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Corridor Cities Transitway Briefing

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Summary

The Maryland Transit Administration (MTA) has recently completed 30% preliminary engineering plans for the Phase One segment of the Corridor Cities Transitway (CCT) between the Shady Grove Metrorail Red Line station and the MARC station at Metropolitan Grove. **This briefing will focus largely on staff comments on the preliminary engineering plans to be forwarded to the MTA and the Montgomery County Department of Transportation (MCDOT). The briefing will also generally examine issues related to timing, coordination, and funding – especially as they relate to Federal Transit Administration (FTA) guidance related to the protection of properties eligible for historic designation.**

Planning Board Action

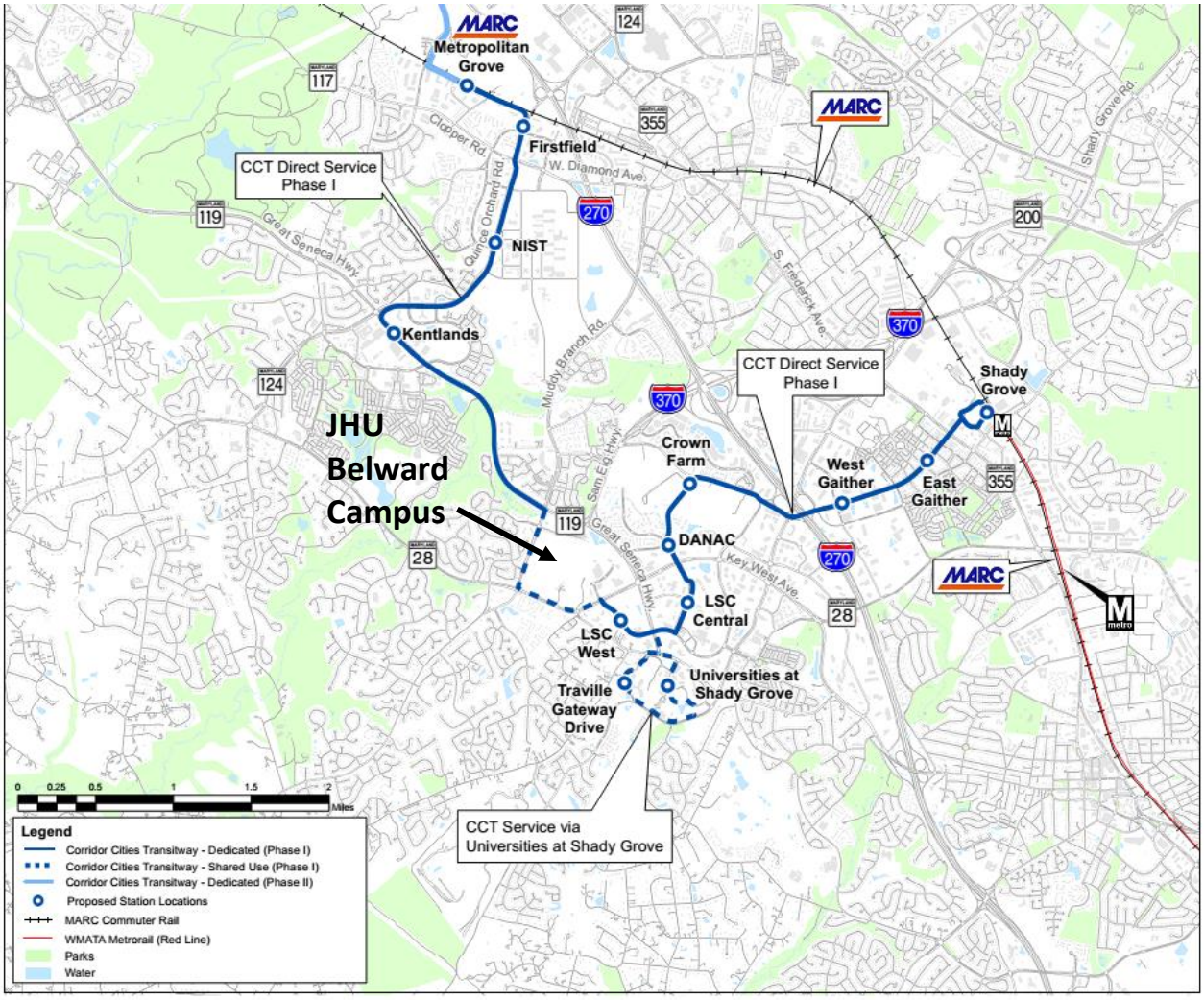
This is primarily a briefing. The purpose is to provide the Planning Board with an update on the CCT as context for two other related agenda items scheduled for January 28th – the draft proposal for a network of separated bike lanes in the LSC area and the approval of amendments to the Great Seneca Science Corridor (GSSC) Design Guidelines to reflect the latest recommendations for the LSC Loop. The Board will be asked to approve forwarding staff comments on the 30% design plans. The staff comments are noted **in bold** throughout the document and presented in summary format at the end of the staff report.

Belward Farm Avoidance Alignment

Although the GSSC Master Plan and the approved Preliminary Plan Amendment (Plan #11996110A) for Johns Hopkins University's (JHU) Belward Campus show the CCT alignment through the Belward Farm, the FTA and Maryland Historic Trust (MHT) do not consider the Belward Farm as otherwise disturbed. The MTA preliminary engineering plans therefore do not show the CCT on Belward Farm (part of the master planned alignment) in response to Federal Transit Administration (FTA) review comments on the Draft Environmental Assessment (EA) and Section 4(f) evaluation. The current CCT alignment (as reflected on the MTA CCT web site) is shown

below in Figure 1. According to the MTA, the FTA review noted that a "feasible and prudent" alternative alignment for the CCT exists (in mixed traffic along Darnestown Road) that would avoid disturbing Ward House/Belward Farm, a property eligible for the National Register of Historic Places (NRHP). [1]

Figure 1 – CCT Alignment on Darnestown Road Avoiding JHU Belward Campus



Source: MTA CCT Website (http://www.cctmaryland.com/images/stories/documents/maps/lpa/lpa_basemap_phasei_ii_150630.pdf)

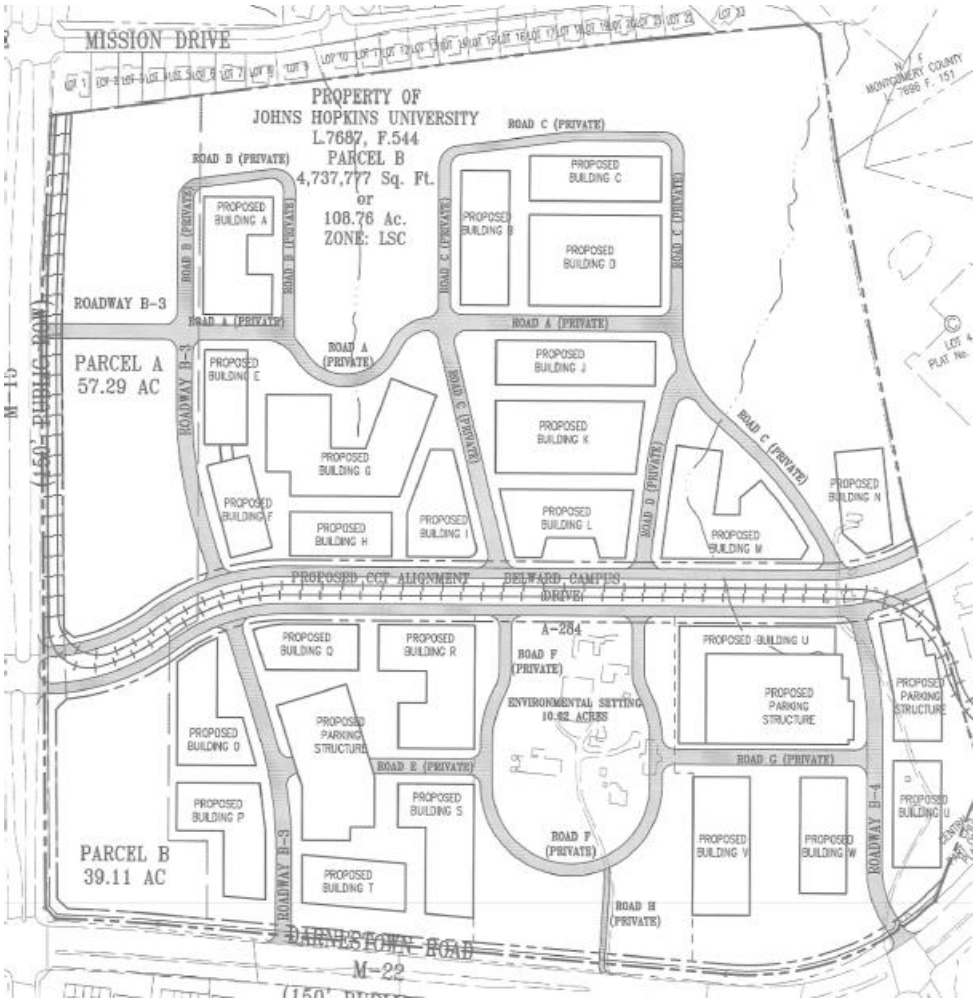
The JHU Belward Campus 2011 Preliminary Plan Amendment (Plan #11996110A) identifies an internal road network on Belward to accommodate both the additional 3.3 million square feet of development permitted in the GSSC Master Plan and the previously approved but unbuilt 1.4 million square feet of development.[2] Part of

[1] According to the MTA, the Draft EA will include an analysis of both the GSSC Master Plan alignment and the "avoidance alignment" and conclude the avoidance alignment is preferred at this time as a "feasible and prudent" alternative.

[2] An additional 390,000 square feet (approximate) of the JHU Research Campus was constructed on the adjoining 30 acres of the original tract.

the road network (Belward Campus Drive) is planned to also accommodate the CCT (and the LSC Belward CCT station) in the median (see Figure 2).

Figure 2 – JHU Belward Campus 2011 Preliminary Plan Amendment

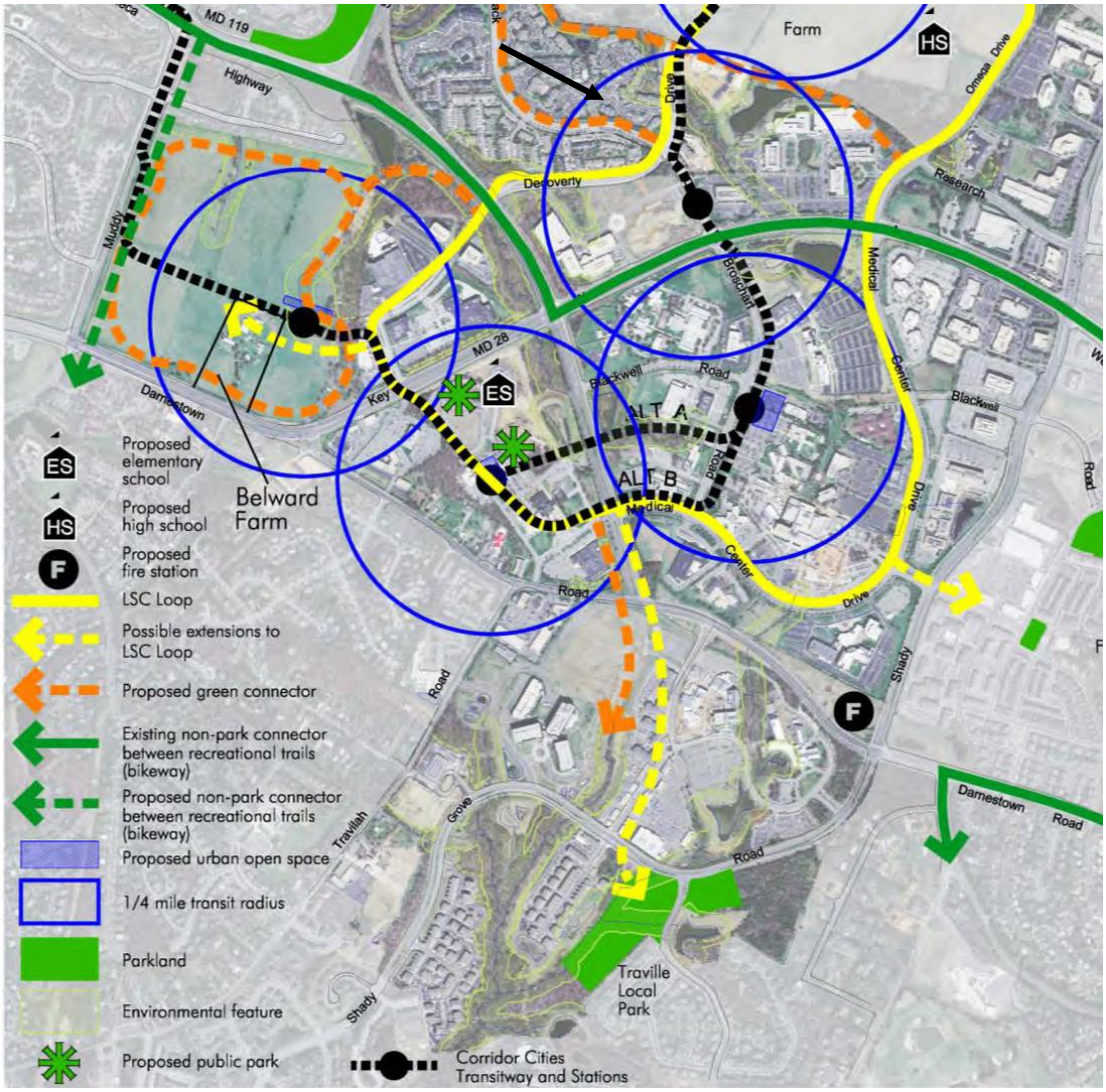


The MTA's 30% preliminary engineering plans that avoid Belward Farm, therefore, are not consistent with the GSSC Master Plan or the approved JHU Belward Campus Preliminary Plan Amendment.[3]

[3] While not consistent with the plans, the potential for both (1) the recent FTA finding related to the CCT alignment on Belward Farm and (2) an eventual re-evaluation of the approximate 108-acre site surrounding and including the farm house for NHRP eligibility were discussed during the development of the GSSC Master Plan.

