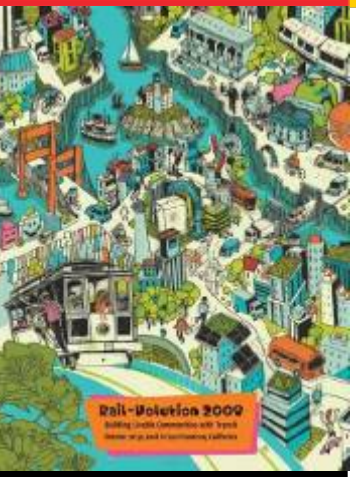


San Francisco
2008

Fitting Light Rail through Well-established Communities

Purple Line

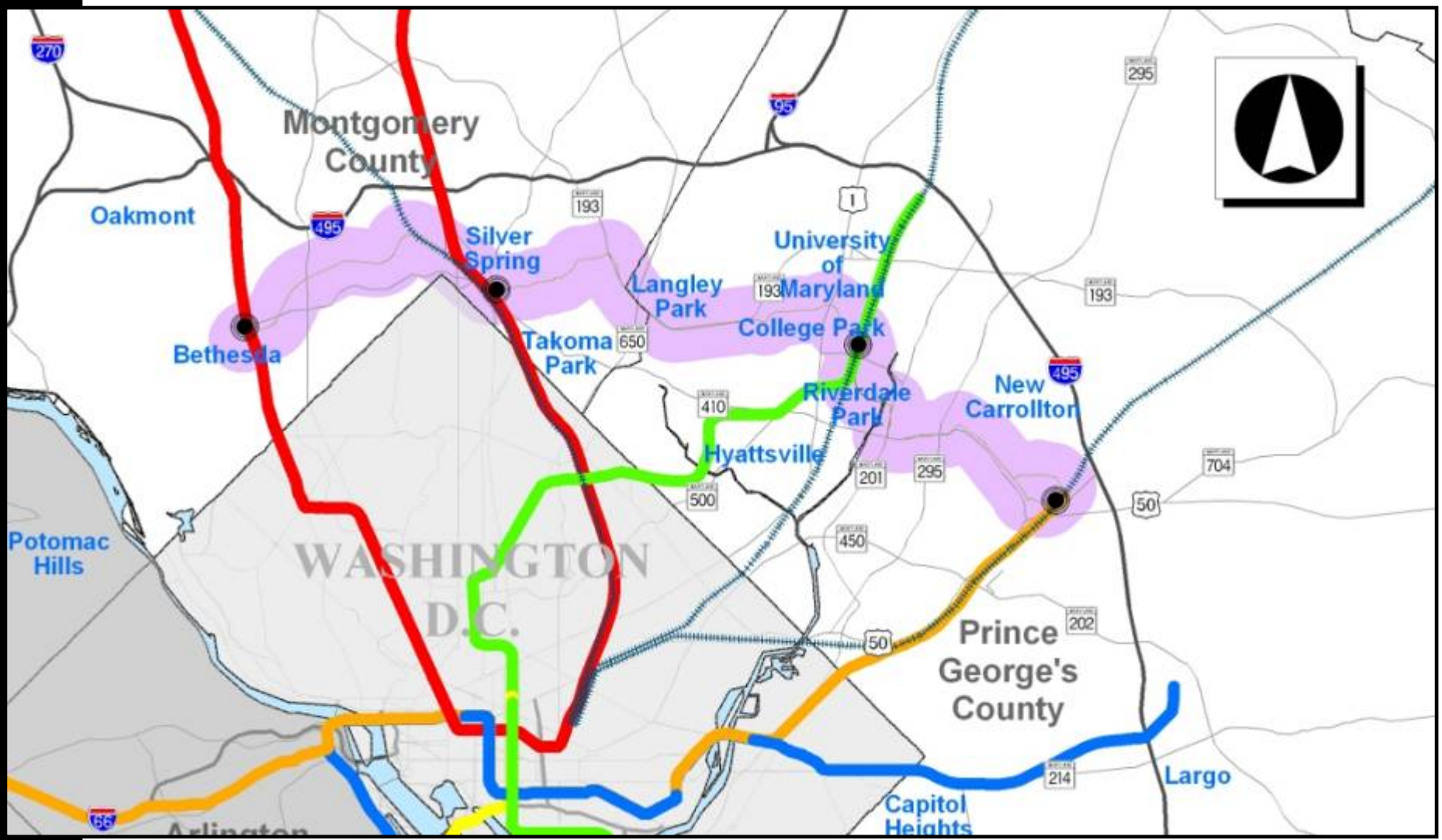
Michael D. Madden
Chief, Project Development,
Maryland Transit Administration

