SUBJECT: CPAM 2016-0002, Silver Line Comprehensive Plan Amendment

ELECTION DISTRICT: Ashburn, Broad Run, and Dulles

CRITICAL ACTION DATE: At the pleasure of the Board

STAFF CONTACTS: Christopher J. Garcia, AICP, Planning and Zoning, Ricky Barker, AICP, Director, Planning and Zoning

PURPOSE: The purpose of this item is to:

- Present the Planning Commission’s Silver Line Comprehensive Plan Amendment (CPAM 2016-0002) recommendations;
- Seek the Board’s endorsement of the CPAM with any directed changes; and
- Receive direction to forward the CPAM as amended to the Virginia Department of Transportation (VDOT) for evaluation and testing.

This item also provides responses to Board members’ requests for:

1. Additional information regarding the comparison of the net fiscal impact and for Metrorail Service Tax District revenues comparing data center and mixed-use development on a hypothetical 20 acre site;
2. A fiscal impact evaluation of data center development vs the current mixed-use development proposal located along both sides of Loudoun County Parkway (DuPont - Fabros Property);
3. Additional information regarding the process for performing a new Noise Study; and
4. Information regarding the status of certain roadway construction funding, and right-of-way within the CPAM-2016-0002 area.

RECOMMENDATIONS:

Planning Commission: The Planning Commission (Commission) forwarded (8-0-1, Sisley absent) CPAM-2016-0002, Silver Line Comprehensive Plan Amendment (Silver Line CPAM) (Attachment 1), as amended at the April 14, 2017, Commission Work Session to the Board of Supervisors (Board) for consideration and action. The most significant amendments recommended by the Commission included: a) changing the planned land use east of the Loudoun Gateway metro station from Route 28 Business to Mixed-Use, Medium Buildings; b) adding language to Chapter 7 – Implementation recommending study and analysis of the Washington Dulles International Airport (Dulles) and a change to the current Airport Noise Overlay District if the study warrants
the change, c) combining of the Compact, Walkable Employment land use typology into the Compact, Walkable Non-residential typology, d) combining the Urban Multi-family Residential land use typology into the Mixed-use, Medium Buildings Typology, and e) re-designating land area within the Moorefield Station development project from the Urban Residential land use typology to Mixed-use, Medium Buildings. The Commission’s recommended planned land use changes are depicted in Attachment 1 and 2.

**Staff:** Staff does not support the Planning Commission’s recommended Planned Land Use Map as found in Attachments 1 and 2. Staff recommends adopting the Planned Land Use Map as found in Attachment 3 which retains the Route 28 Business Land Use designation on the eastern side of the proposed Loudoun Gateway Station. Staff generally supports the Planning Commission’s recommendation to include an implementation action to consider performing additional analysis and evaluation of the noise contours for Dulles and amending Section 4-100 of the County’s Zoning Ordinance to reflect any modified noise contours as provided in Chapter 7 of Attachment 1. Staff is recommending minor text modifications to indicate Board consideration of the implementation step instead of a definitive mandate within the CPAM. Staff is also supporting the other Commission recommended planned land use changes, including the combining land use typologies and re-designating land area within Moorefield Station as a mixed-use typology. Staff also recommends that the Board endorse CPAM 2016-0002 with any additional directed changes and direct staff to forward the CPAM as amended to the Virginia Department of Transportation (VDOT) for testing and evaluation of the proposed roadway network, multi-modal transportation system and transportation system model.

**BACKGROUND:** On [March 17, 2016](#), the Board unanimously approved a resolution initiating a Comprehensive Plan Amendment for the Silver Line Planning Area. This action followed studies by an Urban Land Institute (ULI) Technical Assistance Panel (TAP), completed in May 2014, and a Land Use Scenario Planning Study and a Market Analysis and Best Practices Study presented to the Board on [January 21, 2016](#). As directed by the Board, staff has conducted a planning process to produce a Silver Line Comprehensive Plan Amendment. The process was based on consultant analysis and recommendations, public engagements, and collaboration with other department agencies. Staff believes the Comprehensive Plan Amendment achieves the Board’s four goals:

1. Prompt realization of tax revenues to support future Metrorail operations;
2. Maximizing future employment generation;
3. Achieving the desired land use pattern; and
4. Minimizing demands on the County’s transportation infrastructure.

The Transportation and Land Use Committee (TLUC) met on [July 15, 2016](#), [October 14, 2016](#), and [November 10, 2016](#) to discuss and make recommendations to the Board. These recommended

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1 Items for Board Business Meetings and Public Hearings, Transportation and Land Use Committee Meetings, and Planning Commission Work Sessions and Public Hearings are hyperlinked to each meeting date within the background.
changes included text changes to plan policies, planned land use map changes, planned land use typology changes and transportation plan modifications.

Between the **October 14th** and **November 10th** TLUC meetings, staff provided the Board with an update on the CPAM process along with a summary of the TLUC actions at the October 20, 2016, Board Business Meeting. On November 10, 2016, TLUC agreed by consensus to forward its October 14th recommendations to the Board for consideration.

On **November 29, 2016**, the Board held a special meeting to establish and clarify the overall direction for the Comprehensive Plan Amendment text, endorse a general framework for the Planning Commission review, and identify specific issues and questions for Commission’s consideration. Attachment 4 illustrates the Board’s Recommended Planned Land Use as forwarded to the Commission for its deliberation and recommendation(s).

The Commission was briefed on the draft Silver Line CPAM on December 20, 2016 and January 12, 2017. No action was taken by the Commission during the briefings. A public hearing was conducted on **January 24, 2017** addressing various topics specific to the Silver Line CPAM. The Commission reviewed and discussed the Silver Line CPAM at Work Sessions on February 3, 2017, and March 28, 2017 and took no action. On **April 13, 2017** the Commission forwarded (8-0-1: Sisley absent) Silver Line CPAM, as revised by the Commission (Attachment 1), and revisions to Chapter 6 of the Revised General Plan and Chapters 2, 3, 4, and Appendices 1 and 6 of the Countywide Transportation Plan, to the Board for its consideration and action, including change to language reclassifying the recommendation of implementation of a new noise study to high priority, short term implementation step in Chapter 7 of the Silver Line CPAM and change of an area of land east of the Loudoun Gateway Station from Route 28 Business to Mixed-use, Medium Land Use Designation. The work of the Commission culminated in the presentation of the Silver Line CPAM to the Board on **May 10, 2017** at which the Board forwarded (5-3-1: Supervisors Meyer, Randall, Saines opposed; Umstattd absent) the CPAM to the June 22, 2017 Business Meeting for further action.

On June 15, 2017, staff received a copy of a letter from the Metropolitan Washington Airport Authority (MWAA) sent to Chair Phyllis Randall regarding several items related to the Silver Line CPAM (Attachment 5). Specifically, the letter expressed concerns regarding the potential of residential development on the East side of Loudoun County Parkway due to the high volumes of aircraft flying over the area at a low altitude. MWAA also expressed concern in the letter about residential development around the Loudoun Gateway Station due to its location near the Dulles International runways and flight paths. In addition, the letter stated that the MWAA anticipates acting favorably on upcoming Loudoun County requests for easements on Dulles International land for planned interchanges. As stated in the attached letter, MWAA is unable to concur with the particular location and alignment on Dulles International land for the County’s proposed extension of Shellhorn; however, it is agreeable to the use of some Airport land for this extension and commits to working with the County in the future.
APPROACH FOR DEVELOPING THE BOARD’S RECOMMENDATION:

Staff has divided the topics and issues for the Board’s consideration into two sets of items: 1) Items requiring Board discussion and direction and 2) Other items requiring Board direction. The first set of items include recommendations from either the staff, Commission or both which are either different from the Board’s November 29th recommendations or include items where Board members have requested additional information. For these items, both the Commission’s and staff’s recommendations are presented, any additional information requested by Board members, the options available for the Board, and draft motions under each item for the Board to consider.

The second set include those items where both the staff and Commission were in agreement and where there has been limited concerns expressed by Board members. With this set of items, staff has presented one motion for all the items.

One of the final motions for the Board to consider will include a Board endorsement of the Silver Line CPAM which references motions found in this Board item.

ISSUES REQUIRING BOARD DISCUSSION AND DIRECTION: The following is a summary of the issues that are in need of Board discussion and direction.

1) Implementation Measure to Consider a New Noise Study

The Commission endorsed the Board recommendation that residential development continue to be excluded from the existing Airport Impact Overlay District (AIOD). Specifically, future residential development is proposed to be excluded within the LDN 65 noise contours of the AIOD, and also within the LDN 65 noise contour established by the Environmental Impact Statement (EIS) for construction of the 4th operational runway at Washington Dulles International Airport. The Commission discussion resulted in concurring with the Board land use recommendations on the west side of the Dulles International Airport. However, the Commission made a recommendation at the April 13th meeting to the Board to conduct an updated noise study in the very near future. Specifically, the Commission’s recommendation included adding an implementation measure in the Chapter 7 Implementation section to request an analysis of the Washington Dulles International Airport noise contours that reflect the current alignment of the Airport runways and associated flight paths; and should the study identify changes in the contours, an amendment to Section 4-1400 of the Zoning Ordinance to reflect the new contours should be initiated, which is included in Attachment 1. The language in Chapter 7 (page 7-5) specifically states: “Request an analysis of the Dulles Airport noise contours that reflect the alignment of the Airport runways; and should the study identify changes in the contours, initiate an amendment to Section 4-1400 of the Zoning Ordinance to reflect the new contours.”

STAFF RESPONSES TO BOARD REQUESTS: At the Board Public Hearing on May 10, 2017, staff received a related Board request for additional information:
1) Additional information and estimates of cost and time to conduct a noise study for Dulles International Airport.

Staff sought guidance and rough order of magnitude estimates from two consulting firms that have experience, including local experience, working with airport operators to develop noise studies and noise compatibility plans. Staff relied on Federal Title 14, Code of Federal Regulations (CFR) Part 150 Airport Noise Compatibility Planning standards to define a potential study scenario. CFR Part 150 refers to a noise study, which is a technical exercise to identify noise exposure maps, and the more involved noise compatibility programs that set out airport operation standards to mitigate airport noise impacts on adjacent land areas and protect airport operations, access and capacity. Staff also requested the consultants roughly estimate a noise study based on the buildout of Washington Dulles International Airport. Since the Board and Commission discussions have focused on the Airport Impact Overlay District zoning boundaries (primarily the geography of the current noise contours), staff only asked the consultants to estimate the cost of completing a noise study, which would be the equivalent of developing a Noise Exposure Map under CFR Part 150 for buildout of the airport. The estimates were very preliminary given the lack of scope, definition, and detail as well as lack of information about the availability of data. The paraphrased responses were as follows:

1. To develop a current noise baseline and one future (2040 or beyond) conditions noise contours, the cost could be approximately $300,000, depending on the extent to which the work is done to the level required of a CFR Part 150 study. Presuming that the effort to obtain necessary technical flight information and data could be ironed out within a month, it was estimated the work would take 8-9 months to complete.

2. Another option is the development of a future aircraft activity forecast representing an updated ‘build-out’ scenario including preparation of airport noise contours reflecting the ‘build-out’ scenario and adding a public outreach program with at least three public meetings. Without knowing more details about the scope of the project, availability of data, number of scenarios desired, and the extent of the public process; project costs could not be accurately forecast. As a preliminary estimate, the County could expect such an effort to cost $500,000 or more. No estimate of time to complete was provided.

The noise compatibility planning element of a CFR Part 150 study was not part of staff’s research. The compatibility planning goes beyond establishing noise contours to developing mitigation programs and preventing incompatibility of land uses outside the confines of an airport and airport operations. This type of planning effort is to serve as a vehicle for coordinating efforts to achieve the maximum degree of noise compatibility between an airport and its neighbors while taking into account the requirements of the national aviation system. The compatibility plan requires coordination between the airport sponsor, such as MWAA in this case, and the counties or cities that surround the airport. Noise compatibility planning includes looking for flight paths that would benefit the community without causing airspace delay, reducing safety or unduly burdening use of the airspace or responsibilities of the FAA. The FAA would have significant oversight on and requirements for this type of activity, though the effort is intended to be collaboration among the FAA, airport operator(s), users,
and local jurisdictions. CFR Part 150 studies that include land use / noise compatibility planning may take at least two years to complete. Costs associated with this type of in depth study could be projected to be well beyond the estimates provided in this report.

This information that staff researched is very preliminary. Should the Board direct staff to investigate the options further, a significant scoping and cost estimating exercise would need to be undertaken to establish goals, outcomes, more clearly defined implementation, as well as more detailed project cost estimates, and including recommended collaboration with MWAA and the FAA.

Staff generally supports the Commission’s recommended implementation step. However, staff recommends that the implementation step language be modified to indicate this step as a consideration and not a mandate as may be inferred in the current CPAM language. Further, if a new noise study and evaluation results in the consideration of potential amendments to the AIOD noise contours, staff recommends that concurrent update(s) to the Silver Line CPAM, specifically the planned land use map and policies, be conducted to reflect potential new development conditions. The Board may choose to remove this language as recommended, modify with additional specificity per the staff recommendation or direct other options.

<table>
<thead>
<tr>
<th>Board Options</th>
<th>Table 1: Potential Impacts Related to Conducting a Noise Study</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Land Use</td>
</tr>
<tr>
<td>1) Accept Commission and staff recommendations</td>
<td>● Option for updated land uses after modifying the Zoning Ordinance</td>
</tr>
<tr>
<td></td>
<td>● By not having an updated study, the County may not know the long-term impact to land uses or development potential around the airport.</td>
</tr>
<tr>
<td>2) Remove recommended language from Chapter 7 of Silver Line CPAM</td>
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</table>
DRAFT MOTIONS ON ISSUE 1: DEVELOPMENT IN THE AIRPORT OVERLAY DISTRICT

1. I move that the Board of Supervisors retain the recommended language in Chapter 7, Attachment 1 of the June 22, 2017, Board of Supervisors Business Meeting Action Item, related to the implementation step to request additional analysis and evaluation of the noise contours for Washington Dulles International Airport and amend the Section 4-100 of the County’s Zoning Ordinance to reflect any modified noise contours.

I further move that the Board of Supervisors include language in the Chapter 7 Implementation to indicate this implementation step as Board consideration and also include language to concurrently reevaluate the Silver Line CPAM Planned Land Use for potential land use pattern modifications that may be desired should Section 4-100 of the County’s Zoning Ordinance reflect any modified noise contours.

OR

2. I move that the Board of Supervisors remove the language in Chapter 7 (page 7-5, Attachment 1 of the June 22, 2017, Board of Supervisors Business Meeting Action Item) that specifically states: “Request an analysis of the Washington Dulles International Airport noise contours that reflect the alignment of the Airport runways; and should the study identify changes in the contours, consider initiating an amendment to Section 4-1400 of the Zoning Ordinance to reflect the new contours” and endorse CPAM-2016-0002, Silver Line Comprehensive Plan Amendment without the Staff and Planning Commission’s recommendation for this item.

OR

3. I move an alternate motion.

2) Horsepen Run Connector crossing of the Broad Run – Board Directed Item
On November 29, 2016, The Board directed staff (6-3: Supervisors Buona, Letourneau, and Randall opposed) to incorporate a roadway connection across the Broad Run between Barrister Street and Old Ox Road in the vicinity of Commerce Center Court. The Board further directed staff (9-0) to conduct a traffic analysis of the Old Ox Road (Route 606) corridor and proposed Broad Run crossings with a signalized intersection condition. This connection, subsequently referred to as the Horsepen Run Connector, would provide an additional planned east-west connection in the Silver Line Policy Area. Staff analyzed this connection and found that in order to maintain acceptable traffic operations along Old Ox Road, an interchange would be needed at the intersection of the Horsepen Run Connector and Old Ox Road. Further, staff identified several constraints to the proposed alignment including the width of the Broad Run floodplain, the potential encumbrances to existing structures and the Metrorail railyard, and the proximity to the Old Ox Road and Dulles Greenway interchange.
Based upon staff analysis, the Commission recommended to replace this conceptual road alignment with a map note proposing that this connection be considered in future transportation system evaluation and planning. The Commission identified several concerns, including floodplain impacts, existing development constraining land availability, and the overall high cost of such a project. Further, the Commission considered the existing Countywide Transportation Plan (CTP) planned crossing at Westwind Drive more feasible for construction.

Staff is in concurrence with the Commission’s change to the CTP roadways planned for the area and the recommended text changes currently found in Chapter 4 of the draft Silver Line CPAM (Attachment 1). The Board may choose to endorse the staff and Commission recommendations, direct staff to retain the Board original direction to include the Horsepen Run Connector or direct an alternative option.

<table>
<thead>
<tr>
<th>Board Options</th>
<th>Table 2: Potential Impacts of the Horsepen Run Connector</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Land Use</td>
</tr>
<tr>
<td>1) Accept Commission and staff recommendations</td>
<td>• Option removes potential land use and spatial constraints to implementing the additional roadway crossing</td>
</tr>
<tr>
<td>2) Retain original Board direction in CPAM</td>
<td>• Potential substantial site issues with limited land area available for construction</td>
</tr>
</tbody>
</table>

**DRAFT MOTIONS ON ISSUE 2: HORSEPEN RUN CONNECTOR CROSSING OF THE BROAD RUN**

1. I move that the Board of Supervisors **retain** the recommendations of the Planning Commission and staff for CPAM-2016-0002, Silver Line Comprehensive Plan Amendment, to include the removal of the Horsepen Run Connector from the CTP for the planning area and retain the Commission and staff recommended map notes found in Chapter 4 Transportation (Attachment 1, page 4-45 and Appendix Map 6 of the June 22, 2017, Board of Supervisors Business Meeting Action Item,) to consider an additional crossing of the Broad Run as a potential future planning option.

**OR**
2. I move that the Board of Supervisors revert to the original Board direction to include the Horsepen Run Connector in Chapter 4 Transportation (page 4-45 and Appendix Map 6 as currently drafted) of the CPAM-2016-0002, Silver Line Comprehensive Plan Amendment of the June 22, 2017, Board of Supervisors Business Meeting Action Item,

OR

3. I move an alternate motion.

3) **Mixed-use, Medium Buildings on the East Side of Loudoun Gateway Station**

The Board previously affirmed TLUC’s recommendation to support the designation of properties on the East Side of Loudoun Gateway Station for Route 28 Business and also recommended the Floor Area Ratio (FAR) for the Compact Walkable Non-Residential range be changed from 0.5 to 4.0 FAR to 0.5 to 6.0 FAR. Staff presented the Commission with these land use designation changes. Consolidation of the Compact, Walkable Employment and Compact, Walkable Non-residential land use typologies achieves the FAR increase as directed. However, the Commission elected to revisit this issue and has recommended that land area east of the Loudoun Gateway Station be designated as Mixed-use, Medium Buildings, as reflected in Chapter 3 Planned Land Use (page 3-13) of the Silver Line CPAM (Attachments 1 and 2).

Staff does not support the Commission’s recommendation. Based on feedback from the Department of Economic Development (DED) and based on current development of the land, staff supports this area being designated for Route 28 Business as previously recommended by the Board. The DED staff see these current businesses as an important sector to retain and promote near Dulles. The staff recommendation recognized that the proximity and location of the existing flex industrial uses and planned future uses are mutually supportive and compatible with the Dulles operations and thus should be retained and is shown in Attachment 3. The Board may choose to amend the recommended plan to include the Board’s original direction for Route 28 Business east of Loudoun Gateway Station as found in Attachment 3 and 4, endorse the Commission’s recommendation as shown in Attachments 1 and 2, or direct an alternative option.

<table>
<thead>
<tr>
<th>Board Options</th>
<th>Table 3: Potential Impacts Related to East Side of Loudoun Gateway Station</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>1) Accept Commission recommendations</td>
<td>• Establishes long term planning guidance to change to a different land use pattern</td>
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<tr>
<td></td>
<td>• Creates need for land area for existing uses elsewhere adjacent to Dulles Intl. Airport</td>
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</table>
**Table 3: Potential Impacts Related to East Side of Loudoun Gateway Station**

<table>
<thead>
<tr>
<th>Board Options</th>
<th>Land Use</th>
<th>Transportation</th>
<th>Zoning</th>
<th>Fiscal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) Retain Board and Staff recommendation in CPAM</td>
<td>• Protects and promotes the existing business in this area.</td>
<td>• None beyond current impacts projected</td>
<td>• Recognizes the existing zoning and discourages re-zonings that will not be compatible with existing uses.</td>
<td>• Supports the continuation of existing businesses and promotion of new compatible businesses that contribute to the tax base.</td>
</tr>
</tbody>
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**DRAFT MOTIONS ON ISSUE 3: MIXED-USE, MEDIUM BUILDINGS ON THE EAST SIDE OF LOUDOUN GATEWAY STATION**

1. I move that the Board of Supervisors accept the Planning Commission recommendation for CPAM-2016-0002, Silver Line Comprehensive Plan Amendment to include the designation of land area east of the Loudoun Gateway Station from Route 28 Business to the Mixed-use, Medium Buildings land use typology as shown in Chapter 3 Planned Land Use (page 3-13, Attachments 1 and 2) of the June 22, 2017, Board of Supervisors Business Meeting Action Item.

OR

2. I move that the Board of Supervisors revert to the Board and staff's recommendation to include the designation of land area east of the Loudoun Gateway Station Route 28 Business land use typology as shown in Attachment 3 of the June 22, 2017, Board of Supervisors Business Meeting Action Item.

OR

3. I move an alternate motion.

4) **Mixed-use on the East Side of Loudoun County Parkway**

The Board previously directed that specific land areas east of Loudoun County Parkway, known as DuPont- Fabros’ Loudoun Metro (conceptual development), be designated Compact, Walkable Employment and Compact, Walkable Non-residential Land Use Typologies, though the discussion of designating the area as Mixed-use, Medium Buildings was entertained by the Board on November 29, 2016. The Commission also elected to revisit this issue on April 13, 2017 to re-designate that same area of land east of Loudoun County Parkway as Mixed-use, Medium Buildings. The motion to change the area from a Compact, Walkable Non-Residential designation to Mixed-use, Medium Buildings failed (4-4-1, Salmon, Scheel, Barnes, Priscilla opposed, Sisley absent) (Attachment 2) for the current recommended land use designations for this area).
The underlying zoning for this area is generally PDRDP- Planned Development-Research and Development Park and PDOP - Planned Development - Office Park. PDRDP allows for planned mixed employment park, subject to an adopted concept development plan, which allows the mixing of research and development firms, office complexes, certain types of manufacturing and interrelated land uses. PDOP allows for office park established primarily for administrative, business, and professional offices designed in a parklike environment and subject to an adopted concept development plan. In general, the current zoning uses are congruent with desired uses of the Compact, Walkable Nonresidential primary and secondary uses as described in Chapter 3 of the Silver Line CPAM. In addition, the current zoning does allow for other by-right uses such as data centers, which is supported in plan policy as encouraging development potential of existing by-right uses that may or may not be in keeping with the long term land use intent of the CPAM. Thus, the current land use typology designation and the underlying zoning offer a multitude of development options in this specific area beyond mixed-use or a specific use, such as data centers.

Staff supports maintaining the Compact, Walkable Non-residential Land Use designation as depicted in Attachments 1, 2 and 3 for this area. The Board may choose to retain the existing land use designation as provided in the Silver Line CPAM, direct staff to reconfigure the land use to a different designation or direct an alternative option.

**STAFF RESPONSE TO BOARD REQUESTS:** Staff received three Board related inquiries and requests at or soon after the May 10, 2017, Board Public Hearing. On the day of the public hearing, staff received a report prepared by George Washington University's Center for Real Estate and Urban Analysis for the applicant, “The Net Fiscal Impacts of Development at Loudoun Metro.” While time did not permit a close review of this study, staff did provide an initial reaction and supporting materials (Attachment 6). The first two requests below ask for additional fiscal information, to help evaluate options for this area and in response to materials provided by staff and the report provided by the applicant.

1) **Additional information regarding data through 2040 for the net fiscal impact and for Metrorail Service Tax District revenues as shown on the graph comparing data center and mixed-use development on a hypothetical 20 acre site.**

Attachment 7 provides a table showing cumulative development in five year increments, annual impacts, impacts grouped into five year periods, and cumulative impacts.

Through 2040, development of a hypothetical 20 acre site as data centers provides less cumulative Metrorail Service Tax District revenue than development as mixed-use. With respect to the fiscal impact, data centers provide a greater positive fiscal impact cumulatively through 2040, although the annual fiscal impact from mixed-use development is forecast to exceed that of data centers by 2035.
Table 4. Hypothetical 20 Acre Site: Fiscal Impacts and Metrorail Tax District
Revenues in millions of constant 2016 $

<table>
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<tr>
<th></th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
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<td><strong>Annual Figures</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Mixed-Use Medium</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
<td>Fiscal Impact</td>
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<td><strong>Data Centers</strong></td>
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<td>Fiscal Impact</td>
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<td><strong>Mixed-Use Medium</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
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<td><strong>Data Centers</strong></td>
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<td>$0.9</td>
<td>$1.7</td>
<td>$2.4</td>
<td>$3.2</td>
</tr>
</tbody>
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Note:

1) Mixed-Use Medium is based on achieving all small multi-family units: 1.87 residents, 0.15 school-aged children per unit.

2) Information on how much tax revenue would be generated at the Loudoun Metro site (DuPont – Fabros Site Only) if it were developed as Data Centers and how much if it were developed mixed-use with residential. Projections were requested for 2030, 2040, and 2050.

Attachment 8 provides the 2030, 2040, and 2050 development forecasts and the methodology. The development forecasts were used as inputs for fiscal modeling. Attachment 9 provides detailed information on the fiscal results.

A total of seven scenarios were evaluated to assess the potential fiscal impacts of development at this site: data centers only, mixed-use only (with low, intermediate, and high development forecasts), and mixed-use on the west side of Loudoun County Parkway with data centers on the east side (again with low, intermediate, and high development forecasts).
forecasts). The uncertainty of the pace of development called for a need to have forecast ranges (low, intermediate, high development forecasts). The differences between the low, intermediate, and high scenarios reflect how quickly this site could achieve the build out shown in the proposed land use plan dated September 13, 2016, that DuPont - Fabros representatives emailed the Department of Planning and Zoning (DPZ).

The forecasts for all scenarios with a mixed-use component have commercial development accompanies residential development. If residential development precedes commercial development, fiscal results could be fiscally negative until commercial development occurs.

Table 5. DuPont - Fabros Site: Fiscal Impact and Metrorail Service Tax District Revenues
Annual Figures for 2030, 2040, and 2050 in millions of constant 2016 $s

<table>
<thead>
<tr>
<th></th>
<th>Scenario 1 (small MF units)</th>
<th>Scenario 2 (avg. MF units)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2030</td>
<td>2040</td>
</tr>
<tr>
<td><strong>Data Centers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiscal Impact</td>
<td>$2.9</td>
<td>$5.8</td>
</tr>
<tr>
<td>Metrorail Service Tax District</td>
<td>$0.8</td>
<td>$1.5</td>
</tr>
<tr>
<td><strong>Entire Site Mixed-Use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate Scenario</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiscal Impact</td>
<td>$1.7</td>
<td>$3.6</td>
</tr>
<tr>
<td>Metrorail Service Tax District</td>
<td>$0.6</td>
<td>$1.1</td>
</tr>
<tr>
<td>Low Scenario</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiscal Impact</td>
<td>$4.4</td>
<td>$6.9</td>
</tr>
<tr>
<td>Metrorail Service Tax District</td>
<td>$1.2</td>
<td>$1.7</td>
</tr>
<tr>
<td>High Scenario</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiscal Impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metrorail Service Tax District</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mixed-Use to the West of Loudoun County Parkway, Data Centers to the East</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate Scenario</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiscal Impact</td>
<td>$14.0</td>
<td>$15.3</td>
</tr>
<tr>
<td>Metrorail Service Tax District</td>
<td>$1.2</td>
<td>$1.6</td>
</tr>
<tr>
<td>Low Scenario</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5. DuPont - Fabros Site: Fiscal Impact and Metrorail Service Tax District Revenues

<table>
<thead>
<tr>
<th>District Revenues</th>
<th>Fiscal Impact</th>
<th>Metrorail Service Tax District</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$13.0</td>
<td>$1.0</td>
</tr>
<tr>
<td></td>
<td>$14.9</td>
<td>$1.5</td>
</tr>
<tr>
<td></td>
<td>$15.3</td>
<td>$0.0</td>
</tr>
<tr>
<td></td>
<td>$12.2</td>
<td>$1.0</td>
</tr>
<tr>
<td></td>
<td>$13.3</td>
<td>$1.5</td>
</tr>
<tr>
<td></td>
<td>$13.6</td>
<td>$0.0</td>
</tr>
</tbody>
</table>

**High Scenario**

<table>
<thead>
<tr>
<th>District Revenues</th>
<th>Fiscal Impact</th>
<th>Metrorail Service Tax District</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$14.8</td>
<td>$1.5</td>
</tr>
<tr>
<td></td>
<td>$15.3</td>
<td>$1.6</td>
</tr>
<tr>
<td></td>
<td>$15.3</td>
<td>$0.0</td>
</tr>
<tr>
<td></td>
<td>$13.3</td>
<td>$1.5</td>
</tr>
<tr>
<td></td>
<td>$13.6</td>
<td>$1.6</td>
</tr>
<tr>
<td></td>
<td>$13.6</td>
<td>$0.0</td>
</tr>
</tbody>
</table>

Notes:

1) Given that payments on Loudoun County’s obligations to fund the capital costs of the extension of the Silver Line will be complete prior to 2050, no tax revenues for the Metrorail Service Tax District are shown in 2050.

2) Scenario 1 reflects all small multi-family units: 1.87 residents, 0.15 school-aged children per unit.

3) Scenario 2 reflects multi-family units achieving current County averages for new units: 1.97 residents, 0.23 school-aged children per unit.

Scenarios for both entirely mixed-use development and for mixed-use development on the west side of Loudoun County Parkway and data centers on the east side of Loudoun County Parkway provide greater Metrorail Service Tax District revenues by 2040 than the data center scenario ($1.1 - $1.7 M versus $0.8 M annually). Most of these scenarios also provide greater tax district revenues by 2030 than the data center scenario. The only exception is the mixed-use only, low scenario, which is forecasted to produce $0.6 M in tax district revenues in 2030 as compared to $0.8 M for data centers.

By 2050, all scenarios show Metrorail Service Tax District revenues of $0. The debt service funded through these receipts is projected to be paid by the early 2040s, so by 2050 this Tax District will no longer be active. The westernmost portion of this site (27.7 acres) is within the Rt. 772 Station Service District, and thus would help generate revenues for ongoing Washington Metropolitan Area Transit Authority (WMATA) payments. This station service district currently is not levied (i.e., it has a tax rate of $0.00). Whether mixed-use or data center development would result in more tax revenues to this district depends on the amount and type of development within this area.

In contrast to Metrorail Tax District revenues, the fiscal impact (County revenues minus expenditures) is highest if the entire site is developed as data centers. For data centers, this impact is forecasted to be $25 M by 2030 once data center development is complete, and then continuing at that level. Forecasts of fiscal impacts for the scenarios including mixed-use increase over time. Development with the area west of Loudoun County Parkway as mixed-use and the area to the east as data centers is forecast to achieve a positive $12 - $15 M annually. Development as mixed-use on both sides of Loudoun County Parkway is forecast to achieve $1 - $7 M annually.

Results from the analysis of projections for the DuPont - Fabros site have both similarities and differences to the results from the analysis of a hypothetical 20 acres. In both analyses, scenarios with a mixed-use component have equal or greater annual tax district revenues by 2030. As development continues, tax district revenues then grow. The fiscal impact of
mixed-use development grows over time. In contrast, data centers develop relatively early and then provide steady tax district revenues and a steady positive fiscal impact.

A difference between the analyses is that in the case of the 20 acre hypothetical, the fiscal impact of the mixed-use development scenario exceeds that of the data center scenario by 2035. Scenarios incorporating mixed-use development for the DuPont - Fabros site however, do not exceed the data center scenario, even as of 2050.

These differences in results reflect differences in assumptions about the amount and mix of development. Table 6 compares development assumptions on a per acre basis, demonstrating that the hypothetical 20 acre analysis was based on much more commercial development as part of a mixed-use community than proposed by DuPont -Fabros.

Table 6. Development at Project Completion: Hypothetical 20 Acre Site and DuPont Fabros - Site

<table>
<thead>
<tr>
<th>Hypothetical 20 Acre Site</th>
<th>DuPont - Fabros Proposal (189.9 acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Developed as Data Centers</strong></td>
<td></td>
</tr>
<tr>
<td>Data Centers</td>
<td>18,750 SF/ac</td>
</tr>
<tr>
<td><strong>Developed as Mixed-Use</strong></td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>58,100 SF/ac</td>
</tr>
<tr>
<td>Retail</td>
<td>14,500 SF/ac</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>MF</td>
<td>30 units/ ac</td>
</tr>
<tr>
<td>SFA</td>
<td>5 units/ ac</td>
</tr>
</tbody>
</table>

While the tax district revenues and fiscal impacts potentially flowing from the DuPont – Fabros site have been calculated, these calculations do not take into account any redistribution of development from elsewhere in the plan area, the tax districts, or the County as a whole. Thus the revenues flowing to the tax districts (both the Metrorail Service Tax District and the Rt. 772 Station Service District) may be different if the pattern of development elsewhere within these districts changes based on how this site develops. With regards to fiscal impacts, the increases shown in this analysis do not account for any redistribution from development that would have occurred elsewhere.

Finally, as a calculation of the total fiscal impacts from this site, the results of this analysis are not comparable to the results shown in the Potential Fiscal Impacts Report (Attachment 10), which describes the impact of increased development under the Planning Commission’s Recommended Plan compared to development without adoption of this plan. The analysis for the response to this question is based on all development that could occur at the site.
Transportation Impact Comparison of Mixed-use Verses Data Centers

For consideration of the Board, Department of Transportation and Capital Infrastructure (DTCI) staff prepared a generalized trip generation comparison that considered the approved data center use on this portion of land east of Loudoun County Parkway to a mixed-use development option under consideration. DTCI’s review of the planned roadways in the immediate vicinity of this site indicates that these facilities, as proposed, would be able to accommodate data center uses on this site. Comparatively, a mixed-use development option for this site is forecasted to increase AM peak hour trip generation by 635% (977 additional trips), PM peak hour trip generation by 825% (1,510 additional trips), and total weekday trip generation by 1,165% (15,943 additional trips) as compared to data center uses on this site, as shown in Table 7. Such increases in traffic volumes would impact major corridors in the vicinity of the site that could result in adverse traffic operation conditions and increased delay without additional mitigation.

<table>
<thead>
<tr>
<th>Development Program</th>
<th>AM Peak Trips</th>
<th>PM Peak Trips</th>
<th>Weekday Total Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Trips with Approved Development (971,027 SF Data Center + 5% Office)</td>
<td>183</td>
<td>208</td>
<td>1,497</td>
</tr>
<tr>
<td>Total Trips with Alternative Development (Mixed-Use Residential, Retail, and Office)</td>
<td>1,159</td>
<td>1,718</td>
<td>17,439</td>
</tr>
<tr>
<td>Difference (Mixed-Use minus Data Center)</td>
<td>+977</td>
<td>+1,510</td>
<td>+15,943</td>
</tr>
</tbody>
</table>

1) 5% of office uses based on 971,027 SF of data center uses assumed east of Loudoun County Parkway to provide a conservative estimate of trip generation forecasts for data center uses
2) Mixed-Use assumes 600 SFA Units, 220 MF Units, 260,000 SF of Office, and 166,175 SF of Retail east of Loudoun County Parkway
3) ITE Codes 230 (Townhomes), 220 (Multifamily Residential), 160 (Data Center), 710 (Office), and 820 (Shopping Center) used to forecast trip generation

3) Information regarding the status of certain roadway construction, right-of-way, and funding within the CPAM-2016-0002 area.

In response to this request, DTCI staff prepared a map, provided as Attachment 11, to provide information about the status of remaining unbuilt road corridors in the Silver Line Policy Area. This map provides information regarding which of the unbuilt roads proposed with this plan are already designed or currently under design and which corridors are included the County’s current Capital Improvement Program (FY 2017 – FY 2022 CIP). The map also shows the location of existing parcel boundaries to provide a general idea of how the proposed alignments relate to properties in the area.

DTCI analysis found that approximately 69% of planned roadway corridor miles in the Silver Line Policy Area are already constructed today, and a substantial portion of the unbuilt roadways in the area are being brought forward from the currently adopted 2010 CTP. Due to this continuity, approximately 40% of the unbuilt planned roadway corridors
in the area (representing 46% of the unbuilt lane miles) are included in the CIP, while approximately 47% of the unbuilt roadway corridors (representing 52% of the unbuilt lane miles) are currently under design or have already completed the design process. As such, it is forecasted that through County efforts and existing proffers, more than 83% of the planned roadway corridors in the Silver Line Policy Area will be in place in the coming years, with additional planned corridors anticipated to be constructed through private investment.

The Board may choose to accept the recommendation(s) of the Commission and staff, affirming the Board’s direction to designate land east of Loudoun County Parkway as Compact, walkable Non-residential as found in the Planned Land Use Map (page 3-13) of the Silver Line CPAM, designate the land area as Mixed-Use, Medium Buildings, or may choose to designate a different land use typology.

<table>
<thead>
<tr>
<th>Board Options</th>
<th>Table 8: Potential Impacts of Mixed-Use on the East Side of Loudoun County Parkway</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Land Use</td>
</tr>
<tr>
<td>1) Accept the Commission and staff recommendations to retain the Compact, Walkable Employment typology</td>
<td>• Establishes long term planning guidance</td>
</tr>
<tr>
<td>2) Designate the land area as Mixed-Use, Medium Buildings typology</td>
<td>• Change in expected use outcomes in distribution square footage of nonresidential uses or numbers of residential units</td>
</tr>
</tbody>
</table>

**DRAFT MOTIONS FOR ISSUE 4: MIXED-USE ON THE EAST SIDE OF LOUDOUN COUNTY PARKWAY**

1. I move that the Board of Supervisors **retain** the recommendations of the Planning Commission and staff in CPAM-2016-0002, Silver Line Comprehensive Plan Amendment to retain the designation of land area east of Loudoun County Parkway as the Compact, Walkable Non-residential land use typology as shown in Chapter 3 Planned Land Use (page 3-13 of Attachment 1, and Attachments 2 and 3) of the June 22, 2017, Board of Supervisors Business Meeting Action Item.
2. I move that the Board of Supervisors modify the original Board direction to include the re-designation of land area east of Loudoun County Parkway from the Compact, Walkable Non-residential land use typology as shown in Chapter 3 Planned Land Use (page 3-13 of Attachment 1, and Attachments 2 and 3) of the June 22, 2017, Board of Supervisors Business Meeting Action Item to the Mixed-Use, Medium Buildings land use typology.

OR

3. I move an alternate motion.

5) Single family attached residences as an option in the Medium Mixed-Use typology – Board Directed Item

The Board requested that staff and the Commission determine the criteria that would be used to allow for up to approximately 15% of the Medium Mixed-Use designated areas to have single family attached units (e.g., townhomes). The Silver Line CPAM policies propose location standards for townhouses when they are included as part of an Urban Mixed-Use, Medium development. Townhouses are appropriate as a secondary use to provide a transition between the higher density Mixed-Use components and adjacent lower density development. They may also be appropriate within the Mixed-Use development, except in the commercial core of the development where they can detract from the active street concept in the core area.

To better manage the residential land use mix within the Urban Mixed-Use, Medium Typology, the Silver Line CPAM includes the following policy:

Each neighborhood should accommodate a long-term vision with an appropriate mix combination of residential and non-residential uses that should be framed by a consistent focus on compact urban form and active streets and public spaces.

The predominant residential use should be multifamily units, either stand-alone or in vertically mixed buildings. Urban townhouses may be provided as a secondary use within a larger mixed-use project, under the following conditions:

a. Townhouses are proposed as a minor residential component of a larger mixed-use project of 25 acres or greater;

b. Townhouses represent 15 percent or less of the project’s housing;

c. They are situated where they provide a transition between the higher density mixed-use core and surrounding lower density uses or in close proximity to existing or planned schools and parks;

d. Their design reflects an urban scale, including narrow widths, front doors at the sidewalk, no vehicular (garage) access through the front yard; and

e. They generally are not fronting on the active commercial streets or within commercial core areas.
Staff is recommending that the proposed modifications to the land use policies, land use typologies and land use map changes be retained in the Silver Line CPAM as currently drafted in Chapter 3 Planned Land Use (page 3-29 and 3-30) in Attachment 1.

**STAFF RESPONSE TO BOARD REQUEST:** Staff received Board related inquiries and requests for further examination of numerical forecast results of Single-Family Attached (SFA) reduction from 15% to 5% for the Mixed-Use, Medium Land Use Designation.

The SFA forecasted growth from 2015 to 2040 for the Silver Line Plan Area is 4,464 at 15% and 3,292 at 5%. The forecasted growth through 2040 consists of the following:

- Urban Residential Land Use Designation
- Areas with already approved site plans or subdivision recorded deeds
- Already developed Mixed-Use, Medium Land Use Designation areas that are not forecasted for redevelopment by 2040
- Already developed Mixed-Use, Medium Land Use Designation areas that are forecasted for redevelopment by 2040. The forecast for these areas used the 5% or 15% SFA density.
- Mixed-Use, Medium Land Use Designation areas that are vacant and do not have site plans or subdivision recorded deeds. The forecast for these areas used the 5% or 15% SFA density.

The Board may choose to accept the recommendations of the Commission and staff, or recommend an alternative to add requirements to the existing recommended policies found in Chapter 3 Planned Land Use. One potential option suggested by two Board members could be to limit townhome development to five percent (5%) of the housing units across a development with an additional 10 percent (10%) single family attached development authorized but consisting of smaller, urban formatted units, in the form of ‘2-over-2’ stacked SFA units or other smaller unit type and not to exceed a 15% total for SFA housing within the Mixed-Use, Medium Buildings land use typology. This option allows for up to 15% townhomes if all the units are age-restricted senior housing.

<table>
<thead>
<tr>
<th>Board Options</th>
<th>Table 9: Potential Impacts of Single Family Attached Residences as an Option in the Medium Mixed-Use typology</th>
</tr>
</thead>
</table>
| 1) Accept the Commission and staff recommendations | ![Table Row](#) Establishes long term planning guidance  
|  | ![](https://example.com/attachment TableRow.png) Affirms Board’s original intent  
|  | ![Table Row](https://example.com/attachment TableRow.png) No major impacts to overall function of CPAM transportation system to 2040 beyond current impacts projected  
|  | ![Table Row](https://example.com/attachment TableRow.png) Establishes long term need to address base zoning to implement the Planned Land Use  
|  | ![Table Row](https://example.com/attachment TableRow.png) None to 2040 beyond current projections  
<p>|  | ![Table Row](<a href="https://example.com/attachment">https://example.com/attachment</a> TableRow.png) Potential to meet capital facilities needs with proffers during re-zonings to achieve the Planned Land Use beyond 2040 |</p>
<table>
<thead>
<tr>
<th>Board Options</th>
<th>Table 9: Potential Impacts of Single Family Attached Residences as an Option in the Medium Mixed-Use typology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Land Use</strong></td>
</tr>
<tr>
<td>2) Designate some other SFA distribution</td>
<td>• Change in expected use outcomes in square footage of nonresidential uses or numbers of residential units projected</td>
</tr>
<tr>
<td></td>
<td><strong>Transportation</strong></td>
</tr>
<tr>
<td></td>
<td>• None / undetermined</td>
</tr>
<tr>
<td></td>
<td><strong>Zoning</strong></td>
</tr>
<tr>
<td></td>
<td>• Establishes long term need to address base zoning to implement the Planned Land Use based on the typology selected</td>
</tr>
<tr>
<td></td>
<td><strong>Fiscal</strong></td>
</tr>
<tr>
<td></td>
<td>• Potential change in fiscal balance based on new typology requirements</td>
</tr>
<tr>
<td></td>
<td>• Potential reduction for need for capital facilities (schools), should smaller urban formatted units be required</td>
</tr>
</tbody>
</table>

**DRAFT MOTIONS FOR ISSUE 5: SINGLE FAMILY ATTACHED RESIDENCES AS AN OPTION IN THE MEDIUM MIXED-USE TYPOLOGY**

1. I move that the Board of Supervisors **retain** the recommendations of the Planning Commission and staff for CPAM-2016-0002, Silver Line Comprehensive Plan Amendment to include a land use policy that recommends up to 15% of the housing unit mix (in number of units by project) being townhomes or other single family attached unit types found in Chapter 3 Planned Land Use (page 3-29 and 3-30) in Attachment 1 of the June 22, 2017, Board of Supervisors Business Meeting Action Item.

   OR

2. I move that the Board of Supervisors **modify** the recommendations of the Planning Commission and staff of up to 15% age-restricted townhomes or include addition of a limitation on townhome development to five percent (5%) of the housing units across a development with an additional 10 percent (10%) single family attached development authorized but consisting of smaller, urban formatted units, in the form or ‘2-over-2’ stacked SFA units or other smaller unit type, within the Mixed-Use, Medium Buildings land use typology found in Chapter 3 Planned Land Use (page 3-29 and 3-30) in Attachment 1 of the June 22, 2017, Board of Supervisors Business Meeting Action Item.

   OR

3. I move an alternate motion.

**6) Transportation Impacts and Considerations Related to Prentice Drive and Shellhorn Road Corridors**
The DTCI is commencing with designs for both the Prentice Drive and the Shellhorn Road corridors. An alignment study is currently underway for the Prentice Drive corridor. The Shellhorn Road corridor alignment was endorsed by the Board (8-0-1: Higgins absent) on October 4, 2016, and staff was directed to incorporate this alignment in CPAM 2016-0002.

**STAFF RESPONSE TO BOARD REQUESTS:** A request for additional information on existing roadways, parcel boundaries and reservations for unbuilt portions of the Prentice Drive and Shellhorn Road Corridors was made by the Board.

Portions of Prentice Drive and Shellhorn Road are already in place, including Prentice Drive between Lockridge Road and Pacific Boulevard, and Shellhorn Road between Waxpool Road and Loudoun County Parkway. As shown in Attachments 12 and 13, the planned but unbuilt segments of these projects, including related segments of Randolph Drive, Lockridge Road, and Lockridge Road West, impact several large parcels between the Ashburn Station and Loudoun Gateway Station area.

**County Acquisition of Right-of-Way for Transportation Projects**

As discussed with the Commission, right-of-way for transportation facilities can be obtained for public purposes through three methods: (1) voluntary proffer commitments as part of a rezoning application, (2) conditions imposed by the County as part of special exception applications, or (3) County purchase of land.

Through a rezoning or special exception application, the County is able to ensure coordination the County's Comprehensive Plan is achieved in conformance with State Code ([Code of Virginia, Chapter 15.2-2223](https://www.CODE.VA.GOV/7070)) by ensuring reservation and dedication of right-of-ways needed to achieve the planned transportation network. Additionally, such applications sometimes present further opportunities for construction of roadways and other transportation improvements, or monetary contributions to the County to help to fund these projects. If such opportunities do not arise prior to construction of a facility, as is the case with by-right development, the County would then work with property owners to purchase this land and would fund the construction without financial contributions through proffers or conditions of approval.

**Prentice Drive Corridor Project**

Prentice Drive travels east from the existing intersection of Shellhorn Road and Metro Center Drive to connect with the existing segment of Prentice Drive at Lockridge Road. This project also includes Lockridge Road West, which will provide a connection between Prentice Drive and Waxpool Road. The western end of this corridor will feed traffic directly into the Ashburn Metrorail Station area. This corridor may impact up to seven (7) parcels and includes a crossing of the Broad Run. There is currently a reservation area for portions of Prentice Drive and Lockridge Road West, which was proffered as part of an approved rezoning application (ZMAP 1998-0003). There are approved site plans (STPL 2013-0032, STPL 2014-0024, and STPL 2015-0011) in the immediate vicinity of both Prentice Drive and Lockridge Road West, although initial alignment concepts have demonstrated the
possibility of constructing these roadways without encumbering upon the approved building footprints.

Shellhorn Road Corridor Project
The Board-endorsed alignment for Shellhorn Road shown throughout the plan travels east from Loudoun County Parkway across the Broad Run to Lockridge Road. It then incorporates a segment of existing Lockridge Road between Shellhorn Road and Prentice Drive, and travels in a southeastern direction providing a connection with the Loudoun Gateway Metrorail Station before terminating at its intersection with Moran Road at realigned Randolph Drive. Initial review indicates that this corridor may impact up to six (6) parcels as well as Washington Dulles International Airport property. There are currently no legal dedications or reservations for this corridor through private parcels. This project is currently in initial phases of design.

Coordination with Metropolitan Washington Airports Authority (MWAA)
Through the process of developing an alignment for Shellhorn Road, County staff has worked closely with the MWAA to find a joint solution for the portion of the Shellhorn Road corridor that will traverse MWAA land. In order to construct roadways through airport property, MWAA, would not dedicate right-of-way to the County similar to a private property owner, but rather would provide easements to the County or VDOT for public roadways. Therefore, development of this portion of the corridor requires continued close coordination and partnership with MWAA in order to be able to secure such an easement in perpetuity.

Endorsement of Refined Shellhorn Road Corridor Alignment for Incorporation into the CPAM Document
In consideration of the County’s goal to provide a network of parallel east-west corridors throughout the eastern portion of Loudoun County, DTCI has developed a preliminary configuration for the intersection of Shellhorn Road and Lockridge Road as shown on Attachment 14 (June 12, 2017). While specific intersection designs are generally completed during the roadway design process, given the critical nature of these corridors it is important to ensure the Board is informed of any alternatives impacting the planned alignment of the road and therefore would need additional Board direction. The design of the Shellhorn Road and Lockridge Road intersection would have eastbound Shellhorn Road curve from its October 6, 2017, endorsed alignment into the Lockridge Road alignment south of Shellhorn Road with the section of Lockridge Road north of Shellhorn Road "T-ing" into Shellhorn Road, providing a through connection for east-west traffic. Staff would appreciate Board direction as design commences on this project.

DRAFT MOTIONS FOR ISSUE 7: SHELLHORN ROAD ALIGNMENT

1. I move that the Board of Supervisors endorse the revised alignment of Shellhorn Road as shown in pink on Attachment 14, dated June 12, 2017, and included in the June 22, 2017, Board of Supervisors Business Meeting Action Item.
OR

2. I move an alternate motion.

OTHER STAFF AND COMMISSION RECOMMENDATIONS REQUIRING BOARD DIRECTION

7) Urban Residential Typology Changes – Board Directed Item

The Board requested that staff and the Commission evaluate the appropriateness of the boundaries of the Urban Residential land use designation. Following staff and the Commission’s review, one Urban Residential designated area was modified and replaced with the Mixed-Use, Medium Buildings land use designation at Moorefield Station. The change now designates the area for Mixed-Use, Medium Buildings, which is consistent with the existing zoning and provides for a mixed commercial and office use pattern along Loudoun County Parkway.

Policies were also added to the Urban Residential typology set criteria for including multifamily units in the neighborhoods:

Multifamily housing may be a minor component of Urban Residential Neighborhoods, typically 15%-20% of the total residential mix, and only where it contributes to the overall design integrity of the neighborhood, such as supporting retail development or providing a transition to adjacent high density residential or mixed-use areas. The desired land use mix projections (of residential use types, and limited commercial/retail uses) are designed to ensure envisioned densities, land uses and amenities to implement complete communities.

This land use typology also encourages age-restricted housing options that may further reduce demands for community facilities and services.

The Commission and staff are recommending that the proposed modifications to the land use policies, land use typologies and land use map changes be retained in the Silver Line CPAM as currently found in Chapter 3 Planned Land Use (pages 3-13, and 3-19 through 3-20) in Attachment 1.

8) Compact Walkable Non-residential and Compact Walkable Employment Typologies

These two typologies were found to be very similar, with the principal difference being the inclusion of major regional anchor uses such as stadiums, convention centers and similar facilities being limited to Compact, Walkable Non-residential areas. The Commission found the distinction to be insignificant and recommended merging the two typologies and addressing the location of the major, regional uses by separate policy as shown in Attachment 2.

Staff supports the Commission’s recommendation and is recommending that the proposed modifications to the land use policies, land use typologies and land use map changes be retained in the Silver Line CPAM as currently drafted in Chapter 3 Planned Land Use (pages 3-13, and 3-23 through 3-26) in Attachment 1.
9) **Linear Park along the Broad Run – Board Directed Item**

The Board recommended a linear park with multi-use trails be considered along the Broad Run, potentially linking the area to the W&OD trail and other networks. The Silver Line CPAM now includes the trail alignment running parallel to but immediately outside the floodplain so that the trail can be improved with a hard surface to accommodate commuter and recreational bike traffic, as well as pedestrian traffic.

Staff concurs with Commission’s recommendation and the previous Board’s recommendation, which is depicted in Chapter 5 Community Facilities and Services (pages 5-11 through 5-12) in Attachment 1.

