CHELTENHAM DRIVE BIKEWAY

MANDATORY REFERRAL NO. MR2026005

Description

The Montgomery County Department of Transportation (MCDOT) submitted a Mandatory Referral to construct one-way separated bike lanes on both sides of Norfolk Ave and Cheltenham Drive between Woodmont Avenue and Tilbury Street in Bethesda, Maryland.

COMPLETED: 12/4/2025
PLANNING BOARD HEARING DATE: 12/11/2025
MCPB ITEM NO. 04

Montgomery County Planning Board
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LOCATION

Norfolk Avenue/Cheltenham Drive from Woodmont Avenue to Tilbury Street

MASTER PLAN

2017 *Bethesda Downtown Plan*

2018 *Bicycle Master Plan*

COMPLETE STREETS AREA TYPE

Downtown

APPLICANT

Montgomery County Department of Transportation

ACCEPTANCE DATE

9/26/2025

REVIEW BASIS

Md. Land Use Article, Section 20-301 et seq.

Summary:

- This project provides a high-quality master-planned east-west connection in the Bethesda bicycle network.
- Staff recommends approval of the Mandatory Referral and transmittal of comments to the Montgomery County Department of Transportation.
- The Planning Board review of a Mandatory Referral is pursuant to the Land Use Article of the Maryland Annotated Code, Sections 20-301 et seq.

CONTENTS

SECTION 1 – COMMENTS

Mandatory Referral No. MR2026005

Staff recommends approval of Cheltenham Drive Bikeway, Mandatory Referral No. MR2026005 and the transmittal of the following comments to the Montgomery County Department of Transportation:

1) Narrow travel lanes from 11 feet to 10.5 feet and use the recovered space to expand street buffers, consistent with the *Complete Streets Design Guide*.
2) Ensure all crosswalk markings are ladder-style.
3) At the Cheltenham Drive intersection with Wisconsin Avenue, set back the southern pedestrian crosswalk farther from the intersection and tighten curb radii in line with *Complete Streets Design Guide* defaults to improve safety and accessibility.
4) Construct a one-way separated bike lane in the westbound direction in front of Cheltenham Drive Urban Park that meets *Complete Streets Design Guide* default dimensions to reduce conflicts between bicyclists and motorists and improve Bicycle Level of Traffic Stress to Very Low Stress.
5) Redesign the intersection of Woodmont Avenue and Norfolk Avenue as a protected intersection.
6) Ensure eastbound bicyclists entering the Tilbury Street roundabout can safely merge into the general travel lane where the separated bikeway ends.
    - Raise the marked pedestrian crossing at the southern leg of the Tilbury Street roundabout to sidewalk level.
    - Construct a mountable apron on the outer edge of the southwest corner of the roundabout.
7) To address deficiencies in illuminance in the project area, add pedestrian-scale lighting at appropriate locations to meet Streetlighting Design Requirements target values.

SECTION 2 – INTRODUCTION

The Montgomery County Department of Transportation (MCDOT) proposes to construct one-way separated bike lanes on both sides of Norfolk Avenue/Cheltenham Drive between Woodmont Avenue and Tilbury Street, as shown in Figure 1 (zoomed out) and Figure 2 (zoomed in). On the west end, the project connects to the existing Woodmont Avenue two-way separated bike lanes and the planned Norfolk Avenue shared street from Woodmont Avenue to Rugby Avenue. On the east end, the project transitions into the roundabout at Tilbury Street and allows bicyclists to rejoin general travel lanes on local streets to continue their journeys.

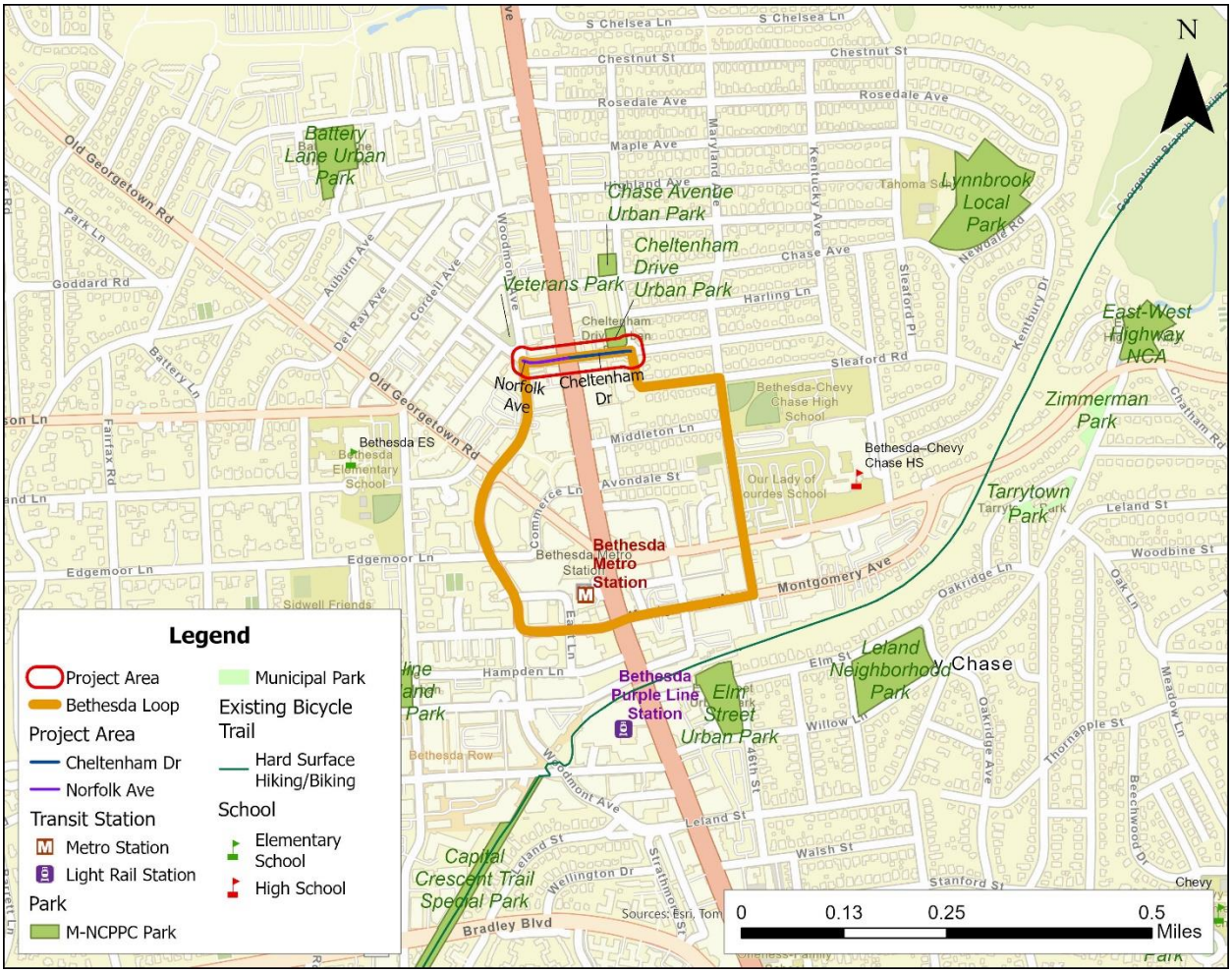

Figure 1: Project Area (Zoomed Out)

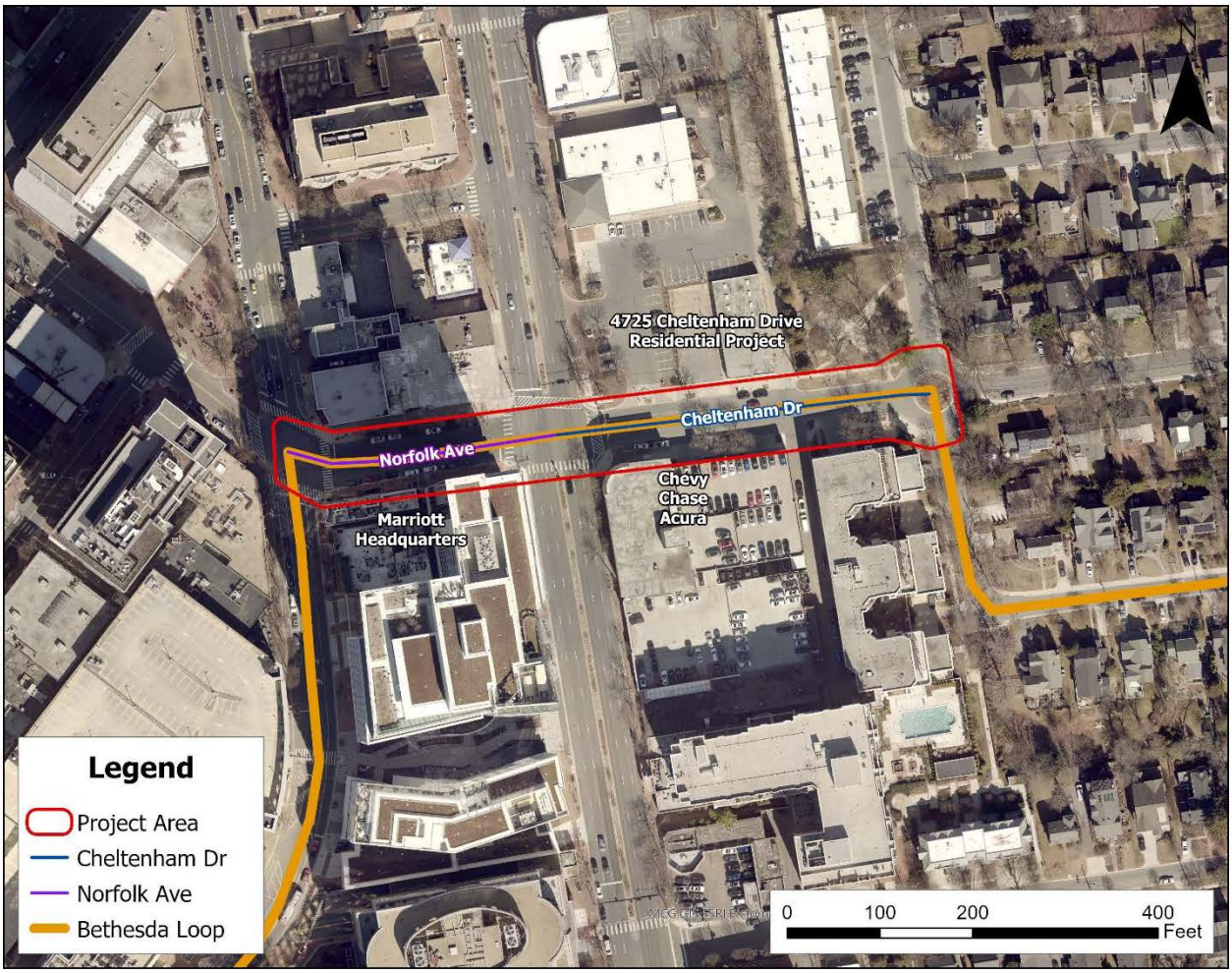

Figure 2: Project Area (Zoomed In)

Bethesda Loop

The proposed project would complete a critical part of the Bethesda Loop, a planned network of low-stress bicycle facilities in and near Downtown Bethesda, as recommended in the 2017 *Bethesda Downtown Sector Plan* and the 2018 *Bicycle Master Plan*. A map of the varying statuses of different bikeways along the Bethesda Loop is shown in Figure 3.

Several bikeways are completed, including two-way separated bike lanes along Woodmont Avenue (west side) between Old Georgetown Road and Norfolk Avenue and two-way separated bike lanes along Montgomery Lane (south side) between Woodmont Avenue and Waverly Street. Construction will likely begin on the southern portion of the Woodmont Avenue two-way separated bike lanes between Old Georgetown Road and Montgomery Lane in early 2026.

