Record of Decision
Attachment D

Final Section 4(f) Evaluation

This Section 4(f) Evaluation has been prepared to comply with the USDOT Act of 1966 (49 USC 303), hereinafter referred to as "Section 4(f)" and its implementing regulations codified at 23 CFR 774. Additional guidance was obtained from FHWA Technical Advisory T6640.8A (FHWA 1987b) and the revised FHWA Section 4(f) Policy Paper (FHWA 2012).

The Section 4(f) Evaluation provides the documentation necessary to support FTA's Section 4(f) determinations as part of its Record of Decision (ROD) for the project, after its consideration of public and agency comments on the Draft Section 4(f) Evaluation. The public and U.S. Department of Interior comment period for the Draft Section 4(f) Evaluation was 45 days, concurrent with the comment period for the Final Environmental Impact Statement (FEIS) from September 6, 2013, to October 21, 2013.

Subsequent to FTA's issuance of the August 2013 Final Environmental Impact Statement (FEIS) and Draft Section 4(f) Evaluation for the Purple Line, review of public comments on the FEIS, and after additional coordination with the agencies with jurisdiction over the Section 4(f) properties, MTA refined the design of the Purple Line Preferred Alternative to reduce environmental and socioeconomic impacts. Specifically, MTA, in coordination with FTA, met with property owners, stakeholder groups, and special interest groups in the project corridor, as well as agencies with jurisdiction over Section 4(f) properties, including the Maryland-National Capital Park and Planning Commission (M-NCPPC)–Montgomery County Department of Parks, M-NCPPC–Prince George's County, the National Capital Planning Commission (NCPC), the National Park Service (NPS), and the Maryland State Historic Preservation Officer (MD SHPO).

In response to input from the public and agencies, design refinements were made along the corridor, including some in the vicinity of Section 4(f) properties. These refinements are described in Section 1.4 as well as in ROD Attachment F. Where the refinements changed the project limits of disturbance (LOD) or design in the vicinity of Section 4(f) properties, the effects of those refinements are considered in this Final Section 4(f) Evaluation.

After consideration of comments on the Draft Section 4(f) Evaluation, the FTA determined that the Purple Line Preferred Alternative will result in:

- Temporary occupancy (not a use) of three park and recreation properties, one of which is also an historic property
- *De minimis* impacts to eight park and recreation properties and historic sites
- Permanent use, not *de minimis*, of two park and recreation properties and three historic sites

Table 1-1 lists the properties for which FTA's determinations were made. FTA obtained concurrence from the officials with jurisdiction regarding its determinations of *de minimis* impact and temporary occupancy exception. FTA received written concurrence from the officials with jurisdiction: the M-NCPPC–Montgomery County Department of Parks (October 17, 2013, and January 3, 2014), the M-NCPPC–Prince George's County (January 24, 2014), NPS, National Capital Parks—East (March 18, 2014) and the MD SHPO. The MD SHPO provided concurrence as set forth in the Section 4(f) regulations by signing the Section 106 Programmatic Agreement (March 14, 2014), which states the Purple Line will have no adverse effect to properties for which FTA made a *de minimis* impact determination (see ROD Attachment B). The officials' signed concurrence letters are provided in Attachment E of the ROD, to which this evaluation is also an attachment.

Table 1-1. Summary of Preferred Alternative Section 4(f) Uses

Section 4(f) Property	Property Type	Permanent Use, Not *De minimis*	Permanent Use, *De minimis*	Temporary Occupancy; No Use
Elm Street Urban Park	Park			●
Rock Creek Stream Valley Park and Rock Creek National Recreational Trail; M:36-87—Rock Creek Park Montgomery County Survey Area	Park and Historic			●
Sligo Creek Stream Valley Park and Sligo Creek National Recreational Trail; M: 32-15—Sligo Creek Parkway	Park and Historic		●	
Long Branch Local Park	Park	●		
Long Branch Stream Valley Park and Long Branch Trail	Park		●	
New Hampshire Estates Neighborhood Park	Park		●	
Northwest Branch Stream Valley Park and Northwest Branch Trail	Park		●	
Anacostia River Stream Valley Park and Northeast Branch Trail	Park		●	
PG: 69-26—Baltimore-Washington Parkway (Gladys Noon Spellman Pkwy)/Riverdale Road Bridges	Park and Historic		●	
Glenridge Community Park	Park	●		
West Lanham Hills Neighborhood Recreation Center	Park			●
M: 35-140—Columbia Country Club	Historic		●	
M: 36-30—Bridge No. M 0085, Talbot Avenue Bridge	Historic	●		
M: 37-16—Metropolitan Branch, B&O Railroad Corridor	Historic	●		
M:36-12—Falkland Apartments	Historic	●		
PG:66-35—University of Maryland Historic District	Historic		●	

After considering the results of the FEIS (Chapter 4.0), which conclude that the Preferred Alternative will not cause noise, vibration, or visual effects on parks and historic properties protected by Section 4(f), FTA determined that the Preferred Alternative will not substantially impair the activities, features, or attributes that qualify Elm Street Urban Park, Rock Creek Stream Valley Park/Rock Creek Montgomery County Survey Area, and West Lanham Hills Neighborhood Recreation Center for protection under Section 4(f) that would constitute a constructive use.

This Final Section 4(f) Evaluation provides a methodology description (Section 1.1); states the project purpose and need (Section 1.2); describes the Preferred Alternative (Section 1.3); identifies Section 4(f) properties, the project impacts to the properties, explains the avoidance and least harm analyses for permanent uses that are not *de minimis*, states FTA's determinations of use under Section 4(f), and presents MTA's commitments to minimize harm (Section 1.4); summarizes FTA and MTA's coordination with officials with jurisdiction (Section 1.5); and presents FTA's conclusion regarding the Preferred Alternative (Section 1.6).

1.1 Methodology

Section 4(f) of the US Department of Transportation Act of 1966, 49 USC 303(c) is a federal law that protects publicly owned parks, recreation properties, wildlife and/or waterfowl refuges, as well as significant historic sites, whether publicly or privately owned. Section 4(f) requirements apply to all transportation projects that require funding or other approvals by the USDOT. As a USDOT agency, FTA must comply with Section 4(f). FTA's Section 4(f) regulations are at 23 CFR Part 774.

FTA cannot approve a transportation project that uses a Section 4(f) property, as defined in 23 CFR 774.17, unless FTA determines that:

- There is no feasible and prudent avoidance alternative, as defined in 23 CFR 774.17, to the use of land from the Section 4(f) property, and the action includes all possible planning, as defined in 23 CFR 774.14, to minimize harm to the property resulting from such use (23 CFR 774.3(a)); or
- The use of the Section 4(f) property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) committed to by the applicant would have a *de minimis* use, as defined in 23 CFR 774.17, on the property (23 CFR 774.3(b)).

This Final Section 4(f) Evaluation was conducted according to the requirements of 23 CFR Part 774 and FHWA's Section 4(f) Policy Paper. The evaluation included the following steps:

- Using a study area (250 feet on each side of the centerline of the Preferred Alternative), MTA reviewed existing mapping, conducted field investigations/site reconnaissance, searched property records and consulted with officials with jurisdiction to identify the properties protected by Section 4(f). Public ownership, public access, significance, and funding of parks and recreational facilities were verified through coordination with the property owners. As defined in FEIS Chapter 4.7.1 a 1,000-foot Area of Potential Effects (APE) around the Preferred Alternative alignment was defined in consultation with the Maryland Historical Trust (MHT), which is the State Historic Preservation Office in Maryland and the official with jurisdiction over historic properties.[1]
- **Assessment of Potential Section 4(f) Uses—** FTA and MTA identified and quantified uses of Section 4(f) properties by the Preferred Alternative. This assessment considered the potential for permanent use (23 CFR 774.17), constructive use (23 CFR 774.15), and temporary use (23 CFR 774.13(d)).
- **Temporary Occupancy Exceptions—**In evaluating uses, FTA and MTA considered the exception for temporary occupancy in 23 CFR 774.13(d). If the criteria for a temporary occupancy exception are met, there is no use.

[1] It is important to recognize the difference between Section 4(f) use of historic properties and Section 106 project effects to historic properties, which are discussed in Chapter 4.7 of the FEIS. Section 4(f) and Section 106 are similar in that they both mandate consideration of historic properties in the planning of a federal undertaking. Section 4(f) applies to the actual use or occupancy of a historic site, while Section 106 involves an assessment of adverse effects of an action on historic properties. The Section 106 process is integral to the Section 4(f) process when historic properties are involved. Conversely, the Section 4(f) process is not integral to the Section 106 process.

- **De minimis Uses—**For properties that would be used, FTA and MTA evaluated the use to determine whether it would meet the requirements for a *de minimis* use. FTA and MTA have notified the officials with jurisdiction of each property for which they are proposing a determination of *de minimis* use. The officials with jurisdiction concurred, enabling FTA to issue determinations of *de minimis* use as part of this Final Section 4(f) Evaluation in the Record of Decision.
- **Analysis of Avoidance, Minimization, and Least-Overall-Harm—**For properties that would be used by the Preferred Alternative, and for which a determination of *de minimis* use has not been made, FTA and MTA have conducted an analysis to determine if there are feasible and prudent alternatives that avoid the use of Section 4(f) properties. In the absence of feasible and prudent avoidance alternatives, FTA and MTA compared alternatives to determine which alternative caused the least overall harm and to ensure that the Preferred Alternative incorporates all possible planning to minimize harm as required by Section 4(f). In determining the alternative with the least overall harm, FTA and MTA considered design refinements, such as alignment shifts, to reduce impacts to Section 4(f) properties.

1.1.1 Definition of Section 4(f) Uses

After identifying the Section 4(f) properties in the project study area, FTA determined whether and to what extent the Preferred Alternative would use each property. The type of Section 4(f) use was then determined according to the Section 4(f) use definitions below.

- **Permanent Use—**Pursuant to 23 CFR 774.17, a permanent use occurs when land from a Section 4(f) property is permanently incorporated into a transportation project. This may occur as a result of partial or full acquisition of the Section 4(f) property, permanent easements, or temporary easements that exceed regulatory limits.
- **Temporary Use—**As defined in 23 CFR 774.13(d), a temporary use occurs when there is a temporary use of land that is "adverse in terms of the statute's preservation purpose as determined by the criteria in 23 CFR 774.13(d)." If the criteria in 23 CFR 774.13(d) are met, the "temporary use exception" applies in which there is no "use" of the Section 4(f) property. If the criteria in 23 CFR 774.13(d) are not met, the use is evaluated as permanent.
- **Constructive Use—**As defined in 23 CFR 774.15(a), a constructive use occurs when a transportation project does not incorporate land from a Section 4(f) property, but the project's proximity impacts are so severe that the protected activities, features or attributes that qualify a property for protection under Section 4(f) are substantially impaired.

1.1.2 Individual Section 4(f) Evaluation

The term "individual Section 4(f) evaluation" is used in this evaluation to refer to the process of assessing avoidance alternatives, determining the alternative with the least overall harm, and considering all possible planning to minimize harm for each property. This analysis is required for all uses of a Section 4(f) property except in the case of a *de minimis* use determination. The steps in this analysis are described below:

- **Analyze Avoidance Alternatives—**In this step, FTA considered alternatives that completely avoid the use of a Section 4(f) property. The avoidance analysis applied the Section 4(f) feasible and prudent criteria (23 CFR 774.17(2) and (3)). An alternative is not feasible if it cannot be built as a matter of sound engineering judgment (2). An avoidance alternative is not considered prudent (3) if (i) it compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need; (ii) it results in unacceptable safety or operational problems; (iii) after reasonable mitigation, it still causes: (A) severe social, economic, or environmental impacts; (B) severe disruption to established communities; (C) severe disproportionate impacts to minority or low income populations, or (D) severe impacts to environmental resources protected under other Federal statutes; (iv) it results in additional construction, maintenance, or

operational costs of an extraordinary magnitude; (v) it causes other unique problems or unusual factors; or (vi) it involves multiple factors in paragraphs (3)(i) through (3)(v) of this definition, that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

- **Determine Alternative with Least Overall Harm—**If no feasible and prudent alternative is identified that would avoid using a Section 4(f) property, FTA determined the alternative that would cause the least overall harm to Section 4(f) properties using the following factors (23 CFR 774.3(c)1): (1) the ability to mitigate adverse impacts to each Section 4(f) property; (2) the relative severity of the remaining harm after mitigation; (3) the relative significance of each Section 4(f) property; (4) the views of the officials with jurisdiction over each property; (5) the degree to which each alternative meets the project purpose and need; (6) the magnitude of adverse effects to resources not protected by Section 4(f); and (7) substantial cost differences among the alternatives.
- **Consider All Possible Planning to Minimize Harm—**Upon determining no feasible and prudent alternatives to avoid Section 4(f) properties, FTA considered and incorporated all possible planning to minimize the impacts of the Preferred Alternative. All possible planning, as defined in 23 CFR 774.17, means that all reasonable measures identified in the Section 4(f) evaluation to minimize harm or mitigate for adverse impacts and effects must be included in the project.
- **Coordinate with Officials with Jurisdiction—**FTA and MTA coordinated with the officials with jurisdiction over each of the protected properties for which a determination is made in this Final Section 4(f) Evaluation.

1.1.3 Temporary Occupancy Exception

Temporary occupancies do not constitute a use and, therefore, are not subject to the provisions of Section 4(f) if they meet each of the five criteria for temporary occupancy exception in 23 CFR 774.13(d):

- Duration of occupancy must be temporary; i.e., less than the time needed for construction of the project, and there can be no change in ownership of the land.
- The scope of work must be minor; i.e., both the nature and magnitude of the changes to the Section 4(f) property are minimal.
- There can be no anticipated permanent adverse physical impacts, nor can there be interference with the activities, features or attributes of the property, on either a temporary or permanent basis.
- The land being used must be fully restored; i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project.
- Written concurrence must be obtained from the officials with jurisdiction, documenting agreement with the above conditions. If the official with jurisdiction does not agree with a temporary occupancy exception determination, an analysis of use must be conducted.

Regarding temporary occupancy, concurrence was obtained from the officials with jurisdiction over the properties, enabling a final determination to be made by FTA in this Final Section 4(f) Evaluation, which is included in the Record of Decision.

1.1.4 De minimis Use

A determination of *de minimis* use can be made only if the project will not adversely affect the features, attributes or activities that make the Section 4(f) property significant. The specific requirements for a *de minimis* use determination are different for historic sites and for public parklands, recreational properties, and wildlife and waterfowl refuges. Per Section 4(f) regulations, evaluations of avoidance alternatives and selection of an alternative having the least overall harm are not required if a *de minimis* use determination is made.

If the official with jurisdiction does not agree with a *de minimis* use determination, an analysis of avoidance alternatives must be conducted. If the analysis concludes that there is no feasible and prudent alternative to use of the Section 4(f) property, FTA

may only approve the alternative that causes the least overall harm. A least overall harm analysis is conducted to determine which alternative may proceed. A *de minimis* use determination is inappropriate where a project results in a constructive use (23 CFR 774.3(b) and 23 CFR 774.17).

Historic Properties

As defined in 23 CFR 774.5 and 774.17, a *de minimis* use determination is made for an historic site if FTA makes a determination for a property of "No Adverse Effect" or "No Historic Properties Affected" through consultation under Section 106 of the National Historic Preservation Act (NHPA), and the State Historic Preservation Officer (SHPO) concurs with that determination.

Parks, Recreation Properties, and Refuges

A *de minimis* use on a public parkland, recreational property, or wildlife and waterfowl refuge is defined as that which does not "adversely affect the features, attributes or activities qualifying the property for protection under Section 4(f)." This determination can be made only with the concurrence of the official with jurisdiction, and can be made only after an opportunity for public review and comment on the proposed determination.

1.1.5 Constructive Use

The FEIS assessment of the potential for proximity effects of the Preferred Alternative is used by FTA and MTA to determine whether a constructive use of properties protected by Section 4(f) would occur. The FEIS assesses the direct, indirect and cumulative effects of the Preferred Alternative on the natural and human environment.

1.2 Purpose and Need

The purposes of the Purple Line project are the following:

- Provide faster, more direct, and more reliable east-west transit service connecting the major activity centers in the Purple Line corridor at Bethesda, Silver Spring, Takoma/Langley Park, College Park, and New Carrollton.
- Provide better connections to Metrorail services located in the corridor.
- Improve connectivity to the communities in the corridor located between the Metrorail lines.

A deficiency in east-west transit services in Montgomery and Prince George's counties has been identified, in various forms, for more than 20 years in regional studies and local land use plans. Growing population and employment in the region has resulted in increasingly congested roadways.

Changing land use patterns in Montgomery and Prince George's counties have increased the amount of suburb-to-suburb travel to and from the corridor's major activity centers. The existing transit system is primarily oriented to accommodate travel in and out of Washington DC. The only transit service available for direct east-west travel is bus service, which can be slow and unreliable because it operates on a congested roadway system. East-west travel on Metrorail within the corridor is possible, but requires a trip into and then out of Washington DC. Large transit-dependent populations in the corridor are affected adversely by the poor connectivity and unreliability of the existing east-west transit services. The Purple Line project proposes to reduce or eliminate these deficiencies.

1.2.1 Need for Faster and More Reliable Transit Service

Faster and more reliable transit service is needed in the Purple Line corridor to address two related transportation problems arising from existing and forecasted transit service market demands: the increasingly detrimental effect of existing and expected future roadway congestion in the corridor on travel times, and the resulting unreliability of the east-west bus transit services in the corridor. The congested roadways mean that bus travel times are not predictable.

The transit service market demands to, from and within the corridor demonstrate the nature and importance of the local and regional travel occurring in the project corridor. Expected growth in population, employment, and activity centers will place a substantial burden on the roadway and transit service networks in the corridor between now and the design year. Road-based bus dependability will deteriorate as traffic congestion grows, making access to destinations such as major activity

centers and radial transit services slow and unreliable. Populations that are transit-dependent will be particularly adversely affected by these conditions.

1.2.2 Need for More Direct Transit Connections to Metrorail

The corridor is deficient in fast, reliable east-west transit services providing access to and from the Metrorail system. WMATA's Metrorail service connects Bethesda, Silver Spring, College Park, and New Carrollton. However, since this service is radially-oriented, rail travel between these centers requires a lengthy, time-consuming trip into Washington DC and then, in most cases, transferring to a different radial line. A Metrorail trip between Bethesda and Silver Spring requires taking the Red Line into the Washington DC core and then traveling back out. To travel from Silver Spring to College Park by Metrorail requires taking the Red Line to the Washington DC core and then transferring to the Green Line to College Park. The Metrorail station at College Park is approximately one mile from the eastern edge of the University of Maryland (UMD) campus, requiring a bus transfer to get to or from UMD.

1.2.3 Need for Better Connectivity to the Communities In Between the Metrorail Lines

As noted above, the corridor lacks fast, reliable east-west transit to serve the communities located in the wedges between the Metrorail lines. These communities are dependent on local bus services, which are often slow and unreliable because of the existing congested roadways.

The county bus services, provided by Montgomery County Ride On and Prince George's TheBus, both terminate in Takoma/Langley Park at the county boundary, requiring the through traveler to transfer to continue an east-west trip. The majority of these bus transfers take place at the intersection of University Boulevard and New Hampshire Avenue, which is the planned location of the Takoma/Langley Park Transit Center and a planned Purple Line station.

1.3 Description of the Preferred Alternative

The Purple Line will be a 16.2-mile light rail transit (LRT) line project in the Maryland suburbs of Washington DC inside the Capital Beltway (I-495). The Purple Line will extend between Bethesda Metro station in Montgomery County and New Carrollton Metro station in Prince George's County. It will connect both branches of the Washington Metrorail Red Line, at Bethesda and Silver Spring, the Green Line at College Park, and the Orange Line at New Carrollton; all three Maryland Area Rail Commuter (MARC) lines; local and regional bus systems; and Amtrak's Northeast Corridor.

1.3.1 Preferred Alternative

The Preferred Alternative will be at grade except for one short tunnel section and three sections elevated on structures. The Preferred Alternative will operate mainly in dedicated or exclusive lanes, providing fast, reliable transit operations. The alignment, stations, system elements, yard, maintenance facility and operating plan are summarized in Table 1-2, shown on Figure 1-1, and described in the following sections.

Table 1-2. Summary of Preferred Alternative

Measure	Preferred Alternative
Length	16.2 miles
Stations	21
Storage and maintenance facilities	2
Ancillary facilities	20 traction power substations—18 along the alignment and 2 in yards Approximately 14 signal bungalows
Length in tunnel	0.3 miles
Length on aerial structures	7,560 feet
Travel time (Bethesda–New Carrollton)	63 minutes during peak hours 60 minutes during off peak hours

Alignment

Bethesda to Silver Spring Transit Center—4.3 miles

The transitway will begin on the Georgetown Branch right-of-way in Bethesda. The Georgetown Branch right-of-way crosses under Wisconsin Avenue. On either side of the Wisconsin Avenue bridge, buildings have been built above the right-of-way; the Apex building west of Wisconsin Avenue, and the Air Rights building to the east. The western terminus will include a short section of track extending west outside the Apex building for approximately 100 feet. The Bethesda station will be under the Apex building.

The station will connect to elevators serving a new south entrance to the Bethesda Metrorail station. The elevators will continue up to Elm Street. Access also will be provided from Woodmont Plaza to the west, and via a sidewalk from the Capital Crescent Trail. This sidewalk from the elevator lobby area adjacent to the Purple Line station and under the Air Rights building will provide access to the station from the east. The transitway will continue east under both Wisconsin Avenue and the Air Rights building. After emerging from under the Air Rights building, the transitway will continue in the Georgetown Branch right-of-way, crossing under East West Highway and passing through the Columbia Country Club (see Figure 1-2 for an illustration of a typical section in the Georgetown Branch right-of-way).

Figure 1-1. Purple Line Preferred Alternative

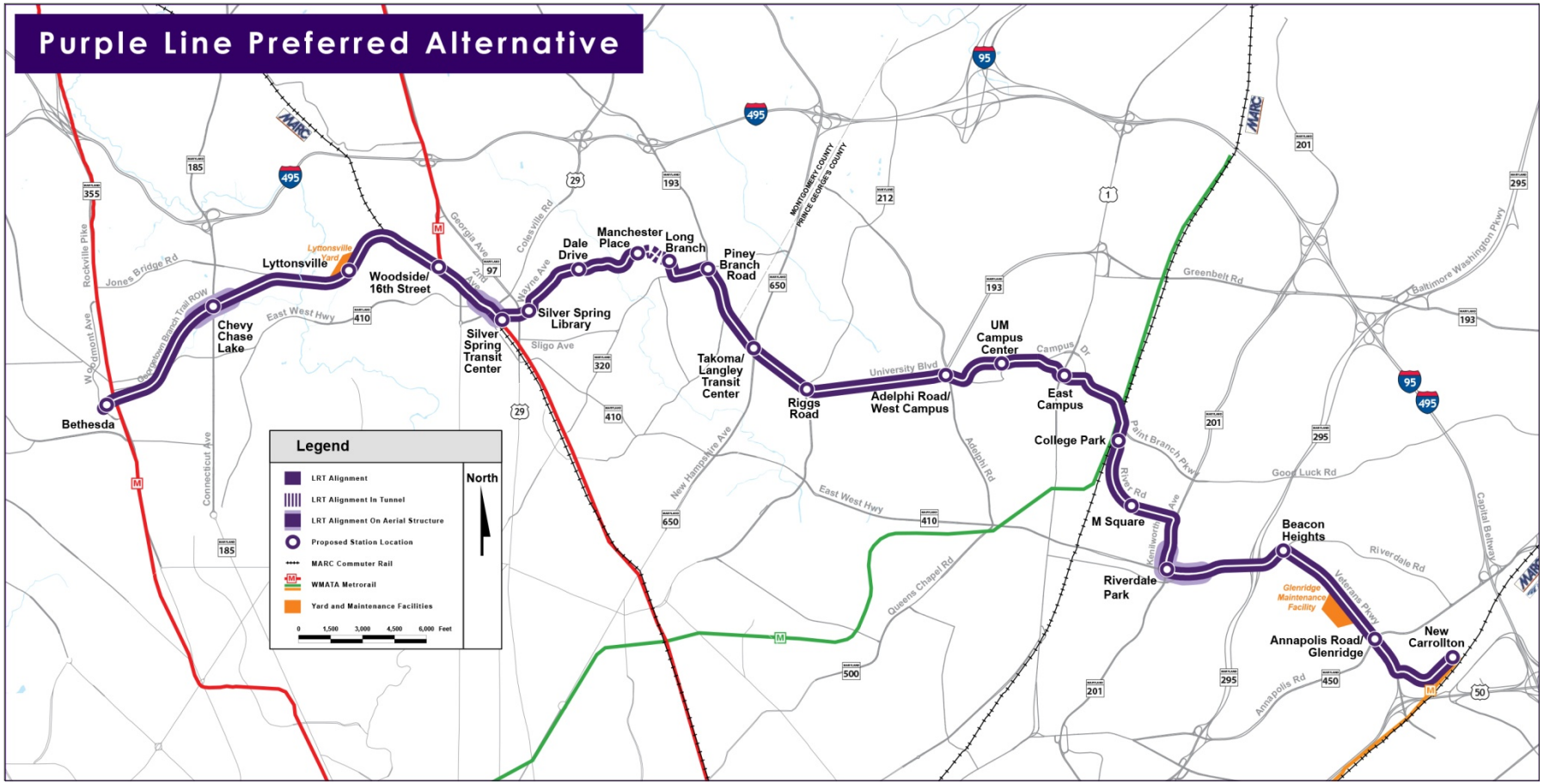
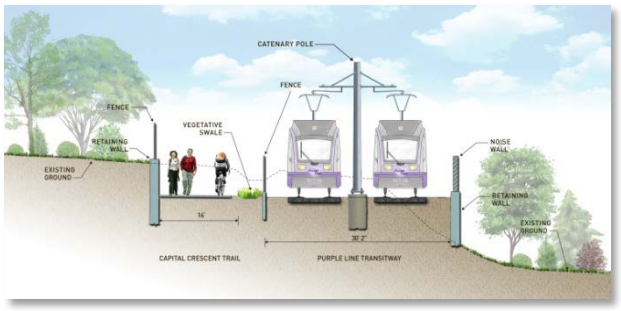


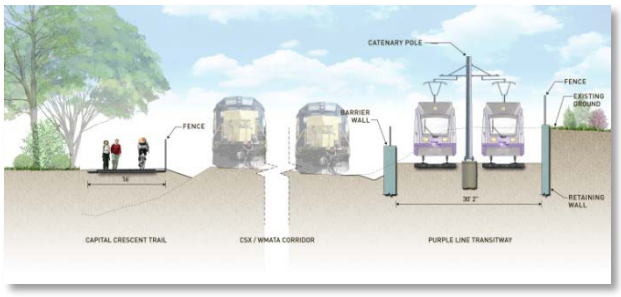
Figure 1-2. Typical Section in Georgetown Branch Right-of-way



Continuing along the Georgetown Branch right-of-way, the transitway will cross Connecticut Avenue on a bridge. The Chevy Chase Lake station will be on the east side of Connecticut Avenue, elevated at the level of the bridge with connections to street level provided by stairs and elevators. The transitway will continue east, returning to grade, and then pass under Jones Mill Road. A new bridge, approximately 10-15 feet lower than the existing pedestrian bridge, will carry the transitway across Rock Creek. The Lyttonsville Yard will be located on the north side of the transitway, mostly west of the Lyttonsville Place bridge. The Lyttonsville station will be located east of the bridge.

Continuing east in the Georgetown Branch right-of-way to the CSX (known as the CSXT right-of-way in the FEIS) right-of-way, the transitway will continue parallel to the CSX right-of-way on the south side (see Figure 1-3 for an illustration of a typical section along the CSX right-of-way).

Figure 1-3. CSX Right-of-Way Typical Section, Looking Southeast



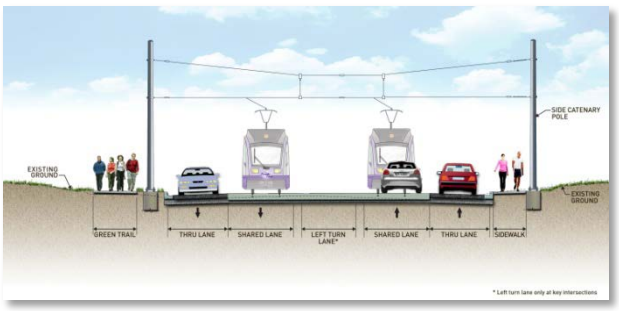
It will pass under the bridges at Talbot Avenue, 16th Street, and Spring Street within or adjacent to the CSX right-of-way, at approximately the same elevation as the CSX tracks. The Woodside station will be just east of the 16th Street Bridge. East of the Falkland Chase (formerly Falklands) Apartments, the transitway will cross over the CSX tracks to the north on an aerial structure and enter the Silver Spring Transit Center (SSTC) parallel to, but higher than, the existing Metrorail tracks. The SSTC station platform will be located between the SSTC and the existing railroad tracks.

Silver Spring Transit Center to Takoma/Langley Park Transit Center—3.2 miles

East of the SSTC, the transitway will turn away from the CSX right-of-way and descend to grade on the south side of Bonifant Street in dedicated lanes. The transitway will cross Georgia Avenue at grade, shifting to the north side of Bonifant Street. Just before reaching Fenton Street, the transitway will turn north to pass through the future Silver Spring Library building, the location of a station, and enter the intersection of Fenton Street and Wayne Avenue. The transitway will continue on Wayne Avenue in mixed-use lanes in the center of the roadway. The intersection of Wayne Avenue and Dale Drive is the location of the Dale Drive station.

The transitway will continue along Wayne Avenue (Figure 1-4). After crossing the intersection of Sligo Creek Parkway, it will enter a tunnel from Wayne Avenue east of Manchester Road to avoid the steep grade of Wayne Avenue. The Manchester Place station in the portal of the tunnel will be accessed both at grade from Wayne Avenue or by stairs or elevators from Plymouth Street above. The transitway will emerge from the tunnel on the south side of Arliss Street in dedicated lanes and will continue to the intersection of Piney Branch Road. The Long Branch station will be on the west side of Arliss Street at this intersection.

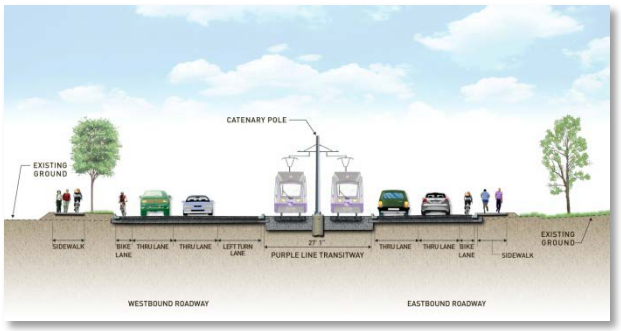
Figure 1-4. Wayne Avenue Typical Section, Looking East



The transitway will run in the median of Piney Branch Road to the intersection with University Boulevard. Piney Branch Road will be widened to accommodate the two new transit lanes.

The Piney Branch station will be in the median of University Boulevard at this intersection. The transitway will continue south in dedicated lanes in the median of University Boulevard to a station at the intersection with New Hampshire Avenue, adjacent to the Takoma/Langley Park Transit Center. On University Boulevard the Preferred Alternative will replace the two center traffic lanes with the transitway. See Figure 1-5 for a typical section of the transitway in the median of University Boulevard.

Figure 1-5. University Boulevard Typical Section, Looking East



Takoma/Langley Park Transit Center to College Park Metrorail Station—4.0 miles

Continuing along University Boulevard, the Riggs Road station will be in the median of University Boulevard on the west side of the Riggs Road intersection. The transitway will continue on University Boulevard, crossing Adelphi Road at grade to enter the University of Maryland (UMD) campus. The Adelphi Road/West Campus station will be located here directly across from UMD University College.

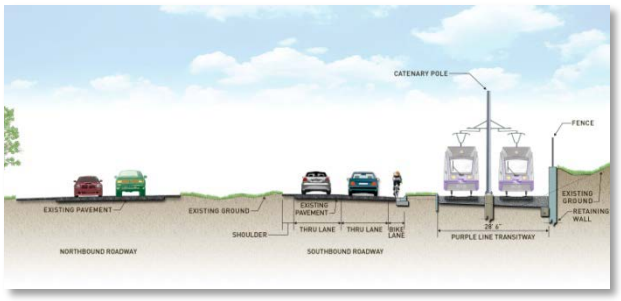
The transitway will turn left at Presidential Drive and follow a future extension of Union Drive as shown in the UMD 2011-2030 Facilities Master Plan in an area which currently contains parking lots to connect to the existing Union Drive and continue to Campus Drive. The Campus Center station will be located near Cole Student Activities Building. The transitway will continue on Campus Drive to Regents Drive. Campus Drive will be rebuilt as a three-lane roadway, with the outside lanes shared by Purple Line vehicles and buses and the center lane as a one-way lane for general traffic. The Preferred Alternative will continue at grade in a new exclusive transitway from Regents Drive, along the parking lots adjacent to the Armory, behind the Visitors Center to Rossborough Lane. The transitway will cross US 1 at grade on Rossborough Lane, to enter the East Campus development. The East Campus station will be on Rossborough Lane just east of US 1. The transitway will continue east to Paint Branch Parkway in dedicated lanes along the curb and will continue on Paint Branch Parkway in mixed-use lanes. Immediately east of the existing station parking garage, it will turn and enter the College Park—UMD Metro station area and will run adjacent to the Metrorail tracks. The Purple Line College Park Metro station will be located here. After passing behind the proposed parking garage for the currently planned future residential development, the transitway will turn towards River Road.

College Park Metrorail Station to New Carrollton Metrorail Station—4.7 miles

The Preferred Alternative will parallel the south side of River Road from River Tech Court to Haig Drive. The M Square station will be just west of Haig Drive. The transitway will continue along the side of River Road, cross over the Northeast Branch, and turn right into the median of Kenilworth Avenue. It will rise on an aerial structure that begins near Quesada Street and will continue over the intersection of Kenilworth Avenue and East West Highway where it will then turn left onto the south side of Riverdale Road. The Riverdale Park station will be on the elevated structure just after the intersection. The transitway will return to grade in dedicated lanes adjacent to Riverdale Road on the south side and will then pass under the Baltimore-Washington Parkway. The existing bridges of the Baltimore-Washington Parkway over Riverdale Road will be lengthened to accommodate the Preferred Alternative. The Beacon Heights station will be just west of the intersection with Veterans Parkway.

The transitway will turn at Veterans Parkway and continue on the south side of the parkway, as shown in Figure 1-6. Along Veterans Parkway, the Glenridge Maintenance Facility will be located at the current site of the Maryland-National Capital Park and Planning Commission (M-NCPPC) Northern Area Maintenance-Glenridge Service Center. The transitway will cross Annapolis Road at grade to arrive at the Annapolis Road station. It will continue along Veterans Parkway and turn left at Ellin Road and travel in the outside lanes of Ellin Road in mixed-traffic operations to arrive at the transitway terminus at the New Carrollton Metro station.

Figure 1-6. Veterans Parkway Typical Section, Looking East



Capital Crescent Trail

As part of the Preferred Alternative, the permanent Capital Crescent Trail will be constructed within the Georgetown Branch right-of-way for a distance of 3.3 miles between Bethesda and the CSX Metropolitan Branch. At the junction with the CSX the trail is planned to continue on the north side of the CSX corridor from the Talbot Avenue Bridge to the SSTC. The permanent Capital Crescent Trail will replace the existing Georgetown Branch Interim Trail which currently extends from Bethesda to Stewart Avenue within the Georgetown Branch right-of-way.

MTA will plan, design, and construct the permanent Capital Crescent Trail between Bethesda and Silver Spring. The Capital Crescent Trail will be owned and operated by Montgomery County, which will be responsible for providing the funds to construct it. Funding for the trail is in the county's Capital Improvements Program. Because the Capital Crescent Trail will be a county facility, Montgomery County has determined design elements such as the trail width, the type of surface, and inclusion of additional amenities such as lighting.

This FEIS for the Purple Line describes the environmental impacts of the trail and mitigation. Once completed, the Capital Crescent Trail will be a paved trail, generally 12 feet wide with 2-foot unpaved shoulders, except that it may be narrower in locations where the width is constrained. Where there is sufficient width, the trail will be located approximately 10 feet from the transitway to provide a landscaped buffer between the two. The trail will include 23 access locations, listed below:

- Elm Street Park
- Bethesda Station
- Pearl Street
- East West Highway
- Sleaford Road
- Kentbury Drive
- Newdale Road
- Connecticut Avenue
- Jones Mill Road
- Rock Creek Trail
- Grubb Road
- Lyttonsville Place
- Stewart Avenue
- Michigan Avenue
- Kansas Avenue
- 4th Avenue
- Lyttonsville Road
- 16th Street
- 3rd Avenue
- Spring Street
- Apple Avenue
- Silver Spring Transit Center
- Ripifant Street/Metropolitan Branch Trail

Due to the physical constraints under Wisconsin Avenue and the Air Rights and Apex buildings, the construction of a full-width trail above the LRT tracks in the underpass would incur high costs and a very high risk due to the need to lower the transitway and reinforce the piers that support the buildings above. In March 2012 the Montgomery County Council decided that it would defer the construction of a full width trail in this built-over section because of the high cost and associated risks.

In fall 2012 MTA developed a new option that would provide a sidewalk connection from the trail to the Bethesda station platform (Figure 1-7). While not a full-width trail, this 5 to 7-foot sidewalk would allow pedestrians to access the Purple Line station, the elevators to the Red Line station and Elm Street, and continue to Woodmont Plaza. This option was presented to and endorsed by the Montgomery County Council in September 2012.

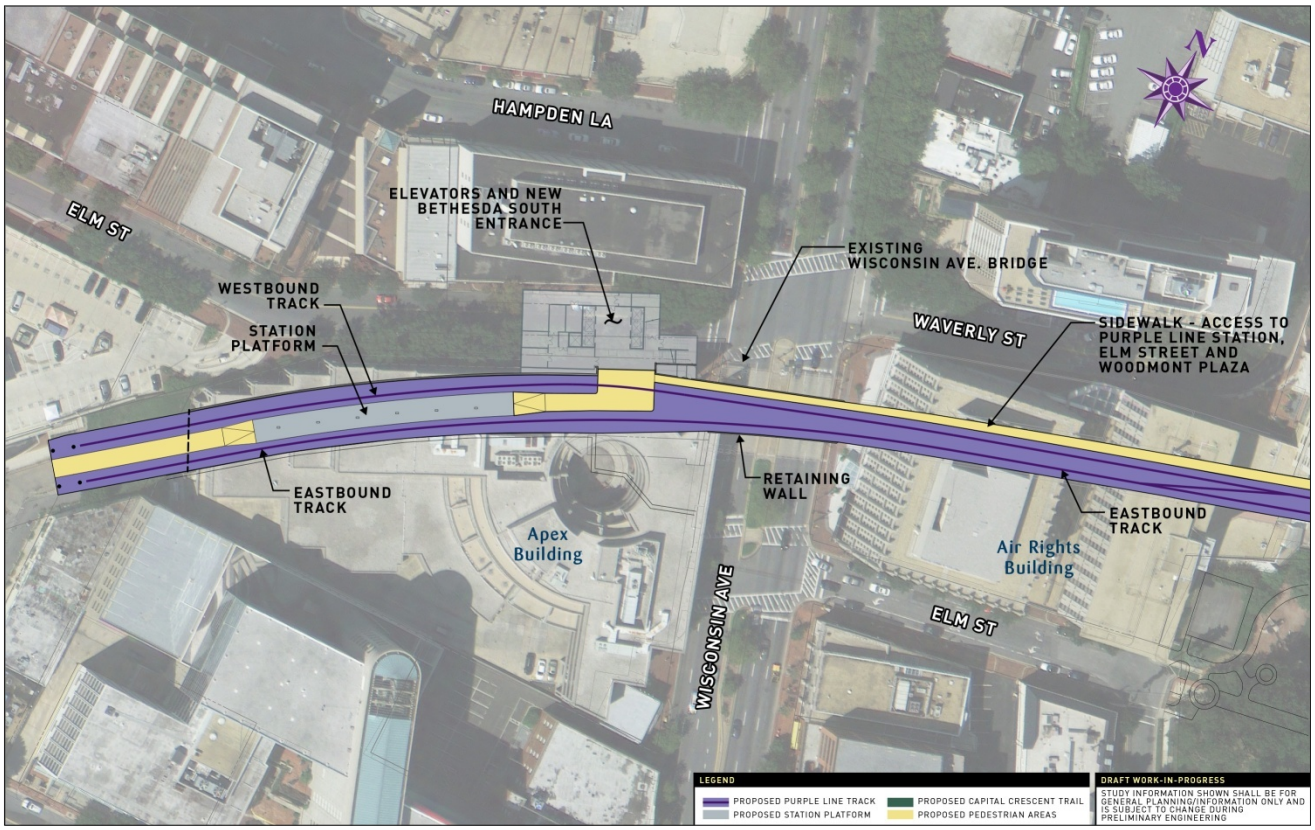
As a separate project, Montgomery County is constructing an at-grade connection between the existing Capital Crescent Trail in Bethesda and Elm Street Park. This connection includes bike lanes and signage on existing streets. The connection is part of the Montgomery County Countywide Bikeways Functional Master Plan (2005).

From Elm Street Park on the south side of the right-of-way, the Capital Crescent Trail will cross over the transitway on an elevated structure. Once on the north side of the transitway the trail will descend to ground level. Between approximately Pearl Street and Rock Creek, the trail will be on the north side of the transitway.

The trail will cross Connecticut Avenue on a separate bridge adjacent to the transitway and will provide pedestrian and bicycle access to the Chevy Chase Lake station. The trail will continue east, passing under Jones Mill Road and crossing Rock Creek on a separate bridge that will be lower than the transitway bridge. After crossing Rock Creek, the trail will pass under the transitway to the south side.

Between Bethesda and Stewart Avenue in Lyttonsville, the trail will parallel the transitway in a similar location as the existing trail. The trail will follow the transitway until crossing to the northeast side of the CSX right-of-way via the new Talbot Avenue Bridge. The trail will be built parallel to, and on the northeast side of, the CSX right-of-way. In correspondence dated September 3, 2013, CSX agreed to the use of CSX property for the trail. This provision would enable the construction of a

Figure 1-7. Bethesda Station



complete off-road connection for trail users into downtown Silver Spring. The trail would cross the CSX right-of-way on the reconstructed Talbot Avenue bridge and would continue on the north side of the CSX right-of-way to the Silver Spring Transit Center. The use or purchase of CSX property is under negotiation with CSX. Use of CSX property for the trail is only needed between the Talbot Avenue Bridge and 16th Street.

Stations

Twenty-one stations, including the Dale Drive station, are planned for the Preferred Alternative. The station locations were selected based on connections with existing transit services and urban design principles including access and safety, public space availability, local plans, ridership catchment areas, and engineering feasibility. Potential station locations were presented to community members, local jurisdictions, and other stakeholders for input. In some cases, stations were moved or shifted in response to comments and included in the 2012 *Draft Environmental Impact Statement Re-evaluation*. Seventeen of the stations will be at street level, three will be on aerial structures, and one will be in a tunnel portal. Most riders will walk to the stations or transfer from other transit services. Access plans for each station have been developed to enhance pedestrian and transit access for nearby communities. Ramps, stairs, elevators, and escalators in compliance with the Americans with Disabilities Act of 1990, as amended, will be provided where needed.

As illustrated in Figure 1-8 and Figure 1-9, the stations will have either side or center platforms depending on the site characteristics and space availability. The characteristics of each station are summarized in Table 1-3. The platforms will be approximately 200 feet long to serve two-car trains. Stations will include ticket vending machines, weather shelters for passengers, lighting, wayfinding and informational signage, trash receptacles, seating, and security equipment such as emergency telephones and closed circuit television cameras. The Purple Line will use off board fare collection, compatible with the SmarTrip system, and a barrier-free proof-of-payment system. Landscaping and bike storage will be included where space allows. The size of station shelters and the number of bike storage facilities will be relative to the projected ridership at each station.

Track Types

Four types of track (ballasted, embedded, direct fixation, and green track) are being considered for the project. They are described below:

- Ballasted track will be used where the transit-way will not be used by other vehicles, such as along Veterans Parkway. Ballast is made up of stones of granite or a similar material. Ballasted track is formed by packing ballast between, below, and around the railroad ties. The ballast provides support, load transfer, and drainage to the track.
- Embedded track will be used where the Purple Line operates in mixed-use lanes on Wayne Avenue and Paint Branch Parkway and where vehicles will cross or drive on the tracks. Embedded track is track structure that is completely covered, except for the top of the rails, with pavement. Embedded track can typically be found where light rail transit routes are constructed within public streets, pedestrian or transit malls, or any area where rubber-tired vehicles must operate.
- Direct fixation track will be used where the Purple Line is on bridges or in a tunnel. Direct fixation track is similar to embedded track in that the rails are fastened directly to the track support.

