Route 1

Multimodal Alternatives Analysis

Public Meeting

October 9, 2013

South County Government Center
Fairfax County, VA

Study Purpose

WHAT IS AN ALTERNATIVES ANALYSIS?

An **Alternatives Analysis** is a study that examines different options to address a transportation problem

Multimodal means that a range of different transportation types will be evaluated

FALL 2013	WINTER 2013 -2014	SUMMER 2014
PURPOSE & NEED	**ALTERNATIVES DEVELOPMENT**	**EVALUATION OF ALTERNATIVES & IMPLEMENTATION PLAN**
Public Meeting	**Public Meeting**	**Public Meeting**
• Data Collection • Purpose and Need • Goals and Objectives	• Transportation Modes • Land Use Potentials	• Transportation and Land Use Analysis • Economic Impacts • Funding Strategy • Agreed-upon Transportation Alternative • Recommendations for Land Use

Public involvement is critical to the success of a major transportation project, so public meetings and other citizen outreach efforts are integrated throughout the study process. The goal is to ensure that all parties are informed, understood and able to participate fully in the process

STAKEHOLDER INVOLVEMENT

The Virginia Department of Rail and Public Transportation (DRPT) is facilitating the Route 1 Multimodal Alternatives Analysis. Key partner agencies include Fairfax County, Prince William County, the Virginia Department of Transportation (VDOT), and the Virginia Office of Intermodal Planning and Investment (OIPI).

Additional project input and guidance is being provided by:

- A **Community Involvement Committee** composed of business and residential leaders and interested organizations.
- An **Executive Steering Committee**, consisting of elected officials, to assist with policy-related decision making and funding strategies
- A **Technical Advisory Committee** consisting of state and local agency staff with expertise in a range of relevant topic areas

Route 1 Multimodal Alternatives Analysis

Virginia Department of Rail and Public Transportation

Office of INTERMODAL Planning and Investment

VDOT

Project Schedule

Jun 2013 | Jul 2013 | Aug 2013 | Sept 2013 | Oct 2013 | Nov 2013 | Dec 2013 | Jan 2014 | Feb 2014 | Mar 2014 | Apr 2014 | May 2014 | Jun 2014 | Jul 2014

K KICK OFF

Data Collection

1 PUBLIC MEETING *(WE ARE HERE)*

2 PUBLIC MEETING

3 PUBLIC MEETING

Purpose and Need

Multimodal Alternatives Development & Evaluation

Traffic Impact Analysis and Travel Demand Modeling

Land Use Assessment and Economic Impact Analysis

Funding Analysis

Environmental Scan

RECOMMEND LOCALLY PREFERRED ALTERNATIVE **LPA**

1 Public Meeting #1 October 9, 2013

- Purpose and Need, Goals and Objectives
- Initial Set of Alternatives

2 Public Meeting #2 February 2014

- Refined Alternatives
- Forecasting Results
- Land Use Assessment

3 Public Meeting #3 May 2014

- Environmental Scan
- Financial Analysis
- Evaluation of Alternatives
- Recommendation for Locally Preferred Alternative

Key Past Studies

Route 1 Centerline Study (1998)

The 1998 study was in response to concerns about increased travel demand in the corridor and a need to ensure coordinated revitalization efforts in Prince William and Fairfax Counties.

Route 1 Location Study (2004)

Determined the right-of-way requirements for widening Route 1 from the existing 4-lane divided highway to a 6-lane divided highway with a multi-purpose trail, sidewalk, wide curb lane for bicycle use and landscaping. The goals of the proposed transportation improvements were to reduce traffic congestion, improve safety, facilitate economic development, and enhance pedestrian access and safety.

Route 1Transit Improvement Study (2003)

Examined the Route 1 corridor between Fort Belvoir to the Huntington Metrorail Station. Recommended a three-phase implementation plan to first improve local bus service, and then introduce bus rapid transit and eventually light rail. The study also included recommendations to add facilities to support transit access.