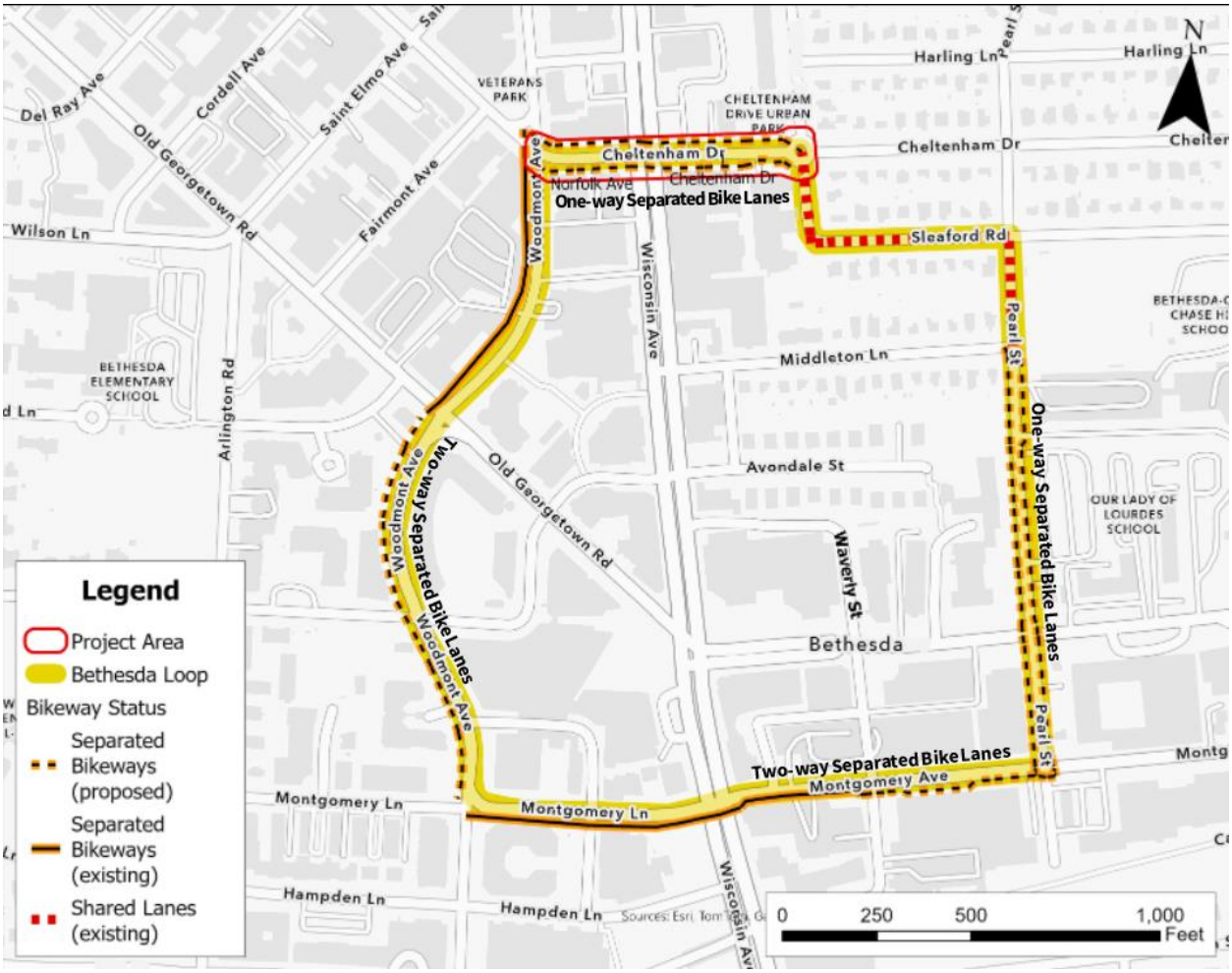

Figure 3: Bethesda Loop Bikeways Status

Figure 3 illustrates existing and planned bicycle facilities near the project. The bike lanes and concrete buffers will be constructed within the existing roadway space by repurposing an existing parking lane on both Cheltenham Drive and Norfolk Avenue. The complete engineering drawings are provided in Attachment A.

The project has several benefits, including:

- Enhancing bicyclist safety and providing connectivity to existing and planned bikeways located within the Bethesda area.
- Providing a critical link in the Bethesda Loop, a planned network of low-stress bicycle facilities in and near Downtown Bethesda.
- Enhancing pedestrian safety and accessibility through the reconstruction of sidewalks, the addition of ADA-compliant sidewalk ramps, as needed, and the addition of an accessible parking space.

SECTION 3 – PROJECT DESCRIPTION

Project Description

The project proposes to add one-way separated bike lanes on both sides of a portion of Norfolk Avenue and a portion of Cheltenham Drive without widening the street. Space for the bike lanes will come from removing one parking lane and narrowing travel lanes.

On Norfolk Avenue, the proposed bike lanes are 6 feet wide with a 2.5-foot wide concrete buffer on the north side and a 3.5-foot wide concrete buffer on the south side. One parking lane, on the south side, would be retained for portions of Norfolk Avenue. The design also includes one new accessible parking space on the south side of Norfolk Avenue west of the intersection with Wisconsin Avenue (MD 355). A typical section is shown in Figure 4.

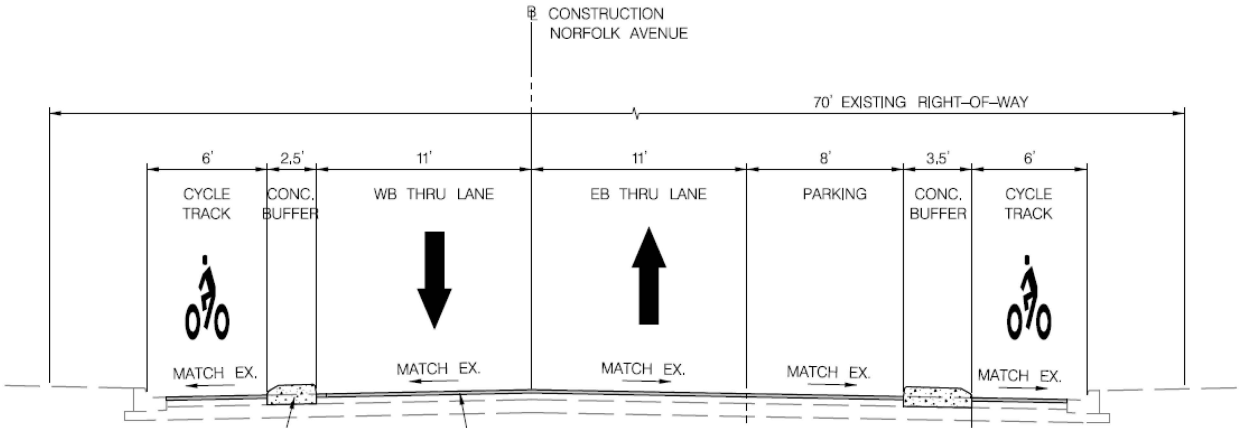

Figure 4: Typical Section - Norfolk Avenue

On Cheltenham Drive, east of the intersection with Wisconsin Avenue (MD 355), the proposed bike lanes are 6 feet wide with 2-foot wide concrete buffers on each side until the bike lane meets the roundabout at Tilbury Street. No parking lanes would be retained. A typical section can be seen in Figure 5.

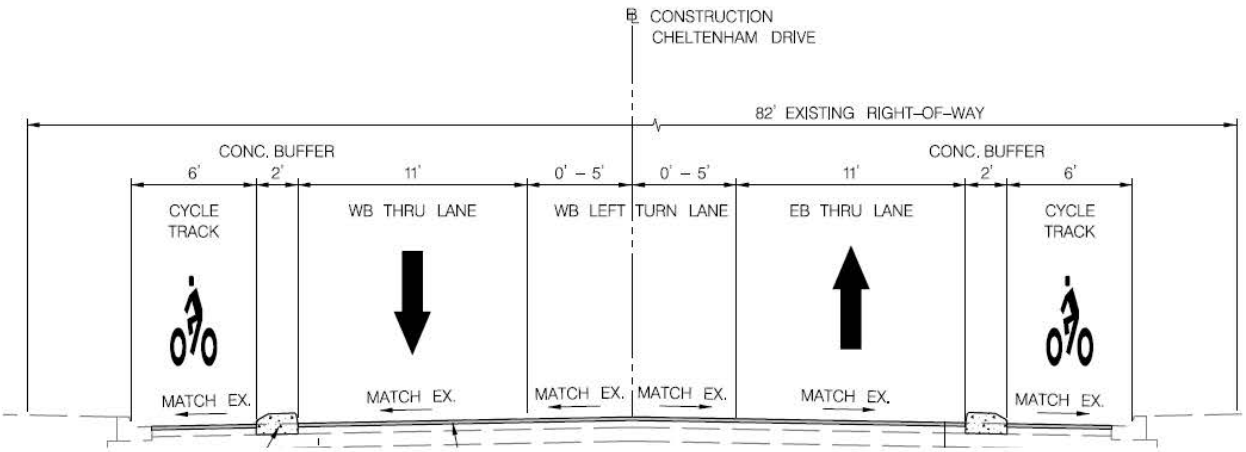

Figure 5: Typical Section – Cheltenham Drive Between Wisconsin Avenue and Entrance to Roundabout

The concrete buffers break at driveways and at an alley, a photo of which can be seen in Figure 6.

Figure 6: Alley on Cheltenham Drive (Facing South)

On the north side of Cheltenham Drive, the design requires bicyclists traveling in the westbound direction to ride in the street about 100 feet from the Tilbury Street roundabout to the bikeway entry (Figure 7, circled in red). A photo of the existing conditions at the roundabout is shown in Figure 8.

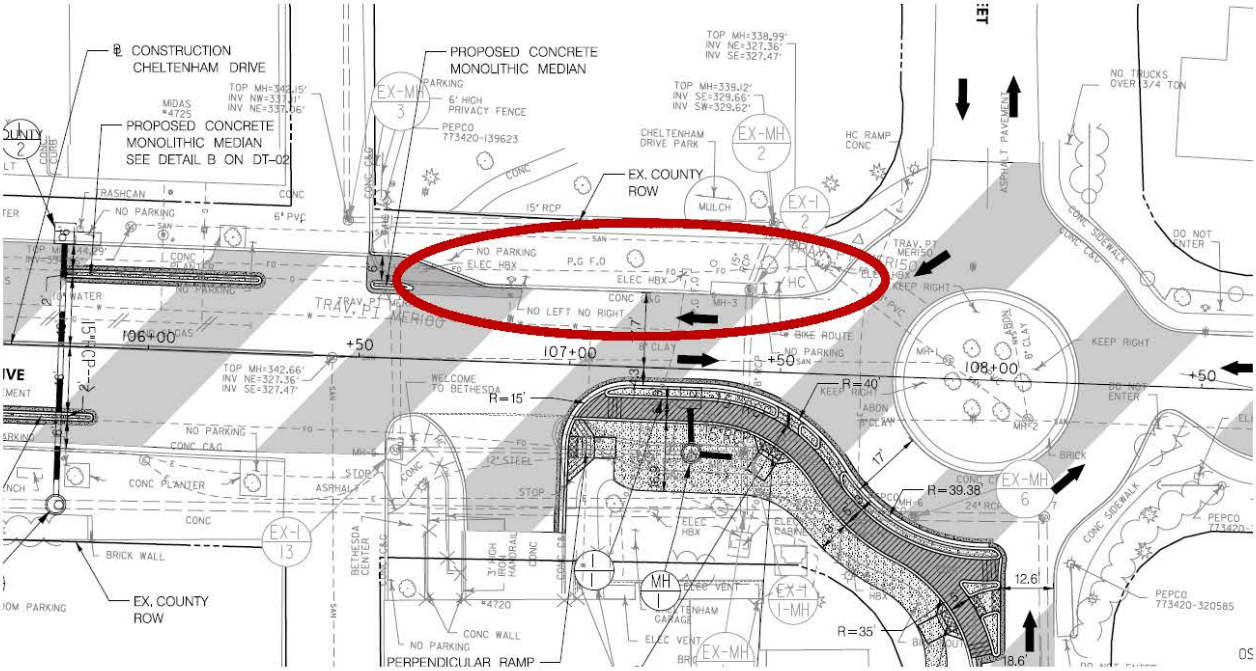

Figure 7: Cheltenham Drive Westbound Shared Travel Lane

Figure 8: Roundabout at Tilbury Street (Facing East)

On the south side, the buffer for the eastbound bike lane ends as the bike lane crosses over the alley. The alignment of the street curves slightly north, with the bike lane curving alongside it, as shown in Figure 9 (circled in red).

