



**GREATER
WASHINGTON
PARTNERSHIP**

FROM BALTIMORE TO RICHMOND
FOSTERING UNITY
ADVANCING GROWTH

Advancing Our Region: Preface to a Blueprint for Regional Mobility



October 2017

Vision for Our Future

By working together we will leverage our unique strengths, our diversity and the power of commerce to help make the 'Capital Region' of Baltimore, Washington, and Richmond ...

... the best place to work, raise a family, and build a business

... a dynamic and inventive business environment with a purpose driven community

... a home for those seeking opportunity to fulfill their aspirations and thrive

... an economic power house that attracts the creatives, entrepreneurs, technologists and people who dream big

... a place with the transportation, housing, education, and healthcare systems designed and shaped for the 21st century

... a global magnet for talent and innovation

Establishing Baltimore, Washington, and Richmond as the model for a thriving super-region.

Many of us take for granted the daily efforts of the thousands of dedicated professionals who work tirelessly to help us move around the region. On behalf of the more than 175,000 employees we represent, we thank you for your service. We want to work with all of you to help provide you with the tools you need to do your job, and ensure that you are part of a transportation system that is the envy of the world.





Mobility in Our Region – We Must All Be Part of the Solution

As many who live and work here would agree, **the Capital Region of Baltimore, Washington, and Richmond** is like no other. Stretching from the mountains to the bay, this region boasts not only the seat of the federal government, but also world-class universities and research institutions, leading growth industries such as information technology, and health and life sciences, a rich diversity of people and cultures, and wonderful places to live, work, and raise a family. Over time, these unparalleled strengths have translated into the creation of what is now an increasingly interconnected super-region that is a major player in the global economy.

But with this growth come real challenges. Our aging infrastructure and disconnected transportation system are not keeping pace with our region's needs. These issues result in challenges that impact all of us. For the 10.2 million of us who call the Capital Region home, it affects our ability to access jobs, housing options and quality of life; we lose time traveling that could be better spent with family and friends. For the region's employers, it affects our ability to retain and recruit talent, and maintain a productive workforce. Under most current projections, as our region adds an expected 2.4 million people over the next 20 years, these mobility challenges will only continue to grow.

To address these challenges, in the context of the scale and unique composition of our super-region, we must have a truly regional strategy for mobility. We must also acknowledge that, as users of our transportation system, we all need to be part of the solution. This document – a look at mobility in our region today and an articulation of priorities for the transportation system our region needs – is the starting point for creating a new Blueprint for Regional Mobility.

It is time for our region's transportation system once again to drive our economic success, rather than hold us back. Working closely with the public and our region's many stakeholders, the Greater Washington Partnership aims to deliver in 2018, a Blueprint for Regional Mobility that will elevate and help accelerate bold solutions, as well as pragmatic answers, to change our mobility trajectory on **four priorities**: connecting the super-region; improving the consumer experience; ensuring equitable access; and integrating innovation to improve on these outcomes. The Blueprint will reflect our commitment to raising the collective expectation for the region's transportation system, which, with regional partnership and execution, can once again be a strength.

By working together and challenging the status quo, we can make progress toward building a more connected and prosperous Capital Region. Mobility is too important to the future of our region to wait any longer.

Thomas F. Farrell, II
Chairman, President & CEO
Dominion Energy

Kenneth A. Samet
President & CEO
MedStar Health

Mark A. Weinberger
Global Chairman & CEO
EY

Co-Chairs, Greater Washington Partnership Regional Mobility Initiative

Executive Summary

The Capital Region of Baltimore, Washington, and Richmond represents the 3rd largest U.S. regional economy and the 7th largest in the world, with more than \$650 billion in annual GDP. Our transportation system, which has helped drive the region's economic success, has tremendous mobility assets compared to many peers. However, coordination of mobility and investment are not keeping pace with the needs of the region's 10.2 million residents. It's time we once again raise the collective expectation for our region's transportation system, starting with a truly regional approach for improving mobility.

Mobility Matters to Our Region's Future

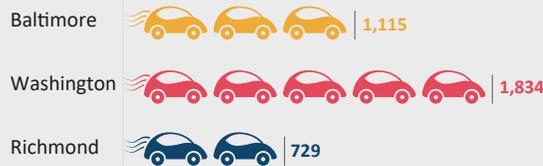
- Over ten million people depend on our regional transportation system to access jobs, education, and vital services every day.
- Mobility is essential to our region's prosperity and quality of life. It impacts employers' ability to attract and retain talent.
- Today's poor mobility performance costs our region more than \$7 billion annually in wasted time, money, and productivity. In fact, parts of the region suffer the largest congestion costs in the country.

Nearly 50% of commuters in the Capital Region travel across county lines on a daily basis to access jobs.

2/3 of millennials in the Washington metro area would consider moving out of the region, with 80 percent citing "horrendous traffic" for making their daily lives and future prospects unsatisfactory.

Source: Kogod School of Business, Greater Washington Index 2016: Millennials

Annual congestion cost (\$ per auto commuter)



Source: 2015 Urban Mobility Scorecard, Texas A&M Transportation Institute.

Our Emerging Super-Region

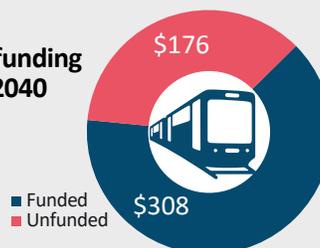
Baltimore, Washington, and Richmond may have been separated by miles of farmland years ago, but it is less clear today where one boundary ends and another begins. The miles between the city centers are now filled with housing and commercial developments and are linked by highways and trains, blurring jurisdictional lines as the region's residents travel across city, county, and state lines on a daily basis. Our transportation system today is regional, and it supports a regional consumer.

Our Transportation System Has Tremendous Assets but Is Constrained

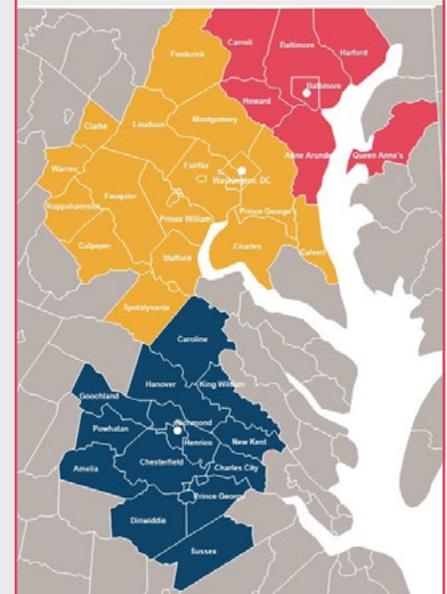
- Our region's organizational composition creates unique impediments to a seamless, consumer-centric mobility experience.
- Our region has not identified how to fund today's transportation needs, and it is unclear how we will pay for future needs.

More than 75 entities – public and private – play a significant decision-making or operational role in delivering mobility options and services in our region.