MTA Maryland

Project Setting

- Located inside the Capital Beltway just north of Washington D.C. extending from Montgomery County to Prince George's County
- Four existing Metrorail lines (two in each county)
- Three MARC commuter rail lines
- Amtrak rail service along the Northeast Corridor
- Study corridor extends west to east along well-established communities
- Corridor accounts for nearly 10% of the Metropolitan Washington Region's transit trips

Project Area Map

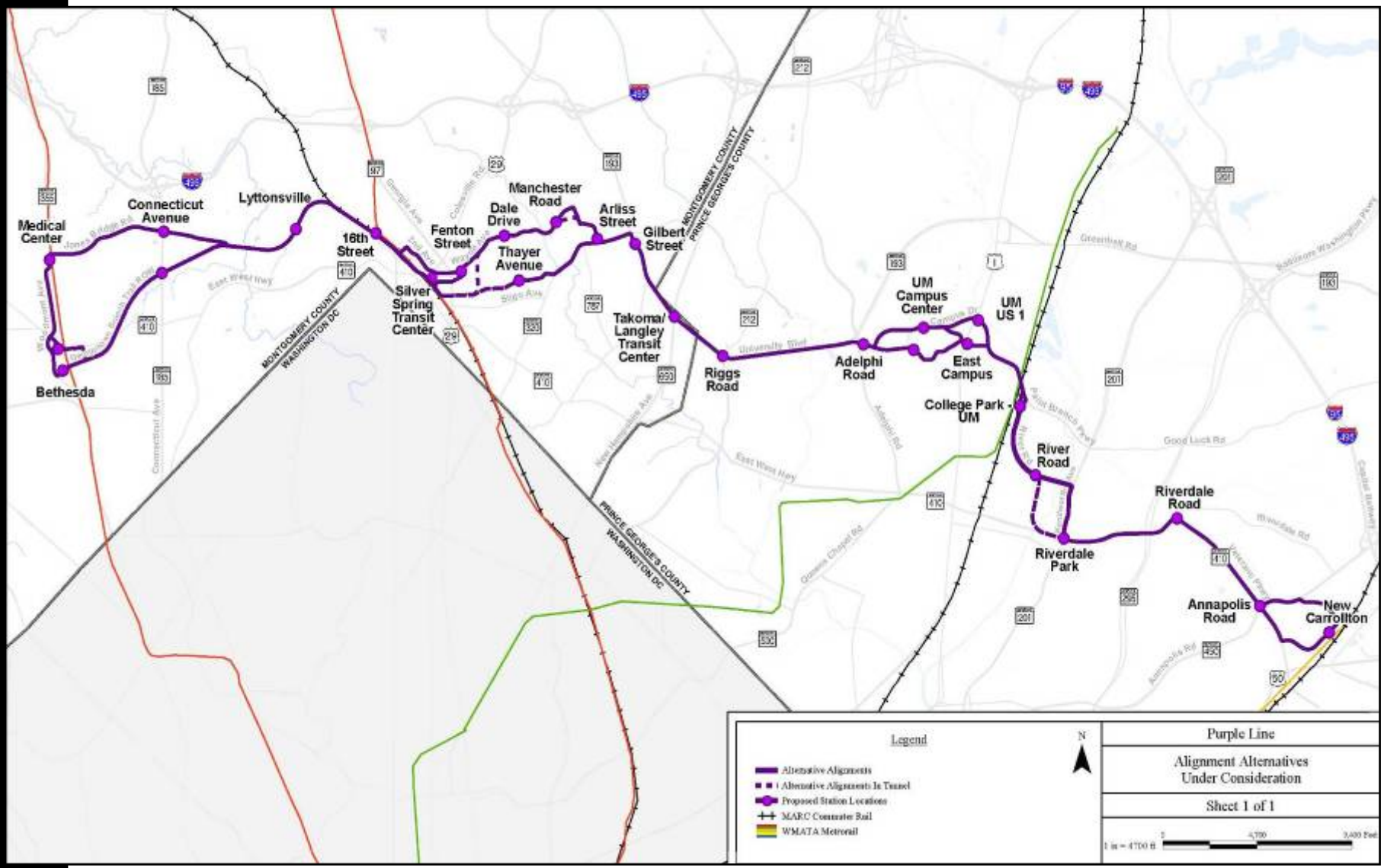


Connectivity with Metro

Project Overview

- AA/DEIS Public Review and Comment: October 17, 2008 – January 14, 2009
- A 16-mile east-west rapid transit line extending from downtown Bethesda to New Carrollton intermodal station area
- The Purple Line will be either light rail or bus rapid transit and will operate largely at street level
- A hiker-biker trail is included along the Georgetown Branch and CSX/WMATA corridor as part of the Capital Crescent Trail
- 22 potential stations
- Evaluating six build alternatives in addition to No-build and TSM
- Ridership projections range from 40,00 to 68,00 daily boardings
- Capital cost estimates range from $386 million to $1.6 billion

Alignment Alternatives



Challenges, Objectives, and Strategies

- Focus is on three distinct segments within the Purple Line corridor
- Three-mile Bethesda/Chevy Chase segment along a former freight railroad right-of-way
- One-mile segment in East Silver Spring along local residential street experiencing increasing traffic.
- One-mile University of Maryland segment through college campus

Segment 1: Bethesda/Chevy Chase

Challenges

- Affluent community with upper-income homes and exclusive country club golf course
- Residences backing up to, and encroaching on, abandoned railroad right-of-way
- Railroad ROW currently used as popular recreational and commuter hiker-biker trail
- Highly wooded, constrained ROW (mostly 66 feet wide)
- Very organized, well financed, and well connected opposition

