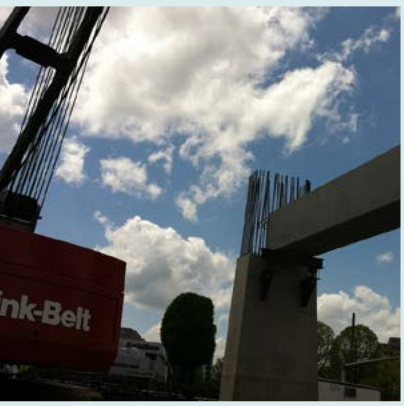




THINKING BIG
PLANNING SMART

A Primer for Greater Washington's Next Generation of Transit







Coalition for Smarter Growth
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A Primer for Greater Washington's Next Generation of Transit

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Contents

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ABOUT THIS REPORT

Preface

Fifty years ago, visionary leaders conceived, planned, and built Metro, radically reshaping the Washington, D.C. region. Where before a scattered series of private bus and streetcar lines served the District of Columbia and the closest suburban neighborhoods, Metro is a truly regional, cross-jurisdictional system. Today Metrorail is a national example of how a well-planned public transportation system can help fuel economic growth by revitalizing communities and helping hundreds of thousands of people get where they're going each day.

It's time to reinvest in our Metro system and to plan, fund, and build the next generation of transit networks for our region. The purpose of this report is to get you involved in creating a vision and plan for the new public transportation investments we need to link together our region's ever-growing number of livable, walkable centers and neighborhoods.

Without your involvement, a clear plan, and leadership by our elected officials and major businesses, we will fail to secure critical public transportation investments from our local, state, and federal governments. On the other hand, we will succeed if we can win the commitment of our elected officials to plan, fund, and build the next generation of transit networks to support a smart growth future for our region.

This report is the first piece of a Next Generation of Transit campaign by the Coalition for Smarter Growth to help make that goal a reality.

But before we can all look ahead, it's important to know where things stand today. This report doesn't discuss what form that next generation of investment should take. Instead, it's meant to provide a primer and serve as a resource for what's already in the works, so that we're all on the same page when we put on our planning hats.

NOW & MOVING AHEAD

Introduction

Without Metro, it's estimated our region would need approximately 710 lane-miles of additional highway lanes at a capital cost of $4.7 billion,[1] causing severe impacts in terms of homes taken for highway expansion. Proximity to Metro is estimated to have sparked some $212 billion in regional real estate value[2], and it's played a key role in helping older suburbs stave off the inner-suburban decline seen in other cities around the U.S. It's had a central role in the rebirth of Washington, D.C.

Metro and our region's other transit systems are essential to connecting people to jobs; particularly for lower-income households and workers, young people, seniors, and the disabled.

In recent years, D.C. neighborhoods served by Metrorail have increasingly attracted a flock of young professionals, downsizing empty nesters, and families from across the region and the nation. While other areas have suffered from the real estate collapse, these transit-rich neighborhoods have continued to boom.

> Make no little plans. They have no magic to stir men's blood and probably will not themselves be realized.
>
> Daniel Burnham

In Arlington, 27% of workers take public transportation to work.[3] Great transit and walkable streets have enabled residents and workers in the Rosslyn-Ballston corridor to convert many of their trips to walking, biking, and transit.

At the same time, regional leaders in government, business, and the nonprofit community have come to the consensus that our region must invest in a network of transit-oriented communities to handle expected growth, manage traffic congestion, and reduce air pollution, water pollution, and the loss of farms and forests.

Tysons Corner is being reborn as a walkable center thanks to Metro's new Silver Line, while White Flint is reemerging much the same way on the Red Line. Meanwhile, Reston Town Center has blossomed as a prominent mixed-use center and awaits the arrival of Metrorail. Alexandria continues to mix old and new urbanism.

Fairfax, Montgomery, Prince George's, Arlington, Alexandria, and even Woodbridge in Prince William County have all made transit-oriented development their top priority. As a result of long-term visionary planning and detailed implementation by local officials, our region now boasts some of the best walkable, transit-friendly neighborhoods in the country.

In time, our region's next walkable, transit-oriented neighborhoods will emerge from the revitalization of commercial strip corridors. The acres of parking lots in these corridors offer a place to focus growth without impacting suburban neighborhoods or increasing traffic.

But to meet the demand for walkable, transit-centered neighborhoods, we'll need to expand our transit networks to new communities and connect our existing network in innovative ways, harnessing the same regional vision it took to create Metro. In the process, we must also invest in restoring the Metrorail system - a transportation backbone so essential to our region that failure is not an option!

> $9804: annual savings from riding public transportation instead of driving in the Washington metro region, August 2012
>
> (source: APTA)

Benefits of Public Transportation

People are paying increasing attention to the cost of commuting by car and are seeking more affordable alternatives. With the sustained high price of gas, transportation is second only to shelter in U.S. household budgets, with Americans spending 18 cents of every dollar on transportation.[4]

Public transportation offers significant household cost savings by reducing the distance we have to drive and is particularly helpful where it has fostered transit-oriented neighborhoods that enable one-car or car-free lifestyles.

Driving isn't an option for many low-income, elderly, and disabled people. Public transportation is the only means these people have to connect to jobs and essential services.

Millennials are increasingly selecting public transportation, walking, and bicycling over the private automobile[5] for affordable alternatives to driving. When they do need a car, many turn to carsharing services like Zipcar and Car2Go, or services such as Uber.

3 in 5 Americans (63%) would rather address traffic by improving public transportation (42%) or developing walkable, bikeable communities (21%) – as opposed to building new roads, an approach preferred by only one in five Americans (20%).

Natural Resources Defense Council

Public transportation provides other benefits to users outside of their wallets. In an increasingly electronic age, public transportation provides valuable time for working, texting, and other activities – or even just a relief from the stress of a white-knuckle commute. Many people also point to transit's environmental impacts and reduced carbon footprint as benefits that they appreciate.[6]

Key to our economic competitiveness, the Metropolitan Washington Council of Governments (MWCOG) has found that in areas with strong public transportation, access to jobs and housing in our region will improve over time. It will decline in neighborhoods and corridors with only highway access.

The $10 billion[7] investment that created Metrorail generated millions of square feet and billions of dollars worth[8] of real estate investment at Metro stations across the region.

