# WEST FALLS CHURCH METRORAIL AREA ACTIVE TRANSPORTATION STUDY 

## FINAL REPORT

## NOVEMBER 2022



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### 1.0 INTRODUCTION

Active transportation, as defined by the Fairfax County Active Transportation Program is: "Selfpropelled, mostly human-powered travel including walking, biking, rolling (scooter, wheelchair, stroller), hiking, running, and riding for transportation and recreational purposes. ${ }^{11}$

On July 13, 2021, the Board of Supervisors adopted a follow-on motion directing County staff to assess existing active transportation conditions in the West Falls Church Transit Station Area (TSA) and its neighboring communities (see Appendix A) and solicit community input to develop recommendations and set active transportation project priorities for the study area. This motion immediately followed the Board's adoption of a Comprehensive Plan Amendment (CPA) for the West Falls Church Transit Station Area (TSA); a map of the TSA is depicted in Figure 1. The adopted CPA permits a higher-density, mixed-use development on the 24-acre property owned by the Washington Metropolitan Area Transit Authority (WMATA) and the seven-acre property currently occupied by Virginia Tech that abuts Haycock Road. In the months preceding the CPA's adoption, community members in the West Falls Church Metrorail area expressed concerns about these developments' likely impact on the areas's roadways and active transportation infrastructure. The following report, the West Falls Church Metrorail Area Active Transportation Study, responds to the Board's July $13^{\text {th }}$ motion.

The CPA calls for "transit-oriented development" (TOD) at the WMATA and Virginia Tech sites which aims to increase transit usage through multiple means, including enhancements to active transportation accommodations. Specific CPA recommendations include the construction of a new street that will link Route 7 (Leesburg Pike), through the City of Falls Church's West Falls development, to the West Falls Church Metrorail station. This new street will include continuous bicycle lanes and wide, well-lit, and landscaped pedestrian walkways. The CPA also highlighted the need for better connectivity between the Metrorail station and the surrounding neighborhoods through an active transportation plan, which ultimately lead to the follow-on motion.

In December 2021, the Fairfax County Department of Transportation (FCDOT) commenced the West Falls Church Metrorail Area Active Transportation Study, which includes existing conditions assessments for the pedestrian and bicycle networks surrounding the West Falls Church Metrorail Station. The pedestrian network is encompassed within a one-mile radius of the Metrorail station and the bicycle network is within a two-mile radius. The assessments, along with vital input from community members, resulted in a list of dozens of recommendations. An Advisory Group of residents of the TSA and surrounding areas was appointed by the Dranesville and Providence District Supervisors. The Advisory Group held seven meetings and took part in three sets of community meetings, facilitated by FCDOT, to discuss the recommendations and prioritize them based on their

[^0]expected benefits, including better access to schools and the Metrorail station, addressing missing links, and improvements to safety and comfort.

The subject report includes background information on the study area, a list of the stakeholders involved, the results of the existing conditions analysis, along with a description of the methodologies used to conduct the analysis, a synopsis of the community outreach performed, a list of recommended active transportation improvements, and the Advisory Group's suggested priorities. This study is a first step in creating a safer, more comfortable, and accessible community for the West Falls Church Metrorail area. Strategies for the funding and implementation of active transportation projects throughout the County are being pursued by the Board of Supervisors, and this report will help in identifying specific projects in the West Falls Church Metrorail area where some of those efforts may be directed.


Figure 1: West Falls Church Transit Station Area

### 2.0 BACKGROUND

The CPA adopted by the Board of Supervisors permits a mix of uses on Sub-units A-1 and A-2 in the West Falls Church Transit Development Area, depicted in Figure 2. In addition to its use as a transit station, the WMATA property (Sub-unit A1) may include office, retail, multifamily residential and townhouses at an intensity of up to .96 floor area ratio (FAR). The Virginia Tech property (Sub-unit A-2) is planned for institutional, office, retail, and residential uses up to an intensity of 2.5 FAR. The combined planned land uses for the WMATA and Virginia Tech properties include a maximum of 1,340 residential dwelling units (DUs), 301,000 square feet (SF) of office, 48,000 SF of retail, and 160,000 SF of institutional space. As part of the CPA process, a traffic impact study (TIS) was conducted to project future traffic conditions given the change in land uses. The TIS, finalized in June 2021, estimated that by year 2030, the two fully developed sites could generate 8,182 daily vehicle trips.


Figure 2: West Falls Church Transit Development Area map
The subject sites are situated in a unique location between Interstate 66 (I-66), to the north, and Haycock Road, a minor arterial, to the southeast, and is proximate to Leesburg Pike, a principal arterial, to the southwest. A portion of the City of Falls Church is located in between the site's southern border and Leesburg Pike. The land within the City of Falls Church includes a middle school and a high school that was recently relocated to make room for the "West Falls" project, a nearly 10-acre mixed-use development that is anticipated to include a mix of land uses and higher development intensity, as
described in detail on the West Falls project website ${ }^{2}$. A TIS was completed for this development in June 2019, and estimated that by 2025, the fully built site could generate 13,154 new vehicle trips per day.

The combination of the West Falls project in the City of Falls Church and the potential for higher density in the WMATA and Virginia Tech parcels in Fairfax County presents an opportunity for a coordinated approach to enhancing multimodal transportation within the West Falls Church Metrorail area. A grid of streets providing connectivity between Leesburg Pike, Haycock Road, and the West Falls Church Metrorail Station will help to promote active transportation use within the development. As the development process continues, the developers may present proposals that they believe could enhance active transportation along area roadways, such as Haycock Road. These suggestions will be evaluated in accordance with the community's recommendations. It is critical that roadways connecting to the surrounding neighborhoods include accommodations for safe, comfortable, and accessible travel for active transportation users.

The Advisory Group for this study was provided with background information as described above and data on existing conditions within the study area as described in Section 8. The Advisory Group leveraged community input and the knowledge of their respective neighborhoods and associations to develop a preliminary set of recommended improvements for the study area that were further refined and prioritized. Over the course of the study, members of the Advisory Group also noted their desire for improvements beyond active transportation infrastructure, including increased traffic enforcement on area roadways and close coordination between Fairfax County and the City of Falls Church on development plans and roadways changes. The makeup of the Advisory Group is noted in the next section.

[^1]
### 3.0 ADVISORY GROUP

The Advisory Group for the study included the following members:

- Cheryl Sim, Dranesville District Representative
- Mark Kieffer, Dranesville District Representative
- Robert Boggs, Dranesville District Representative
- Alternate: Adrienne Whyte, Dranesville District Representative
- Bruce Jones, McLean Citizens Association
- Meera Natarajan, Dranesville Parent Teacher Association
- Michael Lindinger, Dranesville Parent Teacher Association
- Rob Ochsendorf, Providence District
- Jeremy Hancock, Providence District Council and Providence Parent Teacher Association
- Sonya Breehey, Fairfax Families for Safe Streets
- Bruce Wright, Fairfax Alliance for Better Bicycling

The Advisory Group was supported by the Dranesville and Providence District supervisors and staff including:

- Supervisor John Foust, Dranesville District
- Supervisor Dalia Palchik, Providence District
- Jane Edmondson, Dranesville District, Chief of Staff
- Ben Wiles, Dranesville District
- Aryeh Kalender, Providence District

Support was also provided by FCDOT leadership and staff, including:

- Tom Biesiadny, FCDOT, Director
- Jeffrey Hermann, AICP, FCDOT, Site Analysis and Transportation Planning Division Chief
- Michael Garcia, AICP, FCDOT, Transportation Planning Section Chief
- Chris Wells, Active Transportation Program Manager (Ret.)
- Bob Pikora, FCDOT, Transportation Planner III
- Tim Kutz, FCDOT, Transportation Planner III


### 4.0 TECHNICAL GROUP

A Technical Group was established to provide guidance for the study. Technical Group members held three meeting separate from the Advisory Group. Several Technical Group members also attended Advisory Group and community meetings. The Technical Group included the following members:

- Alex Faghri, VDOT
- Sid Siddiqui, VDOT
- Beth Iannetta, Fairfax County Park Authority
- Mike DePue, NOVA Regional Parks
- Michelle Phillips, Fairfax County Public Schools (FCPS)
- Sally Smallwood, FCPS
- Ofc. Brian Rochefort, Fairfax County Police Department
- Claudia Vila, Disability Rights and Resources
- Peter Vigliotti, Department of Public Works and Environmental Services
- Steven Segerlin, WMATA
- Cameron Gahres, City of Falls Church
- Reg Viray, Virginia Tech
- Lauren Delmare, FCDOT, Active Transportation Engineer
- Nicole Wynands, FCDOT, Bicycle and Pedestrian Planner
- Steve Knudsen, FCDOT, Residential Traffic Administration Program Manager

The next section provides details on the geographic scope of the study.

### 5.0 STUDY AREA

The focal point for the study area is the south station entrance to the West Falls Church Metrorail Station. The pedestrian analysis was conducted within a one-mile buffer zone from the Metrorail station, and a two-mile buffer zone was used for the bicycle analysis. The study area is depicted in
Figure 3.


Figure 3: Study area map
The effective walkshed, shown on the map in green, is the area within one mile that a pedestrian can walk to following sidewalks and local roadways. It should be noted that this walkshed assumes a signalized crossing at the intersection of Chestnut Street and Leesburg Pike, which is planned as an
improvement with the City of Falls Church's West Falls project. The blue dots on the map denote transportation projects that are planned (outlined in red) or have been recently completed (outlined in bright pink) ${ }^{3}$. A detailed map listing planned and recently completed projects can be viewed on the study webpage.
https://www.fairfaxcounty.gov/transportation/sites/transportation/files/assets/documents/pdf/trans portation\%20projects,\%20studies\%20and\%20plans/west\%20falls\%20church\%20ats\%20study\%20area \%202 8 22.pdf

[^2]The West Falls Church Metrorail Area Active Transportation Study is intended to assist in improving travel within and surrounding the West Falls Church TSA and ensuring that this travel is safe, accessible, comfortable, and intuitive for all modes of active transportation including walking, bicycling, and other forms of non-motorized travel. The following is a list of objectives completed in the study to address this goal.
a. Created an Advisory Group to inform and guide the planning process and engage with the community
b. Provided multiple opportunities for community input through public meetings and a community survey
c. Ensured transparency throughout the study through publicly available meeting recordings and presentations
d. Used current data to inform the Advisory Group and its preparation of recommendations
e. Proposed improvements to safety, accessibility, and comfort for active transportation users of all ages and abilities
f. Proposed recommendations to improve connectivity between the West Falls Church Metrorail Station, surrounding neighborhoods, and the Washington and Old Dominion (W\&OD) Trail
g. Prepared planning level cost estimates for recommended improvements
h. Prioritized active transportation recommendations with community assistance
i. Identified potential sources for funding projects
j. Ensured that study recommendations were developed within sufficient time as to inform the rezoning process for developments surrounding the West Falls Church Metrorail Station

The study also included an objective to integrate the appropriate active transportation recommendations into the ongoing updates to the Countywide ActiveFairfax Plan. Active engagement with the community was a critical component to the fulfillment of these objectives. Additional details on community outreach are described in Section 9.0.

### 7.0 OTHER STUDIES \& PLANS

There are several studies, both ongoing and completed, that were referenced to better understand the existing and planned environment surrounding the West Falls Church TSA. Some of these studies were, or are, currently being conducted by FCDOT, while others are authored by the Virginia Department of Transportation (VDOT) and the City of Falls Church.
a. West Falls Church TSA CPA supporting Traffic Analysis, June 2021 (contact FCDOT for traffic study)
b. ActiveFairfax Plan (including the current Countywide Trails Plan and Bicycle Master Plan) ActiveFairfax Transportation Plan | Transportation (fairfaxcounty.gov); Fairfax County Countywide Trails Plan Map - Updated June 2018; Countywide Bicycle Master Plan Transportation (fairfaxcounty.gov)
c. Shrevewood Elementary Safe Routes to School (SRTS) study Transportation Alternatives Program $\perp$ Transportation (fairfaxcounty.gov)
d. Virginia Department of Transportation (VDOT) Shreve Road Corridor Study Transportation Impact Analysis (virginiadot.org)
e. Westmoreland Corridor Study westmorelandstpresentation. pdf.pdf (fairfaxcounty.gov)
f. Route 7 Bus Rapid Transit (BRT) Study Route 7 Bus Rapid Transit Study I Transportation (fairfaxcounty.gov)
g. Tysons Metrorail Station Access Management Study (TMSAMS) TMSAMS Tysons Metrorail Station Access Management Study Final Report (fairfaxcounty.gov) and Herndon Metrorail Stations Access Management Study (HMSAMS) Herndon Metrorail Stations Access Management Study (HMSAMS) Final Report (fairfaxcounty.gov)
h. West Falls Church Access to Transit and Multimodal Connectivity, funded by Northern Virginia Transportation Authority https://thenovaauthority.org/wp-content/uploads/2019/12/CFC006.pdf
i. City of Falls Church plans including the West Falls Economic Development Project, West End Small Area Plan, Bicycle Master Plan, and others West Falls Development Project | Falls Church, VA - Official Website (fallschurchva.gov); West End Small Area Plan | Falls Church, VA - Official Website (fallschurchva.gov); Bicycle Master Plan Falls Church, VA - Official Website (fallschurchva.gov)

Another notable development within the study area is the Smart Cities test bed, a \$10 million project funded by the Virginia General Assembly. The Virginia Tech Transportation Institute, the City of Falls Church, VDOT, and Fairfax County are partnering on the project, which is expected to include smart technology solutions such as adaptive lighting, smart intersections, and parking garage utilization indicators. The goals of the Smart Cities project are to reduce pollution and traffic congestion and improve public safety. Additional information on the Smart Cities project can be found in the presentation provided to the Fairfax County Board of Supervisors in June, 2022.

In addition, there are many projects that have been recently completed or are planned within the study area, such as those listed on the Fairfax County Transportation Priorities Plan (TPP). Information on the TPP and other relevant capital projects can be found in Appendix B.

### 7.1 Current Comprehensive Plan Recommendations

The West Falls Church Transit Station Area (TSA) Comprehensive Plan Amendment (CPA) text contains recommendations regarding pedestrian circulation, as well as references to planned improvements in the Fairfax County Bicycle Master Plan and the Fairfax County Trails Plan. The intent of the pedestrian circulation system is to provide a network of walkways, including new routes and improvements to existing facilities, which will provide better connectivity within the West Falls Church TSA and between the West Falls Church Metrorail Station, anticipated new development, and the surrounding neighborhoods. The CPA also recommends development of a streetscape program for the portions of Leesburg Pike, Haycock Road, and Great Falls Street that front or are proximate to the West Falls Church TSA. Pedestrian comfort will be enhanced with the inclusion of street trees, pedestrian-scale lighting, street furniture, and other improvements as part of the streetscape program.