Fairfax County Transit Development Plan (2009)

Guided the expansion and enhancement of Fairfax Connector and Metrobus service operated in and paid for by Fairfax County.

Super NoVa Transit & Transportation Demand Management Vision Plan Study (2010)

Envisioned safe, strategic, and seamless mobility for all options rail, transit, and TDM in the greater NoVa region. Goals included increasing mobility and transportation choice, efficiently using transportation infrastructure to meet current and future needs, integrate transportation and land use planning policy, and support sustained economic growth and prosperity

Fairfax Countywide Transit Study (ongoing)

Determines transit system types needed to accommodate desired economic growth throughout the county over next several decades. This study develops recommendations for Metrorail extensions, appropriate streetcar and light rail placement, and dedicated lanes that allow for faster bus travel.

Route 1 Multimodal Alternatives Analysis

Richmond Highway Public Transportation Initiative (2004)

This study looked at 7 miles of the Route 1 corridor between the Capital Beltway to Mount Vernon Memorial Highway, with the intent to upgrade transit service and improve access. As a result, the plan included provisions to upgrade pedestrian facilities along the corridor, including new sidewalks, enhanced crosswalks, median refuges, pedestrian signals, lighting, curb ramps, and bus stop amenities.

Sustainability of Mixed-Use Development around Woodbridge Station (2009)

Explored transit-oriented development opportunities in the area surrounding Woodbridge's Virginia Railway Express station while testing the impact of various land use and transportation scenarios. The intention was to understand the implications of creating a vibrant, walkable, mixed-use development north of Route 1 and a mass transit node near the existing station

Route 1 Transit Study SJ292 (2010)

Evaluated the level of study necessary to identify and advance potential public transportation services to Fort Belvoir in Fairfax County and Quantico in Prince William and Stafford Counties.

Route 1/Route 123 Interchange (ongoing)

Will improve the current Route 1/ Route 123 interchange in Woodbridge to better accomodate future traffic growth. Route 1 will become wider, and the current at grade interchange will become grade separated to both separate through traffic as well as better connect communities south of Route 1 to Route 123

Route 1 Improvements at Fort Belvoir (ongoing)

Evaluated alternatives for addressing transportation in the section of Route 1 between Telegraph Road (Route 611) and Mount Vernon Memorial Highway (Route 235).

1998 2000 2002 2004 2006 2008 2010 2012 2014

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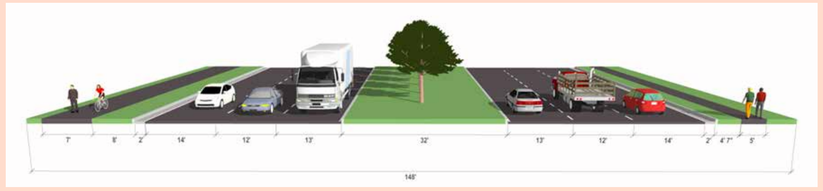
VDOT

Current Studies and Projects

HIGH CAPACITY TRANSIT PROPOSED:

- DRPT Study SJ292 (2010)
- Fairfax County Comprehensive Plan (2011)
- Fairfax County Transit Network Study (ongoing)