Local Public Transportation Providers

District of Columbia

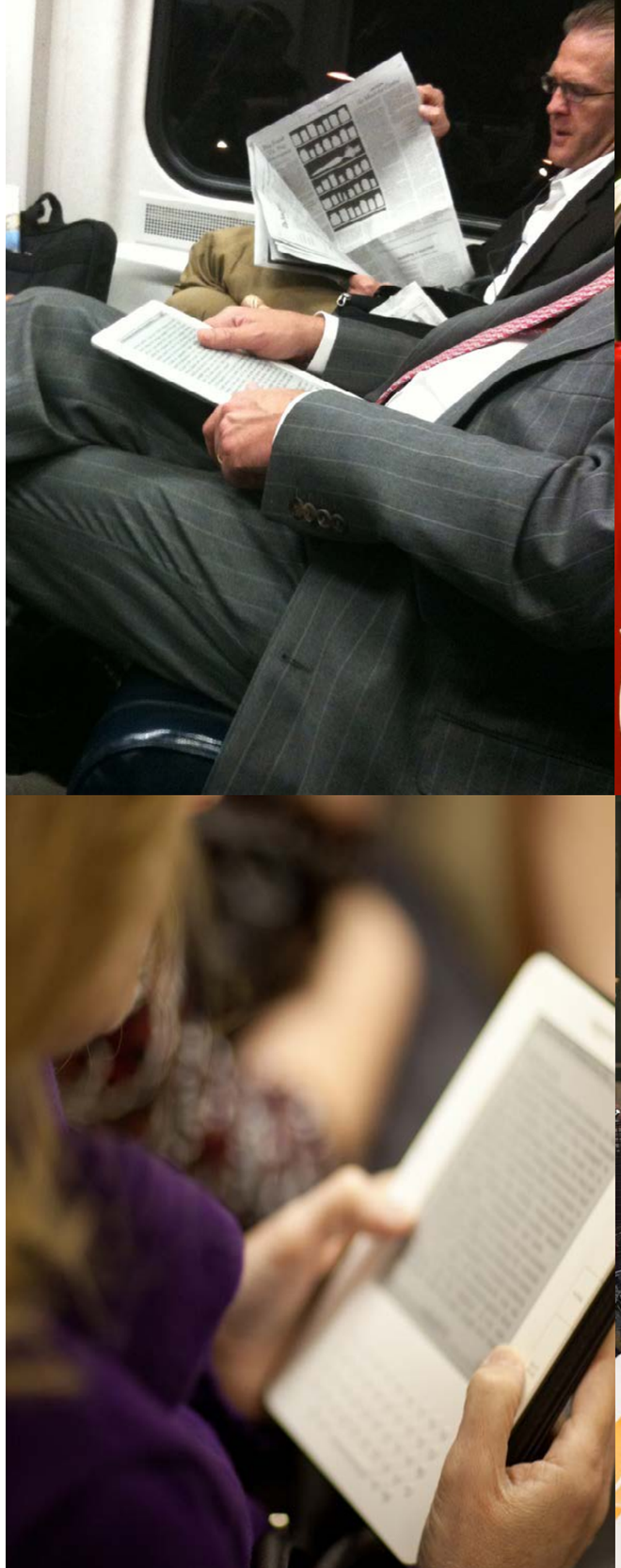
- WMATA
- MARC
- Virginia Railway Express
- Circulator

Maryland

- WMATA
- MARC
- Ride On (Montgomery County)
- TheBus (Prince George's County)
- CMRT Connect-A-Ride (Prince George's County)
- Howard Public Transportation (Howard County)

Virginia

- WMATA
- Virginia Railway Express
- ART (Arlington)
- Connector (Fairfax)
- Cue Bus System (City of Fairfax)
- DASH (Alexandria)
- LINK (Reston)
- Loudoun County Public Transportation (Loudoun County)
- OmniRide – PRTC (Prince William County/Stafford County)
- TAGS (Springfield)



Transit Characteristics by Mode

Mode	Capacity	Right of way	Passenger entry/exit	Fare collection	Frequency
Commuter rail	High-capacity with multicar trains	Traditional railroad lines – between urban core and suburbs	Stations	On-board or with pre-purchased tickets	Published schedules, typically only during peak hours
Heavy rail	High-capacity with multicar trains	Has own dedicated rail right-of-ways, above ground, at grade, or in tunnels	Stations	Collected in station via farecard or pass	Typically frequent enough to not require a published schedule
Light rail (LRT)	Medium-capacity with multicar trains	Usually has own dedicated right-of-ways, separated from other traffic, runs at-grade	Stations	Collected at station via farecard or pass	Typically frequent enough to not require a published schedule
Bus rapid transit (BRT)	High-capacity buses	Typically runs on dedicated bus lanes separated from other traffic. If shared lane, typically has traffic signal priority	Stations	Collected at station via farecard or pass	Typically frequently enough to not require a published schedule
Streetcar	Medium-capacity trains with a single or double car	Usually shares right-of-ways with automobile traffic	On street, typically at designated stops	Typically collected while boarding, cash accepted	Typically frequently enough to not require a published schedule
Local bus service	Medium or low-capacity buses	Shares right-of-ways with automobile traffic	On street, typically at designated stops	Collected while boarding, cash accepted	Published schedules

Commuter rail


Heavy rail

Light rail

Bus rapid transit

Local bus service

Streetcar

REGIONAL BACKBONE: METRO

In Progress & Under Construction

Making this transit-oriented regional vision a reality requires effective and interconnected transit services. Investing in transit-oriented development at Metro's remaining undeveloped stations could create enormous efficiencies of scale. Where we have good TOD (like the Rosslyn-Ballston Corridor in Arlington), Metro trains are filled with passengers traveling in both directions during peak hours. But where we don't, trains run largely empty in the reverse commute direction -- as they do today to Vienna or Greenbelt.

Fortunately, our region's plans recognize the efficiencies of Metrorail, and make taking advantage of the benefits a key part of their framework for regional growth.

Rehabilitating Metro: Metro Forward

But our investments in Metrorail and transit-oriented development are at risk if we don't complete the rehabilitation of the aging Metro system. Years of deferred maintenance, reflecting inadequate annual maintenance funding while jurisdictions focused on completing the system and building other transportation infrastructure, have led to significant breakdowns and service disruptions. A combined federal, state, and local effort to pump $3 billion in addition funds into the system is jumpstarting the rehabilitation, but will require additional investments in coming years. These additional funds must be the *first* priority for our next generation of transit investments.

Priority Corridor Network (Bus Priority Corridors)

WMATA, working in conjunction with individual jurisdictions, identified 24 high-ridership bus corridors in need of intensive service and operational improvements, which now constitute the Priority Corridor Network (PCN).

There are nine corridors are in Washington, D.C., five in Virginia, and 10 in Maryland. Implementation of the PCN is partially funded through a $59 million TIGER grant awarded to the National Capital Region Transportation Planning Board in February 2010. In these selected corridors, buses will receive priority for travel through a variety of investments, including transit signal priority technology, dedicated lanes in some locations or during peak periods, and queue-jump lanes (which designates priority lanes for buses at congested intersections, allowing them to bypass long traffic queues while facilitating transit through movements in turn lanes).

These technologies will synchronize traffic signals to clear intersections for approaching transit and emergency vehicles, reduce congestion, increase traffic flow, and lower the risk of incidents between automobiles, buses, bikers, and pedestrians.

Growing Metro Capacity: Metro Momentum

In mid-January 2013, recognizing the critical need to look to the region's transit future, WMATA released *Momentum*, its strategic plan to look beyond the current six-year *Metro Forward* capital improvement plan and guide growth and improvement over the next 10 years.

The strategic plan is divided into two parts. *Metro 2025* is a $6 billion series of capital improvements, including:

- 100% 8-car trains ($2 billion)
- More capacity at core stations including pedestrian tunnels ($1 billion)
- Fixing the bottleneck at Rosslyn ($1 billion)
- Next-generation communications infrastructure ($400 million)
- Speeding up buses on priority corridors ($600 million)
- More buses and a new garage to grow Metro's bus system ($500 million).

