Attachment 2
Planning Board Recommendations for the Maryland State Highway Administration
April 1, 2014

PURPLE LINE MANDATORY REFERRAL

General Comments

Pedestrian access to the Purple Line stations in Montgomery County is inadequate overall, especially at the Lyttonsville, Woodside, and Piney Branch Road stations. In many locations sidewalks or paths are directly adjacent to the curb with minimum width sidewalks. Since pedestrian volumes around Purple Line stations will increase substantially once the Purple Line is operational, SHA should work with MTA and MCDOT to:

- *Commit to providing quality pedestrian and bicycle improvements between stations and the communities in their immediate vicinities.*
- *Conduct a thorough review of this project with the goal of meeting both AASHTO recommendations for pedestrian facilities as well as ADA Best Practices, at a minimum.*
- *Identify near term and long term improvements to enhance station access.*

In addition, legal crosswalks exist at all intersections of two public roads per State law, and all crosswalks must be made fully ADA-compatible per federal law. Therefore:

- *All intersections must be made fully ADA-compatible. At intersections where a safe crossing cannot be provided, signs prohibiting the crossing to all pedestrians should be installed, but SHA must ensure that there are adequate crossing opportunities, particularly in the vicinity of all bus stops.*

Woodside Station Area

The Woodside Station is located on the east side of 16th Street (MD 390), just across the street from two multifamily complexes that contain over 1,200 dwelling units. The Purple Line 30% design plans direct residences to cross 16th Street at an unsignalized crosswalk at the existing entrance to the Spring Center, connecting to proposed sidewalks on the west side of 16th Street and a ramp that leads down to the residences. While we support the proposed crossing at this location, the crossing as planned is unsafe because the road is six lanes wide, has a posted speed limit of 35 mph, is used by over 25,000 vehicles on a typical weekday, and SHA has not yet agreed to provide a traffic signal.

For those pedestrians who will be uncomfortable crossing 16th Street under these conditions, the nearest signalized crossing of 16th Street is 800 feet to the south at Spring Street. This will require a deviation of as much as 7 minutes, which is substantial given that the average person will walk as much as 10 minutes to a rail station. Few passengers will go out of their way to cross at this signalized intersection. Most will either cross 16th Street at this dangerous location or will be deterred from using the Purple Line altogether.

Additionally, the location where pedestrians are directed to cross 16th Street is proposed to have a "Maryland T" intersection, a design that does not accommodate pedestrian access.

Therefore, SHA should:

- *Ensure safe pedestrian access from the west side of 16th Street to the Woodside Station by: 1) replacing the "Maryland T" intersection at the existing Spring Center with a normal tee intersection that does not have the splitter island in the median; 2) providing a pedestrian refuge on the south leg of the new tee intersection; and 3) providing a pedestrian-actuated traffic signal at the new intersection.*

As currently designed, the intersection of 16th Street and Spring Street does not adequately prioritize pedestrians and bicyclists. The crossing distance on the east leg of the intersection is excessive, requiring two pedestrian signals and three refuge islands to break up the crossing. Furthermore, the intersection geometry enables vehicles traveling northbound on 16th Street and turning right onto Spring Street to speed through the intersection. While this may be an appropriate intersection design in areas with limited pedestrian activity, it is inappropriate in an urban area adjacent to both the Silver Spring Central Business District and a planned Purple Line station, where pedestrian activity will be substantial. Since SHA is responsible for the roads that form this intersection, SHA should coordinate with MCDOT and MTA to redesign this intersection to adequately prioritize pedestrians by:

- *Eliminating the free right turns and realigning Spring Street and the Spring Street Bridge to form a tee intersection with 16th Street, as part of the reconstruction of the Spring Street Bridge.*
- *Providing a minimum 6-foot-wide median pedestrian refuge on the north leg of the intersection of 16th Street and Spring Street.*

Bonifant Street

The following issues should be addressed in coordination with the Montgomery County Department of Transportation to ensure adequate pedestrian access to the east of the Silver Spring Transit Center:

- *The sidewalk bump out at the northeast corner of Georgia Avenue and Bonifant Street will be eliminated, narrowing the sidewalk to about three feet at the Quarry House entrance. Ensure that this sidewalk meets the ADA minimum (i.e. it has a clear width of at least 3 feet).*
- *The sidewalk bump out at the southeast corner of Georgia Avenue and Bonifant Street would be eliminated, but this elimination appears unnecessary. The bump out should be retained to shorten the pedestrian crossing distance on the east leg of the intersection.*

Piney Branch Road

The Purple Line Functional Plan (page 37) recommends implementing sidewalks that are at least 6 feet wide on Piney Branch Road as part of the Purple Line project, and the Long Branch Sector Plan recommends implementing a combined sidewalk and buffer area that is 15 feet wide as part of redevelopment. MTA is proposing to provide only 5-foot sidewalks, with no buffers from the road, and is reluctant to acquire additional right-of-way to widen the sidewalks. Five-foot-wide sidewalks adjacent to the curb are unacceptable in a station area, failing to meet not only the above master plan recommendations, but also AASHTO recommendations, ADA Best Practices, and even SHA's own guidelines. SHA should make use of opportunities for improving the sidewalks where there is publicly owned land, such as the Long Branch Community Center, the Miles Glass property, Long Branch Local Park, and Long Branch Stream Valley Park. In addition, while the sidewalks as proposed are close to existing buildings, there appears to be additional space where the sidewalks could be widened, though this would require property acquisition. SHA and MTA should work together to:

- *Construct the sidewalks on Piney Branch Road to be a minimum of 6 feet wide with a three-foot-wide landscaped offset or ten feet where adjacent to the curb, but evaluate where the sidewalks can be further widened.*
- *Along the frontage of publicly owned property, construct the sidewalks to be 15-feet wide per the Long Branch Sector Plan Design Guidelines.*

The sidewalks on Piney Branch Road to the west of Arliss Street are obstructed with street lights, bus shelters, and utility poles. The proposed five-foot-wide sidewalks that are immediately adjacent to the

curb in the Long Branch commercial area are inadequate. AASHTO recommends ten-foot sidewalks along arterials in business districts where the sidewalk is adjacent to the curb. The large parking lot on the north side of the road appears to have wide drive aisles that could be reduced in width to achieve additional space for sidewalks. SHA should coordinate with MTA to:

- *Increase the width of the sidewalks on the north side of Piney Branch Road, between the Flower Theater and Arliss Street, to 10 feet by reconfiguring the parking lot.*

The crosswalks crossing Piney Branch Road where it intersects Barron Street are skewed due to the location of existing driveways. However, the Montgomery County Department of Parks plans to demolish the Miles Glass building and the Purple Line project plans to relocate the driveway to the Long Branch Community Center. Therefore:

- *If the driveway to the Long Branch Community Center at the intersection of Piney Branch Road and Barron Street is realigned either before or during the construction of the Purple Line (either by MTA or another entity), the driveway design should locate the crosswalks on the east and west leg of the intersection at 90 degree angles from Piney Branch Road to reduce the pedestrian crossing distance.*

Piney Branch Road Station Area

The 30% plans for the Purple Line do not include a direct connection to the south end of the Piney Branch Road station platform, even though this connection is recommended in the Long Branch Sector Plan. Without this access point, passengers will be required to walk about two minutes out of their way to access the platform. Since the average rail passenger will walk 10 minutes to a station, a 2 minute additional walk will decrease the catchment area of the station.

