

**REPORT OF THE VIRGINIA DEPARTMENT OF
RAIL AND PUBLIC TRANSPORTATION**

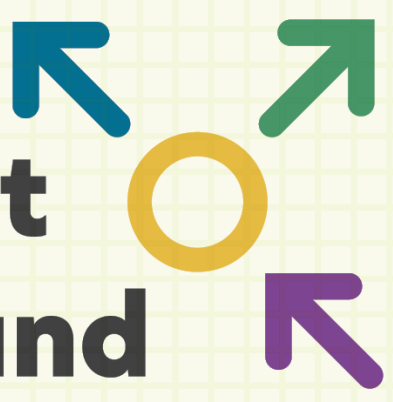
**Virginia Transit Equity and
Modernization Interim Study
Report (HJR 542, 2021 SSI)**

**TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA**



HOUSE DOCUMENT NO. 2

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2022**



Virginia Transit
Equity and
Modernization



HJ 542
Interim Study Report

November 15, 2021



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Preface

As mobility needs in Virginia continue to evolve, new metrics may be more closely tied to achieving community outcomes—not just monitoring conventional transportation system performance. When equitable policy and engagement practices are combined with advanced analytics, the probability of making impactful transportation investments becomes more likely. A future where community values and priorities are used to align local, regional, and statewide initiatives has the potential to amplify the impact of public, private, and non-profit investments to create thriving communities throughout Virginia.

Our Challenge

Community Needs are Increasing and Changing

Public agencies around the country are confronting a series of modern challenges including climate change, economic competitiveness, health and safety, and housing affordability. As needs continue to increase and change, they have the potential to outpace individual efforts and resources allocated to address them. This requires a modern response that maximizes the impact of public policies and investments. Therefore, the Commonwealth of Virginia's response to these challenges includes intentional efforts to align initiatives in ways that promote desired outcomes and ensure the proper stewardship of public resources.

Considering Equity

Future Investments and their Impact on Communities

It is important to consider potential solutions through the lens of equity as new projects and programs are advanced—with a deliberate focus on equitable processes and outcomes. Understanding the influence of future investments on our most vulnerable and underrepresented communities creates an awareness that can lead to outcomes where shared prosperity becomes the norm.

Effective Modernization

Emerging Transit Trends in the 21st Century

An essential component of ensuring equal access to clean, efficient, and sustainable transportation is modernization. In determining how to implement strategies that lead to developing a modern transit system, it is essential to apply innovative best practices related to transit planning, operations, and user experience.

Integrated Strategies and Desired Outcomes

Robust planning has the potential to fortify communities when equity is integrated into the planning process. This approach requires alignment between public policy, community engagement, and financial commitments. By developing a strong methodology and process for integrating equity, we create a setting where progress on community priorities can be accelerated. In this way, we work toward complete communities where the basic needs of all residents are met.

Leveraging Mobility

Improving Access to Opportunity is Mutually Supportive

Enhancing access to opportunity is helpful to both individuals and families as well as to industry and commerce. When transportation is well planned, it provides a lifeline to community essentials like education, healthcare, goods, and services while also supporting our economy by connecting workers with existing and emerging employment centers. A connected Virginia prepares us for the challenges—and opportunities—of tomorrow.

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Introduction

WHAT IS THE TRANSIT EQUITY AND MODERNIZATION STUDY?

The **Virginia Transit Equity and Modernization Study** is aimed at identifying opportunities to advance equitable access to transit services, infrastructure, and technology within the Commonwealth. There has been a renewed focus in recent years on the **advancement of equity, accessibility, and technology**. The study team is exploring a wide variety of topics and **engaging the public** to create a **proactive plan** for the **equitable advancement and modernization** of transit in the Commonwealth.

During the 2021 General Assembly session, House Joint Resolution 542 was passed with a wide range of support from interest groups across the Commonwealth. This legislation requires DRPT to complete a needs assessment that focuses on the equitable delivery of transit services and the modernization of transit in Virginia. This legislation also calls for an emphasis to be placed on identifying transit services and engagement opportunities for underserved and underrepresented communities.

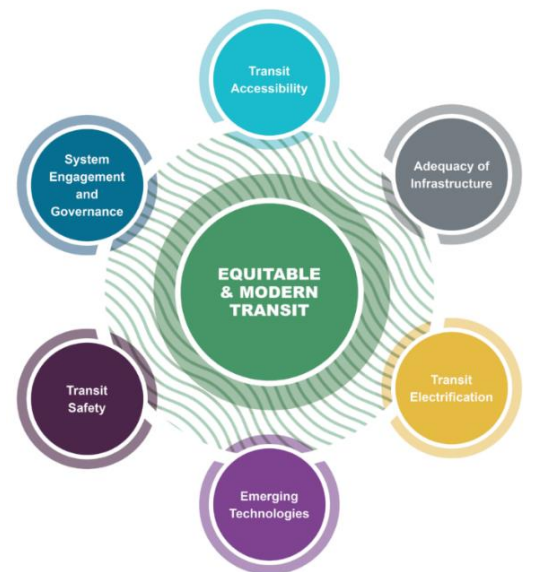


Transit Equity Considerations

- What can be done to increase our understanding of community transit needs, and how can we better ensure no voice or perspective is missed?
- What is the distribution of benefits and burdens when planning for transit delivery?
- What transit investments increase access to opportunities and better connect the workforce to employment?
- What can be done to ensure that those that are impacted by planning decisions have a voice in the process?

Transit Modernization Considerations

- What best practices need to be embraced and what programs, policies, and procedures need to be adapted to advance modernization goals?
- What enhancements can be made to improve rider experience?
- What modernization efforts enhance transit accessibility, infrastructure, electrification, safety, and technology?



WHAT IS THE INTERIM STUDY REPORT?

This interim study report is intended to identify the challenges to and the opportunity for advancing equitable and modern transit within the Commonwealth. It documents study progress to date and outlines preliminary findings. This initial report also identifies themes and key observations regarding the needs of Virginia’s transit systems and provides insight into future recommendations on how to modernize the systems equitably.



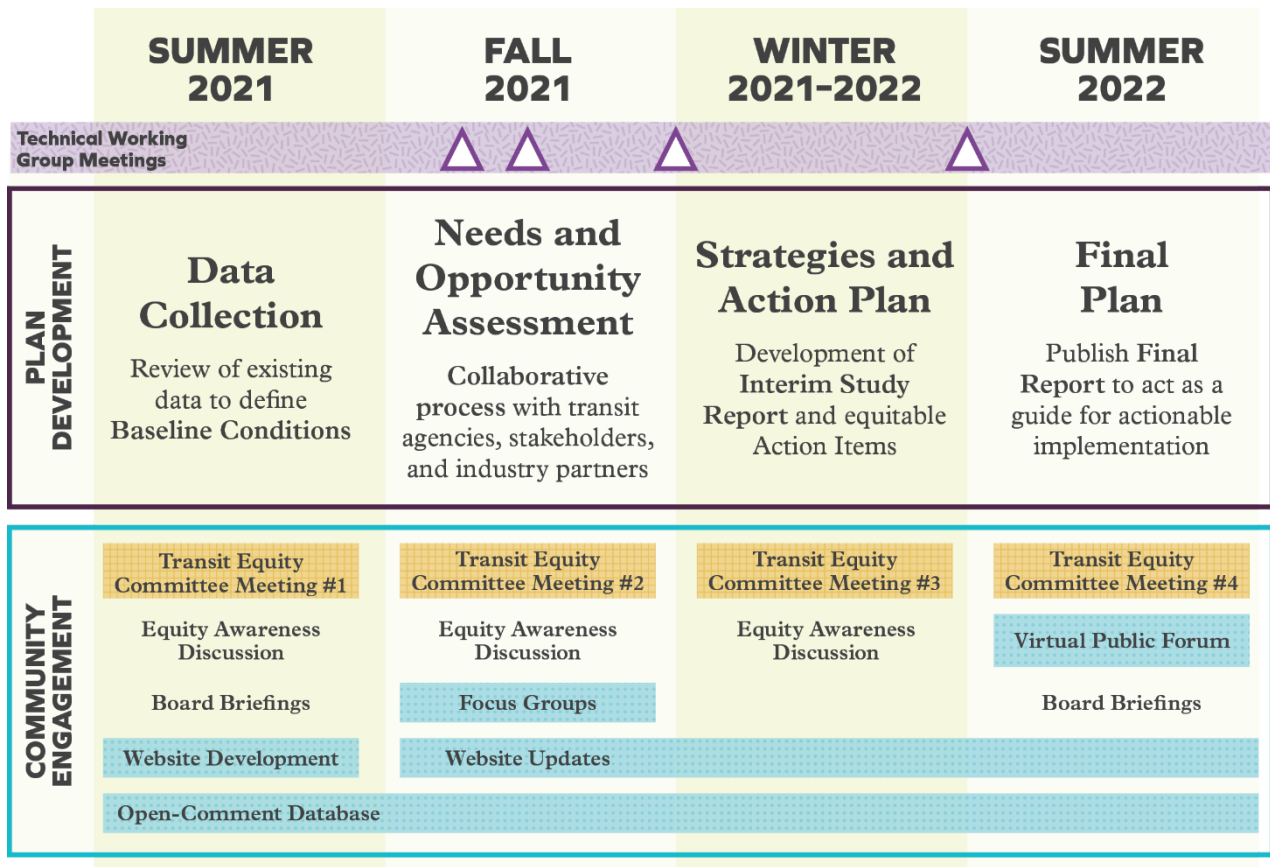
The Virginia Transit Equity and Modernization Study is being led by the Virginia Department of Rail and Public Transportation (DRPT). The mission of DRPT is to facilitate and improve the mobility of the residents of Virginia and to promote the efficient transport of goods and people in a safe, reliable, and cost-effective manner. DRPT is the Commonwealth’s advocate for promoting transportation options to the general public, businesses, and community decision makers. As an agency entrusted with public dollars, DRPT seeks the highest possible return on investment to maximize limited funding and strive to implement best practice management tools and techniques.