10) **Address School Facility Size and Cost Implications within the Silver Line Plan Area:** The Commission asked staff and Loudoun County Public Schools (LCPS) Planning staff to investigate facility sizing and cost implications of new schools in an urban environment, specifically the Silver Line planning area, in Loudoun County. LCPS Planning staff was present at several of the Commission Work Sessions to provide updates on rough estimated requirements of school clusters and potential sizing. However, estimates of size and costs of new urban facilities is inconclusive at this time due to need for study and conceptual design work. However, LCPS Planning staff has indicated that there is potential for greatly reduced student generation and public school needs in the planning based on the proposed development types in the urban environment. LPCS Planning staff and County staff advised the Commission that the LCPS Board and LCPS Planning staff are continuing to move forward with developing new student generation models and new urban school design(s) appropriate for Loudoun County.

Loudoun County DPZ staff also presented an overview of the status of the Silver Line CPAM and the planning process to the LCPS Board on February 28, 2017.

Staff recommends continued collaboration with LCPS to develop new student generation models and new urban school design(s) appropriate for Loudoun County and update the Silver Line CPAM as needed in the future to update appropriate chapters of the plan that relate to capital facilities’ needs and fiscal impacts that are subject to change with the development of new student generation rates for the planning area. There is no direct change to the Silver Line CPAM as a result of this action, as this was a response to the Commission as to what was being done to address student generation in an urban environment in Loudoun County and within the Silver Line CPAM area.

11) **Add Performing Arts Venues to the Medium Mixed-Use and Walkable Employment Typologies:** While staff’s intent has been to accommodate a broad range of cultural facilities, staff supported adding language to clarify the intent of the Plan that “anchor uses” could include significant art facilities like museums and performing art centers; and further, that art venues including performing art centers could be part of a complete mixed-use or walkable community as currently drafted in Attachment 1.
The Commission and staff recommend inclusion of the CPAM land use typology addition that include cultural facilities such as museums, art galleries, and performing arts venues as provided in land use typologies found in Chapter 3 Planned Land Use (pages 3-23 through 3-47) in Attachment 1.

12) **Data Centers Under Current Zoning:** Staff has proposed language addressing comments from representatives of DuPont - Fabros at the Commission Public Hearing on March 28, 2017. The new language in Chapter 3 Planned Land Use (page 3-48) in Attachment 1 under Data Centers would allow properties that are subject to approved re-zonings to be modified by concept plan amendments and proffer amendments to redesign the site, maximize the intensity of development, and make the most efficient use of the property.

The Commission and staff are recommending inclusion of the language regarding data centers as drafted in in Chapter 3 Planned Land Use (page 3-48) in Attachment 1.

13) **Urban Multi-Family Residential:** The Urban Multi-Family Residential land use typology was removed from the Plan and certain features of the typology were incorporated into the Medium Mixed-Use land use typology (Attachments 2). A very small geography of the plan area was dedicated to the Urban Multi-Family Residential typology and merging with the Medium Mixed-Use typology should provide for development consistent with adjacent parcels.

The Commission and staff are recommending inclusion of the change in the Planned Land Use Map (page 3-13) as drafted within Chapter 3 Planned Land Use in Attachment 1.

14) **Urban School Design Standards:** The Commission endorsed the Silver Line CPAM’s Chapter 5 policies supporting the development of urban design standards for smaller school facilities and sites, as well as adding an implementation measure to work with LCPS Board and staff to implement such standards. The proposed Plan policies encourage providing for school needs using capacity in existing or new schools outside of the Silver Line Service District to limit the impact of future facilities needed. While the new school standards designed for new land use environment needs substantive study, LCPS Planning staff and DPZ staff concurred that the new design template may be significantly smaller than current suburban models used in Loudoun County. The intent of the Silver Line CPAM policies is to address this issue as an implementation step to better define the future needs within the planning area. LCPS Planning staff and DPZ staff are continuing to collaborate to move ahead with determining a new design and model for public schools in urban environments.

The Commission and staff are recommending inclusion of the language regarding planning for new urban schools in the planning area as drafted within Chapter 5 Community Facilities (pages 5-13 through 5-16) in Attachment 1.

15) **Public Facilities and Amenities:** The proposed plan policies encourage meeting the community facility needs through a variety of public and private facilities, co-located facilities, re-calibrated design standards for urban environments and facilities located in mixed-use
buildings. For example, any new public active parks may be smaller in size to potentially reduce the impact on future revenue.

The Commission and staff are recommending inclusion of the language regarding planning for public facilities and amenities in the planning area as drafted within Chapter 5 Community Facilities (page 5-4) in Attachment 1.

**DRAFT MOTIONS FOR ISSUES 1 THROUGH 9 FOR OTHER STAFF AND COMMISSION RECOMMENDATIONS REQUIRING BOARD DIRECTION**

1. I move that the Board of Supervisors **retain** the recommendations of the Planning Commission and staff for CPAM-2016-0002, Silver Line Comprehensive Plan Amendment to include modifications found in Items 1 through 9 in the Other Staff and Commission Recommendations Requiring Board Direction section of the June 22, 2017, Board of Supervisors Business Meeting Action Item.

OR

2. I move an alternate motion.

**CPAM CRITERIA FOR APPROVAL:** The Silver Line CPAM conforms to the purpose of the Revised General Plan to guide and accomplish a coordinated, adjusted and harmonious development pattern within Loudoun County’s jurisdiction. In this case, the smaller area of the County encompassing a portion of the Metrorail tax district is the focus of the plan amendment; however, careful and comprehensive surveys and studies of the existing conditions and trends of growth, and of the probable future requirements of its territory and inhabitants have been considered for the long-term recommendations proposed. The Silver Line CPAM, as presented, strives for and achieves the Board’s four goals by setting the stage for viable urban, mixed-use patterns centered around the planned Metrorail Stations; provides for flexible land use categories and policies that allow for near-term development to occur while anticipating longer term development in areas immediately adjacent to the Metro stations; creates a variety of employment focused land uses to support the needs of the area; and creates pedestrian–oriented environments that are projected to decrease the need for auto-oriented transportation infrastructure.

The Board’s endorsed Silver Line CPAM will need to be forwarded to VDOT in order to comply with state requirements. Upon completion of the VDOT review of the plan, specifically its relationship to regional transportation networks and travel demand model outputs, VDOT may recommend modification(s) to appropriate components of the Silver Line CPAM related to the transportation network. Following completion of this review, the Silver Line CPAM will be in compliance with the Code of Virginia § 15.2-2237 regarding required consultation with Commonwealth Transportation Board (through VDOT). This review and evaluation process will take a minimum of 90 days. If the Board chooses to endorse and forward the CPAM to VDOT in July 2017, the soonest the Board could officially adopt the Silver Line CPAM would be late Fall 2017.
REVISED GENERAL PLAN AND COUNTYWIDE TRANSPORTATION PLAN CHANGES: The Silver Line CPAM will require the addition of the Silver Line Plan document as a new component of Loudoun County Comprehensive Plan and required revisions to Chapter 6 of the Revised General Plan and Chapters 2, 3, 4 and 9, as well as Appendix 1 and 6 of the CTP as provided in Attachment 15, Proposed Revised General Plan Revisions and Attachment 16, Proposed 2010 Countywide Transportation Plan Revisions.

AGENCY REVIEW: Throughout the planning process and development of the Silver Line Comprehensive Plan Amendment, the DPZ has engaged various other departments and agencies to provide input and guidance that have shape the current proposed plan. Previous efforts including regular meetings of a steering committee during the Scenario Planning Study and several individual meetings between DPZ staff and other department staff representing various disciplines affected by the Silver Line CPAM. As such, no specific agency comments are presented in this item. However, the Departments of Economic Development, Management and Budget, DTCI, Building and Development, and Parks, Recreation and Community Services, as well as LCPS and MWAA have been thoroughly engaged in this planning process and their suggestions and recommendations have been included within the Silver Line CPAM.

Upon completion of the Board for review and endorsement, the Silver Line CPAM will be sent to VDOT to conduct a review and testing of the multi-modal transportation system and transportation model proposed for the Silver Line Plan area. Upon completion of this agency review, the Plan will be returned to the Board for final consideration and approval.

FISCAL IMPACT: The fiscal impact of the proposed plan amendment is included in the analysis in Attachment 10, Proposed Fiscal Impacts of Land Use Changes Proposed in the Silver Line Plan, dated April 28, 2017. This analysis is based on the Planning Commission’s recommended plan. The results of this study show that the additional development proposed under this plan, as compared to the current plan, has the potential to be fiscally positive. However, to achieve that, a balance of nonresidential and residential development needs to occur along with residential development that generates fewer residents and developer contributions to offset capital costs. Even with a plan and policies to guide future development, market conditions may still lead development to be fiscally negative, if residential development occurs without accompanying nonresidential development. See Attachment 10 for additional information.

ALTERNATIVES: The Board may accept staff recommendations or direct staff to make additional changes to the proposed Silver Line CPAM.

DRAFT MOTIONS:

1. I move that the Board of Supervisors endorse CPAM-2016-0002, Silver Line Comprehensive Plan Amendment, as modified/affirmed with the previous Board motions.

I further move that the Board of Supervisors direct staff to forward this endorsed CPAM-2016-0002, Silver Line Comprehensive Plan Amendment to the Virginia Department of
Transportation for review and evaluation of the associated transportation system and model as required by the Code of Virginia.

OR

2. I move that the Board of Supervisors **table action on the** CPAM-2016-0002, Silver Line Comprehensive Plan Amendment until a future Board Business meeting.

OR

3. I move an alternate motion.

**ATTACHMENTS:**

1. Silver Line Comprehensive Plan Amendment Document
3. Silver Line CPAM Planned Land Use Map (Staff Recommendation) 06-16-2017
4. Silver Line CPAM Planned Land Use Map (Board Recommendation) 11-29-2016
5. Letter from MWAA on Silver Line CPAM
6. Loudoun Metro Fiscal Report
7. Fiscal Impacts of Twenty (20) Acre Site Mixed-Use and Data Center Comparison
8. Dupont – Fabros Potential Site Development Forecasts
9. Dupont – Fabros Potential Site Development Fiscal Impacts
11. CTP Built, Unbuilt, Under Design CIP Map
12. Prentice Drive and Shellhorn Drive Parcel Reservation Map
13. Shellhorn MWAA Lands Map
14. Shellhorn Alignment Concept Map
15. Proposed Revised General Plan revisions
16. Proposed 2010 Countywide Transportation Plan revisions
SILVER LINE COMPREHENSIVE PLAN AMENDMENT
*All photos in this report, unless otherwise noted, were taken by staff in the Loudoun County Department of Planning and Zoning.*
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Chapter 1 - Introduction

Loudoun County has been a longtime supporter of the extension of Metrorail to Washington Dulles International Airport and Loudoun County. The County has been actively planning for the extension of Metrorail to the Dulles Corridor for over 30 years. Detailed planning for Metrorail expansion first appeared in Loudoun County planning documents in the 1995 Toll Road Plan and 1995 Countywide Transportation Plan. The 2001 Revised General Plan further refined the development of transit nodes as refinements to the previous plans. In 2017, the stations were formally named the Loudoun Gateway Station and the Ashburn Station with Metrorail service projected to open in 2020. While planning for Metrorail has occurred over time, this plan reflects the County’s recognition of its eminent arrival and the importance of recognizing current realities and trends.

The County recognizes that planning for the extension of the Silver Line must be a dynamic process that adapts to changing conditions in the world today. Economic conditions, market realities, building technologies, demographic trends, and the way we live our lives have changed over time; thus, policies and guidance for land development should be adapted and refined to ensure that the land development pattern positions the County to successfully maintain a high quality of life for its residents.

Silver Line Policy Area Boundary

For the purposes of this document, the area covered by this Plan is referred to as the “Silver Line Policy Area.” The boundary is intended to cover land generally within 1-mile of the Loudoun Gateway and Ashburn Metrorail stations. However, the boundary was modified based on natural and manmade boundaries or existing neighborhood boundaries that create a more holistic view of the immediate area and a more logical arrangement of planned land uses. Examples of boundaries used include natural boundaries like the Broad Run, major roads including Waxpool Road and Pacific Boulevard, and lines between existing HOAs or development types. In addition to planned land use, this
Comprehensive Plan Amendment also considers transportation needs and constraints, seeks to improve connectivity to the Metrorail stations, and develops roadway design guidelines consistent with the desired form and character of the planning area.

**Comprehensive Plan Amendment (CPAM) History**

On December 5, 2012, the Board of Supervisors established a Metrorail Service District which is a tax district created to help fund construction costs associated with Metrorail operations. Given the establishment of this Metrorail Service District, the Loudoun County Board of Supervisors initiated a process to begin a Silver Line/Metrorail Tax District CPAM on October 16, 2013 to evaluate the development potential of the Metrorail Service District. The purpose of this effort was to evaluate the existing planned land uses around the future Metrorail Stations and to ensure that they strike a desirable balance between: 1) prompt realization of tax revenues to support future Metrorail operations, 2) maximizing future employment generation, 3) achieving the desired land use pattern, and 4) minimizing demands on the County’s transportation infrastructure.

**Urban Land Institute Technical Assistance Panel**

The County used an Urban Land Institute (ULI) Technical Assistance Panel (TAP) to provide a “reality check” and to identify key themes and locations that should be addressed in future planning efforts. The ULI TAP conducted a broad analysis of development opportunities and constraints using a multidisciplinary team of experts with regional knowledge. The ULI TAP discussed planned land use in the context of today’s market conditions and trends in land development. The ULI TAP made several key recommendations that led to subsequent steps in the planning process, and identified key real estate and demographic trends that form the basis for the land use concept in this document.

The most significant trend identified by the ULI TAP, that forms the basis for this document, is a change in the workplace environment. First, the demand for traditional office environment is decreasing and employees and employers are increasingly favoring environments where people work in shared or collaborative office environments, in coffee shops, or at home. Statistics provided by ULI TAP showed that, in recent years private sector office tenants have required up to 18 percent less space when leases were renegotiated.

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**COMPREHENSIVE PLAN AMENDMENT GOALS**

1. Prompt realization of tax revenues to support future Metrorail operations
2. Maximize future employment generation
3. Achieve the desired land use pattern
4. Minimize demands on the County’s transportation infrastructure

**ULI TAP RECOMMENDATIONS**

1. Update the Comprehensive Plan
2. Create a Small Area Plan
3. Engage in place-making activities
4. Develop a market study to identify appropriate land uses or “anchors”
5. Engage in more collaborative planning with Dulles Airport
6. Use County funds to invest in infrastructure
7. Engage in more upfront planning to set clear expectations for developers and to ensure the County’s vision is realized
Secondly, the ULI TAP described an overall trend in office space moving away from post-World War II homogenous suburban environments and towards mixed urban environments with amenities for employees within walking distance. Specifically in the Washington region, the ULI TAP noted that most new office development is occurring immediately surrounding Metrorail stations. The ULI TAP also recommended that appropriate anchor uses be considered around the Loudoun Gateway Station. Based on the ULI TAP report, the Board of Supervisors initiated two additional studies: 1) the Market Analysis and Best Practices Study and 2) the Land Use Scenario Planning Study, which lay the groundwork for this Plan.

**Market Analysis and Best Practices Study**

The first study, the Market Analysis and Best Practices Study, was intended to help the County better understand market trends and the extent to which the County’s policy and regulatory documents were geared toward capturing development associated with those trends. The study also considered the unique position of the Loudoun Gateway Station relative to Washington Dulles International Airport and its associated air operations. The Market Analysis and Best Practices Study was conducted by the consultant team of HR&A Advisors and Kimley-Horn Associates. Overall the study recommendations reflected two key themes: limited demand for office development, and the importance of limiting residential development adjacent to Washington Dulles International Airport and the associated noise impact overlay district.

First, with regard to office development, the study identifies constraining regional factors like US Government sequestration (government work slowdowns and/or shutdowns in the absence of an approved operating budget), reduced General Services Administration space requirements, live-work environment preferences of millennials, ongoing recovery from the recent recession, and an overall surplus in office space. Despite the overall soft office market, the Study provides optimism in noting that 92.3 percent of overall office leasing activity in the Washington, DC region in 2014 occurred in locations within a half mile of Metro stations. This key point also reinforces the County’s vision for focusing growth at or near the Metrorail stations and encouraging uses that will maximize tax revenues and other benefits to Loudoun County. The study emphasizes the need for patience in order to realize long term development goals, as exhibited by case studies of growth around existing Metrorail stations in the region.

Since significant development of the transit station areas is recognized to be a process that will evolve over several decades, the study recommended initiatives that can be used to incentivize or expedite development including financial support, public private partnerships, upfront infrastructure investments, interim uses, and anchor projects to catalyze development.

A second key theme noted throughout the study’s final report relates to residential development location in relation to the noise contours and flight operations at Washington Dulles International Airport. While the study notes that many airports have residential development nearby, it is common for those airport operators and jurisdictions to actively and in some cases, retroactively, seek ways to restrict residential development underneath airport flight paths or restrict the uses within specific noise contours to mitigate conflicts with airport operations. Airports profiled in the Study have employed a wide range of measures to prevent residential development. These measures include zoning ordinances, purchase and ownership of land in flight paths, and strategic runway locations.
Land Use Scenario Planning
The Scenario Planning Study provided an opportunity for the public and stakeholders to contemplate alternative futures for the Silver Line Policy Area. The study measured the impacts of different land use decisions and evaluated the trade-offs associated with competing scenarios. Information from the Scenario Planning Study was considered by County staff and key-decision makers in identifying the land use types that achieved the best balance of benefits and tradeoffs for Loudoun County.

The study built on lessons learned with the market analysis and evaluated parameters such as tax generation, fiscal impact, school-aged population generation, number of vehicle trips produced, and walkability to determine the type of land use pattern that best achieved the County’s goals for the Silver Line Policy Area. Through public involvement, analysis of various metrics, and application of up-to-date planning principles, the study provided several thematic recommendations and a land use recommendation that served as the starting point for this Silver Line CPAM. Several planning principles coming out of the scenario process are discussed in further detail below under “Rationale for the Plan.”

Consultant Recommendations
The Consultant-Recommended Scenario was developed as a means of supporting efforts to find the desired balance between: 1) prompt realization of tax revenues to support future Metrorail operations, 2) maximizing future employment generation, 3) achieving a desirable land use pattern, and 4) minimizing demands on the county’s transportation infrastructure.

The key elements of the recommended scenario include:

- Placing the highest densities near Metro stations
- Supporting walkable neighborhoods to live, work, shop, and play
- Focusing forecast growth into key development areas
- Providing park land and open space to meet community needs
- Protecting operations at Washington Dulles International Airport

Rationale for the Plan
This Silver Line CPAM is intended to guide development around the Loudoun Gateway and Ashburn Metrorail Stations in a manner that specifically addresses current conditions and achieves the land use patterns desired by the public.

KEY THEMES ARISING FROM PUBLIC INPUT

1. The Silver Line Area should be developed with walkable, urban, mixed-use centers
2. The County should fund infrastructure like roads, schools, and facilities to support new mixed-use development
3. Suburban style development patterns are not desirable in the Silver Line Area
4. Having more travel options for walking, biking, and taking public transit is important
5. Increased traffic congestion resulting from new development should be appropriately managed
6. Station areas should be developed as destinations to live, work, and play
7. Roadways should be developed as complete streets to accommodate multiple modes of transportation
8. The Silver Line Area should accommodate, parks, passive open spaces, and large active gathering spaces
9. Density of development should reflect an urban environment
Planning Context
The Silver Line CPAM has been developed to recognize existing conditions. In some instances, the existing land use patterns cannot be reasonably changed or are deemed appropriate for the long term Silver Line Policy Area vision. In these instances, the Plan seeks to adequately buffer sensitive uses or to seamlessly integrate new and old development into a complete community. In other instances, the Plan recognizes land uses that adversely affect the County’s ability to achieve the long term vision. The Plan strategically seeks to phase out such uses by allowing for redevelopment and ensuring that new development accommodates the County’s long term vision. As such, all development in the Silver Line Policy Area should be holistically integrated into the existing environment and into the County’s long-term vision established by landowners, stakeholders and the public input received during the planning process.

RESULTS OF PUBLIC WORKSHOP ACTIVITIES

Roughly 90% of participants said that they strongly agree with the following statement: “I think the study area should have one or more walkable, mixed-use centers, similar to Reston or One Loudoun.”

Roughly 93% of public workshop participants strongly agreed with the following statement: “Having more travel options (walk, bike, transit) in the study area would be important to me.”

Workshop participants identified photographs of walkable, urban, mixed-use development as being the most desirable form of development.
Public Outreach and Engagement Process

Scenario Planning Public Outreach

The scenario planning process included two public workshops and two stakeholder sessions in 2015, as well as, several meetings with the Board of Supervisors. The first public workshop’s purpose was to help the project team get a better understanding of the issues and concerns of the community, and to begin developing alternative land use scenarios that reflected the desires of the general public. The workshop was held within the community and approximately 75 people attended. Attendees were comprised primarily of Loudoun residents, included the general public, and the development community. Workshop participants engaged in a live keypad polling survey and visited a series of workstations to provide feedback regarding a wide range of community development issues. Survey results from the workshop overwhelmingly indicated that participants favored high-density, mixed-use development as the desired land use pattern for the study area. The workshop participants also stated that they were willing to see development in the study area even if it meant that the County had to pay for more schools, roads, and other infrastructure. Following each of the public workshops, the project team met with stakeholders to hear additional discussion of issues. The overall sentiment from meetings with stakeholders was similar to that of the general public. The overall themes emphasized the desire for mixed-use development, the lack of a market for traditional suburban office development, and the need to evaluate projects based on impacts of specific types of development. Stakeholders also expressed the need for flexibility in planning and regulatory documents and the need for long-term development goals to be phased in over time. After receiving feedback from the public outreach meetings, a consultant recommended land use scenario was developed, which formed the basis for the proposed land use and policies plan in this document. The Land Use Scenario Planning Study was presented and endorsed by the Board of Supervisors in January 2016.

Silver Line CPAM Outreach

In March 2016, the Board of Supervisors directed County staff to initiate a CPAM to provide a new land use plan, a companion transportation network, and the accompanying planning policies found in this document. Two additional outreach sessions were held while this Plan was being developed to gain additional feedback on specific Plan policies being proposed. During these outreach sessions, members of the public offered several points but generally echoed discussion from the previous meetings that favored mixed-use development. The public also emphasized the importance of ensuring that the plan provided for adequate facilities to serve the new densities called for by the Plan.

Summary of Board Feedback

The Board of Supervisors was engaged at several points in the process leading to the development of this Silver Line CPAM and the Board’s feedback was used in developing priorities, planning principals, and concepts that shaped the planned land use in this document. The Board overwhelmingly emphasized that the key focus of the Plan should be to maximize long term tax revenue generation, to ensure adequate infrastructure, community facilities and services to support the new development.
These focus areas provided by the Board were instrumental in shaping the vision of the Silver Line CPAM, which places a strong emphasis on long-term goals rather than on allowing for short term development opportunities and more immediate tax revenues. However, the concept of interim uses, as a near term solution while awaiting development of the desired end-state development patterns, was also to be addressed in the Plan. The Plan also places heavy emphasis on providing a transportation system that is appropriate for an urban environment and providing the community facilities and services necessary to support the new planned communities.

### Existing Conditions

The Silver Line Policy Area covers approximately 4,275 acres. As of September 2016 the following were the existing conditions. Roughly 1,975 of this acreage had already developed, while 2,300 acres were undeveloped or minimally developed. Developed land or land under development included 114 acres of community facilities, 483 acres of data centers, 504 acres of flex and industrial uses, 448 acres of residential uses, 271 acres of office uses, 101 acres of retail uses, and 25 acres of utility uses. Only 33 acres of land developed was mixed-use. Most of the undeveloped land does have entitlements. The developed areas included in the Plan area are largely expected to remain in their current state for the foreseeable future. However, some areas have a new land use plan that may encourage redevelopment or rezoning to be more consistent with the long term vision established by this Plan. Other areas have been identified for improvements to enhance connectivity, improve transportation infrastructure, or enhance buffering.

### Using the Silver Line Plan Document

This Plan has been developed with a high level of detail in recognition of the unique conditions, circumstances, and goals for the Silver Line Policy Area. As such land development applications are expected to provide a sufficient level of site planning detail to demonstrate how the new development will be integrated into the planned development pattern. Development proposals will be compared to the overall vision, goals, design, and form established by this Plan as well as their ability to meet connectivity, transportation, economic development, community facilities and services, green infrastructure, and other specific development criteria. The Plan provides criteria that must be met, as well as, graphic examples to demonstrate the intent of tangible and intangible

### THEMES FROM BOARD OF SUPERVISORS DISCUSSIONS

1. Maximize tax revenues
2. Build a compact development pattern
3. Ensure adequate transportation infrastructure
4. Include new public facilities (schools, parks)
5. Provide urban housing types
6. Discourage single-family housing
7. Protect the Dulles Airport
8. Provide transportation choices
9. Use Metrorail is an economic development tool
10. Prioritize mixed-use development around the Ashburn Station
11. Consider appropriately located data centers and performance measures
12. Define clear land use vision for development community
13. Evaluate anchor uses for Loudoun Gateway Station
14. Accommodate interim uses
concepts. The County also seeks to receive land development applications for interim uses that can demonstrate how they can retain the potential for development that ultimately meets the objectives of the Plan. While certain criteria set forth in the Plan are specific, flexibility will be exercised for applications to achieve the intent of the Plan policies.

While this Plan sets specific criteria, the County also recognizes that it was developed based on conditions at a specific point in time and encourages new and innovative ideas to be presented based on any significant changes in market conditions or demographic trends. The key documents that demonstrate the conditions used to establish these conditions and trends are the *Urban Land Institute Technical Assistance Panel Presentation and Final Report*, the *Market Analysis and Best Practices Study Final Report*, and the *Land Use Scenario Planning Study Summary Workbook*. Deviations from this plan can be considered but applicants are expected to describe through research or case studies the rationale for those deviations and how such changes better achieve the County’s goals.
Chapter 2 - VISION
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Chapter 2 - Vision

**Vision Statement**

The new Silver Line community will be planned and designed to be a strong, diverse regional activity center and economic force that will be a leader in innovation in the Washington D.C. Metropolitan Area providing economy-driving employment uses and urban living opportunities while balancing new development with the needs of Washington Dulles International Airport. It will be a superior urban community that is rich in amenities, a dense mixed-use environment, with a balanced community of businesses, commercial development, and residential uses. The community will provide a variety of housing choices, both market rate and affordable, that offer innovative options for families, empty-nesters, singles, and seniors across socio-economic groups in the county. It will be a transportation hub offering a wide array of transportation mode choices including walking, biking, driving, and transit. The area will be a new civic and cultural center that functions as a focal point for Loudoun community activity and identity, as well as, a center of cultural experience in Loudoun County. The Silver Line community will have
a network of green infrastructure that is an amenity for residents while providing protection of valuable environmental resources. It will be characterized by the highest quality of urban design and become known for its livability, vibrant, active neighborhoods, efficient land use, and transportation systems.

**Goals of the Silver Line Plan**

The Loudoun County Board of Supervisors established four long term goals for the Silver Line Policy Area. The Plan’s intent is to provide a vision for the future and a multitude of opportunities for growth and development within this vital area of the County.

1. **Prompt Realization of Tax Revenues to Support Future Metrorail Operations**
   
   Provide a financial net benefit to Loudoun County by minimizing the costs of County services while increasing annual tax revenue. This will be achieved through appropriate transit-oriented mixed-use development in the long term and through interim uses, whether through by-right development or through careful forward planning that are fiscally positive and designed to accommodate the development of higher density uses when market demand for higher density materializes.

2. **Maximize Future Employment Generation**
   
   Increase new employment by concentrating new job opportunities in compact, walkable activity centers near the Metrorail stations. Transit-oriented mixed-use development centers have shifted the economy of the Greater Washington Metropolitan Region, attracting a significant percentage of new employers in recent years. Appropriate transit-oriented mixed-use development and Metrorail service will give the Silver Line Policy Area the competitive economic advantage enjoyed by other centers served by Metrorail in the region. Furthermore, this goal strives to develop a balanced jobs-to-housing ratio that can shorten commutes and promote multi-modal transportation.

3. **Achieve Desirable Land Use Patterns**
   
   Develop a mix of land uses, densities, and housing options in the Silver Line Policy Area that are attractive to innovators, employers, and highly skilled employees. This is accomplished by concentrating the highest densities in mixed-use communities near the Metrorail stations, preserving parks and open space, allowing for innovative land use patterns, creating abundant opportunities for amenities and entertainment, and providing numerous efficient transportation options.

4. **Minimize Demands on the County’s Transportation System**
   
   Prepare the Silver Line Policy Area to absorb and accommodate the transportation impact of the new land use pattern. The potential for new daily vehicle trips created by development around the Metrorail stations is unavoidable. However, the creation of compact walkable mixed-use communities that minimize the number and length of vehicle trips with the support of a local circulator bus system, and a comprehensive pedestrian and bicycle network will help alleviate demands on the transportation system throughout the County.
Objectives of the Silver Line Policy Area

Economic Development and Job Creation

The Silver Line Plan provides for new development types, new land use patterns and intensities of land development that are needed to grow the tax base to create jobs, and establish fiscal sustainability under current market conditions. Metrorail stations and transit-oriented development are necessary to attract new businesses in the region, especially high quality office tenants with highly educated and talented workers. A driving factor behind mixed-use development in the Silver Line Policy Area is creating an environment that attracts new and innovative employers and quality workers. New service businesses, such as retail shops, restaurants, and personal services, will be established to serve the employees, residents and visitors to the area. Businesses will embrace technology and innovation. The result can be an economy that is dynamic and resilient. The mixed-use community created by this Plan should be a place where people will be attracted to the high quality of daily life.

A technology hub for new data centers will be provided to capitalize on these high tax revenue generators and best utilize available power and fiber optic infrastructure of global significance. New data centers and continuous embrace of new technology will also contribute to Loudoun County’s reputation as a global internet capital. To maximize the quality of life and facilitate other economic development opportunities, new data centers should be placed in carefully planned locations that minimize visual, noise, and other impacts on surrounding development while maintaining the opportunities for this development type to continue in the planning area.

Interim uses and development patterns will activate sites, provide income for property owners, and generate tax revenue. Interim uses will be planned to efficiently and easily redevelop when demand for denser mixed-use development materializes. Low density residential development, which usually subdivides both land and ownership, and other suburban development patterns will be avoided to ensure that the long-term urban development pattern desired is readily achievable. The long-term economic viability of Washington Dulles International Airport will be protected by promoting airport-compatible uses and development patterns in the County’s Airport Impact Overlay District.

Tax Revenue Generation

In order to keep pace with capital and operating expenses in the Metrorail Tax Service District, Loudoun County is relying on local tax revenue. The long term goal is to maximize dense, mixed-use development in order to take full advantage of the potential of Metrorail and maximize land values to obtain the highest possible revenues. There is near-term market demand for new multi-family homes, data centers, and a limited amount of retail and office space that can act as interim uses to activate sites in the Silver Line Policy Area, provide near term income for property owners, and begin to generate tax revenue for the County. Interim uses should be planned to efficiently and easily redevelop to more intense uses when market forces support more dense mixed-use development in the future while providing near term economic contribution until the long term vision and development pattern is achieved. Preparing a site or block to evolve with the market will require careful planning, good design, and up front investments by developers. Infrastructure placement, building location and design, parking lot location and design, and provision of parks and landscaped areas should be planned to support higher density development in the long run. In this respect, the Plan
should be flexible and dynamic with regular review in order to refine and adapt policies as necessary. Interim development types, locations, or intensities should not be a deterrent or barrier to implementing the long-term vision that will maximize future revenues for Loudoun County.

**Long Term Development Vision**
The Silver Line Policy Area will become a complete community that accommodates living, working, shopping, learning, and playing in close proximity to Metrorail. High-density, mixed-use, urban development is planned within walking distance of the two Metrorail stations in key development locations. This community will have a high-quality public environment with accessible and connected spaces, and a rich mix of uses that give a sense of place and distinctiveness. It will be an urban community with development types, patterns and densities that will create jobs, grow the tax base, and be fiscally sustainable. The Silver Line Plan is a guiding document for future development, but it is not a regulating document. The *Zoning Ordinance* is the regulating document and will be amended to provide the regulations that will facilitate the realization of the Plan. The Plan is designed for and should be used by diverse stakeholders. For the community, it provides a refined vision for development, the improvement of streets and public spaces, and offers clear direction regarding private sector development. For developers, architects, and engineers, the Plan describes urban design guidelines for development; proposed incentives to help achieve the vision, goals and objectives of the Plan; and presents policies with which individual projects will be evaluated.

The Plan envisions a commitment to high quality urban design of public and private spaces and structures. Urban design characteristics of the area will include: small blocks, a tree-lined grid pattern of streets, building façades set at the back of the sidewalk, ground floor retail uses with transparent façades, and distinctive public spaces. There will be streetscapes and street furniture including public art, water features, and landscaping that contribute to a vibrant sense of urban place. There will also be active public plaza gathering places and spaces that promote culture and the arts, as well as, a green infrastructure network that accommodates passive and active recreational opportunities, ties together new and existing open spaces and provides a variety of recreational amenities while protecting environmental resources. It will be an amenity-rich environment that appeals to multiple generations of residents, workers and visitors.

The Silver Line Policy Area will be a place where walking and bicycling can be convenient travel modes, diversity of use is nurtured, and public spaces are beautiful, safe, and accessible. It will be one of the region’s best places for living, working, playing, and visiting. A grid-form street network will be convenient, active and attractive. It will help prevent traffic congestion, maximize travel choices, and safely and efficiently move people throughout the area.

**Multimodal Access and Mobility**
The transportation system is a quintessential component of the Silver Line Policy Area. Unique places are defined as much by their building typologies and public parks as they are by their roads, mass transit, and pedestrian accessibility. The well-designed thoroughfares of great cities are more than travel ways, they are descriptors of place, addresses of high regard, and destinations for locals and tourists alike. Great streets become representations of the cities themselves. The dense, urban land use plans proposed in the Silver Line Policy Area are dependent on development of a street system that can facilitate their development, helping this area reach its greatest potential.
Mobility and access are the two most important transportation concepts, whether in a dense urban development, a sprawling suburban area, or a pastoral rural setting. Mobility refers to a person’s ability to travel distances quickly. For example, pedestrians might appear to be able to walk a certain distance from their current location, only to find that their mobility is limited by the existence of a wide highway or a parkway and the lack of a safe crossing. A driver might find that their mobility is limited by the existence of a freeway without a convenient roadway crossing.

Accessibility focuses less on distance and more on destination. For example, a residential neighborhood well connected by sidewalks might provide ample mobility for a pedestrian, but the lack of goods and services or employment nearby means that the pedestrian still has no access to these amenities and needs. Meanwhile, a well-connected grid of roads, trails and sidewalks combined with a mix of related uses enhances accessibility.

The Silver Line Policy Area seeks to create high levels of mobility and access through density that supports retail and employment, as well as, a fully-connected and integrated transportation network.

**Linking Land Use and Transportation**

While land use and transportation are often considered as separate planning elements, they are integrally related. A wide intersection is defined by the relationship between a street and a building. In the Silver Line Policy Area, bringing the buildings closer to the street, and making that street more desirable to pedestrians, is critical to presenting the area as a place for people, whether walking, cycling, or riding transit. When frequent pedestrian crossing opportunities exist, the buildings across the street from one another become part of the combined streetscape; no longer separated by a wide and unyielding barrier. The addition of public destinations to this corridor, such as parks and plazas, create destination nodes, drawing people into an area where they can live, shop, stroll, relax, and socialize – all on the same street.
To create this new land use pattern, many factors must be considered in development of the transportation system. Children must be able to get to school. Buses must be able to move transit riders into, out of, and through the area. Delivery trucks must be able to deliver and export the many goods needed in a robust economic center, all while regional vehicular traffic is able to access and move through the area without being overly burdened. This hierarchy of needs requires the development of a well-coordinated system that provides travel options for all system users, from the peak hour commuter to the family on a weekend road trip, and from the child who cannot yet drive to the senior citizen who chooses to forgo driving altogether. This delicate balance can only be achieved when all of these users are considered equally and the needs of one group is not placed above the needs of all others. This Silver Line Plan seeks to strike that ultimate desired balance.

**Connectivity**

In order to achieve the desired levels of mobility and access described above, a well-connected and integrated urban multimodal network, as is proposed in the Silver Line Policy Area, is critical. True connectivity exists when direct routes are constructed, allowing all system users to have convenient and direct access. The standard connected system is referred to as a grid, where redundant, parallel connections provide options and do not require travelers to take long and circuitous routes to reach their final destinations. Direct routes and high connectivity allow transit vehicles to follow a straight and logical path, allow cyclists and pedestrians more practical routes to their destinations and ensure that drivers have several alternative routes through the area. Conversely, when connectivity is lacking, developments are disconnected from one-another. Increased travel times for transit riders, cyclists, and pedestrians lead more people to choose driving over other transit options, congesting roadways.

**How Densities and Connectivity Impact Transportation**

Successful urban areas are defined by density - not density of buildings - but density of people connected to places and each other. The Silver Line Policy Area is planned to encourage development that draws people into and through the area. In turn, these people will allow the Silver Line Policy Area transportation system to work as planned. This is because high densities of people allow for truly urban transportation systems to be developed. High-frequency transit services can operate frequently and efficiently when densities are high enough to fill buses and trains; thereby, justifying services and decreasing cost subsidies. Bicycle routes work best when filled with cyclists, removing vehicle trips from the roadway network. Sidewalks and trails see their greatest use when there are high volumes of people in the immediate vicinity walking to work, walking for leisure, or walking to stores. Lower density, conversely, would result in fewer people and destinations, but the need for more vehicle trips among the people living in the area, since efficient transit services would not arrive as frequently, bike routes would be less populated, and sidewalks would provide less
accessibility. This Plan calls for density and a transportation system to support that density without overburdening the roadway network for those in other parts of the County.

**Silver Line Plan Rationale**

**Existing Conditions**

The Silver Line Policy Area includes 4,275 acres that encompass the Loudoun Gateway and the Ashburn Metrorail Stations, and shares portions of the planning area boundary with Washington Dulles International Airport. This area is anticipated to grow because of market trends toward transit-oriented, mixed-use development near Metrorail stations, as has been experienced throughout the Greater Washington Metropolitan Region.

Considering the existing land uses within the Silver Line Policy Area was an integral part in planning future land uses around the future Metro stops. Incorporating existing development in the overall vision, along with planning for redevelopment, set forth the basis of the Plan. A significant portion of the land in the planning area is currently vacant, including Moorefield Station and Grammercy Park, planned and zoned Transit-Oriented Developments. While currently vacant, these developments along with Loudoun Station, another mixed use project, will set the stage for urban mixed-use in and around the Ashburn Metro Station. Ryan Park center, a ‘big box’ retail center, is an area where redevelopment is envisioned to occur at an advantageous and appropriate time as an extension of the existing Loudoun Station/Grammercy Park’s urban mixed-use development. Spreading outward from the Metro stops, medium intensity mixed-use and urban residential is the planned development pattern. This pattern will take into consideration the location of the existing single-family residential land uses within the Regency and Vantage Pointe developments, which have already been constructed. Walkable urban uses are key in providing a transition and connection to these existing developments.

Several data centers have developed recognizing the fiber optic and power infrastructure in this area. This Silver Line CPAM continues to support data center development in strategic locations where they will not conflict with proposed mixed-use and residential development.

Areas currently developed and planned for industrial uses along the northern portion of the airport and within walking distance of the Loudoun Gateway Station are planned to evolve into a non-residential mixed-use employment environment. Another key existing feature that the Silver Line Plan takes into consideration is the Broad Run and its associated floodplain. This resource provides opportunities for active and passive uses including regional bike and pedestrian connections within a network of green infrastructure that can be a regional amenity.

**Market Conditions**

The *Market Analysis and Best Practices Study* for Loudoun County’s Metrorail Station Areas and the *Land Use Projections Technical Memorandum for the Loudoun County Land Use Scenario Planning Study* summarize current demographic and market real estate conditions, future market trends, targets and timing, and regional economic factors influencing the Silver Line Policy Area at the end of 2015. Desirable
development types, locations, patterns, and intensities identified for the Consultant Recommended Growth Scenario reflect the data, findings, and conclusions from the two studies.

Market conditions through 2040 do not support significant development activity for the study area under current low density, single-use keynote employment land use policies. Instead, new opportunities to encourage future development and increase taxable values are tied to the extension of the Metrorail Silver Line and its connections to Tysons Corner, Arlington, and Washington D.C. Land owners and developers are actively pursuing full realization of the development potential by seeking entitlements in anticipation of station openings in 2020, but it may be many years and several economic cycles before significant compact, transit-oriented development is built in the area. This existing interest in development in this area is a positive first step. The Rosslyn-Ballston Corridor continues to develop 35 years after the Metrorail stations opened and decades after the initial planning began. While prompt realization of the tax benefit is a priority, there should be a balance with the time and patience necessary to achieve the long term vision that is observed in similar developments in our region.

It is important that this Plan embrace an implementation strategy that patiently and deliberately lays the foundation for capitalizing in the long term, similar to an investment portfolio. However, this strategy cannot be static or rigid. Rather, it needs to dynamically respond to changing market conditions and adapt when needed. As the Silver Line Policy Area develops a mixed-use and town center character, retail uses will likely funnel towards those environments, often outcompeting more traditional suburban style retail developments. The Silver Line Plan should be flexible enough to respond to these trends and provide suitable opportunities for retail growth. The types of residential uses and densities in this Plan will be new to Loudoun, but if history is any indicator, residential development in Loudoun County will maintain its strong appeal due to the area’s high quality of life and excellent schools.

This Plan should prepare for these new types of residential developments while allowing for modifications to density and use when appropriate. Finally, the Silver Line Policy Area benefits from the fact that a few landowners control a significant portion of the land, which can facilitate
well-coordinated and phased development. Also, the Policy Area is well served by electricity transmission and fiber optic communications lines, both of which are supportive of high tech economic development. Combining a commitment to long term objectives with the ability to analyze existing needs and utilize area assets, the Plan can guide the area through an era of exciting growth while simultaneously strengthening it for a prosperous future.

**Economic Development**

**Economic Development Contribution to the Silver Line Plan Vision and Goals**

Metro expansion brings economic opportunity and the ability to meet the Board of Supervisors desires of: (1) prompt realization of tax revenue, and (2) maximum employment generation. The Silver Line Plan establishes a vision that responds to both.

The greatest economic opportunity around Metrorail stations is the establishment of regionally significant Walkable Urban Places (WalkUPs). According to the George Washington Center for Real Estate and Urban Analysis, there is a 72% rent per square-foot premium in WalkUPs over drivable suburban areas. The GW Center for Real Estate and Urban Analysis is also measuring higher social equity outcomes in WalkUPs because transportation costs become lower for residents living in WalkUPs due to the presence of alternative options, and there are 2 to 3 times more jobs that are immediately accessible. They contend that this is a complete reversal of the market trends of the 1980s; when there were 2 to 3 times more jobs and higher return on investment on residential in the drivable suburban areas.

Most innovative companies are seeking WalkUPs for their expansion or relocation efforts because they cluster offices, retail, entertainment, services, and housing options in close proximity. The modern workforce demands this amenity-rich environment and expects transportation options such as walking, biking, or transit for commuting, or consuming daily goods and services.

However, WalkUPs take decades to evolve, especially when starting from “greenfield” areas. The County needs to attract interim uses in its targeted industry clusters to realize tax revenue promptly, and continue to support by-right and existing uses. The Silver Line Plan is not intended to drive existing businesses away but instead provide these property and business owners additional options for the future as the market matures around the Metrorail stations.

**Economic Development Policies**

1. Create walkable urban places near the Metrorail stations that include a mix of housing types that are attainable and desirable to all levels of the workforce, transit options, walkable shopping and entertainment near jobs to attract businesses to the Silver Line Policy Area that require an “urban” quality of life experience for their employees.

2. Continue to be flexible, customer-focused, timely, and solution-oriented in review and approval of development projects (and associated permits or entitlements) to allow for market-driven land uses that align with the vision and intent of the Silver Line Policy Area.
3. Attract interim uses within the County’s targeted industry clusters and allow existing uses to continue indefinitely to generate prompt realization of tax revenue.

4. Make incentives for establishment of new businesses easier by revising the County’s Business Incentive Guidelines for commercial prospects that align with the Silver Line Policy Area vision.

5. Streamline the development review process, whenever feasible, for commercial prospects in the Silver Line Policy Area that achieve the Plan’s long term goals.

6. Incentivize construction of attainable workforce housing by considering techniques such as density bonuses, fee waivers, or assistance with required infrastructure.

7. Brand and market transit-oriented developments near the metro stations on a local, regional, national, and global scale.

8. Consider adopting an ordinance to establish a State-sanctioned “Technology Zone” in the Silver Line Policy Area to encourage new and expanding technology businesses to create special incentives for qualified businesses including but not limited to: a reduction of user and permit fees, local tax incentives, special zoning treatment, local ordinance exemptions, or other incentives adopted by ordinance.

9. Explore the feasibility of public-private partnerships to foster an Innovation District near the Loudoun Gateway Metrorail Station that attracts a business ecosystem of innovation companies, science and technology institutions, and entrepreneurs.

10. Prioritize investment in public infrastructure projects that promote economic development opportunities.

11. When designing and planning roadways, balance the needs for an effective transportation network with minimizing the impact on the development potential of properties.

A primary objective of this Plan is to promote economic development and job creation. The research performed prior to development of this Plan consistently showed that office absorption over the past decade has been focused around the regions’ Washington Metrorail Stations and other high-quality mixed use areas.

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1 The County’s targeted clusters for economic development are Data Centers, Information and Communications Technology, Federal Government Contracting, Aviation and Transportation, Health Information and Analytics, Agriculture and Related Businesses, and Retail, Culture and Entertainment.
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Chapter 3 - Planned Land Use

There are three layers of land use planning and urban design within this section. Priority Development and Land use typologies are the two major component layers. The Plan also provides design guidelines to address specific urban design and place-making considerations for uses designated in the Plan.

Priority Development Areas

This Plan establishes Priority Development Areas based on the ability of these areas to accommodate a development pattern that best achieves the four main goals of the Silver Line CPAM. There are 4 types of priority development areas with specific objectives and development characteristics desired in each. These are:

(a) areas within ¼-mile of the Ashburn station;
(b) areas within ½-mile of the Ashburn Station;
(c) areas within ½-mile of the Loudoun Gateway Station; and
(d) new mixed-use neighborhoods

The County endeavors to accelerate development in these areas and will work collaboratively with land owners and developers to ensure that development proposals achieve the Plan vision.

Priority Development Area Policies

1. Incentives should be considered for non-residential development in priority development areas consistent with the Plan’s vision to accelerate the market’s delivery of quality employment and tax revenue in the near and long term.

2. Development of the conceptual street network and multi-modal transportation system in the Silver Line Policy Area should be prioritized in related County actions and planning such as the County’s Budget, 2010 Countywide Transportation Plan and Capital Improvement Plan to expedite development of the transportation network and aid in minimizing the demands on the County’s transportation system.

3. A variety of creative state and local level financing solutions, County partnerships, or other incentives should be considered for infrastructure construction to stimulate market activity in the priority development areas and accelerate a prompt realization of tax revenues.
4. Commercial developments and employment generating uses should be encouraged within the priority development areas.

**Ashburn Station ¼-Mile Buffer**

Land within approximately ¼-mile of the Ashburn Station is the most desirable location for high-density, mixed-use, transit-oriented development. It should be a high priority area for programming future year infrastructure projects that support walkable, urban development principles. This area is expected to have some of the highest densities and concentrations of development in all of Loudoun County. This area should only be developed with high densities consistent with place typology recommendations or phased development that maintains a long term vision for high-density development. Market research indicates that most current office absorption and related job growth within the Washington region occurs with ¼-mile of Metrorail Stations; land within the ¼-mile buffer should be programmed with the highest concentrations of office development and other employment-generating land uses.

**Ashburn Station ¼ Mile Buffer Policies**

1. Development proposals for land within ¼-mile of the Ashburn Station should accommodate office developments and/or high-employment generating uses that conform to the overall vision for a walkable urban development pattern.
2. Densities below those envisioned in the land use typologies discussed below may have an adverse impact on the County’s long-term tax revenue generation potential and should be avoided unless they are demonstrated to be interim uses that can evolve to an ultimate desired use that aligns with the long term vision of the Plan.
3. Areas within ¼-mile of the Ashburn Station will have the tallest buildings envisioned at 10 stories in height, or greater.

**Ashburn Station ½-Mile Buffer**

Land between ¼-mile and approximately ½-mile of the Ashburn Station should develop in a manner that reflects its location on the fringes of the core station area. This area should develop similar to the ¼-mile area but at slightly lower densities. Due to market timing, this area may see development before the ¼-mile area. The County desires for this area to be developed in a way that increases the value of the ¼-mile area and stimulates its development. Walkable, urban development principles are of critical importance for this area and development form should emphasize connections to the ¼-mile area and from the surrounding neighborhoods. Since the ¼-mile area emphasizes developments with high employment generation, the ½-mile area is expected to develop with higher amounts of residential development and supportive retail services.
Ashburn Station ½-Mile Buffer Policies

1. Development proposals for land within ½-mile of the Ashburn Station should be designed as an urban, walkable mixed-use environment that supports multi-modal transportation choices and fosters substantial pedestrian activity within the ½-mile area and to surrounding areas.

2. Densities in the ½-mile buffer area are expected to sustain an urban development pattern with pedestrian activity.

3. The ½-mile buffer area should emphasize walkability by providing pedestrian and bicycle commuter connectivity to the core of the Ashburn Metrorail station and surrounding neighborhoods as well as enabling future connections from undeveloped parcels.

Loudoun Gateway Station ½-Mile Buffer

Land within approximately ½-mile of the Loudoun Gateway Metrorail is envisioned to function as a major destination and gateway to Loudoun County for Metrorail riders. This land and certain types of development are largely constrained by areas of floodplain and the Washington Dulles International Airport Impact Overlay District. Although these constraints limit the area’s potential to develop as a vertically integrated mixed-use community with residential development, a walkable urban environment is still desirable and achievable.

Developments within the ½ mile buffer should allow flexibility in uses to include offices, high density employment uses, retail, educational institutions and civic buildings. The County may also consider attracting catalytic anchor uses that create demand for additional development such as a convention center, a stadium, large institutional uses, or special activities that have a regional or global draw and that can benefit from proximity to the Washington Dulles International Airport (IAD) and the Metrorail. An additional alternative for the Loudoun Gateway Station area may be the long-term development of an Innovation District that is home to knowledge workers and students in advanced technology industries.

Innovation Districts are typically an economic and land development strategy to create mixed-use developments that attract technology, research and development (R&D), and STEM (science, technology, engineering, and math) workers. Advanced industries represent a sizable economic anchor for the U.S. economy and have led the post-recession employment recovery. According to the Brookings Institute, Loudoun County has the largest amount of employment growth in advanced industries in Greater Washington.1 Local economies will need to continue to invest in the advanced industries in order to remain globally competitive and cities have the infrastructure, energy, amenities and densities to attract today’s new generation of knowledge workers in these industries.

While the Loudoun Gateway Station is a suburban greenfield site with environmental constraints and compatibility issues that limit residential development, there are aspects of the Innovation District model that are well-suited for Loudoun’s technology-based economy. Developing an Innovation District requires collaboration between the County, universities and the private sector to attract a business ecosystem of innovation

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1 The County’s targeted clusters for economic development are Data Centers; Information and Communications Technology; Federal Government Contracting; Aviation and Transportation; Health Information and Analytics; Agriculture and Related Businesses; and Retail, Culture and Entertainment.
companies, science and technology institutions, and entrepreneurs. Such a district could include an institutional anchor, along with iconic and unconventional buildings, that sets the area apart from the more traditional planned transit-oriented developments adjacent to Silver Line stations.

Regardless of the eventual land use pattern, the Loudoun Gateway Station area should be developed as a walkable urban place with job opportunities, amenities, pocket parks, transit options and nearby attainable housing that respects neighboring Washington Dulles International Airport operations. The area should be a high priority area for programming walkable infrastructure projects such as complete streets that include space for automobiles, bicycles, pedestrians and transit users.

Ongoing collaboration with Washington Dulles International Airport in the comprehensive planning of land within the Airport and just outside its borders to the north is essential to ensure maximum economic benefit to the County near the Loudoun Gateway Station. The County should remain a partner with Washington Dulles International Airport and explore alternatives in the future if they are mutually beneficial for realizing greater tax revenue while being supportive of the airport’s operations.

