Executive Summary

SMRT
SOUTHERN MARYLAND RAPID TRANSIT STUDY

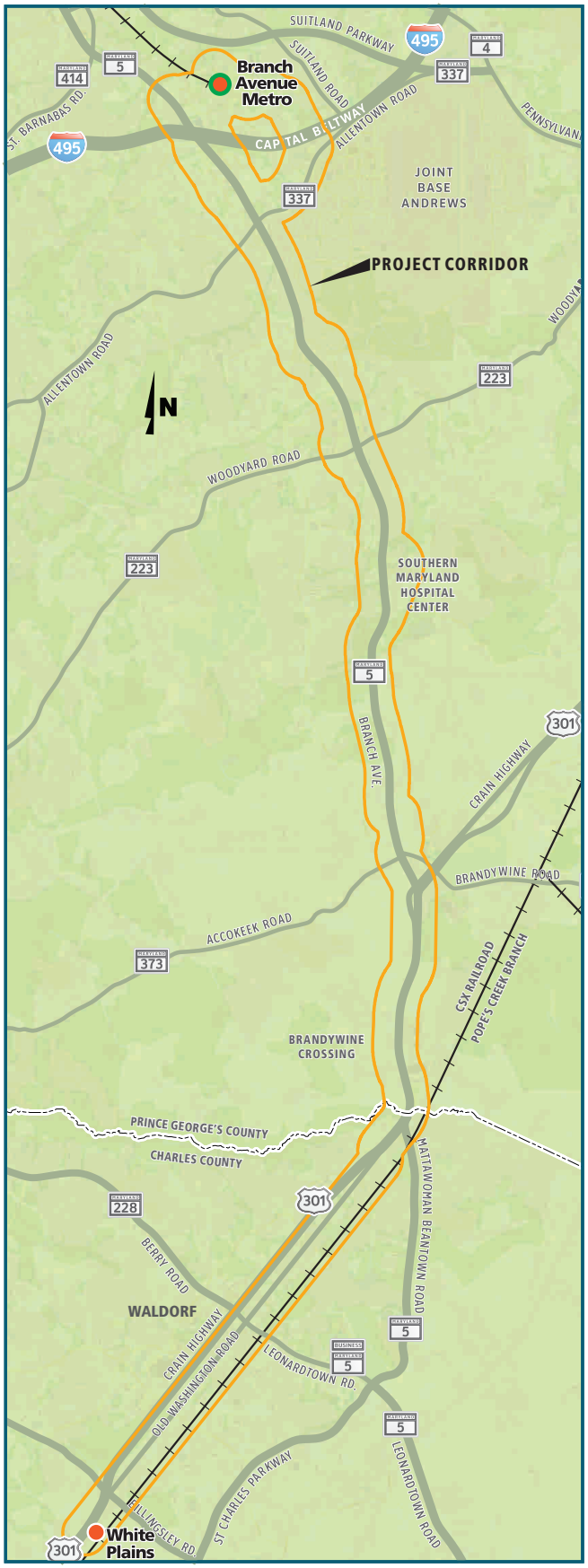
The Maryland Department of Transportation's (MDOT) Maryland Transit Administration (MTA) is working to further advance a rapid transit system along 18.7 miles of the MD 5 (Branch Avenue)/US 301 (Crain Highway) corridor, between Branch Avenue Metrorail Station in Prince George's County and the Waldorf-White Plains area in Charles County (see Figure ES-1). A statement representing the transit Vision for this corridor, referred to as the Southern Maryland Rapid Transit (SMRT) corridor, originated from MTA's 2016 Southern Maryland Rapid Transit Project Corridor Vision (Corridor Vision) document: **Providing safe, accessible, efficient and convenient high-capacity rapid transit during both the peak and off-peak hours in the MD 5/US 301 corridor will overcome a number of transportation challenges that exist in the corridor.**

The Metropolitan Washington Council of Governments (MWCOG) 2040 forecasts anticipate significant growth in employment, population and the number of households for Prince George's, Charles and St. Mary's counties, which supply regional traffic to the SMRT corridor, with most traveling northbound in the morning and southbound in the evening. Additionally, many private development projects along the SMRT corridor have been proposed, studied and thoroughly vetted, without yet being fully implemented. The SMRT project could serve as the impetus to give many projects a greater incentive to develop to the highest and best use, by encouraging higher density transit-oriented development (TOD) in the urban activity centers.

The SMRT Project is an integral part of the on-going development of an interconnected regional transit system that will improve the quality of transit service in the Metropolitan Washington Region.

As travel demand along the SMRT corridor increases, there is limited ability to expand the transportation footprint, and few travel alternatives with reliable travel times are available. The current commuter bus system along MD 5/US 301 is nearing capacity, and further expansion is difficult, as bus storage capacity is scarce, and the streets of downtown Washington, D.C. are unable to handle ever-increasing numbers of commuter buses. Commuter buses are subject to the same travel delays on MD 5/US 301 that are experienced by general vehicular traffic. A separated high capacity transit system is needed to accommodate travel demand within the SMRT corridor, and support widespread job growth.

Figure ES-1: Project Location Map



Prince George's and Charles counties have ongoing planning efforts to integrate land uses and transportation alternatives to attract additional employment options through improved mobility.

Both counties are pursuing the creation of mixed-use centers with densities sufficient to support TOD, which are essential to creating a sustainable regional rapid transit system along the corridor. TOD will provide higher land use density/intensity, help increase transit ridership to maximize transit investment, encourage economic growth and job creation, reduce the jobs to housing imbalance along the MD 5/US 301 corridor, and promote alternative transportation modes (e.g., walking, biking, transit) to reduce or eliminate the need to commute via automobile.

Providing safe, accessible, efficient and convenient high-capacity rapid transit during both the peak and off-peak hours in the MD 5/US 301 corridor will overcome a number of transportation challenges that exist in the corridor.