Segment 1: Bethesda/Chevy Chase

Objectives

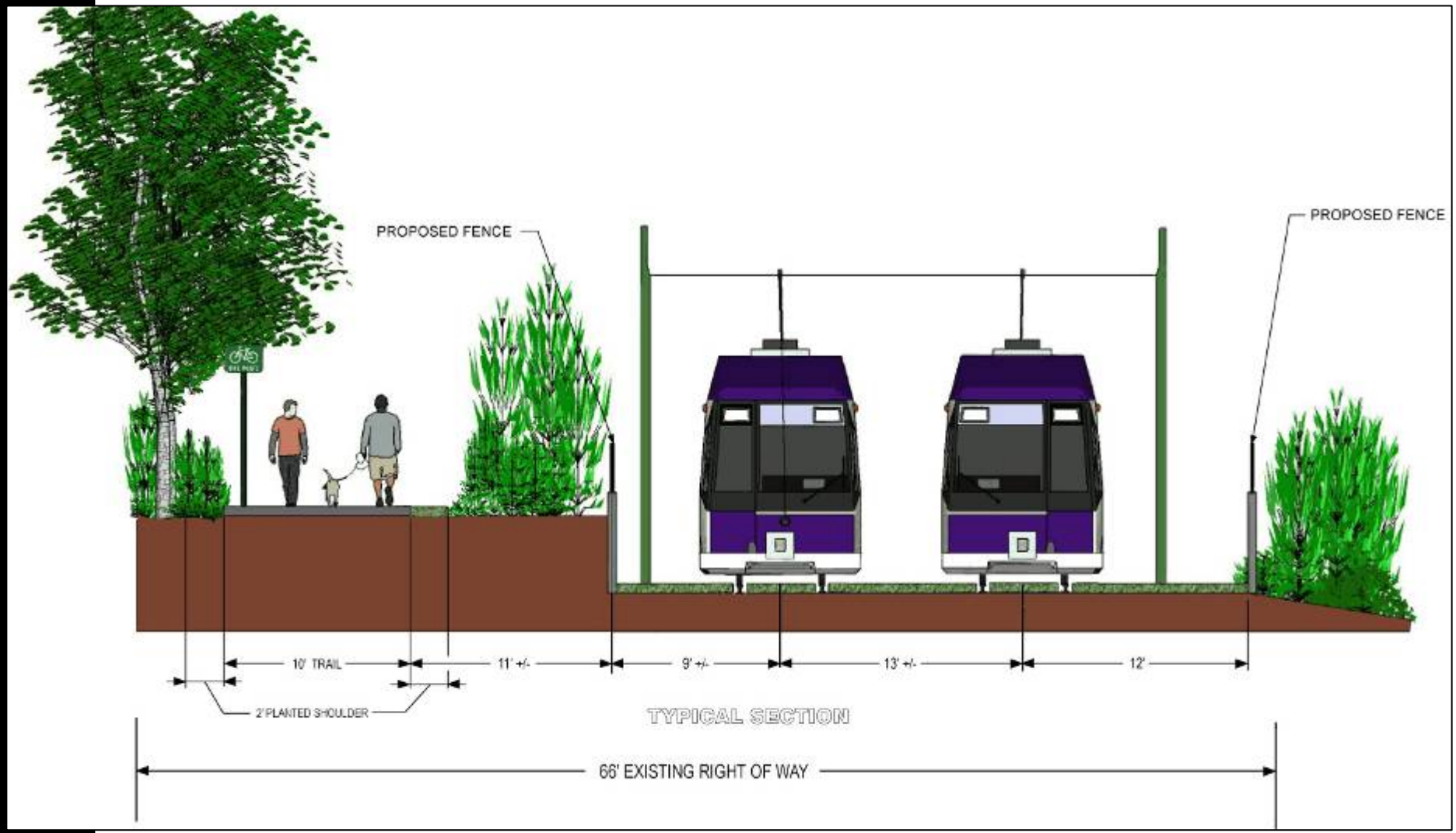
- Save the trail by completing the permanent Capital Crescent Trail parallel to the transitway
- Minimize noise, visual, and private property impacts – No Takings
- Maintain key connections to trail for local community
- Provide for a safe, attractive, and enjoyable trail experience
- Minimize disruption to golf course activities
- Save as many trees as possible

Segment 1: Bethesda/Chevy Chase

Strategies

- Relocate trail to north side of transitway
  - Raise trail 3-4 feet higher than track bed
  - Provide for increased landscaping buffer between transitway and trail
  - Minimize retaining walls by positioning trail to follow the natural lay of the land
- Provide safe, designated trail connections both at grade and grade separated
- Expand landscaping between and along transitway and trail
- Use less obtrusive trolley wire system, rather than catenary
- Use grass tracks and landscape screening
- Use sound walls and retaining walls to provide barrier between transitway and trail