**Loudoun Gateway Station ½-Mile Buffer Policies**

1. Development proposals for land within ½-mile of the Loudoun Gateway Station should reflect the station area’s long-term vision of a global destination, activity center, and leader in innovation and entrepreneurship.
2. The County may consider partnerships with universities and private sector companies to foster growth of an Innovation District at the Loudoun Gateway Station that supports workers and students in the advanced technology and science industries.
3. The Loudoun Gateway Station will serve as a transit and commuter hub while providing an urban walkable environment. Development proposals should balance the needs of commuters with the desire to create a walkable urban environment.
4. Special activity uses are desirable at the Loudoun Gateway Station but proposals will be evaluated on a case-by-case basis to consider their unique benefits and adverse impacts.
New Mixed-Use Neighborhoods

This Comprehensive Plan Amendment creates four (4) new mixed-use neighborhoods typically less than one mile from the Metrorail Stations. These designations generally represent a significant shift in planned land use established by the Revised General Plan or call for redevelopment to better define the County’s long term vision and maximize the locational potential of each specific area. Each neighborhood is located entirely or partially outside of the ½-mile station buffers, which enables multimodal connectivity to the transit-oriented development cores in the Silver Line Policy Area. Additional amenities and services will be accommodated in centralized “core area” locations that functions as the “neighborhood center” or “town center.”

Each neighborhood should offer the activities, quality design and convenience as a place to live, work, shop and play for those populations seeking an urban lifestyle. The neighborhood should complement higher-density development activities within the ¼ and ½-mile buffer areas described in previous sections of the CPAM. The neighborhoods should be organized around their own core and should provide walkable access to housing, retail, and office uses.

General Mixed-Use Neighborhood Policies

1. Each neighborhood should accommodate walkable features and amenities like centralized activity areas such as shopping and dining areas with wide sidewalks, more narrow pedestrian-oriented streets, transit stops, and community gathering places (e.g. parks and plazas).
2. Mixed-use neighborhoods should accommodate infrastructure plans for near-term and long-term transit circulator service.
3. Each neighborhood should accommodate a long-term vision with an appropriate mix of residential and non-residential uses that fulfill daily and convenience needs of its residents and employees.

4. Community facilities like schools, community centers, and libraries should be located to allow as many residents as possible to be within a short walking distance.

5. Neighborhoods should support a high level of pedestrian connectivity including connected street grid patterns with sidewalks, short block lengths, connected trails and pathways providing connections to surrounding neighborhoods.

**Mixed Use Neighborhood #1 Policies**

1. Vertically integrated mixed-use buildings with ground floor commercial that incorporates “main street” planning and design concepts and generates pedestrian activity that extend from Shellhorn Road to Loudoun County Parkway.

2. This area should be carefully planned to avoid impacts to existing single-family detached homes adjacent to the neighborhood through appropriate building setbacks, buffers, and landscaping to screen higher density uses from the single-family detached residential neighborhood.

3. Development in this neighborhood should be accompanied by a plan that addresses safe pedestrian and bicycle connectivity to the Ashburn Station.

4. Existing vegetation adjacent to adjoining single-family detached homes should be preserved to the greatest extent practicable and supplemented with additional vegetation where appropriate.

5. The County encourages innovative engineering, design, and other mitigation approaches to address compatibility with high-voltage power lines, substations, or other existing flex industrial uses located in or adjacent to this neighborhood.

**Mixed Use Neighborhood #2 Policies**

1. This area is envisioned as a long-term redevelopment opportunity that maximizes proximity to the Ashburn Metrorail Stations.

2. The County considers existing data centers located in this neighborhood as an important economic contributor and will support their continued operation until other uses become more economically viable. Any expansion or modifications to these uses should be evaluated to ensure compatibility with the ultimate vision for the Silver Line Policy Area.

3. Development in this neighborhood should be developed with high quality four-sided building designs along the Dulles Greenway.
Mixed Use Neighborhood #3 Policies
1. Development in this area should accommodate enhanced connectivity and integration with existing suburban non-residential uses along Loudoun County Parkway and Centergate Drive that are envisioned to redevelop as urban uses.
2. Development along Centergate Drive should provide vertically integrated mixed-use buildings with ground floor commercial that generates pedestrian activity and incorporates “main street” planning and design concepts.
3. Development in this neighborhood should be designed with high quality building facades along the Dulles Greenway.

Mixed Use Neighborhood #4 Policies
1. Barrister Street will divide mixed-use portions of this neighborhood and development along it should incorporate “main street” planning and design concepts and vertically integrated mixed-use buildings.
2. Existing residential development south of this neighborhood should be connected to the new mixed-use neighborhood.
3. New non-residential development in this neighborhood should be designed to also serve existing residential development south of the neighborhood.
4. Eastern portions of this neighborhood are affected by the aircraft flight paths and should be developed with appropriate non-residential uses.
5. This neighborhood includes high visibility along the Dulles Greenway and areas within the LDN 65 noise contour of the Airport Impact Overlay District (AIOD) and the fourth runway LDN 65 noise contour of the 2005 Washington Dulles International Airport New Runways Environmental Impact Statement (EIS). High quality employment-generating development is envisioned to benefit from the high visibility and to minimize noise sensitive uses within and adjacent to the LDN 65 noise contour areas of the current AIOD and the 2005 Washington Dulles International Airport EIS.
6. Employment uses should demonstrate compatibility in scale, design and nature of associated activities (loading, unloading, storage, commercial traffic, etc.), with the urban character desired for this neighborhood.
7. Development in this neighborhood should be accompanied by a plan that addresses safe pedestrian and bicycle connectivity to the Ashburn or Loudoun Gateway Stations and to existing neighborhoods south of Barrister Street.
8. Development in this neighborhood should be designed with high quality building façades along the Dulles Greenway.

Other Development Areas
Portions of the Silver Line Policy Area outside the mixed-use neighborhoods are expected to provide a land development pattern that supports the mixed-use development areas and recognizes them as area focal points. The primary guidance for development of these areas is based on the underlying planned land use designation discussed below.
Employment Neighborhoods
Non-residential neighborhoods are intended to support large, commercial developments including lifestyle centers, employment campuses, institutional uses, or special activity centers. The Silver Line Plan includes two types of employment neighborhoods: conventional suburban employment and a compact walkable employment area. Compact Walkable Non-Residential neighborhoods are designated based on their proximity to the Loudoun Gateway Station or mixed-use neighborhoods and their location relative to the County’s adopted Airport Impact Overlay District and the 2005 Washington Dulles International Airport EIS LDN 65 noise contours that are limiting factors to residential development. These areas will offer a high degree of flexibility for innovative design proposals that maximize value and transit ridership.

Suburban Employment areas accommodate lower intensity commercial development patterns. These areas are beyond easy walking distances to Metrorail stations but are located along major roadways like Waxpool Road and Loudoun County Parkway. These areas are intended to maximize value based on their proximity to vehicular transportation infrastructure while still allowing for pedestrian and bicycle connectivity to the remaining portions of the Silver Line Policy Area. In general, these areas are best suited for commercial and employment uses benefiting from separation from incompatible uses and easy vehicular access. These areas may offer opportunities for redevelopment once planning goals and substantial development of other neighborhood types is achieved. In the near-term, the county envisions this area to be developed with data centers, employment uses, and limited retail uses that are generally incompatible with urban and pedestrian-focused environments. Suburban Employment areas should be designed to emphasize their location as a gateway into the core station areas. Accordingly, appropriate building placement, design, and landscape buffering is critical to establish an attractive gateway to the area.

Residential Neighborhoods
Residential neighborhoods serve an important function in the overall development pattern as they provide housing options, including work force housing, address unmet housing needs, and contribute to a critical mass of employees and customers to patronize businesses and create the vibrancy desired in the priority growth areas. Residential neighborhoods are expected to develop with little or no employment uses, however they may include limited neighborhood-serving retail uses. Most of these areas are within walking distance to a Metrorail Station or mixed-use neighborhood that will provide residents with transit services and retail destinations. Given this walkable distance, residential neighborhoods are expected to provide a high level of pedestrian and bicycle infrastructure and interconnectivity to the Metrorail Stations and nearby mixed-use neighborhoods.

In general, these areas are lower intensity developments since the County seeks to maximize growth and density in areas with greater proximity to Metrorail.

In the Greater Washington Metropolitan Region new residents near Metrorail stations want more compact, mixed-use and multi-housing type environments and are willing to ‘live smaller’ to get it. These neighborhoods are less car-dependent and promote more active living choices — walking, bicycling or transit — for seniors, families and single professionals alike.
The Silver Line Policy Area anticipates a variety of housing types to include urban multi-family housing products generally averaging between 700 – 1,000 square feet per unit, and may also include, multi-family stacked units, elevator flats, condominiums, urban single-family attached dwellings, ‘two-over-two’ and ‘back-to-back’ single-family attached units. Urban multi-family attached housing units are similar in type, size and design to new housing development observed around existing Metrorail stations in the region (e.g., Rosslyn, Wiehle-Reston or Silver Spring). The plan policies generally encourages small residential unit types, however also accounts for other larger unit types that may be developed throughout the residential and mixed use areas. The Loudoun County Land Use Scenario Planning Study introduced this new urban multi-family attached housing type to account for new residential units in buildings that are expected to be taller and have higher densities. The County seeks to encourage these housing types as household size, student generation, trip generation and demand for other County facilities and services are typically lower per unit than any other housing choice currently in Loudoun County. Accordingly, the County will consider possible revisions to the adopted Capital Intensity Factors (CIFs) to add a unit type that accounts for smaller urban style units. In the absence of an adopted Capital Intensity Factor, the County will evaluate applications on a case-by-case basis and consider reduced CIF contributions when appropriate commitments to unit size and type are provided. The Loudoun County Land Use Scenario Planning Study considered a student generation rate of 0.15 students per household for the new urban multi-family attached housing type and a household size of 1.87 persons per unit. Notwithstanding, any applications seeking reduced CIF contributions for multi-family units should clearly demonstrate and commit to a unit size and type and provide an analysis to justify the reduction. Larger multi-family units and single-family attached units will continue to be evaluated under adopted CIF multipliers or any County policy that supersedes the CIF. More traditional housing types in Loudoun County — suburban single-family detached, suburban single-family attached, suburban multi-family attached, and suburban multi-family stacked — should be minimized in the Silver Line Policy Area to take advantage of proximity to Metrorail service and minimize impacts to supporting County facilities and services.

**Planned Land Use**

The Planned Land Use Map establishes place typologies. These place typologies define the County’s desired land use for a property and provide additional guidance on the form and character of those uses. This detail is critical to defining the sense of place desired in each portion of the Silver Line Policy Area and sets clear expectations of future development for residents, investors, and property owners. These place types describe the interrelatedness of land use and urban design needed to create unique places. The generalized development characteristics that describe different place types include: land use mix, residential density, typical home size, non-residential intensity, prevailing building height, typical block length, preferred street pattern, common open space elements, parking provisions and preferred building placement on a site.

Equal emphasis on land use characteristics and urban design in the place-type descriptions guides decisions about growth and development, land preservation, resource protection, and the provision of community facilities and services. The place type categories and their specific location on the Planned Land Use Map establish a vision for the Silver Line Policy Area that responds to the Board of Supervisor’s four stated priorities.
PLANNED LAND USE (REFER TO APPENDIX, MAP 5)
Place Typologies

**Floodplain/Designated Open Space**

Floodplains and Designated Open Space areas account for land that is covered by a floodplain and land that was designated as open space as part of a previous rezoning application. The primary purpose of this place type is to recognize and protect sensitive environmental features. Given the density and urban form of development in the Silver Line Policy Area, these open space areas are intended to provide the majority of undisturbed land. While the proposed pattern of urban development is expected to result in less open space than elsewhere in the Suburban Policy Area, land development applications are expected to provide open space and protect environmental features that exist on a property.

**Floodplain/Designated Open Space Policies**

1. Floodplain areas should remain in their natural state.
2. Designated open spaces can include active and passive land dedicated for conservation.
3. Applicants should, to the extent possible, designate land for open space where natural resources and sensitive environmental features cover that land.
4. Areas designated floodplain and open space should be utilized in accordance with Chapter 6 of this Plan.
5. Applicants are encouraged to designate land surrounding new stormwater facilities as open space.

### TYPICAL OPEN SPACE LAND USES

<table>
<thead>
<tr>
<th>Primary Land Uses</th>
<th>Secondary Land Uses</th>
<th>Undesirable Land Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Undeveloped/Undevelopable Land</td>
<td>• Passive Recreation</td>
<td>• Buildings and structures</td>
</tr>
<tr>
<td>• Natural Land</td>
<td>• Roads and Trails</td>
<td></td>
</tr>
<tr>
<td>• Conservation Areas</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### OPEN SPACE FORM AND PATTERN

<table>
<thead>
<tr>
<th>Land Use Mix</th>
<th>Primarily undeveloped land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Density Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Typical Home Size Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Non-Residential Intensity Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Prevailing Building Height</td>
<td>N/A</td>
</tr>
<tr>
<td>Typical Block Length</td>
<td>NA</td>
</tr>
<tr>
<td>Street Pattern</td>
<td>NA</td>
</tr>
<tr>
<td>Open Space Elements</td>
<td>Buffers / Trails / Greenways / Ponds / forested areas / wetlands</td>
</tr>
<tr>
<td>Primary Transportation Modes</td>
<td>Walk, Bike</td>
</tr>
<tr>
<td>Parking Provision</td>
<td>N/A</td>
</tr>
<tr>
<td>Building Orientation</td>
<td>N/A</td>
</tr>
<tr>
<td>Building Placement</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Parks/Community Facilities

Parks and Community Facilities are generally publically owned or publically accessible areas that benefit or serve the community with space for active or passive use. Within the Silver Line Policy Area, parks of varying sizes and functions are important because smaller townhouse lots and multi-family projects typically provide less private outdoor space. Parks may also be significantly smaller, privately owned and part of the structural environment such as plazas, usable/accessible open space on green roofs, roof top recreation amenities, and courtyards. This Comprehensive Plan Amendment also identifies locations that can be considered for future, larger parks and community facilities.

Parks and Community Facilities Policies

1. The County should pursue opportunities to create new parks and community facilities as the Silver Line Policy Area develops.
2. New and existing stormwater facilities using natural land features and best management practices should be considered for publically accessible recreation land area or amenities.
3. The County should encourage provision of private civic and community gathering spaces, parks and community facilities, to meet a portion of the needs of new communities in the policy area.

<table>
<thead>
<tr>
<th>TYPICAL CHARACTER OF PARKS AND COMMUNITY FACILITY AREAS</th>
<th>PARKS AND COMMUNITY FACILITIES FORM AND PATTERN</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Playground" /></td>
<td><img src="image2.png" alt="Community Center" /></td>
</tr>
<tr>
<td><strong>Land Use Mix</strong></td>
<td>Community Facilities</td>
</tr>
<tr>
<td>Residential Density Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Typical Home Size Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Non-Residential Intensity Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Prevailing Building Height</td>
<td>N/A</td>
</tr>
<tr>
<td>Typical Block Length</td>
<td>NA</td>
</tr>
<tr>
<td>Street Pattern</td>
<td>NA</td>
</tr>
<tr>
<td>Open Space Elements</td>
<td>Athletic Fields / Courts / Community Gardens / Dog Parks / Plazas / Amphitheater / Buffers / Greenways / Ponds</td>
</tr>
<tr>
<td>Primary Transportation Modes</td>
<td>Auto, Walk, Bike</td>
</tr>
<tr>
<td>Parking Provision</td>
<td>N/A</td>
</tr>
<tr>
<td>Building Orientation</td>
<td>N/A</td>
</tr>
<tr>
<td>Building Placement</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Single-Family Detached Neighborhoods

The Silver Line Plan recognizes existing single-family detached neighborhoods in the Silver Line Policy Area and seeks to protect them, but new single-family detached homes are not desired. Single-family detached neighborhoods are auto dependent and do not make the best use of land near the Metrorail Stations.

Single-Family Detached Policies

1. No new single-family detached neighborhood should be built in the Silver Line Policy Area.
2. The County encourages efforts to increase connectivity of existing single-family detached neighborhoods to nearby neighborhoods.
3. New developments adjacent to single-family detached neighborhoods shall be designed with buffering and other appropriate treatments to reduce impacts on the existing neighborhoods.

<table>
<thead>
<tr>
<th>SINGLE-FAMILY DETACHED LAND USES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Land Uses</strong></td>
</tr>
<tr>
<td>Existing Single-Family Detached Homes</td>
</tr>
<tr>
<td><strong>Secondary Land Uses</strong></td>
</tr>
<tr>
<td>Natural Areas</td>
</tr>
<tr>
<td>Neighborhood Park</td>
</tr>
<tr>
<td>Clubhouse</td>
</tr>
<tr>
<td>Pool &amp; Amenities</td>
</tr>
<tr>
<td><strong>Undesirable Land Uses</strong></td>
</tr>
<tr>
<td>Non-residential Uses</td>
</tr>
<tr>
<td>Residential Uses with incompatible densities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SINGLE-FAMILY DETACHED FORM AND PATTERN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Use Mix</td>
</tr>
<tr>
<td>Separated Uses</td>
</tr>
<tr>
<td>Residential Density Range</td>
</tr>
<tr>
<td>1 – 4 du/ac</td>
</tr>
<tr>
<td>Typical Home Size Range</td>
</tr>
<tr>
<td>2,500 – 3,500 SF</td>
</tr>
<tr>
<td>Non-Residential Intensity Range</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td>Prevailing Building Height</td>
</tr>
<tr>
<td>1 – 3 Stories (45’ Max)</td>
</tr>
<tr>
<td>Typical Block Length</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td>Street Pattern</td>
</tr>
<tr>
<td>Curvilinear or Grid</td>
</tr>
<tr>
<td>Open Space Elements</td>
</tr>
<tr>
<td>Buffers / Ponds</td>
</tr>
<tr>
<td>Primary Transportation Modes</td>
</tr>
<tr>
<td>Auto, Walk, Bike</td>
</tr>
<tr>
<td>Parking Provision</td>
</tr>
<tr>
<td>Private Driveways, On-Street</td>
</tr>
<tr>
<td>Building Orientation</td>
</tr>
<tr>
<td>Facing Street</td>
</tr>
<tr>
<td>Building Placement</td>
</tr>
<tr>
<td>Setback Behind Front Yard</td>
</tr>
</tbody>
</table>

**TYPICAL CHARACTER OF SINGLE-FAMILY DETACHED NEIGHBORHOODS**

- Primary Land Uses: Existing Single-Family Detached Homes
- Secondary Land Uses: Natural Areas, Neighborhood Park, Clubhouse, Pool & Amenities
- Undesirable Land Uses: Non-residential Uses, Residential Uses with incompatible densities

- Residential Density Range: 1 – 4 du/ac
- Typical Home Size Range: 2,500 – 3,500 SF
- Non-Residential Intensity Range: N/A
- Prevailing Building Height: 1 – 3 Stories (45’ Max)
- Typical Block Length: N/A
- Street Pattern: Curvilinear or Grid
- Open Space Elements: Buffers / Ponds
- Primary Transportation Modes: Auto, Walk, Bike
- Parking Provision: Private Driveways, On-Street
- Building Orientation: Facing Street
- Building Placement: Setback Behind Front Yard
Urban Residential Neighborhoods

Urban Residential Neighborhoods can contain a variety of housing types in a high-density walkable urban format. Higher densities are critical to ensuring the walkability and urban character. As such, densities throughout these neighborhoods should generally provide a minimum of 16 dwelling units per acre with no individual portion of the neighborhood falling below that threshold. Appropriate housing types include: urban townhomes, condominiums, senior housing, and apartments. Townhomes that are more characteristic of suburban neighborhoods (larger and wide units with front yards, deeper building setbacks, and driveways to the street) are discouraged as they detract from the pedestrian environment and walkability.

The County anticipates that these areas will be developed with a high proportion of urban style townhomes. Other compatible housing types like apartments and condominiums may be a comparatively minor component of Urban Residential Neighborhoods. Smaller housing units are encouraged since they have the potential to be more affordable to a wider range of County residents and since they will have lower community facility impacts. Other housing types that minimize demands on the County and that are compatible with an urban environment like active adult housing and live-work lofts are also appropriate in the housing mix.

Heights in Urban Residential Neighborhoods are expected to range from 3 to 6 stories. Buildings should be constructed with no or minimal front and side yard setbacks to foster the desired urban environment. Vehicle access to individual buildings will generally be provided through rear alleys. Urban Residential Neighborhoods are expected to be built with common greenspaces accessible to residents.

The County expects that certain non-residential uses will be built in Urban Residential Neighborhoods to serve the residents that live in those neighborhoods. Examples of appropriate non-residential uses include parks; schools; churches; small scale, neighborhood-serving retail uses; and community facilities. While these uses are considered appropriate and necessary for Urban Residential Neighborhoods, development plans should recognize nearby mixed-use areas as community focal points where the majority of amenities and retail establishments will be located.

Urban Residential Neighborhood Policies
1. Urban Residential Neighborhoods should be developed with a focus on a pedestrian environment that provides abundant amenities.
2. A well-connected grid like pattern of streets should maximize connectivity between neighborhoods and to neighborhood amenities, businesses, community facilities, and transit stops.
3. Land development applications should be well integrated with the surrounding neighborhoods.

4. Multi-family housing is a minor component of Urban Residential Neighborhoods, typically 15%-20% or less of the total residential mix, and only where it contributes to the overall design integrity of the neighborhood, such as supporting retail development or providing a transition to adjacent high density residential or mixed-use areas.

5. The desired land use mix is designed to implement complete communities. This mix may vary from project to project and over time provided the project ultimately achieves the recommended range of densities and mix of uses. The degree of flexibility and acceptability of the interim phases and land use mix will depend on location, site constraints, and compatibility with adjacent development, as well as how well the project retains the capacity to achieve the ultimate development pattern and meet the policies and objectives of the Silver Line Plan.

6. Primary vehicular access to buildings should be through rear alleys.

7. On-street parking is desirable to complement on-site parking.

8. Urban Residential Neighborhoods should include a minimum of 10% of the land area for common open space areas like parks, plazas, and outdoor gathering spaces.

9. Elementary schools, community facilities, parks and civic uses should be integrated into Urban Residential Neighborhoods and should be designed to address policies in Chapter 5 Community Facilities and Services and Chapter 6 Green Infrastructure.

10. Buildings in Urban Residential Neighborhoods should be built with minimal setbacks to maximize density and foster a high quality pedestrian environment.

<table>
<thead>
<tr>
<th>TYPICAL URBAN RESIDENTIAL LAND USES</th>
<th>URBAN RESIDENTIAL FORM AND PATTERN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Land Uses</strong></td>
<td><strong>Land Use Mix</strong></td>
</tr>
<tr>
<td>Urban Townhomes</td>
<td>Separated Uses</td>
</tr>
<tr>
<td>Two-over-Two Units</td>
<td>Residential Density Range</td>
</tr>
<tr>
<td>Age Restricted Housing</td>
<td>12 – 24 du/acre</td>
</tr>
<tr>
<td>Live-Work Lofts</td>
<td>Typical Home Size Range</td>
</tr>
<tr>
<td>Apartment Buildings</td>
<td>700 – 2000 SF</td>
</tr>
<tr>
<td>Condominiums</td>
<td>Non-Residential Intensity Range</td>
</tr>
<tr>
<td>Limited neighborhood retail such as</td>
<td>Prevailing Building Height</td>
</tr>
<tr>
<td>drugstores and convenience stores in</td>
<td>3 – 6 Stories (70’ Max)</td>
</tr>
<tr>
<td>an urban, walkable format on the first</td>
<td>Typical Block Length</td>
</tr>
<tr>
<td>floor of residential buildings</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Secondary Land Uses</strong></td>
<td>Street Pattern</td>
</tr>
<tr>
<td>Multi-family attached</td>
<td>Curvilinear or Grid</td>
</tr>
<tr>
<td>Schools</td>
<td>Open Space Elements</td>
</tr>
<tr>
<td>Churches</td>
<td>Pocket Parks / Courts / Buffers /</td>
</tr>
<tr>
<td>Community Centers</td>
<td>Ponds, Outdoor Gathering Spaces</td>
</tr>
<tr>
<td><strong>Undesirable Land Uses</strong></td>
<td>Primary Transportation Modes</td>
</tr>
<tr>
<td>Suburban style townhomes</td>
<td>Transit, Walk, Bike, Auto</td>
</tr>
<tr>
<td>Suburban style retail uses</td>
<td>Parking Provision</td>
</tr>
<tr>
<td></td>
<td>Private Driveways, On-Street</td>
</tr>
<tr>
<td></td>
<td>Building Orientation</td>
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<tr>
<td></td>
<td>Facing Street</td>
</tr>
<tr>
<td></td>
<td>Building Placement</td>
</tr>
<tr>
<td></td>
<td>Setback Behind Front Yard</td>
</tr>
</tbody>
</table>

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3-19
11. Urban Residential Neighborhoods should accommodate transit routes and stops.
12. Urban Residential Neighborhoods may have a variety of residential unit types but the average unit sizes should not exceed 2,000 square feet.
13. Designs that include front load garages, surface parking lots at the front of buildings, large setbacks, and other features that discourage or degrade the walkability and cohesiveness of the community are discouraged.
14. Age-restricted and active adult housing is desired within this land use type.
15. Restaurants, convenience stores, personal service shops and similar uses that can locate in residential neighborhoods as live-work housing units, ground floor uses in a residential buildings or as small footprint shops framing a street, square or similar setting, may locate in Urban Residential Neighborhoods provided they support the community design objectives. The design and ancillary activities associated with the businesses should encourage pedestrian activity and connectivity to the neighborhood.
RESIDENTIAL DEVELOPMENT FEATURES DISCOURAGED IN URBAN RESIDENTIAL NEIGHBORHOODS

- Front load garages
- Auto oriented landscapes
- Large building setbacks

RESIDENTIAL DEVELOPMENT FEATURES DESIRED IN URBAN RESIDENTIAL NEIGHBORHOODS

- Grid like street pattern
- Pedestrian oriented streetscape
- Common open space areas
TYPICAL CHARACTER AND DESIGN FEATURES OF URBAN RESIDENTIAL NEIGHBORHOODS

- Grid like street pattern
- On-street parking
- No or minimal setbacks
- Common open space areas
- Entrances fronting on pedestrian roads
- Generally 3 to 6 Stories
Compact, Walkable Non-Residential

Compact, Walkable Non-Residential centers are identified for land near the Loudoun Gateway Metrorail Station and east of Loudoun County Parkway. This land use typology presents a unique land use compatibility challenge created by its location adjacent to the Washington Dulles International Airport primary runways and flightpaths, within the recognized Airport Impact Overlay District and along the Broad Run floodplain. The County’s adopted Airport Impact Overlay District prohibits residential units within the LDN 65 noise contours of the zoning overlay. This prohibition minimizes noise complaints and ensures unencumbered current and future operations of Washington Dulles International Airport. The zoning overlay encompasses a significant portion of vacant land around the Loudoun Gateway Metrorail Station, and thus presents land use constraints and compatibility issues not uncommon for land around major airports.

This land use typology is also intended to support compact, walkable employment centers that accommodate professional offices or office-like uses in a multi-story mixed use setting with pedestrian access to nearby shopping and entertainment options within a larger neighborhood or community. While offices are anticipated to be the primary land use, other employment uses that capitalize on proximity to Metrorail, institutional uses, and community facilities will also be considered. Buildings are to be located directly behind the sidewalk, and some uses may extend out to the street in the form of sidewalk cafes or outdoor seating areas. The Compact Walkable Non-Residential center concept can accommodate a single tenant or a secure office campus but will typically be a mix of employment, retail and service uses designed so that employees can safely walk to restaurants and other retail uses. Non-Residential centers should also accommodate transit routes to connect employees to nearby neighborhoods and Metrorail Stations.

The County can benefit from being one stop away from Washington Dulles International Airport. Uses may include one or more regional destinations or “anchor” uses within ½ mile of the Loudoun Gateway Station, including: sports stadiums, convention centers, exhibit halls, museums, shopping malls. Another alternative may be establishment of an Innovation District near the Loudoun Gateway Station that attracts a business ecosystem of advanced industries, knowledge workers, science and technology institutions, and entrepreneurs.
Building architecture and site design should be unique and iconic for the larger region. Public spaces and secondary uses surrounding special activity uses can lengthen the stay for visitors. These public spaces will accommodate a variety of social events and activities; including summer concerts, children’s events, talking, playing, people-watching, and exercising. Special needs and planning opportunities and challenges for one or more of these uses will dictate overall site development and design decisions. Given the likely unique land uses that will be developed on this site, the County should engage in design charrettes and/or collaborate with volunteer architectural design and planning groups to find innovative design solutions. Development applications will be reviewed in consideration of the full range of impacts and benefits associated with a project.

Additional non-residential uses can consist of compact walkable, shopping and entertainment options and as compact office centers, which may include ground floor retail. The design and scale of these centers encourages pedestrian activity with a complete and comprehensive network of walkable streets nearby. Buildings are located directly behind the sidewalk; some uses may extend out to the street edge in the form of sidewalk cafes or outdoor seating areas. Parking is satisfied by using on-street parking, structured parking, or shared rear-lot parking strategies. In order to increase activity in Compact Walkable Non-Residential centers, the County envisions a robust transit network to bring people into the area from surrounding neighborhoods.
Compact, Walkable Non-Residential Use Policies

1. Compact, Walkable Non-Residential areas will accommodate a variety of non-residential development options. The County encourages unique and innovative ideas and will consider a wide range of non-residential land use patterns that are shown to benefit the County and maximize utilization of Metrorail.

2. The County encourages development of Compact, Walkable Non-Residential areas as significant employment centers but will consider other appropriate land uses.

3. The County will consider Special Activity Uses to be limited to the area within ½-mile of the Loudoun Gateway Station but can extend beyond ½-mile if directly related to the primary use.
   a. Special Activity Uses must mitigate potential impacts from noise, lighting, signs, parking and similar activities.
   b. Special Activity Uses must include a detailed outline of activities to be conducted on the site, the nature and extent of ancillary uses, proposed hours of operation, and the anticipated frequency and duration of proposed events.
   c. Special Activity Uses must be adequately separated and buffered from incompatible adjacent uses.

4. The County envisions non-residential uses at 3.0 to 6.0 Floor Area Ratios with highest intensity of use within ½ mile of the Loudoun Gateway Station and east of the Broad Run. Densities west of the Broad Run should be lower but may be determined on a case-by-case basis if a unified development plan establishes clear pedestrian and transit linkages, minimal impacts on the river and stream corridor resource and meets other community design objectives of the Plan.

5. Building heights, in certain locations, will need to be reviewed by the Federal Aviation Administration to ensure safe flight paths from Washington Dulles International Airport.

6. Uses will be designed and located to enhance the visual character of the Dulles Greenway Corridor and Loudoun County Parkway.

7. Ground-floor retail, civic space and other commercial uses are encouraged to create activity along street frontages.

8. Freestanding or drive-through retail uses are discouraged due to their adverse effects on walkability and the pedestrian environment.

9. The County promotes concepts like outdoor dining, event space, street fairs, and public art within Compact, Walkable Non-Residential areas.

10. Land development applications should be integrated with adjoining existing and planned neighborhoods.

11. Development in the ultimate condition is anticipated to rely on structured parking with primary vehicular access being on roads other than pedestrian-oriented main streets, however a mix of structured parking, on-street parking and a very limited amount of surface parking is anticipated as an interim land use.

12. Land use plans in Compact, Walkable Non-Residential areas should accommodate bus service and support the function of the Loudoun Gateway Station as a transit hub.

13. Residential development is not appropriate in Compact, Walkable Non-Residential areas.
14. Areas designated as Compact, Walkable Non-Residential should maintain a high level of pedestrian mobility, maintain connections to the station areas, orient buildings to the street and provide walkable street frontages with pedestrian amenities such as outdoor furnishings, street trees, and storefronts where appropriate.
Suburban Employment

Suburban Employment centers provide opportunities to concentrate employment centers where good vehicular access is important and where large land areas are required. Within the Silver Line Policy Area, Suburban Employment centers are located proximate to major roads like Loudoun County Parkway and Waxpool Road. They include both large-scale isolated buildings with numerous employees as well as areas containing multiple businesses that support and serve one another. Flex-industrial uses and auto-oriented retail uses are also appropriate for these areas. Building heights may vary with typical heights ranging from 1 to 6 stories depending on individual user needs. Parking for buildings is satisfied using either surface parking lots or multi-level parking decks. Since these uses often consume large land areas and can be unattractive, high quality landscape buffering is required. It is also important to note that the location of Suburban Employment centers along major roadway corridors makes them function as a gateway into the station areas and mixed-use neighborhoods. This location requires a high emphasis on good design.

Suburban Employment centers within the Silver Line Policy Area could offer long term redevelopment opportunities. This Comprehensive Plan Amendment places greatest focus on development of mixed-use neighborhoods in areas proximate to Metrorail given limited market demand and the desire to strategically focus resources and create concentrated development opportunities as quickly as possible. However, areas designated as Suburban Employment centers should be reevaluated and considered for redevelopment opportunities once significant build-out of mixed-use neighborhoods occurs.

Suburban Employment Policies

1. Suburban Employment centers require high quality site and building design, landscape design and buffering that reflects their function as a gateway to the Metrorail Station.

### TYPICAL SUBURBAN OFFICE LAND USES

<table>
<thead>
<tr>
<th>Primary Land Uses</th>
<th>Secondary Land Uses</th>
<th>Undesirable Land Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Office Buildings</td>
<td>Copy and Printing</td>
<td>Residential Development</td>
</tr>
<tr>
<td>Multi-tenant Professional Office</td>
<td>Sit-down Restaurant</td>
<td></td>
</tr>
<tr>
<td>Research and Development</td>
<td>Bank</td>
<td></td>
</tr>
<tr>
<td>Flex-Industrial</td>
<td>Auto oriented uses (Gas Stations,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drive-through restaurants)</td>
<td></td>
</tr>
<tr>
<td>Suburban style retail</td>
<td>Suburban style retail</td>
<td></td>
</tr>
<tr>
<td>Pad sites</td>
<td>Pad sites</td>
<td></td>
</tr>
<tr>
<td>Self-storage facilities</td>
<td>Self-storage facilities</td>
<td></td>
</tr>
<tr>
<td>Residential Development</td>
<td>Residential Development</td>
<td></td>
</tr>
</tbody>
</table>

### SUBURBAN OFFICE FORM AND PATTERN

<table>
<thead>
<tr>
<th>Land Use Mix</th>
<th>Separated Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Density Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Typical Home Size Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Non-Residential Intensity Range</td>
<td>0.25 – 1.0 FAR</td>
</tr>
<tr>
<td>Prevailing Building Height</td>
<td>1 - 6 Stories (90’ Max)</td>
</tr>
<tr>
<td>Typical Block Length</td>
<td>800 – 1,500 LF</td>
</tr>
<tr>
<td>Street Pattern</td>
<td>Curvilinear</td>
</tr>
<tr>
<td>Open Space Elements</td>
<td>Buffers / Ponds</td>
</tr>
<tr>
<td>Primary Transportation Modes</td>
<td>Auto</td>
</tr>
<tr>
<td>Parking Provision</td>
<td>Parking Deck, Surface Lot</td>
</tr>
<tr>
<td>Building Orientation</td>
<td>Facing Street</td>
</tr>
<tr>
<td>Building Placement</td>
<td>Setback Behind Front Yard</td>
</tr>
</tbody>
</table>
Areas and location along major vehicular thoroughfares.

2. Applications for development in Suburban Employment areas should include detailed concept plans, landscape plans and illustrative elevations to demonstrate their design and compatibility.

3. Retail development can be integrated into Suburban Employment centers but should be secondary to employment uses. Limited retail uses should support employment uses and may include uses that are not compatible with urban, mixed-use neighborhoods.

4. Any non-employment uses in Suburban Employment areas should have a clear relationship to nearby mixed-use neighborhoods and be easily accessible.

5. Suburban Employment areas should accommodate transit infrastructure.

6. Suburban Employment centers should accommodate pedestrian and bicycle connectivity to other portions of the Silver Line Policy Area.
Medium Urban Mixed-Use Neighborhoods

Urban Mixed-Use Neighborhoods with medium-sized buildings offer residents the ability to live, work, shop and play within one community. The term medium buildings refers to an urban building that is generally four to six stories in height and generally in between the smaller massing of two to three story urban residential buildings (see Urban Residential Land Use Typology) and the tall buildings of 10-15 stories in the Urban Mixed Use, Tall Buildings Land Use Typology. They include a combination of single-family attached and multi-family housing, integrated with various retail and employment uses to create a walkable community. The Urban Mixed-Use, Medium Neighborhoods are compact, and may contain condominiums or apartments as well as a limited amount of urban styled townhomes in the fringe areas of the neighborhood. Buildings are to be oriented toward the street and range in size from four to six stories. Ideally, residential units are found above storefronts but some stand-alone residential buildings are expected. The design and scale of development encourages active living with a complete network of walkable streets. Urban Mixed-Use Neighborhoods support driving, transit, bicycling and walking as viable modes of transportation. Parking is to be generally satisfied with on-street and structured parking, and shared rear-lot parking strategies. Urban Mixed-Use Neighborhoods are expected to be built around elements like “main streets,” community focal points, gathering places, plazas, and walkable services and amenities. Buildings that front on these elements are expected to have ground floor commercial that activates the street. Urban Mixed-Use Neighborhoods also provide key locations for office development in the County.

Multi-family housing will be the predominant housing type, typically apartments and condominiums, with densities ranging from 24.0 to 48.0 dwelling units per acre with home sizes averaging approximately 400 to 1,300 square feet. However, more dense urban multi-family attached housing products may reach the upper range of 48.0 dwelling units per acre with smaller homes sizes averaging approximately 1,000 square feet. Household size, student generation, and need for County facilities and services is expected to be lower than in other neighborhoods due to the smaller unit sizes, however Chapter 7 Implementation discusses the need for studying and updating student generation rates to account for the new land uses and housing options envisioned in this plan. In addition, Medium Urban Mixed Use Neighborhoods adjacent to or near the Airpot Impact Overlay District and the 2005 Washington Dulles International Airport EIS LDN 65 noise contours for the 4th runway should also be designed with particular attention given to aircraft noise mitigation.

Medium Urban Mixed-Use Policies

1. Medium Mixed-Use Neighborhoods should be oriented towards a “main street”, intersection or streetscape with ground floor commercial and/or civic space and amenities that attract pedestrians and create activity along street frontages.
2. Anticipated uses include a range of commercial shops that fulfill daily and convenience needs of its residents and employees. The combination of uses should reflect a unified focus on compact urban form with active streets and public spaces.
3. The predominant residential use should be multi-family units, either stand-alone or in vertically mixed buildings averaging approximately 1,300 square feet or less. Urban single-family attached units can be provided as a secondary use within a larger mixed-use project, under the following conditions:
   a. Townhouses are proposed as a minor residential component of a larger mixed use project.
b. Townhouses represent less than 15 percent of the project housing;

c. They are situated where they provide a transition between the higher density mixed use core and surrounding lower density uses or in close proximity to existing or planned schools and parks;

d. Their design reflects an urban scale, including narrow widths, front doors at the sidewalk, no vehicular (garage) access through the front yard; and

e. They generally are not fronting on the active commercial streets or within commercial core areas.

4. The County envisions active street frontages along “main streets” and promotes concepts like outdoor furnishings, outdoor dining, event space, street fairs, and public art space.

5. Medium Urban Mixed-Use Neighborhoods should have a minimum of 10% of land area dedicated to active parks and civic spaces. Uses that serve as gathering spaces like amphitheaters, play areas, fountains, ponds, skating rinks, art display spaces, flower gardens, and seating and picnic areas, are encouraged. Structural spaces such as plazas and roof top gardens accessible to the public may also be considered for achieving the policy minimum.

6. The County anticipates that new school sites will be provided within Urban Mixed-Use Neighborhoods, depending on the neighborhood and projected student populations, to offset demand generated by new development. These school sites will count toward the 10% civic space requirement.

7. Land development applications should be part of a larger neighborhood master plan or demonstrate how the application integrates with and is connected to adjoining existing or planned neighborhood developments.

8. Applications for Urban Mixed-Use Neighborhoods should provide transit plans to meet the transportation accessibility and mobility needs of the residents and employees in the neighborhood.

9. On-street parking is desirable in Urban Mixed-Use Neighborhoods to complement on-site parking.

10. The County anticipates a land use mix in Medium Urban Mixed-Use Neighborhoods where total floor area consists of a minimum of 10% retail and 10% compatible employment uses. These minimums establish the general land use mix for the plan area and for land development applications, but are not site specific.

11. Vertically integrated mixed-use buildings are fundamental components of an Urban Mixed-Use Neighborhood.

12. The land use mix, densities, range of residential unit sizes, and amenities implement complete communities, however these mixes may vary from project to project and over time. The degree of flexibility and acceptability of the interim uses and land use mix will depend on location, site constraints, and compatibility with adjacent development, as well as how well the project retains the capacity to achieve the ultimate development pattern and meet the objectives of the Silver Line Plan.

13. Suburban style, auto-oriented uses are not desirable in Urban Mixed-Use Neighborhoods as they detract from the pedestrian environment. Auto-oriented uses include stand-alone retail and commercial uses with large surface parking areas, large street frontages and multiple curb cuts for vehicular entrances.

14. Age-restricted and active adult housing is desired within this land use type.
## TYPICAL MEDIUM URBAN MIXED-USE LAND USES

### Primary Land Uses
- Condominium Buildings
- Apartment Buildings
- Two-over-two Buildings
- Elevator Flats
- Restaurants
- Grocery Stores
- Banks
- Integrated Retail Sales / Commercial uses
- Doctor Offices
- Multi-tenant Office Buildings
- Corporate Office Buildings

### Secondary Land Uses
- Community Facilities
- Cultural facilities: museums, art galleries, performing arts venues
- Schools
- Pocket Parks
- Neighborhood Parks
- Public Plazas
- Urban Townhomes

### Undesirable Land Uses
- Single Family Detached Homes
- Suburban Style Townhomes
- Large scale commercial uses
- Auto oriented uses (Gas Stations, Drive-through restaurants)

## MEDIUM URBAN MIXED-USE FORM AND PATTERN

<table>
<thead>
<tr>
<th>Land Use Mix</th>
<th>Mix of Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Density Range</td>
<td>24 – 48 du/ac</td>
</tr>
<tr>
<td>Typical Home Size Range</td>
<td>400 – 1300 SF</td>
</tr>
<tr>
<td>Non-Residential Intensity Range</td>
<td>1.0 – 4.0 FAR</td>
</tr>
<tr>
<td>Prevailing Building Height</td>
<td>4 - 6 Stories</td>
</tr>
<tr>
<td>Typical Block Length</td>
<td>400 – 800 LF</td>
</tr>
<tr>
<td>Street Pattern</td>
<td>Grid</td>
</tr>
<tr>
<td>Open Space Elements</td>
<td>Pocket &amp; Neighborhood Parks / Plazas, Public Gathering Spaces</td>
</tr>
<tr>
<td>Primary Transportation Modes</td>
<td>Transit, Walk, Bike, Auto</td>
</tr>
<tr>
<td>Parking Provision</td>
<td>Structured Parking, On Street Parking, Rear Surface Lot</td>
</tr>
<tr>
<td>Building Orientation</td>
<td>Facing Street</td>
</tr>
<tr>
<td>Building Placement</td>
<td>Directly Behind Sidewalk</td>
</tr>
</tbody>
</table>

## RETAIL FORMS INCOMPATIBLE WITH MIXED-USE NEIGHBORHOODS
TYPICAL CHARACTER AND DESIGN FEATURES OF MEDIUM URBAN MIXED-USE NEIGHBORHOODS

- On-Street Parking
- Residential above retail
- Generally 4 to 6 Stories
- Wide Sidewalks, Streetscape improvements
- Outdoor Seating Areas
- Pedestrian Oriented Internal Roads
TYPICAL CHARACTER OF URBAN MULTI-FAMILY ATTACHED DEVELOPMENT IN MIXED USE MEDIUM NEIGHBORHOODS
Tall Urban Mixed-Use Neighborhoods

Urban Mixed-Use Neighborhoods with tall buildings serve broader economic, entertainment, and community activities compared to Mixed-Use Neighborhoods with medium buildings. Uses and buildings are located on small blocks with streets designed to encourage pedestrian activities. Residential units and office uses are found above storefronts which line most of the streets in the neighborhood. Tall Urban Mixed-Use Neighborhoods are different from Medium Urban Mixed-Use Neighborhoods in that the entire urban grid of streets is expected to have active street frontage. Tall Urban Mixed-Use Neighborhoods also place a significant emphasis on parks, public plazas, and outdoor seating areas that serve as community gathering spaces.

Parking is satisfied using on-street parking, structured parking, or shared rear-lot parking strategies. Tall Urban Mixed-Use Neighborhoods encourage active living and place significant emphasis on an interconnected network of walkable streets with a high quality pedestrian environment. Densities in these neighborhoods typically range from 32.0 to 125.0 dwelling units per acre. Home sizes can range from 400 to 1,000 square feet with all residential units being located in apartment and/or condominium buildings. Buildings typically stand ten to fifteen stories tall.

<table>
<thead>
<tr>
<th>TYPICAL MIXED-USE TALL BUILDINGS LAND USES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Land Uses</strong></td>
</tr>
<tr>
<td>• Condominium</td>
</tr>
<tr>
<td>• Apartment</td>
</tr>
<tr>
<td>• Sit-down Restaurant</td>
</tr>
<tr>
<td>• Integrated Retail Sales and Service</td>
</tr>
<tr>
<td>• Bank</td>
</tr>
<tr>
<td>• Grocery Store</td>
</tr>
<tr>
<td>• Night Club</td>
</tr>
<tr>
<td>• Multi-tenant Professional Office</td>
</tr>
<tr>
<td>• Uses compatible with walkable, urban environments</td>
</tr>
<tr>
<td><strong>Secondary Land Uses</strong></td>
</tr>
<tr>
<td>• Community Facilities</td>
</tr>
<tr>
<td>• Cultural facilities: museums, art galleries, performing arts venues</td>
</tr>
<tr>
<td>• Neighborhood Park</td>
</tr>
<tr>
<td>• Public Plaza</td>
</tr>
<tr>
<td>• Outdoor Seating</td>
</tr>
<tr>
<td><strong>Undesirable Land Uses</strong></td>
</tr>
<tr>
<td>• Single-Family Attached and Detached homes</td>
</tr>
<tr>
<td>• Auto oriented uses (Gas Stations, Drive-through restaurants)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MIXED-USE TALL BUILDINGS FORM AND PATTERN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Use Mix</td>
</tr>
<tr>
<td>Residential Density Range</td>
</tr>
<tr>
<td>Typical Home Size Range</td>
</tr>
<tr>
<td>Non-Residential Intensity Range</td>
</tr>
<tr>
<td>Prevailing Building Height</td>
</tr>
<tr>
<td>Typical Block Length</td>
</tr>
<tr>
<td>Street Pattern</td>
</tr>
<tr>
<td>Open Space Elements</td>
</tr>
<tr>
<td>Primary Transportation Modes</td>
</tr>
<tr>
<td>Parking Provision</td>
</tr>
<tr>
<td>Building Orientation</td>
</tr>
<tr>
<td>Building Placement</td>
</tr>
</tbody>
</table>
Tall Urban Mixed-Use Policies

1. Tall Urban Mixed-Use Neighborhoods should provide ground floor retail and civic space or other uses that activate the street frontage on the majority of block frontages.

2. Given their location immediately adjacent to the Ashburn Metrorail Station, Tall Urban Mixed-Use areas should become the most significant employment areas in the County.

3. The County encourages elements like outdoor furnishings, outdoor dining, event space, street fairs, and public art space within Tall Urban Mixed-Use Neighborhoods.

4. Land development applications in Tall Urban Mixed-Use Neighborhoods should demonstrate integration of urban design features, scale of development and connectivity with adjoining existing and planned neighborhoods/developments.

5. Applications for Tall Urban Mixed-Use Neighborhoods should recognize proximity of the Metrorail Station and accommodate large volumes of Metrorail riders passing through the neighborhood.

6. Tall Urban Mixed-Use Neighborhoods should be designed to accommodate transit ridership and should recognize that future transit routes will begin and terminate in the neighborhood.

7. The County anticipates a land use mix in Tall Urban Mixed Use Neighborhoods where total floor area consists of a minimum of 15% retail and 30% office and compatible employment uses. These minimums establish the general land use mix for the plan area for land development applications, but are not site specific.

8. The County encourages innovative uses and alternative building designs that minimize impacts, while maintaining compatibility and maximizing revenues and use of Metrorail.

9. Tall Urban Mixed-Use Neighborhoods are expected to have a minimum of 5% of land area dedicated to active parks, civic spaces and other gathering spaces like amphitheaters, play areas, fountains, ponds, skating rinks, art displays, flower gardens, and seating and picnic areas. Amenities located on roof decks or green roofs with (passive or active) recreation space may be considered for achieving the policy minimum.

10. The land use mix and amenities are to implement complete communities, however the mix and uses are anticipated to vary from project to project and over time depending on location, site constraints, and compatibility of adjacent uses/developments. The degree of flexibility and acceptability of the interim uses and land use mix will depend on location, site constraints, as well as, how well the project retains the capacity to achieve the ultimate development pattern and meet the objectives of the Silver Line Plan.

11. Suburban style, auto-oriented uses are not desirable in Urban Mixed-Use Neighborhoods as they detract from the pedestrian environment. Auto-oriented uses include stand-alone uses with large surface parking areas, large street frontages and multiple curb cuts for vehicular entrances.

12. Age-restricted and active adult housing is desired within this land use type.
TYPICAL CHARACTER OF TALL URBAN MIXED-USE NEIGHBORHOODS

- Buildings Oriented Towards Streets
- Minimal Building Setbacks
- Aligned Building Frontages
- Wide Sidewalks
- Street Furniture
- Street Trees
- Pedestrian Scale Lighting
- On-Street Parking
- Planting Strips
- Bicycle Accommodations
Urban Design Guidelines

The purpose of the Silver Line Policy Area Urban Design Guidelines is to guide property owners, planners, developers, architects, engineers, and all community members in creating enhanced building forms, building facades, pedestrian movement, access, comfort, and safety—contributing to the livability and walkability of the Silver Line Policy Area, particularly in, but not limited to the designated mixed-use areas and higher density residential areas.

The main objective of the accompanying policies is to engage the community in ‘placemaking’, which can be defined as the art of designing buildings, streets, and landscapes to create character defining features of buildings and environments, increase attractiveness to and compatibly with the people who use them. Placemaking is the primary design principle in creating walkable neighborhoods and environments. For the purposes of the Silver Line CPAM, this process of making unique places focuses on creating developments that have dense urban environments and elements of traditional neighborhoods that are linked by multi-modal transit and walkability. This section is organized by: (1) General Urban Design Policies which provide the overall guidance and objectives to be achieved with new development and redevelopment in the planning area; and (2) specific design guidelines with topical strategies for achieving the guideline intent and accompanying illustrations and photographs of possible solutions that would meet the requirement of the guideline. New development applications and modifications to existing development plans and approvals should expect to be reviewed against the guidelines of the Silver Line Policy Area. Development applications should address the entirety of the design guidelines with specificity to ensure that the design intent of the guidelines is achieved for the following topical areas:

- Building Orientation and Setback
- Building Design and Façades
- Street Furnishing and Lighting
- Public Spaces
- On-street Parking
- Sidewalks
- Street Trees and Plantings

Urban Design Policies

1. The policy goals of the Urban Design Guidelines are to:
   - Promote accessibility and establish links to transit
   - Promote walkability
   - Encourage human activity between buildings and streets
   - Establish human scale of buildings at street level and based on land use typology
• Create visually interesting and compatible buildings and site designs that use building forms, materials, fenestration, repetition, rhythm, color and architectural variety resulting in delightful blends of form, volumes, textures and colors in the various neighborhoods
• Create inviting spaces for varied activity
• Create a sense of place and uniqueness
2. All applications for development in the Silver Line Policy Area are expected to include project specific design guidelines, site plans, illustrative, landscape plans, building elevations, and other similar graphics that demonstrate consistency with the Silver Line Urban Design Guidelines and planning principles in this document.
3. The guidelines are designed to fit multiple land use categories, but may not apply to certain categories due to the inherent nature of the categories. For example, urban design guidelines will not apply in many cases to the suburban development use categories. Each set of guidelines has an application matrix that helps guide where the design intent is desired. The Floodplain / Designated Open Space and Parks / Community Facilities land use designations are specifically not addressed as these land areas and facilities are designed to meet specific criteria regardless of location. Route 28 land use designations are also not addressed with design guidelines in this Plan, as they already contain design guidelines specific to those land areas within the current Revised General Plan.
4. The Urban Design Guidelines do not supersede or otherwise limit the application of existing zoning regulations or ordinances or design standards of any building codes, design criteria, or regulatory legislation administered by Loudoun County.
Building Orientation and Setbacks

Buildings, particularly along urban-type streets and “main streets” should have common design strategies which promote walkability, accessibility and activity in the ‘outdoor room’ or ‘outdoor hallway’ between streets and buildings.