VDOT ENVIRONMENTAL ASSESSMENT
6-LANE TYPICAL CROSS SECTION;
BICYCLE AND PEDESTRIAN PATHS

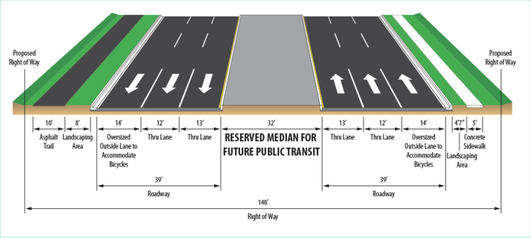


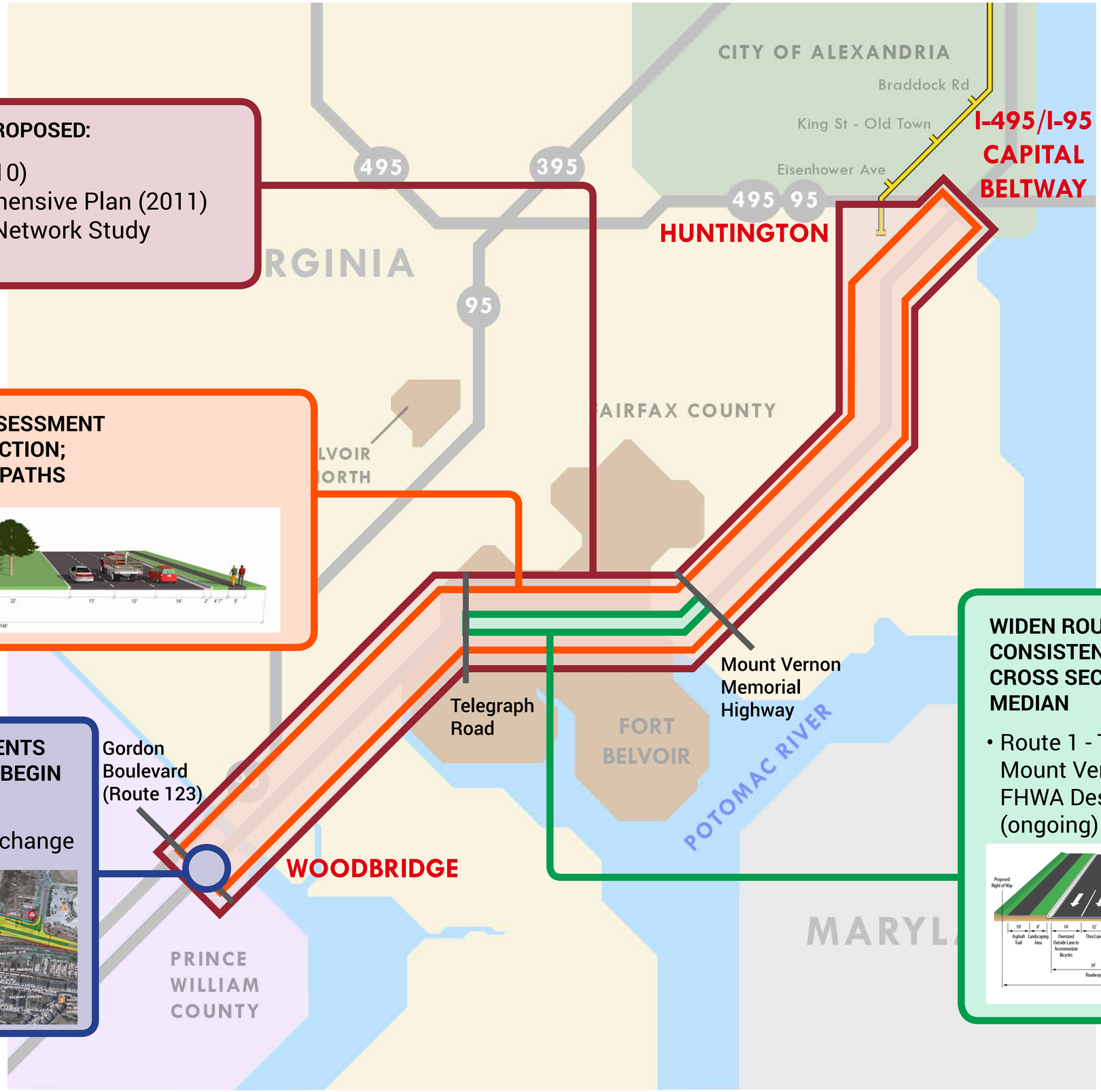
INTERCHANGE IMPROVEMENTS CURRENTLY IN DESIGN, TO BEGIN CONSTRUCTION IN 2015