An effort is underway to update and synchronize the guidance in The Fairfax County Bicycle Master Plan and the Countywide Trails Plan via the new ActiveFairfax Transportation Plan. It is recognized that the facility recommendations noted in this section may change with the ActiveFairfax Transportation Plan. Additional information on the ActiveFairfax Transportation Plan is provided in the next section. The Fairfax County Bicycle Master Plan, shown in
Figure 4, proposes a bicycle lane along Shreve Road and Haycock Road, as well as for portions of


Figure 4: Fairfax County Bicycle Master Plan (Adopted October 28, 2014) Great Falls Street. The plan recommends a shared roadway for Grove Avenue from Fairfax County's
boundary line with the City of Falls Church to the West Falls Church Metrorail Station. Note that this map does not reflect the current City of Falls Church boundary line, and the road crossing shown on Redd Road near Pimmit Drive is planned as a pedestrian and bicycle stream crossing.

The Fairfax County Countywide Trails Plan, shown in Figure 5, proposes major paved trails, at least eight feet wide, along Shreve Road, Haycock Road, Leesburg Pike, and Great Falls Street.


Figure 5: Fairfax County Trails Plan (Amended through July 1, 2018)
Though some of the bicycle facilities and trails depicted in the previous two maps end at the Fairfax County boundary line, the experience of the user should not be disjointed. Coordination with plans outlined by the City of Falls Church is critical to ensure seamless connectivity within the study area.

### 7.2 ActiveFairfax Transportation Plan

Phase I of the ActiveFairfax Transportation Plan began in early 2021 and included an outreach campaign. As part of this outreach, two interactive maps were developed which allow the public to add public feedback. One of the maps, titled Key Destinations and Barriers to Active Transportation was consulted while developing the comprehensive list of recommendations for this study. An excerpt of
the map is displayed in Figure 6, which shows a scattering of blue markers on the map which were placed by the public. Clicking on a marker reveals a comment box with public feedback, and some may include attachments, such as photos of the subject area and supporting documentation for a potential improvement. At the outset of the West Falls Church Metrorail Area Active Transportation Study there were nearly 100 markers placed on the map within the study area alone.


Figure 6: Barriers to Active Transportation and Destinations Map:
https://apd.maps.arcgis.com/apps/CrowdsourceReporter/index.htm/?appid=9477c96772c34d35a5566d3233f10f2e

### 7.3 City of Falls Church Plans

Plans adopted by the City of Falls Church were also consulted to produce a complete picture of the planned pedestrian and bicycle networks within the West Falls Church Metrorail area. An excerpt from the City's Bicycle Master Plan, shown in Figure 7, depicts planned bicycle routes extending from the Washington and Old Dominion (W\&OD) Trail via a new connection to Birch Street and behind the Falls Plaza Shopping Center, as well as along Grove Avenue to Haycock Road.


Figure 7: Excerpt from City of Falls Church Bicycle Master Plan4:
https://www.fallschurchva.gov/DocumentCenter/View/3572/FallsChurch BicycleMasterPlan ConnectingCommunities?bidld=
As noted in Section 2.0, the West Falls project within the City of Falls Church is in the northwest quadrant of Leesburg Pike and Haycock Road, adjacent to the Virginia Tech and WMATA parcels.
Figures 8 and 9 show preliminary concepts produced by the development team for pedestrian and bicyclist circulation, respectively. A "bike path" as noted in the Falls Church Bicycle Circulation Plan can be either an on-street or off-street bicycle lane. A rendering of the West Falls development at the intersection of Leesburg Pike and Haycock Road is depicted in Figure 10. These plans are subject to change, but they provide an idea of how connections through the three properties can be achieved.

As part of the West Falls project, Fairfax County is coordinating with VDOT and the City of Falls Church on modifications to some of the nearby intersections. Access to Chestnut Street from Leesburg Pike will be relocated and a full movement signal will be installed with crosswalks for pedestrians. Crosswalks at the intersection of Leesburg Pike, Haycock Road, and Shreve Road will shift slightly to shorten crossing distances and a curb extension will be installed at the northwest corner of the intersection. The City of Falls Church also plans to repurpose the median on Haycock Road approaching Leesburg Pike to an additional through lane. Further details on the West Falls project, including streetscape plans and cross-sections, can be viewed on the project website:
http://www.fallschurchva.gov/1599/West-Falls-Project

[^3]

Figure 8: Pedestrian Circulation Concept Plan for the West Falls Church Joint Development


Figure 9: Bicycle Circulation Concept Plan for the West Falls Church Joint Development


Figure 10: West Falls development project rendering (credit: Hoffman \& Associates)


Figure 11: W\&OD Trail Connection project map: https://thenovaauthority.org/wp-
content/uploads/2019/12/CFC-006.pdf

Additionally, the City of Falls Church has secured funding from the Northern Virginia Transportation Authority (NVTA) for improvements on Shreve Road from Leesburg Pike to the W\&OD Trail connection south of Hickory Street, as shown in Figure 11. A 10-foot-wide shared use path (SUP) with a 6-foot landscape panel will be installed on the east side of Shreve Road, as well as a crosswalk near the intersection with Gordons Road. The project will provide an improved connection between the W\&OD Trail and the West Falls Church Metrorail Station and is being coordinated with FCDOT.

### 8.0 EXISTING CONDITIONS ASSESSMENT

### 8.1 Pedestrian Level of Comfort

Pedestrian Level of Comfort (PLOC) is a point-based system for rating pedestrian pathways and crossings based on factors that contribute to or detract from pedestrian comfort. In Fall 2019, the Montgomery County Planning Department developed the PLOC methodology and created an online interactive map of the county which scores pathways and street crossings based on the perceived level of comfort for pedestrians using those facilities. The scores account for several variables which include posted speed limit on the adjacent roadway, presence of bicycle lanes, and sidewalk width, among others. Montgomery County's PLOC also differentiates between land uses by designating zones as either urban or non-urban. An urban pathway, for example, should be wider to account for higher pedestrian traffic. The PLOC scores for the West Falls Church Metrorail Area study area are based on a methodology created by FCDOT for an urban context.

The PLOC scores for this study were calculated by assigning points to each variable, with a score of zero assigned to variables that are perceived to provide a baseline level of comfort, for example a pathway of six feet to less than eight feet, or a buffer width of four to less than 8 feet. Variables that detract from comfort, such as higher posted speed limits, or narrow pathways and buffers, add points to the raw score, while variables that contribute to comfort subtract points from the score, such as speed limits of 25 mph or less and pathways equal to or greater than eight feet wide. The scores for each variable were added for all possible combinations, then the raw score was converted to a PLOC score based on the five-point scale in Table 1.

Table 1: Pedestrian Level of Comfort Scale

| Level of Comfort |
| :---: |
| 1 = Very Comfortable |
| $2=$ Comfortable |
| 3 = Somewhat Comfortable |
| $4=$ Uncomfortable |
| $5=$ No Pathway |

The PLOC scores range from one, which is considered very comfortable, to five, which indicates the absence of a pedestrian facility. The following pages outline the variables included for rating pathways and provide examples of locations around the study area where PLOC scores have been applied.

The pathway factors included in this study are pathway width, posted speed limit, buffer width, presence of on-street parking lane, and presence of street trees. Wider pathways improve pedestrian comfort as pedestrians may be able to walk side-by-side, push strollers, or navigate a wheelchair without coming into conflict with other pedestrians. Slower roadway speed limits contribute to pedestrian comfort, as well as wider buffers along the pathway to increase the separation between cars and people. Wider buffers allow for the planting of larger street trees, which can enhance the
physical and visual separation between facilities and may provide shade for pedestrians. The presence of on-street parking provides further separation between the pathway and travel lanes. Table $\mathbf{2}$ shows the PLOC pathway score for all combinations of these variables.

Table 2: Pedestrian Level of Comfort for Pathways ${ }^{5}$

| Pathway width | Posted speed limit | Pathway buffer width/ parking lane (P) and street trees (ST) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Buffer width: 0 ft to <2 ft |  |  |  | Buffer width: 2 ft to <4 ft |  |  |  | Buffer width: 4 ft to $<8 \mathrm{ft}$ |  |  |  | Buffer width: $\geq 8 \mathrm{ft}$ |  |  |  |
|  |  | $\begin{array}{\|l} \text { P \& ST: } \\ \text { No } \end{array}$ | P: Yes, <br> ST: No | $\left\lvert\, \begin{aligned} & \text { P: No, } \\ & \text { ST: Yes } \end{aligned}\right.$ | $\left\lvert\, \begin{aligned} & \mathrm{P} \& \mathrm{ST}: \\ & \text { Yes } \end{aligned}\right.$ | $\begin{array}{\|l\|} \hline \text { P \& ST: } \\ \text { No } \\ \hline \end{array}$ | P: Yes, <br> ST: No | $\begin{aligned} & \text { P: No, } \\ & \text { ST: Yes } \end{aligned}$ | $\begin{aligned} & \text { P \& ST: } \\ & \text { Yes } \end{aligned}$ | $\begin{aligned} & \text { P \& ST: } \\ & \text { No } \end{aligned}$ | P: Yes, <br> ST: No | P: No, ST: Yes | $\begin{aligned} & \text { P \& ST: } \\ & \text { Yes } \end{aligned}$ | $\begin{array}{\|l} \text { P \& ST: } \\ \text { No } \end{array}$ | $\begin{aligned} & \text { P: Yes, } \\ & \text { ST: No } \end{aligned}$ | P: No, ST: Yes | $\begin{aligned} & \text { P \& ST: } \\ & \text { Yes } \end{aligned}$ |
| <5ft | $\leq 25 \mathrm{mph}$ | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 2 | 2 | 1 |
|  | 30 mph | 4 | 4 | 4 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 |
|  | 35 mph | 4 | 4 | 4 | 3 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 |
|  | $\geq 40 \mathrm{mph}$ | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 3 |
| 5 ft to <6ft | $\leq 25 \mathrm{mph}$ | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 2 | 1 | 1 |
|  | 30 mph | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 2 | 2 | 1 |
|  | 35 mph | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 |
|  | $\geq 40 \mathrm{mph}$ | 4 | 4 | 4 | 3 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 |
| $6 \mathrm{ft} \mathrm{to}<8 \mathrm{ft}$ | $\leq 25 \mathrm{mph}$ | 3 | 3 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 |
|  | 30 mph | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 2 | 1 | 1 |
|  | 35 mph | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 2 | 2 | 1 |
|  | $\geq 40 \mathrm{mph}$ | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 |
| $\geq 8 \mathrm{ft}$ | $\leq 25 \mathrm{mph}$ | 3 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|  | 30 mph | 3 | 3 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 |
|  | 35 mph | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 2 | 1 | 1 |
|  | $\geq 40 \mathrm{mph}$ | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 2 | 2 | 1 |

In addition, a point was added to the raw score for pathways that do not have a curb present, which may change the adjusted PLOC score in some cases. Presence of a bicycle lane was also considered in scoring the pathways as this feature provides an additional buffer between the pathway and the vehicular travel lanes. For the purposes of this study, off-street trails were automatically assigned a score of PLOC1 (Very Comfortable), though it is recognized there may be examples where comfort on these trails could be improved.

There are additional variables that affect pedestrian comfort that were not included in this assessment, such as roadway volume, pavement quality, barriers within the pathway, building zone width, frequency of curb cuts, and block length, among others. These variables and others are noted in Appendix D, which provides a more detailed description of PLOC. Pedestrians may experience a different level of comfort than what this report depicts for any given facility. Context and user experience should be considered together with the PLOC scores.

The map in Figure 12 displays PLOC scores for all sidewalks along public roadways within the one-mile study area.

[^4]

Figure 12: Pedestrian Level of Comfort for pathways in the West Falls Church Metrorail study area
The images on the following pages provide examples of pathway segments (highlighted in yellow) along Haycock Road, Leesburg Pike, and Shreve Road with their respective PLOC scores. Data was collected for all pathways along arterial, collector, and most local roads within the study area.


| Pathway <br> width | Posted <br> speed | Buffer <br> width | Parking <br> lane | Street <br> trees | PLOC |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $4^{\prime}$ | 30 mph | $2^{\prime}$ | No | No | Uncomfortable |

An example of an uncomfortable pathway segment (PLOC4) is depicted in Figure 13, which highlights the west side of Shreve Road approaching Leesburg Pike. The sidewalk along this segment of Shreve Road is only four-feet-wide, with a narrow two-foot-wide grass buffer strip between the sidewalk and curb. The posted speed limit on Shreve Road is 30 miles per hour at this location and there is not a parking lane, bicycle lane, or street trees, to provide an additional buffer between pedestrians and vehicles. As seen in the photo in Figure 14, there is a retaining wall for the parking lot on the west side of Shreve Road approaching Leesburg Pike which further restricts the walking space.

Figure 13: PLOC for west side of Shreve Road


Figure 14: Shreve Road, west side, approaching Leesburg Pike


| Pathway <br> width | Posted <br> speed | Buffer <br> width | Parking <br> lane | Street <br> trees | PLOC |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $6^{\prime}$ | 25 mph | $10^{\prime}$ | No | No | Comfortable |

Figure 15: PLOC for north side of Haycock Road


Figure 16: Haycock Road, north side, east of Turner Avenue

A pathway rated as comfortable (PLOC2) is shown in Figure 15. This segment of Haycock Road has a six-foot-wide asphalt trail that is seperated from the roadway by a grass buffer that is ten-feet-wide at a minimum. The adjacent roadway has a posted speed limit of 25 miles per hour.

As seen in the photo in Figure 16, this segment of the trail is partially shaded and well-maintained. There are several segments of the trail along Haycock Road where the pathway narrows and the buffer width decreases, bringing the score down to somewhat comfortable (PLOC3) or uncomfortable (PLOC4).

### 8.2 Bicycle Level of Traffic Stress

The Fairfax County Bicycle Map includes ratings for bicycle routes throughout Fairfax County based on the Level of Traffic Stress (LTS) methodology devised by Peter Furth, et al. ${ }^{6}$ which evaluates the stress a bicyclist may experience for roadway segments, intersection approaches, and unsignalized crossings. The Fairfax County Bicycle Map ${ }^{7}$ has four levels of comfort classification, which roughly translate to the LTS classifications:

1. Most Comfortable (LTS 1)- Suitable for most cyclists, including children. May have a wide, exclusive riding space, or a shared travel space with low speeds and very little vehicular traffic. Intersection approaches present little difficulty.
2. Somewhat Comfortable (LTS 2)- Suitable for most adults but requiring more attention from children. Facilities may be like those rated LTS 1, though intersections require more caution.
3. Less Comfortable (LTS 3)- Higher stress, but still suitable for some adults. May include a riding lane next to multilane traffic with moderate speeds, or a shared lane on a road with low-speed traffic and fewer travel lanes. There may be more crossing lanes at intersections, or higher speed vehicular traffic compared to LTS 2.
4. Use Caution (LTS 4)- Bicyclists may have to share a lane with heavy vehicular traffic. Higher speeds may also be present, and intersection crossings may be longer.