1. Locate buildings at the front property line or at the minimum required setback to create a strong pedestrian pathway framed by adequate spaces for sidewalks, plantings, street furnishings, and lighting along buildings. Where additional setback is necessary, that area can be used to create a plaza, pocket parks or public gathering spaces adjacent to the street, incorporating activity space, outdoor seating, landscape features or water features for example.

2. Design grade level entrances providing direct access to building entrances from sidewalks and streets.

3. Make primary entrances to buildings visible from the street and sidewalk.

4. Create primary entrances for pedestrians that are easily identified and accessible with as direct a path as possible to transit amenities.

5. Maintain at least one entrance from the public way at retail and restaurant establishments.

6. Incorporate transitions from the sidewalk to the front door such as landscaping, overhead cover (canopies, awnings or trellises) and/or porches at individual entrances to businesses and residences.

7. Comply with Americans with Disabilities Act (ADA), Universal Design and/or International WELL Building Institute guidelines at primary pedestrian entrances. Alternate approaches for persons with mobility limitations (such as a ramp next to the main path to the primary entry) should not be necessary.

8. Incorporate passageways or alleys into mid-block developments, particularly on long blocks, that facilitate safe pedestrian movement through the depth of the block to the front of the next parallel block. Pedestrians should not have to walk the circumference of a block in order to access the middle of the next parallel block or alley or parking behind the block.

9. Activate use of mid-block passageways or alleys so that they are visually interesting, functional, well-lit, and safe spaces.
<table>
<thead>
<tr>
<th>Guideline</th>
<th>Land Use Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locate buildings at or near front/street facing property line</td>
<td>X</td>
</tr>
<tr>
<td>Grade level entrances</td>
<td>X</td>
</tr>
<tr>
<td>Building entrances visible from the street and/or sidewalk</td>
<td>X</td>
</tr>
<tr>
<td>Primary entrances that are easily identified and accessible to/from transit</td>
<td>X</td>
</tr>
<tr>
<td>Maintain at least one entrance from the public way</td>
<td>X</td>
</tr>
<tr>
<td>Incorporate transitions from the sidewalk to the front entry</td>
<td>X</td>
</tr>
<tr>
<td>Incorporate passageways or alleys into mid-block developments</td>
<td>X</td>
</tr>
</tbody>
</table>
Building Design and Façades

Addressing architectural features of buildings is an important component of creating the ‘sense of place’ that is desired for the planning area, particularly with respect to the denser and more intensely used areas.

1. Incorporate different façade treatments such as forms, textures, colors, materials, and distinctive architectural features that add visual distinctiveness throughout the policy area while building consistency in their application within individual developments to create uniqueness and identifiable character of each new development.

2. Add scale and interest to the building façade by articulated massing. Blank or long expansive walls with no detail or variation in form, color, texture, openings or material are undesirable, particularly in activity centers and along pedestrian pathways or linkages.

3. Use of architectural features, enhanced materials, fenestration, planting, lighting, and signage should contribute to a more pedestrian friendly streetscape.

4. Reinforce the existing façade rhythm along the street with architectural elements, landscaping, signage, street lighting and street furnishings.

5. Include overhead architectural features, such as awnings, canopies, trellises or cornice treatments that provide identifiable entries shade and reduce heat gain.

6. Contribute to visual interest, human activity along streets and neighborhood safety by providing pedestrian scaled windows and fenestrations at the street level that act as pathways to activity inside buildings and “eyes on the street”.

7. Devote 65% to 75% (minimum) of façade for ground floor retail, restaurants, and professional office uses to pedestrian entrances and pedestrian-level display windows in mixed-use environments, along main streets, and other activity centers.
## Building Design and Facades Guideline Application

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporate different façade treatments</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Add scale and interest to the building façade by articulated massing</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Use of architectural features, enhanced materials, fenestration, planting, lighting, and signage may contribute to a more pedestrian friendly streetscape</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Reinforce the existing façade rhythm along the street with architectural elements</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Include overhead architectural features, such as awnings, canopies, trellises or cornice treatments</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Incorporate transitions from the sidewalk to the front entry</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Devote 75% of façades for ground floor retail, business and office uses to entrances and pedestrian-level display windows</td>
<td>X</td>
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</tr>
</tbody>
</table>

### Sidewalks, Streets Trees and Plantings

Sidewalks, in conjunction with street design and building placement, support ease of pedestrian movement and link people from their homes to community amenities such as parks, public spaces, retail and commercial areas, transit stops, nodes, landmarks and the Metrorail stations. Sidewalks also enrich the quality of the public realm by providing appropriate connections and street furnishings in the public right of way. Sidewalks create the basis for the concept of the ‘outdoor rooms’ and ‘outdoor hallways’ which support human activity at planned centers and along linkages.
Planting street trees and ground cover plantings has proven over time and across urban development to improve the human experience between building and streets. Along with creating inviting spaces, comfort for human activity, and positive impacts to the natural environment, street trees and ground level plantings contribute greatly to the visual appeal of building façades and outdoor spaces.

1. Create a continuous and predominantly straight sidewalk to support two-way pedestrian traffic with enough space for streetscape amenities such as street furnishings, street trees, ground cover plantings areas, street lighting, signage, and utilities.
2. Create amenities that act as a buffer between pedestrians and moving vehicles by the use of landscape and street furniture (benches, newspaper racks, pedestrian information kiosks, bicycle racks, bus shelters, and pedestrian lighting, etc.).
3. Use street furnishings to create a consistent rhythm (i.e., consistent height of light standards or consistent shade pattern of trees) and encourage the activity and use of the sidewalk area between buildings and streets as an outdoor room.
4. Incorporate closely planted shade-producing street trees to encourage pedestrian activity along streets and promote comfort in the outdoor activity spaces. They may be interspersed with existing or proposed street trees. Select native trees and plantings with low maintenance requirements. Plant outdoor spaces with ground cover, low-growing vegetation or permeable materials that accommodate both pedestrian movement and car door swings where on street parking is designed and planned.
### Sidewalks, Streets Trees and Plantings Guideline Application

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Create a continuous and predominantly straight sidewalk to support two-way pedestrian traffic</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>Create amenities that act as a buffer between pedestrians and moving vehicles</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Utilize street furnishings to create a consistent rhythm (i.e., consistent height of light standards or consistent shade pattern of trees) and encourage the activity</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Incorporate appropriately spaced shade-producing street trees to encourage pedestrian activity</td>
<td></td>
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<td>X</td>
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</table>

**Street Furnishings and Lighting**

Street furnishings and lighting should be designed to strengthen the pedestrian experience and encourage outdoor use and activity in activity centers and spaces between buildings and streets. These amenities that are located in the ‘outdoor room’ should also serve to create neighborhood identity and visual coherence with the use of building and street lighting.

1. Provide usable space in the sidewalk areas which should include street furnishings such as benches, trash cans, kiosks, street gardens, bike racks, outdoor sitting spaces, and public art.
2. Provide adequate lighting levels to safely light the pedestrian path.
3. Use adequate, uniform, human-scaled and glare-free lighting to avoid uneven light distribution, harsh shadows, and light spillage.
4. Use poles, standards, fixtures and lighting types that achieve “dark sky” compliant goals and objectives such as lighting when necessary, reducing glare, use of energy efficient lighting systems, lighting enough to promote safety and security, and considers ecological impacts to the natural environment and humans.
## Examples of Street Furnishings and Lighting

### Street Furnishing and Lighting Guideline Application

<table>
<thead>
<tr>
<th>Guideline</th>
<th>Land Use Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide usable space in the sidewalk areas which should include street furnishings</td>
<td>Single Family Detached</td>
</tr>
<tr>
<td>Provide adequate lighting levels to safely light the pedestrian path</td>
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</tr>
<tr>
<td>Utilize adequate, uniform, human-scaled and glare-free lighting</td>
<td>X</td>
</tr>
<tr>
<td>Use poles, standards, fixtures and lighting types that are “dark sky” compliant</td>
<td>X</td>
</tr>
</tbody>
</table>
On-street Parking

On-street parking provides numerous benefits in urban environments such as reducing the need for parking decks and parking lots, buffering pedestrians and moving vehicle traffic, vehicle traffic calming and providing parking near community amenities, businesses and retail uses shaping the outdoor “rooms”.

1. Provide parallel or angled on-street parking wherever possible.
2. Eliminate street parking within pedestrian crossings.
3. Create traffic calming along streets designed for low speeds.

### ON STREET GUIDELINE APPLICATION

<table>
<thead>
<tr>
<th>Guideline</th>
<th>Land Use Category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
</tr>
<tr>
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<td>X</td>
</tr>
<tr>
<td>Create traffic calming along streets designed for low speeds.</td>
<td>X</td>
</tr>
</tbody>
</table>

**EXAMPLE OF ON-STREET PARKING**
Public Spaces

Public spaces are areas that serve as centers for human activity which could be a destination, a space to pass through, or a linkage. These spaces should provide a focal point for gathering, communicate community or neighborhood identity, and help make for complete neighborhoods. These spaces could include plazas, promenades, courtyards, park spaces that are landscaped and/or hardscaped, and should include trees and ground cover vegetation to create inviting spaces for activity and gathering.

1. Orient buildings so that public spaces receive sunlight as well as provision for high quality, safe, night lighting.
2. Balance sunlight accessibility with shade producing trees and overhead cover.
3. Provide a variety of on-site features to maximize use and enjoyment of public spaces, including but not limited to:
   - Water features / public art
   - Outdoor furnishings
   - Vegetative ground cover, gardens and shade tree plantings/reforestation
   - Use of stormwater management (SWM) best practice features to create open spaces
   - Open spaces for gathering large groups of people
   - Variety of ground cover materials such as permeable and impermeable surfaces as well as natural ground cover

EXAMPLES OF PUBLIC SPACES

![Examples of Public Spaces](image-url)
### Public Spaces Guideline Application

<table>
<thead>
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<td>X</td>
</tr>
<tr>
<td>Provide an abundance of on-site features</td>
<td>X</td>
</tr>
</tbody>
</table>

### Additional Land Use Policies

#### Data Centers

The County recognizes that data centers can create significant revenues without creating a significant demand on community facilities and the transportation network. A significant fiber optic infrastructure exists in the Silver Line Policy Area that makes the area particularly attractive for data centers. As such, the County seeks to balance the potential revenue generation with creation of a high-quality urban environment. New data centers should be located at least 1/4-mile or more from the Metrorail Stations. The location of data centers should be focused in areas that are not planned for urban, mixed-use environments. A critical element of data center compatibility is ensuring that the adopted data center performance standards related to site design, buffers and building architecture are implemented. Data centers should also be considered as an appropriate use in areas where the current/existing zoning already permits the development of data centers by-right. In such cases, modifications of approved development plans to increase density, intensity of use or site plan layout, may be supported.

#### Planning for Interim Uses

Market demand for some of the densities or intensities and mix of uses called for in the Plan might not be realized until 10 to 50 years after both Metrorail stations are open. To meet County economic and fiscal goals, the County should accommodate development now that will retain the capacity to achieve the highest development potential in the future through phasing, land reservations, redevelopment or other means.
There are immediate market demands for homes, data centers, and a limited amount of retail and office space in the Silver Line Policy Area. Allowing interim uses can activate sites in the Silver Line Policy Area, provide income for property owners, and generate more immediate tax revenue.

It is important that interim uses provide the opportunity to efficiently and easily redevelop or convert to another use when the market for denser, mixed-use development improves. Preparing a site or block to evolve with the market will require careful planning and upfront investments by the developer; including infrastructure placement, building location and design, parking lot location and design, and long-term park or landscaped area locations.

A hypothetical example for transforming a big box retail store with outparcels into a mixed-use development (residential and non-residential) is depicted in the following images. Amendments to the Loudoun County Zoning Ordinance and Loudoun County Subdivision and Development Ordinance will be necessary to implement more flexibility regarding interim uses, development triggers, etc. New requirements for a site plan with interim development identified should include text, diagrams, the projected time horizon for the interim use (when will the interim use be ceased) and site design features necessary to show how specific lots or parcels will redevelop over time and not preclude implementation of the long-term vision. Interim uses might include parking lots, farmers markets, active recreation areas, such as athletic fields or outdoor gathering spaces, or other uses that are easily deconstructed for redevelopment to an ultimate condition.

Suitable interim uses are generally considered as those uses that retain the property under single ownership; that use open space and surface parking to retain land for future development; that site utilities and infrastructure to facilitate added development or redevelopment to higher densities or ultimate planned uses, that accommodate public facilities that may be needed by the ultimate development potential of the site; or illustrate a long-term phasing program or master plan for ultimate development of the property.
**Phase 1 - Initial Development**

Typical layout for a conventional big box retail store, located several hundred feet behind outparcel buildings (banks, restaurants, convenience stores, multi-tenant retail buildings, etc.) and a large surface parking lot. Open space required for the site is focused on a central green and parking drive aisle extending between the street and big box retail store. Very wide sidewalks or planting areas (up to 80 feet deep) are provided in front and on the side of the big box retail store.

**Phase 2 – Infill Development**

The central green and parking drive aisle are converted to a walkable street with small retail buildings located at the back of sidewalk and parking in the rear.
Phase 3 - Infill Development
The drive aisle in front of the big box retail store is converted to a walkable street with small retail buildings located at the back of sidewalk and parking in the rear (across the street from the big box retail store).

Phase 4 - Infill Development
Surface parking lots are converted to parking decks with buildings all around (enclosed blocks). Small buildings are added to the front and sides of the big box retail store. New buildings support a mix of uses and intensities: multifamily residential, office, retail and entertainment.
Unmet Housing Needs

The Silver Line Policy Area provides a unique opportunity to provide for the development of housing choices affordable to households across the income spectrum by supporting a relatively large proportion of multi-family housing. The County defines unmet housing needs as the lack of housing options for households earning up to 100% of the Area Median Income (AMI). Housing diversity in type and price to address unmet housing needs will enhance the Silver Line Policy Area’s economic vitality and the health of the community. In addition, the mixed-use environment will allow for housing to be located close to employment, transit, shopping and services. A diversity in types of housing should be developed here that accommodates a mix of incomes and family structures. All development applications within the Silver Line Policy Area that include a residential component should address the County’s unmet housing needs. In particular, residential development should accommodate a variety of age groups, interests, needs, and income levels. Residential development should also be accessible to those without cars, meet ADA and other accessibility requirements, and incorporate universal design.

Phase 5 - Full Development Potential
The big box retail store is demolished and replaced with two mixed-use blocks; including walkable streets, mid-rise buildings, central plazas, and parking decks. Outparcel buildings are demolished and replaced with new mixed-use buildings that are located at the back of sidewalk for all adjacent streets (full block development).
County Housing Programs

Recognizing the importance and value of providing for unmet housing needs close to transit access, the County will explore the development of new programs to support affordable housing development within the Silver Line Policy Area such as a reduction in parking ratios for multi-family rental units when developing housing for incomes below 50% AMI and the development of loan programs that support the purchase of housing in the Policy Area by moderate income home-buyers. There are also a variety of housing programs currently used by the County that can help address the unmet housing needs. These programs include the Affordable Dwelling Unit (ADU) program, Unmet Housing Needs Unit (UHNU) program, and Affordable Market Purchase Program (AMPP). The ADU program is administered pursuant to the Zoning Ordinance and provides one approach for addressing needs for households earning 30 to 70 percent of the Area Median Income (AMI). However, this program has limitations and is not required for residential buildings proposed to be 4 or more stories with an elevator. Within the Silver Line Policy Area, the ADU program may have the greatest success at addressing unmet housing needs with for purchase single-family attached units that generally address 50 to 70 percent of AMI since ADUs are not likely to be required in multi-family elevator buildings. The AMPP and UHNU programs were developed to address for-purchase housing in the 70 to 100 percent of AMI range and rental housing below 30 percent of AMI.

Applications for multi-family residential development within the Silver Line Policy Area should provide UHNUs consistent with the policies outlined below recognizing that a key part of the vision for the Silver Line Policy Area is developing a dense mixed-use area with housing type and price diversity.

Unmet Housing Needs Policies

1. All residential development within the Silver Line Policy Area should conform to County policies for addressing unmet housing needs to encourage a diverse population of residents to support a variety of jobs.
2. Housing that is developed to fulfill unmet housing needs should be well integrated and dispersed throughout the Silver Line Policy Area while locating near existing or planned employment uses and on transit routes and at transit stops.
3. A minimum of 12% of the proposed units in a multi-family residential development should address unmet housing needs. Flexibility regarding the percentages within the income tiers may be considered for projects that meet additional housing needs identified by the County. Examples include providing a higher proportion of units in the lowest income tiers or providing a high proportion of fully accessible units. Such proposals shall be evaluated on a case-by-case basis.
4. The minimum number of units shall be distributed as affordable based on the countywide housing policies and the following Income Tiers:
### Income Tiers for Addressing Unmet Housing Needs in the Silver Line Policy Area

Based on Washington Metropolitan Area Median Income (AMI)

<table>
<thead>
<tr>
<th>Income Tier</th>
<th>% of Total Units (Rental Only Projects)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 up to 30%</td>
<td>2 (For Rent)</td>
</tr>
<tr>
<td>Above 30% up to 60%</td>
<td>5 (For Rent)</td>
</tr>
<tr>
<td>Above 60% up to 80%</td>
<td>3 (For Sale Only)</td>
</tr>
<tr>
<td>Above 80%-100%</td>
<td>2 (For Sale Only)</td>
</tr>
</tbody>
</table>

5. If required by the Zoning Ordinance, ADUs will be provided in addition to UHNUs.
6. A covenant securing affordability for a minimum 30 years shall be attached to each unit that addresses unmet housing needs.
7. All dwelling units intended to address unmet housing needs should be provided prior to or concurrent with market rate units according to the phasing plan, be dispersed throughout the project, have a similar mix to market rate units in the number of bedrooms and floor area, and be comparable to market rate units in terms of appearance, materials, and finished quality.
8. The County will evaluate the potential for adding UHNU requirements in the Zoning Ordinance as zoning ordinance amendments occur to implement the land use vision of the Silver Line Policy Area.
9. The County will continue to evaluate and explore opportunities to utilize State, Federal, and other funding opportunities to address unmet housing needs.
10. The housing policies in the Revised General Plan will be used to evaluate development proposals in the Silver Line Policy Area.
11. The County will develop incentives to promote the development of UHNUs in the Silver Line Policy Area which may include flexibility with other requirements of this Plan when the number of UHNUs provided exceeds the policy guidelines above and the development of special loan programs to help moderate income purchasers.
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Chapter 4 - Transportation

Multimodal Transportation
The Silver Line Policy Area transportation network focuses on the concept of choices. If a transportation network is designed appropriately, no resident, worker, or visitor to the area is limited to a single transportation mode in order to travel and allows for choice depending on distance, weather conditions, trip purpose, or personal preference. For others, such as those who are too young to drive, those who do not feel comfortable driving, those who cannot afford a personal vehicle, or those who are unable to drive, multimodal systems provide safe and dependable travel options to ensure convenient access to goods, services, employment opportunities, and entertainment.

Creating a Multimodal System
The Silver Line Plan is critical because development of a multimodal system cannot happen haphazardly or through piecemeal efforts. Just as a comprehensive street network is necessary to allow cars and traffic to move efficiently, so are the networks for transit users, cyclists, and pedestrians’ necessary to encourage people to take advantages of all of these different mode choices. This is comparable to a two-lane road with stop signs every block that slows traffic, but is not as preferable to drivers as a freeway. Transit, automobile, bicycle, and pedestrian networks that account for the mobility needs of all of these different modal users are needed for each mode choice to be viable.

- For Automobiles, this means ensuring that the system of higher-capacity roadways envisioned in the new network are completed in order to move traffic through and into the area.
- For Transit Riders, this means identifying and building streets that feature elements to support premium transit services, including frequent but practically-spaced transit stops, to allow for direct routing, and high-frequency transit services that provide logical connections throughout the County and to the rest of the region via Metrorail.
- For Cyclists, this means ensuring development of on-street bicycle lanes into a network that serves bicycle commuters by providing higher speed, traffic-signal controlled routes through the Silver Line Policy Area, as well as, developing a comprehensive on- and off-road trail network that serves recreational cyclists.
- For Pedestrians, this means completing a sidewalk system that provides continuous routes along both sides of every street in the corridor for maximum mobility and access. It further means providing sidewalks that are free of bicycles, delivery load and unloading, and limits the frequency of driveways to provide limited interruptions and conflict points in the pedestrian network.

Concepts of Multimodal Transportation
The Silver Line Policy Area provides policies to support the creation of a comprehensively multimodal transportation system that accommodates all transportation modes with travel options along every route to incorporate the needs of different users. To that end, this plan incorporates roads, sidewalks, bike lanes, trails, and transit-intensive routes to ensure that multimodal connectivity can be realized. Effective implementation of this multimodal transportation system requires implementation of several key planning principles. These principles include:
1. The development of local and regional street grids providing redundant routes and multiple access options.
2. Human-scaled connections to ensure that every system user has direct routes throughout the area.
3. Roadways that are designed to accommodate drivers, cyclists, and pedestrians.
4. Amenities that encourage and provide adequate access to all types of uses for all travelers.

**Multimodal Street Development Policies**

General policies for these facilities are outlined below. Appendix 1 of the [2010 Countywide Transportation Plan](#) provides specific descriptions of the street section typology for each roadway identified in the Silver Line Policy Area. Along planned limited access roadways (Route 28, Route 267, and Route 606), trail systems along parallel roadways have been incorporated into the plan to provide non-motorized access in these corridors.

1. **Multimodal Design**
   
   Every street within the Silver Line Policy Area will include design elements for vehicles, pedestrians, and bicycles to ensure multimodality. These elements should incorporate all prominent modes, including:
   - *Bicycling* through on-street bike lanes, trails, and shared travel lanes.
   - *Walking* through sidewalks and jogging paths.
   - *Driving and Riding Transit* through innovative street designs.
   - *Modal Transfers* through bicycle parking, transit shelters, and transit stations.

2. **Block Size**

   Small urban block sizes are a critical component to maximizing access and walkability. Development in the Silver Line Policy Area will provide connected internal streets (Local Streets, Avenues, Boulevards, and Multimodal Through Corridors) placed at an interval of no more 660 feet (1/8th mile). This interval is not inclusive of alleyways or service roads. Exceptions for interruptions to the street grid, resulting in a *Superblock* (a block larger than 660 feet by 660 feet), shall be allowed where necessary to provide for public parks, public facilities, cultural institutions, or other uses deemed appropriate by the County requiring a large uninterrupted swath of land, or where natural and fixed manmade features (e.g., floodplains, bridges, utility substations) would not permit development of an optimally-connected network. Where feasible, pedestrian connections through this *Superblock* shall be provided to ensure ample pedestrian connectivity.

3. **Off-Street Parking Areas**

   Parking lots should be oriented to the rear of buildings to ensure safe and convenient access to Boulevards and Avenues for pedestrians and cyclists so that conflicts with vehicle drive aisles are reasonably minimized.
4. **Inter-parcel Connectivity**
   New, expanded, or significantly renovated development plans will seek to maximize the number of logical street connections to adjacent properties and to CTP roadways for all modes so that seamless connectivity can be achieved between developments. Development proposals in the Silver Line Policy Area shall provide for or reserve inter-parcel connections meeting the block criteria above to both undeveloped and underdeveloped adjacent sites so that future developments may connect seamlessly into the proposed development in accordance with land use policies of this plan.

5. **Landscaped Buffers**
   The buffer area between sidewalks and roadways is an important element of transportation system design. Buffer widths should depend on the speed of a roadway, the character of the surrounding development, and will conform to VDOT Design Guidelines.

6. **Street and Driveway Alignments**
   As feasible, streets and driveways shall be constructed to align with existing streets and driveways in order to facilitate development of a grid of streets.

### Roadway Purpose Classifications

The Silver Line Policy Area transportation network features different street typologies to accommodate the diverse needs within the Silver Line Policy Area and the desire to implement multimodal transportation. Among these typologies are commuter routes, commercial mixed-use streets, residential streets, and industrial streets.

**Commuter Routes**
These roads are planned to serve the purpose generally as arterial and collector roadways in a traditional roadway network. They are the key corridors by which traffic travels through and into the Silver Line Policy Area. Generally, these routes have multiple lanes, turn lanes, and moderate-to-high speed limits. These roads are preferred by drivers but may be less desired by pedestrians.

**Commercial Mixed-Use Streets**
These streets are key attractors within the Silver Line Policy Area serving as main streets for a particular area. They feature the highest densities of buildings and are a destination for all travel modes. This leads to slower speeds for all users on these streets. High levels of pedestrian activity slow anyone travelling along these corridors, including drivers and cyclists, but enlivens the environment to create a more economically and socially vibrant
destination node. Commercial Mixed-Use Streets feature wide sidewalks, frequent crossings, and turn lanes only at major intersections in an effort to keep the street narrow and pedestrian-friendly.

**Residential Streets**

These streets serve residential developments in the Silver Line Policy Area and generate the least automobile traffic. They feature low speed limits, integrated traffic calming measures, and generally do not feature turn lanes. Since vehicles move slowly on these streets, bicycles are able to share the road with cars, while pedestrians are able to cross safely without traffic signals or stop signs.

**Industrial Streets**

In areas planned for industrial development, it is critical that streets are able to support large vehicles and other needs of these businesses while preserving access for all modes. Therefore, these streets feature sidewalks and, in some cases, bicycle lanes, but also provide for wider travel lanes, turn lanes where appropriate, and fewer traffic calming devices in order to ensure adequate access for vehicles seeking to access industrial and manufacturing businesses.

**DRPT Definitions and Concepts**

In 2013, the Virginia Department of Rail and Public Transportation (DRPT) released the *Multimodal System Design Guidelines*, which provide a transportation system design manual alternative to the *Virginia Department of Transportation’s (VDOT) Road Design Manual*. In order to permit these guidelines to be applied in certain areas, VDOT amended its Road Design Manual in 2014, adding Appendix B (2), which includes guidelines for implementation of the DRPT standards within an urban area. In order to facilitate the County’s vision of the Silver Line Policy Area as an urban, multimodal center, the County has incorporated these guidelines into this document.

Streets within the Silver Line Policy Area will be identified by a hierarchy as defined by the DRPT. Descriptions of roadway typologies as defined in the DRPT Multimodal System Design Guidelines are provided below.

**Multimodal Through Corridor (MTC)**

MTC is a higher speed corridor that connects multiple activity centers. It is intended for longer distance, higher speed automobile, bus, or rail travel and ideally has limited at-grade intersections with other roadway types. MTCs are good candidates for high speed commuter transit
having few impediments to traffic flow. High speeds limit pedestrian and bicycle modes, and hence, the corridor design should provide separated facilities for these modes if they are needed. The design of the adjacent buildings should be oriented away from MTCs and towards place-making corridors on the other side of the buildings, providing more desirable pedestrian facilities and pedestrian-oriented land uses on the place-making corridors, while still accommodating pedestrian travel along the MTCs. Design speeds for MTCs range from 35 to 55 mph.

**Transit Boulevard**
The Transit Boulevard is the highest capacity and most transit supportive Multimodal Corridor in the typology. It would typically only be found in dense urban centers that have sufficient density and a market for premium transit. A Transit Boulevard is a multi-lane and multimodal boulevard with a dedicated lane or right-of-way for transit. Transit technologies could be bus service with a bus only lane (BRT or express bus), light rail, or other transit technologies with a separate right-of-way. Other transit types that share lanes with general traffic, such as streetcar or local bus service, could be accommodated on a Boulevard, Major Avenue, or Avenue, but the dedicated transit-only right-of-way defines the Transit Boulevard corridor type. Design speeds for Transit Boulevards range from 30 to 35 mph.

**Boulevard**
A Boulevard is the corridor type of highest multimodal capacity that accommodates multiple motorized and non-motorized modes. Boulevards allow for higher traffic volumes and greater efficiency of vehicular movements than Major Avenues, Avenues, and Local Streets, and typically have four to six lanes of traffic but may grow to eight in particularly dense centers, such as Tysons Corner (in Fairfax County). Boulevards provide safe and convenient pedestrian and bicycle access to adjacent land uses. Boulevards feature a median, landscaped amenity elements, street trees, and wider sidewalks. Design speeds for Boulevards range from 30 to 35 mph.

**Major Avenue**
Major Avenues contain the highest density of destinations, intensity of activity, and mix of modes. Because of the close proximity of destinations, pedestrians and street activity are common on Major Avenues. Major Avenues have wide sidewalks to accommodate high numbers of pedestrians and a variety of outdoor activities, including sidewalk cafes, kiosks, vendors, and other street activities. Major Avenues can be areas of high transit ridership for local bus routes. Traffic is low speed and localized. Due to the intensity of destinations, longer regional trips do not use Major Avenues; rather, they would typically be on Boulevards or Multimodal Through Corridors. Autos and buses on Major Avenues travel at slow speeds because pedestrian crossings and on-road bicyclists are frequent. Major Avenues typically have four or fewer lanes for
motor vehicle travel while providing adequate facilities for bicycling and typically providing roadway space dedicated to on-street parking. Design speeds for Major Avenues range from 30 to 35 mph.

**Avenue**

Avenues provide a balance between access to the businesses and residences that front upon them, and the collection of vehicular and pedestrian traffic. While having fewer destinations than Major Avenues, pedestrian and bicycle activity is very common as Avenues serve as critical links in the non-motorized network. Avenues are low speed roadways that facilitate shorter trips, but still contain a fair amount of destinations. Avenues typically have three travel lanes or fewer and do not exceed four lanes. Avenues may have roadway space dedicated for on-street parking and provide adequate bicycle facilities. Avenues have a 25-30 mph design speed.

**Local Street**

Local Streets see the lowest amount of activity and have the slowest speeds and the highest access. Bicyclists typically can share the road with autos because speeds are slow and auto traffic is sparse, although they have separate sidewalks and trails for pedestrian accommodation. Local Streets are primarily in more residential areas and are intended to serve only trips that originate or end along them. They connect to Avenues, Boulevards, or Major Avenues, funneling longer trips to these higher capacity corridor types. Local Streets are characterized by slow design speeds, wider setbacks, they may not have lane striping, and they emphasize on-street parking. Local Streets have a 25 mph design speed.

**Roadway Typology Policies**

1. **Identification of Typology**
   
   Each existing and proposed roadway within the Silver Line Policy Area will be identified by a (1) VDOT functional classification, (2) DRPT classification, and (3) Roadway Purpose Classification.

2. **DRPT Implementation**

   All roadways within the Silver Line Policy Area will be built or redesigned in accordance with VDOT Road Design Manual Appendix B (2) and DRPT Multimodal System Design Guideline standards and policies and descriptions laid out in this document and Appendix 1 of the 2010 Countywide Transportation Plan. Streets internal to a development site should be classified as local secondary roads (VDOT Functional Classification) and local streets (DRPT Multimodal System Classification).

3. **Design to Meet the Typology**

   Roadway designs will meet the policies and intent of the DRPT classification and Roadway Purpose Classification identified for that roadway.
The Transportation Network

Introducing the New Transportation Network

The transportation network established herein seeks to meet all of the objectives described above, creating a regional grid to facilitate the development of an urban grid of local streets throughout. Corridors run generally east-west or north-south, providing multiple redundant travel ways through the area. This allows traffic to divide onto parallel roads, similar to the County’s transportation system plan for other parts of the County. This plan also includes several new components in regard to transportation. Roads are more specifically defined to ensure coordination with all modes. This allows for creation of a network that serves drivers, cyclists, walkers, and transit riders all within the same system. This network allows development to retain and create their own identities, while ensuring that development can be designed to fit seamlessly into the greater network. This network features high-speed highways and low-speed local streets, recognizing the importance of each type of roadway in the overall network, and integrates access to Metrorail as a key component of the overall concept.

Continuing through this chapter, specific discussions of transportation corridors, transportation network elements and features, public transportation services, bicycle and pedestrian mobility, transportation demand management strategies, and land development goals provide policies and concepts that can be engaged to enhance the performance and reliability of the overall transportation system.

For a detailed description of each roadway within the Silver Line Policy Area, see Appendix 1 of the 2010 Countywide Transportation Plan. Please refer to the 2010 Countywide Transportation Plan for transportation policies related to airports, regional coordination, protection of the environment, and funding.
**Changes from the Previous Network**

Roads planned with sweeping curves have been straightened in order to provide for additional land development potential and increase mobility. Planned corridors have been realigned to better serve the Metrorail stations. Ultimate planned roadway lanes have been evaluated to ensure that roads have the capacity they need, while ensuring that excess capacity, which would inhibit mobility and disrupt the planned urban development, is not required. When compared purely on automobile trip generation in the travel demand model, both the previously endorsed and the new networks adequately serve the proposed uses. However, the new network facilitates a more multimodal system, removing some automobile trips from the network entirely. For the purposes of analyzing this new network, the County’s travel demand model estimated trip generation and impact on the regional roadway network, and found it to operate acceptably. The County’s regional model is conservative when evaluating urban areas with a variety of modal options because the model primarily forecasts on private vehicle trips across the County and the region (MWCOG), rather than trips distributed more evenly across different modes. Within the Silver Line Policy Area, the proposed multimodal network will reduce the number of local vehicular trips due to the anticipated increase in transit use, bicycling, and walking. Therefore, the results of this analysis within the Silver Line Plan are more conservative than anticipated. Regardless, the model showed that the Silver Line Policy Area network will adequately support the planned land use and anticipated growth by 2040 and that the overall network is forecast to function acceptably for all modes; thus, allowing the Silver Line Policy Area to develop, while not burdening other residents and businesses in the County.

The new network enhances alternative modes without significant impact to automobile travel by creating corridors more conducive to transit services, more direct routes for cyclists, and more integrated systems for pedestrian accessibility. These changes help ensure that the Silver Line Policy Area transportation network supports and encourages the development typologies proposed herein.

**A Network of Urban Roadways**

The Silver Line Policy Area road network provides ample mobility and access for drivers, transit users, cyclists, and pedestrians, regardless of age or ability. The transportation network provides for true mode choice, ensuring that users are not limited in the options, whether they choose to drive a personal vehicle, ride transit, ride a bicycle, or walk. The transportation network facilitates the development of the envisioned high-density urban development detailed within this plan, and improves and increases connectivity to places throughout Northern Virginia and the region for individuals throughout Loudoun County.

**Comparison to Suburban Roadways**

In a suburban roadway network, grid connectivity is replaced by funneling traffic onto arterial roadways. Traffic in traditional suburban subdivisions travel along local roads, funneling to one or two entrances along collector roads. From there, traffic funnels from the collector onto an arterial with traffic from other subdivisions. This system, therefore, requires wide collector roads and even wider arterial roads to act as the ribs and spine of the network, respectively. An urban network, comparatively, has several sets of ribs and spines that more evenly disperse traffic through the network and allow for more direct travel routes.
Characteristics of Urban Roadways
Urban multimodal streets feature many elements already found in Loudoun County. In the Silver Line Policy Area, these elements include:

1. **Parallel Roads**
   With redundant travel options, multiple routes allow travelers to disperse more evenly and efficiently throughout the system.

2. **Frequent Intersections**
   Long blocks limit pedestrian access and opportunities to reach key corridors. Human-scaled block sizes ensure greater mobility for all system users.

3. **Crosswalks and Midblock Crossings**
   While traveling an additional ¼ mile during a trip may be nearly imperceptible when driving, pedestrians travel approximately three miles per hour. This means that if an individual wants to cross the street and the nearest crossing is ¼ mile in either direction, that person has to travel an additional 10 minutes simply to complete this crossing. Therefore, frequent and well-marked crosswalks make a substantial difference for pedestrians. Along main streets, midblock crossings should also be considered for additional convenience.

4. **Sidewalks**
   Wide sidewalks facilitate pedestrian activity and make streets welcoming to pedestrians. On slower streets, sidewalks may be built adjacent to the curb, while on higher-speed roadways, a buffer area may be appropriate.

5. **Bike Lanes**
   These striped bike-only zones create a safe and dependable route for cyclists, not blocked by pedestrians, and not sharing the travel lane with cars. They encourage bicycle commutes, and increase comfort for cyclists and drivers.

6. **Transit Shelters**
   Enhanced transit shelters are critical in making transit a choice mode during the heat of summer, cold of winter, and in the evening. These shelters can include information such as schedules, live next bus screens, and provide access for all users, including those with physical disabilities. By placing shelters between the sidewalk and the street, transit users can move seamlessly from the shelter onto the bus without conflicting with pedestrians or being exposed to the elements.
Road Network Classifications
Based upon the DRPT Multimodal System Design Guidelines, roadways within the Silver Line Policy Area will be defined according to the DRPT Multimodal System Classification. The descriptions provided below are derived from the DRPT Multimodal System Design Guidelines as they are intended to be applied within the Silver Line Policy Area:

Multimodal Through Corridors
MTCs are the most automobile-focused designation within this system. These roads serve to move regional traffic through the area at higher speeds (45+ MPH) and feature bicycle and pedestrian facilities removed from the roadway. These roads feature wide rights-of-way, turn lanes at all intersections, and have limited bicycle and pedestrian crossings due to their high traffic volumes and speeds. In high pedestrian activity areas, grade-separated crossings may be considered along these roadways to safely move bicyclist and pedestrians across the corridor. Roadways identified as MTCs are described below:

Within the Silver Line Policy Area, planned freeways: Route 28, Route 267, and Route 606 move traffic through the area. As these roads have no at-grade crossings, it is critical that all overpasses and interchanges feature robust bicycle and pedestrian facilities. Due to their high-speed traffic, MTCs are not conducive to development immediately adjacent to the right-of-way, but for the same reasons can support express transit routes and transit-priority lanes. The Dulles Greenway features the Metrorail guideway in the median, including two stations, from just south of Route 606 to Ashburn Village Boulevard/Mooreview Parkway in Ashburn.

Waxpool Road and Ryan Road serve as at-grade roadways with high capacities that move traffic around the northern and southern edges of the Silver Line Policy Area. These roads serve to provide alternative routes to traveling through the areas planned for the highest density. At key intersections along these corridors, interchanges may be considered in the future to serve traffic along these fringes, rather than increasing capacity.
through the more urban centers. Suburban-style bicycle and pedestrian facilities, such as shared-use paths along the roadways, should be considered for such high-speed roadways.

Loudoun County Parkway provides a high-speed six-lane route through the center of the Silver Line Policy Area. While this road sits somewhat in conflict with the ideals of an urban environment, it also provides a primary corridor to move traffic through the area and ensure adequate roadway capacity. Suburban-style bicycle and pedestrian facilities, such as shared-use paths along the roadways, are appropriate for this roadway, but given its location, more frequent traffic signals or grade-separated pedestrian or roadway crossings might be appropriate to ensure continuity of the urban grid. Interchanges should be considered along the portions of Loudoun County Parkway at the northern and southern edges, but would be inappropriate in the urban centers toward the center of the Silver Line Policy Area due to their significant land impacts and pedestrian-unfriendly character. A potential conceptual-level cross-section for Loudoun County Parkway is shown below.
**Boulevards and Avenues**

Boulevards, including Transit Boulevards, and Avenues, including Major Avenues, define the most modally balanced of the DRPT Multimodal System Classifications. These streets vary in width, lanes, and elements, but are all far more urban in nature than Multimodal Through Corridors.

Boulevards will feature elements such as raised, landscaped, medians, four travel lanes, left-turn lanes at most intersections, and a park-like atmosphere for vehicles seeking to access, depart, or move across the Silver Line Policy Area. These roads will nevertheless be urban in nature, often featuring narrower travel lanes than Multimodal Through Corridors, on-road bicycle lanes, on-street parking, wide sidewalks, frequent traffic signals and pedestrian crossings, and buildings closer to the roadway. Boulevards with transit-priority should be studied in the future for conversion to a Transit Boulevard, featuring transit lanes and other premium transit features.

Prentice Drive and Shellhorn Road are east-west Boulevards that will serve the northern portion of the Silver Line Policy Area. Shellhorn Road is planned to travel proximate to both the Loudoun Gateway and Ashburn Metrorail Stations, and therefore will feature urban designs to create a human-scaled roadway. This includes on-street parking and bike lanes, limited right-turn lanes to narrow crossing widths, low speed limits, and limited right-turn lanes. Prentice Drive, also an urban roadway, will feature a slightly higher speed limit, on-street buffered bicycle lanes, and more frequent right-turn lanes than Shellhorn Road. Despite these differences, Prentice Drive and Shellhorn Road will still be more similar in feel and character to each other than to any of the Multimodal Through Corridors described above.

Randolph Drive is a north-south roadway that includes a segment of realigned Moran Road in order to provide a direct connection between Route 606 and Prentice Drive. This road will serve as the de facto dividing line between the more industrial eastern portion of the Silver Line Policy Area and the more urban western portion. The realignment of Randolph Drive will help create a more urban grid through the surrounding...
area and route through traffic from Route 606 at its interchange with the Dulles Greenway to Prentice Drive and Waxpool Road away from the higher density development areas planned at the Loudoun Gateway Metrorail Station. This road will serve as a hybrid between the Boulevard and Multimodal Through Corridor concepts, with more frequent traffic signals and slower speeds than Multimodal Through Corridors, but with right-turn lanes, suburban-style shared use paths, and an interchange at Route 606 and the Dulles Greenway in order to improve operations for drivers along this route.

Avenues will feature elements to embrace and encourage pedestrian activity, such as wide sidewalks, lower speed limits, on-street parking, two-to-four travel lanes, frequent pedestrian crossings, and ample bicycle access.

Barrister Street/Centergate Drive is a Major Avenue connecting Moorefield Station to Prentice Drive east of Loudoun County Parkway. Major Avenues will be slower speeds than Boulevards, with this particular roadway featuring four travel lanes south of Shellhorn Road but turn lanes only at major intersections. Barrister Street/Centergate Drive will feature on-street parking and bike-lanes, frequent intersections, and sidewalks along the roadway, bringing the road into the urban grid as much as possible.
Local Streets
The transportation network provides for optimal circulation of vehicular traffic, allowing travelers from locations within and outside of the Silver Line Policy Area to access key destinations efficiently.

This efficient circulation is facilitated by the development of a connected local roadway system, ensuring that a direct route between an origin and destination within the Silver Line Policy Area is always possible.

Local Streets will feature elements to improve the pedestrian environment while slowing vehicular traffic to create a safe environment for all system users, including children, seniors, and those with disabilities. Traffic calming techniques are encouraged on these streets, which will include every public road not defined as a Multimodal Through Corridor, Boulevard, or Avenue, within the Silver Line Policy Area.
Road System Policies

1. **Grid of Streets**
   Streets within the Silver Line Policy Area will be developed in a grid pattern corresponding to the alignment of at least one Avenue or Boulevard adjacent to or within the site, or to an existing grid of local streets immediately adjacent to the site.

2. **Connectivity**
   Road and pedestrian connectivity will be maximized within the Silver Line Policy Area through connections between Local Streets, Avenues, and Boulevards at regular intervals, and sidewalks along all public and private streets and commercial driveways.

3. **Roadway Widths**
   Streets shall be designed to minimum widths required by the standards of VDOT, in accordance with an appropriate multimodal street section type approved with this document.

4. **Curb Radii**
   Corners at intersections along Boulevards, Avenues, and Local Streets in the Silver Line Policy Area shall be designed to shorten the crossing distance for pedestrians and slow turning traffic in order to increase safety for all system users. Corners at the intersection of two Multimodal Through Corridors shall be designed to facilitate both traffic flow and pedestrian safety.

5. **Turn Lanes**
   Turns lanes will be provided along Multimodal Through Corridors. Turn lanes will be provided along Boulevards, Avenues, and along commercial driveways only where warranted and needed for safety. Turn lanes are prohibited along local streets as defined in Appendix 1 of the 2010 Countywide Transportation Plan. Free-flow turn lanes are prohibited to or from Boulevards, Avenues, or Local Streets. Dual left-turn lanes are prohibited along Avenues, and Local Streets. Dual left-turn lanes are permitted on Boulevards only at intersections with Multimodal Through Corridors.
6. **Cul-de-Sacs**
   Cul-de-sacs and dead-end streets are prohibited in the Silver Line Policy Area, except where specific environmental constraints, road design minimum standards, or public amenities exist that would prohibit a connection, and reasonable development alternatives are not feasible. Service driveways and parking access driveways are not subject to this policy.

7. **On-Street Parking**
   On-street parallel parking shall be provided, where feasible, along all Avenues, and is encouraged along all Boulevards in commercial, industrial, and residential districts, except where the proposed use will generate minimal travel and occupies an area greater than 660 feet in length. On-street parking will be clearly striped and indicated by signage along the street. On-street parking is recommended along local streets in commercial, industrial, and residential districts. Angled or perpendicular on-street parking spaces are prohibited along all public and private streets within the Silver Line Policy Area.

### Roadway Features
Good design for the multimodal transportation system in the Silver Line Policy Area needs to integrate all of the modal demands outlined above. Therefore, consideration of design standards, traffic controls, roundabouts, and other traffic operations and traffic calming measures must be considered in relation to their impacts to each of the modes desired along the corridor. The decisions made in pursuit of these goals will impact traffic patterns, development potential and design, and mode splits for the transportation system through the area.

**ROADWAY FEATURES – TRAVEL LANES**

- Suburban roadway with wide shoulders
- Urban roadway with narrower lanes and on-street parking
- Wider urban roadway with bicycling facilities

Image source (left to right): Hal Jackey/Wikipedia Commons; AgnosticPreachersKid/Wikipedia Commons
While it is commonly understood that the number of travel lanes on a roadway determines roadway capacity, the width of those lanes can have a significant impact as well. Lane width impacts travel speed and pedestrian crossing distance. For example, on a four-lane median-divided roadway, suburban standards can call for the two-lane section in each direction to be 27 feet from curb to curb, exclusive of turn lanes. Comparatively, in a more urban environment that width could be limited to 22 feet. While this difference may seem minimal to drivers, it can make a huge difference for pedestrians.

On-street parking is another factor that can help drivers find parking easily and can slow traffic, make drivers more aware of bicyclists, and protect pedestrians. This is because the cars parked next to the roadway make drivers in the right-lane more cognizant of the potential for movement on their right side; thereby, making them more aware of bicyclists. Further, it provides a physical barrier between the roadway and the sidewalk, protecting pedestrians from vehicle traffic.

Multimodal streets can serve the needs of drivers, transit uses, cyclists, and walkers all at the same time. The pictures to the right demonstrate designs conducive to a multimodal environment, such as pedestrian refuges at wide crossings that provide pedestrians a safe place.
to wait if they cannot make it all the way across the street. Peak hour bus/HOV lanes can encourage transit ridership and carpooling when congestion is heaviest, removing single-occupancy vehicle trips from the road. Meanwhile, in order to protect the pedestrian-oriented character of local streets, traffic calming measures integrated into street design, such as roundabouts, road diets, chicanes, and raised crosswalks can create an environment where traffic feels the need to travel at slower speeds. These are preferable to other types of retrofits, such as speed bumps, median dividers, and retrofitted cul-de-sacs, which breakup neighborhoods and reduce accessibility and mobility.

### ROADWAY FEATURES – TRAFFIC CALMING

- Mini-Roundabout
- Road Diet
- Chicane
- Pedestrian Refuge at Midblock Crossing
- Raised Crosswalk

Image source (left to right): Heather Bowden; Dan Burden; Dan Burden; Lyubov Zuyeva; Dan Burden
Traffic Management and Operations Policies

1. Lane Striping
   Roadway lanes should be striped at a width appropriate to the DRPT Multimodal System Classification, even if they have a wider curb-to-curb width.

2. Traffic Controls
   All intersections within the Silver Line Policy Area shall include traffic control signs or signals so as to clearly indicate right-of-way for all system users.

3. Roundabouts
   Roundabouts should be considered as an alternative to traffic signals and stop controls along Avenues and Local Streets, particularly at entrance gateways to commercial or residential districts. Roundabouts are not preferred along Transit-Priority Streets.

4. Traffic Calming on Boulevards and Avenues
   Boulevards and Avenues shall be designed to permit traffic to operate efficiently at speeds appropriate for the area. As such, measures should be taken during the initial design phase to incorporate elements that will provide a safe environment for all users. On-street parking, roundabouts, textured crosswalks, curb extensions, median islands, and pavement markings that indicate a reduced travel-way width should be incorporated into concept development, special exception, site, and construction plans.

5. Traffic Calming on Local Streets
   Local streets should be designed to prioritize pedestrians. As such, raised crosswalks and intersections, miniature roundabouts, striped chicanes with parking bays, and curb extensions should be employed to maintain appropriate vehicular traffic speeds and provide for safe pedestrian crossings.

Public Transportation

A critical element of an urban area, public transportation serves as the most efficient way to move people along popular commuter routes and between activity centers. This is because far more people can be transported comfortably in a railcar or bus than in a personal vehicle, and no dedicated space is needed to park that transit vehicle. Within the Silver Line Policy Area, transit services are planned to include: Metrorail; commuter, limited-stop, express, and local buses; and shuttles and circulators. Together, these services provide accessibility, convenient, and affordable access for those inside and outside of the County.

Metrorail

Transit service in the Silver Line Policy Area is centered around Metrorail. The Dulles Corridor Metrorail Project (Silver Line) will include stations at Ashburn and Loudoun Gateway with frequent service to the commercial centers at Dulles Airport, Herndon, Reston, Tysons, Arlington, and Washington, DC.
Several major roadways provide easy access to Metrorail from locations throughout the County.
Many locations within the Silver Line Policy Area are within a mile of a Metrorail Station.
**Countywide (local and express) Transit Network**

Metrorail is complemented by a comprehensive and dependable local fixed-route bus service connecting people to places throughout Loudoun County. To create and enhance a high-quality transit system, frequent, fast, and dependable service, as well as, clean and comfortable vehicles and stops are provided. These routes run both express service to important locations throughout the County, and more locally to neighborhoods and communities. Within the Silver Line Policy Area, a limited number of routings between the Metrorail stations and the fringes of the Silver Line Policy Area will increase service on key roadways and provide opportunities for easy transfers. Every local bus route provides access to a Metrorail station or a Transit Center. Optimal service for local fixed-route bus services are at least every 15 minutes in the peak periods, with at minimum, 30 minutes in the off-peak. Fares should commensurate with surrounding jurisdictions and discounts for transfers to/from Metrorail should be studied.

**Transit-Priority Streets**

Several major corridors within the Silver Line Policy Area are designated as Transit-Priority Streets. These streets will serve as the primary routes for the countywide transit network through the Silver Line Policy Area, providing efficient and logical routes between locations throughout the County and the Metrorail Stations. Located primarily along four-lane roads, these streets are designed to facilitate travel of transit and private vehicles alike. In order to facilitate dependable and logical transit routes, stop locations will be placed strategically at key locations along the corridor at distances that provide access to the surrounding area without unnecessarily frequent and underutilized stops. Bus stop locations should face the Transit-Priority Street when possible, rather than an intersecting or adjacent street to provide dependability and clarity of the route to riders. For this system to function properly, it is also crucial that bus stops on either side of a Transit-Priority Street are located at the same intersection so that riders may board and alight a transit vehicle at the same approximate location. Features along these corridors may include enhanced bus stops and transit centers, intelligent transportation system devices (e.g. signal preemption), transit-friendly street elements, and frequent crosswalks. These streets should be considered for transit lanes at such time as transit ridership and projected growth within the area can justify such an improvement.
By prioritizing certain streets for transit service, headways and dependability can improve through the Silver Line Policy Area.

Transit Priority Streets (Refer to Appendix, Map 12)
Transit-Priority Street Policies

1. Transit-Priority Street Elements
   Specific streets within the Silver Line Policy Area identified in this plan or the 2010 Countywide Transportation Plan as Transit-Priority Streets will be designed for transit service with special attention to transit elements including transit shelters and stations, bus bays, and bicycle and pedestrian access to transit services. Development proposals should concentrate the location of fixed transit elements along these roadways in accordance with the policies outlined below.

2. Transit-Priority Street Design
   Roundabouts and raised roadway traffic calming measures are prohibited along Transit Boulevards and other Transit-Priority Roadways, unless specifically indicated in the Silver Line Policy Area Roadway Plan.

3. Intelligent Transit Systems
   Transit-priority elements, such as traffic signal preemption and active parking information signage, should be considered as part of transit system development within the Silver Line Policy Area.

4. High-Capacity Transit System Development
   Transit-Priority Streets should be prioritized for any future plans for transit-priority lanes through the Silver Line Policy Area.

Localized Shuttles and Circulators

Private developments may choose to operate private shuttles connecting residents, employees, and visitors to locations within their site, or to Metrorail services. These private shuttles may be interim – until public transportation service is implemented – or permanent. However, demands for public transportation services and constrained space at the Metrorail Stations for transit vehicles may limit the effectiveness of these services as substantial growth occurs.