Figure 1-8. Typical Center Platform Station

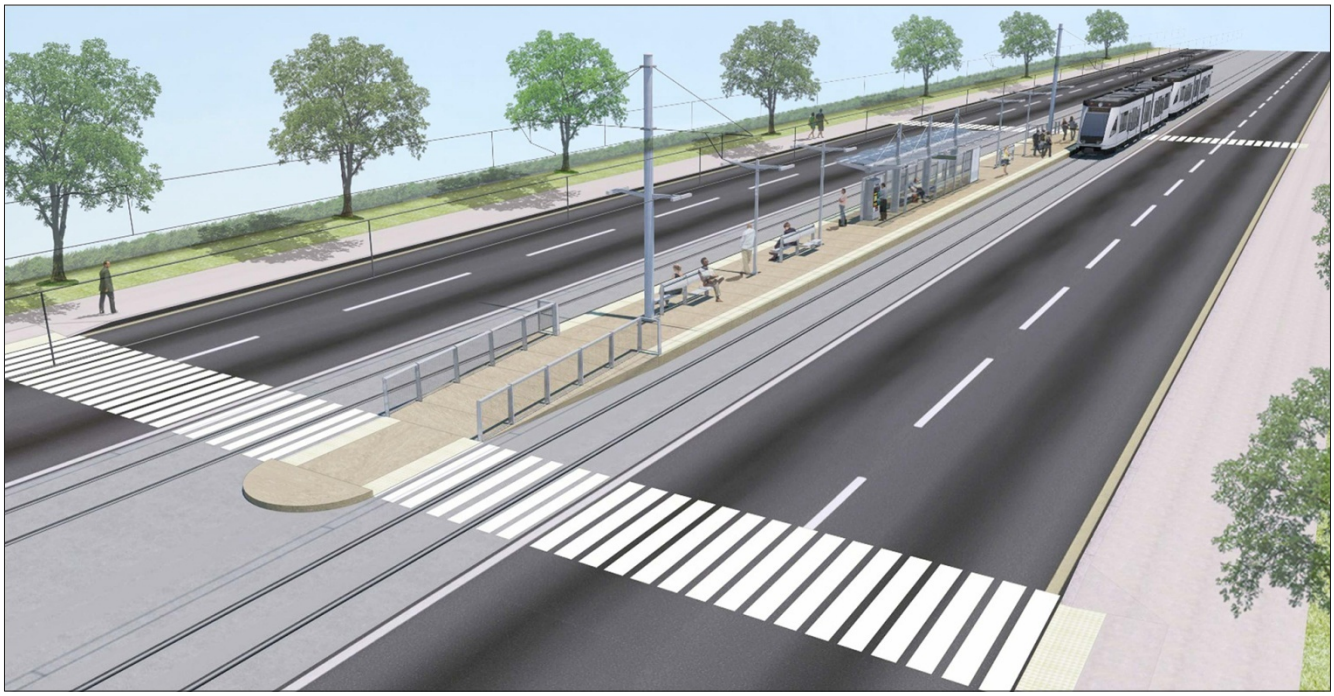


Figure 1-9. Typical Side Platform Station

Table 1-3. Station Summary

Station	Location	Markets Served	Vertical Location	Platform Type	Connecting Transit Services
Bethesda	Georgetown Branch right-of-way and Elm Street, west of Wisconsin Avenue, under Apex Building	Central business and residential district, and transfers	Under Building	Center	Metrorail Red Line; Metrobus: J2, J3, J7, J9; Ride On: 29, 30, 32, 33, 34, 36, 42, 47, 70, 92
Chevy Chase Lake/ Connecticut Avenue	Georgetown Branch ROW at Connecticut Avenue	Local business and residential	Aerial	Side	Metrobus: L7, L8
Lyttonsville	Georgetown Branch ROW at Lyttonsville Place	Local business and residential	At Grade	Center	Ride On: 2
Woodside/16th Street	South of CSX ROW at 16th Street	Local business and residential, and transfers	At Grade	Side	Metrobus: J5, Q2, Y5, Y7, Y8, Y9; Ride On: 3, 4, 5, 127
Silver Spring Transit Center	Silver Spring Metrorail Station	Central business and residential district, entertainment, and transfers	Aerial	Center	Metrorail Red Line; MARC Brunswick Line; Metrobus: F4, F6, J1, J2, J3, J5, Q2, S2, S4, Y5, Y7, Y8, Y9, Z2, Z6, Z8, Z9, Z11, Z13, Z29, 70, 71, 79; Ride On: 1, 2, 3, 4, 5, 8, 9, 11, 12, 13, 14, 16, 17, 18, 19, 20, 22, 28, 127
Silver Spring Library	Wayne Avenue and Fenton Street	Central business and residential district, and transfers	At Grade	Side	Metrobus: F4, F6; Ride On: 12, 16, 17, 19, 20, 28
Dale Drive	Wayne Avenue at Dale Drive	Local residential	At Grade	Center	Ride On: 3, 12, 19;
Manchester Place	Wayne Avenue between Manchester Road and Manchester Place	Local residential	Tunnel Portal	Side	Ride On: 12, 13, 19
Long Branch	Arliss Street at Piney Branch Road	Local business and residential	At Grade	Center	Ride On: 14, 16, 20, 24
Piney Branch Road	University Boulevard and Piney Branch Road	Local business and residential, and transfers	At Grade	Center	Metrobus: C2, C4; Ride On: 14, 15, 16, 20, 24
Takoma/Langley Transit Center	University Boulevard and New Hampshire Avenue	Local business and residential, and transfers	At Grade	Center	Metrobus: C2, C4, F8, K6; Ride On: 16, 17, 18; TheBus: 17, 18
Riggs Road	University Boulevard and Riggs Road	Local business and residential, and transfers	At Grade	Center	Metrobus: C2, C4, F8, R5, R1, R2; TheBus: 17, 18
Adelphi Road/West Campus	Campus Drive and Adelphi Road	Residential, UMUC, and transfers	At Grade	Center	Metrobus: C2, C8, F6, F8, R3; TheBus: 17
Campus Center	Campus Drive at Cole Student Activities Building	UMD	At Grade	Side	Metrobus: C2, C8, F6; UM Shuttles; TheBus: 17,
East Campus	Rossborough Lane at US 1	Commercial, hotel, residential, UM, and transfers	At Grade	Side	Metrobus: C2, C8, F6, 81, 83, 86; TheBus: 17
College Park Metro	River Road at College Park—UMD Metro station	Residential, future mixed-use development, and transfers	At Grade	Center	Metrorail Green Line; MARC Camden Line; Metrobus: C2, C8, F6, R12, 83, 86; TheBus: 14, 17 CAR: G, H
M Square	River Road at Haig Drive/University Research Court	M Square Research Park and residential	At Grade	Side	Metrobus : F6, R12; TheBus: 14

Station	Location	Markets Served	Vertical Location	Platform Type	Connecting Transit Services
Riverdale Park	Kenilworth Avenue and MD 410	Local business, and residential	Aerial	Side	Metrobus: F4, R12, 84, 85; TheBus: 14
Beacon Heights	Riverdale Road at Veterans Parkway	Local business and residential	At Grade	Side	Metrobus: F4, 84, 85; TheBus: 14
Annapolis Road/ Glenridge	Veterans Parkway at Annapolis Road	Local business	At Grade	Side	Metrobus: F13, T18,
New Carrollton	Ellin Road at New Carrollton Metro station	Business, residential, and transfers	At Grade	Center	Metrorail Orange Line; MARC Penn Line; Amtrak; Metrobus: B21, B22, B24, B25, B27, B29, B31, C28, F4, F6, F12, F13, F14, R12, T16, T17, T18, 84,85, 88; TheBus: 15, 16, 21, 21X

Notes: Bus Operators: WMATA Metrobus = WMATA, Ride On = Montgomery County, TheBus = Prince George's County, CAR = Connect a Ride
WMATA J4, Ride On 15, and Shuttle-UM 111 will likely be replaced by the Purple Line

- Green track (Figure 1-10) is trackway where plant material is grown between the rails. Green track is commonly used in Europe and is being evaluated for portions of the Purple Line. Green track can be an aesthetic treatment and under certain conditions may be used to address stormwater management requirements.

Figure 1-10. Green Tracks with Grass

In some locations there is no choice of track type. For example, the tracks must be embedded where other vehicles will operate on or cross the tracks. In other areas the track type is being evaluated based on operations, maintenance, cost, and aesthetics.

Storage and Maintenance Facilities

The Preferred Alternative will have two storage and maintenance facilities: one at Lyttonsville in Montgomery County and the other at Glenridge in Prince George's County. The AA/DEIS envisioned that approximately half the fleet would be stored in each location, and the maintenance and operations activities will be split. However, this resulted in some redundant activities as certain functions would be performed at both sites, and maintenance buildings would be required at each site with associated materials storage, locker rooms, training/break rooms, and other employee services. As discussed below and in the 2012 *Draft Environmental Impact Statement Re-evaluation*, the activities at the sites have been reconsidered as a result of further design work to reduce redundant activities, reduce costs, and minimize impacts.

Lyttonsville Yard

The Lyttonsville yard will be parallel to the transitway and provide tracks to store vehicles not in use or waiting for repair. The yard will include a train wash, a traction power substation, fuel pumps, office facilities, operations center, and an employee parking structure located above the storage tracks. The parking structure will provide 200 spaces for MTA employees and 200 spaces for employees of the county's maintenance facility. The parking for county employees will be provided because the yard will displace their existing parking facility. A stormwater management facility will be constructed underground. Figure 1-11 shows the Lyttonsville Yard site plan.

Glenridge Maintenance Facility

The Glenridge Maintenance Facility will be located at the current site of the M-NCPPC Northern Area Maintenance—Glenridge Service Center. The facility will provide the repair and maintenance needs. To increase the separation from, and reduce impacts to, Glenridge Park and Glenridge Elementary School, a more linear configuration is designed for the Glenridge site rather than the loop configuration proposed in the AA/DEIS. Most activities will occur in the maintenance building. Approximately 225 parking spaces will be provided for MTA employees. A traction power substation will also be located at this facility. Figure 1-12 shows the Glenridge Maintenance Facility site plan.

Ancillary Facilities

Traction Power Substations

Traction power substations convert electric power to appropriate voltage and type to power the light rail vehicles. The Preferred Alternative will require substations approximately every mile. The Preferred Alternative will have twenty substations, including 18 along the transitway and one each at the Lyttonsville and Glenridge facilities (see December 2013 drawings titled, "Preliminary Engineering, Purple Line Light Rail" on the project website). The substation structures will range in size from approximately 15 by 52 feet to 22 by 60 feet. The substations will be sited at easily accessible locations with approximately 10 feet of space around the substation building for access and

for underground electrical facilities. Depending on the visual sensitivity of each site, landscaping or other screening could be used.

Signal Bungalows

Signal bungalows contain elements of the signaling control system, circuits and equipment required for train operation. Fourteen signal bungalows will be located along the transitway at track crossover locations and will be approximately 10 feet by 20 feet in size. Depending on the visual sensitivity of each site, landscaping or other screening could be used.

Overhead Contact System

The overhead contact system (OCS) provides a continuous supply of electrical power to the LRT vehicles. This is achieved by the use of overhead wires centered over the tracks, supported by poles. The vehicles have rooftop pantographs which run along the wires supplying the vehicles with power. Depending on the location, the poles supporting the overhead contact system will be positioned in between the tracks, or on either side, outside of the tracks. In some cases, poles also will be used for street lights or signs. MTA will work with the local utility companies and jurisdictions to investigate the opportunities for this shared use during the design phase of the project.

Two types of wire systems are designed for the Purple Line: an auto-tensioned simple catenary and a fixed-termination single contact wire.

Figure 1-11. Lyttonsville Yard

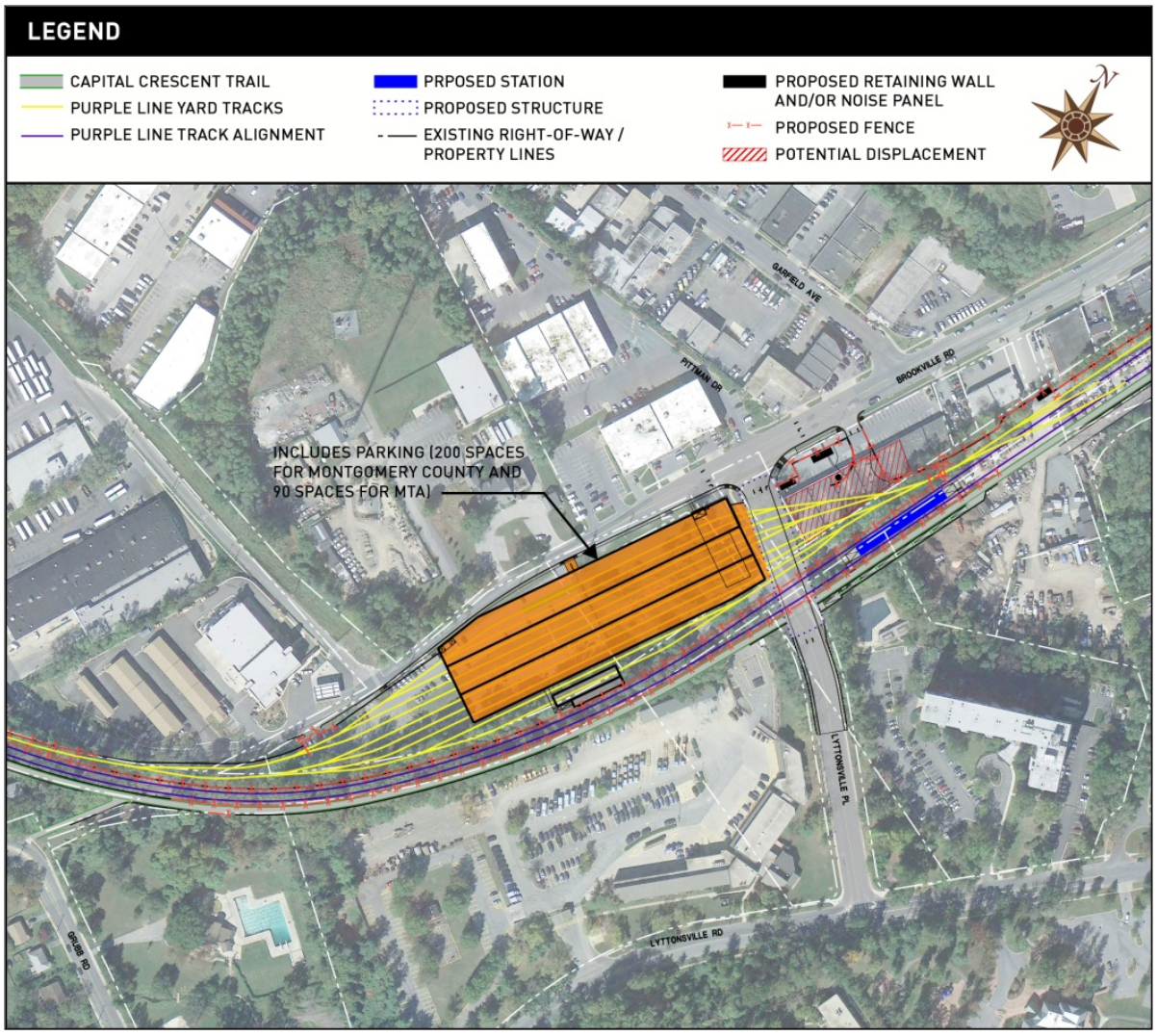
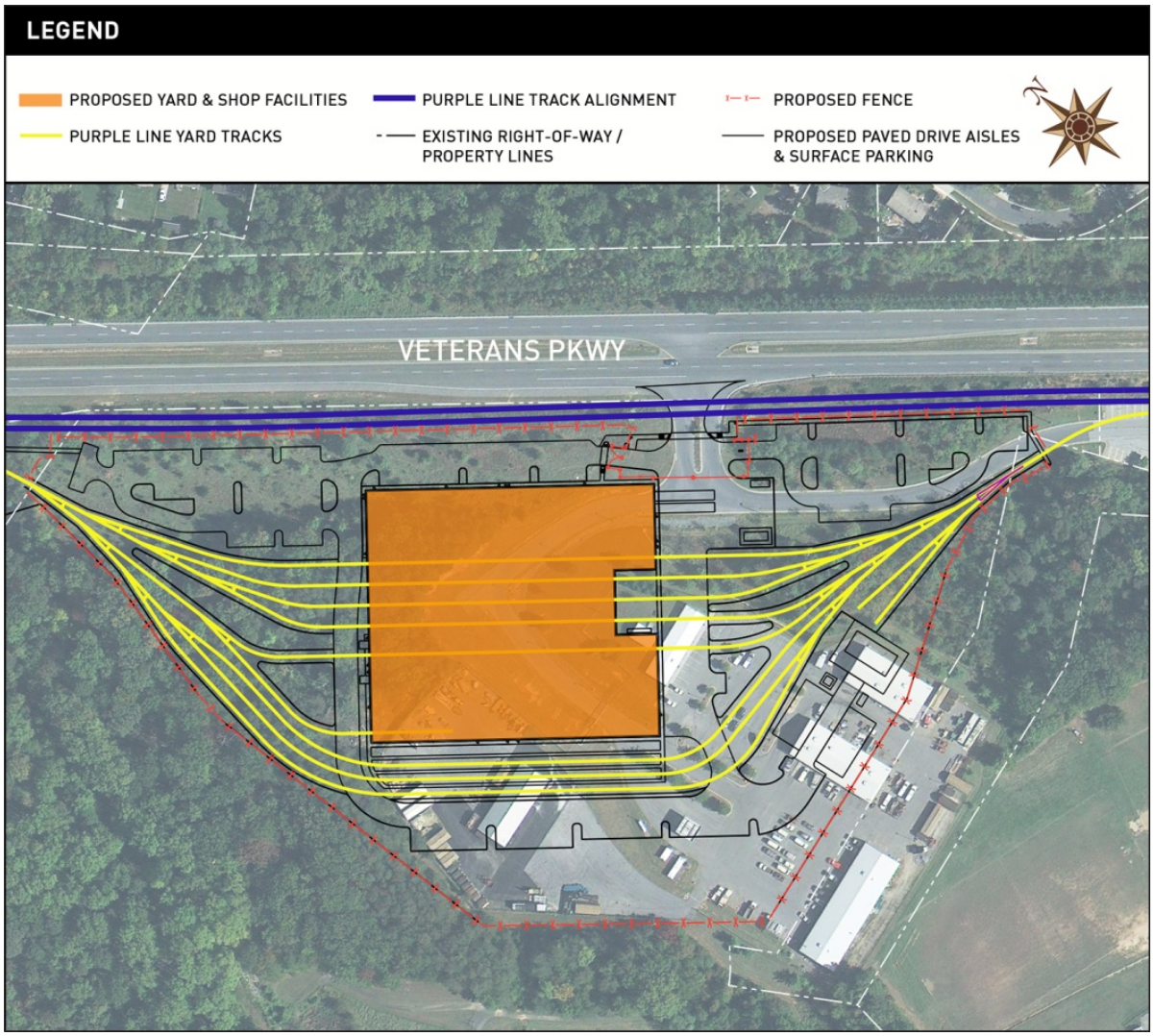


Figure 1-12. Glenridge Maintenance Facility



An auto-tensioned simple catenary system typically consists of a messenger wire supporting a contact wire by means of hangers (Figure 1-13). The distance between the messenger wire and the contact wire is typically four feet. In straight sections of the transitway the support poles can be up to 240 feet apart, but will need to be more closely spaced in curves.

A fixed-termination single contact wire uses a single trolley wire (Figure 1-14); however, because of the electrical load requirements, a parallel supplementary feeder needs to tap into the trolley wire approximately every 200 feet.

The auto-tensioned simple catenary will be used for the majority of the transitway, while the fixed-termination single contact wire will be used for the Plymouth Street tunnel and the portion of the transitway from the Adelphi Road/West Campus station to the East Campus station. A double feeder system will be installed through the center of the UMD campus to minimize the potential for electromagnetic interference (EMI) impacts to university research activities. (See the memos regarding EMI mitigation and minimization in Summary of Alternatives Analysis, 2008 to the Present (2012)).

Figure 1-13. Auto Tensioned Catenary System

Figure 1-14. Fixed-Termination Single Contact Wire Sharing a Pole with Street Lights

Gates

An automatic gate protects road users and pedestrians, and informs them of the approach or presence of rail traffic at grade crossings. Automatic gates are typically installed in conjunction with flashing light signals, and they are designed to extend across the approaching roadway to block roadway vehicles or pedestrians from crossing the tracks when a train is approaching. On the Purple Line, the decision to install automatic gates at grade crossings will be based on engineering studies of each crossing. In general, automatic gates will be installed at grade crossings of dedicated alignments where LRT speeds will exceed 35 mph.

Crossovers

A crossover is a location where a rail vehicle can move from one set of tracks to another. Twelve crossovers will be provided, one at each of the two terminal stations at Bethesda and New Carrollton, and 10 intermediate crossovers. The crossovers at the terminal stations will be used for normal operations to provide access to both platform tracks. The intermediate crossovers will be used during special operations or during maintenance. These have been located to provide approximately 12-minute headways in both directions when single-track operations are required.

Additionally, two pocket tracks will be located on either side of the UMD campus to facilitate the addition of supplementary trains during special events at the University. Pocket tracks are short sections of track located off the mainline transitway to provide a place to stage supplementary trains. The pocket tracks will be located in the median of University Boulevard near Riggs Road and just east of the College Park Metro station, behind the proposed joint development residential building on River Road.

Preferred Alternative Service Characteristics

The operations plan for the Preferred Alternative is based on a number of assumptions that were developed from the ridership estimates. Headways for the line were planned to provide sufficient capacity for that passenger volume. The Preferred Alternative will take approximately 63 minutes to travel the corridor from Bethesda to New Carrollton during peak hours, and 60 minutes during off peak hours. When operating in or adjacent to roadways, the Preferred Alternative will operate at, or below, the posted speed limit.

Hours of Service and Headways

The Preferred Alternative will operate seven days a week. The hours of operation will be scheduled to meet the first and last Metrorail train at each of the four stations where the Preferred Alternative connects with Metrorail (Table 1-4). Peak hour headways will be 6 minutes, and off-peak headways will be 10-12 minutes.

Table 1-4. Approximate Span of Service

Day of Week	Hours of Operation
Monday–Thursday	5:00 AM–12:00 AM
Friday	5:00 AM–3:00 AM
Saturday	7:00 AM–3:00 AM
Sunday	7:00 AM–12:00 AM

Fares

Purple Line fares are assumed to be flat fares following the regular Metrobus fares and policies. Passengers will purchase tickets from ticket vending machines at stations and board the trains through multiple doors to expedite boarding. A proof-of-payment method is assumed, with roving, on-board fare inspectors. SmarTrip cards and other multi-trip passes will be available for purchase at Metro sales offices, retail outlets, or Commuter Stores. Passengers will swipe their cards to record the trip before boarding the Purple Line. A transfer from the Purple Line to the Metrorail is expected to require payment of the Metrorail fare while a the fare for transfer from Metrorail to the Purple Line would be reduced. Transfer fares with Metrobus and other local services would be similar to existing bus-to-bus transfer fare policies. MTA will establish the fare policies prior to the start of operations.

Preferred Alternative Operating Characteristics

The specific vehicles for the Purple Line have not been identified, but a set of general design criteria have been established calling for articulated vehicles approximately 95 feet long operating in two-car trains. Each vehicle will accommodate 140 passengers for a total train capacity of 280. The vehicles will be at least 70 percent low-floor vehicles for easy boarding.

Preferred Alternative Costs

Capital Cost

The estimated capital cost for the Purple Line is $2.2 billion in Year of Expenditure dollars. This cost includes the transitway construction, vehicles, support facilities, right-of-way, and the engineering and other professional services required to design and implement the project. These costs are presented in detail in the *Purple Line Capital Cost Technical Report* (2013).

Project capital funding is expected to come from federal, State/local, and private sources with up to 50 percent of funding planned to come from the federal FTA New Starts program. FTA's New Starts program is a discretionary federal program that provides capital grants for the construction of fixed-guideway transit projects. The Purple Line will compete for New Starts funding grants with projects from across the country. On October 7, 2011, the Purple Line was approved for FTA New Starts Preliminary Engineering Phase, as it was called at the time of approval, based on the previously submitted Request to Enter Preliminary Engineering. The project was deemed competitive in projected ridership, cost-effectiveness, user benefits, and many other areas, as compared to other projects receiving federal funds, and it is believed the project continues to be competitive for the next phases under the new local financial commitment criteria FTA has established under the recent federal MAP-21 law that enabled the New Starts program. The State of Maryland is identifying funding options from state and local sources for its share of the funding with the primary state source being the Transportation Trust Fund.

As the SSTC and the Takoma/Langley Transit Center are funded separately and scheduled to be constructed independently and in advance of the Purple Line, no costs are assumed here except for possible modifications of the projects to accommodate the Purple Line. The new south entrance to the Bethesda Metro station also is an independent project, but it will be built at the same time as the Purple Line.

The expenditure for the Georgetown Branch right-of-way between Bethesda and the CSX Metro-

politan Branch, purchased previously by Montgomery County for the specific purposes of providing both a transitway and trail, is assumed to be already contributed by the county to the project.

The Capital Crescent Trail between Bethesda and Silver Spring will be constructed by MTA concurrently with the construction of the Purple Line. Along the Georgetown Branch right-of-way, MTA will include sufficient right-of-way for the trail as part of the design of the project, and will design the transitway to be compatible with the trail. Construction of the trail itself will be funded by Montgomery County. The cost of construction of the trail is not included as part of the $2.2 billion cost estimate of the project. Funding for the trail is in Montgomery County's approved Capital Improvements Program. The Green Trail[2] along Wayne Avenue is not part of the Purple Line and also will be funded separately by Montgomery County, but likely will be built with the Purple Line.

It is assumed that the use of roadway rights-of-way controlled by the state, counties, and local jurisdictions, including those on the UMD campus and at Metrorail stations, will be granted to the project at no cost, except for construction of new facilities and replacement or repair of existing facilities and utilities.

Operations and Maintenance Costs

MTA is assumed to be responsible for operation and maintenance of the Purple Line services and associated costs. This annual cost is estimated to be $38 million (2012 dollars). MTA, WMATA, Montgomery County, Prince George's County, UMD, and other transit operators in the corridor and the region will continue to be responsible for operations and maintenance of their bus and rail transit services and facilities, recognizing that some adjustments to service levels and routing bus services may result from implementation of the project.

The cost of operating and maintaining the Capital Crescent Trail will be the responsibility of Montgomery County.

Preferred Alternative Implementation Schedule

The schedule for the Purple Line anticipates major construction beginning in July 2015 and revenue service beginning in December 2020.

1.3.2 Refinements since the AA/DEIS and Preliminary Section 4(f) Evaluation

The AA/DEIS and Preliminary Section 4(f) Evaluation identified a number of Section 4(f) properties that would potentially be affected by one or more of the numerous alternatives considered in the AA/DEIS within a 500-foot-wide study area centered on the alignment for the build alternatives. See AA/DEIS, Section 4.4.2; see also *Preliminary Section 4(f) Evaluation Technical Report* (Sept. 2008), Table 4-1. Between the AA/DEIS and the FEIS, the Preferred Alternative was chosen and has been refined through public involvement and agency outreach resulting in a reduction in the number and extent of potential uses of Section 4(f) properties (see 2012 *Draft Environmental Impact Statement Re-evaluation*). Table 1-5 lists properties that were identified by FTA as potential uses in the Preliminary Section 4(f) Evaluation, but would not be used by the Preferred Alternative. As no Section 4(f) use would occur, these properties are not included in this evaluation.

1.4 Section 4(f) Properties

Sixteen properties protected by Section 4(f) are assessed in this evaluation (Table 1-6). Of these, thirteen properties will be used by the Preferred Alternative. Each property was determined to be of national, state, or local significance and is classified as one or both of the following:

- Publicly owned park, recreation property, or refuge
- Publicly or privately owned historic site

[2] The Green Trail is a Montgomery County DOT project that would parallel the Purple Line along Wayne Avenue in Silver Spring. The trail would be an eight to 10-foot wide pedestrian and bicycle trail that would supplement the County's transportation program. Per the County's CIP, "The Green Trail is part of a transportation corridor and is not considered a recreational area of state or local significance."

Table 1-5. Section 4(f) Properties Identified in the AA/DEIS Not Used by the Preferred Alternative

Property Name	Classification	Reason for Exclusion
Georgetown Branch Interim Trail	Shared-use trail	The Georgetown Branch Interim Trail—that is, the temporary recreational trail that currently exists within the Georgetown Branch right-of-way—is not a Section 4(f) property. In a letter dated February 22, 1995, FTA informed the County that Section 4(f) "does not apply to land that has been temporarily used for recreational or park purposes if the State or local government with jurisdiction over the land officially indicated prior to allowing the temporary park or recreational use, that the land was intended for a transportation use." The Montgomery County Council adopted a resolution on August 1, 1995 authorizing the establishment of an interim hiker/biker trail in the Georgetown Branch right-of-way. The resolution stated that "the section between Bethesda and Silver Spring remains designated as a transportation corridor in which an interim trail is permitted until the master planned transit and trail facility is approved and funded consistent with the master plan." After that resolution was adopted, the County removed the then-existing freight rail tracks and established an unpaved recreational trail in the Georgetown Branch right-of-way. That unpaved trail remains in existence today.[1]
Taylor Site (18MO243)	Archeological Site	No direct use, properties are outside the project limits of disturbance No constructive use of properties; project noise, vibration, and visual effects will not impair the activities, features or attributes of these properties
Bethesda Elementary School	Public School	
Leland Neighborhood Park	Local Park	
Bethesda-Chevy Chase High School	Public School	
Preston Place	Historic Property	
Woodside Historic District	Historic Property	
Old Silver Spring Post Office	Historic Property	
First Baptist Church of Silver Spring	Historic Property	
Montgomery Blair High School	Historic Property/ Public School	
East-West Highway Neighborhood Conservation Area	Conservation Area	
Lynnbrook Local Park	Local Park	
North Chevy Chase Local Park	Local Park	
North Chevy Chase Elementary School	Public School	
Clean Drinking Water Manor Site (18MO030)	Archeological Site	
Rosemary Hills Elementary School	Public School	Recreational facilities within the boundaries of the school are located outside the limits of disturbance.
Metro Urban Park	Local Park	Property no longer exists; it was removed as part of construction of the Silver Spring Transit Center.
Silver Spring International School	School	Recreational facilities within the boundaries of the school are located outside the limits of disturbance.
East Silver Spring Elementary School	Public School	No direct use, properties are outside the project limits of disturbance No constructive use of properties; project noise, vibration, and visual effects will not impair the activities, features or attributes of these properties
Sligo Cabin Site (18MO)	Archeological Site	
Sligo Adventist School	Historic Property/ Religious School	
Nolte Local Park	Local Park	
Dale Drive Neighborhood Park	Local Park	
Flower Avenue Urban Park	Local Park	
Long Branch Arliss Neighborhood Park	Local Park	
New Hampshire Estates Elementary School	Public School	
Carole Highlands Elementary School	Public School	

Table 1-5. Section 4(f) Properties Identified in the AA/DEIS Not Used (continued)

Property Name	Classification	Reason for Exclusion
Paint Branch Stream Valley Park	Park	
Paint Branch Trail	Recreational Trail	
Old Town College Park	Historic Property	
College Lawn Station	Historic Property	
Indian Creek Park	Park	
Calvert Hills Historic District	Historic Property	
M-NCPPC Department of Parks and Recreation Regional Headquarters	Historic Property	
Calvert Neighborhood Park	Local Park	
Riverdale Community Recreation Center (part of Anacostia River Stream Valley Park)	Recreation Center	
Riverside Drive Park (part of Anacostia River Stream Valley Park)	Local Park	
College Park Airport	Historic Property	No direct use; the Preferred Alternative will be aligned in existing travel lanes on Paint Branch Parkway. The parkway occupies a corner of the historic property, having been built in 1977 subsequent to the National Register listing and historic boundary definition. Paint Branch Parkway is not a contributing element to the historic property. MTA will not acquire the property the Preferred Alternative will occupy. No constructive use of the property; project noise, vibration, and visual effects will not impair the activities, features or attributes of this property (see Section 106 Assessment of Effects for Historic Properties, 2013).
College Park Airport Site (18PR200)	Archeological Site	No direct use, properties are outside the project limits of disturbance
Fire Site (18PR263)	Archeological Site	Eligible portion of site is outside of limits of disturbance.
Area K Domestic Site	Archeological Site	Site is outside of limits of disturbance.
Martins Woods	Historic Property	No direct or constructive use of property
East Pines Neighborhood Recreation Center	Recreation Center	No direct or constructive use of property
Prince George's County's M-NCPPC Park Police Headquarters	Park Police Headquarters	This facility has no recreational facilities. It is not considered a public park or recreational property, is not open to the public, and therefore is not protected by Section 4(f).
M-NCPPC's Northern Area Maintenance Office	Maintenance Facility	This facility has no recreational facilities. It is not considered a public park or recreational property, is not open to the public, and therefore is not protected by Section 4(f).
Glenridge Elementary School	Public School	Publicly accessible recreational facilities within the boundaries of the school are located outside the limits of disturbance.

[1]Based on these facts, FTA confirms its previous determination that the unpaved hiker/biker trail in the Georgetown Branch right-of-way is not a Section 4(f) property, because it was constructed as a temporary facility with an explicit understanding that the right-of-way was reserved for a transportation purpose. The determination is consistent with 23 CFR 774.11(h), which provides that Section 4(f) does not apply when a property that has been formally reserved for a future transportation facility temporarily functions for park or recreation purposes. This determination also is consistent with 23 CFR 774.11(i), which provides that Section 4(f) does not apply when a park or recreational area and a transportation facility are jointly planned.

Figure 1-15 shows the location of each identified property in relation to the Preferred Alternative. The subsections that follow describe each property and the determinations of the Section 4(f) evaluation.

1.4.1 Publicly Owned Parks and Recreational Properties

The Preferred Alternative will permanently use portions of eight parks and recreational properties (Table 1-6). FTA has made *de minimis* use

determinations for six of these properties. FTA made a determination of temporary occupancy exception for three parks and recreation properties the Preferred Alternative would occupy during construction. As defined in 23 CFR 774.13(d), the temporary use of these properties meets the Section 4(f) criteria for temporary occupancy exception. FTA's final determinations are consistent with its proposed determinations in the Draft Section 4(f) Evaluation.

Table 1-7 summarizes the uses. Supporting discussions of each park and recreational area are provided below.

Elm Street Urban Park

Section 4(f) Property Description

Elm Street Urban Park is 2.1 acres in size and is located in the Town of Chevy Chase. This park is bounded by the Georgetown Branch Interim Trail to the north, 47th Street to the west, Willow Lane to the south, and 46th Street to the east. The park includes playgrounds, a gazebo, several picnic tables, benches, trails, and public art (Figure 1-16). The park is owned and maintained by the M-NCPPC–Montgomery County Department of Parks, which plans to reconstruct the entire park within the next few years as a requirement of a nearby development. Although the schedule is currently uncertain, these improvements are being designed in coordination M-NCPPC's Montgomery County Department of Parks. The park is accessible by the roadways previously mentioned, as well as from the Georgetown Branch Interim Trail.

Table 1-5. Section 4(f) Properties Identified in the AA/DEIS Not Used (continued)

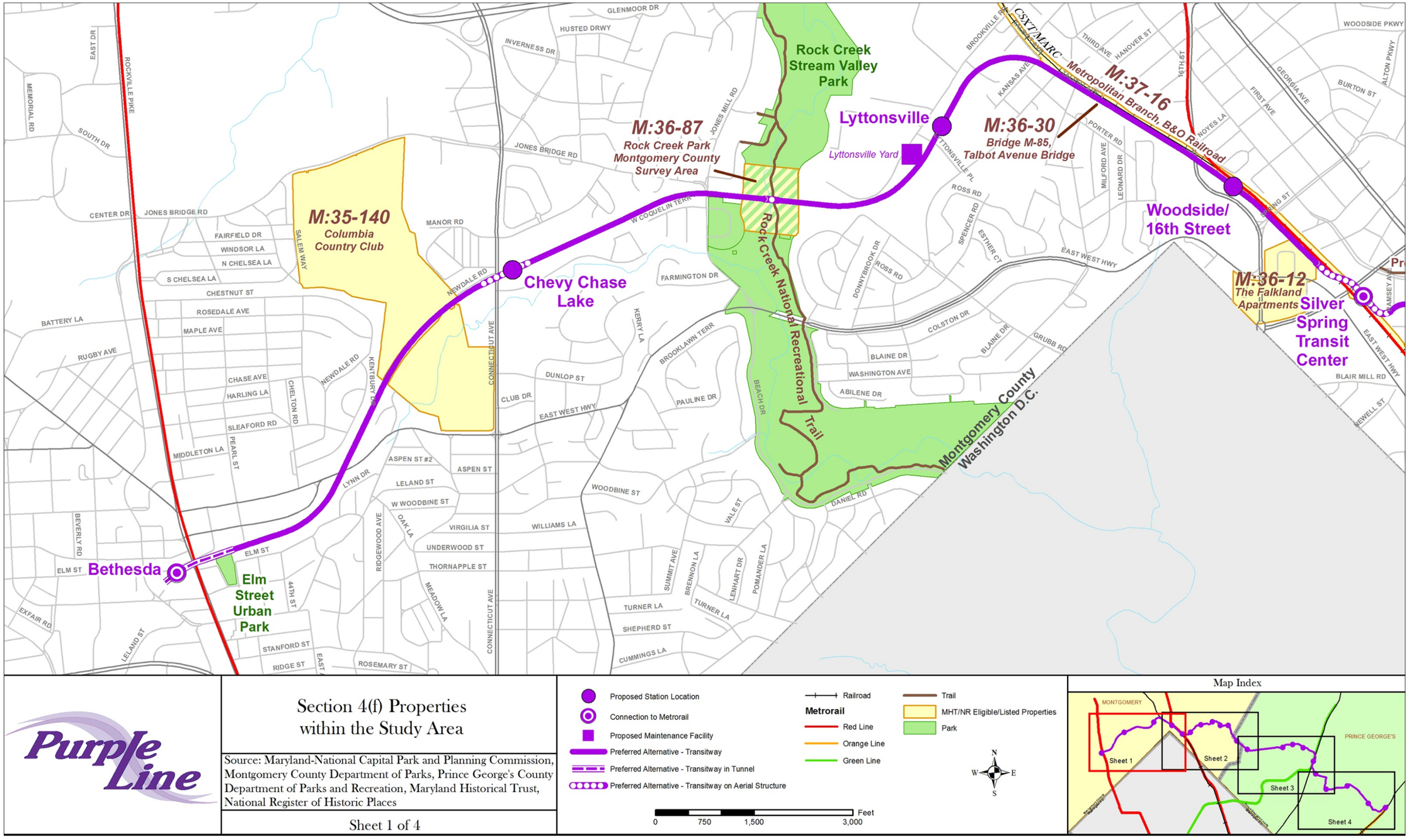
Table 1-6. Section 4(f) Properties Evaluated in this Evaluation

Prop #	Property Name	Classification	Address/Location	Official(s) with Jurisdiction	Features/Attributes
1	Elm Street Urban Park	Park	4600 Elm Street, Bethesda	M-NCPPC–Montgomery County Department of Parks	Playgrounds, a gazebo, picnic tables, benches, trails, and public art
2	Columbia Country Club (M: 35-140)	Historic Property	7900 Connecticut Avenue, Chevy Chase	MHT	Golf Course
3	Rock Creek Stream Valley Park *including:*		Olney-Laytonsville Road to Washington DC line	M-NCPPC–Montgomery County Department of Parks; NCPC	Trails, lakes, historic plantation, athletic fields, playgrounds, and picnic areas
	a) Rock Creek National Recreational Trail	Recreational Trail	Rockville south to Washington DC line		
	b) Rock Creek Park Montgomery County Survey Area (M:36-87)	Historic Property	Montgomery County portion of larger park at Georgetown Branch Interim Trail Crossing	MHT	Creek, trail, athletic field
4	Bridge M-85, Talbot Avenue Bridge (M: 36-30)	Historic Property	Talbot Avenue, Silver Spring	MHT	Historic Bridge
5	Metropolitan Branch, B&O Railroad (M: 37-16)	Historic Property	Union Station, Washington DC to Point of Rocks, Frederick County, MD	MHT	Historic Rail Corridor
6	Falkland Apartments (M: 36-12)	Historic Property	8305 16th Street, Silver Spring	MHT	Historic Apartment Complex; known in the FEIS as the Falkland Chase Apartments
7	Sligo Creek Stream Valley Park *including*:				Trail networks, playgrounds, softball fields, tennis courts, natural areas, and picnic amenities
	a) Sligo Creek National Recreational Trail	Recreational Trail	Hermitage Avenue to Montgomery County line	M-NCPPC–Montgomery County Department of Parks; MHT; NCPC	
	b) Sligo Creek Parkway (M: 32-15; PG: 65-25)	Historic Property	University Boulevard south to New Hampshire Avenue in Takoma Park	MHT	Historic parkway
8	Long Branch Local Park	Park	8700 Piney Branch Road, Silver Spring	M-NCPPC–Montgomery County Department of Parks	Playground, community center, softball field, multi-use field, tennis courts, and picnic area.
9	Long Branch Stream Valley Park *including*:	Park	9500 Brunett Avenue, Silver Spring	M-NCPPC–Montgomery County Department of Parks	Playgrounds, athletic facilities, picnic areas, natural areas, and trails
	a) Long Branch Trail	Recreational Trail	Long Branch Local Park to south of Carroll Avenue		
10	New Hampshire Estates Neighborhood Park	Park	8825 Piney Branch Road, Takoma Park	M-NCPPC–Montgomery County Department of Parks	Playgrounds, athletic field, picnic area, and aesthetic features
11	Northwest Branch Stream Valley Park *including:*			M-NCPPC–Prince George's County; NCPC	Trails, playgrounds, aquatic center, athletic fields and courts, picnic areas, recreational centers, and a duck pond
	a) Northwest Branch Trail	Recreational Trail	Armentrout Drive to south of Capital Beltway along Northwest Branch of the Anacostia River		
12	University of Maryland Historic District (PG: 66-35) and Rossborough Inn (PG: 66-22)	Historic Property	7965 Baltimore Avenue, College Park	MHT	Educational Facility/Campus
13	Anacostia River Stream Valley Park *including:*	Park	Prince George's County to Washington DC	M-NCPPC–Prince George's County; NCPC	Playgrounds, athletic fields and courts, community centers, and trails
	a) Northeast Branch Trail	Recreational Trail	Lake Artemesia to Anacostia River		Trails—includes American Discovery Trail and East Coast Greenway
14	Baltimore-Washington Parkway	National Park/Historic Property	Washington DC line at Tuxedo north to MD 175	NPS; MHT	Historic parkway

Prop #	Property Name	Classification	Address/Location	Official(s) with Jurisdiction	Features/Attributes
15	Glenridge Community Park	Local Park	5070 Flintridge Drive, Hyattsville	M-NCPPC–Prince George's County	Playground, athletic fields and courts, trails, shelters, and picnic areas
16	West Lanham Hills Neighborhood Recreation Center	Recreation Area	7700 Decatur Road, Landover Hills	M-NCPPC–Prince George's County	Playground, recreation center, athletic courts, trail, and picnic areas

M-NCPPC: Maryland-National Capital Park and Planning Commission; NCPC: National Capital Planning Commission; NPS: National Park Service; MHT: Maryland Historical Trust

Figure 1-15. Section 4(f) Properties



Purple Line

Section 4(f) Properties within the Study Area

Source: Maryland-National Capital Park and Planning Commission, Montgomery County Department of Parks, Prince George's County Department of Parks and Recreation, Maryland Historical Trust, National Register of Historic Places

Sheet 1 of 4

Proposed Station Location
Connection to Metrorail
Proposed Maintenance Facility
Preferred Alternative - Transitway
Preferred Alternative - Transitway in Tunnel
Preferred Alternative - Transitway on Aerial Structure

Railroad
Metrorail
Red Line
Orange Line
Green Line

Trail
MHT/NR Eligible/Listed Properties
Park

N W E S

0 750 1,500 3,000 Feet

Map Index

Figure 1-15. Section 4(f) Properties (continued)

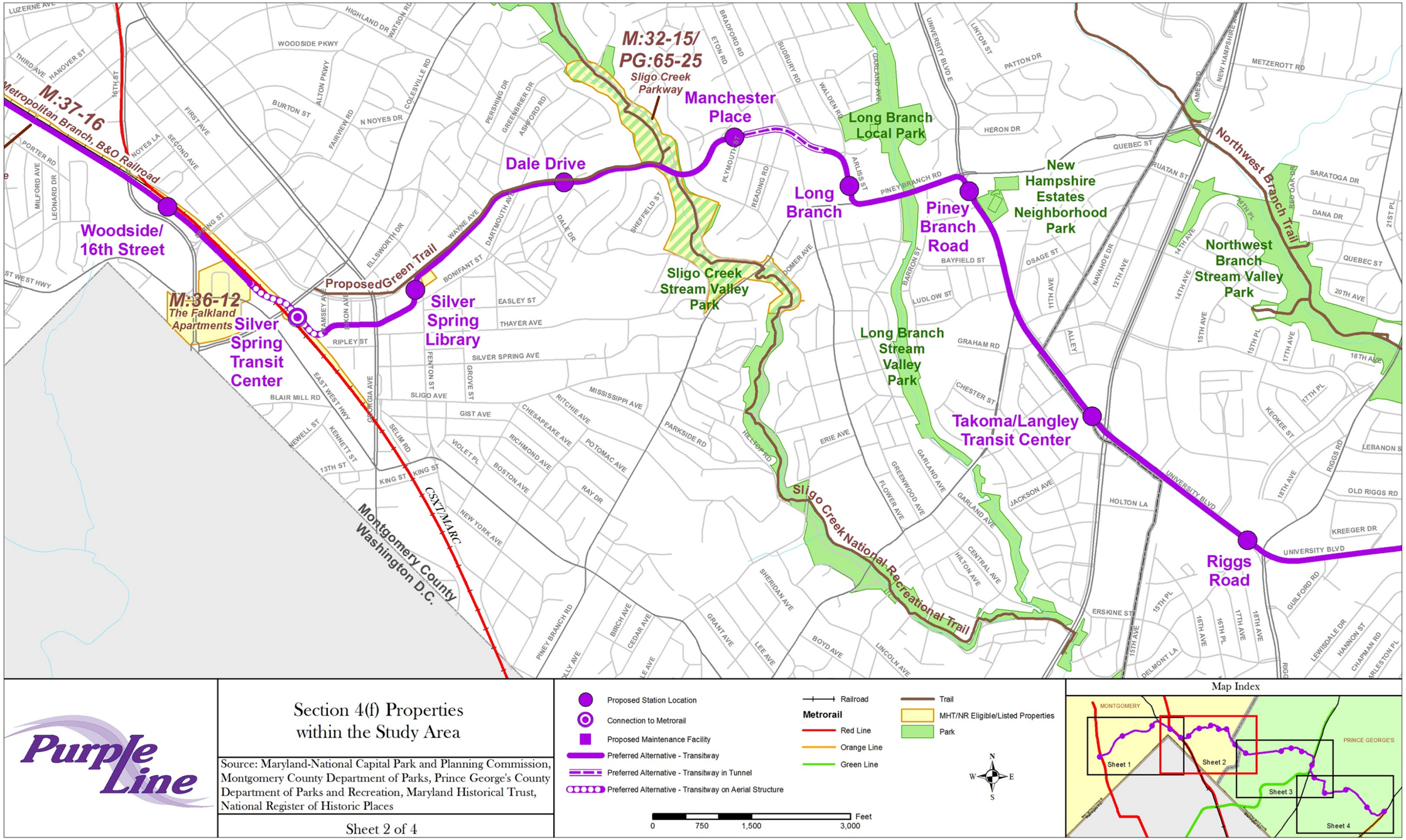


Figure 1-15. Section 4(f) Properties (continued)