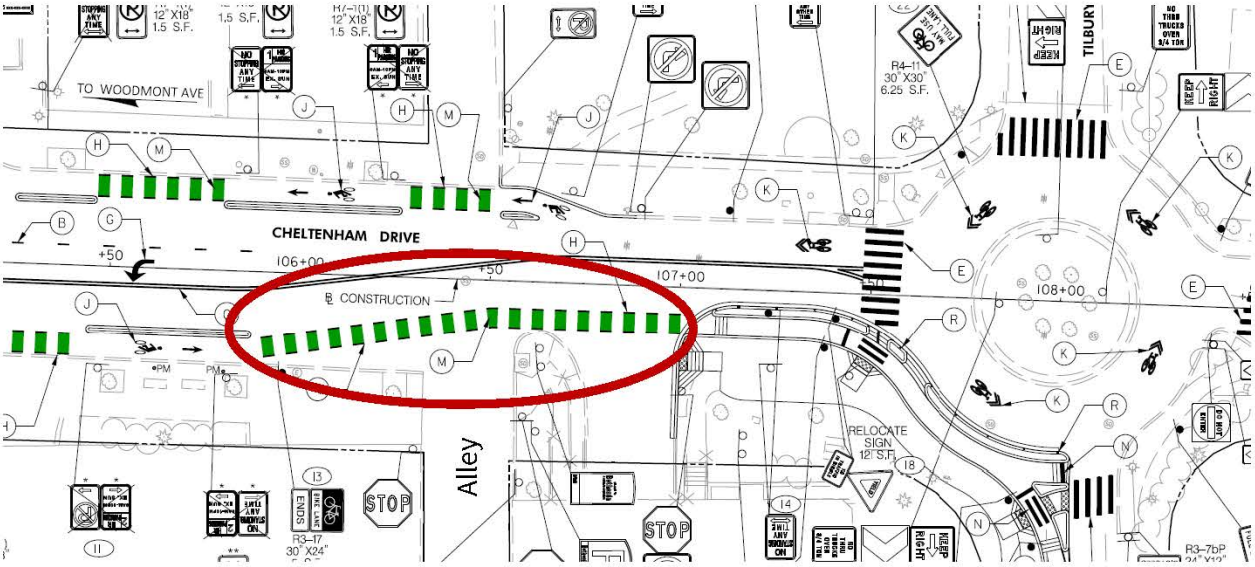

Figure 9: Cheltenham Drive Eastbound Bike Lane, at Alley

East of the alley and the Cheltenham Garage entrance, the eastbound bike lane moves back behind a concrete curb as it travels around the southwest side of the Tilbury Street roundabout. In this section, the bike lane will be 5 feet wide, paralleling a sidewalk that ranges from 8 to 17 feet wide. A plan view graphic is shown in Figure 10 and a typical section is shown in Figure 11.

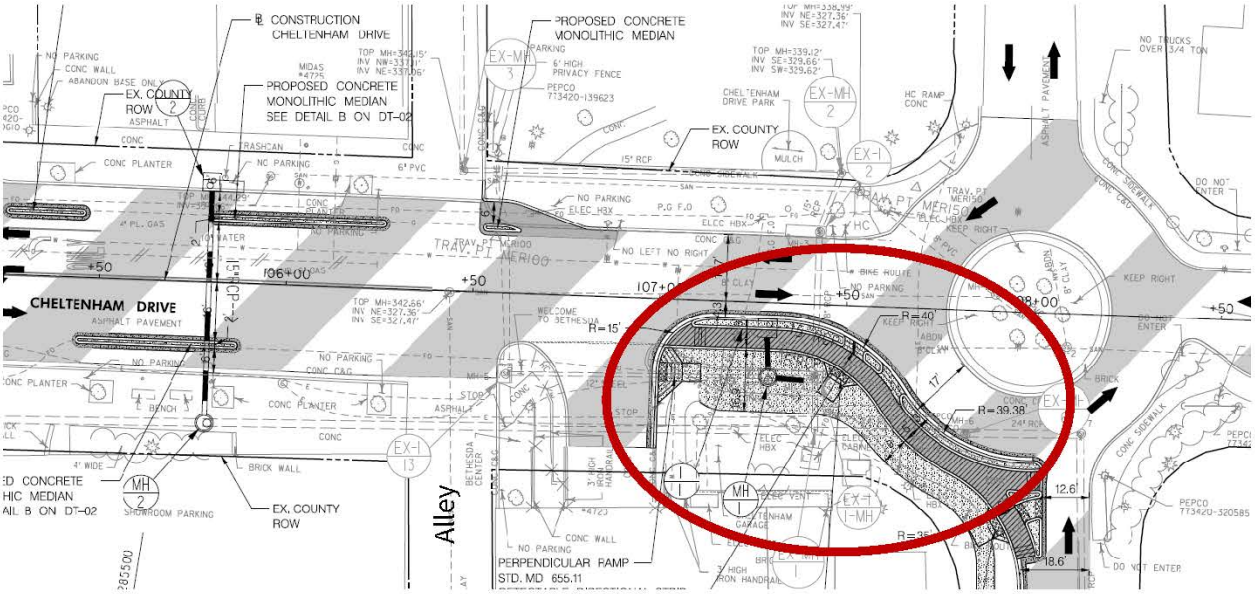

Figure 10: Cheltenham Drive Eastbound Bike Lane, at Roundabout

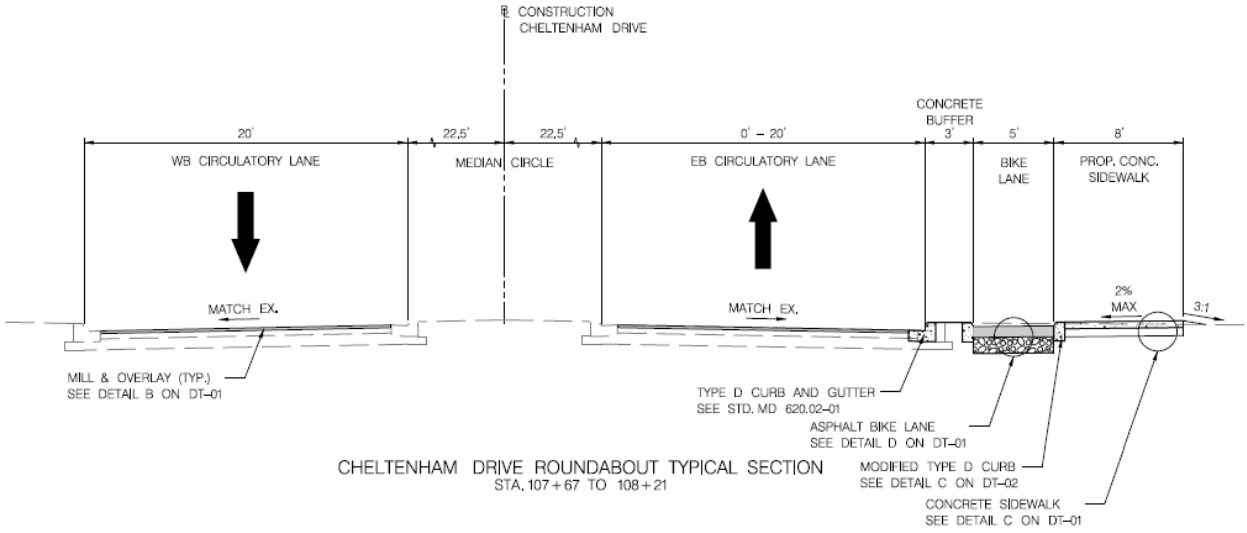

Figure 11: Typical Section - Cheltenham Drive Roundabout

Background

Development Pipeline

There is one project in the development pipeline in the project area. Currently under construction, 4725 Cheltenham Drive replaces an automotive detailing business with a residential development that will include up to 102 multi-family units. The project is directly west of Cheltenham Drive Urban Park (see Figure 2). A photo of the site is shown in Figure 12. The project will:

- Build up to 102 multi-family units
- Include a minimum of 15% Moderately Priced Dwelling Units (MPDUs) (or up to 17 units)
- Remove an existing curb cut along the property's Cheltenham Drive frontage and construct a continuous bike buffer at that location (see Figure 13)

Figure 12: 4725 Cheltenham Drive Construction (Facing Northeast)

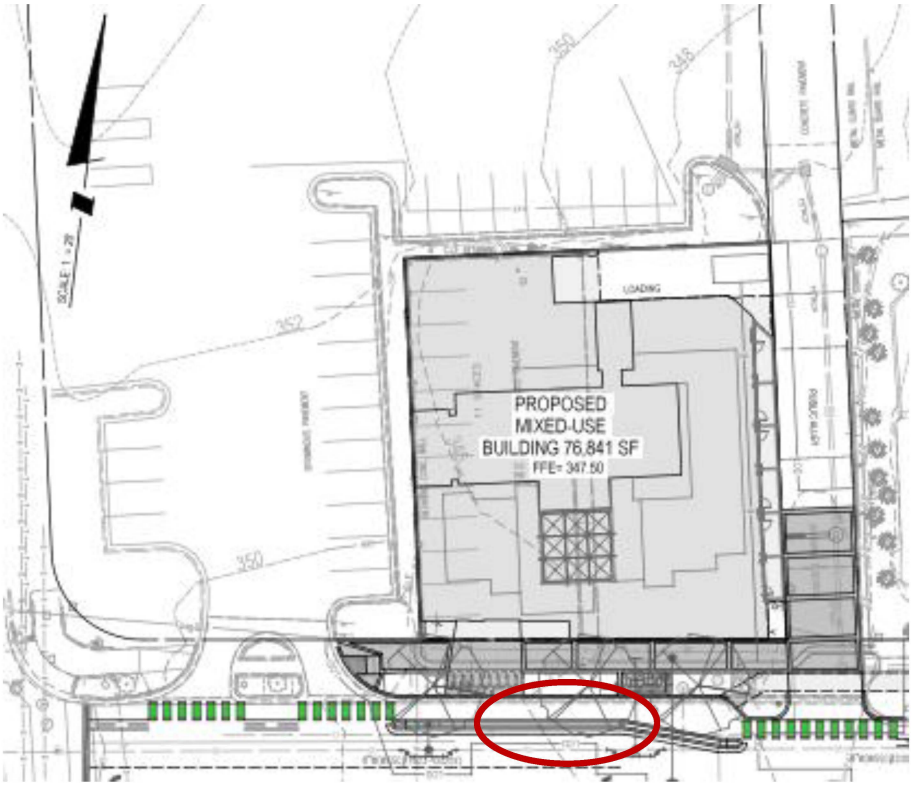

Figure 13: Eastern Driveway Entrance on Cheltenham Drive – Project Site Plan Design

Surrounding Areas

Norfolk Avenue/Cheltenham Drive in this area traverses multiple land uses. On Norfolk Avenue and Cheltenham Drive close to the intersection with Wisconsin Avenue (MD 355), the surrounding zoning is Commercial Residential (CR-3.0 and CR-5.0) and Commercial Residential Town (CRT-1.25). Moving towards the eastern limit of the project area, the zoning transitions to Residential – Medium Density moving east away from the project area, as shown in Figure 14.