Aside from countywide bus services and private shuttle services, circulator services localized within the Silver Line Policy Area can efficiently move people in high-density areas with all-day demands for service between the Metro Stations and the core developments within the Silver Line Policy Area. This circulator is different from countywide local routes in both its character and route, using smaller buses and preferring denser, busier, and often slower streets that bring people to the most popular centers in the area, even at the expense of slightly increased travel times. Fares on circulator routes are usually lower than local fixed-route services, if not free altogether. Circulators, unlike traditional buses, are considered to be economic incubators and tend to run at all times as they have the greatest demand. They run frequently in the evening and on weekends when tourism to the area is most prominent. A conceptual map of potential circulator routes is shown below. These routes are intended for conceptual purposes only and would be further planned in coordination with the entity that would be operating the service.
In the long term, circulator routes should comprehensively cover residential and employment centers within the Silver Line Policy Area; ensuring that all residents and most employees are within a five minute walk of a shuttle stop. As the below concepts indicate, at least four shuttles are envisioned:

- A Moorefield Station Shuttle providing a connection between Moorefield Station and the Ashburn Metrorail Station South Transit Center.
- An Ashburn Station Shuttle providing a connection between areas north and south of the Ashburn Metrorail Station and the Ashburn Metrorail Station South Transit Center.
- A Loudoun Gateway Station Shuttle providing a connection between the Route 28 Business District and the Loudoun Gateway Metrorail Station Transit Center; and
- A Silver Line Loop Circulator providing a connection between the Ashburn North, Ashburn South, and Loudoun Gateway Transit Centers and the surrounding areas.

These shuttles will provide direct routes between development areas and the Metrorail Stations in order to ensure convenient and reliable access to all parts of the Silver Line Policy Area.

**Transit Circulator Policies**

1. **Private Shuttles**

   In order to ensure residents and employees in the Silver Line Policy Area have a car-free option for travel to and from Metrorail, the County will seek private shuttle services between developments within the Silver Line Policy Area and at least one of the Metrorail Stations during review of legislative land development applications. These shuttles should operate at a minimum frequency of every 15 minutes during peak hours and every 30 minutes during all other times that Metrorail is operating.
2. **Land Development Applications**
   Proposed circulator routes and stop locations should be indicated on any land development application concept development plan in order to ensure integration and route connectivity with adjoining developments.

3. **Provision of Service**
   Fixed-route private shuttle services will be operated on an interim basis, ceasing operation at such time as a public circulator service is initiated that provides redundant routing and frequency.

4. **Circulator Routes**
   Circulators will be routed to provide direct access to development nodes within the Silver Line Policy Area.

**Transit Features**
Bus shelters are an important element at stop locations with stops and associated shelters placed at intervals relative to the surrounding development density. In higher density areas, more frequent stops are assigned, with frequencies declining as dictated by housing and commercial density. Regardless of spacing, well-lit and signed shelters placed at the bus stop locations should be easily identifiable and include service information where feasible. In the central core of highly dense areas, more prominent and inclusive amenities are constructed to provide for modal transfers, higher ridership demands, and route transfers.
Transit Stop Development Policies

1. **Bus Stop Locations and Spacing**
   On Transit-Priority Streets, transit shelters shall be provided at a frequency no greater than one every ¼ mile and no less than one every 6/10ths of a mile with exact locations and frequencies to be determined in coordination with Department of Transportation and Capital Infrastructure Staff. This will help to ensure efficient operations of transit services while providing adequate access for riders. Deviations from this policy will be considered in locations where low demand uses (e.g., Data Centers, Secure Facilities) are proposed and would demonstrably attract minimal trips. On streets with existing or planned bus rapid transit service, station locations will be identified as part of the transit line construction and accommodated by development plans.

2. **Shelter Placement**
   Bus shelters shall be located between the sidewalk and the street in order to minimize conflicts between pedestrians on the sidewalk and transit riders awaiting a bus. Shelters shall be placed at least 60 feet from the edge of the curb radius of the nearest intersection to ensure safe boarding and alighting for transit riders and safe turning movements for vehicular traffic.

3. **Shelter Design and Characteristics**
   Bus shelters shall be at least 16 feet in width with designs to be determined as part of the land development application process. Shelters shall include seating, interior lighting, protection from the elements, signage indicating the name of the nearest intersecting streets, and wayfinding signage for areas within the vicinity of the bus shelter. Transit stops, pads, and shelters shall be designed to meet all local, state, and federal accessibility standards, and shall be designed to provide optimal access between the shelter, sidewalk, and stop location.

4. **Transit Centers**
   When a development is estimated to generate a high level of transit use during the peak hour and/or several transit routes are planned to converge at a particular stop location, an enhanced transit center shall be included as part of the development application. This center shall include enhanced elements such as bus bays, sufficient bicycle parking, a raised bus platform, and a unified structure covering the transit waiting, alighting, and departure areas.

5. **Park and Ride Lots**
   New commuter parking facilities for non-guideway (local and commuter bus) transit service are discouraged within the Silver Line Policy Area and are prohibited within one mile of any rail station, except for those areas within the LDN 65 airport noise overlay zone where more intensive urban uses may not be feasible.
**Bicycle and Pedestrian Transportation**

Often paired, cycling and walking are two distinctive transportation options that can be made possible with incorporation of infrastructure to support these travel modes. Generally, people will choose cycling or walking for shorter trips, as well as, for recreation. In the Silver Line Policy Area, the development patterns outlined in Chapter 3 of this document support walking and cycling by establishing a mix of uses, residential density to support these uses, and street design elements to make these non-motorized modes not only an option, but a preferable alternative to driving or taking transit. A bicyclist and pedestrian-friendly development pattern will also help to remove potential vehicle trips from the roadway as people will choose to shop locally and seek employment locally, rather than driving to these destinations and adding cars to the area’s roadways. Below is a discussion of how to facilitate development that considers accommodations for bicyclists and pedestrians.

**Bicycle Mobility: Bike Lanes and Asphalt Trails**

Bicycle mobility is important for the success of the Silver Line Policy Area. Cycling has become a primary mode of travel in urban areas throughout the United States, allowing for short- to medium-range trips with no per-mile transportation cost to the commuter. A multimodal urban center must accommodate bicycles in a safe and inviting manner through buffered, connected, and logical bike lanes, and ample bicycle parking. The proliferation of bicycles is possible when safe, convenient, and abundant networks are put into place to provide real mobility. A comprehensive network will not only lead to a significant increase in bicycling for commutes and errands, but these trips directly reduce automobile trips and help to alleviate vehicular congestion on roads by making these other modes of travel more feasible. This will also ease demand for limited parking spaces, which are costly to construct and maintain in an urban environment where land values are high. The more
comprehensive the bicycle network, the exponentially greater the impact. In many American cities, investments in bicycling infrastructure have helped to draw young professionals and dynamic businesses, further growing their local economies.

**On-Road Bicycle Lanes and Trails**

For commuter cyclists, real mobility exists when a combination of shared low-speed travel lanes, dedicated bicycle lanes on medium-speed roadways, and buffered bike lanes on higher-speed roadways are provided in a complete and practical form to create a network that caters to commuter cyclists. This plan includes a detailed plan for on-road bicycle lanes in the Silver Line Policy Area, with an overall goal of creating a bicycle-friendly environment for residents, workers, and visitors.

On-road bicycle facilities exist in many forms based upon the roadway characteristics. On low-speed local roads, bicycles may be able to safely share the travel lanes with vehicles. To facilitate this multimodal operation, signage, such as “Share the Road” signs, and striping, such as “Sharrow” markings can be used to alert drivers to the presence of cyclists. On slightly more prominent roads with more traffic, striped bike lanes, which create an additional, narrow travel lane intended only for bicycles, may be suitable. Often, these types of lanes are best located on streets with moderate traffic speeds where other moderate-speed elements, such as on-street parking and frequent pedestrian crossings, can be accommodated. For higher-speed roads, providing a dedicated bicycle lane is crucial, as is ensuring its separation from vehicular traffic. This can be accomplished by adding a striped-out area between the bike lane and the vehicle lane, providing a buffer between modes. This buffered bike lane helps ensure that errant drivers and cyclists will be far less likely to cross paths, just as a highway shoulder helps ensure that errant drivers have some ability to regain control of a vehicle before departing the roadway altogether. On the highest-speed roads, however, accommodating cyclists in a safe and comfortable manner on the roadway may not be possible. While regular cyclists tend to prefer the roadway where traffic is of a low-to-moderate speed (35 MPH or under), higher speed corridors are often incompatible with on-road bicycling, instead requiring a trail adjacent to the roadway. In these cases, it becomes critical that the trail is arranged to accommodate cyclists, limiting tight curves and providing clear sightlines for safety.
Complementarily, off-road trails can further improve this network, with well-placed and well-designed paths providing an additional layer of connectivity for cyclists. This, however, depends on these trails becoming an integrated part of the network, with adequate space for cyclists and pedestrians, manageable curves, protected roadway crossings, and frequent bicycle-friendly access points. These trails can serve a dual purpose: providing commuter routes during weekday peak travel periods, while providing recreational opportunities during early-mornings, evenings, and weekends. In order to facilitate demand for these trails for either use, it is critical that these pathways are pleasant, with good maintenance and natural features, and safe with adequate sightlines, trail markings, and wayfinding. This plan includes a detailed plan for off-road trails in the Silver Line Policy Area in order to create commuting routes and family-friendly amenities that serve to promote and enliven the outdoor environment. While road-adjacent trails can also

**ON-STREET BICYCLE NETWORK (REFER TO APPENDIX, MAP 14)**

On-road cycling facilities vary by roadway type and network constraints.

![Cycling Facilities Bike Lanes and Trail Comparison](Image source: Green Lane Project/Flickr)

- Cyclists Using On-Street Bike Lane
- Cyclists on Trail Along Roadway
provide useful connectivity along major corridors outside of the development core, they are not appropriate in high-density urban areas due to the pedestrian activity in these locations. As such, in these areas, sidewalks and on-road bicycling are more compatible with the Silver Line Policy Area’s mobility and development goals.

Trails for Transportation

Asphalt trails, or shared-use paths, in the Silver Line Policy Area serve two important and distinct purposes. They provide recreational opportunities through their role as linear parks, allowing families to ride bicycles together or hike through nature, and allowing opportunities to experience a natural environment interwoven into one that is markedly urban. However, they are also a key component of a multimodal transportation system. While a trail may serve as a recreational amenity on Saturday afternoon, come Monday morning, it can also become a commuting route for those walking or riding a bicycle to work. Loudoun County already has a transportation corridor of this nature: the Washington & Old Dominion Regional Park Trail. Well used by commuters and leisurely travelers alike, this route is often over-capacity, with pedestrians, joggers, recreational cyclists, and commuter cyclists all in conflict with one another. The popularity of this facility speaks to the need for more trail systems in the County, as well as to the importance of these trails not only as parks but as part of the transportation system.

TRAILS FOR TRANSPORTATION (REFER TO APPENDIX, MAP 15)

Trails provide off-road access and connectivity between major centers.

CYCLING FACILITIES
OFF-STREET TRAILS

Image source: Green Lane Project/Flickr
A complete urban bicycle network includes on-street bike lanes, street-adjacent trails, and off-road trails.

**Legend**
- **M**: Silver Metrorail Station
- Silver Metrorail (Planned)
- **P**: Policy Area Boundary
- Airport Property
- Floodplain/Designated Open Space
- On-Street Bike Facilities
- Off-Street Trails

**Note:** See map notes for further information on map callouts (A)

**Silver Line Policy Area Network**
- Existing Interchange
- Planned Interchange
- Planned Roundabout
- Grade Separated Roadways

**Comprehensive Vision for Bicycling** (Refer to Appendix, Map 16)
Bicycle Amenities
An important part of a comprehensive bicycle network, stationary amenities (e.g. bicycle parking) are necessary components of a complete system. Similar to a road network without traffic signals or adequate parking, a good bicycle network requires quality bicycle parking, including bike racks and bike storage, which are provided with a high level of access to major destinations. Additionally, with a complete network comes opportunities for services such as bike share, allowing tourists and workers access to bicycles away from their homes, and providing opportunities for “last mile” travel so that people living or working within bicycling distance – but not walking distance – of a transit center can reach their destinations without requiring a personal vehicle or waiting for the bus.

Comprehensive Vision for Bicycling
Creating a comprehensive bicycle network means developing a system that serves bicycle commuters, those shopping and making local trips by bicycle, and those cycling for recreation and/or exercise. The network proposed within this plan provides ample options for all of these users, ensuring travel options for current and future residents, workers, and visitors.

Bicycle Connectivity Policies
1. Bicycle Lanes
Marked on-street bike lanes (minimum 5 feet in width) shall be provided where called for by the Silver Line Plan. On roads with speed limits of 30+ MPH or roads with at least four through travel lanes, bicycle lanes shall be buffered from traffic by striping at least 3 additional feet in width. Buffer zones are recommended, but not required, where on-street parking spaces are provided adjacent to the bicycle lanes as they help provide additional space between both open doors from parked cars and moving traffic.

2. Trails
Off-street asphalt trails shall be constructed in accordance with the Silver Line Plan. Where parallel and adjacent to a roadway, these trails shall be at least 10 feet in width and shall provide a direct route (without flexuous deviation) to allow for moderate bicycle speeds. Where routed independently from a roadway, the trails shall be at least 16 feet in width and feature a separating stripe down the center of the path to indicate the bi-directional nature of the trail. At intersections, curb ramps shall be placed in the direction of the bicycle path to facilitate through movements. Where both sidewalks and trails intersect with a roadway in the same direction, separate crosswalks should be marked for trail users (bicyclists) and for those on the sidewalk (pedestrians), as permitted by VDOT. Development proposals shall include construction of trails, or at minimum, reservation or dedication of trail easements where indicated by the Trails Plan. Unless specifically indicated otherwise by the Trails Plan, all trails shall be paved for ease of use and access for all system users. Trails included in the Trails Plan shall include a public access easement along their entire length or be dedicated to the County as a linear park in order to ensure public right of access throughout the trail network.

3. Dedicated Roadway Crossings
For roadway crossings as part of the off-road trail network, the County shall seek public and private opportunities to construct grade-separated crossings. As an interim condition, traffic signals may be sought to provide a safe crossing of roadways with 4 or more vehicular travel lanes.
4. **Bicycles on Roadways without Bicycle Lanes and Trails**
   On two-lane Avenues and Local Streets without on-street bicycle lanes or adjacent trails, travel lanes shall be designed for use by vehicles and bicycles through pavement markings and/or “Share the Road” signs to convey awareness of the presence of bicyclists in the vehicular travel lanes.

5. **Bicycle Parking**
   Secure bicycle parking (bike racks) for at least four bicycles shall be provided at average intervals of once every 660 feet (1/8th of a mile) within commercial districts and once every 1,320 feet (1/4th of a mile) within residential districts. Bicycle parking will be provided in public parks and near primary entrances to public facilities.

6. **On-Site Bicycle Facilities**
   Secure bicycle rooms are encouraged within high-density residential and commercial buildings proposed within the Silver Line Policy Area to encourage bicycling among residents and employees.

7. **Bicycle and Pedestrian Connectivity Diagram**
   Land development applications within the Silver Line Policy Area shall demonstrate conformance with the Silver Line Plan and, for legislative applications, shall include a bicycle and pedestrian connectivity plan, clearly indicating on-road and off-road mobility options proposed with the application.

**Pedestrian Connectivity**

A comprehensively connected pedestrian network is integral to the success of the Silver Line Policy Area. The promise and economic success of the Silver Line Policy Area is dependent on providing an inviting, accommodating, and safe environment, encouraging pedestrian activity within the urban core. Pedestrians are not only a critical transportation component, but also act as a magnet, attracting economic growth and development. Achieving the goals of a walkable and vibrant urban center is only possible with human-scaled transportation system development, including street sections at a scale narrow enough for all pedestrians to cross comfortably with elements, such as, curb extensions to shorten crossing distances, crosswalks at frequent intervals, direct routes between key destinations within the urban center, and grade separation where pedestrian and/or vehicular traffic volumes and/or road widths make at-grade crossings impractical.

Pedestrians depend on many factors to make travel comfortable and easy. Like roadways, sidewalks that are too narrow may feel constricted, especially if located along a wide roadway or tall buildings. Also like roadways, wider
sidewalks can encourage pedestrian activity, as the sidewalks become more accommodating to large groups and conversations. Human-scaled transportation elements also include analysis and consideration focused on the pedestrian experience. A mile-long journey that may take 4 minutes for a driver in a climate-controlled vehicle within a moderately-dense environment takes approximately 20 minutes for a pedestrian in the elements, assuming a safe and direct pathway is available. Therefore, considering the needs of pedestrians means thinking at a pedestrian scale, understanding that a short travel distance for a driver may be significant for a pedestrian, and that the amenities offered by a personal vehicle cannot be provided in the same way for a pedestrian. Therefore, improving conditions for pedestrian travel must be accommodated in other ways, such as creation of an attractive streetscape, development of awnings and inlets to provide temporary shelter; provision of benches and trees for sitting and shade; and allotment crosswalks, signs, and signals that can ensure safe interaction with vehicular travel ways.

The most prominent conflict for pedestrians in a suburban environment is often the barrier of wide and intimidating roadways that can feature 150-foot wide crossing distances. That distance requires more than 30 seconds for a typical pedestrian to cross, and far longer than that if the pedestrian is unable to move at a rapid pace.

Additionally, these types of roadways promote automobile travel, with drivers often unprepared for the presence of pedestrians, making collisions between vehicles and pedestrians, especially when vehicles are turning, particularly common. While ground-level pedestrian activity is always preferred, and visually-appealing crosswalks are encouraged, high-volume, wide thoroughfares may require more extensive crossing infrastructure, including grade-separation, in order to ensure that system users, including children, senior citizens, and disabled individuals can cross safely.

The vision for the Silver Line Policy Area is a highly-connected pedestrian-friendly network that supports and encourages pedestrian activity and makes walking a preferred mode of travel. This can be achieved through construction of a comprehensive system, development of pedestrian-oriented neighborhoods, and a focus on pedestrian nodes.

**Pedestrian Connectivity Policies**

1. **Sidewalks**
   Minimum 8-foot sidewalks are required along both sides of all Multimodal Through Corridors, Boulevards, and Avenues. They are encouraged along all Local Streets, within the Silver Line Policy Area, regardless of use or location, unless specific provisions are described for the roadway in Appendix 1 of the 2010 Countywide Transportation Plan. Minimum 6-foot wide sidewalks are required along both sides of any Local Street in the Silver Line Policy Area, regardless of use or location.
2. **At-Grade Pedestrian Crossings**
   Safe pedestrian crossings shall be incorporated into all intersections within the Silver Line Policy Area for all pedestrian approaches.

3. **Grade-Separated Pedestrian Crossings**
   Grade-separated crossings may be provided in lieu of an at-grade crossing if such a crossing meets the grade-level sidewalk within 660 feet (1/8th of a mile) of the subject intersection. Grade-separated crossings are preferred to connect dense developments on either side of Multimodal Through Corridors and other higher-speed and wide roadways where the street typology is not conducive to a pedestrian environment.

4. **Crossing Accessibility and Safety**
   Grade-separated and at-grade pedestrian crossings shall be fully-accessible for all users, complying with all local, state, and federal regulations, and shall be, at minimum, 16 feet in width. Tunneled and skyway crossings shall include lighting throughout for pedestrian safety and clear sightlines from end to end, including at approaches. Signing shall be provided directing pedestrians and cyclists to use the grade-separated crossing in order to reach the opposite side of the roadway. Pedestrian refuge islands should be considered for at-grade crossings of wider roads where space allows.

5. **Pedestrian walkability**
   In order to maximize pedestrian access and mobility, pedestrian networks should provide direct routes to major destinations within the grid, as possible. When trip reductions are applied as part of a traffic study for a development application, transit walksheds are required to provide a high-level of pedestrian access in coordination with plan policies.

6. **Curb extensions**
   In order to narrow the travel width of an intersection, curb extensions should be constructed at all crossings along streets with on-street parking, unless a right-turn lane is required per policy at the intersection.

7. **Crosswalks**
   Crosswalks shall be provided at all intersections within the Silver Line Policy Area. Crosswalks shall be provided along Avenues and Boulevards at least once every 1,320 feet (1/4th of a mile), shall be designed to VDOT standards, and shall include appropriate signage and/or signaling to alert drivers to the presence of pedestrians. Along Multimodal Through Corridors, Boulevards, and Avenues, crosswalks will be marked in an enhanced style, such as Solid.
Continental, Zebra, Ladder, or another similar style acceptable by VDOT that provides a highly visible indication of the potential for pedestrians to be crossing at that location.

**Transportation Demand Management Strategies**

Urban development patterns provide ample opportunities for implementation of bold Transportation Demand Management (TDM) strategies. Walking to work becomes a viable option for many people. High ridership transit service is made possible by increased density along major corridors. Possibilities for bike share and car share services that are dependent on integrated residential and office environments can grow in demand in order to serve the area.

**Public Transit Walksheds and Trip Reductions**

Trip reductions based on transit access from a proposed development are encouraged in the Silver Line Policy Area. These reductions will consider several factors related to use, transit services available, access to transit service, and orientation of uses toward transit with appropriate connectivity. Scoping agreements for traffic impact studies shall be based on walksheds described herein, which could vary within the development area, and the design of the transportation network within the development site to facilitate the level of transit-use described in the scoping document and traffic impact study. Transit reductions for local transit will vary, not to exceed the rates outlined above, based upon a review of:

1. The overall frequency of all existing transit services serving the site, including combined headways and hours of operation (weekday / peak / weekend).
2. The type of service offered (local / limited / express).
3. The scale of bus facilities existing on the site or proposed as part of the land development application (shelter / transit center / transit station).
4. Estimated transit ridership based on the proposed uses and likelihood of the proposal to generate ridership at a level equitable to the requested reduction.

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**RESIDENTIAL WALKSHED REDUCTIONS**

<table>
<thead>
<tr>
<th>100% for the following uses:</th>
<th>80% for the following uses:</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Multi-family (under 1,500 SF)</td>
<td>✓ Multi-family (over 1,500 SF)</td>
</tr>
<tr>
<td>✓ Urban Single-family attached (under 1,800 SF)</td>
<td>✓ Single-family attached (1,800 to 2,400 SF)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>50% for the following uses:</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Single-family attached (over 2,400 SF)</td>
</tr>
<tr>
<td>✓ Single-family detached</td>
</tr>
</tbody>
</table>

---

**COMMERCIAL/NON-RETAIL WALKSHED REDUCTIONS**

<table>
<thead>
<tr>
<th>100% of the walkshed reduction for the following uses:</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Office</td>
</tr>
<tr>
<td>✓ Artistic studios</td>
</tr>
<tr>
<td>✓ Educational institutions</td>
</tr>
<tr>
<td>✓ Research and development parks</td>
</tr>
<tr>
<td>✓ Technology campuses</td>
</tr>
</tbody>
</table>

Reductions may not be applied for any auto-oriented or industrial/manufacturing use, including related office components:

- Warehouses
- Data centers
- Vehicle rental businesses
- Manufacturing
- Breweries (non-retail)
- Moving/Shipping businesses
TDM Policies

1. **Live/Work**
   The County will provide information regarding the benefits of working in a mixed-use urban center and encourage employees to consider options for living closer to their workplaces.

2. **Metrorail and Transit**
   The County will strongly encourage the use of Metrorail and other transit services, and work with companies in the Silver Line Policy Area to develop strategies to encourage daily ridership, and incentives for those who do not drive alone. The County will work with development applicants to ensure that transit is featured as a prominent component of the development proposal.

3. **Traffic Scoping**
   The trip reduction guidelines described in this section shall be applied to planning studies, traffic impact study scoping documents, and land applications, as applicable and requested, when identifying needs and mitigating impacts of proposed transit-oriented developments. During traffic scoping, the Applicant may also request to take reductions based on Institute of Transportation Engineers (ITE), ULI, or other accepted industry standard, urban development impact evaluator in consultant with County staff.

4. **Vehicle Trip Reductions**
   Trip reductions shall be permitted for different uses within the Silver Line Policy Area based upon walkshed and access to transit if the site is designed according to the guidelines for transit-oriented developments within this document. The primary/public building entrances claimed within the walkshed must be located within the walkshed area for the associated reduction to be utilized.

5. **Minimum Parking Reductions**
   Reductions to parking requirements will be evaluated by standards of the County’s Zoning Ordinance and policy. The policy component of this

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**COMMERCIAL/RETAIL WALKSHED REDUCTIONS**

**100% of the walkshed reduction for the following uses:**
- All pedestrian-oriented retail uses

**Reductions may not be applied for any auto-oriented retail use:**
- Drive-through restaurants
- Drive-through banks
- Drive-through pharmacies
- Car washes
- Gas stations
- Automobile service stations
- Convenience stores (if fronted by gas pumps)

**MAXIMUM ALLOWABLE WALKSHED REDUCTIONS**

- **Transit Core** (¼ Mile or less from a Transit Center)
  - 40% Rapid Transit | 25% Local Transit
- **Transit Neighborhood** (¼ Mile to ½ Mile from a Transit Center)
  - 20% Rapid Transit | 10% Local Transit
- **Transit-Supportive Area** (½ Mile to 1 Mile from a Transit Center)
  - 5% Rapid Transit | 0% Local Transit

(These may be applied at the weighted rates for proposed developments as described below based upon walkshed and transit service in the vicinity.)
review will be based upon the trip reductions described above, as well as, any information provided by the Applicant as justification for the reduction.

6. **Car Share and Bike Share**
   The County will study the creation of a bike share system and encourage car sharing services to locate in the Silver Line Policy Area in order to allow residents and workers to access local and regional services without the need for a private automobile. The County will request that development applicants provide opportunities for car share and bike share within their developments.

7. **Carpools and Vanpools**
   The County will work with employers in the Silver Line Policy Area to encourage workers to commute by carpool and vanpool, and to incentivize those who do not drive alone.

8. **High-Occupancy Vehicle and Bus Lanes**
   The County will consider alternative travel lane typologies along roadways within the Silver Line Policy Area in order to encourage alternative travel options.

9. **Dynamic Parking**
   The County will encourage the development of dynamic parking systems in public and publicly-accessible parking structures in order to guide drivers to available spaces.

**Transportation System Implementation and Land Development**
Successfully implementing this plan requires a concerted effort by the Board of Supervisors, County staff, and private landowners and developers to ensure that a coordinated and connected multimodal network is achieved. To that end, connectivity policies offer guidance to the development community, supplementing the policies described in the above sections in an effort to facilitate the implementation of the transportation system planned for the multimodal Silver Line Policy Area.

**Land Development Connectivity Policies**

1. **Connectivity**
   Land development applications will include connected and unified road, bicycle, and pedestrian networks, where feasible, in order to promote connectivity within a development and between neighboring developments.

2. **Public Roads**
   Internal roads within a development site shall be public unless meeting the definition of alleys or service roads. Public Roads shall be designed to meet the standards of VDOT Road Design Manual Appendix B (2) and DRPT Multimodal System Design Guidelines.

3. **Meeting the Intent of the Typology**
   Development applicants will define how the proposed roadways within the proposed development meet the intent of either a commuter route, commercial mixed-use street, residential street, or industrial street, and demonstrate compliance with the policies and sections for each roadway.
4. **Mitigating Impacts**
   The Applicant will be responsible for mitigating each of the modal impacts generated by the proposed development. Trip reductions incorporated into the Applicant’s traffic analysis will be considered as modal shifts.

5. **Pedestrian Corridors**
   All Multimodal Through Corridors, Boulevards, and Avenues shown in this plan shall be considered pedestrian corridors. In order to maintain the integrity of these corridors, service uses such as loading docks and trash collection should face service driveways internal to the site. Service driveways and parking lots shall not be placed immediately parallel to pedestrian corridors unless it can be demonstrated that the proposed layout enhances or complements the pedestrian streetscape.

6. **Planned Roadways, Sidewalks, and Trails**
   Any roadway or trail indicated within this plan shall be constructed in the location shown on this plan and as described in this plan, whether built by the County or as part of a land development application.

**Map Notes**

The following notes refer to each map shown in this chapter:

A. Additional north-south connections through this area will be evaluated as part of any redevelopment proposal.
B. An Additional Broad Run crossing should be considered at this location as part of any redevelopment proposal.
C. Broad Run crossings will be constructed to accommodate parallel trails on both sides of the Broad Run where indicated by the plan.
D. Local access, interchange locations and ultimate alignment of Route 606 between Route 28 and Loudoun County Parkway to be determined by later study with consideration of adjacent development/stakeholders.

**General Notes:**

- Planned roadway alignments shown are conceptual and subject to further engineering. Alignments will be further refined as part of the planning process and through the land development application process.
- Sidewalks are required on both sides of all streets except where a road-adjacent trail is indicated by the plan.
- Existing privately-maintained roadways are not shown in this plan.
**Definitions**

**Access** – The ability of the traveler to reach desired destinations. May vary based upon travel mode or development patterns. High-level access refers to adjacency or high-proximity to desired places, while low-level access refers to undesirable travel distances or environments necessary to reach a destination. Inaccessible defines a situation in which a destination cannot reasonably be reached by a particular mode under any practical circumstance.

**Alley** – A private roadway serving more than three (3) private driveways, emanating from a public street or another alley. Does not serve building frontage.

**Auto-Oriented Street** – A streetscape arranged to provide convenient access primarily to automobiles. This includes frequent driveway access points, building frontages facing away from the street, speed limits greater than 30 MPH, and limited at-grade pedestrian crossing locations.

**Auto-Oriented Uses** – Any use more likely to draw automobile traffic than foot traffic. Includes uses primarily for cars, such as gas pumps and car wash facilities, as well as uses oriented toward drivers, such as drive-through restaurants and pharmacies, and uses developed to serve drivers more conveniently than pedestrians, such as convenience stores located to the rear of gas pumps.

**Avenue** – A Major Avenue or Avenue as defined by the DRPT Multimodal System Design Guidelines. Avenues are locally-oriented streets serving to provide a high degree of connectivity and access between and through an urban center.

**Bike Lane, Striped** – An on-street bike lane that features a single solid striped lane between the vehicular travel way and the curb or on-street parking spaces with a width of at least six (6) feet.

**Bike Lane, Buffered** – An on-street bike lane that features a curbside bicycle lane and striped buffer zone and two solid stripes between the bicycle lane and the vehicular travel ways. The bicycle lane is at least five (5) feet in width and the buffer zone is at least three (3) feet in width.

**Boulevard** – A Transit Boulevard or Boulevard as defined by the DRPT Multimodal System Design Guidelines. Boulevards serve to provide mobility throughout the area, connecting urban development areas with other neighborhoods and regional connections.

**Bus Lane** – A managed lane dedicated for use by public transit vehicles. This lane may be exclusive to transit vehicles at all times or only during certain travel periods, as signed. The lane may be incorporated into the vehicular road section or separated by buffers or barriers, or within an exclusive right-of-way.

**Circulator** – A public transit service that serves a small area, often traveling in a circular, rather than linear, route. Serves to connect riders within a localized area, or to a transit center where more substantial transit services are offered.
Connectivity – The provision of multiple, parallel, and redundant travel ways within a network to provide for integration, mobility, and access. High connectivity describes a high level of integration, mobility, and access, while low connectivity describes a lack of options and access, disintegration and limited mobility.

DRPT Multimodal System Design Guidelines – A set of transportation design standards developed by the Virginia Department of Rail and Public Transportation for implementation within urban areas and applied through approvals from the Virginia Department of Transportation.

Grid of Streets – An interconnected roadway network with parallel and redundant streets meeting at frequent intervals, commonly featured within an urban area.

High-Occupancy Vehicle (HOV) Lane – A managed lane dedicated for use by vehicles with two (2) or more passengers. This lane may be exclusive to qualifying vehicles at all times or only during certain travel periods, as signed. The lane may be incorporated into the vehicular road section or separated by buffers or barriers.

Landscape Buffer – A space between the roadway curb and the sidewalk that may feature grass, shrubs, and trees along with other physical streetscape elements.

Local Street – As defined by the DRPT Multimodal System Design Guidelines, Local Streets serve to provide access through neighborhoods and feature traffic calming applications to enhance the pedestrian-oriented feel of the street.

Mixed-Use Development – A development with multiple uses seamlessly integrated in the design and development. In regard to transportation, features an internal street network that allows different uses to be accessed on foot, by bicycle, or via transit without easy recognition by the traveler that the uses have changed. Often features retail and/or office uses surrounded by residential uses in order to create a town center concept.

Mobility – The distance a person can reasonably travel from an origin point within a certain timeframe. Indifferent to the desired destination. May be impacted by barriers to travel, such as limited-access roadways, traffic congestion, or lack of infrastructure.

Multimodal System – A transportation system that features primary elements for multiple travel modes, providing connectivity to destinations within the area through true travel options and related supportive development.

Multimodal Street (Complete Street) – A street that contains elements to allow multiple primary modes of travel.

Multimodal Through Corridor – As defined by the DRPT Multimodal System Design Guidelines, Multimodal Through Corridors provide higher-speed regional access to and through an area and are intended to freely move substantial traffic volumes in order to decrease congestion on other roadways.
Multimodal Transportation – A transportation system element that provides opportunities for modal transfers and use of multiple transportation modes. Examples include on-street and structured parking, transit stops and stations, bike and car share services, bike racks, and park-and-ride facilities.

Optimal Traffic Circulation Pattern – Roadway development scheme that optimizes and equalizes vehicular and pedestrian access throughout a site that features fluid internal connections and connections to adjacent roadways and developments to limit funneling of traffic and access limitations.

Pedestrian Corridor – All controlled-access Multimodal Through Corridors, all Boulevards, and all Avenues within the Silver Line Policy Area.

Pedestrian-Oriented Street – A street typology featuring elements that encourage pedestrian activity, including wide sidewalks, continuous street frontage with primary building entrances, active plazas and parks, frequent crosswalks, and speed limits of 30 MPH or below.

Premium Transit – Public transit that features high-quality elements including, but not limited to, dedicated guideways, enhanced transit shelters, off-board ticketing, and special branding.

Public Street – A street maintained by the Virginia Department of Public Transportation (VDOT).

Service Road – A private roadway serving three (3) or fewer private driveways, emanating from a public street or an alley. Provides access to loading docks and trash collection areas. Does not serve building frontage.

Shared Lane – A roadway travel lane shared by vehicles and bicycles, with signage and/or pavement markings to indicate this situation.

Shared-Use Path – See trails.

Trail – An asphalt trail with a minimum width of 10 feet along roadways and 16 feet away from roadways designed to serve pedestrians and cyclists.

Transit Center – A premium transit station featuring elements to serve multiple transit vehicles, boarding and alighting passengers, waiting passengers, and modal transfers. May feature amenities including retail space, climate control, taxi stands, or aesthetic prominence.

Transit-Oriented Development (TOD) – A development served by, or planned to be served by, frequent transit service that is designed in a compact and dense urban form that facilitates convenient and comfortable bicycle and pedestrian access to applicable transit stations, drawing travelers to the transit station area, and supporting the continued operation and growth of the transit system in the vicinity of the development.

Transit-Priority Street – A street designed with transit elements such as bus lanes, bus bays, bus stops and/or special traffic signals to facilitate the movement of transit vehicles and encourage transit ridership. Usually feature the highest density of transit routes and frequencies.
**Transportation Demand Management (TDM)** – Techniques and concepts applied to transportation systems to decrease congestion during peak periods, encourage more sustainable travel patterns, and educate commuters about travel options. Common methods including carpooling, transit use, flexible schedules, and telework.

**Trip Reduction** – A modal shift from private vehicle to public transportation, cycling, or walking assumed as part of a traffic impact analysis.

**VDOT Road Design Manual Appendix B (2)** – The enabling design manual for the DRPT Multimodal System Design Standards.

**Urban Area** – A higher-density area that has at least eight (8) dwelling units per acre and features urban elements such as street grids, optimized traffic circulation patterns, multimodal streets, and encouragement of transit-use, walking, and cycling.

**Walkshed** – The walking distance from a transit station as measured by the most direct route provided. May be used to measure reductions to estimated automobile trip generation and density that may be served by transit.
Chapter 5 - COMMUNITY FACILITIES AND SERVICES
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Chapter 5 - Community Facilities and Services

Community Facilities
New shopping amenities, office and employment uses, and residential development will be provided by private investment and development. There will also be a variety of plazas, parks, and community amenities that will be privately owned and developed to support the new communities in the Silver Line Policy Area. The County will provide a variety of community facilities to the Silver Line Policy Area such as public safety, parks and recreational facilities, and schools with new urban styled facility standards and designs. In addition, there may be a need for satellite offices for government agencies and services. State agencies may also want to locate facilities in this densely populated part of the County.

The County envisions that the Silver Line Policy Area to include a variety of community facilities and amenities for future residents, employees, and visitors. The County will need to explore reducing the land requirements of schools and parks to efficiently provide those amenities and minimize the amount of land under public ownership. Growth management policies seek to ensure that appropriate facilities are in place or scheduled to be provided prior to when those facilities are needed by the new communities. All applications for development in the Silver Line Policy Area should include an analysis of the capacity of facilities to serve new development.

General Policies
1. All new facilities should be well integrated into the urban environment, to include being vertically integrated within mixed-use buildings.
2. Smaller facilities like community centers and libraries should be located within community cores, in proximity to the greatest number of future residents and where they will contribute to the desired active streetscape.
3. Opportunities for colocation of uses and leasing of privately owned space should be explored.
4. Public-private partnership opportunities should be thoroughly explored and encouraged to reduce land area requirements for public uses.

Public Safety and Emergency Services
Development that occurs in the Silver Line Policy Area will place new demands on the County’s Sheriff, Fire, and Rescue services. In addition, since the new development will have more urban characteristics, there may be a need for different types of equipment and facilities that are more conducive to serving an urban community.
**Sheriff’s Office**

As the Silver Line Policy Area grows, there will be an increased need for a law enforcement presence to ensure the safety of residents and visitors, and to respond to any incidents and crimes. The Loudoun County Sheriff’s Office seeks to address such concerns by maintaining a proactive presence to discourage any crimes. Review of development applications should include discussions with the Sheriff’s office to ensure that any possible site design features and measures consider safety. This is particularly important for any major anchor uses that will attract large crowds such as a stadium or a convention center being considered at the Loudoun Gateway Station.

Another key function of the Loudoun County Sheriff’s Office is to assist in traffic management on area roads. One particular concern specifically related to the Silver Line Policy Area is preventing traffic issues around new schools. Historically, pick-up and drop-off activities at schools have led to traffic issues and queueing on roads surrounding schools. Given the urban environment envisioned for the Silver Line Policy Area, special attention will need to be given to school site designs to prevent such issues. Traffic management strategies should ensure that neighboring uses are not impacted by school functions. The parking demands for Metro and other major land uses may also necessitate the need for special parking districts.

To ensure continued safety, staff levels will need to rise as population and activity in the Silver Line Policy Area increase. There may also be a need for an increased number of bicycle and foot patrols within more urban environments. The Silver Line Policy Area is currently served by the University Station, Dulles South, and Eastern Loudoun Public Safety Centers. As the Policy Area becomes a population center there may be a need to develop a new public safety center or substation in the Silver Line Policy Area to maintain a continued and beneficial police presence. This need should be continuously monitored as development and growth occur and applications for development should evaluate the possibility of a public safety center or substation.

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**EXISTING PUBLIC SAFETY FACILITIES (REFER TO APPENDIX, MAP 17)**

[Map image showing existing public safety facilities in the Silver Line Policy Area.]
Sheriff’s Office Policies
1. The Loudoun County Sheriff’s office should seek to maintain a proactive public safety presence in the Silver Line Policy Area as new development occurs.
2. Development proposals should be evaluated for the impact on Sheriff’s office service provision and consider permanent structures, substations, or other facilities that may be necessary to ensure public safety criteria are met.
3. The Loudoun County Sheriff’s Office should take an active role in evaluating development applications to identify demands on law enforcement and crime prevention design measures that could be implemented in the project, particularly for uses where large crowds are likely.
4. Use of special parking districts should be evaluated with all applications that can adversely affect parking in adjacent neighborhoods.
5. The staffing, facilities, and equipment needs of the Loudoun County Sheriff’s Office should be continuously monitored as new development occurs and is proposed to ensure adequate public safety resources.

Fire and Rescue
The planned growth in the Silver Line Policy Area and other parts of the County necessitates an evolving plan to ensure adequate Fire and Rescue services. As new development and fire stations come online, existing service areas and response times will change to adapt to changing land use conditions. The County currently has a need for 2 new fire stations according to the 2021 to 2030 Capital Needs Assessment (CNA). The two stations are in the Route 606 corridor in the Sterling Planning Subarea near the Innovation Center Station in Fairfax, and near the Loudoun Gateway Station in the Dulles Planning Subarea. The County should actively work with the development community to identify suitable fire station sites in the Silver Line Policy Area. Options for co-location of fire stations in privately owned buildings and in buildings with other County Facilities should also be explored. The County’s overall goal for the County’s Suburban Policy Area is to maintain fire response times of 10 minutes or less and to have one fire station to serve every 25,000 people. These goals may need to be reconsidered for the Silver Line Policy Area, which is envisioned to become more urban in nature.

With taller buildings, the County will need to evaluate the need for equipment like ladder and aerial trucks that can safely serve the planned 10 to 15 story buildings. Additional measures to ensure fire safety include increased use of sprinklers. Development in the Silver Line Policy Area will require close coordination with Loudoun County Fire and Rescue to ensure appropriate circulation and access for emergency vehicles around new buildings. In addition, it is critical to recognize and understand that many of the planned roadways in the Silver Line Policy Area have not been built. Construction of these roadways is critical to maximizing response times and ensuring high levels of accessibility to all new buildings. In some instances, it may be appropriate to advance roadway construction projects to allow faster response times for emergency situations.
Fire and Rescue Policies
1. All development should provide sprinkler service to enhance safety of building occupants and to enhance firefighting capabilities.
2. New applications should be evaluated to ensure adequate emergency access to buildings.
3. The need for new firefighting equipment and station locations should be evaluated over time as development occurs.

Parks, Open Space, and Recreation
The relatively dense pattern of development envisioned for the Silver Line Policy Area increases the need for a variety of parks and open space areas to serve residents, employees, and visitors to the area. The range of new facilities within the neighborhoods will include community greens, playgrounds, recreational fields, and public plazas which could be publicly or privately owned. As a general rule, the County will strive to have some form of publicly accessible park or open space land available within easy walking distance of every resident in the Silver Line Policy Area. Based on current CNA planning, there is already a significant deficit of parks and recreation facilities in the communities within and surrounding the Silver Line Policy Area. As such, the County will need to carefully review and consider the impacts that new development may have on existing and planned park facilities to ensure that acceptable amounts of park and recreation amenities are available to both current and future residents.

Typically, park facilities serving a more urban population are smaller and more numerous than the County’s dispersed suburban parks and recreation model. Larger facilities are often on shared use sites such as schools and in some cases commercial facilities. Most parks within the Silver Line Policy Area will generally fall under the County’s adopted category of Neighborhood Parks (ranging from 0.1 acre up to 29 acres), but three specific types of Neighborhood Parks are envisioned for the Silver Line Policy Area: pocket parks, urban recreation parks and large neighborhood parks.

It is important to note that the likely demographic makeup of future residents of the Silver Line Policy Area will be somewhat different from that of the rest of the County. While there will still be a significant number of families residing in the area, there is also expected to be an increased number of young adults (generally 18 to 35 years old) and empty nesters (generally over 55 years old) that are likely to seek recreation opportunities and amenities within walkable distances from their residence or place of employment which are often provided commercially and through property owners associations. Such private facilities should be encouraged and credited for potentially reducing the need for public facilities.
Pocket Parks
Pocket parks (a mini neighborhood park) will be a critical component of the planning area given the limited outdoor space owned by individual homeowners. They will typically be located in the center of multi-family residential, mixed-use neighborhoods, or near office buildings. Pocket parks will provide amenities like open fields, picnic areas, benches, seating areas, flower gardens, and shade trees. The parks will generally serve a population of 1000 residents and will generally be less than 1 acre in size.
Urban Recreational Parks

Urban recreational parks are specifically envisioned to provide active recreational amenities to the residents of the Silver Line Policy Area as well as other County residents. While these parks will provide active recreation amenities, they will generally only provide one to three fields or courts. These parks will be located within safe walking distance of residential neighborhoods or within the neighborhood itself. Amenities at urban recreational parks will accommodate activities such as soccer, cricket or baseball fields, tennis courts, basketball/volleyball, bocce courts, playgrounds, and walking trails, as well as, benches or picnic tables. Urban recreational parks range in size from roughly 2 to 10 acres and serve a population of approximately 6,000 people.
Large Neighborhood Parks
Large neighborhood parks will serve a similar function to urban recreational parks but will be larger and provide a greater number of fields, courts, or other amenities. They will typically range in size from 10 to 30 acres with multiple recreational options. Unlike pocket parks which typically provide only passive recreation opportunities, large neighborhood parks will have a focus on recreational fields and courts for sports. Large neighborhood parks will typically provide 3 to 6 fields or courts and serve approximately 20,000 residents. Therefore, 1 or 2 such facilities depending on size should be considered to serve new residents within the Silver Line Policy Area. Amenities at large neighborhood parks may accommodate multiple active recreation opportunities such as soccer, cricket or baseball fields, tennis courts, basketball/volleyball, bocce courts, playgrounds, picnic areas, and walking trails. Given the limited land area available in the Silver Line Policy Area it may be necessary to acquire several smaller park sites or identify a larger site outside of the policy area.
Indoor Recreational Facilities
Indoor recreational facilities can provide an important amenity for future Silver Line Policy Area residents and the greater Loudoun Community. Examples of facilities that can support the new population include senior centers, teen centers, and other facilities to support indoor recreation like exercise, dance, and educational classes.

Community Greens and Plazas
Community greens will range in size from 0.5 to 2 acres with a central place for social gatherings, such as celebrations, summer concerts, and children’s events. These community greens will generally be privately owned, maintained, and programmed as part of a neighborhood association or similar group but will remain publically accessible. Features of community greens will include plazas, courtyards, outdoor cafes, fountains, dog parks, public art, community garden plots, and tot lots. These facilities are critical and should be liberally used because of the lack of private yards.

Linear Parks
A linear park along the Broad Run will be pursued to provide open space and recreation opportunities in the Silver Line Policy Area. Significant development is envisioned on either side of the Broad Run so open space areas are necessary to balance the increased density. This linear park could be the amenity that comes to identify the community within the region, providing links to other regional trails and extending to the Potomac. The Silver Line Policy Area is envisioned to have an interconnected network of trails that serve as transportation and recreational amenities. In addition to providing trails, the park can provide a significant open space amenity with both passive and active recreation opportunities. Given the fact that significant areas of floodplain exist along the Broad Run much of the land would only be appropriate for unpaved trails, passive recreation areas, and natural resources preservation areas.

CONCEPTUAL BROAD RUN LINEAR PARK AREAS (REFER TO APPENDIX, MAP 21)
However, areas outside of the floodplain should be considered for active recreation opportunities and the County should pursue a paved trail along the edge within a 50’ buffer area outside of the Broad Run RSCR. Chapter 6, Green Infrastructure would also apply to this park and open space feature. Development applications along the Broad Run should include discussion of opportunities to create this park through easements, land conveyance to the county, or similar methods that ensure public access.

**Parks and Open Space Policies**

1. All residential, retail, employment center, and mixed-use applications for development in the Silver Line Policy Area should have access to or include passive open spaces or pocket parks generally within easy walking distance of any proposed residence.
2. All applications for residential or mixed-use development in the Silver Line Policy Area should have access to or provide active recreation facilities within 1-mile of any proposed residence.
3. The County will develop urban park standards for each of the different park types envisioned within the Silver Line Policy Area.
4. Parks, open space, and recreation park amenities can either be public facilities or in private ownership. Private ownership of facilities is encouraged to minimize public expenditures and such facilities should be credited during development review to the extent they reduce the need for public facilities.
5. The County will encourage other types of nontraditional parks and open space such as privately owned rooftop parks/green roofs and internal green spaces within developments.
6. The County will work collaboratively with landowners to secure the necessary land and public access easements and pursue development of a linear park along both sides of the Broad Run connecting to other regional parks and trails and to destinations within the Policy Area.
Schools
Planning for Additional School Capacity
Loudoun County and Loudoun County Public Schools have jointly undertaken the task of studying the impacts of the new urban land use pattern and the potential school facilities that will be needed in the Silver Line Policy Area. Using assumptions of reduced student generation rates due to a mix of smaller urban residential housing products, a rough estimate for school requirements could be as high as 3 elementary schools, 1 middle school and 1 high school using current suburban standards or as low as 1 elementary school and an under-sized (comparative to current standards) middle school.

EXAMPLES OF URBAN SCHOOL DESIGNS

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suburban standards) middle and high school with some service needs being met outside the Silver Line Policy Area. However, due to virtually no history with planning for and developing urban formatted schools, the County and Loudoun County Public Schools will be continuing to define student generation rates for the new land use types in the Silver Line Policy Area. Total student generation, though estimated in the Potential Fiscal Impacts of the Land Use Changes Proposed in the Silver Line Plan report, will be largely indeterminate until thorough study of new student generation rates based on new urban land use typologies and new urban school formats is completed. Regardless, the new student generation creates a planning challenge as existing system-wide school capacity is constrained and land for new schools is becoming increasingly costly. A prerequisite for any future residential development is available school capacity, which will require collaboration and partnership with landowners and the County.

Another challenge is the limited amount of land available in the Silver Line Policy Area. In order to balance the need for new school sites with the desire to maximize the economic potential of the area, new schools will need to be designed to fit on smaller sites and move away from the larger suburban campus schools found elsewhere in the County. The new schools should also be more compatible with the urban character envisioned for the Silver Line Policy Area and promote increased walkability and reduced reliance on bus and private automobile transportation.

**Planning for New School Sites**

Each of the different types of schools (elementary, middle, and high) have unique sets of needs. Elementary Schools (Grades K to 5), which have the smallest number of students, should be designed and sited to serve the neighborhoods in which they are located. They should have a high level of walkability and be sited in locations that maximize their proximity to the highest number of residents. These schools will generally require land to accommodate facilities like playgrounds, rectangular fields, basketball courts and baseball diamonds and are likely to be small in overall size and land requirements. Every school may not necessarily include every one of these facilities and opportunities for co-use to fulfill parks needs
should be explored as is a current practice in Loudoun County. Any facilities that are included in individual school sites should be designed and located in a manner that allows for their use through programming from the Loudoun County Department of Parks, Recreation, and Community Services (PRCS). Since these facilities are expected to be located within neighborhoods, parking and bus facilities should be minimized to what is absolutely necessary and opportunities for shared parking should be explored.

Middle and high schools will be larger than elementary schools and may be located further away from the Metrorail stations due to potential land area needs, though potentially significantly reduced from the current suburban models. Since these schools may serve a larger population, a greater amount of bus and automobile transportation to the schools could be expected. This increased vehicular traffic demand means that middle and high schools should be located along roadways that can accommodate higher traffic flows. One factor that distinguishes high schools from the other types of schools is the need for sufficient land to accommodate an increased number of sports fields and larger parking areas. Consideration should be given to a centralized sports facility such as a stadium that can serve all middle and high school sports events. Locating high schools outside the Policy Area may also be a reasonable strategy given the greater land requirements and potentially high premium for land within the Policy Area boundaries.

School Policies
1. Extensive collaboration with Loudoun County Public Schools is necessary to identify new school sites in the Silver Line Policy Area and mitigate the demands created by new residential development.
2. New residential development should be evaluated against current and projected school capacity to ensure sufficient capacity is available as development occurs.
3. During development review, the County will consider use of an urban residential school generation factor to identify school capacity needs generated by a proposed project when appropriate commitments to unit size and type are provided with applications.
4. Shared use of school facilities by Loudoun County Department of Parks, Recreation, and Community Services and Loudoun County Public Schools will be encouraged to maximize use of facilities where possible.
5. The County will evaluate schools within or in the vicinity of the Silver Line Policy Area and determine if any locations provide opportunities for expansion.

New School Location and Design Policies
1. County Staff will work with applicants and Loudoun County Public Schools to identify and design school sites to ensure that new schools fit within the urban development form desired for the Silver Line Policy Area.
2. Current Zoning Ordinance and Facilities Standards Manual standards should be evaluated to ensure that landscape, buffering, stormwater management and similar requirements are consistent with the desire for urban school designs in the Silver Line Policy Area.
3. Designs of schools should be reevaluated, particularly with regard to outdoor facilities, building entrances, and emergency access, and may require modifications to better utilize smaller school sites and integrate schools into urban neighborhoods.

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4. The County recognizes that new school designs and urban school locations may result in increased costs to build schools in the Silver Line Policy Area. The short-term increased cost of these schools will be studied and balanced against the benefits of the new school designs.

5. New elementary schools should be located and designed to be integral to the residential neighborhoods they serve and designed in a manner that promotes high levels of walkability.

6. New schools in the Silver Line Policy Area should minimize the building footprint and school site while maintaining access to resources and amenities found in other County Schools.