As a key step to realizing the transit Vision along the MD 5/US 301 SMRT corridor, MTA is nearing completion of a nearly three-year, pre-National Environmental Policy Act (NEPA) planning study in collaboration with Prince George's County and Charles County (page MTA-39, CTP, 2014). This pre-NEPA study, also referred to as the SMRT Study, focuses on two transit modes – Bus Rapid Transit (BRT) and Light Rail Transit (LRT) – and marks a major milestone towards providing sustainable traffic congestion relief for commuters, residents, business owners and others along the MD 5/US 301 SMRT corridor. The SMRT Study has been subject to oversight by a Steering Committee made up of two representatives each from MTA, Prince George's County and Charles County, and has included in-depth discussions with a Technical Advisory Working Group to assist in the evaluation of alignments and alternatives.

What is the Purpose of this DRAFT SMRT Alternatives Report?

This DRAFT Report presents a balanced summary of an array of BRT and LRT transit alternatives and options, engineering and environmental analyses, alternatives analyses, ridership forecasting, cost estimates, economic analysis, stakeholder coordination, public involvement and other technical studies and coordination efforts made to date.

This DRAFT SMRT Alternatives Report does not contain recommendations regarding mode (BRT or LRT) or alignment choice. The contents of this DRAFT Report will be presented at an upcoming online public forum. Following the receipt of comments from the online public forum, MTA will distribute a FINAL Report containing a Recommended Alternative including mode (BRT or LRT), alignment, typical section (width of transitway), profile, station information (e.g., location, size, means of access and amenities, such as parking), supporting infrastructure (e.g., maintenance facilities), key issues for future considerations, and strategies for propelling the project into a NEPA study.

As a result of this study, Prince George's County and Charles County planners will, after two decades, have a rapid transit alternative – the SMRT Recommended Alternative – to incorporate into their various land use and transportation master plans, Geographic Information Systems (GIS) data sets and other resources available to the public.

What Prior Studies Were Done?

The possibility of rapid transit as a viable mode choice in Southern Maryland has been envisioned dating back to the 1996 Southern Maryland Mass Transportation Study. The following transportation studies conducted since 1996 have emphasized the need for transportation improvements in Southern Maryland, and some specify rapid transit along the SMRT MD 5/US 301 corridor:

- US 301/MD 5 Light Rail Feasibility Study (1997);
- MD 5/US 301 Transit Service Staging Plan (2004);
- Southern Maryland Transportation Needs Assessment (2008);
- Southern Maryland Commuter Rail Service Feasibility Study (2009);
- Southern Maryland Transit Corridor Preservation Study (2010);
- ***SMRT Corridor Vision (2016)****; and
- ***SMRT Environmental Inventory (2016)****.

* Part of this study

What Challenges Will Rapid Transit Address?

- The corridor does not have a balance between jobs and housing.
- The existing auto-based transportation system is not adequate to support existing and planned development.
- Available options do not offer a reliable travel time from Waldorf to other parts of the Washington Metropolitan Region.
- There are few alternative travel options within the MD 5/US 301 Corridor.
- Transit-dependent populations have poor travel

accessibility throughout the corridor.
- As travel demand increases, there is limited potential to expand the transportation footprint.
- Population in the corridor is projected to grow by 26% and jobs are anticipated to increase by 51% within 25 years.

What Types of Rapid Transit are Being Considered?

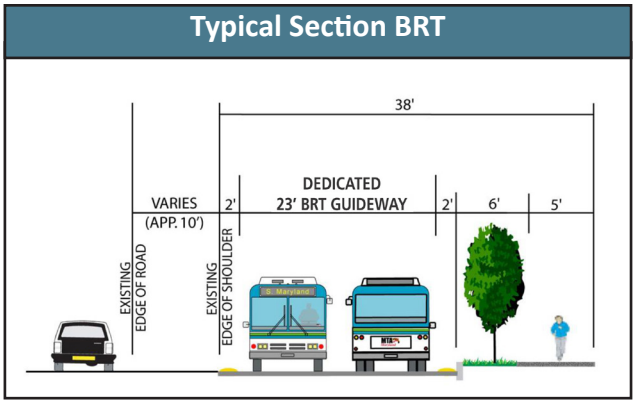
This study has included balanced consideration of BRT and LRT for the entire length of the corridor, with all of the studied alignments analyzed as both BRT and LRT. Both modes would include branded vehicles, off-vehicle fare collection, high-frequency all day service, signal priority at traffic signals (or grade separation), and travel speeds which match or exceed the adjacent roadway. Some of the key differences between the two modes are as follows:

- LRT operates on rail, typically powered by overhead catenary wires; BRT operates on a roadway physically separated from the highway.
- LRT uses traditional steel-wheeled rail vehicles with a 150 passenger per car capacity. Two car trains at 6 to 8 minute intervals will be needed for estimated 2040 ridership demands. This LRT configuration provides adequate capacity beyond 2040.
- BRT uses rubber tires, specially designed buses with a 90 passenger per bus capacity. A three-bus platoon at 6 minute intervals will be needed for estimated 2040 ridership demands.

Comparison of BRT and LRT Features

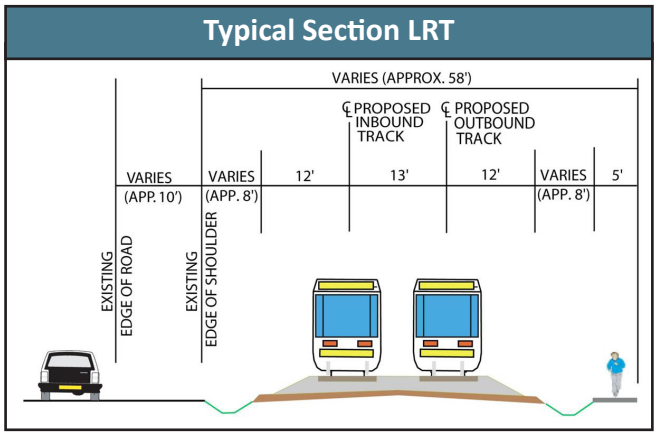
Feature	BRT	LRT
Dedicated transitway for operations	●	●
Operates on roadway with no rail or overhead catenary	●	
Operates on rail, powered by electric overhead catenary wires		●
Off vehicle fare purchase	●	●
Low-floor vehicles with level boarding	●	●
Traffic signal priority or pre-emption	●	●
Frequent service at substantial transit stations	●	●
Separately branded vehicles	●	●
Maximum cars per configuration	3	2
Maximum passengers per 3-bus platoon/2-car consist (train)	270	300
Travel Speed (mph)	55	55
Construction Cost (2016 $Billion)	1.1 to 1.5	1.6 to 2.0

Typical Section BRT



Example of BRT Vehicle

Typical Section LRT



Example of LRT Vehicle

What are the Key Findings from the LRT vs. BRT Engineering Analysis?