Figure 14: Zoning

Norfolk Avenue and Cheltenham Drive are both classified as Downtown Streets in the project area and have a posted speed limit of 25 MPH.

Wisconsin Avenue (MD 355), a major six-lane thoroughfare, divides the project corridor, splitting Norfolk Avenue from Cheltenham Drive. In this area, Wisconsin Avenue is classified as a Downtown Boulevard.

The existing roadway typical section varies. On Norfolk Avenue, the curb-to-curb width is 46 feet, allowing for one travel lane and one parking lane in each direction. There is a 5-foot-wide sidewalk on the north side, buffered by trees, and a 10-foot-wide sidewalk on the south side adjacent to the Marriott Headquarters building with trees planted in a hardscape buffer.

On Cheltenham Drive between Wisconsin Avenue (MD 355) and the alley, there is 24 feet in the eastbound direction that accommodates both a single travel lane and a parking lane. In the westbound direction, there is a 10-foot travel lane and a 12-foot left turn lane. Both sides of the road have sidewalks, with 10 feet of sidewalk space and 5 feet of tree buffer, as seen in Figure 15.

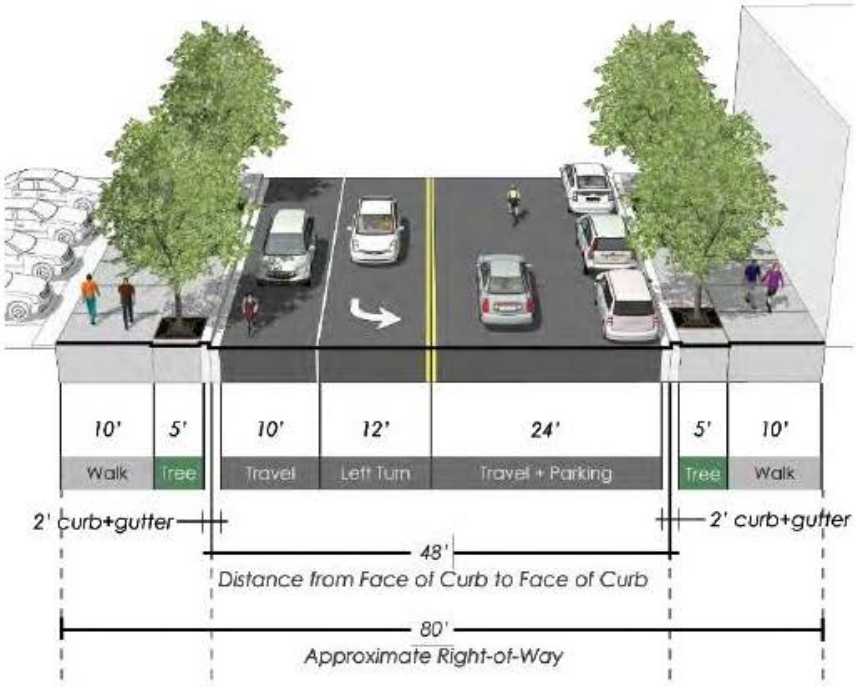

Figure 15: Existing Section – Cheltenham Drive from Wisconsin Avenue to Alley (Facing East)

Moving east from the alley, the road is 25 to 35 feet between the curbs and provides two-way travel. There are grass buffers (12 feet on the north side, 5 feet on the south side) and relatively narrow sidewalks (4 feet on the north side, 5 feet on the south side), as shown in Figure 16.

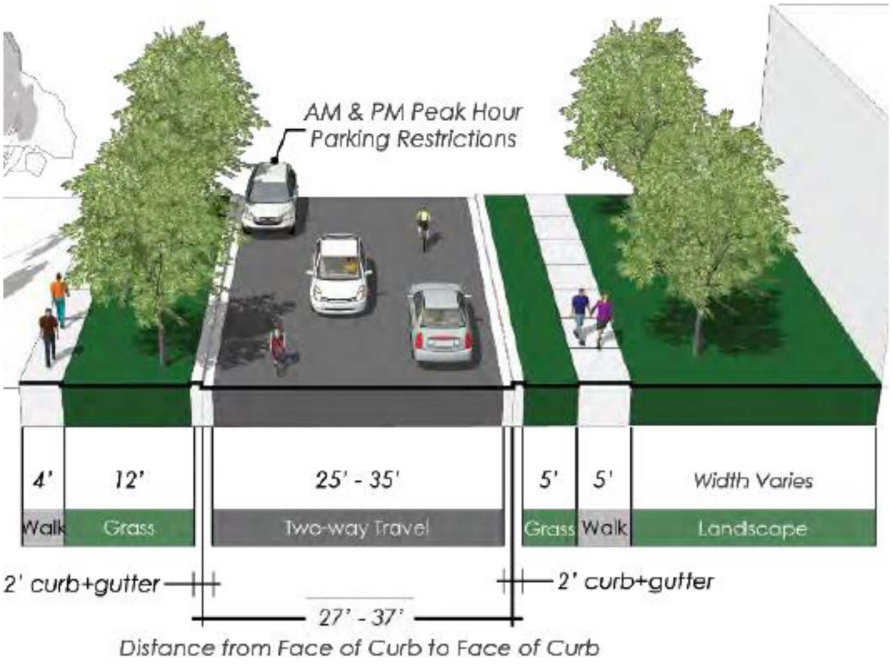

Figure 16: Existing Section – Cheltenham Drive from Alley to Tilbury Street (Facing East)

SECTION 4 – COMMUNITY OUTREACH

As part of the Cheltenham Drive Feasibility Study (Attachment B), MCDOT staff conducted a virtual public workshop on September 30, 2021. Attendee feedback helped shape the study's alignment and facility type recommendations and is included in the report. MCDOT staff also led a public meeting on March 27, 2025, where they explained the proposed design, existing conditions, and timeline, and solicited input.

After accepting the Mandatory Referral for review, Montgomery Planning Staff notified local civic and homeowners' associations and other interested parties of this proposal.

MCDOT held a meeting with local stakeholders at their request on-site on November 6, 2025, to discuss the proposed design and collect feedback. Feedback included concerns about impacts to local businesses, the proposed bikeway's limited utility, and specific design considerations.

As of the date of this report, several community members have asked for copies of the design plans, and limited testimony has been received and shared with the Planning Board Chair's office.

SECTION 5 – MANDATORY REFERRAL CONSIDERATIONS

Mandatory Referral review is guided by Montgomery Planning's *Uniform Standards for Mandatory Referral Review* (December 2022), and the authority granted to the Planning Board in Section 20-301 of the Land Use Article of the Maryland Code. In order to ensure comprehensive review of public projects,

the Planning Board has jurisdiction over applications filed by the State, Federal, and County governments, including MCPS, as well as municipalities located within the Montgomery County portion of the Regional District. This includes the following activities: (i) acquiring or selling land; (ii) locating, constructing or authorizing a road, park, public way or ground, public building or structure, or publicly owned or privately owned public utility; or (iii) changing the use of or widening, narrowing, extending, relocating, vacating or abandoning any of the previously mentioned facilities. The Planning Board, or its Staff, must review such projects pursuant to the Uniform Standards and transmit comments to the applicant within the prescribed timeframe.

As described in the Uniform Standards, the Planning Board, or its Staff, considers all relevant land use and planning aspects of the proposal including, but not limited to, the following:

1. ***whether the proposal is consistent with the County's General Plan, functional plans such as the master plan of highways, environmental guidelines, the approved and adopted area master plan or sector plan, and other public plans, guidance documents, or programs for the area;***
   See discussion below in Section 6.A related to Master Plan Consistency.

2. ***whether the proposal is consistent with the intent and the requirements of the zone in which it is located;***
   Not Applicable.

3. ***whether the nature of the proposed site and development, including but not limited to its size, shape, scale, height, arrangement, design of structure(s), massing, setback(s), site layout, and location(s) of parking is compatible with the surrounding neighborhood and properties;***
   Not Applicable.

4. ***whether the locations of buildings and structures, open spaces, landscaping, recreation facilities, and pedestrian and vehicular circulation systems are adequate, safe, and efficient;***
   Not Applicable.

5. ***whether the proposal has an approved NRI/FSD and a preliminary SWM Concept Plan, and meets the requirements of the Forest Conservation Law (Chapter 22A of the County Code). Forest Conservation Plan, if applicable, must be approved by the Planning Board, either before or at the time of the Board's mandatory referral review and action on the project. Unlike the mandatory referral review by the Board, the conditions of the Forest Conservation Plan are binding on all county projects and require a Resolution of Approval.***
   See discussion below in Section 6.B related to Forest Conservation and Stormwater Management.

6. ***whether a Preliminary or a Final Water Quality Plan has been reviewed by the Planning Board if the project is located in a Special Protection Area. In addition, for a Water Quality Plan for a project on public property, the Board must determine if the plan meets any additional applicable standards for Special Protection areas, including the standards of Article V. WATER QUALITY REVIEW IN SPECIAL PROTECTION AREAS, of the County Code (pursuant to Section 19-65(d)(4));***
   Not Applicable.

7. ***whether or not the site would be needed for park use if the proposal is for disposition of a surplus school or other publicly-owned property.***
   Not Applicable.

8. ***whether alternatives or mitigation measures have been considered for the project if the proposal is inconsistent with the General Plan or other plans and policies for the area, or has discernible negative impacts on the surrounding neighborhood, the transportation network, the environment, historic resources (including burial sites) or other resources.***
   Alternative design measures are discussed in Section 6.A below and provided as comments.

SECTION 6 – MANDATORY REFERRAL ANALYSIS

A. Master Plan Consistency

Roadways

The proposed project is consistent with the 2025 *Master Plan of Highways and Transitways* because there are two current and planned travel lanes along Norfolk Avenue and Cheltenham Drive, and this project maintains those lanes. Norfolk Avenue is classified as a Downtown Street with two lanes and a target speed of 25 MPH. Cheltenham Drive is classified as a Downtown Street with two lanes and a target speed of 25 MPH.

Bikeways

The Cheltenham Drive Bikeway is identified in both the 2017 *Bethesda Downtown Plan* and the 2018 *Bicycle Master Plan*. The *Bicycle Master Plan* provides more specificity, indicating there should be:

- separated bike lanes along Norfolk Avenue/Cheltenham Drive between Woodmont Avenue and Tilbury Street, and
- a shared street configuration along Tilbury Street and Sleaford Road to connect to Pearl Street.

As part of MCDOT's feasibility study for this project in 2021, a consultant identified potential route and facility type alternatives to make this connection in the Bethesda bikeway network. Ultimately, the feasibility study recommended one-way separated bike lanes on both sides of Norfolk Avenue/Cheltenham Drive between Woodmont Avenue and Tilbury Street, further refining the *Bicycle Master Plan* recommendation, as well as a contra-flow striped bike lane south along Tilbury Street to Sleaford Road.

The proposed project is fully consistent with applicable master plans.

B. Transportation Best Practices

Complete Streets Design Guide

The proposed project spans two blocks along Norfolk Avenue and Cheltenham Drive between Woodmont Avenue and Tilbury Street. Table 1 and Table 2 show the extent to which each block achieves the vision of a Downtown Street from the *Complete Streets Design Guide*.

While the proposed bikeway width along Norfolk Avenue (6 feet) does not achieve the default of 6.5 feet, it does exceed the minimum. The street buffer width varies, but the decision to maintain on-street parking in the eastbound direction makes achieving 6-foot buffers in both directions not possible.