**Land and Site Acquisitions**

The County will need to identify the range and variety of community facilities and services necessary to support development and provide amenities to future residents, employees, and visitors. Given the urban environment envisioned, a wide range of County facilities will be necessary. All portions of the Silver Line Policy Area are considered appropriate for County facilities given the urban environment that is being created and the intent of having all necessary facilities proximate to future residents. All applications for development in the Silver Line Policy Area should include a discussion of existing facilities and the capacity of those facilities to serve new development. Like schools, all new facilities are anticipated to be well integrated into the urban environment. Smaller, compact facilities like community centers and libraries should be located within community cores in proximity to the greatest number of future residents and contribute to the desired active streetscape. Opportunities for colocation of uses, vertical integration into mixed-use buildings, leasing of privately owned space and privately-operated facilities should be explored.
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Chapter 6 - Green Infrastructure

Green infrastructure is a term used to describe the collection of natural, cultural, heritage, environmental, protected, passive, and active resources integrated into a related land area system. It includes the following major topographic and natural features: rivers, stream corridors, floodplains and wetlands, steep slopes, forested and vegetative landscapes, wildlife and endangered species habitats, heritage resources, parks, greenways, trails, and recreational facilities. In addition to approximately 1,370 acres of forested land cover, the Silver Line Policy Area includes approximately 560 acres of floodplain and associated water resources, including streams and wetlands, flora and fauna resources, and archaeological and heritage resources.

The County will need to take a balanced approach between the preservation of environmental resources and the development intensity envisioned within the Silver Line Policy Area. The identification of active and passive uses adjacent to the study area’s significant environmental resources will help to provide further protection of these resources while offering opportunities for experiencing the natural environment within the built environment context. Priority preservation areas ensure the protection of critical environmental resources while also taking into consideration the planned densities envisioned for the Silver Line Policy Area.

Broad Run Watershed

The Broad Run is a defining natural feature of the Silver Line Policy Area, draining to the Potomac River. The Silver Line Policy Area is entirely within the Broad Run watershed. The quality of the Broad Run and the surrounding riparian areas are important not only to aquatic life and wildlife, but to County residents and businesses.
The Virginia Department of Environmental Quality (DEQ) systemically tests Virginia’s rivers, lakes, and tidal waters for pollutants. The DEQ monitoring and analysis determines whether a water body meets the water quality standards in support of the six designated uses for surface waters: aquatic life, (human) fish consumption, shell fishing, recreation, public water supply, and wildlife. As required by the federal Environmental Protection Agency (EPA), the DEQ issues a biannual Virginia Water Quality Assessment Integrated Report, listing individual stream segments that do not meet these standards as impaired.
In 2008, DEQ listed the segment of Broad Run beginning at the confluence with Horsepen Run as it enters the southern portion of the Silver Line Policy Area as impaired for aquatic life (aquatic insects and other small organisms that live on the stream bottom) and recreation. The aquatic life use impairment extends to the Potomac River. The 2009 Countywide Stream Assessment includes data points that provide information on water quality standards within the Silver Line Policy Area. Data points for Broad Run, Indian Creek, Beaverdam Run, and an unnamed tributary to Beaverdam Run highlight these stream segments as being severe stress for aquatic life and suboptimal for habitat (See maps above). Stress and Severe Stress means these waterways are impaired for aquatic life use, as defined by DEQ under the Clean Water Act.

To restore and maintain water quality standards for impaired waters, DEQ, with public input, develops Total Maximum Daily Load (TMDL) studies. The TMDL will identify the pollutant responsible and the suspected cause and source of the pollutant. Commonly referred to as a “pollution diet”, the TMDL will also determine the total amount of pollutants the stream can handle without resulting in the impaired status and identify needed reductions from the various pollutant sources. Pollutants come from either a single location (sewage treatment plant or industrial discharge pipe), called point sources or from a large, widespread area (urban or agricultural runoff), called nonpoint sources. The Broad Run TMDL is scheduled for the 2018 to 2020 timeframe. Once completed, the TMDL will be submitted to the EPA for review and approval. If the Broad Run TMDL identifies pollutants, conveyed by stormwater runoff as a source of the impairment, as part of the County’s Municipal Separate Storm Sewer System (MS4) Permit, the County must develop and implement a TMDL Action Plan to reduce pollutants. The MS4 Permit and/or a TMDL Action Plan obligations, if required, may include stormwater pollutant reduction and mitigation projects, such as stormwater infrastructure retrofits, reforestation, stream restoration and/or riparian plantings. Additionally, Loudoun County is located within the Chesapeake Bay Watershed and is currently subject to the Chesapeake Bay TMDL and the Chesapeake Bay Watershed Implementation Plan (WIP), which requires state jurisdictions within the
watershed, including Virginia, to meet sediment, phosphorus, and nitrogen reduction goals by 2025. Given the anticipated rate of development within the Silver Line Policy Area, much of the area will likely have entitlements prior to the development of the local TMDL Action Plan. The County should take a proactive approach, prior to development of the TMDL Action Plan, to avoid costly and time-consuming processes to restore water quality to mandated standards after development is completed.

In 2014, the Upper Broad Run Watershed Management Pilot Project (UBRWMP) was completed to provide the County with a method to assess watersheds and implement watershed management plans. Lessons learned from the pilot project can then be applied to the remaining County watersheds. The UBRWMPP covers approximately the western third of the Silver Line Policy Area. The UBRWMPP assessed the current conditions within the watershed, developed watershed management practices that could be implemented to make progress toward TMDL or other pollutant removal goals for the Upper Broad Run watershed, and projected future conditions with and without the implementation of suggested watershed management measures. Project sites identified by the UBRWMPP should be targeted for restoration efforts as part of a proactive approach toward TMDLs. Watershed management involves both regulating water quality and quantity of surface water and groundwater. Several of the strategies identified in the UBRWMPP should be implemented in the study area to improve water quality conditions and prevent further degradation.

In an effort to offset further degradation of the Broad Run, the County will need to take a balanced approach between the urban style development patterns recommended by this Plan and the protection and restoration of environmental resources to meet existing and future state
water quality requirements. The identification of buffer zones along the Broad Run and its tributaries will help to offset further degradation, while the prioritization of tree conservation and reforestation opportunities will aid in pollutant removal from water resource systems.

The highest priority preservation area within the study area is the Broad Run River and Stream Corridor Resource (Broad Run RSCR), which consists of the Broad Run, adjoining major floodplain, adjacent very steep slopes (slopes 25 percent or greater, starting within 50 feet of the Broad Run and floodplain, extending no farther than 100 feet beyond the Broad Run or floodplain), as well as, a 50-foot Management Buffer surrounding the Broad Run floodplain and adjacent very steep slopes. In areas where the floodplain and very steep slopes do not extend beyond either bank by 100 feet, a minimum 100-foot stream buffer will protect the Broad Run and will be considered as part of the Broad Run RSCR (See Map to the right). The Broad Run RSCR primarily contains existing good quality bottomland hardwood forest cover. The preservation of the existing forest cover within the Broad Run RSCR, and reforestation in open areas will help to reduce pollutant discharge to the Broad Run by reducing stormwater runoff, as well as, reducing stream bank erosion; a major source of sedimentation in streams and rivers. Preservation and enhancement of the riparian corridor will also provide habitat for the various species within the study area that would otherwise be displaced by the urban development patterns recommended by this Silver Line Plan. Recognizing the Broad Run RSCR as the highest priority preservation area, only those uses permitted within the major floodplain, with the exception of active recreation uses, will be permitted within the Broad Run RSCR. Uses permitted within the Broad Run RSCR should support or enhance the biological integrity of the river and health of the Broad Run. Dedication of the Broad Run RSCR to the County would aid in preserving this environmental resource while also providing for a linear open space amenity with pervious trails. The 50-foot Management Buffer and 100-foot Minimum Stream Buffer will also be applied adjacent to other areas of major and minor floodplain within the Silver Line Policy Area.
Priority preservation natural areas consist of the Broad Run RSCR, major and minor floodplain RSCR, and the forest cover outside of and adjacent to the RSCR.

**Green Infrastructure Policies**

1. The County will protect rivers and streams and their corridors, which will include:
   a. Rivers and streams draining 100 acres or more.
   b. 100-year floodplains (including major and minor).
   c. Adjacent steep slopes (slope 25 percent or greater, starting within 50 feet of streams and floodplains, extending no farther than 100 feet beyond the originating stream or floodplain).
   d. 50-foot Management Buffer surrounding the floodplains and adjacent steep slopes or a 100-foot Minimum Stream Buffer when the 100-year floodplain and adjacent steep slope areas do not extend beyond either bank by 100 feet.
   e. Wetlands, forests, historic and cultural resources, and archaeological sites that fall within the area of one or more of the above elements.

2. The County will only support development and uses in the river and stream corridor that support or enhance the biological integrity and health of the river and stream corridor; however, full density credit will be provided for the gross area of the river and stream corridor. These uses are intended to have minimal adverse effects on the following: wildlife, aquatic life, and their habitats; riparian forests, wetlands, and historic and archaeological sites, and will be required to complement the hydrologic processes of the river and stream corridors including flood protection and water quality. New uses should meet the environmental objectives of the river and stream corridor and be limited to:
   a. Road crossings, rail crossings, bridges and drive-way crossings.
   b. Utilities and utility rights-of-way.
   c. Local and regional stormwater management facilities within the minor floodplain RSCR only (subject to best management practice requirements).
   d. Public lakes and ponds (subject to best management practice requirements).
   e. Public water supply reservoirs.
   f. Historic and archaeological sites.
   g. Paths and trails including permeable footpaths, biking or hiking paths, and horse trails.
   h. Passive recreation limited to hiking, biking, horseback riding, picnicking, camping, climbing, hunting, fishing, and wildlife viewing.
   i. Active recreation within the minor floodplain RSCR only.
   j. Silviculture, as required to care for forests and not commercial forestry (limited to: forest preservation and tree planting; limited tree clearing and clearing of invasive species; tree trimming and pruning; and removal of individual trees; subject to appropriate best management practice requirements).
   k. Planting native vegetation (subject to appropriate best management practice requirements).
   l. Conservation to include: stream restoration projects, facilities and activities; Adopt-A-Stream programs; scientific, nature and archaeological studies and education programs.

3. The 50-foot Management Buffer will protect the other river and stream corridor natural elements from upland disturbances and adjacent
development. The 50-foot Management Buffer can be reduced if it can be shown that a reduction does not adversely impact the other river and stream corridor features, and that performance standards and criteria, developed as part of the implementation of the river and stream corridor policies, are met and maintained. Only uses listed in Policy 2 will be supported within the Broad Run RSCR.

4. The County will work to implement the watershed management measures identified in the Upper Broad Run Watershed Management Pilot Project (UBRWMPP).

5. The County should use the lessons learned from the UBRWMPP to initiate and implement the development of the Lower Broad Run Watershed Management Plan (LBRWMP) expanding watershed planning efforts to include the entire Silver Line Policy Area.

6. To offset the development densities recommended in this Plan, the County encourages applicants to consider implementing enhanced pollutant control measures and watershed management strategies such as: downspout disconnection; tree planting/reforestation, especially within riparian areas; storm drain marking; stream restoration; wetland creation; adding best management practices (BMPs); enhanced stormwater management ponds; enhanced pollution/erosion control measures and stormwater pond conversion.

7. The County seeks to preserve existing vegetation to the maximum extent practicable with an emphasis on those areas identified within and adjacent to the Broad Run RSCR.

8. The County encourages tree conservation and reforestation of the Broad Run RSCR as a method to improve water quality. Undisturbed areas of the RSCR should be forested either through the retention of existing forest cover or through the planting of cleared land areas in consultation with the County Urban Forester.

9. The County encourages stormwater Best Management Practices on-site or as close to the area being treated as possible to prevent increased nutrient and sediment runoff into the Broad Run.

10. Natural features should be integrated into new developments in the planning area, including park spaces or on-site open space amenities.

11. The County should establish a riparian planting program within the Silver Line Policy Area.

12. The County should consider incentives or a funding program for reforestation, stormwater management (SWM)/BMP projects, and SWM/BMP retrofits within the Silver Line Policy Area.
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Chapter 7 - Implementation

Introduction

Revised General Plan Amendments

The Silver Line CPAM amends the Revised General Plan and the 2010 Countywide Transportation Plan, to advance the vision for the Silver Line Policy Area. The Plan provides residents, property owners, developers, and government officials to have a shared understanding of the future direction of the area and, therefore, plan and act based on the guidance provided. Amendments to the 2010 Countywide Transportation Plan implement the Virginia Department of Rail and Public Transportation Multimodal Guidelines and establish a roadway network to accommodate the proposed development pattern. The amendments also incorporate policies and practices regarding transit, pedestrian circulation, bicycling and transportation demand management that best respond to the needs of the transit-oriented development planned for the Silver Line Policy Area.

In order to achieve an enduring plan for the future that evolves over time and adjusts to market/economic conditions in a structured manner, the following actions should be implemented:

<table>
<thead>
<tr>
<th>Implementation Task</th>
<th>Priority</th>
<th>Responsibility</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrate the Silver Line Plan into the New Comprehensive Plan (Envision Loudoun).</td>
<td>High</td>
<td>DPZ</td>
<td>Incorporate into current Envision Loudoun process.</td>
</tr>
<tr>
<td>Regularly evaluate land development in the area to assess how well Board goals are being implemented.</td>
<td>Medium</td>
<td>DPZ, DMB</td>
<td>Annually as component of Fiscal Impact and demographic updates.</td>
</tr>
<tr>
<td>Review and consider updating the Silver Line Plan at least every five (5) years.</td>
<td>Low</td>
<td>DPZ, Planning Commission</td>
<td>Five year review cycle.</td>
</tr>
</tbody>
</table>

Notes: DPZ = Department of Planning and Zoning, DMB = Department of Management and Budget.

Implementation Initiatives and Actions

Zoning Ordinance Amendments

Loudoun County should craft new regulatory tools through Zoning Ordinance Amendments (ZOAM) to ensure the Zoning Ordinance has the new standards necessary to implement the land uses, densities, and design features proposed in the Silver Line Policy Area. Such amendments should focus both on refinements to the existing transit-oriented zoning districts; PD-TRC (Planned Development – Transit Related Center) and PD-TREC (Planned Development – Transit Related Employment Center) Zoning Districts, and update or add other zoning districts that may be used to implement the various place typologies and achieve the urban form desired for in the Silver Line Policy Area.
<table>
<thead>
<tr>
<th>Implementation Task</th>
<th>Priority</th>
<th>Responsibility</th>
<th>Time-Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refine the existing PD-TRC, PD-TREC, and PD-TC to implement the mixed use and compact, walkable typologies.</td>
<td>High</td>
<td>DPZ</td>
<td>Short Term (0-2 years)</td>
</tr>
<tr>
<td>Refine existing or add zoning districts to implement residential and employment typologies.</td>
<td>High</td>
<td>DPZ</td>
<td>Short Term (0-2 years)</td>
</tr>
<tr>
<td>Establish a collaborative legislative review process including design charrettes for significant legislative applications within the Policy Area.</td>
<td>High</td>
<td>DPZ, DBD, DED</td>
<td>Short Term (0-2 years)</td>
</tr>
<tr>
<td>Broaden the application review process to evaluate not only the application but how it fits within or facilitates desirable development on adjacent properties.</td>
<td>High</td>
<td>DPZ, DBD, DED</td>
<td>Short Term (0-2 years)</td>
</tr>
<tr>
<td>Develop concepts for landowners illustrating how to transition from interim to long term use.</td>
<td>High</td>
<td>DPZ</td>
<td>Mid Term (3-5 year)</td>
</tr>
<tr>
<td>Request an analysis of the Dulles Airport noise contours that reflect the alignment of the Airport runways; and should the study identify changes in the contours, initiate an amendment to Section 4-1400 of the Zoning Ordinance to reflect the new contours.</td>
<td>Med</td>
<td>DPZ, outside agencies</td>
<td>Mid Term (3-5 year)</td>
</tr>
<tr>
<td>Develop and broadcast design guidelines and practices that represent the best design principles for mixed-use and transit-oriented development.</td>
<td>Med</td>
<td>DPZ</td>
<td>Mid Term (3-5 year)</td>
</tr>
</tbody>
</table>

Notes: DPZ = Department of Planning and Zoning, DBD = Department of Building and Development, DED = Department of Economic Development.

**County Infrastructure, Facility, and Service Planning**

As the Silver Line Policy Area develops in an urban form, County facilities should be designed to integrate into the community, use land efficiently and reflect the needs of the anticipated population of “empty-nest” households. This may necessitate new facility service standards, new facility designs, and public and private partnerships.

The following table provides a preliminary assessment of some County facility requirements expected to be necessary to accommodate the proposed land use plan. The facility requirements are based on the County’s adopted standards and preliminary recommendations for alternative standards developed during the Silver Line planning process. The County should take a proactive role in ensuring that any new facilities in the Silver Line Policy Area are constructed efficiently and with the smallest land footprints possible.
### Facility Type

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Estimated Number Required for Silver Line</th>
<th>Recommended* Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary School</td>
<td>3*</td>
<td>1 per 875 Students*</td>
</tr>
<tr>
<td>Middle School</td>
<td>1*</td>
<td>1 per 1,350 Students*</td>
</tr>
<tr>
<td>High School</td>
<td>1*</td>
<td>1 per 1,875 Students*</td>
</tr>
<tr>
<td>Library</td>
<td>1</td>
<td>0.6 sf per capita</td>
</tr>
<tr>
<td>General Government Support Facility</td>
<td>1</td>
<td>4 sf per capita</td>
</tr>
<tr>
<td>Pocket Park (Public or Private ownership)</td>
<td>23</td>
<td>1 per 1,000 residents</td>
</tr>
<tr>
<td>Urban Recreation Park</td>
<td>4</td>
<td>1 per 6,000 residents</td>
</tr>
<tr>
<td>Large Neighborhood Park</td>
<td>1 to 2</td>
<td>1 per 20,000 residents</td>
</tr>
<tr>
<td>Broad Run Linear Park/Trail</td>
<td>2</td>
<td>Each side of Broad Run</td>
</tr>
<tr>
<td>Fire Station</td>
<td>1</td>
<td>1 per 25,000 Residents*</td>
</tr>
<tr>
<td>Sheriff Substation</td>
<td>2</td>
<td>1 at each Metro Station</td>
</tr>
</tbody>
</table>

*Conservative estimate based on current suburban standards for capital facilities, does not account for anticipated reduced capital facilities needs based on new urban land uses and new housing types forecasted.

In order to ensure needed public infrastructure, facilities and services for residents, visitors, and business owners, the following actions should be taken to achieve the vision of the Silver Line Policy Area:

<table>
<thead>
<tr>
<th>Implementation Task</th>
<th>Priority</th>
<th>Responsibility</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop new facilities design standards that meet the needs of an urban community with minimized land area requirements.</td>
<td>High</td>
<td>DMB, various</td>
<td>Short Term (0-2 years)</td>
</tr>
<tr>
<td>Evaluate the need to establish proffer guidelines that reflect a capital intensity factor associated with urban design standards, efficient use of land and shared use of private facilities.</td>
<td>Medium</td>
<td>DMB, DPZ, FIC, LCPS</td>
<td>Short Term (0-2 years)</td>
</tr>
<tr>
<td>Determine a priority list of infrastructure, facilities and services to support implementation of this plan.</td>
<td>Medium</td>
<td>DTCI</td>
<td>Short Term (0-2 years)</td>
</tr>
<tr>
<td>Explore opportunities for public/private partnerships to provide public facilities.</td>
<td>Medium</td>
<td>DMB, DPZ</td>
<td>Mid Term (3-5 year)</td>
</tr>
</tbody>
</table>

Notes: DMB = Department of Management and Budget, DPZ = Department of Planning and Zoning, FIC = Fiscal Impact Committee, LCPS = Loudoun County Public Schools, DTCI = Department of Transportation and Capital Infrastructure.
Site Planning and Development Application Process
The Silver Line CPAM identifies four Priority Neighborhood and Development Areas that are in addition to mixed-use areas around the Metrorail stations. The land use plan for the Silver Line Policy Area was developed with flexibility as a foundational principle. However, master planning through a charrette-styled process that involves property owners, stakeholders, planning and design professionals, and County staff is a method of designing and creating great places while balancing development and community expectations. A collaborative design approach should allow for cohesion between neighborhoods and offer strategies to achieve interim and long term development objectives. The specific actions to achieve this initiative should be:

<table>
<thead>
<tr>
<th>Implementation Task</th>
<th>Priority</th>
<th>Responsibility</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish a collaborative legislative review process including pre-submittal design</td>
<td>High</td>
<td>DPZ, DBD, DED</td>
<td>Short Term (0-2 years)</td>
</tr>
<tr>
<td>charrettes, assigned design teams and review timetables that encourage Plan design</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>concepts.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broaden the application review process to evaluate not only the application but how</td>
<td>High</td>
<td>DPZ, DBD, DED</td>
<td>Short Term (0-2 years)</td>
</tr>
<tr>
<td>it fits within or facilitates desirable development on adjacent properties.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluate the benefits of neighborhood or area plans in selected areas of the Silver</td>
<td>Low</td>
<td>DPZ</td>
<td>Mid Term (3-5 year)</td>
</tr>
<tr>
<td>Line Policy Area.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: DPZ = Department of Planning and Zoning, DBD = Department of Building and Development, DED = Department of Economic Development.

Land and Site Acquisition for County Facilities
The County should continually refine its capital facilities planning to reflect the character and needs of the Silver Line Policy Area. Continuous monitoring of new development and rezoning applications is necessary to determine the number and type of facilities that will be required based on factors like the specific type of development proposed, densities, and unit types.

Analysis conducted during the planning process for this document suggests nearly 8,000 new residential units may be produced by 2040, in addition to 7,100 housing units that are already constructed, being constructed or approved by existing entitlements, assuming a mid-range density of development by 2040. Residential units are also forecasted to be constructed in the Plan area by 2040 and beyond, though estimates beyond 2040 are not reliable due to unknown variabilities of future market conditions and housing demands. These units may add new households with school-aged children. It is important to note that these numbers are based on the assumption that small urban style units
(generally 700 to 1000 square feet) will ultimately be the predominant type of multi-family unit constructed in the Silver Line Policy Area. Larger units and deviations from the policies and recommendations in this document may result in higher populations and/or student generation.

Ideally reduced facility sizes and footprints will be needed to accommodate public facilities needs associated with the proposed land use plan. While land and existing facilities outside the Silver Line Policy Area may be used, most community-serving facilities should be located within the Policy Area. The community will benefit from having facilities located within walking distance. The County should consider acquiring the necessary land through a variety of means including proffers for land dedication, purchases and leases by the County, and other unique alternatives. While some of the facilities are likely to require ownership by the County, multi-family housing projects may provide a range of amenities and services that may reduce the need for public facilities. The anticipated populations of empty-nest households may also reduce the need for certain facilities. The following action steps should be taken to address the projected needs for the provision of land for public facilities:

<table>
<thead>
<tr>
<th>Implementation Task</th>
<th>Priority</th>
<th>Responsibility</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct a more thorough assessment of facility and land needs:</td>
<td>High</td>
<td>DTCI, other County departments, LCPS, outside agencies</td>
<td>Mid Term (3-5 year)</td>
</tr>
<tr>
<td>• Determine the priority list of facilities and land required for the Policy Area;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Determine minimum land requirements based on facilities standards for urban environments;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Identify locational design standards, opportunities for co-location, shared use and other efficiencies.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: DTCI = Department of Transportation and Capital Infrastructure, LCPS = Loudoun County Public Schools.

**Collaboration with the Metropolitan Washington Airports Authority**

The Loudoun Gateway Station will be located on land owned by the Metropolitan Washington Airports Authority (MWAA) and the majority of the land within ½ mile of the station will be on airport property. Loudoun County policies and zoning do not apply to MWAA property. However, any land development that occurs on land under the County’s jurisdiction will be required to access the Metro station by crossing airport property. As such collaboration with MWAA is important to ensure that a quality pedestrian environment can be achieved and maintained. The County should work collaboratively with MWAA to develop a coordinated plan for development around the Loudoun Gateway Station.
**Implementation Task**

<table>
<thead>
<tr>
<th>Collaborate with MWAA on future airport land planning to ensure compatibility between planning efforts inside and outside the boundaries of the Silver Line Policy Area and Washington Dulles International Airport property.</th>
<th>Priority</th>
<th>Responsibility</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>DPZ, DED, outside agencies</td>
<td>Mid Term (3-5 year)</td>
<td></td>
</tr>
</tbody>
</table>

Notes: DPZ = Department of Planning and Zoning, DED = Department of Economic Development.

**Growth Management**

The Silver Line CPAM will result in a significant number of new residential units being added to the County in an area where existing community facilities and services may not be sufficient to meet demands of the future residents. As such, a critical component of this plan is a growth management policy that ensures facilities are available to meet demands generated from proposed legislative applications. The capacity and the ability to serve new development should continue to be an important evaluation factor in decisions on legislative applications. Limited available land for the new facilities in the Silver Line Policy Area makes this policy critically important since the County may not have easy access to readily available land for use by the County. The County should work collaboratively with applicants and landowners to provide the appropriate facilities needed to accommodate growth and consider nontraditional means to meet future service demands.

**Fiscal Health**

New development with added residential should be directed to areas with existing service capacity or will be available at the time of development. The Silver Line CPAM considers a specific mix of uses that are intended to maximize revenues to the County while minimizing costs. Fiscal results can vary based on the number of residents and school children generated, how rapidly development occurs, and the balance of residential and non-residential development. Deviations from the policies of this Plan could adversely affect the fiscal balance that is envisioned for the Silver Line Policy Area. Deviations to type of development and residential unit types could result in a greater demand for County facilities. The proposed fiscal analysis anticipates that all additional multi-family units in this area will be fairly small and of an urban format resulting in fewer residents and school children, thereby, reducing demand and potential costs for community facilities. The successful implementation of this plan also envisions more compact physical facilities.

The Silver Line CPAM calls for a mix of residential and non-residential development. It is possible that non-residential and residential development will not occur at the same rate and for residential development to precede non-residential development for several years. Since residential development can be fiscally negative, it is important that non-residential development be appropriately timed or phased into the Silver Line Policy Area and that changing market conditions be balanced with the County’s goal of maximizing tax revenues.
Specifically, the Silver Line CPAM should provide a land use plan and related policies that support and encourage new development within the Metrorail Service Tax District to generate the revenue needed to pay for future Metrorail costs while not adversely impacting the County’s overall fiscal balance. In other words, the Silver Line CPAM should carefully measure the specific land use recommendations in relationship with how well they meet the Board’s fiscal objectives. However, fiscal objectives should be balanced by the stated land use planning objectives of maximizing employment and achieving the desired land use pattern. Focusing primarily on tax positive, non-residential uses without providing for urban-like residential communities to attract employees and support amenities would not be realistic based upon the County’s previous Market Analysis and Best Practices Study Final Report and the recommendations of the Urban Land Institute’s Technical Assistance Panel Final Report for this area. An approach lacking urban development features or characteristics would also jeopardize the unique opportunity Loudoun has to create a vibrant urban community with diverse housing, ample employment opportunities, unique shopping and entertainment facilities, and serve as a major focal point for our community.

Due to the County’s previous planning for areas around the Metro stations, existing uses, entitlements, and new developments under construction, the County is well underway with generating new development and employment to help meet its goal of “prompt realization of tax revenues to support future Metrorail operations”. Within the Metrorail Tax District, a number of large data centers are either under construction or have current site plan approval. Adjacent to the Ashburn Metrorail Station, the Moorefield Station, Gramercy Park, and Loudoun Station projects will generate new residential uses, commercial uses, and employment opportunities. Existing uses within the area are already contributing to tax revenues to support Metrorail operations.

Through the Silver Line CPAM, the County acknowledges existing uses and entitlements within the study area, and appreciates the current and future investment of property owners as a major planning consideration. For those property owners with existing developments and uses, the Silver Line CPAM provides for future redevelopment opportunities, if desired. For those property owners who have existing entitlements that are not at a site planning stage or construction, this Silver Line CPAM provides an opportunity to consider rezoning their properties to potentially increase densities, and change land use and land use mixes to meet the future vision and market for this area. Thus, maximizing the potential of their property.
<table>
<thead>
<tr>
<th>Implementation Task</th>
<th>Priority</th>
<th>Responsibility</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor residential and nonresidential tax base within the Metrorail Service Tax District.</td>
<td>High</td>
<td>COR</td>
<td>Annually</td>
</tr>
<tr>
<td>Monitor land development by product type, vacant and developed acreage, amount of development, densities, location within tax districts, and distance from Metro stations.</td>
<td>High</td>
<td>DPZ</td>
<td>Annually</td>
</tr>
<tr>
<td>Monitor remaining development potential by planned use, location within tax districts, and distance from the Metro stations.</td>
<td>High</td>
<td>DPZ</td>
<td>Annually</td>
</tr>
<tr>
<td>Monitor LCPS student generation within the plan area and the pupil generation rates by housing unit type.</td>
<td>High</td>
<td>LCPS/DPZ</td>
<td>Annually</td>
</tr>
</tbody>
</table>

Notes: COR = Commissioner of Revenue, DPZ = Department of Planning and Zoning, LCPS = Loudoun County Public Schools.
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Chapter 8 - Fiscal Health

Introduction
Since the 1990s, Loudoun County has integrated land use planning and fiscal management, which has helped the County manage a period of high growth. The aim is that Loudoun County remains a well-serviced community with a high quality of life and a fiscal balance to allow an affordable tax rate.

As stated in Chapter 2, the Board of Supervisors identified four long term goals for this plan, including “prompt realization of tax revenues to support future Metrorail operations.” This goal, as well as ensuring that proposed land use changes either are fiscally beneficial or at least fiscally neutral, are two considerations while developing a land use plan and policies support the long-term quality of life in Loudoun County as a whole while benefitting from the extension of Metrorail into Loudoun County.

These goals translate into two aspects to consider: Metrorail Tax District Revenues and Net Fiscal Impact to the County.

Metrorail Tax District Revenues
The Silver Line Policy Area overlaps with three Metrorail tax districts that were adopted by the Board in December 2012 to fund the capital and operating costs of the Silver Line extension into Loudoun County. Each district can have a maximum special levy (in addition to the general real property tax levy) of $0.20 per $100 of assessed value. The Board of Supervisors has the discretion to set each district’s tax rate up to $0.20 – and may choose to lower tax rates when sufficient revenues are generated.

A special levy of $0.20 has been in effect for the large Metrorail Service Tax District, which encompasses the two Metrorail station service districts plus some additional areas, since January 1, 2013. The primary purpose of the special levy in the Metrorail Service Tax District is to service the debt incurred by the County to fund its portion of the cost of constructing the Metrorail extension into Loudoun. The district will remain in effect as long as needed to pay off the debt incurred. Completion of debt payments are expected by the early 2040s.

To date, no special levies have been authorized for the Route 606-Airport Stations (includes the Loudoun Gateway and Dulles Airport Stations) Service District or for the Route 772 Station (Ashburn Station) Service District. However, revenue from special levies in these districts would be one source of funding for the County’s ongoing annual payments to the Washington Metropolitan Area Transit Authority (WMATA) for providing Metrorail service to these stations.
The map on the following page provides a closer view of the planned land uses within and outside of the Metrorail Service Tax District (shown by the red outline) along with the two Metrorail station service districts (dotted lines). The boundary of the Silver Line Policy Area is shown in black. The Silver Line Policy Area generally is located in the northern portion of the district, west of Route 28 and north of Dulles Airport. The Silver Line Policy Area also includes some land outside of the Metrorail Service Tax District.
Considerations for generating tax district revenue include:

- Development that occurs earlier provides more revenue over time to help pay for Metrorail obligations.
- The location of development within the Silver Line Policy Area will determine whether it will help pay for the ongoing costs of Metrorail (WMATA payments).

**Net Fiscal Impact to the County**

The fiscal impact to the County as a whole can be considered in conjunction with the additional Metrorail tax district revenues that development in this area can generate. New development within the Metrorail tax districts should generate revenue to help pay for future Metrorail costs while not adversely impacting the County’s overall fiscal well-being.

Loudoun County often includes fiscal impact analyses as part of planning efforts, especially when the proposed type of development is new to the County. These analyses project the County’s revenues and expenditures that could flow from an area, whether it be at the individual project level, an area of the County, or the County as a whole. The net of revenues and expenditures is known as the fiscal impact.

To understand whether a proposed land use change is fiscally beneficial, the focus of these studies is on the fiscal difference between current and proposed land use patterns and policies. The results of an analysis can help decision makers understand whether and to what extent the proposed land use change improves the County’s overall fiscal condition. In addition to expressing results in dollars, results also can be expressed in terms of the impact on the County’s real property tax rate.
These analyses focus on changes to the revenues and expenditures that support the operation of County government and the Loudoun County Public Schools, along with the capital needs and costs specifically tied to the proposed increases in development.

The focus of a fiscal impact analysis is on Countywide impacts. Using this approach, the impact of land use changes in this area on the County’s overall revenues and expenditures can be clearly identified. Any shifts in development from outside to inside the policy area that would not change the overall fiscal balance of the County are excluded from the assessment of fiscal balance.

Fiscal analysis has shown that the following three concepts are important to ensure fiscal balance for the County as the Silver Line CPAM is implemented:

- A balance of non-residential and residential development.
- Residential development types within the land use typology parameters that generate fewer residents and school children.
- Developer contributions that fully offset capital costs associated with residential units.

**Development Context**

**Current Development Forecasts Countywide, Based on the Existing Land Use Plan**

Loudoun County regularly produces long-term forecasts of development, population, households and employment. Forecasts are based on both the market demand for different types of development, and the land supply provided under existing plans and entitlements. Forecasts of new development from Loudoun County’s Metropolitan Washington Council of Governments (MWCOG) Round 9.0 Cooperative Forecasts completed in March 2016 are shown in the following charts. The residential forecasts demonstrates the impact of a declining supply of land for townhomes (single-family attached, SFA), and then as time goes on, also for multi-family units (MF). Single-family detached (SFD) will decline due to diminished supply in the Suburban and Transition Policy Areas and low demand foreseen in the Rural Policy Area.
Forecasted Change to Countywide Development with This Plan

Residential units and office space are the two types of development expected to increase Countywide based on the implementation of the land use plan in this area. Countywide increases result from development within the Silver Line Policy Area only. While the amounts of other types of development (such as retail, hotels, etc.) may change within and outside the Silver Line Policy Area, an increase in these types of development is not expected overall within the County.

Development forecasts in general are based on the mid-point of the range of densities proposed for each land use typology, and a consideration of market conditions and projected rates of absorption. Development of residential units and office space could be greater or less than the forecasts depending on market conditions, unknown site development constraints for each parcel/land bay, and a host of other variables that are beyond the scope of this CPAM and the associated forecasting. The Silver Line Policy Area proposed planned land use is forecasted to increase residential development Countywide and within the Silver Line Policy Area by more than 3,000 townhomes and almost 5,000 multi-family
housing units through 2040 (See table below). Forecasts are presented for additional single-family detached (SFD), single-family attached (SFA), and multi-family (MF) units. The Silver Line Policy Area is forecasted to have a total of 18,247 total housing units by 2040 as illustrated in the chart on the following page.

**Forecasted New Housing Units in the Silver Line Policy Area from 2015 Through 2040**

<table>
<thead>
<tr>
<th></th>
<th>Revised General Plan (including entitlements)</th>
<th>Increase with the Silver Line CPAM</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFD</td>
<td>45</td>
<td>0</td>
<td>45</td>
</tr>
<tr>
<td>SFA</td>
<td>1,209</td>
<td>3,255</td>
<td>4,464</td>
</tr>
<tr>
<td>MF</td>
<td>5,888</td>
<td>4,726</td>
<td>10,614</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7,142</strong></td>
<td><strong>7,981</strong></td>
<td><strong>15,123</strong></td>
</tr>
</tbody>
</table>

[Chart showing forecasted new housing units]

This chart illustrates the increase in housing units from the revised general plan to the proposed plan with the Silver Line CPAM. The total increase is shown from 2015 levels, with the silver line policy area forecast to have a total of 18,247 housing units by 2040.
The table below shows the net housing unit difference through 2040, along with the net increase in households, population, and school children. The plan envisions the majority of multi-family units in this area be small and of an urban format – and thus, have fewer residents and school children.

### Housing Units, Households, Population, and School Children

**Increase Above Revised General Plan and Entitlements from 2015 through 2040**

<table>
<thead>
<tr>
<th></th>
<th>Housing Units</th>
<th>Households</th>
<th>Population</th>
<th>School Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SFA</td>
<td>3,255</td>
<td>3,157</td>
<td>9,094</td>
<td>1,705</td>
</tr>
<tr>
<td>MF</td>
<td>4,726</td>
<td>4,395</td>
<td>8,076</td>
<td>545</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7,981</strong></td>
<td><strong>7,552</strong></td>
<td><strong>17,170</strong></td>
<td><strong>2,250</strong></td>
</tr>
</tbody>
</table>

The Silver Line Policy Area change in planned land use is forecasted to increase office development Countywide by two million square feet through 2040. Within the Silver Line Policy Area overall square footage of non-residential development is forecasted to have an increase of 14,030,748 square feet through 2040. The demand for non-residential development is forecasted to shift between areas inside and outside the Silver Line Policy Area (See tables below).

### Forecasted New Non-Residential Development Countywide from 2015 Through 2040

<table>
<thead>
<tr>
<th></th>
<th>Revised General Plan (including entitlements)</th>
<th>Increase with the Silver Line CPAM</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>14,033,720 sf</td>
<td>2,000,000 sf</td>
<td>16,033,720 sf</td>
</tr>
<tr>
<td>Data Center</td>
<td>10,197,264 sf</td>
<td>0 sf</td>
<td>10,197,264 sf</td>
</tr>
<tr>
<td>Light Industrial/Flex</td>
<td>8,621,409 sf</td>
<td>0 sf</td>
<td>8,621,409 sf</td>
</tr>
<tr>
<td>Retail</td>
<td>8,520,000 sf</td>
<td>0 sf</td>
<td>8,520,000 sf</td>
</tr>
<tr>
<td>Other</td>
<td>12,829,798 sf</td>
<td>0 sf</td>
<td>12,829,798 sf</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>54,202,191 sf</strong></td>
<td>0 sf</td>
<td><strong>56,202,191 sf</strong></td>
</tr>
</tbody>
</table>
Forecasted New Non-Residential Development in the Silver Line Policy Area from 2015 Through 2040

<table>
<thead>
<tr>
<th></th>
<th>Revised General Plan (including entitlements)</th>
<th>Increase with the Silver Line CPAM</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>3,424,410 sf</td>
<td>2,452,071 sf</td>
<td>5,876,481 sf</td>
</tr>
<tr>
<td>Data Center</td>
<td>4,298,060 sf</td>
<td>-251,243 sf</td>
<td>4,046,817 sf</td>
</tr>
<tr>
<td>Light Industrial/Flex</td>
<td>1,065,000 sf</td>
<td>-545,667 sf</td>
<td>519,333 sf</td>
</tr>
<tr>
<td>Retail</td>
<td>1,238,000 sf</td>
<td>656,854 sf</td>
<td>1,894,854 sf</td>
</tr>
<tr>
<td>Other</td>
<td>2,017,262 sf</td>
<td>-323,999 sf</td>
<td>1,693,263 sf</td>
</tr>
<tr>
<td>Total</td>
<td>12,042,732 sf</td>
<td>1,988,016 sf</td>
<td>14,030,748 sf</td>
</tr>
</tbody>
</table>

Forecasted Change to Metrorail Service Tax District Development with This Plan
Forecasted changes in development within the tax district follow the pattern shown Countywide, with some differences:

- The increase in office development is forecasted to be higher than the Countywide increase, with some office development that would have occurred elsewhere in the County being located within the tax district instead.
- The increase in residential development is forecasted to be lower than the Countywide increase, with some residential development locating in those portions of the policy area that are outside the tax district.

Creating a Fiscally Beneficial Result
A fiscal analysis was run on this plan, using the development assumptions outlined in the preceding section. Full results can be found in the *Potential Fiscal Impacts of the Land Use Changes Proposed in the Silver Line Plan* report. [Note for the Board of Supervisors June draft: this analysis was last run in April 2017, based on the Planning Commission’s recommended land use plan. Assumptions in that report, aside from development forecasts based on the proposed land use plan, remain current. The *Potential Fiscal Impacts* report will be revised based on the Board of Supervisor’s recommended land use plan.]
To assess the variety of outcomes that could occur in the year 2040, this analysis included sensitivity tests of some key assumptions:

- Number of residents and school children produced by multi-family units.
- Balanced mix of non-residential and residential development.
- When and how rapidly development occurs.

Real property values also can have a strong impact. The following illustration documents differences in assumptions for multi-family units.

**MULTI-FAMILY UNITS**

<table>
<thead>
<tr>
<th>Assumptions for multi-family units (suburban format, using County averages)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Residents per household: 1.97</td>
</tr>
<tr>
<td>- School-aged children per household: 0.23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assumptions for multi-family units (small, urban format)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Residents per household: 1.87</td>
</tr>
<tr>
<td>- School-aged children per household: 0.15</td>
</tr>
</tbody>
</table>
Balancing the Mix of Land Uses

The Board of Supervisors identified “Prompt realization of tax revenues to support future Metrorail operations” as one of the four goals for this CPAM. In addition to considering tax revenue generation, the impact on the County’s fiscal balance is an important consideration. Residential development, particularly townhome development, may have enough market support to occur quickly. This development also has the potential to generate substantial tax district revenues. On the flip side, it comes with costs that make its net fiscal impact to the County (aside from tax district revenues) negative.

The *Potential Fiscal Impacts* report includes detailed tables. On a more general level, the table below provides a guide to expected impacts, based on the assumptions used in this report. Figures from studies like this can be used as a guide to the general direction and magnitude of results.

<table>
<thead>
<tr>
<th>Results per . . .</th>
<th>County Fiscal Impact</th>
<th>Metrorail Service Tax District Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office 1,000,000 SF</td>
<td>5.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Multi-family (small) 1,000 units</td>
<td>-0.1</td>
<td>0.4</td>
</tr>
<tr>
<td>Multi-family (average) 1,000 units</td>
<td>-0.9</td>
<td>0.4</td>
</tr>
<tr>
<td>Townhomes 1,000 units</td>
<td>-1.9</td>
<td>0.8</td>
</tr>
</tbody>
</table>

**Fiscal Policies**
1. Consider the balance of non-residential development and residential development, appropriately timing development to help mitigate the costs of residential development.
2. Encourage multi-family developments and housing units that are small and designed for an urban environment.
3. Encourage townhouse developments and housing units that are small and designed for an urban environment.
4. Ensure that developer contributions fully offset the capital costs of residential development, other than those for by-right and affordable dwelling units.
5. Investigate and implement capital facility configurations, such as co-location, new urban facility design formats, and service area overlaps inside and outside the Silver Line Policy Area that could reduce the amount of land and/or capital costs for providing facilities and services within the policy area.
Appendix - Maps

Map 1. Silver Line Policy Area Boundary
Map 2. Generalized Existing Land Use
Map 3. Silver Line Aerial Photograph
Map 4. Priority Development Areas
Map 5. Planned Land Use
Map 6. Silver Line Policy Area Countywide Transportation Plan Map
Map 7. Multimodal Through Corridor Network
Map 8. Boulevards and Avenues
Map 9. Conceptual Local Streets Network
Map 10. Key Routes to Metrorail Stations
Map 11. Distance to Metrorail Stations
Map 12. Transit-Priority Street Network
Map 13. Conceptual Transit Circulator Routes
Map 14. On-Street Bicycle Network
Map 15. Trails for Transportation
Map 16. Comprehensive Vision for Bicycling
Map 17. Existing Public Safety Facilities
Map 18. Conceptual Pocket Park Locations
Map 19. Potential Urban Recreation Park Locations
Map 20. Potential Neighborhood Park Locations
Map 21. Conceptual Broad Run Linear Park Areas
Map 22. Potential School Locations
Map 23. Silver Line Stream Impairment and Stream Assessment Data
Map 24: Eastern Loudoun Aquatic Life Use Impairment
Map 25: Eastern Loudoun Aquatic Life Use Impairment (Bacteria)
Map 26: Eastern Loudoun Fish Consumption Impairment
Map 27: Upper Broad Run Watershed Management Pilot Project
Map 28: Priority Preservation Areas
Map 29. Metrorail Service Tax District
Map 30. Metrorail Tax Districts and CPAM Policy Area
Map 1. Silver Line Policy Area Boundary

Legend
- Silver Line Policy Area Boundary
- Scenario Planning Study Area

[Map Image]
Map 2. Generalized Existing Land Use

Legend
- Silver Line Policy Area Boundary
- Distance from Metrorail Station
  - 0.25 Miles
  - 0.5 Miles
  - 1 Mile
  - FP
- Under Construction*

Existing Land Use
- Open Space/Undeveloped Land
- Parks/Community Facilities
- Community Facility
- Suburban Retail
- Single Family Detached
- Urban Townhomes
- Suburban Multifamily Attached
- Suburban Multifamily Attached, Stacked
- Suburban Office
- Data Center
- Urban Mixed Use, Medium Buildings
- Flex/Industrial
- Utility
- Full Planned Land Use selection

*Under Construction refers to areas where site work is underway or permits have been issued but buildings may not be visible.
Map 3. Silver Line Aerial Photograph

Legend
- Silver Line Policy Area Boundary
- Distance from Metrorail Station
  - 0.25 Miles
  - 0.5 Miles
  - 1 Mile
Map 4. Priority Development Areas

Legend
- Silver Line Policy Area Boundary
- Development Areas
  - Ashburn Station 1/2-Mile Buffer
  - Ashburn Station 1/4-Mile Buffer
  - Loudoun Gateway Station 1/2-Mile Buffer
  - New Mixed-Use Neighborhood #1
  - New Mixed-Use Neighborhood #2
  - New Mixed-Use Neighborhood #3
  - New Mixed-Use Neighborhood #4
Map 6. Silver Line Policy Area Countywide Transportation Plan Map

General Notes:
- Planned roadway alignments shown are conceptual and subject to further engineering. Alignments will be further refined as part of the planning process and through the land development application process.
- Sidewalks are required on both sides of all streets except where a road-adjacent trail is indicated by the plan.
- Existing privately-maintained roadways are not shown in this plan.

Map Notes:
A. Additional north-south connections through this area will be evaluated as part of any redevelopment proposal.
B. An additional Broad Run crossing should be considered at this location as part of any redevelopment proposal.
C. Broad Run crossings will be constructed to accommodate parallel trails on both sides of the Broad Run where indicated by the plan.
D. Local access, interchange locations, and ultimate alignment of Route 606 between Route 28 and Loudoun County Parkway to be determined by later study with consideration of adjacent development/stakeholders.
Map 7. Multimodal Through Corridor Network

Legend

- Silver Metrorail Station
- Silver Metrorail (Planned)
- Policy Area Boundary
- Airport Property
- Floodplain/Designated Open Space
- Silver Line Policy Area Network
- Existing Interchange
- Planned Interchange
- Planned Roundabout
- Grade Separated Roadways
- Multimodal Through Corridor

Note: See map notes for further information on map callouts (A)

Source: Delorme, MapmyIndia, ©OpenStreetMap contributors, and the GIS user community.
Map 8. Boulevards and Avenues
Map 9. Conceptual Local Streets Network

NOTE: The dashed streets shown are conceptual only. Locations and configurations of the street network will be determined as part of development applications.
Map 10. Key Routes to Metrorail Stations
Map 12. Transit-Priority Street Network

Note: Dotted yellow line adjacent to Ashburn Metrorail Station indicates planned transit emphasis on privately owned road (Vinegar Hill Drive) for use as bus/transit vehicle access.

Note: See map notes for further information on map callouts (A).
Map 15. Trails for Transportation
Map 16. Comprehensive Vision for Bicycling
Map 17. Existing Public Safety Facilities

Legend
- Sheriff Station
- Fire Station
- Silver Line Policy Area Boundary
Distance from Metrorail Station
- 0.25 Miles
- 0.5 Miles
- 1 Mile
Map 18. Conceptual Pocket Park Locations

Legend
- Silver Line Policy Area Boundary
- Distance from Metrorail Station
  - 0.25 Miles
  - 0.5 Miles
  - 1 Mile
  - 1/8-Mile Radius
Map 19. Potential Urban Recreation Park Locations

Legend
- Silver Line Policy Area Boundary
- Distance from Metrorail Station
  - 0.25 Miles
  - 0.5 Miles
  - 1 Mile
- Potential Urban Recreation Park Locations
Map 20. Potential Neighborhood Park Locations

Legend
- Silver Line Policy Area Boundary
- Distance from Metrorail Station
  - 0.25 Miles
  - 0.5 Miles
  - 1 Mile
- Approximate Size of 1 Neighborhood Park
- Potential Neighborhood Park Locations
Map 21. Conceptual Broad Run Linear Park Areas
Map 22. Potential School Locations
Map 23. Silver Line Stream Impairment and Stream Assessment Data
Map 27. Upper Broad Run Watershed Management Pilot Project
Map 28. Priority Preservation Areas
June 15, 2017

The Honorable Phyllis J. Randall
Chair, Loudoun County Board of Supervisors
1 Harrison Street, SE 5th Floor
Leesburg, VA 20175

Dear Chair Randall:

The Metropolitan Washington Airports Authority (Airports Authority) is pleased to have been an active and supportive partner with Loudoun County in a host of economic development and transportation planning matters over the past three decades.

Throughout this period, the Airports Authority has provided to Loudoun County, the Virginia Department of Transportation, Loudoun Water, Dominion Energy and other utility companies nearly two dozen licenses, leases and easements across the property of Washington Dulles International Airport (Dulles International), worth millions of dollars, to be used in the delivery of roadways, utilities and other elements of infrastructure that serve County residents and businesses. (Examples of these conveyances are given in an enclosure.) The Airports Authority has also been a partner with the County in the construction of the Silver Line extension into Loudoun and has most recently leased approximately 12 acres of Dulles International land, at no cost to the County, for parking and transit facilities that will serve County residents using the Loudoun Gateway Metrorail station.

In addition, the Airports Authority anticipates acting favorably on upcoming Loudoun County requests for easements on Dulles International land that are needed for the County’s planned interchange improvements at Route 606 and the Loudoun County Parkway and at Route 606 and Route 50. Moreover, while the Airports Authority is unable to say today that we concur with the particular location and alignment on Dulles International land for the County’s proposed extension of Shellhorn Road (as shown in the current version of the County’s Silver Line Comprehensive Plan Amendment (CPAM)), we can say that we are agreeable to the use of some Airport land for this extension and commit to working with the County to identify a specific location that meets the needs of both parties.¹

¹ Loudoun County’s proposed extension of Shellhorn Road travels across Dulles International land that is proximate to the Loudoun Gateway Station. The Airports Authority is currently studying potential uses (including non-aviation uses) to which this land might be put in the years ahead. The outcome of this study effort could affect the location of roadway and other infrastructure improvements that development of this land will require, as well as a final location and alignment of the proposed Shellhorn Road extension. It is, therefore, not possible for the Airports Authority at this time to agree to a particular location and alignment for this County-proposed roadway extension.

Dulles International | Reagan National | Dulles Toll Road
mwaa.com
The Honorable Phyllis J. Randall
Loudoun County Board of Supervisors
Page 2

The Airports Authority values deeply the contributions Loudoun County has made in the course of our partnership and, in particular, the contributions the County has made in the area of land use planning and regulation where the County has often prevented new residential uses in areas around Dulles International likely to experience high aircraft noise. Land use policies adopted and consistently implemented by the County over the years have served to preserve and protect Dulles International Airport, the Airport’s capacity to deliver to the Washington, D.C. region air transportation service to all parts of the globe, and the corresponding role the Airport plays in growing the local and regional economy, including within the County’s special tax districts surrounding the Airport.

The strength of the Loudoun County-Airports Authority partnership has been tested on occasion over the years as a result of requests from land owners and developers to alter the County’s land use policies and regulations governing development around Dulles International. In these cases, the County has usually remained firm in its commitments, and affirmed the soundness of its policies regarding the use of land in noise-sensitive areas around the Airport. On June 22, 2017, another test will occur as part of the Board of Supervisor’s vote on the Silver Line CPAM, when the Board will be asked to endorse a land-use vision that includes construction of hundreds, if not thousands, of new residences east of the Loudoun County Parkway and north of Dulles International’s three north-south runways.

Federal Aviation Administration (FAA) guidelines and the experiences of airport communities across the nation point to the wisdom of prohibiting residential development in high aircraft noise impact areas around the ends of active runways. In the case of the residential land uses north of Dulles International and east of the Loudoun County Parkway, which have been proposed to be included in the Silver Line CPAM, multiple factors – the high volume of aircraft flying over the area in question, the low altitude at which many of these aircraft fly (between 400 and 600 feet) on their approach to the runways, and the fact that a significant portion of these flights will, in the future, likely occur at night – present critical quality-of-life issues for any new residents permitted to move into this area. In our view, the placement of homes in this area near, and under the flight paths of, three operating runways, whose aviation activity is certain to grow over time, would be extremely unfair to the families and individuals who would live in these homes. It would, in addition, almost certainly give rise to demands from these new residents that the County and the FAA curtail and otherwise restrict flights over their homes (especially those occurring at night), as well as other “nuisance” airport activities.