For additional reference, the CCT alignment in the vicinity of the JHU Belward Campus (Belward Farm) and the LSC Loop as depicted in the GSSC Master Plan is shown below in Figure 3.

Figure 3 – CCT Master Plan Alignment On Belward Campus Drive (dashed black line) and LSC Loop (solid yellow line)



Source: GSSC Master Plan

Staging

The GSSC Master Plan includes three different but related staging "triggers" that must be met before Phase Two development can begin. They are a "fully funded" CCT, funding of the LSC Loop trail (see Figure 2 above) and attainment of an 18 percent non-auto driver mode share (NADMS).[4] Any previously approved development, including JHU's previously approved 1.4 million square feet of development, is not affected by the staging but any additional commercial development by JHU or any other applicant in the LSC area would not be able to go forward under the current staging regime.[5]

In theory, construction funds could be programmed for a CCT that initially operates over the avoidance alignment until Belward Campus Drive or some part of the JHU Belward Campus is constructed. The CCT running way and station (LSC Belward) would ideally be constructed at the same time as the roadway but could come later – depending on the phasing of the adjacent development or funding considerations. The ultimate configuration of the CCT, however, must be consistent with any applicable adopted master plan and approved preliminary plan amendment.

Re-evaluation of Ward House/Belward Farm Eligibility for NRHP

JHU informed County staff and the MTA in late November 2015 that they are considering carrying out grading and other preliminary or initial site development activity on the Belward Campus consistent with the Preliminary Plan Amendment over an unspecified time period in 2016. Staff expects JHU to follow this work with a request to the MTA, Maryland Historical Trust (MHT) and/or FTA to re-evaluate Ward House/Belward Farm as to its eligibility for the NRHP. The basis for the request would be that recent changes (i.e., the grading or other site development activity) to the property warrant the re-evaluation. The GSSC Plan notes that the 1996 Preliminary Plan approval provided for open space and the maintenance of the view of the farm house from Darnestown Road with an environmental setting of 6.98 acres and Appendix 6 of the GSSC Plan notes that subsequent development plans for Belward Farm must include re-evaluating an appropriate setting for the resource. The 2011 Preliminary Plan Amendment reflects 10.02 acres surrounding the Ward House for preservation that is consistent with the recommendation in the GSSC Master Plan. A similar re-evaluation of the England/Crown Farm property was undertaken as part of the development of the Draft EA in part in response to the new mixed use development at Crown Farm – site of another CCT station. The re-evaluation resulted in a reduction in the area eligible for the NRHP from the original 47-acre site to the Victorian farmhouse and, therefore, no alignment changes for the CCT were necessary.

[4] "Fully funded" is defined as fully funding construction within the first six years of the County's Capital Improvement Program (CIP) or the Maryland Department of Transportation's (MDOT) Consolidated Transportation Program (CTP). NADMS is the percentage of commuters not driving alone to get to a work location in the LSC area during the peak period on a typical workday. MCDOT commuter surveys are used to determine the latest percentage. The 2015 survey indicated the current percentage is 16.1%.

[5] As of May 2015, Phase One of the LSC staging does have remaining capacity for 2,189 dwelling units.

Advancing Design, Funding, and Construction of the CCT

The CCT – including Phase Two from Metropolitan Grove to Clarksburg – is the Council's and Executive's number two (behind the Purple Line) State transportation construction priority.

The MTA schedule for the CCT has been adjusted recently in response to the FTA review of the Draft Environmental Assessment Report. The CCT web site indicates the National Environmental Policy Act (NEPA) process will be completed at the same time as the 30% level preliminary engineering plans. More recent conversations with MTA staff indicate the NEPA process will likely extend into 2016 to be followed by the initiation of final design (also in 2016). The MTA staff has also indicated the final design will (like the Purple Line) focus on aspects of the project that can be modified to reduce both capital and operating costs. The beginning of right of way acquisition and the permitting/agreement phase would likely not start until sometime in calendar 2017. There are no programmed funds for the construction of the CCT.

The estimated cost of construction is $545 million (2012 dollars). The forecast weekday ridership (in 2035) is 35,900. Updated cost and ridership estimates are expected to be provided as part of the Draft Environmental Assessment that will be available in advance of the Public Hearing and would not reflect any reductions attributable to any value engineering or cost reduction initiative carried out during final design.

As previously noted, the absence of programmed construction funds for the CCT is not related to the eventual development of some or all of the JHU Belward Campus's previously approved 1.4 million square feet of commercial development. That development can proceed without the CCT construction funding in place assuming applicable Adequate Public Facilities (APF) requirements are met during review of the application(s).

In summary the eventual achievement of any significant part of the vision of the GSSC Master Plan for the LSC area (i.e., Stage 2 as identified in the GSSC Plan) will continue to be delayed however until CCT construction funds are identified and programmed – even if future market conditions begin to better align with the plan vision. In the interim the MTA planning process now underway will have preserved the option in the near term for competing for Federal funds to defer some of the CCT capital costs. The possibility exists however that any prolonged (continued) delay in identifying construction funds could result in having to update the environmental documentation once again (regardless of whether federal and/or state funds are identified as the funding source) – thereby resulting in an additional delay in CCT implementation.

Review of CCT Preliminary Engineering Plans (approximately 30% design level)

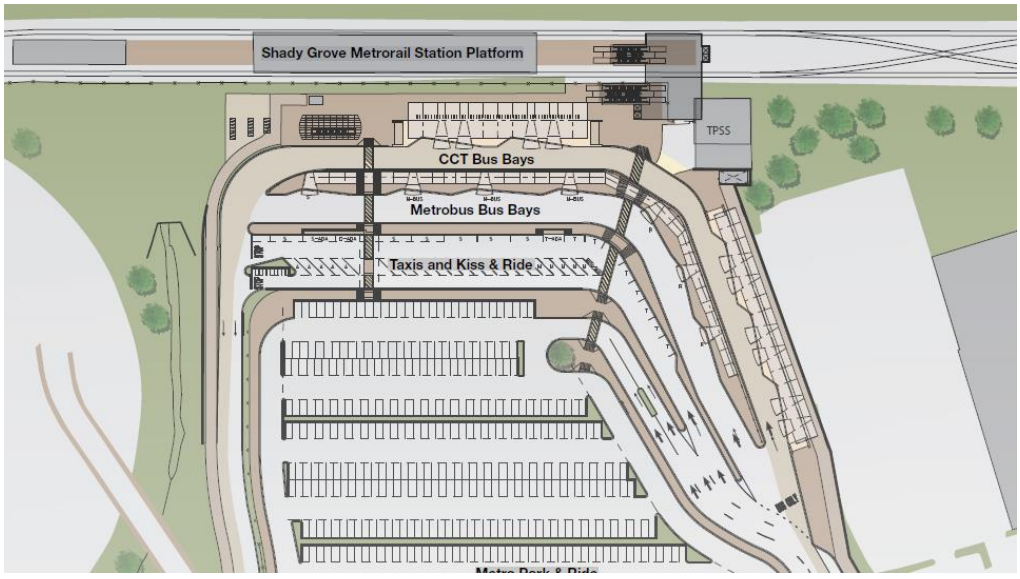
The following section presents a brief discussion of the design features at station locations and other selected locations along the CCT alignment known to be either of interest or concern to various stakeholders or adjacent land owners or a central focus of the GGSC Master Plan or other plans and projects in development (e.g., the Bicycle Master Plan or the LSC Loop). The discussion is not intended to include all aspects of the CCT preliminary engineering plans along the entire alignment. The review begins at the Shady Grove Red Line Station.

Shady Grove Road Station

Plans call for there to be five bus bays for CCT vehicles at the Shady Grove Road Station. The existing surface parking lot on the west side of the Red Line will be reconfigured to include two different counter-clockwise drive aisles and loading areas – one for the CCT and one for WMATA (Metrobus) and Ride On buses. An aerial of the existing lay-out and a plan view of the future are shown below in Figure 4.

Figure 4 – Shady Grove Metro Station (Existing and Future with CCT)

Source: Google



Source: Shady Grove Station Capacity Improvements Study - September 2015 (Figure 40, page 30).

In addition to the five bus bays for the CCT the number of bus bays for use by WMATA and Ride On would increase from three to five and an additional bay would be available for shuttle bus providers (e.g., the King Farm shuttle), resulting in a total of 11 bus bays on the west side of the station.

The Washington Metropolitan Transit Authority (WMATA) recently (September 2015) completed the Shady Grove Station Capacity Improvements Study that examined a number of aspects of the station capacity – both now and in the future and with and without the CCT and other BRT routes. One aspect included a preliminary analysis of the adequacy of bus bays with the CCT in the future (2030). The analysis indicated that with the construction of the CCT and the associated five bus bays on the west side, there would be "adequate bus bays and layover spaces both on the east and west sides of the Shady Grove Metrorail Station in 2020 with and without the CCT and in 2030 with the CCT."[6] The analysis appears to indicate at one point that a total of 12 bus bays (for either bus in active service or laying over) would be needed on the west side and if so, that slightly exceeds the total of 11 now in the CCT plans.[7] One of the 11 bays in the CCT plan is dedicated to shuttle providers and it is unclear if that requirement was factored into the WMATA preliminary analysis. **Staff recommends that MTA and WMATA continue to coordinate on the number of bus bays required at the Shady Grove Station as there may be slightly differing estimates between the CCT plan and the recently completed WMATA preliminary analysis of future bus bay requirements.**

The need for the additional drive aisle and boarding area for the CCT result in the kiss and ride and taxi space being relocated or shifted an estimated 55-60 feet to the west toward Frederick Road. This result in a smaller surface parking area and begins to impact an area designated as a Proposed Town Square in the 2006 Shady Grove Sector Plan (see Figure 5).

Figure 5 – Metro West Neighborhood (Shady Grove Sector Plan – 2006)

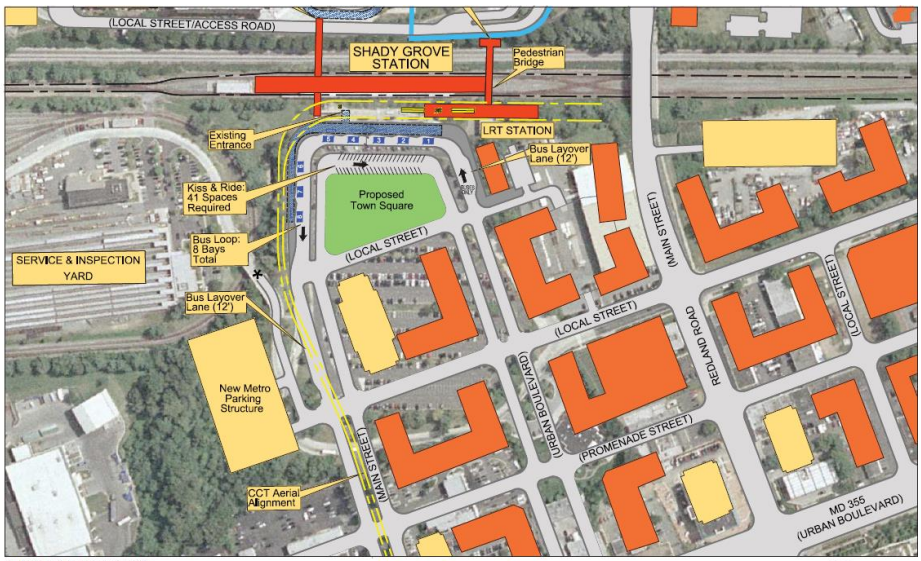


Figure 33: Station West Side - Metro West Neighborhood
Source: Shady Grove Sector Plan (March 2006)

[6] Shady Grove Station Capacity Improvements Study – September 2015 (WMATA), page 75.
[7] Shady Grove Station Capacity Improvements Study – September 2015 (WMATA), page 32, Figures 43 and 44.