One of the objectives of the ActiveFairfax Transportation Plan is to update the Bicycle LTS methodology for Fairfax County. However, the Bicycle Map in its current state provides a useful guide for bicyclists seeking the most comfortable routes between destinations. Note that perceptions of comfort may vary, and like PLOC, there are other factors that may affect one's perceived level of comfort that are not accounted for in this methodology.

In Figure $17^{8}$ below, bicycling routes are displayed for a small portion of the study area based on their LTS. The green lines indicate routes that are classified as "Most Comfortable," which in this case are slow speed, low traffic, local streets with shared roadways for bicyclists. Routes that are least comfortable ("Use Caution") for bicyclists are depicted with red lines ${ }^{9}$. Many of the arterials in the study area, such as Leesburg Pike, Shreve Road, and Great Falls Street fall within this category. The purple line to the south represents the W\&OD Trail, which appears to connect to the West Falls Church

[^5]Metrorail Station via low-stress residential streets. However, Leesburg Pike interrupts these connections, as described below.


Figure 17: Bicycle LTS near the West Falls Church Metrorail Station
A closer look at the map reveals that there are no low-stress connections across Leesburg Pike for bicyclists. Dale Drive intersects Leesburg Pike at the northwest yellow circle on the map in Figure 18. The crossing is uncontrolled and unmarked across five travel lanes, with the interchange for I-66 located directly to the west. Though the speed limit for this section of Leesburg Pike is 25 miles per hour, vehicles often exit off the interstate at much higher speeds, making this crossing even more stressful for bicyclists. The yellow circle in the middle highlights the crossing of Leesburg Pike at Chestnut Street. This crossing is also uncontrolled and unmarked across five or more lanes of travel (depending on the crossing leg), though a signal at this intersection is proposed with the City of Falls Church project. While the posted speed limit for this segment of Leesburg Pike is 25 mph , it is heavily
traveled at 30,000 average daily traffic (ADT) ${ }^{11}$. The crossing at Shreve Road to the southeast, while controlled, is across seven lanes of travel on the western leg of the intersection and has a "Use Caution" LTS classification.


Figure 18: Leesburg Pike intersections at Dale Drive, Chestnut Street, and Shreve Road
Connections to the Metrorail station from the north are also lacking. Northwest along Leesburg Pike there is a bikeable sidewalk indicated on the LTS Map as a red-dashed line (refer to Figure 17). However, the sidewalk along this segment is only 3 to 5 -feet wide, which is not wide enough to accommodate both bicyclists and pedestrians, or two-way bicycle travel. Bicyclists travelling from the northeast may use a paved trail that runs along the north side of Haycock Road. The trail follows a bridge over I-66, as shown in Figure 19 before arriving at the Metro Access Road. As shown in the inset photo, the trail approaching the bridge is very narrow and not well-maintained. The asphalt trail transitions to a four-foot-wide sidewalk along the bridge.

[^6]

Figure 19: Trail along north side of Haycock Road approaching the Metrorail station from the northeast
Though most residential streets within the study area are classified as LTS 1, Grove Avenue depicted in blue in Figure 20, is rated LTS 2. There is a narrow asphalt pathway level with the roadway on the north side of the street and there is little room for bicyclists and vehicles to share the road, particularly approaching Haycock Road as shown in the inset photo (looking southeast). This is an important route as it links the Metrorail station to the W\&OD Trail through the City of Falls Church.


Figure 20: Trail along north side of Grove Avenue

### 8.3 Trails and Parks

In addition to the Washington and Old Dominion Railroad Regional Park, located in the southern portion of the study area and maintained by the Northern Virginia Regional Park Authority, there are several local parks and trails which fall under the jurisdiction of the Fairfax Country Park Authority. Many of these local parks contain trail systems which augment the active transportation network, especially in the northern portion of the study area, as shown on the map in Figure 21.

## A few notable examples

- Pimmit Run Stream Valley Park: Nearly 80 acres of park land that includes a trail network which extends from the Pimmit Hills neighborhood west of the Dulles Toll Road to the Potomac Hills neighborhood in the east. The trail system also connects to Olney Park and Kent Gardens Park and Stream Valley Trail.
- Haycock Longfellow Park: Just over 24 acres and located in the center of the community bounded by Great Falls Street, Kirby Road, Westmoreland Street, and Haycock Road. The trail system includes a mix of natural surface and asphalt trails.
- Lemon Road Park: Nearly 10 acres of park space located just north of Lemon Road Elementary School. The trail system connects the school to Pimmit Drive to the north and Idylwood Road to the south. Trail materials are asphalt and natural surface.


Figure 21: Map of local parks and trails north of the West Falls Church Metrorail station
https://www.fairfaxcounty.gov/parks/trails/trail-buddy

The local and regional parks and trails in the study area are important community assets and, in some cases, help supplement the sidewalk and roadway network. This can provide a great benefit to travelers seeking a route that is more comfortable than those provided along the area's roadways. Further detail on these roadways is provided in the next section.

### 8.4 Area Roadways

A list of the minor arterial and principal arterial roadways in the study area is provided in Table 3. The table includes speed limits for the roadways and the annual average daily traffic (AADT) for the year 2019, as measured by VDOT.

Table 3: Study area roadways

| Roadway Name | Classification* | Speed Limit | AADT (2019)** |
| :--- | :--- | :--- | :---: |
| Great Falls St: Kirby Rd to Haycock Rd | Minor Arterial | 35 MPH | 10,000 |
| Great Falls St: Haycock Rd to County Line | Minor Arterial | 35 MPH | 8,900 |
| Haycock Rd: Leesburg Pike to Great Falls St | Minor Arterial | $25-35 \mathrm{MPH}$ | 12,000 |


| Roadway Name | Classification* | Speed Limit | AADT (2019)** |
| :--- | :--- | :--- | :---: |
| Haycock Rd: Great Falls St to Westmoreland St | Minor Arterial | 25 MPH | 6,400 |
| Idylwood Rd: Gallows Rd to Leesburg Pike | Minor Arterial | 35 MPH | 11,000 |
| Idylwood Rd: Leesburg Pike to Great Falls St | Minor Arterial | $25-35 \mathrm{MPH}$ | 9,400 |
| Kirby Rd: Great Falls St to Westmoreland St | Minor Arterial | 35 MPH | 11,000 |
| Leesburg Pike: I-495 to I-66 | Principal Arterial | 35 MPH | 42,000 |
| Leesburg Pike: I-66 to County Line | Principal Arterial | $25-35 \mathrm{MPH}$ | 30,000 |
| Shreve Rd: Buckelew Dr to Leesburg Pike | Minor Arterial | 30 MPH | 10,000 |
| Westmoreland St: Haycock Rd to Kirby Rd | Minor Arterial | 25 MPH | 9,000 |

*https://www.fairfaxcounty.gov/planning-development/sites/planning-development/files/assets/compplan/policy/transportation.pdf
** https://virginiadot.org/info/2019 traffic data.asp

The West Falls development project in the City of Falls Church and the potential redevelopment of the WMATA and Virginia Tech parcels in Fairfax County, along with other nearby projects, will likely result in an increase in traffic on the area's roadways. The map in Figure $\mathbf{2 2}$ depicts roadways in the study area along with their asssociated pre-pandemic (2019) average daily traffic (ADT) volumes and volumes forceasted in the year 2045, assuming much of the planned development has been built out. The year 2045 was used to correspond with the horizon year analyzed in the traffic analysis for the West Falls Church TSA CPA.


Figure 22: Pre-pandemic (2019) ADT and future forecasted (2045) daily traffic volumes

### 8.5 Crash History

Information on crashes invoving pedestrians was also collected within a 5-year period back from March, 2022 (see Figure 23). The crash data was collected from VDOT's ArcGIS map to include all pedestrian injuries within the one-mile study area. Many of the pedestrian injuries occurred along roadways with heavier traffic volumes, such as Leesburg Pike and Haycock Road, and one fatality occurred along Shreve Road proximate to the W\&OD Trail near Hickory Street.


Figure 23: VDOT 5-year crash data: pedestrian incidents within the one-mile study area radius (as of March, 2022) https://www.arcgis.com/home/webmap/viewer.htm/?webmap=b086753548b248539d5d58a8710ce087

### 8.6 Vulnerability Index

The Fairfax County Vulnerability Index is a tool that classifies census tracts into five different classes based on a combination of factors that indicate the level of vulnerability for the average resident (see Figure 24). Categories range from Very High (most vulnerable) to Very Low (least vulnerable) and include data from the 2016-2020 American Community Survey, including, for example, median household income, vehicle ownership, and educational attainment. The Vulnerability Index may be useful in identifying the unique set of challenges faced by specific segments of the population. For
example, low car ownership may suggest that a higher portion of the census tract uses transit, or modes of active transportation. It is especially important to ensure that active transportation networks are complete, safe, and comfortable for those users that have fewer travel options available to them.


Figure 24: Fairfax County Vulnerability Index near the West Falls Church Metrorail station: https://fairfaxcountygis.maps.arcgis.com/apps/webappviewer/index.htm/?id=3e53aba65959421ab352f63096273a51

The data collected on existing conditions for the study area was shared with the Advisory Group to aid in their discussions. The next section lists recommendations for pedestrian and bicycle improvements in the study area.

### 9.0 PRELIMINARY RECOMMENDATIONS

### 9.1 Pedestrian Recommendations

Due to its large geographic area and high number of roadways, the one-mile study area was divided into four quadrants. The quadrants overlap with one another, but each contains recommendations that are focused on two or three primary roadways, as well as a few local streets. Characteristics for each quadrant are described in the subsections below.

The quadrant maps on the following pages display existing PLOC scores for all public roadways, recommended projects (pale blue, numbered boxes), recently completed projects (dark blue boxes), and currently planned projects (bright blue boxes). The list of recommendations was produced through consultation with the Advisory Group, community members, the Technical Group, and the ActiveFairfax Barriers to Active Transportation and Destinations Map.

## Southwest Quadrant

A large portion of the southwest quadrant (Figure 25) is made up of single family detached housing with very little sidewalk infrastructure. The major roadways through the quadrant are also missing sidewalks along certain segments, including along Shreve Road, Leesburg Pike, and Idylwood Road. The W\&OD Trail runs east and west along the southern portion of the quadrant. Pedestrian access to the Metrorail station from the trail can be made via Shreve Road, which becomes Haycock Road north of Leesburg Pike. However, much of this route is rated as uncomfortable (PLOC4) for pedestrians. The sidewalks along Leesburg Pike are also uncomfortable for those walking between Idylwood Road and the Metrorail station. Several of the recommendations for this quadrant seek to improve the pathways and crossings along these routes.

,Figure 25: Pedestrian Level of Comfort for pathways in the Southwest quadrant

## Northwest Quadrant

The northwest quadrant (Figure 26) has single family detached housing extending across and along Idylwood Road and Pimmit Drive. Many of the neighborhood streets have sidewalks, and most are rated as either somewhat comfortable or uncomfortable. There are also strip shopping malls along either side of Leesburg Pike west of Pimmit Drive, along with several apartment complexes. The Lemon Road Elementary School is located along Idylwood Road north of the WMATA railyard. Many of the recommendations in this quadrant seek to improve access to the school, especially through crossing treatments over Idylwood Road, such as high-visibility crosswalks, pedestrian refuge islands, and flashing beacons.


Figure 26: Pedestrian Level of Comfort for pathways for the Northwest quadrant

## Northeast Quadrant

The northeast quadrant (Figure 27) includes single family detached housing and several townhome communities, along with two schools: Haycock Elementary School and Longfellow Middle School. Like the southwest quadrant, many of the local streets have no sidewalks. Two of the primary roadways through the quadrant, Great Falls Street and Haycock Road, only have continuous pedestrian pathways on one side of the road. Recommendations for this quadrant focus on improving access along and across these two roadways, as well as crossing improvements at Westmoreland Street near the Haycock Elementary School.


| Level of Comfort |
| :---: |
| 1 = Very Comfortable |
| 2 = Comfortable |
| 3 = Somewhat Comfortable |
| $4=$ Uncomfortable |
| 5 = No Pathway |

G) Add mid-block crossing from Casemont Dr to north side of Haycock Rd. Must include construction of curb ramps and sidewalk

## H) Construct sidewalk on one side of

 Beacon LnRight-turn lane and pedestrian signal at Haycock Rd/Westmoreland St; pedestrian access between Temple and Haycock Elementary School on Westmoreland St. (Status: Complete Project \# PPTF01-03800)
I) Complete the asphalt path along south side of Haycock Rd east of Great Falls St
J) Construct sidewalk along west side of Great Falls St from Idylwood Rd to Grande Ln

Figure 27: Pedestrian Level of Comfort for pathways for the Northeast quadrant

## Southeast Quadrant

Like the northeast quadrant, Haycock Road and Great Falls Street are the primary roadways, and there are several local roadways within the single-family neighborhoods that have no sidewalks (Figure 28). Pedestrians walking between the Metrorail station and the neighborhoods northeast of I-66 must use the trail along the north side of Haycock Road, which becomes uncomfortable approaching and along the I-66 overpass southwest of Turner Avenue. Although it is rated as somewhat comfortable (PLOC3), the pathway along Grove Avenue is recommended for improvement as it provides an important connection between the W\&OD Trail in the City of Falls Church and the Metrorail station via Haycock Road and Metro Access Road. A set of projects coordinated with the City of Falls Church made intersection and sidewalk improvements to North West Street and an extensive portion of Great Falls Street. Further improvements to Great Falls Street are recommended, including additional crossings and new sidewalk on the west side of the roadway south of Haycock Road.


Figure 28: Pedestrian Level of Comfort for pathways for the Southeast quadrant

### 9.2 Bicycle Recommendations

The map below in Figure 29 shows the recommended bicycle network improvements within the twomile study area. The location of the bicycle facilites should be coordinated with property owners and neighboring jurisdictions as appropriate.


Figure 29: Recommended bicycle network improvements within the two-mile study area
A. Leesburg Pike from Pimmit Dr to Falls Church Dr: 12-foot-wide shared use path (SUP)
B. Haycock Rd from Westmoreland St to City of Falls Church: 8-foot-wide to 10 -foot-wide paved trail from Westmoreland St to City of Falls Church
C. Shreve Rd from the W\&OD Trail to Leesburg Pike: 10-foot-wide SUP
D. Grove Ave from City of Falls Church to Haycock Rd: Extend existing paved trail to the City of Falls Church and improve the surface
E. Great Falls St from Kirby Rd/Idylwood Rd to N West St: 8-foot-wide paved trail
F. Idylwood Rd from Virginia Ln to Leesburg Pike: 8-foot-wide paved trail
G. Westmoreland St from Haycock Rd to Arlington County: 8-foot-wide paved trail
H. Westmoreland St from Somerville Dr to Hopewood Dr: 8-foot-wide paved trail
I. Leesburg Pike from Lisle Ave/Ramada Rd to Pimmit Dr: 12-foot-wide SUP
J. West St from Lee Hwy to Fairwood Ln: 8-foot-wide paved trail
K. Great Falls St from Chain Bridge Rd to Kirby Rd/Idylwood: 8-foot-wide paved trail
L. Pimmit Dr from Idylwood Rd to Leesburg Pike: 8-foot-wide paved trail
M. Kirby Rd from Westmoreland St to Great Falls St: 8-foot-wide paved trail
N. Improve W\&OD Trail crossing at Virginia Ln: Install flashing beacons for better visibility

If implemented, the recommendations listed above and in Section 9.1 have the potential to create a much more comfortable environment for active transportation users in the study area. However, the combined list of 58 potential improvements is extensive, and the Advisory Group's ultimate task was to further refine the list and establish priorities. In addition to the existing conditions data shared with the Advisory Group, feedback was received from members of the community via the public comment period at the end of every Advisory Group meeting and three sets of community meetings. The feedback from these forums, along with an online community survey, are detailed in the next section.