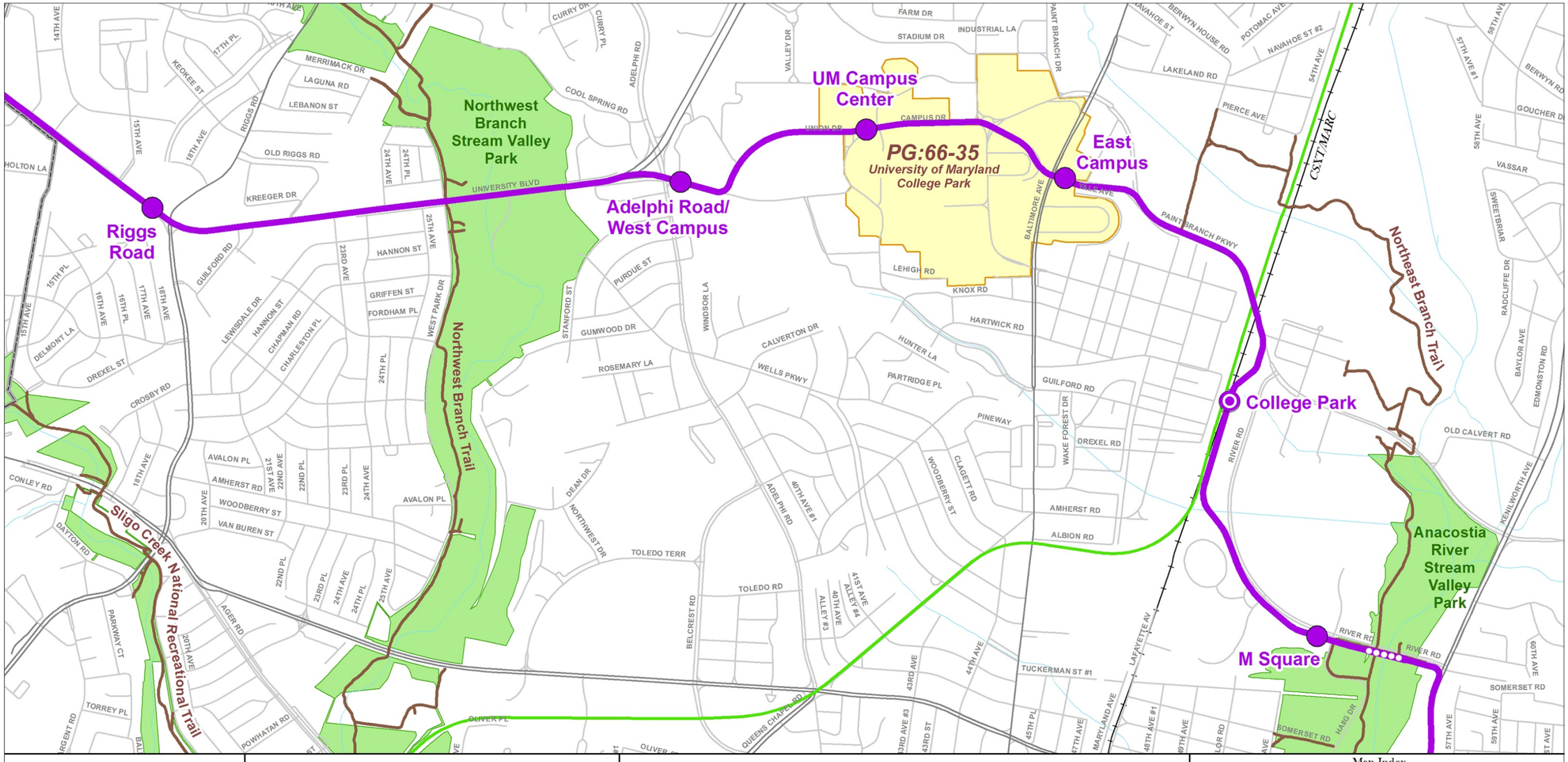


Figure 1-15. Section 4(f) Properties (continued)

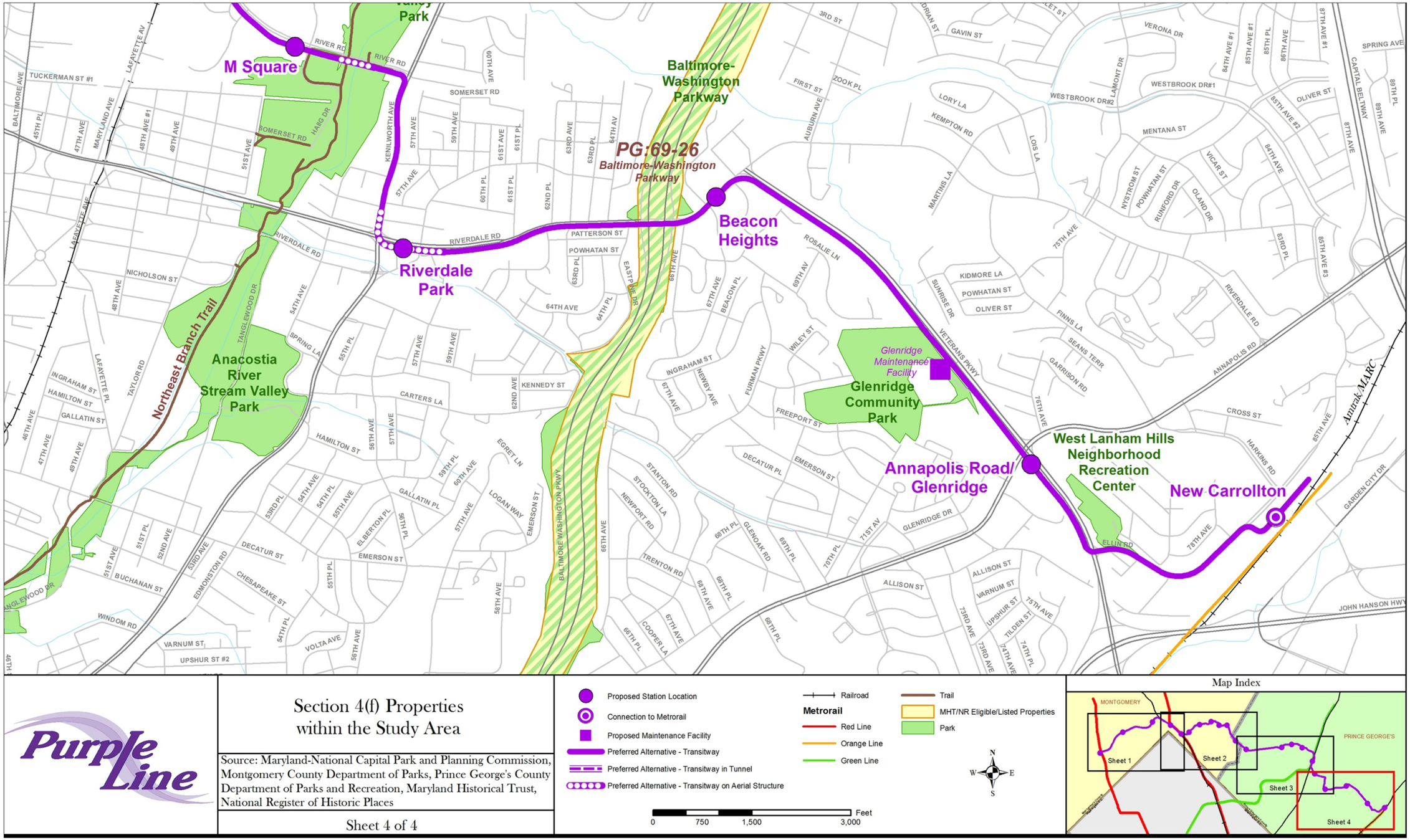


Table 1-7. Summary of Preferred Alternative Park Uses/Impacts

Section 4(f) Property	Permanent Use, Not *De minimis*	Permanent Use, *De minimis*	Temporary Occupancy; No Use	Existing Property Acreage	Permanent Use Acreage	Percent of Property Permanently Used
Elm Street Urban Park			●	2.1	0.00	0.00
Rock Creek Stream Valley Park and Rock Creek National Recreational Trail			●	3,960.0	0.00	0.00
Sligo Creek Stream Valley Park and Sligo Creek National Recreational Trail		●		543.0	0.24	0.04
Long Branch Local Park	●			14.0	0.02	0.14
Long Branch Stream Valley Park and Long Branch Trail		●		41.0	0.11	0.27
New Hampshire Estates Neighborhood Park		●		4.7	0.20	4.26
Northwest Branch Stream Valley Park and Northwest Branch Trail		●		510.0	0.80	0.16
Anacostia River Stream Valley Park and Northeast Branch Trail		●		794.0	1.36	0.17
Baltimore-Washington Parkway		●		1,353.0	0.61	0.05
Glenridge Community Park	●			53.5	5.32	6.13
West Lanham Hills Neighborhood Recreation Center			●	9.0	0.00	0.00

Figure 1-16. Elm Street Urban Park Playground

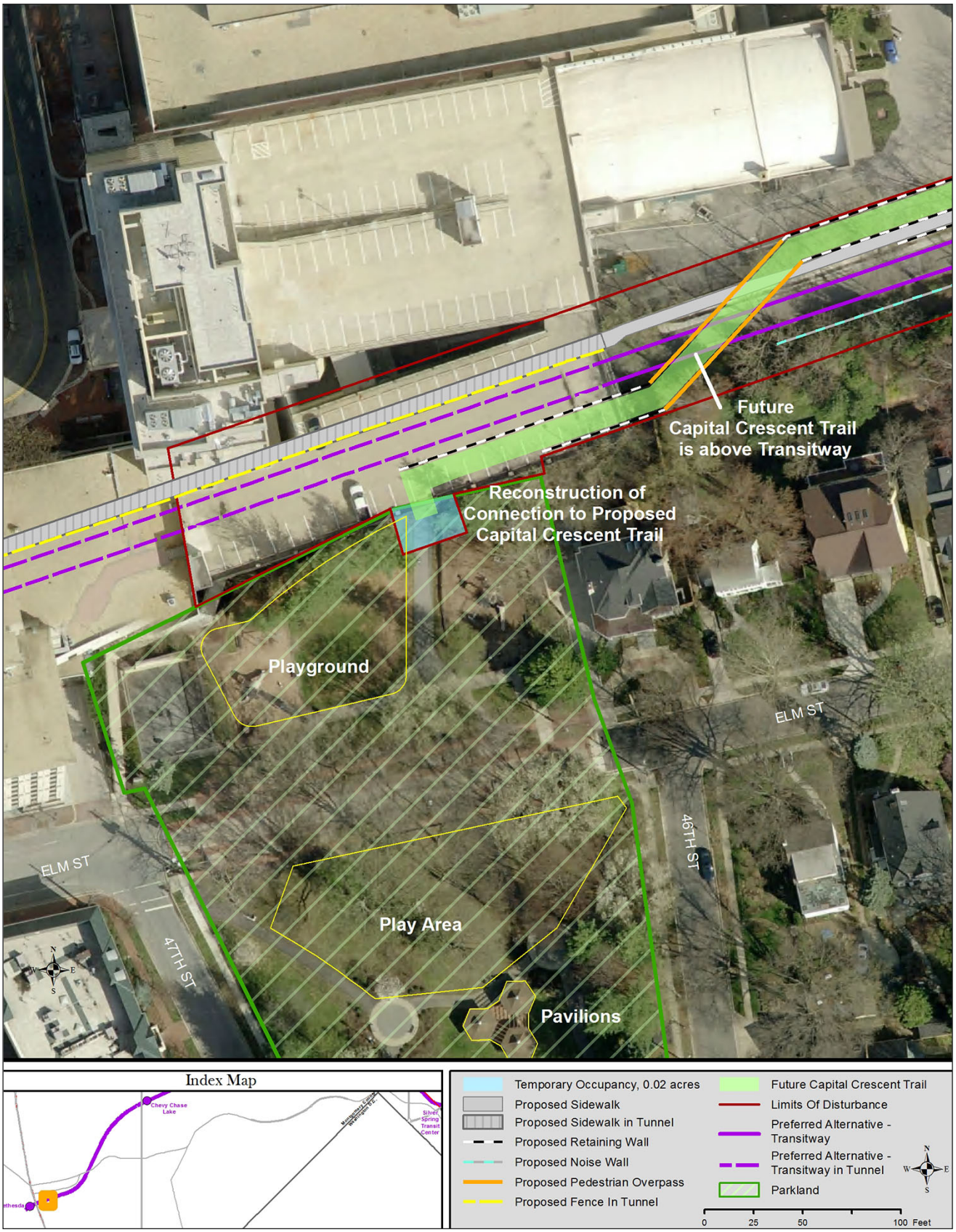
Temporary Occupancy Exception

The Preferred Alternative transitway will be aligned under the Air Rights Building, located directly to the north of Elm Street Urban Park (Figure 1-17). The existing connection between Elm Street Urban Park and Georgetown Branch Interim Trail will be reconstructed to provide access to the Capital Crescent Trail. The trail connection will include a bridge over the transitway. As designed in coordination with the M-NCPPC–Montgomery County Department of Parks, MTA will construct the Capital Crescent Trail connection with Elm Street Urban Park, using approximately 0.02 acres of temporary construction easements on a pathway within the park. The land to be temporarily used includes a portion of an existing path, an undeveloped corner of a playground, and a grassy area adjacent to the path. The construction of the access connection as part of Preferred Alternative will not adversely affect the activities, features or attributes—playgrounds, gazebo, picnic tables, benches, trails and public art—of the park in its existing or proposed future configuration.

During the FEIS public review period, one comment was received pertaining to the Section 4(f) evaluation for the Elm Street Urban Park. The commenter felt that the FEIS/Draft Section 4(f) Evaluation mischaracterized the potential effects of the project on the park. Among their concerns were: the introduction of a wide path through the park and the future redevelopment of the park (both separate

planned projects by M-NCPPC); noise and visual effects; and the potential changes due to a minor master plan amendment currently under consideration by Montgomery County. MTA considered these issues in design development and mitigation for the park. FTA took into consideration the comments regarding Elm Street Urban Park as they relate to Section 4(f).

Figure 1-17. Elm Street Urban Park



MTA has coordinated with M-NCPPC–Montgomery County Department of Parks and NCPC during development of the Preferred Alternative design. Section 1.5 summarizes MTA's coordination activities; memoranda of MTA meetings with M-NCPPC–Montgomery County Department of Parks and NCPC are provided in FEIS Appendix I and ROD Attachment E.

Commitments and Mitigation Measures

MTA's coordination with M-NCPPC–Montgomery County Department of Parks resulted in the following mitigation and minimization measures. Two features of the Purple Line design alongside the park will mitigate potential visual and noise effects and increase safety for park users. A ventilation structure will be located between the park and the transitway, limiting views of the transitway and acting as a barrier for noise from the passing trains. The trail connection will climb on retained fill under the Air Rights Building to a point where the connection crosses over the transitway. The retained fill will also limit views of the transitway and act as a barrier for noise from passing trains. The only access between the Capital Crescent Trail and the park will be via the trail connection, which will be fenced to provide safe passage over the transitway.

MTA's design of the ventilation structure, retaining wall, and landscaping adjacent to Elm Street Urban Park, as well as the design of the trail connection, are being coordinated with both M-NCPPC–Department of Parks and Department of Planning to ensure interim functionality of the existing park as well as long-term compatibility with planned upgrade to the park.

MTA will implement the following mitigation measures:

- Maintain access to the park during construction.
- Provide a functional interim condition for the park, reviewed and approved by M-NCPPC, prior to its planned redevelopment.
- Design the trail connection to the Capital Crescent Trail to meet Americans with Disabilities Act (ADA) requirements.
- Will not construct stormwater management facilities within the boundaries of the Park unless required by the terms of a stormwater permit.
- Land disturbed during construction of the project will be returned to preconstruction conditions or better.
- Land upon which a temporary construction easement is placed will be returned to M-NCPPC upon completion of the construction of the trail connection.

Section 4(f) Determination

FTA has made a temporary occupancy exception determination for the construction easements, as they satisfy the five criteria for temporary occupancy set forth in 23 CFR 774.13(d), as discussed in Section 1.1.1. Specifically, (1) the duration of the work is temporary, less than the overall project construction period and no change in property ownership will occur; (2) the work is confined to a small area of the park and will result in minimal changes to the park; (3) no permanent adverse impacts to the park and no interference with the protected activities, features, or attributes of the park will occur; (4) the disturbed land will be fully restored to at least as good condition; and (5) the officials with jurisdiction have provided documented agreement to these findings. As such, the temporary construction easements do not constitute a use of Elm Street Urban Park.

The Preferred Alternative will not permanently use any part of Elm Street Urban Park. The FEIS Chapter 4.0 assessment of effects indicates that the Preferred Alternative will not cause noise, vibration, or visual effects on Elm Street Urban Park that would constitute a constructive use; no substantial impairment of the activities, features or attributes—playgrounds, gazebo, picnic tables, benches, trails and public art—that qualify the park for protection under Section 4(f) will occur. M-NCPPC–Montgomery County Department of Parks concurred with FTA's temporary occupancy exception determination for Elm Street Urban Park in a letter dated December 17, 2013 (Record of Decision Attachment E).

Rock Creek Stream Valley Park and Rock Creek National Recreational Trail

Section 4(f) Property Description

Rock Creek Stream Valley Park is a natural stream valley park along Rock Creek. The park is approximately 3,960 acres in size, extending from Olney-Laytonsville Road (MD 108) in Montgomery County to the Washington DC boundary. The park follows the length of Rock Creek. Rock Creek Stream Valley Park amenities include trails, lakes, a historic plantation, boating and a ropes course, an interpretive area in the farm park, numerous athletic fields, a scenic parkway road, playgrounds, and picnic areas. The portion of the park in the project area is owned and maintained by M-NCPPC–Montgomery County Department of Parks, funded in part by Maryland Program Open Space funds. The portion of Rock Creek Park within Washington DC is a national park and is owned by the National Park Service.

Rock Creek Stream Valley Park includes an extensive trail system. Rock Creek National Recreational Trail is a 19-mile, paved surface, shared use trail. The trail includes numerous natural-surface spur trails and paved connector trails and numerous natural areas.

Temporary Occupancy Exception

The Preferred Alternative will be aligned completely within the Georgetown Branch (Montgomery County) right-of-way through Rock Creek Stream Valley Park (Figure 1-18). As currently designed, the project will remove the existing bridge that currently carries the Georgetown Branch Interim Trail over Rock Creek and the Rock Creek National Recreational Trail. MTA, working in consultation with M-NCPPC–Montgomery County Department of Parks and the NCPC, proposes to build two new bridges in the same area for the Purple Line project, one for the transitway and one for the Capital Crescent Trail. The Preferred Alternative will provide a connection between the Capital Crescent Trail and the Rock Creek National Recreational Trail as the Capital Crescent Trail bridge will lead to a ramp to the existing trail.

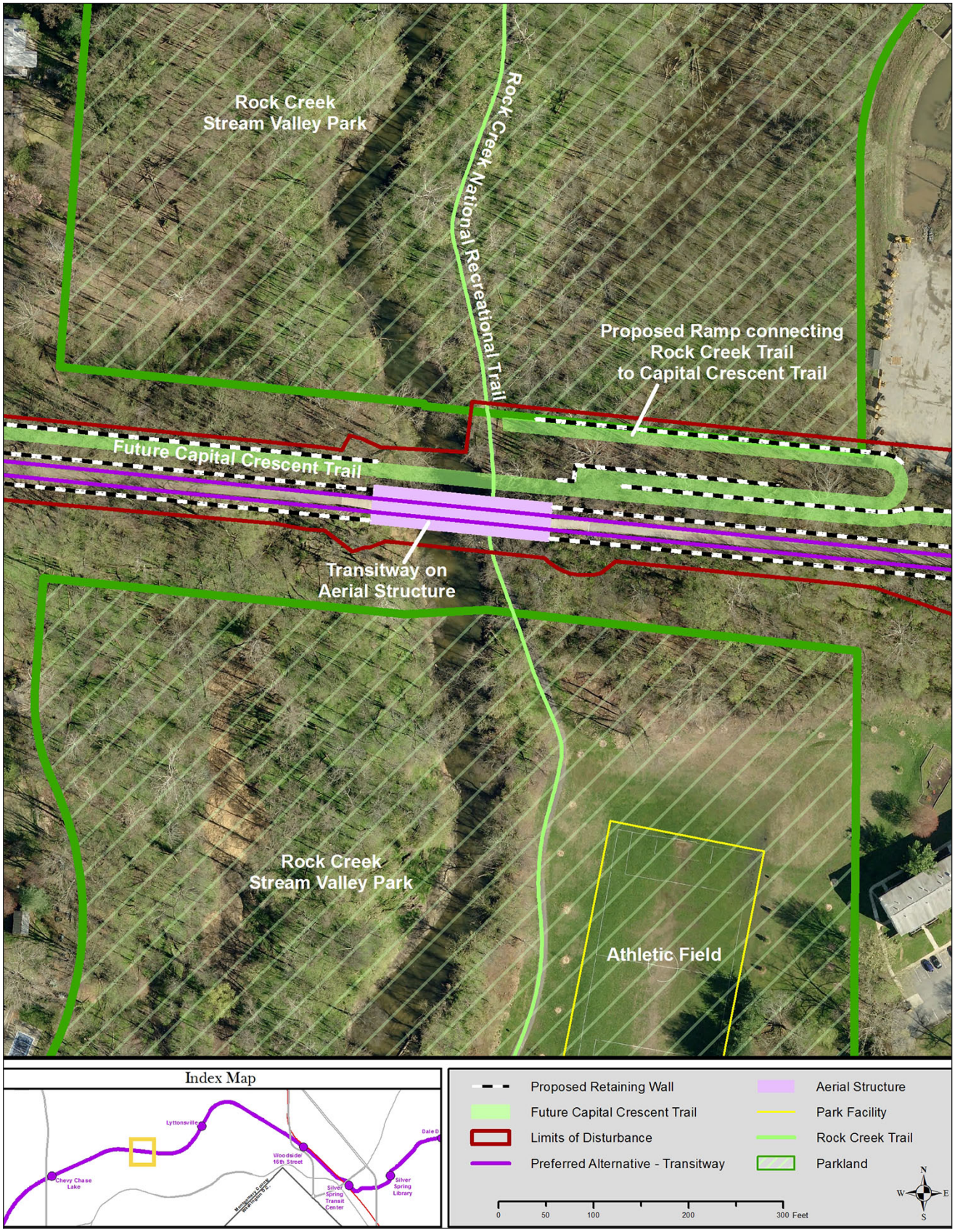
During the FEIS and Section 4(f) Evaluation public comment period, two comments were received. One commenter expressed general concern for potential impacts to the park and the other commenter expressed concerns that overall park impacts were not acknowledged in the Draft Section 4(f) Evaluation. MTA considered these comments in the design development and mitigation for the park, as described below. FTA took into consideration the comments regarding Rock Creek Park as they relate to Section 4(f).

During construction of the bridges, the portion of Rock Creek National Recreational Trail in the immediate vicinity of the bridges will be temporarily detoured for short periods of time. When trail detours occur, the detour route will begin to the north of the project area and use Susanna Lane to Jones Mill Road, south to East-West Highway, then east to Meadowbrook Lane, where the Rock Creek National Recreational Trail will be accessed to the south of the project area.

Tree removal will be required within the Georgetown Branch right-of-way, which is owned by Montgomery County, for the construction of the transitway and trail structures. Since tree removal will occur completely within Georgetown Branch right-of-way and will not encroach onto park property, these activities will not be a use of a Section 4(f) property.

MTA has coordinated with M-NCPPC–Montgomery County Department of Parks and NCPC during development of the Preferred Alternative. Section 1.5 summarizes MTA's coordination activities; memoranda of MTA meetings with M-NCPPC–Montgomery County Department of Parks and NCPC are provided in FEIS Appendix I and ROD Attachment E.

Figure 1-18. Rock Creek Stream Valley Park and Rock Creek National Recreational Trail



Commitments and Mitigation Measures

Although the project will have no direct impacts to park property, MTA developed measures in coordination with M-NCPPC to minimize the potential for temporary construction effects on the park. MTA will implement the following mitigation measures:

- Construct all elements of the project within Georgetown Branch right-of-way.
- The detour of the Rock Creek National Recreational trail will be temporary and for short periods of time during construction of the project.
- Within the Georgetown Branch right-of-way, raise the Rock Creek National Recreational Trail out of the one-year floodplain on an elevated wooden boardwalk to reduce flooding and siltation that currently plague the trail. MTA will continue to coordinate with M-NCPPC regarding the design of the raised section of the trail.
- Selectively clear trees within Georgetown Branch right-of-way adjacent to Rock Creek Stream Valley Park. Disturbed areas will be replanted and restored within the Georgetown Branch right-of-way where reasonable to mitigate for tree removal.
- Will not construct stormwater management ponds or structures within Rock Creek Stream Valley Park unless required by the terms of a stormwater permit.
- Continue coordination with NCPC, M-NCPPC–Montgomery County Department of Parks, and Montgomery County Department of Transportation to improve the aesthetics of the transitway and trail bridges through Rock Creek Stream Valley Park. The bridges will be designed as signature facilities with aesthetic consideration for park users.
- Contingent upon approval by US Army Corps of Engineers and Maryland Department of the Environment, as part of the removal of the existing bridge over Rock Creek, the pier foundation within the existing stream channel will be removed 12-18 inches below existing grade. The stream will be stabilized with appropriate stream design methods that will factor in hydrology, hydraulics, and existing conditions both upstream and downstream of the pier and aquatic wildlife passage. MTA's pier removal and stream improvement design will be further refined as the project design advances.
- Maintain access to the park and Rock Creek National Recreational Trail during construction.
- Design the Capital Crescent Trail and the connection to Rock Creek National Recreational Trail to meet ADA requirements.
- Design retaining walls and landscaping plans within Georgetown Branch right-of-way crossing the park in consultation with M-NCPPC.
- Will not construct stormwater management facilities within the boundaries of the park unless required by the terms of a stormwater permit.

Section 4(f) Determination

FTA has made a temporary occupancy exception determination for the trail detour, as it satisfies the five criteria for temporary occupancy exception set forth in 23 CFR 774.13(d), as discussed in Section 1.1.1. Specifically, (1) the duration of the work is temporary, less than the overall project construction period and no change in property ownership will occur; (2) the work is confined to a small area of the park and will result in minimal changes to the park; (3) no permanent adverse impacts to the park and no interference with the protected activities, features or attributes of the park will occur; (4) the disturbed land will be fully restored to at least as good condition; and (5) the officials with jurisdiction have provided documented agreement to these findings. As such, the temporary construction easements do not constitute a use of Rock Creek Stream Valley Park and Rock Creek National Recreational Trail.

The Preferred Alternative will not permanently use any part of Rock Creek Stream Valley Park and Rock Creek National Recreational Trail. The FEIS Chapter 4.0 assessment of effects indicates that the Preferred Alternative will not cause noise, vibration, or visual effects on Rock Creek Stream Valley Park and Rock Creek National Recreational Trail. Therefore, the Preferred Alternative will not substantially impair the activities, features, or

attributes—trails, lake, interpretive area, athletic fields, playgrounds and picnic areas—that qualify the park for protection under Section 4(f); no constructive use will occur.

M-NCPPC–Montgomery County Department of Parks concurred with FTA's temporary occupancy exception determination for Rock Creek Stream Valley Park in a letter dated January 3, 2014 (Record of Decision Attachment E).

Sligo Creek Stream Valley Park and Sligo Creek National Recreation Trail

Section 4(f) Property Description

Sligo Creek Stream Valley Park is 543 acres in size, consists of seven different units, and encompasses the Sligo Creek floodplain. Units 1 and 2 of the park are within the project study area. Unit 1 is 36.7 acres in size and extends from Chaney Drive northwest to Piney Branch Road in Takoma Park. Unit 2 is 39.4 acres in size and extends from Piney Branch Road northwest to MD 29 in Four Corners. It includes Sligo Cabin Neighborhood Park, which is located directly north of Dale Drive. Sligo Creek Stream Valley Park was acquired in 1932 and is one of the oldest parks owned and maintained by M-NCPPC–Montgomery County Department of Parks. This park includes playgrounds, softball fields, tennis courts, a picnic area, natural areas, and the Sligo Creek National Recreational Trail (Figure 1-19).

Figure 1-19. Sligo Creek Stream Valley Park Playground

Sligo Creek National Recreational Trail is a paved shared use trail that follows the Sligo Creek floodplain through Prince George's and Montgomery Counties. The trail is approximately 10 miles long and is one of the oldest in Montgomery County. The trail is connected to a countywide trail system. The trail is the most heavily used facility within Sligo Creek Stream Valley Park system. To the south the trail terminates at the Northwest Branch Trail.

The Sligo Creek National Recreational Trail is part of Sligo Creek Stream Valley Park and was purchased using Capper-Cramton Act funding. Within the project area, the trail parallels the north side of Wayne Avenue for approximately 200 feet before crossing over Wayne to continue southbound between Sligo Creek and the Parkway.

Use of Section 4(f) Property—*De minimis* Use

The Preferred Alternative will share the two center lanes of Wayne Avenue where the roadway crosses Sligo Creek Stream Valley Park (Figure 1-20).

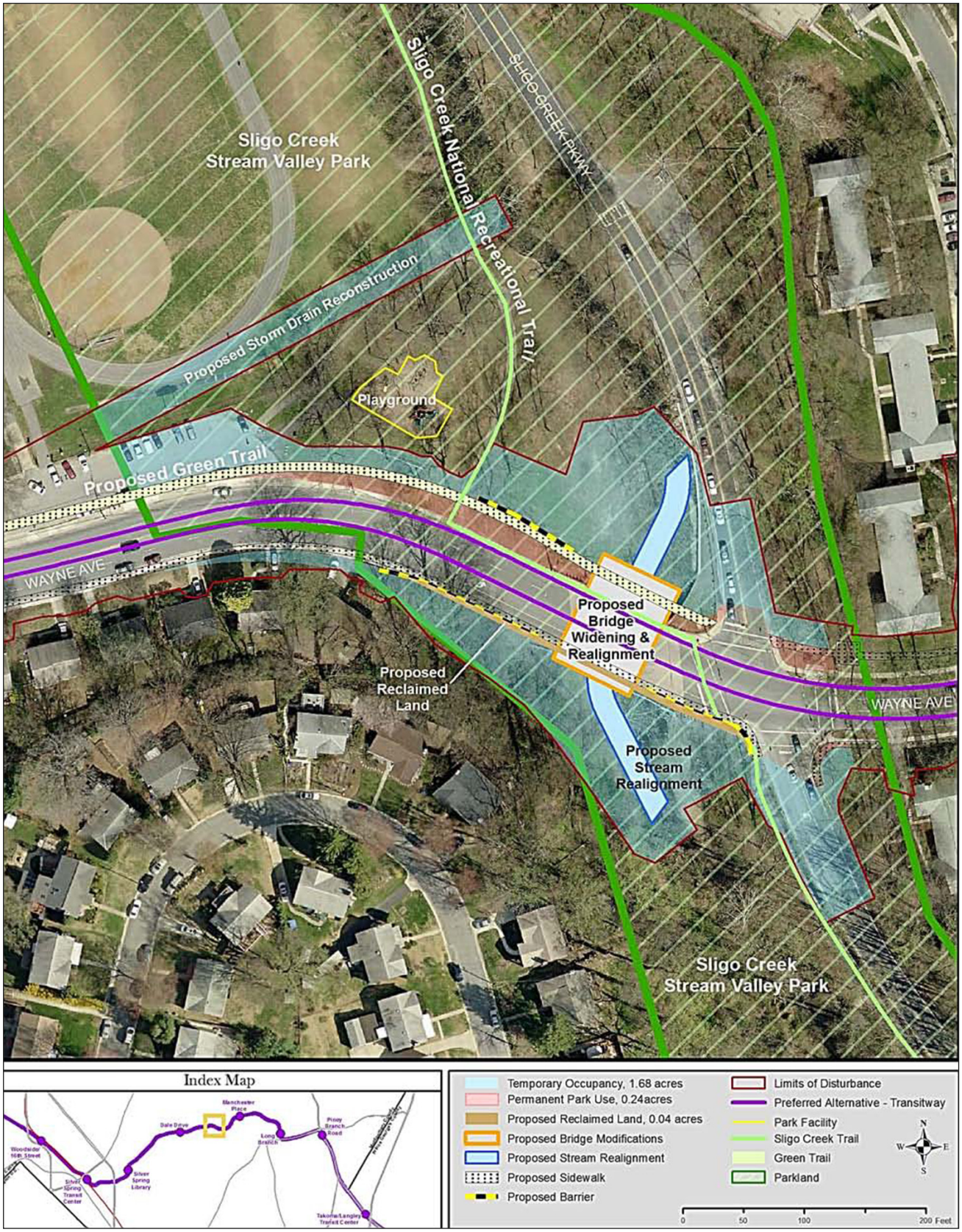
MTA will replace the existing Wayne Avenue bridge with a wider, single span structure to accommodate the transitway and the extension of the proposed Green Trail. Retaining walls will be used to limit the land area required for grading and vegetation removal.

As part of the Purple Line project and in coordination with the M-NCPPC–Montgomery County Department of Parks and NCPC, the latter having jurisdiction under the Capper-Cramton Act, MTA will make stream channel and floodplain improvements in the immediate vicinity of the bridge to alleviate the existing tendency for flooding and overtopping the roadway at the crossing.

Specifically, the Sligo Creek stream channel will be realigned to provide a more perpendicular crossing at the roadway. This change, in conjunction with removing the existing, skewed bridge pier, will eliminate existing constrictions to creek water flow. As part of this work, a portion of an existing drainage pipe currently conveying stormwater from Wayne Avenue in the vicinity of Silver Spring International Middle School to Sligo Creek may be

replaced with a new, larger pipe to increase drainage capacity in the immediate area. The floodplain

Figure 1-20. Sligo Creek Stream Valley Park and Sligo Creek National Recreational Trail



in the bridge area will be re-graded to improve its ability to manage flood water volume, stabilize slopes, and install permanent vegetation.

While MTA intends to minimize tree removal during construction and implement selective clearing techniques, trees within the proposed work area will be impacted. MTA will remove approximately 29 trees, including 13 trees to the north of Wayne Avenue and 16 trees to the south.

The decision to operate the transitway in mixed-traffic lanes on Wayne Avenue was done to minimize impacts to the community, including the use of park property. MTA will permanently use 0.24 acre of park property to implement these project-related elements. The Preferred Alternative will not use or affect other developed recreational facilities associated with the park or affect the retaining walls along Sligo Creek Parkway. No use of the Sligo Creek National Recreational Trail will occur.

During construction, MTA will temporarily use 1.68 acres of Sligo Creek Stream Valley Park for equipment access, drainage upgrades, and work area. The temporarily used park land is primarily grassy or wooded and undeveloped. Approximately three of 25 parking spaces in the park parking lot west of the stream will be temporarily used by MTA for access and staging. These parking spaces will be restored to a condition at least as good as existing upon completion of the construction of the project through park property. Wayne Avenue will remain open to traffic during construction; no change in park access will occur.

Commitments and Mitigation Measures

MTA is coordinating with the M-NCPPC–Montgomery County Department of Parks to develop plans that minimize harm to the park and trail.

MTA will minimize impacts on Sligo Creek Stream Valley Park by constructing retaining walls to limit the land area required for grading and vegetation removal, selectively clear trees in the work area to minimize tree loss, and stabilize temporarily disturbed stream banks. Specifically, MTA will work with M-NCPPC–Montgomery County Department of Parks as the project moves forward to identify specimen or champion trees in the construction area. Trees to be preserved will be marked with protective fencing to avoid impacts or removal during construction. In addition, MTA will build its construction access road to the south of Wayne Avenue on an existing Washington Suburban Sanitary Commission (WSSC) utility easement to minimize tree removal.

MTA will plant trees within Sligo Creek Stream Valley Park, where reasonable and feasible, to mitigate tree loss that occurs as a result of the project. MTA will replace guardrail, signs, and other existing structures on park land it disturbs with new structures designed to match the existing elements in the park.

MTA is committed to designing an environmentally sensitive stream crossing when designing the Wayne Avenue Bridge. The bridge will be designed to provide the least amount of environmental impact and improve the hydraulics of Sligo Creek through the project area. Sligo Creek will be realigned as part of the bridge replacement.

A work group will be formed between M-NCPPC and MTA to further study and recommend appropriate design and mitigation for the stream realignment at Sligo Creek with the goal of ensuring long-term stability and reducing stress on the stream. The group will work together, hold field visits, and coordinate with the appropriate resource agencies to gain approval for the recommended improvements. The work group will collect and assess data on the competing issues in the area, including a downstream project by WSSC, specimen trees, existing utilities, floodplain connectivity, structural requirements for the new bridge, stream hydraulics, and existing habitat. The work group will also consider the effects of widening the bridge to accommodate a Green Trail that is wider than currently proposed. Finally, the work group will weigh the cost (environmental and financial) and benefits of the proposals and recommend specific mitigation. The final recommended mitigation measure is contingent upon approval from the U.S. Army Corps of Engineers and Maryland Department of the Environment.

Upon completion of the Purple Line, approximately 0.04 acre of property currently owned by Montgomery County Department of Public Works abutting the park will be converted to green space and conveyed to M-NCPPC–Montgomery County Department of Parks for inclusion in the park. The property to be conveyed to M-NCPPC–Montgomery County Department of Parks (shown on Figure 6-20 as "reclaimed land") is located directly south of Wayne Avenue within the existing roadway right-of-way and is currently used for transportation purposes; it is not Section 4(f)-protected property.

MTA will implement the following additional mitigation measures:

- Maintain access to recreational facilities, including the existing playground within Sligo Creek Stream Valley Park and Sligo Creek National Recreational Trail during construction.
- Avoid impacts to specimen trees within the park, where reasonable.
- Design sidewalk improvements along Wayne Avenue to meet ADA requirements.
- Complete the design and construction of the proposed Green Trail, to be funded by Montgomery County Department of Public Works, and constructed in conjunction with the Purple Line.
- Restore the parking lot west of the stream to a condition equal to or better than the existing condition.

In coordination with M-NCPPC–Montgomery County Department of parks, MTA will provide replacement parkland to mitigate the permanent use of land at Sligo Creek Stream Valley Park. MTA will consolidate its mitigation for the permanent use of parkland in Montgomery County at a single site adjacent to New Hampshire Estates Neighborhood Park. MTA will continue to coordinate with M-NCPPC–Montgomery County Department of Parks regarding the design and implementation of this land mitigation plan.

Section 4(f) Determination

FTA has made a *de minimis* use determination for the Preferred Alternative at the Sligo Creek Stream Valley Park and Sligo Creek National Recreational Trail. The permanent and temporary uses by the project will not adversely affect the features, attributes or activities—trails, playgrounds, ball fields, tennis courts, natural areas and picnic amenities—that qualify Sligo Creek Stream Valley Park and Sligo Creek National Recreational Trail for Section 4(f) protection. M-NCPPC–Montgomery County Department of Parks concurred with FTA's *de minimis* use determination for Sligo Creek Stream Valley Park on December 17, 2013 (Record of Decision Attachment E).

Memoranda of MTA meetings with M-NCPPC–Montgomery County Department of Parks are provided in FEIS Appendix I and ROD Attachment E.

Long Branch Local Park

Section 4(f) Property Description

Long Branch Local Park is located on the north side of Piney Branch Road in Silver Spring. The park is approximately 14 acres in size and includes the Long Branch Community Center, a playground, softball field, multi-use field, tennis courts, pool, and a picnic area (Figure 1-21). It was acquired by Montgomery County in 1948. The park is owned and maintained by M-NCPPC–Montgomery County Department of Parks, funded in part by Maryland Program Open Space funds.

Figure 1-21: Long Branch Community Center

Use of Section 4(f) Property—Permanent Use, Not *De minimis*

The Preferred Alternative transitway will be located in the median of Piney Branch Road, which abuts Long Branch Local Park to the south (Figure 1-22). The MTA will widen Piney Branch Road to accommodate two additional lanes for the transitway, extending the culvert that conveys Long Branch Stream under Piney Branch Road, and adding a parallel drainage pipe adjacent to the culvert to address flooding in the area. The roadway cross section will include two dedicated lanes for the transitway, an 11-foot wide vehicle lane and a 16-foot wide mixed-traffic lane for vehicle and bicycle use in each direction, and five-foot wide sidewalks on both sides of Piney Branch Road.

MTA will permanently use approximately 0.02 acre of Long Branch Local Park property to extend the culvert and reconstruct the sidewalk. The land where the culvert will be located is undeveloped and wooded; the sidewalk area is a vegetated strip of land immediately north of the existing sidewalk along Piney Branch Road. In coordination with M-NCPPC, MTA determined that its activities will not result in the closure of Long Branch Local Park at any time during or after construction.

During construction, approximately 0.28 acre of temporary construction easements will be required within Long Branch Local Park to grade the land around the existing culvert and roadway, as well as provide access during construction. The land encompassed by temporary construction easements includes the existing wooded land around the culvert location, the park entrance driveway, which is needed for access, and approximately two of 92 parking spaces in the park parking lot. Long Branch Local Park will remain open throughout construction.

Existing left-turn access to and from the park at Piney Branch Road will be eliminated by the Preferred Alternative as traffic cannot cross the transitway at an unsignalized intersection. This condition will be mitigated by providing a new entrance roadway to the park at the traffic signal across from Barron Street. The driveway will provide through movements from Barron Street as well as facilitate left turns out of the park to Piney Branch Road.

Coordination is on-going between MTA and M-NCPPC regarding mitigation measures for project impacts within Long Branch Local Park. Memoranda of MTA meetings with M-NCPPC–Montgomery County Department of Parks are provided in FEIS Appendix I and ROD Attachment E. The Preferred Alternative will not adversely affect the features, attributes or activities—softball field, multi-use field tennis courts, pool, and a picnic area—that qualify the park for protection under Section 4(f). FTA proposed a *de minimis* use determination for impacts to Long Branch Local Park. However, M-NCPPC–Montgomery County Department of Parks initially stated that they would not concur with a determination of *de minimis* use because while access was maintained to the park and Long Branch Community Center, it would have been modified to right-in/right out movements only. Since that time, modifed access, as well as other mitigation measures, has been determined in consultation with M-NCPPC. Although these mitigation measures may have led to an agreement by M-NCPPC to a *de minimis* use determination, FTA's evaluation and proposed determination of use had been made in the Draft Section 4(f) Evaluation.

On the basis of that evaluation and consideration of public and agency comments during the FEIS comment period, FTA has determined there will be a use of Long Branch Local Park.

Avoidance Alternatives

Several avoidance options and alternatives were considered, including two sets of tunnel options ("A" and "B"), a surface alignment along Colesville Road, and the No Build Alternative. Each is described below. The transportation system management (TSM) alternative examined in the AA/DEIS was not considered to be a prudent avoidance alternative as it compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need (23 CFR 774.17(3)(i)).

Figure 1-22. Long Branch Local Park

Tunnel—"A" Options

Two tunnel options "A" extended from Sligo Avenue near Piney Branch Road to Anne Street at University Boulevard just west of the planned Takoma/Langley Transit Center. The "A" options are shown on Figure 1-23. Both options would have been at grade along Sligo Avenue from downtown Silver Spring to Piney Branch Road. From there, they would enter a tunnel, resurfacing at the intersection of Anne Street and University Boulevard, where they would resurface and continue eastbound on University Boulevard at grade.

One "A" option roughly followed in the direction of Park Valley Road and curved towards Anne Street staying under existing roadway rights-of-way as much as possible. The second "A" option would have tunneled in a straight line under the residential neighborhoods to reduce tunnel length, and therefore cost. The tunnels were approximately 0.8-mile long; tunnel profiles were deep enough to pass below Sligo Creek and Long Branch. A third tunnel option "A" was a variation of the longer tunnel option. The tunnel would begin in downtown Silver Spring, west of Georgia Avenue, run below Sligo Avenue, passing under Sligo Creek and Long Branch Stream and would surface on University Boulevard near the Takoma Langley Transit Center.

Each tunnel "A" option would bypass Purple Line stations at Manchester Place, Long Branch, and Piney Branch. The longer options would have a station near Columbia Union College and Washington Adventist Hospital in Takoma Park. The tunnel "A" options were dropped because they do not support the County Master Plans for economic redevelopment of the Long Branch/ Flower Avenue station area, and they would be extraordinarily costly. There was little public support for a station near the college and the hospital.

While the tunnel "A" options would have avoided use of Long Branch Local Park and are considered feasible, none is considered prudent as each involves multiple factors in 23 CFR 774.17(3)(i) through 23 CFR 774.17(3)(vi), that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude: weak performance in meeting purpose and need by not providing connections to communities between activity centers; environmental impacts by not supporting local plans for economic and community revitalization of the Long Branch/Piney Branch commercial areas; and additional construction, maintenance, or operational costs of an extraordinary magnitude. In addition, the tunnel "A" options were not supported by the public.

Tunnel—"B" Options

The tunnel "B" options evaluated would have provided tunnels connecting to Piney Branch Road. The tunnel "B" options are shown on Figure 1-23. The tunnel "B" options included a long tunnel under Wayne Avenue. It would start in downtown Silver Spring, travel under Wayne Avenue, under Sligo Creek, continue generally below Manchester Road and Piney Branch Road, under Long Branch, and would surface near the intersection of Piney Branch Road and Barron Street. The tunnel "B" options were approximately two miles long and the tunnel profiles were deep enough to pass under both Sligo Creek and Long Branch. The tunnel "B" options would not have served the Long Branch neighborhood due to the cost of an underground station.

While the tunnel "B" options would have avoided use of Long Branch Local Park and are considered feasible, neither is considered prudent as each involves multiple factors in 23 CFR 774.17(3)(i) through 23 CFR 774.17(3)(vi), that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude: weak performance in meeting purpose and need by not providing connections to communities between activity centers; environmental impacts by not supporting local plans for economic and community revitalization of the Long Branch/Piney Branch commercial areas; and additional construction, maintenance, or operational costs of an extraordinary magnitude. In addition, the tunnel "B" options were not supported by the public.

Surface Alignment—Colesville Road

A surface alignment option using Colesville Road from the Silver Spring Transit Center to University Boulevard was considered early in the project. This surface alignment would join University Boulevard

in Four Corners and turn south to Takoma/Langley Crossroads at New Hampshire Avenue. Colesville Road is six lanes wide with a reversible center lane. It is a heavily used major arterial. Surrounding land uses are generally single-family residential except in downtown Silver Spring. University Boulevard is likewise a major arterial and a six-lane roadway. The extremely heavy traffic on Colesville Road would make it very difficult to implement dedicated or exclusive lanes for transit (Figure 1-24).

In April 1996 the Maryland State Highway Administration (SHA) conducted a feasibility study for a busway on US 29[3]. After this study, both the Montgomery County Council and M-NCPPC–Montgomery County Department of Parks recommended that US 29 not be considered for either a busway or light rail route because of the extremely high traffic volume and lack of ability to add capacity. The surface alignment was not supported by the public or local jurisdiction for the reasons above. Because the surface alignment extends north outside the general Purple Line corridor and then comes south again, it adds approximately 3.8 miles to the Purple Line alignment and, therefore, lengthens the trip time. The alignment would also add cost as well as potential environmental and community impacts associated with accommodating a corridor along Colesville Road.