The second part, called *Metro 2040*, includes new tunnels to separate the Blue Line at Rosslyn and the Yellow Line at L'Enfant Plaza. It also includes potential Metrorail extensions farther into the suburbs, including Bowie and Centreville (Orange Line) and Potomac Mills (Blue Line). Finally, it looks at better integration with commuter rail and other surface transit. All *Metro 2040* plans are still in the conceptual phase, and the costs and impacts of long-term extensions will have to be evaluated. Neither the 2025 nor the 2040 plans address funding.

Beyond Metro: Projects & Plans in 2013

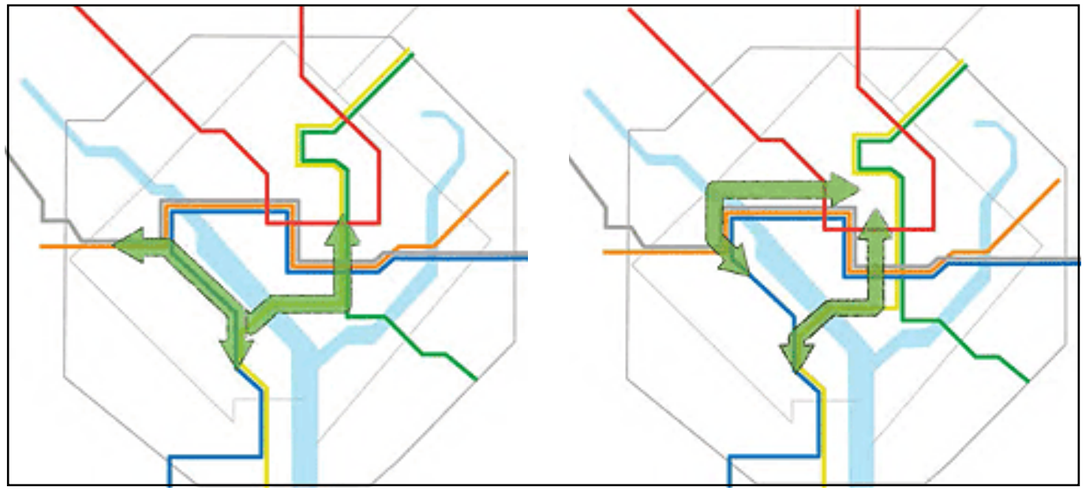
Implementation of MWCOG's *Region Forward* transit-oriented vision will require more high-capacity, frequent public transportation service in new corridors.

The region is advancing six unique transit projects today, with other concepts on the books in regional and sub-regional transportation plans.

The six we've selected are either under construction or in planning, and are highlighted on the following pages. They are Metro's Silver Line, D.C. Streetcar, Maryland Purple Line, Virginia streetcars, Virginia BRT corridors, and Montgomery rapid transit.

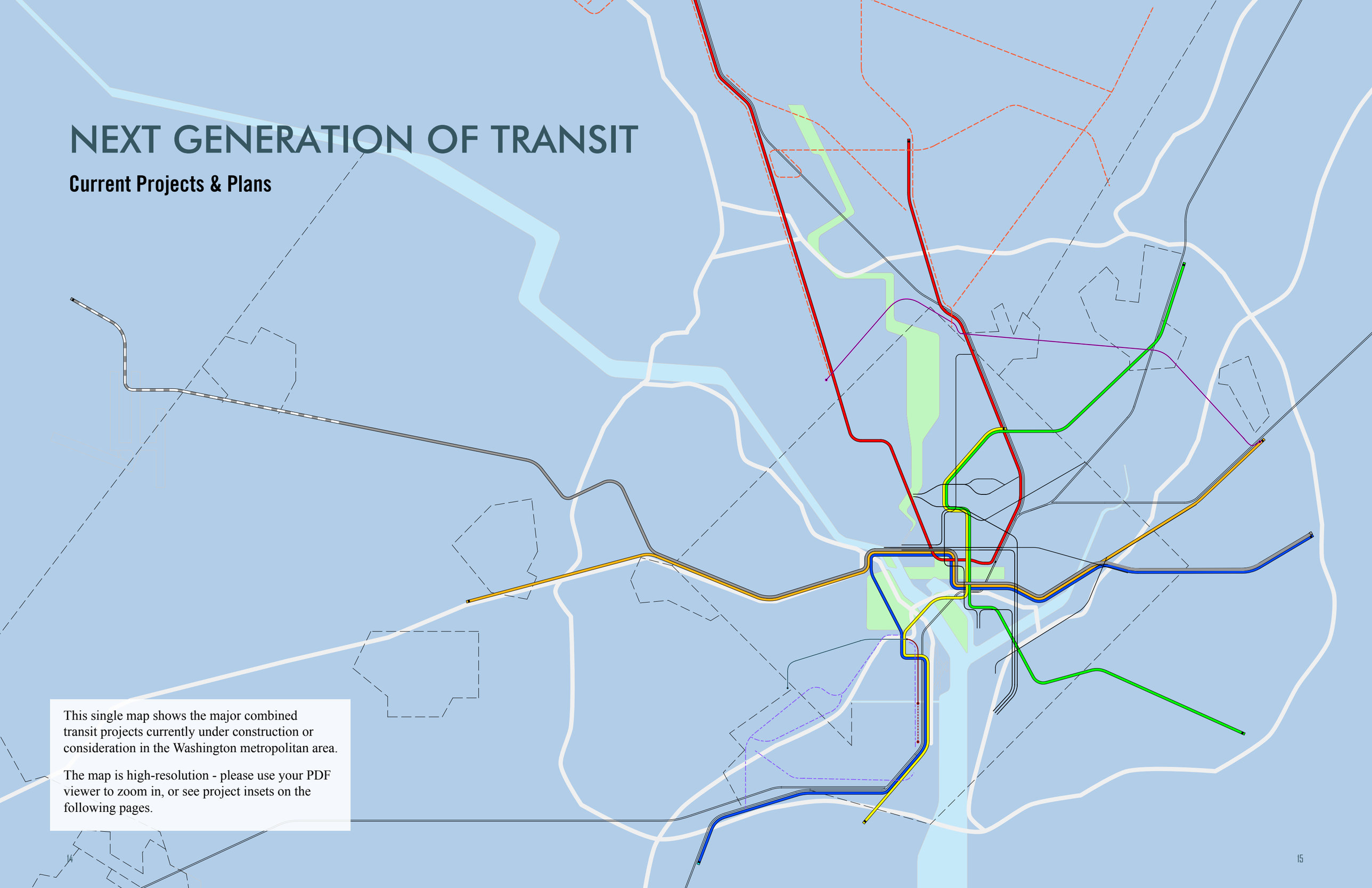
Additional transit proposals can be found in various local and regional plans, beginning on page 30.

Metro 2040 conceptual new tunnels and connections between lines



NEXT GENERATION OF TRANSIT

Current Projects & Plans



This single map shows the major combined transit projects currently under construction or consideration in the Washington metropolitan area.

The map is high-resolution - please use your PDF viewer to zoom in, or see project insets on the following pages.