- Route 1/ Route 123 Interchange

WIDEN ROUTE 1 TO ACHIEVE CONSISTENT 6-LANE CROSS SECTION AND EXPAND MEDIAN

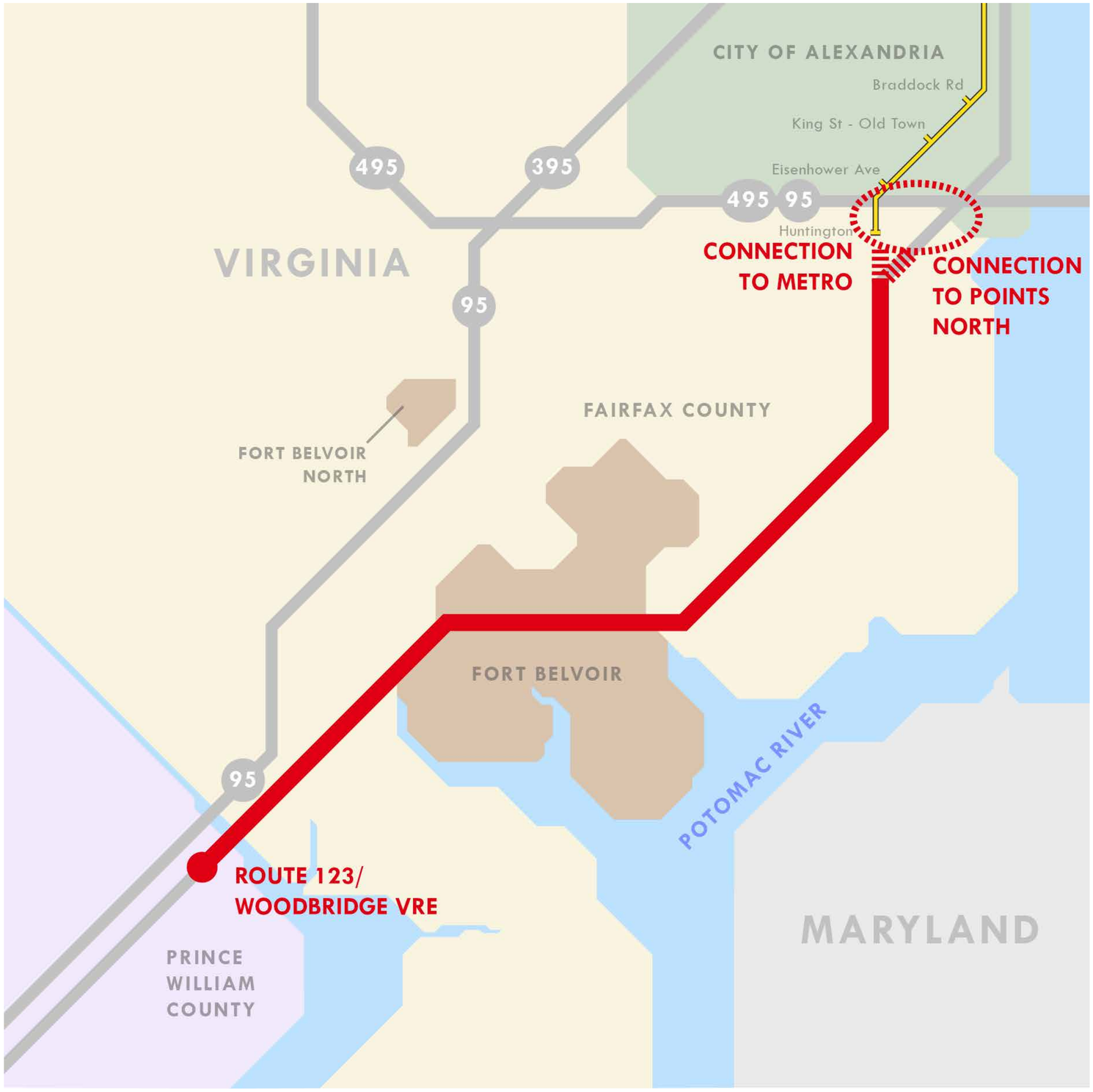
- Route 1 - Telegraph Road to Mount Vernon Memorial Highway FHWA Design Build Project (ongoing)