STUDY GOALS AND OUTCOMES

The overarching goal of the study is to create an assessment of current conditions, identify opportunities for improvement, and develop an action plan that works towards the desired outcomes of a more equitable and modern transit system across Virginia. The final results of the study will include a needs assessment focused on equitable delivery of transportation services and modernization of transit, including targeted recommendations and strategies for Virginia’s transit agencies and communities, emphasizing engagement with underserved communities in the Commonwealth.

STUDY PROCESS

The Virginia Transit Equity and Modernization Study began in the summer of 2021. Key deliverables throughout the study include this interim report, several technical memoranda, and the final report, which will be completed in August 2022.



KEY STUDY ELEMENTS

Public Engagement

Listening to a wide range of voices is critical to developing solutions that reflect the varied needs and priorities of transit users in the Commonwealth. Authentic communication and genuine partnership are critical to hearing and understanding diverse lived experiences. The study’s inclusive public participation program fosters open and honest conversations, where those diverse perspectives are valued and respected.

Study Website

The Transit Equity and Modernization Study website—VAtransitequity.com—is an essential tool in the public engagement process. The study website serves as a publicly accessible electronic repository for study information, provides transparency to the study process, allows for interested persons to sign up for email updates, and serves as an additional tool to collect information and feedback through an online comment form.

Rider Focus Group Meetings

The study team conducted online focus groups in the summer of 2021. The focus groups allowed the study team to engage participants from across the state and the virtual format kept participants safe despite the ongoing COVID-19 pandemic. **Forty-eight participants across seven focus group meetings** offered a diverse set of perspectives including: **frequent and infrequent riders, stakeholders, advisory council members, and people with disabilities** across areas of Virginia serviced by both fixed-route and demand-response services.

Key findings from focus group meetings with riders include:

- **There is significant support for the concept of transit equity.** Participants, however, expressed concern and interest for how this will be put into practice at the local level.
- **Several common barriers to using transit exist**, including lack of familiarity with systems, safety concerns, long travel times and trip lengths, access to stops and stations, and overall reliability of services.
- **Basic infrastructure elements are of great concern**, with riders expressing a widespread lack of basic bus stop features such as shelters, seating, lighting, and sidewalk connections.
- **Health and safety of riders and operators is top of mind**, especially in light of the ongoing COVID-19 pandemic. Many riders prefer to avoid crowded spaces and worry that rules around face coverings and social distancing are not being enforced, making the public transit journey an uncomfortable one.
- **The majority of riders do not feel as though they have a voice** in public transit decision-making in their communities, with widespread concern that the voices that are most heard are those that are the loudest and the wealthiest, rather than those of the average rider.

“Lack of bus shelters can be a barrier to transit. My bus stop is around the corner and does not have a shelter. I sometimes miss my bus on rainy days because I wait for it from home to stay dry. I have to wait 20 minutes for the next bus and am late to work.”

“COVID-19 safety measures should be continued post-pandemic, such as thorough cleaning of vehicles and availability of hand sanitizer at stops and stations.”

“Too many bus stops are poorly placed and not accessible to those in wheelchairs, forcing people to travel farther to catch the bus or to not use transit at all.”

Virtual Public Forum

A virtual Transit Equity and Modernization Forum—planned for May 2022—will be a key element of the study team’s approach to developing considerations and direction for future transit technology efforts with an equity lens. The forum will provide an opportunity to brainstorm with participants, industry partners, and outside stakeholders, creating an opportunity for DRPT to convene **transit thought-leaders from around the country, Virginia transportation leadership, and transit users** together to provide a diverse set of perspectives.

Transit Equity Committee

As part of the study, a Transit Equity Committee (TEC) consisting of transit agency executives has been formed. The TEC will be convened at four major milestones throughout the study process and is designed to advise the study team and inform equity and modernization efforts in a manner consistent with Virginia House Joint Resolution 542 and other study elements. **The TEC’s work also will inform the study’s recommendations and action plan, which includes identifying answers to the following:**

- What does “equity” and “modernization” mean for the technical areas identified?
- How do we overcome biases in transit planning and design?
- What are the desired outcomes we’re seeking to advance?
- What resources and processes need to be implemented to ensure equitable outcomes?

Transit Agency Survey

To capture both qualitative and quantitative information directly from local transit agencies, the study team conducted a transit agency survey in the summer of 2021. Survey questions covered the six technical areas and sought to measure interest in various topics, identify concerns and opportunities, and gauge progress on the local level toward equity and modernization goals. **The survey had a 100 percent response rate from local transit agencies in Virginia.**

Technical Assessment

While the focus on the study is to identify opportunities to enhance equity in conjunction with modernization efforts, there also are several technical transit topics that will be explored including:



Accessibility

The link between transit supply and need, with an emphasis on underserved populations and the ability of transit to connect people to jobs and opportunities

Adequacy of Infrastructure

The conditions of existing transit infrastructure and what is needed to bring them to an acceptable minimum standard



Emerging Technologies

The feasibility of Virginia's transit agencies adopting emerging transit technologies, and the associated costs, benefits, and timelines for implementation

Electrification

A review of the current state of electric, Zero-Emission Buses (ZEBs) operated in Virginia's transit fleet today, and a review of opportunities and barriers to transitioning to ZEBs



Safety

The safety of all transit passengers and employees on transit vehicles, in operations facilities, and traveling to and from transit stops and stations

Engagement and Governance

A review of agency practices for engaging with the public, particularly with transportation-disadvantaged communities, and their role in transit agency governance



Technical Working Groups

Technical Working Groups, comprised of local transit agency staff, stakeholders, and partner agencies from across Virginia as well as national thought-leaders from the transit industry, are being used to solicit diverse perspectives, brainstorm unconstrained ideas, explore feasibility and implementation barriers, and provide input on recommendations for each of the study's technical areas. **Bringing together a group with strong technical knowledge and diverse backgrounds, ideas, and experiences will enrich conversations and bring forward feasible and implementable solutions that contribute to equity and modernization.**

Supporting Equity and Balancing Tradeoffs

Virginia is under increasing pressure to make decisions about transportation, transit, and overall mobility that require challenging tradeoffs. At the heart of these tradeoff conversations are issues of transit equity.

***Transit equity** is the shared and just distribution of benefits and burdens when planning for transit delivery. This includes the importance of providing access to opportunities for employment, socializing with friends and family, connecting with the community, and meaningfully participating in our society.*

Social/Geographic Equity (Where We Invest)

There is an urgency to focus limited resources on the needs of vulnerable communities to ensure that people of all ages, abilities, and backgrounds have access to high-quality, affordable transit.