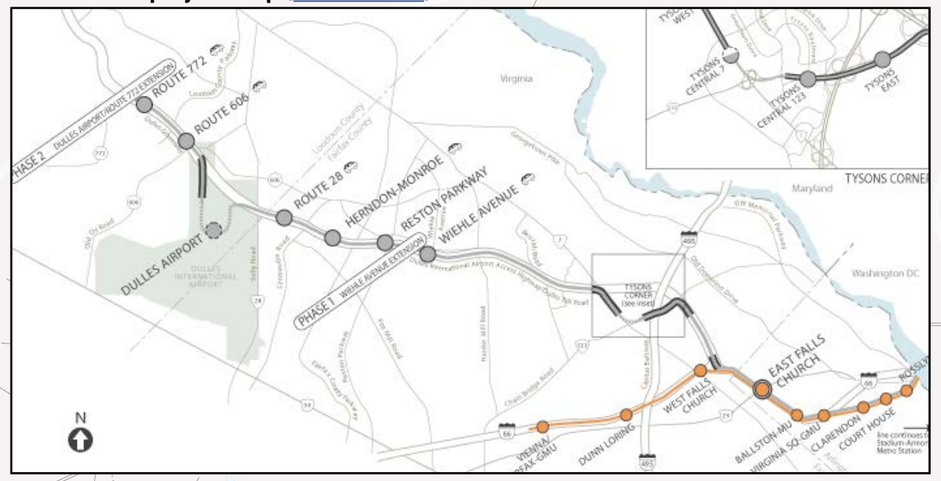
SILVER LINE

Fairfax & Loudoun Counties, VA

This 23-mile extension of the existing Metrorail system will be operated by WMATA from East Falls Church to Washington Dulles Airport, and west to Ashburn. The project's 11 new stations are being built in two phases. The first phase incorporates five stations: four stations will serve Tysons Corner, and the fifth will serve Wiehle Avenue in Reston.

The Reston-Herndon area will feature three stations: Wiehle (Phase I), Reston, and Herndon (Phase II). The remaining Phase II stations will be Dulles/Route 28, Dulles Airport Route 606, and Route 772 in Loudoun.

Dulles Metro project map (click to visit)



Silver Line At-a-Glance

Route	Phase I	Phase II
Mode	Heavy rail	
Total Length (miles)	11.6	11.4
Frequency of service (peak/off-peak)	7 min / 12 min	
Projected average daily ridership (year)	57,400 (2025)	
Projected completion date	2013	2016
Capital cost/mile ($2012)	$155.5 million	under evaluation
Total # of vehicles	1366 (entire Metrorail system with Silver Line)	
Vehicle capacity	120	
Operated by	WMATA	

D.C. STREETCAR

Washington, D.C.

The proposed D.C. Streetcar is an eight-line light rail and streetcar network under construction by the D.C. Department of Transportation (DDOT). When complete, the system will serve all eight wards of the District. The eight planned lines are:

- MLK Jr. Avenue/M Street
- K Street/H Street/Benning Road
- Georgia Avenue/14th Street/7th Street
- 8th Street/MLK Jr. Avenue/K Street/H Street
- Rhode Island Avenue/U Street/14th Street/K Street
- Florida Avenue/8th Street/U Street/Calvert Street
- Minnesota Avenue
- Calvert Street/Columbia Road/Irving Street/Michigan Avenue

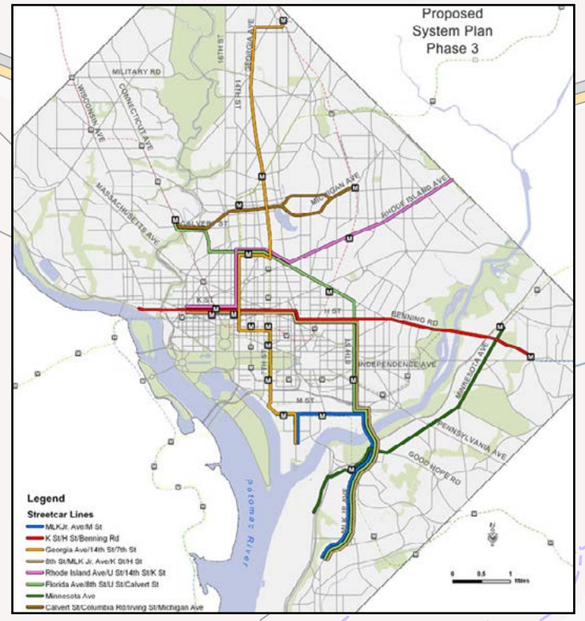
The H Street/Benning Road segment is projected to begin operation in late 2013 or early 2014, pending vehicle testing, while construction on Phase 1 of the Anacostia line continues.

The remaining lines are still being planned; an Alternatives Analysis study for the Union Station to Georgetown (via K Street) segment is in progress.

D.C. Streetcar At-a-Glance

Mode	Streetcar
Total Length (miles)	37
Frequency of service (peak/off-peak)	not available
Projected average daily ridership (year)	15,000
Projected completion date	2013 (Phase I)
Capital cost/mile ($2012)	40.25 million
Annual operations and maintenance costs	71.06 million
Total # of vehicles	not available
Vehicle capacity	168
Operated by	DDOT

D.C. Streetcar project map (click to visit)



PURPLE LINE

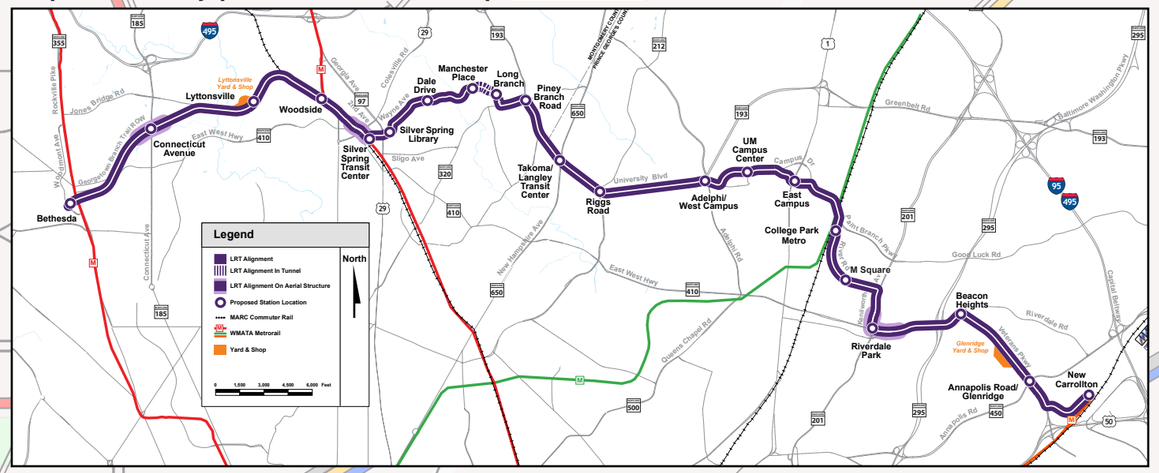
Montgomery & Prince George's Counties, MD

The Purple Line light rail project is slated to run from Bethesda in Montgomery County to New Carrollton in Prince George's County, connecting Metrorail's Red, Green, and Orange Lines, as well as MARC, Amtrak, and local bus services. The plan calls for 21 stations.