According to MTA, the access point is not included in the 30% plans because SHA has not agreed to provide a traffic signal at this location. SHA is concerned that left turning traffic from University Boulevard to Piney Branch Road will back up beyond a signal at Gilbert Street. However, the introduction of a rail station in University Boulevard and the land use changes proposed by the Long Branch Sector Plan will fundamentally change the nature of the area from one largely focused on automobiles to one equally focused on pedestrians. A traffic signal at the intersection of University Boulevard and Gilbert Street should be considered for several reasons:

- Improved station access: The proposed Piney Branch Road station is one of only two Purple Line stations along the entire 16 mile alignment that have a single-ended platform. Providing a traffic signal at Gilbert Street would permit access to the station from the south side, reducing travel time by about 2 minutes for riders traveling to and from points to the south of the station and would reduce the number of pedestrian conflicts at Piney Branch Road, potentially improving its operation.
- Safety: A new signal would promote slower vehicular speeds from all directions of travel in the immediate vicinity of the intersection. This is particularly important because of the significant volumes of pedestrians that are expected to cross University Boulevard. The lower traffic volumes at this tee intersection make it a safer place for pedestrians to cross if a signal is installed.
- Enhanced bikeway network: The traffic signal is also an important component of an off-road bikeway that is proposed to connect the Sligo Creek Trail and the Long Branch Trail to the

Northwest Branch Trail. From west to east the shared use path would travel along Domer Avenue, Barron Street, Gilbert Street, and Piney Branch Road.

- Context: The Long Branch area today has considerable pedestrian activity. With the additional pedestrian activity generated by the Piney Branch Road Purple Line Station and the density proposed in the Long Branch Sector Plan, University Boulevard will be transformed into a more urban area. MTA's plans to convert two existing traffic lanes to a transitway shows a significant advancement in balancing the needs of all roadway users, and this approach can also be applied to signalized intersection spacing in urban environments. The spacing between Piney Branch Road and Gilbert Street is about 425 feet, similar to many other examples within a short distance from Gilbert Street and other areas in Montgomery County where the focus is more on providing adequate pedestrian access, local circulation, and access to businesses than it is on higher speed through-travel. Examples include:

  MD 193 (University Boulevard)
  - Carroll Avenue to Merrimac Drive (planned): 500 feet
  - Merrimac Drive (planned) to Lebanon Street (planned): 600 feet
  - Lebanon St (planned) to Shopping Center driveway (planned): 200 feet
  - Shopping Center driveway (planned) to Takoma / Langley Transit Center driveway : 225 feet
  - Takoma / Langley Transit Center driveway to New Hampshire Avenue: 400 feet

  MD 320 (Piney Branch Road)
  - University Boulevard to Barron St: 475 feet
  - Barron St to Garland St: 375 feet

SHA should:

➲ *Provide a traffic signal at the intersection of University Boulevard and Gilbert Street.*

University Boulevard

Per its policy, SHA is requiring that the Purple Line project include bike lanes on University Boulevard, however bike lanes do not provide enough protection to attract cyclists with a wide range of abilities on a busy state highway with a posted speed limit of 40 mph. Buffered bike lanes and cycle tracks are widely regarded as superior facilities to bike lanes in this environment. At a minimum, SHA should require MTA to provide a striped buffer between the bike lanes and traffic (buffered bike lanes), though a physical separation from traffic is preferable (cycle tracks).

We understand that SHA is reconsidering its policy on bicycle lanes, as evidenced by the Maryland Twenty-Year Pedestrian and Bicycle Plan finalized in January 2014. An objective of the plan (page 32) is to "Encourage the use of existing processes to implement pilot projects on State roadways to test innovative design treatments such as cycle tracks, colored bike lanes, and new pedestrian crossing treatments, following a context sensitive design approach." The Purple Line project provides a rare opportunity to prioritize bicycling on a major urban thoroughfare. While bike lanes are an improvement over existing conditions, a treatment with greater protection for cyclists is needed in this area. SHA should consider conducting a pilot project on University Boulevard as part of the Purple Line to implement cycle tracks or buffered bike lanes where there is sufficient right-of-way. Therefore, SHA should work with MTA to:

- *Construct cycle tracks or buffered bike lanes on University Boulevard where right-of-way is available, and transition from the cycle tracks or buffered bike lanes to regular bicycle lanes where the right-of-way is constrained.*

If the state is not willing to construct cycle tracks or buffered bike lanes as part of the Purple Line, then the typical section should include the off-road shared use path per the Long Branch Sector Plan and Takoma/Langley Crossroads Sector Plan. Therefore, SHA should work with MTA to:

- *If there is not agreement to construct cycle tracks (or buffered bike lanes) in place of standard on-road bike lanes, provide 8-foot-shared use paths along both sides of University Boulevard where right-of-way is available. Where sufficient space is not available, the shared use path should transition into a sidewalk.*

The right turn lanes in the northwest and southeast quadrants of the intersection of University Boulevard and Carroll Avenue are extremely wide and almost the same width as the adjacent three through lanes. Therefore:

- *The right turn lanes in the northwest and southeast quadrants of the intersection of University Boulevard and Carroll Avenue should be designed to be more perpendicular to University Boulevard. This will reduce the need for the wide lanes, slow down turning traffic, and make it easier for pedestrians to cross.*

Takoma Langley Transit Center Station Area

The intersection of University Boulevard and New Hampshire Avenue should be designed to prioritize pedestrian safety and minimize their exposure. The proposed curb radii of between 65 feet and 100 feet at three of the four corners are far in excess of what is needed to accommodate the design vehicle. Therefore:

- *At the intersection of University Boulevard and New Hampshire Avenue, the radii should be reduced to encourage slower turning speeds, shorten the crossing distance, and enable the handicap ramps to be in better alignment with the crosswalks.*

AASHTO recommends that a pedestrian refuge be provided at all intersections that exceed 60 feet. The crossing distance of about 150 feet on the east leg of University Boulevard, for example, is 150% over the distance for which AASHTO recommends that a pedestrian refuge be provided (60 feet). Therefore:

- *At the intersection of University Boulevard and New Hampshire Avenue the median island on the east leg should be extended to create a refuge and the medians on the north and south legs should be bulbed-out to six feet minimum in width to create refuges.*

The right turn lanes in the northwest and southeast quadrants of the intersection of University Boulevard and New Hampshire Avenue are extremely wide and almost the same width as the adjacent three through lanes. Therefore:

- *The right turn lanes in the northwest and southeast quadrants of the intersection of University Boulevard and New Hampshire Avenue should be designed to be more perpendicular to University Boulevard. This will reduce the need for the wide lanes, slow down turning traffic, and make it easier for pedestrians to cross.*

In addition:

- *On the northeast and southwest corners of the intersection, the proposed landscape panels behind the sidewalk should instead be moved to be adjacent to the curb so that pedestrians are better guided toward the handicap ramps and to break up the expanse of pavement at this large intersection.*

Additional graphics that help to explain many of the comments can be found at:
www.mcatlast.org/purple

Attachment 3
Planning Board Recommendations for the Montgomery County Department of Transportation
April 1, 2014

PURPLE LINE MANDATORY REFERRAL

General Comments

Pedestrian access to the Purple Line stations in Montgomery County needs additional improvement, especially at the Lyttonsville, Woodside, and Piney Branch Road stations. In many locations sidewalks or paths are directly adjacent to the curb with minimum width sidewalks. Since pedestrian volumes around Purple Line stations will increase substantially once the Purple Line is operational, MCDOT should work with MTA and SHA to:

- *Commit to providing quality pedestrian and bicycle improvements between stations and the communities in their immediate vicinities.*
- *Conduct a thorough review of this project with the goal of meeting both AASHTO recommendations for pedestrian facilities as well as ADA Best Practices at a minimum.*
- *Identify near term and long term improvements to enhance station access.*

In addition, legal crosswalks exist at all intersections of two public roads per State law, and all crosswalks must be made fully ADA-compatible per federal law. Therefore:

- *All intersections must be made fully ADA-compatible. At intersections where a safe crossing cannot be provided, signs prohibiting the crossing to all pedestrians should be installed, but SHA must ensure that there are adequate crossing opportunities, particularly in the vicinity of all bus stops.*

A bus service planning study has not been completed to determine how RideOn bus service and other shuttle services will be adjusted (bus stop locations, routes, frequency, and span of service) when the Purple Line is completed. This is needed to inform decisions about station areas in final design, such as the location of crosswalks and where to located bus stops. MCDOT should:

- *Conduct a bus service planning study to determine how routes, frequencies, span of service and the location of bus stops will be adjusted when the Purple Line opens for service. MCDOT should also coordinate service changes for Metrobus routes with WMATA.*

Finally, Montgomery County can further support pedestrian and bicycle access to transit by:

- *Utilizing a "Bicycle Pedestrian Priority Area Projects" annual program to enhance pedestrian and bicycle station access in locations where redevelopment is unlikely in the next 5 to 10 years. This program was recommended by the full Council on March 25, 2014, pending budget reconciliation.*

Bethesda Station

The Town of Chevy Chase continues to have concerns regarding impacts to Elm Street Urban Park and adjacent residences, noise impacts, and an access point to the Capital Crescent Trail. Therefore, MTA and MCDOT should:

- *Continue to work with the Town of Chevy Chase to address design refinements to the Purple Line and the Capital Crescent Trail to provide an additional grade-separated crossing of the trail and to reduce noise impacts and impacts to Elm Street Urban Park and residences adjacent to the park.*

Lyttonsville Station Area

While the northeast leg of the intersection of Brookville Road and Lyttonsville Place has an acceleration lane today, it is unclear why it is needed when the intersection is controlled by a four-way stop and the only traffic coming from the south is originating at the RideOn maintenance depot. Therefore:

- *Eliminate the acceleration lane on the north leg of the intersection of Brookville Road and Lyttonsville Place. Instead use the space for wider sidewalks and bike lanes to provide continuity from the proposed sidewalks on the Lyttonsville Place Bridge.*

While Lyttonsville Place is one of two roads that residents will use to get to Lyttonsville Station, and it is a route that trucks use to get to the Lyttonsville industrial area, the Purple Line 30% engineering plans provide no bicycle accommodations and only the bare minimum (5-foot-wide sidewalks with no offset from the road) accommodation for pedestrians south of the bridge. To enhance bicycle and pedestrian access to the Purple Line station:

- *Widen the proposed 5-foot-wide sidewalk on both sides of Lyttonsville Place to at least 7 feet to meet AASHTO recommendations and provide bicycle lanes by removing the "activity lane."*

Furthermore, it is not clear that a bus stop on Lyttonsville Place is the best location for a few reasons. First, a bus stop on Lyttonsville Place requires an at-grade crossing, whereas a bus stop on Brookville Road could be located next to a stop-controlled intersection. Second, the curb-to-curb distance on Brookville Road is wider than Lyttonsville Place so there is additional space for a bus pull-off area. Finally, if the Forest Glen Annex provide shuttles from their campus to the station, it would be preferable to have a stop on Brookville Road, instead of Lyttonsville Place, so that the shuttles can turn around at the RideOn Depot instead of circulating through the community. While RideOn buses currently stop within the base, the Forest Glen Annex is upgrading security, and it is possible that they will rely on their own shuttle service in the future. Therefore, MCDOT should:

- *Consider a bus stop with a pull-off area on Brookville Road instead of Lyttonsville Place and improve the crossing of Brookville Road at Lyttonsville Place for pedestrians.*

There is a conflict between cyclists traveling on the Capital Crescent Trail and Purple Line passengers crossing the Capital Crescent Trail to get from the ramp to the Purple Line platform. Therefore:

- *The conflict point on the Capital Crescent Trail at the ramp from Lyttonsville Place should include features that inform bicyclists of pedestrian crossings.*
- *Provide a larger landing area at the base of the proposed ramp down to the Capital Crescent Trail from Lyttonsville Place. The landing and crossing could be designed to incorporate local historical and cultural enhancements.*

The Forest Glen Annex is the largest employer in the Lyttonsville area (2,000+ employees), and many employees and visitors will walk to the Purple Line station as part of their commute. To do so, these passengers will need to cross Brookville Road, a wide street with heavy truck volumes. MTA expects many passengers will use the Capital Crescent Trail to get to the station, avoiding the poor sidewalks and industrial area on Brookville Road. Therefore, to facilitate pedestrian travel between the Forest Glen Annex and the Purple Line station, MCDOT should:

- *Provide a traffic signal at the intersection of Brookville Road and Stephen Sitter Avenue.*

- *Since Stewart Avenue will be the main access route for employees at the Forest Glen Annex until a new access point on Brookville Road can be constructed, reduce the parking lane widths on Stewart Avenue to 8 feet and reallocate that space to the sidewalk area to achieve a 5 foot buffer and 10 foot sidewalk on the south side and a 9 foot sidewalk on the north side.*

Finally:

- *In addition to lighting the Capital Crescent Trail under the Lyttonsville Place Bridge, provide wall-wash lighting along the bridge abutment walls to enhance pedestrian safety.*

Woodside Station Area

As currently designed, the intersection of 16th Street and Spring Street does not adequately prioritize pedestrians and bicyclists. The crossing distance on the east leg of the intersection is excessive, requiring two pedestrian signals and three refuge islands to break up the crossing. Furthermore, the intersection geometry enables vehicles traveling northbound on 16th Street and turning right onto Spring Street to speed through the intersection. While this may be an appropriate intersection design in areas with limited pedestrian activity, it is inappropriate in an urban area adjacent to both the Silver Spring Central Business District and a planned Purple Line station, where pedestrian activity will be substantial. Since SHA is responsible for the roads that form this intersection, MCDOT should coordinate with SHA to redesign this intersection to adequately prioritize pedestrians by:

- *Eliminating the free right turns and realigning Spring Street and the Spring Street Bridge to form a tee intersection with 16th Street, as part of the reconstruction of the Spring Street Bridge.*

Spring Street is the connection between the Silver Spring Central Business District and the Woodside Purple Line Station. As such it should be constructed as a gateway to Silver Spring and prioritized for pedestrians and bicycles. Furthermore, it is unclear why on-street parking is prioritized on a bridge where the pedestrian walkways are especially constricted, especially since parking meters will further reduce the clear width. Therefore, MCDOT should:

- *Eliminate both rows of parking on the Spring Street Bridge. Widen the proposed 5-foot-wide sidewalks to 13 feet wide. Separate the 16-foot-wide shared travel lane into 11-foot-wide through lanes and 5-foot-wide bike lanes.*

Silver Spring Transit Center Station Area

During the Planning Board's review of the Purple Line mandatory referral on March 20, 2014, there was considerable discussion regarding the need for a direct connection between the planned Purple Line station and the existing Red Line station at the Silver Spring Transit Center. This connection is recommended in the Purple Line Functional Plan and is important because it will facilitate transfers between the two rail lines, but remains unfunded. The Maryland Transit Administration estimates that there will be 3,500 daily transfers between the Red Line and Purple Line by 2040. This represents almost 30% of Purple Line boardings and alightings at this station. Therefore, in coordination with MTA and WMATA, MCDOT should:

- *Design and construct a convenient direct connection between the Red Line and the Purple Line at the Silver Spring Transit Center station.*

Bonifant Street

The following issues should be addressed to ensure adequate pedestrian access to the east of the Silver Spring Transit Center:

- *The ramp on the south side of the road is shared use path width, but the ramp directly across the street on the north side of "Ripifant Road" is smaller than shared use path width. Both ramps should be shared use path width and aligned.*
- *The sidewalk and curb on the north side of Bonifant Street between Dixon Avenue and the alley should be reconstructed so that they are in alignment with the sidewalks on either side.*
- *The sidewalk on the south side of Bonifant Street between the alley and Georgia Avenue appears to be as narrow as two feet wide at the eastern end. Ensure that this sidewalk meets the ADA minimum.*
- *The sidewalk bump out at the northeast corner of Georgia Avenue and Bonifant Street will be eliminated, narrowing the sidewalk to about three feet at the Quarry House entrance. Ensure that this sidewalk meets the ADA minimum (i.e. it has a clear width of at least 3 feet).*
- *The sidewalk bump out at the southeast corner of Georgia Avenue and Bonifant Street would be eliminated, but this elimination appears unnecessary. The bump out should be retained to shorten the pedestrian crossing distance on the east leg of the intersection.*

Silver Spring Library Station Area

One area of concern at the Silver Spring Library Station is the southwest corner of the intersection of Wayne Avenue and Fenton Street, where the Purple Line will form a fifth leg of the intersection. Pedestrians should be directed away from the apex of this corner, as it is the entry and exit location for the Purple Line trains. Therefore, in coordination with MTA and the Montgomery County Department of General Services (DGS):

- *The sidewalk at the southwest corner should be constructed to go directly between the Wayne Avenue and Fenton Street ramps and be 12 feet wide to accommodate a high level of activity. The space between that sidewalk and the radius curb should be made of a non-traversable surface to discourage pedestrians entering this location.*

An approved development at the southeast corner of Wayne Avenue and Fenton Street will improve the pedestrian area, if constructed. If the project is not constructed, work with MTA to make the following improvement:

- *The proposed sidewalk at the southeast corner of Wayne Avenue and Fenton Street should be constructed behind the ramps. While the current design meets ADA requirements, it is far from meeting ADA Best Practices, which should be followed at this major downtown intersection that is immediately adjacent to the station.*

There are barriers between the platforms at the Silver Spring Library station limiting crossings to the corner of Wayne Avenue and Fenton Street and at the detectable warning surface (DWS) near Bonifant Street. Therefore, in coordination with MTA and DGS:

- *At the Silver Spring Library station, the area with the detectable warning surface should be widened and better integrated with the plaza at the corner of Bonifant Street and Fenton Streets.*

Wayne Avenue

MCDOT is not recommending street trees on the north side of Wayne Avenue because per County Standard 700.01: "no tree plantings will be permitted if green space is less than 6 feet". The County should reconsider this standard and allow street trees to be planted on the north side of Wayne Avenue, especially since the Purple Line proposed substantial impacts along the roadway. Therefore, MCDOT should:

- *Grant a design exception to allow street trees to be planted in the 5-foot-wide buffer on the north side of Wayne Avenue between the curb and the Silver Spring Green Trail.*

The Purple Line Functional Plan (page 31) recommends sidewalks that are at least 6 feet wide on the south side of Wayne Avenue. The 30% engineering plans include 5-foot-wide sidewalks, even though there appear to be opportunities to widen the sidewalks to 6 feet in the right-of-way.

- *The sidewalks on the south side of Wayne Avenue should be widened to 6 feet with landscaped buffers from traffic wherever the right-of-way is available to do so.*

Dale Drive Station Area

While the pedestrian space is at almost the bare minimum on the south side at Wayne Avenue, the intersection at Wayne Avenue and Dale Drive is proposed to add a turn lane in each direction. Therefore, in coordination with MTA:

- *The intersection of Wayne Avenue and Dale Drive should be changed to eliminate these turn lanes in favor of providing a dedicated transit lane in the eastbound direction, shifting the platform one lane to the north and creating a pedestrian refuge on the west leg of the intersection.*

On the east side of Dale Drive, north of Wayne Avenue, MTA is proposing dual sidewalks along the school driveway. This is in addition to the sidewalks provided adjacent to Wayne Avenue. Therefore, in coordination with MTA and Montgomery County Public Schools (MCPS):

- *The dual sidewalks along Dale Drive between Wayne Avenue and the school driveway should be combined into one wider sidewalk that is offset from the curb. The sidewalk north of the school driveway should be offset from the curb similar to what exists now but with a straighter alignment.*

Manchester Place Station Area

On Wayne Avenue between Sligo Creek Parkway and Manchester Road, there is extra pavement that may lead to unwanted vehicular movements. Therefore:

- *On Wayne Avenue between Sligo Creek Parkway and Manchester Road, a raised island should be constructed between the two turn lanes to guide vehicles into the correct lanes.*

Long Branch Station Area

The Long Branch Sector Plan recommended a full-movement intersection on Arliss Street just north of the Long Branch Station platform, to facilitate access into the Town Center site. Therefore, in coordination with MTA and the Washington Real Estate Investment Trust (WRIT):

- *Provide for a future northbound left turn lane into the Long Branch Town Center by either: 1) repurposing the northern portion of the proposed southbound left turn lane from Arliss Street to Piney Branch Road, or 2) adding a northbound left turn lane from Piney Branch Road to the Town Center.*

BETHEDSA METRO STATION SOUTH ENTRANCE MANDATORY REFERRAL

The following changes should be considered:

- *On Elm Street at the intersection with Wisconsin Avenue, the existing eastbound movement should continue to permit all movements, if possible.*
- *Provide dual handicap ramps at the southwest corner of Wisconsin Avenue and Elm Street.*

In addition:

- *Should an agreement be made by mid April 2014 to demolish the Apex Building to allow an improved Bethesda station design to be built, MCDOT must submit the "alternative" Bethesda Metro Station South Entrance project design to the Planning Board as a mandatory referral. The Planning Board commits to an expedited review of a Bethesda Station area mandatory referral.*

CAPITAL CRESCENT TRAIL MANDATORY REFERRAL

While MCDOT is the project sponsor for the Capital Crescent Trail, MTA is designing the trail. Therefore, MCDOT should work with MTA to accomplish the recommendations below.