Transportation funding needs through 2040 (\$ in billions)



Source: Long-Range Transportation Plans for BMC, MWCOG, FAMPO and Richmond RTPO



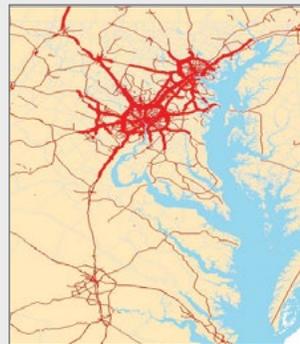


Bold Action is Needed to Change Our Trajectory

- The inconvenient truth is that under current projections, our transportation system will struggle to meet future consumers’ needs. Currently planned investments will only slow the deterioration of the system’s performance.
- Under current projections, roadway congestion will worsen across the Capital Region through 2040, increasing by more than 50 percent.
- By 2020, transit will reach capacity in the District’s downtown core, and buses and rail cars will be even more congested. The region has not identified sufficient funding to expand transit services to meet future demand.

■ Road Congestion in the Capital Region, 2007-2030

Auto Demand, 2007



Auto Demand, 2030



Daily Autos
 — 0 – 30000
 — 30001 – 75000
 — > 75001

Source: NCSG’s Chesapeake Megaregion Market Analysis

We Need a Blueprint for Regional Mobility

Four Priorities for Our Region’s Transportation System

1 Connect the Super-Region

Through faster, more reliable and robust transportation options, we will create a more closely connected super-region – starting by connecting the major downtown activity centers of Baltimore, Washington, and Richmond – that maximizes the economic benefits of expanded access to talent, housing, and intellectual and social amenities.

2 Improve the Consumer Experience

Through an enhanced, modernized, and coordinated network of transportation options cutting across our region’s jurisdictional boundaries, travel to and from daily destinations will be seamless and reliable, resulting in greater productivity and higher quality of life.

3 Ensure Equitable Access

Through affordable and diverse transportation options, every resident of the Capital Region – regardless of his or her community – will have access to the employment, education and healthcare opportunities that enable economic mobility and opportunity.

4 Integrate Innovation

By encouraging and enabling the consistent, seamless, and rapid adoption of mobility innovations across the region and jurisdictional boundaries, we will enable and accelerate a highly connected super-region, an improved consumer experience, and more equitable access for all.

Join Us to Build the Blueprint

Making progress on these priorities will impact our region in tangible ways. But it will require new levels of collaboration.

The Greater Washington Partnership invites you to join us in building the Regional Mobility Blueprint, for delivery in mid-2018. We seek to collectively create, elevate and accelerate the mix of bold and pragmatic transportation solutions – projects, policies, and initiatives – needed to strengthen the Capital Region.

Learn more at:

www.greaterwashingtonpartnership.com/mobility



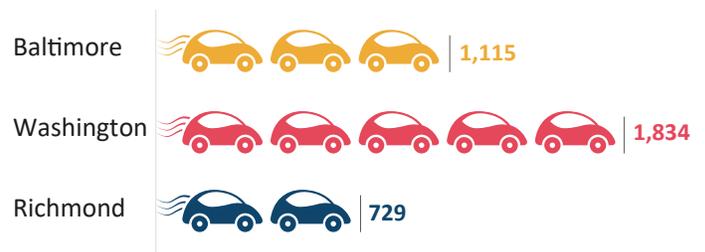


A major factor both enabling and constraining our region's economic growth is mobility. Some effects of the strained transportation system are obvious: roadways transforming into parking lots during the morning and evening rush, buses bypassing stops because they do not have room for waiting passengers or not showing up at all, and trains that are delayed for hours while waiting for traffic on the track ahead to clear.

Less obvious are the economic impacts, which include:

- *Lost wages and wasted money.* While some level of traffic congestion is a sign of robust economic activity, excessive congestion wastes gas and cuts into productive working hours. One estimate puts the annual costs for Capital Region residents at more than \$7 billion, with Washington metro area drivers each losing \$1,834 annually, which is the highest cost in the nation.⁷
- *Lower economic productivity.* A transportation system that cannot handle demand reduces economic productivity. Consider a cable television repair person who travels from home to home throughout the day. The more time that person spends in traffic, the less time he or she can spend helping customers, resulting in a less productive day.
- *Higher prices for goods.* The cost of moving freight from where it is produced to where it is sold is, in part, built into the price of goods. The longer and less efficient that trip is, the more consumers will pay. Between them, the Baltimore and Washington metro areas have four of the 100 worst truck bottlenecks in the nation.⁸
- *Challenges attracting and retaining talent.* The sometimes-grueling daily commute dissuades talented professionals from locating here, and causes many of those already here to consider moving elsewhere. While many factors play into our region's migration, it's no surprise that the top 10 regions where Washington metro area residents relocate have, on average, 20 percent shorter commutes.⁹ Meanwhile, two-thirds of millennials in the Washington metro area would consider moving out of the region, with 80 percent citing "horrendous traffic" for making their daily lives and future prospects unsatisfactory.¹⁰

■ **Annual congestion cost (\$ per auto commuter)**



Source: 2015 Urban Mobility Scorecard, Texas A&M Transportation Institute.



2/3 of millennials in the Washington metro area would consider moving out of the region, with 80 percent citing "horrendous traffic" for making their daily lives and future prospects unsatisfactory.

Mobility Options Attract Talent

Increasingly, employers are locating to places where densities of talent are more easily accessed by non-vehicle mobility options. From Marriott to GE to McDonald's, many of America's major employers have relocated corporate headquarters from suburban office parks to urban neighborhoods, highlighting the importance of quality mobility options including transit, bike lanes, and walkability in their efforts to attract and retain workers.

Today in the Washington metro area, **85 percent** of the current pipeline for commercial development is located within one quarter mile of a Metrorail station. **Ninety-two percent** of commercial leases over 20,000 square feet signed in the last few years have been within one-half mile of a Metrorail station. Walkable urban places are commanding above-market rents, demonstrating the strong demand for transit-oriented environments.

These trends reflect the preference of workers and residents alike, and do not appear to be slowing anytime soon.

Source: PlanItMetro: Metro's Planning Blog



2 | Our Transportation System Has Tremendous Assets but Is Constrained

The Capital Region has a diverse transportation system that supports the daily travel needs of nearly five million commuters and countless additional non-commute trips. Transportation options in the region are plentiful, including roads, rail, buses, bikes and a variety of mobility services.

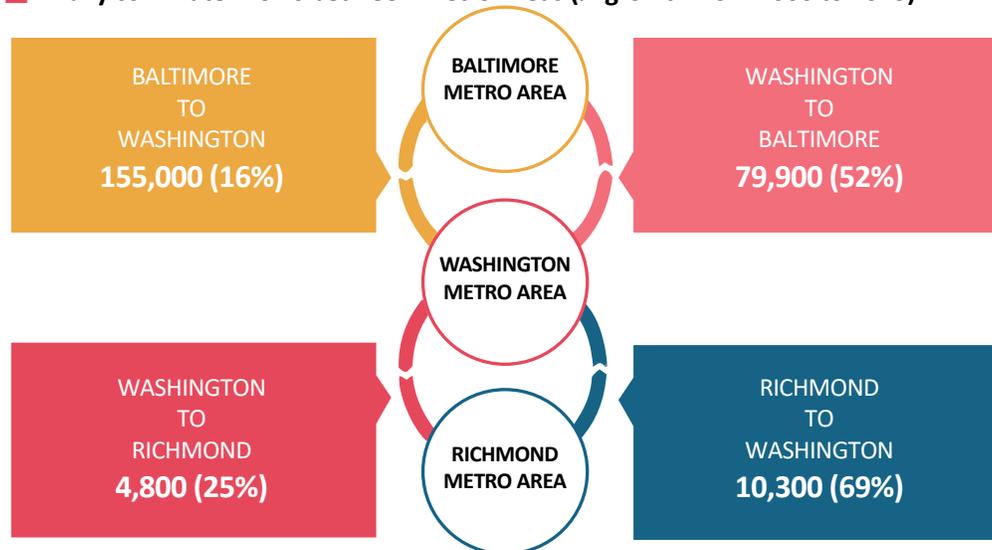
The system serves a regional consumer. Each day, 49 percent of all commuters – 2.4 million people – in the Capital Region cross county lines to get to their place of work. Seventeen percent of the region’s commuters travel across state borders to access jobs.¹¹