Purple Line At-a-Glance

Mode	Light rail
Total Length (miles)	16.3
Frequency of service (peak/off-peak)	6 min / 10 min
Projected average daily ridership (year)	55,300 (2030)
Projected completion date	2020
Capital cost/mile ($2012)	$99.83 million
Annual operations & maintenance costs ($2012)	$29.26 million
Total # of vehicles	55
Operated by	MTA

Purple Line locally-preferred alternative map (click to visit)



VIRGINIA STREETCAR

Arlington and Fairfax, VA

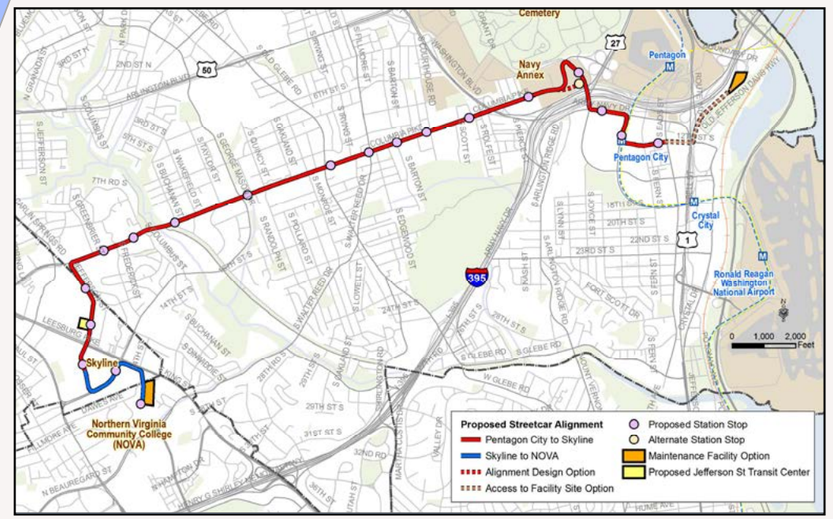
Virginia Streetcar At-a-Glance

Project	Columbia Pike	Crystal City
Mode	Streetcar	TBD
Total Length (miles)	5.0	
Frequency of service (peak/off-peak)	12 min / 15 min	
Projected average daily ridership (year)	3,162 (2016)	
Projected completion date	2015	
Capital cost/mile ($2012)	48.15 million	
Annual operations & maintenance costs ($2012)	22.54 million	
Operated by	TBD	

The Columbia Pike Streetcar (blue line) is a joint effort between Arlington and Fairfax Counties and WMATA to bring improved public transportation services to the 4.5 mile mixed-use corridor between Fairfax's Skyline area and Arlington's Pentagon City Metro station. The streetcar will replace the enhanced bus service currently provided by Pike Ride, carrying additional passengers and supporting plans for mixed-use revitalization and additional housing in the corridor.

Also shown is the planned Crystal City Streetcar (red line and dotted). Study of the Arlington portion is slated to begin in 2013, so data is unavailable for this proposed corridor. Alexandria may decide to extend the streetcar into Potomac Yard with a terminus at either the proposed Potomac Yard Metro station or Braddock Road Metro. The streetcar would be in addition to the BRT route that Alexandria is currently constructing through Potomac Yard from Braddock Road and Pentagon City (see page 24).

Columbia Pike Streetcar map (click to visit)



VIRGINIA BRT

Alexandria and Arlington, VA

Virginia BRT At-a-Glance

Route	Van Dorn – Pentagon	Braddock Rd-Potomac Yard - Crystal City - Pentagon City	Duke Street (Old Town - Landmark)
Mode	BRT		
Total Length (miles)	6.5	5.0	TBD
Frequency of service (peak/off-peak)	7.5 min / 15 min	12 min / 15 min	
Projected average daily ridership (year)	15,000 (2035)	1,779 (2012)	
Projected completion date	2018	2014	
Capital cost/mile ($2012)	15.38 million	1.72 million	
Annual operations & maintenance costs	60 million	8.095 million	
Total # of vehicles	not available	13	
Operated by	TBD	WMATA	

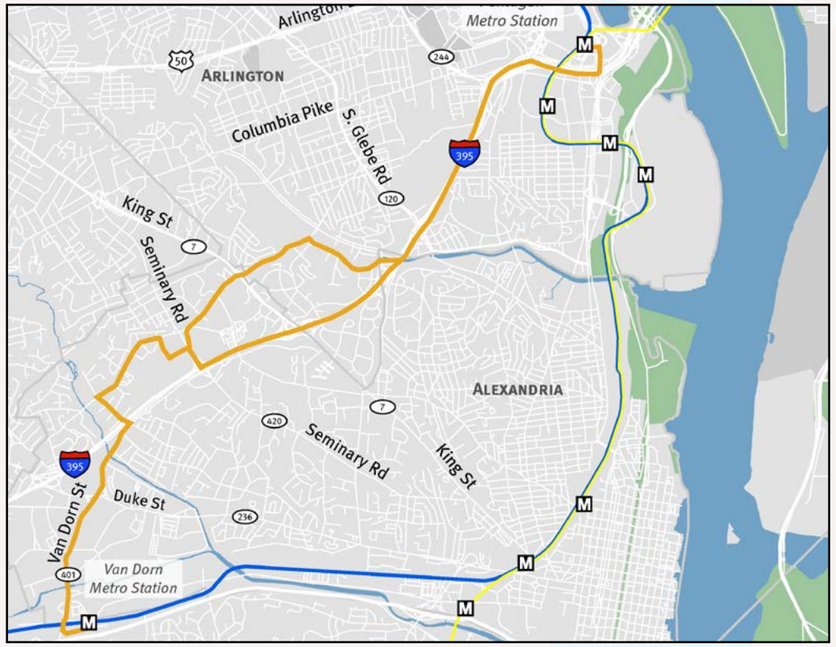
Alexandria is planning three BRT corridors: Van Dorn-Pentagon, Braddock Road-Potomac Yard-Crystal City-Pentagon City, and Duke Street.

The BRT transitway between Braddock Road Metro station and Pentagon City is projected to be operational in 2014.

Another corridor would connect the Van Dorn Street Metrorail station to the Pentagon and Pentagon City Metrorail stations, traversing a 6.5 mile route connecting to future redevelopment of Landmark Mall, the new Beauregard Corridor mixed-use redevelopment, and Shirlington. At Mark Center, a second branch for this corridor would enter the I-395 HOV lanes and continue to the Pentagon and Pentagon City Metrorail stations. The City will begin the Alternatives Analysis and Environmental Review process on the corridor in the spring of 2013 (projected operation to begin in 2018).

Finally, Alexandria will also study an east-west BRT corridor along Duke Street, between Old Town and Landmark, which may potentially extend into Fairfax County; further land use study is required and funding is still being identified for this corridor (projected to begin construction in 2020).

Virginia BRT lines map (click to visit)



MONTGOMERY RAPID TRANSIT

Montgomery County, MD

Montgomery County is planning a Rapid Transit system on key corridors that would complement and integrate with Metro's Red Line and the long-planned Purple Line. The Montgomery County Transit Task Force, a group appointed by the Montgomery County Executive, proposed a 160-mile system incorporating the most important features of a high performing bus rapid transit system, including dedicated right-of-way to the maximum extent possible, off-vehicle ticket purchase, level boarding, real-time bus arrival information, and very frequent service.

The preliminary cost estimate from the Transit Task Force indicated it would cost approximately $12 million per mile for capital construction.[9] A more accurate cost estimate will become clear as the proposal is honed by the county's technical staff and consultants.