Modal Equity (How We Travel)

Projects, programs, and policies need to be prioritized to invest in an integrated transportation system that ensures all Virginians have safe and reliable options, no matter how they choose to travel.

Transit services are a powerful tool that can enhance communities, connect people to jobs and opportunities, and promote healthier, more sustainable lifestyles. The presence of transit options can also contribute to more equitable societal outcomes by providing mobility options to those that otherwise do not have access to reliable means of transportation. This is especially true for historically marginalized communities, those that remain underserved today, and those that may have been adversely affected by transportation decisions in the past. Transit can offer considerable opportunities for::

Vulnerable Populations

Access to transit is a critical social determinant of health. For people of color and low-income residents, safe and affordable mobility options work to overcome health disparities and the inequitable distribution of resources and opportunities.

Transit also allows a greater number of Virginia residents to participate in the workforce. This is especially true for people with disabilities and individuals with limited or no access to cars. In addition, the reliability of transit services impacts access to jobs and opportunities.

The Environment

The transportation sector is among the largest sources of greenhouse gas emissions in the U.S. and Virginia. Enhancing and expanding the transit system is a powerful tool to reduce emissions and reduce the environmental impact of transportation.

Transit reduces gasoline consumption and Virginia’s carbon footprint. Every year, public transit saves Virginia 11.3 million gallons of gasoline and \$27 million in fuel consumption costs.

The Economy

Transit helps grow and sustain Virginia’s economy by connecting people to jobs, businesses and services, education, and more. Virginia businesses rely on their employees and customers having easy and convenient travel options to get to and from their sites.

Transit investments offer a nearly 3-to-1 economic return—every \$1 invested in public transit generates \$2.9 in economic activity. Annual public investments in transit supports nearly 29,000 jobs. Every direct or contracted job in the transit sector supports an additional 4.1 jobs across Virginia.

Source: [Economic Impacts of Public Transportation in the Commonwealth of Virginia \(2020\)](#)



EMERGING TRENDS

Zero-Fare Transit

While not a new idea, declining ridership and farebox revenues during the COVID-19 pandemic brought zero-fare transit to the forefront of transit policymaking discussions. Despite declines in ridership, the Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020 provided federal funds to transit agencies to maintain operations. After seeing the benefits that zero-fare transit brings to riders, many transit operators around the country are looking to continue zero-fare transit in the future.

Twenty-three transit agencies in Virginia operated zero-fare service at one point during the pandemic. Many agencies have voiced interest in continuing zero-fare service in the future, potentially leveraging state Transit Ridership Incentive Program (TRIP) funding.

Bus Fleet Electrification

The fight to address climate change and make communities cleaner has made electric buses a priority for transit providers around the country. Electric buses are typically purchased to replace older buses at the end of their service life or when expanding service. As battery technology improves and the market grows, electric buses will become more attractive to agencies for their efficiency and reliability.

Approximately \$16.7 million from the Volkswagen Mitigation Trust Fund has been disbursed over 3 years for the purchase of 36 electric buses to replace older diesel buses for five transit agencies: Alexandria (DASH), Blacksburg Transit, Fairfax County, Hampton Roads Transit, and Valley Metro.

Shared Mobility

Bikeshare began in Virginia in 2010 with the launch of Capital Bikeshare in Arlington and has since spread across Northern Virginia. Private dockless bikeshare companies began operating in Virginia in 2017 and 2018 and quickly pivoted to e-scooters in many communities. Many micromobility providers are part of ongoing pilot programs at the local level that are being continuously evaluated and updated. **Virginia's communities have innovated in this field through unique, data-driven approaches that encourage responsible rider behavior, support connections to transit, strive for equity, and achieve accessibility.**

Not all transit riders live right next to their transit stop, and not all destinations are immediately adjacent to a stop. With that, transit riders must find a way to their transit stop to begin their trip ("first-mile") and/or to their final destination once they get off their bus or train ("last-mile"). Shared micromobility devices—whether they are bikes or scooters—can help make these first- and last-mile trips easier and provide a lower-cost and greener alternative to driving.

Microtransit

A form of demand-response service, microtransit has grown in popularity due to its typically smaller fleet vehicles and more flexible route schedules, which are particularly advantageous in areas with lower and more dispersed transit demand. Microtransit can supplement fixed-route transit service in urban areas and provide an enhanced transportation option for riders in rural areas that do not have enough demand to support traditional fixed-route service.

The Virginia Microtransit Initiative is an 18-month program to pilot microtransit in rural communities. Bay Transit and Mountain Empire Older Citizens are the first agencies in the Commonwealth to provide microtransit to riders in their service area.

Rideshare

Ridesharing companies, such as Uber and Lyft, have grown rapidly since launching roughly a decade ago. Although they provide primarily vehicle-based transportation, rideshare services can complement and provide connections to public transit with coordination and partnerships in place. .

Companies that provide services like these have drastically changed the landscape for how we think and plan for the growing transportation network.

Transit agencies across the country are forming partnerships with rideshare companies in order to make their services more available to a wider audience, to leverage new technology, and to improve mobility choices for their customers, including in Miami, Atlanta, St. Louis, Dallas, Denver, and Los Angeles.

New Technologies

New and emerging technology such as autonomous and connected vehicles have the potential to improve roadway safety, enhance mobility for persons with disabilities, and reduce congestion. Vehicle technology is advancing quickly, and Virginia needs to be well-positioned to adapt to these changes. **Proactive policymaking and monitoring will be needed to address the potential for increased travel and congestion associated with the development and deployment of autonomous vehicles.**

Virginia's first autonomous shuttle is currently being piloted in Fairfax County, providing driverless service to riders between a prominent mixed-use district and a Metrorail station. Fairfax County partnered with Dominion Energy, the Virginia Department of Transportation (VDOT), DRPT, Virginia Tech Transportation Institute, EDENS, and George Mason University to implement this project.

Impact of COVID-19

The Virginia Transit Equity and Modernization Study is being conducted during a time of continuing uncertainty, prompted by the COVID-19 pandemic. Some of this uncertainty pertains to long-term impacts to transportation, transit, and mobility, such as increased rates of telework and more trips that occur outside of the traditional morning and evening rush hour. Despite this, it will continue to be important for Virginia's communities to provide a wide range of mobility options, especially to ensure equity for their essential workers who do not have the luxury of telework and more often rely on public transit.

DRPT has issued guidance to transit agencies in their COVID-19 pandemic responses, underscoring that public transit is an essential service that provides vital connections for essential workers and access to basic lifeline services, including healthcare, grocery stores, and food pantries. DRPT has encouraged all transit systems to maintain at least a minimum level of service, even during "stay at home" orders, to meet these basic community needs.

THE STATE OF TRANSIT IN VIRGINIA

Virginia's transit systems have made great progress in recent years—providing a strong foundation for the Commonwealth to further advance these efforts with an eye towards equity and modernization. Virginia has shown a renewed dedication to making smart investments in transit, with improved opportunities for funding and an array of goal-oriented planning and performance measurement efforts to keep the Commonwealth moving.

Changing the Transit Funding Landscape

In 2014, DRPT predicted a major shortfall for transit capital funds due to the expiration of transportation bonds. Since then, the transit funding landscape has been transformed for the better with the creation of several statewide programs, including:

- **SMART SCALE**, which evaluates transportation projects based on an objective, outcome-based scoring process that is transparent to the public and allows decision-makers to be held accountable to taxpayers. Select transit capital projects are eligible under the SMART SCALE program, and since its inception, over \$450 million has been allocated to transit and rail projects across Virginia.
- **The Washington Metropolitan Area Transit Authority (WMATA) Capital Fund**, which provides \$500 million in new regional funding for WMATA, \$154 million of which is contributed by the Commonwealth.
- **Commuter Rail Operating and Capital Fund**, which provides \$15 million annually to Virginia Railway Express.
- **2020 Transportation Omnibus Bill**, which stabilized and increased transportation revenues in Virginia, and specifically increased revenues used to fund transit projects and operations throughout the state.
- **Central Virginia Transportation Authority**, a newly created authority in central Virginia that provides new funding opportunities for priority transportation investments across the region, 15 percent of which is dedicated to the Greater Richmond Transit Company (GRTC).
- **Hampton Roads Regional Transit Program**, which allocated approximately \$30 million annually towards a regional network of transit routes.