While the surface alignment would have avoided use of Long Branch Local Park and is considered feasible, it is not considered prudent by a combination of the Section 4(f) criteria: it compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need (23 CFR 774.17(3)(i)); and it involves multiple factors, that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude (23 CFR 774.17(3)(vi)).

No Build Alternative

The No Build Alternative is an avoidance alternative considered in this Final Section 4(f) Evaluation. The No Build Alternative would cause no use of the park. However, the No Build Alternative compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need. Therefore, while the No Build Alternative is feasible, it is not prudent (23 CFR 774.17(3)(i)).

Property-specific Least Overall Harm Analysis

FTA applied the Section 4(f) criteria to determine the build alternative with the least overall harm to Long Branch Local Park. In this analysis, the Preferred Alternative and each of the build alternatives in the AA/DEIS were evaluated, and an alignment on a new location was considered. In addition, the ability to provide left-turn lanes at the signalized intersection of the park was examined.

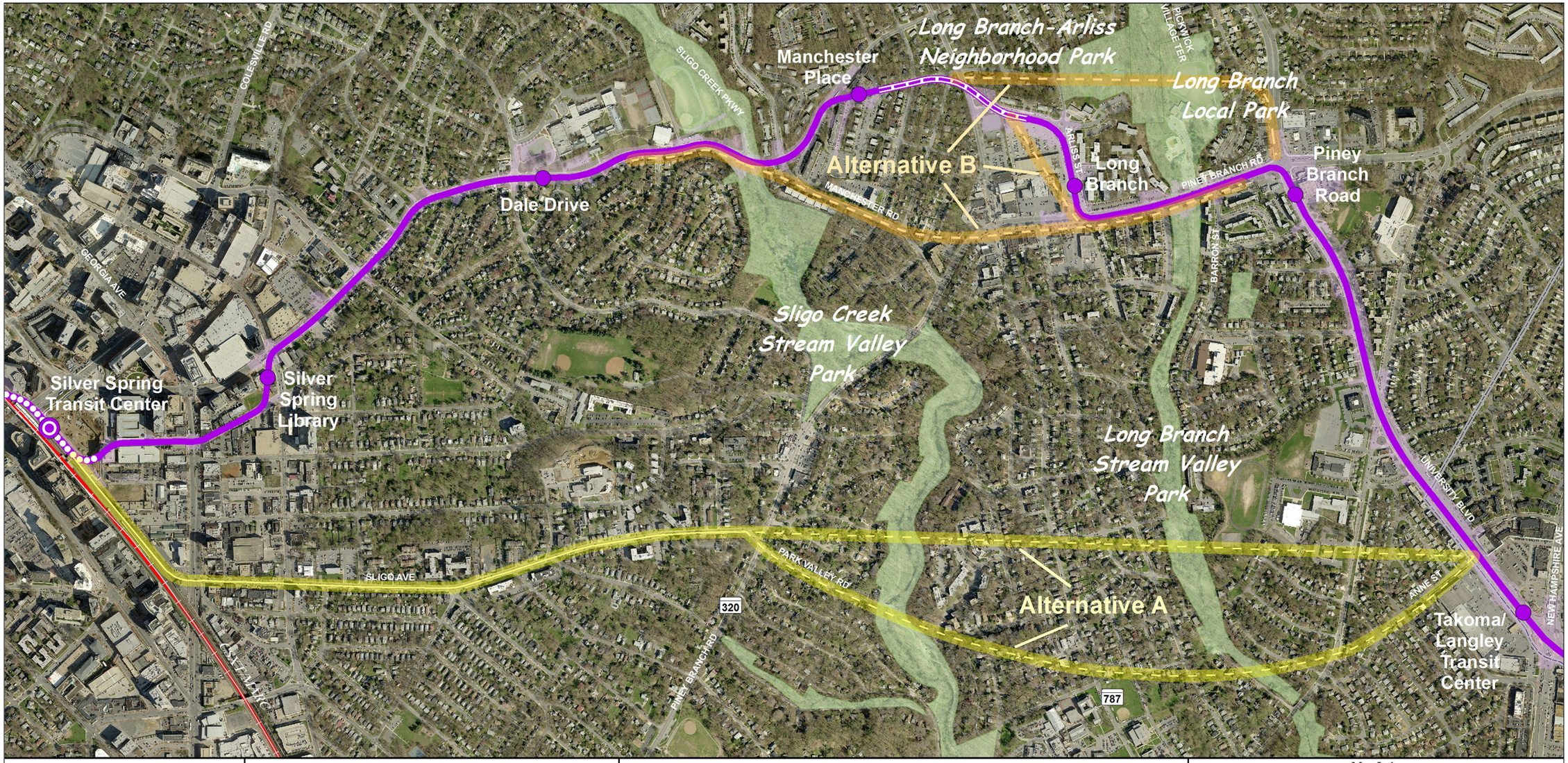
New Alignment Location

Long Branch Local Park extends from just south of Pickwick Village Terrace, approximately 0.25 mile north of the project area, to Piney Branch Road. There are several contiguous parks immediately north of Long Branch Local Park along the Long Branch stream valley including Long Branch-Arliss Neighborhood Park, Long Branch-Wayne Local Park, and Long Branch Stream Valley Park. A portion of Long Branch Stream Valley Park is located immediately south of Piney Branch Road and continues approximately one and a half miles southeast of the project area, ending at New Hampshire Avenue. Overall, Long Branch Local Park and the contiguous parks form a nearly two-and-a-half mile stream valley park system that extends from East Franklin Avenue to the north to New Hampshire Avenue to the south and is nearly perpendicular to Piney Branch Road.

The long, linear nature of the Long Branch stream valley and associated park system, which is aligned from north to south, precludes a surface alignment that passes around and avoids all of the parks within the stream valley system. As shown on Figure 1-15, the University Boulevard corridor cannot be accessed from the Long Branch/Arliss area without crossing one of the Long Branch stream valley parks. While changing the location of the surface alignment could potentially avoid impacts to Long Branch Local Park, it would result in impacts to one of the other parks within the Long Branch stream valley park system. As an alignment

[3] *US 29 Busway Feasibility Study*, Montgomery County Department of Transportation, April 1996

Figure 1-23. Long Branch Local Park Avoidance Alternatives—Tunnel Options



Purple Line

Long Branch Local Park Avoidance Alternatives Tunnel Options

Source: Maryland Transit Administration

Sheet 1 of 1

Alternative A
- Transitway
- Transitway in Tunnel
- Limits of Disturbance

Alternative B
- Transitway in Tunnel
- Limits of Disturbance

Preferred Alternative
- Proposed Station Location
- Connection to Metrorail
- Transitway
- Transitway in Tunnel
- Transitway on Aerial Structure
- Limits of Disturbance

- Park
- Metrorail Red Line
- CSXT/MARC

N W E S

0 500 1,000 2,000 Feet

Map Index

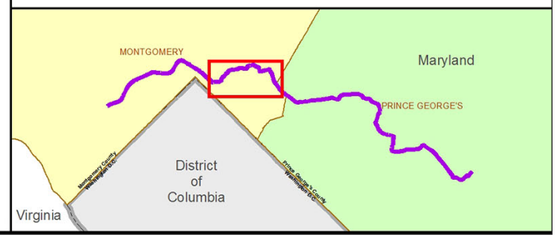
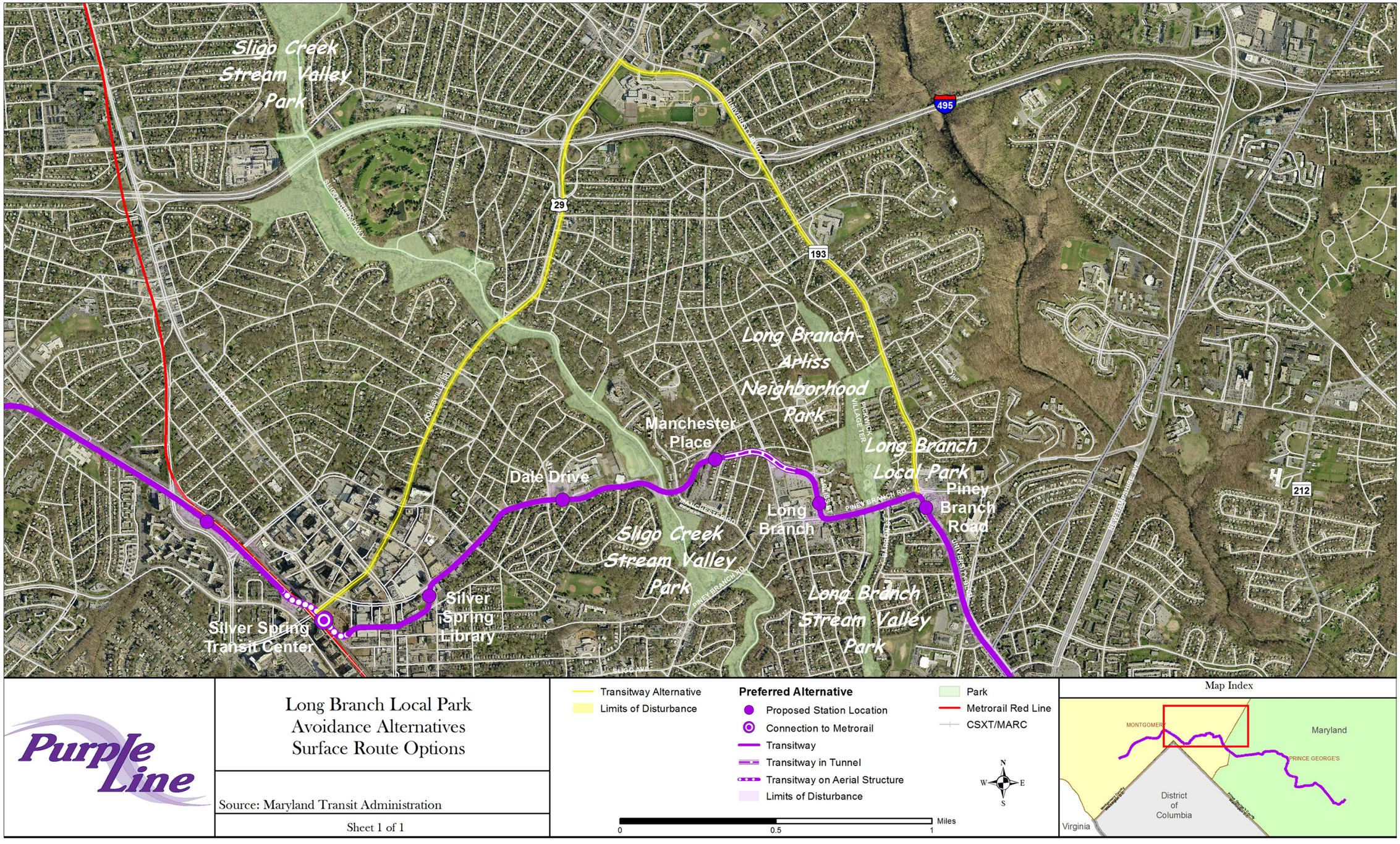


Figure 1-24. Long Branch Local Park Avoidance Alternatives—Surface Option



on a new location would use at least one park at this location, it is not the alternative with the least overall harm to properties protected by Section 4(f). (23 CFR 774.3(c)(1)).

AA/DEIS Alternatives

Like the Preferred Alternative, each of the AA/DEIS alternatives would be aligned in the median of Piney Branch Road and would require widening the roadway to accommodate the transitway. Each of the alternatives would require two dedicated travel lanes, one in each direction. The amount of widening would be the same among the alternatives, and the reasons for widening to the south would be the same among the alternatives.

The amount and location of Long Branch Local Park use would be the same for each alternative, the ability of MTA to mitigate adverse impacts to the property, and the relative severity of the remaining harm to the property after mitigation are the same (23 CFR 774.3(c)(1)(i) and (ii)). Among the alternatives, the Preferred Alternative strongly meets the project purpose and need (23 CFR 774.3(c)(1)(v)). The magnitude of adverse impacts to properties not protected by Section 4(f) is similar among the alternatives (23 CFR 774.3(c)(1)(vi)).

The feasibility of providing left-turn lanes at a signalized park intersection with Piney Branch Road was considered. Providing left-turn lanes on Piney Branch Road would necessitate acquiring additional right-of-way and widening the road to provide sufficient room for the lanes. Roadway widening would use more Long Branch Local Park land as well as land from Long Branch Stream Valley Park across the roadway.

For these reasons, and despite the Preferred Alternative being more costly than all but the High Investment LRT Alternative (23 CFR 774.3(c)(1)(vii)) as discussed in Section 1.4.3, the Preferred Alternative is the alternative with the least overall harm to parks protected by Section 4(f).

Section 1.4.3 presents a corridor-wide least overall harm analysis that considers all Section 4(f) properties.

All Possible Planning to Minimize Harm

As defined in 23 CFR 774.17, FTA and MTA are coordinating with the officials with jurisdiction to evaluate and incorporate into the Preferred Alternative all possible planning to minimize harm. In terms of design, the primary means of minimizing park use is aligning the Preferred Alternative on Piney Branch Road, an existing road and bridge crossing the park. MTA minimized the width of roadway widening to that which is needed to accommodate the Preferred Alternative, the roadway cross section, and the drainage improvements. Other strategies MTA has incorporated into the Preferred Alternative design to minimize park use include retaining walls to limit the area of grading and vegetation removal, selective tree clearing to minimize tree loss, and stream bank stabilization.

Enhanced pedestrian and bicycle connections to the park are included in the Preferred Alternative design. The design of Piney Branch Road includes bicycle lanes enhancing bike access to Long Branch Local Park and facilities, as well as the Long Branch Trail. In addition, there is a new traffic signal with a pedestrian phase at Garland Avenue. The signal will facilitate safe crossing for people traveling between the Long Branch Trail, Long Branch Local Park and local trail/path systems. Improved pedestrian crossings will also be provided on Piney Branch Road at Barron Street.

In addition, as part of the roadway widening, sidewalks on both the north and south sides of Piney Branch Road will be reconstructed. The *Draft Long Branch Sector Plan* (December 2012) indicates that wider sidewalks are planned throughout the area to provide pedestrian-friendly development that would increase community connectivity. Along Piney Branch Road, the Long Branch Sector Plan ultimately proposes wider sidewalks. The Preferred Alternative includes the replacement of the existing five-foot wide sidewalks; however the extension/expansion of the existing culvert under Piney Branch Road is being designed with a higher headwall so that when wider sidewalks are implemented in the future by Montgomery County there is sufficient space for a 10-foot sidewalk and no additional structural

modifications of the culvert would be required at Long Branch Stream.

While the project will not restrict pedestrian and bicycle access to Long Branch Local Park and amenities located within the park, as currently designed, the Preferred Alternative will modify vehicular access to the park, as described above.

As currently designed and as previously mentioned, the Preferred Alternative will result in impacts to the access to Long Branch Community Center. After extensive coordination between MTA and M-NCPPC–Montgomery County Department of Parks, it was determined that MTA will design and construct a new access to Long Branch Community Center. The new access road and parallel trail will tie in directly across from Barron Street, through the existing site of the Miles Glass Company building, which was recently purchased by M-NCPPC–Montgomery County Department of Parks. M-NCPPC–Montgomery County Department of Parks will be responsible for the demolition and removal of materials from the existing site. Relocating the entrance to this signalized intersection will help offset the change in access to the recreation center as a result of the Purple Line. The signalized intersection will facilitate all movements to and from the recreation center except left turns in from Piney Branch Road. Those patrons wanting to access the site from the west will use local roadways to Barron Street and travel through the intersection, make a u-turn at University Boulevard, or park at the library and walk the access trail to the facility. This is consistent with the Long Branch Sector Plan.

Commitments and Mitigation Measures

During construction, use of park land will be minimized by MTA's commitment to complete as much construction as possible from the Piney Branch Road right-of-way rather than using park property. Prior to the start of construction, MTA will work with M-NCPPC–Montgomery County Department of Parks to identify specimen or champion trees in the construction area. Impacts to specimen and champion trees will be avoided within the park, where reasonable. Trees to be preserved will be marked with protective fencing to avoid impacts or removal during construction.

While MTA intends to minimize tree removal during construction and implement selective clearing techniques, tree removal cannot be avoided completely. To compensate for tree loss, new trees will be planted within Long Branch Local Park, particularly along the stream if appropriate. Long Branch Local Park currently has problems with invasive vegetation species. Within the immediate project area, MTA will remove invasive species and replant the disturbed area with native species. An invasive species removal management plan will be developed that will be reviewed by M-NCPPC–Montgomery County Department of Parks. In addition, MTA will restore all areas it has cleared along the Long Branch Stream as a result of its construction activities.

In coordination with M-NCPPC–Montgomery County Department of Parks, MTA has agreed to provide replacement parkland to mitigate the permanent use of land at Long Branch Local Park. MTA will consolidate its mitigation for permanent use of parkland in Montgomery County at a single site adjacent to New Hampshire Estates Neighborhood Park. MTA will continue to coordinate with M-NCPPC–Montgomery County Department of Parks regarding the design and implementation of this mitigation plan.

A work group will be formed between M-NCPPC and MTA to further study and recommend appropriate design and mitigation at Long Branch with the goal of enhancing long-term stream stability and improving the health of the resource. The group will work together, hold field visits, and coordinate with the appropriate resource agencies to gain approval for the recommended improvements. The work group will collect and assess data on the health of downstream resources and the presence of fish and other species. While an existing gravity sewer line under the existing culvert limits the ability to lower the culvert, the work group will study the viability of raising the stream to facilitate fish passage. They will also review the capacity of the planned conveyance and study appropriate stream improvements upstream and downstream of the road crossing. Finally, the work group will weigh the cost (impacts and financial) and benefits of the proposals and recommend specific mitigation. The final recommended mitigation measure is

contingent upon approval from the US Army Corps of Engineers and Maryland Department of the Environment.

MTA will maintain full access to Long Branch Local Park, including Long Branch Community Center, during construction. MTA will avoid affecting park access and parking during construction within Long Branch Stream Valley Park during June and July to minimize operational impacts to Long Branch Community Center.

Sidewalk improvements along Piney Branch Road will be designed to meet ADA requirements. The headwalls and wingwalls associated with the culvert extension and new pipe will be raised to accommodate future sidewalk widening to 10 feet without impacting the need for additional culvert extension.

Beyond the culvert extension and construction of the parallel pipe under Piney Branch Road, no stormwater management facilities will be constructed within the boundaries of the Park unless required by the terms of a stormwater permit.

MTA will replace guardrail, signs, and other existing structures disturbed or removed within its construction area with new structures designed to match the existing elements throughout the park.

Long Branch Stream Valley Park

Section 4(f) Property Description

Long Branch Stream Valley Park is approximately 41 acres in size. The park extends from Franklin Avenue to the confluence with Sligo Creek near the Montgomery County–Prince George's County Line north to Piney Branch Road along Long Branch stream. Amenities within Long Branch Stream Valley Park include playgrounds, athletic fields, athletic courts, picnic areas, natural areas, and a paved recreational/commuter trail. The park is owned and maintained by M-NCPPC–Montgomery County Department of Parks, funded in part by Maryland Program Open Space funds. Within the project study area, the park is an undeveloped forested area that includes the Long Branch Trail.

Use of Section 4(f) Property—*De minimis* Use

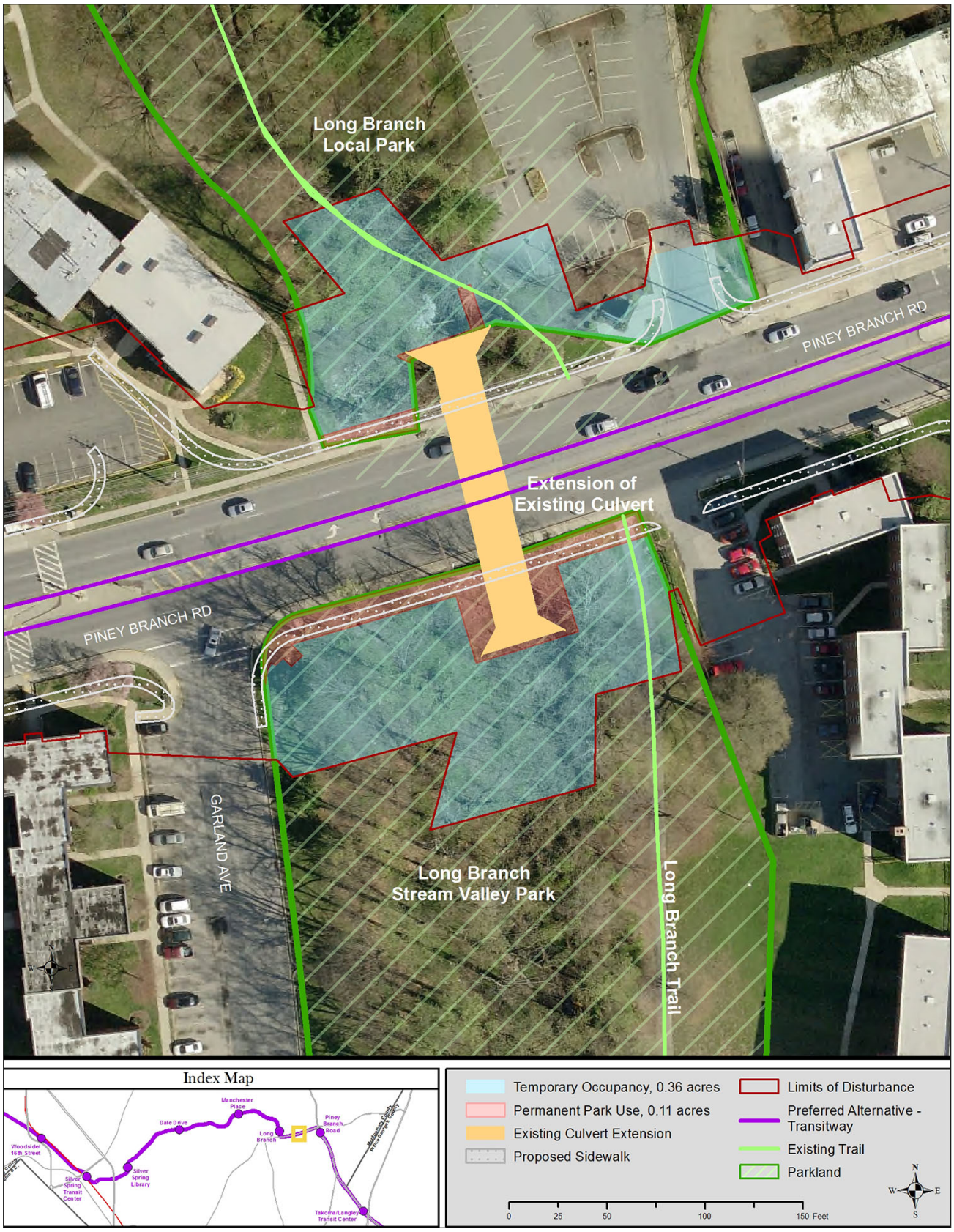
The Preferred Alternative will be aligned within the median of Piney Branch Road between Long Branch Stream Valley Park to the south and Long Branch Local Park to the north (Figure 1-25). In its coordination with the M-NCPPC–Montgomery County Department of Parks, MTA determined it will use approximately 0.11 acre of property from Long Branch Stream Valley Park to widen Piney Branch Road to accommodate the Preferred Alternative, lengthen the existing culvert conveying Long Branch under Piney Branch Road and reconstruct sidewalks along the roadway. The road cross section will include two dedicated lanes for the transitway, one in each direction, an 11-foot wide vehicle lane and a 16-foot wide mixed-traffic lane for vehicle and bicycle use in each direction. Five-foot wide sidewalks will be provided on both north and south sides of Piney Branch Road. The Preferred Alternative will include improved signalized pedestrian crossings along Piney Branch Road, which will benefit trail users wanting to cross Piney Branch Road.

During construction, approximately 0.36 acre of temporary construction easements will be required for access to the work area along Piney Branch Road. Specifically, the work area is needed to enable construction of the widened roadway and culvert extension. The area of temporary easements is currently wooded and undeveloped. Long Branch Stream Valley Park and Long Branch Trail will remain open throughout construction.

MTA is coordinating closely with the M-NCPPC–Montgomery County Department of Parks, the officials with jurisdiction over the park, to minimize use of park property. Specifically, roadway widening is primarily to the south to minimize impacts to the access driveway of Long Branch Local Park to the north, the portion of the Long Branch Trail within the park, and the businesses east and west of the park. The portion of the park to be permanently used is undeveloped and wooded.

MTA has coordinated with M-NCPPC–Montgomery County Department of Parks during Preferred Alternative design development. Section 1.5 summarizes MTA's coordination activities; memoranda of MTA meetings with M-NCPPC–Montgomery County Department of Parks are provided in FEIS Appendix I and ROD Attachment E.

Figure 1-25. Long Branch Stream Valley and Long Branch Local Parks



Commitments and Mitigation Measures

In coordination with M-NCPPC–Montgomery County Department of Parks, MTA has agreed to provide replacement parkland to mitigate the permanent use of land at Long Branch Stream Valley Park. MTA will consolidate its mitigation for permanent use of parkland in Montgomery County at a single site adjacent to New Hampshire Estates Neighborhood Park. MTA will continue to coordinate with M-NCPPC–Montgomery County Department of Parks regarding the design and implementation of this mitigation plan.

MTA is committed to an environmentally sensitive stream crossing with a goal of maximizing capacity and reducing stream velocity. A work group will be formed between M-NCPPC and MTA to further study and recommend appropriate design and mitigation at Long Branch with the goal of enhancing long-term stream stability and improving the health of the resource. The group will work together, hold field visits, and coordinate with the appropriate resource agencies to gain approval for the recommended improvements. The work group will collect and assess data on the health of downstream resources and the presence of fish and other species. While an existing gravity sewer line under the existing culvert limits the ability to lower the culvert, the work group will study the viability of raising the stream to facilitate fish passage. They will also review the capacity of the planned conveyance and study appropriate stream improvements upstream and downstream of Piney Branch Road. Finally, the work group will weigh the cost (environmental and financial) and benefits of the proposals and recommend specific mitigation. The final recommended mitigation measure is contingent upon approval from the US Army Corps of Engineers and Maryland Department of the Environment.

During construction, use of park land will be minimized by MTA's commitment to complete as much construction as possible from the Piney Branch Road right-of-way rather than using park property. Prior to the start of construction, MTA will work with M-NCPPC–Montgomery County Department of Parks to identify specimen or champion trees in the construction area. Impacts to specimen and champion trees will be avoided within the park, where reasonable. Trees to be preserved will be marked with protective fencing to avoid impacts or removal during construction.

While MTA intends to minimize tree removal during construction and implement selective clearing techniques, tree removal cannot be avoided completely. To compensate for tree loss, new trees will be planted within Long Branch Stream Valley Park, particularly along the stream if appropriate.

MTA will remove invasive species in the immediate project area and develop a management plan for review by M-NCPPC. Areas that are cleared as a result of invasive species removal will be replanted with native vegetation.

MTA will replace guardrail, signs, and other existing structures disturbed or removed within its construction area with new structures designed to match the existing elements throughout the park.

MTA will implement the following additional mitigation measures:

- Maintain access to Long Branch Trail during construction.
- Avoid impacts to specimen trees within the park, where reasonable.
- Design sidewalk improvements along Piney Branch Road to meet ADA requirements. The headwalls and wingwalls associated with the culvert extension and new pipe will be raised to accommodate future sidewalk widening to 10 feet without impacting the need for additional culvert extension.
- Avoid affecting park access and parking within Long Branch Local Park during construction within Long Branch Stream Valley Park during June and July to minimize operational impacts to Long Branch Community Center if specific work activities in Long Branch Stream Valley Park necessitate work or access through Long Branch Local Park.

Section 4(f) Determination

The permanent and temporary uses by the Preferred Alternative will not adversely affect the features, attributes or activities—playgrounds athletic fields, picnic areas, natural areas and trails—that qualify

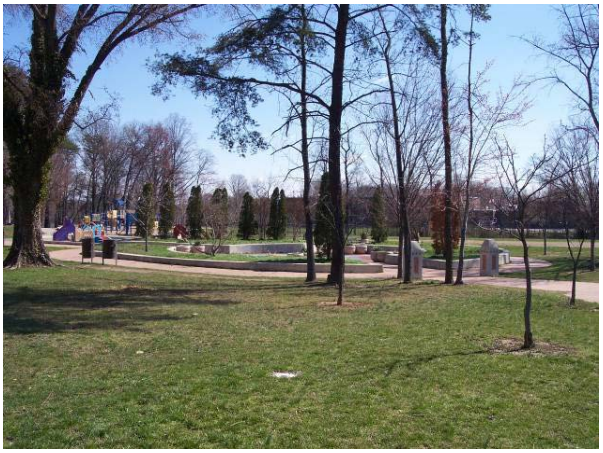
the park for Section 4(f) protection. FTA has made a *de minimis* use determination for the Preferred Alternative at Long Branch Stream Valley Park. M-NCPPC–Montgomery County Department of Parks concurred with FTA's *de minimis* use determination for Long Branch Stream Valley Park on December 17, 2013 (Record of Decision Attachment E).

New Hampshire Estates Neighborhood Park

Section 4(f) Property Description

New Hampshire Estates Neighborhood Park is located along University Boulevard near Piney Branch Road. The property was purchased in 1976 by M-NCPPC–Montgomery County Department of Parks for use as a park (Figure 1-26). The park is 4.7 acres in size and features two playgrounds, a football/soccer field, and a picnic area. The park is owned and maintained by M-NCPPC–Montgomery County Department of Parks, funded in part by Maryland Program Open Space funds. M-NCPPC–Montgomery County Department of Parks is planning to redevelop the park in the future.

Figure 1-26. New Hampshire Estates Neighborhood Park Playground



Use of Section 4(f) Property—*De minimis* Use

The Preferred Alternative will be aligned through the median of Piney Branch Road, turning southeast into the median of University Boulevard (Figure 1-27). The Piney Branch Road Station will be located on University Boulevard directly south of the intersection with Piney Branch Road. University Boulevard will be widened to accommodate the dedicated transitway and station, while maintaining two lanes of traffic in each direction, a third approach lane on northbound University Boulevard, turn lanes, and sidewalks.

Initially, MTA considered widening University Boulevard toward and/or away from the park. However, widening away from the park will result in substantial residential and business displacements. In addition, it will require the displacement of an existing Potomac Electric Power Company (Pepco) substation located along University Boulevard, directly west of the southern portion of New Hampshire Estates Neighborhood Park. For these reasons and the substantially high impacts of the relocations, particularly the Pepco substation, MTA aligned the transitway in the median of University Boulevard, and initiated discussions with M-NCPPC–Montgomery County Department of Parks regarding potential use of a portion of the park if acceptable minimization and mitigation strategies could be provided. Widening University Boulevard to accommodate the transitway in the median will result in the permanent use of 0.20 acre of New Hampshire Estates Neighborhood Park, directly adjacent to University Boulevard. Park amenities affected by the use will include some sitting and grassy areas, landscaped structures, artwork, decorative brick paving adjacent to University Boulevard, and an existing parking lot.

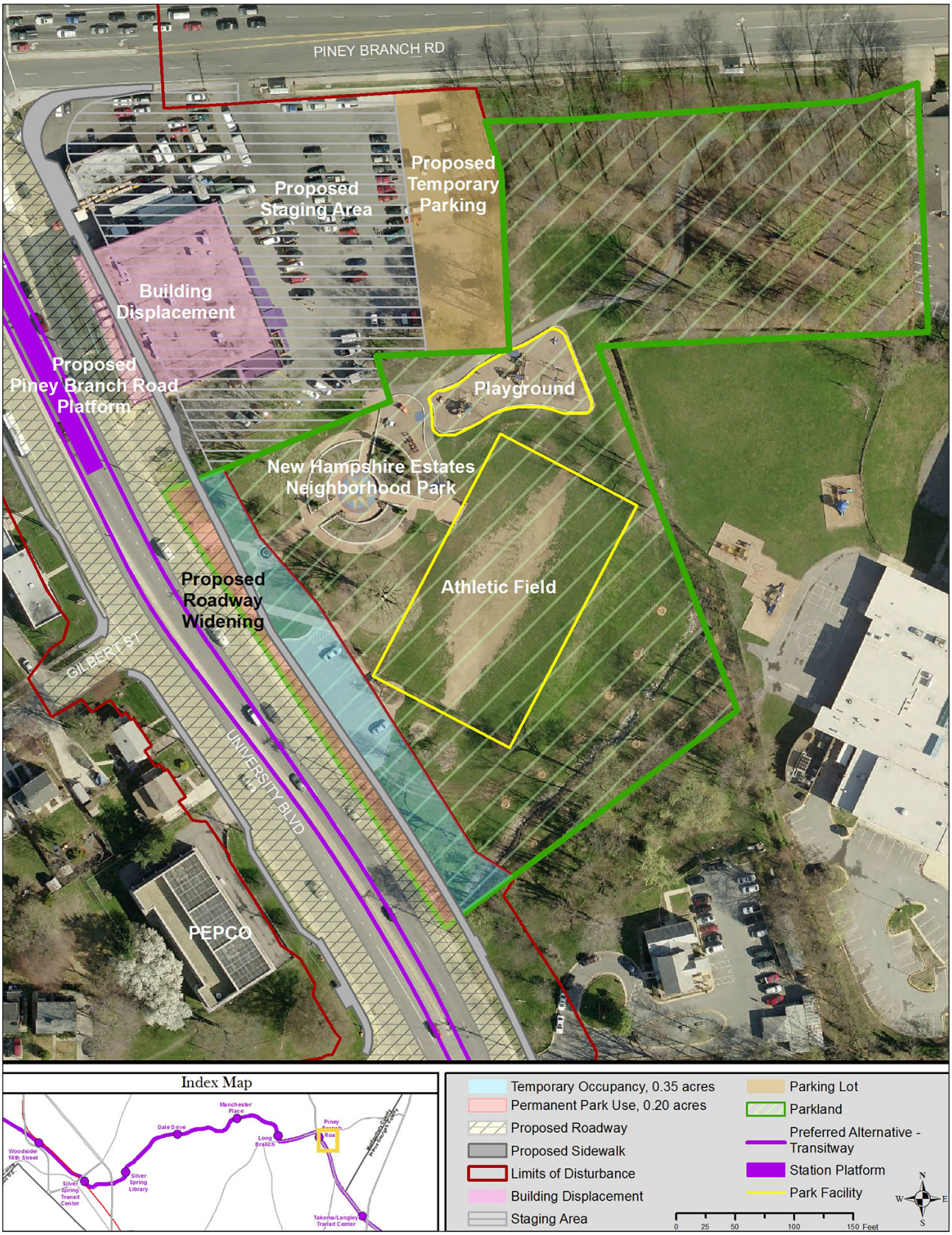
During construction, MTA will temporarily use 0.35 acre of the park to undertake the roadway widening, and stream and culvert upgrades. The park land used temporarily includes grassy and landscaped areas, paved walkways, and an existing parking lot.

Commitments and Mitigation Measures

In coordination with the M-NCPPC–Montgomery County Department of Parks regarding measures to minimize harm to the park, MTA agreed to eliminate the space between the expanded roadway curb and sidewalk and implement a closed drainage system. In addition, MTA will address a drainage issue on the eastern edge of the park by upgrading an existing stormwater culvert and grading the asso-

ciated stream for a short distance. Memoranda of MTA meetings with M-NCPPC–Montgomery

Figure 1-27. New Hampshire Estates Neighborhood Park



County Department of Parks are provided in FEIS Appendix I and ROD Attachment E.

In coordination with M-NCPPC–Montgomery County Department of Parks, MTA has agreed to provide replacement parkland to mitigate the permanent use of land at New Hampshire Estates Neighborhood Park. MTA will consolidate its mitigation for the permanent use of parkland within Montgomery County at a single site adjacent to New Hampshire Estates

Neighborhood Park. The land will be used by MTA during Purple Line construction for temporary parking and construction staging, then provided to the park as permanent replacement land after construction is completed. M-NCPPC–Montgomery County Department of Parks will accommodate the replacement land in their future redevelopment plan for the park. MTA will continue to coordinate with M-NCPPC–Montgomery County Department of Parks regarding the design and implementation of its mitigation plan and the effects of the project on the park.

MTA will implement the following additional mitigation measures:

- Maintain access to the park during construction including temporary parking and access, as appropriate.
- Provide a functional interim condition, for review and approval of M-NCPPC–Montgomery County Department of Parks, for the park prior to its planned redevelopment.
- Design sidewalk improvements along University Boulevard to meet ADA requirements.
- Will not construct stormwater management facilities within the boundaries of the park unless required by the terms of a stormwater permit (beyond the retrofit of the existing drainage ditch).
- Replace guardrails, signs, railing and other structures on University Boulevard within or adjacent to the park to match existing park elements, as reasonable.

Section 4(f) Determination

The permanent and temporary uses of the Preferred Alternative will not adversely affect activities or features, attributes or activities—playgrounds, athletic field, picnic areas and aesthetic features—that qualify the New Hampshire Estates Neighborhood Park for Section 4(f) protection. FTA has made a *de minimis* use determination for the Preferred Alternative at the New Hampshire Estates Neighborhood Park. Montgomery County Department of Parks concurred with FTA's *de minimis* use determination for New Hampshire Estates Neighborhood Park on December 17, 2013 (Record of Decision Attachment E).

Northwest Branch Stream Valley Park and Northwest Branch Trail

Section 4(f) Property Description

Northwest Branch Stream Valley Park is 510 acres in size and is located along the Northwest Branch of the Anacostia River, north and south of University Boulevard (MD 193), between Riggs Road and Adelphi Road in Prince George's County. The park was purchased in part using Capper-Cramton Act funding. In the vicinity of the Preferred Alternative, the park also includes Lane Manor Community Recreation and Aquatic Center, Adelphi Manor Community Recreation Center, and University Hills Neighborhood Park. Northwest Branch Stream Valley Park and all of the related facilities are owned and maintained by M-NCPPC–Prince George's County Department of Parks and Recreation, funded in part by Maryland Program Open Space funds.

Northwest Branch Trail (Figure 1-28) is located in southeastern Montgomery County and northeastern Prince George's County. It is 16 miles in length and extends north and south of the Capital Beltway. North of the Capital Beltway, approximately ten miles of the trail's surface is natural surface. The hard surface portion of the trail is part of the Prince George's County's Anacostia Tributary Trail System, while the natural surface portion is used for hiking and extends to Wheaton Regional Park. Heading southeast, the trail extends into Prince George's County, ending at the confluence of the Northwest and Northeast branches of the Anacostia River in Hyattsville. The trail has a paved asphalt surface at University Boulevard and in the immediate vicinity.

Figure 1-28. Northwest Branch Trail

Use of Section 4(f) Property—*De minimis* Use

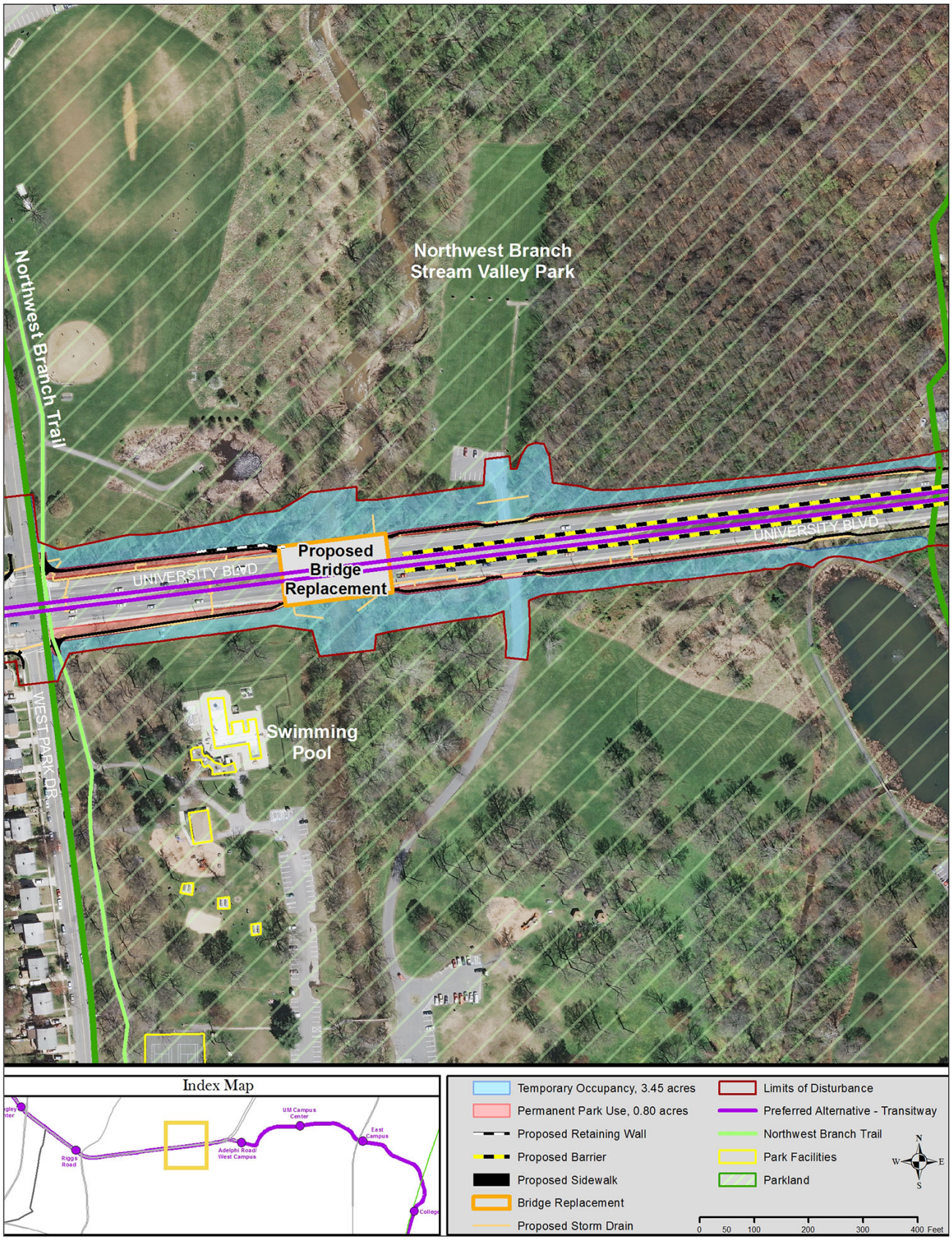
The Preferred Alternative transitway will be aligned through the median of University Boulevard, which crosses Northwest Branch Stream Valley Park perpendicularly (Figure 1-29). The Preferred Alternative includes widening University Boulevard to accommodate the Purple Line and replacing the existing bridge over the Northwest Branch of the Anacostia River with a new, wider bridge to match the wider roadway. MTA will permanently use approximately 0.80 acre of property from Northwest Branch Stream Valley Park. The parkland to be used is grassy or wooded and undeveloped. MTA will not permanently use any facilities associated with Northwest Branch Stream Valley Park.

Access to the park will change with the permanent closure of the median on University Boulevard between West Park Drive and Adelphi Road, eliminating left-turning movements. The median closure is necessitated by the Purple Line using the median and the prohibition of unsignalized turns across the transitway. Vehicles traveling west on University Boulevard will have to make a U-turn at West Park Drive to access the existing playground within Northwest Branch Stream Valley Park, east of Lane Manor Community Recreation and Aquatic Center. Eastbound vehicles will have to make a U-turn at Adelphi Road to access the archery range located to the north of University Boulevard and west of Temple Street.

In consultation with the M-NCPPC–Prince George's County and NCPC, the latter having jurisdiction under the Capper-Cramton Act, MTA has agreed to address several drainage and water quality issues along University Boulevard. Taking this action will require additional temporary construction easements; however, land used for upgrading the existing drainage system will be returned to the park upon completion of the construction of the project. In particular, both north and south of University Boulevard, between West Park Drive and Temple Street, the existing drainage ditches directly adjacent to University Boulevard will be relocated to convey discharge toward the Northwest Branch of the Anacostia River. A retaining wall will be constructed near the eastern end of an existing drainage ditch located north of University Boulevard and east of West Park Drive to maintain the ditch and avoid disturbing the embankment that supports the existing pond, located to the north of the wall.

MTA will temporarily use approximately 3.45 acres of Northwest Branch Stream Valley Park during construction to access work areas and address drainage issues. The Northwest Branch of the Anacostia River will be temporarily impacted approximately 125 feet upstream to 125 feet downstream of University Boulevard to temporarily divert the stream while the new University Boulevard Bridge is built and grading refinements are made to the stream channel north of University Boulevard. These refinements will provide positive drainage to the Northwest Branch of the Anacostia River and the existing swale that conveys stormwater from University Boulevard to the stream. These activities are intended to improve the water quality of and drainage flows to the Northwest Branch of the Anacostia River. The temporarily used park lands will be returned to M-NCPPC–Prince George's County when construction is complete. The Northwest Branch Trail will be temporarily relocated from the eastern side to the western side of West Park Drive during construction. Full access to the trail and park facilities will be maintained during construction.

Figure 1-29. Northwest Branch Stream Valley Park and Northwest Branch Trail



MTA has coordinated with M-NCPPC–Prince George's County during project design development. Section 1.5 summarizes MTA's coordination activities; memoranda of MTA meetings with M-NCPPC–Prince George's County and NCPC are provided in FEIS Appendix I and ROD Attachment E.

Commitments and Mitigation Measures

To minimize impacts on Northwest Branch Park, MTA will:

- Assist M-NCPPC–Prince George's County with the identification of parkland to mitigate the permanent use of land within Northwest Branch Stream Valley Park.
- Continue to coordinate with M-NCPPC–Prince George's County regarding the project design and development of mitigation measures.
- Replace guardrails, signs, and other existing structures that are disturbed within or adjacent to the park by Purple line construction with new structures that match existing elements within the park, where reasonable.
- Develop landscape plans, including tree and vegetation replacement (at agreed upon mitigation ratios in consultation with M-NCPPC–Prince George's County), using native and approved species to mitigate the temporary and permanent removal of vegetation and trees.
- Include the landscape plans for areas within the park in the project plans and specifications and make them available for review and approval by M- NCPPC–Prince George's County at milestones in the project development process (i.e., 60% design and 90% design).
- Restore work areas temporarily disturbed during construction.
- Coordinate its construction schedule with M-NCPPC–Prince George's County to avoid impacts to the annual Hispanic Festival that is held in the park.
- Continue to coordinate with M-NCPPC–Prince George's County to minimize construction impacts to the park.

A land exchange agreement will be executed between MTA and M-NCPPC to mitigate for the permanent use of parkland within Prince George's County as a result of the project. Mitigation for park impacts throughout Prince George's County may be consolidated in one or more locations. The financial valuation and compensation of the permanent and temporary uses will be determined through an approved appraisal process between M-NCPPC–Prince George's County and MTA following all applicable Federal and State laws and practices.