### 10.0 COMMUNITY INPUT

### 10.1 Public Information Meetings

Three rounds of public information meetings were held, each with two sessions, where citizens and stakeholders were able to review project progress and provide input on analysis and recommendations. Details on those public meetings are as follows:

Round 1: Wednesday, February 9 and Saturday, February 12, 2022 (virtual).
Synopsis: Introduced project background, purpose, and scope, including study objectives, makeup of the Advisory and Technical Groups, and outline of existing conditions assessment methodology.

Round 2: Tuesday, May 17 and Thursday, May 19, 2022 (virtual).
Synopsis: Reviewed project background, purpose, and scope, including study objectives, makeup of the Advisory and Technical Groups, and outline of existing conditions assessment methodology. Shared results of the PLOC analysis and the list of recommendations for the study area. Announced the community survey and noted the next steps.

Round 3: Wednesday, October 26, 2022 (virtual) and Thursday, October 27, 2022 (Longfellow Middle School).
Synopsis: Presented the community survey results and the Advisory Group's list of priority projects. Reviewed components of the study report and solicited feedback from community members.

### 10.2 Community Survey Results

An online survey was open and available to the public from May 10, 2022 to June 13, 2022. The goal of the survey was to poll residents on the active transportation improvements that they felt should be prioritized. There were several questions on respondent demographics, and maps to indicate the locations of recommended improvements. A postcard was also mailed to approximately 4,000 residents within the one-mile study area to encourage participation in the survey and the community meetings. The survey closed with 441 responses. The survey questions and response can be found in Appendix E.

The top three selections from the community survey for each quadrant are noted below:

## Southwest quadrant

1. Improve pathway along Leesburg Pike from Idylwood Road to Falls Church Drive
2. Add high-visibility crosswalks at all interchange ramp crossings along Leesburg Pike, and install flashing beacons where appropriate
3. Improve safety and comfort crossing Leesburg Pike/Shreve Road/Haycock Road intersection, for example, decrease crossing distance, add pedestrian median, pedestrian lead time, exclusive pedestrian phase

## Northwest quadrant

1. Install accessible route to Lemon Road Elementary School from Pimmit Drive
2. Create accessible pedestrian route to Metrorail station from Idylwood Road
3. Add high-visibility crosswalks at the Pimmit Drive/Leesburg Pike intersection (all legs)

## Northeast quadrant

1. Add high-visibility crosswalks to all legs of the Great Falls Street and Haycock Road intersection. Must include construction of curb ramps and sidewalk
2. Construct sidewalk on east side of Great Falls Street north of Hutchison Street
3. Add mid-block crosswalk over Great Falls Street to access Pimmit Run Stream Valley Park

## Southeast quadrant

1. Improve pathway along north side of Haycock Road from Great Falls Street to Metro Access Road
2. Construct sidewalk along Turner Avenue from Grayson Place to Haycock Road
3. Add crosswalk over Turner Avenue along Haycock Road

The online survey also included a map of the two-mile radius for bicycle improvements. Refer to Figure 29 on page 41 for the bicycle improvements map. The top three selections from the community survey are below:

## Two-mile Bicycle Network Improvements

1. Haycock Road from Westmoreland Street to City of Falls Church
2. Shreve Road from the Washington and Old Dominion Trail to Leesburg Pike
3. Leesburg Pike from Pimmit Drive to Falls Church Drive

Community feedback was a critical component of the study and was part of the Advisory Group's considerations in selecting the projects that should be prioritized. The Advisory Group's priorities are noted in the next section.

### 11.0 ADVISORY GROUP RECOMMENDATIONS

The Advisory Group was not held to a specific methodology for prioritizing potential bicycle and pedestrian projects. Rather, the Advisory Group was asked to consider their personal knowledge of the study area, conversations with neighbors and community associations, data provided by Fairfax County staff, and the results of the community survey and feedback from community meetings to determine the projects that should be prioritized. Advisory Group members were also asked to provide a justification for each of their choices; for example, if the project is expected to benefit access to schools or the West Falls Church Metrorail station.

Several of the potential projects were combined to offer a more comprehensive approach to pedestrian network improvements. These instances can be identified by looking at the "Map ID" column in the tables on the following pages. Table 4 provides ranges for the cost estimates and the corresponding number of dollar signs for the subsequent tables in this section. The range of cost estimates are conservative to account for project complexities that may be identified later in the process.

Table 4: Cost estimate ranges

| Symbol | Cost Range |
| :--- | :--- |
| $\$$ | $<\$ 1 \mathrm{M}$ |
| $\$ \$$ | $\$ 1 \mathrm{M}$ to $<\$ 2 \mathrm{M}$ |
| $\$ \$ \$$ | $\$ 2 \mathrm{M}$ to $<\$ 5 \mathrm{M}$ |
| $\$ \$ \$$ | $>\$ 5 \mathrm{M}$ |

The recommended improvements should also incorporate pedestrian-scale lighting and placemaking elements, such as street trees, benches, and other amenities, where appropriate. These improvements would add to cost and are not included in the following estimates. The improvements identified below will reflect engineering assessments and design consideration. Public outreach to consult local community members will occur during the design process.

### 11.1 Southwest Quadrant

A summary of the Advisory Group's priority projects for the southwest quadrant is shown in Table 5 and are depicted on the map in Figure 30.

Table 5: Southwest Quadrant Priorities

| Rank | Project | Map ID | Type | Benefit(s) | Cost |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Improve safety and comfort crossing Leesburg Pike at Shreve Rd/Haycock Rd | H | Crossing | Access to Metrorail and regional trail system; pedestrian comfort; safety | \$\$ |
| 2 | Construct new pathway along the north side of Shreve Rd between Chestnut St and Leesburg Pike | G, I | Pathway | Access to Metrorail and regional trail system; pedestrian comfort; safety | \$\$\$ |
| 3 | Improve sidewalk along Leesburg Pike from Idylwood Rd to Falls Church Dr. Install flashing beacons at I-66 interchange crossings. ${ }^{12}$ | $\begin{aligned} & \text { A, C, } \\ & \text { E (NW) } \end{aligned}$ | Sidewalk/ pathway/ crossings | Access to Metrorail; improved visibility; pedestrian comfort; safety | \$\$\$\$ |
| 4 | Construct sidewalks along Gordons Rd and Chestnut St | F | Sidewalk | Pedestrian comfort; safety | \$\$ |

[^7]

Figure 30: Southwest quadrant map: Advisory Group priorities


Figure 31: Chestnut Street looking southwest toward Gordons Road

For the southwest quadrant, the Advisory Group recommended prioritizing access between the residential communities south of Leesburg Pike and the Metrorail station. Improving safety and comfort for active transportation users crossing Leesburg Pike at the intersection of Shreve Road and Haycock Road is a critical first step in fulfilling this objective. Potential solutions may include reducing the crossing distance over Leesburg Pike through curb extensions, repurposing the inside eastbound left turn lane for a pedestrian refuge island, and improving the signal operations for pedestrians. These improvements would require close coordination with VDOT, and a traffic assessment would likely need to be conducted to determine effects on vehicular operations, especially given that Leesburg Pike is a National Highway System (NHS) route. Fairfax County should also continue to engage with the City of Falls Church on proposed changes to this intersection. Members of the Advisory Group noted concerns about the removal of the median on Haycock Road approaching Leesburg Pike and the transition of travel lanes across the intersection to Shreve Road.

The cost for implementing crossing improvements on Leesburg Pike depends on the type of solution. Signal timing adjustments, which could also include the addition of a leading pedestrian interval (LPI) or an exclusive pedestrian phase, would fall within the low-end of the cost range. The higher cost solutions could include a combination of the solutions mentioned above.

The pathway along Leesburg Pike should also be improved. Low-cost solutions include repainting all intersection and interchange crossings with high-visibility markings, performing sidewalk maintenance to repair cracked and uneven surfaces and control overgrowth adjacent to the sidewalk, and installing pedestrian signals, such as flashing beacons, at interchange crossings. A higher cost solution would include installing a shared use path and wider buffer strip. This improvement should be coordinated with the Bus Rapid Transit (BRT) system planned along the Leesburg Pike corridor. Additional improvements to this section of Leesburg Pike are also included in Section 11.5.

Another priority is constructing a new sidewalk along the north side of Shreve Road between Chestnut Street and Leesburg Pike. Shreve Road is a major roadway in this quadrant and lacks quality sidewalks on both sides. The addition of sidewalk along the north side would significantly enhance walkability for
surrounding neighborhoods, particularly the Falls Hill neighborhood. Residents in these nearby communities do not have comfortable or convenient access to the West Falls Church Metrorail Station and likely choose to drive.

Chestnut Street (shown in Figure 31) and Gordons Road are two local roadways that connect Leesburg Pike to Shreve Road; both roadways contain sidewalk gaps. The proposed signal at Chestnut Street and Leesburg Pike may encourage more pedestrian traffic along these roadways. Constructing sidewalks and closing these gaps would significantly enhance walkability for pedestrians in these communities.

### 11.2 Northwest Quadrant

A summary of the Advisory Group's priority projects for the northwest quadrant is shown in Table 6 and are depicted on the map in Figure 32.

Table 6: Northwest Quadrant Priorities

| Rank | Project | Map ID | Type | Benefit(s) | Cost |
| :---: | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1}$ | Add pedestrian refuge on Idylwood Rd near <br> Lemon Road Elementary School | I | Crossing | Access to school; <br> safety | \$ |
| $\mathbf{2}$ | Make pathway from Pimmit Dr to Lemon <br> Road Elementary School ADA accessible | A | Pathway | Access to school; <br> safety | \$\$ |
| $\mathbf{3}$ | Create a secure pedestrian pathway to the <br> Metrorail Station from Idylwood Rd through <br> or along the WMATA railyard | G | Pathway | Access to Metrorail; <br> safety | \$\$\$\$ |
| $\mathbf{4}$ | Construct sidewalk along Redd Rd to <br> Idylwood Rd and provide crosswalk across <br> Redd Rd at Idylwood Rd. Improve visibility <br> by re-grading the embankment on the <br> corner of Idylwood Rd and Redd Rd. | B, H | Sidewalk/ | Access to school; <br> improved visibility; | \$\$ |
| $\mathbf{5}$ | Prossing <br> Pedestrian comfort; <br> intersection of Pimmit Dr and Leesburg Pike, <br> and <br> and add crosswalks to missing legs ${ }^{14}$ | D | Crossing | Access to Metrorail; <br> improved visibility; | \$ |

[^8]

Figure 32: Northwest quadrant map: Advisory Group priorities

Several of the Advisory Group's recommendations for the northwest quadrant are focused on improving access to Lemon Road Elementary School. These include installing a pedestrian refuge island on Idylwood Road at the existing crossing near Montview Court and creating an accessible route from Pimmit Drive to the elementary school. There is a project in the Transportation Priorities Plan (TPP 208) to connect Pimmit Drive and Idylwood Road via a pedestrian bridge on Redd Road. This future crossing, if combined with the Advisory Group's recommendations, could contribute to a more convenient pathway to the Lemon Road Elementary School. There is a steep stairway that connects Pimmit Drive to the Lemon Road Park (Figure 33). If creating an ADA pathway along this route proves infeasible, the Redd Road connection could serve as an alternative.

The recommendation to create a pedestrian path through the WMATA railyard to the north station entrance received a mixture of support and opposition among Advisory Group members. The project could provide a more convenient connection for residents northwest of the Metrorail station who would otherwise walk along Leesburg Pike to the trail on Falls Church Drive to access the station entrance. On the other hand, the project would likely be the costliest of all the recommendations in this study and some residents and WMATA have voiced concerns with


Figure 33: Stairway from Pimmit Drive to Lemon Road Park security at the railyard. A feasibility study for this connection was conducted in 2011, which may be consulted if this project is considered. Additional details on this study can be found in Appendix F.

### 11.3 Northeast Quadrant

A summary of the Advisory Group's priority projects for the northeast quadrant is shown in Table 7 and are depicted on the map in Figure 34.

Table 7: Northeast Quadrant Priorities

| Rank | Project | Map ID | Type | Benefit(s) | Cost |
| :---: | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1}$ | Add mid-block crossing on Haycock Rd <br> near Casemont Dr with flashing beacons | G | Crossing | Access to Metrorail; <br> access to school; <br> safety | \$ |
| $\mathbf{2}$ | Install no right-turn on red or yield to <br> pedestrian signage at Westmoreland St/ <br> Haycock Rd intersection. Provide leading <br> pedestrian interval and construct corner <br> expansion/bulb-outs | F | Intersection <br> improvement | Pedestrian comfort; <br> Access to school; <br> safety | \$ |
| $\mathbf{3}$ | Add crossing on Great Falls St at <br> Hutchison St and add sidewalk on | C | Crossing/ <br> sidewalk <br> Hutchison St from Great Falls St to <br> Reynolds St | Access to school; <br> improved visibility; <br> pedestrian comfort; <br> safety | \$\$ |



Figure 34: Northeast quadrant map: Advisory Group priorities


Figure 35: Intersection of Haycock Road and Casemont Drive looking northeast

The Advisory Group's priorities for the northeast quadrant were selected for their potential for improving access to nearby schools including Haycock Elementary School and Longfellow Middle School. A mid-block crossing is recommended over Haycock Road near its intersection with Casemont Drive (see Figure 35). Some students currently walk to Westmoreland Street via Beacon Lane, but Beacon Lane lacks sidewalks. This crossing could offer students an alternative route via the path along the north side of Haycock Road. The location of this crossing must consider driver and pedestrian visibility due to the topography near this intersection. Further enhancements may include upgraded curb ramps, sidewalks, and flashing beacons.

### 11.4 Southeast Quadrant

A summary of the Advisory Group's priority projects for the southeast quadrant is shown in Table 8 and are depicted on the map in Figure 36.