CORRIDOR NEEDS

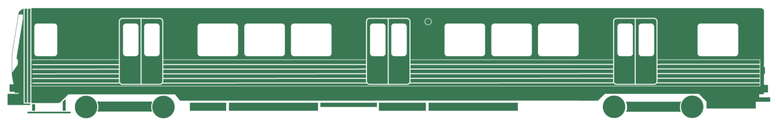
- Attractive and competitive transit service
- Viable multimodal travel options
- Efficient and affordable access to employment, workforce, and major destinations
- Congestion relief and emissions reductions
- Transportation support for local land use plans



Project Goals

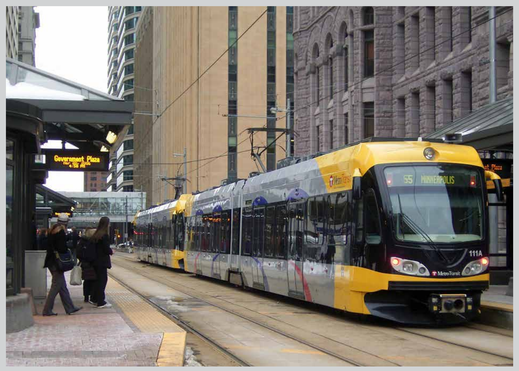
GOALS	SPECIFIC AIMS	FEEDBACK
 **Improve high-quality multimodal travel options**	• Improve transit to reduce travel times and increase frequency, reliability, and attractiveness • Improve access for workers to jobs and opportunities generally, and for minority and low-income populations specifically • Increase comfort, connectivity, and attractiveness of bicycle and pedestrian networks to and along the corridor • Integrate with existing (and planned) transit systems and roadway improvements	
 **Improve safety; increase accessibility**	• Provide accessibile pathways to and from transit service and local destinations along Route 1 • Reduce pedestrian-vehicle conflicts • Improve pedestrian crossings • Improve traffic operations • Reduce congestion	
 **Increase the economic competitiveness and vitality of the corridor**	• Increase and improve connectivity to regional activity centers • Encourage and support compact, higher density, mixed use development consistent with local plans, policies, and economic objectives • Increase public and developer confidence in the delivery and sustainability of new transit invesments	
 **Protect and improve community, health, and the environment**	• Minimze impacts on private property and historic and natural resources • Expand opportunities for more and affordable housing near high quality transit • Reduce energy consumption and greenhouse gas emissions • Increase opportunities for “active transportation” (e.g. walking, bicycling)	

Transit Mode Alternatives

	METRORAIL	MONORAIL
Mode		
Operating Environment	 	 
	STATION SPACING 0.5 - 5 miles	**AVG/MAX SPEEDS** 30 mph / 70 mph
	STATION SPACING 0.5 - 2 miles	**AVG/MAX SPEEDS** 10 - 15 mph / 50 mph
Car Capacity	 60 - 80 seated (120 total)	 10 - 75 seated (40 - 150 total)
Max Capacity (Peak Direction)	 9,600 passengers per hour (8-car trains, 120 passengers per car every 6 minutes)	 6,000 passengers per hour (4-car train, 150 passengers per car every 6 minutes)
Cost	**CAPITAL COST** $$$$ $100 - $250 million per mile	**OPERATING COST** ¢ $0.30 - $0.50 per passenger mile
	CAPITAL COST $$$$ $100 - $200 million per mile	**OPERATING COST** ¢¢ $0.29 - $1.53 per unlinked trip

Sources:
DRPT Transit Service Design Guidelines
National Transit Database
Recent Industry Experience