While usage of other mobility options is rising as their availability increases, motor vehicles are still the dominant mode of transport in the Capital Region. However, usage varies in different parts of the region. In the Richmond area, 90 percent of commuters drive to work. In the Baltimore metro area, 85 percent drive to work. Even in the Washington metro area, more than 75 percent of commuters drive.¹² Meanwhile, more than 80 percent of the region’s freight by weight moves by truck, with the remainder by rail and other means.¹³

Innovations are changing the way we consume transportation in the Capital Region. Real-time mobility information and amenities such as car share and bike share have transformed many consumers’ travel preferences and patterns. However, the availability and utility of these options is not consistent throughout the region. Where tech-enabled mobility exists, consumers are becoming accustomed to a wide variety of choices that can be customized to provide mobility “on demand.”

Debate remains on when driverless cars and drone deliveries will be fully operational and integrated into our daily mobility services, but few doubt that these new technologies will have a transformative impact on our transportation system. How we implement these technologies will have a direct impact on consumers’ choices, mobility options, and equitable outcomes for all Capital Region residents.

■ Daily commuter flows between Metro Areas (% growth from 2000 to 2013)



Source: American Community Survey



■ **Transportation options in the Capital Region**

Type of transportation	Public or private?	Where is it available?
Interstate highways	Public	Throughout region
Roads	Public	Throughout region
Public transportation (rail)	Public	Baltimore metro area, Washington metro area
Public transportation (bus)	Public	Generally throughout region, though coverage and frequency differ
Intercity rail	Quasi-public	North-south between city centers, west from the District
Bicycle lanes and trails	Public	Mostly in urban cores
Sidewalks	Public	Generally throughout region, though varies by neighborhood and type of street
Taxis	Private	Throughout region
Car share	Private	Locations primarily in urban cores
Ride matching	Both	Throughout region
Bikeshare	Both	Mostly in urban cores
Carpool/Vanpool	Both	Throughout region
Ferry	Private	Georgetown-District Wharf-Alexandria-National Harbor; Baltimore Harbor
Freight rail	Private	North-south between city centers, west from the District



Who's in Charge? A Look at Who Plays a Role in Our Transportation System

The Capital Region has many entities that play a major role influencing the transportation system; the frequent lack of regional alignment around decision-making and accountability can detrimentally impact the consumer's mobility experience.

Our region's transportation system is the product of many actors, with disparate policy and funding approaches. In fact, **more than 75 public and private transportation entities play a significant decision-making or operational role in delivering mobility options and services in our region.** These entities have varying ownership, authority, operational, and decision-making responsibilities, and help to establish policy and funding priorities.

The principal entities are the three state governments (the District of Columbia functions as a state for transportation purposes), along with county and city entities, and private companies that build, operate, and maintain our transportation infrastructure. Additionally, the federal government owns many important transportation assets that connect our system, including the Baltimore-Washington Parkway and the Arlington Memorial Bridge.

A mobility consumer in our region often relies on numerous entities to complete a single trip, with multiple entities responsible for different infrastructure assets and services being offered. Fortunately, these changes are usually invisible to the consumer – the road typically does not stop at the border, but merely changes owners.

Nevertheless, in some cases, the lack of coordination between owners can have dramatic impacts on the region's mobility. For example:

- Commuters on the northbound Inner Loop of I-495 face daily backups where express lane users exit those lanes on the Virginia side of the American Legion Bridge before passing into Maryland, which does not provide an express option.
- Our region's transit systems' planning, schedules, investments and fares are not often coordinated across mobility providers. For example, riders on county-owned buses must transfer to a regional WMATA Metrobus or Metrorail if they want to venture more than a few miles outside their county. When riders transfer between bus services, they must pay full fare unless there is a fare-sharing agreement in place between the different transit agencies.
- In most locations throughout the Capital Region, it will require a savvy consumer to navigate the challenge of planning and paying for a trip that uses multiple mobility options, whether that be bus, bike share, or rideshare, each of which are provided by a different entity with its own planning and payment tools.
- VRE and MARC commuters must terminate travel at Union Station and transfer to Metrorail, Metrobus, or the other state's commuter rail service to access job sites and other destinations in Maryland or Virginia.



■ Capital Region transportation providers and related entities

	MD	DC	VA
Federal	Federal Government		
State 	MDOT	DDOT	VDOT
Metro region planning agencies	BMC	NCR-TPB	
Principal transit agencies  	DC Circulator/Street car 		GRTC 
	Maryland MTA  		VRE 
	WMATA  		
	Amtrak 		
Regional transit agencies 	Baltimore Charm City Circulator, Howard Transit, Prince George's County Transit, Ride-On, Montgomery County Transit		Arlington Transit, City of Fairfax CUE Bus, Fairfax Connector, Fredericksburg Regional Transit, Greater Lynchburg Transit Company, Loudoun County Commuter Bus, Petersburg Area Transit, Potomac and Rappahannock Transportation Commission, Sussex County Bus
Local 	Baltimore DOT		Richmond DOT
Counties 	Anne Arundel, Baltimore, Calvert, Carroll, Charles, Harford, Howard, Montgomery, Prince George's, Queen Anne's		Amelia, Arlington, Caroline, Charles City, Chesterfield, Clarke, Culpepper, Dinwiddie, Fairfax, Fauquier, Goochland, Hanover, Henrico, King William, Loudoun, New Kent, Powhatan, Prince George's, Prince William, Rappahannock, Spotsylvania, Stafford, Sussex, Warren
Other regional mobility actors	Toll operators, regional bus operators, intercity bus operators, paratransit providers, rail operators, freight rail operators, airport operators, shuttle buses, on-demand car rental, taxis, ride-hailing, ride-share, bikeshare, data providers, fare collection agencies, port operators, labor unions, ride-matching, mobile parking applications		

Transportation systems:  Roads  Rail  Buses



Washington's Metro System: A Case Study in the Challenges Presented by a Fragmented Region

Washington's Metro system presents a stark case in point of the challenges that can arise when a component of our transportation system straddles many jurisdictional boundaries. With three state-level entities, numerous counties and cities, and even the federal government involved in its oversight and funding, Metro has a governance structure unique among transit agencies in the United States.

With no dedicated funding source and a board of directors appointed by the major contributing jurisdictions – creating split fiduciary responsibilities between the appointing jurisdiction and the transit agency – decisions about funding and paying for the Metro system are a frequent subject of dispute among the jurisdictions. As a result, critical decisions about investment and operations have been deferred or diluted for years.

Bold action is required to address the immediate and long-term structural challenges that have plagued the system. A healthy Metro system is essential for our region's long-term success.

Source: Total ridership from WMATA Vital Signs Report 2016, conservatively assumes 1 person = 2 unlinked trips. Other data from WMATA, Regional Benefits of Transit, 2011.

