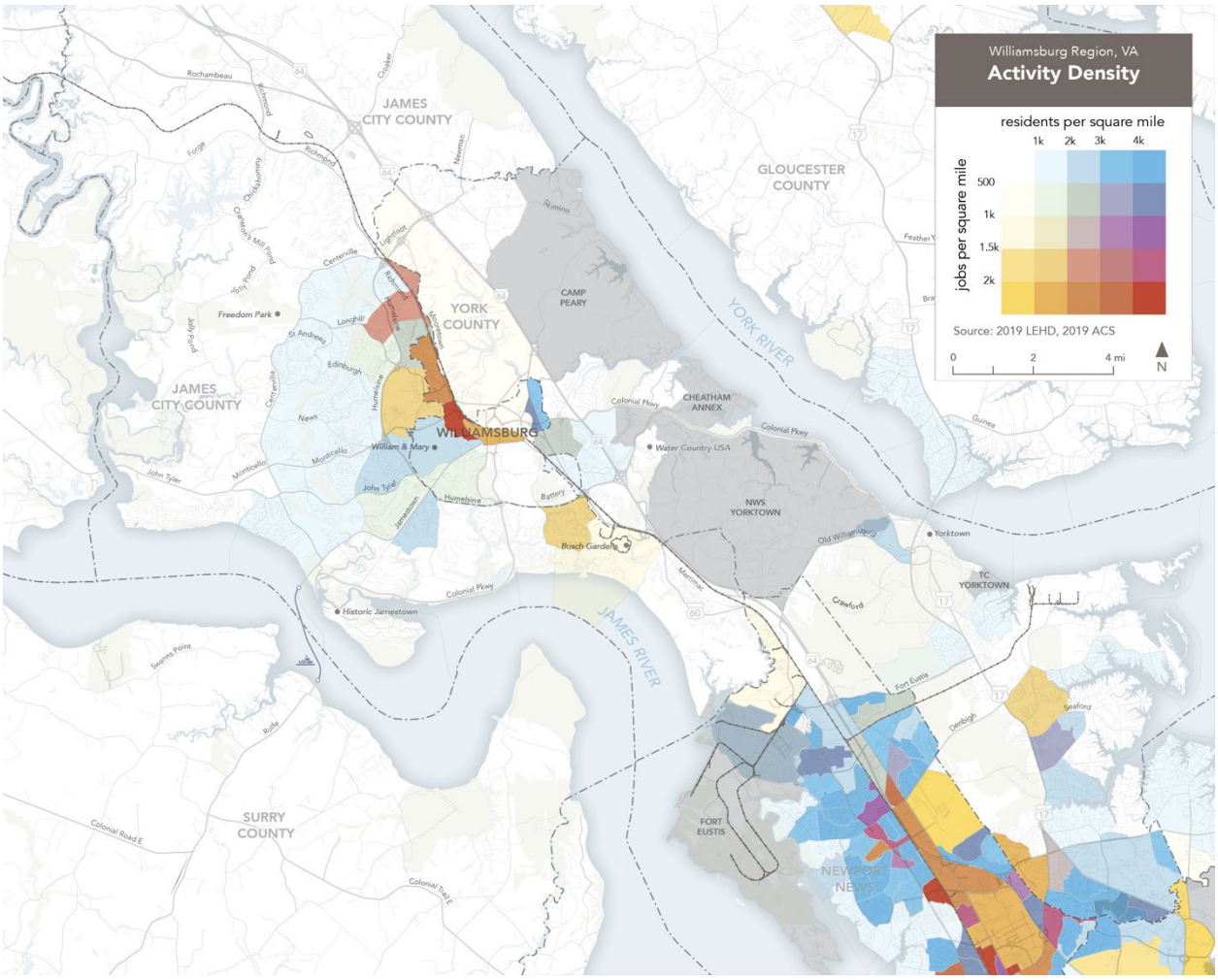
Resident and job density are both critical measures of a place's ridership potential. The following map combines those two measures to show activity density—the density of both residents and jobs. Places that have both a high density of residents and a high density of jobs have the highest ridership potential since it is likely to be a strong market for travel throughout most of the day.

Residential density is shown in shades of blue, job density is shown in shades of yellow, and places that have a combination of residents and jobs are shown in shades of red. Like in the previous maps, darker colors signify higher density.

In the Williamsburg Area, the place with the highest activity density is Downtown Williamsburg, particularly along Richmond Road from Downtown to Bypass, including William & Mary and Midtown Row.

Universities are often sources of all-day all-direction transit demand. This is partly because they are dense with jobs and housing. Also, students and staff come and go depending on their class schedules, which can vary day to day, and often include evening courses.

Places farther along Richmond Road also have high activity density along with Colonial Williamsburg. Merrimac Trail has high density, but it is mostly residential. Monticello Avenue near New Town also has high density with primarily residents to the south and jobs to the north.



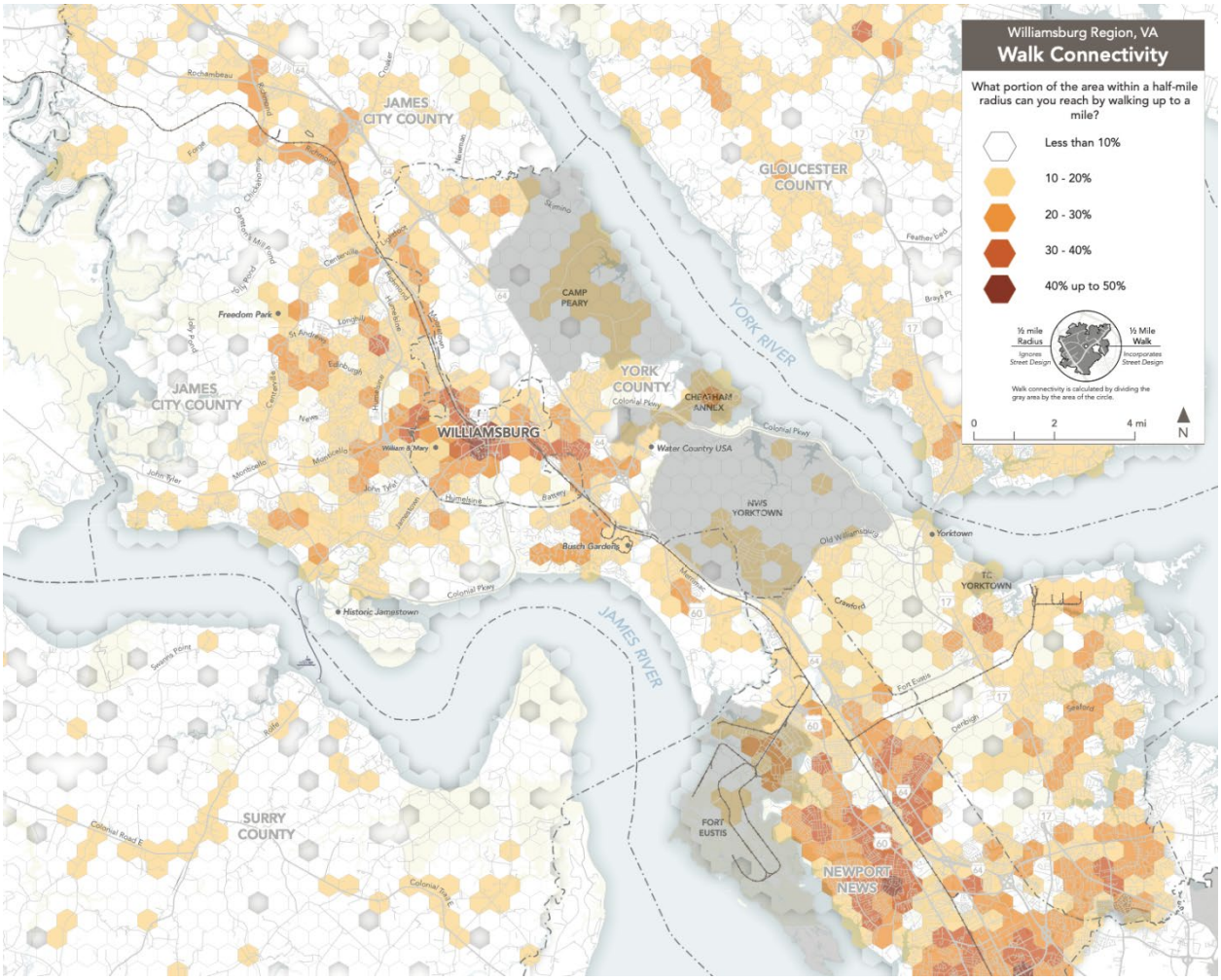
Walkability

In almost all cases, transit trips begin and end by walking. Therefore, the ability to walk to transit is very important. The street pattern determines how much of the area around a stop is truly within a short walking distance.

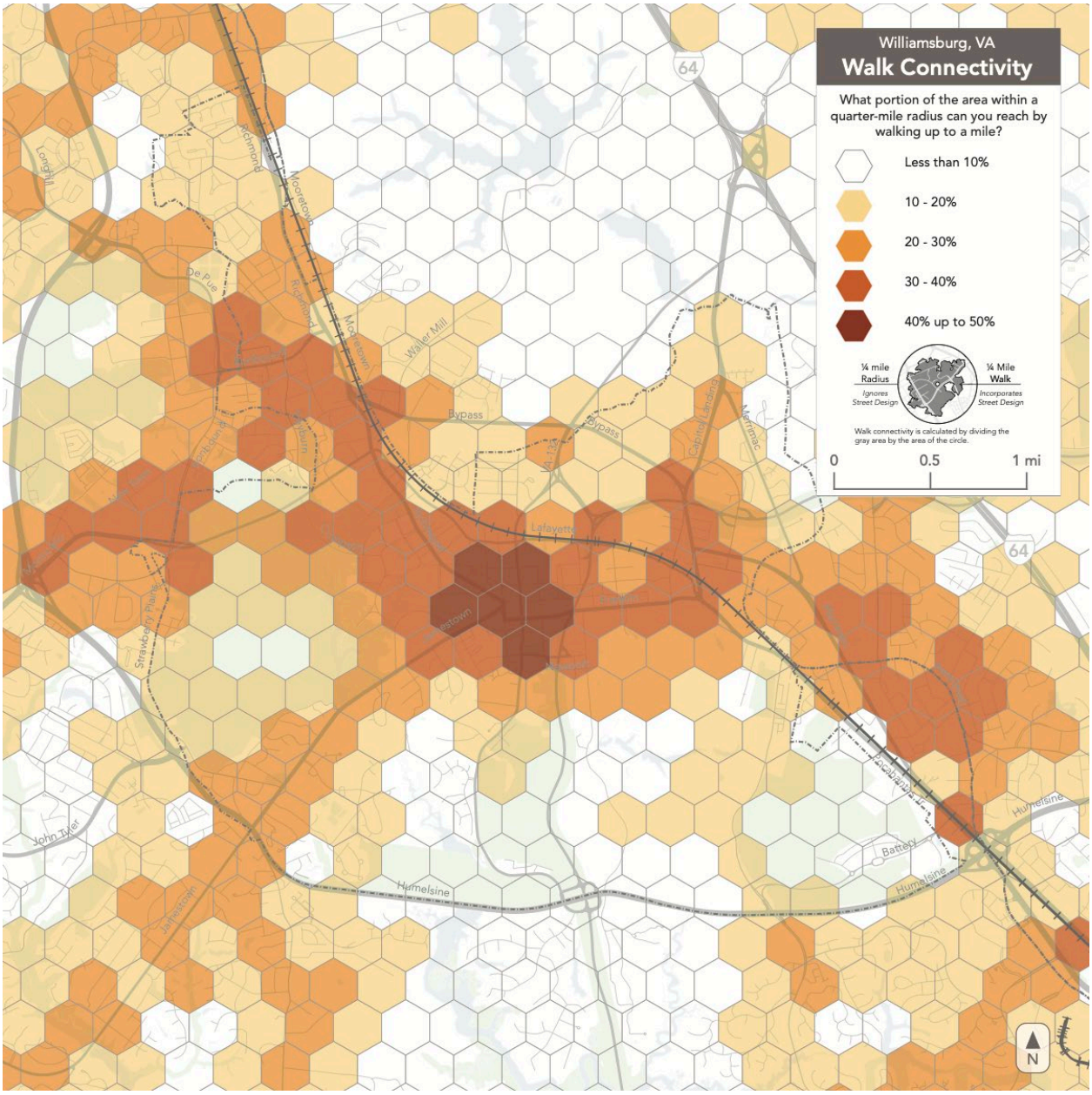
Areas with highly connected street patterns provide short and direct paths between any two locations. Areas with poorly connected street patterns, often in “walled garden” developments, forces long and circuitous paths between locations and discourages walking. Low street connectivity tends to be accompanied by wide, fast arterial streets, because the few through-streets that exist must handle all the area’s car traffic. A lack of sidewalks and safe crossings of major streets can also mean that fewer people and jobs are within a short

walk of transit because people may have to walk further and out-of-direction to cross the street to reach a bus stop.

The map below shows the proportion of area within a half-mile radius of locations that is accessible through the street grid in that location. Darker areas correspond to more contiguous grid-like layouts, while lighter areas represent barriers to walkability, including restrictive street patterns. In some cases, the lack of street connectivity and limited walkability is a combination of both development pattern and natural topography that limits the ability to create more connected street networks.



The most connected areas in the region are within Williamsburg. The next map shows a more detailed zoomed in map of the core Williamsburg area.



In Williamsburg, the most walkable place is Colonial Williamsburg and areas just west of there. This is where the street network provides the best connectivity.
The next areas with high street connectivity are:

- The inner parts of Richmond Road;
- Midtown Row and High Street;
- New Town; and
- Areas along Merrimac Trail and Penniman Road.

It is important to note that this is only one measure of walkability; it is essential to have safe sidewalks and crosswalks as well as ramps and adequate space for people in wheelchairs, so that whether people are walking or rolling, they can reach the bus stop safely. Without adequate pedestrian infrastructure, fewer people will use transit as reaching the stop will be impossible, or feel unsafe, or take too long.

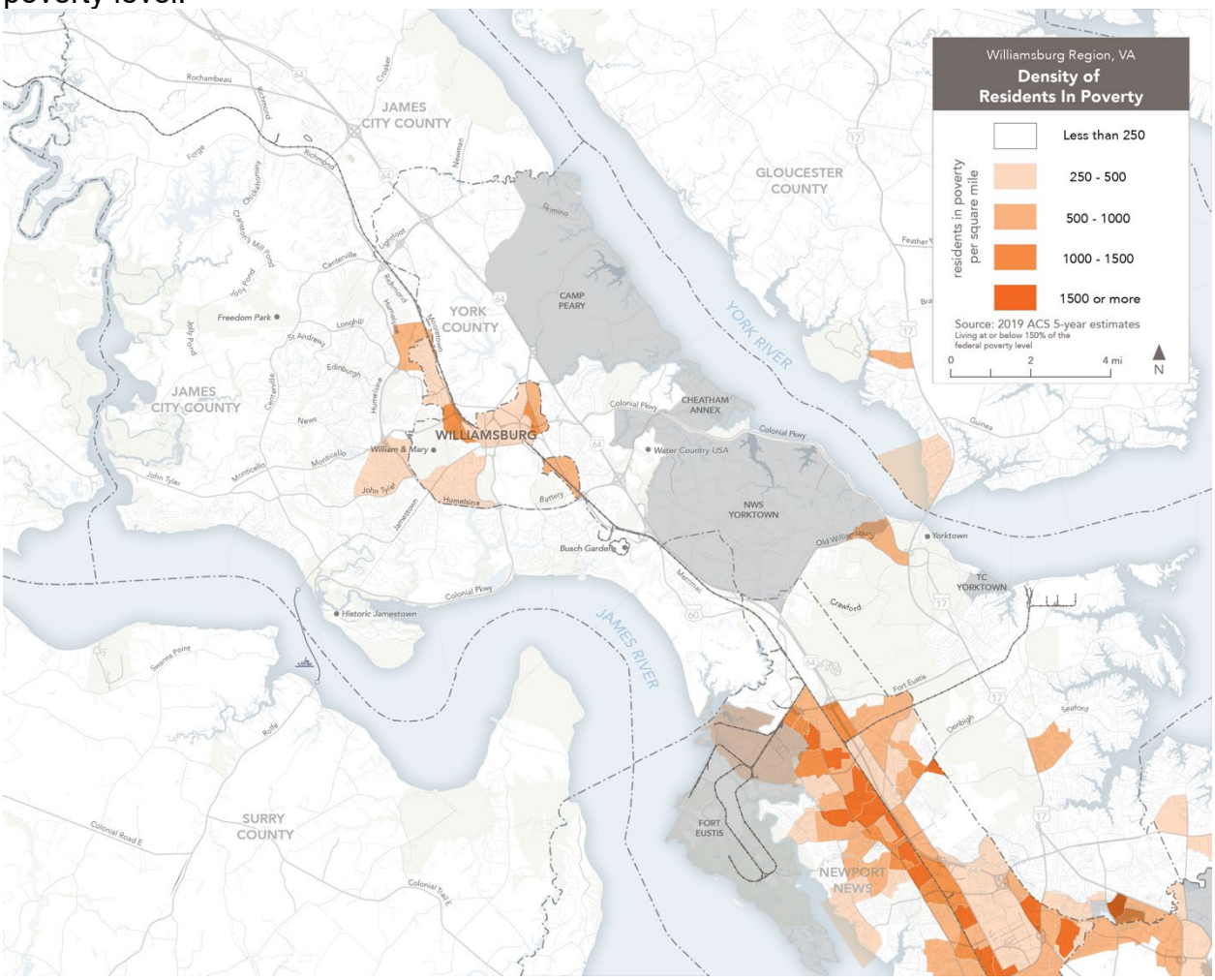
Furthermore, if a street is not safe to cross, then transit is only truly providing one-way service. You might be able to get to the supermarket, but if you can cross the street to reach the other bus stop, you can't get home.