Table 8: Southeast Quadrant Priorities

| Rank | Project | Map ID | Type | Benefit(s) | Cost |
| :---: | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1}$ | Improve pathway along Haycock Rd from <br> Great Falls St to Metro Access Rd. Add <br> high-visibility crosswalks on all legs at the <br> intersection of Great Falls St and Haycock <br> Rd and on Turner Ave at Haycock Rd | B, C, <br> D (NE) | Pathway/ <br> crossings | Access to Metrorail; <br> access to school; <br> improved visibility; <br> pedestrian comfort; <br> bicyclist comfort; <br> safety | \$\$\$\$ |
| $\mathbf{2}$ | Construct sidewalk along one side of <br> Turner Ave from Grayson Pl to Haycock Rd | A | Sidewalk | Access to Metrorail; <br> pedestrian comfort; <br> safety | \$\$ |
| $\mathbf{3}$ | Improve pathway along Grove Ave <br> approaching Haycock Rd | E | Pathway | Access to Metrorail; <br> pedestrian comfort; <br> safety | \$\$ |
| $\mathbf{4}$ | Add crosswalk on Great Falls St at Moly Dr | G | Crossing | Access to Metrorail; <br> access to school; <br> pedestrian comfort; | \$ |



Figure 36: Southeast quadrant map: Advisory Group priorities ${ }^{15}$

[^9]One of the projects in the southeast quadrant that gained the most attention and support from the Advisory Group and surrounding communities is the pathway along the north side of Haycock Road extending from Great Falls Street to the Metro Access Road southwest of the I-66 overpass. The intersection of Great Falls Street and Haycock Road has no crosswalks along the southwest and southeast legs, and the two crosswalks present have standard markings. Adding these crosswalks will require new sidewalk and curb ramps on the southwest corner of the intersection. Segments of the Haycock Road pathway immediately east and west of the intersection with Great Falls Street have little separation from the roadway and no curb (see Figure 37). Continuing southwest, the path by Turner Avenue approaching the l-66 overpass is steep, narrow, and overgrown with vegetation. The sidewalk along the overpass has no protective barriers, and is very narrow and uneven in places, with cracks and overgrowth (see Figure 38).


Figure 37: Northeast corner of Haycock Road and Great Falls Street


Figure 38: Haycock Road looking northeast on the l-66 overpass

The Advisory Group recommends comprehensive, coordinated safety and access improvements on the Haycock Road trail from Great Falls Street to the Metro Access Road. Improvements should include the following, at a minimum.

- Increase the trail width to an 8 to 10-foot-wide paved trail from Great Falls Street to Metro Access Road to accommodate pedestrians and bicyclists.
- Maintain separation from the roadway. Install curb and gutter where sufficient buffer width cannot be achieved.
- Stormwater management needs should be carefully considered along the entirety of the trail.
- Improve the trail's approach to the I-66 overpass southwest of Turner Avenue.
- Include handrails to accommodate all ages and abilities and decrease pathway slope, where feasible.
- Relocate the guardrail near Turner Avenue to the opposite side of the trail to allow for a narrowing of the travel lanes between Turner Avenue and the I-66 overpass.
- Increase the pathway width along the I-66 overpass.
- Remove the outside southbound travel lane on Haycock Road. Repurpose with a painted buffer or bicycle lane as a short-term solution.
- Install a protective barrier along the bridge walkway, such as a jersey barrier.
- Improve crossings by adding high-visibility crosswalks over all legs of the Great Falls Street and Haycock Road intersection, and across Turner Avenue.
- Additional crosswalks at Great Falls Street and Haycock Road will require new sidewalks, curb and gutter, and curb ramps. Corner curb extensions may also be appropriate.
- Assess whether updated signage, such as "No Right Turn on Red" may be appropriate at signalized approaches.
- Include pedestrian-scale lighting along the trail.


### 11.5 Two-Mile Bicycle Network Improvements

Priorities for bicycle network improvements were selected in part due to their proximity to the Metrorail station and the W\&OD Trail and closely align with the Community Survey rankings. The priorities are listed in Table 9 and are depicted in the map in Figure 39.

## Table 9: Bicycle Network Priorities

| Rank | Project | Map ID |
| :---: | :--- | :--- |
| $\mathbf{1}$ | Haycock Rd from Westmoreland St to City of Falls Church: $\mathbf{8}^{\prime}$ to $10^{\prime}$ paved trail | B |
| $\mathbf{2}$ | Shreve Rd from the W\&OD Trail to Leesburg Pike: 10' shared use path ${ }^{16}$ | C |
| $\mathbf{3}$ | Leesburg Pike from Pimmit Dr to Falls Church Dr: 12' shared use path | A |
| $\mathbf{4}$ | Improve the W\&OD Trail crossing at Virginia Ln: install flashing beacons for <br> better visibility | N |

It is worth noting that the top three priorities fall within the one-mile radius and are related to projects that are prioritized in the one-mile quadrant maps. The fourth-ranked project is specific to a crossing

[^10]along the W\&OD Trail just outside of the one-mile radius. Considerations for each of the four projects are listed below:

1. Haycock Road from Westmoreland Street to Fairfax County boundary line: This project should include a widening of the trail along the north side of Haycock Road from Westmoreland Street to the Fairfax County boundary line with the City of Falls Church. Improvements to the trail should include the recommendations noted in section 10.4. A road diet should be considered for the section of Haycock Road south of the I-66 overpass to adjust the curb line and provide more space to active transportation users off-street. Improvements along the southern section should also be coordinated with the City of Falls Church to ensure that facility types are aligned.
2. Shreve Road from the W\&OD Trail to Leesburg Pike: This section of Shreve Road provides a critical link between the W\&OD Trail and the West Falls Church Metrorail Station. Improvements along the south side of Shreve Road are planned from the W\&OD Trail to Leesburg Pike as part of the NVTA-funded grant awarded to the City of Falls Church. However, a pathway should also be included along the north side of the roadway from Pinecastle Road to Leesburg Pike. The width of the pathway and landscape buffer will depend on the limited right-of-way along Shreve Road, but it should be designed to accommodate all trail users. The project should include the recommendations from southwest quadrant map numbers 7,8 , and 9 .
3. Leesburg Pike from Pimmit Drive to Falls Church Drive: Bicyclists should be accommodated offstreet along Leesburg Pike due to high traffic volumes and posted speed limit. Improvements to the bicycle accommodations along Leesburg Pike should include the recommendations from southwest quadrant map numbers 1 and 3 , and northwest quadrant map numbers 4 and 5 . At a minimum, a 12 -foot SUP should be provided along the north side of the roadway with a wide landscaped buffer.
4. Improve the W\&OD Trail crossing at Virginia Lane: This improvement will need to be coordinated with NOVA Parks and VDOT. The crossing runs parallel to Shreve Road and is located at the bottom of a hill where there is often higher-speed bicycle traffic. The crossing was recently improved from standard to high-visibility markings, including tactile surfaces on the trail approaches at Virginia Lane. Additional improvements may include flashing beacons to alert drivers and trail users that they are approaching the crossing.


Figure 39: Bicycle map: Advisory Group priorities

### 12.0 OTHER POTENTIAL RECOMMENDATIONS

There are other ways to improve pedestrian comfort and bicycle level of traffic stress and encourage active transportation use in the West Falls Church Metrorail area; for example, the addition of street trees and pedestrian-scale lighting along trails and sidewalks. The Advisory Group also acknowledged some of the common implementation challenges associated with new sidewalk construction and requested that Fairfax County staff explore other opportunities for active transportation improvements, especially solutions that could be implemented relatively quickly and at low cost. Three potential solutions are offered below, followed by a list of additional studies recommended by the Advisory Group.

### 12.1 Road Diet

One way to allocate additional space for active transportation users is through a road diet. A road diet generally removes travel lanes from a roadway to repurpose that space for other uses or modes of travel. The most common application is to convert an undivided four-lane roadway to a three-lane roadway consisting of two through lanes and a center two-way left-turn lane. The space saved often allows for the painting of bicycle lanes, and studies have shown that these treatments can result in significant crash reductions. ${ }^{17}$ Road diets have been implemented in many parts of Fairfax County and can sometimes be implemented as part of VDOT repaving projects.

Although much more costly, road diets may involve extensions of the curb line into the roadway to provide wider sidewalks and buffers for pedestrians. Travel lanes could also be repurposed for onstreet parking or dedicated transit lanes. The image in Figure $\mathbf{4 0}$ depicts an example of a road diet that creates a multimodal street by repurposing much of the roadway. Note that pedestrians crossing this roadway have a much shorter exposure to traffic.

[^11]

Figure 40: Road Diet (http://carfreeamerica.net/road-diet-guide/)
Possible candidates for a road diet may be Haycock Road between Turner Avenue and the City of Falls Church, and Great Falls Street on the I-66 overpass. However, before such a solution is considered, an assessment should be performed in coordination with VDOT to determine the needs of the various modes and impacts to vehicular capacity, as well as to garner feedback from adjacent stakeholders, property owners, and the community. Impacts to vehicular traffic should be weighed against the potential benefits to active transportation modes.

### 12.2 Slow Streets

Another idea intended to share more roadway space with active transportation users is the slow streets concept, also known as shared streets. During the height of the COVID-19 pandemic, many jurisdictions around the country were grappling with the challenge of maintaining social distance on narrow pedestrian pathways. This issue was exacerbated as people began to make fewer trips by car, and especially in the warmer months when more people began walking outdoors. Slow streets were touted as a quick, low-cost answer to this problem. Temporary barriers and signage were put in place on some local streets to designate that segment of street as a shared space for vehicles, pedestrians, and bicyclists (see Figure 41). Typical characteristics of a slow street include:

- Speeds of 15 MPH or less
- Partial barriers at entry points with signage
- Allow local vehicular access, deliveries, and emergency vehicles, only
- Traffic calming elements, such as chicanes


Figure 41: Slow Street (https://nacto.org/publication/streets-for-pandemic-response-recovery/emerging-street-strategies/slowstreets/)

Slow streets have not been implemented in Fairfax County, though the concept was used temporarily in Washington, D.C. As shown in Figure 42, some jurisdictions around the country have put more permanent slow streets measures in place, including in parts of San Francisco and Los Angeles. Fairfax County is also exploring the idea through the Safe Streets for All Program, which is an initiative aimed at addressing transportation safety issues for active transportation users.


Figure 42: Post-pandemic Slow Street: (https://www.sfmta.com/sites/default/files/reports-anddocuments/2021/09/slow streets design toolkit document lakest.pdf)

As a first step, one or two local streets should be selected to test as a temporary pilot project. Good candidates for such a project may be Chestnut Street and Gordons Road between Dale Drive and Shreve Road, and Highland Avenue between Haycock Road and North West Street. As with road diets, slow street projects would require an assessment of the potential traffic impacts and must be closely coordinated with VDOT and affected members of the community.

### 12.3 One-Way Local Streets

The map in Figure 43 shows a one-way street concept for the Falls Hill neighborhood, with blue arrows indicating the direction of travel. Designating these streets as one-way may allow enough space for the construction of sidewalks, while maintaining parking for residents on both sides of the street. The Jefferson Manor subdivision, another area of Fairfax County located about a five-minute walk from the Huntington Metrorail station, contains several one-way streets. These streets typically have one travel lane, on-street parking lanes and a five-foot wide sidewalk with curb and gutter on both sides. A similar configuration may be feasible in some areas proximate to the West Falls Church Metrorail station.


Figure 43: Concept for one-way streets in the Falls Hill neighborhood

### 12.4 Additional Studies

Although the West Falls Church Metrorail Area Active Transportation Study encompassed a large study area, the Advisory Group recommended that a few of the major roadways through the area could benefit from further study. The Advisory Group raised concerns about the need for more traffic enforcement on area roadways, especially to discourage speeding. They recommend speed studies be undertaken to determine whether the posted speed limits are appropriate for given roadways. The Advisory Group also recommends comprehensive corridor studies that focus on multimodal improvements along a single roadway. The following is a list of potential future studies recommended by the Advisory Group.

- Haycock Road Corridor Study: A comprehensive study of Haycock Road from Westmoreland Street to the Fairfax County boundary line with the City of Falls Church. This study should include the recommended improvements and considerations listed in Section 11.4.
- Great Falls Street Corridor Study: Similar to the Westmoreland Street Corridor Study, which runs parallel to this roadway, this study would assess the existing conditions along the corridor and recommend roadway and active transportation improvements from Chain Bridge Road to the Fairfax County boundary with the City of Falls Church.
- Great Falls Street Speed Study: A study to determine whether a change in the posted speed limit is warranted on Great Falls Street from Chain Bridge Road to the Fairfax County boundary with the City of Falls Church.
- Leesburg Pike Corridor Study: A study to assess multimodal transportation along Leesburg Pike from Idylwood Road to the Fairfax County boundary line with the City of Falls Church. This may be fulfilled through the ongoing Route 7 BRT study.

It is important to recognize that project costs and timelines will make it difficult to realize all the improvements proposed in this study within the near future. The next section describes some of the funding sources available to Fairfax County and suggests some potential strategies for funding projects.

### 13.0 TRANSPORTATION FUNDING

There are a variety of transportation projects in Fairfax County which are funded through various sources. Most transportation projects are funded by more than one revenue source, including sources at the local, regional, state, and federal levels, or through private contributions. Expected revenues may be committed to scheduling and funding transportation projects as part of transportation programming schemes. Each program and funding source has its own set of requirements. A list of transportation programming and revenue sources is included in Table 10.

Table 10: Transportation programming and revenue sources

| Local Programming |  |
| :---: | :---: |
| - Annual County Budget <br> - Capital Improvement Program | - Transportation Priorities Plan |
| Local Revenue Sources |  |
| - General Obligation Bonds <br> - Revenue Bonds <br> - General Funds <br> - Special Tax Districts <br> - Service Districts | - Commercial and Industrial Property Tax <br> - NVTA 30\% Local Funding <br> - Developer Contributions / Proffers <br> - Transit Fares; Advertising; etc. |
| Regional Programming |  |
| - Transportation Planning Board: Six-Year Transportation Improvement Program | - NVTA Six-Year Program: Projects funded by NVTA 70\% revenues |
| Regional Revenue Sources |  |
| - Tolls/ Concessionaire Agreements | - Regional Gas Tax (Statutorily directed to WMATA) |
| Statewide Programming |  |
| - Six-Year Improvement Program: Approved by Commonwealth Transportation Board <br> - Smart Scale <br> - State of Good Repair <br> - Interstate Operations and Enhancement Program | - Virginia Highway Safety Improvement Program <br> - Special Structures <br> - Revenue Sharing: $100 \%$ match state funding program, $\$ 5 \mathrm{M}$ per year per locality <br> - State Aid for Transit: Merit-based and Transit Ridership Incentive Program |
| Federal Programming |  |
| - Discretionary Grants (RAISE, INFRA, MEGA, FTA) <br> - Earmarks <br> - Defense Access Roads <br> - Transportation Alternatives (TA) Set-Asides: TA, Safe Routes to Schools, Boulevards from Divided Highways, Recreational Trails | - Formula Grants <br> - Congestion Mitigation and Air Quality (CMAQ) <br> - Regional Surface Transportation Program: Recommendations submitted by NVTA |

In 2021 the Board of Supervisors authorized $\$ 100$ million for pedestrian and bicycle safety projects over six years. The first $\$ 5$ million was allocated in January 2022 and FCDOT staff have created a prioritization methodology for project selection. The list of initial projects will be presented to the Board at a forthcoming meeting. An additional \$25.21 million was allocated as part of FY 2022 Carryover funds from the General Fund. The pedestrian refuge on Idylwood Road at the Lemon Road

Elementary School has been identified as a potential project in this initial round of funding. This project was ranked number one by the Advisory Group in the northwest quadrant, identified as Map ID "I".