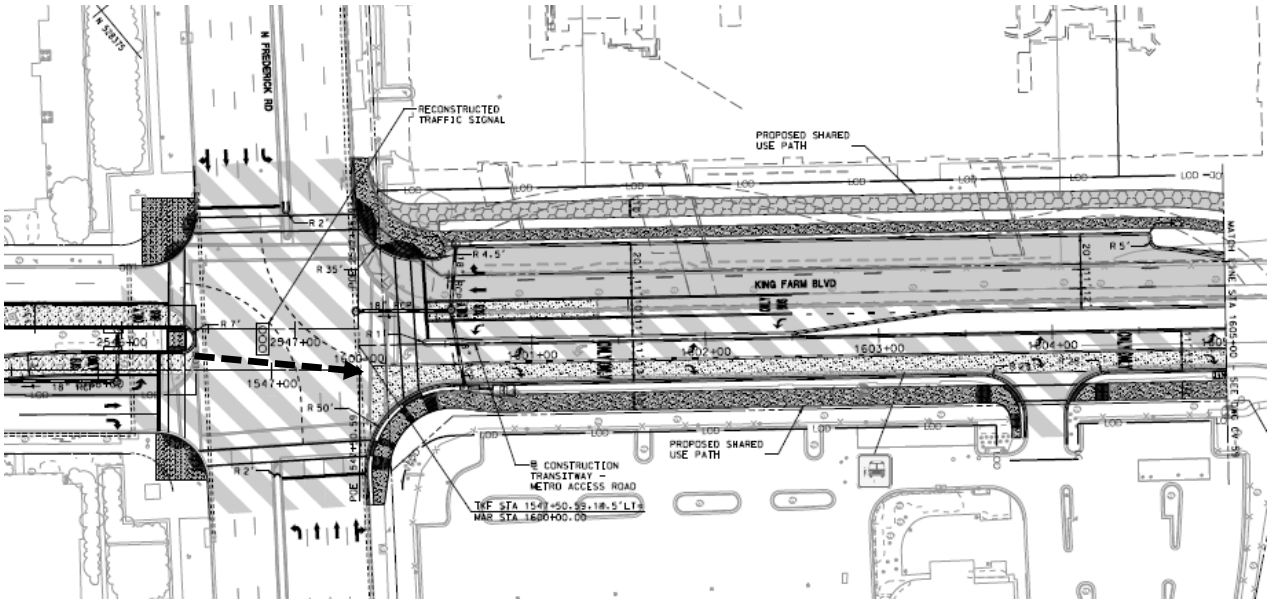
The concept shown above in Figure 5 assumes the CCT is light rail transit (LRT) instead of BRT and is elevated in the station area. There are a total of eight bus bays to accommodate local bus service. In addition, there is a new Metro Parking Structure to replace the surface parking that would be lost with the Metro West Neighborhood development.

There are no active development plans for the area where the surface parking lot is currently located. Any plan under consideration would require agreement with WMATA as the land owner and was also require close coordination with the MTA CCT design team and the County to insure consistency with the CCT plans and the 2006 Shady Grove Sector Plan. **Staff therefore recommends the MTA remain in frequent contact with both WMATA and the County (and vice-versa) as development plans in the immediate station area (especially on the west side) are introduced at a concept level, refined and finally submitted. The need for the expansion of the bus bays on the west side to accommodate a BRT CCT will result in a slightly different footprint or concept than the one presented for the Metro West Neighborhood in the 2006 Shady Grove Sector Plan.**

Transition to/from King Farm Boulevard

The CCT will cross North Frederick Road (MD 355) at-grade – taking advantage of a separate signal phase at the intersection to transition to and from the exclusive lanes on King Farm Boulevard. The existing Metro Station Access Road on the east side of North Frederick Road will be widened to the south to accommodate the bus lanes. The CCT lane configuration (as shown below in Figure 6) will be slightly off-set in the eastbound direction (see heavy dashed line) to accommodate the separate through and turn lanes as well as the shared use path on the south side of the Metro Station Access Road. The eastbound BRT will advance across North Frederick Road (MD 355) during a separate signal phase. **Because of space constraints in this location, staff recommends the MTA continue close coordination with the Planning Department and the City of Rockville related to development applications in the southeast corner of this intersection.**

Figure 6 – North Frederick Road / Metro Station Access Road Plan with CCT



King Farm Boulevard

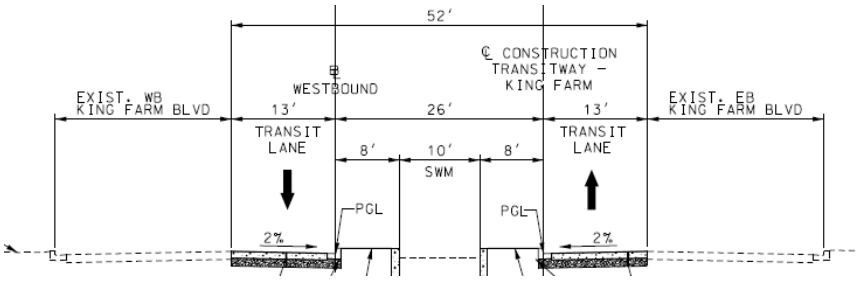
The CCT will be adjacent to the median of King Farm Boulevard with center platforms at the both the East Gaither Station at Pleasant Street and the West Gaither Station at Piccard Drive. The bus lanes will be separated by a 26-foot wide green buffer – part of which will be for stormwater management facilities. A street view of the segment along King Farm Boulevard looking east toward Pleasant Street is shown in Figure 5 – along with the typical section for this segment of the alignment.

Figure 7– King Farm Boulevard Section

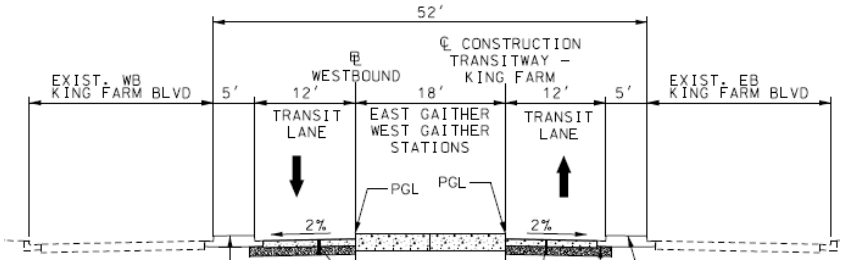
Existing Condition – Eastbound on King Farm Boulevard Near Pleasant Street

Source: Google

Future Running Section with Middle Separation for Green Buffer and Stormwater Management

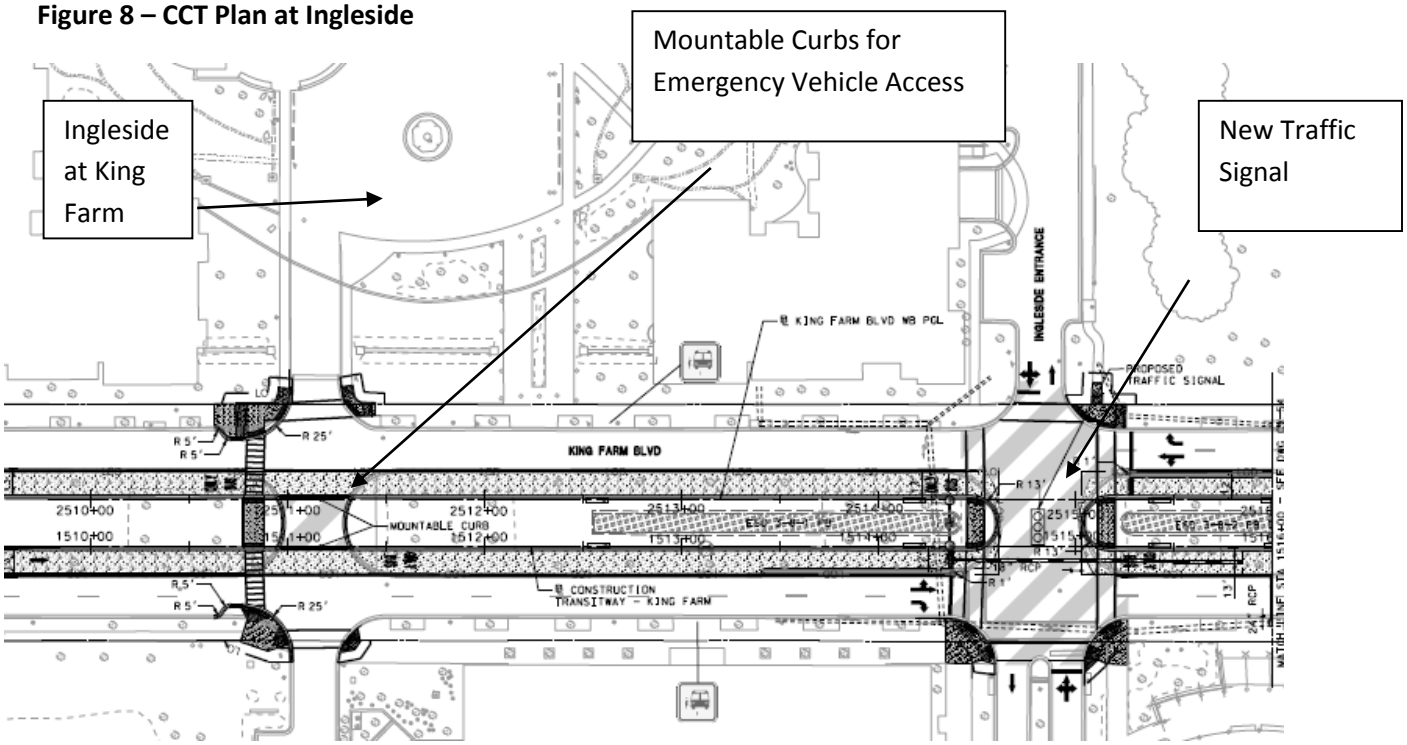


Future Section with 18' Wide Station Platform



Traffic on streets intersecting King Farm Boulevard will not be able cross the median on King Farm Boulevard and turn left onto King Farm Boulevard unless the intersection is signalized. A new traffic signal will be installed at the intersection with and Grand Champion Drive, Reserve Champion Drive, and the entrance to the Ingleside perimeter parking (east side) to allow for traffic to cross the median. Emergency vehicles will be able to cross the median across from one of the main driveways at Ingleside (see Figure 8 below). The CCT plans do not affect current the on-street parking locations on King Farm Boulevard. Recommendations on the placement of the CCT and access to King Farm Boulevard from intersecting streets were developed through extensive review and coordination with the Area Advisory Committee (ACC) 3 members.

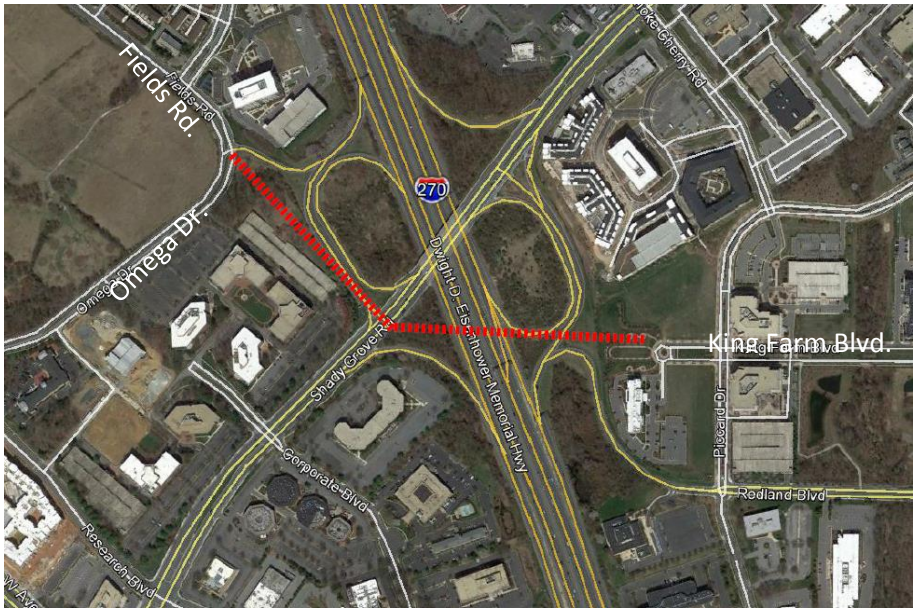
Figure 8 – CCT Plan at Ingleside



CCT Bridge Over I-270 Connecting King Farm and Crown

The CCT plans include a bridge over I-270 that will connect King Farm on the east with the Crown development on west side. The bridge as currently design would consist of two 13 foot lanes for the BRT and an adjacent (on the north side of the structure) shared use path. A rough approximation of the alignment of the bridge as it crosses I-270 is shown below in Figure 9.

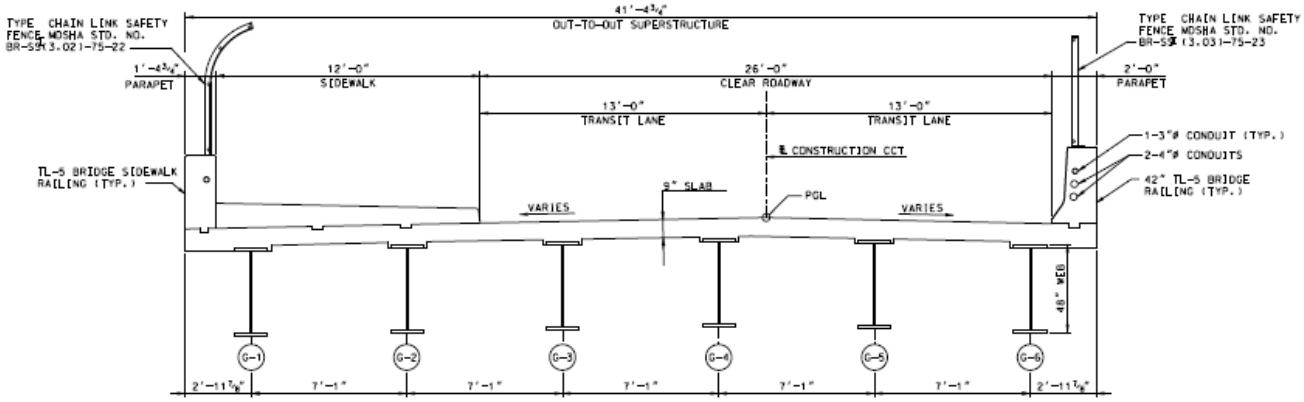
Figure 9 – CCT Alignment (General) Over I-270



Source: Google

The bridge section will consist of two 13’ wide travel lanes for the BRT buses and an adjacent 12’ wide sidewalk on the north side of the structure (see Figure 10 below).