Transit Mode Alternatives

	LIGHT RAIL	STREETCAR
Mode	 	 
Operating Environment	  **STATION SPACING** 0.5 - 2 miles **AVG/MAX SPEEDS** 20 - 25 mph / 70 mph	  **STATION SPACING** 0.10 - 0.5 miles **AVG/MAX SPEEDS** 8 - 12 mph / 45 mph
Car Capacity	 40 - 80 seated (180 total)	 30 - 50 seated (120 total)
Max Capacity (Peak Direction)	 3,600 passenger per hour (2-car trains, 180 passengers per car every 6 minutes)	 1,200 passengers per hour (120 passengers per car every 6 minutes)
Cost	**CAPITAL COST** $$$ $50 - $150 million per mile **OPERATING COST** ¢ $0.40 - $0.80 per passenger mile	**CAPITAL COST** $$ $30 - $80 million per mile **OPERATING COST** ¢ $0.50 - $0.85 per passenger mile

Sources:
DRPT Transit Service Design Guidelines
National Transit Database
Recent Industry Experience

Transit Mode Alternatives

	HIGH CAPACITY BUS RAPID TRANSIT	ENHANCED BUS	LOCAL BUS
Mode	BRT	ENHANCED	LOCAL
Operating Environment	 	 	 
	STATION SPACING 0.5 - 2 miles **AVG/MAX SPEEDS** 12 - 20 mph / 50 mph	**STATION SPACING** 0.5 - 1 mile **AVG/MAX SPEEDS** 10 - 15 mph / 50 mph	**STATION SPACING** 0.25 - 0.5 miles **AVG SPEEDS** 8 - 12 mph / 50 mph
Vehicle Capacity	 40 - 60 seated (90 total)	 25 - 40 seated (60 total)	 25 - 40 seated (60 total)
Max Capacity (Peak Direction)	 900 passengers per hour (90 passengers per bus every 6 minutes)	 600 passenger per hour (60 passengers per bus every 6 minutes)	 360 passenger per hour (60 passengers per bus every 10 minutes)
Cost	**CAPITAL COST** $$ $10 - $30 million per mile for busways $500K - $800K per vehicle **OPERATING COST** ¢ $0.40 - $0.60 per passenger mile	**CAPITAL COST** $ $400K - $600K per vehicle **OPERATING COST** ¢ $0.40 - $0.65 per passenger mile	**CAPITAL COST** $ $400K - $600K per heavy duty bus $125K - $250K per light duty bus **OPERATING COST** ¢ $0.50 - $0.85 per passenger mile

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Recent Industry Experience

Example Transit Applications

Emerald Express (EMX) Bus Rapid Transit

Location: Eugene, Oregon

Operator: Lane Transit District

Service Route Length: 9 miles

Current Weekday Ridership: 14,500

Construction Cost: $25 Million (2007)

Metrorail Light Rail Transit

Location: Houston, Texas

Operator: Metropolitan Transit Authority of Harris County (METRO)

Service Route Length: 7.5 miles

Current Weekday Ridership: 37,500

Construction Cost: $325 Million (2004)

Rapid Ride Enhanced Bus

Location: Albuquerque, New Mexico

Operator: City of Albuquerque Transit Department (ABQ Ride)

Service Route Length: 11 miles (trunk line)

Current Weekday Ridership: 10,400

Construction Cost: $4.8 million FTA Grant for station construction and fleet acquisition (2004)

Swift Bus Rapid Transit

Location: Everett, Washington

Operator: Community Transit and Everett Transit

Service Route Length: 17 miles

Current Weekday Ridership: 4,200

The Tide Light Rail

Location: Norfolk, Virginia

Operator: Hampton Roads Transit

Service Route Length: 7.4 miles

Current Weekday Ridership: 4,900

Construction Cost: $320 million (2011)

Hiawatha Line, Light Rail Transit

Location: Minneapolis, Minnesota

Operator: Metro Transit (METRO)