Low-Income Residents

A frequently-cited goal for transit service is to provide affordable transportation for lower-income people, who are less likely to own cars. Understanding where low-income populations are located is also a key civil rights requirement.

Transit can be an attractive option for low-income people due to its low price. In medium to high density areas with walkable street networks, this can produce high ridership. However, if transit doesn't actually allow people to make the trips they need in a reasonable amount of time, even lower-income people will not use it. They will seek other options, such as buying a used car or getting a ride from a friend, even if it causes financial or social stress.

The map below shows the density of residents with family incomes below 150% the federal poverty level.



The area west of downtown stands out as having a relatively high density of people in poverty likely including many university students. For many students, this type of poverty is a temporary circumstance, and while their independent income may be low or negligible, their

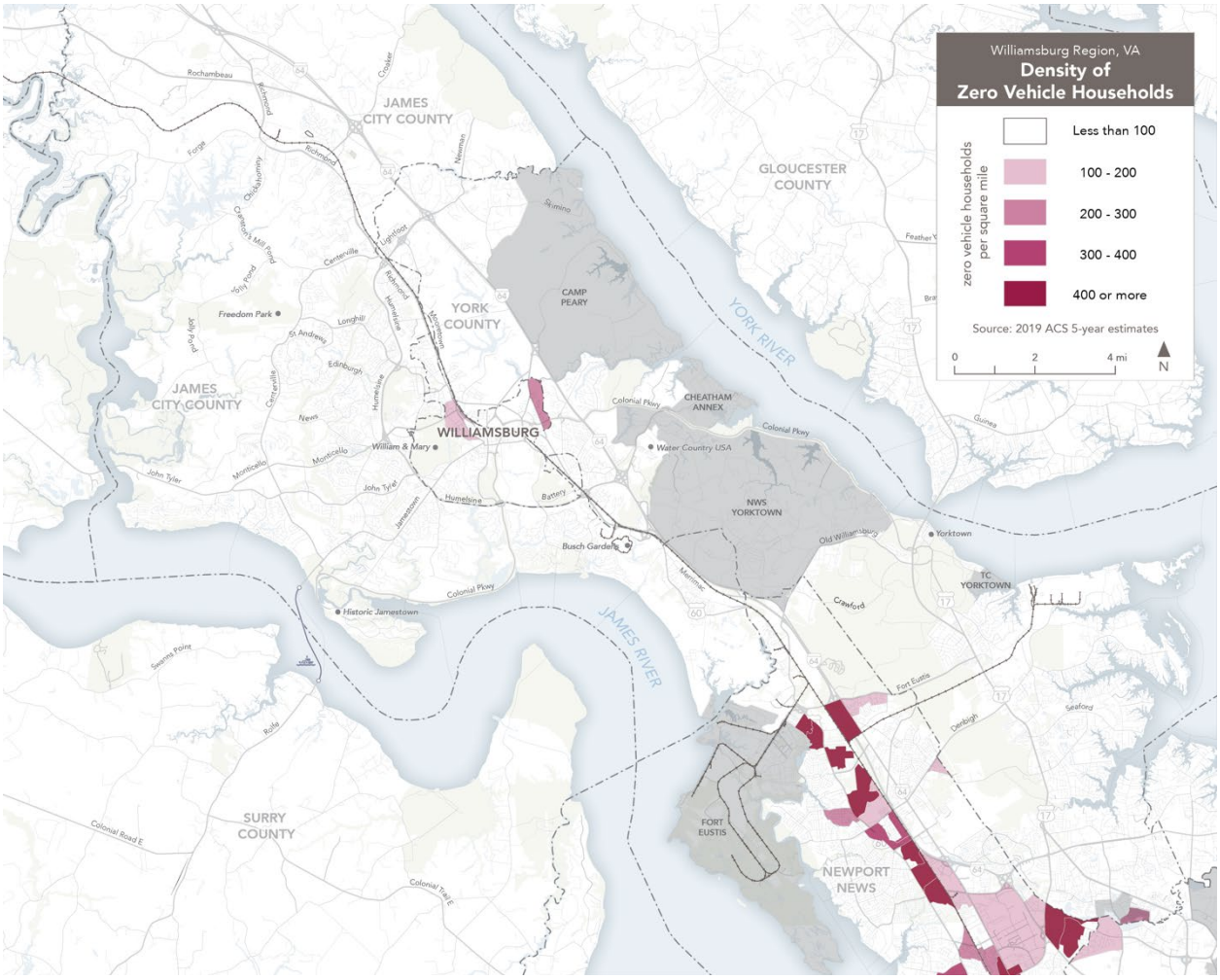
spending power is often higher due to family support. Nevertheless, university students are often likely to use transit on account of their low incomes.
The other area that stands out is along Capitol Landing Road and Merrimac Trail. When we looked at residential density alone, this area also stood out as dense. This suggests that there is both a high market and a high need for transit here.

Households without cars

Another factor affecting transit's competitiveness and need in an area is the availability of personal cars. People in households without vehicles are not necessarily "transit-dependent" but do have a greater inclination toward transit use because they don't have a car in their driveway, always ready to go. Generally, people without vehicles have fewer options than those who do have access to personal cars. If transit is a useful—reasonably fast, reliable, available when needed—and people can use it to reach the places they need to go, it can be a compelling option.

If transit does not present a realistic travel option, then people without cars will find other ways to reach the places they need to go, by getting rides from friends or family members, cycling, using electric scooters, walking, or using taxis or TNCs. Alternatively, some people may not travel, thereby limiting their access to the economic and social opportunities in the region.

The map below shows the density of households without cars in the Williamsburg Area. Note that this map shows households, not individual residents like the previous maps.



There are corridors with a high concentration of household without vehicles that closely correspond to people in poverty. There are pockets of households without cars near William & Mary and along Capitol Landing and Merrimac Trail.

Seniors

Seniors (persons aged 65 and above) are an important constituency for transit because a major value of transit coverage is providing service for people who cannot drive, no matter where they live.

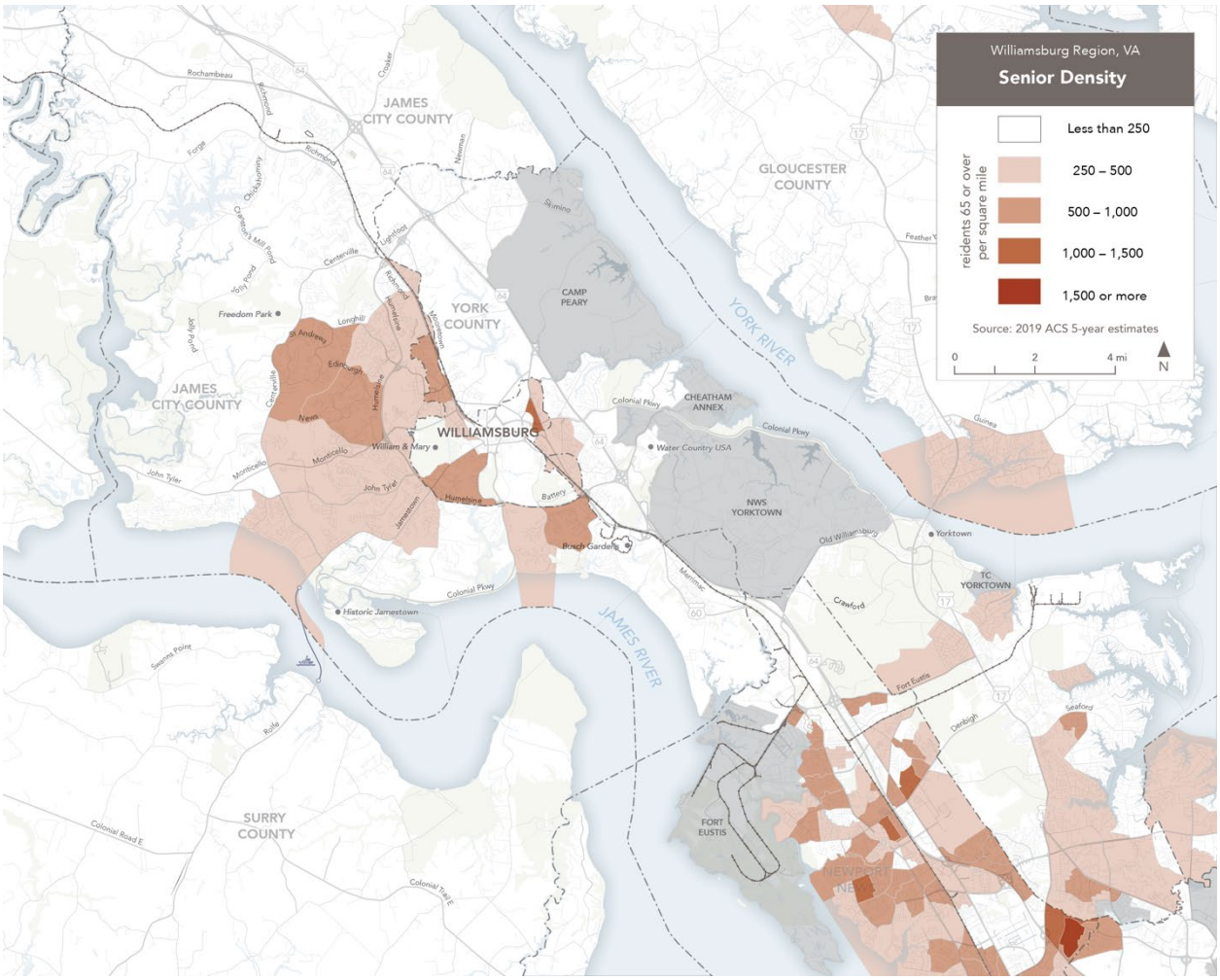
Some seniors cannot drive and may be more likely to use transit. As a group, senior-headed households are less likely to own cars than the general population.

Seniors tend to have different preferences for transit than younger people. Seniors are more likely to be sensitive to walking distance. On average, seniors also tend to be less sensitive to long waits and slow or indirect routes, because many are retired and have relatively flexible schedules. Most riders who are employed, in school or caring for kids in school will find service with long waits and slow or indirect routes to be intolerable.

Due to these factors, transit service designed primarily to meet the needs of seniors rarely attracts high overall ridership relative to cost. Thus, the amount of focus that transit agencies

place on meeting the needs of seniors should be carefully balanced with the needs and desires of the rest of the community.

The map below shows the density of senior residents in the Williamsburg Area. The density of seniors tends to be concentrated in a “ring” outside of Downtown Williamsburg. The area along Merrimac Trail has the highest concentration of seniors and corresponds with high density of household without cars.

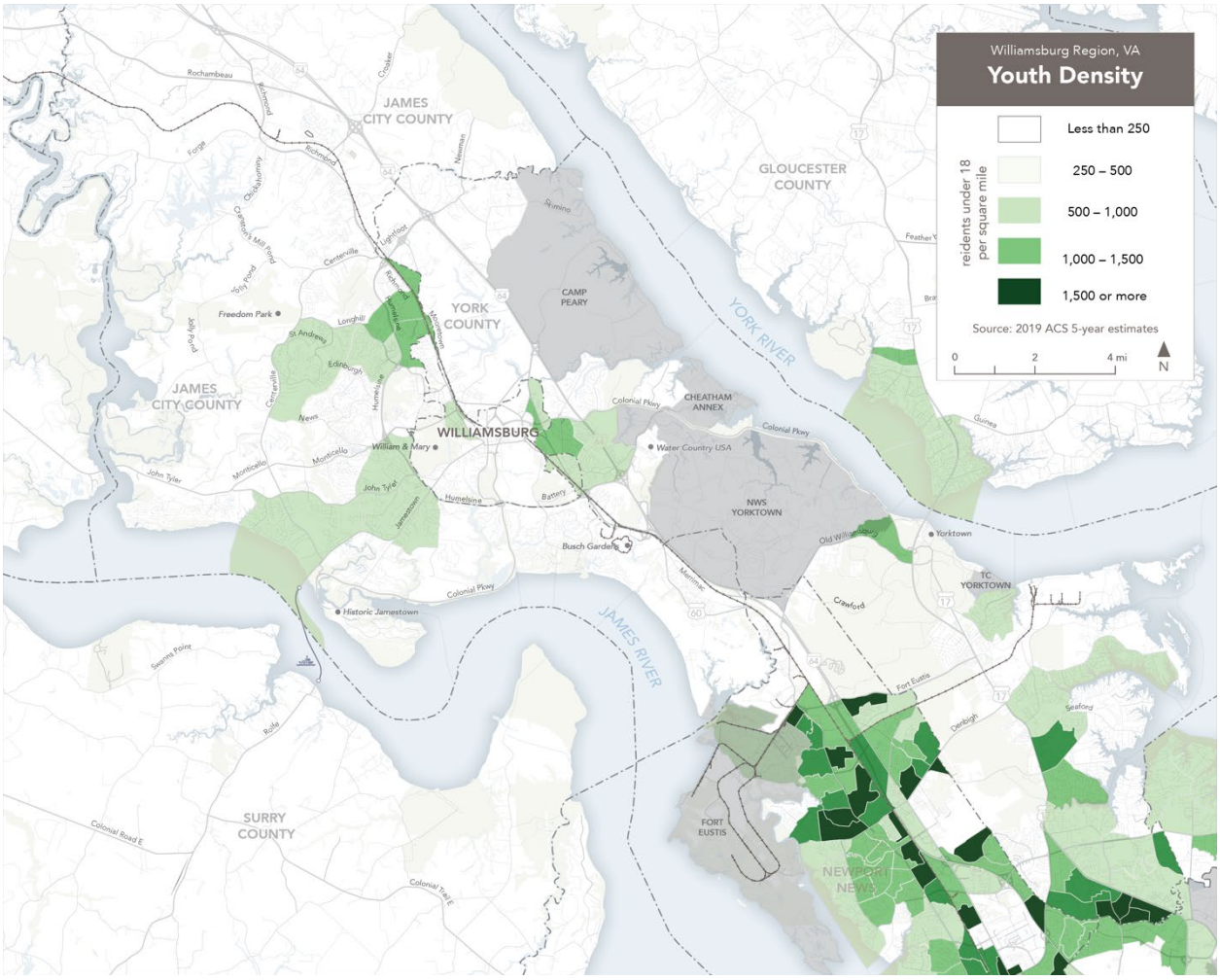


Many of the moderate senior density areas (like Kingsmill) have incredibly circuitous street networks that are hard for transit to serve efficiently.

Youth

Just as transit coverage can meet the needs of seniors who cannot or choose not to drive, transit coverage can also meet the needs of children and teenagers who are too young to drive.

The map below shows the density of residents under the age of 18 in the Williamsburg Area. Young residents are scattered in various areas around the periphery of the city and nearby suburban areas of James City and York counties. The highest concentration of young residents is north of Williamsburg along Richmond Road and east along Penniman Road.



Young people are like seniors in that they often live on a tighter budget than people of working age. For this reason, both are very sensitive to transit fares, and parents are sensitive to paying a fare for each child.

However, young people and seniors are very different in their ability and willingness to walk to transit service. Most young people can and will walk farther to reach service than seniors. Whatever effect an increase in price has on ridership among working age people, it will have an even stronger effect on ridership among young and old people. (This is why most transit agencies, along with movie theaters and other for-profit businesses, offer a discounted price for seniors and children.)

Also, good transit service for youth can free parents from the chaperone duty, allowing families more flexibility in their schedules and lives.