Figure 10 – CCT Bridge Typical Section Looking East or Toward King Farm



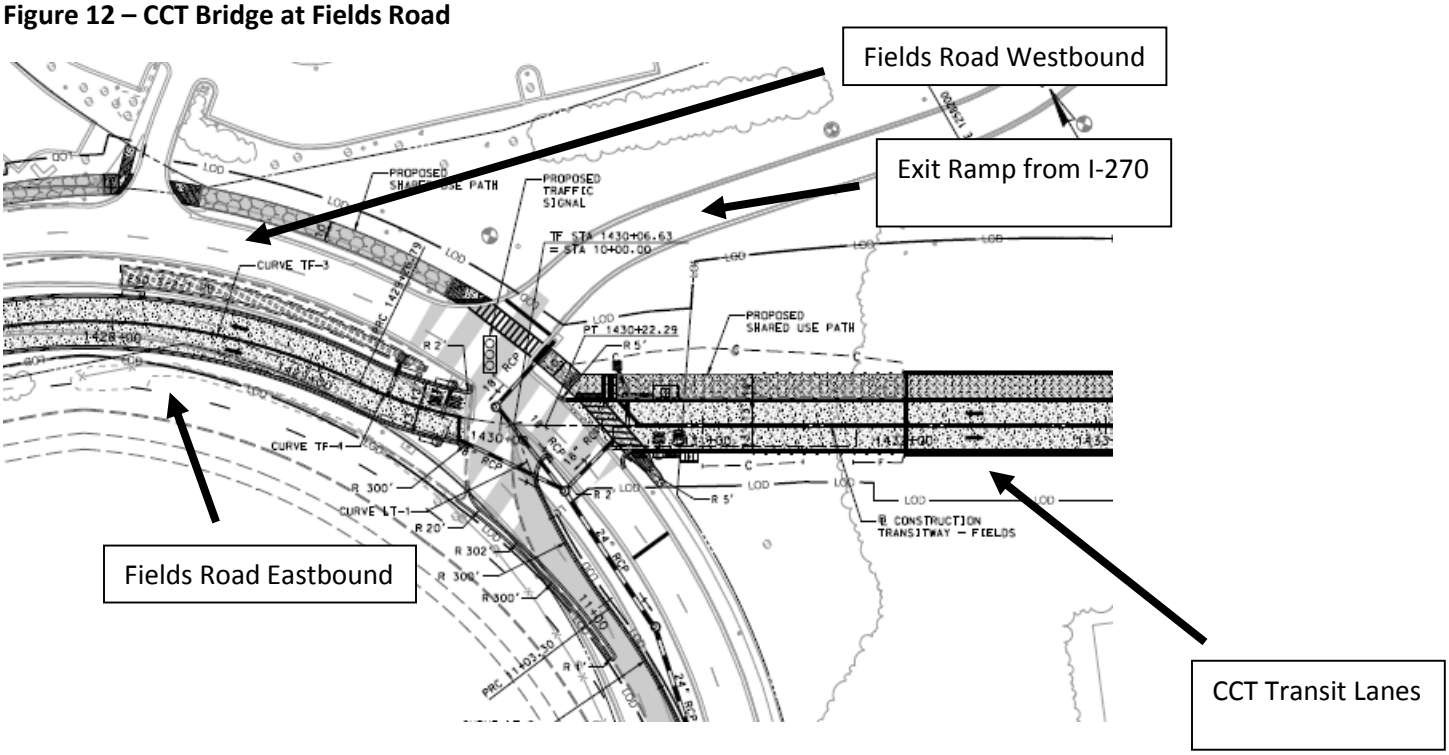
The 12’ wide sidewalk connects the sidewalk in King Farm to a sidewalk on the east side of Washingtonian Boulevard. The current drawings do not reflect a barrier or buffer between the sidewalk and the transit lane on the bridge. **Staff recommends the MTA consider including a combination of protective features (railing, raised curb, pavement treatment, etc.) to delineate an area between the sidewalk and the adjacent transit lane.** An example of one type of separation used on a new bridge in Portland Oregon is shown in Figure 11 below.

Figure 11 – Railing Separating Bike/Pedestrian Paths from Light Rail Transitway in Portland OR

Source: http://www.americantrails.org/resources/structures/tilikum.html

A new traffic signal will be installed at the intersection of the CCT transit lanes, the I-270 ramp to Omega Drive / Fields Road, and Fields Road (see Figure 12) to facilitate CCT buses entering and exiting the median alignment on Fields Road.

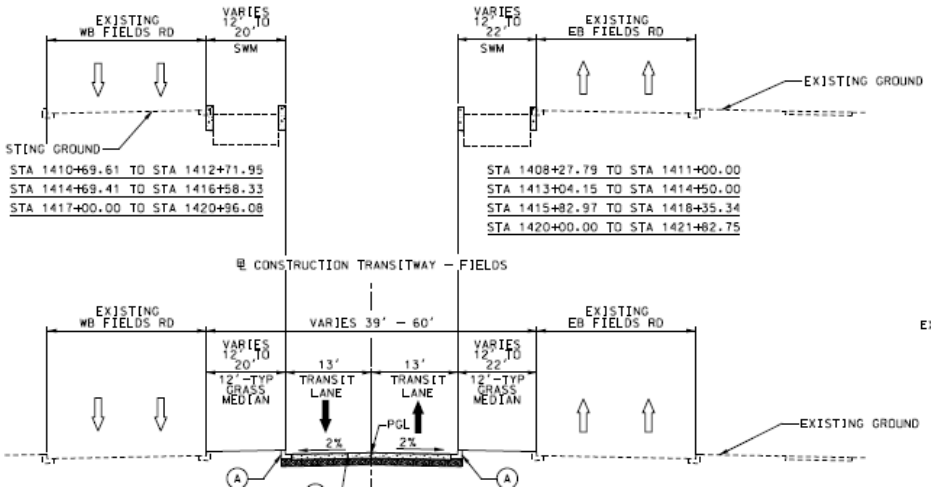
Figure 12 – CCT Bridge at Fields Road



Fields Road Section

The CCT will be located in the median of Fields Road and operate in 13-foot wide exclusive bus lanes. Existing traffic signals will be reconstructed at Washingtonian Boulevard and Decoverly Drive. Vehicles exiting other streets intersecting Fields Road will be unable to cross the CCT transit lanes and turn left onto Fields Road. Stormwater management or grass medians will be located between the transit lanes and the travel lanes (see Figure 13 below).

Figure 13 – Fields Road Typical Section



The Washington Metropolitan Transit Authority's (WMATA) Metroway BRT service along US Route 1 (see Figure 14 below) in Alexandria has a similar footprint as that planned for Field's Road.

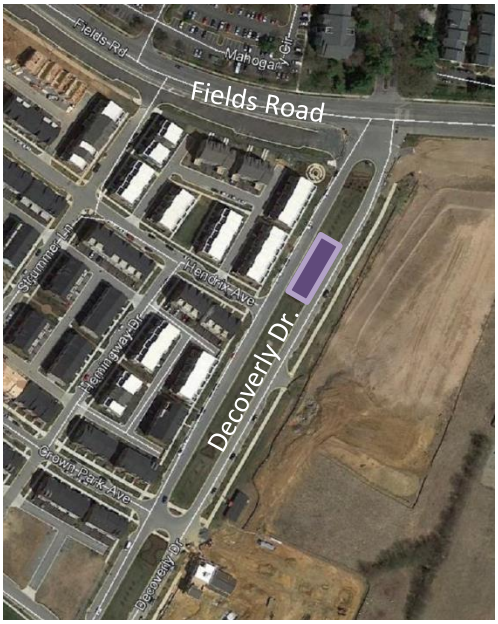
Figure 14 – Metroway Typical Section in Alexandria VA

Crown Farm Station

The CCT Crown Farm Station is located in the median of Decoverly Drive between Hendrix Avenue and Fields Road (see Figure 15 below).

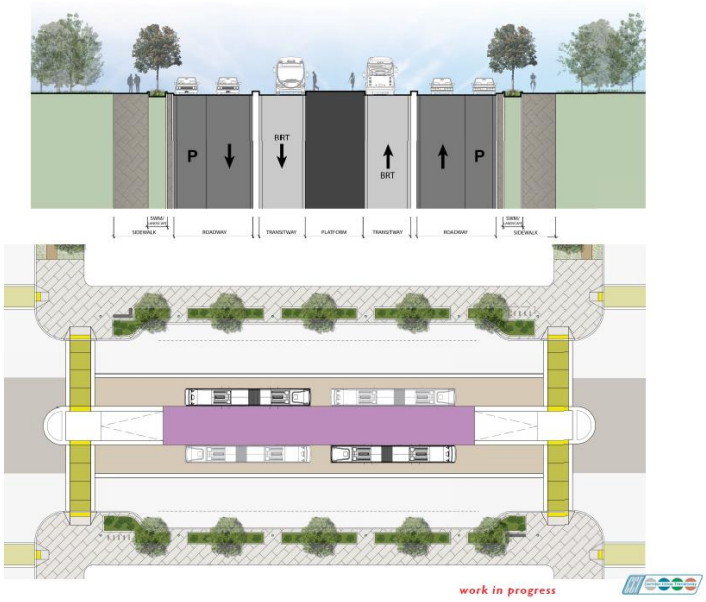
Figure 15 – Crown Farm Station Location on Decoverly Drive

Approximate Location



Source: Google

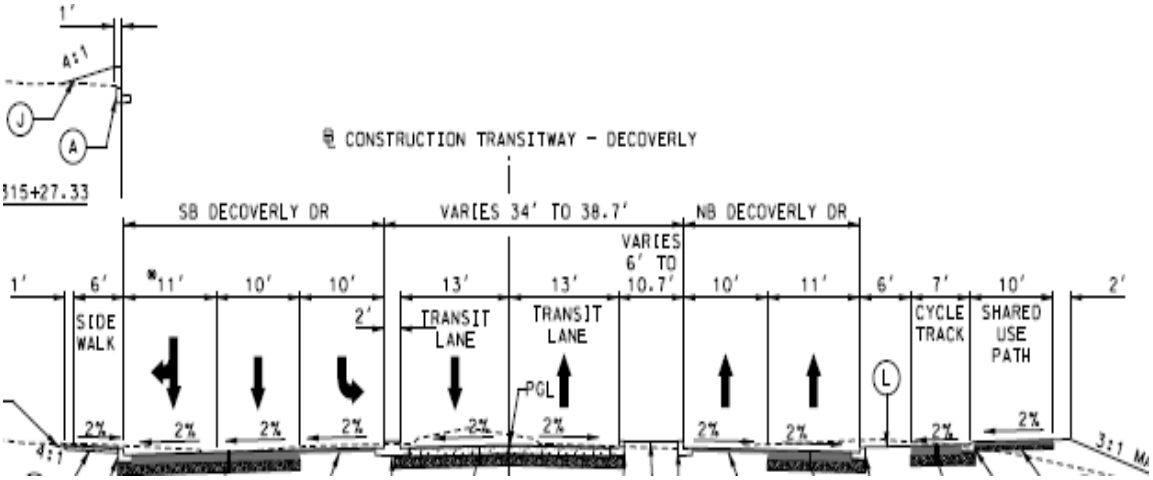
Conceptual Plan View



Source: MTA

The CCT plans include a shared use path and 7-foot wide separated bike lane or cycle track on the east side of Decoverly Drive beginning at Skyhill Way and continuing south to the DANAC Station (see Figure 16 below) on Diamondback Road. **The Draft Life Sciences Center Bicycle Network Proposal recommends a protected bike lane on both sides of Decoverly Drive (one northbound as in the CCT plan and the other southbound on the west side of Decoverly Drive). Staff recommends continued coordination with the MTA and the City of Gaithersburg on the implementation of the separated bike lanes within this section where there are few physical constraints.**

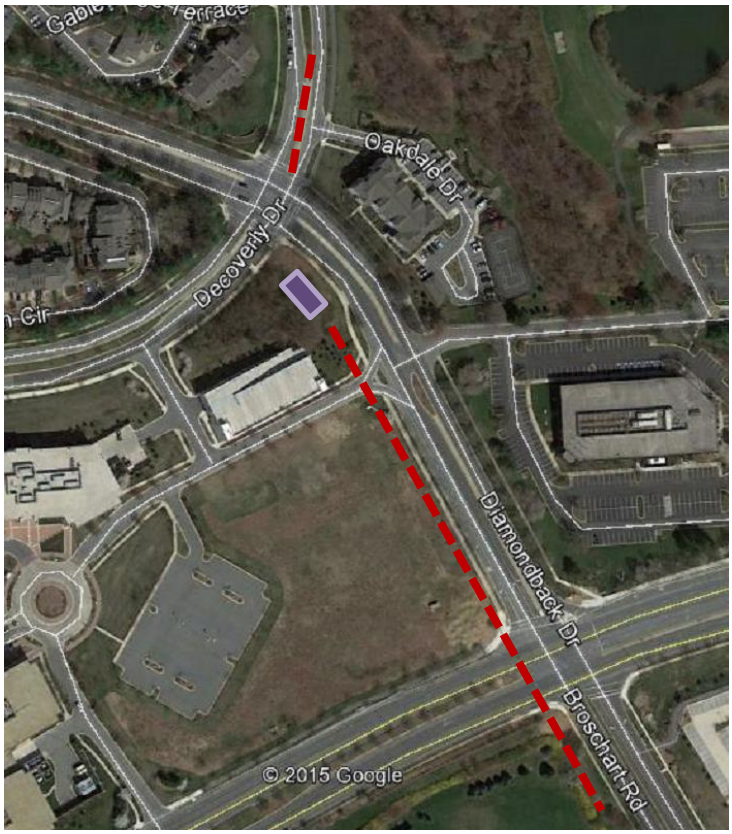
Figure 16 – CCT in Median of Decoverly Drive with Cycle Track and Shared Use Path on East Side

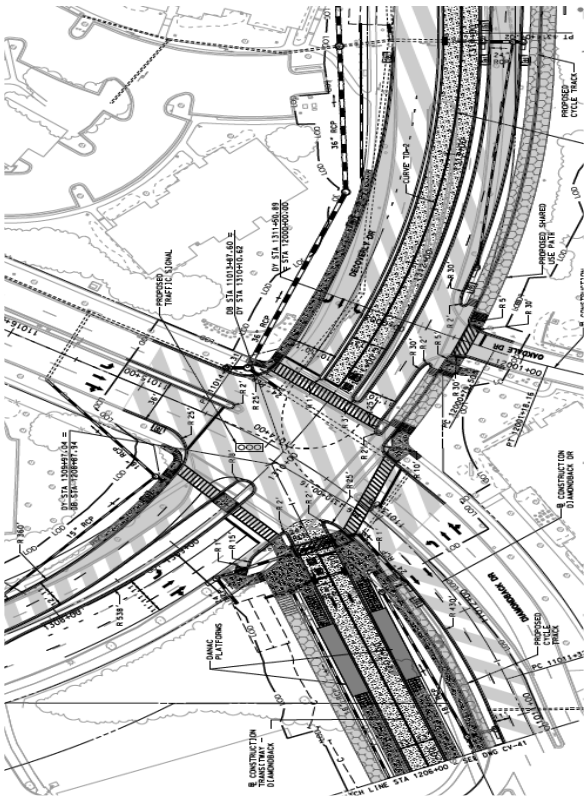


DANAC Station

The CCT continues in the median of Decoverly Drive and then turns onto Diamondback Drive where it transitions to running on the west side of the roadway (see Figure 17 below) at the DANAC Station.