Table 1: Downtown Street Characteristics – Norfolk Avenue: Woodmont Avenue to Wisconsin Avenue

Design Parameter	Design Guidance	Proposed by Project	Achieved by Project
Target Speed	20 mph	25 mph	**No, unchanged**
Maximum Number of Vehicle Through Lanes	4	2	**Yes, unchanged**
Outside Travel Lane Width	10.5 ft	11 ft	**No**
On-Street Parking Width	8 ft (optional)	WB: None EB: 8 ft	**Yes**
Bikeway	One-way Separated Bike Lane: 6.5 ft default; 5 ft minimum	6 ft	**Yes**
Ped/Bike Buffer	6 ft, 2 ft min	6 ft	**Yes**
Street Buffer	6 ft; 11 ft inclusive of on-street parking	WB: 2.5 ft EB: 11.5 ft (including on-street parking)	**Partially**

Similarly, along Cheltenham Drive, even with on-street parking removed to provide space for the separated bike lanes, there is insufficient width to provide the default 6.5-foot bikeways and 6-foot street buffers.

Table 2: Downtown Street Characteristics – Cheltenham Avenue: Wisconsin Avenue to Tilbury Street

Design Parameter	Design Guidance	Proposed by Project	Achieved by Project
Target Speed	20 mph	25 mph	**No, unchanged**
Maximum Number of Vehicle Through Lanes	4	2	**Yes, unchanged**
Outside Travel Lane Width	10.5 ft	11 ft	**No**
On-Street Parking Width	8 ft (optional)	None	**N/A**
Bikeway	One-way Separated Bike Lane: 6.5 ft default; 5 ft minimum	6 ft	**Yes**
Ped/Bike Buffer	6 ft, 2 ft min	5 ft	**Yes**
Street Buffer	6 ft	2 ft	**No**

Comment: Narrow travel lanes from 11 feet to 10.5 feet and use the recovered space to expand street buffers, consistent with the *Complete Streets Design Guide*.

As shown in Tables 1 and 2, travel lanes along Downtown Streets should be 10.5 feet wide. Travel lanes in the proposed design are 11 feet wide. On the block of Norfolk Avenue between Woodmont Avenue and Wisconsin Avenue, narrowing these lanes by half a foot will allow the westbound street buffer to expand from 2.5 feet to 3.5 feet. This wider buffer still does not achieve the default buffer width for the street type, but provides greater separation from motor vehicles than what is currently designed. On the block of Cheltenham Drive between Wisconsin Avenue and Tilbury Street, similarly narrowing the lanes will allow the street buffers in both directions to expand from 2 feet to 2.5 feet, providing greater separation from motor vehicles than what is currently designed.

Pedestrian Level of Comfort

The Pedestrian Level of Comfort (PLOC) methodology captures how comfortable it is to walk and roll in different conditions in Montgomery County. A variety of pathway and crossing factors are considered to determine a comfort score for each crossing and pathway segment. The four main scores are: undesirable (score = 4), uncomfortable (score = 3), somewhat comfortable (score = 2), and very comfortable (score = 1).

Existing PLOC scores in the area are shown in Figure 17.

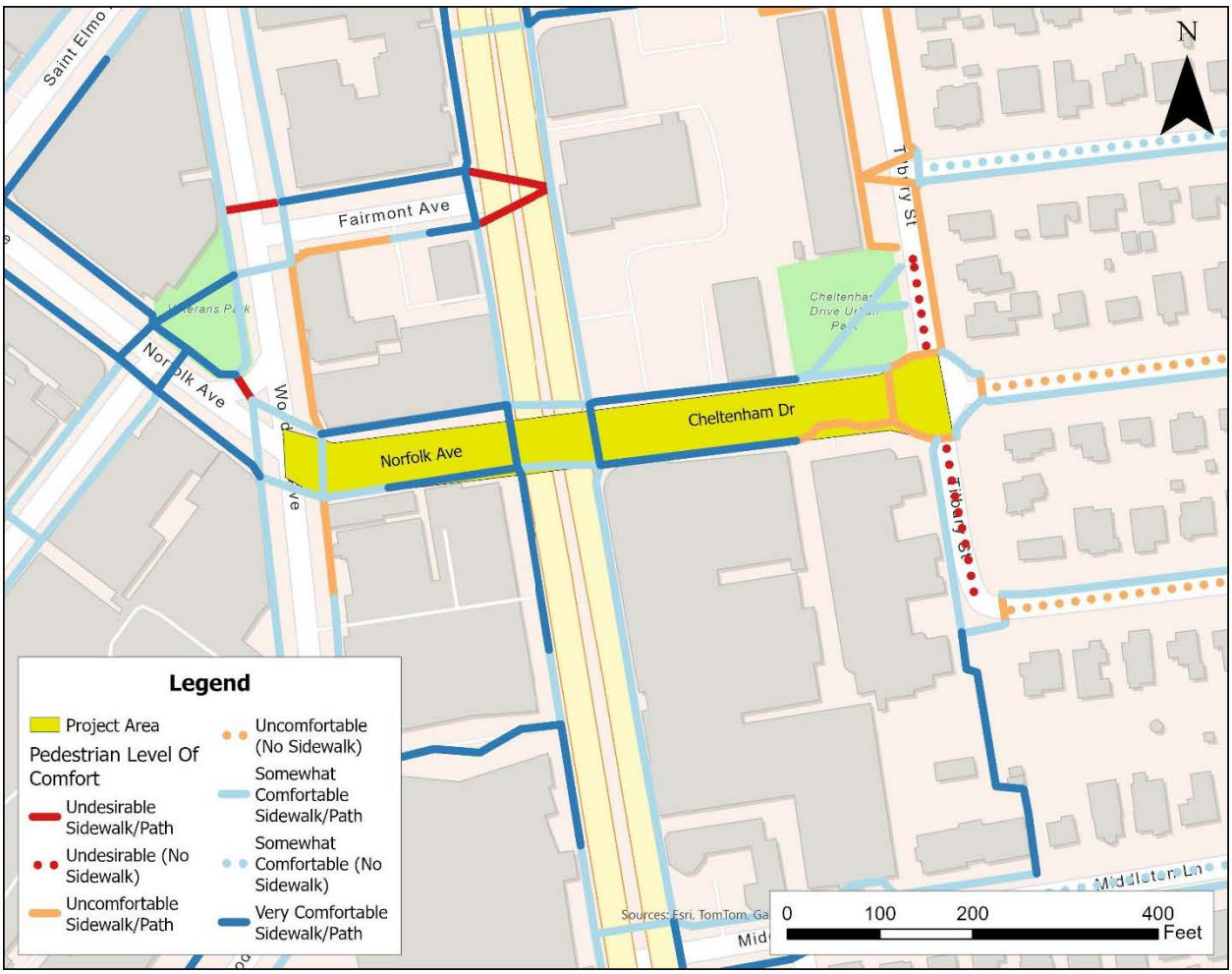

Figure 17: Existing PLOC Scores

PLOC in the project area is Very Comfortable or Somewhat Comfortable, except along the MCDOT Cheltenham Garage and around the Tilbury Street traffic circle. Strong existing PLOC scores are due to the low speed limit and the wide sidewalks buffered by ample tree panels and on-street parking. This project will improve PLOC along the parking garage to Somewhat Comfortable by widening the sidewalk to at least 8'. Additionally, the crossing legs around the Tilbury Street traffic circle that

currently score Uncomfortable will be improved to Somewhat Comfortable with the addition of the proposed high visibility crosswalk markings.

To further improve the pedestrian experience, Staff recommends the following:

Comment: Ensure all crosswalk markings are ladder-style.

The ladder-style crosswalk marking (farthest right in Figure 18) is preferred over the continental-style crosswalk markings shown in the engineering drawings because it incorporates the parallel lines of the standard-style crosswalk that pedestrians with low vision find helpful for maintaining the correct heading in the crosswalk. The ladder crosswalk is recommended by MCDOT's *Accessible Design Guide* and the *Pedestrian Master Plan*.

Figure 18: Crosswalk Types

Comment: At the Cheltenham Drive intersection with Wisconsin Avenue, set back the southern pedestrian crosswalk farther from the intersection and tighten curb radii in line with *Complete Streets Design Guide* defaults to improve safety and accessibility.

As shown in Figure 19 in red, the southern crosswalk does not go straight across Wisconsin Avenue. Instead, it has a slight kink at the nose of the median separating north- and southbound traffic. This jog reduces the value of the marked crosswalk to people with vision disabilities because it requires maneuvering in the street, rather than just continuing straight.

Additionally, the proposed curb ramps on the southwestern corner for both the western and southern crossings do not align with their respective receiving curb ramps. Instead, they guide pedestrians either into the middle of the street or into curbs, as shown with thick blue arrows in Figure 19.

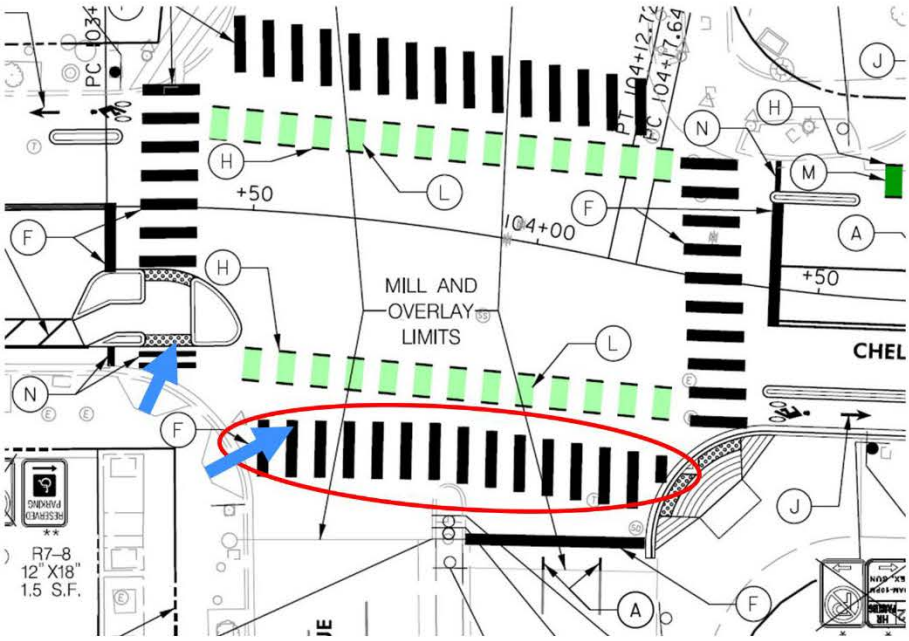

Figure 19: Cheltenham Drive/Wisconsin Avenue Intersection – Mandatory Referral Design

Planning Staff developed Figure 20, which shifts the southern crosswalk and its curb ramps farther south. These changes would allow the crosswalk markings to be installed straight across Wisconsin Avenue and the curb ramps perpendicular to the street, providing more helpful guidance for pedestrians of all ages and abilities. The nose of the concrete median should also be extended to protect crossing pedestrians and bicyclists from turning motorists. The southwestern curb ramp for the western crossing leg could also be reconstructed to be perpendicular by building out the southwestern curb to have a much tighter radius. This is possible because the curb line that controls vehicular turning radii at this corner is designed to be farther out into the street as part of the bikeway construction.