Metro Has an Outsized Impact on the Region's Economy

- Nearly eight percent of all workers in the Capital Region get to their jobs by Metrorail or Metrobus. Many more use it to get to school, medical appointments, and other essential services.
- Properties within ½ mile of Metrorail are worth seven to nine percent more than properties located farther away, and generate 28 percent of the Washington metro area's property taxes even though they represent only four percent of the land.
- Without Metro, we would need to double the size of the Capital Beltway – equivalent to the distance between the District and Chicago – and double the number of parking spaces in Arlington and the District's Downtown to maintain current travel conditions.



What Can We Afford? A Look at How Our Transportation Needs Are Funded

The Capital Region’s transportation funding cannot meet the system’s needs and is not sustainable in the long term.

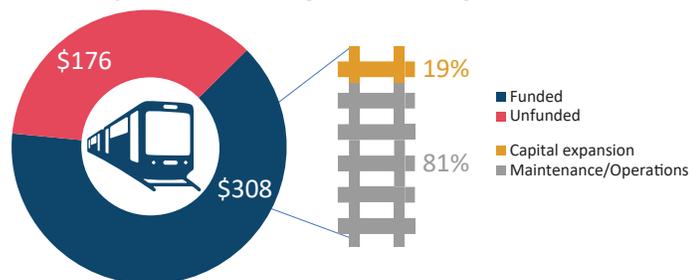
For years, **available funding has not kept pace with increasing demand for maintenance and expansion.** Despite the fact that Virginia and Maryland both acted in 2013 to increase state transportation revenues by billions over the coming years, projected available funding is estimated to cover only 64 percent of our system’s need for operations, maintenance and improvement through 2040. Additional funding sources will be required to fill the gap.

Compounding the challenge is the fact that **one of our region’s primary funding sources – fuel taxes, which account for more than one-third of transportation funding – appears unsustainable.** The federal fuel tax, which has not been adjusted in nearly a quarter of a century, has lost 40 percent of its purchasing power due to inflation during that time.¹⁴

As cars are becoming more fuel-efficient, electric vehicle use is growing, and, in some places, people are driving less (per capita), less fuel is likely to be consumed in the future.

Meanwhile, other large sources of funding such as parking fees, traffic citations, and licensing and registration fees are likely to be further eroded by adoption of autonomous vehicles.

■ Transportation funding needs through 2040 (\$ in billions)



Source: Long-Range Transportation Plans for BMC, MWCOG, FAMPO and Richmond RTPO.. Note that these totals reflect expenditures and needs planned by metropolitan planning organizations, and may not include projects that are planned and funded entirely by state or local entities.

Analysis: Positive advancements in how transportation investment decisions are made

Private sector businesses typically use a life-cycle cost-benefit approach to guide investments in order to maximize returns and ensure accountability to shareholders. Nationally, transportation agencies have been slow to adopt this sound business practice, and typically do not conduct cost-benefit analyses before determining which projects and programs receive scarce transportation dollars.

Recent activity by Virginia, Maryland, and the District to maximize returns on investment and improve accountability and transparency to taxpayers is encouraging.

- Virginia has positioned itself as a national leader with its adoption of the Smart Scale transportation investment program, which uses publicly established metrics to transparently rank and prioritize each project that will receive taxpayer funds in the commonwealth.
- Maryland recently enacted the Maryland Open Transportation Investment Decision Act, which is intended to stand up a similar program to Virginia’s Smart Scale, to take effect in 2019.
- The District of Columbia has created the District Mobility tool that provides consumers information on the system’s performance across mobility options, and it is conceivable that this program could be built upon to provide a data-driven decision-making process for the District’s transportation funding.

See www.vasmarketscale.org, www.mgaleg.maryland.gov, and www.districtmobility.org for more information.



Where Are We Headed? A Look at the Future Performance of Our System

The inconvenient truth is that, in nearly every scenario with projected funding, today’s mobility challenges will worsen in the future.

Demand for transit will continue to outstrip supply as existing systems strain to accommodate consumers. Meanwhile, major chokepoints for moving people and goods could remain unaddressed due to lack of funding or regional consensus.

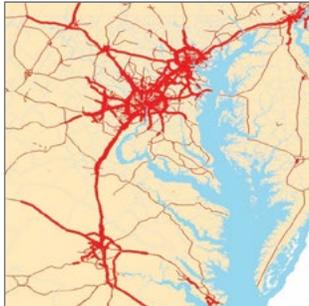
While more people are expected to walk, bike, or use shared mobility services in the future than do so today, large numbers of the Capital Region’s residents will continue to face daily challenges on the roads and rails, limiting their access to jobs, school, or other essential destinations, and detrimentally impacting quality of life.

Road Congestion in the Capital Region, 2007-2030

Auto Demand, 2007



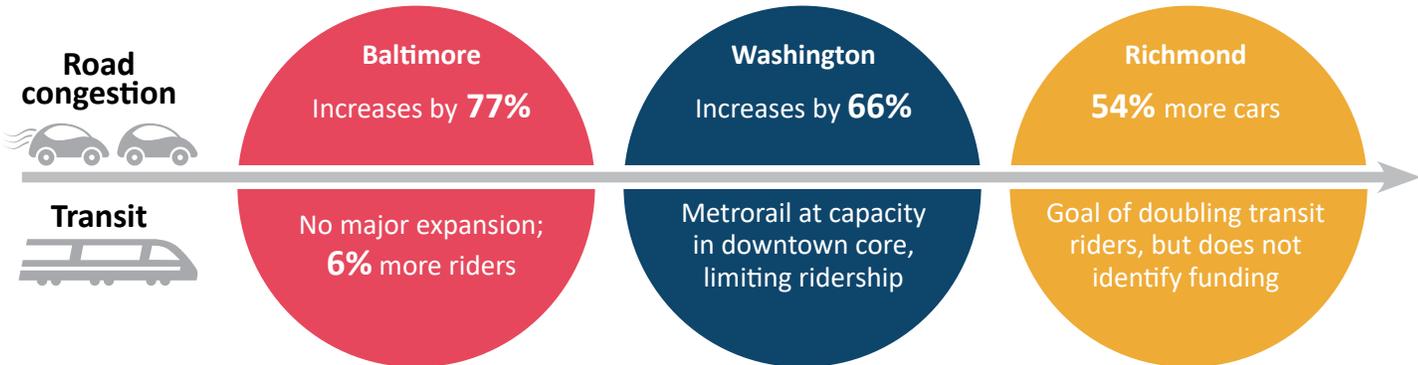
Auto Demand, 2030



Daily Autos
 0 – 30000
 30001 – 75000
 > 75001

Source: NCSG’s Chesapeake Megaregion Market Analysis

Mobility Performance in 2040 Based on Current Projections



Source: Long-Range Transportation Plans for BMC, MWCOG, FAMPO and Richmond RTPO

3 | Priorities to Achieve Our Regional Vision

Maintaining and upgrading our transportation system is essential to achieving our vision for the Capital Region as a place for dynamism and opportunity, where people consistently choose to work, raise a family, and build a business. We have identified four mobility priorities on which our region must make progress in order to achieve that vision. These priorities are the foundation for a new Blueprint for Regional Mobility.



Imagine if ...

You could take the train from Richmond to Baltimore for a morning meeting and get back in time for lunch.



Connect the Super-Region

Priority One

Today, neither the highways nor the train provide an efficient, reliable connection for the super-region.