Figure 17 – Transition from Decoverly Dr. Median to West Side of Diamondback Drive at DANAC Station





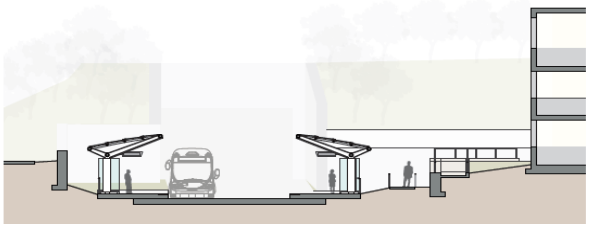
The CCT DANAC station is located in the southwest quadrant of the intersection of Decoverly Drive and Diamondback Drive (see Figure 17 above). The alignment and station design have been coordinated closely with the plans for the development of the DANAC site and take into the account the change in elevation and entrance plaza (see Figure 18 below). A new traffic signal with separate phase for the CCT buses will be installed.

Figure 18 – DANAC Station Concept

Station Location on Side of Diamondback Rd.

Source: MTA

Section Depicting Elevation Change



Source: MTA

The CCT continues on the west side of Diamondback in a side-running configuration and crosses Key West Highway at grade onto Broschart Road (see Figure 17 aerial above).[8] The southbound cycle track (now on the west side of Diamondback Road next to a buffer from the travel lanes and the sidewalk) ends at Key West Avenue. The Draft Life Sciences Center Bicycle Network Proposal recommends one-way separated bike lanes or a cycle track on both sides of Diamondback Road. The access to 15010 Broschart Road will be reconstructed and be limited to right in – right out.

LSC Central Station

The CCT then crosses Blackwell Road at a diagonal to the east side of Broschart Road where the LSC Central Station is located (see Figure 19 below).

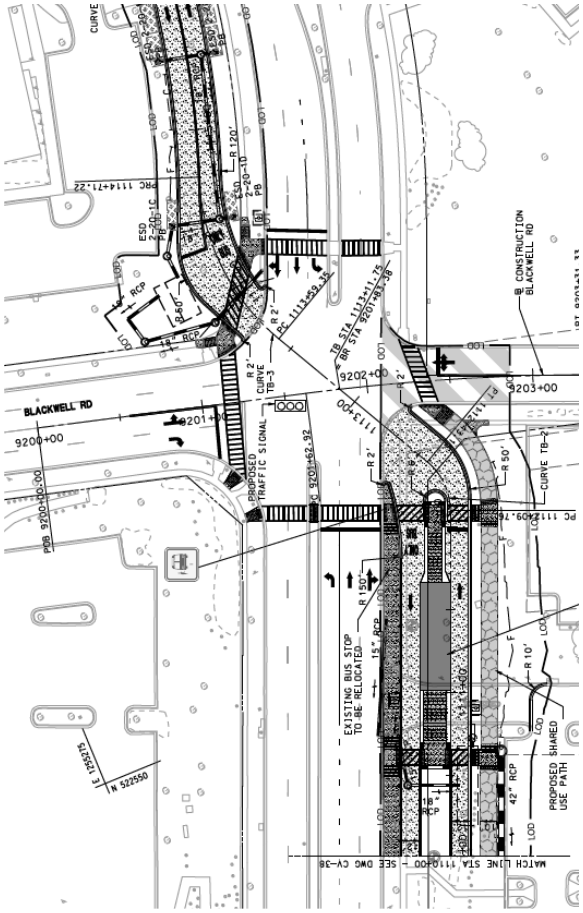
[8] The 15% concept plans reflected the CCT going under Key West Avenue. The at-grade alignment results in an estimated $30 million is cost savings (largely related to utility relocation) and an estimated average 45 second increase in the travel time.

Figure 19 – CCT Alignment Crossing Blackwell Road at LSC Central Station

Aerial View

Source: Google

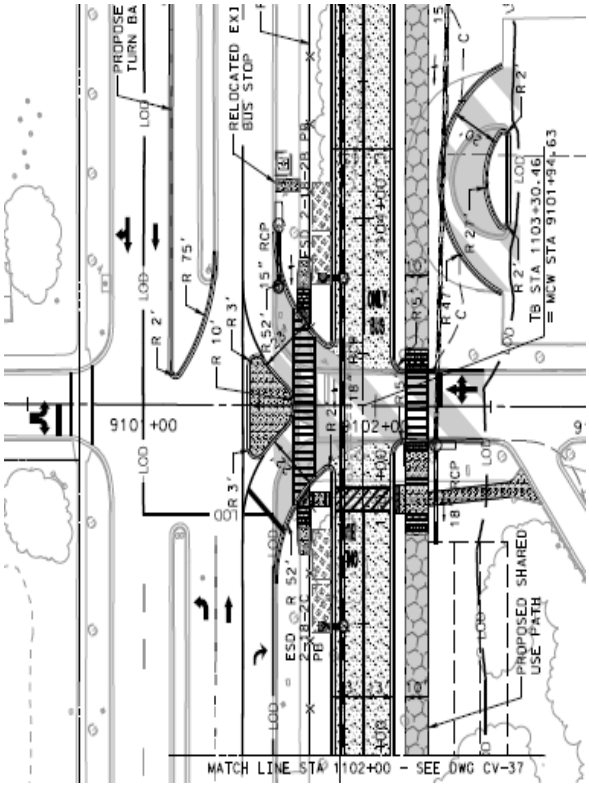
Plan View



The CCT will significantly impact the existing Broschart Road access points to the Shady Grove Adventist Hospital. The access point at Medical Center Way will be converted to a right in – right out and the two existing access point to the surface parking lot will be closed as reflected in Figure 20 below.

Figure 20 – CCT on Broschart Road between Blackwell Drive and Medical Center Drive

Intersection with Medical Center Way

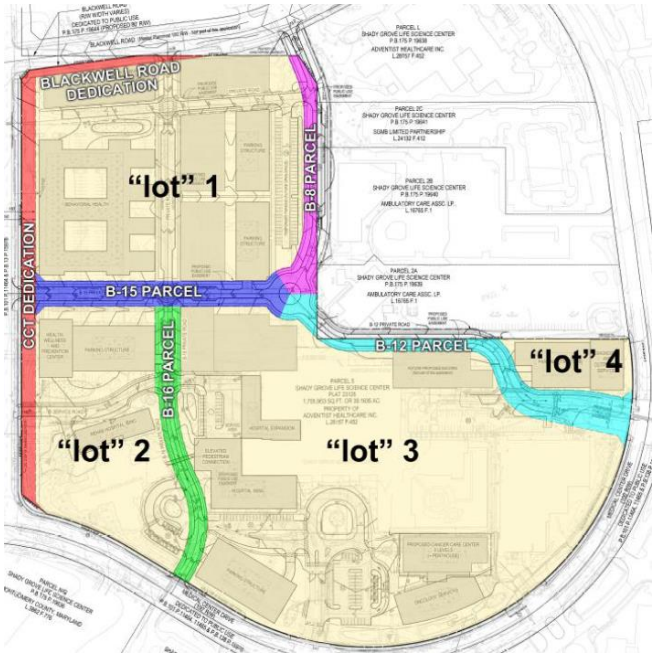


Access Modifications on Broschart Road

Source: Google

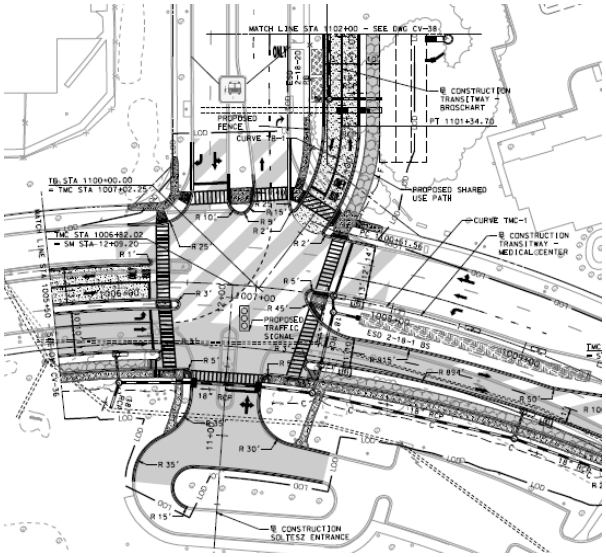
The CCT plans and the plans for the redevelopment of the Shady Grove Adventist Hospital site (Preliminary Plan 120110160) have been coordinated and include dedication for the space for the CCT on the east side of Broschart Road (see Figure 21 below). Continued coordination will be required through CCT Final Design and the consideration of the Site Plan for the hospital. There is a planned shared use path on the east side of Broschart Road from the LSC Central Station to Medical Center Drive.

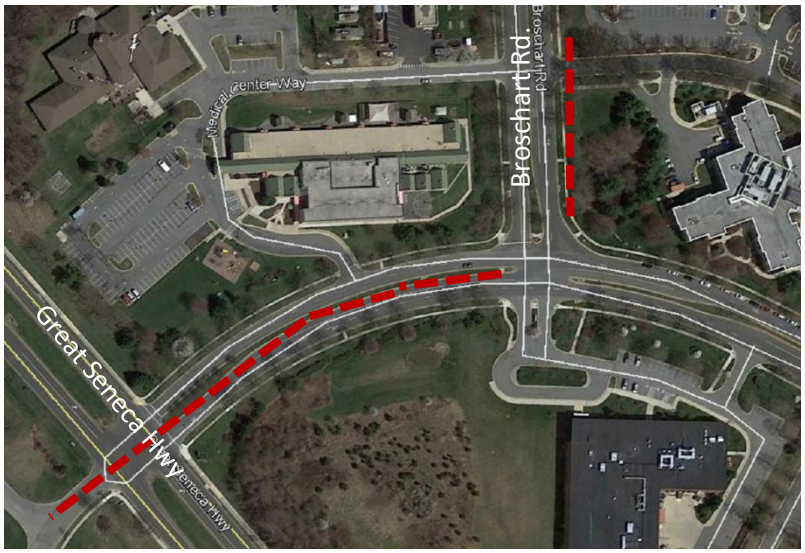
Figure 21 – Shady Grove Adventist Hospital Preliminary Plan



The CCT alignment transitions back to the median of the roadway as it enters Medical Center Drive from Broschart Road (See Figure 22 below) and crosses Great Seneca Highway at grade.

Figure 22 – Transition to Medical Center Drive

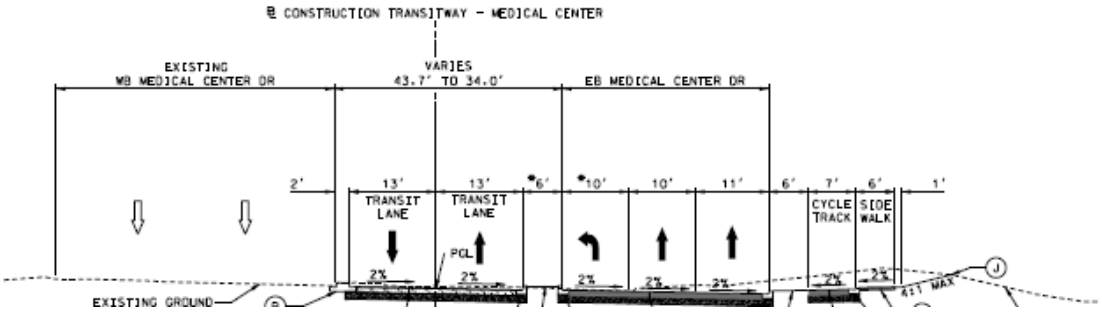




Source: Google

Figure 23 below reflects the typical section for Medical Center Drive between Broschart Road and Great Seneca Highway. This section includes a 7-foot wide protected bike lane or cycle track on the south (or eastbound) side. The Draft Life Sciences Center Bicycle Network Proposal includes a similar protected lane on the north or westbound side of Medical Center Drive. **The CCT 30% plans and the Site Plan Amendment for 9550 Medical Center Drive were closely coordinated. Staff recommends continued coordination during the CCT final design work.**

Figure 23 – CCT Medical Center Drive Section



The CCT runs within the right of way of Medical Center Drive extended on the Public Safety Training Academy (PSTA) site that is planned for redevelopment as depicted below in Figure 24. The MTA's 30% CCT plans do not reflect the master plan alignment that crosses Key West Drive onto Johns Hopkins Drive.