People of Color

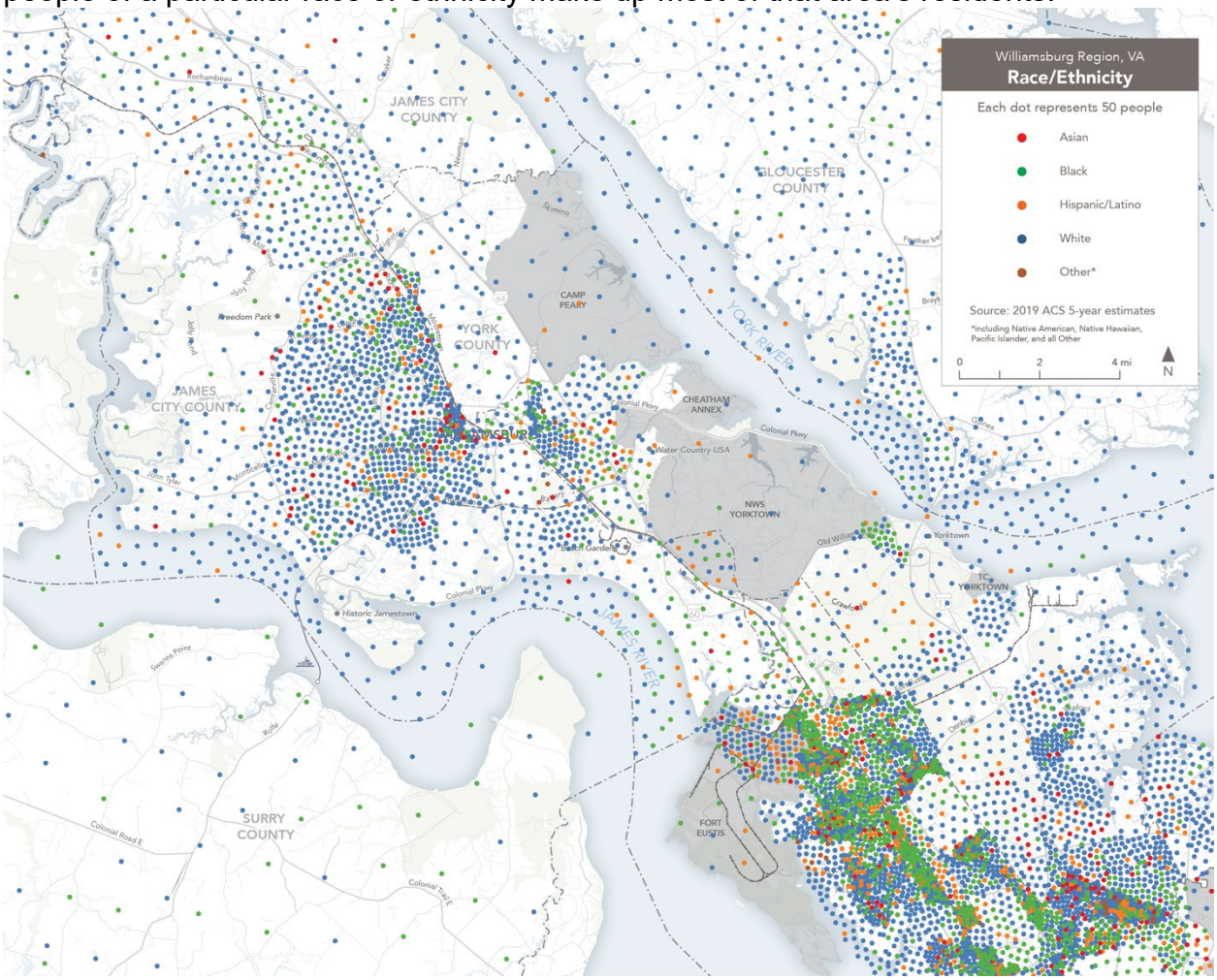
While information about people's income tells us something about their potential interest in or need for transit, information about ethnicity or race do not alone tell us how likely someone is to use transit.

However, avoiding placing disproportionate burdens on people of color is essential to

the transit planning process and required by federal law. Transit agencies are required by Title VI of the Civil Rights Act of 1964 to ensure that services they provide do not discriminate based on race, color or national origin.

Equity-based transit goals are often articulated in terms of improving mobility or transit access for people of color, particularly in places where the existing development patterns and transportation network contribute to disparities in access to jobs and other opportunities.

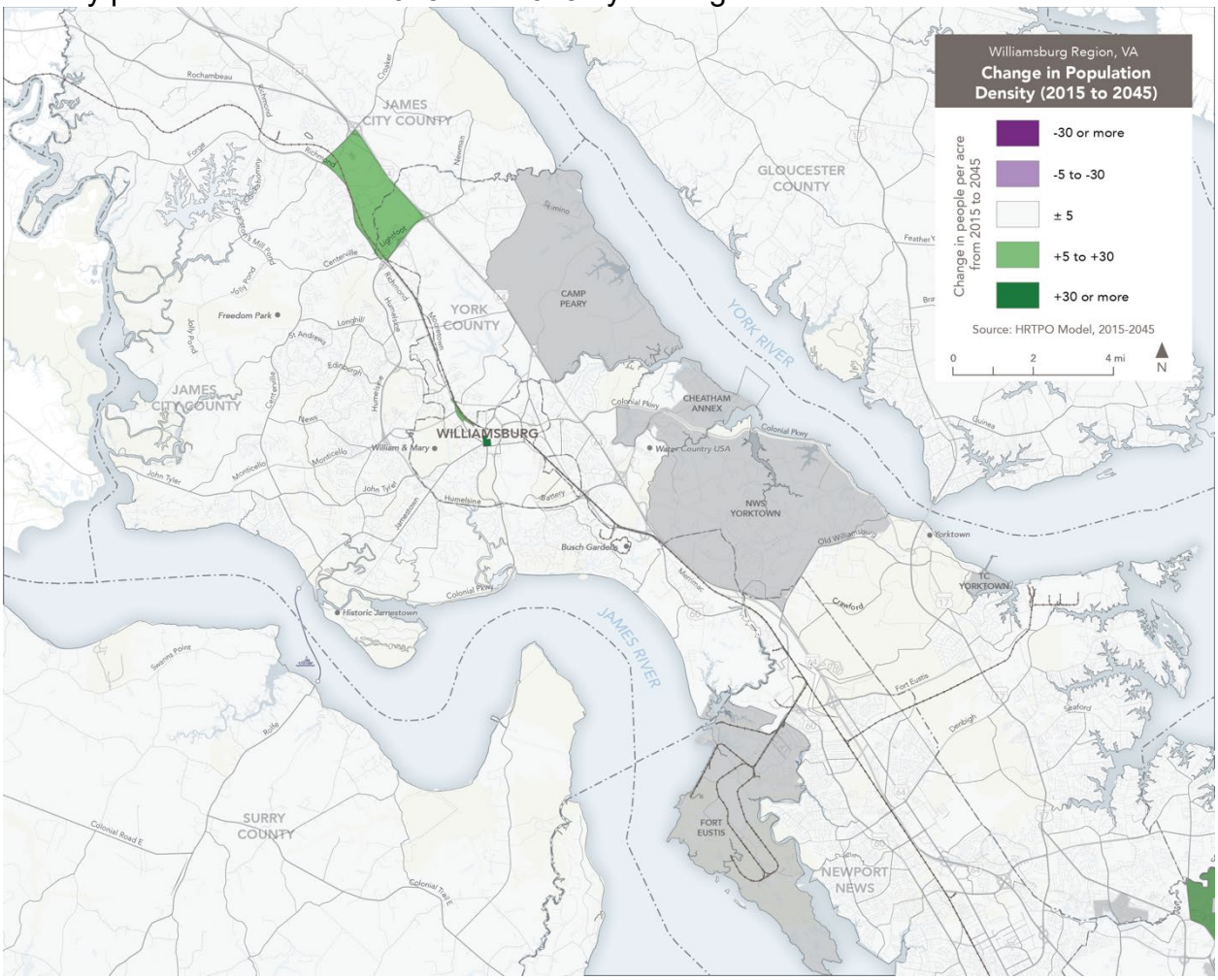
The map below shows the distribution of people by race and ethnicity in the Williamsburg Area. Each dot on the map represents 50 residents. Where many dots are very close together, the overall density of residents is higher. Where dots of a single color predominate, people of a particular race or ethnicity make up most of that area's residents.



Most dense places in the Williamsburg Area have a mixture of racial and ethnic groups, particularly William & Mary and areas along Richmond Road. Medium-density areas tend to have fewer people of color. There are a few places that have higher concentrations of people of color such as eastern Penniman Road.

Projected Growth: Residential Density

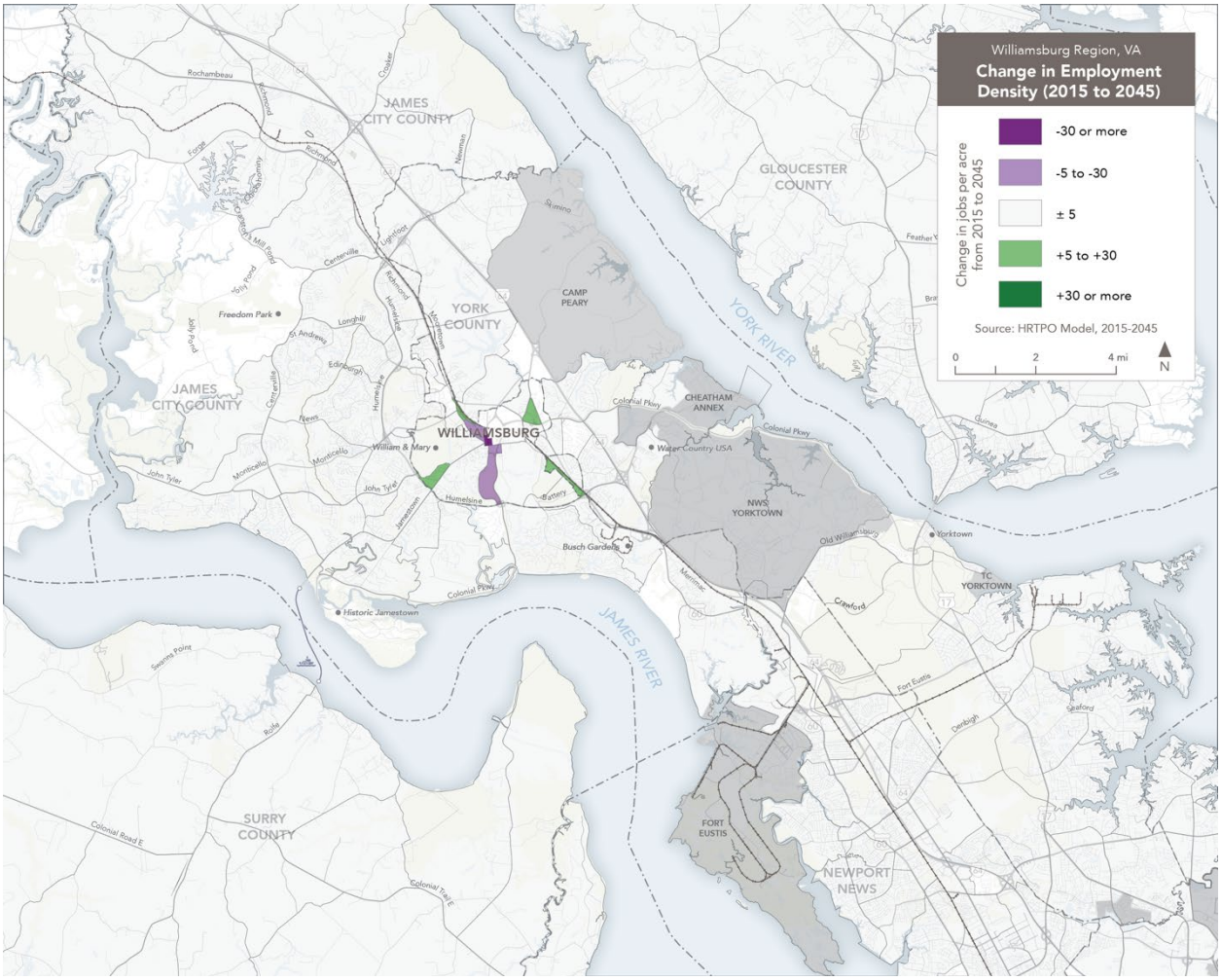
The TSP process requires a review of the projected growth in residents. To understand the projected growth's relevance to transit, the map below shows the change in residential density predicted between 2015 and 2045 by the region's land use forecasts.



The areas that show the most growth is in Colonial Williamsburg, along inner Richmond Road, and the area north of Lightfoot Road.

Projected Growth: Residential Density

To understand the change in future ridership potential, the map below shows the projected change in Job Density. There is a projected decrease in employment in Downtown Williamsburg. Based on the previous map, this is the same location that will see an increase in residential density.



Job concentration has a larger effect on transit demand than residential concentration. Therefore, this shift in jobs from downtown Williamsburg to the periphery could mean lower transit demand in the future.

There are also some areas scattered outside of Williamsburg that have a projected increase in job density.

2.3 Performance Evaluation

2.3.1 System-wide Performance

This section summarizes system-wide performance, some overview information was provided in an earlier section describing the overall WATA system.

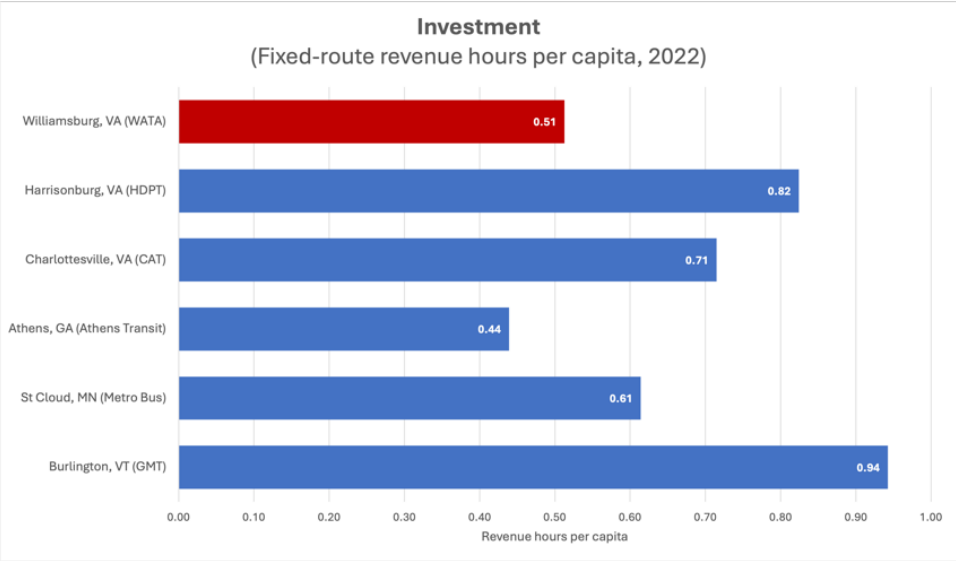
2.3.2 Comparison to Peer Systems

The charts on this page show some basic data about the performance of the WATA bus system, compared to similar systems in similar urban areas. These peer cities are similar to the Williamsburg Area in terms of the size of their service area population and urban form.

Service Investment Per Capita

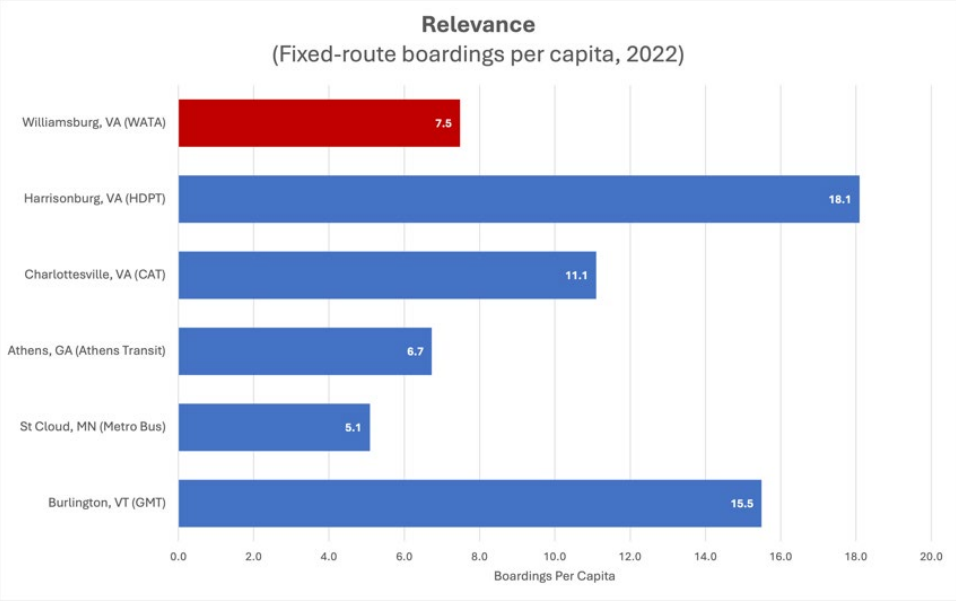
Investment measures the quantity of service relative to the population being served, specifically service hours per capita. WATA provides about 0.51 service hours per capita,

which is a little low compared to peers. Other small cities in Virginia, like Charlottesville and Harrisonburg, invest more in transit per capita. Note that this data is from 2022 and does not include Route 15 Colonial.



Ridership Per Capita, or Relevance

Relevance is a measure of how many people ride transit relative to the total population. Specifically, it measures the number of boardings per year divided by the service area population. Thus, this measure indicates how relevant transit is to the life of the city or region.

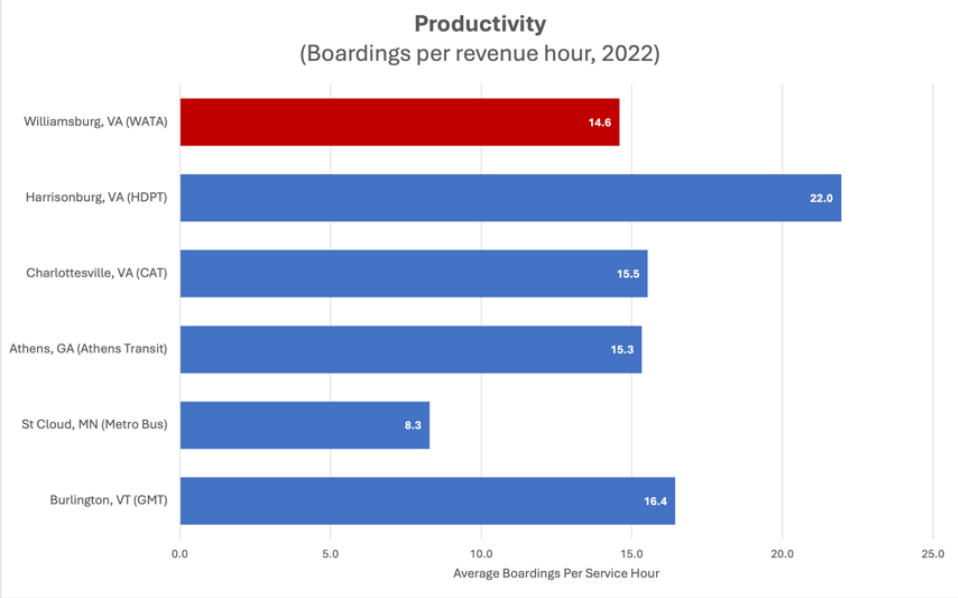


The three cities in this group that have higher investment per capita (Harisonburg, Charlottesville, Burlington, and Burlington) also have higher relevance. There is, worldwide, a correlation between the amount of service provided and transit ridership. However, service provision is not enough to guarantee ridership: the land uses, built environment and

transportation policies of the service area must also be supportive of transit. Note that this data is from 2022 and does not include Route 15 Colonial.