Our aspiration

Through faster, more reliable and robust transportation options, we will create a more closely connected super-region – starting by connecting the major downtown activity centers of Baltimore, Washington, and Richmond – that maximizes the economic benefits of expanded access to talent, housing, and intellectual and social amenities.

Why it matters

Connectivity is essential to leveraging the scale of the entire region and its assets. By making the major activity centers of our region more connected and accessible, the benefits of regional agglomeration become more pronounced.

In a truly connected region, a patient in Alexandria could easily participate in a research study at Johns Hopkins; a college student in Richmond could take an internship with the federal government in DC; and a military family could live together in Washington while one spouse works at Quantico and the other at Fort Meade.

How we measure progress

While measures of our super-region's connectedness are not well established, the **speed, reliability, and availability** of travel options between the major downtown activity centers of the three metro areas can help us determine whether, over time, our region is becoming more connected or if mobility challenges are pushing us further apart.

Speed: Congestion spans much of the day on both roads and rail. Today, a morning drive from Baltimore to Washington can take up to 240 percent longer than the same trip without traffic. Only those driving from Washington to Richmond in the morning face a relatively uncongested route. Between Baltimore and Washington, travel time by train is less than half of what it takes to drive, but between Washington and Richmond trains take longer than the average car trip.

Reliability: For car trips, travel times can vary by nearly an hour, particularly between Baltimore and Washington. For train travelers, the likelihood of arriving on time depends on the route and direction of travel. In general, commuter trains (MARC and VRE) are on time between 84-95 percent of the time. However, neither commuter train option travels beyond Union Station, which requires consumers to transfer to a different transit provider to travel between states to access job locations. Amtrak's regional trains are often late, with fewer than half of the trains in the southbound direction arriving on time in Richmond.

Available options: Travelers between the metro areas can avoid known delays by taking alternative modes of transportation – if reasonable alternatives exist. Today, Amtrak and MARC provide 75-81 daily trains between Baltimore and Washington, while Amtrak provides only 11 trains between Richmond and Washington (with VRE providing another eight between Fredericksburg and Washington). For context, stations in the District's downtown core have access to 375 Red Line daily train trips on an average weekday.



■ Travel time between Metro areas, 2017

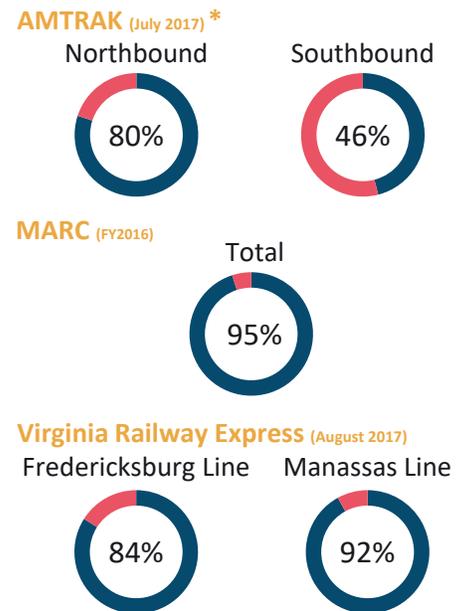
		Actual time in morning	Expected time in light traffic ¹
Baltimore to Washington, DC		1h 15min – 2h	~35 min
		~50 min	~40 min
Washington, DC to Baltimore		55min – 1h 40 min	~35 min
		~40 min	~35 min
Washington, DC to Richmond ²		1h 40 min – 2h	~ 1h 40 min
		~3h 15min	~2h 45 min
Richmond ² to Washington, DC		2h – 2h 40 min	~ 1h 40 min
		~3h 35min	~3h 15min
Baltimore to Richmond ²		2h 40 min – 3h 30 min	~ 2h 20 min
		~4h 30min	~4h
Richmond ² to Baltimore		2h 30min – 3h 20 min	~ 2h 20 min
		~5h	~4h 30min

¹Speed on highways assumed to be 65 mph in light traffic and scheduled time for trains assumed to be expected time

²Main Street Station

Source: Google maps, Amtrak, Amtrak Status Maps Archive Database

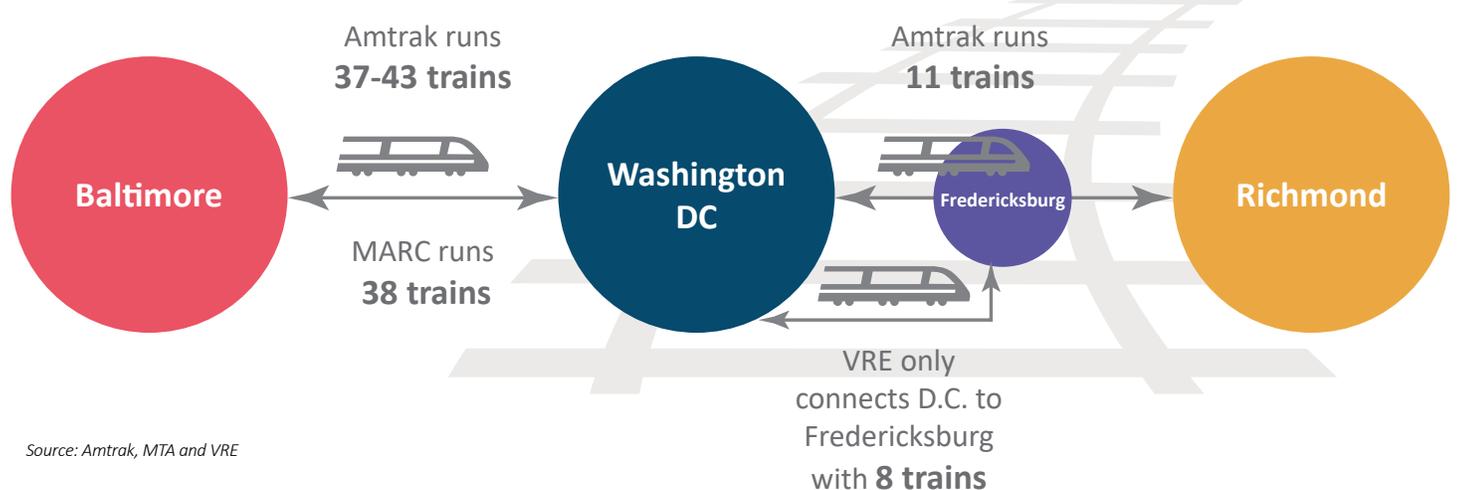
■ On-time performance of rail



Source: Amtrak, MTA and VRE

*Amtrak Northeast Regional trains only, data reflects on time performance over the entire route.

■ Number of daily trains between cities on weekdays



Source: Amtrak, MTA and VRE

Imagine if ...



You could choose from multiple mobility options and access reliable, real-time status reports to help you pick the fastest way to get to work each day.



Improve the Consumer Experience

Priority Two

Consumers of our transportation system in the Capital Region experience recurring delays and unreliable commutes.

Our aspiration

Through an enhanced, modernized, and coordinated network of transportation options cutting across our region's jurisdictional boundaries, travel to and from daily destinations will be seamless and reliable, resulting in greater productivity and higher quality of life.

Why it matters

Improving our residents' quality of life and productivity is key to attracting and retaining the workforce our region's employers need now and in the future. The ease and cost of the daily commute trip affects what jobs a person can access and, in turn, affects the size of the talent pool from which employers can draw. Meanwhile, having to plan enough travel time to account for traffic delays in order to avoid being late takes productive time out of people's days.