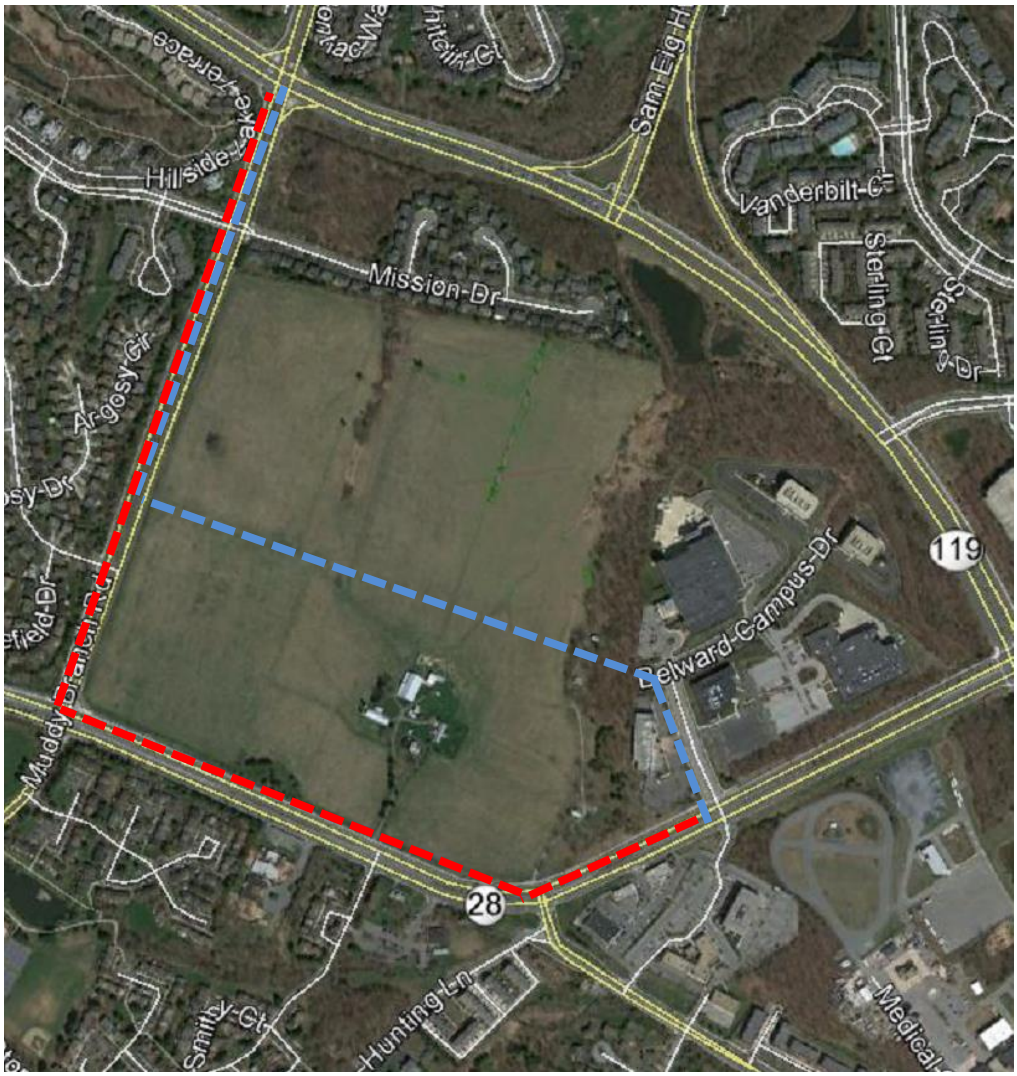
Figure 24 – CCT PSTA Alignment (Approximate) and LSC West Station

CCT Alignment MTA 30% Plans ------- CCT Master Plan Alignment -------

Muddy Branch Road

The CCT "avoidance alignment" as reflected in the MTA's 30% plans begins on Key West Avenue (see Figure 24 above) and continues in mixed traffic along Darnestown Road and Muddy Branch Road (see Figure 25 below).

Figure 25 – CCT (Approximate) Alignment Comparison – MTA 30% Plan vs. Master Plan Alignment



CCT Alignment MTA 30% Plans — — — CCT Master Plan Alignment — — —

It should be noted that while the 30% plans reflect the CCT operating in mixed traffic along Muddy Branch Road, the plans previously under consideration for advancing the design of the master plan alignment called for the CCT in the median of an eventual six lane Muddy Branch Road. The approach now agreed upon between MTA and MCDOT involves no changes to the footprint on the west side of Muddy Branch Road (including the southbound travel lanes). An additional grass strip would be next to the southbound travel lanes where an additional southbound general purpose travel lane would be added in the future when needed. The two CCT lanes would be in the middle and another grass strip for a third northbound lane in the future would be adjacent to the northbound CCT lane. The two existing northbound lanes would be re-built. The Draft Life

Sciences Center Bicycle Network Proposal recommends a two way protected bike lanes on the east side of Muddy Branch Road between Darnestown Road and Great Seneca Highway.

The GSSC Master Plan includes recommendations for a six lane Muddy Branch Road as noted above and potentially an interchange at Muddy Branch Road and Great Seneca Highway as well. The community remains concerned about property impacts in this area resulting from the introduction of the CCT, the eventual widening of Muddy Branch Road, and any eventual construction of an interchange.[9] In particular, there is concern that while progress has been made on how the additional travel lanes on Muddy Branch Road would be phased, there remain questions about CCT final design proceeding without more detail on how it would interface with the planned interchange. The GSSC Master Plan addressed these concerns in part by noting:

"It is recognized that future social and technical changes may allow for equivalent mobility and capacity to be achieved without building additional grade-separated interchanges. Such mobility and capacity enhancements would need to be considered as alternative solutions to a grade separated interchange during a transportation project planning study, or the review of a land development project."

"Prior to any interchange design, a feasibility study will examine the alternative mobility enhancements described above and develop context-sensitive solutions. The Plan supports context-sensitive improvements that are designed to facilitate community connections, minimize right of way needs, and address visual and noise concerns through design elements such as depressing roadways and ramps below grade."

In addition to a need to more closely examine potential alternatives to the interchange at this location (as well as how any interchange would relate to CCT final design), there is a related need to at the same time to examine whether it is feasible to forego plans for the widening of Muddy Branch Road to six lanes. Muddy Branch Road with either four or six lanes will still have four signalized intersections from Darnestown Road to Great Seneca Highway (a distance of about 2,800 feet) with separate CCT signal phases. The potential increase in capacity resulting from the addition of the travel lanes needs to be considered in the context of the setting and the location and function of the signals along the roadway segment. **As a result, staff recommends that as CCT Final Design consistent with the GSSC master plan alignment progresses, additional analysis consistent with that called for in the GSSC Master Plan be carried out that examines the need, feasibility, and compatibility of the interchange and road widening along Muddy Branch Road.**

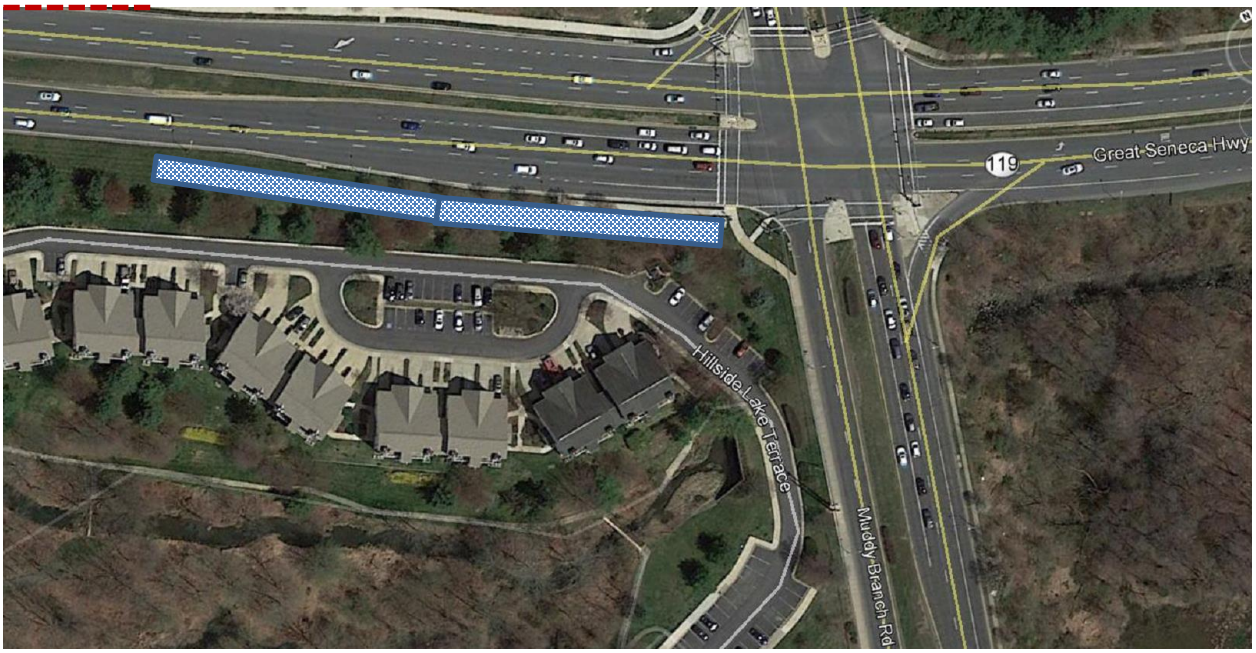
<u>Great Seneca Highway and Kentlands Station</u>

The CCT alignment in the current MTA 30% plan transitions from running in mixed traffic on Muddy Branch Road to exclusive lanes on the south side of Great Seneca Highway (see Figure 26 below). This alignment continues along the south side of Great Seneca Highway within the City of Gaithersburg until it reaches the Kentlands Station. The communities along and near the alignment have expressed concern about the loss of trees and proximity to residences along Great Seneca Highway, especially along Upshire Circle (see Figure 27

[9] The CCT in the median of a widened (six lane) Muddy Branch Road would result in the demolition of a residence on Mission Drive that is adjacent to Muddy Branch Road.

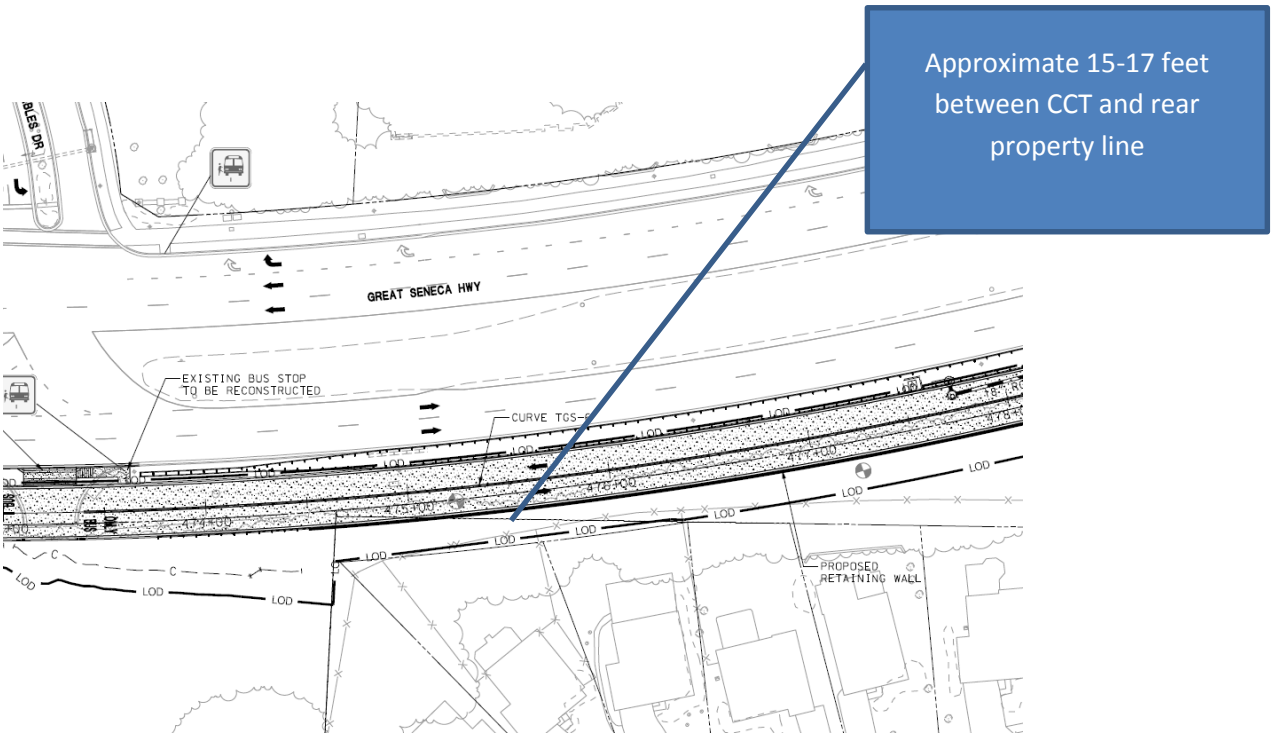
below). The CCT alignment is about 15-17 feet from the rear property line of two of the properties at its closet point.