Montgomery County's DOT and Planning Department have begun their own technical studies to determine service considerations, right-of-way needs, and prioritization of the proposed routes. Based on ridership forecasts from the Planning Department and existing land use plans, Phase I seems likely to include one or more of the following high-traffic corridors: Route 355 (Rockville Pike), Georgia Avenue, Viers Mill Road, the Corridor Cities Transitway, and Route 29 (Colesville Road).

To learn more about this evolving project, please visit:

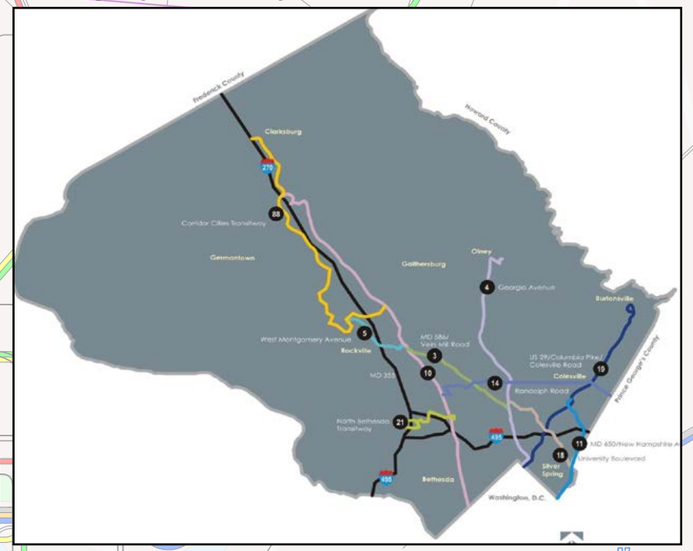
- Montgomery Planning Department Recommendations
- Institute for Transportation and Development Policy report on Montgomery RTV
- Transit Task Force Recommended Phase I map

Montgomery RTV At-a-Glance

Mode	BRT
Total Length (miles)	90-160
Projected completion date	2021
Capital cost/mile ($2012)	11.32 million
Annual operations & maintenance costs ($2012)	181.23 million
Operated by	TBD

This data is from a 2011 Parsons Brinckerhoff study. See notes, following page, for more info.

Planning Department map (click to visit)



COMPARING CURRENT PROJECTS BY THE NUMBERS

	Mode	Total length (mi)	Frequency of Service (one-direction) minutes		Average Daily Ridership		Operations & Maintenance Cost (millions)		Operations & Maintenance cost estimated $2012 (millions)	Capital Cost (billions)		Capital cost estimated $2012 (billions)	Capital cost/mi $2012 (millions)	Operating cost/mi $2012 (millions)	Projected completion date	# of vehicles	vehicle capacity	notes
			Peak	Off-peak	Persons	Year	Amount	Year		Amount	$ Year							
Silver Line Phase 1	Heavy Rail	11.6	7	12	57,400	2025	n/a	n/a	n/a	$2.7	2007	$1.809	$155.95	n/a	2013	1366 (all Metrorail)	120	Daily Station Boardings. Full LPA data.
Silver Line Phase 2	Heavy Rail	11.4	7	12			$117.88	2025	n/a	$3.83	n/a	n/a	n/a	n/a	2016		n/a	This is O&M for the entire completed projected phases 1 and 2.
DC Streetcar H Street/Benning Road	Streetcar	2.02	10	10	13,900	2030	$1.163	2012	$1.163	$0.08	2009	$0.079	$39.32	$0.58	2014	5	168	
DC Streetcar Anacostia	Streetcar	0.5	15	15	1100	2030	$0.464	2012	0.464	$0.025	2009	$0.025	$49.64	$0.93	n/a	2	n/a	
DC Streetcar (all phases)	Streetcar	37	n/a	n/a	15,000	n/a	$68	2009	71.06	$1.5	2009	$1.489	$40.25	$1.92	n/a	n/a	n/a	
Purple Line	Light Rail	16.3	6	10	55,300	2030	$28.55	2010	29.26375	$1.6	2011	$1.627	$99.83	$1.80	2020	55	n/a	
Columbia Pike Streetcar+	Streetcar	5	12	15	3162	2016	$22.45	2011	22.540	$0.2225	2011	$0.226	$48.15	$4.80	2015	n/a	115	
Crystal City	Streetcar	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	
Braddock Road - Pentagon City	BRT	5	12	15	1779	2012	$8.063	2011	8.095	n/a	2011	$0.009	$1.72	$1.62	2014	13	n/a	
Duke Street	BRT	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	
Van Dorn-Pentagon	BRT	6.5	7.5	15	15,000	2035	$60	2012	60	$0.1	2012	$0.100	$15.38	$9.23	2018	n/a	n/a	
TTF Montgomery BRT	BRT	90 - 160	n/a	n/a	n/a	n/a	$180.51	2011	181.232	$1.826	2011	$1.857	$11.32	$1.10	2021	n/a	n/a	
PB Montgomery BRT +~	BRT	150	10	15	186,000	2040	$165	n/a	n/a	$2.4	2010	$2.479	$16.53	n/a	2020	347	n/a	Cost/Boarding $2.44
CCT	BRT	15	3 to 5	8 to 10	47,700	2035	n/a	n/a	n/a	$0.521	2012	$0.521	$34.73	n/a	2020	68	n/a	Phase 1 and Phase 2

+Average of cost estimate range ~Average of ridership estimates

Methodology

In order to compare the costs for all the proposals, capital and operating costs were converted to current year $2012 dollars.

To convert capital cost from the base year to current year dollars ($2012), we used the 2012 Second Quarter Turner Building Cost Index. This index takes into account labor rates, productivity, material prices and competitive condition of the market place.

The same process was used to convert operation and maintenance costs to current year dollars ($2012). Since a large share of O&M costs consist of labor, our team used the U.S. Department of Labor Employment Cost Index (ECI) for the conversion.

Notes

Analyst Haleemah Qureshi completed this table in August 2012, therefore it does not include data from any studies completed or updated since that time.

The Montgomery County BRT network proposal information is primarily from the report prepared by the Transit Task Force in May 2012. However the Task Force report does not specify ridership or frequency of service data due to the belief that "traditional modeling does not necessarily apply in the case when a transformational comprehensive network is being proposed." In other words, the ridership growth forecasts do not take into account new riders that will be attracted to the network.

Therefore in order to maintain metrics for comparison, ridership and frequency of service statistics are from an older study conducted by Parsons Brinckerhoff and MCDOT in 2011. It should also be noted that the 2011 study does not include the CCT unlike the TTF report. Information for the CCT is shown separately in order to provide a clearer picture of the BRT network.

The Capital Cost for the CCT is the sum of the cost for the two phases of construction. Phase 1 costs were derived from the Transit Task Force report and Phase 2 costs were taken from the MTA report. All costs were converted to 2012 dollars before any calculations were made.

Financing for the second phase of the Silver Line is currently under discussion, therefore the capital cost has yet to be determined. At the moment, the capital cost figures for phase 2 are in the range of $3 billion (year of expenditure).

28

OTHER LOCAL & REGIONAL PLANS

In addition to the projects outlined previously in this report, new public transportation networks and projects are proposed in various government planning documents, as well as by the Sierra Club and contributors to Greater Greater Washington. Inclusion of specific plans and projects does not imply our endorsement.