Trail – Typical Section for 66’ ROW

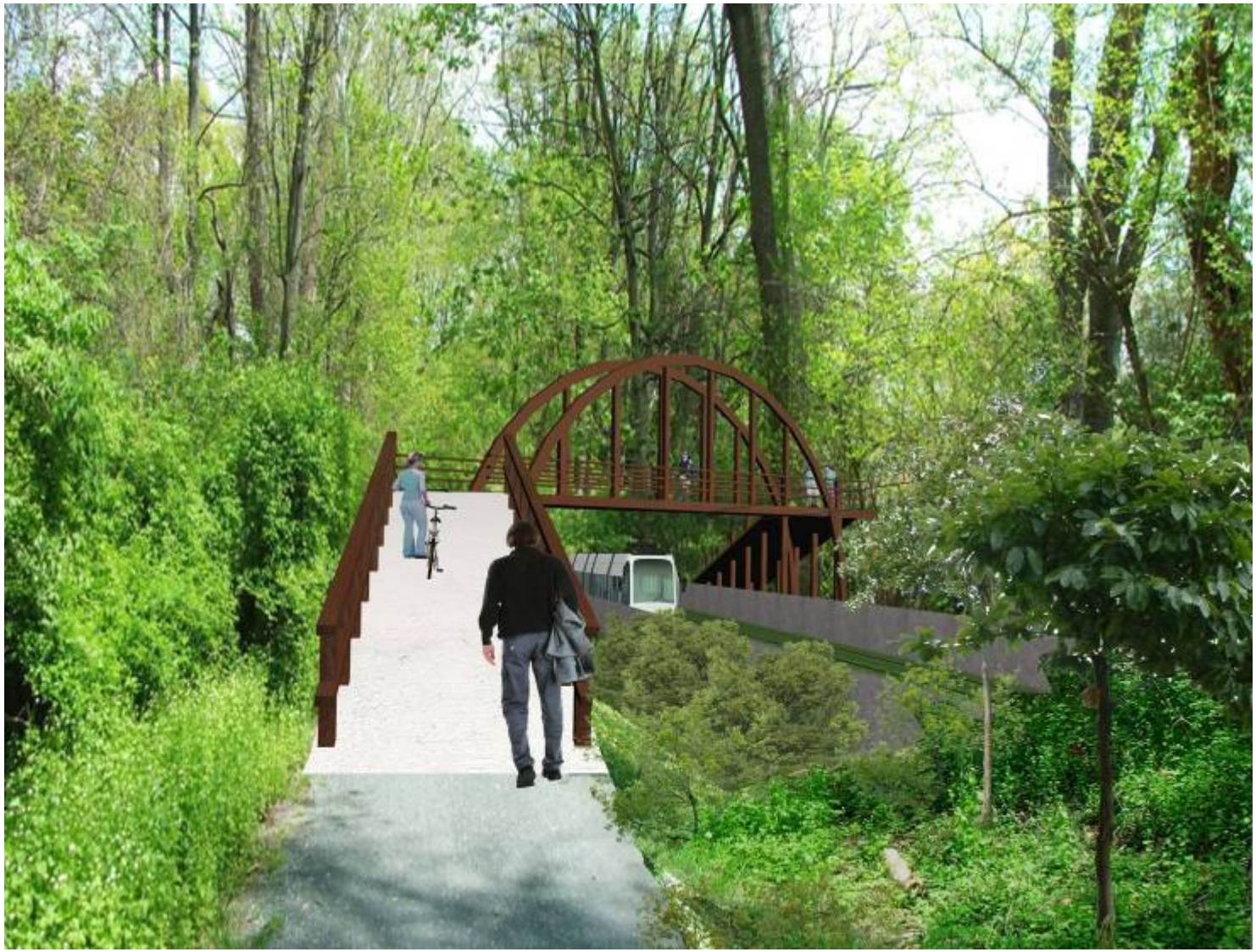


Grass Tracks

Freiburg, Germany

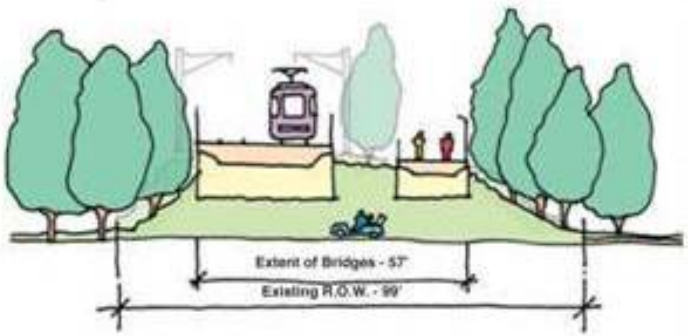
Trail Access and Crossing

Trail: Grade-separated Crossing



Transitway and Trail

Columbia Country Club



MTA has offered the Country Club design options to integrate the transitway and trail with the golf course and enhance the crossing through the golf course.

Rock Creek Bridge

- Trail would be on a separate, lower bridge over Rock Creek
- Allows an easier, ADA-compliant ramp connection to Rock Creek Trail
- More pleasant experience for trail users

Segment 2: East Silver Spring

Challenges