Setting Goals and Staying Accountable

Over the past decade, Virginia has better aligned the performance of its transportation systems with the needs of residents and employers. These needs have been identified in major statewide planning efforts. Measuring progress toward meeting the goals set forth in plans and studies is critical to Virginia's ability to make smarter investments. These programs have changed how decision-making about transit in the Commonwealth is addressed by state and local agencies:

- **MERIT**, or Making Efficient and Responsible Investments in Transit, is Virginia's program to provide financial assistance to support transit service throughout the Commonwealth. The reforms associated with the MERIT program allow DRPT to demonstrate that statewide transit funds are going to projects and systems that are meeting the Commonwealth's goals and relies on increased accountability and transparency from its local agency partners. MERIT is used to manage grant funding for operating and capital assistance, demonstration projects, technical assistance, and state-funded internships in transit.
- **VTrans**, Virginia's statewide transportation plan that lays out the overarching vision and goals for all transportation modes in the Commonwealth, with a focus on mid-term and long-term needs and priorities.

- **Transit Ridership Incentive Program**, a new DRPT grant program focused on meeting goals of improving regional connectivity and increasing ridership through deployment of pilot programs like zero-fare services that are tracked through defined performance metrics.
- **Interstate Operations and Enhancement Program** reviewed the performance of I-81, I-64, and I-95 to determine safety, reliability, and travel flow needs and identify efficient solutions, including heavy investments in transit and TDM improvements, that were adopted into the Six-Year Improvement Program.
- **Corridor Transit and TDM Planning** has been completed for the I-66 corridor, resulting in a program of services tied to dedicated revenues from I-66 Outside the Beltway. Similar planning efforts are underway for I-495, where a partnership with the Maryland Department of Transportation and Maryland Transit Administration has unlocked new potential transit solutions for crossing the American Legion Bridge. Study of public transportation needs between Springfield and Quantico is also underway, with a component that integrates land use and development opportunities.

Investing in the Future

Building on funding opportunities and the Commonwealth's goals, Virginia has been strengthening the performance of its transit services through investments made through the MERIT and SMART SCALE programs. Virginia has also shown creativity in developing new solutions that increase transit access, promote sustainability, and implement new technologies.

- **Rural Microtransit**, funded in partnership with FTA's Integrate Mobility Innovation Grant. Virginia has invested in microtransit pilot programs in the Middle Peninsula and Southwest Virginia to connect rural residents with shopping, educational, and healthcare destinations.
- **Virginia Breeze**, a service of DRPT, provides intercity bus service between Washington, DC and transit-underserved areas throughout the Commonwealth. Three routes are currently running as of 2021, with a fourth route beginning later this year connecting Bristol to cities along I-81 and Washington, DC.
- **Bus Electrification**, resulting from a partnership of DRPT and Department of Environmental Quality, Virginia is investing funds from the VW Mitigation Trust Fund into electric-powered buses, with 36 vehicles purchased or approved for purchase as of 2021.
- **Autonomous Vehicle Shuttle Project**, testing first/last mile connections between a Metrorail station and nearby development using an autonomous vehicle shuttle to learn about various aspects of deploying automation technology within a transit system.
- **Transforming Rail in Virginia** is a program to acquire and improve hundreds of miles of rail right-of-way to upgrade and extend Amtrak and VRE services and lay the foundation for a potential Southeast High-Speed Rail Corridor connecting Washington, DC to North Carolina and points south. This program of improvements includes the new Long Bridge, a \$2 billion investment that will address a major passenger and freight bottleneck between Virginia and the Northeast Corridor.

Virginia's People and Communities

DEMOGRAPHIC TRENDS

+8%
Population Growth Since 2010

+14%
Projected Growth from 2020 to 2040

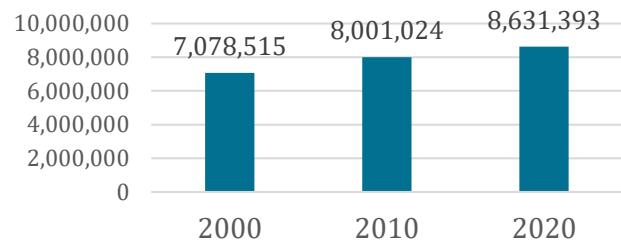
11%
Hispanic or Latino Population

41%
People of Color¹

Source: U.S. Census, American Community Survey 5-Year Estimates (2019)

Population Growth

Virginia has seen a significant population increase since 2000, growing by 1,552,878 people (or 21.9 percent). This increase was most dramatic between 2000 and 2010, which saw a 13.0 percent increase as opposed to a 7.9 percent increase between 2010 and 2020.

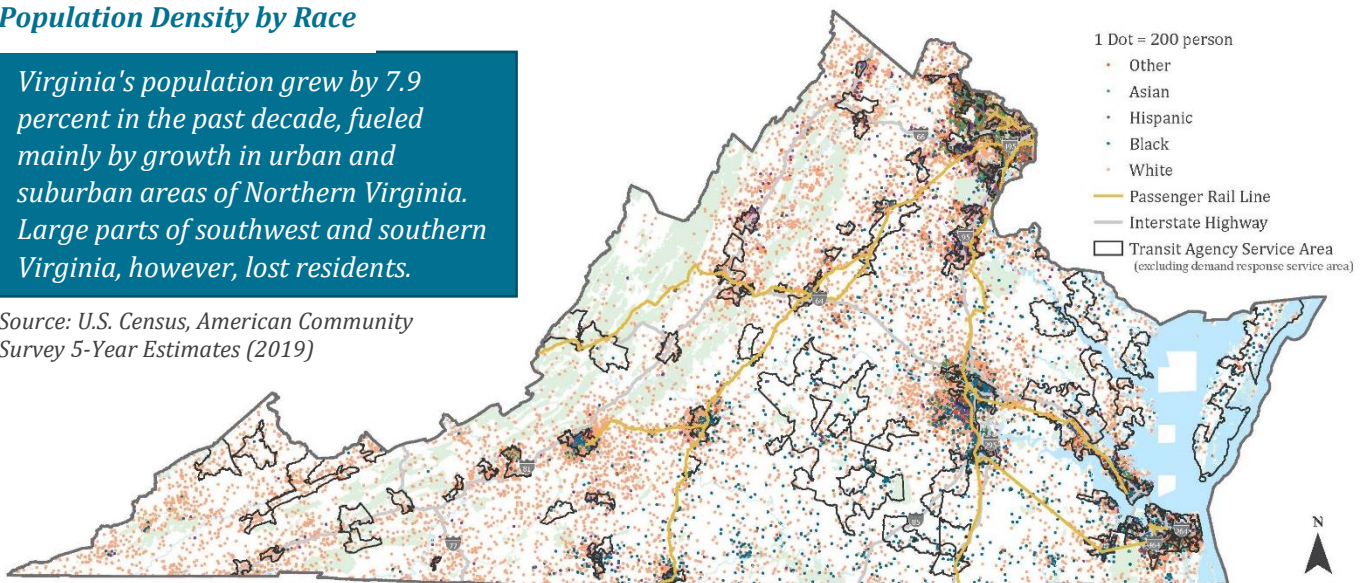


Though Virginia has added more than half a million new residents since 2010, statewide population growth has slowed significantly. Despite this slowed growth, Virginia is becoming increasingly diverse. Virginia's Hispanic or Latino population surpassed 900,000 people in 2020, growing by more than 275,000 (or 44 percent) over the past decade. Today, nearly one-in-ten Virginians (11 percent) identify as Hispanic or Latino, compared with 8 percent a decade ago. **People of color now make up 41 percent of the state's population, compared with 35 percent in 2010.**

Population Density by Race

Virginia's population grew by 7.9 percent in the past decade, fueled mainly by growth in urban and suburban areas of Northern Virginia. Large parts of southwest and southern Virginia, however, lost residents.

Source: U.S. Census, American Community Survey 5-Year Estimates (2019)



Population density is greater in urban areas of Northern Virginia, Richmond, and Hampton Roads, but also in the smaller cities of Fredericksburg, Charlottesville, and Roanoke.