Section 4(f) Determination

In coordination with M-NCPPC–Prince George's County and NCPC, FTA has determined that the Preferred Alternative will not adversely affect the features, attributes or activities—trails, playgrounds, aquatic center, athletic fields and courts, picnic and recreational areas and a duck pond—that qualify the park for Section 4(f) protection. FTA has made a *de minimis* use determination for the Preferred Alternative at Northwest Branch Stream Valley Park. M-NCPPC–Prince George's County concurred with FTA's *de minimis* use determination for Northwest Branch Stream Valley Park and Northwest Branch Trail in a letter dated January 24, 2014 (Record of Decision Attachment E).

Anacostia River Stream Valley Park and Northeast Branch Trail

Section 4(f) Property Description

Anacostia River Stream Valley Park encompasses 794 acres of land and includes the following features and attributes: playgrounds, athletic fields, community centers, various courts, and trails (Figure 1-30). The park is owned and maintained by M-NCPPC–Prince George's County Department of Parks and Recreation, funded in part by Maryland Program Open Space funds. In the vicinity of the Preferred Alternative, the park was purchased in part using Capper-Cramton Act Funding. Two national bicycle routes, the American Discovery Trail and the East Coast Greenway, converge on the Northeast Branch Trail in the project area and cross the Preferred Alternative alignment.

The Northeast Branch Trail is part of the Anacostia Tributary Trail system. It is owned and maintained by M-NCPPC–Prince George's County Department of Parks and Recreation. The Northeast Branch

Trail is 3.4 miles in length and runs northeast from near US 1 in Hyattsville to Lake Artemesia. Several disconnected sections of trail were constructed prior to the 1990s. Beginning in the early 1990s additional sections were constructed to form one continuous trail.

Figure 1-30. Anacostia River Stream Valley Park

Use of Section 4(f) Property—*De minimis* Use

MTA, in coordination with M-NCPPC–Prince George's County and NCPC, the latter having jurisdiction under the Capper-Cramton Act, determined that the Preferred Alternative transitway will be aligned parallel to and immediately south of River Road on Anacostia River Stream Valley Park land. Whereas MTA initially considered an alignment within River Road, design factors led MTA to pursue the Preferred Alternative alignment. First, the roadway curve at the M Square station location does not meet design requirements which prescribe a 300 foot straight section. Second, MTA will have had to widen River Road to accommodate the transitway, thereby using park property and incur additional project cost.

The transitway will cross Northeast Branch Trail perpendicularly. The transitway will be built on a permanent embankment for most of its length through the park, while it will be on its own structure over Northeast Branch Trail, the Northeast Branch of the Anacostia River, and the unnamed trail connection to Kenilworth Avenue (Figure 1-31). The transitway will be at approximately the same elevation as River Road. The portions of the park that will be temporarily used are grassy or wooded and undeveloped.

MTA will permanently use approximately 1.36 acres of Anacostia River Stream Valley Park owned by M-NCPPC–Prince George's County. Property that will be permanently used abuts River Road to the south and extends from Haig Drive to the end of M-NCPPC–Prince George's County property, just west of Kenilworth Avenue and east of the Northeast Branch of the Anacostia River. The land to be permanently used is partly grassy and partly wooded and undeveloped.

Overall, MTA will temporarily use approximately 2.58 acres of the Anacostia River Stream Valley Park during construction. Construction activities will occur primarily to the south of River Road for the transitway, and relocation of the unnamed trail connection to Kenilworth Avenue, including a staging and storage area for bridge construction. MTA will use a currently undeveloped parcel of park land at the southeast quadrant of the River Road-Haig Drive/University Research Court intersection as the temporary construction staging area. MTA is coordinating with M-NCPPC–Prince George's County regarding the long-term use of this parcel. Upon completion of construction, MTA will clear and grade the parcel, enabling M-NCPPC–Prince George's County to construct a futsal[4] or other court on the site at a later date.

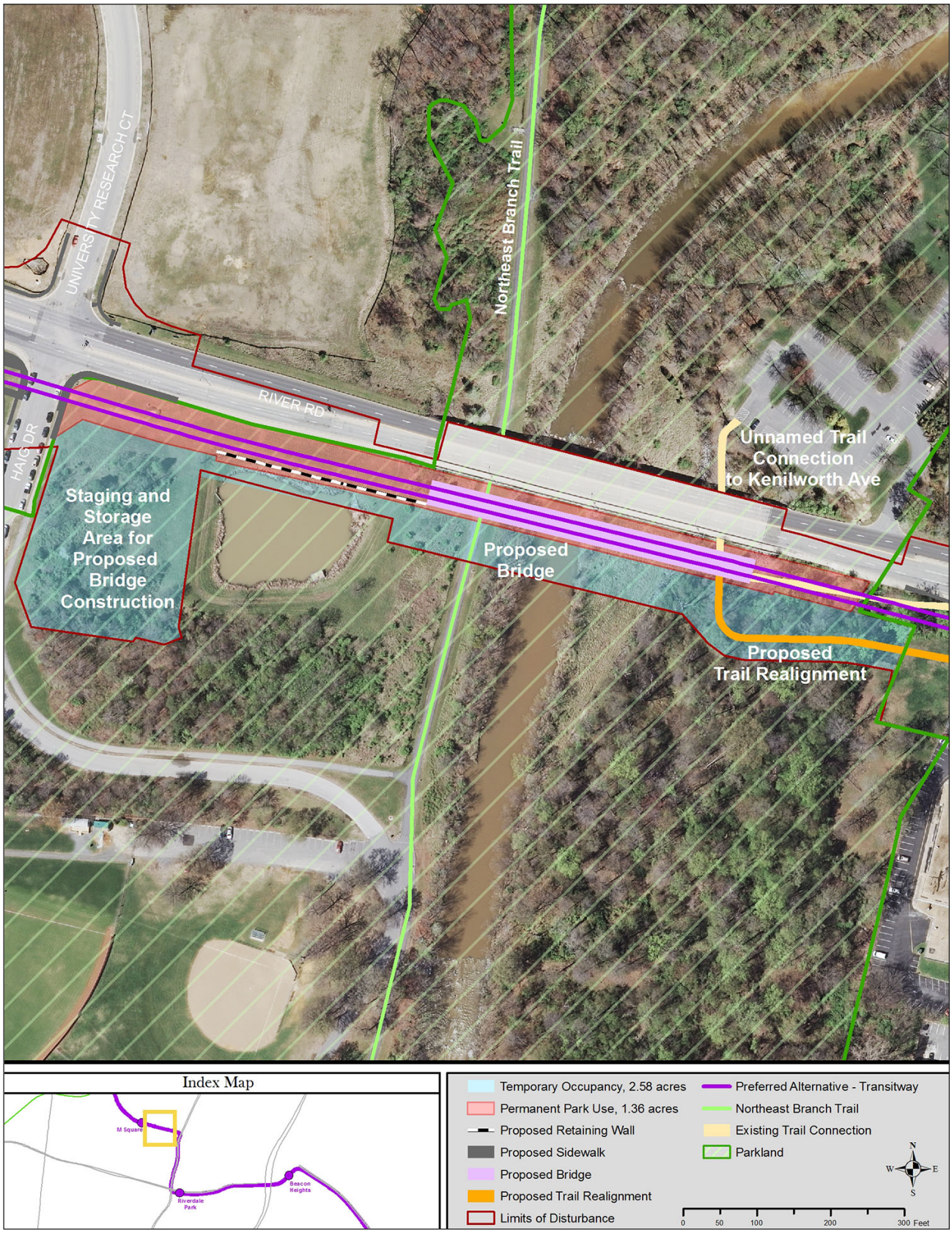
Commitments and Mitigation Measures

MTA has coordinated with M-NCPPC–Prince George's County during project design development. Section 1.5 summarizes MTA's coordination activities; memoranda of MTA meetings with M-NCPPC–Prince George's County and NCPC are provided in FEIS Appendix I and ROD Attachment E. In consultation with the M-NCPPC–Prince George's County and NCPC on measures to minimize harm, MTA has agreed to permanently relocate the unnamed trail connection to Kenilworth Avenue that is currently located east of the stream on the south side of River Road. Specifically, the trail will be shifted to the south, outside of the

[4] Futsal is a variant of soccer that is played on a smaller hard surface pitch.

transitway alignment. In addition, where Haig Drive and University Research Court intersect with River Road, MTA will remove the

Figure 1-31. Anacostia River Stream Valley Park and Northeast Branch Trail



traffic circle and replace it with a signalized intersection prior to construction to allow for safe pedestrian access and vehicular traffic crossing the Preferred Alternative transitway. The replacement of the traffic circle with a signalized intersection will also serve to avoid the queuing of traffic when trains are moving through.

Other minimization and mitigation measures MTA will implement include:

- Assist M-NCPPC–Prince George's County with the identification of parkland to mitigate the permanent use of land within Anacostia River Stream Valley Park and replace permanently used land in-kind.
- Replace guardrails, signs, and other existing structures that are disturbed within or adjacent to the park by MTA construction with new structures that match the existing elements within the park, where reasonable.
- Will not place stormwater management facilities within the park unless required by the terms of a stormwater permit.
- Continue to coordinate with M-NCPPC–Prince George's County regarding the project design and development of mitigation measures.
- Develop landscape plans including tree and vegetation replacement (at agreed upon mitigation ratios in consultation with M-NCPPC–Prince George's County) using native and approved species to mitigate the temporary and permanent removal of vegetation and trees.
- Include the landscape plans for areas within the park in the project plans and specifications and make them available for review and approval by M-M-NCPPC–Prince George's County at milestones in the project development process (i.e., 60% design and 90% design).
- Maintain access to the park and Northeast Branch Trail during construction including a temporary detour of the trail to Haig Drive during construction crossing River Road at grade to University Research Court and through the M Square property to reconnect to Northeast Branch Trail.
- Coordinate temporary trail detours with M-NCPPC–Prince George's County.
- Restore the trail to its existing configuration upon completion of the project.
- Coordinate the identification of specimen or champion trees and selective tree clearing with M-NCPPC–Prince George's County.
- Establish a buffer area required for protection and mark in the design plans and in the field to protect specimen or champion trees.
- Replant and restore trees within areas of the park cleared during construction where reasonable.
- Identify prior to construction the presence of invasive plant species in all areas where vegetation will be disturbed and develop a two-year invasive plant species avoidance and removal program within the project limits.
- Submit the invasive plant species avoidance and removal program to M-NCPPC–Prince George's County for approval and implementation by MTA.

A land exchange agreement will be executed between MTA and M-NCPPC to mitigate for the permanent use of parkland within Prince George's County as a result of the project. Mitigation for park impacts throughout Prince George's County may be consolidated in one or more locations. The financial valuation and compensation of the permanent and temporary uses will be determined through an approved appraisal process between M-NCPPC–Prince George's County and MTA following all applicable Federal and State laws and practices.

Section 4(f) Determination

The permanent and temporary uses by the Preferred Alternative will not adversely affect the features, attributes or activities—playgrounds, athletic fields, and courts, community centers and trails—that qualify the park for Section 4(f) protection. FTA has made a *de minimis* use determination for the Preferred Alternative at Anacostia River Stream Valley Park. No permanent use of Northeast Branch Trail or the unnamed trail connection to Kenilworth Avenue will occur. M-NCPPC–Prince George's County concurred with FTA's *de minimis* use determination for Anacostia River Stream Valley Park and Northeast Branch Trail in a letter dated January 24, 2014 (Record of Decision Attachment E).

Baltimore-Washington Parkway

Section 4(f) Property Description

The Baltimore-Washington Parkway (MD 295) (PG: 69-26) was listed in the National Register of Historic Places in 1991. The Baltimore-Washington Parkway (Gladys Noon Spellman Parkway) is a 32-mile divided highway that extends from the US 50/MD 201 interchange at the Washington DC border, north to I-95 in Baltimore (Figure 1-32). For most of its length the roadway is four lanes wide. Built between 1950 and 1954 and opened in 1954, the parkway has a variable-width median and is bounded by a buffer of natural forest and cultivated vegetation. The roadway follows gently rolling terrain and has modest vistas. Visitors experience the park primarily by driving on the parkway.

The median varies between 15 to 200 feet wide and the right-of-way ranges from 400 to 800 feet wide. The median vegetation ranges from mown grass to dense woodland. In the study area, the parkway passes over Riverdale Road on two bridges separated by a wide median. The land around the bridges consists of sparsely treed and grassed slopes within the interchange, with a denser, forested median to the north and south of the interchange and denser forests along the eastern and western boundaries of the parkway to the north of Riverdale Road. Denser forests exist along the eastern and western boundaries of the parkway to the south of Riverdale Road with residential development abutting both sides of the park property.

Figure 1-32. Baltimore-Washington Parkway Bridge

The parkway was originally designed as a defense highway and alternate commuter route. Nineteen miles of the Baltimore-Washington Parkway are owned and maintained by the National Park Service (NPS). The NPS-owned portion of the parkway extends from the eastern border of Washington DC northeast through Prince George's County and into Anne Arundel County to the MD 175 (Jessup Road) interchange, where the SHA jurisdictional boundary begins. The parkway's appended name commemorates Gladys Noon Spellman, a local educator and former congresswoman who died in 1988. The portion of the parkway in the study area is owned by the US government and operated by the NPS.

Use of Section 4(f) Property—*De minimis* Use

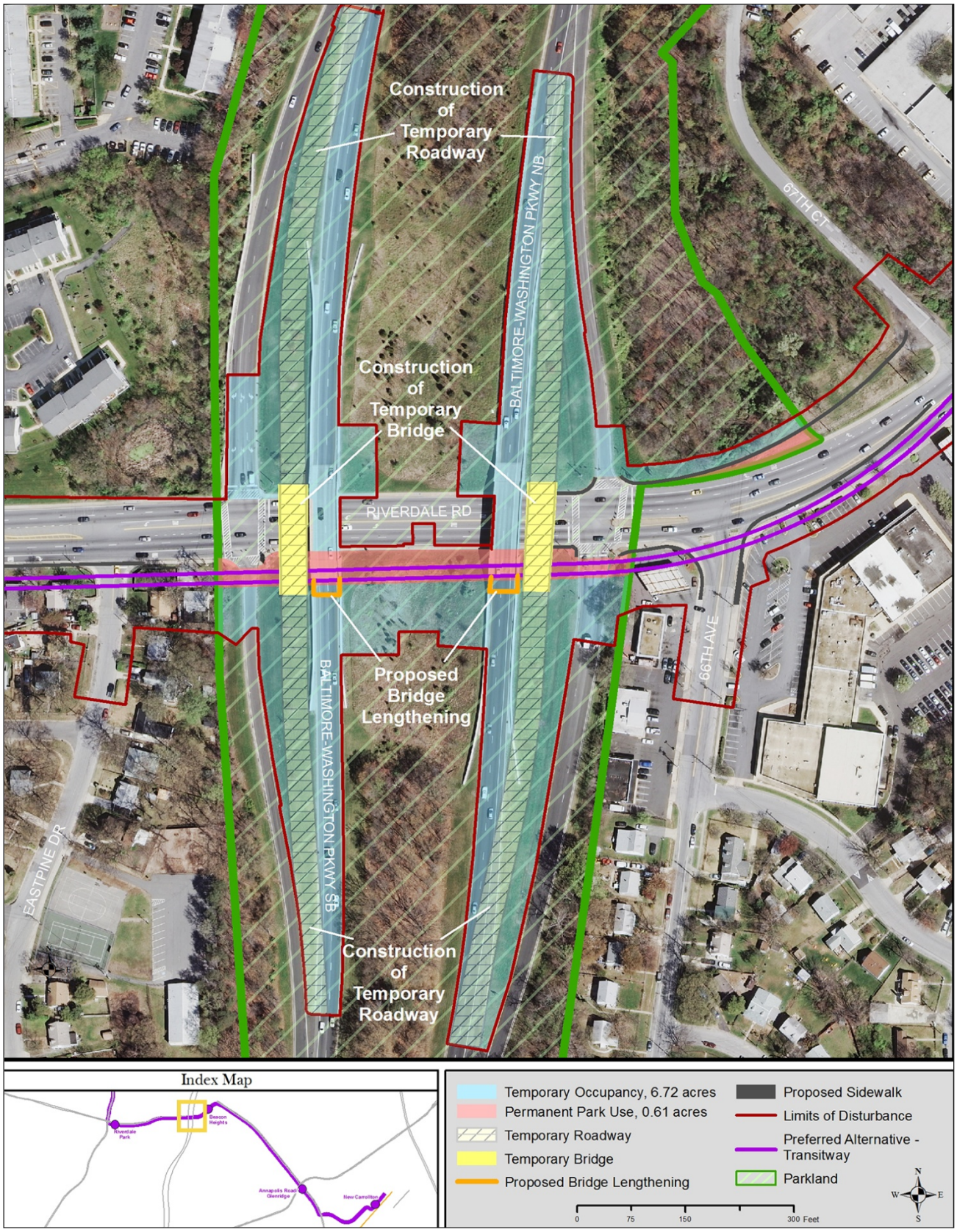
The Preferred Alternative will be aligned directly south of Riverdale Road (MD 410) on two dedicated transitway lanes (Figure 1-33). As the existing parkway bridges over Riverdale Road are insufficiently long to span Riverdale Road and the new transitway, MTA will replace the existing Baltimore-Washington Parkway bridges with longer bridge spans. In coordination with the NPS—National Capital Parks East, two temporary bridges, one in each direction, will be constructed on the outside of the existing Parkway to maintain two lanes of traffic in each direction. The roadway approaches to the bridges will be temporarily shifted to align with the temporary bridges.

MTA will require approximately 6.72 acres of temporary construction easements on parkway property to install the temporary bridges, realign the parkway approaches to the temporary bridges, construct the new bridges, and construct the transitway. Approximately 3.82 acres of park property and 2.90 acres of parkway roadway will be temporarily used by MTA to build the Preferred Alternative. The park land that will be temporarily used is grassy with scattered trees or wooded areas. Throughout the duration of bridge construction, full access to the Baltimore-Washington Parkway from Riverdale Road will be maintained.

The alignment of the Preferred Alternative along the southern side of Riverdale Road will require

permanent use of approximately 0.61 acre of property from the Baltimore-Washington Parkway.

Figure 1-33. Baltimore-Washington Parkway Park Use



MTA has coordinated with the NPS during refinement of the Preferred Alternative, including the application of strategies to minimize harm to the parkway. Section 1.5 summarizes MTA's coordination activities; memoranda of MTA meetings with NPS are provided in FEIS Appendix I and ROD Attachment E.

Prior to selecting the southern alignment of the transitway, MTA considered several alignment options that would not cause bridge impacts and replacement, and would minimize the amount of new right-of-way needed. Among these, single track options and mixed-traffic lanes on Riverdale Road proved to cause undesirable conflicts with traffic movements to and from the parkway ramps. In both cases, these options would share lanes on Riverdale Road, resulting in substantial traffic delays and queuing on Riverdale Road as well as on the parkway ramps. A tunnel option was determined to be infeasible due to the terrain, the bridge foundations, and community impacts and impractical due to its cost.

Commitments and Mitigation Measures

Other strategies MTA has applied to minimize harm to the parkway include aligning the Preferred Alternative along the existing alignment of Riverdale Road at the parkway as opposed to a new alignment. MTA developed and evaluated four maintenance of traffic concepts in consultation with NPS. MOT Option 1 included the construction of one temporary bridge within the median of Baltimore-Washington Parkway over Riverdale Road with the permanent bridges being constructed one at a time. MOT Option 2 included the construction of two temporary bridges located adjacent to each of the existing bridges within the median of the parkway. This alternative was evaluated both with and without the construction of retaining walls in an effort to minimize impacts to forested land within the median. Both of the permanent bridges would have been constructed at the same time to minimize construction time within NPS property. MOT Option 3 includes the construction of two temporary bridges located adjacent to the existing bridges to the outside of the parkway, between the roadway and ramps. Both of the permanent bridges would be constructed at the same time. Retaining walls would be constructed to minimize impacts to the existing ramps. MOT Option 4 included widening the existing parkway bridges to maintain traffic on the structure during construction. Three design options were associated with this alternative, including widening each bridge to the outside toward the existing ramps and widening inside the parkway toward the median, both with and without the construction of retaining walls. No temporary bridges would have been constructed with MOT Option 4.

Ultimately, Maintenance of Traffic (MOT) Option 3 was developed and selected by MTA consultation with NPS National Capital Region (NCR) and National Capital Parks-East (NACE) at the June 22, 2012 agency coordination meeting. MOT Option 3 will be implemented during construction and will avoid impcts to trees in the median. MPT Option 3 includes construction of temporary bridges on the outside of the existing bridges, between the existing roadway and the ramps. The temporary bridges would maintain two lanes of traffic in each direction during construction and would avoid the forest area and archeological site in the medeian of the parkway. MTA evaluated the traffic effects and determined that traffic will not back up onto the parkway ramps during project construction or operation.

The permanent replacement bridge structures would have a similar arch design as the existing bridge structures. The new structures would be constructed on the same horizontal alignment as the existing parkway roadways and would be the same width (across the roadway) as the existing bridges.

The bridges would include horizontal arched concrete shields above the transitway overhead wires (see Attachment B of Baltimore-Washington Parkway *de minimis* use concurrence letter, Record of Decision Attachment E). The purpose of the shields is to block views of the wires by visitors driving on the parkway. The design of these shields was developed in consultation with the NPS. The design of the shields would match the shape of the existing arch of the bridge structure, blending in visually as vehicles approach the bridges on Riverdale Road. In addition, the shields would not

extend above the bridge railings so as to maintain views from the parkway to the adjacent landscape.

MTA will attach catenary wires to the bridges as agreed upon during consultation with NPS at the June 22, 2012 meeting. Attaching the catenary wires to the bridge will reduce the number of catenary poles within the park. Final specifications for bridge design will be subject to review by the NPS.

MTA will re-use the stone façade on bridge abutments to maintain the appearance of the abutments as practicable. The existing stone would be removed from the existing abutments, stored during construction to maintain the integrity, and be re-used to the extent practicable. If additional stone is required, it would come from the same source, if possible. MTA will identify new stone, if needed in consultation with the NPS to match the existing stone.

MTA will develop landscape plans including tree and vegetation replacement (at agreed upon ratios in consultation with NPS) using native and approved species to mitigate the temporary and permanent removal of vegetation and trees. Landscape plans for areas within the park will be included in the project plans and specifications, and will be made available for review and approval by NPS at milestones in the project development process (i.e., 60% design and 90% design).

MTA will conduct a survey prior to construction in all areas where vegetation will be disturbed to identify the presence of invasive species. A two year invasive species avoidance and removal program within the project limits will be developed, submitted to NPS for approval and implemented by MTA.

The maintenance of traffic plan calls for temporary bridges and approach roadways to be constructed between the existing mainline roadway and bridges and the ramps between the parkway and Riverdale Road. Upon completion of construction, all temporary roadway, structures and construction materials will be removed and the ground will be returned to pre-construction grade using stockpiled materials from the site, or similar, to support vegetation. Any residual structures or pavements will be removed. The area will be stabilized and planted with appropriate species. The final landscape plan for the slope between the mainline roadway and ramps will be determined in consultation with the NPS.

Sensitive natural and built resources, including trees and archeological resources, would be identified and a buffer area will be established and marked in the design plans and in the field to protect the resources. MTA will also identify the sensitive resources on the project design plans, including the buffer area required for protection. NPS will be consulted and MTA will locate the resources and buffer in the field prior to construction activities. The NPS National Capital Region tree guidelines will be incorporated into project specifications, contract documents and the NPS Special Use Permit.

Other minimization measures include:

- MTA will design sidewalk improvements along Riverdale Road to meet ADA requirements.
- MTA will not construct stormwater management facilities within the boundaries of the parkway.
- During design reviews, MTA will provide NPS with plans for the material, colors and finishes for permanent traffic signals and roadway lighting poles and fixtures within the parkway. NPS will approve the plans prior to final design.

A land exchange agreement will be executed between MTA and NPS to mitigate for the permanent use of approximately 0.6 acres of park land along Riverdale Road. The financial valuation and exchange of the permanent land will be determined through an approved appraisal process between NPS and MTA following all applicable Federal and State laws and practices. The general steps of the land exchange include the following:

- The property being exchanged is identified by NPS.
- NPS National Capital Region Lands Office contacts the U.S. Department of the Interior (DOI) Office of Valuation Services (OVS) and provides details of exchange.
- OVS prepares Statement of Work (SOW) to be used by contract appraiser.

- OVS provides SOW and a list of qualified and DOI-approved appraisers to MTA.
- MTA hires appraiser from list.
- Appraiser prepares appraisal based on DOI SOW.
- OVS reviews appraisal for conformance with SOW and applicable regulations.
- Once appraisal is approved OVS informs NCR Lands of appraisal acceptance.
- Proceed with transaction.

To mitigate for temporary impacts, MTA will replace sections of metal guardrail that were previously installed along the Baltimore-Washington Parkway. The guardrail was installed to address immediate safety concerns and does not meet the design aesthetic or guidelines of the NPS. Guardrail will be replaced with an approved FHWA Crash Tested longitudinal barrier system, such as the Stone Masonry Guardwall (TL-3) system which is an approved design for FHWA EFL roadways, including the NPS Baltimore-Washington Parkway. This can be found in the Design Elements Guidelines at http://www.efl.fhwa.dot.gov/technology/abs.aspx.

The exact location and limits of this work will be determined in consultation with the NPS and the MD SHPO and will be selected in areas that do not result in adverse effects to the park.

To establish equitable compensation, the scope of the mitigation including the cost of design, overhead, fees, mitigation, construction, and other attributable items will be commensurate with the value of temporary use of NPS property by the Purple Line in accordance with all applicable Federal and State laws. To support this work, NPS will waive fees associated with construction permits and temporary lease agreements, design reviews, and other administrative or other fees that may be required for the mitigation. In addition, NPS will facilitate design review and approval including construction access and maintenance of traffic plans.

Section 4(f) Determination

Through coordination with NPS, FTA has determined that the permanent and temporary uses by the Preferred Alternative will not adversely affect the features, attributes or activities—park and parkway—that qualify the Baltimore-Washington Parkway for Section 4(f) protection. FTA has made a *de minimis* use determination for the Preferred Alternative at the Baltimore-Washington Parkway because of the mitigation measures and the coordination undertaken with NPS to minimize harm. NPS concurred with FTA's *de minimis* use determination for Baltimore-Washington Parkway in a letter dated March 18, 2014 (Record of Decision Attachment E).

Glenridge Community Park

Section 4(f) Property Description

Glenridge Community Park is located directly southwest of MD 410 (Veterans Parkway), the Northern Area Maintenance Glenridge Service Center, and Glenridge Elementary School, north of Freeport Avenue, east of Trinidad and Greenland Streets, and south of Rosalie Lane in Glenridge, Prince George's County (Figure 1-34). The M-NCPPC–Prince George's County Department of Parks and Recreation owns 62 acres of land, of which the park encompasses approximately 53.5 acres and the remaining 8.5 acres of land is the Northern Area Maintenance Glenridge Service Center. The park was funded in part with Maryland Program Open Space funds. The service center has no recreational facilities, is not part of Glenridge Community Park and is not open to the public. For these reasons, the Service Center property is not considered a Section 4(f) property and is not included in this evaluation.

Figure 1-34. Glenridge Community Park Picnic Area

Facilities at the park include a playground, athletic fields, basketball courts, tennis courts, a trail network, shelters, picnic areas, and parking. All of the recreational facilities within the park are located within the western half of the park. The remaining park property is wooded, undeveloped, and designated a Woodland Conservation Area by M-NCPPC–Prince George's County according to their ordinance and Maryland's Forest Conservation Act.

From Veterans Parkway (MD 410), Glenridge Community Park is accessible from Annapolis Road to Gallatin Street or Annapolis Road to Greenvale Parkway to 70th Place to Flintridge Drive. Parking for Glenridge Community Park is provided at both the Flintridge Drive and Gallatin Street access points.

Use of Section 4(f) Property—Permanent Use, Not *De minimis*

MTA, through coordination with M-NCPPC–Prince George's County, determined its Purple Line Glenridge Maintenance Facility will be constructed primarily on the M-NCPPC's Northern Area Maintenance Glenridge Service Center property (Figure 1-35). However, MTA will use a portion of undeveloped and wooded park property, primarily north of the Service Center property. The Preferred Alternative will not impact existing, developed park facilities.

The maintenance facility will include a large maintenance building, rail tracks for access from the mainline transitway as well as on-site vehicle storage, motor vehicle parking and access driveways to Veterans Parkway. MTA will permanently use approximately 5.32 acres of park property, including 4.1 acres within the existing forest conservation area. In addition, MTA will temporarily use approximately 0.37 acre of park land to provide work areas to build the project.

The configuration of the Purple Line Glenridge Maintenance Facility will avoid the adjacent Glenridge Elementary School property and associated fields. The Preferred Alternative will not necessitate closure of Glenridge Community Park at any time during or after construction.

After publication of the FEIS, MTA modified the configuration of the lead tracks and parking, and moved the signal bungalow along Veterans Parkway toward the facility. These refinements slightly reduce the project LOD, but do not change FTA's Section 4(f) determination.

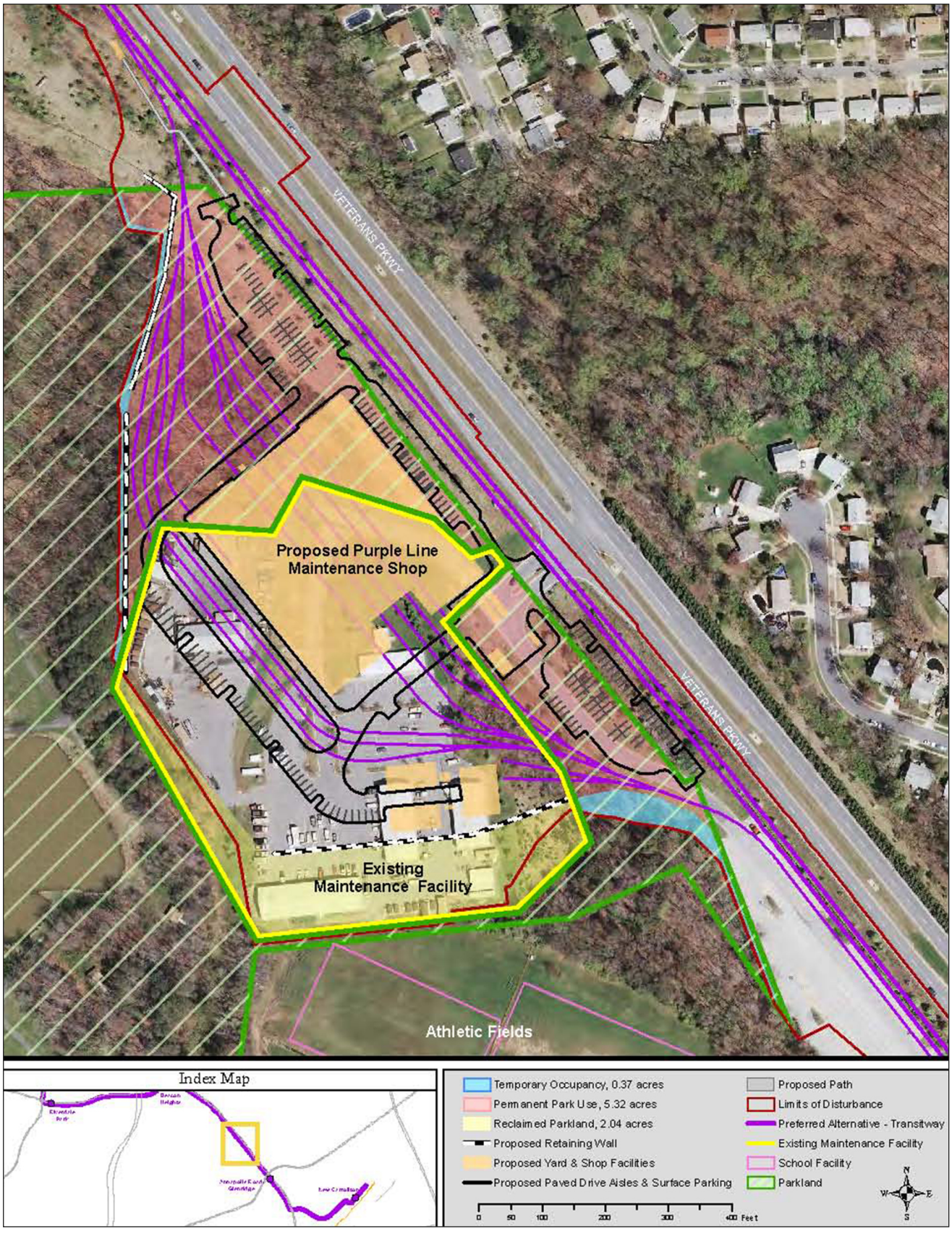
Avoidance Alternatives

The avoidance analysis focuses on alternative locations for the maintenance facility. Early in the planning process, MTA determined that there was no single, suitable site large enough to contain a full storage yard, maintenance facility and operations center for the Purple Line. Therefore, MTA sought two sites, preferably one in each county towards either end of the corridor.

When MTA evaluated potential locations for a storage yard and shop facility, several criteria were considered including the proximity of the site to the transitway, the size of the site, the ability to grade the site to level conditions, the ability to provide vehicular access to the site, existing zoning and land use, and adjacent land uses.

MTA performed a search for sites throughout the Prince George's County portion of the study area and assessed their feasibility. Limitations to finding suitable sites included the developed character of the corridor, the presence of large land areas devoted to stream valley parks and the Baltimore-Washington Parkway, land use, and populations. Properties considered include the Pepco utility right-of-way on University Boulevard, three sites south of the College Park Metrorail station, a site near the intersection of Riverdale Road and Veterans Parkway, two sites on the north side of Veterans Parkway, and sites east of the WMATA Orange Line tracks and US 50 in New Carrollton (Figure 1-36). Ultimately, each site was determined to be not prudent and feasible based on engineering, environmental, suitability, or cost factors as explained below.

Figure 1-35. Glenridge Community Park



Pepco Site

MTA considered the Pepco utility right-of-way on University Boulevard; however, Pepco was concerned about the potential for conflicts between the Preferred Alternative overhead contact system, maintenance facility power system, and the overhead high voltage Pepco transmission lines. Ultimately, Pepco was unwilling to agree to MTA using their right-of-way. For this reason, the Pepco site was determined not prudent (23 CFR 774.17(3)(v)).

Sites South of College Park Metrorail Station

MTA considered sites south of the College Park Metrorail station, but found each difficult to access through forest and wetland areas. One site was infeasible as it is not large enough for the facility. The second site would result in additional construction, maintenance, or operational costs of an extraordinary magnitude to cross the CSX tracks. This site is now undergoing rezoning for a major proposed mixed-use development (23 CFR 774.17(3)(iii)(A), (3)(iv), and (3)(vi)). The final site south of the College Park Metrorail station is a federal government-owned property that MTA initially thought was vacant and available. MTA's further investigation determined that using the site would cause severe social, economic, or environmental impacts as it is slated for redevelopment and is unavailable for consideration as a potential location for a maintenance facility (23 CFR 774.17(3)(iii)(A)).

Site Near the Intersection of Riverdale Road and Veterans Parkway

The site near the intersection of Riverdale Road and Veterans Parkway is developed with an apartment and townhouse community. It is surrounded by other residential areas. At the time the site was initially identified, MTA thought that it was underutilized. However, since that time new property managers have made improvements and the complex provides affordable housing for a diverse community within a portion of the project area that has a majority of minority population. MTA would displace all residents in the complex and cause disproportionately high and adverse impacts to minority or low income populations if it were to use the site. In terms of Section 4(f), use of the site is not prudent because it would involve multiple factors in 23 CFR 774.17(3)(i) through 23 CFR 774.17(3)(v), that while individually minor, cumulatively cause unique impacts of extraordinary magnitude.

Sites on the North Side of Veterans Parkway

The sites on the north side of Veterans Parkway are densely forested areas with streams, wetlands and steep and uneven topography. These characteristics make the sites difficult to develop, particularly as a nearly level transit vehicle maintenance facility. One site is not prudent as it is not large enough for a maintenance facility, does not meet the purpose and need (23 CFR 774.17(3)(i)).

Sites East of the WMATA Orange Line Tracks and US 50

Finally, the sites east of the WMATA Orange Line and US 50 would require the Purple Line to cross the Amtrak and WMATA tracks as well as US 50. Using the sites would result in additional construction, maintenance, or operational costs of an extraordinary magnitude as it would be a very costly grade-separated crossing on an alignment that is not needed for the project. Further, these parcels are slated for TOD development around the New Carrollton Metrorail station (23 CFR 774.17(3)(iii)(A), (3)(iv), and (3)(vi)).

Using the criteria of Section 4(f), none of the alternative sites considered is a feasible and prudent avoidance alternative site for the Purple Line maintenance facility in Prince George's County.

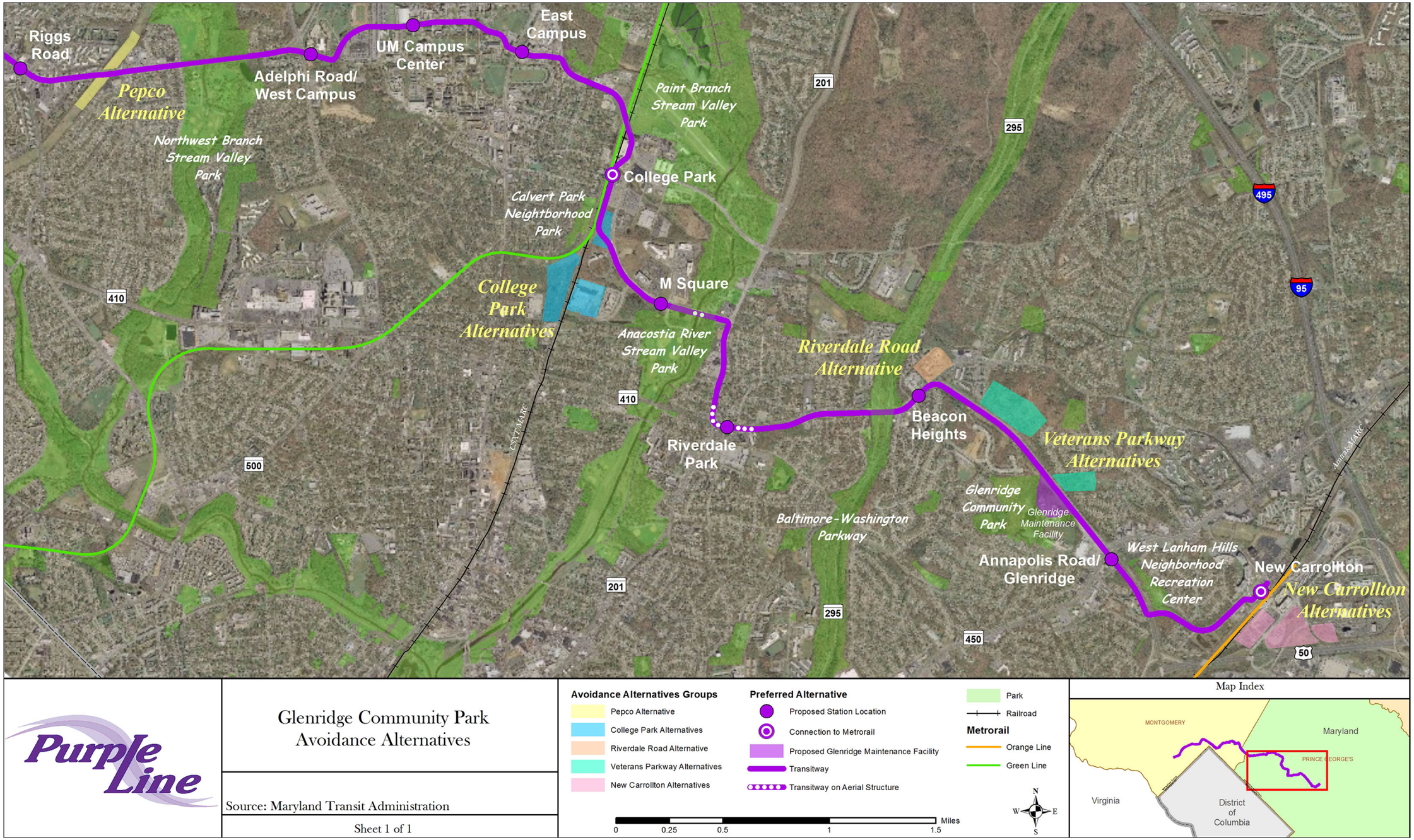
No Build Alternative

The No Build Alternative is an avoidance alternative as it would cause no use of the park. However, the No Build Alternative compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need. Therefore, while the No Build Alternative is feasible, it is not prudent (23 CFR 774.17(3)(i).

Property-specific Least Overall Harm Analysis

MTA applied the Section 4(f) criteria to determine the build alternative with the least overall harm to Glenridge Community Park. In this analysis, the

Figure 1-36. Glenridge Community Park Avoidance Alternatives



Preferred Alternative and each build alternative in the AA/DEIS was evaluated. MTA assumed that the refinements to the facility layout it has done for the Preferred Alternative in consultation with the M-NCPPC would have occurred if any of the other light rail transit build alternatives had been advanced. Regarding the BRT alternatives, a maintenance facility site would be required of similar size although MTA would have greater flexibility in applying the facility layout design criteria. However, for the purposes of the FEIS and Section 4(f) analyses, MTA's facility site evaluation process assumed no difference in site needs.

The amount and location of use of Glenridge Community Park would be the same for each alternative, the ability of MTA to mitigate adverse impacts to the property, and the relative severity of the remaining harm to the property after mitigation are the same (23 CFR 774.3(c)(1)(i) and (ii)). Among the alternatives, the Preferred Alternative strongly meets the project purpose and need (23 CFR 774.3(c)(1)(v)). The magnitude of adverse impacts to properties not protected by Section 4(f) is similar among the alternatives (23 CFR 774.3(c)(1)(vi)). For these reasons, and despite the Preferred Alternative being more costly than all but the High Investment LRT Alternative (23 CFR 774.3(c)(1)(vii)) as discussed in Section 1.4.3, the Preferred Alternative is the alternative with the least overall harm to Glenridge Community Park.

Section 1.4.3 presents a corridor-wide least overall harm analysis that considers all Section 4(f) properties.

All Possible Planning to Minimize Harm

At the time of the AA/DEIS, MTA envisioned splitting the fleet as well as the maintenance and operations activities equivalently between the Glenridge and Lyttonsville facilities. The AA/DEIS concept of the Glenridge Yard and Shop would have used portions of Glenridge Community Park and the recreational facilities at the Glenridge Elementary School.

Several factors influenced the design of the maintenance facility at the Glenridge site since the publication of the AA/DEIS. Updated ridership and transit travel time estimates increased the total projected fleet size, increasing Purple Line maintenance and storage needs. While this data indicated the need to enlarge the facility layout to accommodate the increased fleet size, MTA responded by reprogramming use of the Glenridge and Lyttonsville sites to reduce redundant activities, reduce costs, and ultimately reduce the size of the facilities. As currently reprogrammed, the Lyttonsville Yard will be used primarily for storage, daily cleaning/servicing, and the operations center. The Glenridge Maintenance Facility will be used primarily for maintenance activities.

In making this change, MTA also reconsidered the facility layout. During the AA/DEIS, a "loop" configuration was envisioned. As currently reprogrammed, the Glenridge facility will have a linear configuration, which was developed in coordination with the M-NCPPC Prince George's County. The linear configuration is better suited to moving trains to and from the main line transitway, as well as through the maintenance facility building, than the loop configuration. While the linear configuration will permanently use approximately two additional acres of park land, it avoids impacts to the developed recreational facilities within the park including the path and pavilions. During MTA's coordination with the County regarding the park and the maintenance facility property, the County agreed that the linear configuration will have less impact to the recreational properties of the park and school than the AA/DEIS layout and is preferred. Memoranda of MTA meetings with M-NCPPC–Prince George's County are provided in FEIS Appendix I and ROD Attachment E.

The linear configuration of the current facility design will make approximately 2.04 acres of land from the Glenridge Service Center property available to be transferred to the park and/or school. In consultation with Prince George's County, this additional land will benefit the park and school by enabling development of a second full size field, drainage improvements, and visual screening. With this transfer, the net use will be approximately 3.28 acres of protected park/recreational land.

Commitments and Mitigation Measures

To minimize the overall size of the maintenance facility, underground stormwater management facilities will be used. Retaining walls will be installed to minimize land area needs and to avoid impacts to an existing stream located on the northwestern side of the maintenance facility. The walls will reduce the area of grading needed, thereby maximizing the land area available for future recreational activities on the expanded Glenridge Elementary School property.

Topographically, the maintenance facility will be at a lower elevation than the school and adjacent park, thereby reducing visual effects. MTA will also plant trees as a mitigation measure to offset tree removal.

Focusing maintenance activities at the Glenridge facility requires a larger maintenance building than envisioned during the AA/DEIS, enabling most maintenance activities at the site to occur indoors. This refinement reduces visual, light, and noise effects to impact adjacent properties.

Coordination between MTA and the M-NCPPC–Prince George's County is ongoing regarding minimization and mitigation strategies at Glenridge Community Park as a result of the Preferred Alternative.

West Lanham Hills Neighborhood Recreation Center

Section 4(f) Property Description

West Lanham Hills Neighborhood Recreation Center is approximately nine acres in size, located in Landover Hills, and owned and maintained by M-NCPPC–Prince George's County Department of Parks and Recreation, and funded in part by Maryland Program Open Space funds (Figure 1-37). The park is bounded by Veterans Parkway to the west, Ellin Road to the south, Emerson Road and a residential development to the east, and a car dealership to the north. The park includes a playground, recreation center, basketball court, tennis court, trail and a picnic facility.