As you know, airlines have multiple choices when it comes to expanding their services to new airports, providing flights to new destinations, and eliminating flights at one airport and placing them at another. Within this highly competitive “airline-airport marketplace,” the Airports Authority aggressively markets Dulles International as an international gateway airport with flight availability 24 hours a day, seven days of the week, and with the capacity that will allow airlines to grow over time. We engage in this marketing effort to ensure that, in the coming years and decades, air transportation service to all parts of the globe will be available to businesses and residents of the national capital region. The goal of this effort – to grow Dulles International in order to meet the region’s evolving air transportation needs and to enhance the regional economy – has been sustained for years by our partnership with Loudoun County and its airport-related land use policies and decision making. In our view, our effort to market and grow Dulles International would be seriously compromised by any County decisions that signify a break from its prior airport-supportive policies and decisions.

The Airports Authority certainly shares the Loudoun County goal of smart and sustainable growth for the County. Accordingly, we strongly support thoughtful residential development around the
new Innovation Center and Ashburn Metrorail stations. But, as indicated above, we cannot say the same regarding residential development around the Loudoun Gateway Station due to its location in relation to Dulles International runways and flight paths. Moreover, with respect to development around this station, I would note that, in the early 1990s, the Airports Authority granted the County’s requests that the station, as well as a nearby park and ride lot, be located on Dulles International land. In the spirit of our then-evolving partnership, the Airports Authority granted these County requests in return for an assurance that development over time around the station would not result in residential and other uses that would be incompatible with the Airport. We ask today that the County remain true to that assurance.

Based on the experiences of other airport communities throughout the country, the Airports Authority believes that changing the County’s long-standing airport-related land use policies, as part of the Silver Line CPAM, to ease the introduction of new residences in noise-sensitive areas east of the Loudoun County Parkway and north of Dulles International’s main runways would be an unfortunate decision with serious adverse consequences for those who would reside in the residences, for the County, for the region and for Dulles International.

If you or your colleagues would like to discuss this matter further, please contact me directly or contact Mr. Michael Cooper, State and Local Government Affairs Manager, at (703) 417-8787 or michael.cooper@mwaa.com.

Sincerely,

John E. Potter
President and Chief Executive Officer

Enclosure

cc: Loudoun County Board of Supervisors
Mr. Tim Hemstreet, Loudoun County Administrator
Mr. Ricky Barker, Loudoun County Director of Planning and Zoning

JEP:mc
Examples of Licenses, Leases and Easements across the Property of Washington Dulles International Airport benefiting Loudoun County, VA

FOR TRANSIT FACILITIES:

- Existing Park and Ride and bus transfer station near Loudoun Gateway Station
- Future Loudoun County Parking Garage serving Loudoun Gateway Station
- WMATA Railyard facilities benefiting future Silver Line customers

FOR ROADWAYS:

- Conveyances for new and widened County roadways (e.g., Route 606, Route 28, Route 50, Loudoun County Parkway, Carter’s School Road and Dulles South Parkway); a portion of the Dulles Greenway; new and improved interchanges along Route 28, Route 50, and Route 606
- Easement for Trip II to construct the Dulles Greenway
- Dulles Landing/Route 606 traffic signalization

FOR WATER & SEWER:

- Horsepen Run Parallel Sewer project
- Drainage ponds

FOR UTILITIES:

- Easements to Washington Gas for gas lines
- Utility Relocations
- Easements to Dominion Energy for electric transmission lines (including, most recently, in connection with the Poland Road 230-kV transmission line alignment project)
Applicant’s Loudoun Metro Fiscal Report, May 2017

On the day of the May 10, 2017 Public Hearing, staff received a report prepared by George Washington University’s Center for Real Estate and Urban Analysis for the applicant, “The Net Fiscal Impacts of Development at Loudoun Metro.” While time did not permit a close review of this study, staff did provide an initial reaction and supporting materials to the Board of Supervisors.

Staff analyses of data center versus mixed-use development on a hypothetical 20 acre site, are described below. The applicant’s report follows later in this attachment. The components of this attachment include:

- Loudoun County Department of Planning and Zoning, “Comparison of Data Center Use versus Mixed Use Development”

Staff’s advisement to the Board of Supervisors provided via e-mail included the following points:

Comparison of the Applicant’s Loudoun Metro Report to Analysis Provided by Staff

The applicants’ Loudoun Metro report compares two alternatives for development of the DuPont Fabros property: development as mixed-use and development as data centers. This is a high-level, general study, which focuses only on real property revenues (to the General Fund and the Metrorail Service Tax District combined) as compared to school-related expenditures. While staff did not have sufficient time to review this study closely, there are numerous differences between this analysis and that provided by staff, resulting in part from

- the focus in this report on the project or site level, rather than impacts at a larger scale (such as changes when considered from the level of the tax district and the County as a whole),
- the assumption that all mixed-use development would be complete by 2029, and
- differences in assumptions and methods.

Analysis of a Hypothetical 20 Acre Site

In working with the Planning Commission, staff provided a comparison of development as either Mixed-Use Medium or as Data Centers as part of its presentation at its April 13th work session. This comparison was done for a hypothetical 20 acres, so not at the same scale as the Loudoun Metro project (230 acres). It does, however, provide a basis of comparison of the relative fiscal impacts of the two uses, showing fiscal results as of 2030 and 2040. In comparison to the Loudoun Metro study, approximately 50 percent of development was projected to be built within ten years, as compared to all of the Loudoun Metro project being completed in nine years. Data and a line graph were provided to the Board of Supervisors on May 10th (see “Comparison of Data Center Use versus Mixed Use Development,” following).
Staff Analysis of Overall Impacts of the Plan

To support the plan process as a whole, staff developed the Illustrative Fiscal Impacts page, which captures the impacts of the additional new development forecast under the plan, and the Potential Fiscal Impacts report, which provides further information on cumulative tax district revenues and capital facility needs, along with sensitivity tests to provide ranges of possible fiscal results. The Illustrative Fiscal Impacts is an attachment to the Potential Fiscal Impacts report.

Staff’s fiscal analysis focuses on the impact of the net difference in development, if the Silver Line CPAM is adopted versus under the current plan and entitlements. Analysis reflects assumptions about the additional amount of development that could occur. For example, a net increase of 2 M square feet of office space Countywide by 2040 is forecast if the plan is adopted. Other forecasted development increases include about 3,300 more townhomes and 4,700 more multi-family units as of 2040.

The Illustrative Fiscal Impacts page shows the impacts of differences in when this additional development would be expected to occur between now and 2040: additional townhomes by about 2030; multi-family units between 2030 and 2040, and office development throughout the forecast period.

Contrasts with the Loudoun Metro Report’s Project-Level Approach

As a project-level fiscal analysis, the Loudoun Metro fiscal report presents development occurring at this site, without taking into account whether the development otherwise could occur elsewhere instead. Staff’s analysis uses the overall growth in the County and in the Metrorail Service Tax District as inputs. This approach reflects a difference between fiscal analyses that assess impacts at a larger scale versus those done at a project level.

The Loudoun Metro fiscal report includes for the mixed-use alternative, the assumption that 720,000 SF of office, another 730,000 SF of nonresidential and civic uses, 2,828 multi-family units, and 108 townhomes would occur at this location by 2029. This contrasts with the assumptions developed by staff as of 2030 for the Illustrative Fiscal Impacts page, which – rather than representing what would occur at a given site – reflect the net overall change to the County and to the Tax District. Using the forecasts shown on the Illustrative Fiscal Impacts page, Countywide an increase of 1,000,000 SF of office and 3,300 townhomes is expected as of 2030. In addition, 1,000 multi-family units are expected to relocate to the Tax District by 2030 (rather than develop outside the Tax District if the plan is not adopted).

For the data center alternative, the Loudoun Metro fiscal report forecasts 2.1 M square feet of development, to arrive by 2027.
Comparison of Data Center Use verses Mixed Use Development
Planning and Zoning Department

Based upon a request by several Planning Commissioners during the review process, staff did a comparison of the projected revenues between a data center use and mixed use development on a twenty (20) acre site (not a site-specific property). This comparison shows that the data center use had greater revenue early on, while the mixed use development took longer to exceed the revenues generated by the data center use. In performing this comparison, staff made the following assumptions:

1. 50% of site acreage allocated for residential at 36 units per acre
2. 25% of site acreage allocated for civic, roads and other infrastructure, etc.
3. 12% of site acreage allocated for retail with a 2.5 Floor Area Ratio (FAR)
4. 12% of site acreage allocated for office with a 2.5 FAR
5. Data Center fully constructed by 2020 (by right development) while mixed use development would take longer until construction began and take until 2040 for complete build out.

Comparison of Revenues (in Millions Annually) 2030/2040 between a Data Center Use and Mixed Use Development on a 20 Acre Site

<table>
<thead>
<tr>
<th>Proposed Urban Mixed Use Medium by Use Type</th>
<th>2030 Floor Area/Units</th>
<th>2030 County Impacts</th>
<th>2030 District Net Revenues</th>
<th>2040 Floor Area/Units (Cumulative)</th>
<th>2040 County Impacts</th>
<th>2040 District Net Revenues</th>
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<tbody>
<tr>
<td>Office</td>
<td>455,000</td>
<td>$2.3</td>
<td>$0.1</td>
<td>1,162,000</td>
<td>$5.8</td>
<td>$0.3</td>
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<tr>
<td>Retail</td>
<td>155,000</td>
<td>$1.1</td>
<td>$0.1</td>
<td>290,000</td>
<td>$2.0</td>
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<tr>
<td>Multi-family</td>
<td>280</td>
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<td>610</td>
<td>-$0.1</td>
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<td>Single-family Attached</td>
<td>110</td>
<td>-$0.2</td>
<td>$0.1</td>
<td>110</td>
<td>-$0.2</td>
<td>$0.1</td>
</tr>
<tr>
<td>Total Impact/Revenues</td>
<td>$3.1</td>
<td>$0.4</td>
<td></td>
<td>$7.6</td>
<td>$0.8</td>
<td></td>
</tr>
<tr>
<td>Proposed Data Center Uses</td>
<td>2030 Floor Area</td>
<td>2030 County Impacts</td>
<td>2030 District Revenues</td>
<td>2040 Floor Area</td>
<td>2040 County Impacts</td>
<td>2040 District Revenues</td>
</tr>
<tr>
<td>--------------------------</td>
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<td>---------------------</td>
<td>-----------------------</td>
<td>-----------------</td>
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</tr>
<tr>
<td>Data Centers</td>
<td>375,000</td>
<td>$4.5</td>
<td>$0.2</td>
<td>375,000</td>
<td>$4.5</td>
<td>$0.2</td>
</tr>
</tbody>
</table>

Based on the Planning and Zoning staff’s experience, mixed use development would take significant longer to develop compared to the data center use. As seen in the graphic below, the breakeven point where the County-wide fiscal impact for mixed-use would equal the data center use would be around 2033 (See Blue and Orange Lines). The mixed-use development fiscal impact would significantly exceed that from data centers over time. The yellow and gray lines represent Silver Line tax district revenue.
Projected Break Even Mixed Use Development Versus Data Center by County and By District

20-Acre Comparison

- Mixed Use County
- Data Center County
- Mixed Use District
- Data Center District
The Net Fiscal Impacts of Development at Loudoun Metro

Center for Real Estate and Urban Analysis
THE GEORGE WASHINGTON UNIVERSITY

Prepared by:
Michael Rodriguez, AICP
Director of Research

George Washington University School of Business
Center for Real Estate and Urban Analysis

Prepared for:
Zebra Ventures, LLC

May 2017
Overview

The George Washington University Center for Real Estate Analysis conducted a net fiscal impact analysis of two development alternatives for a site approximately north of the intersection of Loudoun County Parkway and Shellhorn Road in Loudoun County. This 230 acre site is situated 0.9 miles from the planned Silver Line Ashburn Station, and therefore is suitable for denser development supported by a heavy-rail transit asset.

Figure 1. Proposed Site for Mixed-Use Alternative

The first alternative, the Mixed-Use Alternative, consists of 4.1 million square feet (s.f.) of residential, office, retail, and civic uses. The second alternative, the Data Center Alternative, consists of 2.1 million s.f. of specialty office single-use in the form of technology and data centers.

We estimated the fiscal impacts from 2020 to 2040 with respect to Loudoun County property taxes, and the cost of providing school services to residents in the Mixed-Use Alternative. Using a 3 percent discount rate, we estimate that the net fiscal impact dollars of the Mixed-Use Alternative is $95.2 million from 2020 to 2040; and $54.6 million for the Data Center Alternative over the same 21-year period.¹

¹ All values in this analysis are reported as 2017 present value dollars, using a 3 percent discount rate.
Definitions of Alternatives

We analyzed two alternatives for the site: a Mixed-Use Alternative, and a Data Center Alternative. The Mixed-Use Alternative is a 4.1 million s.f. development of residential, commercial, and civic uses. The Data Center Alternative is a single-use alternative consisting of 2.1 million s.f. of data center specialty office use. Table 1 below outlines the details of the two alternatives.

Table 1. Comparison of Alternatives by Product Type and Size

<table>
<thead>
<tr>
<th></th>
<th>Mixed-Use Alternative</th>
<th>Data Center Alternative</th>
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<tbody>
<tr>
<td>Data Center</td>
<td>-</td>
<td>2,105,000 s.f.</td>
</tr>
<tr>
<td>Retail</td>
<td>431,175 s.f.</td>
<td>-</td>
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<tr>
<td>Office</td>
<td>720,000 s.f.</td>
<td>-</td>
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<tr>
<td>Movie Theater</td>
<td>45,000 s.f.</td>
<td>-</td>
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<td>Hotel</td>
<td>156,250 s.f.</td>
<td>-</td>
</tr>
<tr>
<td>Civic</td>
<td>100,000 s.f.</td>
<td>-</td>
</tr>
<tr>
<td>Residential – Multifamily</td>
<td>2,403,800 s.f. (2,828 D.U.)</td>
<td>-</td>
</tr>
<tr>
<td>Residential - Townhomes</td>
<td>237,600 s.f. (108 D.U.)</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: George Washington University Center for Real Estate and Urban Analysis, 2017; Zebra Ventures, LLC; Torti Gallas and Partners

Mixed-Use Alternative

The Mixed-Use Alternative consists of 4.1 million s.f. of development, 65 percent of which is dedicated to residential use. The remaining 35 percent consists of office, retail, hotel, movie theater, and civic uses. The residential portion consists of 2,828 multifamily dwelling units (D.U.) and 108 single-family attached townhome dwelling units. We assumed an average size of 805 s.f. for multifamily units, and 2,200 s.f. for townhomes.

We also assumed that the development will begin delivery in 2020, with delivery generally evenly-spaced over a 10-year period and completing in 2029.
Figure 2. Mixed-Use Alternative Split of Product Types

Source: George Washington University Center for Real Estate and Urban Analysis, 201; Zebra Ventures, LLC; Torti Gallas and Partners

Figure 3. Mixed-Use Alternative Project Delivery Timeline

Source: George Washington University Center for Real Estate and Urban Analysis, 2017
Data Center Alternative

The Data Center Alternative consists of 2,105,000 s.f. of data center specialty office use. We assumed that this development will begin delivering in 2020, with delivery generally evenly-spaced over an 8-year period and completing in 2027, two years faster than the Mixed-Use Alternative.

*Figure 4. Data Center Alternative Project Delivery Timeline*

![Data Center Alternative Project Delivery Timeline](image)

*Source: George Washington University Center for Real Estate and Urban Analysis, 2017*

Revenue Generation

We applied a real estate property tax rate of $1.125 per $100 of assessed value for all properties, consistent with Loudoun County property tax rates as of May 2017. Additionally, due to the proximity to a proposed heavy-rail transit station, we incorporated a special tax district assessment of $0.20 per $100 of assessed value, for a total tax rate of $1.325 per $100 of assessed value.

We then estimated the market value for the proposed developments. The following outlines the data sources for the value per square foot of each product type:

- **Retail**: $394 per s.f. based on CoStar™ retail data for the One Loudoun development, which served as a comparable retail development type.
- **Office**: $331 per s.f. based on CoStar office data for the One Loudoun development, which served as a comparable retail development type.
- **Movie Theater**: $224 per s.f. based on Loudoun County tax records for a comparable movie theater, the Alamo Drafthouse Cinema at One Loudoun, 20575 Easthampton Plaza.

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2 [https://www.loudoun.gov/taxes](https://www.loudoun.gov/taxes)
- **Hotel**: $160 per s.f. based on Loudoun County tax records for a comparable hotel, the SpringHill Suites by Marriot, Ashburn, 20065 Lakeview Center Plaza.

- **Multifamily and Townhomes**: $322 per s.f. based on CoStar data for a comparable development at Reston Town Center in Fairfax County. Additional data searches from Redfin indicated townhome sales in and around Reston Town Center ranging from $290 per s.f. to $500 per s.f. We used the more conservative estimate of $322 per s.f., which suggests a market price of $273,700 for an 800 s.f. multifamily unit, and $708,400 for a 2,200 single-family attached townhome.

- **Data Center**: $170 per s.f. based on CoStar data for data centers in Loudoun County.

**Table 2. Assumptions of Market Value per Square Foot by Product Type**

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Market Value per Square Foot (2017 $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail</td>
<td>$394.00</td>
</tr>
<tr>
<td>Office</td>
<td>$331.00</td>
</tr>
<tr>
<td>Movie Theater</td>
<td>$223.88</td>
</tr>
<tr>
<td>Hotel</td>
<td>$159.93</td>
</tr>
<tr>
<td>Residential – Multifamily</td>
<td>$321.80</td>
</tr>
<tr>
<td>Residential - Townhome</td>
<td>$321.80</td>
</tr>
<tr>
<td>Data Center</td>
<td>$170.00</td>
</tr>
</tbody>
</table>

*Source: George Washington University Center for Real Estate and Urban Analysis, 2017; CoStar™, Loudoun County Treasurer’s Office*

The Mixed-Use Alternative’s estimated property tax revenues range from $2.1 million in 2020 to $8.7 million (2017 $ PV) by 2040. By comparison, the Data Center Alternative’s estimated property tax revenues range from $542,000 in 2020 to $2.4 million by 2040.

As Figure 5 below illustrates, the estimated revenues are greater for the Mixed-Use Alternative from the onset. The rising and falling shape of the figure conveys the effects of the project delivery ramp up, and then the effects of the discount rate diminishing the time value of money in later years.
Over a 21-year period, we estimate that the property tax revenues from the Mixed-Use Alternative total $187.6 million (2017 PV $). By comparison, the Data Center Alternative property tax revenues total $54.6 million over the same period. Thus, before considering educational costs, the Mixed-Use Alternative would generate $133.0 million more property tax revenues to Loudoun County than the Data Center Alternative.

Table 3. Comparison of Estimated Property Tax Revenues, 2020-2040

<table>
<thead>
<tr>
<th></th>
<th>Total 21-Year Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017 Present Value $</td>
</tr>
<tr>
<td>Mixed-Use Alternative</td>
<td>$187,603,077</td>
</tr>
<tr>
<td>Data Center Alternative</td>
<td>$54,561,002</td>
</tr>
<tr>
<td>Difference</td>
<td>$133,042,075</td>
</tr>
</tbody>
</table>

Source: George Washington University Center for Real Estate and Urban Analysis, 2017
School Generation and Education Costs

Student Generation

To consider the net fiscal impacts of the alternatives, we considered the costs of providing school services to the school-age children living in the Mixed-Use Alternative’s residential units. While the previous section considered the property tax revenues, this section considers the costs of development with respect to education.

First, we identified an appropriate student generation rate, which is measured in the number of students per dwelling units. Multifamily units and mixed-use developments generally have fewer school-age children than other types of residential developments, and Loudoun County Public Schools (LCPS) outlines different student generation factors.³ We used the factors from the LCPS Silver Line Comprehensive Plan Amendment: 0.15 students per multifamily dwelling unit, and 0.50 students per townhome unit. These are lower student generation rates than the standard assumption for LCPS.

This is a conservative estimate, however, because they are still more than double that in Arlington County, Virginia, which can be considered a comparable area with mixed-use development. Thus, the LCPS Silver Line CPAM student generation factors we used are admittedly conservative; using more aggressive, lower student generation rates would lower the estimated costs of the Mixed-Use Alternative.

Table 4. Comparison of School Generation Rates

<table>
<thead>
<tr>
<th></th>
<th>LCPS Standard</th>
<th>LCPS Silver Line CPAM</th>
<th>Arlington County, VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multifamily</td>
<td>0.37</td>
<td>0.15</td>
<td>0.06</td>
</tr>
<tr>
<td>Townhomes</td>
<td>0.56</td>
<td>0.50</td>
<td>0.267</td>
</tr>
</tbody>
</table>

(Single Family Attached)

Source: Loudoun County Public Schools

Using the LCPS Silver Line CPAM student generation factors, we estimate that the number of LCPS students generated from the Mixed-Use Alternative ranges from 83 students in 2020 to 478 students by full build-out in 2029, and onward through 2040. This student generation applies exclusively to the Mixed-Use Alternative because the Data Center Alternative does not include any residential units.

³ https://www.loudoun.gov/DocumentCenter/View/126532
Figure 6. Cumulative Student Generation, Mixed-Use Alternative

Source: George Washington University Center for Real Estate and Urban Analysis, 2017

Student Education Costs

We used a cost of education of $17,421 annually per student. This is commensurate with LCPS data which reports $12,195, but only accounts for 70 percent of the total costs to educate a student. Thus, we inflate costs to $17,421 annually per student and use that figure. We also assume that these costs remain constant (in real 2017 dollar terms) over the 21-year period through 2040.

At this educational cost factor, the Mixed-Use Alternative’s annual costs range from $1.3 million (2017 $ PV) in 2020 to $4.2 million by 2040. The costs rise per year with the ramp-up of the project, and then diminish because of the discount rate (Figure 7).

Over the period from 2020 to 2040, these educational costs for the Mixed-Use Alternative total $92.4 million.
Net Fiscal Impacts

Our estimate of net fiscal impacts considers the property tax revenue estimates and subtracts the education costs, which exclusively occur in the Mixed-Use Alternative. For the Mixed-Use Alternative, while the tax revenues from 2020 to 2040 total $187.6 million (2017 PV $), the education costs totaled $92.4 million. Thus, the net fiscal impact of this alternative is $95.2 million.

Because the Data Center Alternative has no residential units, and therefore no school-age children, its net fiscal impacts are equal to its revenues of $54.6 million (2017 PV $).

We therefore estimate that the net fiscal impact of the Mixed-Use Alternative to Loudoun County is 1.8 times that of the Data Center Alternative. Both alternatives provide Loudoun County additional revenues relative to costs, but the Mixed-Use Alternative brings far more revenue on the count of the higher valuations for the proposed properties, as well as the intensity of the land use.

Table 5. Comparison of Net Fiscal Impact, 2020-2040

<table>
<thead>
<tr>
<th></th>
<th>Total 21-Year Net Fiscal Impact 2017 Present Value $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed-Use Alternative</td>
<td>$95,229,008</td>
</tr>
<tr>
<td>Data Center Alternative</td>
<td>$54,561,002</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td><strong>$40,668,006</strong></td>
</tr>
</tbody>
</table>

Source: George Washington University Center for Real Estate and Urban Analysis, 2017
Limitation of Analysis

We assessed the net fiscal impacts of two development alternatives based only on estimated property tax revenues, and the costs of educating children in the proposed residential units. However, there are many other fiscal revenues and costs that could be considered.

On the revenue side, a more expansive analysis may consider the sales tax impacts from the retail activity in the Mixed-Use Scenario, which would make that scenario’s revenues higher. Furthermore, the additional employment that the Mixed-Use Scenario would create would also lead to additional economic impacts from multiplier effects. By considering the multiplier-effects (indirect and induced) of retail activity and employment activity of each scenario, one would likely find greater net fiscal impacts for the Mixed-Use Alternative in comparison to the Data Center Alternative.

Secondly, we assumed that the students generated in the Mixed-Use Alternative would be “net new” to Loudoun County, and therefore a cost. In other words, none of the students would have been children that otherwise would have lived elsewhere in Loudoun County. However, it is highly likely that at least some of the students would have been a transfer cost: a shift of the cost of serving that student somewhere else in the county to the proposed Mixed-Use Alternative. While we did not consider this effect, further analysis would find lower education costs for this reason.

Finally, a broader analysis may consider the net fiscal impacts of development in the context of overall Loudoun County growth. Similar to the idea of students simply being shifted from one part of the county...
to another, new residential growth is likely to occur somewhere in Loudoun County. Either it will occur somewhere in existing housing stock, new housing stock in greenfields, infill, or in the Mixed-Use Alternative. From a cost of infrastructure services perspective, research shows\(^4\) that it costs governments less to absorb residential growth in slightly higher densities in comparison to traditional single-family detached units in greenfields. This is because as density increases, the costs of items like road, sewer, and water are distributed over more households; and infill development is further able to take advantage of existing infrastructure. A broader consideration of this sort would likely make the Mixed-Use Alternative even more favorable in comparison to the Data Center Alternative.

**Summary**

We examined two alternative developments for a proposed 230 acre site in Loudoun County: a 4.1 million s.f. Mixed-Use Alternative and a 2.1 million s.f. Data Center Alternative. Based on the estimated real estate values and taxes under each alternative, and student generation rates and education costs, we find that the Mixed-Use Alternative provides greater net fiscal impacts to Loudoun County over a 21-year period than the Data Center Alternative.

Even after considering the costs of educating students in the residential units, the Mixed-Use Alternative provides a net fiscal impact to Loudoun County of $95.2 million (2017 PV $) from 2020 to 2040. By contrast, the Data Center Alternative provides a net fiscal impact of only $54.6 million, even though the Data Center Alternative has no residential units and therefore no students to educate.

Thus, The Mixed-Use Alternative provides a net fiscal impact that is 1.8 times greater than that of the Data Center Alternative, and would generate an additional $40.7 million from 2020 to 2040.

**Table 6. Comparison of Net Fiscal Impact, 2020-2040**

<table>
<thead>
<tr>
<th>Total 21-Year Net Fiscal Impact 2017 Present Value $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed-Use Alternative</td>
</tr>
<tr>
<td>Data Center Alternative</td>
</tr>
<tr>
<td>Difference</td>
</tr>
</tbody>
</table>

*Source: George Washington University Center for Real Estate and Urban Analysis, 2017*

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Fiscal Impacts, Hypothetical 20 Acres Developed as Mixed-Use Medium and as Data Centers

On May 10, 2017, staff sent an e-mail to the Board of Supervisors highlighting differences between the fiscal impact analysis of the DuPont Fabros property performed by George Washington University, and the analysis staff has been providing as part of the Silver Line CPAM effort. One attachment to this e-mail was a comparison of impacts from data center uses versus mixed use development, developed by the Department of Planning and Zoning. Data on this attachment were provided for individual years, 2030 and 2040, along with a line graph (see the second page) showing trends every five years. Supervisor Higgins requested that data be provided cumulatively through 2040.

The table beginning on the third page shows cumulative development in five year increments, annual impacts, impacts grouped into five year periods, and cumulative impacts. Through 2040, development of a hypothetical 20 acre site as data centers provides less cumulative Metrorail Service Tax District revenue than development as mixed use. With respect to fiscal impact, data centers provide a greater positive fiscal impact cumulatively through 2040, although the annual Countywide fiscal impact from mixed use development is forecast to exceed that of data centers by 2035.

As an analysis of a hypothetical 20 acre site, the figures provided in this attachment are based on development occurring at this site, without taking into account whether the development otherwise would occur elsewhere instead. This approach reflects a difference between fiscal analyses that assess impacts at a larger scale versus those done at a project level. It is possible that results at the County or tax district level could be less than what is shown here.
Projected Break Even Mixed Use Development Verses Data Center by County and By District

20-Acre Comparison

- Mixed Use County
- Data Center County
- Mixed Use District
- Data Center District
Fiscal Impacts, Hypothetical 20 Acres Developed as Mixed-Use Medium and as Data Centers

Fiscal Impact and Metrorail Service Tax District Revenues

Based on the line graph included in the Department of Planning and Zoning's "Comparison of Data Center and Mixed Use Development," May 10, 2017.

Mixed-Use Medium is based on achieving all small multi-family units: 1.87 residents, 0.15 school-aged children per unit

in millions of constant 2016 $s

Cumulative Development

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed-Use Medium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office (SF)</td>
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<td>227,500</td>
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<td>Retail (SF)</td>
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<td>Multi-Family (units)</td>
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<td>282</td>
<td>447</td>
<td>612</td>
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<tr>
<td>Townhomes (units)</td>
<td>-</td>
<td>54</td>
<td>108</td>
<td>108</td>
<td>108</td>
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<tr>
<td>Data Centers</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Centers (SF)</td>
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<td>375,000</td>
<td>375,000</td>
<td>375,000</td>
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Annual Fiscal Impact and Metrorail Tax District Revenues

<table>
<thead>
<tr>
<th></th>
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<th>2025</th>
<th>2030</th>
<th>2035</th>
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<td>Data Centers</td>
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<td>Mixed-Use Medium</td>
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<tr>
<td>----------------------</td>
<td>-----------------------------------------------</td>
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<td></td>
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<tr>
<td></td>
<td>Metrorail Service Tax District Revenues</td>
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<td>$3.6</td>
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<tr>
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<td>Cumulative</td>
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<tr>
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<td><strong>Fiscal Impact</strong></td>
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<td></td>
<td><strong>Metrorail Service Tax District Revenues</strong></td>
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<td><strong>Fiscal Impact</strong></td>
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<td>$0.2</td>
<td>$0.9</td>
<td>$1.7</td>
<td>$2.4</td>
</tr>
</tbody>
</table>
DuPont Fabros Site: Development Forecasts

Staff evaluated the following three land use scenarios for the DuPont Fabros site.

1) Data Centers Only (both the west and east side of Loudoun County Parkway)
2) Mixed Use Only (both the west and east side of Loudoun County Parkway)
3) Mixed-Use on the west side of Loudoun County Parkway and data centers on the east side

Staff evaluated these scenarios using the proposed land use plan dated September 13, 2016 that DuPont Fabros representatives emailed the Department of Planning and Zoning. The DuPont Fabros land use plan had not been officially submitted to the County as an application as of June 6, 2017. The land use plan that the County received from DuPont is consistent with the information that George Washington University (GWU) received and used in their May 2017 reported entitled “The Net Fiscal Impacts of Development at Loudoun Metro”. The GWU report specified that if the site were all data center there would be 2,105,000 SF. A map of the DuPont Fabros site is found on the following page. The tables found below indicate the amount of residential housing units and non-residential square footage development that DuPont Fabros proposes by category. The tables also provide a crosswalk between DuPont Fabros’ development categories and Loudoun County’s forecasting categories.

<table>
<thead>
<tr>
<th>Category</th>
<th>Housing Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dupont Fabros/GWU</td>
<td>Loudoun Forecasting</td>
</tr>
<tr>
<td>Residential</td>
<td>Multi-Family (MF)</td>
</tr>
<tr>
<td>Residential Towns</td>
<td>Single-Family Attached (SFA)</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Category</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dupont Fabros/GWU</td>
<td>Loudoun Forecasting</td>
</tr>
<tr>
<td>Data Center</td>
<td>Data Center</td>
</tr>
<tr>
<td>Office</td>
<td>Office</td>
</tr>
<tr>
<td>Retail</td>
<td>Retail</td>
</tr>
<tr>
<td>Movie Theatre</td>
<td>Retail</td>
</tr>
<tr>
<td>Hotel</td>
<td>Other</td>
</tr>
<tr>
<td>Civic</td>
<td>Other</td>
</tr>
</tbody>
</table>

Development of the DuPont Fabros site is not expected to begin until 2020. The Silver Line Area Plan is tentatively expected to be adopted by the end of 2017, dependent on VDOT’s sign off. The rezoning and site plan process for the DuPont Fabros site is assumed to take two years.

Staff analysis indicates that the effects of competition would be strong if there is too much mixed use in the study area. The Silver Line Scenario Planning Study consultant’s believed this as well, and therefore, the number of mixed use communities was limited in their recommended land use scenario (Stantec, Loudoun County Land Use Scenario Planning Study, Consultant Recommended Development Scenario, December 18, 2015). Having an all mixed use scenario for DuPont would likely cause Moorefield Station
and the Loudoun Gateway Station area to lose out some due to competition. The following information is indicative of this phenomenon:

**Office:** The entire Silver Line Plan Area has 5.9 million sq. ft. forecasted between 2015 and 2040; this is a figure that staff previously presented to the Board of Supervisors (Board). In the all mixed use scenario (Scenario #2), DuPont would have a share of 8.5% of the study areas growth. In the mixed use west side and data center east side scenario (Scenario #3), DuPont would have a share of 4.1% of the study areas growth.

**Retail:** The entire Silver Line Plan Area has 1.9 million square feet forecasted between 2015 and 2040; this is also a figure that staff previously presented to the Board. In the all mixed use scenario (Scenario #2), DuPont would have a share of 25% of the study area’s growth. In the mixed use west side and data center east side scenario (Scenario #3), DuPont would have a share of 18% of the study areas growth.

Following are the forecast assumptions and figures for the three scenarios. Scenarios 2 and 3 include low, intermediate, and high forecasts. The uncertainty of the pace of development called for a need to have forecast ranges for Scenarios 2 and 3.
**Development Forecast Assumptions**

The following tables includes background information and assumptions that staff used to devise the forecasts.

**Residential Development**

<table>
<thead>
<tr>
<th>Development Type</th>
<th>Background and Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family Attached (SFA)</td>
<td>Given the Countywide shortage of supply for SFA and the market demand outpacing supply, all of the SFA units allowed in the entire Silver Line Area are expected to be absorbed by 2030, including the 108 SFA proposed at the DuPont Fabros site.</td>
</tr>
<tr>
<td>Multi-Family (MF)</td>
<td>The residential market demand for MF in the entire Silver Line Area is forecasted to be 10,614 new units by 2040; staff has presented this to the Board previously. If the east (680 MF units) and west side (2,148 MF units) of DuPont Fabros were developed with residential as proposed, all other developer proposals developed as proposed, and all approved projects built as approved, there would be 4,071 MF units remaining to be built in the Silver Line Area after 2040. Out of the 4,071 MF units, 1,483 units would be associated with entitled or developer proposed projects, and the other units would be redevelopment. After 2040 Waterside is the only approved project outside the Silver Line area that is expected to have remaining MF development. Waterside's residential development is forecasted to have less than 1,000 units remaining to be built after 2040 and to be built out by 2045. The County is expected to absorb 1,100 MF per year from 2030 to 2050 based on demand. Therefore, all entitled or developer proposals in the County would be developed by 2050. For comparison, since the Silver Line commenced operations at Wiehle-Reston East in 2014, there have been 865 MF units developed at or adjacent to the station. The Mosaic District in Fairfax County began developing in 2010 and has developed 782 MF in a seven year period, and there are 314 remaining to be built.</td>
</tr>
</tbody>
</table>
## Non-Residential Development

<table>
<thead>
<tr>
<th>Development Type</th>
<th>Background and Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data Center</strong></td>
<td>The County issued building permits for 2.1 million square feet of data centers in 2016. This is the most the County has issued in one year. An update to the Fiscal Impact Committee Guidelines is underway. The committee examined updates to development forecasts in the fall of 2016. Data center plans in the pipeline and the Department of Economic Development’s knowledge of individual project timelines resulted in a Countywide forecast of 8.3 million square feet (SF) of data centers being delivered between 2015 and 2020. A drop to 5.1 million SF was expected to occur between 2020 and 2030; this was, mainly due to land supply constraints, but also possible water and power supply constraints. The demand outpaces the supply. Based on the Countywide supply and demand for data centers, staff is confident DuPont Fabros's proposed 2.1 million SF of data centers would likely be built out by 2030. Therefore, no low or high scenario is necessary for the data center scenario.</td>
</tr>
<tr>
<td><strong>Retail</strong></td>
<td>DuPont Fabros proposes 476,175 SF of retail, which includes a movie theatre. The proposal calls for 341,475 SF on the west side and 135,000 SF on the east side. For the retail forecasts for all scenarios, staff used the ratio of housing units to retail square feet as a starting point and then staff adjusted those numbers as deemed a reasonable amount of change in a ten year period. For comparison, One Loudoun developed 316,000 SF of retail in 4 years. The retail market in Loudoun is quite saturated and given the competition from other Silver Line area developments, the DuPont Property's pace of development is forecasted to grow slower than One Loudoun.</td>
</tr>
<tr>
<td><strong>Office</strong></td>
<td>DuPont Fabros proposes 720,000 SF of office. The proposal calls for 240,000 SF on the west side and 480,000 SF on the east side. Between today and 2030 much of the office development in the Silver Line area is expected to develop at Loudoun Station and Gramercy District, as well as at Moorefield Station. The market can absorb only so much at any time. Therefore, the pace of development for the DuPont site is expected to be less than both One Loudoun and the Wiehle-Reston East Metrorail area. One Loudoun developed 215,000 SF of office in 4 years. The Silver Line commenced operations at Wiehle-Reston East in 2014, and since then the area has developed 365,000 SF of office. The amount of data center square footage that could fit on the east side for Scenario 3 was estimated based upon the proportion of the entire site's acreage that was on the east side.</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>DuPont Fabros proposes 256,250 SF of “other” space. The “other” category includes schools, civic space, and hotels. The developer is proposing a 100,000 SF school on the east side and 2 hotel buildings on the west side which together would total 156,250 SF.</td>
</tr>
</tbody>
</table>
Forecasts by Scenario

**Scenario 1 - All Data Centers**

<table>
<thead>
<tr>
<th>Data Centers</th>
<th>Forecasted Cumulative Total Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2030</td>
</tr>
<tr>
<td>Total</td>
<td>2,105,000</td>
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</table>

**Scenario 2 - All Mixed Use**

**Low**

<table>
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<tr>
<th>Residential Type</th>
<th>Forecasted Cumulative Total Units</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2030</td>
</tr>
<tr>
<td>SFA</td>
<td>108</td>
</tr>
<tr>
<td>MF</td>
<td>1,000</td>
</tr>
<tr>
<td>Total</td>
<td>1,108</td>
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<table>
<thead>
<tr>
<th>Non-Residential Type</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2030</td>
</tr>
<tr>
<td>Office</td>
<td>150,000</td>
</tr>
<tr>
<td>Retail</td>
<td>180,000</td>
</tr>
<tr>
<td>Other</td>
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<tr>
<td>Total</td>
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**Intermediate**

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</thead>
<tbody>
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<td>2030</td>
</tr>
<tr>
<td>SFA</td>
<td>108</td>
</tr>
<tr>
<td>MF</td>
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<table>
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<th>Non-Residential Type</th>
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</thead>
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</tr>
<tr>
<td>Office</td>
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### High

<table>
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<td>2030</td>
</tr>
<tr>
<td>SFA</td>
<td>108</td>
</tr>
<tr>
<td>MF</td>
<td>1,900</td>
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<table>
<thead>
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<td></td>
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</tr>
<tr>
<td>Office</td>
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<td>Retail</td>
<td>330,000</td>
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<tr>
<td>Other</td>
<td>256,250</td>
</tr>
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<td>Total</td>
<td>986,250</td>
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</table>

### Scenario 3 - Mixed Use West Side and Data Center East Side

### Low

<table>
<thead>
<tr>
<th>Residential Type</th>
<th>Forecasted Cumulative Total Units</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>2030</td>
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<tr>
<td>SFA</td>
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<tr>
<td>MF</td>
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<td>Total</td>
<td>1,108</td>
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<table>
<thead>
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<th>Forecasted Cumulative Total Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2030</td>
</tr>
<tr>
<td>Data Center</td>
<td>971,027</td>
</tr>
<tr>
<td>Office</td>
<td>100,000</td>
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<tr>
<td>Retail</td>
<td>170,000</td>
</tr>
<tr>
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## Intermediate

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<td>108</td>
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</tr>
<tr>
<td>MF</td>
<td></td>
<td>1,300</td>
<td>2,148</td>
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<td></td>
<td>1,408</td>
<td>2,256</td>
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<table>
<thead>
<tr>
<th>Non-Residential Type</th>
<th>Forecasted Cumulative Total Square Feet</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Center</td>
<td></td>
<td>971,027</td>
<td>971,027</td>
<td>971,027</td>
</tr>
<tr>
<td>Office</td>
<td></td>
<td>150,000</td>
<td>240,000</td>
<td>240,000</td>
</tr>
<tr>
<td>Retail</td>
<td></td>
<td>210,000</td>
<td>341,175</td>
<td>341,175</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>180,000</td>
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<tr>
<td>Total</td>
<td></td>
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<td>1,808,452</td>
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## High

<table>
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<tr>
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<th>2030</th>
<th>2040</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFA</td>
<td></td>
<td>108</td>
<td>108</td>
<td>108</td>
</tr>
<tr>
<td>MF</td>
<td></td>
<td>1,900</td>
<td>2,148</td>
<td>2,148</td>
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<tr>
<td>Total</td>
<td></td>
<td>2,008</td>
<td>2,256</td>
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<table>
<thead>
<tr>
<th>Non-Residential Type</th>
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<th>2040</th>
<th>2050</th>
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<tbody>
<tr>
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<td>971,027</td>
<td>971,027</td>
</tr>
<tr>
<td>Office</td>
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<td>200,000</td>
<td>240,000</td>
<td>240,000</td>
</tr>
<tr>
<td>Retail</td>
<td></td>
<td>300,000</td>
<td>341,175</td>
<td>341,175</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>256,250</td>
<td>256,250</td>
<td>256,250</td>
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<tr>
<td>Total</td>
<td></td>
<td>1,727,277</td>
<td>1,808,452</td>
<td>1,808,452</td>
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</tbody>
</table>
Fiscal Impacts, Different Scenarios for the DuPont Fabros Site

Background

This site is located on either side of Loudoun County Parkway, as shown on the map on the third page. The applicant’s proposal for this site is called “Loudoun Metro.”

On May 10, 2017, the Board of Supervisors received an e-mail highlighting differences between the May 2017 fiscal impact analysis of this site performed by George Washington University, “The Net Fiscal Impacts of Development at Loudoun Metro,” and the analysis staff has been providing as part of the Silver Line CPAM effort. The George Washington University report compared two alternatives: development as mixed-use and development as data centers. The report was a high-level, general study, focusing only on real property revenues (to the General Fund and the Metrorail Service Tax District combined) as compared to school-related expenditures.

Following the May 10, 2017 public hearing, Supervisor Buffington requested that staff provide information on how much tax revenue would be generated at this site if it were developed as data centers and how much if it were developed mixed use with residential. Projections were requested for 2030, 2040, and 2050.

Metrorail Tax Districts

Three Metrorail tax districts (see the map on the next page) were adopted by the Board in December 2012 to fund the capital and operating costs of the Silver Line extension into Loudoun County. Each district can have a maximum special levy (in addition to the general real property tax levy) of $0.20 per $100 of assessed value. These taxes are on real property only.

A special levy of $0.20 has been in effect for the large Metrorail Service Tax District, which encompasses the two Metrorail station service districts plus some additional areas, since January 1, 2013. The primary purpose is to service the debt incurred by the County to fund its portion of the cost of constructing the Metrorail extension into Loudoun. Payments are expected to be complete by the early 2040s.

In addition, revenues from the two Station Service districts will be one source of support for ongoing payments to the Washington Metropolitan Area Transit Authority (WMATA) for providing Metrorail service to Loudoun. These two districts also can have a special levy of up to $0.20 on real property, although no levy is in effect at this time (i.e., the tax rates for both districts are $0.00). A portion of the site (27.7 acres) is within one of these districts, the Rt. 772 Station Service District. The map on the third page of this attachment provides a close up view of the site and tax districts. The map on the fourth page shows the Planning Commission’s Recommended Plan for the plan area overall along with the tax district boundaries.
Development Scenarios

Staff has provided forecasts of growth at this site under a variety of scenarios, as explained in a previous attachment. Fiscal impacts for each scenario were calculated, as described below.

There are differences in the categories of development shown for the mixed-use scenario in the George Washington University report and those used for these fiscal calculations:

- The 45,000 square feet listed for a movie theater is modeled as retail in these calculations.
- The 100,000 square feet of civic space is not included in these calculations, since while the applicant may choose to offer this as part of development negotiations, the fiscal modeling already incorporates the assumption that County capital costs resulting from this development would be mitigated through proffer contributions.
- County staff’s forecasts of growth combine both the civic space and hotel space into the “Other” category. Only hotel space (totaling 156,250 square feet upon project completion) is shown here.
County Fiscal Impact Analysis Method

To support the development of the Silver Line Comprehensive Plan Amendment, staff has provided two different types of resources during the plan development process:

- A report which has been updated periodically based on changes in the proposed land use plan: *Potential Fiscal Impacts of the Land Use Changes Proposed in the Silver Line Plan*. This report includes sensitivity tests, showing potential ranges for results.

- A summary sheet, “Illustrative Fiscal Impacts,” which summarizes fiscal impacts for each land use. This simplified view provides impacts at more than one point in time, and enables the user to calculate for themselves the impacts based on different development scenarios. Since the data in this summary focuses on the impacts of new development only, it does not take into account an additional positive increase if other residential units switch to having smaller household sizes and pupil generation rates (per Scenario 1 in the *Potential Fiscal Impacts* report).

The calculations in this attachment are provided on Illustrative Fiscal Impact summary sheets for each development scenario. The fiscal results cover two different measures, each calculated for a given year (i.e., annual figures):

- **Fiscal Impact** – the net of revenues minus operating and capital expenditures for development at this site.

- **Revenues to the Metrorail Service Tax District** – based on a special levy of $0.20 per $100 on real property assessed values for this district, the large district established to help fund Metrorail construction costs until the early 2040s. This is the maximum tax rate allowed and the rate currently in effect.

*Calculations of Fiscal Impact*. Calculations reflect both the operating and capital costs of development at this site. In calculating capital costs, the assumption that almost all of these costs will be offset by developer contributions (proffers) has been made.

Calculations also incorporate the revenues accruing to the General Fund, including real property, personal property, and sales tax. In the case of hotels, the 2% unrestricted Transient Occupancy Tax, which accrues to the General Fund, is also included.

Most of the uses shown on the Illustrative Fiscal Impact summary sheets also were modeled for the *Potential Fiscal Impacts* report. The attachments to that report include the fiscal assumptions (inputs) developed for those uses. Two uses are exceptions: data centers, which draw from assumptions included in the Loudoun County’s *2015 Fiscal Impact Committee Guidelines*, and hotels. Assumptions developed for hotels are included as the last page of this attachment.

Fiscal impact results depend in part from the mix of commercial and residential uses over time. While the fiscal impact is positive for all seven scenarios, if residential development precedes...
commercial development, fiscal results could be fiscally negative until commercial development occurs.

Calculations of Metrorail Service Tax District Revenues. Calculations assume a $0.20 tax rate throughout the period, although if revenues are sufficient, the Board of Supervisors may choose to lower the tax rate. Given that this debt service will be paid off prior to 2050, Metrorail Service Tax District revenues are shown as $0 in 2050 for all scenarios.

Calculations do not include any revenues that could accrue to the Rt. 772 Station Service District from the 27.7 acre portion of the site within this district. This tax is not levied at this time. The Board of Supervisors will determine when it will be levied and at what tax rate (up to $0.20 per $100 of real property assessed value) in the future.

Real property assessed value assumptions for these calculations are the same as used for the calculation of fiscal impact.

Project-Level Fiscal Impact Analysis: Differences Compared to Taking a County-wide View

The analysis staff has provided to support the development of the Silver Line Comprehensive Plan Amendment has largely focused on the impact of the net difference in development, if the plan is adopted versus under the current plan and entitlements. Calculations have been based on the additional amount of development that could occur, rather than the total amount of development.

In most other documents (the exception being analysis of development of a hypothetical 20 acre site), this analysis has reflected:

- Fiscal impact (also known as Fiscal Balance) – based on the difference in development for the County as a whole. Using this approach, the impact of land use changes in this area on the County’s overall revenues and expenditures can be clearly identified. Any shifts in development from outside to inside the plan area that would not change the overall fiscal balance of the County are excluded.

- Metrorail service tax district revenues – based on the difference in development within the tax district, which also can reflect the relocation of development that would have occurred elsewhere in the County without the plan to the tax district.

As a project-level fiscal analysis, figures provided in this attachment are based on development occurring at this site, without taking into account whether the development otherwise could occur elsewhere instead. This approach reflects a difference between fiscal analyses that assess impacts at a larger scale versus those done at a project level. It is possible that results at the County or tax district level could be less than what is shown here.

For these reasons, these results are not comparable to the results shown in the Potential Fiscal Impacts Report, which describes the impact of increased development under the Planning
Commission’s Recommended Plan compared to development without adoption of this plan. The analysis for the response to this question is based on all development that occurs at the site.

Results

Fiscal impacts

The fiscal impact is highest if the entire site is developed as data centers. For data centers, this impact is forecast to be $25 M by 2030 once data center development is complete, and then continuing at that level. Development with the area west of Loudoun County Parkway as mixed-use and the area to the east as data centers is forecast to achieve a positive $12 - $15 M annually. Development as mixed-use on both sides of Loudoun County Parkway is forecast to achieve $1 - $7 M annually. Forecasts for scenarios including mixed-use increase over time, these ranges represent the lowest 2030 to the highest 2050 values.

The fiscal impacts shown in this analysis do not adjust for 1) the development that would have occurred in this area without adoption of the plan and 2) any redistribution from development that would have occurred elsewhere, both of which would lower the positive fiscal impact to the County from a planned land use change at this site.

Metrorail tax district revenues

Scenarios for both entirely mixed-use development and for mixed use development to the west of Loudoun County Parkway and data centers to the east of Loudoun County Parkway provide greater Metrorail Service Tax District revenues by 2040 than the data center scenario ($1.1 - $1.7 M versus $0.8 M annually). Most of these scenarios also provide greater tax district revenues by 2030 than the data center scenario. The only exception is the mixed-use only, low scenario, which is forecasted to produce $0.6 M in tax district revenues in 2030 as compared to $0.8 M for data centers.

By 2050, all scenarios show Metrorail Service Tax District revenues of $0. The debt service funded through these receipts is projected to be paid by the early 2040s, so by 2050 this Tax District will no longer be active.

The westernmost portion of this site (27.7 acres) is within the Rt. 772 Station Service District, and thus would help generate revenues for ongoing Washington Metropolitan Area Transit Authority (WMATA) payments. This station service district currently is not levied (i.e., it has a tax rate of $0.00) and a revenue forecast for this district has not been included in this analysis.

The tax district revenues shown in this analysis do not adjust for any redistribution from development that would have occurred elsewhere in the tax district, both of which would lower the actual increase in tax revenues from a planned land use change at this site.
Illustrative Fiscal Impacts, Dupont Fabros Site: developed as data centers

Using Results per 1,000 Units/100K SF to Calculate Fiscal Scenarios
in millions of constant 2016 $

### Annual Results per 1,000 units or 100K SF

<table>
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<tr>
<th></th>
<th>Fiscal Impact</th>
<th>Metrorail Service Tax District Revenues</th>
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</thead>
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<tr>
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<td>0.03</td>
</tr>
<tr>
<td>Retail 100,000 SF</td>
<td>0.7</td>
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</tr>
<tr>
<td>Data Center 100,000 SF</td>
<td>1.2</td>
<td>0.04</td>
</tr>
<tr>
<td>Hotel 100,000 SF</td>
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<td>0.02</td>
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<tr>
<td>Multi-family (small) 1,000 units</td>
<td>-0.1</td>
<td>0.41</td>
</tr>
<tr>
<td>Multi-family (average) 1,000 units</td>
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</tr>
<tr>
<td>Townhomes 1,000 units</td>
<td>-1.9</td>
<td>0.84</td>
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### Illustration:
Data center development assumed to occur by 2030.
All development assumed to occur within the Metrorail Service Tax District. This debt service will be paid off prior to 2050

<table>
<thead>
<tr>
<th>Annual Impacts in 2030</th>
<th>Annual Impacts in 2040</th>
<th>Annual Impacts in 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Center 2,105,000 SF</td>
<td>25.3 0.8</td>
<td>2,105,000 SF</td>
</tr>
</tbody>
</table>

### Notes:
1) Assumptions regarding development levels provided by the Loudoun County Department of Planning and Zoning, June 1, 2017.

2) Assumptions underlying County fiscal impact and Metrorail Service Tax District revenue for office and residential uses reflect those used in the "Potential Fiscal Impacts of the Land Use Changes Proposed in the Silver Line Plan" report as of April 28, 2017. For data centers, assessed value and square feet per employee were drawn from the "2015 Fiscal Impact Committee Guidelines." For hotels, assessed value and square feet per room were developed based on comparables, revenues per room were drawn from STR Global data, and assumptions about the number of employees per room and incidental expenditures per room where drawn from the 2012 RCLCO report. Other revenue and expenditure assumptions are drawn from the assumptions used in the Potential Fiscal Impacts report.