- LRT is easily expandable, if needed to meet capacity needs beyond 2040, by adding an additional car to the train.
- This 3-bus platoon BRT configuration would not have capacity to handle passenger loads beyond 2040 and is not easily expandable. BRT would require guideway and station improvements to allow increased BRT capacity beyond 2040.
- Overall LRT costs are approximately $0.5 Billion higher than BRT costs ($1.6B to $1.9B for LRT vs. $1.1B to $1.4B for BRT).
- Annual operating costs for LRT are approximately $10 Million lower for LRT than for BRT ($25M per year for LRT vs. $35M per year for BRT)

What are the Key Findings from the LRT vs. BRT Economic Impact Analysis?

Comparisons of BRT and LRT systems throughout the country reveal that, all things being equal, LRT generally results in greater public/private development interest, higher ridership and more economic growth than BRT. For this study, an Economic Rent Analysis compared potential TOD and economic impacts of LRT and BRT in the SMRT Corridor, finding that as accessibility improves, so does the productivity and character of the economy.

Mixed-Use centers with densities to support BRT/LRT transit service are essential to creating a regional rapid transit system.

Implementation of the SMRT Project (either a BRT or LRT rapid transit system) has the potential for increasing economic growth, with LRT providing 15% to 22% more economic stimulation than BRT. Both systems will increase regional employment, with the addition of approximately 250,000 to 300,000 person years of work, $20 Billion to income, and $30 Billion to property development and values. The increased employment and property values resulting from rapid transit are projected to expand the tax base by $5 to $6 Billion, which in itself would cover the cost of the project.

What SMRT Mainline Alternatives are Under Consideration?

The Mainline Alternatives analyzed in this study were derived from, and remain similar to, those developed in MTA's 2010 Southern Maryland Transit Corridor Preservation Study. The Mainline Alternatives refer to the portion of the corridor from Allentown Road (MD 337) south.

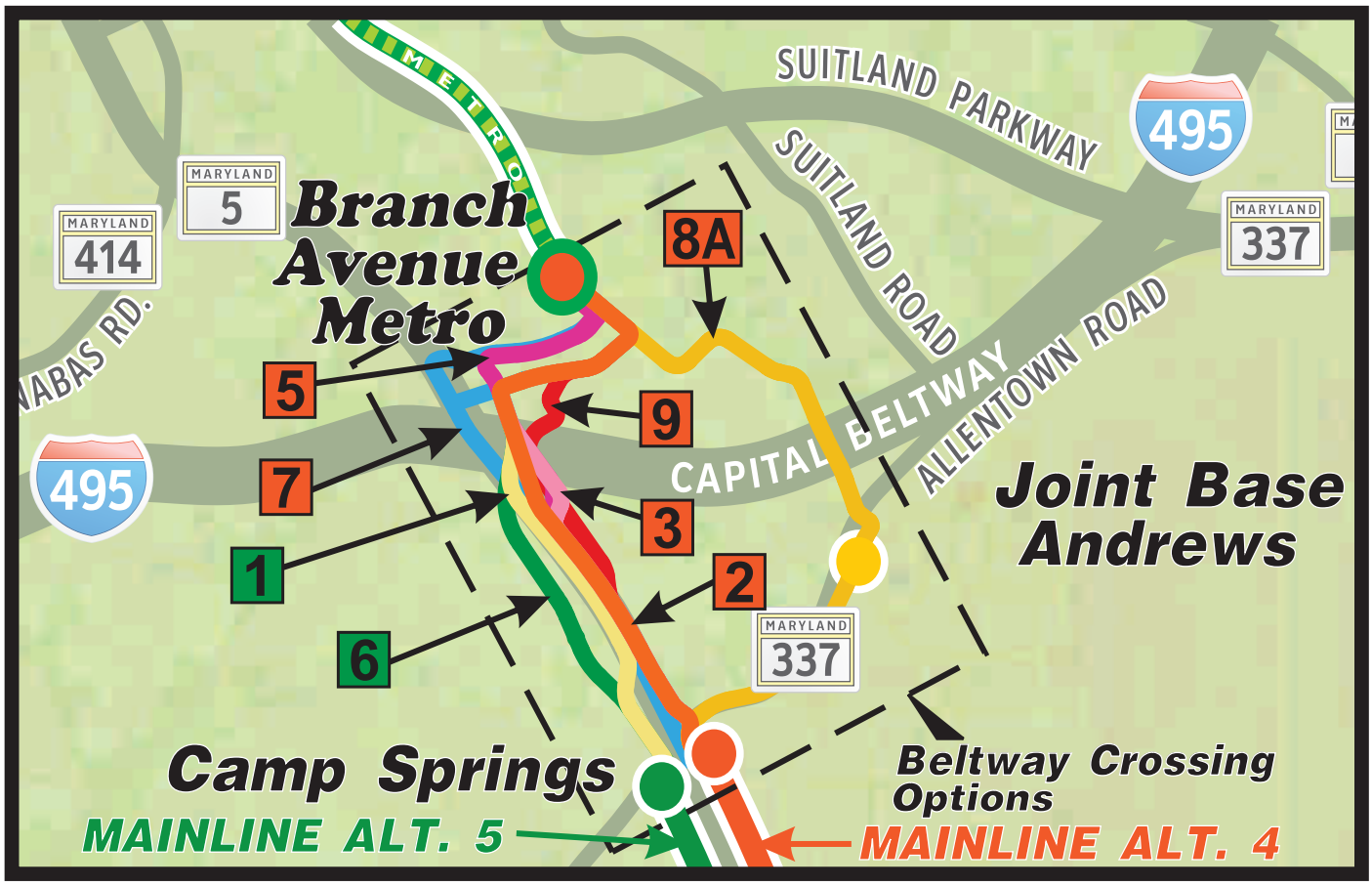
The 2010 Corridor Preservation Study developed five Mainline Alternatives and identified one – Alternative 4 – as preferred. This study evaluated the five Mainline Alternatives, and eliminated Alternatives 1, 2 and 3 from further consideration. Alternatives 4 and 5 remained under consideration.