Figure 1-37. West Lanham Hills Recreational Building

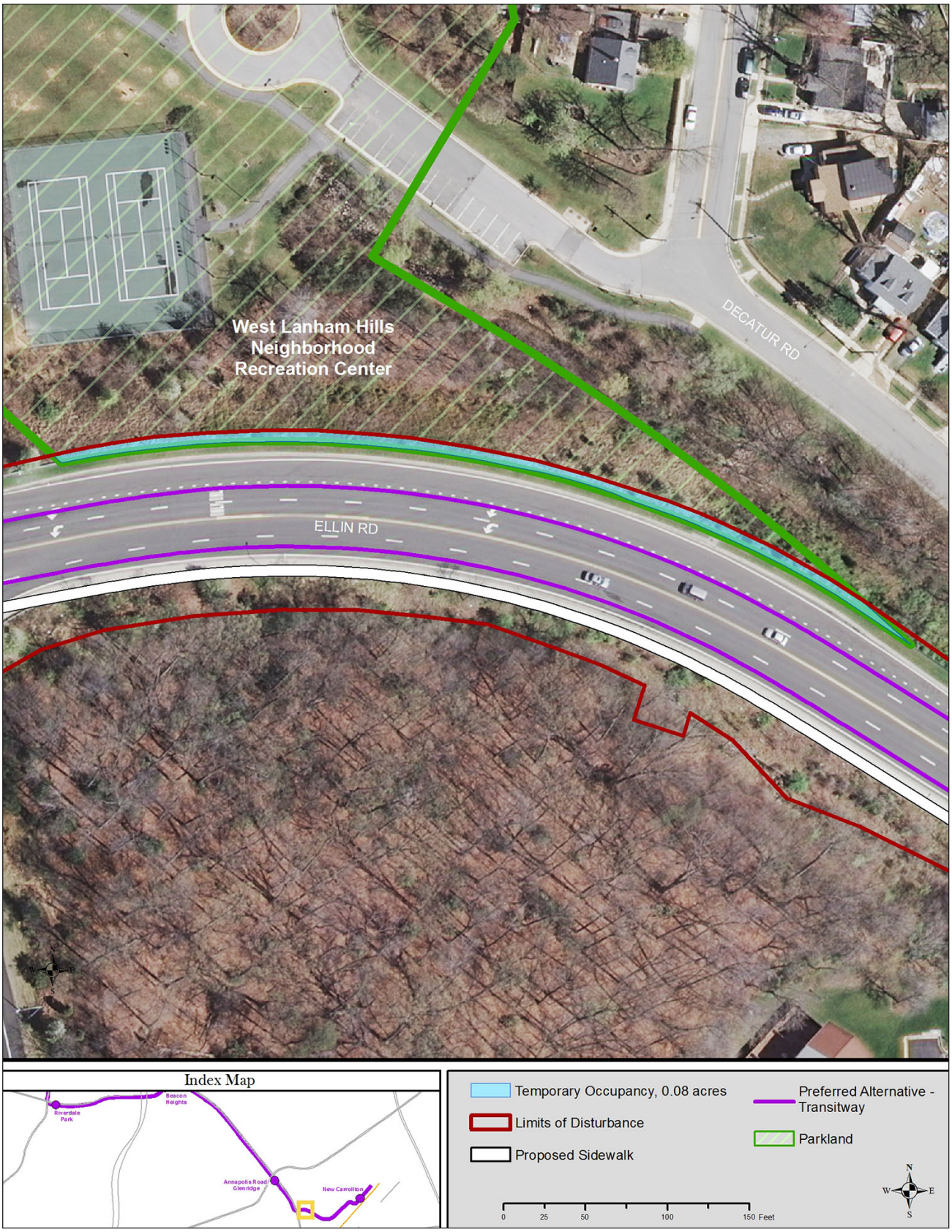
Temporary Occupancy Exception

The Preferred Alternative will be aligned along the west side of Veterans Parkway (Figure 1-38). It will cross Veterans Parkway, onto Ellin Road where the transitway will be in a mixed-use lane. MTA will raise the elevation of Ellin Road approximately one to two feet to meet the transitway design criteria. The sidewalks along Ellin Road will be rebuilt. Due to the change in roadway elevation and the steep slopes alongside Ellin Road, MTA will re-contour the land immediately adjacent to Ellin Road to meet existing grades.

As currently designed, MTA will require a temporary easement of 0.08 acre from West Lanham Hills Neighborhood Park to enable construction access to the work area. MTA will restore land disturbed by project construction activities within the park upon completion of construction along Ellin Road. Full access to West Lanham Hills Neighborhood Recreation Center and all associated facilities will be maintained throughout construction.

Through its coordination with M-NCPPC–Prince George's County, FTA has determined that constructing the transitway will not adversely affect activities, features or attributes—playground, recreational center, athletic courts, trail, and picnic areas—of the park. Memoranda of MTA meetings with M-NCPPC–Prince George's County are provided in FEIS Appendix I and ROD Attachment E.

Figure 1-38. West Lanham Hills Neighborhood Recreation Center



Commitments and Mitigation Measures

Although the project will have no direct impacts to park property, MTA developed measures in coordination with M-NCPPC to minimize the potential for temporary construction effects on the park. MTA will implement the following mitigation measures:

- Continue coordination with M-NCPPC Prince George's County throughout design and construction.
- Enter into a right-of-way agreement with M-NCPPC Prince George's County for approximately 0.08 acre on the West Lanham Hills Neighborhood Recreation Center land to grade the slope and associated construction activities alongside Ellin Road. The work area is an undeveloped area of the park and no change in ownership of the park land will occur.
- Coordinate with M-NCPPC-Prince George's County to determine if Tree Conservation Plan (TCP) 2-088-90 is affected by the project construction in the park, revise the TCP as necessary, and provide mitigation as required.
- Coordinate with M-NCPPC-Prince George's County to restore disturbed park land. Restoration of the disturbed area within West Lanham Hills Neighborhood Recreation Center will be completed after project completion.
- Maintain access to the West Lanham Hills Neighborhood Recreation Center at all times during and after construction.

Section 4(f) Determination

The temporary construction easement meets the five criteria for temporary occupancy exception set forth in 23 CFR 774.13(d), as discussed in Section 1.1.1. Specifically, (1) the duration of the work is temporary, less than the overall project construction period and no change in property ownership will occur; (2) the work is confined to a small area of the park and will result in minimal changes to the park; (3) no permanent adverse impacts to the park and no interference with the protected activities, features or attributes of the park will occur; (4) the disturbed land will be fully restored to at least as good condition; and (5) the officials with jurisdiction have provided documented agreement to these findings. As such, the temporary construction easement does not constitute a use of the West Lanham Hills Neighborhood Recreation Center. M-NCPPC–Prince George's County concurred with FTA's temporary occupancy exception determination for West Lanham Hills Neighborhood Recreation Center in a letter dated January 24, 2014 (Record of Decision Attachment E).

1.4.2 Historic Properties

In accordance with 23 CFR 774.5(b)(1), FTA has determined that the Preferred Alternative will use use portions of seven historic properties protected by Section 4(f). Table 1-8 lists these properties and their attributes; an evaluation of each is provided in the sections that follow.

The Preferred Alternative will result in a permanent Section 4(f) use of three historic properties, which will not be *de minimis*. For these three properties, this Final Section 4(f) Evaluation includes an analysis of avoidance alternatives, minimization measures, and mitigation efforts, as well as coordination with officials having jurisdictional authority.

For the other four historic properties, FTA made *de minimis* use determinations, based on findings of "no adverse effect" for those properties in the Section 106 consultation process. These findings are described below.

FTA, NPS, MTA and MHT signed a Programmatic Agreement that outlines commitments and mitigations concerning historic properties and archeological sites under Section 106 (Record of Decision Attachment B). MTA will implement the project in accordance with the Section 106 Programmatic Agreement.

Columbia Country Club (M: 35-140)

Section 4(f) Property Description

The Columbia Country Club (Club) (Figure 1-39) is historically significant for the period from its founding in 1911 through 1962. It is locally significant under NRHP Criterion A as an excellent example of a recreational and social complex in the suburban development of the surrounding Chevy Chase area and for its contributions, both directly

Table 1-8. Summary of Preferred Alternative Historic Sites Uses/Impacts

Section 4(f) Property	Section 106 Effect	Permanent Use, Not *De minimis*	Permanent Use, *De minimis*	No Use	Existing Resource Acreage	Permanent Use Acreage	Percent of Property Permanently Used
M: 35-140—Columbia Country Club	No Adverse Effect		•		146.00	0.55	<1%
M:36-87—Rock Creek Park Montgomery County Survey Area	No Adverse Effect			•	500.00	0.00	0
PG: 69-26—Baltimore-Washington Parkway (Gladys Noon Spellman Pkwy)/Riverdale Road Bridges	No Adverse Effect		•		1,353.00	0.54	<1%
M: 32-15—Sligo Creek Parkway	No Adverse Effect		•		181.80	0.24	<1%
M: 36-30—Bridge No. M-0085, Talbot Avenue Bridge	Adverse Effect	•			0.04	0.04	100%
M: 37-16—Metropolitan Branch, B&O Railroad Corridor	Adverse Effect	•			3,960.00	2.10	<1%
M:36-12—Falkland Apartments	Adverse Effect	•			19.61	0.52	2.7%
PG:66-35—University of Maryland Historic District [1]	No Adverse Effect		•		188.3	0.16	<1%

[1] The UMD historic district includes contributing and non-contributing elements. The acreage and percentage of Section 4(f) use are based on impacts to the contributing elements.

Figure 1-39. Columbia Country Club Clubhouse

and indirectly, to development of the Chevy Chase area. It is also locally significant under Criterion C for the landscape design of its golf course and the Spanish Revival-style design of its clubhouse.

The boundaries of the Columbia Country Club as a National Register-eligible property generally follow the Club's existing property boundaries. The Club property is made up of two irregular parcels of land which are separated by the 100-foot-wide Georgetown Branch right-of-way. This 100-foot-wide right-of-way is the former Georgetown Branch of the B&O Railroad, which operated as a freight line from 1909 until 1985 between Silver Spring, Maryland and Georgetown, Washington DC.

The Georgetown Branch predated the Columbia Country Club. The right-of-way was previously determined to be not eligible for the NRHP on April 11, 2002. An interim trail is now located in a portion of the Georgetown Branch right-of-way, and a few of the Club's greens and tees have encroached upon the county-owned right-of-way on both sides of the right-of-way. A chain link fence lines both sides of the Georgetown Branch Interim

Trail, creating a physical separation between the trail and the Columbia Country Club.

The Columbia Country Club was determined to be eligible for the NRHP in 2002 under Section 106 criteria A and C. The Columbia Country Club was re-evaluated in 2011 and remains eligible under the same criteria. As amended in 2012, the NRHP boundaries generally follow the current legal boundary, but have been expanded to include the portions of three golf holes located within the County-owned right-of-way.

Use of Section 4(f) Property—*De minimis* Use

The Locally Preferred Alternative, developed in 2009 after completion of the AA/DEIS, located the Purple Line transitway and the Capital Crescent Trail entirely within the County-owned Georgetown Branch right-of-way. The LPA would have impacted the greens and tees that extend into the Georgetown Branch right-of-way. The LPA would have required relocating those greens and tees.

In refining the LPA to develop the Preferred Alternative, and in response to Columbia Country Club concerns about impacts on views of the golf course from its clubhouse and about the need to relocate the greens and tees on the south side of the right-of-way, MTA agreed to shift the Preferred Alternative alignment slightly north. With the northward shift, the alignment of the transitway and trail will be within the northern portion of the county-owned Georgetown Branch right-of-way, with the northerly retaining wall partially on Club property. The northerly shift preserves the holes and tees on the south side of the right-of-way as well as certain landscaping, including mature trees protecting the viewshed from the Clubhouse (Figure 1-40).

The Club prefers the northward shift, even though it is located partially on Columbia Country Club property, because it causes less impact to views from the clubhouse and it reduces impacts to the greens and tees on the south side of the right-of-way. In particular, existing landscaping including mature trees are preserved.

Under the Preferred Alternative, existing golf course amenities and landscaping on the north side within the Georgetown Branch right-of-way will be removed. The substantial difference in elevation between the transitway and the golf course necessitates the use of retaining walls on the north and south sides of the transitway. MTA, in consultation with the Columbia Country Club, developed a terraced retaining wall design on the north side featuring large planting areas for landscape and vegetative screening materials. MTA will provide a solid parapet noise panel approximately four feet in height along both sides of the transitway where it passes the Columbia Country Club property. Approximately eleven overhead contact wire poles will be placed along the transitway where it passes the Columbia Country Club property.

As part of the Preferred Alternative, MTA will reconstruct and lengthen the cart underpasses under the Georgetown Branch right-of-way. Golf course features within the existing Georgetown Branch right-of-way will be relocated by the Columbia Country Club prior to the start of project construction. No stations or other large-scale, above-ground elements will be placed within the boundary of the Columbia Country Club or within the Georgetown Branch right-of-way at the Columbia Country Club frontage.

Through its coordination with the Columbia Country Club and in response to their concerns that the Preferred Alternative construction period be as short as possible within the Columbia Country Club property and along the Georgetown Branch trail, MTA developed a construction plan with a work area footprint large enough to allow multiple activities to occur simultaneously using larger equipment. This work area will comprise approximately 2.29 acres along the north side of the Georgetown Branch trail. The work area will include a temporary access road at the foot of the retaining wall in order to provide an efficient construction operation. The underpasses and landscape terrace work areas will also be accessed from this construction staging area. MTA will develop and implement a Construction Work Plan specifying a temporary access road and work area. Upon project completion, MTA will restore the temporary access road area. In terms of Section 4(f), the Preferred Alternative will

permanently use 0.55 acre and temporarily use 2.29 acres of the Columbia Country Club.

The Preferred Alternative will not alter the Columbia Country Club's historic integrity related to location, design, setting, materials, workmanship, feeling, and association. The overhead wire system will not visually affect the property's setting, feeling, and association, and the view from the club house will not be adversely affected. As a result of Section 106 consultation and with input from the Maryland Historical Trust and the other consulting parties, FTA has determined that the Preferred Alternative will have no adverse effect on the historic Columbia Country Club. On November 6, 2013, MHT issued no objection to FTA's no adverse effect determination for the Columbia Country Club (Record of Decision Attachment E). In addition, FTA, NPS, MTA and the MHT signed a

Figure 1-40. Columbia Country Club

Section 106 Programmatic Agreement, which states FTA's determination of no adverse effect on the Columbia Country Club. The Programmatic Agreement outlines commitments and mitigation concerning the Columbia Country Club (Record of Decision Attachment B). MTA will implement the project in accordance with the executed Section 106 Programmatic Agreement.

As MHT concurred with FTA's Section 106 no adverse effect determination in the Programmatic Agreement, FTA has made a *de minimis* use determination under Section 4(f). The permanent and temporary uses by the Preferred Alternative will not affect the historic viewshed of the Clubhouse or the overall design and features of the golf course that qualify the Columbia Country Club for Section 4(f) protection.

Rock Creek Park Montgomery County Survey Area (M: 36-87)

Section 4(f) Property Description

Rock Creek Park Montgomery County Survey Area is a portion of historic Rock Creek, a linear corridor approximately 3,960 acres in size, extending from Olney-Laytonsville Road (MD 108) in Montgomery County to the Washington DC boundary. The Rock Creek Park Montgomery County Survey Area encompasses an area of 500 feet on either side of the Georgetown Branch Interim Trail. Park amenities in the survey area include the Rock Creek National Recreational Trail, the creek, and an athletic field. The park is owned and maintained by M-NCPPC–Montgomery County Department of Parks, funded in part by Maryland Program Open Space funds; MHT is the official with jurisdiction in this Section 4(f) Evaluation.

Use of Section 4(f) Property

The Preferred Alternative will be aligned completely within the Georgetown Branch right-of-way through Rock Creek Park Montgomery County Survey Area (Figure 1-41). MTA will remove the existing bridge that currently carries the Georgetown Branch Interim Trail over Rock Creek and the Rock Creek National Recreational Trail. MTA, working in consultation with M-NCPPC–Montgomery County Department of Parks and the NCPC, the latter having jurisdiction under the Capper-Cramton Act, proposes to build two new bridges in the same area for the Purple Line project, one for the transitway and one for the Capital Crescent Trail.

Memoranda of MTA meetings with M-NCPPC–Montgomery County Department of Parks and NCPC are provided in FEIS Appendix I and ROD Attachment E.

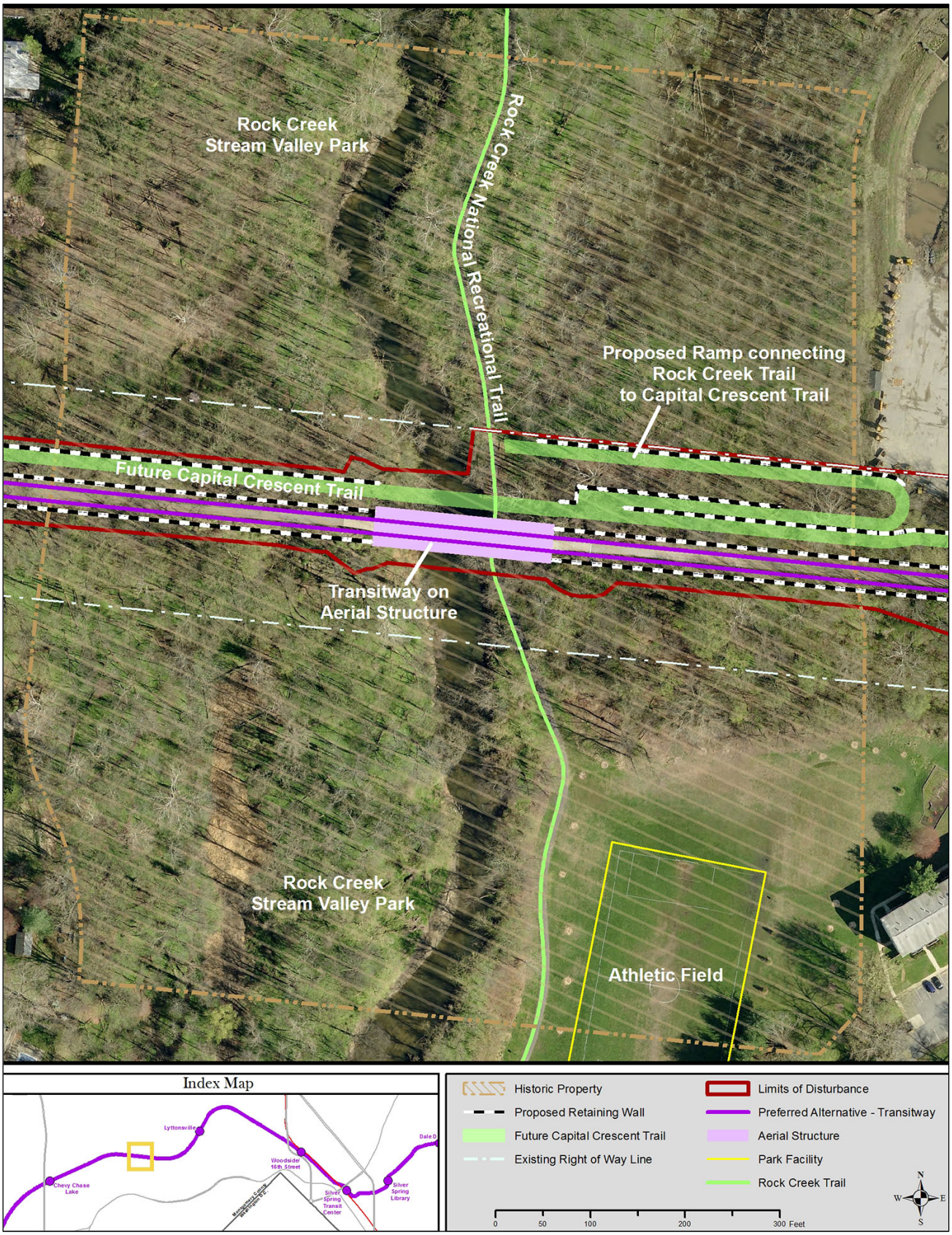
Temporary Occupancy Exception

Temporary work areas will be located within the County-owned right-of-way. During construction of the bridges, the portion of the Rock Creek National Recreational Trail in the immediate vicinity of the bridges will be temporarily detoured for short periods of time. When trail detours occur, the detour route will begin to the north of the project area and use Susanna Lane to Jones Mill Road, south to East-West Highway, then east to Meadowbrook Lane, where the Rock Creek National Recreational Trail will be accessed to the south of the project area.

The Preferred Alternative will improve connections to the Rock Creek National Recreational Trail as the Capital Crescent Trail bridge will lead to a ramp to the existing trail. Memoranda of MTA meetings with M-NCPPC–Montgomery County Department of Parks and NCPC are provided in FEIS Appendix I. Vegetation removal will be required within the Georgetown Branch right-of-way for the construction of the transitway and trail structures. All tree removal will be completely within the Georgetown Branch right-of-way. MTA will develop design and landscaping plans in consultation with M-NCPPC. Retaining walls will be used to reduce impacts and maximize planting areas.

The FEIS Chapter 4.0 assessment of effects indicates that the Preferred Alternative will not cause noise, vibration, or visual effects on the historic Rock Creek Park Montgomery County Survey Area. Therefore, the Preferred Alternative will not substantially impair the activities, features, or attributes—trail, creek, and athletic field—that qualify the property for protection under Section 4(f); no constructive use will occur.

Figure 1-41: Rock Creek Park Montgomery County Survey Area



The Preferred Alternative will not alter the Rock Creek Park Montgomery County Survey Area's historic integrity related to location, design, setting, materials, workmanship, feeling, and association. Although MTA will introduce new visual elements in the Georgetown Branch right-of-way, the Preferred Alternative will not visually affect the historic property's setting, feeling, and association.

As a result of Section 106 consultation and with input from the Maryland Historical Trust and the other consulting parties, FTA has determined that the Preferred Alternative will have no adverse effect on the historic Rock Creek Park Montgomery County Survey Area. On November 6, 2013, MHT issued no objection to FTA's finding of no adverse effect on the Rock Creek Park Montgomery County Survey Area (Record of Decision Attachment E). In addition, FTA, NPS, MTA, and MHT signed a Section 106 Programmatic Agreement, which states FTA's determination of no adverse effect on the Rock Creek Park Montgomery County Survey Area (Record of Decision Attachment B).

FTA has made a temporary occupancy exception determination for the trail detour, as it satisfies the five criteria for temporary occupancy exception set forth in 23 CFR 774.13(d), as discussed in Section 1.1.1. Specifically, (1) the duration of the work is temporary, less than the overall project construction period and no change in property ownership will occur; (2) the work is confined to a small area of the property and will result in minimal changes to the property; (3) no permanent adverse impacts to the property and no interference with the protected activities, features or attributes of the property will occur; (4) the disturbed land will be fully restored to at least as good condition; and (5) the officials with jurisdiction have provided documented agreement to these findings. As such, the temporary construction easements do not constitute a use of historic Rock Creek Park Montgomery County Survey Area. Montgomery County concurred with FTA's determination for Rock Creek Montgomery County Survey Area (Rock Creek Stream Valley Park) in a letter dated January 3, 2014 (Record of Decision Attachment E).

Baltimore-Washington Parkway (Gladys Noon Spellman Pkwy)/Riverdale Road Bridges (PG: 69-26).

Section 4(f) Property Description

Baltimore-Washington Parkway (MD 295) (PG: 69-26) was listed in the National Register of Historic Places in 1991 as part of the Parkways of the National Capital Region, 1913–1965 multiple property listing. The parkway is significant under Criterion A for its association with mid-twentieth century transportation planning in the Washington DC metropolitan area and under Criterion C for the design of its various components, including structures and landscape.

The Baltimore-Washington Parkway (Gladys Noon Spellman Parkway) is a 32-mile divided highway that extends from the US 50/MD 201 interchange at the Washington DC border, north to I-95 in Baltimore. Built between 1950 and 1954 (period of significance) and opened in 1954, the parkway has a variable-width median and is bounded by a buffer of forest and cultivated vegetation. The parkway follows gently rolling terrain and has modest vistas. The median varies between 15 to 200 feet wide and the right-of-way ranges from 400 to 800 feet wide. The median vegetation ranges from mown grass to dense woodland.

The Baltimore-Washington Parkway achieves state and local significance in the areas of transportation and landscape architecture. It exemplifies the last period of construction for this type of road and is the only fully developed parkway of its kind in Maryland. The enabling legislation justifies the Baltimore-Washington Parkway as a major scenic artery within the park and parkway system of the nation's capital; as a formal entrance to the city of Washington DC; as a defense and military route among suburban Federal installations and the city; and as a contributing element to the commercial and residential development of the Baltimore-Washington corridor. The parkway maintains original integrity of setting, design, and associations characteristic of the earliest parkways designed for pleasure motoring—the preservation of natural topography and vegetation for scenic purposes

coupled with "high-speed" elements of modern freeway design.

Within the study area, two circa 1995 bridges (Riverdale Road bridges) each carry two lanes of Baltimore-Washington Parkway over six lanes of Riverdale Road. The original bridges over Riverdale Road were constructed between 1951 and 1952 and carried two travel lanes over the two travel lanes of Riverdale Road, spanning 60 feet. While the bridges are sympathetic to the stylistic attributes of the larger parkway system, the bridges are not original to the park, were constructed outside the parkway's period of significance, and were constructed using modern materials. As such, they do not have historic integrity of location, setting, design, feeling, and workmanship and are not contributing elements of the historic property.

No historically significant contributing structures are located within the immediate project area. The land around the bridges consists of grassed slopes and forests of varying densities within the median and along the outer boundaries of the interchange over Riverdale Road.

Use of Section 4(f) Property—*De minimis* Use

As shown on Figure 1-42, the Preferred Alternative will be aligned directly south of and parallel to Riverdale Road (MD 410) in a dedicated transitway. As the existing parkway bridges over Riverdale Road are insufficiently long to span Riverdale Road and the new transitway, MTA will replace the existing non-historic Baltimore-Washington Parkway bridges with longer bridge spans. In coordination with the NPS—National Capital Parks East, two temporary bridges, one in each direction, will be constructed on the outside of the existing Parkway to maintain two lanes of traffic in each direction. The roadway approaches to the bridges will be temporarily shifted to align with the temporary bridges.

MTA will permanently use 0.54 acres and temporarily use 6.61 acres of land within the historic boundaries of the parkway to install the temporary bridges, realign the parkway approaches to the temporary bridges, construct the new bridges, and construct the transitway. The work areas are primarily grassy with scattered trees or paved roadways. During construction, full access to the Baltimore-Washington Parkway from Riverdale Road will be maintained. MTA will restore temporarily used property after construction.

The alignment of the Preferred Alternative along the southern side of Riverdale Road will require permanent use of approximately 0.54 acre of property from the Baltimore-Washington Parkway. MTA has coordinated closely with the NPS during refinement of the Preferred Alternative, including the application of strategies to minimize harm to the parkway. Section 1.5 summarizes MTA's coordination activities; memoranda of MTA meetings with NPS are provided in FEIS Appendix I and ROD Attachment E.

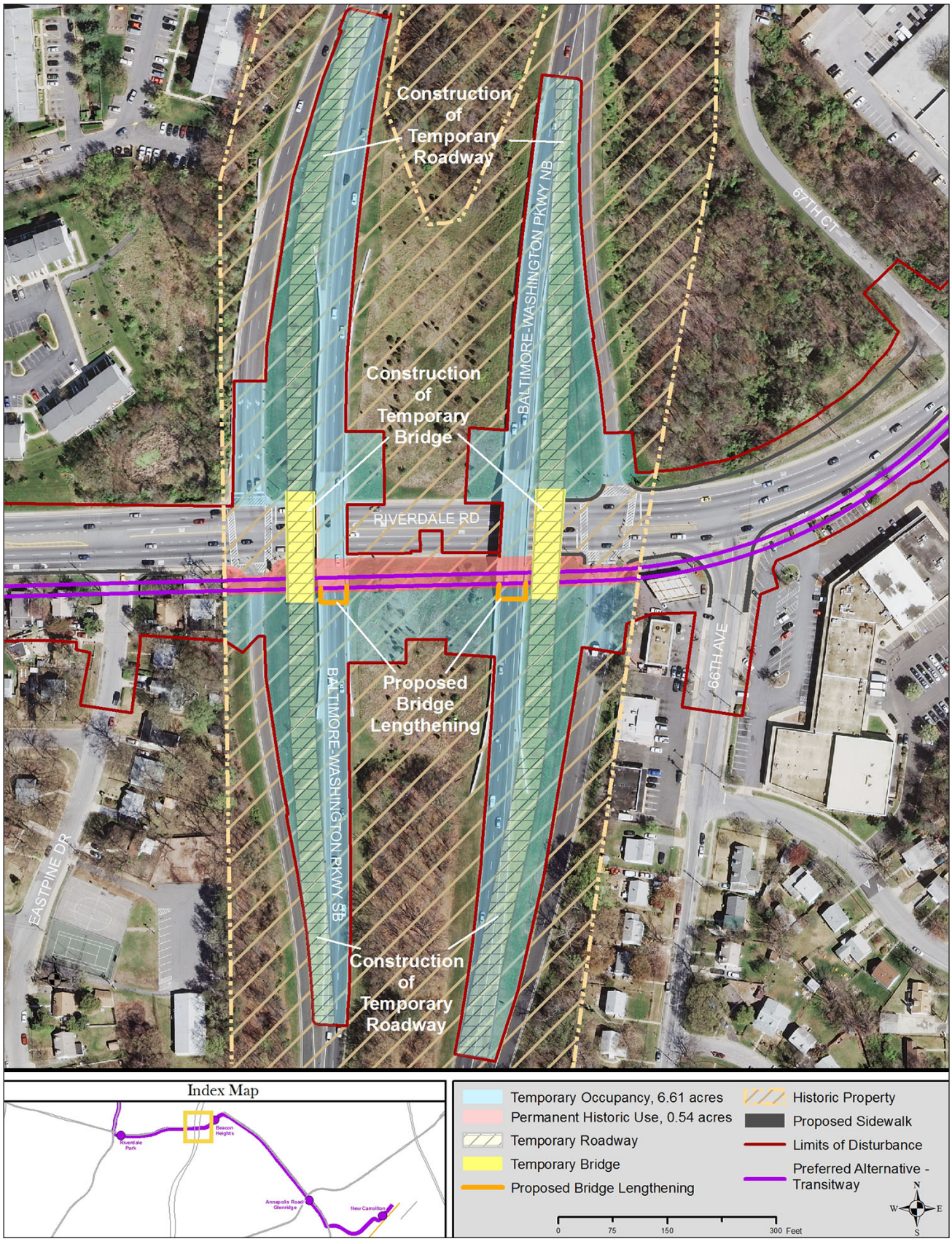
Prior to selecting the southern alignment of the transitway, MTA considered several alignment options that will not cause bridge impacts and replacement, and will minimize the amount of new right-of-way needed. Among these, single track options and mixed-traffic lanes on Riverdale Road proved to cause undesirable conflicts with traffic movements to and from the parkway ramps. In both cases, these options will share lanes on Riverdale Road, resulting in substantial traffic delays and queuing on Riverdale Road as well as on the parkway ramps. A tunnel option was determined to be infeasible due to the terrain, the bridge foundations, and community impacts.

Commitments and Mitigation Measures

Other strategies MTA has applied to minimize harm to the parkway include aligning the Preferred Alternative along the existing alignment of Riverdale Road at the parkway as opposed to a new alignment. MTA developed and evaluated numerous construction staging and maintenance of traffic concepts in consultation with the NPS. Ultimately, Maintenance of Traffic (MOT) Option 3 was developed and selected by MTA consultation with NPS National Capital Region (NCR) and National Capital Parks-East (NACE) at the June 22, 2012 agency coordination meeting. MOT Option 3 will be implemented during construction and will avoid impcts to trees in the median. MPT Option 3 includes construction of temporary bridges on the

outside of the existing bridges, between the existing roadway and the ramps. The temporary bridges would maintain two lanes of traffic in each

Figure 1-42. Baltimore-Washington Parkway Historic Use



direction during construction and would avoid the forest area and archeological site in the medeian of the parkway.MTA evaluated the traffic effects and determined that traffic will not back up onto the parkway ramps during project construction or operation.

The permanent replacement bridge structures would have a similar arch design as the existing bridge structures. The new structures would be constructed on the same horizontal alignment as the existing parkway roadways and would be the same width (across the roadway) as the existing bridges.

The bridges would include horizontal arched concrete shields above the transitway overhead wires (see Attachment B of Baltimore-Washington Parkway *de minimis* use concurrence letter, Record of Decision Attachment E). The purpose of the shields is to block views of the wires by visitors driving on the parkway. The design of these shields was developed in consultation with the NPS. The design of the shields would match the shape of the existing arch of the bridge structure, blending in visually as vehicles approach the bridges on Riverdale Road. In addition, the shields would not extend above the bridge railings so as to maintain views from the parkway to the adjacent landscape.

MTA will attach catenary wires to the bridges as agreed upon during consultation with NPS at the June 22, 2012 meeting. Attaching the catenary wires to the bridge will reduce the number of catenary poles within the park. Final specifications for bridge design will be subject to review by the NPS.

MTA will re-use the stone façade on bridge abutments to maintain the appearance of the abutments as practicable (Figure 1-43). The existing stone would be removed from the existing abutments, stored during construction to maintain the integrity, and be re-used to the extent practicable. If additional stone is required, it would come from the same source, if possible. MTA will identify new stone, if needed in consultation with the NPS to match the existing stone.

Figure 1-43. Baltimore-Washington Parkway Bridge Abutment

MTA will develop landscape plans including tree and vegetation replacement (at agreed upon ratios in consultation with NPS) using native and approved species to mitigate the temporary and permanent removal of vegetation and trees. Landscape plans for areas within the park will be included in the project plans and specifications, and will be made available for review and approval by NPS at milestones in the project development process (i.e., 60% design and 90% design).

MTA will conduct a survey prior to construction in all areas where vegetation will be disturbed to identify the presence of invasive species. A two year invasive species avoidance and removal program within the project limits will be developed, submitted to NPS for approval and implemented by MTA.

The maintenance of traffic plan calls for temporary bridges and approach roadways to be constructed between the existing mainline roadway and bridges and the ramps between the parkway and Riverdale Road. Upon completion of construction, all temporary roadway, structures and construction materials will be removed and the ground will be returned to pre-construction grade using stockpiled materials from the site, or similar, to support vegetation. Any residual structures or pavements will be removed. The area will be stabilized and planted with appropriate species. The final landscape plan for the slope between the mainline roadway and ramps will be determined in consultation with the NPS.

Sensitive natural and built resources, including trees and archeological resources, would be identified and a buffer area will be established and marked in the design plans and in the field to protect the resources. MTA will also identify the sensitive resources on the project design plans, including the buffer area required for protection. NPS will be consulted and MTA will locate the resources and buffer in the field prior to construction activities. The NPS National Capital Region tree guidelines will be incorporated into project specifications, contract documents and the NPS Special Use Permit.

Other minimization measures include:

- MTA will design sidewalk improvements along Riverdale Road to meet ADA requirements.
- MTA will not construct stormwater management facilities within the boundaries of the parkway.
- During design reviews, MTA will provide NPS with plans for the material, colors and finishes for permanent traffic signals and roadway lighting poles and fixtures within the parkway. NPS will approve the plans prior to final design.

A land exchange agreement will be executed between MTA and NPS to mitigate for the permanent use of approximately 0.6 acres of park land along Riverdale Road. The financial valuation and exchange of the permanent land will be determined through an approved appraisal process between NPS and MTA following all applicable Federal and State laws and practices. The general steps of the land exchange include the following:

- The property being exchanged is identified by NPS.
- NPS National Capital Region Lands Office contacts the U.S. Department of the Interior (DOI) Office of Valuation Services (OVS) and provides details of exchange.
- OVS prepares Statement of Work (SOW) to be used by contract appraiser.
- OVS provides SOW and a list of qualified and DOI-approved appraisers to MTA.
- MTA hires appraiser from list.
- Appraiser prepares appraisal based on DOI SOW.
- OVS reviews appraisal for conformance with SOW and applicable regulations.
- Once appraisal is approved OVS informs NCR Lands of appraisal acceptance.
- Proceed with transaction.

To mitigate for temporary impacts, MTA will replace sections of metal guardrail that were previously installed along the Baltimore-Washington Parkway. The guardrail was installed to address immediate safety concerns and does not meet the design aesthetic or guidelines of the NPS. Guardrail will be replaced with an approved FHWA Crash Tested longitudinal barrier system, such as the Stone Masonry Guardwall (TL-3) system which is an approved design for FHWA EFL roadways, including the NPS Baltimore-Washington Parkway. This can be found in the Design Elements Guidelines at http://www.efl.fhwa.dot.gov/technology/abs.aspx.

The exact location and limits of this work will be determined in consultation with the NPS and the MD SHPO and will be selected in areas that do not result in adverse effects to the park.

To establish equitable compensation, the scope of the mitigation including the cost of design, overhead, fees, mitigation, construction, and other attributable items will be commensurate with the value of temporary use of NPS property by the Purple Line in accordance with all applicable Federal and State laws. To support this work, NPS will waive fees associated with construction permits and temporary lease agreements, design reviews, and other administrative or other fees that may be required for the mitigation. In addition, NPS will facilitate design review and approval including construction access and maintenance of traffic plans.

Section 4(f) Determination

FTA coordinated with MHT and the other consulting parties to complete Section 106 consultation; FTA has made a no adverse effect determination regarding the Baltimore-Washington Parkway. Although the new bridges will slightly change the setting and design of the roadway, the Preferred Alternative will have no adverse effect on the historic Baltimore-Washington Parkway in

terms of Section 106. On November 6, 2013, MHT issued no objection to FTA's determination of no adverse effect on the Baltimore-Washington Parkway (Record of Decision Attachment E). In addition, FTA, NPS, MTA and the MHT signed a Section 106 Programmatic Agreement, which states FTA's determination of no adverse effect on the Baltimore-Washington Parkway. The Programmatic Agreement outlines commitments and mitigation concerning the Baltimore-Washington Parkway (Record of Decision Attachment B). MTA will implement the project in accordance with the executed Section 106 Programmatic Agreement.

As MHT concurred with FTA's Section 106 no adverse effect determination in the Programmatic Agreement, FTA has made a *de minimis* use determination under Section 4(f). The permanent and temporary uses by MTA will not adversely affect the features, attributes or activities that qualify the Baltimore-Washington Parkway for Section 4(f) protection. NPS concurred with FTA's determination for Baltimore-Washington Parkway in a letter dated March 18, 2014 (Record of Decision Attachment E).

Sligo Creek Parkway (M: 32-15 and PG: 65-25)

Section 4(f) Property Description

Sligo Creek Parkway, located within Sligo Creek Stream Valley Park, is approximately five miles long with an average right-of-way width of 30 feet. The roadway commences at University Boulevard near Silver Spring in the north and winds southeastward to New Hampshire Avenue in Takoma Park. The parkway is significant under Criteria A and C as a roadway corridor that includes enhanced natural terrain and topography, existing and enhanced native vegetation, an articulated vegetative buffer, vistas, designed culverts, guard rails, and bridges, limited and well-distanced access, and roadside overlooks, parks, and parking areas.

The parkway was a project conceived by planning officials and developers to complement the boom in the construction of the Washington DC suburbs during 1929. Within the park, the two-lane undivided roadway meanders along Sligo Creek accessing numerous foot paths, bridges, picnic and playground areas and a golf course. The width of Sligo Creek Stream Valley Park generally buffers parkway road from adjacent development and provides a recreational driving experience. The parkway's road-related features include stone retaining walls and bridges, metal foot bridges, reinforced timber guardrails and parking areas.

Sligo Creek Parkway is significant as a component of the regional transportation routes and associated landscape and engineering features planned and constructed by the M-NCPPC–Montgomery County in the years spanning the First and Second World Wars.

Use of Section 4(f) Property—*De minimis* Use

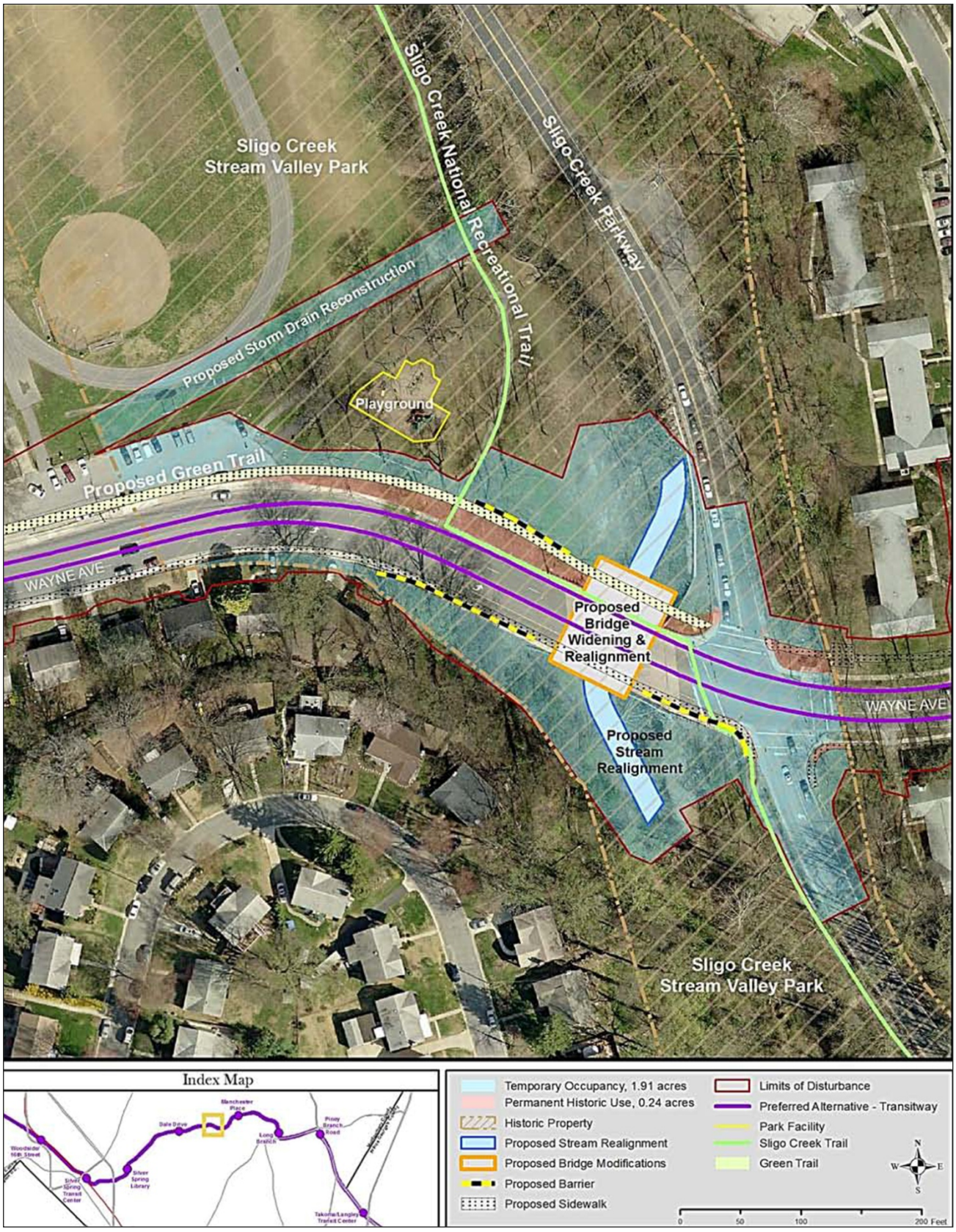
The Preferred Alternative will be located on Wayne Avenue across Sligo Creek Stream Valley Park, crossing the Sligo Creek Parkway at grade at the Wayne Avenue intersection (Figure 1-44). The Preferred Alternative elements in the parkway vicinity include the transitway and overhead contact system. The current setting of the parkway/Wayne Avenue intersection includes the two roadways and the park, consisting of mature trees, shrubs and the creek. The bridge carrying Wayne Avenue over Sligo Creek, upon which the transitway will run, was reconstructed in 2004 and is not a contributing element to the parkway. The Wayne Avenue bridge in this location will be widened to accommodate the transitway. As part of the construction of the new Wayne Avenue bridge, the stream will be realigned for a short distance.

In terms of Section 4(f), MTA will permanently use 0.24 acre and temporarily use 1.91 acres of the Sligo Creek Parkway.

FTA coordinated with MHT and the other consulting parties to complete Section 106 consultation. FTA has made a no adverse effect determination regarding the Sligo Creek Parkway. On November 6, 2013, MHT issued no objection to FTA's determination that the Preferred Alternative will have no adverse effect on Sligo Creek Parkway (Record of Decision Attachment E). In addition, FTA, NPS, MTA and the MHT signed a Section 106 Programmatic Agreement, which

states FTA's determination of no adverse effect on the Sligo Creek Parkway. The Programmatic

Figure 1-44. Sligo Creek Parkway



Agreement outlines commitments and mitigation concerning the Sligo Creek Parkway (Record of Decision Attachment B). MTA will implement the project in accordance with the executed Section 106 Programmatic Agreement.

As MHT concurred with FTA's Section 106 no adverse effect determination in the Programmatic Agreement, FTA has made a *de minimis* use determination under Section 4(f). The permanent and temporary uses by the Preferred Alternative will not adversely affect the features, attributes or activities—historic parkway—that qualify the Sligo Creek Parkway for Section 4(f) protection. M-NCPPC–Montgomery County concurred with FTA's determination for Sligo Creek Parkway (Sligo Creek Stream Valley Park) in a letter dated December 17, 2013 (Record of Decision Attachment E).

Metropolitan Branch, B&O Railroad (M: 37-16)

Section 4(f) Property Description

The Metropolitan Branch of the B&O Railroad extends from Union Station, Washington DC northwest to Point of Rocks, Frederick County, Maryland, where it connects with the principal line of the original B&O Railroad and becomes the primary rail route to Chicago and the west from the Washington-Baltimore area (Figure 1-45)

Figure 1-45. B&O Railroad

The Metropolitan Branch of the B&O Railroad was originally built between 1865 and 1873 and has been maintained and upgraded since construction, as it continues to serve as an active CSX, WMATA, Amtrak and MARC transportation route. In the Purple Line FEIS, this corridor is referred to as the CSX right-of-way. The Metropolitan Branch, B&O Railroad, is historically significant for its association with the transportation industry, as well as agricultural and residential development of Montgomery County (Criterion A) and for its extant stations and engineering structures (Criterion C).

Use of Section 4(f) Property—Permanent Use, Not *De minimis*

The Preferred Alternative will be aligned on and along the existing Metropolitan Branch, B&O Railroad right-of-way from just south of Brookville Road to Colesville Road (Figure 1-46). While the width of the railroad right-of-way will remain unchanged, MTA will use a portion of the property for the Preferred Alternative and MTA will replace the existing Talbot Avenue Bridge, a contributing element to the historic railroad property.

MTA will permanently use approximately 2.10 acres of property within the Metropolitan Branch, B&O Railroad property for the Preferred Alternative, and will temporarily use approximately 2.22 acres of the property during construction. The land area to be used is primarily ballast track bed with no aboveground railroad infrastructure. As the Preferred Alternative will intersect the southern abutment of the Talbot Avenue Bridge, MTA will remove the historic structure and build a new, longer bridge. The Talbot Avenue Bridge is the next property discussed in this section, which includes details regarding MTA's use of the bridge. On the basis of these two actions, removing the historic structure and building a new, longer bridge, FTA has determined that the project will have an adverse effect on the Metropolitan Branch, B&O Railroad property. On November 6, MHT concurred that the Preferred Alternative will have an adverse effect on Metropolitan Branch, B&O Railroad (Record of Decision Attachment E).

