Study Purpose

- Study the feasibility of rapid transit on the US 301/MD 5 corridor between White Plains and the Branch Avenue Metro station

- Project Goal - Provide counties with a specific transit alignment to protect in local land use plans

- Identify approximate locations of potential transit stations, parking and other facilities

- Generate alignment mapping to facilitate property reservation by County planning staff
Study Approach

- Examine existing and future land uses for transit supportive environments
- Identify several alternative alignments that could be developed into BRT or LRT in the future
- Analyze alignments:
  - Support of local land use and economic development goals
  - Environmental “fatal flaws” / potential impacts
  - Engineering feasibility
- Select preferred alternative
Study Approach (continued)

- Conduct conceptual level capital cost estimates
  - To facilitate financial planning activities / ball park estimate

- Conduct ridership estimates
  - Get an order-of-magnitude estimate of ridership

- Develop report with recommendations for right-of-way preservation and land use policy to support transit supportive environment
Coordination

- MTA has worked collaboratively with agency stakeholders throughout the study
- Interagency Project Management Team:
  - Charles County
  - Prince George’s County
  - Tri-County Council for Southern Maryland
  - Maryland State Highway Administration
  - Maryland Department of Transportation headquarters
  - Andrews Air Force Base
  - Washington Metropolitan Area Transit Authority
- Collaboration with SHA on roadway projects
  - US 301
  - MD 5
  - Brandywine Interchange
Corridor Map
Study Assumptions

- Multimodal System - Could be Light Rail Transit or Bus Rapid Transit
- Alignment will be double tracked or double-laned
- At least one full service operations and maintenance facility will be required to service this system
- Locations are being identified in both Prince Georges and Charles Counties
Light Rail Transit (LRT)

- Operate on rails on principally a separate guideway.
- Get their power from overhead electrical lines
- Low-floor, modern vehicles and stations
Light Rail Transit

- Light Rail Transit (LRT) is a railway that operates on exclusive rights-of-way and usually boards and discharges passengers at floor level.

- LRT cars vary in width and length, but articulated cars (that flex in the middle) are most common in North America.
LRT Typical Section: Ballasted Track Adjacent to Roadways
LRT Typical Section: Ballasted Track Adjacent to Pope’s Creek Railroad
Bus Rapid Transit (BRT)

- Uses buses to transport large numbers of people rapidly and efficiently
- Provides service with the speed and comfort of rail and still has the cost benefits and flexibility of bus transit
  - Branded service with rail-like vehicles and station designs
  - Operate on bus-only lanes
  - Off-bus fare collection
  - High-frequency all day service
  - Signal priority at stop lights or grade separation
Bus Rapid Transit

- BRT is often referred to as light rail on rubber tires.
BRT Typical Section
Alternatives Considered

- 5 Alternatives were considered between DeMarr Road and Allentown Road
- The alternatives were comprised of different combinations of alignments in Charles County and Prince George’s County
- Charles County
  - Adjacent to west side of Pope’s Creek Railroad
  - Median of Old Washington Road (MD 925)
  - Adjacent to Western Parkway on the west side of US 301
Alternatives Considered (cont’d)

- Charles County alternatives
Alternatives Considered (cont’d)

- Prince George’s County
  - East side of US 301/ MD 5
  - West side of US 301/ MD 5
  - East side of Spine Road/ MD 5
- 6 “Beltway Options” were considered north of Allentown Road:
  - Aerial
  - Tunnel
  - At-grade – traveling on roads to Branch Avenue
- The tunnel “Beltway Options” were found to have the fewest environmental, community and engineering issues.
Preferred Alternative

• West side of Pope’s Creek, east side of MD 5
• Most supportive of land use and economic development goals of Charles and Prince Georges County
• Operations & Maintenance facility site – just South of DeMarr Road in Charles County
Preferred Alternative

- No fatal flaws – environmental, community, or engineering
- Second O&M site (likely) near TB in Prince George’s County
- Tunnel crossing of the Capital Beltway from east side of MD 5 with entrance to Branch Avenue Metrorail station likely from Auth Road
- Platform located within close proximity to the Branch Avenue Metrorail platform to facilitate easy transfers
Station Locations

- 11 station locations have been identified along the preferred alternative
  - DeMarr
  - Smallwood
  - Leonardtown (future station - 2050)
  - Acton
  - Mattawoman Beantown (future station - 2050)
  - Timothy Branch
  - Brandywine
  - Surratts
  - Woodyard
  - Coventry
  - Branch Avenue Metro
## Transit Operations

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<th>Engineering &amp; Operations</th>
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<th>Prince Georges County</th>
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Ridership Summary

- Uses 2009 version of adopted travel forecasting model used by the Metropolitan Washington Council of Government
- Assumes operation of feeder buses from California / Charlotte Hall to provide riders from Southern portion of region.
- Ridership Results: 23,500 – 26,500 daily boardings
Future Planning and Design Challenges

- Proposed interchanges on improved US 301 and MD 5
- Coordination with CSX
- Air Force Base
  - Provide service to the Base – no obvious station locations
  - Residential development adjacent to MD 5
- Design of the future crossing of the Capital Beltway
- Interface of the transit services at Branch Avenue
Capital Cost Estimates

- Objective was to obtain an “order of magnitude” cost for BRT and LRT systems
- Assumes a 70-foot transitway for right-of-way
- Assumes retaining walls would be used to avoid impacts to existing structures, otherwise, cut/fill was used
- Includes standard cost contingencies to mitigate risk involved with cost estimation
Capital Cost Estimates (cont’d)

- LRT = $1.4 Billion (2009 dollars)
- BRT = $1.1 Billion (2009 dollars)
- Items that are driving the cost
  - Distance: almost 19 miles of transitway
  - Tunnel underneath the Capital Beltway
  - Aerial structure over MD 223
  - Right-of-way acquisition
Counties’ Next Steps

- Planning
  - Adoption of the transit corridor into appropriate Master Plans
  - Land use and zoning regulations review and revisions
- Right-of-way reservation

- Coordination
  - Continued coordination between Counties
  - Coordination with other agencies (SHA, WMATA, AFB, etc.)
Transit-Friendly Land Use

- Transit corridor
  - Focused development around station areas
    - Create destinations
- Transit station area design
  - Mixed Use
  - High density
    - Residential – 12-25 units per acre
    - Employment – 20-150 employees per acre
    - Taper densities from the station to communities
- Walkable urban design
  - Buildings oriented to street; parking in rear or structured
Report Availability

- Final report, appendices, and Land Use Report completed in August 2010
- Posted at [www.mta.maryland.gov/projects](http://www.mta.maryland.gov/projects)