In a consumer-friendly system, residents could choose from a variety of commuting options and be assured that they would nearly always arrive at work on time. A subway commuter from Washington to Dulles could be assured that bike share – and safe bike lanes – would be available on both ends of the trip. A resident of Annapolis could get to a job in either Baltimore or Washington on a bus that uses uncongested express lanes to assure an on-time arrival.

How we measure progress

The **speed, reliability, and availability** of travel options within each metro area in the Capital Region impact consumers' experience.

Speed: Drivers in our region experience significant amounts of congestion, which has been growing worse. Commuters in the Washington metro area have the longest average commute in the Capital Region, which exceeds the national average by 31 percent. Commuting by transit typically takes much longer than driving, with transit riders in the Capital Region facing commute times 63 percent longer than the average vehicle commuter. The region's principal transit agencies' buses travel at speeds lower than 11.5 miles per hour,¹⁵ on average, and Baltimore metro area transit riders face the longest average commute time at 56 minutes.

Reliability: The ever-present possibility of delays means people must plan extra time for their trips to make sure they arrive on time. According to one estimate, in order to be late no more than once a month for a typical 20-minute car trip in light traffic, consumers in the Capital Region need to plan for up to 69 minutes of travel. Bus riders are generally delayed far more often than rail riders in Baltimore, while the opposite is true in Washington.

Available options: Having multiple mobility options is of increasing importance for recruiting and retaining younger workers. Many factors influence availability, such as frequency and hours of service. The availability and use of mobility options in the Capital Region vary depending on consumers' location. One in five commuters in the Washington metro area gets to work by transit, bicycle, motorcycle, or walking. In the Baltimore metro area, that figure is closer to one in ten, while in the Richmond metro area, only one in 20 commuters does not drive to work.

Source: Federal Transit Administration, National Transit Database.

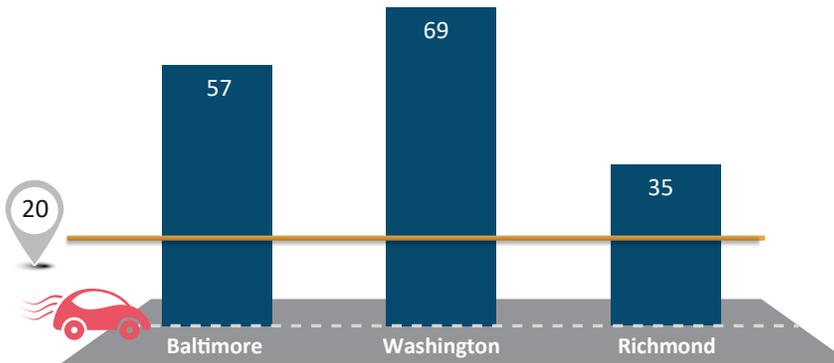


Average Commute Time in the Capital Region, 2016

	Average Commute Time (min)	Added Time Required for Transit vs. Car (min)	Added Time Required for Transit vs. Car (%)
Capital Region	33	19	63%
Baltimore	31	26	88%
Washington	35	14	41%
Richmond	26	17	88%

Source: American Community Survey

Planned time for car trips to ensure on-time arrival (minutes)

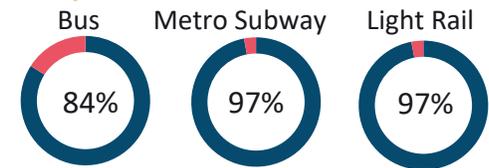


*Represents an estimate of planned travel time required to be late no more than once per month for a typical 20 minute trip in light traffic.

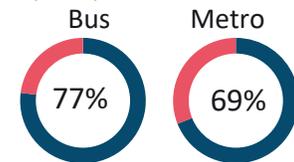
Source: 2015 Urban Mobility Scorecard, Texas A&M Transportation Institute

On-time performance of transit agencies

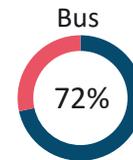
Maryland Transit Administration (FY 2016)



WMATA (Q1 2017)

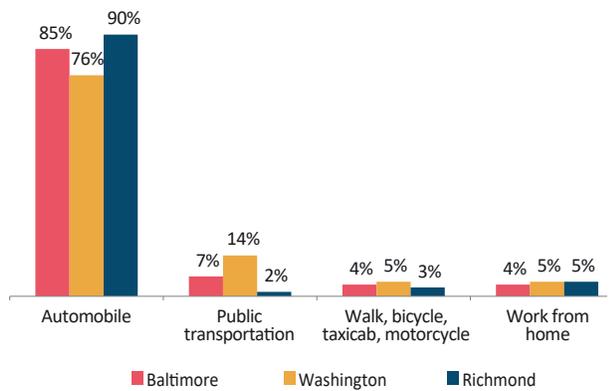


Greater Richmond Transit Company (FY 2017)



Source: MTA, WMATA, GRTC

Commuter trips by mode, 2015



Source: American Community Survey

Imagine if ...



Our transportation system was flexible enough that, even if you couldn't afford a car or chose not to have one, you could still efficiently and cost-effectively access a job in an auto-centric area.



Ensure Equitable Access

Priority Three

Today, many consumers are without essential access to transportation options, limiting their upward economic mobility and holding back our region's full potential.

Our aspiration

Through affordable and diverse transportation options, every resident of the Capital Region – regardless of his or her community – will have access to the employment, education and healthcare opportunities that enable economic mobility and opportunity.

Why it matters

Research has demonstrated that transportation access directly affects outcomes related to future earnings and upward mobility.¹⁶ Lack of access to quality and reliable transportation, particularly transit, also fuels inequality and is a growing factor in the ability of people in our region and across the country to escape poverty.

How we measure progress

Measures of accessibility and affordability, though limited, indicate that transportation options are not equitably distributed throughout the region.

Accessibility: Economic opportunities throughout the Capital Region are drastically reduced for individuals without a car. Richmond's buses serve only about half of the metro area's low-cost housing, and there is limited service in Chesterfield County which is expected to see significant growth over the next 25 years. Moreover, only 45 percent of lower-wage jobs are located within a quarter mile of a transit stop.¹⁷ In the Baltimore region, as of 2011, only about 16 percent of the jobs were located in the city's core; the bulk of the area's jobs were located in suburban places, many of which are not well-served by transit.¹⁸

Affordability: While housing represents the primary expense for households, transportation is the second largest expense. In areas with limited mobility options, these costs can present a particular burden for low- and moderate-income families. Moderate-income families (80 percent of area median income) in the Capital Region spend between one-sixth and one-quarter of their income on transportation.



■ **Jobs Accessible for Average Employee by Mode**

	Total Employment	# of Jobs Accessible by Transit Within 40 Minutes	% Jobs Accessible by Transit Within 40 minutes	# of Jobs Accessible by Car Within 40 Minutes	% Jobs Accessible by Car Within 40 minutes
Baltimore	1,262,886	40,033	3%	1,233,054	98%
Washington	2,689,299	111,631	4%	1,877,242	70%
Richmond	597,123	13,843	2%	516,877	87%

Source: University of Minnesota 2015 Access Across America data

■ **Transportation Costs as a Percentage of Moderate Household Income (80% AMI)**

	80% of Area Median Income	Total Annual Amount Spent on Transportation	Percent of Income Spent on Transportation
Baltimore	\$56,749	\$10,782	19%
Washington	\$73,859	\$11,817	16%
Richmond	\$47,935	\$11,504	24%

Source: Center for Neighborhood Technology, H+T Affordability Index

Imagine if ...