The trail will result in the permanent use of approximately 0.4 acre of property within the Metropolitan Branch, B&O Railroad historic property boundary.

Figure 1-46. Metropolitan Branch, B&O Railroad

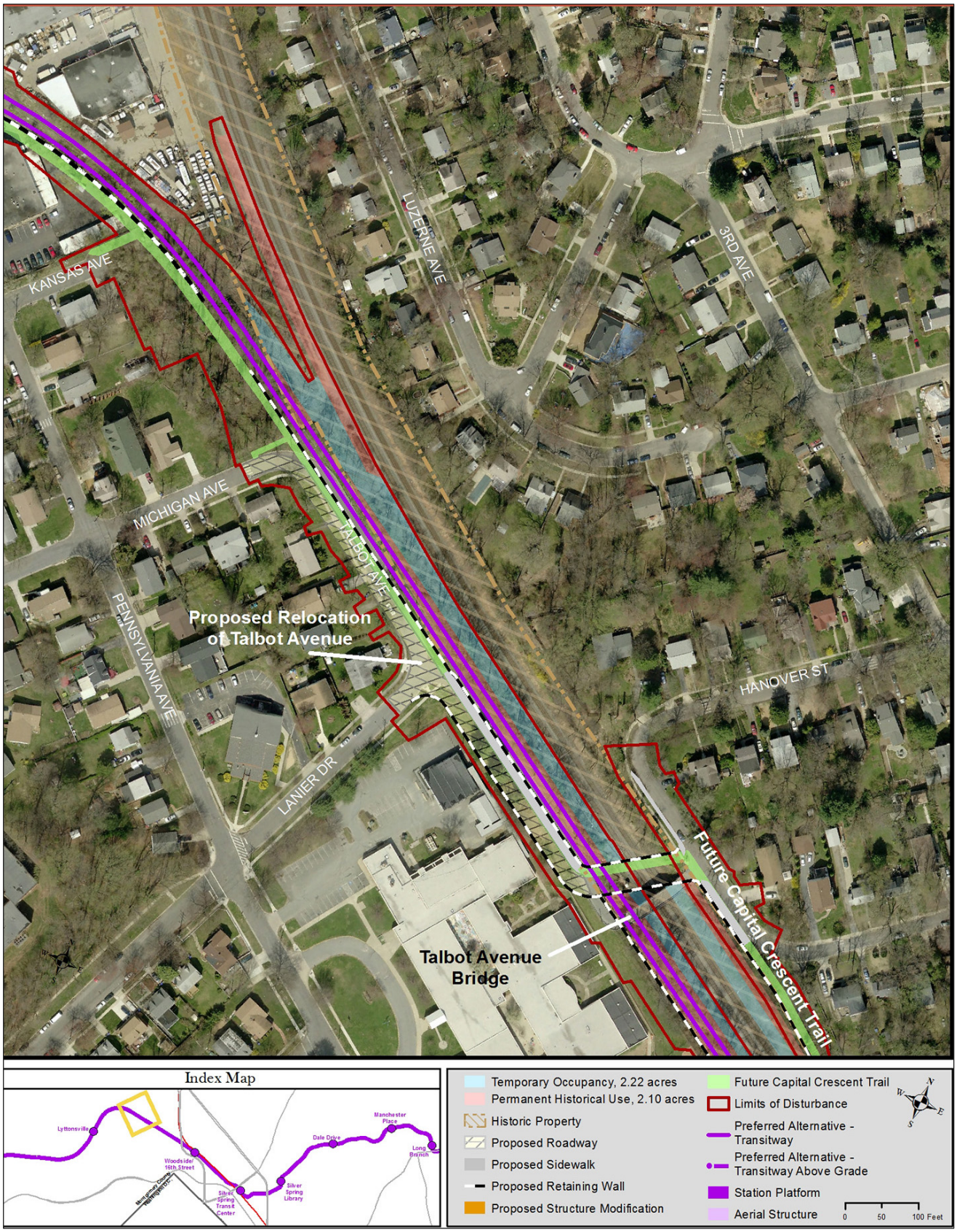


Figure 1-46. Metropolitan Branch, B&O Railroad (continued)

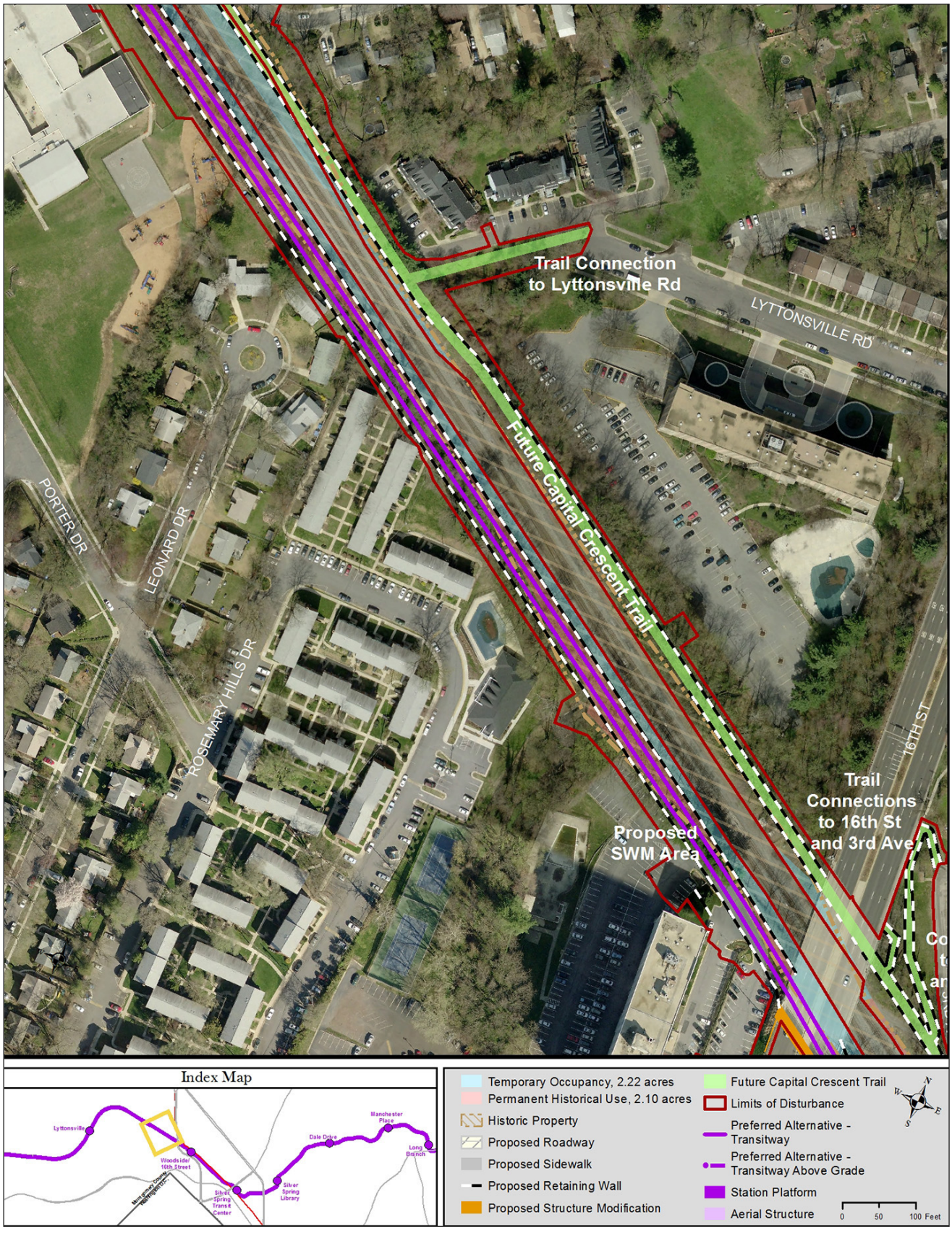


Figure 1-46. Metropolitan Branch, B&O Railroad(continued)

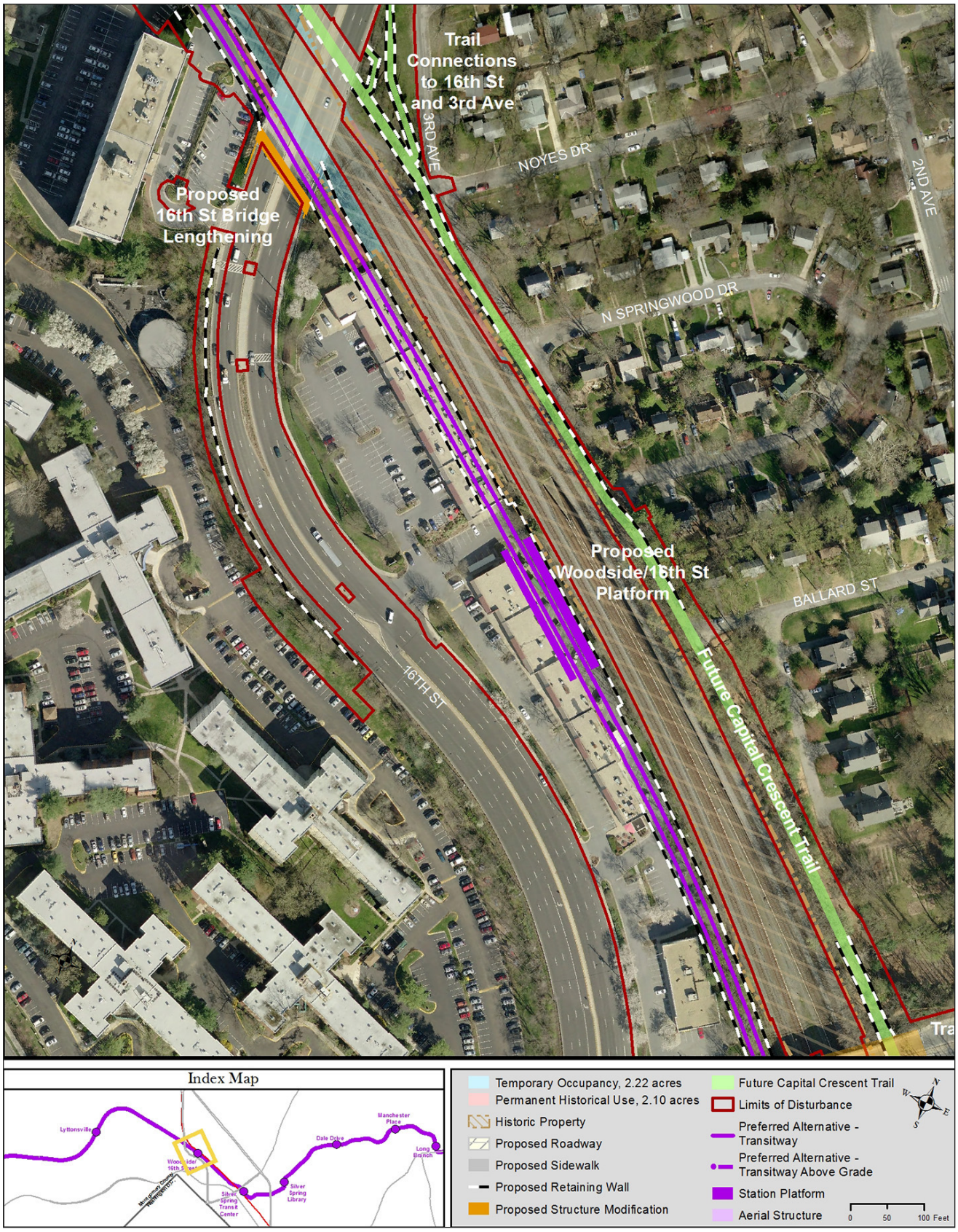


Figure 1-46. Metropolitan Branch, B&O Railroad (continued)

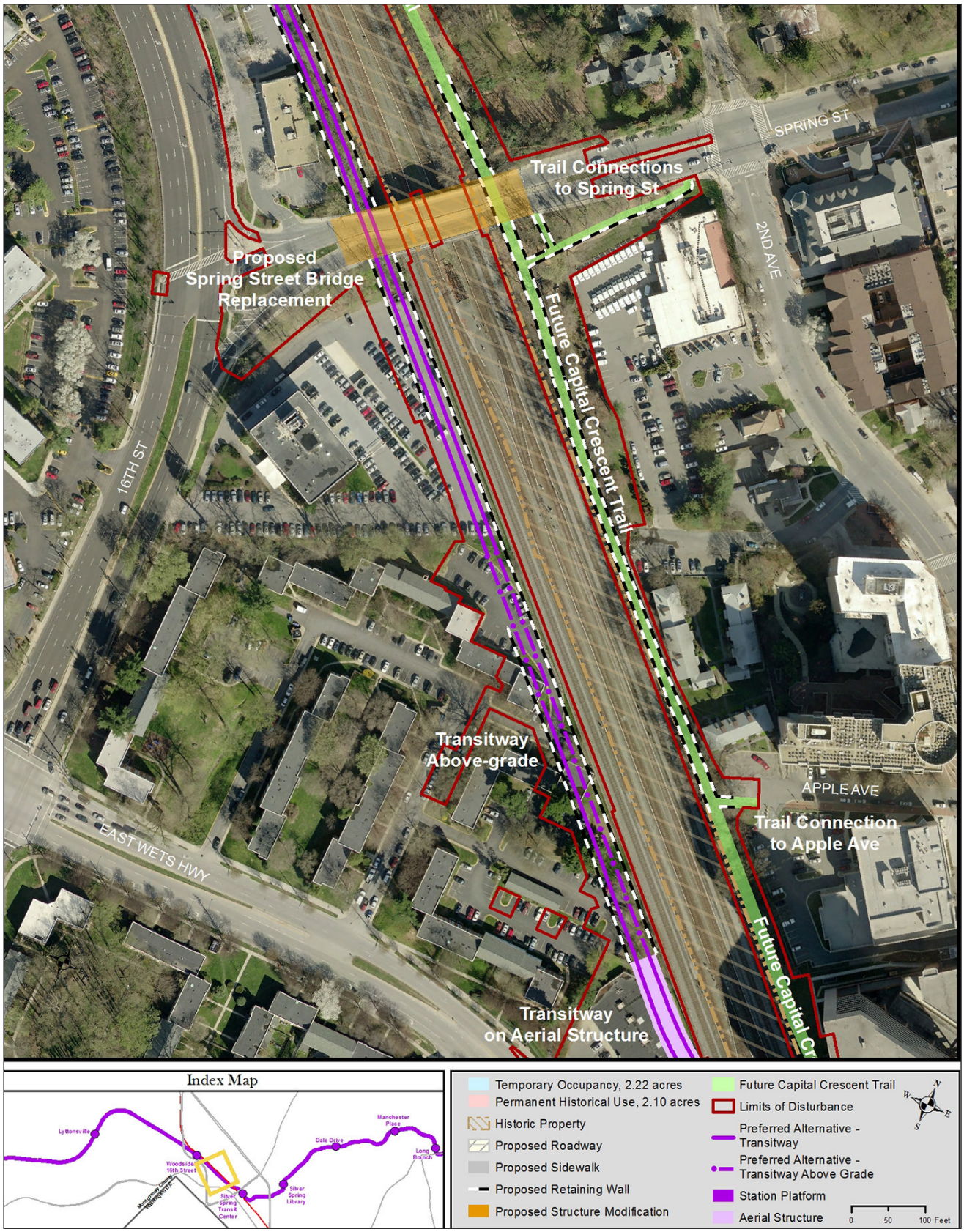
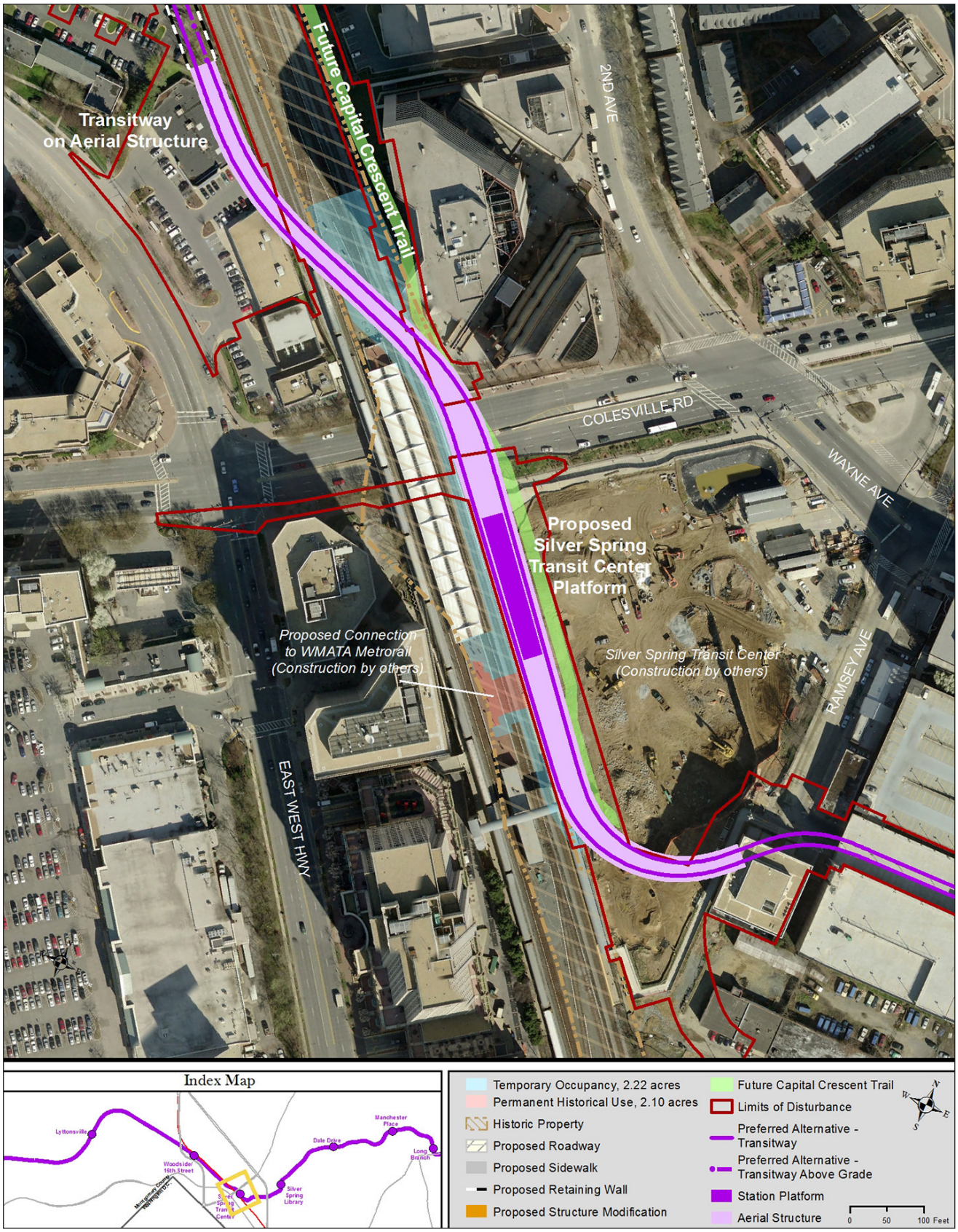


Figure 1-46. Metropolitan Branch, B&O Railroad (continued)



Since the FEIS, MTA removed the separate Capital Crescent Trail bridge that would have crossed Metropolitan Branch, B&O Railroad at Michigan Avenue. The trail will be aligned on the new Talbot Avenue bridge, which has been slightly realigned and widened. Elimination of the trail bridge does not change the adverse effect finding for the historic district, but does reduce the project LOD along the Metropolitan Branch.

Avoidance Alternatives

Two avoidance alternatives were considered involving a southerly shift of the transitway ("A") and tunneling ("C"). Figure 1-47 shows these alternatives. The TSM alternative examined in the AA/DEIS was not considered in the analysis of avoidance alternatives as it compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need (23 CFR 774.17(3)(i)).

Southerly Alignment Shift ("A")

MTA considered shifting the transitway south of Talbot Avenue and the bridge to avoid impacting the bridge. A southerly alignment would displace eight single family residences, the Rosemary Hills Elementary School Building and some of its recreational spaces. While a southern shift may be feasible, it is not prudent as it would cause severe social, economic, or environmental impacts involving impacts to residences, the school and its outdoor recreational areas, which are protected by Section 4(f) (23 CFR 774.17(3)(iii)(A)).

Tunnel Alternatives

MTA considered two avoidance alternatives involving tunneling. In Tunnel Alternative "C," the transitway will cross under the Metropolitan Branch, B&O Railroad property in a tunnel and emerge on the north side of the right-of-way. It would run parallel to the Metropolitan Branch, B&O Railroad property on the surface to Silver Spring Transit Center.

In the second tunneling alternative, the "under Talbot Avenue Bridge" tunneling alternative, the transitway would be aligned under the Metropolitan Branch, B&O Railroad property in a tunnel, passing under the Talbot Avenue Bridge abutment and continuing to the Silver Spring Transit Center. To avoid impacting the bridge, the tunnel would have to be deeper and longer than the tunnel considered in the AA/DEIS.

For each tunnel alternative, business displacements would occur along the surface portion of the alignments as each approaches the Silver Spring Transit Center, including a two-story professional office park and a large multistory (approximately 15 floors) office building. Neither tunnel alternative is considered prudent as each involves multiple factors that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude: existing development on both sides of the Metropolitan Branch corridor that substantially constrains access to the site during construction; severe social, economic, or environmental impacts due to the high number of property impacts; and additional construction, maintenance, or operational costs of an extraordinary magnitude due to the extraordinary construction cost (23 CFR 774.17(3)(vi).

No Build Alternative

The No Build Alternative is an avoidance alternative considered in this Final Section 4(f) Evaluation. The No Build Alternative would cause no use of the historic property. However, the No Build Alternative does not achieve the project purpose and need. Therefore, while the No Build Alternative is feasible, it compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need (23 CFR 774.17(3)(i)).

Property-specific Least Overall Harm Analysis

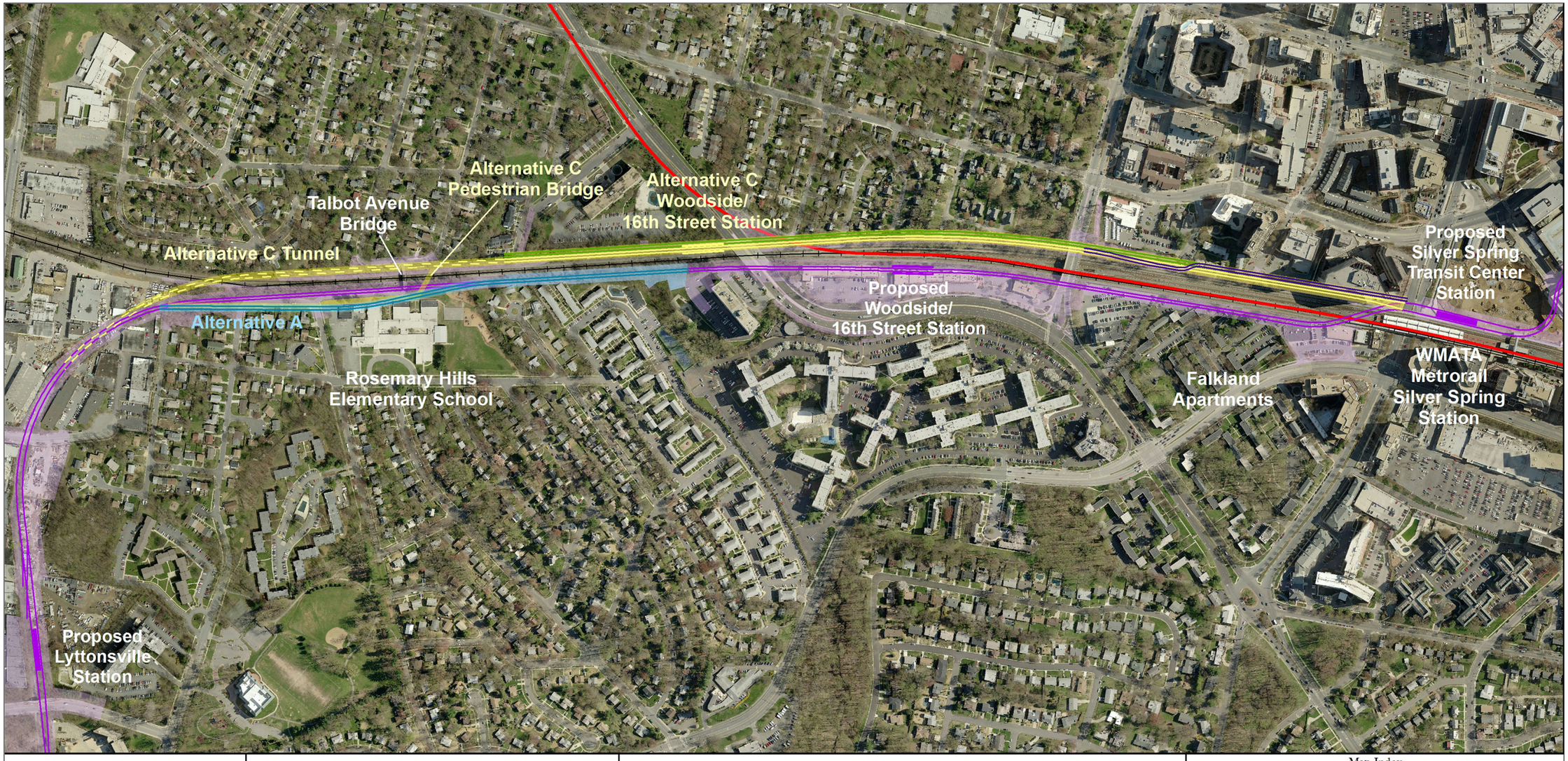
MTA applied the Section 4(f) criteria to determine the build alternative with the least overall harm to the Metropolitan Branch, B&O Railroad property.

AA/DEIS Alternatives

During development of the AA/DEIS alternatives, MTA proposed using the Metropolitan Branch, B&O Railroad property because it is an existing transportation right-of-way that traverses the Purple Line corridor, and the portion of the right-of-way in the corridor is in a similar orientation to that of the Purple Line. Using the property will enable the

Purple Line to operate faster and more reliably than on the existing roadway network,

Figure 1-47. Metropolitan Branch and Talbot Avenue Bridge Avoidance Alternatives



thereby responding to the project purpose and need.

The Low Investment BRT Alternative is the only build alternative that would not use the Metropolitan Branch, B&O Railroad property, as it would not be aligned along the Metropolitan Branch, B&O Railroad corridor.

With the exception of the Low Investment BRT Alternative, each of the alternatives considered in the AA/DEIS would use the same portion of the Metropolitan Branch, B&O Railroad property as the Preferred Alternative. Each of the AA/DEIS alternatives would be aligned in the Metropolitan Branch, B&O Railroad property and would use the Metropolitan Branch property. Each of the alternatives would require two dedicated travel lanes, one in each direction. The amount of right-of-way needed would be the same among the alternatives, and the reasons for the alignment on the south side of the Metropolitan Branch, B&O Railroad property would be the same among the alternatives.

The use of the Metropolitan Branch, B&O Railroad property would be the same for each AA/DEIS alternative, the ability of MTA to mitigate adverse impacts to the property, and the relative severity of the remaining harm to the property are the same (23 CFR 774.3(c)(1)(i) and (ii)). Among the alternatives, the Preferred Alternative strongly meets the project purpose and need (23 CFR 774.3(c)(1)(v)). The magnitude of adverse impacts to properties not protected by Section 4(f) is similar among the alternatives (23 CFR 774.3(c)(1)(vi)). For these reasons, the Preferred Alternative is the least overall harm alternative with regard to the Metropolitan Branch, B&O Railroad property. Section 1.4.3 presents a corridor-wide least overall harm analysis that considers all Section 4(f) properties.

All Possible Planning to Minimize Harm

To minimize the effect of the Preferred Alternative on the Metropolitan Branch, B&O Railroad property, the Preferred Alternative would avoid physically impacting or altering the existing rail infrastructure and operations. In its alignment parallel to the existing railroad tracks, the Preferred Alternative would operate independently of existing operations. The presence of the Preferred Alternative on the Metropolitan Branch, B&O Railroad property is not incompatible with existing rail transportation and does not take away from the significance of the corridor and its transportation use. As design advances, MTA is committed to working with CSX and other corridor operators to meet CSX railroad clearance and operating requirements.

FTA and MTA completed Section 106 consultation and signed a Programmatic Agreement with MHT and other consulting parties regarding mitigation measures for the Metropolitan Branch, B&O Railroad property and Talbot Avenue Bridge (Record of Decision Attachment B). Specifically, MTA will complete recordation plans to document and photograph the Talbot Avenue Bridge, adhering to the guidelines set forth in “HABS/HAER Photographs: Specifications and Guidelines” (U.S. Department of the Interior, 2001); “HABS/HAER Standards” (U.S. Department of the Interior, 1990); “HABS Historical Reports” (U.S. Department of the Interior, October 2000); and “Historical American Engineering Record Guidelines for Historical Reports” (U.S. Department of the Interior, 2008, updated 2010).Details regarding the development and approval of recordation plans are outlined in the Programmatic Agreement (FTA ROD Attachment B).

Section 1.4.3 presents a corridor-wide least overall harm analysis that considers all Section 4(f) properties.

Bridge No. M-85, Talbot Avenue Bridge (M: 36-30)

Section 4(f) Property Description

Bridge No. M-85, Talbot Avenue Bridge, is located on Talbot Avenue, west of Grace Church Road, north of Rosemary Hills Elementary School, and east of Lanier Drive in Silver Spring (Figure 1-48). The bridge crosses the CSX Metropolitan Branch right-of-way. The bridge is a three-span structure that was constructed in 1918. The superstructure consists of a steel plate through-girder in the center span, rolled girders in the end spans, timber floor beams and a timber plank deck. The substructure consists of two concrete abutments and two steel pier column bents on concrete foundations. The structure is 18 feet wide. The traffic safety features consist of timber curbs, timber railings and metal guardrail. The bridge retains its original structural elements with the exception of the timber decking and portions of the steel pier column bents.

Figure 1-48. Talbot Avenue Bridge

The existing structure has severe structural deficiencies which include inadequate load-carrying capacity and areas of section loss in the main load-carrying members. Load rating calculations for this structure indicate that legal vehicle loads in Maryland exceed the carrying capacity of the bridge, as it is currently posted for a 10,000 pound gross weight limit.

A 2009 bridge inspection report indicates that the structure has a Bridge Sufficiency Rating of 27.2. The sufficiency rating is calculated using a formula that evaluates four separate factors of the bridge: structural adequacy and safety, serviceability and functional obsolescence, essentiality for public use and special concerns. The result is a percentage value that is indicative of the bridge sufficiency to remain in service. A bridge's sufficiency rating lower than 50.0 indicates that the bridge is structurally deficient, functionally obsolete, and a total replacement is warranted. In addition to this rating, sight distance issues are present in the vicinity of the structure.

Talbot Avenue Bridge is individually eligible for listing in the NRHP and is a contributing element to the NRHP-eligible Metropolitan Branch, B&O Railroad. The bridge is eligible for the NRHP under Criterion C as a significant example of a metal girder bridge and is representative of the industrial modifications that occurred along the B&O Railroad corridor in the first quarter of the twentieth century, particularly as they relate to technological improvements in both materials and structural technology.

Use of Section 4(f) Property—Permanent Use, Not *De minimis*

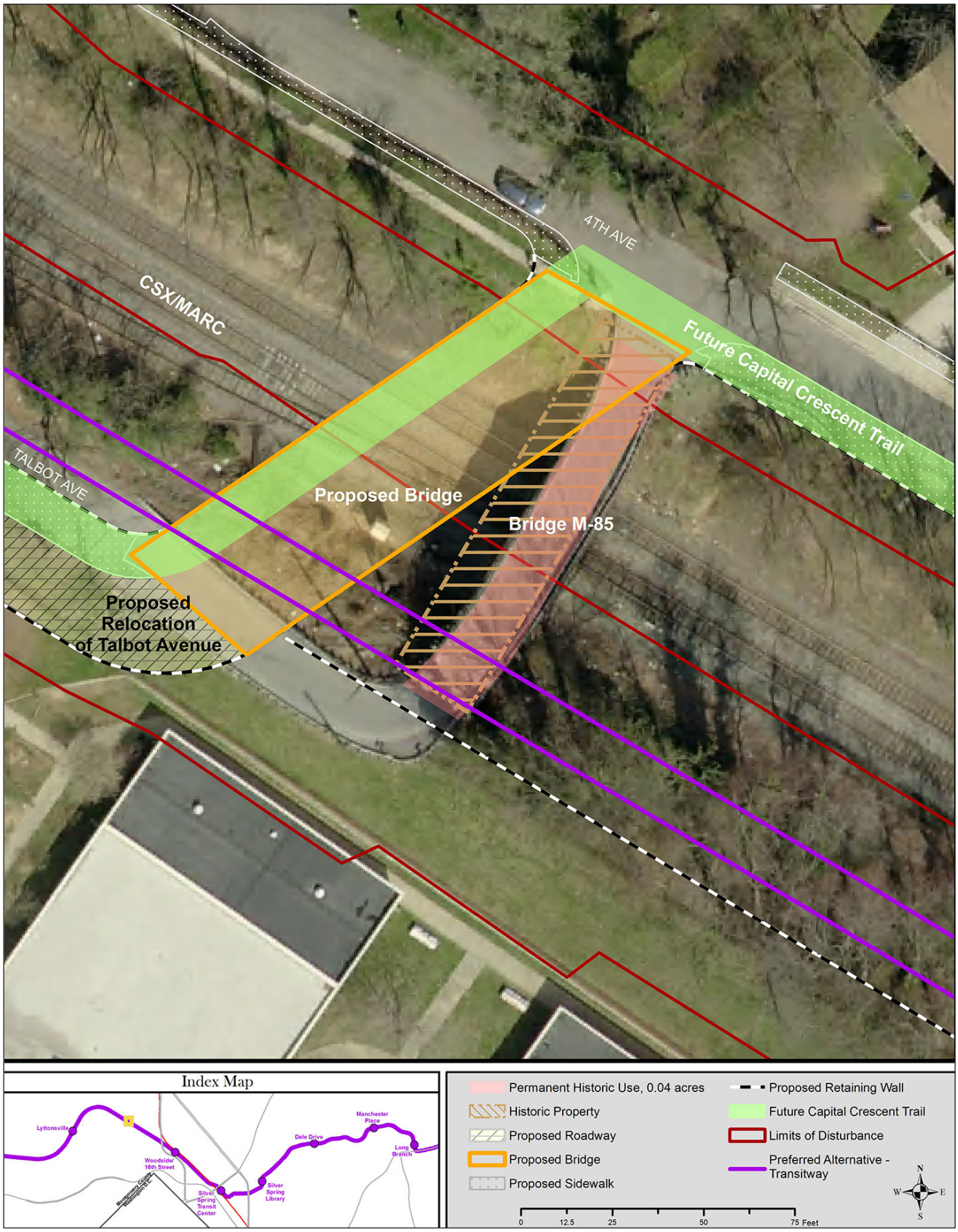
As currently designed, the Preferred Alternative transitway will be located on and along the south side of the Metropolitan Branch, B&O Railroad right-of-way from just south of Brookville Road to Colesville Road (Figure 1-49). The Preferred Alternative will intersect the south abutment of the Talbot Avenue Bridge and approach roadway.

MTA will remove the bridge and construct a new, longer and wider bridge over the CSX railroad tracks at the same location (Figure 1-47). The new bridge will accommodate two lanes of traffic, as well as an ADA-compliant sidewalk. The new abutment locations will provide sufficient horizontal clearance to accommodate the Preferred Alternative.

FTA has determined that the Preferred Alternative will have an adverse effect on the Talbot Avenue Bridge in terms of Section 106 as the bridge will no longer be eligible for the NRHP as an individual property when it is removed; all integrity of location, design, setting, materials, workmanship,

feeling, and association will be removed. On November 6, 2013, MHT concurred with FTA's

Figure 1-49. Bridge M-85, Talbot Avenue Bridge



adverse effect determination (Record of Decision Attachment E). In terms of Section 4(f), MTA will permanently use the Talbot Avenue Bridge, and the use will not be *de minimis*.

Avoidance Alternatives

It is not possible to shift the Preferred Alternative transitway within the Metropolitan Branch, B&O Railroad property to avoid the bridge abutment. As the CSX tracks and infrastructure are immediately north of the alignment, MTA must comply with CSX railroad clearance requirements, and Talbot Avenue is immediately to the south of the corridor.

Due to the generally north-south orientation of the Metropolitan Branch, B&O Railroad corridor and the east-west orientation of the Preferred Alternative alignment, it is not possible to avoid crossing the Metropolitan Branch, B&O Railroad corridor. During Purple Line project development leading up to the AA/DEIS, MTA examined the Metropolitan Branch, B&O Railroad and other transportation corridors in the project area as part of the process of determining Purple Line alignments for the AA/DEIS. In this process, MTA determined that the route of the Metropolitan Branch, B&O Railroad corridor would cause the least traffic and community impacts. Moreover, a new rail transportation use in the existing rail transportation corridor would be a consistent use.

The Preferred Alternative alignment using Metropolitan Branch was determined by the configurations of the transitway alignments to the east and west of the Metropolitan Branch. Each AA/DEIS alternative alignment was determined by the same iterative planning process. As a result, the Preferred Alternative alignment must pass over, under, or around the Talbot Avenue Bridge.

Southerly Alignment Shift and Tunnel Alternatives

Alternatives A and C, considered as avoidance alternatives for the Metropolitan Branch, B&O Railroad property, were also considered for Talbot Avenue Bridge. Each is described above and shown in Figure 1-47. Alternatives A and C were dismissed as not feasible and prudent for the same reasons: severe social, economic, or environmental impacts as the southerly shift would have severe residential and school impacts (23 CFR 774.17(3)(iii)(A)); and tunneling is not feasible if it cannot be built as a matter of sound engineering judgment, it would have severe social, economic, or environmental impacts due to high property impacts, and it would result in additional construction, maintenance, or operational costs of an extraordinary magnitude (23 CFR 774.17(3)(iii)(A), (4)(iv), and (3)(vi)).

TSM Alternative

The TSM alternative examined in the AA/DEIS was not considered prudent as it compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need (23 CFR 774.17(3)(i)).

No Build Alternative

The No Build Alternative is an avoidance alternative considered in this Section 4(f) Evaluation. The No Build Alternative would cause no use of the historic property. However, the No Build Alternative does not achieve the project purpose and need. Therefore, while the No Build Alternative is feasible, it is not prudent (23 CFR 774.17(3)(i)).

Least Overall Harm Analysis

MTA applied the Section 4(f) criteria to determine the build alternative with the least overall harm to the Talbot Avenue Bridge. In this analysis, the Preferred Alternative and each of the build alternatives in the AA/DEIS were evaluated.

AA/DEIS Alternatives

During development of the AA/DEIS alternatives, MTA proposed using the Metropolitan Branch, B&O Railroad property because it is an existing transportation right-of-way that traverses the Purple Line corridor, and the portion of the right-of-way in the corridor is in a similar orientation to that of the Purple Line. Using the property would enable the Purple Line to operate faster and more reliably than on the existing roadway network, thereby achieving the project purpose and need.

The Low Investment BRT Alternative is the only build alternative that would not use the Talbot Avenue Bridge property, as it would not be aligned adjacent to the Metropolitan Branch, B&O Railroad corridor. With the exception of the Low Investment

BRT Alternative, each of the alternatives considered in the AA/DEIS would intersect Talbot Avenue Bridge in the same way as the Preferred Alternative.

Each of the alternatives considered in the AA/DEIS that would be aligned in the Metropolitan Branch, B&O Railroad corridor would intersect the Talbot Avenue Bridge abutment. Each of the alternatives would require two dedicated travel lanes, one in each direction. The amount of right-of-way needed would be the same among the alternatives, and the reasons for the alignment on the south side of the Metropolitan Branch, B&O Railroad corridor would be the same among the alternatives.

The use of the Talbot Avenue Bridge would be the same for each alternative; the ability of MTA to mitigate adverse impacts to the property and the relative severity of the remaining harm to the property are the same (23 CFR 774.3(c)(1)(i) and (ii)). Among the alternatives, the Preferred Alternative strongly meets the project purpose and need (23 CFR 774.3(c)(1)(v)). The magnitude of adverse impacts to properties not protected by Section 4(f) is similar among the alternatives (23 CFR 774.3(c)(1)(vi)). For these reasons, and despite the Preferred Alternative being more costly than all but the High Investment LRT Alternative (23 CFR 774.3(c)(1)(vii)) as discussed in Section 1.4.3, the Preferred Alternative is the least overall harm alternative with regard to the Talbot Avenue Bridge.

Section 1.4.3 presents a corridor-wide least overall harm analysis that considers all Section 4(f) properties.

All Possible Planning to Minimize Harm

In its completed Section 106 consultation with MHT, FTA and MTA signed a Programmatic Agreement identifying the mitigation strategies for the bridge (Record of Decision Attachment B). Specifically, MTA will complete recordation plans to document and photograph the Talbot Avenue Bridge, adhering to the guidelines set forth in "HABS/HAER Photographs: Specifications and Guidelines" (U.S. Department of the Interior, 2001); "HABS/HAER Standards" (U.S. Department of the Interior, 1990); "HABS Historical Reports" (U.S. Department of the Interior, October 2000); and "Historical American Engineering Record Guidelines for Historical Reports" (U.S. Department of the Interior, 2008, updated 2010).Details regarding the development and approval of recordation plans are outlined in the signed Section 106 Programmatic Agreement (Record of Decision Attachment B).

Falkland Apartments (M: 36-12)

Section 4(f) Property Description

The Falkland Apartments, known in the FEIS as the Falkland Chase Apartments, is a large, Colonial Revival-style garden apartment and townhouse community that occupies the northeast, southeast, and southwest quadrants of the intersection of East-West Highway, Colesville Road, and 16th Street in Silver Spring. Figure 1-50 shows a portion of the Colonial Revival architecture. The Falkland Apartments were developed in the 1930s by the Blair family on part of their former farm. The Falkland Apartments were determined eligible for listing in the NRHP as one of the first three projects funded by the Federal Housing Administration and as a model garden apartment complex, the first of its kind in Montgomery County (Criteria A). The apartment complex is also significant for its Colonial Revival design by Washington DC architect Louis Justement, which embodies classical design elements—building architecture and layout, and landscape—that evolved from the "garden city" movement (Criteria C).

Figure 1-50 Falkland Apartments

Use of Section 4(f) Property—Permanent Use, Not *De minimis*

The Preferred Alternative will be aligned on the south side of and outside the NRHP-eligible Metropolitan Branch, B&O Railroad property, which is directly east of the Falkland Apartments (Figure 1-51). The Preferred Alternative is aligned on the Falkland Apartments property along the northeastern boundary of the property; MTA will permanently use approximately 0.52 acre of the historic property. The property to be used contains lawn, landscaping, internal roadways to the complex, and 12 apartment units in two buildings, all of which are contributing elements of the historic property. All elements within the limits of disturbance, including portions of the two apartment buildings, will be removed to implement the Preferred Alternative. Removing these elements will diminish the property's design, setting, materials, workmanship, feeling, and association. FTA has determined that the Preferred Alternative will have an adverse effect on the Falkland Apartments in terms of Section 106. On November 6, 2013, MHT concurred with FTA's determination that the Preferred Alternative will have an adverse effect on the Falkland Apartments (Record of Decision Attachment E). In terms of Section 4(f), the Preferred Alternative will result in a use that is not *de minimis*.

Prior to publication of the FEIS, MTA refined the LOD based on review of the Falkland Apartment building plans. The refinement resulted in a slight increase in the LOD; however, the refinement does not change the Section 106 finding of adverse effect or the Section 4(f) use determination. This refinement was made prior to the publication of the FEIS and was included in the FEIS's assessment of impacts and shown on the graphics in Chapter 6, Draft Section 4(f) Evaluation, but was not shown in the Environmental Resource Mapping in Volume II of the FEIS.

As part of the construction of the Preferred Alternative, MTA's work activities will require a temporary construction area approximately 0.51 acre in size, within the historic boundary of the Falkland Apartments.

Avoidance Alternatives

Two avoidance alternatives were assessed: transitway alignment on the north side of the Metropolitan Branch corridor ("B") and a tunnel alignment under the Metropolitan Branch, B&O Railroad corridor ("C") (Figure 1-52). The TSM alternative examined in the AA/DEIS was not considered in the analysis of avoidance alternatives as it compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need (23 CFR 774.17(3)(i)).

Alignment Shift—North Side of Metropolitan Branch ("B")

Alignment shift "B" would be a surface alignment along the south side of the Metropolitan Branch, B&O Railroad corridor until just west of the Falkland Apartments where the transitway would climb and cross over the Metropolitan Branch, B&O Railroad and continue east along but outside on the north side of the Metropolitan Branch, B&O Railroad corridor. As with tunnel alternative "C," alternative "B" would displace a 2-story professional office park and a large multistory (approximately 15 floors) office building. While technically feasible, Alternative B is not prudent as it would have severe social, economic, or environmental impacts due to the high number of property impacts (23 CFR 774.17(3)(iii)(A)).

Tunnel Alternative

Tunnel alternative "C" was presented in the AA/DEIS and in the Metropolitan Branch, B&O Railroad discussion above. Tunnel alternative "C" is considered not prudent as it involves multiple factors that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude: existing development on both sides of the Metropolitan Branch corridor that substantially constrains access to the site during construction; severe social, economic, or environmental impacts due to the high number of property impacts; and additional construction, maintenance, or operational costs of an extraordinary magnitude due to the extraordinary construction cost (23 CFR 774.17(3)(vi).