Productivity

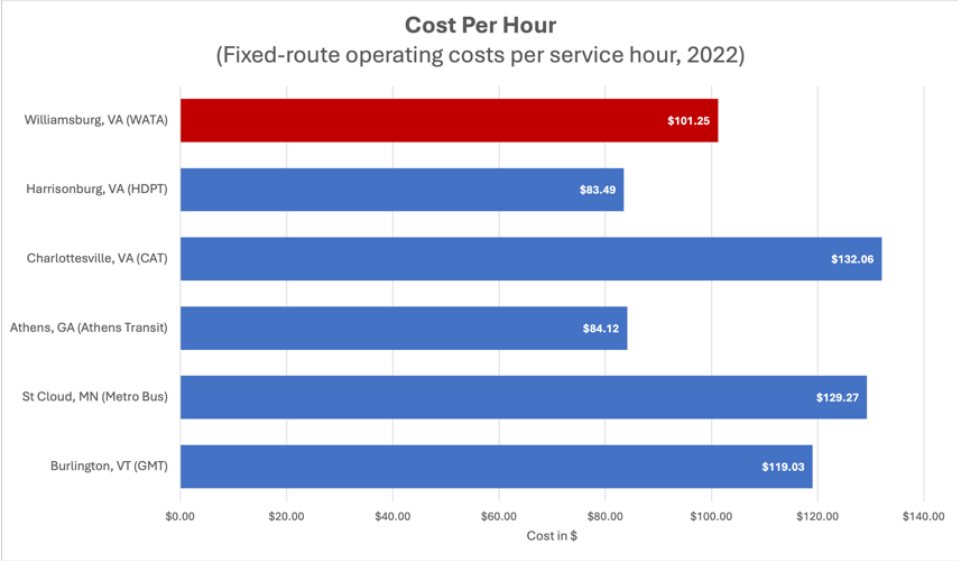
Productivity is a measure of how many riders a system is attracting compared to the cost to serve them. It divides the total annual boardings by the total annual service to tell us how many riders are boarding for every hour each WATA vehicle is running (called “Revenue Hours”).



WATA’s productivity is lower than most of its peers, which means that the system is getting few riders relative to the service provided. Local factors like land use may be affecting this result, or WATA may provide more coverage, and less frequency, compared to peers. Note that this data is from 2022 and does not include Route 15 Colonial.

Cost Efficiency

In this instance, “efficiency” refers not to the cost of attracting riders, but to the cost of putting service on the street.



WATA's costs per hour of service provided are at the low end of the range compared to some peers at about $101 per service hour. This suggests that WATA is doing well in managing its costs.

2.3.3 Proximity to Service

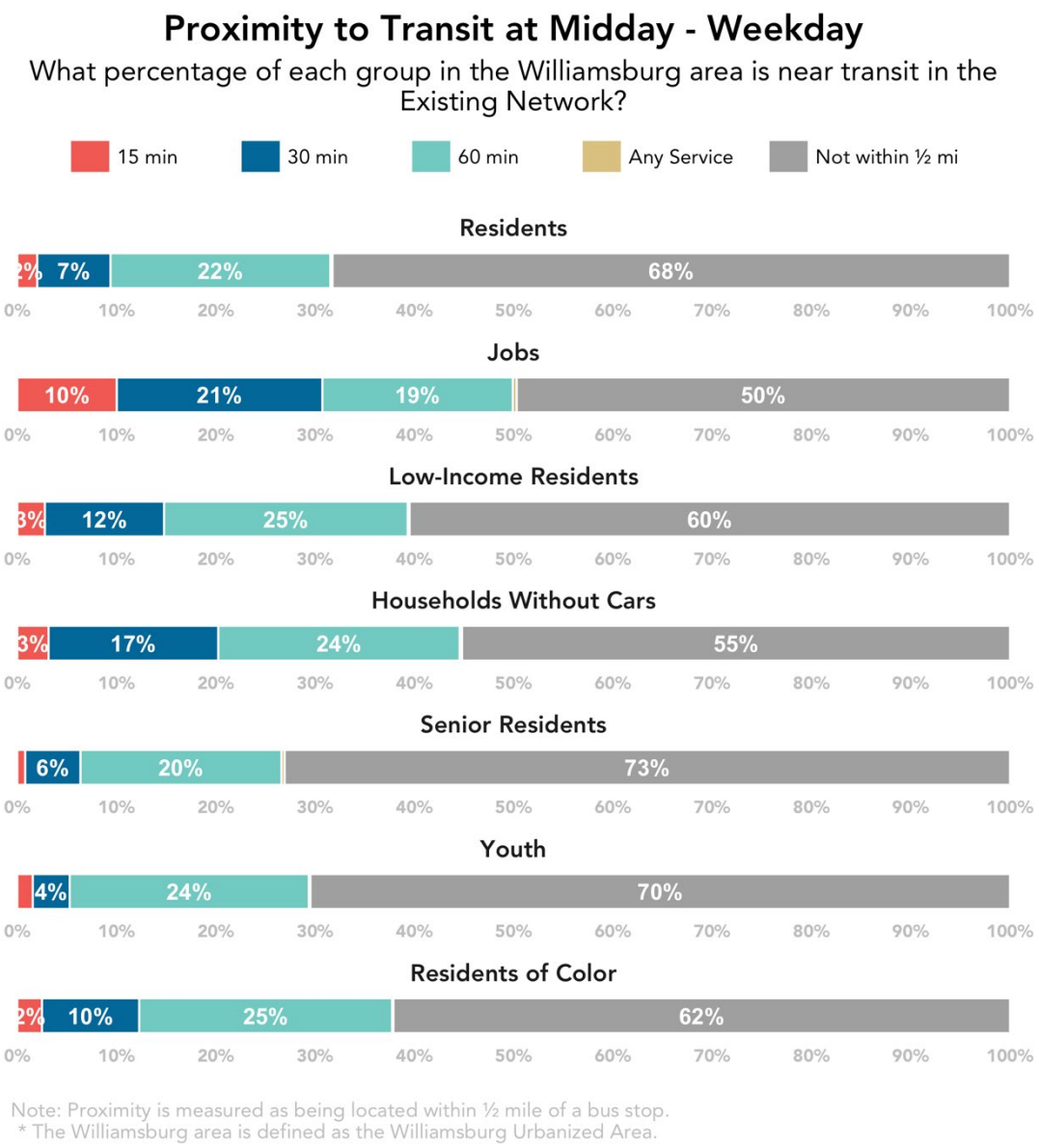
By measuring the proximity of residents and jobs to service, we can evaluate progress towards both ridership and coverage goals.

- A ridership goal is served when large numbers of people are close to more frequent, all-day service, because frequent s correlated with high ridership.
- Coverage goals are served when large numbers of people are close to any service. It can be particularly important for coverage goals if people in key demographic groups are close to service.

The chart below shows the coverage provided by the 2023 WATA network to residents and jobs in the Williamsburg Urbanized Area at midday on a weekday. The overall coverage is divided into proximity to transit of various frequencies at midday.

In 2023, 32% of residents were within a half a mile of some frequency of transit service.

Of them, 9% were within the ½ mile of 30-minute service or the Colonial Williamsburg Shuttle.

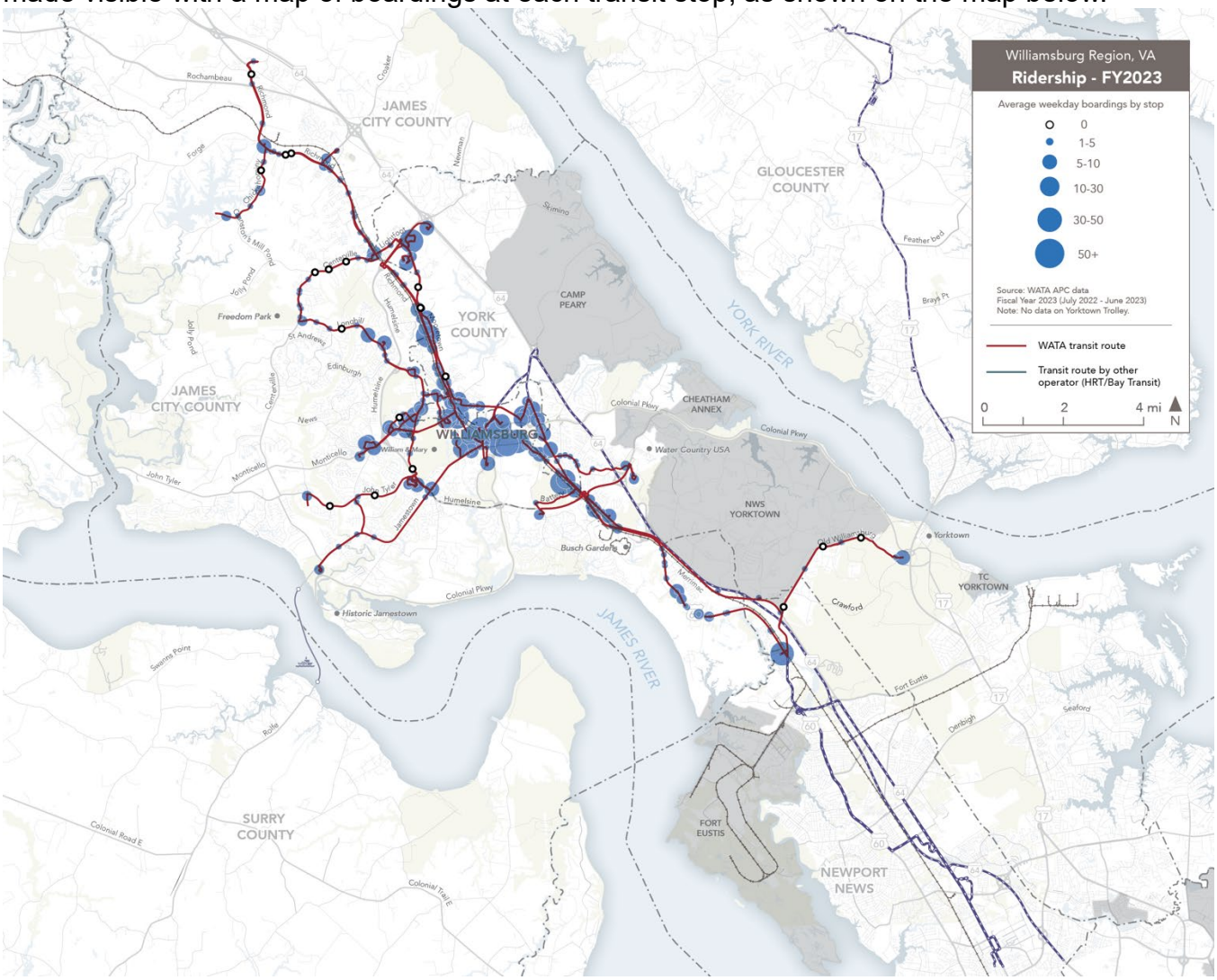


Among low-income residents, 40% were near service of any frequency, while 15% were near 30-minute-frequency service or better.
For people of color, 38% were near any service and 12% were near 30-minute services or better. These numbers are likely higher than the proportion of all residents, because low-income residents and people of color are a larger portion of the population in some of the more transit-friendly parts of the service area, where it costs little to get service near numerous people.

A large proportion of jobs in the region are located in Downtown, Colonial Williamsburg, Richmond Road, New Town, and along Pocahontas Trail. Thus, 31% of jobs in the Williamsburg area are near 30-minute transit service or better (compared to just 9% of the population). Also, 50% of all jobs are near transit service of any frequency.

2.3.4 Ridership

One measure of transit performance is the sheer amount of ridership it attracts. This can be made visible with a map of boardings at each transit stop, as shown on the map below.

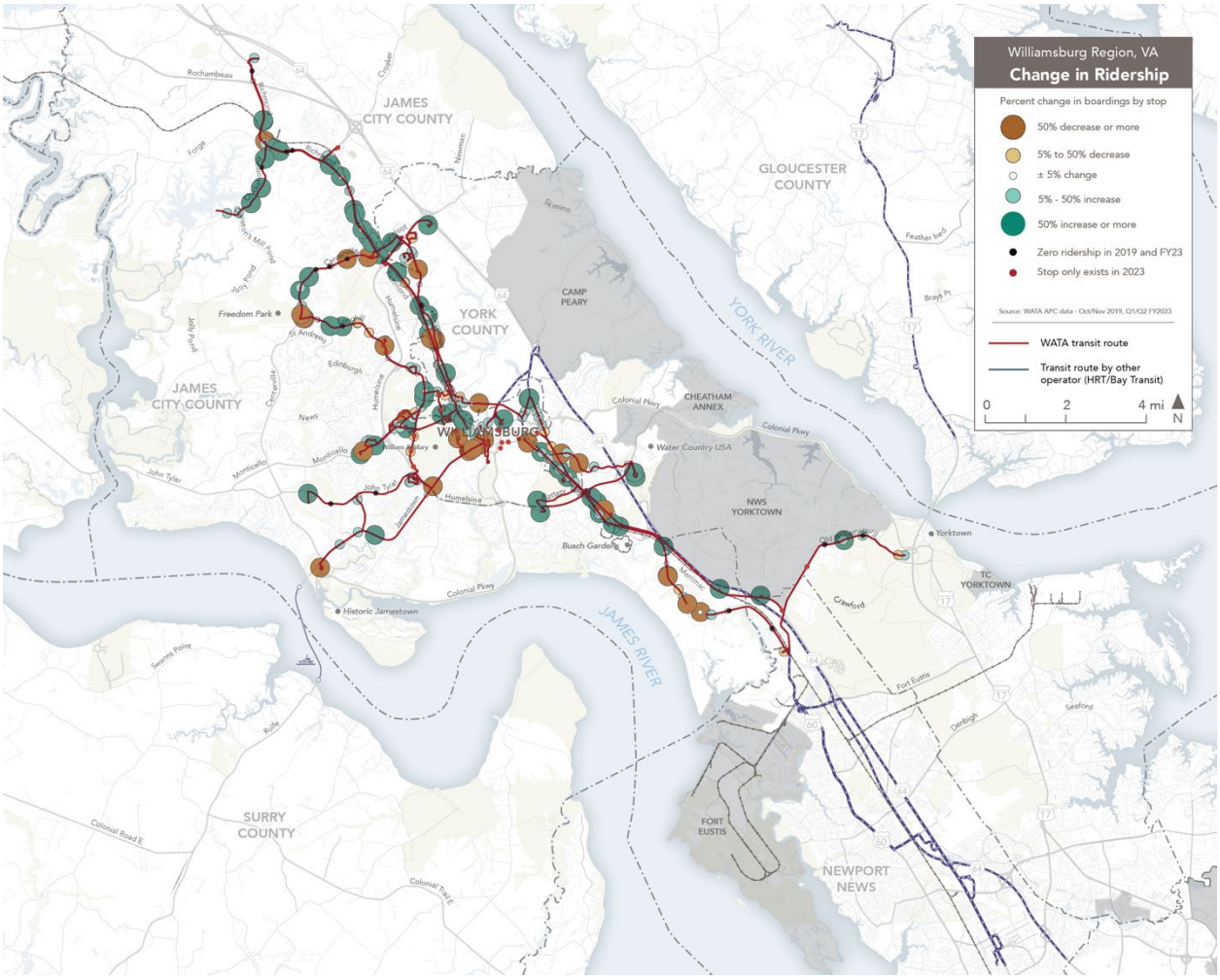


This map shows ridership on the 2023 fixed route network. Dots represent bus stops and are sized based on the average number of boardings at each stop on weekdays, in the spring of 2023.

High ridership routes and areas can appear in two ways on this map: either as large dots or as multiple medium-sized dots that are very closely spaced. Looking for those patterns we can observe that the highest boardings occur:

- In Downtown Williamsburg, including Colonial Williamsburg and William & Mary;
- Along most of Richmond Road up to the Williamsburg Premium Outlets;
- At the Walmart on E Rochambeau Drive;
- In and around New Town;
- Along Capitol Landing and Merrimac Trail; and
- Along Pocahontas Trail.

The map below compares ridership before the pandemic, in 2019, with ridership in 2023 after service was greatly reduced and ridership fell. To make the changes in ridership visible, this map shows the percent change in boardings by stop. There is some increase in ridership north of the Walmart on Route 9 and some decrease in ridership along the southern part of Pocahontas Trail. But apart from that,, there are no significant changes to ridership patterns.



2.3.5 Route-by-Route Ridership and Productivity

People who value the environmental, business, or development benefits of transit will talk about ridership as the key to meeting their goals. If that were the primary measure of transit's success, then our attention would be focused on the highest ridership routes.

However, because any transit agency is operating under a fixed budget, the measure they should be tracking is not sheer ridership but ridership relative to cost. They would not be satisfied simply by a large dot on the boardings maps shown on previous pages until they knew what it cost the transit agency to achieve that large dot.

The cost of providing a service is in proportion to the quantity of service provided, and the primary measure of the quantity of transit available for customers to use is "revenue hours." A

revenue hour (also called a vehicle revenue hour, or a service hour) is one bus operating on the road for one hour.