Regional Constrained Long Range Transportation Plan (CLRP)

The CLRP is the governing transportation plan for the region, and is limited to projects for which there is reasonably-identified funding. The CLRP includes over 750 transportation projects throughout the region.

Northern Virginia Transportation Authority: TransAction 2040

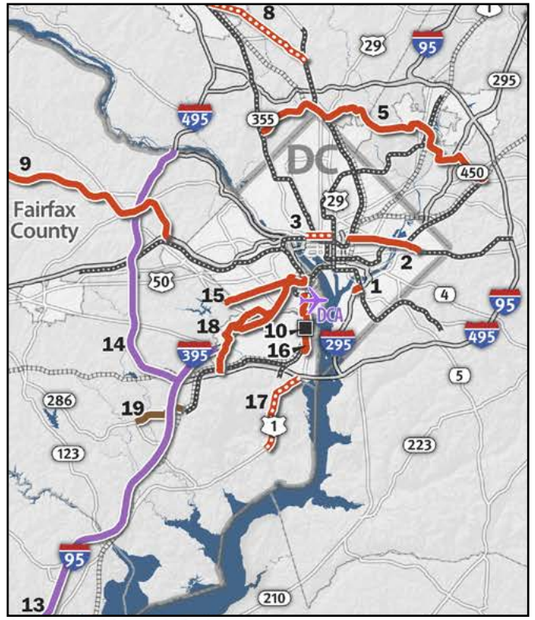
TransAction 2040 is an update of the NVTA's 2030 Transportation Plan. The project list features over 100 highway projects, more than 50 transit projects, and over 40 pedestrian and bicycle projects.

Maryland's Consolidated Transportation Program

The *Consolidated Transportation Plan* (CTP) is Maryland's six-year capital budget for transportation infrastructure. Major transportation projects included in the 2013 report are Baltimore's Red Line (light rail), the Purple Line (light rail), and the Corridor Cities Transitway (BRT).

Prince George's Countywide Master Plan of Transportation

Prince George's transportation plan includes the Purple Line and TOD at multiple transit nodes. The plan ties transportation investments to four tiers: developed, developing, rural, and corridors. For example, high-frequency bus service (provided by TheBus and Metrobus) and Metrorail serves the developed tiers, and lower-frequency lines service less dense tiers. The plan includes a potential Green Line Metrorail extension to BWI-Thurgood Marshall Airport via Konterra-Brickyard, Laurel, and Fort Meade, as well as BRT/LRT on MD Route 5 (Branch Avenue Metro to Brandywine).



Regional CLRP Transit Projects Map

Fairfax County 2050 Countywide Transit Network Study

The *2050 Countywide Transit Network Study* will determine Fairfax County's future transit needs, and identify high-density corridors, determine the quality of transit necessary, and establish an interconnected, multi-modal transit network to increase connectivity between residential and business activity centers in Fairfax County and regional transit systems.

MARC's Growth and Investment Plan

The MARC commuter rail system *2007 Growth and Investment Plan* targets improvements in ridership and service. Ridership objectives include increasing passenger carrying capacity threefold and increasing the of share trips carried by the commuter rail system during peak travel periods. Enhancing peak service by lowering headways (interval between trains) on the Penn Line (to 15-minutes) and the Camden/Brunswick Lines (to 20-minutes) is a priority. Additional objectives include providing express and non-stop service, late-evening and weekend services, and improving reliability to 95% on-time or better.

VRE Expansion Plan

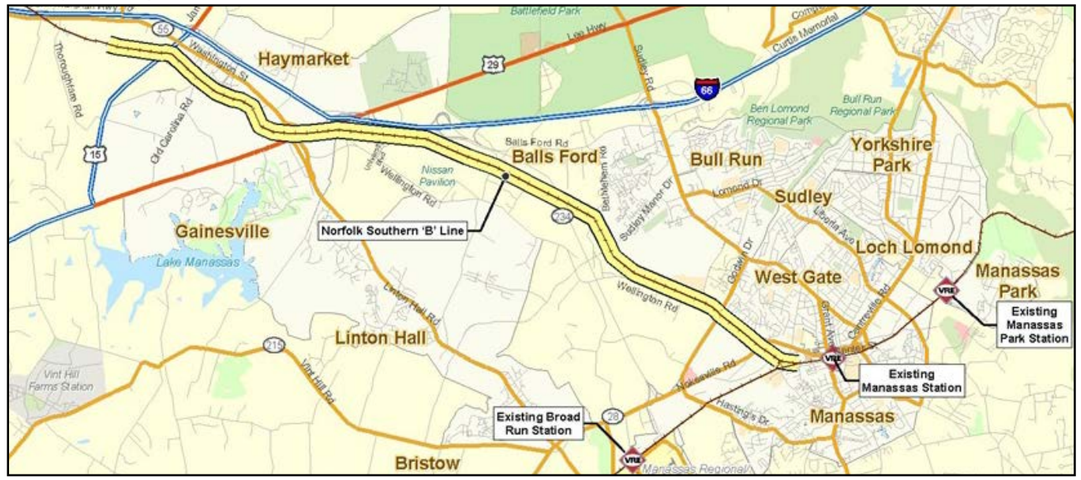
The Virginia Railway Express (VRE) commuter rail system is in the preliminary design stage for an approximately 11-mile extension west from the City of Manassas to the Town of Haymarket. Three new commuter rail stations could be built along the extension, at (or near) Sudley Manor/Innovation, Gainesville, and Haymarket. The environmental impact study, along with preliminary engineering and transportation planning services, is underway.

Metropolitan Washington Council of Governments Planning

Aspirations Scenario

Aspirations focuses on implementing a network of variably-priced highway lanes and a regional BRT network operating on toll the lanes. The scenario also includes transit-oriented land use and the following

VRE Haymarket Expansion



high-profile transit projects: Purple Line, Georgia Avenue Transitway (Glenmont to the ICC), US 1 Transitway (King Street Metro to Potomac Mills), and the VRE extension to Haymarket. The primary transportation benefits derive from the land use changes and transit.

What Would it Take? Scenario

What Would it Take? (WWIT) examines how effective land use and transportation policies and projects can mitigate climate change and help reduce mobile carbon dioxide (CO_2) emissions in the Washington region. The scenario emphasizes TOD, fixing the east-west job imbalance, and additional transit including Metrorail feeder bus services, neighborhood circulator buses, the K Street Transitway, and bus service on HOV facilities (US 50, I-270, US 29). WWIT also includes free bus-rail transfers, free off-peak bus service, and the implementation of the technology and priority components of the TPB TIGER grant.

Region Forward and Activity Centers

Region Forward, a vision and regional compact adopted in 2010, represents the comprehensive vision of the region's 21 jurisdictions and follows a multi-year planning process. At its core, it shares the Coalition for Smarter Growth's long-held vision for a network of transit-oriented communities. Its stated goals include:

- The enhancement of established neighborhoods of differing densities with compact, walkable infill development, rehabilitation and retention of historic sites and districts, and preservation of open space, farmland, and environmental resource land in rural areas.
- Transit-oriented and mixed-use communities emerging in regional activity centers that will capture new employment and household growth.
- A broad range of public and private transportation choices for our region, which maximizes accessibility and affordability to everyone and minimizes reliance upon single occupancy use of the automobile.
- A transportation system that maximizes community connectivity and walkability, and minimizes ecological harm to the region and world beyond.