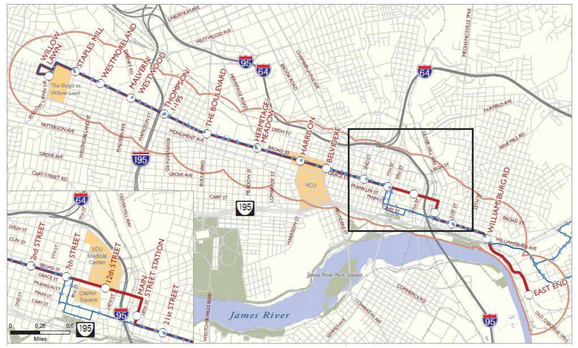
Service Route Length: 12.3 miles

Current Weekday Ridership: 34,200

Construction Cost: $715 million (2004)

Regional Examples of Transit Supportive Development

Richmond: Broad Street Bus Rapid Transit



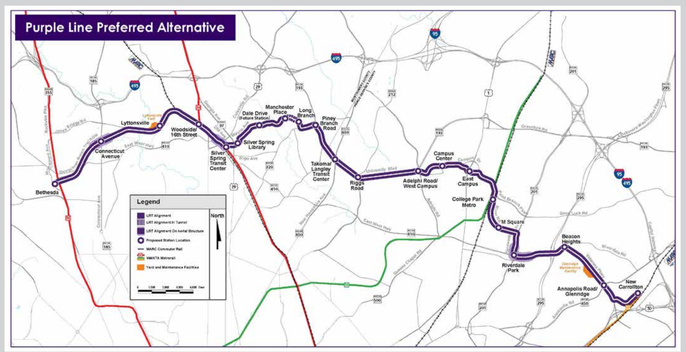
Proposed BRT Alignment

Proposed BRT Station Rendering

Rockett's Landing Existing Development

Rockett's Landing Proposed Development

Maryland: Purple Line Light Rail Transit



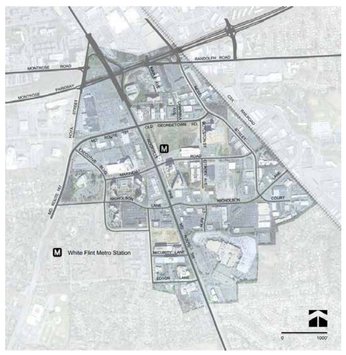
Proposed Purple Line Alignment

Chevy Chase Lake Proposed Development

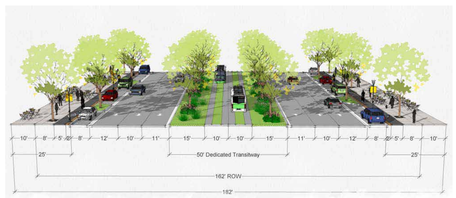
University of Maryland Station Rendering

Proposed Light Rail in Context

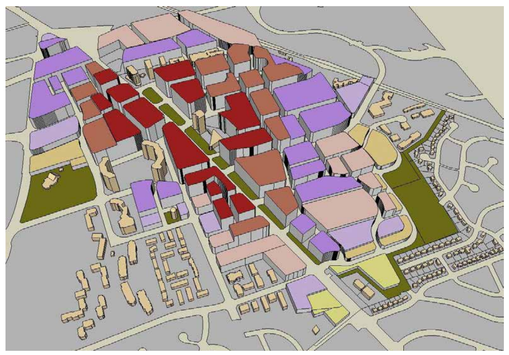
Maryland: Rockville Pike at White Flint Metro