Strategies for funding improvements to active transportation should consider the relative cost and ease of implementation for each project along with the expected benefits. This study recommends several improvements that are relatively low-cost, such as high-visibility crosswalks at intersections and mid-block crosswalks. Many of these projects are also located near schools. The Safe Routes to School Program (SRTS) and the Safe Streets and Roads for All (SS4A) law are potential sources for funding these projects. The Redd Road crossing at Idylwood Road has been put forward as one such project eligible for SS4A. The Advisory Group ranked this project fourth in the northwest quadrant, identified as Map ID "H".

Rezoning cases for the WMATA and Virginia Tech parcels will include an assessment of impacts to transportation. The expected impacts identified as part of this assessment may require mitigation measures including, for example, improvements to the pedestrian infrastructure that links the parcels to the surrounding neighborhoods. Proffer negotiations between Fairfax County and the developers will consider the nexus and proportionality of proposed off-site projects in relation to the subject site.

### 14.0 CONCLUSION

Fairfax County is striving to improve conditions for active transportation users through projects that provide comfortable, safe, and low-stress facilities. Several parts of the County, including areas surrounding the West Falls Church Metrorail study area, were planned and built in a time when consideration for vehicular traffic often came at the expense of active transportation accommodations, such as sidewalks. Providing active transportation accommodations in a built-environment can be challenging and costly, but it is vital, especially for areas that are focused on transit-oriented development. Safe and comfortable sidewalks and bicycle facilities may encourage transit usage as they can provide access to more people within transit station areas.

Through community participation and the support of the Advisory Group and Technical Group, a comprehensive list of improvements has been identified and prioritized for the West Falls Church Metrorail study area. As the Board of Supervisors continues to pursue strategies for the funding and implementation of active transportation projects, this report may be a resource for where to direct their efforts in the West Falls Church Metrorail area.

## APPENDIX A - Follow-on Motion

- Approval of Plan Amendment 2018-II-1M, as recommended by the Planning Commission.
- That the Countywide Transportation Plan Map and Community Planning Sector Maps be updated as shown in the Staff Report

Chairman McKay and Supervisor Lusk jointly seconded the motion.
Following discussion regarding the application, the question was called on the motion and it carried by unanimous vote.

Jointly with Supervisor Palchik, Supervisor Foust moved that the Board direct staff to develop an active Transportation Plan for the West Falls Church TSA and surrounding area. This plan should include an existing conditions assessment to be performed within the pedestrian and bicycle access sheds of the Metro rail station and should identify barriers to access inadequate facilities and other areas for improvement. Following this assessment, staff should conduct outreach to solicit community feedback on proposed recommendations and develop priorities, including short-term and long-term projects. The plan should identify potential opportunities for public and private funding sources for the proposed improvements. Development of the plan will be performed by County staff and does not require dedicated County funds. Chairman McKay and Supervisor Palchik jointly seconded the motion.

Supervisor Palchik clarified that this study will also be able to address existing concerns in the community, as well as take into consideration the recommendations that have already been jointly provided with the Virginia Department of Transportation of the Shreve Road study.

Following discussion regarding the motion, the question was called on the motion and it carried by unanimous vote.
49. CHAIRMAN MCKAY'S VOTE ON THE 4 P.M. PUBLIC HEARING ON A PROPOSED ZONING ORDINANCE AMENDMENT TO NEW CHAPTER 112.1, REGARDING SPECIAL PERMIT FEES AND OTHER MINOR REVISIONS (6:51 p.m.)
(NOTE: Earlier in the meeting, this public hearing was held. See Clerk's Summary Item \#47.)

Chairman McKay asked the Clerk to record him as voting "AYE" for the 4 p.m. Public Hearing on a Proposed Zoning Ordinance Amendment to New Chapter 112.1, Regarding Special Permit Fees and Other Minor Revisions.
50. BOARD ADJOURNMENT (7:52 p.m.)

At 7:52 p.m. the Board adjourned.
https://www.fairfaxcounty.gov/boardofsupervisors/sites/boardofsupervisors/files/assets/meeting-materials/2021/board/july13-board-summary.pdf

## APPENDIX B - Transportation Priorities Plan

An update to the Fairfax County Transportation Priorities Plan (TPP) was approved by the Board of Supervisors on December 3, 2019. The TPP includes a list of transportation projects to be prioritized within FY 2020-2025. The full list of projects can be found here:
https://www.fairfaxcounty.gov/transportation/tpp. A map of FCDOT Capital Projects can be found here:
https://fairfaxcountygis.maps.arcgis.com/apps/Viewer/index.html?appid=31d474851ec649398c5950fe c5fde64b\#

In January 2014, after two years of public input and analysis, the Fairfax County Board approved over \$1.4B in Transportation Priorities Plan (TPP), which set priorities for transportation over a six-year period (FY 2015-FY 2020). This included approximately 220 projects (including road widenings, bike and pedestrian improvements, transit service, etc.). The expected revenues included the funds that the County expected to reasonably receive from all funding sources.

In December 2019, the Board approved an updated TPP, with approximately $\$ 3.0$ billion of transportation improvements. The FY 2020-2025 TPP includes a list of projects to continue, as well as a list of numerous projects that will be deferred due to the diversion of significant regional revenues to WMATA state of good repair needs. This includes projects funding through various programs/sources.

TPP projects were evaluated based on a variety of factors.

- Congestion Reduction
- Mode Balance
- Safety
- Travel Time Savings
- Community Input
- School and Park Access
- Healthy Communities Initiative
- Countywide Balance
- Access to Transit Centers
- Air Quality
- Economic Development (support for revitalization areas and major Activity Centers)
- Regional Consideration (included in NVTA TransAction)
- One Fairfax
- Economically Disadvantaged Populations
- Disabled/Elderly Populations
- Cultural Diversity

Below in Table 11 is a list of some of the completed and planned projects in the study area. This includes TPP projects as well as other relevant projects from other plans, as noted.

Table 11: FCDOT Capital Projects (created on 8.16.2022)

| ID | Project Name | Status |
| :--- | :--- | :--- |
| TPP 186 | Westmoreland Street Walkway from Kirby Road to Lemon Road | Initiated |
| TPP 187 | Westmoreland Street and Rosemont Drive Bike Lanes | Construction |
| TPP 142 | Kirby Road Walkway from Ivy Hill Drive to Corliss Court | Complete |
| TPP 141 | Kirby Road Walkway from Halsey Road to Franklin Avenue | Construction |
| TPP 349 | Kirby Road Sidewalk from Chesterbrook Pool to east of Chesterbrook <br> Elementary School | Complete |
| TPP 21001 | Westmoreland Street and Hopewood Drive Intersection Improvements | Complete |
| TPP 185 | TMSAMS Pavement marking plans | On-hold |
| TPP 201 | Great Falls Street Walkway from Grande Lane to Haycock Road | Initiated |
| TPP 203 | Idylwood Road Walkway from Friendship Lane to Stephanie Marie Drive | Initiated |
| TPP 136 | Idylwood Road from Norwalk Street to Eastman Drive | Complete |
| TPP 137 | Idylwood Road Walkway | Initiated |
| PPTF01-06300 | Idylwood Road Sidewalk | Complete |
| TPP 208 | Redd Road Walkway | Initiated |
| TMSAMS | Idylwood Road Trail | On-hold |
| TPP 20065 | Birch Street Sidewalk | Complete |
| TPP 202 | Great Falls Street Walkway from I-66 Bridge to North West Street |  |
| TPP 350 | North West Street Sidewalk from Great Falls Street to Brilyn Place | Complete |

## West Falls Church Active Transportation Study: Scope of Work

1. Goal - As stated in the adopted Comprehensive Plan, the goal toward which this study will contribute is:
"Travel within and surrounding the TSA should be safe, accessible, comfortable, and intuitive for all modes of active transportation including walking, bicycling, and other forms of nonmotorized travel. Infrastructure should be of sufficient size and have adequate connections for people trying to access the West Falls Church Metrorail Station, including from neighborhoods along Haycock Road toward Westmoreland Street, the Falls Hill area along Route 7, and from the Washington \& Old Dominion (W\&OD) Trail, a major regional trail located about a half mile south of the West Falls Church Metrorail Station."
2. Purpose - Through a community-driven and led process, document deficiencies in active transportation ${ }^{1}$ infrastructure within the West Falls Church study area (Figure 2). Based on community feedback, identify and prioritize improvements to active transportation within the study area, and work with County officials to identify potential opportunities for funding.

This study will address the follow-on motion to the West Falls Church TSA Comprehensive Plan Amendment (CPA), which was adopted by the Board of Supervisors on July 13, 2021:
> "That the Board direct staff develop an active transportation plan for the West Falls Church TSA and surrounding area. This plan would include an existing conditions assessment, to be performed within the pedestrian and bicycle access shed of the Metrorail station, and should identify barriers to access, inadequate facilities, and other areas for improvement. Following this assessment*, staff should conduct outreach to solicit community feedback on proposed recommendations and develop priorities, including short-term and long-term projects. The plan should identify potential opportunities for public and private funding sources for proposed improvements. Development of the plan will be performed by County staff and does not require dedicated County funds."
> *Supervisor Foust clarified after the motion that staff should perform additional community outreach before the existing conditions assessment.
3. Background - The following is a brief synopsis of the West Falls Church CPA and a list of studies that may help inform the development of the present Study, and an implementable Plan in due course:

In 2018, the Board of Supervisors authorized the consideration of the West Falls Church TSA Plan Amendment to study the Washington Metropolitan Area Transit Authority (WMATA) and Virginia Tech parcels in the West Falls Church TSA. The Board requested that staff

[^12]consider a mix of uses (office, retail, multifamily, and townhouses) up to an intensity of . 96 floor area ratio (FAR) for the WMATA property (Sub-unit A-1 in Figure 1), and a mix of uses (institutional, office, retail, and residential) at an intensity up to a 2.5 FAR for the Virginia Tech property (Sub-unit A-2 in Figure 1). The combined planned land uses for the WMATA and Virginia Tech properties include a maximum of 1,340 residential dwelling units (DUs), 301,000 square feet (SF) of office, $48,000 \mathrm{SF}$ of retail, and $160,000 \mathrm{SF}$ of institutional.


Figure 1: West Falls Church Transit Development Map - Sub-Units

The process leading to the adoption of the CPA included community outreach, community meetings, and smaller-scale meetings with various homeowners and civic associations. Community members voiced their desire for improvements to walk and bike between the Metrorail station and nearby neighborhoods, noting the lack of sidewalks along many residential streets, and narrow or otherwise inadequate pathways. Several community members also expressed concern about the increased traffic that could result from the proposed developments within the vicinity of the West Falls Church Metrorail Station, and the conditions for school children walking or biking to Haycock Elementary School and other area destinations. As a result of this feedback, a key recommendation of the CPA was to develop a Plan to improve active transportation within and surrounding the West Falls Church TSA. The present study will inform that Plan.

In addition to the West Falls Church Plan Amendment, the following plans and studies are available
a. West Falls Church TSA Traffic Analysis (contact FCDOT for traffic study)
b. ActiveFairfax Plan (including the current Countywide Trails Plan and Bicycle Master Plan) ActiveFairfax Transportation Plan | Transportation (fairfaxcounty.gov); Fairfax County - Countrwide Trails Plan Map - Updated June 2018; Countywide Bicycle Master Plan | Transportation (fairfaxcounty.gov)
c. Shrevewood Elementary Safe Routes to School (SRTS) study Transportation Alternatives Program I Transportation (fairfaxcounty.gov)
d. Virginia Department of Transportation (VDOT) Shreve Road Corridor Study Transportation Impact Analysis (virginiadot.org)
e. Westmoreland Corridor Study westmorelandstpresentation. pdf.pdf(fairfaxcounty.gov)
f. Route 7 Bus Rapid Transit (BRT) Study Route 7 Bus Rapid Transit Study I Transportation (fairfaxcounty.gov)
g. Tysons Metrorail Station Access Management Study (TMSAMS) TMSAMS Tysons Metrorail Station Access Management Study Final Report (fairfaxcounty.gov) and Herndon Metrorail Stations Access Management Study (HMSAMS) Herndon Metrorail Stations Access Management Study (HMSAMS) Final Report (fairfaxcounty.gov)
h. West Falls Church Access to Transit and Multimodal Connectivity, funded by Northern Virginia Transportation Authority https://thenovaauthority.org/wp-content/uploads/2019/12/CFC-006.pdf
i. City of Falls Church plans including the West Falls Economic Development Project, West End Small Area Plan, Bicycle Master Plan, and others West Falls. Development Project | Falls Church, VA - Official Website (fallschurchva.gov); West End Small Area Plan | Falls Church, VA - Official Website (fallschurchva.gov); Bicycle Master Plan IFalls Church, VA - Official Website (fallschurchva.gov)

Another notable development within the study area is the Smart Cities test bed, a \$10 million project funded by the Virginia General Assembly. The Virginia Tech Transportation Institute, the City of Falls Church, VDOT, and Fairfax County will partner on the project which will include smart technology solutions such as adaptive lighting, smart intersections, and parking garage utilization indicators. The goals of the Smart Cities project are to reduce pollution and traffic congestion and improve public safety.

Also, several capital projects have recently been completed within the study area, including the installation of sidewalk along Great Falls Street from North West Street to Osborn Street in January 2021. Pedestrian and bicycle projects that have either been constructed or planned are noted on the study area map at the end of this document.
4. Objectives - The objectives of the West Falls Church Active Transportation Study are to:
a. Create an Advisory Group that will inform and guide the planning process and engage with the community to ensure equitable representation among affected community members.
b. Provide multiple opportunities for community input throughout the
development of the study through pro-active outreach and engagement.
c. Ensure transparency throughout the process of developing the study.
d. Improve safety, accessibility, and comfort for all active transportation users, including walking, bicycling, and other forms of non-vehicular travel. Improvements should meet the requirements of the Americans with Disabilities Act (ADA).
e. Increase connectivity between the West Falls Church Metrorail Station, surrounding neighborhoods, and the Washington and Old Dominion(W\&OD) Trail.
f. Ensure that the most recent and accurate data are used to inform the Advisory Group and its preparation of recommendations.
g. Prepare planning level cost estimates for recommended improvements.
h. Prioritize active transportation recommendations with community assistance.
i. Integrate active transportation recommendations for the West Falls Church area into the Countywide ActiveFairfax Transportation Plan.
j. Identify funding to implement the recommendations.
k. Ensure draft study recommendations are developed within sufficient time as to inform the rezoning process for developments surrounding the West Falls Church Metrorail Station.