Alternative 4 (preferred in the 2010 study) is located on the east side of MD 5 for the entire length of the corridor. Alternative 5 is located on the west side of MD 5 from Allentown Road to south of Woodyard Road, where it crosses over to the east side of MD 5 and is the same as Alternative 4 south thereof. Alternatives 4 and 5, together with their associated Beltway Crossing Options, are illustrated and described in Figure ES-2 (see next page).

What are the Key Findings from the Analysis of the Alternatives?

- Alternative 4 is located on the east side of MD 5 and US 301 for the entire corridor, serving all of the key activity centers – Branch Avenue Metrorail, Joint Base Andrews (JBA), Southern Maryland Hospital, Brandywine Crossing and the Waldorf Urban Redevelopment Corridor (WURC) – without crossing MD 5/US 301.
- Alternative 5 would result in from 14 to 22 more business displacements than Alternative 4 – primarily along Old Branch Avenue between Old Alexandria Ferry Road and the beltway.
- Since the west side of MD 5 is more densely developed along the Alternative 5 alignment, at-grade roadway crossings (potentially causing traffic operations challenges) and impacts to potential hazardous materials sites are significantly higher for Alternative 5 than Alternative 4.
- There are 4 to 14 more residential property displacements with Alternative 4 than Alternative 5.
- Alternative 5 only connects to either Beltway Crossing Option 1 or Option 6 and therefore requires a tunnel to cross the beltway and MD 5.
- Since Alternative 5 requires a tunnel crossing, it is at least $300 Million more expensive than Alternative 4 with the Beltway Crossing Options that do not require a tunnel.
- If the areas along Alternative 5 where significant business displacements would occur are able to redevelop, Alternative 5 may be located in closer proximity to more TOD sooner, since dense development is already in place.

Figure ES-2: Key Map of SMRT Beltway Crossing Options



What SMRT Beltway Crossings are Under Consideration?

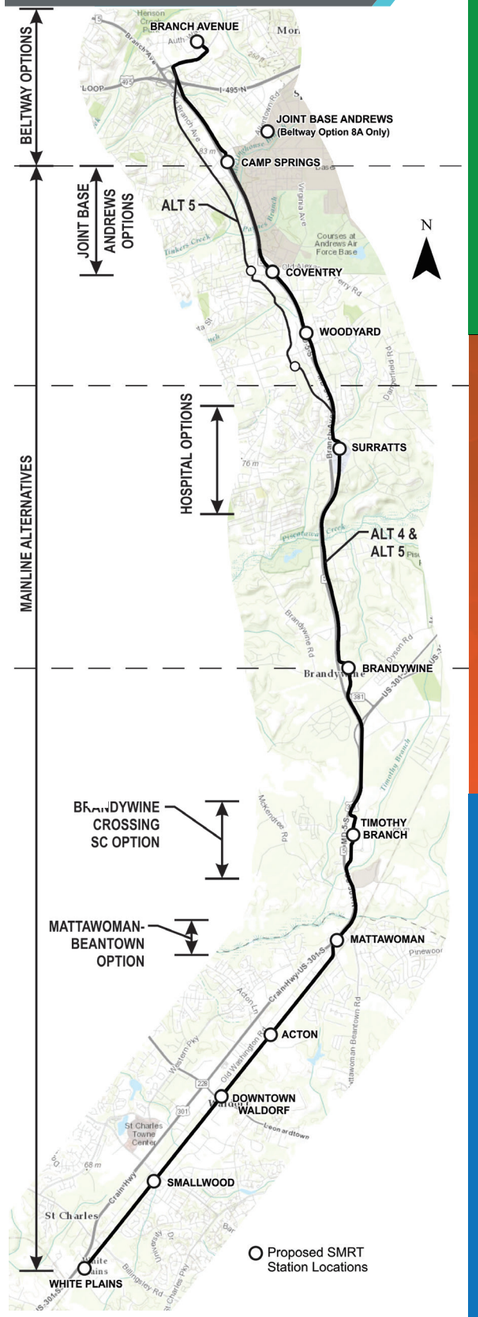
This study took a fresh look at the six Beltway Crossing Options developed in the 2010 Corridor Preservation Study and developed additional options. A Key Map of the Beltway Crossing Options is shown in Figure ES-2 and detailed schematics of each are shown in Figure ES-3.

What are the Key Findings for the Beltway Crossing Options?

- Beltway Crossing Option 1 and Option 6 (Mainline Alt. 5) require a 1.2 to 1.3 mile tunnel to cross MD 5 and the beltway to reach the Branch Avenue Metrorail Station at a cost of at least $300 Million more than the Beltway Crossing Options that do not require a tunnel (Beltway Crossing Options 3, 5, 7, 8A and 9 with Mainline Alt. 4).
- Beltway Crossing Option 1 and Option 6 would result in 14 to 22 more business displacements than Beltway Crossing Options 3, 5, 7, 8A and 9.
- At-grade roadway crossings and impacts to potential hazardous materials sites are significantly higher for Beltway Crossing Option 1 and Option 6 than Beltway Crossing Options 3, 5, 7, 8A and 9.
- Residential property displacements are highest with Beltway Crossing Option 3. In general, the residential displacements are 10% to 34% (4 to 14) higher with the Beltway Crossing Options associated with Alternative 4 than those with Alternative 5.
- Beltway Crossing Option 8A is the only option that includes a station directly serving JBA, at its main gate, near employment centers. The ridership increases in comparison to other scenarios, resulting from direct service to JBA are slightly outweighed by the ridership losses caused by the additional transit travel time with the 0.4-mile longer 8A alignment length. JBA has expressed a strong preference for Beltway Crossing Option 8A.
- Beltway Crossing Option 8A has slightly higher natural environmental impacts (e.g., streams, wetlands, woodlands, etc.) than all other options (see Table ES-1).
- Beltway Crossing Option 7 and its suboptions, which are located in the median of MD 5 north of Coventry Way, are not able to accommodate a station at either Camp Springs or JBA; therefore, only indirect connections (via shuttle) would be possible to JBA.