The revenue hours on any particular route will depend on a few factors:

- The length of the route (a route covering more distance or running on more circuitous paths will require more vehicles to run).
- The speed of the bus (a slower speed means that covering the same distance takes more time).
- The frequency of service along the route (higher frequency is delivered by increasing the number of buses being driven on the route at once).
- The daily and weekly span of service for a route (how many hours it is available).

Ridership relative to cost is called “productivity.” In this report, productivity is measured as boardings per revenue hour:

Productivity is strictly a measure of achievement towards a ridership goal. Services that are designed for coverage goals will likely have low productivity. This does not mean that these services are failing or that the transit agency should cut them. It just means that their funding is not being spent with the purpose of attracting high ridership.

Cost per boarding is directly related to productivity for most transit services. It costs a transit agency a similar amount to run the same type of bus on various routes.[2] The number of passengers each route attracts therefore determines the average cost per passenger boarding.

The table below reports total ridership, productivity and average cost per boarding for WATA services.

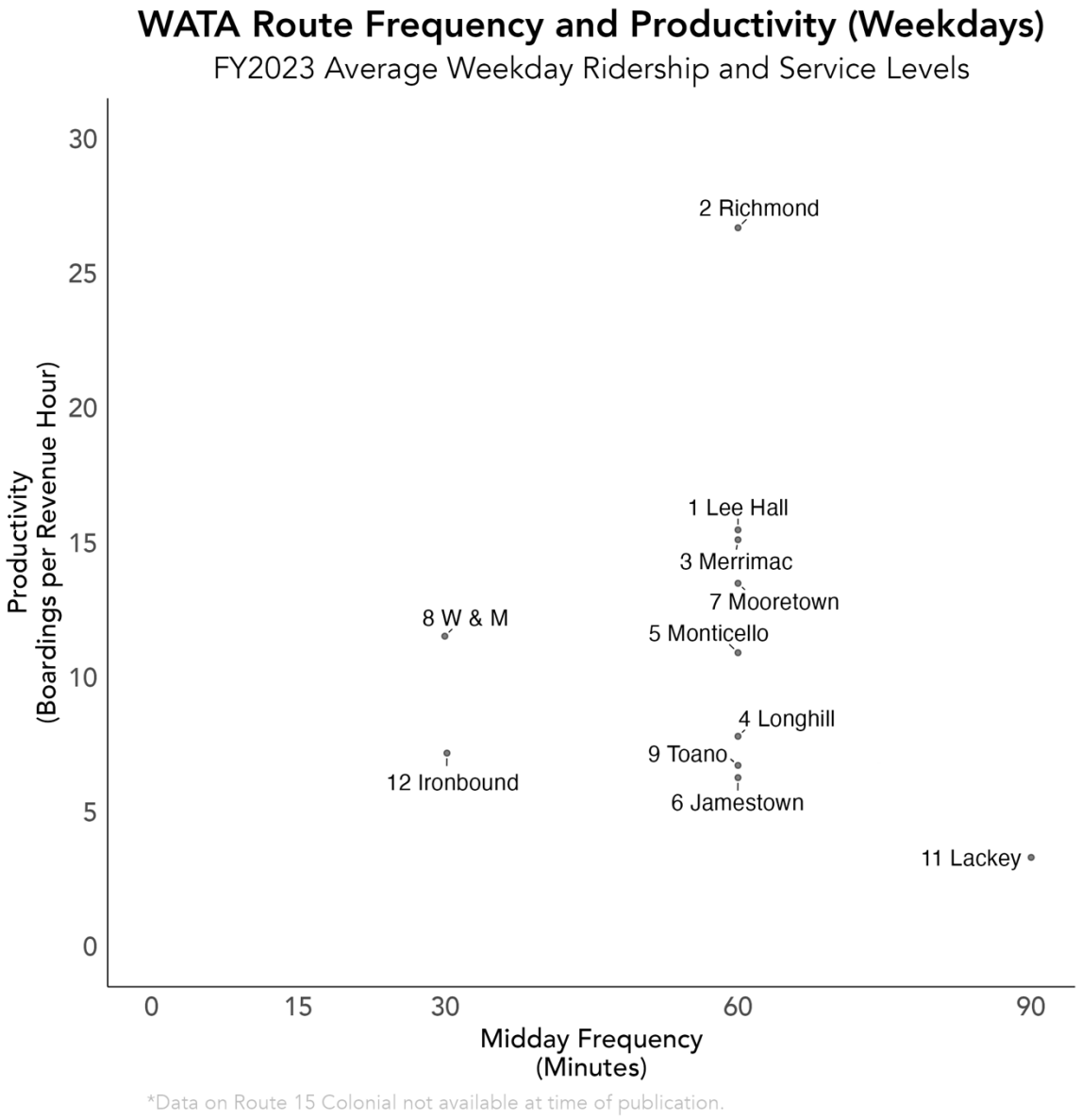
Route	2024 Average Weekday Ridership	2024 Average Weekday Revenue Hours	2024 Average Weekday Productivity
Route 1 Lee Hall	231	15	15.4
Route 2 Richmond Road	399	15	26.6
Route 3 Merrimac Trail	225	15	15.1
Route 4 Longhill Road	116	15	7.8
Route 5 Monticello	161	15	10.9

[2] There are exceptions. Buses that are used only during peak hours represent a higher operating cost and a higher capital cost per hour of service than buses that are used all day and all week. This is because the extra bus must be purchased, stored and maintained, for only a few hours of service a day. It is also because peak-only work shifts tend to be unpopular and therefore more expensive to staff. Regarding cost differences between different routes, sometimes transit agencies use different types of vehicles for different routes, and this can result in different operating costs for different routes.

Route 6 Jamestown	93	15	6.2
Route 7 Mooretown Road	201	15	13.4
Route 8 William & Mary	126	11	11.5
Route 9 Toano	100	15	6.7
Route 11 Lackey	44	14	3.3
Route 12 Ironbound	213	30	7.1

We can also look at productivity relative to route frequency. The two are correlated, though frequency alone is not enough to make a route productive: the frequency must be deployed in areas that are supportive of transit in that they are linear, continuously dense, walkable, and with a mix of uses and activities.

The scatterplot below shows how 2023 WATA fixed routes compared within frequency categories (based on their all-day weekday frequencies).



In 2023, Route 2 was the most productive in the system, despite having a poor frequency of every 60 minutes. This suggests that, on some segments of Route 2, service was undersupplied and there was an unmet need for better frequency.

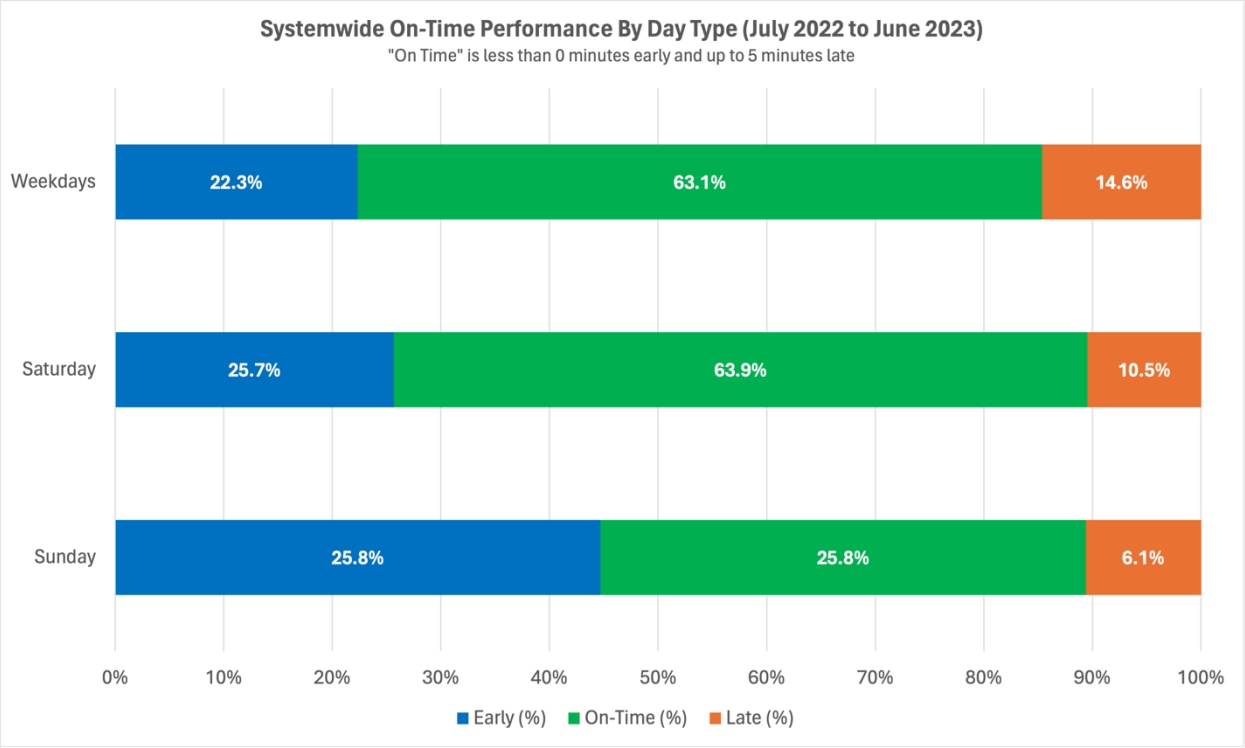
Routes 1, 3, and 7 were the next most productive, serving an area that is dense with visitors and destinations. Route 12 has a relatively low productivity despite being on a very good

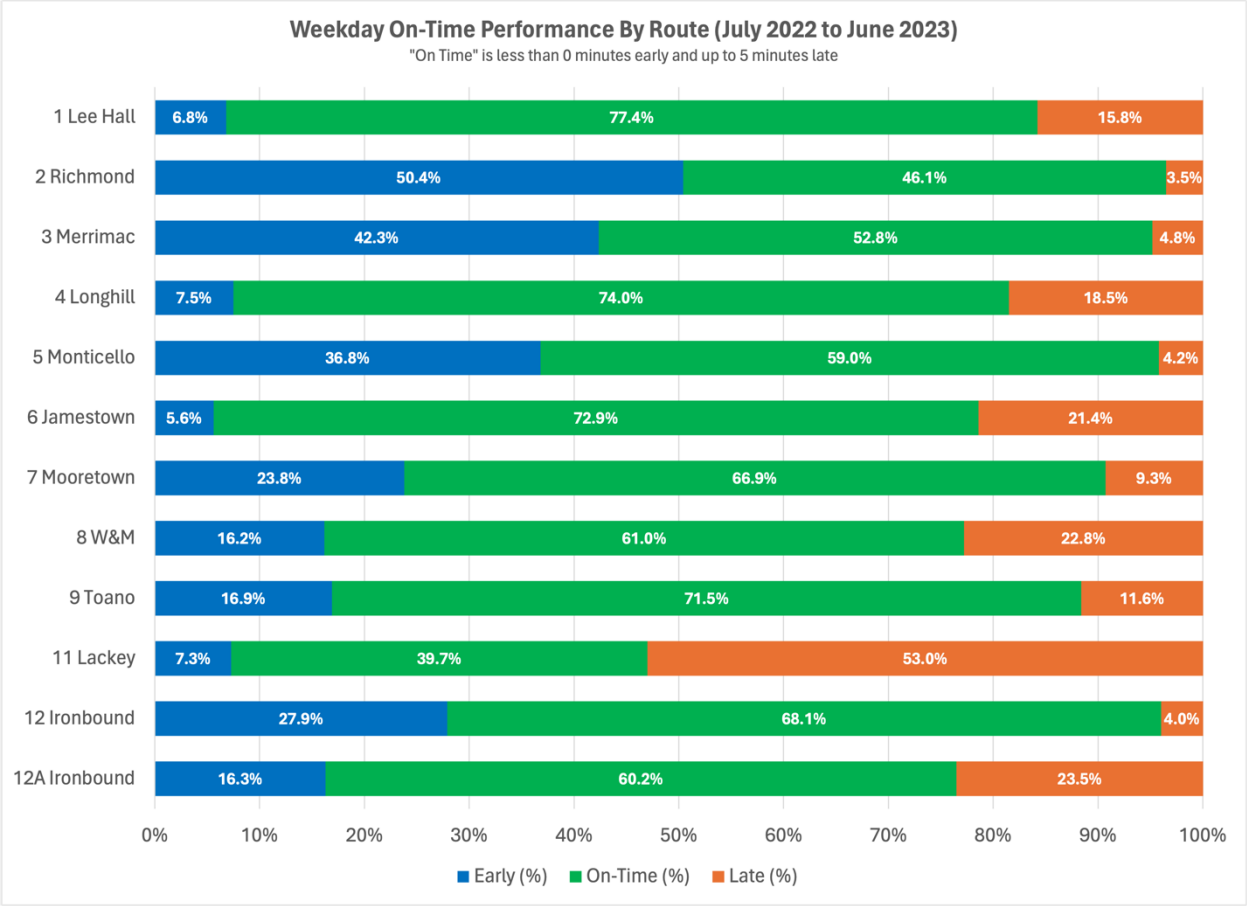
corridor providing a frequency of 30 minutes. Since the service is new this year, this is to be expected. It takes time for people to learn about the new service and learn about its usefulness. Route 11 is unsurprisingly the least productive route since it has the worse frequency.

2.3.6 On-Time Performance

On-time performance is a measure of how reliably buses depart when customers expect them to depart. Reliability is particularly important when a transit network is built of infrequent routes. If another bus is not coming soon, the timeliness of each bus is extremely important. The first chart below shows the percentage of times a bus trip was observed to be early, on time, and late in FY23. Overall, routes are early about 22% of the time, late about 14% of time, and about 63% on-time. The second chart shows the times specific routes were observed to be early, on time, and late.

On an infrequent route, an early departure can be much worse than a late one. If a route that comes every 60-minutes is 5 minutes late, someone might be 5 minutes late to work, and that is bad. But if it is 5 minutes early, they probably weren't at the bus stop in time to catch it, and they have to catch the next bus—which means they are now 60 minutes late to work.





Routes 5, 7, and 12 arrived early about over 20% of the time. Routes 2 and 3 arrived early more than 40% of the time.

For WATA, a bus is considered “on-time” if it arrives at a timepoint 0 minutes before or 5 minutes after the scheduled time and departs at most 5 minutes after the scheduled time.

Routes 1, 4, 6, 8, and 12A arrived late more than 20% of the time. Route 11 arrived late more than 50% of the time.

Bad reliability doesn’t just make people a little bit late to their destinations, it can make them extremely late if it causes them to miss a pulse. Since the pulse at the Transportation Center relies on buses arriving at the same time once every hour, a late bus that misses the pulse can mean that a person has to wait 60 minutes for their connection.

2.3.7 Safety

In WATA’s latest Safety and Security report, preventable accidents for 2022 and 2023 were reported at 0.72 and 1.01 per 100,000 miles, respectively. WATA’s goal is less than one preventable accident per 100,000 miles per year.

2.3.8 Fleet and Facility Management

Details about WATA’s fleet are laid out in Chapter 4.

2.3.9 Performance Based Opportunities for Improvement

WATA's network has not fully recovered from the fall in funding of the COVID-19 pandemic. Frequencies and hours of service are worse than they were in 2019.

As funding recovers, WATA can make these improvements, to gain performance relative to its goals:

1. First, prioritize investments in high ridership services, with improved frequencies, hours of service, speed and directness.
2. Second, add new coverage to provide additional areas, residents, and destinations with at least minimal service.
    a. Restore spans of service during weekdays to what was provided pre-Covid.
    b. Restore spans of service during Sundays to what was provided pre-Covid.
3. Invest in reliability improvements, especially for routes that offer passengers timed connections at pulses.
    a. A new AVL system will improve the accuracy and availability of real-time information for passengers, while also supporting better supervision and support for service operations.
4. Work with neighboring transit providers to increase service for long-distance trips.
5. Review ADA Paratransit management and operations in order to reduce the speed at which the program's costs are growing and the costs per rider are growing.
6. Provide clear public information about the transit system, including:
    a. An online PDF map of fixed routes
    b. Accurate static GTFS information for trip-planning

2.4 Operating and Network Efficiency Evaluation

The evaluation of the 2023 network is included above in previous sections of this Chapter.

2.5 Opportunities to Collaborate with Other Agencies and Stakeholders

2.5.1 Collaboration Analysis

Regional Connectivity

For connections outside of the WATA service area, at time of writing what exists is:

- Long-distance commercial bus service provided by Greyhound (one time per day) and Flixbus (4 times per day)
- Amtrak's Northeast Regional train service (4 times per day)
- Neighboring Hampton Roads Transit (HRT) provides 2 trips per day between Newport News and the WTC, weekdays only.
- Additional connections with HRT are available at Lee Hall.

Collaboration within the WATA Service Area

WATA currently provides public transportation services to James City County, the City of Williamsburg, York County, Newport News, the College of William & Mary, and the Colonial Williamsburg Foundation.

WATA consistently coordinates and engages with various stakeholder including:

- Departments within each Jurisdiction
  - Housing/Social Services, Community/Economic Development, Planning, etc.
- Colonial Williamsburg Foundation
- Busch Gardens (and Water Country USA)
- College of William & Mary
- Virginia Peninsula Community College
- Virginia Department of Rail and Public Transportation
- Social Service Non-Profits
- Neighborhood Associations
- Local Hospitals
- Chambers of Commerce

Regional and State Planning Partners

WATA continuously engages with HRTPO, VDOT, and DRPT. A representative from DRPT serves on the WATA Board of Directors.