You could use your smartphone to plan and pay for any trip in the Capital Region, regardless of mobility option or provider.



Integrate Innovation

Priority Four

Individual jurisdictions in the Capital Region are leading the way on integrating mobility innovations, but coordination to scale and integrate these at the regional level is limited.

Our aspiration

By encouraging and enabling the consistent, seamless, and rapid adoption of mobility innovations across the region and jurisdictional boundaries, we will enable and accelerate a highly connected super-region, an improved consumer experience, and more equitable access for all.

Why it matters

Effectively incorporating rapidly changing technology and mobility options has the potential to transform the way we plan for, deliver, and experience mobility. With thoughtful application on a regional basis, technological innovations can help our region maximize its resources and improve the mobility consumer's experience.

How we measure progress

Our region's performance integrating innovation can be assessed by examining the **availability of new technology and services** and the **integration of services across jurisdictions**.

Conversations with private mobility companies reinforce the fact that the Capital Region's numerous jurisdictions – each with their own procurements and regulatory processes – can be a factor that dissuades entrepreneurs from starting or expanding in the region. Meanwhile, public agencies' deployment of new technologies that could benefit the consumer, such as integrated payment platforms, have been slowed by limited funding resources.

The growth of bike share illustrates the challenges of providing new services across jurisdictional lines. The District of Columbia and Arlington County led the country with the creation of Capital Bikeshare in 2010, which paved the path for the introduction of Baltimore Bike Share in 2016 and RVA Bike Share in Richmond in 2017. Capital Bikeshare now has 440 stations in five jurisdictions, with Prince George's County planning to join the system in 2018, but each expansion requires negotiations with a separate jurisdiction, and there are still no integrated bike share and transit payment options.

The District recently continued pioneering in this arena by enabling private dockless bike share providers (e.g., Spin, MoBike, Jump, etc.) to operate in the city through a pilot that expands the reach of cycling options, including Capital Bikeshare.

The adoption of common fare payment systems is another area in which the availability and integration of services have been challenging. Consumers are increasingly turning towards mobility providers that provide door-to-door solutions (i.e., Mobility-as-a-Service), but common trip planning and payment platforms (like London's Oyster Card, which works on intercity rail and transit, and Chicago's transit payment and trip planning application that will soon seamlessly sync with the city's bike share system) are not yet available in the Capital Region. Currently, only MTA's CharmCard and Metro's SmarTrip allow consumers to pay for trips on the other's system. However, neither of those cards are synced with mobile applications that seamlessly allow a consumer to plan and pay for a trip, or add value to the card. The Greater Richmond Transportation Company (GRTC) recently announced that it is retiring its paper tickets and upgrading to plastic farecards and mobile payment systems, which will increase efficiency for both consumers and the transit agency.¹⁹ However, none of the region's farecards currently function with Amtrak, VRE, bike share, or private ride share operations.

The challenge of adopting common technology is also present in the area of parking. Jurisdictions are using different mobile parking applications and providers. For example, if you want to park in the District you would use Parkmobile. For those parking in Montgomery County, the primary mobile park application is MobileNow! These differences across jurisdictional lines create confusion for consumers and undermine the potential benefits of these new technologies.



■ Integrating mobility systems across jurisdictions

	Washington, DC	Baltimore, MD	Richmond, VA
			
Works with:	<p>WMATA Metro rail and bus systems, DASH, Ride On, Fairfax Connector, ART, CUE, Loudoun County Transit, Omniride, TheBus, DC Circulator, MTA Local Bus, Light Rail and Metro Subway*</p>	<p>MTA local bus, light rail and metro subway, WMATA metro rail and bus systems, DASH, Ride On, Fairfax Connector, ART, CUE, Loudoun County Transit, Omniride, TheBus, DC Circulator*</p>	<p>GRTC bus service</p>
Does not:	<p>Integrate with Amtrak, VRE, MARC, bikeshare, ride share options; Provide mobile option</p>	<p>Integrate with Amtrak, VRE, MARC, bikeshare, ride share options; Provide mobile options</p>	<p>Integrate with Amtrak, VRE, MARC, Washington or MD regional transit, bikeshare, ride share options; Provide mobile options</p>

*MTA and Washington metro area transit authorities do not reconcile fare payments, and users of SmartTrip and CharmCard must pay separately to access both systems.

Source: Transit agency websites

4 | A Blueprint for Regional Mobility

Four Priorities for Our Transportation System

Connect the Super-Region

Today, neither the highways nor the train provide an efficient, reliable connection for the super-region.

Improve the Consumer Experience

Consumers of our transportation system in the Capital Region experience recurring delays and unreliable commutes.

Ensure Equitable Access

Today, many consumers are without essential access to transportation options, limiting their upward economic mobility and holding back our region's full potential.

Integrate Innovation

Individual jurisdictions in the Capital Region are leading the way on integrating mobility innovations, but coordination to scale and integrate these at the regional level is limited.

Join Us to Build the Blueprint

Making progress on these priorities will impact our transportation system and our region in tangible ways. It will also require a never-before seen level of collaboration across jurisdictional and sectoral lines.

The Greater Washington Partnership invites you to join us in advancing specific transportation solutions – projects, policies, and initiatives – to strengthen the Capital Region. These solutions will form the basis of a Regional Mobility Blueprint, an action-focused agenda for the Partnership and stakeholders across the region.

Get Involved

- Public Request for Information (RFI)
- Stakeholder roundtables and workshops
- Expert working groups and public events
- Learn more at:
www.greaterwashingtonpartnership.com/mobility

Addressing the Fundamentals

As part of any action, we must also address two of the key challenges that have held us back.

- **Regional coordination.** We need bold approaches that allow us to bring our complex regional governmental structures together around a shared strategy.
- **Funding.** The region needs to engage in a serious exploration of ways to increase transportation funding to make the critical investments needed in projects and programs, and place those funding sources on sustainable paths that are immune to projected decreases in gas tax, parking, and vehicle fee receipts.

Our Commitment

Among the assets of the Capital Region are the many committed leaders, across the public, private and nonprofit sectors, who are working to solve the region's mobility challenges. The organizations comprising the Greater Washington Partnership are ready to be partners, assume our responsibility, and help lead on the critical issue of mobility in the Capital Region.