Figure 26 – CCT (on Great Seneca Highway west of Muddy Branch Road (Location and Width Approximate)



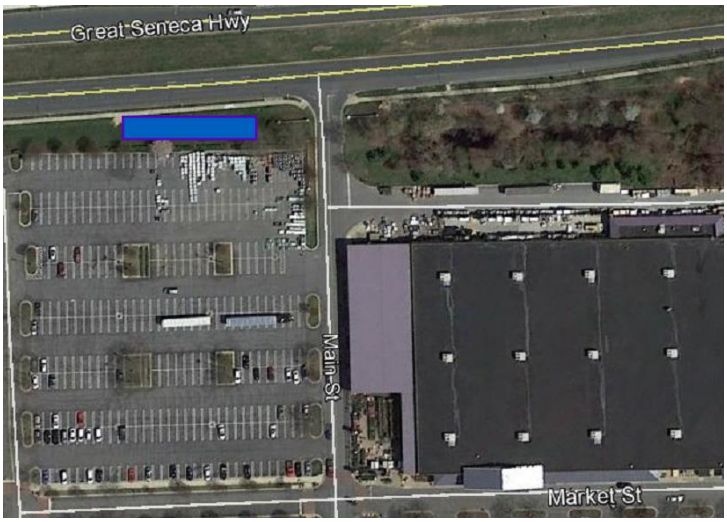
Note: ▨ represents two 13-foot wide transit lanes (total 26 feet in width)

Figure 27 – CCT near Upshire Circle



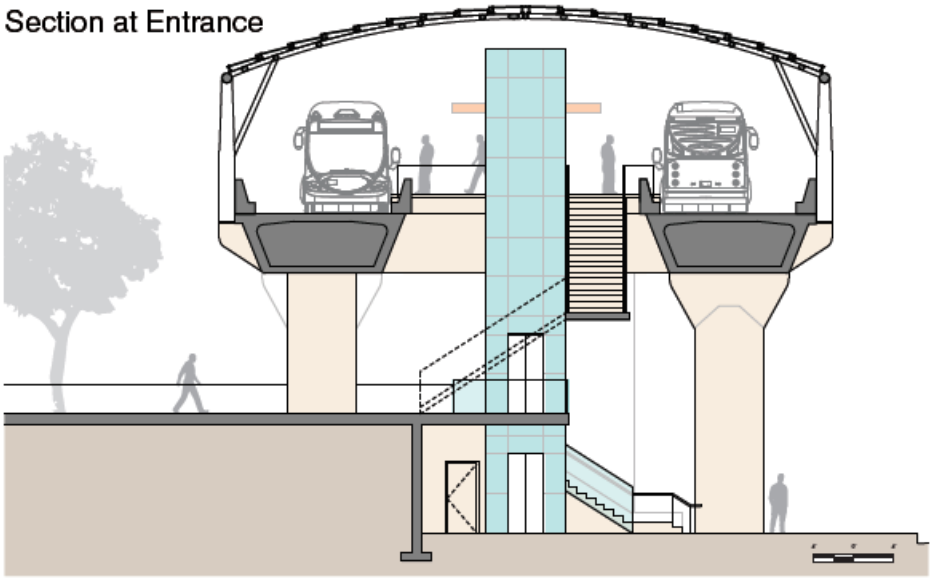
The Kentlands CCT Station will be located just west of where Great Seneca Highway intersects Main Street (see Figure 28 below). The station will be elevated as depicted in Figure 29 below.

Figure 28 – Kentlands Station (Approximate Location)



Source: Google

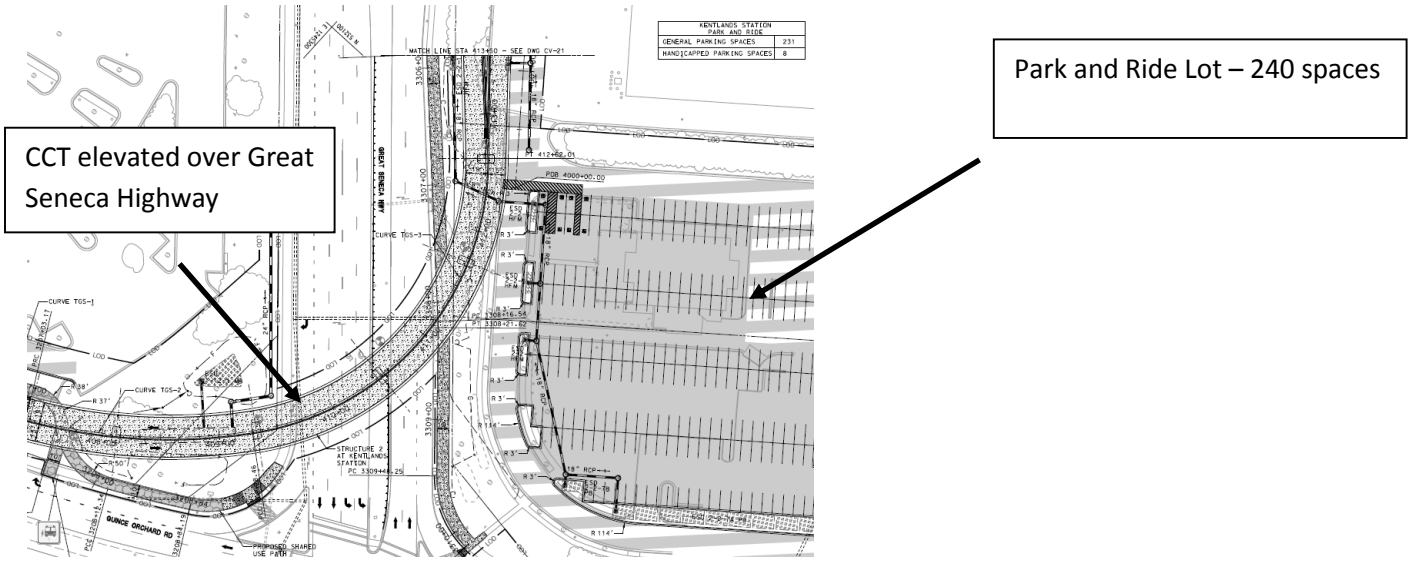
Figure 29 – Kentlands Station Concept



Source: MTA

The CCT will remain elevated as it crosses Great Seneca Highway and returns to grade on the south (or east) side of Quince Orchard Road. Current plans include a Park and Ride Lot at the corner in close proximity to the station.

Figure 30 – CCT at Great Seneca Highway and Quince Orchard Road

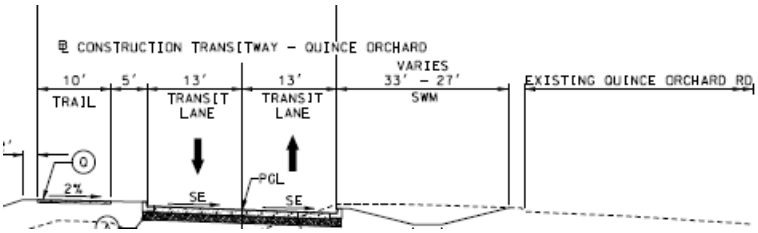


Quince Orchard Road and National Institute of Standards & Technology (NIST) Station

The CCT alignment continues along the east side of Quince Orchard Road to the NIST station. A shared use path will run parallel to the CCT as shown in Figure 31 below. The shared use path connects with the existing shared use path on the north side of Great Seneca Highway. The section shown below in Figure 31 is representative of the section between Twin Lakes Drive and the NIST station.

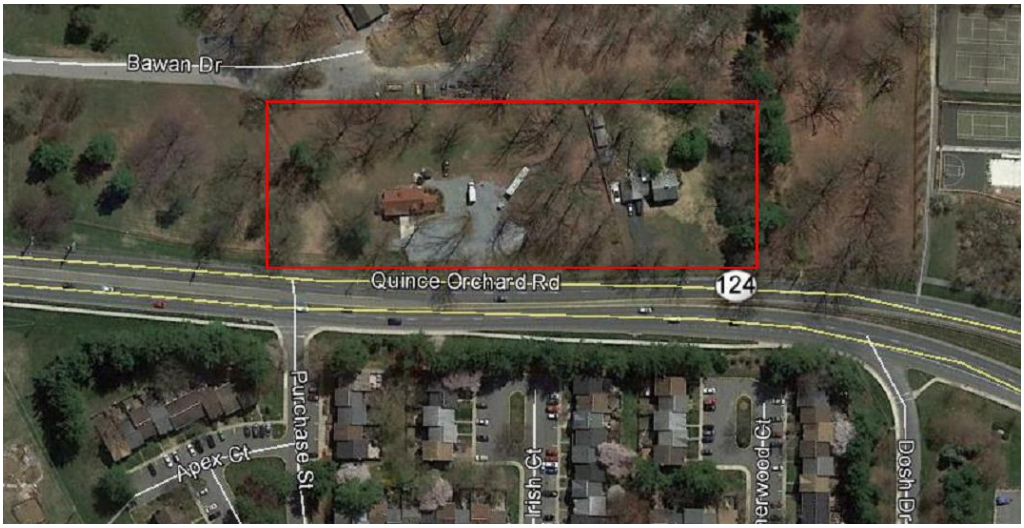
Figure 31 CCT Typical Section on Quince Orchard Road

Looking Toward Great Seneca Highway



There are two building displacements on the south side of Quince Orchard Drive between Purchase Street and Dosh Drive. The locations are shown in Figure 32 below.

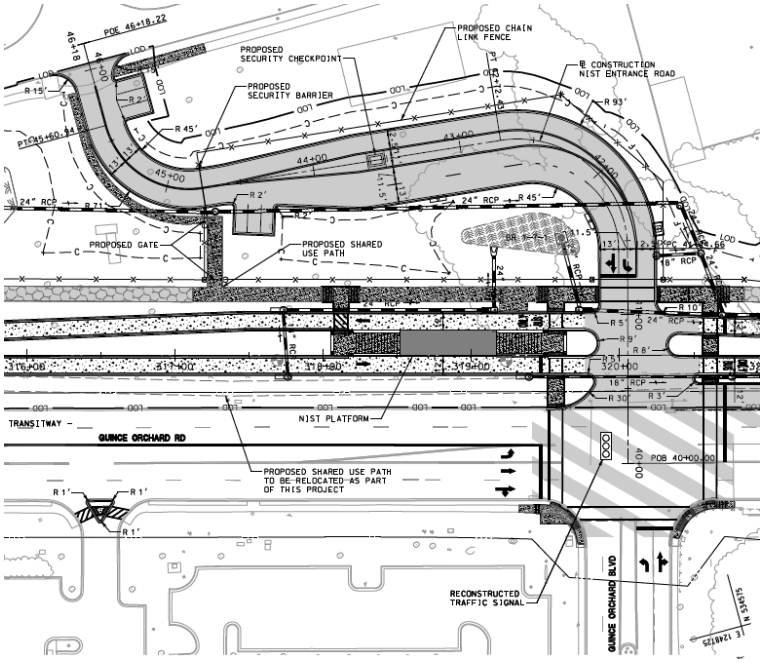
Figure 32 – Building Displacements Along Quince Orchard Road in 30% Plans



Source: Google

The NIST station is located on the east side of Quince Orchard Road, just north of the intersection with Quince Orchard Boulevard. A new NIST entrance road that connects the NIST Service Road with that intersects with Quince Orchard Road at Quince Orchard Boulevard will be constructed as part of the CCT project (see Figure 33 below).

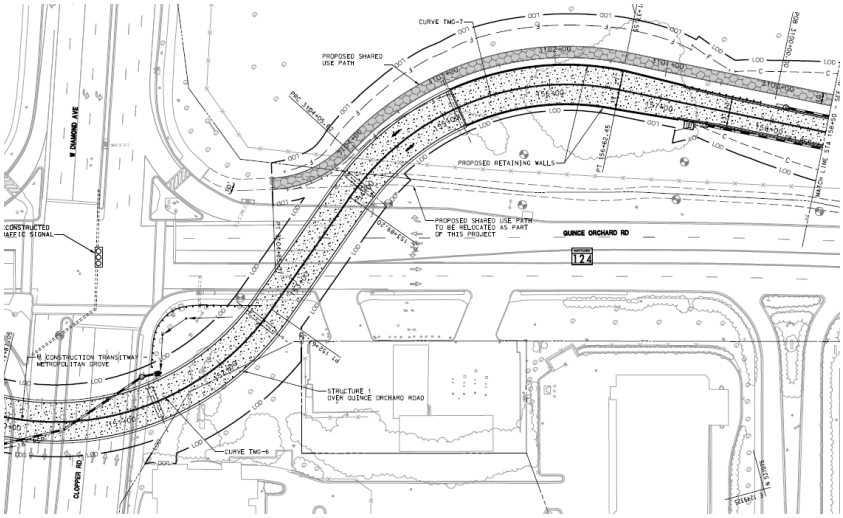
Figure 33 – NIST Station and New Entrance Road Plan



Transition into Firstfield and Metropolitan Grove Stations

The CCT alignment crosses over both Quince Orchard Road and Clopper Road on a bridge before coming back to grade and entering the Firstfield Station. A plan view of the crossing is provided in Figure 34.

Figure 34 – CCT Crossing over Quince Orchard Road and Clopper Road



The Firstfield Station is located in the northwest quadrant of the intersection of Firstfield Road and Quince Orchard Road as depicted below in Figure 35.

Figure 35 – First Field Station Location (Approximate)

The CCT continues along the west side of Quince Orchard Road before turning parallel to the CSX right of way and reaching the Metropolitan Grove MARC Station (see Figure 36 below). A representative cross-section parallel to the CSX tracks is shown in Figure 37.