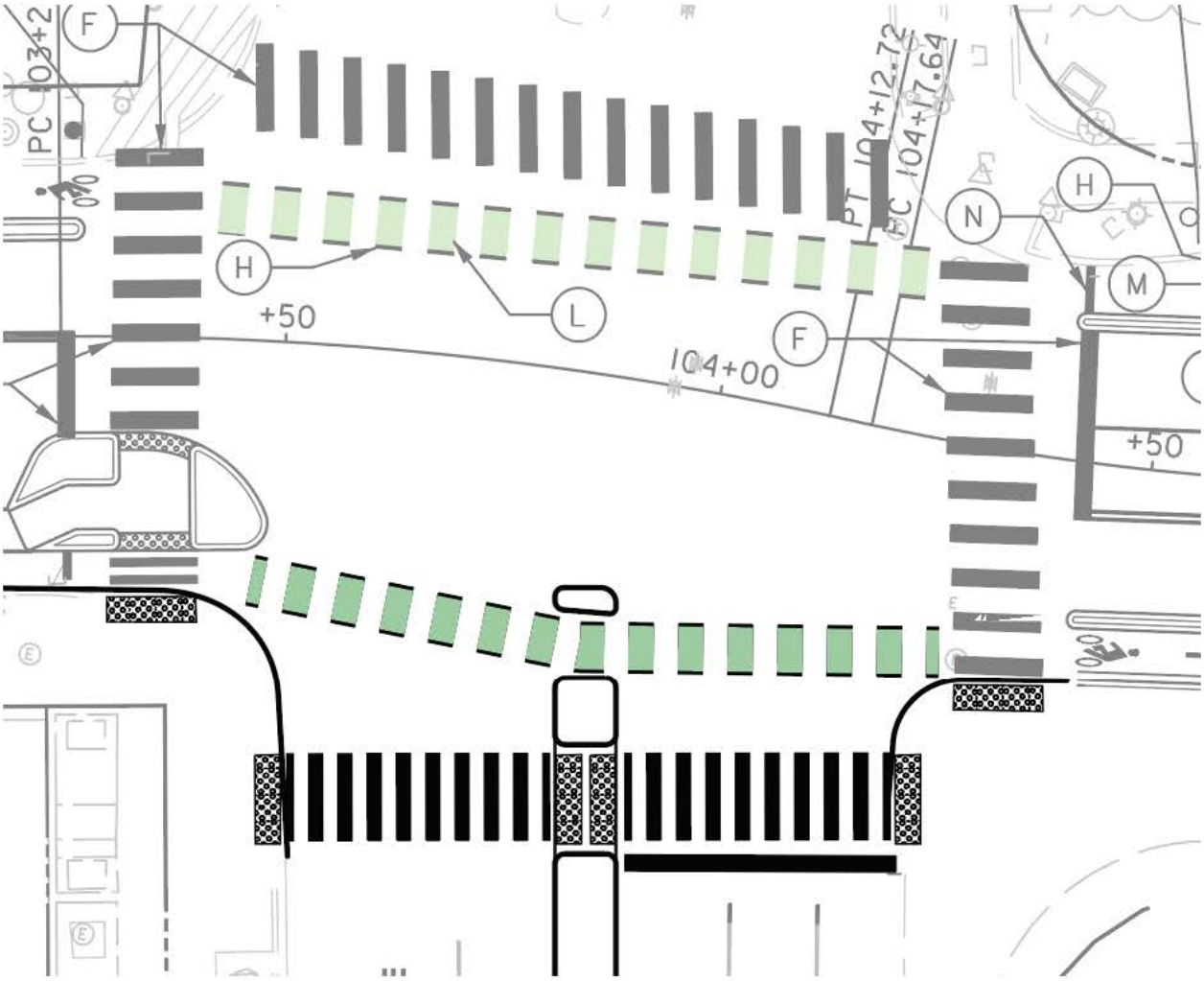

Figure 20: Potential Curb and Crosswalk Changes at Cheltenham Drive/Wisconsin Avenue Intersection

Bicycle Level of Traffic Stress

The Bicycle Level of Traffic Stress (BLTS) methodology captures how comfortable it is to bicycle in different conditions in Montgomery County. The BLTS methodology assigns a numeric stress level to streets and trails based on attributes such as the presence of a bikeway, traffic speed, number of lanes, frequency of parking turnover, and the ease of intersection crossings. The possible scores are: Very Low Stress (appropriate for most children), Low Stress (appropriate for most adults) and High & Moderate Stress (inappropriate for children and most adults).

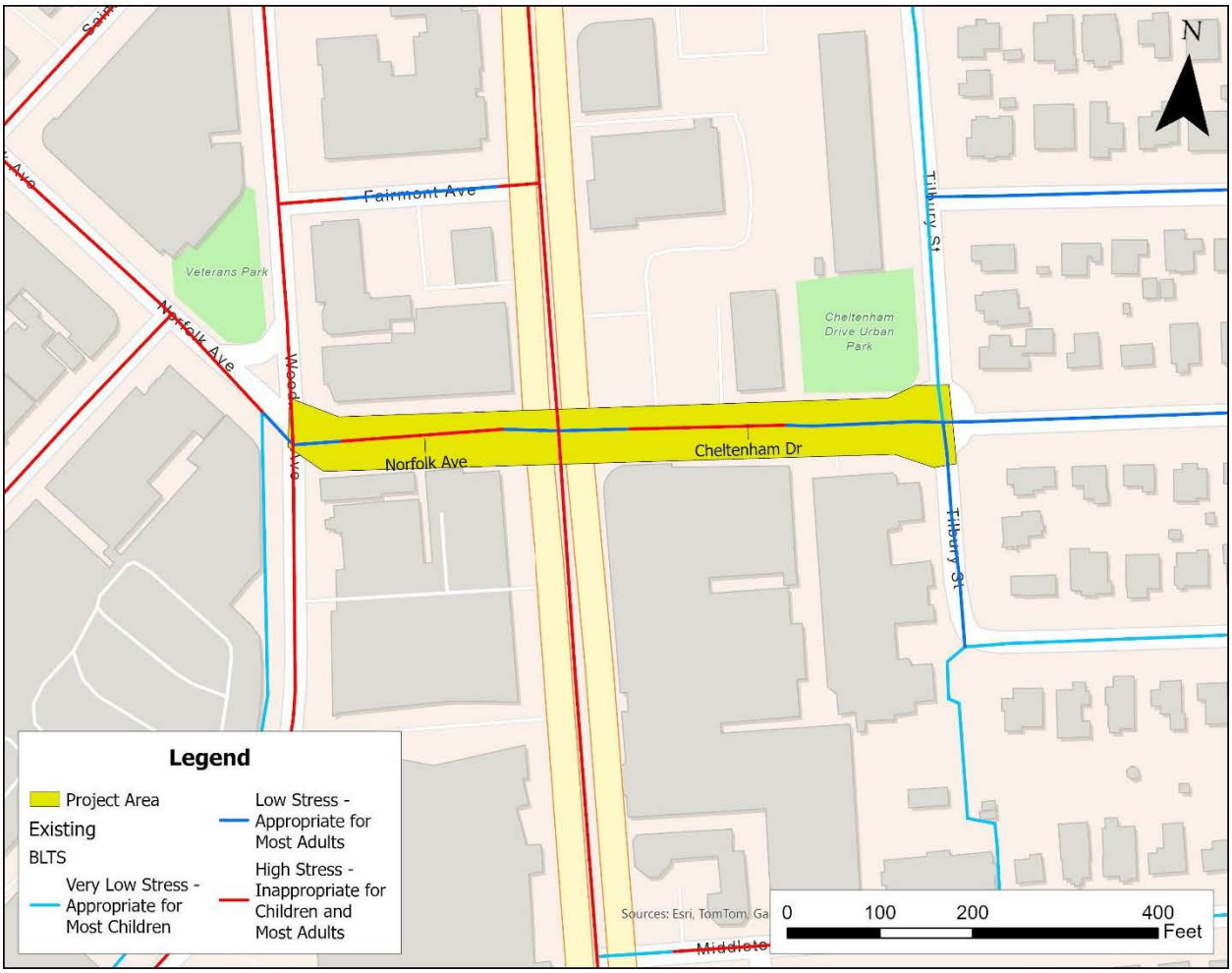

Figure 21: Existing Bicycle Level of Traffic Stress (BLTS) Scores

Figure 21 shows that there are currently High Stress and Low Stress segments in the project area. With the separated bike lanes proposed as part of this project, most of this corridor will be Very Low Stress, the best BLTS score. The exception is in the westbound direction in front of Cheltenham Drive Urban Park where the current design does not include a separated bike lane. Instead, bicyclists must exit the traffic circle in the motor vehicle lane and then merge into the separated bike lane at the alley, as shown in Figure 22. This is more stressful than bicycling in a separated bike lane, so this segment would be Low Stress (appropriate for adults), but not Very Low Stress (appropriate for children) like the rest of the corridor.

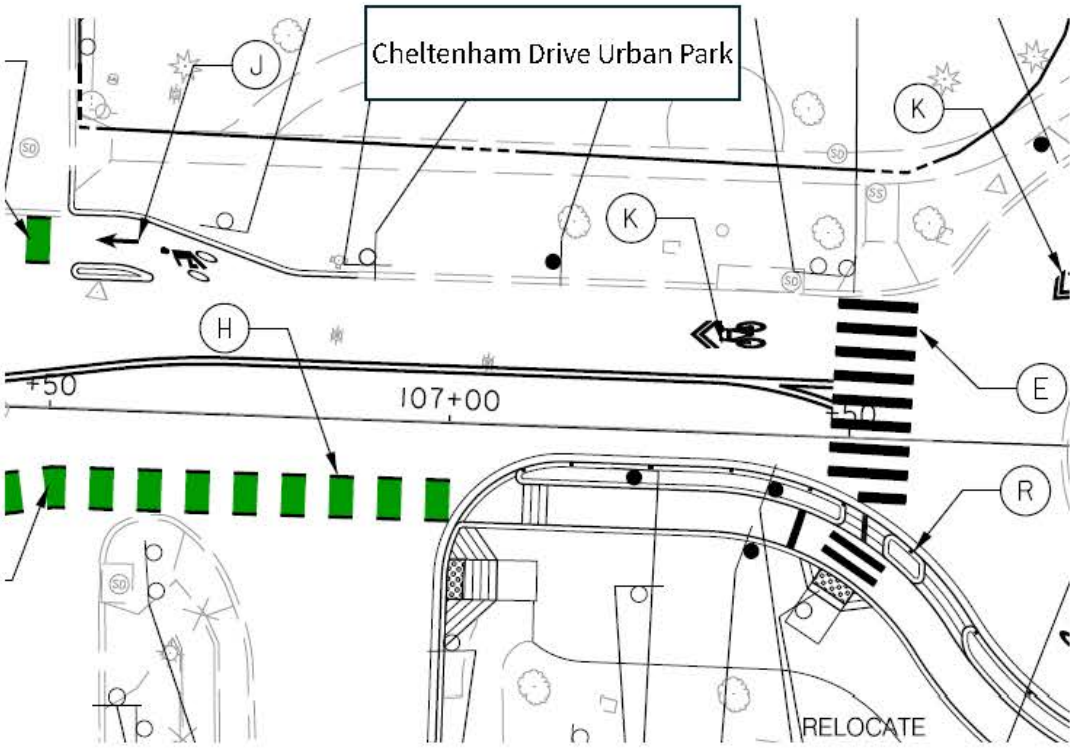

Figure 22: MCDOT Proposed Westbound Shared Lane in front of Cheltenham Drive Urban Park

Comment: Construct a one-way separated bike lane in the westbound direction in front of Cheltenham Drive Urban Park that meets *Complete Streets Design Guide* default dimensions to reduce conflicts between bicyclists and motorists and improve Bicycle Level of Traffic Stress to Very Low Stress.

There appears to be sufficient space behind the curb in the landscape panel to construct a separated bike lane without disrupting the existing sidewalk that fronts Cheltenham Drive Urban Park (Figure 23 and Figure 24). Montgomery Parks property does not begin until the northern edge of sidewalk, and

Montgomery Parks staff support constructing the bikeway in the public right-of-way in front of this park.