General Comments

Upon completion, the segment of the Capital Crescent Trail between Silver Spring and Bethesda will likely experience similar popularity to the existing segment between Bethesda and Georgetown. The design of the trail should reflect its importance as a facility of regional significance. Therefore:

- *Develop and implement a unique signing and branding plan for the Capital Crescent Trail between the Silver Spring Metro station and the Bethesda Metro station. Signing should be provided at regular intervals on the trail, as well as at all access points.*

The Capital Crescent Trail's importance as a bikeway will increase with the completion of this project, but a wayfinding plan has not yet been developed to direct trail users to and from the trail/bikeway. Therefore:

- *Implement a wayfinding plan on the trail at all access points and in locations beyond the trail to direct trail users to the trail.*

In many locations ramps connecting to the Capital Crescent Trail are not flared. This affects sight distance and makes it more difficult to maneuver between the trail and the ramps. Therefore:

- *All ramp connections to the Capital Crescent Trail should be flared to the extent possible to facilitate access to the trail.*

The engineering plans show a noise wall for the Purple Line located on the side of the Capital Crescent Trail that is away from the Purple Line. This could create a situation where noise from the Purple Line is augmented on the trail. Therefore:

- *In the final design, any noise walls planned for installation should be placed directly adjacent to the track. In cases where the trail and the tracks are parallel, the noise wall should be placed between the track and the trail. A fence will be placed on the outer edge of the trail. This will improve the sound and visual quality along the trail by creating a solid buffer from moving rail equipment.*

Location Specific Comments

The recently approved Bethesda Purple Line Station Minor Master Plan recommends that the Capital Crescent Trail "mainline route" cross over the Purple Line on a bridge and then travel along the northern edge of Elm Street Park (just south of the Purple Line) southwest to the intersection of Elm Street and 47th Street, where it branches into a "surface route" and a potential new "tunnel route." As currently designed there are two closely spaced 90-degree turns in Elm Street Urban Park. This will be difficult for many cyclists to navigate, especially cyclists with trailers, and will create a severe pinch point at a location that will experience high use. Therefore, to be consistent with the master plan:

- *Explore ways to provide a smooth transition for the Capital Crescent Trail into Elm Street Park avoiding sharp turns, including consideration of structural adjustments to the Air Rights Building garage.*

The ramp from the Capital Crescent Trail to the south side of East-West Highway would require an extremely sharp 180-degree turn to go east on East-West Highway, which will be difficult for cyclists to maneuver. It would be beneficial to have a longer landing area at the terminus to facilitate turns by cyclists, though this is complicated by the steep grade of the ramp. While this ramp has an 8.25% grade, it may be possible to create this landing area at East-West Highway by shortening the landing area at the junction with the trail. Therefore:

- *To create additional landing space at the western terminus of the East-West Highway ramp, investigate whether it is possible to reduce the length of the landing area at the junction with the Capital Crescent Trail.*

In addition, the sidewalk between the bridge and Montgomery Avenue is adjacent to the curb, even though there appears to be sufficient space for an offset. Therefore:

- *Along East-West Highway, widened the sidewalk to 7 feet and build it against the retaining wall for the ramp so that a landscaped buffer between the sidewalk and the road can be provided. Add an ADA ramp that is aligned with the ramp on the other side of the driveway.*

In some locations only stair access is provided to the Capital Crescent Trail, due to right-of-way limitations or other reasons. For people on bicycles this can be challenging, because carrying bicycles up stairs can be heavy and awkward, especially Capital Bikeshare bikes. Bicycle "channels" provide a groove on the side of the staircase that enables many cyclists to push their bicycles up and down the stairs. To facilitate bicycle access:

- *Provide a bicycle channel on the stairway connection to the Capital Crescent Trail at East-West Highway, Sleaford Road, and on the east side of Connecticut Avenue.*

The Chevy Chase Lake Sector Plan recommends a shared use path (LB-4) on the south side of Newdale Road to connect the Capital Crescent Trail to the west side of Connecticut Avenue. Currently, engineering plans show a 5 to 6-foot-wide sidewalk in this location. MTA has indicated that "an 8-foot-wide shared use path cannot be accommodated due to the proximity of MSE Wall 1FO supporting the CCT." However, the 30% engineering plans show a buffer between Newdale Road and this sidewalk, so it is unclear why the shared use path cannot be widened for most of its length. Therefore:

- *A shared use path should be provided on the south side of Newdale Road that is 10 feet wide where right-of-way is available, and 8 feet wide in constrained locations.*

The Chevy Chase Lake Sector Plan recommends a shared use path (SP-82) along Coquelin Run between Jones Bridge Road and Chevy Chase Lake Drive, with a connection to the Capital Crescent Trail. The Purple Line 30% engineering plans reflect a 14-foot-wide underpass for SP-82; however, a connection between the two trails is not included. Design allowances should be included in final design so that this connection is not precluded in the future. Therefore:

- *Design the ultimate ramp connection between the Capital Crescent Trail and the Coquelin Run Trail during final design.*

Until this ramp connection is constructed, the distance between the two closest trail access points (Connecticut Avenue and Jones Mill Road) is about two-thirds of a mile, roughly a 14 minute walk. For trail users in this segment, the maximum walk time to any access point will be 7 minutes, or half the walk time from end to end. Therefore:

- *To enhance trail security, a temporary staircase should be constructed from the Capital Crescent Trail to the Coquelin Run right-of-way.*

The tie-in between the long ramp that connects Jones Mill Road to the Capital Crescent Trail appears to have inadequate sight distance. Therefore:

- *Provide a landing area between Jones Mill Road and Capital Crescent Trail that facilitates adequate sight distance and safe connections.*

To improve pedestrian and bicycle access to the Capital Crescent Trail:

- *The median island on the south leg of Jones Mill Road, across from the ramp, should be 8 to 10 feet wide to facilitate use by southbound bicyclists headed toward the ramp.*
- *The sidewalk in the southwest quadrant of the intersection of Jones Bridge Road and Jones Mill Road should be constructed behind the proposed ramps to facilitate travel by disabled persons as well as to provide storage space for people waiting to cross either street.*

In addition,

- *The gap between the two traffic islands at Station 1034+00 appears to be too narrow to adequately accommodate left turns from Jones Bridge Road.*

The proposed location of the trail in the September 2012 engineering drawings is on CSX property, within 50 feet of their track centerline, and therefore does not meet CSX's criteria for selling their property for a trail. Therefore, the best location for the trail appears to be on the south side of the tracks as shown in the 30% engineering drawings. This means that there are tradeoffs to consider between impacts to residential properties, the function of the Capital Crescent Trail, and the function of Talbot Avenue. Since this involves potential changes to circulation, emergency vehicle access, and private property, this issue will be explored in greater detail as part of the ongoing Greater Lyttonsville Sector Plan. Therefore, MCDOT should work with MTA to:

- *Issue a change order to address the substandard trail width on the Capital Crescent Trail, between Michigan Avenue and Lanier Drive, if recommended by the Greater Lyttonsville Sector Plan.*

At this point there is no agreement between CSX Transportation and MTA to locate the Capital Crescent Trail on CSX property between Lyttonsville Road and 16th Street. If this issue is not resolved MCDOT will need to select an alternate routing for the trail. Therefore:

- *If CSX does not agree to locate the Capital Crescent Trail on CSX property between Lyttonsville Road and 16th Street, MCDOT must submit the revised trail plans to the Planning Board as a mandatory referral.*

Although Third Avenue is a low volume road, the proposed access point to the trail should avoid a mid-block crossing. Therefore:

- *Realign the trail access point to either Noyes Lane or Noyes Drive to avoid mid-block crossings.*

The connection between the Capital Crescent Trail and the Metropolitan Branch Trail is located on a channel on top of the Silver Spring Transit Center. It appears from the 30% engineering plans that the channel may narrow to about 8 feet between knee walls, which is an effective width of 4 feet after

reductions for shy distance. While this channel was constructed as part of the transit center, it remains inaccessible at this time so staff was unable to measure it. Regardless, all trails must have an effective width of at least 8 feet to be considered a shared use path. Between two knee walls this would mean the actual width would have to be at least 12 feet wide, to account for shy distance. Widening the connection between the two trails would require a change to the Silver Spring Transit Center green roof and is outside of the purview of the current Capital Crescent Trail project. However, Montgomery County should conduct a follow-up project once the Silver Spring Transit Center is complete to:

- *Investigate ways to widen the connection between the Capital Crescent Trail and the Metropolitan Branch Trail to be 16 feet upon completion of the Silver Spring Transit Center to achieve a 12-foot effective width.*

SILVER SPRING GREEN TRAIL MANDATORY REFERRAL

While MCDOT is the project sponsor for the Silver Spring Green Trail, MTA is designing the trail. Therefore, MCDOT should work with MTA to accomplish the recommendations below.