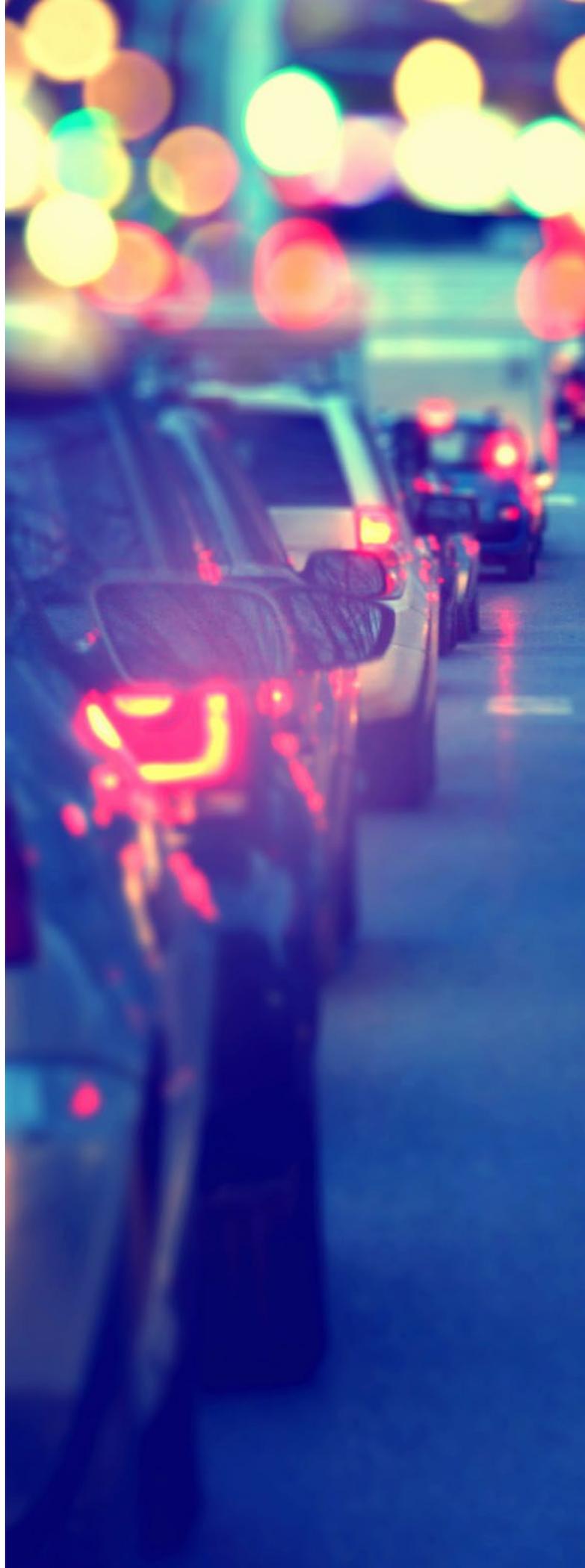


Mobility Initiative Co-Chairs

- **Thomas F. Farrell, II**
Chairman, President & CEO
Dominion Energy
- **Kenneth A. Samet**
President & CEO
MedStar Health
- **Mark A. Weinberger**
Global Chairman & CEO
EY

Mobility Initiative Steering Committee

- **Robert Blue**, Dominion Energy
- **Michael Curran**, MedStar Health
- **Tyler Duvall**, McKinsey & Company
- **Marcia Hale**, Building America's Future
- **Maurice Jones**, LISC
- **Jason Miller**, Greater Washington Partnership
- **John Porcari**, WSP USA
- **Kevin Virostek**, EY
- **Edward Wytkind**, EW Strategies, LLC
- **David Zipper**, German Marshall Fund, 1776 Seed Fund





Acknowledgements

We would like to thank the employers that comprise the Greater Washington Partnership for their time and support of this work. In particular, we would like to acknowledge Jon Godsmark, Tim Melrose, Nikhil Jain, Felicia Mason and the EY team for their expert guidance, analytical, and creative support.

Additionally, we would like to thank Sarah Kline of SK Solutions LLC for her research, counsel, and management of this report.

In preparing this report, the Greater Washington Partnership has sought the expertise of numerous public officials and other transportation stakeholders, including elected officials, representatives of state and city departments of transportation, metropolitan planning organizations, transit authorities, regional organizations, labor organizations, chambers of commerce, academic institutions, and nonprofit organizations. We thank these individuals for their thoughtful contributions to our work. In particular, we thank the region's four metropolitan planning organizations and the various Departments of Transportation, without whose data and input this analysis would not have been possible.

Endnotes

- 1 Greater Washington Partnership analysis of Brookings, "Global Metro Monitor 2015," available at <https://www.brookings.edu/research/global-metro-monitor/>.
- 2 Bureau of the Census, Moody's Analytics.
- 3 Baltimore-Washington International Thurgood Marshall Airport, Ronald Reagan Washington National Airport, Dulles International Airport, and Richmond International Airport.
- 4 Port of Baltimore and Richmond Marine Terminal. The Port of Virginia in Hampton Roads is outside the Capital Region though many goods moving to and from that port travel through the Region.
- 5 For purposes of the quantitative analysis underlying this report, the Partnership has identified four "peer regions" against which we will compare the Capital Region's performance. The regions were selected based on a combination of population, regional GDP, extent and nature of transportation services, and input from Partnership members.
- 6 U.S. Department of Commerce, Bureau of Economic Analysis.
- 7 Texas Transportation Institute, "2015 Urban Mobility Scorecard," available at <https://static.tti.tamu.edu/tti.tamu.edu/documents/mobilityscorecard-2015.pdf>.
- 8 American Transportation Research Institute, "2017 Top 100 Truck Bottleneck List," available at <http://atri-online.org/2017/01/17/2017-top-100-truck-bottleneck-list/>.
- 9 Greater Washington Partnership analysis of data from the American Community Survey and Jeannette Chapman, "Migration in the Washington Region: Trends between 2000 and 2015 and Characteristics of Recent Migrants," (George Mason University: Stephen S. Fuller Institute, 2017) available at http://sfullerinstitute.gmu.edu/wp-content/uploads/2017/09/SFI_Migration_Trends_Washington_Region_092017.pdf.
- 10 Kogod School of Business, "Greater Washington Index 2016: Millennials," (American University, 2017) available at https://www.american.edu/kogod/research/publications/upload/kogod_millennial_index_2017_final.pdf.
- 11 American Community Survey.
- 12 American Community Survey.
- 13 Bureau of Transportation Statistics and Federal Highway Administration, Freight Analysis Framework (U.S. Department of Transportation, 2016) available at <http://faf.ornl.gov/fafweb/>.
- 14 Carl Davis, "Inflation Drives Federal Gas Tax Down Almost 40%," (Tax Justice Blog, May 20, 2015) available at http://www.taxjusticeblog.org/archive/2015/05/inflation_drives_federal_gas_t.php#WZoRHeGPdQ.
- 15 Federal Transit Administration, National Transit Database.
- 16 See, e.g., Raj Chetty, et al. "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States," (Harvard University, 2014) available at https://scholar.harvard.edu/files/hendren/files/mobility_geo.pdf.
- 17 Center for Urban and Regional Analysis, L. Douglas Wilder School of Government and Public Affairs, "Understanding the Jobs-Affordable Housing Balance in the Richmond Region," (Virginia Commonwealth University, 2017) available at https://cura.vcu.edu/media/cura/pdfs/cura-documents/EditedJobs-Housing_July12_FINALE.pdf.
- 18 Joe Cortwright, "Surging City Center Job Growth," (City Observatory, 2015) available at <http://cityobservatory.org/wp-content/uploads/2015/02/Surging-City-Center-Jobs.pdf>.
- 19 GRTC, "Go Cards Retire For Advanced Fare Technology," (GRTC Press Release, October 5, 2017) available at <http://ridegrtc.com/news-initiatives/press-releases/go-cards-retire-for-advanced-fare-technology>.





About the Greater Washington Partnership

The Greater Washington Partnership is a first-of-its-kind civic alliance of CEOs in the region, drawing from the leading employers and entrepreneurs committed to making the Capital Region – from Baltimore to Richmond – one of the world’s best places to live, work, and build a business.

www.greaterwashingtonpartnership.com



@GW_Partnership



@gw_partnership



Greater Washington Partnership



Greater Washington Partnership