Figure 23: Space for Proposed Separated Bike Lane on Cheltenham Drive (Facing West)

Figure 24: Montgomery Planning Proposed Westbound One-Way Separated Bike Lane on Cheltenham Drive

In addition to providing a separated bike lane in the westbound direction here, Staff recommends the following comments to make the bicycling experience even better in this corridor.

Comment: Redesign the intersection of Woodmont Avenue and Norfolk Avenue as a protected intersection.

As currently designed, the proposed bikeway effectively ends right before the Woodmont Avenue intersection. This creates several challenges (shown in Figure 25).

1) Bicyclists continuing westbound along Norfolk Avenue must merge into general traffic through the intersection, creating conflict and stress.
2) If arriving on a red signal, westbound bicyclists turning southbound into the Woodmont Avenue separated bike lanes must wait through a full signal cycle in two different locations to navigate through the intersection. First, they must wait for a green signal to cross to the bicycle box in the northwest corner of the intersection. Then, they must wait in that bicycle box through a full signal cycle for a green signal before proceeding south into the Woodmont Avenue bike lanes. This creates tremendous delay for bicyclists traveling through the area.

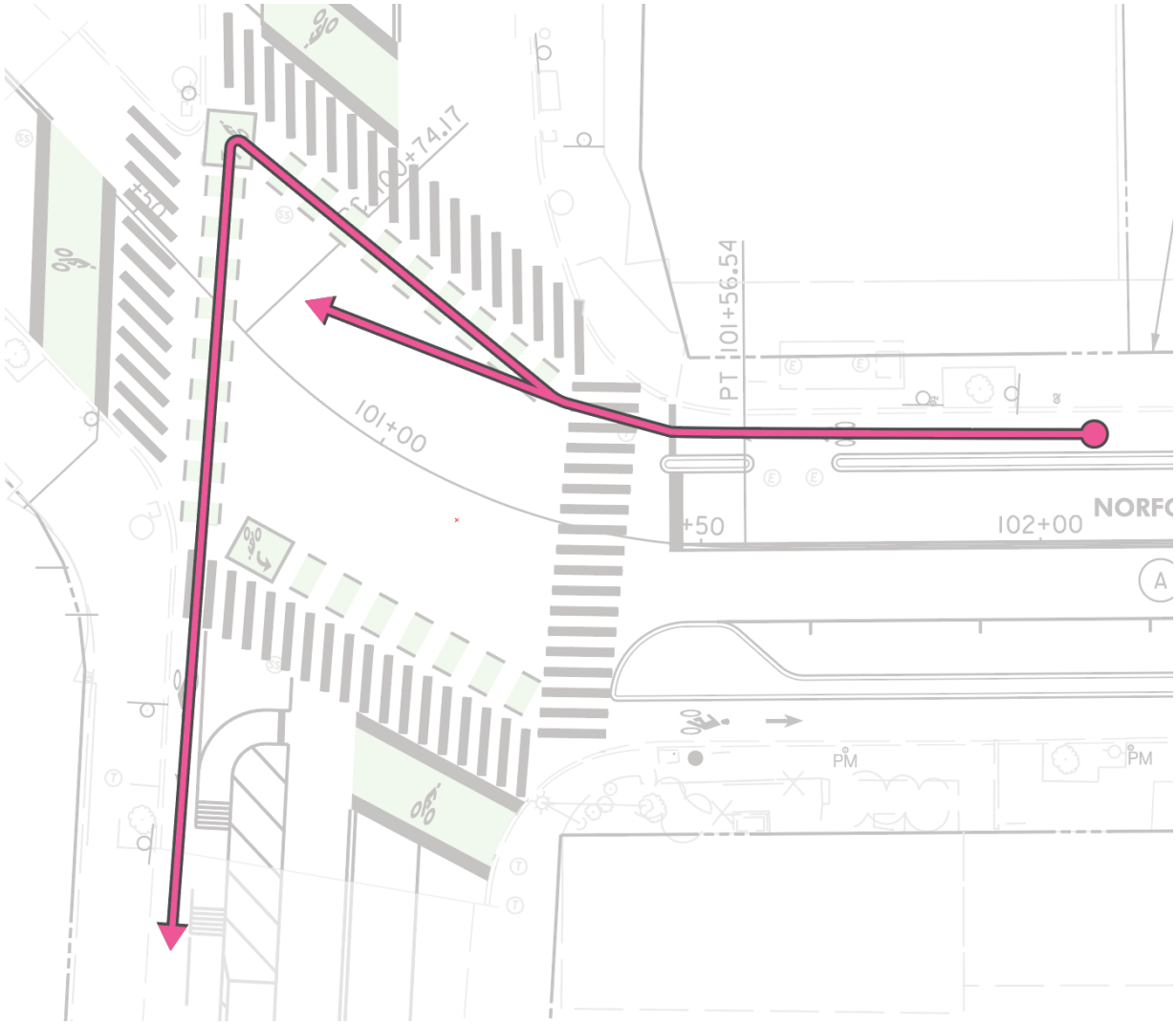

Figure 25: MCDOT Proposed Woodmont Avenue / Norfolk Avenue Intersection

If a protected intersection is constructed with space gained from setting back the southern and eastern pedestrian crossings from the intersection (Figure 26), several opportunities emerge:

1) Corner islands can be constructed at the southeast and southwest corners of the intersection, tightening the curb radii, improving visibility, and slowing the turning speed of motor vehicles.
2) Space is created to allow bicyclists to cross in both directions on the eastern and southern legs of the intersection. This provides additional routing options and allows bicyclists to advance on their journeys regardless of intersection signal status when they arrive.
3) Pedestrian curb ramps and crossings can be made more perpendicular. This shortens crossing distances, provides easier crossings for people with visual impairments, and with the addition of the corner islands, reduces the amount of time pedestrians are exposed to motor vehicle traffic, leading to fewer crashes.

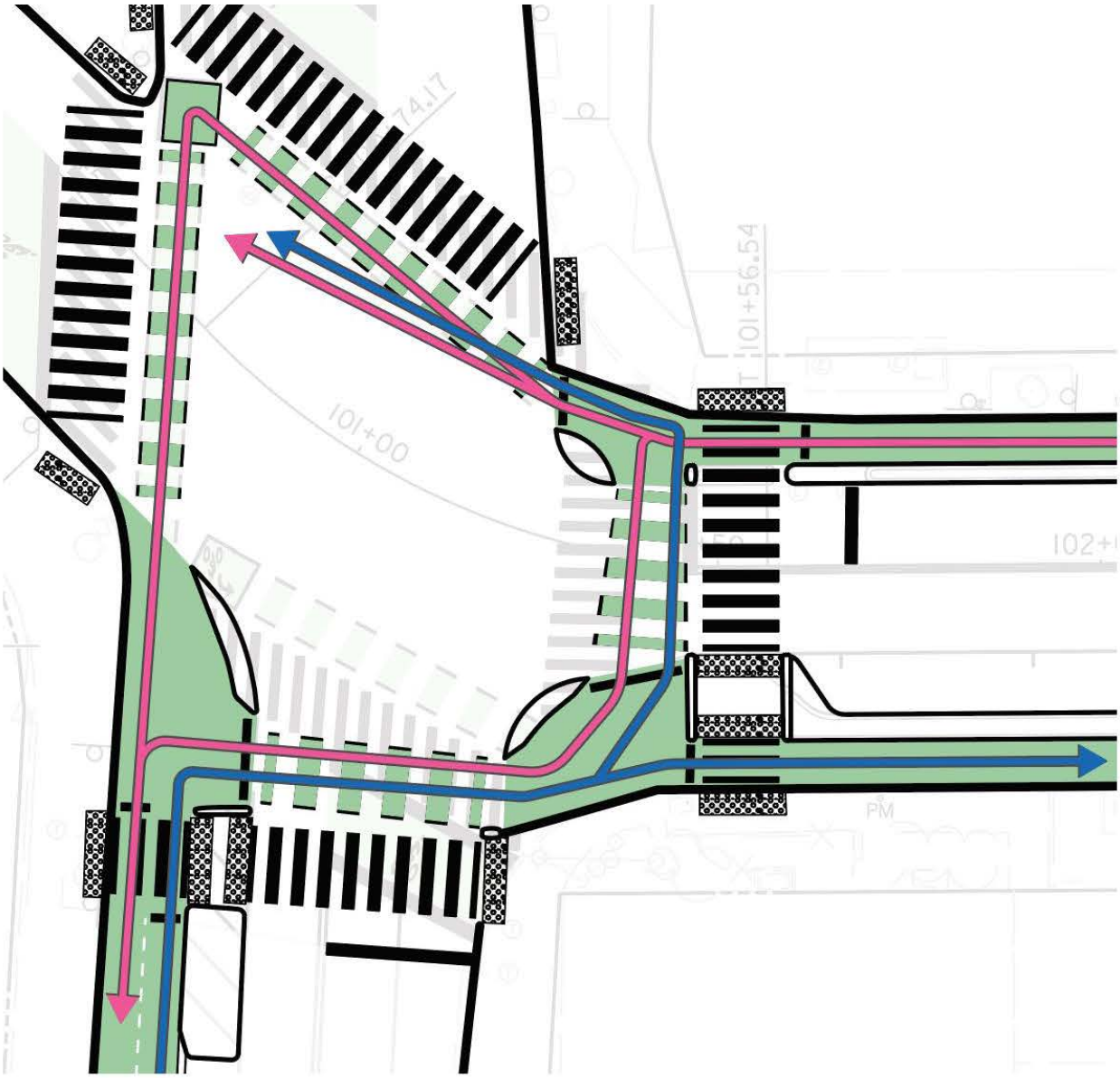

Figure 26: Montgomery Planning Recommended Woodmont Avenue / Norfolk Avenue Protected Intersection

Comment: Ensure eastbound bicyclists entering the Tilbury Street roundabout can safely merge into the general travel lane where the separated bikeway ends.

For bicyclists traveling eastbound on Cheltenham Drive and continuing south on Tilbury Street, the proposed design transitions a separated bike lane into a striped contraflow bike lane along Tilbury Street toward Sleaford Road. For bicyclists continuing north on Tilbury Street, the separated bike lane ends and bicyclists rejoin motor vehicle traffic to traverse the roundabout and exit on northbound Tilbury Street.

When a bikeway ends, bicyclists must merge back into travel lanes to continue their journey. It is a best practice to terminate bikeways along straight segments of roadway or at a signalized intersection for

safety reasons. In this project, the bikeway ends at a yield-controlled roundabout. This means that to safely enter the roundabout, bicyclists will have to look over their left shoulder to ensure there is a gap in traffic while at the same time looking to the right to determine if northbound Tilbury Street traffic will yield to them. The bicyclist fields of vision (the blue triangles) and potential conflicts (by the red arrows) are shown in Figure 27.