Figure ES-3: Mainline Alignment Alternatives and Beltway Crossing Options Under Consideration

KEY MAP FOR ALTERNATIVES & OPTIONS

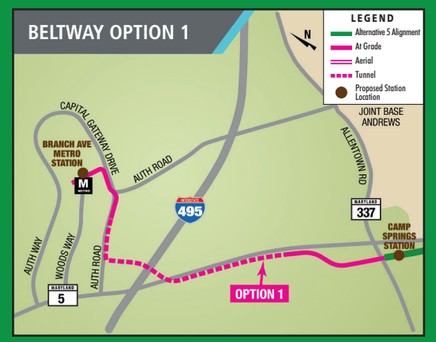


BELTWAY CROSSING OPTIONS WITH MAINLINE ALTERNATIVE #5

(WEST OF MD 5)

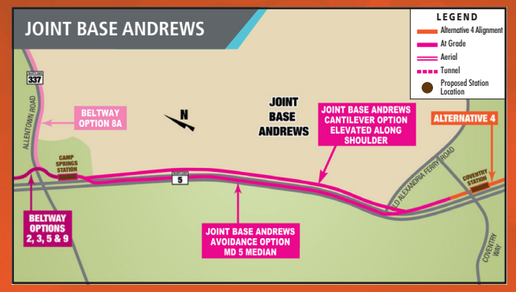
Alternative 5 runs west then east of MD 5: South of Allentown Road, the alignment runs east of Old Branch Avenue before returning to the west side of MD 5 near Kirby Road. The alignment then follows the existing ramps crossing Coventry Way and Woodyard Road interchanges at-grade. South of Woodyard Road, it follows the perimeter of the existing Park and Ride lot before returning adjacent to the west side of MD 5. South of the Park and Ride lot, crossing over MD 5 on an aerial structure, it returns to the east side of MD 5 north of Surratts Road. Alternatives 4 and 5 are the same alignment beyond this location. Please see below for alignment information.

Alternative 5 can be extended across the Capital Beltway lanes using either Option 1 or Option 6 only.



Cantilever Option – Similar to Alt. 4 alignment, except LRT or BRT would be elevated over outside Northbound MD 5 shoulder.

Avoidance Option (MD 5 Median) – With Alt. 4, LRT or BRT would be elevated within MD 5 median.



ALTERNATIVES 4 AND 5 ARE THE SAME SOUTH OF WOODYARD ROAD

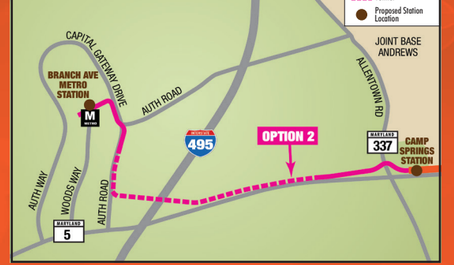
South of Woodyard Road, both alternatives are the same. The alignment runs adjacent to the ramps at the proposed Surratts Road and Burch Hill Road interchanges and veers slightly away from MD 5 to accommodate the proposed Brandywine interchange and Park and Ride lot. Continuing south on MD 5, Alternative 4/5 travels adjacent to the ramps at the proposed MD 373 and McKendree Road interchanges. Diverging from MD 5/US 301 south of Mattawoman-Beantown Road, the alignment crosses Substation Road at-grade before turning south parallel to the CSX rail line. The southern study limit is located in Charles County at DeMarr Road.

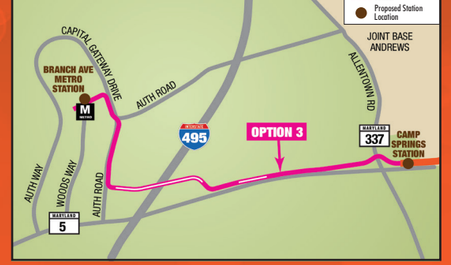
BELTWAY CROSSING OPTIONS WITH MAINLINE ALTERNATIVE #4

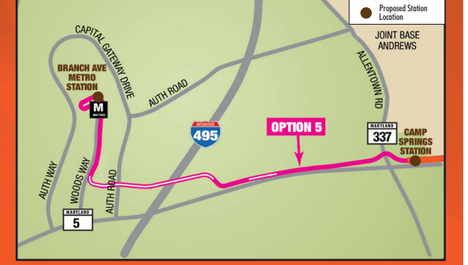
(EAST OF MD 5)

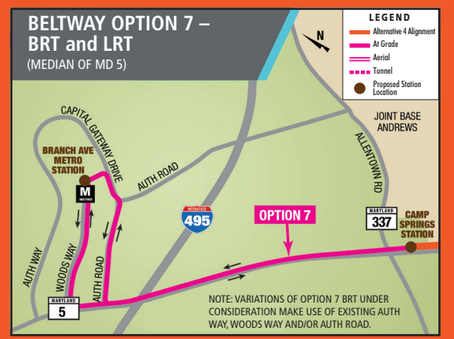
Alternative 4 runs on the east side of MD 5: South of Allentown Road, the alignment runs adjacent to the Allentown Road off-ramp and crosses Old Alexandria Ferry Road and Coventry Way at-grade. It then proceeds over Malcolm and Woodyard Roads on an aerial structure. Alternatives 4 and 5 are the same alignment south of Woodyard Road.

Alternative 4 can use Options 2, 3, 5, 7 (all), 8A or 9 to cross the Capital Beltway lanes.