2.5.2 Collaboration-Based Opportunities for Improvement

In the creation of this TSP, the three local jurisdictions have been continuously engaged to decide on the planned improvements (laid out in Chapter 3). Thanks to the ongoing conversations since the beginning of this study, a new funding partnership has been established to determine the local contribution from each of jurisdiction. This collaboration has been crucial in the creation of this plan.

In addition, the three jurisdictions have also expressed interest in improving bus stop amenities. Since the local jurisdictions own most of the streets where WATA operates, this collaboration presents an opportunity to improvement the quality of infrastructure.

3 Planned Improvements and Modifications

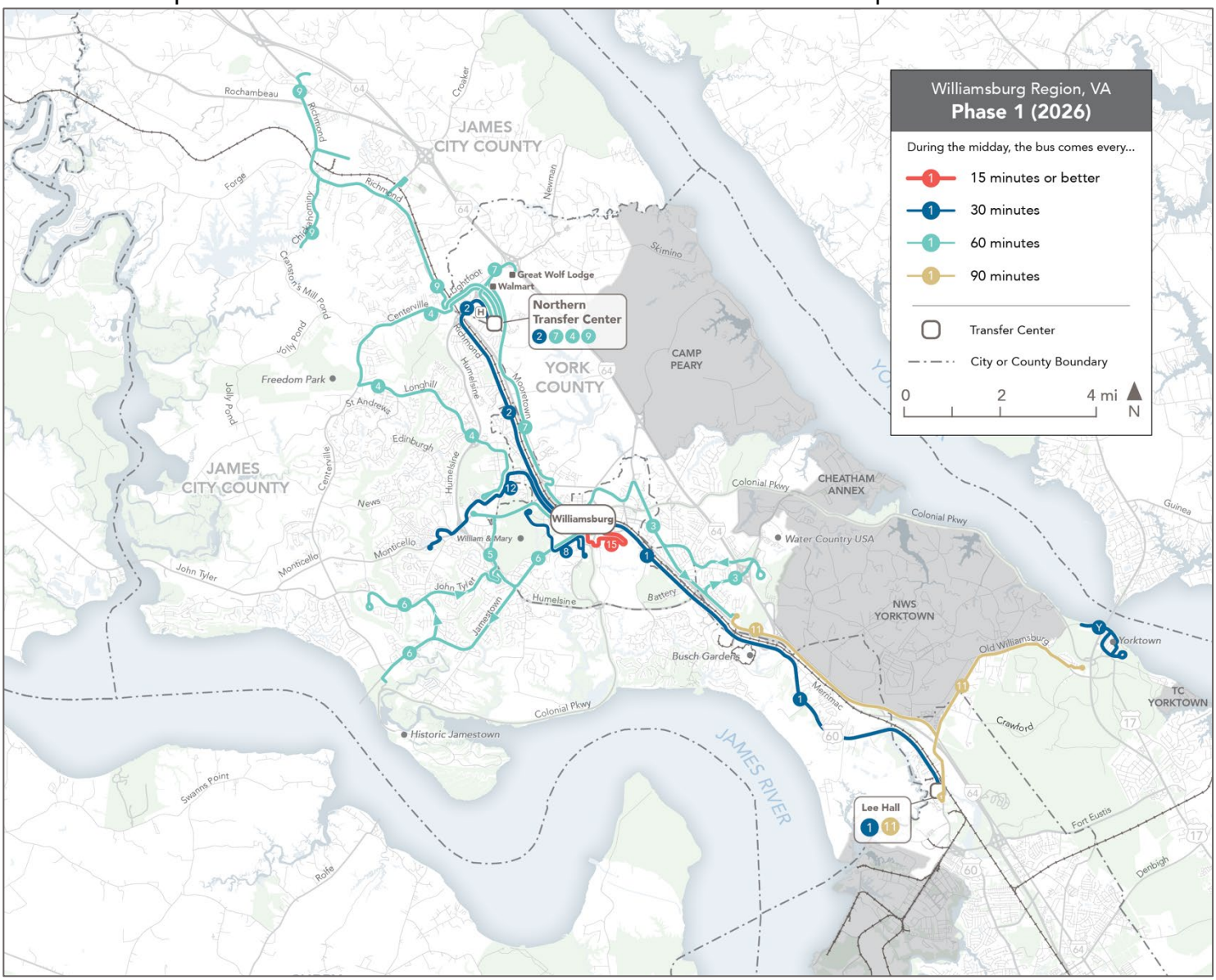
3.1 Planned Service Improvements and Prioritization

Financially-constrained improvements to WATA service are described below. While they require increased operating and capital funding over what WATA has today, collaboration with partners has yielded in a plan to increase 50% service over the course of three phases.

3.1.1 Fixed Route Improvements: Phase 1, Short-Term

The first set of improvements to the WATA network is planned for FY2026. It will act on the policy direction decided by the Board, to emphasize high ridership in growth, and it is made possible by the funding and collaboration agreed-to by WATA's partners as described in the previous chapter.

The map below shows the network as it will be once Phase 1 is complete.



The improvements to fixed routes reflected on this map, over what was offered in 2023, are:

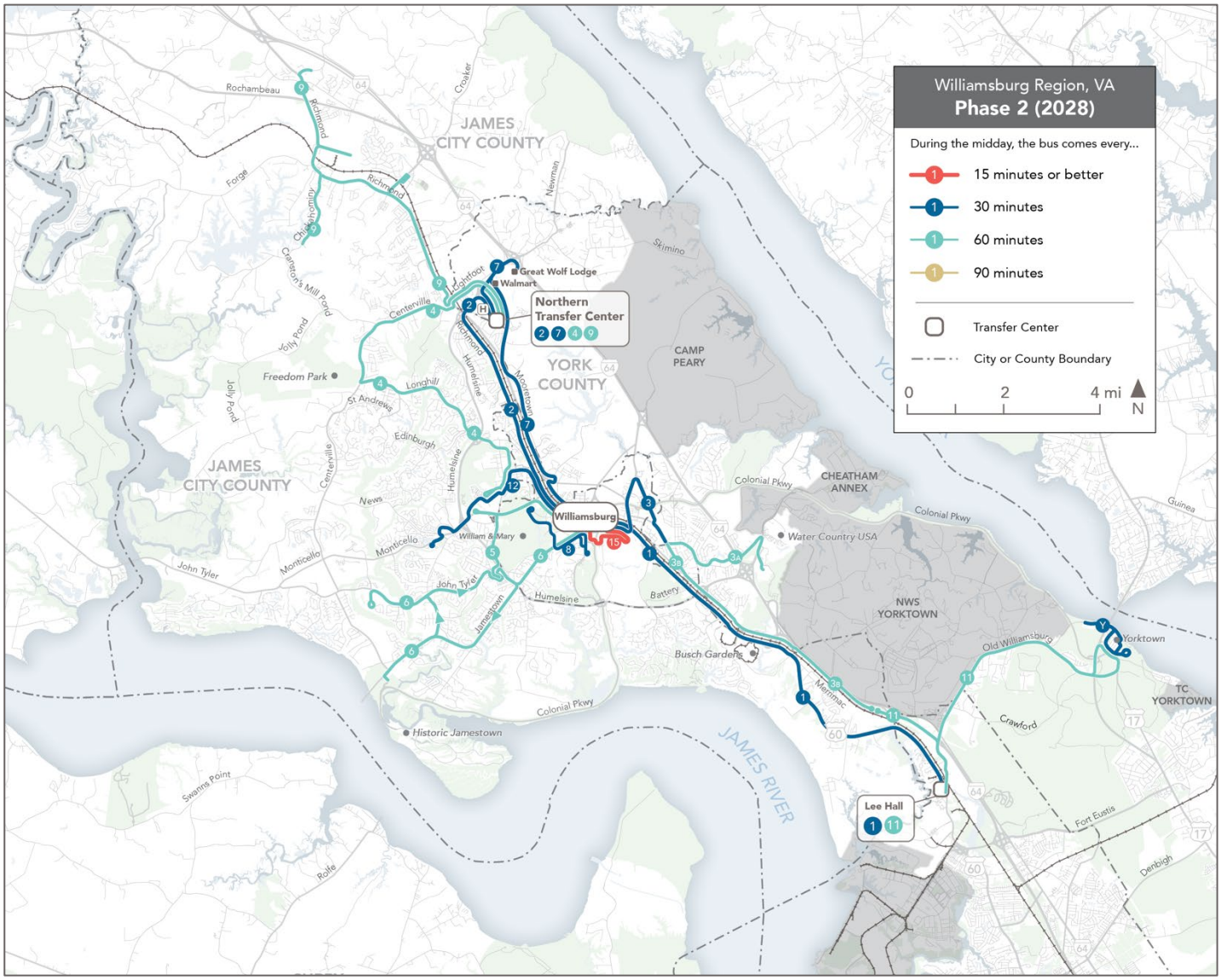
- Frequency improvements to Routes 1 and 2, to 30-minute frequency all day. This will address unmet needs for useful service along those routes, while also serving some of the strongest transit markets in the WATA area. The goals of these improvements are to attract more ridership while also providing improved service for Title VI populations.
- A realignment of routes around the Northern Transfer Center. The purpose of these changes is to:
    - Increase the number of destinations in the area that most passengers can reach without a transfer.
    - Use buses efficiently to provide the planned frequency of each route. [3]
    - Send service past the busiest and most transit-oriented places.

The Phase 1 improvements are estimated to increase annual fixed route operating costs by $1,088,897in FY2026.

[3] For any given frequency, there are efficient and inefficient route lengths, in terms of the number of buses and the number of revenue hours required to offer the service.

3.1.2 Fixed Route Improvements: Phase 2, Mid-Term

The map below shows the fixed route network after a second phase of improvements is complete, planned for FY2028.



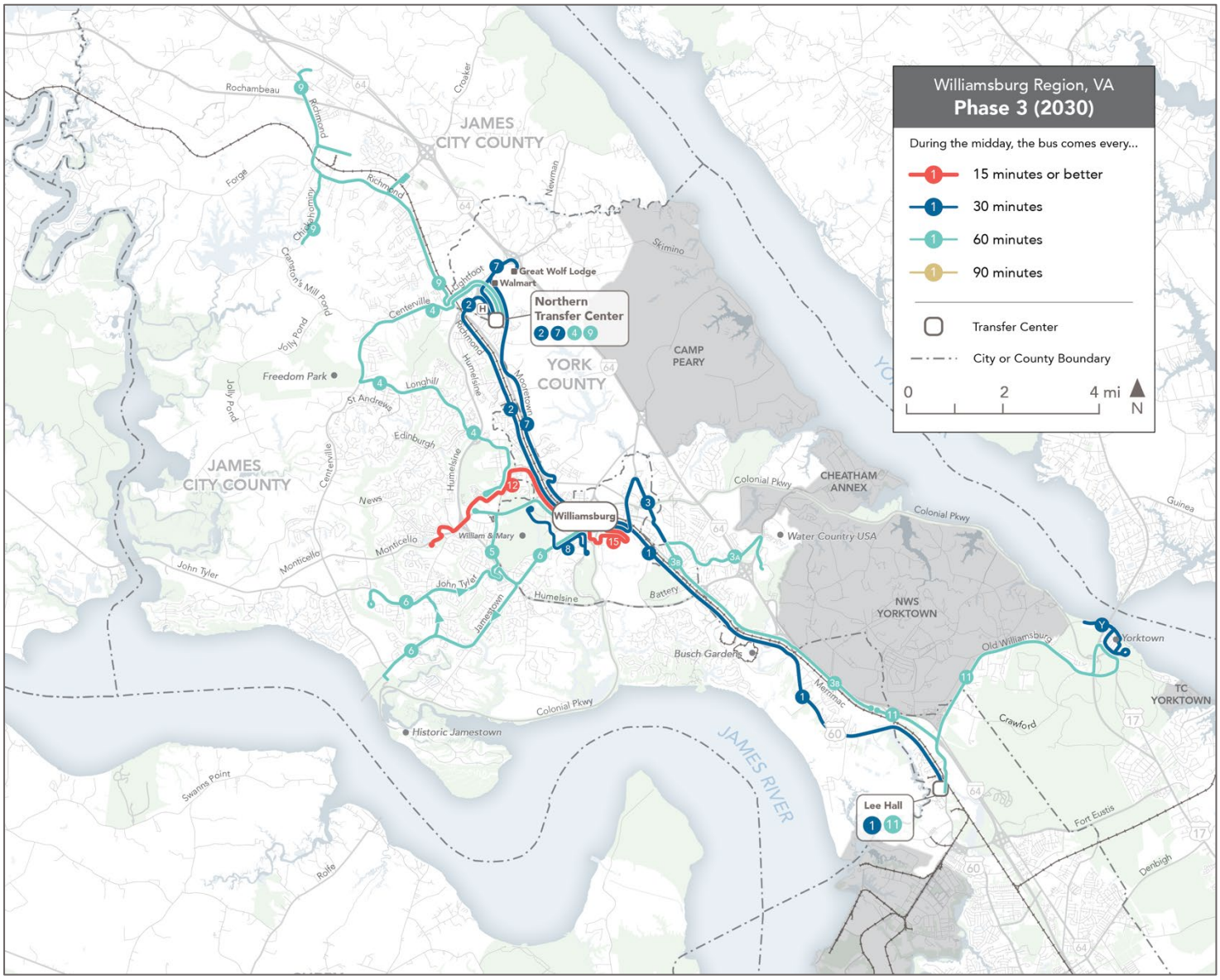
In this second phase, the improvements over Phase 1 will further improve the ridership potential of the network by increasing the average residents' access to jobs and destinations within a reasonable time. These improvements will be:

- Improved frequency on Route 7, to every 30 minutes all day.
- Improved frequency on Route 3, to every 30minutes all day.
    - Related to this, Route 3 will branch to offer hourly service both to the Marquis Shopping Center and to Lee Hall for a connection with Route 11.
- Increased frequency on Route 11 to a consistent hourly frequency all day.

The Phase 2 improvements are estimated to increase annual fixed route operating costs by about $1,155,211 in FY2028 (over the costs of Phase 1).

3.1.3 Fixed Route Improvements: Phase 3, Long Term

The third phase of improvements to the fixed route networks was planned for FY2030. The map below shows the network once these improvements are made.



The major improvement planned for Phase 3, over what is provided in Phase 2, will be an increase in the frequency of Route 12 to every 15 minutes, all day. This will increase access to jobs, shopping, education and other opportunities for the large number of people and jobs within a short walk of Route 12.

The Phase 3 improvements are estimated to increase annual fixed route operating costs by about $1,135,805 in FY2030 (over Phase 2 costs).

3.1.4 Capital Costs for Fixed Route Improvements

Adding these three phases of service improvements through the year 2030 will increase WATA's capital costs for fleet. In addition to the total funding necessary to maintain the fleet in a State of Good repair, additional capital funding will be needed to purchase new vehicles.

The operating expense estimates given for each phase describe the on-going, annual operating costs of providing that service, starting in the planned year of implementation for each phase and continuing indefinitely into the future.

The capital costs shown in the table below are expenses to acquire needed vehicles for the service expansion represented in each phase, which are not repeated annually but rather every 10-15 years depending on the lifetime of the acquired vehicles. Additional replacement needs are laid out in Chapter 4.

Further detail on both operating and capital expenses, and on operating and capital revenues to fund these phased improvements, is provided in Chapter 5.

Capital Costs for Phases 1-3	**FY2024**	**FY2025**	**FY2026**	**FY2027**	**FY2028**	**FY2029**	**FY2030**
Total 35–40-foot buses	$1,234,054	$412,000	$1,485,260	$437,091	$1,575,712		$1,194,052

Table 1 Capital costs to implement the Short-, Mid- and Long-range phases of the service plan.

3.2 Service Development

The table below shows the additional service in terms of service hours. FY2026 includes the addition of Phase 1, FY 2028 includes the addition of Phase 2, and FY2030 includes the addition of Phase 3.

Revenue Hours to Add by Year	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Fixed Route	88,631	88,631	98,735	98,735	108,839	108,839	118,943	118,943	118,943	118,943
ADA Paratransit	15,795	15,795	15,795	15,795	15,795	15,795	15,795	15,795	15,795	15,795

Table 2 Planned service Development by year, in terms of Revenue Hours.

4 Implementation Plan

Introduction

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

In addition to the TSP-required elements that focus on physical assets, we have also included a discussion of the staffing needs that will be required to implement the improvements highlighted in the TSP.

4.1 Asset Management

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

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

- "Able to perform its designated function,
- Does not present a known and unacceptable safety risk, and
- Its lifecycle investments have been met or recovered."[4]

DRPT's group plan integrates its MERIT (Making Efficient and Responsible Investments in Transit) process, which is the performance-based process that DRPT uses to allocate state transportation funds to projects. The MERIT scoring process for SGR (for vehicles) consists of an Asset Condition Score (age and mileage, up to 60 points) and a Service Impact Score (operating efficiency, frequency, travel time, and/or reliability; accessibility and/or customer experience, and safety/security, up to 40 points). These two scores form the SGR technical score of up to 100 points.
DRPT's TAM plan discusses both useful life benchmarks (ULBs) and useful life standards (UL) when assessing the life cycle of assets. The ULB is "the expected lifecycle of capital asset for particular transit providers' operating environment or the acceptable period of use in service for that operating environment."[5] ULBs are generally longer than useful life standards, which typically include values that represent the earliest point at which an asset can be replaced. DRPT's TAM plan indicates that the ULBs are considered the maximum age at which vehicles would meet SGR. Both benchmarks are included within the presentation of the WATA's vehicle assets.