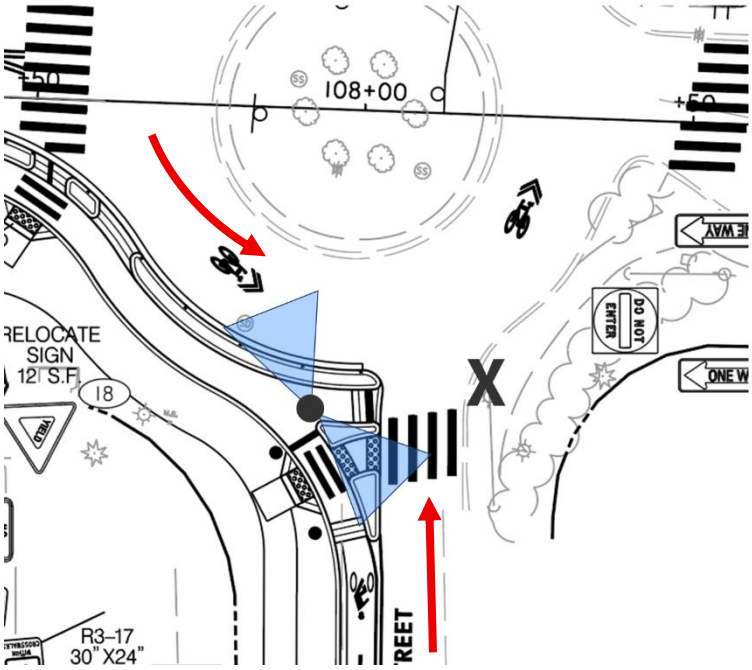

Figure 27: Bikeway Conflict Point at Tilbury Street Roundabout

To reduce the likelihood of conflict, Staff recommends two changes:

1) **Raise the marked pedestrian crossing at the southern leg of the Tilbury Street roundabout to sidewalk level.**
   This will act as a speed hump, slowing northbound motor vehicles on Tilbury Street approaching the roundabout and providing more time for bicyclists and motorists to see each other and for motorists to yield to traffic in the roundabout. Additionally, raised crossings (Figure 28) benefit pedestrians by reinforcing their priority to cross the street and allowing

people to travel directly from one sidewalk to the next without having to walk or roll down into the street and then back up at the receiving ramp.

Figure 28: Raised Crossing at Sidewalk Level. Photo Credit: Vladimir Zlokazov

2) **Construct a mountable apron on the outer edge of the southwest corner of the roundabout.**
Mountable aprons are curbing used within roundabouts and protected intersections to constrain the movement of most vehicles while still allowing access for larger vehicles, like buses or trucks. Typically, the mountable apron is provided on the inner curb of the roundabout (the side of the travel lane nearest the center of the circle), but in this case, constructing it on the outside would guide motor vehicles farther away from the bikeway, providing some additional separation between merging bicyclists and motor vehicles. Figure 29 shows how mountable aprons guide automobile movements while maintaining access for larger vehicles. Figure 30 shows what a mountable apron could look like in the Tilbury Street roundabout using vertical black stripes.

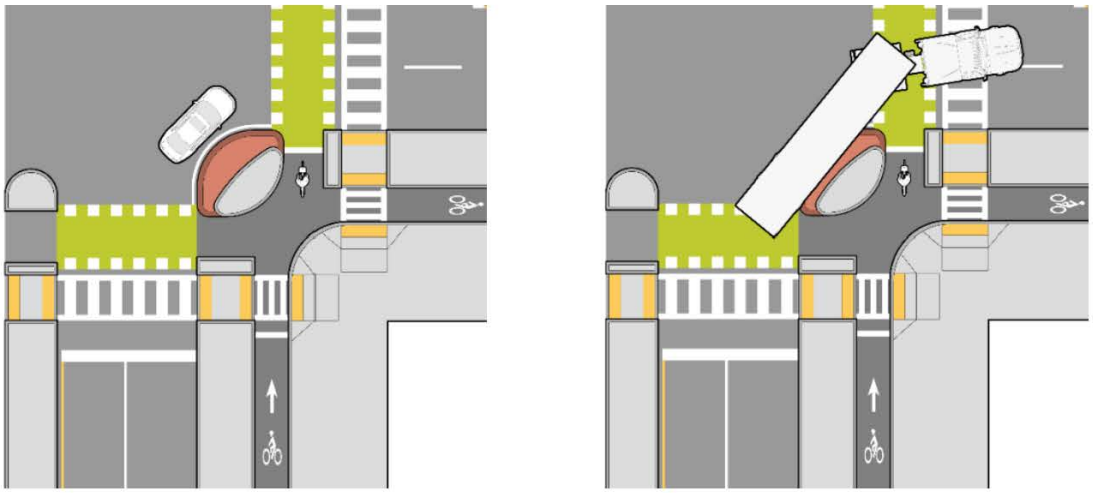

Figure 29: Mountable Aprons for Cars and Trucks

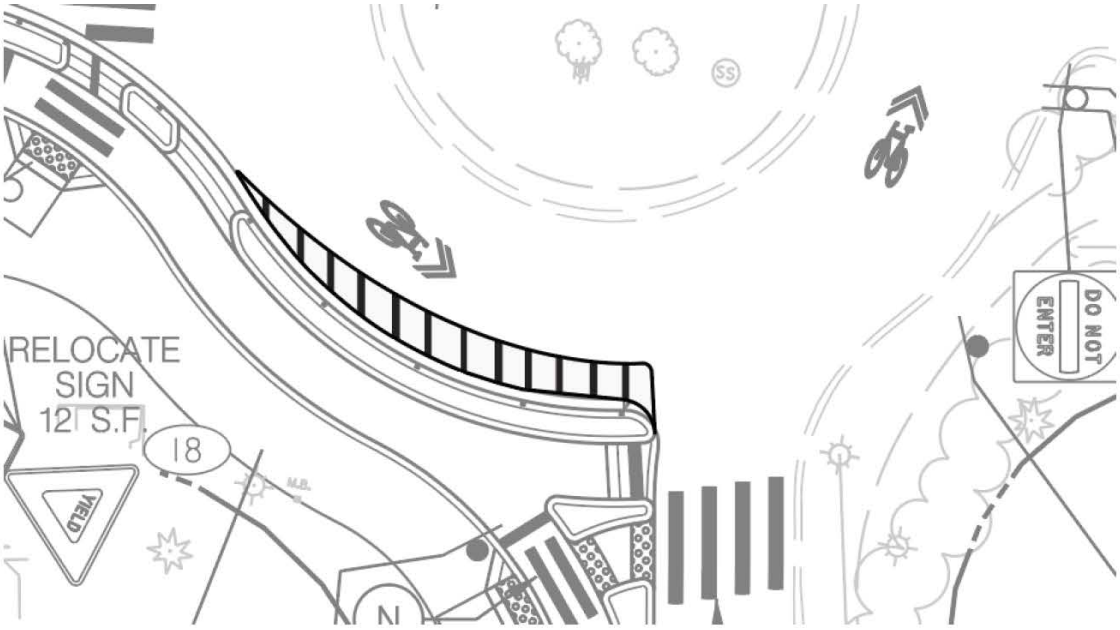

Figure 30: Potential Mountable Apron Design

Because Cheltenham Drive and Tilbury Street are low-volume streets, there will not be frequent conflicts at this merge point, but conflicts will occur and the design should ensure they can be safely navigated.

Streetlighting Design Requirements

MCDOT adopted updated streetlighting requirements in December 2024 that include target lighting values for different elements of the streetscape to ensure there is sufficient lighting for people traveling by any mode. The target values are context-specific and change based on the street's classification in the *Master Plan of Highways and Transitways*. While the MCDOT project team did not conduct a complete lighting analysis (to include vertical illuminance), comparing the Streetlighting

Design Requirements target values in Table 3 to the lighting levels modeled in the project corridor makes clear that the street lighting that currently exists in this area is insufficient. Values in red in the table below do not meet the target. The lighting plan is included in the project plan set (Attachment A), but no new lighting is being proposed. However, the project team has indicated an openness to improving lighting.

Comment: To address deficiencies in illuminance in the project area, add pedestrian-scale lighting at appropriate locations to meet Streetlighting Design Requirements target values.

Table 3: Project Lighting Values (Target Values in Parenthesis)

Location	Minimum Horizontal Illuminance	Maintained Average Horizontal Illuminance	Uniformity Ratio	Maintained Average Vertical Illuminance
Westbound Sidewalk: Woodmont Avenue to Wisconsin Avenue	0.0 (0.2 ≤)	0.25 (0.9 ≤)	Not Defined (3.0 ≥)	Not Calculated (2.0 – 2.5 ≤)
Eastbound Sidewalk: Woodmont Avenue to Wisconsin Avenue	0.1 (0.2 ≤)	0.98 (0.9 ≤)	9.8 (3.0 ≥)	Not Calculated (2.0 – 2.5 ≤)
Westbound Sidewalk: Wisconsin Avenue to Tilbury Street	0.0 (0.2 ≤)	0.84 (0.9 ≤)	Not Defined (3.0 ≥)	Not Calculated (2.0 – 2.5 ≤)
Eastbound Sidewalk: Wisconsin Avenue to Tilbury Street	0.1 (0.2 ≤)	1.00 (0.9 ≤)	10.0 (3.0 ≥)	Not Calculated (2.0 – 2.5 ≤)
Roadway: Woodmont Avenue to Wisconsin Avenue	0.0 (N/A)	1.69 (0.7 – 1.0 ≤	Not Defined (3.0 ≥)	N/A (N/A)
Roadway: Wisconsin Avenue to Tilbury Street	0.1 (N/A)	1.69 (0.7 – 1.0 ≤)	16.9 (3.0 ≥)	N/A (N/A)

C. Environment

Environmental Guidelines

The project conforms to the Planning Board-approved *Environmental Guidelines for Environmental Management of Development in Montgomery County*.

The project is located within the Rock Creek Watershed, which is a Use I watershed. There are no stream buffers, wetlands, or 100-year floodplains on-site. The soils on the project are classified as urban land and are not considered highly erodible or sensitive. There are no known rare, threatened, or endangered species on the project.

Any environmental impacts have been minimized to the greatest extent possible and are necessary and unavoidable to achieve the design standards of the proposed bike lanes and concrete buffers. The following sections evaluate project compliance with Chapter 22A.

Forest Conservation

The project is subject to Chapter 22A, Montgomery County Forest Conservation Law, but exempt from Article II and from the submission of a forest conservation plan under Section 22A-5(e) as a "county and municipal highway project." Forest Conservation Exemption No. 42025104E was granted under Section 22A-5(e) on January 27, 2025 (Attachment C). While the project is exempt from Article II of the Forest Conservation Law, the Applicant is still required under section 22A-9 of Chapter 22A of the County Code to prepare a plan ("22A-9 Plan") that demonstrates:

a) General.
    a. This Section applies to construction of a highway by the County or a municipality as part of an approved Capital Improvements Program project.
    b. The construction should minimize forest removal, land disturbance, and loss of significant, specimen, or champion trees to the extent possible while balancing other design, construction, and environmental standards. The constructing agency must make a reasonable effort to minimize land disturbance to avoid the cutting or clearing of trees and other woody plants.
b) If the forest to be cut or cleared for a County highway project equals or exceeds 20,000 square feet, the constructing agency must reforest a suitable area at the rate of one acre of protected reforestation for each acre of forest cleared.
c) Reforestation for County highway projects must meet the standards in subsections 22A-12(e), (g) and (h).
d) Any mitigation requirement for loss of significant, specimen, or champion trees must be based on the size and character of the tree.

The exemption includes the required 22A-9 Plan. Because the project under review is only at the 30% design stage, the limits of disturbance shown on the 22A-9 Plan are preliminary. The Department of

Transportation will submit a Final 22A-9 Plan to Planning Staff for review and approval during the final (100%) design phase of the project. A final 22A-9 Plan, showing the finalized limits of disturbance, must be submitted and approved by Planning Staff prior to clearing, grading, or demolition for each phase of construction.

Stormwater Management

The applicant has an approved stormwater management concept. The Department of Permitting Services letter, dated January 14, 2025, is attached (Attachment D).

SECTION 7 – CONCLUSION

With the suggested comments and modifications, the Mandatory Referral application satisfies the applicable standards of the Md. Land Use Article, Section 20-301 et seq. and the Uniform Standards for Mandatory Review. The Project is consistent with the recommendations of the 2017 *Bethesda Downtown Plan* and the 2018 *Bicycle Master Plan*. Therefore, Staff recommends approval of Mandatory Referral No. MR2026005 with comments as specified at the beginning of this report.

ATTACHMENTS

Attachment A: Complete Engineering Drawings

Attachment B: Cheltenham Drive Bikeway Feasibility Study

Attachment C: Forest Conservation Plan Exemption Letter

Attachment D: Stormwater Management Concept Approval Letter