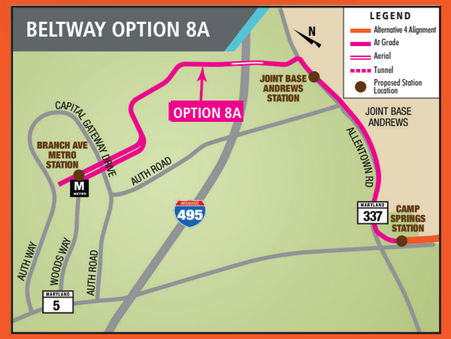


Table ES-1: Summary of Preliminary SMRT Corridor Transit Scenarios

SMRT Corridor Scenario	*Alternative 4 w/Options (East side of MD 5)[9]*	RIDERSHIP				ENGINEERING			SOCIO-ECONOMIC/CULTURAL					NATURAL ENVIRONMENT				CAPITAL COSTS		O&M COSTS[7]	
		Type of I-495 (Beltway) Crossing	Round 2 Daily Ridership - LRT	Round 2 Daily Ridership - BRT	Transit Run Time - LRT (Minutes)[8]	Transit Run Time - BRT (Minutes)[8]	Length of Alignment (Miles)[1]	Length of Structures (LF) - Tunnel (T), Aerial (A)	At-Grade Roadway Crossings	Residential Properties[2]	Business/Commercial Properties[2]	Churches, Schools, Cemeteries	Environmental Justice Areas	Historic Sites	Stream Crossings	Wetlands (Acres)	100-Year FEMA Floodplain (Acres)[3]	Woodlands (Acres)	Bus Rapid Transit (BRT) - Costs ($Millions)	Light Rail Transit (LRT) - Costs ($Millions)	BRT - Annual Operating and Maintenance Costs ($Millions)	LRT - Annual Operating and Maintenance Costs ($Millions)
1	Beltway Crossing Option 2 (Tunnel under I-495); Hosp. Option 1[5]	Tunnel	27,900	27,300	39	38	19.0	2,350 (A) 6,100 (T)	43	50	79	6	2	8	11	12.4	8.2	114.5	$1,426	$1,933	$34.5	$24.3
2	Beltway Crossing Option 3 (Aerial over I-495); Hosp. Option 1[5]	Aerial	27,900	27,300	39	38	19.0	4,580 (A)	39	55	78	6	2	8	11	12.5	8.4	117.7	$1,103	$1,617	$34.5	$24.3
3	Beltway Crossing Option 5 (Aerial over I-495); Hosp. Option 1[5]	Aerial	27,900	27,300	39	38	19.0	5,720 (A)	39	53	78	6	2	7	11	12.7	8.4	114.6	$1,120	$1,629	$34.5	$24.3
4	Beltway Crossing Option 7D (MD 5 At-Grade under I-495); Hosp. Opt. 1[5]	MD 5 At-Grade	N/A	24,800	N/A	41	19.0	10,840 (A)	42	45	72	6	2	10	11	10.4	7.4	104.7	$1,119	N/A	$35.6	N/A
5	Beltway Crossing Option 7E (MD 5 At-Grade under I-495); Hosp. Opt. 1[5]	MD 5 At-Grade	23,900	24,800	46	41	19.2	11,195 (A)	46	50	73	6	2	9	11	10.4	7.4	107.8	$1,155	$1,686	$35.6	$25.0
6	Beltway Crossing Option 8A (JBA Station & aerial over I-495); Hosp. Op. 1[4 5]	Aerial	26,500	25,200	42	41	19.4	2,860 (A)	47	45	79	6	3	11	12	14.1	10.1	132.9	$1,115	$1,614	$36.4	$24.8
7	Beltway Crossing Option 9 (Aerial over I-495); Hosp. Option 1[5]	Aerial	27,900	27,300	39	38	18.9	3,700 (A)	38	51	78	6	2	8	11	12.7	8.4	121.0	$1,081	$1,585	$34.5	$24.3
8	JBA Cantilever Option w/Belt. Op. 9 (Aerial over I-495); Hosp. Op. 1[5]	Aerial	27,900	27,300	39	38	18.9	10,215 (A)	37	51	78	6	2	8	11	12.0	8.0	118.2	$1,141	$1,658	$34.5	$24.3
9	JBA Avoidance Option w/Belt. Op. 9 (Aerial over I-495); Hosp. Opt. 1[5]	Aerial	27,900	27,300	39	38	18.9	13,780 (A)	36	51	76	6	2	8	11	11.3	7.3	117.2	$1,201	$1,728	$34.5	$24.3
	Alternative 5 w/Options (West side of MD 5)[9]																					
10	Beltway Crossing Option 1 (Tunnel under I-495); Hosp. Option 1[5]	Tunnel	27,500	27,200	40	38	19.2	2,225 (A) 6,500 (T)	59	41	94	7	3	14	11	12.1	10.1	107.8	$1,437	$1,946	$35.7	$24.5
11	Option 6 (Tunnel under I-495); Hosp. Option 1[5]	Tunnel	27,500	27,200	40	38	19.2	2,225 (A) 6,900 (T)	56	41	93	7	3	17	11	12.0	10.0	106.7	$1,432	$1,942	$35.7	$24.5

Legend for Comparison of Alternatives: BETTER NEUTRAL WORSE

Notes:

[1] Length of Alignment as measured from Branch Avenue Metrorail Station to the proposed White Plains Station

[2] Property Impacts = potential displacements within Limit of Disturbance and assumed Station infrastructure envelope

[3] The floodplain acreage includes county designated floodplain present in the Wesson Drive area

[4] Beltway Crossing Option 8A impacts are based on an at-grade crossing of Allentown Rd. If Aerial Option selected, add 1,500 LF to Length of Structure total and subtract 2 crossings from the Intersection Crossings total