General Comments

Several ramps on the north side of the Wayne Avenue are shown at an inadequate width to accommodate the Silver Spring Green Trail. Therefore:

- *Ramps for the Silver Spring Green Trail should be a minimum of 8 feet wide and the trail should be pointed directly into the ramp wherever possible rather than coming in at a 90-degree angle.*

The design of the Silver Spring Green Trail should reflect its importance as a connection between the Silver Spring Metrorail station, Capital Crescent Trail, the Metropolitan Branch Trail, and the Sligo Creek Trail. Therefore:

- *Develop and implement a unique signing and branding plan for the Silver Spring Green Trail between Spring Street and Sligo Creek Parkway. Signing should be provided at regular intervals on the trail, as well as at all access points.*

Location Specific Comments

With the completion of the Silver Spring Green Trail by 2020, only a one-block long segment of the trail will be incomplete. Therefore:

- *Design and construct the last remaining unbuilt and unprogrammed portion of the Silver Spring Green Trail, a one-block segment between Fenwick Lane and Cameron Street.*

The 4th Edition of the *Guide for the Development of Bicycle Facilities* states that the typical width of a shared use path is 10 to 14 feet wide, with the wider values applicable to areas with high use and/or a wider variety of user groups (page 5-3). In very rare circumstances, a reduced width of 8 feet may be used where specific conditions exist. While there is limited right-of-way along much of Wayne Avenue, there are locations where the trail could be expanded to the recommended 10 feet. Therefore:

- *Widen the Silver Spring Green Trail to 10 feet while maintaining a 5-foot-wide buffer with the curb where: 1) there is sufficient right-of-way, and 2) widening the trail would not make retaining walls higher. Candidate locations appear to be between Springvale Road and Greenbrier Drive and in front of the elementary and middle schools.*

The distance between ramps on the north side of Dartmouth Avenue is about 70 feet, even though the typical curb-to-curb distance for the rest of the road is about 25 feet. This is excessive for a residential street. Therefore:

- *Extend the curb at the northwest corner of Wayne Avenue and Dartmouth Ave to reduce the crossing distance for trail users.*

The Silver Spring Green Trail is proposed to be located adjacent to the curb at around Station 383+00, even though there appears to be sufficient right-of-way to provide an offset from the curb. Therefore:

- *Offset the trail from Wayne Avenue by building a retaining wall for the adjacent school parking lot.*

At the intersection of the Silver Spring Green Trail and the Sligo Creek Trail the connection is not flared. This affects sight distance and makes it more difficult to maneuver between the trail and the ramps. Therefore:

- *The connection between the Silver Spring Green Trail and the Sligo Creek Trail should be flared to the extent possible to facilitate access to the trail.*

The Sligo Creek Trail and the Silver Spring Green Trail will converge between the Sligo Cabin Park playground and Sligo Creek Parkway. This segment of the trail is currently a narrow sidewalk adjacent to the curb. MTA is proposing to widen the trail to 8 feet typically, and to 9 feet as it passes over the Wayne Avenue Bridge over Sligo Creek. Trail users tend to shy away from the road and bridge parapets by about 2 feet so the effective width of the trail will be only 5 feet on the bridge. This is substandard for any trail, but especially at a location where two major trails converge. Therefore:

- *The Silver Spring Green Trail on the Wayne Avenue Bridge over Sligo Creek should be widened to 14 feet (an effective width of 10 feet) to reflect expected demand. A barrier should be provided between the roadway and the trail on the bridge.*

The Wayne Avenue Bridge over Sligo Creek is a gateway to Silver Spring and should reflect its importance for motorists, train patrons, and trail users. When rebuilt, the new bridge should convey the same sense of arrival as does the East-West Highway Bridge over the Georgetown Branch in Bethesda. Therefore:

- *The existing stepped brick parapets on the Wayne Avenue Bridge over Sligo Creek should be replicated in the design of the new bridge. Ornamental lighting should be added to the bridge due to the high level of pedestrian and bicyclist activity on the bridge, as planned in the design of the existing bridge.*

The southwest corner of Wayne Avenue and Sligo Creek Parkway is the receiving end of the Sligo Creek Trail but has a sidewalk width. Therefore:

- *Widen the southwest corner of Wayne Avenue and Sligo Creek Parkway to at least 8 feet. Sligo Creek Trail should be relocated behind the traffic signal pole so that users can directly access the ramp to cross Sligo Creek Parkway.*

Additional graphics that help to explain many of the comments can be found at:
www.mcatlast.org/purple

Exhibit J:

Not Used

Exhibit K:

MD 320 Piney Branch Road

Figure 6-25. Long Branch Stream Valley and Long Branch Local Parks

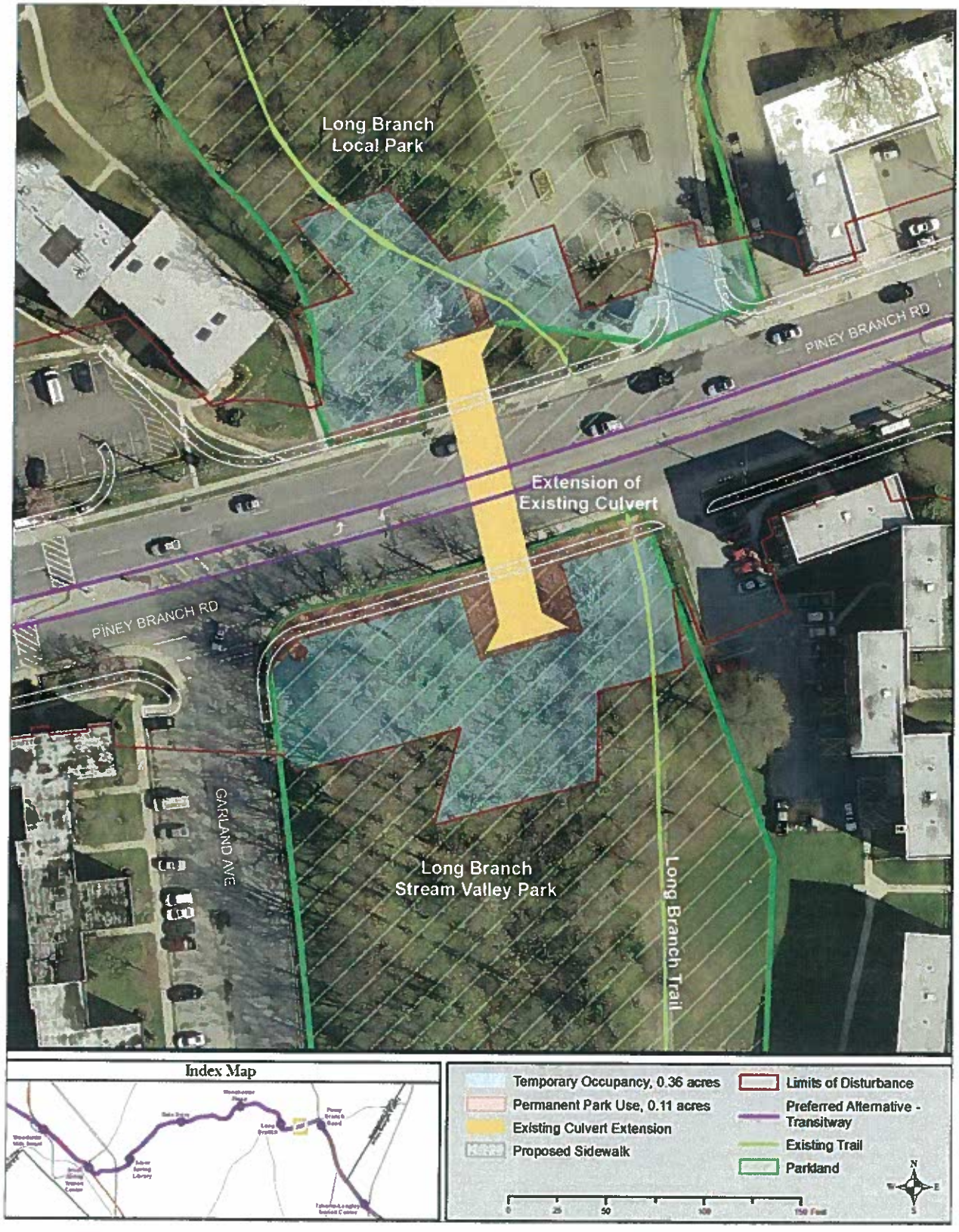


Exhibit L:

KenGar Soccer Field Layout

Ken-Gar Palisades

Proposed Grading

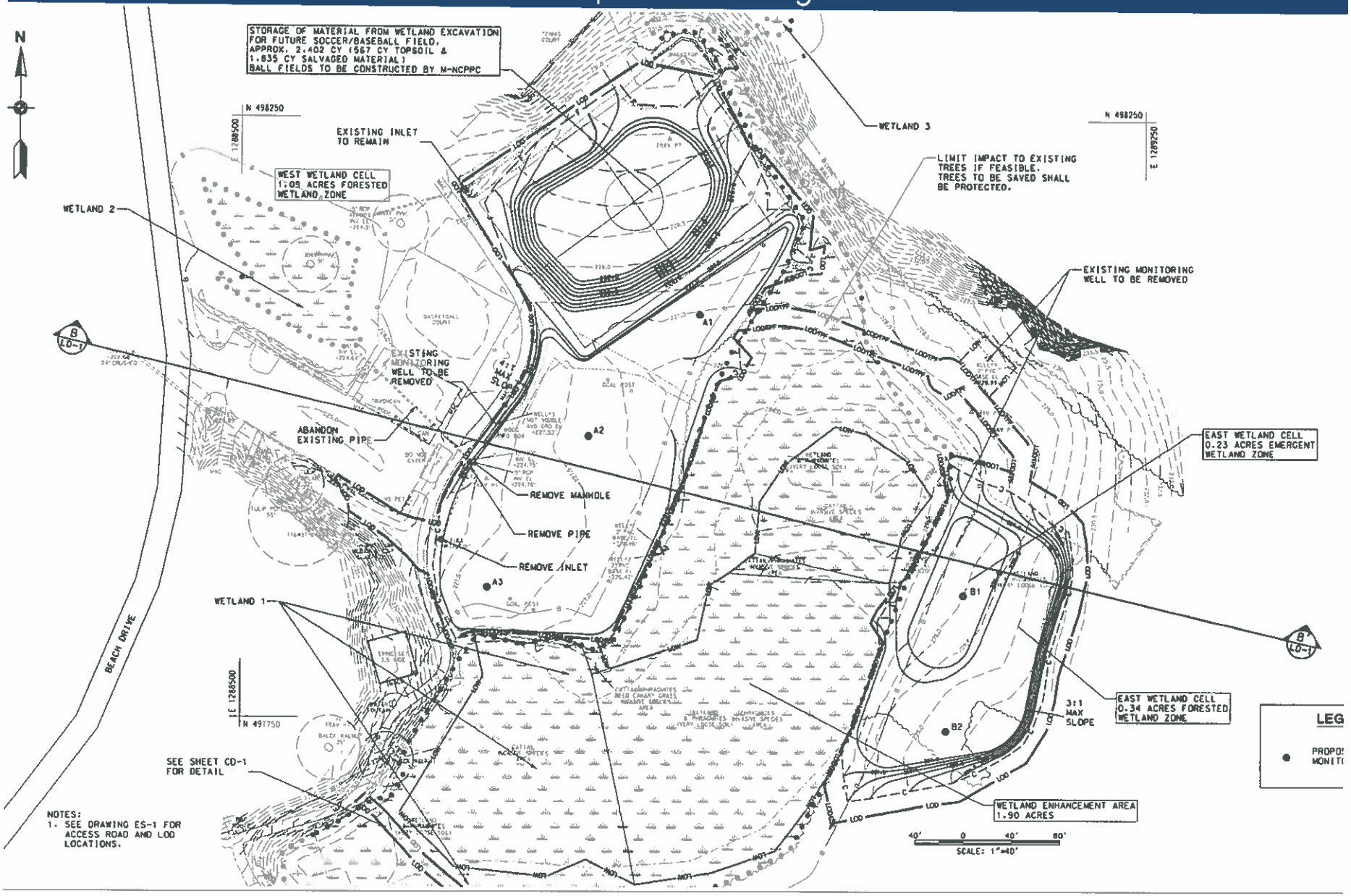


Exhibit M:

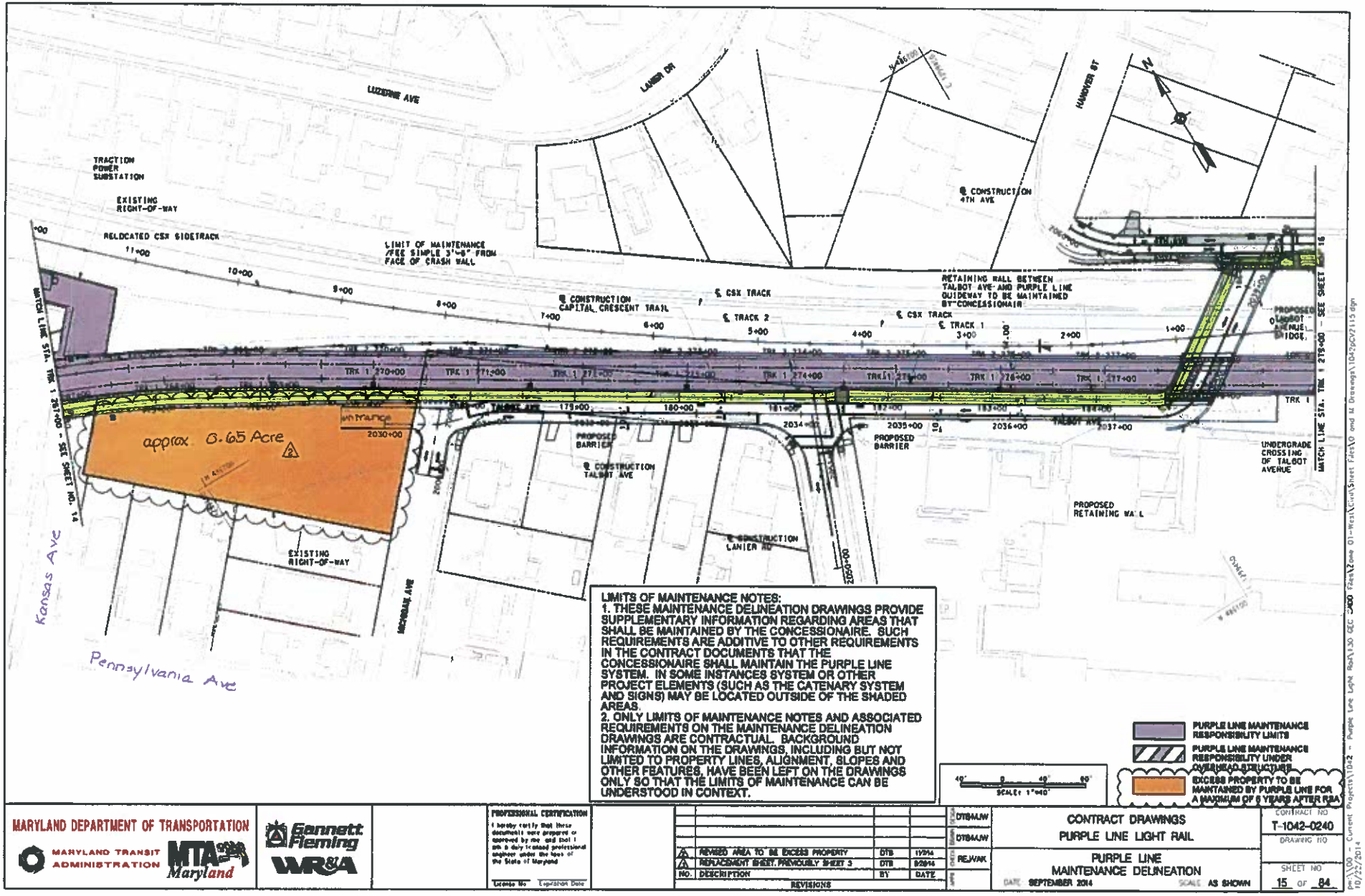
MTA Required Parks Properties

Purple Line
Properties to be Acquired from M-NCPPC (Montgomery County)

MTA ITEM NUMBER	PLAT NUMBER	TAX DISTRICT	TAX ACCOUNT IDENTIFICATION NUMBER	ADDRESS	OWNER NAME	COUNTY	AREA OF FEE SIMPLE TAKE SQ.FT	AREA OF TEMPORARY CONSTRUCTION EASEMENT, SQ. FT	AREA OF REVERTIBLE EASEMENT, SQ. FT	AREA OF PERPETUAL ACCESS EASEMENT, SQ. FT	AREA OF PERPETUAL AERIAL EASEMENT, SQ. FT	AREA OF PERPETUAL DRAINAGE EASEMENT, SQ. FT	AREA OF PERPETUAL SPECIAL PURPOSE EASEMENT, SQ. FT	AREA OF PERPETUAL SUB-SURFACE EASEMENT, SQ. FT	AREA OF PERPETUAL UTILITY EASEMENT, SQ. FT	ACQUISITION TYPE
01389	59199	07	2381911	4600 ELM STREET	MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION	MONTGOMERY	0	497	0	0	0	383	0	0	0	Partial
01504	59233	13	968624	8680 PINEY BRANCH ROAD	MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION	MONTGOMERY	1,215	5,018	0	0	0	804	0	0	0	Partial
01505	59233	13	968783	PINEY BRANCH ROAD	MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION	MONTGOMERY	1,414	8,653	0	0	0	1,059	0	0	0	Partial
01506	59233	13	968817	8700 PINEY BRANCH ROAD	MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION	MONTGOMERY	429	961	0	0	0	1,375	0	0	0	Partial
01507	59233	13	968910	8700 GARLAND AVENUE	MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION	MONTGOMERY	1,536	7,809	0	0	0	1,710	0	0	0	Partial
01508	59233	13	970627	8714 PINEY BRANCH ROAD	MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION	MONTGOMERY	14	1,476	0	0	0	309	0	0	0	Partial
01509	59233	13	970638	8712 PINEY BRANCH ROAD	MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION	MONTGOMERY	0	564	0	0	0	73	0	0	0	Partial
01641	59227	13	U269819	SLIGO PARKWAY	MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION	MONTGOMERY	19,291	26,834	0	0	0	12,520	0	0	13,683	Partial
01651	59236	13	970365	720 UNIVERSITY BOULEVARD E	MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION	MONTGOMERY	4,613	4,334	0	0	0	0	0	0	0	Partial
01652	59235 59236	13	970376	UNIVERSITY BOULEVARD E	MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION	MONTGOMERY	5,380	2,359	0	0	0	0	0	0	0	Partial
01691	59236	13	1744982	UNIVERSITY BOULEVARD E	MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION	MONTGOMERY	4,727	3,257	0	0	0	0	0	0	0	Partial

Exhibit N:

Meadowbrook Annex
Replacement Area (i.e., Talbot Street)



LIMITS OF MAINTENANCE NOTES:

1. THESE MAINTENANCE DELINEATION DRAWINGS PROVIDE SUPPLEMENTARY INFORMATION REGARDING AREAS THAT SHALL BE MAINTAINED BY THE CONCESSIONAIRE. SUCH REQUIREMENTS ARE ADDITIVE TO OTHER REQUIREMENTS IN THE CONTRACT DOCUMENTS THAT THE CONCESSIONAIRE SHALL MAINTAIN THE PURPLE LINE SYSTEM. IN SOME INSTANCES SYSTEM OR OTHER PROJECT ELEMENTS (SUCH AS THE CATENARY SYSTEM AND SIGNS) MAY BE LOCATED OUTSIDE OF THE SHADED AREAS.
2. ONLY LIMITS OF MAINTENANCE NOTES AND ASSOCIATED REQUIREMENTS ON THE MAINTENANCE DELINEATION DRAWINGS ARE CONTRACTUAL. BACKGROUND INFORMATION ON THE DRAWINGS, INCLUDING BUT NOT LIMITED TO PROPERTY LINES, ALIGNMENT, SLOPES AND OTHER FEATURES, HAVE BEEN LEFT ON THE DRAWINGS ONLY SO THAT THE LIMITS OF MAINTENANCE CAN BE UNDERSTOOD IN CONTEXT.

PURPLE LINE MAINTENANCE RESPONSIBILITY LIMITS
PURPLE LINE MAINTENANCE RESPONSIBILITY UNDER OVERHEAD STRUCTURE
EXCESS PROPERTY TO BE MAINTAINED BY PURPLE LINE FOR A MAXIMUM OF 5 YEARS AFTER FBA

SCALE: 1"=40'

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND TRANSIT ADMINISTRATION
MTA Maryland

Gannett Fleming
WR&A

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland
License No. Expiration Date

NO.	DESCRIPTION	BY	DATE
2	REVISED AREA TO BE EXCESS PROPERTY	DTB	11/3/14
1	REPLACEMENT SHEET, PREVIOUSLY SHEET 3	DTB	9/29/14

REVISIONS

DTB&MJW
DTB&MJW
REJ/WK

CONTRACT DRAWINGS
PURPLE LINE LIGHT RAIL

PURPLE LINE
MAINTENANCE DELINEATION

DATE: SEPTEMBER 2014 SCALE: AS SHOWN

CONTRACT NO. T-1042-0240
DRAWING NO.
SHEET NO. 15 OF 84

P:\100 - Current Projects\1042 - Purple Line Light Rail\130 GEC 2400 Trackwork 01-West\Civil\Sheet Files\0 and M Drawings\1042pc02115.dgn
10/22/2014

Exhibit O:

Long Branch Stream Valley Park
Commission Vegetation Work Area