Figure 1-51. Falkland Apartments

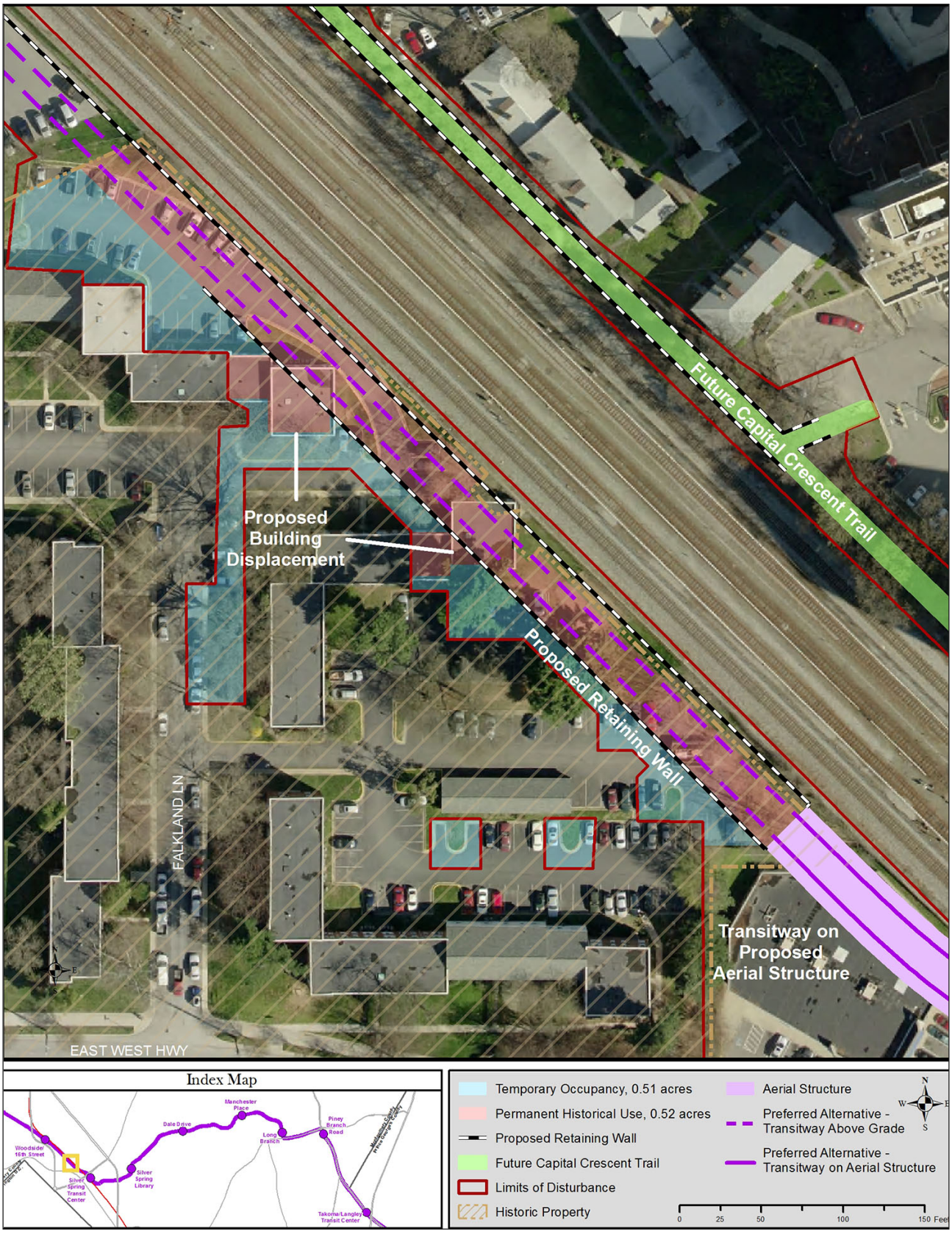
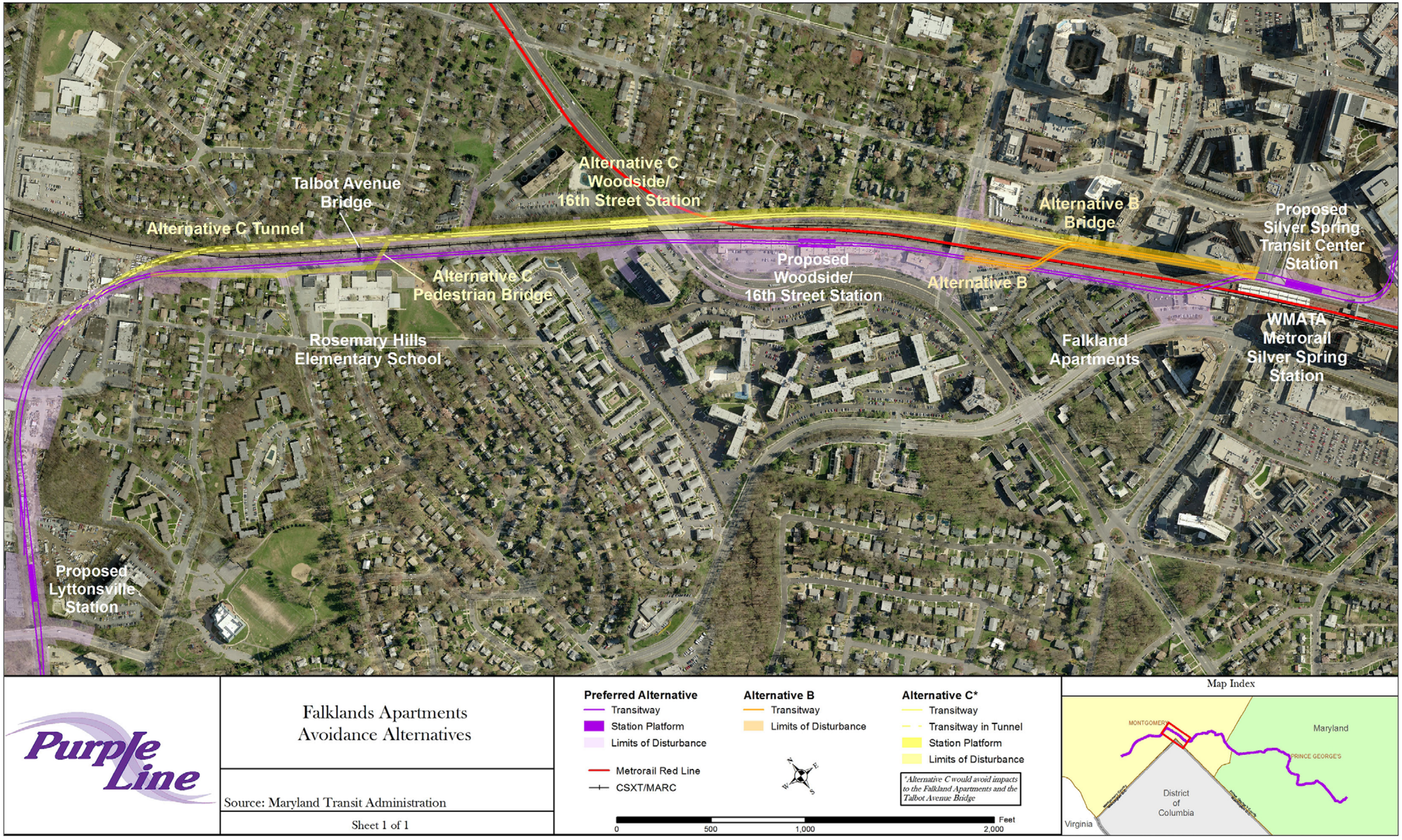


Figure 1-52. Falkland Apartments Avoidance Alternatives



Alignment Shift—South of Falkland Apartments

A third avoidance alternative is a surface alignment that avoids the Falkland Apartments by turning south from the Metropolitan Branch and east around it. The track curves required for this shift are not consistent with the design criteria for the project. Further, looping around the complex would yield a circuitous route to the Silver Spring Transit Center, displacing numerous high rise apartment buildings and single family homes, severely reducing transit travel times and causing longer vehicular delays. Avoiding the Falkland Apartments by looping around the property is not prudent as it would cause severe social, economic, or environmental impacts (23 CFR 774.17(3)(iii)(A)).

No Build Alternative

The No Build Alternative is an avoidance alternative considered in this Section 4(f) Evaluation. The No Build Alternative would cause no use of the historic property. However, the No Build Alternative does not achieve the project purpose and need. Therefore, while the No Build Alternative is feasible, it compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need (23 CFR 774.17(3)(i)).

Property-specific Least Overall Harm Analysis

MTA applied the Section 4(f) criteria to determine the build alternative with the least overall harm to the Falkland Apartments. In this analysis, the Preferred Alternative and each of the build alternatives in the AA/DEIS were evaluated.

AA/DEIS Alternatives

During development of the AA/DEIS alternatives, MTA proposed using the Metropolitan Branch, B&O Railroad property because it is an existing transportation right-of-way that traverses the Purple Line corridor, and the portion of the right-of-way in the corridor is in a similar orientation to that of the Purple Line. Using the property will enable the Purple Line to operate faster and more reliably than on the existing roadway network, thereby achieving the project purpose and need.

In the vicinity of the Falkland Apartments, the alignments of all AA/DEIS alternatives, except the Low Investment BRT Alternative, are shifted south and outside of the Metropolitan Branch, B&O Railroad property because of the change in elevation and alignment requirements to cross the railroad property east of the Falkland Apartments as the Purple Line heads east toward the Silver Spring Transit Center.

With the exception of the Low Investment BRT Alternative, each of the alternatives considered in the AA/DEIS would use the same portion of the Falkland Apartments property as the Preferred Alternative.

The Low Investment BRT Alternative is the only build alternative that would not use the Falkland Apartments property, as it would not be aligned adjacent to the Metropolitan Branch corridor. Among the remaining alternatives, each would be aligned along the northeast property line adjacent to the Metropolitan Branch corridor. Each alternative would require two dedicated travel lanes, one in each direction. The amount of right-of-way needed would be the same among the remaining alternatives, and the reasons for the alignment on the south side of the Metropolitan Branch corridor would be the same among the remaining alternatives.

The use of the Falkland Apartments would be the same for all but the Low Investment BRT Alternative, and the ability of MTA to mitigate adverse impacts to the property among the remaining alternatives is the same (23 CFR 774.3(c)(1)(i) and (ii)). Among all alternatives, the Preferred Alternative strongly meets the project purpose and need, whereas the Low Investment BRT Alternative is weak in meeting the purpose and need (23 CFR 774.3(c)(1)(v)). The magnitude of adverse impacts to properties not protected by Section 4(f) is similar among all alternatives (23 CFR 774.17(3)(i) and (vi)). In view of these factors, particularly the importance of an alternative strongly achieving the project purpose and need, and despite the Preferred Alternative being more costly than all but the High Investment LRT Alternative (23 CFR 774.3(c)(1)(vii)) as discussed in Section 1.4.3, the Preferred Alternative is the alternative with the least overall harm to the Falkland Apartments.

Section 1.4.3 presents a corridor-wide least overall harm analysis that considers all Section 4(f) properties.

All Possible Planning to Minimize Harm

During the AA/DEIS, the owner of the Falkland Apartments had plans to redevelop the portion of the property the Preferred Alternative will use. The property owner and MTA coordinated to reserve sufficient space for the Preferred Alternative corridor. The corridor location and dimensions were determined by MTA establishing a minimal transitway footprint and aligning the needed right-of-way at the property boundary. Since that time, the owner's redevelopment plans have not gone forward.

In response to this change, MTA further minimized its right-of-way needs by using retaining walls to limit its use of the property. By doing so, MTA was able to reduce the amount of building removal and residential displacements within the Falkland Apartments.

In its Section 106 consultation with MHT and other consulting parties, FTA and MTA developed mitigation for the Falkland Apartments. Specifically, MTA will complete recordation plans to document and photograph the Falkland Apartments, adhering to the guidelines set forth in "HABS/HAER Photographs: Specifications and Guidelines" (U.S. Department of the Interior, 2001); "HABS/HAER Standards" (U.S. Department of the Interior, 1990); "HABS Historical Reports" (U.S. Department of the Interior, October 2000); and "Historical American Engineering Record Guidelines for Historical Reports" (U.S. Department of the Interior, 2008, updated 2010). Details regarding the development and approval of recordation plans are outlined in the signed Section 106 Programmatic Agreement (Record of Decision Attachment B).

University of Maryland Historic District, College Park (PG: 66-35) and Rossborough Inn (PG: 66-22)

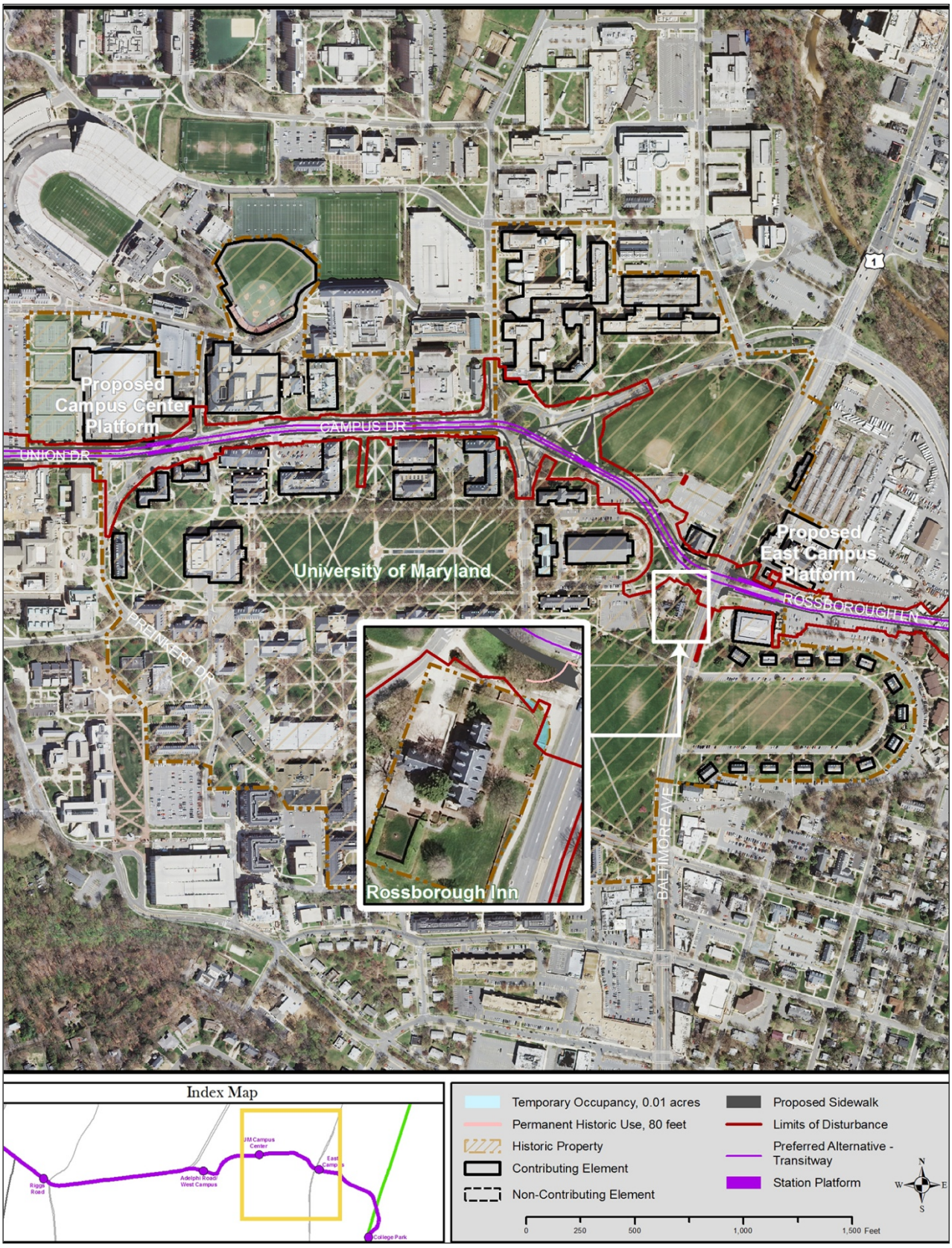
Section 4(f) Property Description

The College Park campus of the University of Maryland is situated on 1,250 acres and serves as the flagship institution of the state's university system (Figure 1-53). The University of Maryland began as the Maryland Agricultural College, established in 1856 by Charles Benedict Calvert and eighteen other wealthy planters. The new institution was created to modernize agricultural practices and enable local farmers to increase productivity. The University of Maryland College Park's historic campus extends from Metzerott Road and Paint Branch Parkway on the north, Adelphi Road on the west, Rhode Island Avenue on the east, and Knox Road on the south. The historic core of the campus is 188.3 acres in size and encompasses a considerably smaller area than the University as a whole. The historic core is centered on McKeldin Mall, a large green space which extends from the Main Administration Building on the east to McKeldin Library on the west. Other buildings in the historic core are largely organized around smaller plazas and quadrangles, such as Hornbake Plaza on the north side of Campus Drive and the Grassy Bowl east of Anne Arundel Hall. The University of Maryland, College Park Historic District extends to Stadium Drive and Field House Drive to the north, Greenhouse Road and Leondardtown Hall to the east, Lehigh Road to the south, and Campus Drive to the west.

The historic core of the campus is eligible for listing in the National Register as a historic district under NRHP Criterion A for its role in the development of education and agriculture in Maryland and Criterion C for its concentration of Georgian Revival collegiate buildings. The period of significance begins in 1856 with the charter of the university and extends through 1961, at the end of a period of post-World War II expansion.

The Federal-style Rossborough Inn, constructed circa 1803 by Richard Ross, was included in the land sold by the Calvert family to Maryland Agricultural College. The structure, the oldest on campus, has been enlarged and expanded, assuming its present appearance in the 1930s. Under University ownership, the Rossborough Inn has served various uses including a restaurant, an agricultural experiment station and a faculty and alumni club, and presently serves as the Office of Undergraduate Admissions. The Rossborough Inn is eligible for the National Register and is a contributing property within the University of Maryland Historic District.

Figure 1-53. University of Maryland College Park



Use of Section 4(f) Property—*De minimis* Use

Early on in the Purple Line planning process, MTA identified the University of Maryland campus as an essential transit service hub; the campus is one of the activity centers identified in the project purpose and need. The Preferred Alternative will enter the campus across from Rossborough Lane, turning north and west to align with Campus Drive (Figure 1-53). From its point of entry at the east to just west of the Campus Drive/Presidential Drive intersection, the Preferred Alternative is within the historic district. Two stations will be provided on campus: Campus Center station in the center of the campus and East Campus station along Rossborough Lane.

The transitway will run primarily within existing roadways within the western two-thirds of the district, including Campus Drive (Figure 1-54) and Union Drive. These roadways have been upgraded during the late 20th century, including new sidewalks, street furniture, modern lighting, bus pull outs, and planting and landscaping. The new elements of the transitway, including embedded track, an overhead contact system, and the transit vehicles, will be new visual elements. However, in the context of the modern street lights, signage, bus shelters and other elements, the visual change will be minimal.

Campus Center station will be toward the east end of the district on Campus Drive near the Cole Student Activities Building. The station will have side configuration and will generally occupy the existing Campus Drive footprint, with minor widening, to the east of the Cole Student Activities Building. At this location, Campus Drive has two travel lanes for through traffic, as well as a parking lane on the south side, a bus pull-out on the north side of the road, and modern bus shelters on the north side of Campus Drive. All of the contributing buildings in this vicinity are set well back from the road. Given the existing transportation features of Campus Drive and the minimal elements of the station, Campus Center station will not diminish the characteristics that make the district or its contributing elements eligible for the National Register of Historic Places. Campus Center station was determined by FTA to have no adverse effect on the contributing elements of the district, the historic district as a whole, or the Rossborough Inn.

East Campus station will be built along Rossborough Lane, east of US 1. The station platform and shelters will be outside the transitway lanes on the sidewalk. Currently Rossborough Lane in this location has three travel lanes, a concrete sidewalk along the north side of the road, a narrow concrete island walkway, and a parking lot along the

Figure 1-54. Campus Drive, University of Maryland

south side of the road. Given the existing transportation features of Rossborough Lane (Figure 1-53) and its surroundings, as well as the minimal elements of the station, East Campus station will not diminish the characteristics that make the district or its contributing elements eligible for the National Register of Historic Places. East Campus station will have no adverse effect on the elements of the district or the historic district as a whole.

In its ongoing coordination with the University, MTA has developed a number of strategies to integrate the Preferred Alternative into the campus and minimize harm to the historic district. Foremost among these strategies is placement of the alignment primarily through areas that are non-contributing elements, specifically Rossborough Lane and Campus Drive. These elements contain contemporary features that have been modified in the years since the period of significance. By placing the transitway and stations in these areas, MTA has minimized the effect of the Preferred Alternative on the historic district. Use of Campus Drive is viewed by the University and MTA as an appropriate location given the current use of the corridor by bus transit and public traffic. The many bus pull-outs, street signage, overhead wires, and other contemporary elements provide a context that will enable the Purple Line overhead contact wire system and track to coexist without having an adverse effect on the historic district.

As currently designed, the Preferred Alternative will impact and thereby use approximately 80 feet of an existing brick wall in the vicinity of the Rossborough Inn (involving temporary occupancy of 0.01 acre of land during construction) to achieve the turn of the transitway at the US 1 crossing. Although considered a contributing element, the wall has been altered since the district's period of significance.

The Preferred Alternative will result in the removal of the modern traffic circle at Regents Drive before traversing a small portion of lawn to the north of the Mitchell Building, and then continuing eastward, crossing a portion of an existing parking lot adjacent to Reckford Armory, connecting to and following Rossborough Lane between Turner Hall and Rossborough Inn to US 1. The transitway will cross US 1 along Rossborough Lane between Ritchie Coliseum and the University of Maryland Service Building, both of which are contributing buildings, as well as large modern parking lots. The transitway will connect to Paint Branch Parkway directly east of the Plant Operations and Maintenance Shops building.

Commitments and Mitigation Measures

MTA will assess the compatibility of the project design with the historic, architectural and scenic qualities of the University of Maryland Historic District, College Park historic district in terms of scale, massing, color and materials, as well as responsiveness to the recommended approaches to new construction set forth in the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR Part 68).

MTA will consult with MHT, the University of Maryland and other consulting parties that have an interest regarding the location and design of catenary poles and light fixtures; the location and design of station facilities; and the roadway, sidewalk and bike path materials. MTA will utilize context sensitive design practices to select materials that are consistent with existing materials and enhance the aesthetic and historic qualities of the campus. MTA will identify the historic resources and establish and mark a buffer area in the design drawings and in the field to protect the resources. MTA will submit the design drawings to MHT, the University of Maryland and other consulting parties that have an interest in this property, for review and comment.

MTA will develop a landscape plan in consultation with MHT, the University of Maryland and other consulting parties that have an interest in this property. The Landscape Plan will be developed as a measure to minimize the visual impact of the Undertaking on the historic district. The portion of the brick wall that is impacted will be re-built using the same general placement, curve and materials as the existing wall. Where reasonable, measures will be taken to minimize views of the catenary poles and wires, and reduce the visual intrusion of the

Undertaking through fields and open space. The design of catenary poles, roadways and pedestrian pathways will be designed in such a fashion that trees and other vegetation can be utilized to the maximum extent possible. The Landscape Plan will specify the location, type and size of plant materials. MTA will submit the plans to MHT, the University of Maryland and other consulting parties that have an interest, for review and comment. MTA will implement the project in accordance with the executed Section 106 Programmatic Agreement.

Section 4(f) Determination

In terms of Section 4(f), MTA will permanently use approximately 80 feet of a contributing brick wall near US 1 and temporarily use approximately 0.01 acre of contributing land around the wall within the 188.3 acre University of Maryland, College Park Historic District, or less than one percent of historic district property. The Preferred alternative would use approximately 14.19 acres of non-contributing property—primarily portions of existing roadways, lawns and parking lots—within the District that are not significant landscape components.

As the Preferred Alternative has been integrated into the campus and aligned primarily on existing roadways and other non-contributing elements, the transitway will not diminish the characteristics that make the district or its contributing elements eligible for the National Register of Historic Places; it will have no adverse effect on the district. FTA coordinated with MHT and the other consulting parties to complete Section 106 consultation.

FTA has made a no adverse effect determination regarding the University of Maryland Historic District, College Park. On November 6, 2013, MHT issued no objection to FTA's no adverse effect determination for the University of Maryland Historic District, College Park (Record of Decision Attachment E). In addition, FTA, NPS, MTA and the MHT signed a Section 106 Programmatic Agreement, which states FTA's determination of no adverse effect on the University of Maryland. The Programmatic Agreement outlines commitments and mitigation concerning the University of Maryland (Record of Decision Attachment B). MTA will implement the project in accordance with the executed Section 106 Programmatic Agreement.

As MHT concurred with FTA's Section 106 no adverse effect determination in the Programmatic Agreement, FTA made a *de minimis* use determination under Section 4(f). The permanent and temporary uses by the Preferred Alternative will not adversely affect the features, attributes or activities—historic parkway—that qualify the University of Maryland Historic District, College Park for Section 4(f) protection.

1.4.3 Corridor-wide Least Overall Harm Analysis

FTA's corridor-wide least overall harm assessment examined the build alternatives evaluated in the AA/DEIS, as well as the Preferred Alternative, including design efforts to minimize and mitigate impacts, to identify the alternative having the least overall harm to Section 4(f) properties. The constraints in the corridor—traffic congestion, lack of opportunity to increase roadway capacity, topography of steep stream valleys, and existing heavy rail corridors, which constrain the physical environment—limit the solutions to address the project needs to these alternatives.

In accordance with 23 CFR 774.3(c)(1), FTA applied the seven least overall harm factors listed in Section 1.1.2. The results of the assessment are presented in Table 1-9, summarized below by factor, and followed by an interpretive discussion.

Factor i—Impact Mitigation

The AA/DEIS alternatives and the Preferred Alternative would, in large part, have the same transitway alignment in the corridor. In assessing the alternatives, MTA considered design refinements, such as alignment shifts, to reduce impacts to Section 4(f) properties. The Preferred Alternative was refined using this iterative process. MTA would have the same ability to refine the alternatives considered in the AA/DEIS that use the same alignment.

The adverse impacts of each alternative on Section 4(f) properties would be similar with some exceptions; and MTA's design assumptions and refinements to the Preferred Alternative would apply equally to the other alternatives. Specifically,

MTA would have the same ability to mitigate impacts among the alternatives as it has committed

Table 1-9. Least Harm Analysis Factors

Alternatives	Section 4(f) Least Overall Harm Criteria (23 CFR 774.3(C)(1)						
	Impact Mitigation[1]	Remaining Severity[2]	Property Significance[3]	Officials' Views[4]	Purpose and Need[5]	Impact Magnitude[6]	Cost[7]
Preferred Alternative	Equal ability to mitigate	1 high 4 moderate 9 low	Equal significance	MTA developed minimization and mitigation measures with Officials	Strongest	Right-of-way acquisition moderate	2.2
High Investment LRT	Equal ability to mitigate	1 high 4 moderate 9 low	Equal significance	Same as Preferred Alternative	Strongest	Same as Preferred Alternative	2.5
Medium Investment LRT	Equal ability to mitigate	1 high 3 moderate 9 low	Equal significance	Same as Preferred Alternative	Strong	Same as Preferred Alternative	1.9
Low Investment LRT	Equal ability to mitigate	1 high 3 moderate 9 low	Equal significance	Same as Preferred Alternative	Moderate	Same as Preferred Alternative	1.8
High Investment BRT	Equal ability to mitigate	1 high 4 moderate 9 low	Equal significance	Same as Preferred Alternative	Strong	Same as Preferred Alternative; limited capacity of BRT; operational problems	1.8
Medium Investment BRT	Equal ability to mitigate	1 high 4 moderate 9 low	Equal significance	Same as Preferred Alternative	Moderate	Same as Preferred Alternative; limited capacity of BRT; operational problems	1.0
Low Investment BRT	Equal ability to mitigate	1 high 2 moderate 8 low	Equal significance	Same as Preferred Alternative; one less property	Weak	Same as Preferred Alternative; limited capacity of BRT; operational problems	0.7

[1] The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property)
[2] The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection
[3] The relative significance of each Section 4(f) property
[4] The views of the official(s) with jurisdiction over each Section 4(f) property
[5] The degree to which each alternative meets the purpose and need for the project
[6] After reasonable mitigation, the magnitude of any adverse impacts to properties not protected by Section 4(f)
[7] Substantial differences in capital costs among the alternatives ($ billions, AA/DEIS estimates adjusted to 2012 dollars)

for the Preferred Alternative. The Low Investment BRT Alternative would avoid the use of two properties, Falkland Apartments and the Columbia Country Club, from which the other alternatives would use a portion.

Factor ii—Relative Severity of Remaining Harm

Considering the relative severity of remaining harm to Section 4(f) properties, MTA assigned a severity rating to each property, with "high" being removal of the entire property, "moderate" being partial use of the property that does not qualify for a *de minimis* use determination, "low" being a partial use of the property for which a *de minimis* use determination was made by FTA, and "no use" being avoidance of the property. Among the alternatives, MTA's design assumptions and refinements to the Preferred Alternative would apply equally to the other alternatives.

Remaining Severity of Harm Ratings

- High
  - Talbot Avenue Bridge
- Moderate
  - Metropolitan Branch, B&O Railroad
  - Glenridge Community Park
  - Falkland Apartments
  - Long Branch Local Park
- Low
  - Columbia Country Club
  - Long Branch Stream Valley Park
  - Northwest Branch Valley/Northwest Branch Trail
  - Anacostia River Stream Valley Park/Northeast Branch Trail
  - Baltimore-Washington Parkway
  - Sligo Creek Stream Valley Park/Sligo Creek National Recreation Trail
  - New Hampshire Estates Neighborhood Park
  - Sligo Creek Parkway
  - University of Maryland Historic District
- No Use
  - Elm Street Urban Park
  - Rock Creek Stream Valley Park/Rock Creek National Recreation Trail
  - West Lanham Hills Neighborhood Recreation Center
  - Baltimore-Washington Parkway (Low and Medium Investment LRT and Low Investment BRT Alternatives)
  - Falkland Apartments (Low Investment BRT Alternative only)
  - Columbia Country Club (Low Investment BRT Alternative only)

MTA's use of each Section 4(f) property and the mitigation it would apply to offset those uses would be the same among all but three alternatives. As a result, the severity of the remaining harm to each Section 4(f) property would be the same. The exceptions are the Low and Medium Investment LRT and Low Investment BRT alternatives, which would not use part of the Baltimore-Washington Parkway. In addition, the Low Investment BRT alternative would not use the Columbia Country Club or Falkland Apartments property.

Factor iii—Property Significance

MTA considered each Section 4(f) property to be equally significant in this evaluation.

Factor iv—Officials' Views

The officials with jurisdiction over the Section 4(f) properties have provided views regarding the Preferred Alternative. Other than the no use determination for the Falkland Apartments in the Low Investment BRT Alternative, MTA expects that officials' views on the alternative would be the same, given that MTA's design assumptions about and refinements to the Preferred Alternative could apply equally to this alternative and the impacts of the alternative would be the same.

MTA is in the process of developing county-wide mitigation plans specific to Montgomery and Prince George's County parks. The plans will capture MTA's negotiated mitigation for impacts to parkland including: (1) selective tree clearing and identification of specimen or champion trees, where applicable; (2) marking trees to be preserved with

protective fencing to avoid impacts or removal during construction; (3) replanting and restoration within cleared areas where reasonable; (4) replacing guardrails, signs, and other existing structures associated with parks that are removed during construction with new structures, where appropriate; (5) matching new structures with existing elements throughout each respective park; (6) replacing impacted parkland in one location; and (7) providing landscaping adjacent to the Preferred Alternative alignment, where appropriate.

Factor v—Purpose and Need

The degree to which each alternative meets the project purpose and need is a distinguishing factor in this evaluation. Each alternative would achieve the project purpose and need by providing faster, more direct and more reliable east-west transit service connecting major activity centers in the Purple Line corridor. Each would provide better connections to Metrorail services in the corridor, and improve connectivity to the communities between Metrorail lines.

However, the effectiveness of performance among the alternatives differs; these differences correlate in large part with the amount of dedicated travel lanes and structures each alternative would use for unconstrained travel. The Preferred Alternative and High Investment LRT Alternative are strongest in achieving the purpose and need. These alternatives include the most linear feet of dedicated travel lanes, tunnels and structures, thereby providing the fastest and most reliable end-to-end travel time as reported in the AA/DEIS (63 and 50 minutes, respectively). Strong performers, the Medium and Low Investment LRT, and High and Medium Investment BRT Alternatives, have less linear feet of dedicated lanes, tunnels and structures, and more shared lanes. As a result, they perform slightly slower and relatively less reliably compared with the strongest performers. End-to-end travel times would be 59 to 73 minutes, as reported in the AA/DEIS. The Low Investment BRT Alternative is a weak performer, as it would use mixed-use lanes and accrue the longest travel time of all the alternatives considered (96 minutes).

A compounding factor to overall performance is the capacity of the transit service, which is the number of patrons the alternatives can accommodate compared to the ridership forecast for the Purple Line. As described in Chapter 2.0 of the FEIS, the Preferred Alternative has high passenger capacity and the ability to accommodate projected future growth in ridership. In the AA/DEIS, the Medium Investment LRT Alternative had the second highest ridership, new transit trips and improved travel times as compared to the other alternatives. The High Investment LRT Alternative was designed to be even faster, and therefore had a nine percent higher ridership.

The High Investment BRT Alternative would have lower ridership than the Medium Investment LRT Alternative. The BRT alternatives would have limited capacity to handle increased ridership in the future. Since the carrying capacity of a BRT vehicle is much less than a two-car train, reducing headways by adding more BRT vehicles to the service would have caused operational problems including queuing of buses at major intersections.

Factor vi—Impact Magnitude

The adverse impacts of the alternatives to non-Section 4(f) properties would be the same among these alternatives as MTA's design assumptions and refinements to the Preferred Alternative apply equally to the other alternatives. MTA would have similar ability to mitigate impacts among these alternatives that it has committed for the Preferred Alternative.

Factor vii—Cost Difference

The cost of each alternative is a distinguishing factor in this evaluation. The Preferred Alternative cost estimate is based on year of expenditure dollars and takes into consideration engineering refinements; the Preferred Alternative cost is reported in Chapter 2.0 of the FEIS. Cost estimates for the other alternatives are presented in Table 1-9. The costs for these alternatives are based on the estimates reported in Table 6-2 of the AA/DEIS, escalated to 2012 dollars, and supplemented to account for cost increases that would affect all alternatives, such as additional stormwater management requirements. Applying these factors,

the cost presented in Chapter 2.0 is higher than the AA/DEIS estimated costs. As MTA's design assumptions and refinements can be applied to the other alternatives, the costs for each would also be expected to increase. The High Investment LRT Alternative had the highest cost ($2.5 billion) because it had the most tunnels and structures. The Preferred Alternative has one tunnel and a number of structures and is less costly at $2.2 billion. The Medium and Low Investment LRT Alternatives and the High investment BRT Alternatives had a moderate cost ($1.9 to 1.8 billion). The Medium and Low Investment BRT Alternatives had the least cost as they had the least infrastructure ($1.0 to $0.7 billion).

Least Harm Alternative Selection

MTA's corridor-wide least overall harm assessment examined the build alternatives evaluated in the AA/DEIS, as well as the Preferred Alternative. FTA has determined that the Preferred Alternative will have the least overall harm to Section 4(f) properties for the following reasons:

While the Low Investment BRT Alternative would impact three less Section 4(f) properties compared to the other alternatives, the Low Investment BRT Alternative is the least able to meet the project purpose and need. Its use of shared lanes on existing streets with local traffic would add considerable travel time, making it the slowest of the alternatives considered. In addition, as it would operate in the same lanes with other motor vehicle traffic, the alternative would be constrained by traffic congestion and delays that plague roadway travel today and are forecast to increase in the future. Thus, the Low Investment BRT Alternative was not considered the least overall harm alternative.

The Low and Medium Investment LRT Alternatives would impact one less Section 4(f) property compared to the remaining alternatives evaluated. While there would be no use of Baltimore-Washington Parkway with these alternatives, they would be aligned within shared use lanes under the Parkway. This would result in operational impacts to the Parkway, Riverdale Road, and the transitway. All other build alternatives would have similar impacts on Section 4(f) properties; MTA would have the same ability to mitigate those impacts, and the severity of remaining harm would be the same.

The Medium Investment BRT Alternative performs moderately well in achieving the purpose and need; and the High Investment BRT Alternative is a strong performer. However, the BRT alternatives as a group have limited capacity to handle increased ridership in the future. Since the carrying capacity of a BRT vehicle is much less than a two-car train, MTA considered adding more BRT vehicles to the service. The resulting operational problems included unacceptable bus queuing, added congestion, and delays at major intersections. For these reasons, the Medium and High Investment BRT Alternatives are not considered the least overall harm alternatives.

By attracting more riders and new transit trips compared with the BRT alternatives, the LRT alternatives would generate more user benefits and reduce more automobile trips from roadways albeit at higher initial construction costs. The Low Investment LRT Alternative moderately achieves the project purpose and need and has a moderate cost. Its shortcoming is its reliance on mixed-use traffic lanes to a considerably greater degree than the other LRT alternatives. As a result, the Low Investment LRT Alternative cannot overcome slower travel times due to traffic delays and roadway congestion. The Low Investment LRT Alternative is not considered by FTA to be the least overall harm alternative.

The Medium Investment LRT Alternative has the second highest ridership, new transit trips and improved travel times of all the build alternatives. The High Investment LRT Alternative was designed to be even faster, and therefore had a nine percent higher ridership, but a 34 percent increase in cost. The Preferred Alternative includes three elements from the High Investment LRT Alternative that improve the travel times measurably, but at less cost. For these reasons, the Preferred Alternative is the strongest achiever of the project purpose and need and the alternative with the least overall harm.

1.5 Coordination

MTA coordinated with Federal, State, and local agencies during the EIS and Section 4(f) evaluation processes. In its coordination with the officials with jurisdiction, MTA identified properties, determined means to avoid or minimize use of Section 4(f)-protected properties through design refinements, and developed measures to minimize harm. Memoranda of agency coordination meetings are provided in FEIS Appendix I.

1.5.1 Park Agency Coordination

Department of Interior (DOI)

The Draft Section 4(f) Evaluation was provided to the DOI for review; the DOI had a 45-day review period, which occurred concurrently with the review period for the FEIS. No comments were received from the DOI within 15 days after the close of the 45-day comment period. In accordance with 23 CFR 774.5(a), FTA assumes a lack of objection from the U.S. Department of the Interior.

National Capital Planning Commission (NCPC)

NCPC has an advisory role regarding parklands in Montgomery and Prince George's Counties, unless Capper Cramton funding was used to purchase park property. In the latter case, such as with Rock Creek Stream Valley Park, Sligo Creek Stream Valley Park, Northwest Branch Stream Valley Park, and Anacostia River Stream Valley Park, NCPC has approval authority, meaning actions affecting these parklands require formal NCPC approval. FTA and MTA are coordinating with the NCPC regarding the effect of the Preferred Alternative on each of these parks (see Section 4.6).

The Baltimore-Washington Parkway is owned by the federal government, under the jurisdiction of the NPS. As federal property located within the National Capital Region, outside of the District of Columbia, the NCPC has advisory review authority over projects within the park. An initial meeting to reintroduce the Purple Line to NCPC staff was held on August 9, 2011. Follow up meetings were held on February 22, 2012, and July 12, 2012 to present the project to NCPC and request their input on various design elements. Through these outreach and coordination efforts, FTA invited the NCPC to be a Cooperating Agency on the FEIS in March 2012 and NCPC accepted the invitation on April 11, 2012.

NCPC's formal review process can consist of one, two, or three stages of Commission review, depending on the location and complexity of a project. Regarding the Purple Line, the Commission will likely review the project either as a two-stage (separate Preliminary and Final actions) or one-stage (combined Preliminary and Final action) review. NCPC's future review timetable will depend on when detailed plans are available that adequately describe the project's impacts/mitigation related to visual resources, water quality, stormwater management, and other environmental factors within the Baltimore-Washington Parkway and parklands acquired through Capper-Cramton Act funding.

Officials with Jurisdiction

Coordination with the officials with jurisdiction over parks and historic properties in the study area occurred as follows.

M-NCPPC–Montgomery County Department of Parks

Though MTA coordinated with M-NCPPC during Purple Line alternatives development and evaluation during the AA/DEIS, MTA contacted M-NCPPC via letter in December 2011, requesting a meeting to begin formal agency coordination. Meetings were held with M-NCPPC–Montgomery County Department of Parks on January 25, 2012, May 16, 2012, November 21, 2012, February 1, 2013, February 26, 2013, and November 13, 2013 to provide a detailed overview of the Preferred Alternative and to discuss potential park impacts, including minimization and mitigation strategies. MTA continues to coordinate with the M-NCPPC regarding project effects on the following affected parks: Elm Street Urban Park, Rock Creek Stream Valley Park, Long Branch Local Park, Long Branch Stream Valley Park, Sligo Creek Stream Valley Park, and New Hampshire Estates Neighborhood Park. Memoranda of MTA meetings with M-NCPPC–Montgomery County Department of

Parks are provided in FEIS Appendix I. M-NCPPC–Montgomery County Department of Parks concurred with FTA's *de minimis* use determination for Sligo Creek Stream Valley Park, Long Branch Stream Valley Park, and New Hampshire Estates Neighborhood Park and temporary occupancy exception determination for Elm Street Urban Park on December 17, 2013 (Record of Decision Attachment E). M-NCPPC–Montgomery County Department of Parks concurred with FTA's temporary occupancy exception determination for Rock Creek Stream Valley Park on January 3, 2014 (Record of Decision Attachment E).

M-NCPPC–Prince George's County

Though MTA coordinated with M-NCPPC during Purple Line alternatives development and evaluation during the AA/DEIS, MTA contacted M-NCPPC via letter in December 2011, requesting a meeting to begin formal agency coordination. Meetings were held with M-NCPPC–Prince George's County on January 6, 2012, August 7, 2012, October 8, 2012, March 15, 2013, and November 7, 2013 to provide a detailed overview of the Preferred Alternative and to discuss potential park impacts as well as discuss minimization and mitigation strategies. MTA continues to coordinate with the M-NCPPC—Prince Georges County regarding project effects on the following affected parks: Northwest Branch Stream Valley Park, Anacostia River Stream Valley Park, and Glenridge Community Park, and West Lanham Hills Neighborhood Recreation Center. Memoranda of MTA meetings with M-NCPPC–Prince George's County are provided in FEIS Appendix I. M-NCPPC–Prince George's County concurred with FTA's *de minimis* use determination for Northwest Branch Stream Valley Park and Anacostia River Stream Valley Park and temporary occupancy exception determination for West Lanham Hills Neighborhood Recreation Center on January 24, 2014 (Record of Decision Attachment E).

National Park Service

Though FTA coordinated with NPS during the AA/DEIS, in December 2011, FTA contacted NPS via letter to initiate formal agency coordination. As part of MTA's coordination and outreach efforts regarding the Purple Line crossing under the Baltimore-Washington Parkway along Riverdale Road (MD 410), MTA conducted coordination with the NPS. Beginning in January 2012, MTA, FTA, and NPS National Capital Region (NCR) staff met monthly with representatives of the NPS, National Capital Parks – East (NACE) to discuss the proposed Purple Line and the potential impacts it would have on the Baltimore-Washington Parkway. Through these outreach and coordination efforts, FTA invited the NPS to be a Cooperating Agency on the FEIS in March 2012; NPS accepted the invitation on March 16, 2012. In addition to discussing anticipated impacts, staff from these respective agencies discussed avoidance measures and ways to minimize and mitigate impacts to the parkway. Many of the minimization measures discussed at these monthly meetings were intended to reduce the impact to the forest area in the median of the parkway, maintain traffic flow on the parkway, minimize effects from construction, and decrease potential visual impacts to the maximum extent possible. Memoranda of MTA meetings with NPS are provided in FEIS Appendix I. NPS concurred with FTA's de minimis use determination for Baltimore-Washington Parkway on March 18, 2014 (Record of Decision Attachment E).

Maryland Department of Natural Resources (MDNR), Program Open Space (POS)

The MDNR's POS staff was initially contacted by MTA by letter in December 2011 requesting a meeting with MDNR's POS to begin formal agency coordination. A meeting was held on July 9, 2012 to provide a detailed overview of the Preferred Alternative and discuss potential impacts to parks that were purchased or developed using POS funds. The parks funded in part by Maryland Program Open Space funds include: Rock Creek Stream Valley Park, Long Branch Local Park, Long Branch Stream Valley Park, New Hampshire Estates Neighborhood Park, Northwest Branch Stream Valley Park, Anacostia Stream Valley Park, Glenridge Community Park, and West Lanham Hills Neighborhood Recreation Center. MTA will coordinate with MDNR's POS through the agency

with jurisdiction to develop its mitigation plan prior to project construction.

Maryland Historical Trust (MHT)

Section 106 coordination with MHT and the public began when MTA provided opportunities for comment on the historic properties identification and evaluation process at public open houses in August 2006, December 2007, and May 2008. FTA initiated formal Section 106 consultation process on October 27, 2011. FTA and MTA coordinated with the MHT and other consulting parties in a formal Section 106 consultation process to determine the eligibility of historic properties for listing in the National Register of Historic Places (NRHP), delineate the historic boundaries of properties, establish an Area of Potential Effects, determine the effects of the Preferred Alternative on historic properties, and develop appropriate mitigation for adverse effects in a Programmatic Agreement. MHT participated in several Interagency Resource Meetings sponsored by MTA and attended by FTA on the following dates: October 18, 2010, December 15, 2010, November 16, 2011, December 16, 2011, March 21, 2012, April 18, 2012, August 20, 2012, December 19, 2012, March 20, 2013, July 17, 2013, and August 8, 2013. MHT has also participated in consulting parties meetings to discuss property eligibility for the NRHP and project effects on August 11, 2013. On November 6, 2013, MHT issued a letter MHT concurring with FTA's finding that the Preferred Alternative will have an adverse effect on the Falkland Apartments, Talbot Avenue Bridge, and the Metropolitan Branch of the B&O Railroad. In its letter, MHT also indicated no objection to the effect determinations made by FTA for the remaining historic properties within the project's APE (Record of Decision Attachment E).

FTA and MTA met with the consulting parties on December 19, 2013 to discuss the details of a programmatic agreement for the project. On March 14, 2014, FTA, NPS, MTA and MHT signed a Programmatic Agreement stipulating the commitment to avoid, minimize and mitigate project effects on historic properties (Record of Decision Attachment B).

Public

The public had an opportunity to review and comment on the Draft Section 4(f) Evaluation concurrently with the Purple Line FEIS. FTA responded to public comments on the Draft Section 4(f) Evaluation in this Final Section 4(f) Evaluation, which is included in the Record of Decision.

1.6 Determination of Section 4(f) Use

Considering the foregoing discussion of the Purple Line Preferred Alternative's use of Section 4(f) properties and considering that FTA and MTA have coordinated with the officials with jurisdiction regarding the findings of this Section 4(f) Evaluation, FTA concludes that there is no prudent avoidance alternative to the use of land from 14 historic and recreational properties. As described, the project includes all possible planning to minimize harm to Section 4(f) properties resulting from use. In addition, the project will have a *de minimis* impact on four historic and six recreational Section 4(f) properties. Measures to minimize harm, such as avoidance, minimization, mitigation, and enhancement measures, were developed by MTA in coordination with the officials with jurisdiction over these properties. FTA coordinated with these officials prior to making its *de minimis* determination. Finally, balancing all the factors discussed in Section 1.4, FTA has determined that the Purple Line Preferred Alternative will cause the least overall harm in light of Section 4(f)'s preservation purpose.