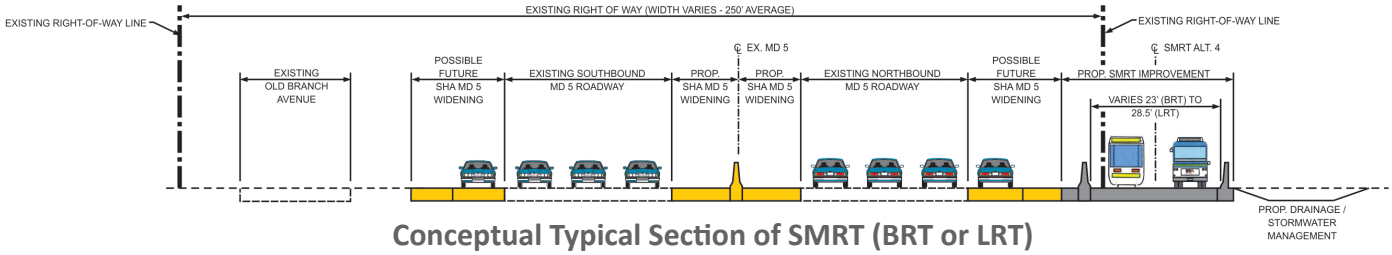
[5] Options include Brandywine Crossing Shopping Center Option and Mattawoman Beantown Option

[6] 2010 Corridor Preservation Study costs have been escalated to 2016 prices as a comparison

[7] No BRT or LRT Vehicle Replacement Costs are included

[8] White Plains to Branch Avenue at Auth Road: No-Build Average Highway Time = 59 Minutes; Max-Build Average Highway Time = 52 Minutes

[9] All Corridor Scenarios do not preclude widening of MD 5 one additional lane in each direction from I-95/I-495 to the US 301 split



Conceptual Typical Section of SMRT (BRT or LRT)
Mainline Alternative 4 Along Northbound MD 5

What Other Specific Local Alignment Options were Considered and What are the Key Findings?

In addition to the Mainline and the Beltway Crossing, this study has identified four basic breakout study areas:

Joint Base Andrews Options (See Figures 3-9 and 3-10): Mainline Alternative 4 will require grading and/or drainage disturbance as much as 40 feet into JBA property, in an area with residential housing (see typical section above). Given the potential challenges in obtaining right-of-way from, or constructing rapid transit infrastructure close to, JBA with Mainline Alternative 4, two options have been developed to minimize or avoid impacts to JBA. Both options connect to Mainline Alternative 4 only, since Alternative 5 avoids any impact to JBA property.

- *JBA Avoidance Option* places the transit alignment on elevated structure over the median of MD 5 from Old Alexandria Ferry Road to Allentown Road.
- *JBA Cantilever Option* places the transit alignment on elevated structure over the outside northbound MD 5 shoulder. This may not fully avoid grading or drainage within JBA property, but will reduce the impacts compared to Mainline Alternative 4.

MTA has met several times with representatives of JBA on the issues of alignment, property impacts, station location and future growth on JBA. Coordination will remain on-going with JBA on all of these issues, particularly as JBA coordinates with the contractor that manages the residential housing units within JBA along northbound MD 5.

MedStar Southern Maryland Hospital Center (MSMHC) Options (See Figure 3-8): The MSMHC is located in the southeast quadrant of the MD 5/Surratts Road intersection and is considered a major employer in the region with high potential transit use, given its plans for continued expansion. The original Mainline Alternative 4/5 alignment and hospital station are located immediately adjacent to MD 5, making it difficult to access the hospital from the station on foot due to the elevation difference. The SMRT Study has developed several options to better serve the hospital. These options, described in Figure 3-8, have been discussed with hospital representatives without any conclusion as to which, if any, they prefer. The differences between the options, in terms of cost, ridership, or environmental impact, are negligible.

Brandywine Crossing Shopping Center Option (See Figure 3-12): The original Mainline Alternative 4/5 alignment and Brandywine Station are located immediately adjacent to MD 5/US 301, potentially causing traffic conflicts at the driveways and resulting in less than optimal station proximity to the many retail establishments. An optional alignment has been developed that includes a 500-foot easterly alignment shift into the middle of the shopping center parking area. This option has been reviewed favorably by one of the shopping center representatives, but further coordination is needed in future stages of project development.

Mattawoman-Beantown Road Option (See Figure 3-12): The original Mainline Alternative 4/5 alignment and Mattawoman Station are located immediately adjacent to MD 5/US 301, primarily to limit the footprint of the Mattawoman Creek crossing. MDOT/State Highway Administration (SHA) has been planning for many years to improve the capacity of the MD 5/US 301/Mattawoman-Beantown Road intersection, possibly including a grade separation (flyover ramp for the southbound-to-eastbound movement). Combined with significant potential development and separately constructed county/developer roadway improvements (e.g., the extension of Western Parkway), there remain numerous uncertainties with regard to the ultimate roadway design/lane configurations at this intersection.

The Mattawoman-Beantown Road Option has the greatest compatibility with the range of roadway options under consideration, given its shift to the east (see Figure 3-12). While it requires a new structure crossing Mattawoman Creek, the crossing location could be placed adjacent to the CSX rail line crossing. The optional design has a higher cost than basic Alternative 4/5, due to the additional bridge over Mattawoman – Beantown Road, but likely provides better constructibility and traffic operations.

What Stations are Proposed?

Thirteen transit station locations -- strategically spaced and placed at key activity and employment centers to maximize ridership -- are being considered at the following locations: Branch Avenue Metrorail Station; Camp Springs, JBA (with Beltway Crossing Option 8A only), Coventry Way, Woodyard Road, Surratts Road/MSMHC, Brandywine, Timothy Branch, Mattawoman, Acton, Downtown Waldorf, Smallwood and White Plains (see Figure ES-3). These locations are consistent with proposed land use and station location recommendations from a range of sources, including JBA and Prince George's County Joint Land Use Study (JLUS), Prince George's County's Subregion 5 Master Plan, Central Branch Avenue Revitalization Sector Plan, Waldorf Urban Design Study (WUDS), and WURC Phase 1 and 2 Development Plans for Waldorf Center.

What are the Key Findings of the Station Location Analysis?