To implement this vision, the Council of Governments recently adopted an updated map and plan for Activity Centers which will be more compact, more walkable and mixed-use, and more transit-oriented.

Sierra Club Northern Virginia Transit Vision

The Sierra Club's *Northern Virginia Transit Vision* promotes transit connectivity and an increase in walkability, and aims to increase local support for transit investment. The vision suggests potential criteria for prioritizing transit projects, including connecting activity centers and transit modes, providing congestion relief, supporting land use planning at stations, cost-benefit analysis, and consideration of historical and environmental factors. Corridors identified as offering the highest potential for successful transit and improved connectivity include Route 7 (Alexandria to Tysons), Pentagon to Van Dorn, Glebe Road, and the Beltway HOT lanes bus service.

Greater Greater Washington

Contributors to the blog *Greater Greater Washington* have offered a range of ideas for new public transportation routes in the region, including Metrorail, streetcar, and commuter rail. Their posts and maps can be found online at greatergreaterwashington.org. *Greater Greater Washington*'s crowd-sourcing is a prime example of the public engagement that should be integrated in a next generation of transit vision.

GETTING THERE

Information about the many transit plans and projects proposed and in progress across our region is scattered and decentralized across dozens of jurisdictional websites. To succeed in our mission of planning an effective Next Generation of Transit, we need a consolidated transit plan.

Let's summarize what we know:

A few major public transportation projects are under construction, funded, or in the final planning stages:

- Silver Line
- Early phases of the D.C. Streetcar
- Purple Line
- Columbia Pike Streetcar
- Alexandria BRT corridors
- Priority bus corridors

All of these have been approved for inclusion in the region's formal Constrained Long Range Plan (CLRP).

Other prominent transit projects featured in the CLRP include the Corridor Cities Transitway in Montgomery County, VRE expansion, the Potomac Yard Metro station, the K Street Transitway, US 1 streetcar in Crystal City, and expanded HOV/HOT lanes along the I-270/US 15 Corridor, I-66, I-95/395, the Franconia/Springfield Parkway, and the Fairfax County Parkway.

Many other plans for transit projects and networks have been put forward as well. These various other plans contain both CLRP-approved projects and non-CLRP projects. These include:

- Northern Virginia Transaction 2030 Plan (and 2040 Plan update)
- Montgomery Rapid Transit system (BRT Plan)
- MARC expansion plan
- Local public transportation plans

The Sierra Club and *Greater Greater Washington* have been doing their own brainstorming.

Finally, MWCOG's *Region Forward* has a transit-oriented vision for the region at its core.

Frankly, it's challenging to get a handle on the many transit plans. That's one major reason why the Coalition for Smarter Growth advocates collaborating to create one central, comprehensive, and understandable vision for a next generation of transit network for our region.

By engaging stakeholders in bottom-up brainstorming, we aim to inspire an official process for developing a comprehensive and consolidated regional public transportation plan.

Our goal is for the region to complete that plan within the next two years, while launching a concurrent effort to identify and dedicate significantly more funding to our public transportation needs.

Principles to Guide a Next Generation of Transit

1. **High-capacity public transportation is the most important investment** for supporting a sustainable region of livable, walkable centers, and neighborhoods.

2. **Several factors make public transportation investments critical**:

   - High energy prices and the high cost of auto transportation
   - Climate change
   - Air and water pollution
   - Failure of road expansion to effectively manage traffic, due to induced demand and related inefficient patterns of auto-dependent development
   - The significant number of residents who cannot drive, cannot afford a car or do not own a car. This includes lower-income residents, the disabled, the young and elderly, and the growing sector of our population seeking to live in communities where they do not have to be dependent on a car.
   - The benefit public transportation provides in supporting compact, efficient development, lowering per capita infrastructure costs and saving land.

3. **Rehabilitating and improving our Metrorail system must be our first priority.**

4. **Major public transportation investments must be tied to good land use:** well-designed, compact, mixed-use, mixed-income, walking and biking-friendly neighborhoods with interconnected local street networks - both transit-oriented development and traditional neighborhood development.

5. **Supporting build-out at our existing Metro stations should be a priority**, and together with mixed-use development at all stations, will ensure that our Metro trains have high ridership in both directions all day.

6. **New high-capacity public transportation corridors must include the region's commercial/retail corridors**. Given the strong commitment to preserving the character of existing suburban neighborhoods, these commercial corridors offer the best opportunity to absorb regional growth while protecting suburban neighborhoods.

7. **We should be flexible and not locked into one public transportation mode as the answer.** We should ensure we match the public transportation mode, design and service plan to the land use densities and levels of service we are trying to achieve.

8. **Public transportation planners should ensure that each public transportation study considers all modes and the necessary mixed-use, walkable, and transit-oriented urban design** essential to maximizing ridership and the value of the public transportation investment. Safe and robust access to public transportation by promoting walking and bicycling and supportive local street networks must be a part of any public transportation and funding plan.

9. **Continuing to debate the mode after a final vote by an elected board or council isn't constructive.** It delays and even harms the advancement of much needed public transportation investments.

Let's get to work!

Citations

[1] WMATA, "Making the Case for Transit", page 8, http://www.wmata.com/pdfs/planning/WMATA%20Making%20the%20Case%20for%20Transit%20Final%20Report%20Jan-2012.pdf

[2] http://dc.streetsblog.org/2011/10/17/what-if-washington-never-built-metro/

[3] Brookings Metropolitan Policy Program, "Connecting to Opportunity: Access to Jobs via Transit in the Washington, D.C. Region", Appendix 3, http://www.brookings.edu/research/papers/2012/11/~/media/D3589634EEC94C09B895AB17D126DC1F.ashx

[4] http://www.transact.org/report.asp?id=41

[5] http://www.nytimes.com/2012/03/23/business/media/to-draw-reluctant-young-buyers-gm-turns-to-mtv.html

[6] http://www.realtor.org/articles/how-millennials-move-the-car-less-trends

[7] The Great Society Subway by Zachary Schrag. Amount in nominal dollars, not real dollars.

[8] WMATA, "Making the Case for Transit", page 47, http://www.wmata.com/pdfs/planning/WMATA%20Making%20the%20Case%20for%20Transit%20Final%20Report%20Jan-2012.pdf

[9] http://www6.montgomerycountymd.gov/Apps/cex/transit/reportfinal.asp

Other references not listed here are provided as hyperlinks throughout the publication.

References

Crystal City – Potomac Yard Transit Improvements Project (2012). Transit Operations Plan. Available online here.

District Department of Transportation (2010). DC Streetcar System Plan. Available online here.

Dulles Corridor Metrorail Project (2012). Phase 2 Fact Sheet. Available online here.

Dulles Corridor Metrorail Project (2012). Project Overview Fact Sheet. Available online here.

Metro Washington Council of Governments (2012). Financially Constrained Long-Range Transportation Plan for 2030, Project Description Form: Bus Rapid Public transportation from Van Dorn Metrorail Station to Pentagon Metrorail Station. Available online here.

Montgomery County Department of Transportation (2011). Countywide Bus Rapid Transit Study: Consultant's Report (Final). Available online here.

Pike Transit Initiative (2012). Columbia Pike Transit Initiative, Alternatives Analysis / Environmental Assessment: Executive Summary. Available online here.

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