[4] Virginia Group Tier II Transit Asset Management Plan, DRPT, Adopted September 23, 2022, page 5.
[5] Virginia Group Tier II Transit Asset Management Plan, DRPT, Adopted September 23, 2022, page 12.

4.1.1 WATA Assets

WATA's assets can be categorized into the following areas:

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

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

4.1.2 Revenue and Non-Revenue Vehicle Policies

A detailed inventory of WATA's existing fleet is provided as part of Appendix B. The authority owns 22 vehicles that are used to directly operate fixed route transit service and seven vehicles that are used to operate ADA complementary paratransit services. WATA also owns 10 compressed natural gas (CNG) vehicles that are used to provide service-oriented to the needs of the Colonial Williamsburg Foundation, and two trolleys that are operated by York County for seasonal service in Yorktown. There are also six support vehicles.

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

Table 4-1: WATA Fleet Summary and Useful Life Information

Fleet Type	Existing Primary Vehicle Type	Minimum Service Life	Minimum Service Miles	Useful Life Benchmark (ULB)	Estimated Cost (FY2025)
WATA Fixed Routes	Gillig and New Flyer 30–40-foot buses	12	500,000	14	$700,000
CWF Service	Orion and Gillig CNG 40-foot buses	12	500,000	14	$750,000
Yorktown Trolley	Hometown Trolleys	10	350,000	10	$600,000
ADA Paratransit	Champion and Starcraft BOC	4 - 7	100,000 to 200,000	8-10	$180,000
Non-Revenue/Support	Ford Explorer, Ford Escape, Dodge Minivans	4	100,000	8	$52,000

While WATA's fleet replacement policies follow DRPT and federal useful life guidelines, the authority has recently taken on the operation of service for the Colonial Williamsburg Foundation's fixed route service. Ten of the 14 vehicles used for this service are past the 14-year useful life benchmark and will need to be replaced in the near term. This will require a significant investment, which WATA is proposing to begin addressing in its FY2026 capital budget request. It should be noted that some of the vehicles will be retired and not replaced.

The current CWF fleet is fueled by compressed natural gas (CNG), which eliminates many of the negative air quality issues associated with diesel-fueled vehicles. The CWF vehicles may be good candidates for an electrification pilot for WATA, as the route is a short circulator that stays within the historic area.

York County partners with WATA for trolley vehicles that the county operates in the historic Yorktown area. This service is expected to grow over the next five years and York County would like to explore a transition to electric trolley vehicles as the service expands and the fleet is replaced. WATA and the county will need to explore the infrastructure needed to support a transition to electric vehicles for the Yorktown trolleys.

WATA uses a variety of methods to dispose of vehicles that have reached the end of their useful life. These include public auction, sale by sealed bid, transfer, donation, scrap, and substitution for parts.

4.1.3 Maintenance and Operations Facilities Policies

WATA has been planning for the purchase, renovation, and expansion of the existing maintenance and operations facility for over ten years. A facility study was completed in 2010, which recommended that WATA acquire, retrofit, and further develop the existing site that WATA had been leasing from CWF.
In 2020, WATA was able to purchase the property located at 7239 Pocahontas Trail and began the design and construction process. Design work started in FY2022 and was recently completed. WATA has included construction funding for this facility in its FY2024 and FY2025 capital budgets, which are included within Chapter 5 of this TSP.

The facility project will improve the functionality for WATA in several ways, including improving accessibility for people with disabilities, expanding the administrative office space, providing sufficient separation of personal and bus vehicle movements, providing sufficient employee parking, improving the dispatch area, providing improved security, and providing additional space for inventory storage. The timing of the project may also provide a good opportunity to include the infrastructure required for electric vehicles.

DRPT's group TAM plan includes condition assessments of passenger stations, parking facilities, administrative buildings, and exclusive use maintenance facilities. The scale used to assess facilities is called the "TERM (Transit Economic Requirements Model) Scale," with values between 5 (excellent) and 1 (poor). A value of 3.0 or above indicates a State of Good Repair.[6]

WATA's facility condition assessment scores should be high for the next several years once the construction is completed. Note that WATA will need to develop a facility maintenance plan to address

[6] Facility Condition Assessment Guidebook, FTA, USDOT, undated, page 9.

FTA compliance requirements.

4.1.4 Passenger Facilities and Infrastructure Policies

WATA has been working for several years to identify a suitable location to construct a passenger transfer facility to serve the northern portion of the service area. The northern transfer function currently occurs at the Walmart bus stop, located at 721 E. Rochambeau Drive. There are no amenities and driver facilities at the Walmart. In addition, the location of this site necessitates that the buses turn around adjacent to Walmart's loading facilities.

In FY2022 WATA purchased property at 6166 Old Mooretown Road, which is located south of the current location and adjacent to the R.F. Wilkinson YMCA. The site is currently raw land. Design work for the project has been initiated. The FY2024 and FY2025 capital budgets included funding for the design and construction of this facility.

WATA's primary transfer facility is located at the Williamsburg Transportation Center, which is owned by the City of Williamsburg. WATA has outgrown this facility and may need to address a re-configuration of the site with the City of Williamsburg. The current configuration only allows for five vehicles to stage at the center simultaneously. HRT's Route 921 and Greyhound also use the space twice a day, along with taxis and other drivers accessing the Amtrak service.

WATA has also been working with its partners to provide additional shelters and improve existing shelters and stops. Both James City County and York County will be purchasing and installing bus shelters in their respective jurisdictions over the next several years, which is why the TSP includes limited funding within WATA's budget for these capital projects.

An important near-term project is the installation of a shelter along Longhill Road. This project is comprehensive and will involve improved pedestrian access, drainage, and landscaping. WATA is also planning to conduct a site selection study to help determine bus stop improvements for the next five years. The results of that study can be used by the jurisdictions to construct the recommended bus stop improvements.

DRPT's group TAM plan includes assessments of passenger facilities but does not assess individual bus stops. As such, the Williamsburg Transportation Center is the only current passenger facility within the plan, and it meets the SGR standards.

The planned Northern Transfer Center will come online as a passenger facility once it is constructed. SGR policies will apply to this facility as it ages.

4.1.5 Technology and ITS Policies

WATA currently uses the Transit App and Equans to provide real-time transit information for the fixed route buses. WATA has been awarded grant funding to replace this system and implement a new automatic vehicle locator (AVL) system. This project also included mobile ticketing and infotainment and was completed in FY23. The new system improves the customer experience, and improves the availability of internal data for assessing system performance.

APCs are also planned for implementation during the TSP period. As of the moment of writing this document, All have been installed except on CNGs. APCs will help WATA collect more detailed ridership information, as well as helping the agency with National Transit Database (NTD) reporting.

ADA paratransit rides are scheduled through Via's paratransit software program. There are no current plans to replace this program.

The TSP also includes the routine replacement of computer hardware and software so that WATA's staff can work as efficiently as possible as updated systems emerge.

4.1.6 Equipment

As discussed within WATA's 2024 Budget Book, the most significant equipment need in the short term is the capital repair of the CNG compressors that are used to fuel the CNG buses. This repair was included within the FY2025 budget.

As WATA looks at the potential to purchase electric vehicles, the infrastructure needed to charge and maintain electric vehicles will also be needed. The infrastructure to support electric vehicles has been included within the construction budget for the facility.

4.2 Capital Implementation Plan

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

4.2.1 Vehicles

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

4.2.2 Vehicle Replacement Plan – Baseline Estimate

Table 4-2 provides the existing fleet inventory by vehicle class with the estimated number of vehicles per class that will need to be replaced each year. The operating condition of the vehicles and the availability of funding will dictate the actual replacement year. In addition to helping WATA and DRPT plan future fleet needs, this vehicle replacement plan will also feed DRPT's transit asset management plan (TAM), which is an FTA-required plan that must include an asset inventory, condition assessments of inventoried assets, and a prioritized list of investments to improve the state of good repair of its capital assets.[7] The TAM requirements establish state of good repair standards and four state of good

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

repair performance measures.

Table 4-2: WATA Vehicle Replacement Schedule

Type of Vehicles	# in Current Fleet	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
Fixed Route - 35-40 ft. buses- diesel	21		2	3	2	3	2	3	3	3	
Fixed Route - CWF - 40 ft. buses- CNG	14	4									
Paratransit - Body-on-chassis	7	3				3	3	1			
Trolleys	4		1				1		1		1
Service Vehicles	6			1					2	1	
Total Vehicles	**52**	**7**	**3**	**4**	**2**	**6**	**6**	**4**	**6**	**4**	**1**

4.2.3 Vehicle Expansion Plan

The WATA Board decided to focus the TSP service enhancements on providing a higher level of service in the most densely populated areas of WATA's service area. This model, termed the "ridership model," contrasts with a model that provides a lower level of service to a broader service area ("coverage" model). Given this decision, improving the frequency of service for the core routes serving the urbanized area is the centerpiece of the plan. Expansion vehicles will be needed to implement the increases in service frequency.

York County has seen increasing demand for the Yorktown Trolley service, and expansion trolleys are also part of the plan. As previously discussed, York County would like to pilot an electric trolley for the service.

The expansion schedule for WATA, as discussed in detail in Chapter 3, is summarized in Table 4-3.

Table 4-3: Summary of WATA Expansion Schedule and Vehicle Requirements

Type of Vehicles	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
35–40-foot buses		2		4		2		2		
Trolleys Yorktown		1								
Electric Vehicles - 30-40 ft.		1	2		2					
Total Vehicles	0	4	2	4	2	2	0	2	0	0

The annual schedule for vehicle replacement and expansion based on current services and the service enhancements described in Chapter 3, is provided in Table 4-4.

Table 4-4: Vehicle Purchases per Year – Combined Replacement and Expansion

Type of Vehicles	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
Fixed Route - 35-40 ft. buses- diesel		4	3	6	3	4	3	5	3	
Fixed Route - CWF - 40 ft. buses- CNG	4									
Paratransit - Body-on-chassis	3				3	3	1			
Trolleys		2				1		1		1
Electric Vehicles		1	2		2					
Service Vehicles			1					2	1	
Total Vehicles	7	7	6	6	8	8	4	8	4	1

4.2.4 Estimated Vehicle Costs

The estimated vehicle replacement costs are presented in Table 4-5. These costs are based on current costs for Gillig heavy duty transit buses, and the FY2022-FY2023 DRPT vehicle contract with Sonny Merryman (amended), along with an estimate of 30% for vehicle options added for the small vehicles. Vehicle costs have risen significantly over the past several years, particularly in the body-on-chassis category.

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

Table 4-5: Estimated Costs of New Vehicles

Fiscal Year	Heavy-Duty Transit Vehicle	Electric Vehicle and Charger	Rubber-Tired Trolley	14 Passenger Cutaway	27 Passenger Cutaway	Support Vehicles
2024	$700,000	$950,000	$600,000	$180,000	$250,000	$52,000
2025	$721,000	$978,500	$618,000	$185,400	$257,500	$53,560
2026	$742,630	$1,007,855	$636,540	$190,962	$265,225	$55,167
2027	$764,909	$1,038,091	$655,636	$196,691	$273,182	$56,822
2028	$787,856	$1,069,233	$675,305	$202,592	$281,377	$58,526
2029	$811,492	$1,101,310	$695,564	$208,669	$289,819	$60,282
2030	$835,837	$1,134,350	$716,431	$214,929	$298,513	$62,091

2031	$860,912	$1,168,380	$737,924	$221,377	$307,468	$63,953
2032	$886,739	$1,203,432	$760,062	$228,019	$316,693	$65,872
2033	$913,341	$1,239,535	$782,864	$234,859	$326,193	$67,848
2034	$940,741	$1,276,721	$806,350	$241,905	$335,979	$69,884

4.2.5 Facilities

As previously discussed, WATA is currently in the process of designing and constructing a new administrative, operating, and maintenance facility, as well as the Northern Transfer Center. The estimated costs by year to design and build these facilities are provided in Table 4-6.

Table 4-6: Facility Design and Construction Expenses and Schedule

Project	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
Administrative, Operations, and Maintenance Facility	$5,935,719	$9,779,038								
Northern Transfer Center	$2,701,637									
Total Facility Capital Expenses	**$8,637,356**	**$9,779,038**								

4.2.6 Other Capital

There are several other capital improvements scheduled for implementation over the life of the TSP. The estimated costs and implementation years are shown in Table 4-7. The full capital budget is provided in Chapter 5.

Table 4-7: Other Capital Improvements

Project	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
Equipment for Facility			$200,000							
Fixtures for facility			$200,000	$100,000						
Longhill Bus Shelter Improvements	$130,000									
Bus Pull-Offs		$80,000	$175,000							
CNG Gas System Maintenance	$157,233									
AVL System Upgrade (CW)		$200,000								
Automatic Passenger Counters (CW)		$10,000								
ADP Hardware/Software	$130,000	$65,000	$82,000	$84,000	$86,520	$89,116	$91,789	$94,543	$97,379	
Total	**$417,233**	**$355,000**	**$657,000**	**$184,000**	**$86,520**	**$89,116**	**$91,789**	**$94,543**	**$97,379**	**$0**

4.3 Staffing Plan

In addition to the need for expansion vehicles and equipment, WATA also recognizes that future expansion will not be possible without additional front-line staff. Expansion projects for WATA's directly operated services are scheduled to be implemented in FY2026, FY2028, and FY2030. The revenue service hours associated with these expansions are shown in Table 4-8.

Table 4-8: Added Revenue Hours by Expansion Project

Phase	Improvement	Year	Additional Revenue Service Hours
1	Increased Frequency Routes 1 and 2	FY2026	10,104
2	Increased Frequency Routes 3 and 7	FY2028	10,104
3	Increased Frequency Route 12	FY2030	9,340

Based on the current fixed route driver budgeted staffing ratios, for each ***vehicle revenue hour*** there is a need for ***1.41 driver pay hours***. This ratio accounts for the non-revenue hours associated with each revenue hour, as well as holidays and paid time off. Using this existing relationship, a summary of the additional driver pay hours and the associated number of drivers is provided in Table 4-9.

Table 4-9: Estimated FTE Equivalents Needed for Additional Revenue Service Hours

Phase	Improvement	Year	Additional Revenue Service Hours	Additional Pay Hours	Full-Time Equivalents (FTE)
1	Increased Frequency Routes 1 and 2	FY2026	10,104	14,247	6.85
2	Increased Frequency Routes 3 and 7	FY2028	10,104	14,247	6.85
3	Increased Frequency Route 12	FY2030	9,340	13,263	6.38

Note that the FTEs could be comprised of both full and part-time positions. For the fixed route services, WATA is currently budgeted for 45 full-time drivers and 10 part-time drivers.

These improvements are all associated with increased frequency of service, as such, additional paratransit drivers or dispatch staff are not likely to be needed to support the expansions as the span of service will remain the same. There may be a need for an additional position for training and driver supervision, and this can be evaluated as the expansions occur. There may also be a need for additional paratransit drivers as the region's population ages.

5 Financial Plan

Introduction

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

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

5.1 Operating and Maintenance Expenses

Several assumptions used in developing the operating cost estimates are described in this section. The FY2025 – FY2034 budgets are based on the draft FY2025 budget and the projects that are scheduled for implementation during the TSP planning period. The projected cost per revenue hour and the operating costs to maintain the current level of service between FY2026 and FY2034 assume a 3% annual inflation rate.

The first section of the ten-year budget shows the inflationary cost increases associated with the level of service currently provided by WATA. Applying a three percent per year inflation rate to the current annual operating costs will result in a cost increase of just over $3 million by 2034.

The second section of the ten-year budget shows the operating costs that are associated with the three phases of improvements developed for the TSP. Each of the three phases increases annual operating costs by about $1.1 million. Including inflation and the cost of each of the three phases, the total annual operating costs are expected to increase by nearly $7.1 million, or 71%. These improvements will result in 30-minute headways on four of the core routes and 15-minute headways on Route 12. The projected FY2034 operating budget is about $17.1 million, up from about $10 million in FY2025.

5.2 Funding Sources for Operations

Revenue

WATA generates revenue through the farebox, contracts for service, and advertising. On occasion WATA will also generate revenue through the sale of vehicles that have reached the end of their useful life or through insurance proceeds.

Farebox revenue is budgeted at $379,000 for FY2025. This represents 3.8% of the total operating expenses for the year. This is about a percentage point lower than previous years, reflecting the addition of the Route 15 fare free service (Colonial Williamsburg). Note that CW contract revenue makes up for some of this revenue for several years. For the TSP budget, the farebox recovery rate of 3.8% was carried

through as the services are improved. The added service is expected to result in an additional $270,000 in annual fare revenue by 2034.

Contract services include services provided that meet the needs of the Colonial Williamsburg Foundation (CWF) as well as services provided that meet the needs of the College of William & Mary. For FY2025, CWF is providing a payment of $700,000 to support the operation of Route 15, which has replaced the CWF circulator service. CWF will reduce its support for the route by $150,000 each year for the next several years until it no longer provides any revenue for the route. These reductions are reflected in the TSP budget. WATA recently took over operation of this route and has found that additional resources than previously calculated were needed. Contract revenue from the William & Mary is projected to increase with how inflation affects the cost per hours.

Advertising payments also show only inflationary increases, though a larger fleet size may offer opportunities for increased advertising revenue.

Federal Funding

WATA receives a significant amount of grant funding from the Federal Transit Administration (FTA). In FY2025, federal grant funding to support operations, maintenance, and planning is budgeted to be $4,563,169. These funds are from FTA's Section 5307 Urbanized Area Formula Grant Program, FTA's Section 5311 Formula Grants for Rural Areas Program (which are distributed through DRPT), and Section 5303 planning funds, which are distributed through the Hampton Roads Transportation Planning Organization (HRTPO).
Federal funding currently comprises 53% of the net deficit for WATA. This ratio is carried through for the ten-year budget, but it may need to be re-evaluated if this level of federal support is not available as the operating expenses grow.