¹ People of color are defined as those who identify as Black, American Indian, Asian, Pacific Islander, Other, and Two or More races, as well as those who identify as Hispanic and/or Latino regardless of race (currently classified as "minority" populations by the U.S. Census Bureau).

Age

Virginians are relatively young, but aging. As seen on the graph to the right, Millennials (roughly approximated by those aged 25–44) make up the largest share of the population among all generations at 26.9 percent. However, Baby Boomers (roughly approximated by those 55–74) and older adults make up the fastest-growing cohorts by far.

Cohort	2010	2020	% Change
0-14	19.1%	18.3%	- 4%
15-24	14.0%	13.3%	- 5%
25-34	13.6%	13.9%	+ 2%
35-44	13.9%	13.0%	- 6%
45-54	15.1%	13.5%	- 11%
55-64	12.0%	12.9%	+ 8%
65-74	6.9%	9.0%	+ 30%
75-84	3.8%	4.4%	+ 15%
85+	1.5%	1.7%	+ 15%

Given the breakdown in ages and increase in older Virginians, it will be increasingly important for all modes of travel—especially transit—to be accessible to and convenient for people of all ages and abilities.

Income

The median household income for the Commonwealth is around \$75,000. Typical household incomes in Northern Virginia are around \$130,000, whereas average household incomes in southwestern Virginia are around \$45,000.

Considering the median household income of Virginia’s communities is crucial to understand the associated transportation burdens and barriers to opportunity a community—or subset of a community—faces. Access to transportation is one of the highest indicators of job accessibility and economic mobility. Incomes across the Commonwealth clearly follow patterns of higher population and employment density.

Median Household Income

Virginia’s highest-income areas are most heavily concentrated in Northern Virginia, the suburbs of Richmond, and the Hampton Roads area.



Source: U.S. Census, American Community Survey 5-Year Estimates (2019)

VULNERABLE POPULATIONS

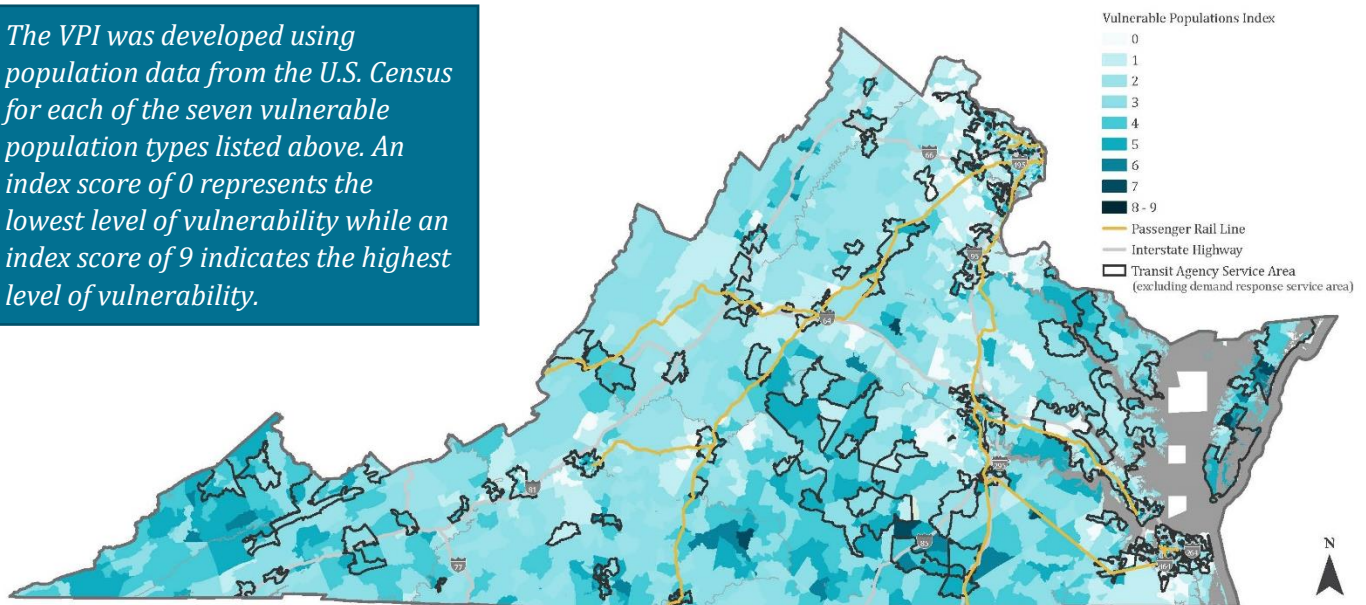
To link equity considerations to existing demographics in transit service areas across the Commonwealth, the study team developed a vulnerable population index (VPI) using seven population groups that were determined to be vulnerable based on federal requirements and regional guidance. In recent years, analysis of equity impacts in the Commonwealth has relied on the use of Equity Emphasis Areas (EEAs) as defined in the Virginia’s Transportation Plan (VTrans), which looked at similar populations groups to determine whether or not census block groups in Virginia are locations where equity is a concern. Building on that defined structure, this study applies a VPI to further assess impacts to vulnerable groups, which allows for a more detailed evaluation between technical areas and their impacts, including geographic focuses at the Census Block Group and transit agency level.

The vulnerable population groups considered in the VPI include:

- Households at or below the poverty line
- Minority populations
- Hispanic populations
- Limited English proficiency (LEP) populations
- People with disabilities
- Persons over age 65
- Zero-car households

Vulnerable Populations Index

The VPI was developed using population data from the U.S. Census for each of the seven vulnerable population types listed above. An index score of 0 represents the lowest level of vulnerability while an index score of 9 indicates the highest level of vulnerability.



Source: U.S. Census, American Community Survey 5-Year Estimates (2019)

Transit in Virginia

Transit is Vital to Virginia. Three of the 75 largest transit agencies in the United States operate in the Commonwealth of Virginia, and WMATA is the nation's third-most heavily used rail transit system with more than 620,000 average weekday passenger trips in 2019. Also, the Virginia Railway Express (VRE) commuter rail system is one of the fastest-growing commuter rail services in the United States.

In Virginia, there are many public transit service operators and commuter service programs that provide a choice of alternatives to driving private vehicles. Carpools, vanpools, transit, passenger ferry, commuter rail, biking, and walking are smart ways for Virginians to get to work and travel throughout the state.

Transit Saves Money. The average American household spends 16 cents out of every dollar on transportation; and 93 percent of those transportation costs go to buying, maintaining, and operating personal vehicles. Individuals who ride transit instead of driving can save more than \$10,000 on average annually.

Public Transportation Saves Time and Reduces Congestion. Transit has a proven record of reducing congestion and in Virginia it saves 23 million hours per year in travel. Every commuter rail car removes 125 vehicles from our roads. A single bus can eliminate 40 vehicles, and vanpools remove more than 6,000 cars annually from Virginia's roads.

Transit Provides Economic Opportunity. Transit is a smart investment. In Virginia, every dollar invested in transit generates approximately 2.9 dollars in economic activity statewide. Annual investments in public transit support nearly 29,000 jobs in Virginia, and every direct or contracted job in the transit sector supports an additional four jobs in the state.








Transit is a Preferred Mode of Travel. Millennials and Baby Boomers are increasingly becoming multimodal and moving to communities that provide robust transit options. Transit also serves as a lifeline for people with disabilities, older adults, and for individuals who cannot or choose not to drive. It facilitates essential trips to jobs, grocery shopping, and medical appointments as well as to schools, social functions, and parks and open space. Transit provides personal mobility and freedom for people from every walk of life.

Transit Riders are Not the Only Beneficiaries. When cars stay off the road, their pollutants stay out of the air. Our nation's carbon emissions are reduced by 37 million metric tons annually, which is the equivalent to the electricity consumption of every household in New York City, Washington, Atlanta, Los Angeles, and Denver. Public transportation also reduces gasoline consumption. Due to its use, Virginians save 11.3 million gallons of gasoline annually.