Active engagement with the community will be critical to the fulfillment of these goals, which should be considered through the equity lens of One Fairfax Policy and align with the priorities set forth in the Countywide Strategic Plan. The Community Outreach section contains additional details on this subject.
5. Advisory Group - An Advisory Group has been created to inform the process. Representation in the Advisory Group should include a variety of demographics to meet One Fairfax goals for equity. The Advisory Group will include the following:
a. Three representatives each from Supervisors' Districts in Dranesville and Providence
b. Two representatives each from Dranesville and Providence District school PTAs within the study area
c. One representative from the McLean Citizens Association (MCA)
d. One representative from the Providence District Council (PDC)
e. One representative from the Fairfax Alliance for Better Bicycling (FABB)
f. One representative from Fairfax Families for Safer Streets

## A Technical Group will provide technical implementation expertise on ideas from the Advisory Group and includes the following:

a. Two representatives from the Fairfax County Department of Transportation (FCDOT)
b. One representative from the Fairfax County Park Authority (FCPA)
c. One representative from the Virginia Department of Transportation (VDOT)
d. One representative from the Northern Virginia Regional Park Authority (NOVA Parks)
e. One representative from Fairfax County Public Schools (FCPS)
f. One representative from Fairfax County Police
g. One representative from the Washington Metropolitan Area Transit Authority (WMATA)
h. One representative from the City of Falls Church
i. One representative from Virginia Tech

The Study will be managed by FCDOT, and staff will be responsible for, meeting facilitation, scheduling, technical planning and design work, and reporting to the Board of Supervisors (BOS). The Advisory Group will guide the existing conditions assessment and propose recommendations for improvements with implementation checks from the Technical Group and FCDOT. The Advisory Group and FCDOT will receive and process community feedback, which will inform the decision-making process.
6. Tasks and Deliverables - The draft Scope of Work will be reviewed and finalized by the Advisory Group, following input from the Dranesville and Providence District Supervisors and any stakeholders the Supervisors choose to include. The project will be completed upon the publication of a final report and following a community meeting to review the recommendations and priorities, as well as next steps for funding and implementation, and any feedback is incorporated. The following tasks and deliverables shall be completed:
a. Task: Complete an active transportation gap-analysis for the area surrounding the West Falls Church Metrorail Station, defined as a one-mile radius for pedestrians and a two-mile radius for bicyclists. The gap-analysis will use GIS and aerial imagery, augmented by on-the-ground site visits and observations, and include average daily traffic (ADT) data, and projected ADT on a selected number of streets (on streets where data is available). District Supervisors may also facilitate walking tours for area residents that can be supported by FCDOT staff. Refer to the study area map in Figure 2 at the end of this document for extent of the gap-analysis.
i. Deliverable: Create a map and associated table of the study area that identifies missing sidewalks, crosswalks, or other barriers to access for pedestrians, including crosswalks and active transportation facilities that need improvements, within a one-mile radius of the station entrance.
ii. Deliverable: Create a map and associated table of the study area that identifies missing links for bicyclists within a two-mile radius of the station entrance. This assessment should include on-street and off-street facilities. Bicycle Level of Traffic Stress (LTS) may be used to help identify missing links.
b. Task: Recommend improvements to the active transportation network.
i. Deliverable: Develop a list of recommendations based on the findings of the gap analysis. Active transportation facility recommendations should adhere to the latest guidance in the ActiveFairfax Transportation Plan or guidance established through this process.
c. Task: Set short-term and long-term priorities for active transportation recommendations.
i. Deliverable: Consider and agree on criteria to rate and prioritize potential projects, including feasibility, cost, direct benefit to residents, etc.
ii. Deliverable: Create a poll/survey to allow community members to indicate their priorities for projects in the study area.
d. Task: Communicate findings to the community.
i. Deliverable: Publish a final report on the Study, which shall include associated maps and tables, the methodology used for study, the results of the gap-analysis, a list of recommendations including the process for their selection and prioritization, potential costs and funding sources, and documentation of community engagement. Details on community engagement, including public meetings, are described in the next section.
7. Community Outreach - Transparency and inclusivity are critical in ensuring the success of the West Falls Church Active Transportation Study. Ongoing and frequent coordination between County Staff, the Advisory Group, and the public will be included in the project schedule. Requirements are as follows:
a. The Advisory Group shall meet at regular and scheduled intervals throughout the process to discuss the Study, review community feedback, and reach consensus on recommendations. The Technical Group will meet separately to provide input and guidance on Advisory Group recommendations. FCDOT will act as liaison between the Technical Group an Advisory Group.
b. Fairfax County staff shall conduct regular internal project meetings to ensure coordination with other relevant planning efforts, such as the ActiveFairfax Transportation Plan.
c. At least one meeting each should be held with both the Trails, Sidewalks and Bikeways Committee (Trails, Sidewalks and Bikeways Committee | Transportation (fairfaxcountr.gov)), and the Transportation Advisory Commission (Transportation Advisory Commission (TAC) | Transportation (fairfaxcounty.gov)) to providea briefing on the Study and request feedback.
d. Develop and conduct a community survey that will help set and prioritize study recommendations. Compile and publish results.
e. Three public meetings shall be held to provide the community with information on the Study and solicit feedback:
i. Public Meeting \#1: Introduction to the Study and Advisory Group, including review of scope, goals and objectives, strategy, and timeline. Open an initial comment period to seek community input on the proposed approach and feedback to aid in developing recommendations
and priorities.
ii. Public Meeting \#2: Present results of the gap-analysis and first set of recommendations. Begin second comment period to prioritize recommendations.
iii. Public Meeting \#3: Present final recommendations from draft report, priorities, and funding and implementation strategies to the community and secure feedback.
f. Additional, smaller-scale meetings should be held with individual community groups, such as Homeowners Associations or Civic Associations, to provide additional opportunity for community participation. Equal opportunity shall be provided to any community association that requests a meeting.
8. Timeline - The following is an estimated timeline for meeting all milestones of the Study

Winter 2021/2022:

1. Create the West Falls Church Active Transportation Advisory Group.
2. Create website to include relevant project information, meetings, schedules, contact information, and methods for public input.
3. Review draft scope of work with Advisory Group.
4. Advisory Group: Finalize Study scope, including geographic boundaries, goals, and objectives.
5. Analysis of current traffic data and projections.
6. Conduct active transportation gap-analysis, which will include an assessment of current needs and future requirements.
7. Prepare and publish public outreach plan. Initiate outreach activities as described in the plan.
8. Public meeting (1 of 3 ): Introduction to the Study and Advisory Group, including review of scope, goals and objectives, strategy, and timeline. Solicit community feedback for the active transportation gap-analysis

## Winter/Spring 2022:

9. Advisory Group: Review input from the community and discuss the results of the gap-analysis.
10. Finish active transportation gap-analysis and seek additional public input.

Spring 2022:
11. Prepare first set of recommendations based on results of the gap-analysis, ActiveFairfax policy review, and community feedback.
12. Public meeting (2 of 3): Present results of the gap-analysis and first set of recommendations. Begin second comment period to prioritize recommendations.
13. Advisory Group: Review public comments and determine final recommendations. Set priorities for recommendations based on community feedback. Identify potential funding sources for projects and create a list of funding streams that may be applicable.
14. Public meeting (3 of 3): Present final recommendations from draft report, priorities, and funding strategy to the community, and secure feedback.
15. Advisory Group: Debrief from final public meeting and determine appropriate steps to finalize report.
16. Board acceptance of study recommendations.
17. Edit final report as necessary and publish on the Country website.

Figure 2: West Falls Church Active Transportation Study Area Map

## APPENDIX D - PLOC Methodology

The methodology for pedestrian level of comfort (PLOC) assigns point values to variables that affect perceived pedestrian comfort for pathways and roadway crossings. Variables that negatively impact pedestrian comfort, such as higher speeds and narrow pathways, add points to the PLOC score; the higher the score the less comfortable a pathway or crossing. Point values for the base PLOC variables are shown in Table A1.

Standards within the Virginia Department of Transportation (VDOT) Road Design Manual were considered in the determination of point values. For example, sidewalks in an urban minor arterial street system should be at least 5 -feet wide, so anything below that minimum would be considered uncomfortable for pedestrians. However, Fairfax County has been including 6-foot minimum sidewalks in many of the activity area plans as this allows pedestrians enough room to walk side-by-side. Therefore, a pathway width of 6 to 8 -feet is assigned the baseline score of " 0 " in the table. The VDOT

Table 12: Baseline PLOC variables

| Base PLOC Variables |  |  |  |
| :---: | :---: | :---: | :---: |
| Pathways | Pathway width | $<5 \mathrm{ft}$ | +2 |
|  |  | 5 ft to $<6 \mathrm{ft}$ | +1 |
|  |  | 6 ft to $<8 \mathrm{ft}$ | 0 |
|  |  | $\geq 8 \mathrm{ft}$ | -1 |
|  | Buffer width | 0 ft to $<2 \mathrm{ft}$ | +2 |
|  |  | 2 ft to $<4 \mathrm{ft}$ | +1 |
|  |  | 4 ft to $<8 \mathrm{ft}$ | 0 |
|  |  | $\geq 8 \mathrm{ft}$ | -1 |
|  | On-street parking/ street trees | P \& ST: No | +2 |
|  |  | P: Yes, ST: No | +1 |
|  |  | P: No, ST: Yes | 0 |
|  |  | P \& ST: Yes | -1 |
|  | Speed <br> limit | $\leq 25 \mathrm{mph}$ | -1 |
|  |  | 30 mph | 0 |
|  |  | 35 mph | +1 |
|  |  | $\geq 40 \mathrm{mph}$ | +2 |
| Crossings | Uncontrolled crossing |  | +2 |
|  | Crossing lanes | 2-3 | 0 |
|  |  | 4-5 | +1 |
|  |  | 6+ | +2 |
|  | Median type | Raised refuge island | -1 |
|  |  | Raised/ hardened centerline | 0 |
|  |  | Painted/none | +1 |
|  | Crosswalk type | High visibility | -1 |
|  |  | Standard | 0 |
|  |  | Unmarked | +1 |

standard for a sidewalk buffer is 4 -feet, with 6-feet required for tree planting. Larger trees require structural cells or a planting area at least 8 -feet wide, which provides benefits to pedestrian comfort with further separation from the roadway and additional tree shade.

The VDOT Manual on Uniform Traffic Control Devices (MUTCD) ${ }^{18}$ was referenced in assigning some of the point values to the controlled and uncontrolled crossing variables. In general, the MUTCD states that crosswalks should not be installed for uncontrolled crossings across four or more lanes over roadways that have a posted speed limit greater than 40 mph , though VDOT allows exceptions depending on traffic volume and other variables.

Adding together the applicable variables gives an initial score, which is then adjusted to the 4-point PLOC scale (not including "No Pathway" and "No Crossing"). For pathways, a total score equal to or less than - 1 is "Very Comfortable"; 0 to 1 is "Comfortable"; 2 to 4 is "Somewhat Comfortable"; and equal to or greater than 5 is "Uncomfortable". For crossings, a total score equal to or less than -2 is "Very Comfortable"; -1 to 0 is Comfortable";

[^13]Table 13: Additional PLOC variables

| Additional PLOC Variables |  |  |  |
| :---: | :---: | :---: | :---: |
| Pathways | No curb |  | +1 |
|  | ADT $\geq 30 \mathrm{k}$ |  | +1 |
|  | Obstructions |  | +1 |
|  | Poor pavement quality |  | +1 |
|  | $\mathrm{BZ}<3{ }^{\prime}$ or $>20^{\prime}$ |  | +1 |
|  | Block length > 400' |  | +1 |
|  | Separated bike lane |  | -1 |
| Crossings | Crossing speed >3.5' per sec |  | +1 |
|  | Pedestrian LOS (delay) | A-B | -1 |
|  |  | C-D | 0 |
|  |  | E-F | +1 |
|  | High turning volumes |  | +1 |
|  | Substandard ramp |  | +1 |
|  | Auto left turn conflict |  | +1 |
|  | Lead ped interval ( $3-7 \mathrm{sec}$ ) |  | -1 |

1 to 2 is "Somewhat Comfortable"; and equal to or greater than 3 is "Uncomfortable". There is a higher risk of conflict with a vehicle at crossings, so the adjusted comfort scores for crossings are slightly different than the pathways scores.

As mentioned in the report, additional variables should be included in the PLOC score assessment where data is available. Some of the variables in Table 13 were included in examples provided in the existing conditions assessment to show how they might affect the PLOC score.

Traffic volumes at 30,000 ADT or higher diminish pedestrian comfort, while inclusion of a separated bicycle lane provides a benefit as it creates an additional buffer between pedestrians and vehicles on the roadway. A building zone width of between 3 to 20 -feet gives pedestrians additional room away from the roadway and can help contribute to placemaking. Other factors that could diminish pedestrian comfort include obstructions in the pathway and poor pavement quality. Rational thresholds for these variables could be researched for future applications of PLOC.

Operational factors at crossings could also affect the PLOC score. The ADA standard for pedestrian crossing speed is 3.5feet per second. Comfort is negatively affected if the signal timing at a controlled crossing requires a pedestrian to cross at a higher speed. Pedestrian level of service (LOS) may influence comfort based on how long a pedestrian must wait to cross the roadway. Pedestrian delay greater than 40 seconds (LOS E or F) also results in a higher likelihood of illegal crossings (see Table 14).

Table 14: Pedestrian level of service

| Pedestrian Level of Service |  |  |
| :---: | :---: | :---: |
| Pedestrian <br> Delay (sec) | Likelihood of <br> Noncompliance | LOS |
| $<10$ | Low |  |
|  |  | B |
| $\geq 10-20$ | Moderate | C |
|  |  |  |
| $>20-30$ |  | E |
| $>30-40$ |  | Figh |
| $>40-60$ | Very High | F |
| $>60$ |  |  |

High turning volumes, expressed in vehicles per hour (vph), will also cause discomfort. In this report, right turning volumes equal to or greater than 150 vph are considered high. Thresholds for left turning movements depend on the number of opposing lanes crossed as a higher number of lanes can create sight distance issues for pedestrians and drivers. A left turn across one opposing lane has a threshold of 100 vph , and a left turn across two opposing lanes has a threshold of 50 vph . These turning volume thresholds are based on preliminary research from AASHTO's Bikeway Design Guide, so further refinement may be needed.

An operational variable that provides a benefit to pedestrian comfort is the presence of a leading pedestrian interval (LPI). An LPI provides walk time for pedestrians, typically from three to seven
seconds, before vehicles get a green signal. Though not widely used, a pedestrian scramble phase would also provide an operational benefit to pedestrians as this allows a pedestrian only phase for crossing.

There are different contexts throughout the County for which different variables or PLOC scores may apply. For example, many residential areas have no pathways and some rural parts of Fairfax County have walkable road shoulders; however, roadway conditions and volume of traffic may differ significantly from more urbanized areas like the West Falls Church Metrorail area. Context should always be considered when performing a PLOC assessment.