Figure 36 – CCT Alignment between Firstfield Station and Metropolitan Grove

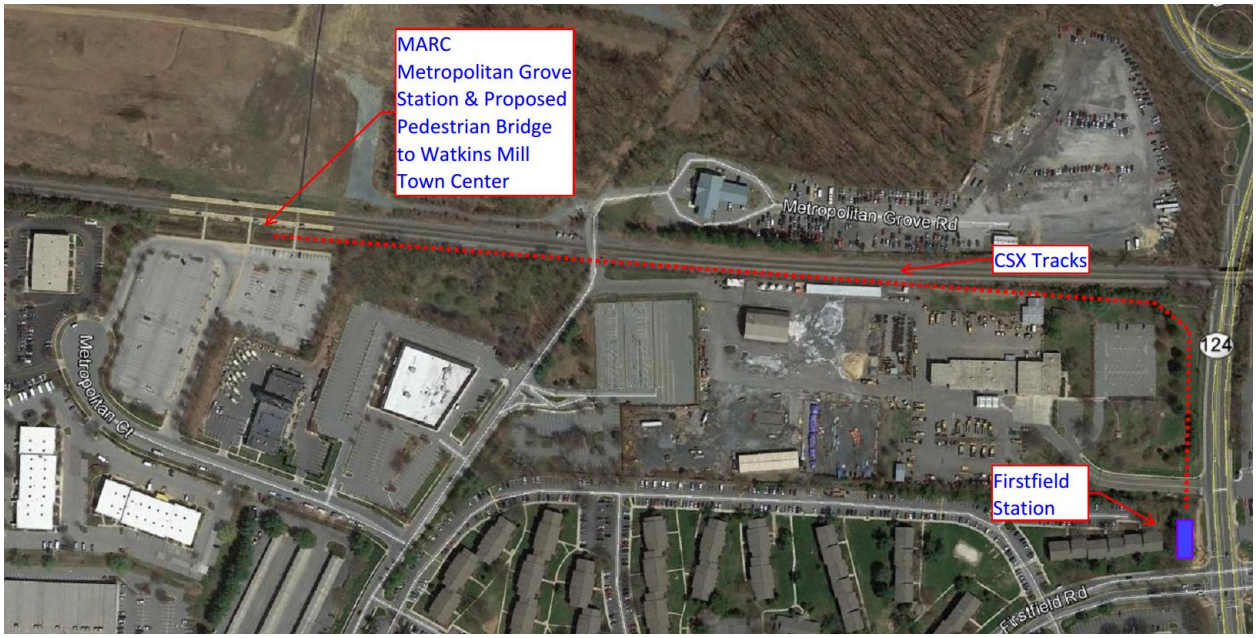
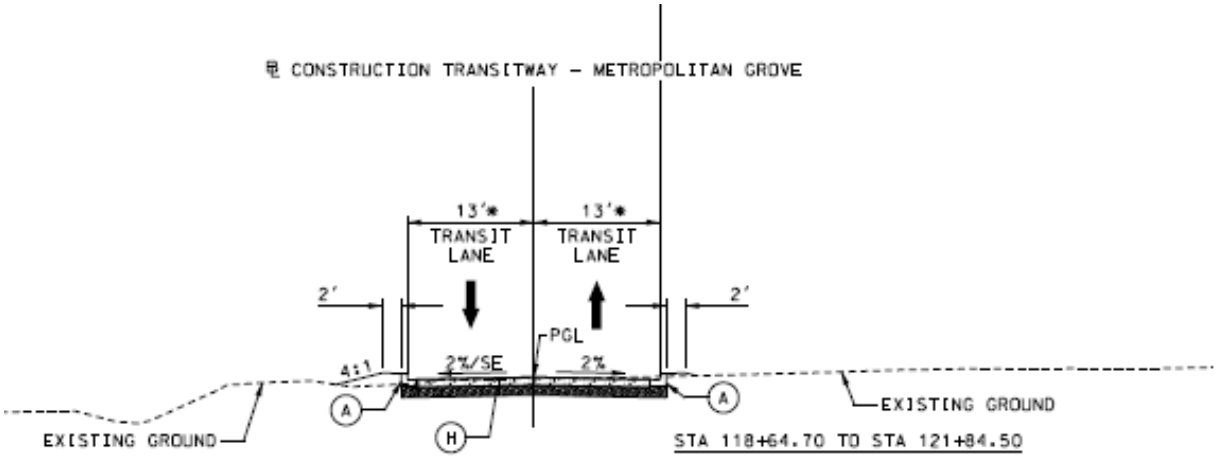


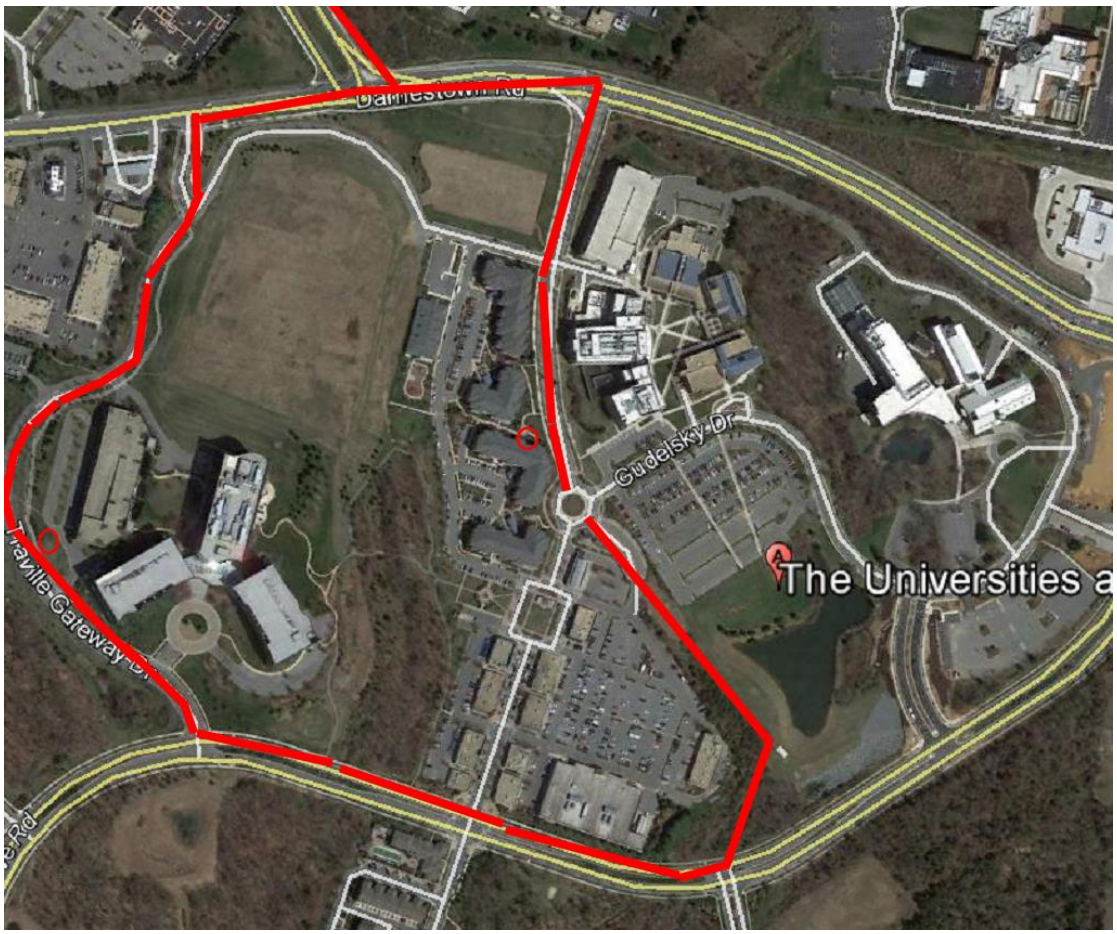
Figure 37 – CCT Representative Section Parallel to CSX Tracks



The Universities at Shady Grove (USG) Alignment

The CCT operations plan for weekdays has buses operating over the previously described main line between Shady Grove and Metropolitan Grove in each direction every 6 minutes during peak periods and every 10 minutes during off peak hours. Buses will also provide service to USG (see Figure 39 below) on a 15-minute frequency.

Figure 39 – CCT USG Service



◯ Denotes Station Location (Approximate)

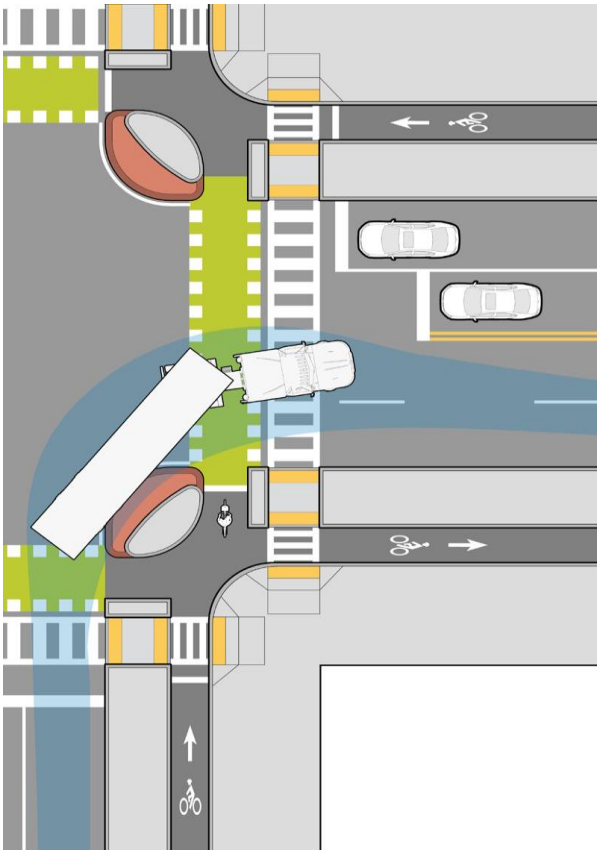
Stormwater Management and Coordination

Staff has had interagency discussions about ways to coordinate CCT stormwater facility planning with adjacent development where feasible. **In general, while more advanced design of the CCT will be required to inform decisions on where joint or combined efforts related to stormwater management might be attainable the potential for such coordination should be examined as design proceeds and development review adjacent to the corridor takes place.**

Protected Intersections

As previously noted, work is underway on the County Bicycle Master Plan. One key design element under consideration is advancing the concept of "protected intersections" that have the potential for providing more efficient separation among pedestrians, cyclists, and vehicles. **Staff recommends that the MTA design team consider the protected intersection design where appropriate throughout the corridor.** A prototype design is depicted below in Figure 38.

Figure 38 – Example of Protected Intersection



Source: MassDOT Separated Bike Lane Planning & Design Guide, p. 56)

Summary of Staff Comments on CCT 30% Design Plans for Forwarding to MTA and MCDOT

The following is a summary of the preceding staff comments on various aspects of the CCT 30% design plans. **Staff is requesting Planning Board approval to forward these comments to MTA and MCDOT:**

1. **The MTA's 30% preliminary engineering plans that avoid Belward Farm are not consistent with the GSSC Master Plan or the approved JHU Belward Campus Preliminary Plan Amendment.**
2. **The MTA and WMATA should continue to coordinate on the number of bus bays required at the Shady Grove Station as there may be slightly differing estimates between the CCT plan and the recently completed WMATA preliminary analysis of future bus bay requirements.**
3. **The MTA should remain in frequent contact with both WMATA and the County (and vice-versa) as development plans in the immediate Shady Grove station area (especially on the west side) are introduced at a concept level, refined, and submitted. The need for the expansion of the bus bays on the west side to accommodate a BRT CCT will result in a different footprint or concept that the one presented for the Metro West Neighborhood in the 2006 Shady Grove Sector Plan.**
4. **Because of space constraints at the intersection of Frederick Road and King Farm Boulevard, staff recommends the MTA continue close coordination with the Planning Department and the City of Rockville related to development applications in the southeast corner of this intersection.**
5. **Consider including a combination of protective features (railing, raised curb, pavement treatment, etc.) to delineate an area between the sidewalk and the adjacent transit lane on the bridge over I-270.**
6. **The Draft Life Sciences Center Bicycle Network Proposal recommends a protected bike lane on both sides of Decoverly Drive (one northbound as in the CCT plan and the other southbound on the west side of Decoverly Drive). Continued coordination with the MTA and the City of Gaithersburg is recommended on the implementation of the separated bike lanes within this section where there are few physical constraints.**
7. **The CCT plans and the plans for the redevelopment of the Shady Grove Adventist Hospital site (Preliminary Plan 120110160) have been coordinated and include dedication for the space for the CCT on the east side of Broschart Road. Continued coordination will be required through CCT Final Design and the consideration of the Site Plan for the hospital.**
8. **The CCT 30% plans and the Site Plan Amendment for 9550 Medical Center Drive were closely coordinated. Continued coordination during the CCT final design work is essential.**
9. **CCT Final Design consistent with the GSSC master plan alignment should include additional analysis consistent with that called for in the GSSC Master Plan that examines the need, feasibility, and compatibility of the Great Seneca Highway/Muddy Branch Road interchange and road widening (to six lanes) along Muddy Branch Road.**
10. **While more advanced design of the CCT will be required to inform decisions on where joint or combined efforts related to stormwater management might be attainable the potential for such coordination should be examined as design proceeds and development review adjacent to the corridor takes place.**
11. **The MTA design team should consider the protected intersection design where appropriate throughout the corridor.**