- Four-lane local roadway along community of single family residences fronting street
- Significant level of vehicular and local bus traffic
- Stream valley park and steep grades
- Pedestrian safety concerns about elementary- and middle-school students
- Limited on-street parking in off-peak hours
- Organized opposition pushing for underground alternative only

Segment 2: East Silver Spring

Objectives

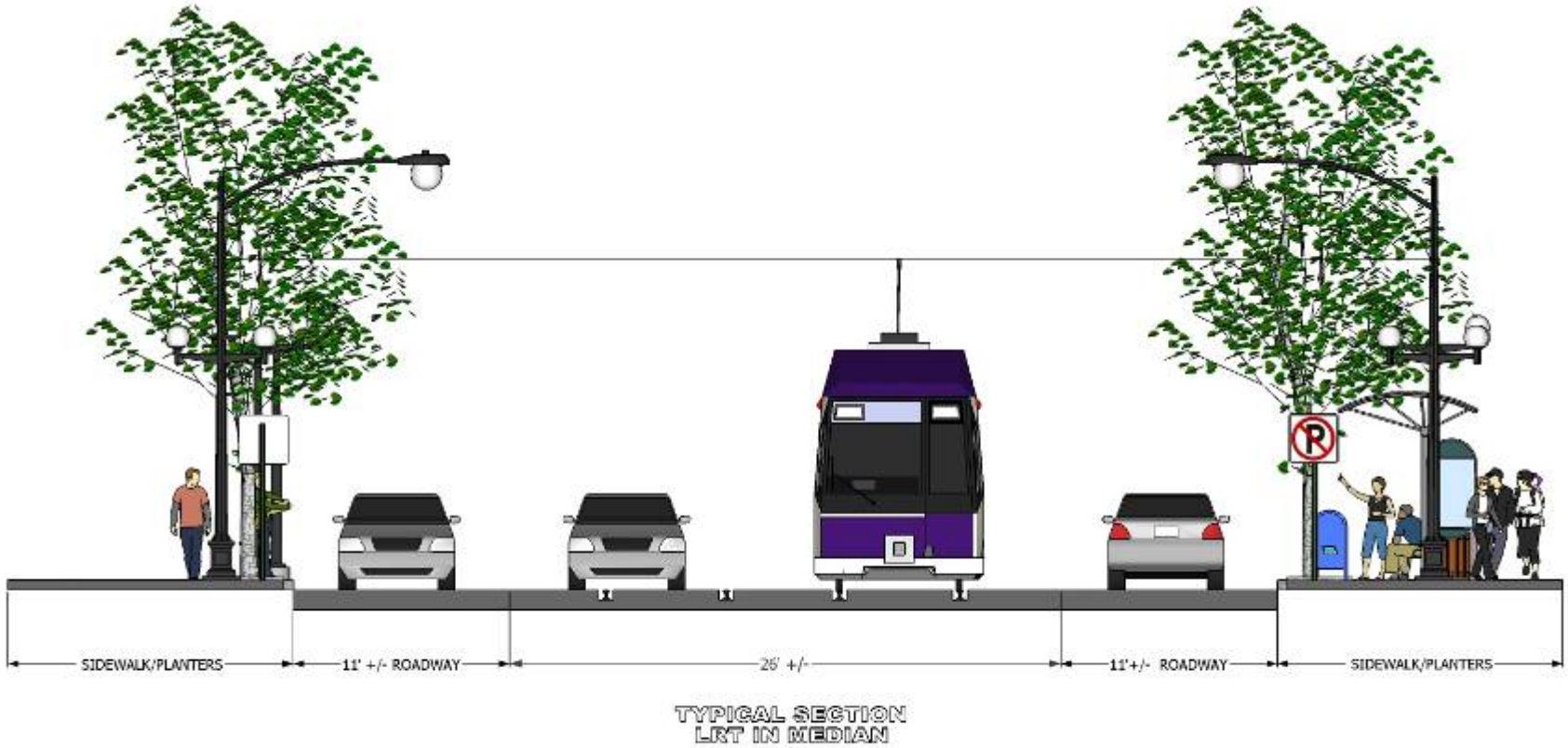
- Maintain or improve existing traffic levels of service
- Minimize residential property impacts and allow for some on-street parking
- Provide improved and safe pedestrian access to transit
- Minimize noise and visual impacts
- Evaluate tunnel options