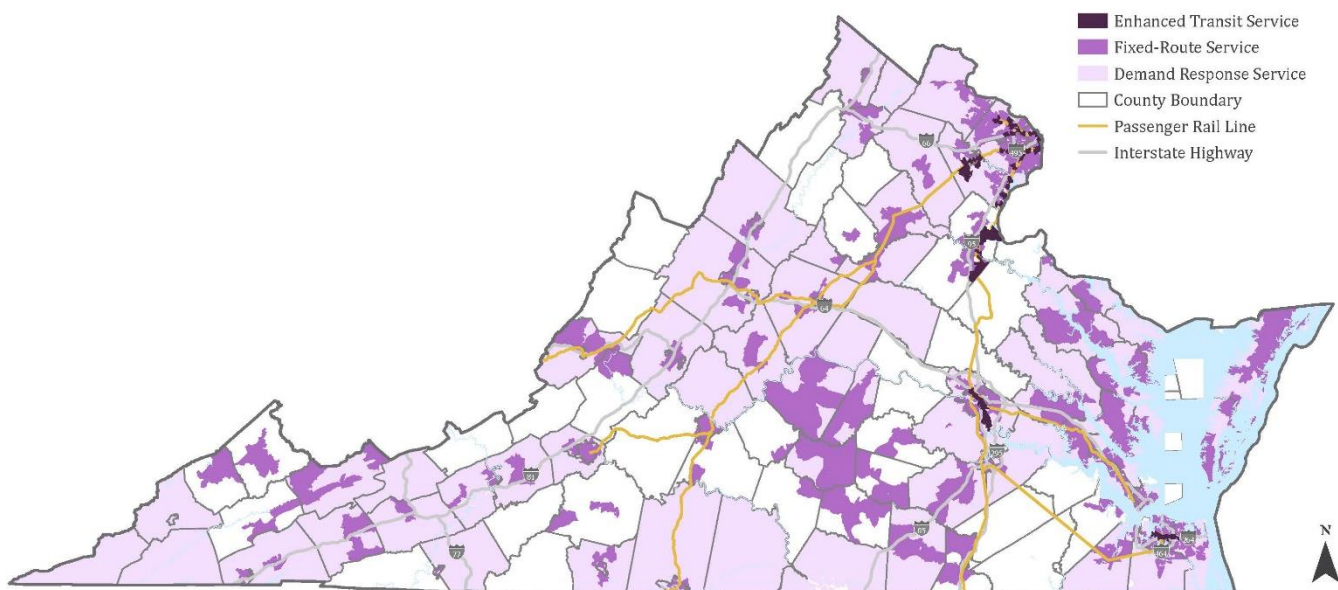
Source: *American Public Transportation Association
Economic Impacts of Public Transportation in the Commonwealth of Virginia (February 2020)*

TRANSIT SERVICE COVERAGE

Summarizing transit service coverage helps to identify and communicate the availability of transit service within Virginia. Three classifications of transit service coverage are defined primarily by the types of transit service available within a given area. This information is supplemented by other community features such as population and employment density.

	Enhanced Transit Service	Fixed-Route Service	Demand Response Service	None
Transit Service Type	 <p>Areas with bus rapid transit or rail service, often in addition to conventional fixed-route and demand-response services.</p> <ul style="list-style-type: none"> • Bus rapid transit (The Pulse in Richmond) • Light rail (The Tide in Norfolk) • Heavy rail (Metrorail) • Commuter rail (Virginia Railway Express) 	 <p>Areas with bus services that follow a set route (i.e., Fairfax Connector, Fredericksburg Regional Transit, Charlottesville Area Transit)</p>	 <p>Areas with transit services that do not follow a set route and may require advanced scheduling (i.e., Lake Country Area Agency on Aging, Mountain Empire Older Citizens)</p>	No transit service available
Typical Density (People and Jobs)				

Transit Service Coverage

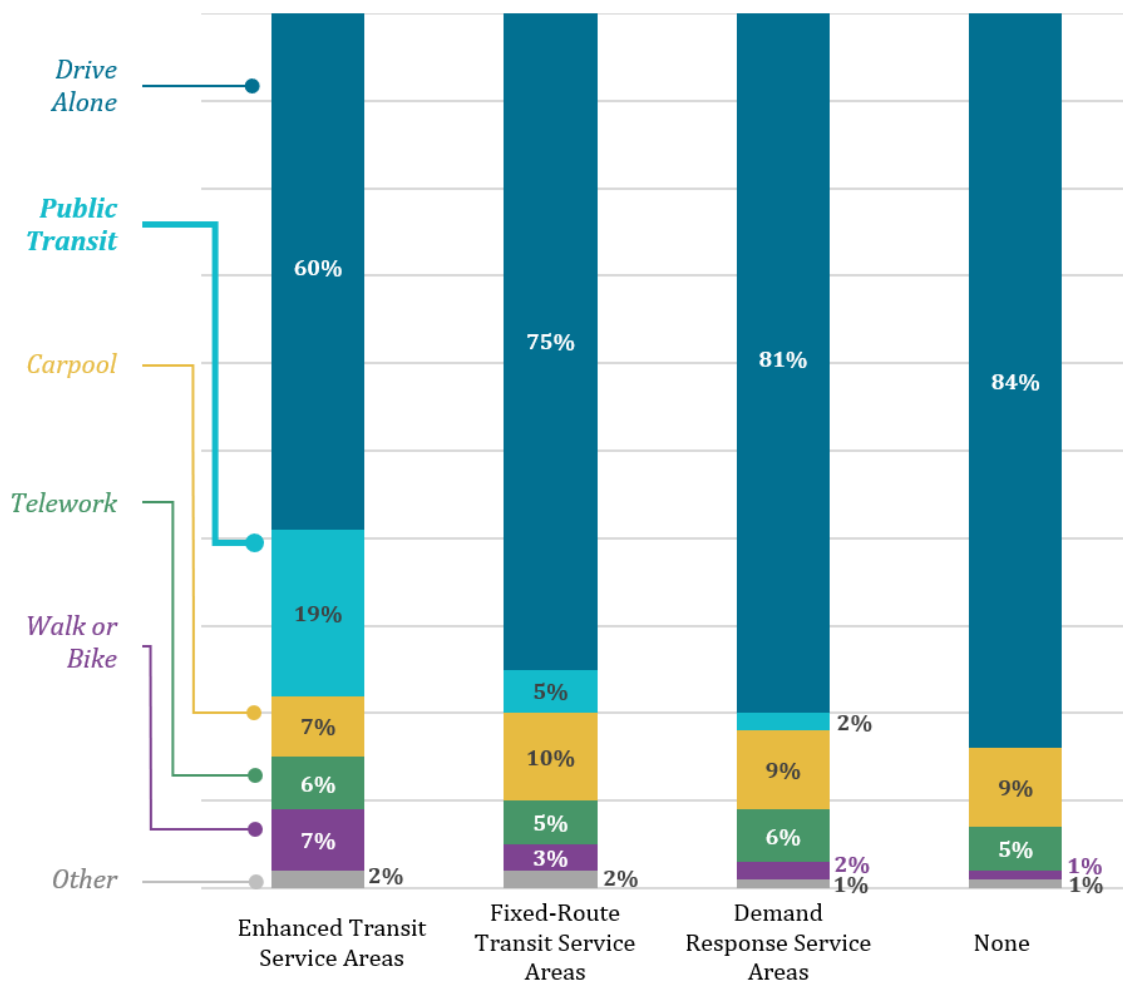


Travel Patterns

Virginia is largely a car-dependent state. 80 percent of Virginia workers drive alone to work—a number that varies across different transit service areas. Areas with enhanced transit service on average have higher rates of public transit use for work trips in addition to carpooling and other modes such as walking and biking.

These imbalances are a direct result of sprawling patterns of growth and development which have also created other issues that present challenges throughout Virginia, such as disconnected multimodal networks. , Additionally, the transportation sector accounts for almost half of CO₂ emissions,² and the average household in Virginia spends a quarter of their income on transportation.³ Achieving a more balanced mode split is critical to achieving complicated—and sometimes competing—mobility goals, such as **managing rapid growth; improving multimodal accessibility and safety; supporting equity, affordability, and health; responding to climate change; and alleviating traffic congestion.**

Commute Mode Split by Transit Service Coverage



Source: U.S. Census, American Community Survey 5-Year Estimates (2019)

² U.S. Energy Information Administration, 2018 State CO₂ Emissions by Sector

³ Housing and Transportation Affordability Index

Transit Ridership

More than 171 million transit trips were taken in Virginia in 2019, with more than half of these occurring on enhanced transit service. The vast majority of remaining trips occurred on fixed-route service. Demand response service facilitated over 2 million trips in 2019, representing just over one percent of all transit trips in Virginia.