## APPENDIX E - Survey and Results

1. Do you live within approximately two miles of the West Falls Church Metrorail station as shown on the map?

- Yes
- No


2. Please rank the improvements you feel are most important to enhancing active transportation (e.g., walking or biking) within the study area.
$\square$ Pedestrian infrastructure (e.g., wider/new sidewalks, benches)
$\square$ Bicycle infrastructure (e.g., bicycle lanes, bicycle parking, bikeshare)
$\square$ Improved roadway crossings (e.g., visibility at crosswalks, shorter crossing distances)Improved roadway and pathway lighting (e.g., pedestrian-scale lighting)Lower posted speed limitsOther (please specify)
The following questions pertain to proposed pedestrian improvements within a one-mile radius of the West Falls Church Metrorail Station.
3. Please rank the active transportation improvements as shown in red on the southwest quadrant map below. (The number in the answer corresponds with the number on the map.)

| Legend |  |
| :---: | :---: |
| - Recommended Project | - Jurisdictional Border |
| Sidewalks | - Regional Trail |
| 1 Mile Buffer | - Orange Line |
| 2 Mile Buffer | - - - ${ }^{\text {- }}$ Silver Line |


(1) Improve the pathway along Leesburg Pike from Idylwood Rd to Falls Church Dr
(2) Add a crosswalk over Idylwood Rd near Barbour Rd/ Cartbridge Rd
(3) Add high-visibility crosswalks at all interchange ramp crossings along Leesburg Pike, and install flashing beacons where appropriate
(4) Construct sidewalk along Barbour Rd and improve pathway across the bridge over I-66
$\square$ (5) Construct sidewalk along Pinecastle Rd
$\square$ (6) Construct sidewalks along Gordons Rd and Chestnut St
$\square$ (7) Improve the pathway along the north side of Shreve Rd between Gordons Rd and Leesburg Pike
(8) Improve safety and comfort crossing Leesburg Pike/Shreve Rd/Haycock Rd intersection, for example, decrease crossing distance, add pedestrian median, pedestrian lead time, restricting right on red(9) Construct sidewalk along the north side of Shreve Rd from Chestnut St to Gordons Rd(10) Construct sidewalks along the south side of Shreve Rd between Patricia Ct and Buckelew Dr
(11) Construct sidewalk along Allan Ave between Stuart PI and Buckelew Dr
4. Please rank the active transportation improvements as shown in red on the northwest quadrant map below. (The number in the answer corresponds with the number on the map.)

(1) Install accessible route to the Lemon Rd Elementary School from Pimmit Dr
(2) Construct sidewalk along Redd Rd to Idylwood Rd
(3) Construct sidewalk along the southside of Idylwood Rd north of Norwalk St
(4) Add high-visibility crosswalks at the Pimmit Dr/Leesburg Pike intersection (all legs)(5) Add high-visibility crosswalks at the Idylwood Rd/Leesburg Pike intersection
(6) Improve visibility of mid-block crossing on Idylwood Rd near Hyde Rd with flashing beacons
(7) Create accessible pedestrian route to Metrorail station from Idylwood Rd
(8) Add crosswalk over Redd Rd at Idylwood Rd and improve visibility by re-grading the embankment
(9) Construct pedestrian refuge island on Idylwood Rd at Montview Ct and Lemon Rd Elementary School
(10) Add flashing beacons to the Idylwood Rd crossing at Hillside Dr and Eastman Dr

5. Please rank the active transportation improvements as shown in red on the northeast quadrant map below. (The number in the answer corresponds with the number on the map.)
(1) Add mid-block crosswalk over Great Falls St to access Pimmit Run Stream Valley Park
(2) Construct sidewalk on east side of Great Falls St north of Hutchison St
$\square$ (3) Add flashing beacons and crosswalk over Great Falls St at Hutchison St. Must include construction of curb ramps and sidewalk
$\square$ (4) Add high-visibility crosswalks to all legs of the Great Falls St and Haycock Rd intersection. Must include construction of curb ramps and sidewalk
$\square$ (5) Add mid-block crosswalk over Westmoreland St at Orland St
$\square$ (6) No right-turn on red, or yield to pedestrian signage for southbound Westmoreland St at intersection with Haycock Rd and construct corner expansion/ bulb outs
$\square$ (7) Add mid-block crossing from Casemont Dr to north side of Haycock Rd. Must include construction of curb ramps and sidewalk.
(8) Construct sidewalk on one side of Beacon Ln
$\square$ (9) Complete the asphalt path along south side of Haycock Rd east of Great Falls St(10) Construct sidewalk along west side of Great Falls St from Idylwood Rd to Grande Ln
6. Please rank the active transportation improvements as shown in red on the southeast quadrant map below. (The number in the answer corresponds with the number on the map.)
(1) Construct sidewalk along Turner Ave from Grayson Pl to Haycock Rd
(2) Add crosswalk over Turner Ave along Haycock Rd
(3) Improve pathway along north side of Haycock Rd from Great Falls St to Metro Access Rd
(4) Construct sidewalk along south side of Haycock Rd from Westwood PI to bridge over I-66
(5) Perform trail maintenance on Grove Ave approaching Haycock Rd
(6) Construct sidewalk on Mt Daniel Dr
(7) Add crosswalk over Great Falls St at Moly Ln
(8) Construct asphalt pathway along west side of Great Falls St to Haycock Rd
(9) Add stop bars to existing all-way-stop Fisher Ave/ Brilyn Pl intersection
(10) Construct sidewalk on Fisher Ave
(11) Add crosswalk over Highland Ave along Haycock Rd
(12) Add mid-block crossing over Great Falls St at Walnut St
$\square$ (13) Road diet along Haycock Rd, including pedestrian refuge islands at Falls Church Dr and Metro Access Rd
7. Do you live within one of the four quadrants shown in questions $\mathbf{3 - 6}$ above?

- Southwest
- Northwest
- Northeast
- Southeast
- None of the above


8. Looking at the overall area within a two-mile radius of the West Falls Church Metrorail Station, please rank the priorities for bicycle improvements as shown in red.
$\square$ (1) Leesburg Pike from Pimmit Dr to Falls Church Dr
$\square$ (2) Haycock Rd from Westmoreland St to City of Falls Church boundary line
(3) Shreve Rd from the W\&OD Trail to Leesburg Pike
$\square$ (4) Grove Ave from City of Falls Church boundary line to Haycock Rd
(5) Great Falls St from Kirby Rd/Idylwood Rd to N West St
(6) Idylwood Rd from Virginia Ln to Leesburg Pike
(7) Westmoreland St from Haycock Rd to Arlington County boundary line
(8) Westmoreland St from Somerville Dr to Hopewood Dr
(9) Leesburg Pike from Lisle Ave/Ramada Rd to Pimmit Dr
$\square$ (10) West St from Lee Hwy to Fairwood Ln
$\square$ (11) Great Falls St from Chain Bridge Rd to Kirby Rd/Idylwood
$\square$ (12) Pimmit Dr from Idylwood Rd to Leesburg Pike
$\square$ (13) Kirby Rd from Westmoreland St to Great Falls St
$\square$ (14) Improve W\&OD Trail crossing at Virginia Ln
9. Additional recommendations are listed below. Please rank the recommendations that you think would most benefit active transportation:
$\square$ Maintenance agreement, including landscaping and pathway upkeep, for "gateways" into development
$\square \quad$ Public art to make pedestrian routes more visually appealing and contribute to placemaking
$\square$ "Slow streets" pilot program to designate certain residential streets for lower speed, local traffic only
$\square$ Street trees/ landscaping along pedestrian routes
$\square$ Wayfinding signage for bicycle and pedestrian routes
$\square$ Local shuttle service to the Metrorail station to complement active transportation
10. Do you have access to a vehicle?

- Yes
- No

11. Do you presently use the West Falls Church Metrorail?

- Yes
- No

12. If you answered "Yes" to the question above, how do you usually get to the Metrorail Station?

- Drive
- Carpool/rideshare (Lyft, Uber, etc.)
- Walk
- Bike
- Transit
- Other

13. What is your race or ethnicity?

- Hispanic or Latino
- White (Not Hispanic or Latino)
- Black or African American
- Native Hawaiian or Pacific Islander
- Asian
- Native American or Alaska Native
- Two or More Races
- Prefer not to say
- Other (please specify)

14. What is your age?

- 17 or younger
- 18-30
- 31-50
- 51-70
- 71 or older
- Prefer not to say

15. What is your gender?

- Female
- Male
- Prefer not to say

16. What is your annual household income?

- \$0 to \$49,999
- \$50,000 to \$100,000
- \$100,000 to \$150,000
- \$150,000 to \$200,000
- Above \$200,000
- Prefer not to say
Do you live within approximately two miles of
the West Falls Church Metrorail station as

| shown on the map? |  |
| :--- | :--- |
| Answer Choices | Resp |


| Please rank the improvements you feel are most important to enhancing active transportation (e.g., walking or biking) within the study area. |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 |  | 2 |  | 3 |  | 4 |  | 5 |  | Total | $\begin{array}{\|r} \text { Score } \\ \hline 4.28 \end{array}$ |
| Pedestrian infrastructure (e.g.,wider/new sidewalks, benches) | 55.81\% | 240 | 25.81\% | 111 | 11.63\% | 50 | 4.19\% | 18 | 2.56\% | 11 |  |  |
| Bicycle infrastructure (e.g., bicycle lanes, bicycle parking, bikeshare) | 13.10\% | 55 | 19.52\% | 82 | 23.33\% | 98 | 24.05\% | 101 | 20.00\% | 84 | 420 | 2.82 |
| Improved roadway crossings (e.g., visibility at crosswalks, shorter crossing distances) | 23.83\% | 102 | 36.21\% | 155 | 25.47\% | 109 | 11.92\% | 51 | 2.57\% | 11 | 428 | 3.67 |
| Improved roadway and pathway lighting (e.g., pedestrian-scale lighting) | 3.33\% | 14 | 14.29\% | 60 | 26.67\% | 112 | 39.29\% | 165 | 16.43\% | 69 | 420 | 2.49 |
| Lower posted speed limits | 5.44\% | 23 | 5.67\% | 24 | 12.53\% | 53 | 19.39\% | 82 | 56.97\% | 241 | 423 | 1.83 |
|  |  |  |  |  |  |  |  |  |  |  | Answered | 438 |
|  |  |  |  |  |  |  |  |  |  |  | Skipped | 3 |





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Please rank the active transportation improvements as shown
in red on the southeast quadrant map below．（The number in
the answer corresponds with the number on the map．）
（3）Improve pathway along north side of Haycock Rd from Great Falls St
（1）Construct sidewalk along Turner Ave from Grayson PI to Haycock Rd
（4）Construct sidewalk along south side of Haycock Rd from Westwood PI
5）Perform trail maintenance on Grove Ave approaching Haycock Rd
（7）Add crosswalk over Great Falls St at Moly Ln
6）Construct sidewalk on Mt Daniel Dr
（13）Road diet along Haycock Rd，including pedestrian refuge islands at
Falls Church Dr and Metro Access Rd
（11）Add crosswalk over Highland Ave along Haycock Rd
（9）Add stop bars to existing all－way－stop Fisher Ave／Brilyn PI
（12）Add mid－block crossing over Great Falls St at Walnut St

| Do you live within one of the four |  |  |
| :--- | ---: | :---: |
| quadrants shown in questions 3－6 |  |  |
| above？ |  |  |
| Answer Choices |  |  |




| What is your race or ethnicity? |  |  |
| :--- | ---: | ---: |
| Answer Choices | Responses |  |
| Hispanic or Latino | $1.87 \%$ | 8 |
| White (Not Hispanic or Latino) | $69.09 \%$ | 295 |
| Black or African American | $1.17 \%$ | 5 |
| Native Hawaiian or Pacific Islander | $0.47 \%$ | 2 |
| Asian | $9.37 \%$ | 40 |
| Native American or Alaska Native | $0.23 \%$ | 1 |
| Two or More Races | $2.11 \%$ | 9 |
| Prefer not to say | $14.29 \%$ | 61 |
| Other (please specify) | $1.41 \%$ | 6 |
|  | Answered | $\mathbf{4 2 7}$ |
|  | Skipped | $\mathbf{1 4}$ |




## APPENDIX F - Toole Design Report






WEST FALLS CHURCH METRO TRAIL
Concopp Albonment Plan
Protion Sheen 3

[^14]
[^0]:    ${ }^{1}$ https://www.fairfaxcounty.gov/transportation/bike-walk/activefairfax

[^1]:    ${ }^{2}$ http://www.fallschurchva.gov/1599/West-Falls-Project

[^2]:    ${ }^{3}$ See FCDOT Capital Projects map for project status updates. FCDOT Capital Projects (arcgis.com)

[^3]:    ${ }^{4}$ The map depicts two off-street trails planned through the WMATA railyard, though only one route is planned in the Fairfax County Comprehensive Plan. George Mason High School as shown in this map has been demolished, moved, and renamed Meridian High School (see Figure 24 on page 37).

[^4]:    ${ }^{5}$ Some combinations of factors may not be possible, such as a 0 - 2 -foot buffer with street trees.

[^5]:    ${ }^{6}$ https://transweb.sjsu.edu/sites/default/files/1005-low-stress-bicycling-network-connectivity.pdf
    7 https://www.fairfaxcounty.gov/transportation/bike/map
    ${ }^{8}$ Some Advisory Group members requested that the segment of Haycock Road between Westmoreland Street and Great Falls Street be redesignated as "least comfortable" or "use caution;" but it was not possible to amend Figure 17 to reflect their concern.
    ${ }^{9}$ These lines are colored gray on the actual bike map but are shown in red for this report to improve readability.

[^6]:    ${ }^{11}$ http://www.virginiadot.org/info/2019 traffic data.asp

[^7]:    ${ }^{12}$ High-visibility crosswalks were added to all legs of the Leesburg Pike and Idylwood Road intersection and all I-66 interchange crossings along Leesburg Pike between Idylwood Road and Falls Church Drive in October, 2022.

[^8]:    ${ }^{13}$ A portion of this project may be funded through the Safe Streets and Roads for All (SS4A) federal grant.
    ${ }^{14}$ High-visibility crosswalks were added on the south and west legs of the Leesburg Pike and Pimmit Drive intersection in October, 2022. High-visibility crosswalks are still recommended on the north and east legs.

[^9]:    ${ }^{15}$ The Advisory Group member representing the Mt. Daniel neighborhood recommended removing Map ID "F", sidewalk along Mt. Daniel Drive from the list of recommended improvements.

[^10]:    ${ }^{16}$ This project is funded through the NVTA grant awarded to the City of Falls Church referenced on page 21.

[^11]:    ${ }^{17}$ https://safety.fhwa.dot.gov/road diets/guidance/info guide/ch1.cfm\#s11

[^12]:    ${ }^{1}$ Active transportation is generally defined as a self-propelled mode of transport, such as walking or bicycling, though may also include motorized electric devices, such as e-scooters or e-bicycles.

[^13]:    ${ }^{18}$ https://www.virginiadot.org/business/virginia mutcd supplement.asp

[^14]:    / ${ }^{\text {Toole }}=$