A Station Typology was developed for each planned SMRT station based on two categories – access pattern and land use pattern. This typology will aid the counties and subsequent SMRT planning teams in station area planning and design. Access pattern refers to the role that each station plays within the overall system. Land Use Pattern refers to the density, physical character and mix of uses within ½-mile of the station. A summary of the assumed land use and access patterns for each of the planned SMRT stations is shown in the chart below.

What are the Key Ridership Forecasting Findings?

Ridership and travel times were projected to the Year 2040 using a travel forecasting model based upon the Regional MWCOG travel forecasting process, together with the recently created Washington Metropolitan Area Transit Authority (WMATA) post-processing model. The number of combinations of Mainline Alternatives, Beltway Crossing Options and highway widening possibilities is too large for all of them to be modeled; therefore, this study developed 12 of the most representative scenarios that would develop the full range of potential ridership projections. The key results of the SMRT ridership modeling are as follows:

- The forecasted 2040 SMRT ridership ranges from 24,000 to 28,000 daily riders for the 12 scenarios (16.7% variance from highest to lowest) with little variation between LRT and BRT. The scenarios that eliminate the Camp Spring Station have the lowest ridership. The scenarios that extend the BRT outside the corridor have the highest ridership, but by a small amount.
- Travel times and mode are the primary drivers of ridership in the SMRT corridor.
- Ridership is very directional in the peak direction (northbound in AM) and strong during the peak period.
- The Branch Avenue Metrorail Station shows the highest daily boardings of all stations, as it accommodates transfers from the Metrorail system. Other stations with high daily boardings include Mattawoman, Smallwood and Downtown Waldorf.
- Highway widening, thus reducing highway traffic congestion, results in only a 1% decrease in total ridership.
- LRT has slightly higher ridership, in general, than BRT.

Transit travel time ranges from 37 to 42 minutes for the entire corridor length and is as much as 24 minutes, or 39%, faster than the highway time.

Access Patterns	Land Use Patterns			
	Town Center/ Mixed Use: Dense, mixed use	**Special Anchor:** Single institutional attractor	**Residential:** Serves Residential Neighborhood	**Rural/Isolated:** Low intensity
Intermodal: Provides connections to regional transit	Branch Avenue Mattawoman			
Mid-Line Local: Serves local destinations	Woodyard Timothy Branch Acton Downtown Waldorf	Joint Base Andrews Surratts	Camp Springs Coventry Smallwood	
Regional Collector: Access to transit from broad commute shed				Brandywine White Plains

What Public Outreach Efforts Were Conducted?

In an effort to maintain an open line of communication with communities, businesses, and institutions in the SMRT corridor, as well as regional stakeholders, MTA developed a project website (http://mta.maryland.gov/smrt/) allowing visitors to contact the Project Manager, download newsletters and Open House materials, request a presentation, comment on SMRT Study reports, submit responses to the SMRT Project Survey, fill out a Comment Form, and join the Study's mailing list. Open Houses were conducted in both June 2014 (146 attendees) and Spring 2015 (163 attendees) in Clinton, Waldorf and Temple Hills, first to provide information on alignments identified during the 2010 Corridor Preservation Study, and then to present updated alignments and options under consideration; characteristics of BRT and LRT; and visions and challenges along the SMRT corridor. MTA identified potential Environmental Justice (EJ) populations (low-income and minority) and disadvantaged persons within the study area and ensured they were informed and afforded the opportunity to provide comments on the SMRT Study. Information contained in this DRAFT SMRT Alternatives Report will be presented during an upcoming online public forum.

How Will Environmental Effects be Handled?

The *SMRT Environmental Inventory* (2016) identified natural, socioeconomic and cultural resources resources potentially affected by the SMRT alternatives and options under consideration, which have been discussed with local, state and federal resource regulatory agencies. By identifying potential environmental concerns early in the planning process, avoidance, minimization and protection measures can be incorporated into the continuing design efforts. Compensatory mitigation for unavoidable impacts to natural environmental resources will be investigated as part of a future NEPA study.

When Will a Recommended Alternative for the SMRT Corridor be Identified?

A SMRT Recommended Alternative will be identified after the online public forum. The remaining timeline for the SMRT Project is as follows:

- December 2016: MTA releases DRAFT SMRT Alternatives Report for public comment
- Winter 2016/2017: MTA conducts online public forum
- January 2017: MTA identifies a SMRT Recommended Alternative
- Early 2017: MTA publishes the FINAL SMRT Alternatives Report

What Are the SMRT Project's Next Steps?

At the conclusion of this pre-NEPA study, the necessary pieces (i.e., project definition, alignment preference, engineering feasibility determination, environmental screening and preliminary agency coordination/public involvement) will be in place to advance to the full NEPA stage of project development, when funding for the next phase is identified. MTA is commited to progressing the SMRT Project, and will continue to work towards securing a federal lead agency and funding for a NEPA study. MTA will continue coordinating with SHA, Prince George's and Charles counties to support roadway improvement projects, maintain future right-of-way for dedicated rapid transit along the MD 5/US 301 SMRT corridor, and to encourage TOD.

Right-of-Way Preservation

The identification of a SMRT Recommended Alternative will not, in itself, preserve or secure essential right-of-way for a rapid transit system in the SMRT corridor. The longer it takes to secure project approvals and funding for right-of-way acquisition, the more difficult and expensive the necessary land will be to acquire. A goal of this study is to provide Prince George's and Charles counties a basis or reference point for preserving right-of-way into the future, which may also help reduce impacts to existing facilities. Inclusion of a SMRT Recommended Alternative in county planning documents (e.g., land use and development plans) will allow coordinated integration of highway improvement projects along the corridor (so short-term highway improvements do not preclude rapid transit implementation long-term) and provide a reference for potential TOD investment.

How Can I Comment on the SMRT Project?

Comments may be submitted by emailing the MTA SMRT Project Manager, Ms. Jackie Seneschal, at Jseneschal1@mta.maryland.gov, sending written correspondence to: MTA Office of Planning, 6 St. Paul Street, Suite 902, Baltimore, MD 21202; or via the comment form located on the SMRT webpage, accessible at: www.mta.maryland.gov/SMRT.