The vast majority of transit trips across the commonwealth are taken in areas with enhanced fixed-route service, which are concentrated in Northern Virginia, Richmond, and Hampton Roads. This can be attributed to the availability of higher-capacity transit systems in these areas, such as Virginia Railway Express and WMATA’s Metrorail system in Northern Virginia and Washington DC, Greater Richmond Transit Company’s Pulse bus rapid transit in Richmond and Henrico County, and Hampton Roads Transit’s Tide light rail in the City of Norfolk.

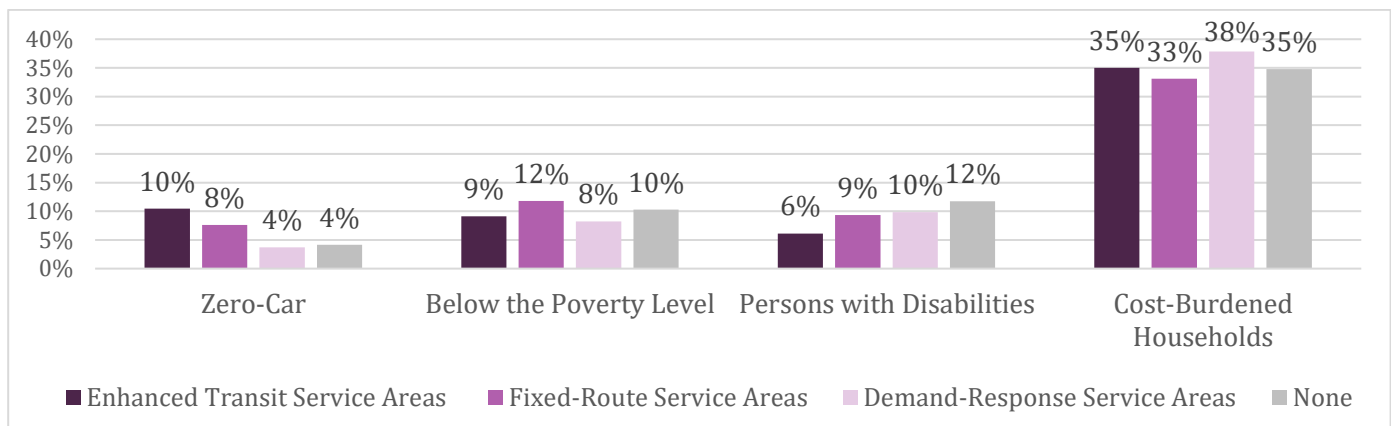
Transit Service Type	Total Annual Ridership (2019)
Enhanced Transit Service	98,100,000
Fixed-Route Service	71,300,000
Demand Response Service	2,200,000
TOTAL	171,600,000

Source: National Transit Database (Fiscal Year 2019). Includes WMATA Virginia ridership.

Vulnerable Populations

The presence of vulnerable populations can be a key indicator of a community’s need for transit service. Data shows that individuals living in enhanced transit service areas—many of which are denser and more urban—and in fixed-route service areas are more likely to not have a car or be living in poverty. Individuals within demand-response service areas are more likely to identify as having a disability. Households within demand-response service areas are more likely to be cost-burdened, defined by the U.S. Department of Housing and Urban Development as families that spend more than 30 percent of their income on housing costs. With transportation costs often being the second-highest household expenditure after housing, the presence of public transit can be critical to affordability and quality of life, especially for those who are cost-burdened.

Vulnerable Populations by Transit Service Type



Source: U.S. Census, American Community Survey 5-Year Estimates (2019)

The percentage of Virginians that live at or below the poverty is 13.9 percent, which is slightly higher than the national average of 12.3 percent.

Initial Findings

Through the early stages of this study, several preliminary findings have been identified that account for the current state of transit equity and modernization across the state. These findings present several opportunities that the team will explore further throughout the remainder of this study—many of which will serve as the basis for study recommendations, actions and strategies, and Final Report.

Equity must be more heavily considered in guidance, requirements, and funding programs for transit agencies.

While transit is operated at the local level, the Commonwealth sets policies that agencies must follow and administers funding programs in which agencies can participate. The Commonwealth has the potential to impact transit at the local level through changes in policy that apply to all transit agencies that operate in Virginia. Currently, some DRPT funding programs—such as the MERIT Capital and Operating Assistance Programs—focus primarily on cost efficiency and transit ridership. While important measures of transit success, these metrics alone can conflict with providing the most equitable service. Augmenting these funding considerations to include community outcomes has the potential to result in long-term equity benefits.

DRPT can explore the opportunity to analyze MERIT Capital Assistance scores specifically for projects that seek to replace or expand basic infrastructure at bus stops and transit stations—however, since the existing capital assistance program provides funding primarily for state of good repair projects, additional consideration for and funding of bus stop infrastructure improvement would be reliant on additional funding.

Similar concerns were noted in the Joint Legislative Audit and Review Commission’s Report on Transportation Infrastructure and Funding issued in November 2021. DRPT, in consultation with the Transit Service Delivery Advisory Committee (TSDAC), is required to periodically review both the MERIT Capital and Operating Assistance programs. This periodic review is required in 2022, for implementation with the FY24 application cycle.

Many bus stops are poorly placed and not well-connected to sidewalks.

There are widespread barriers that riders face when traveling to bus stops, including lack of connectivity to sidewalks and crosswalks and poor placement of bus stops along streets. Lack of sidewalk connectivity deters transit ridership for those who have access to other travel options. For those who rely on transit and have no other options, these accessibility deficiencies lead to unpleasant and unsafe conditions, including having to cross roads with no crosswalks and overcome uneven terrain on foot or in wheelchairs.

There are considerable opportunities to provide better and safer access to bus stops, especially for neighborhoods and communities that rely on transit most. Private property owners, State and local agencies that operate rights-of-way, and transit agencies can work together and better coordinate the placement of bus stops, ensuring that they are accessible and comfortable for users of all ages and abilities.

79%
of transit agencies in Virginia indicated that they have bus stops that are not well-connected to sidewalks

Basic transit infrastructure is insufficient.

The availability of basic transit infrastructure—such as shelters, seating, and lighting—is inconsistent across Virginia, with few systems providing these necessary features at most or all of their bus stops. For those that rely on transit, the absence of these necessary features leads to uncomfortable and unacceptable conditions, with riders having to sit on the curb or wait for their bus to the often-harsh elements of rain, sun, or snow. Key challenges include coordination with property owners, roadway design and space constraints, and funding shortages.

Elevating the importance of basic infrastructure within existing funding programs, coupled with resources and design guidance, has the potential to address this issue. This should also be address during the 2022 review of the MERIT Capital program, in coordination with TSDAC.

Transit riders have limited opportunities to be a part of the decision-making process.

Transit agencies across Virginia recognize and value the importance of engagement with their communities. However, riders currently have a limited voice in decision-making processes. Additionally, guidance that ensures participation from and engagement with underrepresented and underserved communities is missing. Providing consistent methods for formal rider involvement and mechanisms to ensure the voices and needs of our most vulnerable are represented will contribute to more equitable outcomes.

Transit agencies can establish formal methods to include riders in decision-making processes and ensure that mechanisms are in place to engage riders from underrepresented communities, especially for representation on transit agency boards and advisory bodies. Beyond providing ample opportunities to participate and be heard, it is equally important for these voices to reach transit leadership and key decision-makers.

Transit agencies of all sizes across the Commonwealth can consider forming rider advisory groups to help inform and advise local transit decision-making. These bodies can be comprised of current riders and/or community stakeholders who have an interest in preserving and enhancing transit in their respective communities, including local institutions, major employers, city and/or county leadership or staff, and more.



There is strong interest in fleet electrification across Virginia transit agencies, but more resources are needed.

Several transit agencies in the Commonwealth are actively procuring and deploying electric buses, and many more are seeking to follow suit. While funding opportunities continue to be available at both the federal and state level to assist agencies in the deployment of electric buses, related equipment, and facilities, agencies require a goals and policies to guide fleet electrification, guidance on how and where to equitably implement electrification, and strategies for incorporating higher-cost electric buses into the funding prioritization processes.