White Flint Before



Proposed Rockville Pike Configuration



Proposed New Development Pattern

White Flint Metro with adjacent development

Future Pike and Rose Development

Route 1 Multimodal Alternatives Analysis

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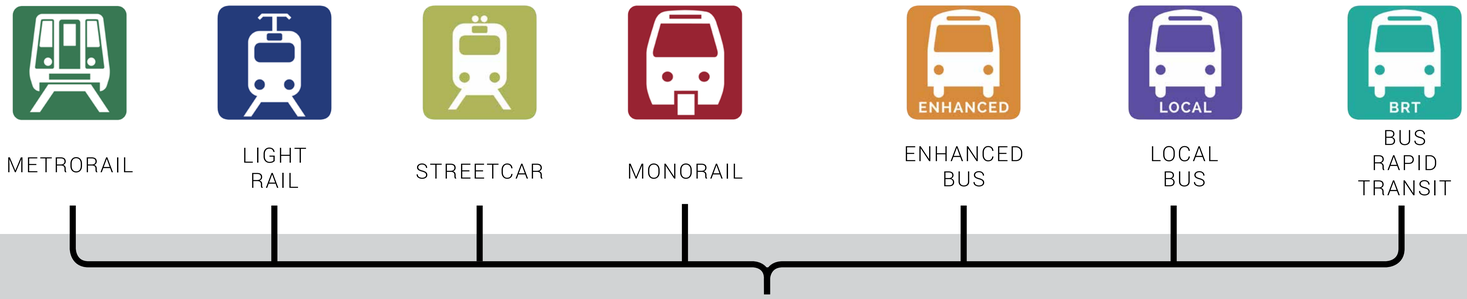
Priorities

HYPOTHETICAL SCENARIO	AGREE	DISAGREE	NEED MORE INFORMATION
1. I would be willing to deal with more traffic congestion in my car (i.e., wait two more minutes at a signal) if Route 1 became a place where I felt safe and comfortable walking and crossing the street.			
2. I would be willing to have ten story buildings in key activity centers on Route 1 if I would also be able to walk safely from my home to destinations (sidewalks and crosswalks at intersections, etc.).			
3. I would be willing to have ten story buildings in key activity centers on Route 1 (e.g., Beacon Center) if I would also get higher quality transit service.			

Evaluation of Alternatives

SEPTEMBER 2013

Range of Transit Technologies



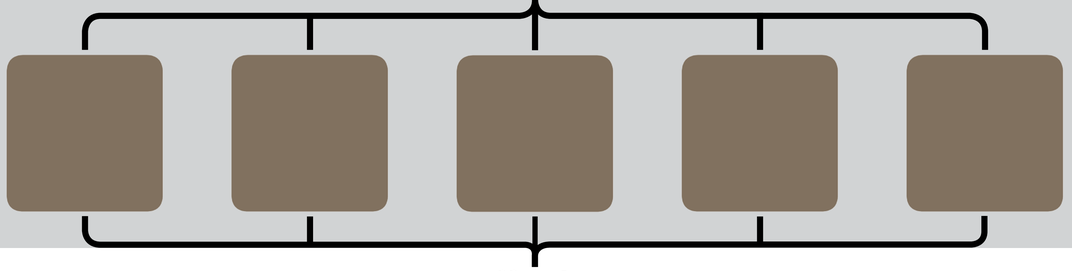
OCTOBER - NOVEMBER 2013

Policy Directive Screening

Baseline Policy Requirements

Initial Alternatives

Technology, operating characteristics, stop spacing, roadway cross section



DECEMBER 2013

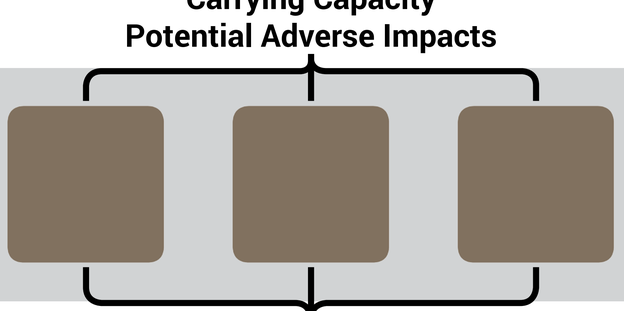
Screening

Cost Effectiveness
Carrying Capacity
Potential Adverse Impacts

DECEMBER 2013 JANUARY 2014

Refined Set of Alternatives

Technology, detailed operating plan, and station locations



JANUARY - APRIL 2014

Detailed Evaluation

Purpose and Need Measures of Effectiveness
Environmental Impacts
New Starts / Small Starts Evaluation

MAY - JUNE 2014

Preferred Alternative