Segment 2: East Silver Spring

Strategies

- Conduct detailed traffic studies and develop computer traffic simulation models
- Recommend shared lanes for one mile and widen only at signalized intersections to provide left turn lanes
- Provide short tunnel segment for area of excessive grade
- Minimize impact to park
- Provide two at-grade stations at densely populated areas and bus transfer locations
- Add improved sidewalks and streetscaping
- Accommodate limited on-street parking
- Integrate catenary poles and street lighting

Wayne Avenue Typical Section



Approximately 50 feet wide

Wayne Avenue near Cedar Street

Wayne Avenue at Dale Drive

Wayne Avenue approaching Sligo Parkway

Segment 3: University of Maryland

Challenges

- Attractive, developed university campus of 36,000 students, 12,000 employees, and many visitors
- University administration historically opposed to rail on campus
- Existing rail service located one mile off campus
- Campus core is not connected to emerging campus development areas
- Very slow moving vehicular traffic along primary route through campus
- Large numbers of pedestrian crossings (25,000 crossings for 12-hour period)
- Extensive bus travel through campus by multiple providers (750 buses, one bus/minute)

Segment 3: University of Maryland

Objectives

- Enhance connections among west campus, campus core, and M^2 Research Center
- Provide for intermodal connectivity
- Minimize conflicts with non-transit vehicles and pedestrians
- Minimize transit travel time through campus
- Complement campus aesthetic appeal and architectural character
- Minimize visual, noise, vibration, and EMI impacts

Segment 3: University of Maryland

Strategies

- Restrict non-transit and non-university related vehicular traffic from primary campus route
- Conducted detailed traffic and pedestrian studies and develop computer simulation models
- Locate stations convenient to the largest concentration of people and to existing services
- Provide direct links to planned campus development sites
- Provide extensive pedestrian ways, landscaping, and enhanced pedestrian-plaza design emphasis
- Employ context-sensitive design to fit into campus setting

University of Maryland

Campus Drive "Plaza Concept"

University of Maryland

Pedestrian Plaza Concept

University of Maryland

Pedestrian Plaza Concept

Conclusion

Lessons Learned

- Carry out an inclusive and collaborative process
- Get out and into the community frequently
- Employ public outreach in conducting a variety of forums
- Listen carefully to the community and ask probing questions
- Clearly explain results
- Use multiple methods of presentation to help the public visualize the possibilities
- Make sure all materials being distributed send the correct message
- Be willing to challenge, discard, and refine design concepts