It will be important for local transit agencies to express a commitment to the equitable deployment of electric transit vehicles to be eligible for such funding and for metrics to be in place to monitor and track equitable outcomes.

There is an opportunity to support the acceleration of electric transit vehicle adoption across the Commonwealth by establishing goals and policies, guidance on appropriate implementation, and other programs or education/technical guidance for transit agencies to address the challenges of pursuing electrification.

There is increasing interest in piloting zero-fare service to overcome barriers to transit access.

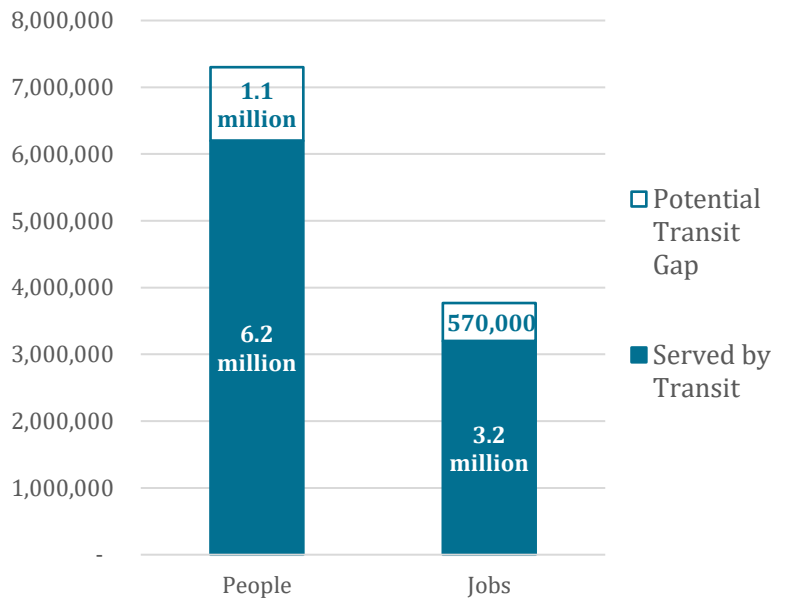
Roughly half of Virginia’s transit agencies have expressed an interest in implementing zero-fare transit. Eleven agencies have already fully or partially implemented zero-fare transit, according to the study’s Transit Agency Survey, much of which can be attributed to practices and policies adopted during the COVID-19 pandemic. Implementing zero-fare transit across the Commonwealth would require an investment greater than either DRPT’s current Capital or Operating Assistance budgets, but significantly less than the amount spent each year on roadway infrastructure improvements.

While zero-fare transit can bring great benefits to transit agencies and the communities they serve, it is not a one-size-fits-all solution—several other policies and strategies have been shown to provide equity benefits, such as the removal of transfer fees, increased frequency and coverage, or targeted subsidized fares.

The interest in and demand for piloting zero-fare service has greatly outpaced the funding that is available via DRPT’s Transit Ridership Incentive Program (TRIP). Should more funding become available, there is an opportunity to reduce financial barriers to transit for riders across the Commonwealth by increasing the number of agencies that are able to pilot and offer zero-fare service.

Availability of transit in Virginia is high, but gaps exist.

Across the Commonwealth, there are approximately 1.06 million people that need fixed route transit service but currently do not have it, and approximately 570,000 jobs that should be served by fixed route transit but are not currently. Further gaps may exist in rural areas that may be served by demand-responsive service. State funding formulas are not set up to support closing those gaps. State transit operating assistance currently incentivizes agencies to provide service that will gain the most ridership. However, this structure is not necessarily conducive to expanding service coverage to new areas that may help provide service to new areas and new opportunities.



Expanding the reach and increasing the frequency of transit services that are available will improve access to jobs and opportunities across all industries, leading to a more competitive statewide economy.

** Census block groups defined as rural by the US Census were not included in this estimate, as the factors that determine rural area transit needs are different from those that determine fixed-route needs. An analysis of rural transit needs will be included in later stages of this study.*

There are unique needs for and barriers to adopting new and emerging technology among Virginia’s transit agencies.

Virginia has made great strides in implementing emerging technology, specifically with autonomous vehicle testing, rural microtransit, and driver assistance technology. However, there is much room for improvement and further expansion— among Virginia’s transit agencies, only 8 percent use contactless fare payment, 34 percent use real-time vehicle tracking, and 5 percent have implemented mobility-on-demand services.

There remains a significant need and opportunity for transit agencies across Virginia to adopt more industry-standard technologies.

The Commonwealth, and specifically DRPT, plays a critical role in the testing and deployment of emerging technologies through technical assistance, grants and funding for technology, and state contracting and cooperative purchase agreements.

Transit is among the safest ways to travel, but there is room to improve both perceived and actual safety for transit riders, operators, and employees.

According to research by the American Public Transit Association, the chance of being involved in a crash decreases by more than 90 percent when taking public transit instead of driving, meaning that travel by transit is approximately 10 times safer than by automobile. Despite this, transit riders have several safety concerns, most notably when traveling to and from or while waiting at transit stops. Further, transit employees indicate that building a safety culture through adequate training, open and frequent communication, and strong organizational commitment contributes to a positive transit safety perception.

“I feel comfortable while riding a bus or train because I’ve been doing it for over 10 years, but as a young woman of color, I feel that I have to be more aware of my safety in public, especially on public transit. I feel least safe when I am traveling to get to the bus stop or train station.”

– Rider Focus Group Participant

This presents the opportunity for transit agencies to better communicate how transit provides a safe travel option and increase coordination with local jurisdictions to increase security at and near transit stops.

More and better data is needed to make informed and equitable decisions.

In order for the Commonwealth, DRPT, and local transit agencies to have accurate, up-to-date information, robust data must be produced, maintained, and tracked across all industry focus areas. If data is consistent, accurate, and reliable it can support resource allocation and performance management.

There is an opportunity to enhance and expand the collection and availability of data at the statewide and local levels, so that DRPT and transit agencies can have the tools required to make informed decisions around projects, programs, and investments that can lead to more equitable outcomes.

Next Steps

Building on opportunities highlighted in the existing conditions assessment and engagement with the public and stakeholders, the study team will develop an Action Plan and Final Report with the aim to advance the equitable delivery and modernization of transit services in Virginia. With a variety of next steps ranging from developing equitable action items within the six technical areas to a robust public and stakeholder engagement schedule, the study team aims to publish a Final Report in the summer of 2022 that acts as a guide for actionable implementation. The following figures outline the next steps for the plan development and public engagement.

ACTIONS AND STRATEGIES

Through the development of the baseline condition assessment, the study team has identified opportunities to advance equitable transit within the Commonwealth. Working with agency and industry partners (also referred to as the Technical Working Groups), the study team will develop practical recommendations and strategies by topic area including suggested implementation approaches for different geography types, timelines, roles, sequencing, resource needs and proposed metrics for success.

ACTION PLAN

This study is focused on understanding needs statewide and developing a blueprint for future investments that considers timing, partnerships, and outcomes that will benefit the users of the system with a keen focus on vulnerable populations and creating equitable opportunities for engagement.

Building on the understanding of current conditions and the opportunities identified in this Interim Study Report, the study team will develop an Action Plan through further data analysis strategy development with the Transit Equity Committee, input from broader public and industry partner outreach, and coordination with DRPT leadership. Implementation strategies by topic area will address barriers to success, as defined at the beginning of the study through survey and coordination with stakeholders. The team will use the strategies to inform a plan of actionable recommendations in an implementation matrix. The matrix will describe actions, next steps, needed coordination, timeline, and responsible agencies. The Action Plan will be a key part of the Final Report to be published in the summer of 2022.

The study's Action Plan will serve as a blueprint for DRPT and industry partners to use for advancing transit equity and modernization in the Commonwealth. The Action Plan will include practical recommendations and strategies by topic area, as well as suggested implementation timelines, sequencing, resources needed and proposed metrics for success. The Action Plan will serve as a framework for improving state/local policies and procedures that impact equitable service delivery and transit modernization.

FINAL REPORT

The Final Report will compile information from all stages of the study and will include an Executive Summary of major findings; a main report of all findings, recommendations, and strategies as well as the methodology for their development and identification; and technical appendices containing a glossary of terms, data sources, and a compilation of all Technical Memos.