State Funding

State operating funds are provided through DRPT's MERIT program. In FY2025, WATA is expected to receive $2,373,202 through this program. MERIT funds are awarded through a performance-based formula, which considers the size of the agency relative to other agencies across Virginia, as well as performance trends. These funds comprise about 28% of WATA's expected net operating deficit for FY2025. State funding is potentially available to help with up to 30% of the net deficit, but it is not a given that this level of funding will be available.

For the TSP budget, it is assumed that state operating funds will continue to be available at the 28% level, though this will need to be evaluated for each of the three phases of improvements.

TRIP Funding

WATA is intending to apply for funding through DRPT's TRIP program (Transit Ridership Incentive Program) to help with the implementation of greater frequency of service on the core fixed routes. This program is intended to create more accessible, safe, and regionally significant transit networks. For WATA, increasing frequency on regional routes that serve the Virginia Beach-Norfolk-Newport News, VA-NC Metro area would likely be an eligible expense. The TRIP funds can be up to five years and start

at up to 80% of the project cost, phasing out by 20% each year[8]. These funds would be helpful for WATA's planned expansions, as the traditional federal and state programs are based on past performance. This means that the expansions need to be in place prior to being able to access the state and federal funds to support them. We have put a line-item placeholder for TRIP funding in the TSP budget and it can be updated as appropriate each year.

Local Funding

Local funding to help support WATA's operations is provided by James City County, the City of Williamsburg, York County, and the City of Newport News. A local cost allocation formula had been in place since 2005 to split the local costs among the three primary partners (James City County, the City of Williamsburg, and York County). This formula was based on route miles. Newport News also provided funding to help support the service to Lee Hall.

As part of the TSP process, the funding formula was reviewed, and a new cost allocation formula based on revenue service hours was developed. The new formula also has a contingency fee to ensure that WATA has funds available for capital match.

The new formula has been calculated with the following methodology:

1. The distance that every route runs in each jurisdiction was measured.
2. The percentage of each route in each jurisdiction was calculated.
3. This percentage was applied to the total annual revenue hours of every route to determine how many revenue hours are in each jurisdiction for every route.
4. Revenue hours were added by jurisdiction.
5. The total percentage of revenue hours per jurisdiction was calculated and applied to the local funding needed.

This methodology has been applied to the new service completely until Phase 2. Phase 3, which includes an increase in frequency on Route 12 from 30 minutes to 15 minutes, is only of interest to the City of Williamsburg. Therefore, the cost for that additional service, has all been assigned to the City of Williamsburg.

Route 15 Colonial has a different funding allocation. Although Route 15 runs completely within the City of Williamsburg, its service is important to the entire region. Due to Route 15's regional importance, the three jurisdiction have agreed on the following local funding distribution:

- 50% for the City of Williamsburg,
- 35% for James City County, and
- 15% for York County.

Table 5-1: Local Funding Allocation in Phase 1

Phase 1 - Percentage of service in each jurisdiction			
Route	Percentage		Revenue Hours

[8] DRPT, Transit and Commuter Assistance Grant Application Manual, "Blue Book," application guidance for FY2025.

	Williamsburg	James City County	York County	Total Annual Revenue Hours	Williamsburg	James City County	York County
1	30%	55%	15%	10,104	3,031	5,557	1,516
2	30%	45%	25%	10,104	3,031	4,547	2,526
3	40%	10%	50%	5,052	2,021	505	2,526
4	0%	80%	20%	5,052	-	4,042	1,010
5	50%	50%	0%	5,052	2,530	2,522	-
6	30%	70%	0%	5,052	1,530	3,522	-
7	20%	5%	75%	5,052	1,010	253	3,789
9	0%	85%	15%	5,052	-	4,294	758
11	0%	30%	70%	4,620	-	1,386	3,234
12	50%	50%	0%	10,104	5,052	5,052	-
Total				**65,244**	**18,206**	**31,679**	**15,359**
Percentage					**28%**	**49%**	**23%**

Table 5-2: Local Funding Allocation in Phase 2

Phase 2 - Percentage of service in each jurisdiction							
Route	Percentage			Total Annual Revenue Hours	Revenue Hours		
	Williamsburg	James City County	York County		Williamsburg	James City County	York County
1	30%	55%	15%	10,104	3,031	5,557	1,516
2	30%	45%	25%	10,104	3,031	4,547	2,526
3A	45%	5%	50%	5,052	2,273	253	2,526
3B	35%	35%	30%	5,052	1,768	1,768	1,516
4	0%	80%	20%	5,052	-	4,042	1,010
5	50%	50%	0%	5,052	2,530	2,522	-
6	30%	70%	0%	5,052	1,530	3,522	-
7	20%	5%	75%	10,104	2,021	505	7,578
9	0%	85%	15%	5,052	-	4,294	758
11	0%	30%	70%	4,620	-	1,386	3,234
12	50%	50%	0%	10,104	5,052	5,052	-
Total				**75,348**	**21,237**	**33,447**	**20,663**
Percentage					**28%**	**44%**	**28%**

Table 5-3: Local Funding Allocation in Phase 3

Phase 3 - Percentage of service in each jurisdiction							
Route	Percentage			Total Annual Revenue Hours	Percentage		
	Williamsburg	James City County	York County		Williamsburg	James City County	York County
1	30%	55%	15%	10,104	3,031	5,557	1,516
2	30%	45%	25%	10,104	3,031	4,547	2,526
3A	45%	5%	50%	5,052	2,273	253	2,526

3B	35%	35%	30%	5,052	1,768	1,768	1,516
4	0%	80%	20%	5,052	-	4,042	1,010
5	50%	50%	0%	5,052	2,530	2,522	-
6	30%	70%	0%	5,052	1,530	3,522	-
7	20%	5%	75%	10,104	2,021	505	7,578
9	0%	85%	15%	5,052	-	4,294	758
11	0%	30%	70%	4,620	-	1,386	3,234
12	50%	50%	0%	20,208	15,156	5,052	-
Total				**85,452**	**31,341**	**33,447**	**20,663**
Percentage					**37%**	**39%**	**24%**

The FY2025 preliminary budget includes the following local funding amounts to support operations and maintenance expenses:

- James City County $706,286
- City of Williamsburg $450,306
- York County $347,191
- City of Newport News $45,000
- Total **$1,548,783**

Calculations completed for the development of the TSP budget indicate that a local match of **$1,651,852** is needed. This is $103,069 higher than the total local match listed in the preliminary FY2025 budget. WATA will need to re-calculate the local match requirements for each jurisdiction in order to balance the budget.

For FY2025, local funding represents about 19.2% of the total net deficit. While this same percentage is used going forward, the localities should be prepared to pay a higher share if federal and state funds do not increase in proportion to WATA's planned improvements.

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

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

Table 5-4: WATA - TSP Annual Operating Cost Estimates

Projects	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034
Current Level of Service	$10,012,823	$10,313,208	$10,622,604	$10,941,282	$11,269,520	$11,607,606	$11,955,834	$12,314,509	$12,683,945	$13,064,463
Total Revenue Service Hours (1)	88,631									
TSP Improvements										
Fixed Route Cost Per Hour	$104.63	$107.77	$111.00	$114.33	$117.76	$121.29	$124.93	$128.68	$132.54	$136.52
Increased Frequency Routes 1 and 2		$1,088,897	$1,121,564	$1,155,211	$1,189,867	$1,225,563	$1,262,330	$1,300,200	$1,339,206	$1,379,382
Increased Frequency Routes 3 and 7				$1,155,211	$1,189,867	$1,225,563	$1,262,330	$1,300,200	$1,339,206	$1,379,382
Increased Frequency Route 12						$1,135,805	$1,169,879	$1,204,975	$1,241,125	$1,278,358
Total Projected Operating Expenses	**$10,012,823**	**$11,402,105**	**$11,744,168**	**$13,251,704**	**$13,649,255**	**$15,194,537**	**$15,650,373**	**$16,119,885**	**$16,603,481**	**$17,101,586**
% Change Year by Year		14%	3%	13%	3%	11%	3%	3%	3%	3%

(1) Fixed routes, ADA, and contract hours. Does not include potential demo route.

Table 5-5: WATA TSP – Operating Revenue and Funding Source Estimates

Anticipated Revenue and Subsidies	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034
All Fares (1)	$379,000	$433,280	$446,278	$503,565	$518,672	$577,392	$594,714	$612,556	$630,932	$649,860
Contract Services	$1,009,600	$813,268	$671,166	$529,300	$387,679	$296,309	$305,199	$314,355	$323,785	$333,499
Advertising	$36,000	$37,080	$38,192	$39,338	$40,518	$41,734	$42,986	$44,275	$45,604	$46,972
Subtotal, Revenue	$1,424,600	$1,283,628	$1,155,637	$1,072,203	$946,869	$915,436	$942,899	$971,186	$1,000,321	$1,030,331
Net Deficit	$8,588,223	$10,118,477	$10,588,531	$12,179,501	$12,702,386	$14,279,102	$14,707,475	$15,148,699	$15,603,160	$16,071,255
Federal Funds	$4,551,758	$4,688,311	$4,828,960	$5,780,279	$5,953,687	$6,934,233	$7,142,259	$8,028,811	$8,269,675	$8,517,765
State Funds	$2,404,702	$2,476,844	$2,551,149	$3,053,732	$3,145,344	$3,663,368	$3,773,269	$4,241,636	$4,368,885	$4,499,951
Potential Future TRIP funds (2)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Local Funds	$1,631,762	$2,953,323	$3,208,422	$3,345,490	$3,603,354	$3,681,501	$3,791,946	$2,878,253	$2,964,600	$3,053,538
Subtotal, Subsidies	**$8,588,223**	**$10,118,477**	**$10,588,531**	**$12,179,501**	**$12,702,386**	**$14,279,102**	**$14,707,475**	**$15,148,699**	**$15,603,160**	**$16,071,255**
Total Projected Operating Revenue and Subsidies	**$10,012,823**	**$11,402,105**	**$11,744,168**	**$13,251,704**	**$13,649,255**	**$15,194,537**	**$15,650,373**	**$16,119,885**	**$16,603,481**	**$17,101,586**

(1) The farebox recovery estimate is 3.8% of the total operating expenses.

(2) WATA is planning to apply for TRIP funds through DRPT to help defray the initial costs for the TSP service improvements. It is not a given that these funds will be available or at what level.

5.3 Capital Expenses and Funding Sources

Federal

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

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

Some of these funds are accessed directly from the FTA, while others flow through DRPT or the Hampton Roads Transportation Planning Organization (HRTPO).

State

DRPT has implemented a capital assistance prioritization process that allows the agency to allocate and assign limited resources for projects that are deemed the most critical.[9] DRPT's capital program now classifies, scores, and prioritizes projects into the following categories:

- **State of Good Repair (SGR)**. This category includes projects and programs that replace or rehabilitate existing assets, excluding major capital construction projects with a total cost of over $3 million. The state match for SGR is up to 68%.

- **Minor Enhancement (MIN).** This category includes projects and programs to add capacity, new technology, or a customer facility, and meet the following criteria:
  - Total project cost of less than $3 million; or
  - Vehicle expansion of not more than 5 vehicles or 5% of the existing fleet size, whichever is greater.
  - The state match is up to 68 percent.

- **Major Expansion (MAJ)**. This category includes projects or programs that add, expand, or improve service with a cost exceeding $3 million or, for expansion vehicles, and increase of greater than 5 vehicles or 5% of fleet size, whichever is greater. The state match is up to 50 percent.

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

Each phase of WATA's phase expansion adds two vehicles and has a project cost of less than $3 million. As such we have categorized each phase as a minor enhancement.

Table 5-3 provides the ten-year TSP financial plan for vehicle replacements under the SGR category. Table 5-4 provides the vehicle expansion plan to address the service enhancements developed for the

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

TSP. These budgets are based on the vehicle prices outlined in Chapter 4.

Table 5-5 provides the ten-year budget for facilities and Table 5-6 provides the ten-year budget for passenger amenities, technology, and other capital items. Note these tables start with FY2024 to reflect major projects that began in FY2024 (or earlier) and are split over several years.

Table 5-6: WATA TSP Capital Budget – State of Good Repair – Vehicle Replacement

Vehicle Replacements	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034
Fixed Route - 35-40 ft. buses		$1,485,260	$2,294,727	$1,575,712	$2,434,476	$1,671,674	$2,582,736	$2,660,217	$2,740,023	
Fixed Route - CWF - 40 ft. buses	$2,884,000									
Paratransit - Body-on-chassis	$540,000				$590,073	$607,776	$208,669			
Trolleys		$636,540				$716,431		$760,062		$806,350
Service Vehicles			$56,822					$65,872	$67,848	
Sub-Total Replacement Vehicles	**$3,424,000**	**$2,121,800**	**$2,351,549**	**$1,575,712**	**$3,024,549**	**$2,995,881**	**$2,791,405**	**$3,486,151**	**$2,807,871**	**$806,350**
Total SGR Expenses	**$3,424,000**	**$2,121,800**	**$2,351,549**	**$1,575,712**	**$3,024,549**	**$2,995,881**	**$2,791,405**	**$3,486,151**	**$2,807,871**	**$806,350**
Anticipated Funding Sources - Current Federal/State/Local Matching Ratios										
Federal	$2,739,200	$1,697,440	$1,881,239	$1,260,570	$2,419,639	$2,396,705	$2,233,124	$2,788,921	$2,246,297	$645,080
State	$547,840	$339,488	$376,248	$252,114	$483,928	$479,341	$446,625	$557,784	$449,259	$129,016
Local	$136,960	$84,872	$94,062	$63,028	$120,982	$119,835	$111,656	$139,446	$112,315	$32,254
Total Funding	**$3,424,000**	**$2,121,800**	**$2,351,549**	**$1,575,712**	**$3,024,549**	**$2,995,881**	**$2,791,405**	**$3,486,151**	**$2,807,871**	**$806,350**

NOTE:

THE BUDGET NUMBERS ARE BASED ON USEFUL LIFE CRITERIA, ESTIMATED PRICES, AND TYPICAL FUNDING RATIOS (80% FED; 16% STATE; 4% LOCAL)

Table 5-7: WATA TSP Capital Budget- Expansion Vehicles

Capital Need	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034
35–40-foot buses		$1,485,260		$3,151,424		$1,671,674		$1,773,478		
Trolleys		$636,540								
Electric Vehicles		$1,007,855	$2,076,182		$2,202,620					
Vehicle Expansion Expenses	**$0**	**$3,129,655**	**$2,076,182**	**$3,151,424**	**$2,202,620**	**$1,671,674**	**$0**	**$1,773,478**	**$0**	**$0**
Anticipated Funding Sources- Current Federal/State/Local Matching Ratios										
Federal	$0	$2,503,724	$1,660,946	$2,521,139	$1,762,096	$1,337,339	$0	$1,418,782	$0	$0
State	$0	$500,745	$332,189	$504,228	$352,419	$267,468	$0	$283,756	$0	$0
Local	$0	$125,186	$83,047	$126,057	$88,105	$66,867	$0	$70,939	$0	$0
Total Funding	**$0**	**$3,129,655**	**$2,076,182**	**$3,151,424**	**$2,202,620**	**$1,671,674**	**$0**	**$1,773,478**	**$0**	**$0**

Table 5-8: WATA TSP Capital Budget – Facilities

Project	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033
Administrative, Operations, and Maintenance Facility	$5,935,719	$9,779,038								
Northern Transfer Center	$2,701,637									
Total Facility Capital Expenses	$8,637,356	$9,779,038	$0	$0	$0	$0	$0	$0	$0	$0
Anticipated Funding Sources										
Federal	$10,057,524	$554,209	$0	$0	$0	$0	$0	$0	$0	$0
State	$2,382,821	$5,144,081	$0	$0	$0	$0	$0	$0	$0	$0
Local	$40,330	$237,429	$0	$0	$0	$0	$0	$0	$0	$0
Total Funding	**$12,480,675**	**$5,935,719**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

NOTE: FUNDING AMOUNTS WERE DERIVED FROM WATA'S FY2024 BUDGET BOOK

Table 5-9: WATA TSP Capital Budget – Passenger Amenities, Technology, and Other Capital

Project	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033
Equipment for Facility			$200,000							
Fixtures for facility			$200,000	$100,000						
Longhill Bus Shelter Improvements	$130,000									
Bus Pull-Offs		$80,000	$175,000							
CNG Gas System Maintenance	$157,233									
AVL System Upgrade (CW)		$200,000								
Automatic Passenger Counters (CW)		$10,000								
ADP Hardware/Software	$130,000	$65,000	$82,000	$84,000	$86,520	$89,116	$91,789	$94,543	$97,379	$100,300
Total	**$417,233**	**$355,000**	**$657,000**	**$184,000**	**$86,520**	**$89,116**	**$91,789**	**$94,543**	**$97,379**	**$100,300**
Anticipated Funding Sources										
Federal	$333,786	$284,000	$525,600	$147,200	$69,216	$71,292	$73,431	$75,634	$77,903	$80,240
State	$66,757	$56,800	$105,120	$29,440	$13,843	$14,258	$14,686	$15,127	$15,581	$16,048
Local	$16,689	$14,200	$26,280	$7,360	$3,461	$3,565	$3,672	$3,782	$3,895	$4,012
Total Funding	**$417,233**	**$355,000**	**$657,000**	**$184,000**	**$86,520**	**$89,116**	**$91,789**	**$94,543**	**$97,379**	**$100,300**