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4) Due to rounding, totals may not equal the sums of components.
Illustrative Fiscal Impacts, Dupont Fabros Site: developed as mixed use

Intermediate Scenario

Using Results per 1,000 Units/100K SF to Calculate Fiscal Scenarios

_in millions of constant 2016 $s_

<table>
<thead>
<tr>
<th>Fiscal Impact</th>
<th>Metrorail Service Tax District Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office 100,000 SF</td>
<td>0.5</td>
</tr>
<tr>
<td>Retail 100,000 SF</td>
<td>0.7</td>
</tr>
<tr>
<td>Data Center 100,000 SF</td>
<td>1.2</td>
</tr>
<tr>
<td>Hotel 100,000 SF</td>
<td>0.3</td>
</tr>
<tr>
<td>Multi-family (small) 1,000 units</td>
<td>-0.1</td>
</tr>
<tr>
<td>Multi-family (average) 1,000 units</td>
<td>-0.9</td>
</tr>
<tr>
<td>Townhomes 1,000 units</td>
<td>-1.9</td>
</tr>
</tbody>
</table>

Illustration:
Townhomes assumed to arrive over 10 years finishing by 2030.
All development assumed to occur within the Metrorail Service Tax District. This debt service will be paid off prior to 2050.

<table>
<thead>
<tr>
<th>Annual Impacts in 2030</th>
<th>Annual Impacts in 2040</th>
<th>Annual Impacts in 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiscal Impact ($M)</td>
<td>Tax District Revenues ($M)</td>
<td>Fiscal Impact ($M)</td>
</tr>
<tr>
<td>Office 250,000 SF</td>
<td>1.3</td>
<td>0.1</td>
</tr>
<tr>
<td>Retail 250,000 SF</td>
<td>1.8</td>
<td>0.1</td>
</tr>
<tr>
<td>Data Center - SF</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Hotel 80,000 SF</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Multi-family (small) 1,300 units</td>
<td>-0.1</td>
<td>0.5</td>
</tr>
<tr>
<td>Townhomes 108 units</td>
<td>-0.2</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Scenario 1: assuming small MF units (1.87 residents and 0.15 school-aged children per unit)
### Annual Impacts in 2030

| Scenario 2: assuming average MF units (1.97 residents and 0.23 school-aged children per unit) |
|---|---|---|---|---|---|---|
| Office | 250,000 SF | 1.3 | 0.1 | 500,000 SF | 2.5 | 0.2 | 720,000 SF | 3.6 | 0.0 |
| Retail | 250,000 SF | 1.8 | 0.1 | 476,175 SF | 3.3 | 0.2 | 476,175 SF | 3.3 | 0.0 |
| Data Center | - SF | 0.0 | 0.0 | - SF | 0 | 0.0 | - SF | 0 | 0.0 |
| Hotel | 80,000 SF | 0.2 | 0.0 | 156,250 SF | 0.5 | 0.0 | 156,250 SF | 0.5 | 0.0 |
| Multi-family (average) | 1,300 units | -1.2 | 0.5 | 2,600 units | -2.3 | 1.1 | 2,828 units | -2.5 | 0.0 |
| Townhomes | 108 units | -0.2 | 0.1 | 108 units | -0.2 | 0.1 | 108 units | -0.2 | 0.0 |
| **Total** | | 1.9 | 0.8 | | | 3.8 | 1.5 | | 4.7 | 0.0 |

**Notes:**

1) Assumptions regarding development levels provided by the Loudoun County Department of Planning and Zoning, June 1, 2017.

2) Assumptions underlying County fiscal impact and Metrorail Service Tax District revenue for office and residential uses reflect those used in the "Potential Fiscal Impacts of the Land Use Changes Proposed in the Silver Line Plan" report as of April 28, 2017. For data centers, assessed value and square feet per employee were drawn from the "2015 Fiscal Impact Committee Guidelines." For hotels, assessed value and square feet per room were developed based on comparables, revenues per room were drawn from STR Global data, and assumptions about the number of employees per room and incidental expenditures per room where drawn from the 2012 RCLCO report. Other revenue and expenditure assumptions are drawn from the assumptions used in the Potential Fiscal Impacts report.

3) County fiscal impacts for data centers reflect the assumption that 60% of computer equipment personal property revenue can be attributed to this use, based on an analysis provided to Loudoun County's Finance/Government Services and Operations Committee in September 2013. This share may have grown over time. An increased share could result in a more positive fiscal impact. For example, if 75% is assumed to be the share, the County fiscal impact per 100K SF would increase to $1.4 M. Tax district revenues are unaffected.

4) Due to rounding, totals may not equal the sums of components.
## Illustrative Fiscal Impacts, Dupont Fabros Site: developed as mixed use

**Low Scenario**

Using Results per 1,000 Units/100K SF to Calculate Fiscal Scenarios

*in millions of constant 2016 $s*

### Annual Results per 1,000 units or 100K SF

<table>
<thead>
<tr>
<th>Fiscal Impact</th>
<th>Office 100,000 SF</th>
<th>Retail 100,000 SF</th>
<th>Data Center 100,000 SF</th>
<th>Hotel 100,000 SF</th>
<th>Multi-family (small) 1,000 units</th>
<th>Multi-family (average) 1,000 units</th>
<th>Townhomes 1,000 units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiscal Impact</td>
<td>0.5</td>
<td>0.7</td>
<td>1.2</td>
<td>0.3</td>
<td>-0.1</td>
<td>-0.9</td>
<td>-1.9</td>
</tr>
<tr>
<td>Tax District Revenues</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>0.02</td>
<td>0.41</td>
<td>0.41</td>
<td>0.84</td>
</tr>
</tbody>
</table>

**Illustration:**

Townhomes assumed to arrive over 10 years finishing by 2030.

All development assumed to occur within the Metrorail Service Tax District. This debt service will be paid off prior to 2050.

| Scenario 1: assuming small MF units (1.87 residents and 0.15 school-aged children per unit) |
|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| **Annual Impacts in 2030**                       | **Annual Impacts in 2040**                       | **Annual Impacts in 2050**                       |
| Fiscal Impact ($M)                               | Tax District Revenues ($M)                       | Fiscal Impact ($M)                               |
| Office 150,000 SF                               | 0.8                                              | 1.5                                              |
| Retail 180,000 SF                               | 1.3                                              | 2.3                                              |
| Data Center - SF                                | 0.0                                              | 0.0                                              |
| Hotel - SF                                      | 0.0                                              | 0.0                                              |
| Multi-family (small) 1,000 units                 | -0.1                                             | -0.2                                             |
| Townhomes 108 units                             | -0.2                                             | -0.2                                             |
| **Total**                                       | **Total**                                       | **Total**                                       |
| Annual Impacts in 2030                          | Annual Impacts in 2040                          | Annual Impacts in 2050                          |
| Office 450,000 SF                               | 450,000 SF                                      | 2.3                                              |
| Retail 476,175 SF                               | 476,175 SF                                      | 3.3                                              |
| Data Center - SF                                | - SF                                            | 2,828 units                                     |
| Hotel 156,250 SF                                | 156,250 SF                                      | 0.5                                              |
| Multi-family (small) 1,000 units                 | 2,828 units                                     | -0.3                                             |
| Townhomes 108 units                             | 108 units                                       | -0.2                                             |
| **Total**                                       | **Total**                                       | **Total**                                       |
| Fiscal Impact ($M)                               | Tax District Revenues ($M)                       | Fiscal Impact ($M)                               |
| Office 1.7                                      | 6.0                                              | 5.6                                              |
| Retail 3.6                                      | 1.1                                              | 0.0                                              |
### Annual Impacts in 2030

#### Scenario 2: assuming average MF units (1.97 residents and 0.23 school-aged children per unit)

<table>
<thead>
<tr>
<th></th>
<th>Office</th>
<th>Retail</th>
<th>Data Center</th>
<th>Hotel</th>
<th>Multi-family (average)</th>
<th>Townhomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF</td>
<td>150,000</td>
<td>180,000</td>
<td>-</td>
<td>-</td>
<td>1,000</td>
<td>108</td>
</tr>
<tr>
<td>Residents</td>
<td>0.8</td>
<td>1.3</td>
<td>0.0</td>
<td>0.0</td>
<td>-0.9</td>
<td>-0.2</td>
</tr>
<tr>
<td>School-aged children per unit</td>
<td>0.0</td>
<td>0.1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.4</td>
<td>0.1</td>
</tr>
<tr>
<td>SF per unit</td>
<td>300,000</td>
<td>325,000</td>
<td>-</td>
<td>80,000</td>
<td>2,000</td>
<td>108</td>
</tr>
<tr>
<td>Residents per unit</td>
<td>1.5</td>
<td>2.3</td>
<td>-1.8</td>
<td>0.2</td>
<td>-0.2</td>
<td>-0.2</td>
</tr>
<tr>
<td>School-aged children per unit per unit</td>
<td>0.1</td>
<td>0.1</td>
<td>0.8</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>SF per 100K SF</td>
<td>1.5</td>
<td>2.3</td>
<td>-1.8</td>
<td>0.2</td>
<td>-0.2</td>
<td>-0.2</td>
</tr>
<tr>
<td>SF per unit</td>
<td>450,000</td>
<td>476,175</td>
<td>-</td>
<td>156,250</td>
<td>2,828</td>
<td>108</td>
</tr>
<tr>
<td>Revenue per unit</td>
<td>0.1</td>
<td>0.1</td>
<td>0.8</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>SF per 100K SF</td>
<td>2.3</td>
<td>3.3</td>
<td>-2.5</td>
<td>0.5</td>
<td>-0.2</td>
<td>-0.2</td>
</tr>
<tr>
<td>SF per unit</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

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**Illustrative Fiscal Impacts, Dupont Fabros Site: developed as mixed use**

**High Scenario**

Using Results per 1,000 Units/100K SF to Calculate Fiscal Scenarios

in millions of constant 2016 $s

<table>
<thead>
<tr>
<th>Office</th>
<th>100,000 SF</th>
<th>0.5</th>
<th>0.03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail</td>
<td>100,000 SF</td>
<td>0.7</td>
<td>0.04</td>
</tr>
<tr>
<td>Data Center</td>
<td>100,000 SF</td>
<td>1.2</td>
<td>0.04</td>
</tr>
<tr>
<td>Hotel</td>
<td>100,000 SF</td>
<td>0.3</td>
<td>0.02</td>
</tr>
<tr>
<td>Multi-family (small)</td>
<td>1,000 units</td>
<td>-0.1</td>
<td>0.41</td>
</tr>
<tr>
<td>Multi-family (average)</td>
<td>1,000 units</td>
<td>-0.9</td>
<td>0.41</td>
</tr>
<tr>
<td>Townhomes</td>
<td>1,000 units</td>
<td>-1.9</td>
<td>0.84</td>
</tr>
</tbody>
</table>

**Scenario 1: assuming small MF units (1.87 residents and 0.15 school-aged children per unit)**

<table>
<thead>
<tr>
<th>Office</th>
<th>400,000 SF</th>
<th>2.0</th>
<th>0.1</th>
<th>720,000 SF</th>
<th>3.6</th>
<th>0.2</th>
<th>720,000 SF</th>
<th>3.6</th>
<th>0.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail</td>
<td>330,000 SF</td>
<td>2.3</td>
<td>0.1</td>
<td>476,175 SF</td>
<td>3.3</td>
<td>0.2</td>
<td>476,175 SF</td>
<td>3.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Data Center</td>
<td>- SF</td>
<td>0.0</td>
<td>0.0</td>
<td>- SF</td>
<td>0.0</td>
<td>0.0</td>
<td>- SF</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Hotel</td>
<td>156,250 SF</td>
<td>0.5</td>
<td>0.0</td>
<td>156,250 SF</td>
<td>0.5</td>
<td>0.0</td>
<td>156,250 SF</td>
<td>0.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Multi-family (small)</td>
<td>1,900 units</td>
<td>-0.2</td>
<td>0.8</td>
<td>2,828 units</td>
<td>-0.3</td>
<td>1.2</td>
<td>2,828 units</td>
<td>-0.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Townhomes</td>
<td>108 units</td>
<td>-0.2</td>
<td>0.1</td>
<td>108 units</td>
<td>-0.2</td>
<td>0.1</td>
<td>108 units</td>
<td>-0.2</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Illustration: Townhomes assumed to arrive over 10 years finishing by 2030.

All development assumed to occur within the Metrorail Service Tax District. This debt service will be paid off prior to 2050.
<table>
<thead>
<tr>
<th></th>
<th>Annual Impacts in 2030</th>
<th>Annual Impacts in 2040</th>
<th>Annual Impacts in 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Office</strong></td>
<td>400,000 SF</td>
<td>720,000 SF</td>
<td>720,000 SF</td>
</tr>
<tr>
<td></td>
<td>2.0</td>
<td>3.6</td>
<td>3.6</td>
</tr>
<tr>
<td></td>
<td>0.1</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Retail</strong></td>
<td>330,000 SF</td>
<td>476,175 SF</td>
<td>476,175 SF</td>
</tr>
<tr>
<td></td>
<td>2.3</td>
<td>3.3</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>0.1</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Data Center</strong></td>
<td>- SF</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Hotel</strong></td>
<td>156,250 SF</td>
<td>156,250 SF</td>
<td>156,250 SF</td>
</tr>
<tr>
<td></td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Multi-family (average)</strong></td>
<td>1,900 units</td>
<td>2,828 units</td>
<td>2,828 units</td>
</tr>
<tr>
<td></td>
<td>-1.7</td>
<td>-2.5</td>
<td>-2.5</td>
</tr>
<tr>
<td></td>
<td>0.8</td>
<td>1.2</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Townhomes</strong></td>
<td>108 units</td>
<td>108 units</td>
<td>108 units</td>
</tr>
<tr>
<td></td>
<td>-0.2</td>
<td>-0.2</td>
<td>-0.2</td>
</tr>
<tr>
<td></td>
<td>0.1</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>2.9</td>
<td>4.7</td>
<td>4.7</td>
</tr>
<tr>
<td></td>
<td>1.2</td>
<td>1.7</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Scenario 2: assuming average MF units [1.97 residents and 0.23 school-aged children per unit]**

Notes:

1) Assumptions regarding development levels provided by the Loudoun County Department of Planning and Zoning, June 1, 2017.

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4) Due to rounding, totals may not equal the sums of components.
Illustrative Fiscal Impacts, Dupont Fabros Site: west side mixed use, east side data centers

**Intermediate Scenario**

Using Results per 1,000 Units/100K SF to Calculate Fiscal Scenarios

*in millions of constant 2016 $s*

<table>
<thead>
<tr>
<th>Fiscal Impact</th>
<th>Annual Results per 1,000 units or 100K SF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Metrorail Service Tax District Revenues</td>
</tr>
<tr>
<td>Office</td>
<td>100,000 SF</td>
</tr>
<tr>
<td>Retail</td>
<td>100,000 SF</td>
</tr>
<tr>
<td>Data Center</td>
<td>100,000 SF</td>
</tr>
<tr>
<td>Hotel</td>
<td>100,000 SF</td>
</tr>
<tr>
<td>Multi-family (small)</td>
<td>1,000 units</td>
</tr>
<tr>
<td>Multi-family (average)</td>
<td>1,000 units</td>
</tr>
<tr>
<td>Townhomes</td>
<td>1,000 units</td>
</tr>
</tbody>
</table>

**Illustration:**

Data center development assumed to occur by 2030. Townhomes assumed to arrive over 10 years finishing by 2030.

All development assumed to occur within the Metrorail Service Tax District. This debt service will be paid off prior to 2050.

<table>
<thead>
<tr>
<th>Fiscal Impact</th>
<th>Annual Impacts in 2030</th>
<th>Annual Impacts in 2040</th>
<th>Annual Impacts in 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tax District Revenues</td>
<td>Tax District Revenues</td>
<td>Tax District Revenues</td>
</tr>
<tr>
<td></td>
<td>($M)</td>
<td>($M)</td>
<td>($M)</td>
</tr>
<tr>
<td>Office</td>
<td>150,000 SF</td>
<td>0.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Retail</td>
<td>240,000 SF</td>
<td>1.7</td>
<td>0.1</td>
</tr>
<tr>
<td>Data Center</td>
<td>971,027 SF</td>
<td>11.7</td>
<td>0.4</td>
</tr>
<tr>
<td>Hotel</td>
<td>80,000 SF</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Multi-family (small)</td>
<td>1,300 units</td>
<td>-0.1</td>
<td>0.5</td>
</tr>
<tr>
<td>Townhomes</td>
<td>108 units</td>
<td>-0.2</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>14.0</td>
<td>1.2</td>
<td></td>
</tr>
</tbody>
</table>

Scenario 1: assuming small MF units (1.87 residents and 0.15 school-aged children per unit)
### Annual Impacts in 2030 | Annual Impacts in 2040 | Annual Impacts in 2050
--- | --- | ---
**Scenario 2: assuming average MF units (1.97 residents and 0.23 school-aged children per unit)**

<table>
<thead>
<tr>
<th>Category</th>
<th>2030 SF</th>
<th>2040 SF</th>
<th>2050 SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>150,000</td>
<td>240,000</td>
<td>240,000</td>
</tr>
<tr>
<td>Retail</td>
<td>240,000</td>
<td>341,175</td>
<td>341,175</td>
</tr>
<tr>
<td>Data Center</td>
<td>971,027</td>
<td>971,027</td>
<td>971,027</td>
</tr>
<tr>
<td>Hotel</td>
<td>80,000</td>
<td>156,250</td>
<td>156,250</td>
</tr>
<tr>
<td>Multi-family (average)</td>
<td>1,300</td>
<td>2,148</td>
<td>2,148</td>
</tr>
<tr>
<td>Townhomes</td>
<td>108</td>
<td>108</td>
<td>108</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>0.8</td>
<td>0.0</td>
<td>1.2</td>
</tr>
<tr>
<td>Retail</td>
<td>1.7</td>
<td>0.1</td>
<td>2.4</td>
</tr>
<tr>
<td>Data Center</td>
<td>11.7</td>
<td>0.4</td>
<td>11.7</td>
</tr>
<tr>
<td>Hotel</td>
<td>0.2</td>
<td>0.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Multi-family (average)</td>
<td>-1.2</td>
<td>0.5</td>
<td>-1.9</td>
</tr>
<tr>
<td>Townhomes</td>
<td>-0.2</td>
<td>0.1</td>
<td>-0.2</td>
</tr>
</tbody>
</table>

### Notes:

1) Assumptions regarding development levels provided by the Loudoun County Department of Planning and Zoning, June 1, 2017.

2) Assumptions underlying County fiscal impact and Metrorail Service Tax District revenue for office and residential uses reflect those used in the "Potential Fiscal Impacts of the Land Use Changes Proposed in the Silver Line Plan" report as of April 28, 2017. For data centers, assessed value and square feet per employee were drawn from the "2015 Fiscal Impact Committee Guidelines." For hotels, assessed value and square feet per room were developed based on comparables, revenues per room were drawn from STR Global data, and assumptions about the number of employees per room and incidental expenditures per room where drawn from the 2012 RCLCO report. Other revenue and expenditure assumptions are drawn from the assumptions used in the Potential Fiscal Impacts report.

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4) Due to rounding, totals may not equal the sums of components.
Illustrative Fiscal Impacts, Dupont Fabros Site: west side mixed use, east side data centers

**Low Scenario**

Using Results per 1,000 Units/100K SF to Calculate Fiscal Scenarios

*in millions of constant 2016 $s*

<table>
<thead>
<tr>
<th></th>
<th>Fiscal Impact (SM)</th>
<th>Tax District Revenues (SM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office 100,000 SF</td>
<td>0.5</td>
<td>0.03</td>
</tr>
<tr>
<td>Retail 100,000 SF</td>
<td>0.7</td>
<td>0.04</td>
</tr>
<tr>
<td>Data Center 100,000 SF</td>
<td>1.2</td>
<td>0.04</td>
</tr>
<tr>
<td>Hotel 100,000 SF</td>
<td>0.3</td>
<td>0.02</td>
</tr>
<tr>
<td>Multi-family (small) 1,000 units</td>
<td>-0.1</td>
<td>0.41</td>
</tr>
<tr>
<td>Multi-family (average) 1,000 units</td>
<td>-0.9</td>
<td>0.41</td>
</tr>
<tr>
<td>Townhomes 1,000 units</td>
<td>-1.9</td>
<td>0.84</td>
</tr>
</tbody>
</table>

**Illustration:**

- Data center development assumed to occur by 2030. Townhomes assumed to arrive over 10 years finishing by 2030.
- All development assumed to occur within the Metrorail Service Tax District. This debt service will be paid off prior to 2050.

<table>
<thead>
<tr>
<th></th>
<th>Annual Impacts in 2030</th>
<th>Annual Impacts in 2040</th>
<th>Annual Impacts in 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office 100,000 SF</td>
<td>0.5</td>
<td>0.0</td>
<td>240,000 SF</td>
</tr>
<tr>
<td>Retail 170,000 SF</td>
<td>1.2</td>
<td>0.1</td>
<td>310,000 SF</td>
</tr>
<tr>
<td>Data Center 971,027 SF</td>
<td>11.7</td>
<td>0.4</td>
<td>971,027 SF</td>
</tr>
<tr>
<td>Hotel 80,000 SF</td>
<td>0.0</td>
<td>0.0</td>
<td>80,000 SF</td>
</tr>
<tr>
<td>Multi-family (small) 2,000 units</td>
<td>-0.1</td>
<td>0.4</td>
<td>2,000 units</td>
</tr>
<tr>
<td>Townhomes 108 units</td>
<td>-0.2</td>
<td>0.1</td>
<td>108 units</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scenario 1:assuming small MF units (1.87 residents and 0.15 school-aged children per unit)
<table>
<thead>
<tr>
<th>Scenario 2: assuming average MF units (1.97 residents and 0.23 school-aged children per unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Office</strong></td>
</tr>
<tr>
<td><strong>Retail</strong></td>
</tr>
<tr>
<td><strong>Data Center</strong></td>
</tr>
<tr>
<td><strong>Hotel</strong></td>
</tr>
<tr>
<td><strong>Multi-family (average)</strong></td>
</tr>
<tr>
<td><strong>Townhomes</strong></td>
</tr>
</tbody>
</table>

|  | 12.2 | 1.0 | 13.3 | 1.5 | 13.6 | 0.0 |

**Notes:**

1) Assumptions regarding development levels provided by the Loudoun County Department of Planning and Zoning, June 1, 2017.

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**Illustrative Fiscal Impacts, Dupont Fabros Site: west side mixed use, east side data centers**

**High Scenario**

Using Results per 1,000 Units/100K SF to Calculate Fiscal Scenarios

*in millions of constant 2016 $s*

<table>
<thead>
<tr>
<th></th>
<th>Fiscal Impact</th>
<th>Tax District Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office 100,000 SF</td>
<td>0.5</td>
<td>0.03</td>
</tr>
<tr>
<td>Retail 100,000 SF</td>
<td>0.7</td>
<td>0.04</td>
</tr>
<tr>
<td>Data Center 100,000 SF</td>
<td>1.2</td>
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<td>-0.1</td>
<td>0.41</td>
</tr>
<tr>
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<td>-0.9</td>
<td>0.41</td>
</tr>
<tr>
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<td>-1.9</td>
<td>0.84</td>
</tr>
</tbody>
</table>

**Illustration:** Data center development assumed to occur by 2030. Townhomes assumed to arrive over 10 years finishing by 2030.

All development assumed to occur within the Metrorail Service Tax District. This debt service will be paid off prior to 2050.

<table>
<thead>
<tr>
<th></th>
<th>Fiscal Impact ($M)</th>
<th>Tax District Revenues ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Office</strong> 200,000 SF</td>
<td>1.0</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Retail</strong> 300,000 SF</td>
<td>2.1</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Data Center</strong> 971,027 SF</td>
<td>11.7</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Hotel</strong> 156,250 SF</td>
<td>0.5</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Multi-family (small)</strong> 1,900 units</td>
<td>-0.2</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Townhomes</strong> 108 units</td>
<td>-0.2</td>
<td>0.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Fiscal Impact ($M)</th>
<th>Tax District Revenues ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Office</strong> 300,000 SF</td>
<td>2.4</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Retail</strong> 341,175 SF</td>
<td>2.4</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Data Center</strong> 971,027 SF</td>
<td>11.7</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Hotel</strong> 156,250 SF</td>
<td>0.5</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Multi-family (average)</strong> 2,148 units</td>
<td>-0.2</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Townhomes</strong> 108 units</td>
<td>-0.2</td>
<td>0.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Fiscal Impact ($M)</th>
<th>Tax District Revenues ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Office</strong> 400,000 SF</td>
<td>3.7</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Retail</strong> 341,175 SF</td>
<td>2.4</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Data Center</strong> 971,027 SF</td>
<td>11.7</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Hotel</strong> 156,250 SF</td>
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<td>0.0</td>
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</tbody>
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<table>
<thead>
<tr>
<th></th>
<th>Fiscal Impact ($M)</th>
<th>Tax District Revenues ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Office</strong> 400,000 SF</td>
<td>3.7</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Retail</strong> 341,175 SF</td>
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<td>0.1</td>
</tr>
<tr>
<td><strong>Data Center</strong> 971,027 SF</td>
<td>11.7</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Hotel</strong> 156,250 SF</td>
<td>0.5</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Multi-family (average)</strong> 2,148 units</td>
<td>-0.2</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Townhomes</strong> 108 units</td>
<td>-0.2</td>
<td>0.1</td>
</tr>
</tbody>
</table>
### Scenario 2: assuming average MF units (1.97 residents and 0.23 school-aged children per unit)

<table>
<thead>
<tr>
<th></th>
<th>Annual Impacts in 2030</th>
<th></th>
<th>Annual Impacts in 2040</th>
<th></th>
<th>Annual Impacts in 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Office 200,000 SF</td>
<td>1.0</td>
<td>0.1</td>
<td>240,000 SF</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>Retail 300,000 SF</td>
<td>2.1</td>
<td>0.1</td>
<td>341,175 SF</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>Data Center 971,027 SF</td>
<td>11.7</td>
<td>0.4</td>
<td>971,027 SF</td>
<td>11.7</td>
</tr>
<tr>
<td></td>
<td>Hotel 156,250 SF</td>
<td>0.5</td>
<td>0.0</td>
<td>156,250 SF</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Multi-family (average)</td>
<td>-1.7</td>
<td>0.8</td>
<td>2,148 units</td>
<td>-1.9</td>
</tr>
<tr>
<td></td>
<td>Townhomes 108 units</td>
<td>-0.2</td>
<td>0.1</td>
<td>108 units</td>
<td>-0.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13.3</td>
</tr>
</tbody>
</table>

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4) Due to rounding, totals may not equal the sums of components.
Hotel Assumptions

Hotel Comparables: assessed values as of January 1, 2015

The April 2012 RCLCO report, *Market and Fiscal Impact Analysis of the Phase 2 Metrorail Extension to Loudoun County* included seven hotel properties used as benchmarks for valuation, in Exhibit V-21.

The hotels below were selected from this list by excluding hotels with extensive conference space and by excluding extended stay hotels/hotels with full kitchens in rooms.

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>PIN</th>
<th>Units</th>
<th>GFA</th>
<th>GFA/Unit</th>
<th>Total Assessed Value</th>
<th>Total Assessed Value per Unit</th>
<th>Total Assessed Value per GFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Springhill Suites, Dulles</td>
<td>22595 Shaw Road, Sterling</td>
<td>033-35-1280-000</td>
<td>158</td>
<td>92,790</td>
<td>587</td>
<td>$9,198,390</td>
<td>$58,218</td>
<td>$99</td>
</tr>
<tr>
<td>Hampton Inn Suites</td>
<td>22700 Holiday Park Dr., Sterling</td>
<td>033-15-0495-000</td>
<td>170</td>
<td>101,065</td>
<td>595</td>
<td>$9,334,520</td>
<td>$54,909</td>
<td>$92</td>
</tr>
<tr>
<td>Aloft Hotel, Dulles North</td>
<td>22390 Flagstaff Plaza, Dulles</td>
<td>089-18-0679-000</td>
<td>135</td>
<td>68,555</td>
<td>508</td>
<td>$5,156,530</td>
<td>$38,197</td>
<td>$75</td>
</tr>
<tr>
<td>Averages</td>
<td></td>
<td></td>
<td>154</td>
<td>87,470</td>
<td>567</td>
<td>$7,896,480</td>
<td>$50,441</td>
<td>$90</td>
</tr>
</tbody>
</table>

Sales and TOT Tax Assumptions

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Revenue per Room (RevPar)</td>
<td>$80</td>
<td>Calculated based on actuals for all hotels tracked by STR Global, FY 2016.</td>
</tr>
<tr>
<td>Days per year</td>
<td>365</td>
<td></td>
</tr>
<tr>
<td>Other Sales (as % of RevPar)</td>
<td>5%</td>
<td>Based on 2012 RCLCO assumption.</td>
</tr>
<tr>
<td>Sales Tax</td>
<td>1%</td>
<td>FY 2016 Budget</td>
</tr>
<tr>
<td>General Fund Transient Occupancy Tax</td>
<td>2%</td>
<td>FY 2016 Budget</td>
</tr>
<tr>
<td>Restricted Use Transient Occupancy Tax</td>
<td>3%</td>
<td>FY 2016 Budget</td>
</tr>
</tbody>
</table>

STR Global Averages (all hotels tracked), quarterly actuals, FY 2016

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Occupancy Rate</th>
<th>ADR</th>
<th>RevPar</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015.3</td>
<td>70.08434922</td>
<td>112.219756</td>
<td>78.64849</td>
</tr>
<tr>
<td>2015.4</td>
<td>58.59419255</td>
<td>105.7533994</td>
<td>61.96535</td>
</tr>
<tr>
<td>2016.1</td>
<td>61.17972515</td>
<td>105.2308475</td>
<td>64.37994</td>
</tr>
<tr>
<td>2016.2</td>
<td>82.25008973</td>
<td>119.2476018</td>
<td>98.08126</td>
</tr>
<tr>
<td>average</td>
<td></td>
<td>75.76876</td>
<td></td>
</tr>
</tbody>
</table>

Employee Ratio Assumptions

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees per room</td>
<td>0.30</td>
</tr>
<tr>
<td>GSF per room</td>
<td>570</td>
</tr>
<tr>
<td>GSF per employee</td>
<td>1,900</td>
</tr>
</tbody>
</table>

Based on 2012 RCLCO assumption. Based on comparables above.
Potential Fiscal Impacts of the Land Use Changes Proposed in the Silver Line Plan

Based on the Planning Commission Recommended Plan

April 28, 2017

Loudoun County Department of Management and Budget

Beth Hilkemeyer, AICP, Research Analyst, Department of Management and Budget

Doug Kinney, Economist, Department of Management and Budget

Nikki Speight, Debt Manager, Department of Finance and Procurement
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About this Report

This report provides a forecast of the potential fiscal impact of the increase in development envisioned by the Silver Line Comprehensive Plan Amendment, specifically the Planning Commission’s Recommended Plan as of April 13, 2017. It discusses capital needs and financing costs, and the difference that could be expected between County revenues and operating expenditures. This report also includes a calculation of the potential increase in Metrorail Service Tax District revenues.

Much of this analysis focuses on status in the year 2040, consistent with the format of forecasts provided by Loudoun County’s Department of Planning and Zoning. Scenarios and sensitivity tests are included that illustrate what could occur based on variations in assumptions. Sensitivity tests of the difference between revenues and operating expenditures also help illustrate fiscal impacts that could occur during any periods where residential development precedes nonresidential development.

This report, and the calculations underlying it, has been updated periodically. It was first prepared for the October 14, 2016 Board of Supervisors Transportation/Land Use Committee (TLUC) meeting, using staff’s “Iteration 3” draft land uses. This report was subsequently updated using “Iteration 4” (townhomes removed) for the November 10, 2016 TLUC meeting. The fiscal models were updated yet again for the presentation shown at the November 29, 2016 Board of Supervisor’s special business meeting, incorporating some formula adjustments. This report was most recently updated as of January 4, 2017, for the Planning Commission public hearing on January 24, 2017.

In addition to updating model results to reflect the Planning Commission’s Recommended Plan, the following changes have been made to the content of the report since the January 2017 version:

- Two additional attachments (“Change to Loudoun County’s Fiscal Balance” and “Illustrative Fiscal Impacts”) are now included to help demonstrate the potential impacts of the plan.
- A section describing redevelopment has been added, along with maps identifying these areas.
- A net increase of less than one lane mile of roadway has been added to the increase in capital facilities needed by 2040 under the recommended plan.
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Background

Plan Goals, Location, and Process

On October 16, 2013, the 2012-2015 Loudoun County Board of Supervisors initiated a Silver Line/Metrorail Tax District Comprehensive Plan Amendment (CPAM). Part of the focus of this effort was encouraging development to increase the tax base while minimizing demands on transportation infrastructure (and implicitly, minimizing the needed infrastructure investment to support this development). The Board looked to achieve a balance between these four goals:

1) Prompt realization of tax revenues to support future Metrorail operations,
2) Maximizing future employment generation,
3) Achieving the desired land use pattern, and
4) Minimizing demands on the county's transportation infrastructure.

Staff sought input from an Urban Land Institute Technical Assistance Panel (ULI TAP) in 2014, followed by two consultant studies:

- Market Analysis and Best Practices (HR&A, September 2015). This study focused on the station areas and the best practices for planning near airports.
- Land Use Scenario Planning (Stantec, January 2016). This study focused on land planning options between the station areas, and included fiscal impact calculations.

The 2016-2019 Board of Supervisors gave direction to continue forward with the CPAM on March 17, 2016. The boundary for the CPAM is shown in black on Figure 1. The focus area for Stantec’s Land Use Scenario Planning effort was within the red boundary.
The Small Area Plan area overlaps with the Metrorail Service Tax District, a major source of funding to support Loudoun County’s obligations with the extension of Metrorail (see Figure 2). The boundary of the plan area is shown in black, and the boundary of the tax district is shown in red. The plan area generally is located in the northern portion of the district, west of Route 28 and north of Dulles Airport. A small portion of the study area encompasses the portions of the airport north and east of the Greenway (Route 267), which is an area where future development associated with the Loudoun Gateway station may occur. The plan area also includes some land outside of the Tax District.
Figure 2. Comparison of the Plan Area to the Metrorail Service Tax District
Overview of this Study

Loudoun County includes fiscal impact analyses as part of planning efforts, especially when the proposed type of development is new to the County. These analyses project the County’s revenues and expenditures that could flow from an area, whether it be at the individual project level, an area of the County, or the County as a whole. The net of revenues and expenditures is known as the fiscal impact.

To understand whether a proposed land use change is fiscally beneficial, the focus of these studies is on the fiscal difference between current and proposed land use patterns and policies. The results of an analysis can help decision makers understand whether and to what extent the proposed land use change improves the County’s overall fiscal condition. In addition to expressing results in dollars, results also can be expressed in terms of the impact on the County’s real property tax rate.

Features of this Analysis

This analysis is based on the differences in levels of development in the year 2040 Countywide. The analysis is based on the Planning Commission’s Recommended Plan, using forecasted residential units (multi-family and single-family attached) and office square footage from Loudoun County’s Department of Planning and Zoning (DPZ). Based on DPZ’s analysis, the total amount of development as of 2040 Countywide, within the plan area, and within the tax district would not change if the Commission’s recommended land use change to Mixed-Use, Medium Buildings on the eastern side of the proposed Loudoun Gateway Station was removed per Staff’s recommendation.

This fiscal impact analysis:

1. Forecasts capital facility needs and costs.
2. Forecasts the land needed for capital facilities, based on Loudoun County’s current capital facility standards.
3. Characterizes the change to the overall fiscal balance within the County based on the proposed land use changes.
4. Forecasts the increase in real property tax revenue to the overall Metrorail Service Tax District.

To characterize the County’s fiscal balance in the year 2040, two aspects are examined:

- the net of revenues and operating expenditures in 2040, and
- the capital financing costs in 2040.

Additional information is provided on capital facilities:

- Capital facilities needed
- Total capital costs
- Total land needed
• Cumulative financing costs that would be incurred if the County paid for these facilities

And on Metrorail Service Tax District revenues:

• In the year 2040
• Cumulative to the year 2040

In addition to providing data as of the year 2040, a high-level, generalized summary of both changes to fiscal balance (County fiscal impacts) and tax district revenues for both 2030 and 2040 resulting from the additional development expected to result from the Recommended Plan was provided to the Planning Commission. This “Illustrative Fiscal Impacts” view of the data is also provided with this report.

This analysis focuses on changes to the revenues and expenditures that support the operation of County government and the Loudoun County Public Schools, along with capital costs specifically tied to the proposed increases in development.

Other than for Metrorail Service Tax District calculations, the focus of this study is on Countywide impacts. Using this approach, the impact of land use changes in this area on the County’s overall revenues and expenditures can be clearly identified. Any shifts in development from outside to inside the plan area that would not change the overall fiscal balance of the County are excluded from the assessment of fiscal balance.

While a forecast of Metrorail Service Tax District revenues is included, this analysis does not incorporate the capital and operating costs related to the Silver Line extension. Metrorail tax district revenues are one source of funding to offset Metrorail costs. Tax district revenue forecasts from this report can be used to assess the potential impact of land use changes on Loudoun County’s options for paying for Metrorail costs.

Assumptions

Countywide Changes in Development as of 2040

DPZ provided the forecasted aggregate change in development Countywide as of the year 2040. DPZ identified residential units and office space as the two types of development that both would increase in the plan area and also Countywide. Countywide changes result from increases in development within the plan area only. While the amounts of other types of development (such as retail, hotels, etc.) may change within the plan area, there is not expected to be an increase in these types of development overall within the County.

For the purposes of tax district revenue calculations, DPZ also provided a forecast of office and residential development within the tax district area. Within the tax district, office development is expected to increase beyond the overall increase in office development Countywide.
DPZ’s figures are based on the mid-point of the range of densities proposed for each land use, and a consideration of market conditions and projected rates of absorption. Development of residential units and office space could be greater or less than these forecasts.

DPZ anticipates that the proposed change in planned land use would lead to an increase of over 4,700 multi-family housing units, about 3,250 single-family attached units, and 2 million SF of office development Countywide. DPZ’s assumptions draw from advice provided by the Stantec study team, which identified the potential for increases in office space and the development of relatively small multi-family units with the establishment of a different land use pattern in the area between the Ashburn and Loudoun Gateway stations.

Table 1 shows forecasts for additional residential development through 2040 under the proposed plan. It also shows the forecast under the current plan, and the difference. Forecasts are presented for single-family detached (SFD), single-family attached (SFA), and multi-family (MF) units.

With regards to nonresidential development, by 2040 an additional 2 million SF of office development is forecast within County, based on instituting the proposed land pattern and policies. Some shift of office development that would have occurred elsewhere in the County into the plan area also is anticipated.

Table 1. Forecasts New Housing Units in the Plan Area: current plan and entitlements versus proposed plan

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SFD</td>
<td>45</td>
<td>45</td>
<td>-</td>
</tr>
<tr>
<td>SFA</td>
<td>1,209</td>
<td>4,464</td>
<td>3,255</td>
</tr>
<tr>
<td>MF</td>
<td>5,888</td>
<td>10,614</td>
<td>4,726</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7,142</td>
<td>15,123</td>
<td>7,981</td>
</tr>
</tbody>
</table>

This report analyzes the impact of differences between the current plan along with entitlements and proposed plan – in other words, this report focuses on the impact of the increment of development. For residential development, that means looking at the impacts of the additional 7,981 housing units and their residents, as illustrated by Figure 3.

¹ Table 1 presents forecasted residential development through 2040. It is anticipated that additional residential development under the proposed plan would continue past 2040 to ultimate buildout. The timing of development is subject to market conditions.
Table 2, shows this net difference through 2040, along with the net increase in households, population, and school children. The proposed plan anticipates that additional multi-family units in this area will be fairly small and of urban format – and thus have fewer residents and school children. Figures in Table 2 reflect the assumption that all of these units will have these characteristics.

Table 2. Increase in Housing Units, Households, Population, and School Children

<table>
<thead>
<tr>
<th>Housing Units</th>
<th>Households</th>
<th>Population</th>
<th>School Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFD</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SFA</td>
<td>3,255</td>
<td>3,157</td>
<td>9,094</td>
</tr>
<tr>
<td>MF</td>
<td>4,726</td>
<td>4,395</td>
<td>8,076</td>
</tr>
<tr>
<td></td>
<td>7,981</td>
<td>7,553</td>
<td>17,170</td>
</tr>
</tbody>
</table>

Year 2016 Revenues and Expenditures

To evaluate a change in fiscal balance, fiscal impact analyses use revenue and expenditure figures all from one fiscal year. Doing so ensures that the real property tax rate (used here, $1.135 as of January 1, 2015), assessed values (also as of January 1, 2015) and expenditures are all aligned.

This analysis uses figures from fiscal year 2016, and draws some of its inputs from the analysis done by TischlerBise as part of the Stantec Scenario Planning report: "Fiscal Impact Assistance for Loudoun County..."

Revenues and expenditures are shown in FY 2016 constant dollars.

Current Capital Facility Standards and Costs

The following assumptions were used to estimate the number of capital facilities that may need to be developed as a result of the Silver Line Small Area Plan, as well as the cost in current dollars of the development of these capital facilities:

- The facility cost factors are based upon facility cost estimates used to develop the FY 2016 Budget.
- The per capita factors and other guidelines used to calculate the number of capital facilities triggered for development are based on the 2014 Adopted Capital Facility Standards.
- The costs related to facilities that are already developed or do not relate to this type of development have been provided with zero values (Animal Shelter, Fire Tanker Trucks, Brush Trucks, Community Centers, Recycling Drop-off Centers, Special Waste Drop-off Centers, Juvenile Detention Center, Emergency Homeless Shelter, Youth Shelter, and Bus Maintenance Facility).
- For facilities that require land to be developed, the total acreage required and estimated land acquisition costs are based upon a "worst case scenario" using current standards. The Silver Line Comprehensive Plan Amendment calls for development of facilities with an urban character and with smaller footprints.

Capital Financing

Capital costs for general government and school projects are typically financed through a combination of cash and long term debt. The County’s fiscal policy requires that 10% of the Capital Improvements Program (CIP) be funded with local tax funding, fund balance and other recurring local revenue sources. This 10% cash contribution is referred to as “Pay-Go” (for “pay as you go” financing).

Below is a list of the assumptions in the debt service calculations:

- Assumes 90% debt financing and 10% Pay-Go financing
- Conservative interest rate of 5 percent, which is higher than the current market for AAA credit
- Amortizes the debt over 20 years
- Assumes one issuance per year
- Does not include costs of issuance (e.g. financial advisor and bond counsel fees, rating agencies fees, etc.)

Assumptions used in this analysis can be found in Attachment 2.

Sensitivity Tests

Fiscal results can vary based on key assumptions, including the number of residents and school children generated, how rapidly development occurs, and the balance of nonresidential and residential
development. This report includes scenarios and sensitivity tests\(^2\) that show the impact of varying these assumptions (Table 3). These tests can help the reader consider the possible range of fiscal outcomes, both in the year 2040 and in the years leading up to then.

**Table 3. Tests of Key Assumptions**

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Test</th>
<th>Influences</th>
</tr>
</thead>
</table>
| Number of residents and school children   | Scenarios 1 and 2, assuming different household sizes and pupil generation rates for multi-family units | • Operating costs  
                                             | • Capital costs                                              |
| When and how rapidly development occurs   | Slower and sooner versus faster and later development                | • Capital financing costs  
                                             | • Cumulative Metrorail Service Tax District revenues        |
| Balance of nonresidential and residential development | The forecast mix of residential and nonresidential development, versus residential development only, and versus townhouse development only | • Fiscal balance                                        |

Real property values are also an important assumption. For this analysis, values are based on current assessed value data and analysis done for the Stantec Scenario Planning study. Calculations assume that real property values outside of the plan area are not influenced by this land use plan.

**Number of Residents and School Children**

Since the number of residents and school children influence fiscal results, two scenarios are used in this report, as shown in Table 4. Scenario 1 in Table 4 reflects the assumption that all additional multi-family units in this area will be fairly small and of urban format, resulting in fewer residents and school children (1.87 residents per household, 0.15 school children). Scenario 2 uses current, larger multi-family demographic factors (1.97 residents per household, 0.23 school children). While the proposed plan calls for urban-style townhomes, whether and to what extent these townhomes might produce fewer residents and school children is unknown. For these units, current demographic factors are used (2.88 residents per household, 0.54 school children).

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\(^2\) A sensitivity test examines the impact of changing an assumption on the results of a calculation. Sensitivity tests are used to consider “what if” the assumption is different.
Table 4. Increase in Housing Units, Households, Population, and School Children

### Scenario 1: assuming small multi-family units throughout the plan area

<table>
<thead>
<tr>
<th></th>
<th>Housing Units</th>
<th>Households</th>
<th>Population</th>
<th>School Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFD</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SFA</td>
<td>3,255</td>
<td>3,157</td>
<td>9,094</td>
<td>1,705</td>
</tr>
<tr>
<td>MF</td>
<td>4,726</td>
<td>4,395</td>
<td>8,076</td>
<td>545</td>
</tr>
<tr>
<td></td>
<td>7,981</td>
<td>7,553</td>
<td>17,170</td>
<td>2,250</td>
</tr>
</tbody>
</table>

### Scenario 2: using current multi-family household sizes and pupil generation rates

<table>
<thead>
<tr>
<th></th>
<th>Housing Units</th>
<th>Households</th>
<th>Population</th>
<th>School Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFD</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SFA</td>
<td>3,255</td>
<td>3,157</td>
<td>9,093</td>
<td>1,705</td>
</tr>
<tr>
<td>MF</td>
<td>4,726</td>
<td>4,395</td>
<td>8,659</td>
<td>1,334</td>
</tr>
<tr>
<td></td>
<td>7,981</td>
<td>7,553</td>
<td>17,752</td>
<td>3,039</td>
</tr>
</tbody>
</table>

**How Rapidly Development Occurs**

The speed of residential development influences how much funding will be needed for capital facilities in a given year. To evaluate this impact, fiscal results were compared for two options: relatively slower development, starting soon, and relatively faster development, starting later. To help evaluate cumulative tax district revenues, similar assumptions were used for office development. (Starting the faster growth case later is more conservative, as the Metrorail Service Tax District will accumulate less revenue.)

For both the slower and faster growth options, residential and office development is modeled using flat average rates per year. In the slower and sooner option, residential development begins in 2018 and office development begins in 2021. In the faster and later option, both residential and office development begin in 2031. Figure 4 illustrates the two options, using the example of residential development. Since the need for capital facilities goes hand-in-hand with the arrival of residents, the slope of the two lines can give a sense of the difference in how rapidly capital facilities would need to be provided.
Balance of Residential and Nonresidential Development

Capital facility payments are only one part of the fiscal impact equation. Other components are revenues and operating expenditures. By the year 2040, the year for which fiscal impacts are calculated for this report, the total amount of development is the same.

This report analyzes the fiscal balance (the balance between revenues and expenditures) for the year 2040. The amount of nonresidential and residential development is an important determinant of fiscal balance, with nonresidential development generally increasing revenues more than it increases costs to the County, whereas the costs of residential development can exceed the revenue it provides.

To evaluate the impact of the mix of development on revenues and operating expenditures, the forecasted mix (office, single-family attached, and multi-family development) was modeled, along with two “worst case” sensitivity tests:

- development of only residential uses (single-family attached and multi-family development)
- development of only townhouses (single-family attached)

These options were selected as sensitivity tests, reflecting in general that residential uses have developed more quickly than office uses in the past.

While modeling results are presented for the year 2040, these results also can act as a guide to the range of fiscal impacts that could occur prior to 2040, if residential and nonresidential development do not occur at the same time.
Limitations

Any analysis of this type is subject to future conditions being different than those assumed. This can be the case for forecasts, and also for the means of service delivery, including the services the County provides and the types of capital facilities needed.

Other aspects of this study’s design to note:

- Fiscal impact figures are provided in the year 2040, rather than annually. It is possible that nonresidential and residential development will not occur at the same rate throughout the period, and even for residential development to precede nonresidential development for several years. Since residential development can be fiscally negative, the fiscal balance in a given year could be worse than is modeled for the year 2040.

- Data were not available by location within the plan area, so real property values for all development are largely based on County averages, with no increase in values close to the Metro stations.
Capital Facilities

Capital Facility Needs and Costs

Residential development leads to the need for additional County services, and the facilities used to provide those services. Table 5 on the following page shows the incremental increase in facilities needed, for the development under the proposed plan through 2040.

Calculations are based on the increment of a facility needed to accommodate population growth each year, then summed as of 2040. To be conservative, costs are included even if the facility is not triggered (i.e., the increments do not add up to a full facility, but rather are 0.6 of a facility, etc.). Doing this reflects the uncertainty inherent in any long-term forecast, is consistent with how staff has calculated needs for previous plans, and is consistent with how the Capital Intensity Factor is applied.

The results serve as a guide to the number and costs of capital facilities that will need to be developed and the amount of land need to accommodate those facilities. Under Scenario 1, the total value of capital facility costs in 2040 is approximately $360 million. This is a third of the value of the current six-year CIP excluding transportation-related projects. The FY 2017 – FY 2022 CIP totals approximately $1,073,880,000 for general government- and school-related capital projects. A need for about 200 acres for capital facilities is projected by 2040, using the current, conservative standards, based on a suburban model.

Using the current multi-family household sizes and pupil generation rates, Scenario 2 has somewhat higher capital facility development costs when compared to the smaller multi-family unit sizes used for Scenario 1. Higher generation rates result in higher overall capital facility costs given the higher service demand driven by an increase in the growth of the population. Under Scenario 2, the total value of capital facility costs in 2040 is approximately $420 million. A need for about 225 acres for capital facilities is projected by 2040, using the current, conservative standards, based on a suburban model.

Capital Financing Costs

Capital costs for general government and school projects are typically financed through a combination of cash, proffered land or facilities, and long term debt. Debt financing capital projects can be beneficial for several reasons. Debt financing frees up cash flow so that large amounts of funds are not tied up for capital projects and can be used elsewhere. Also, debt financing allows capital costs to be spread out over the useful life of the assets. This creates another benefit of generational equity; because the costs are spread out over time, they are also spread out over current and future users; therefore, everyone using the asset “shares” in the cost. Although there are borrowing costs (interest payments) associated with debt financing, as a locality with a triple AAA credit rating, Loudoun has access to the market at lower interest rates.

To show the impact of capital costs on the County’s ability to pay for them, capital costs are translated into annual expenditures. Table 6 presents costs in the year 2040.
## Table 5. Additional Capital Facilities Needed: current versus proposed plan

_In constant dollars._

<table>
<thead>
<tr>
<th>Capital Facility</th>
<th>Scenario 1</th>
<th></th>
<th>Scenario 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Portion of</td>
<td>Cost in constant</td>
<td>Portion of</td>
<td>Cost in constant</td>
</tr>
<tr>
<td></td>
<td>Facility</td>
<td>dollars</td>
<td>Facility</td>
<td>dollars</td>
</tr>
<tr>
<td>Elementary School</td>
<td>1.12</td>
<td>$ 60,315,816</td>
<td>1.51</td>
<td>$ 81,474,700</td>
</tr>
<tr>
<td>Middle School</td>
<td>0.38</td>
<td>31,873,077</td>
<td>0.52</td>
<td>43,054,203</td>
</tr>
<tr>
<td>High School</td>
<td>0.38</td>
<td>66,736,538</td>
<td>0.52</td>
<td>90,147,823</td>
</tr>
<tr>
<td>Animal Shelter</td>
<td>0.03</td>
<td>-</td>
<td>0.04</td>
<td>-</td>
</tr>
<tr>
<td>Sheriff Stations</td>
<td>0.17</td>
<td>2,784,974</td>
<td>0.18</td>
<td>2,879,321</td>
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<tr>
<td>Fire Station</td>
<td>0.69</td>
<td>13,856,190</td>
<td>0.71</td>
<td>14,325,600</td>
</tr>
<tr>
<td>Fire Engine</td>
<td>1.72</td>
<td>1,373,600</td>
<td>1.78</td>
<td>1,420,134</td>
</tr>
<tr>
<td>ALS Ambulance</td>
<td>1.72</td>
<td>600,950</td>
<td>1.78</td>
<td>621,309</td>
</tr>
<tr>
<td>Aerial Truck</td>
<td>0.69</td>
<td>686,800</td>
<td>0.71</td>
<td>710,067</td>
</tr>
<tr>
<td>Heavy Rescue Squad</td>
<td>0.34</td>
<td>274,720</td>
<td>0.36</td>
<td>284,027</td>
</tr>
<tr>
<td>Fire Tanker Truck</td>
<td>1.72</td>
<td>-</td>
<td>1.78</td>
<td>-</td>
</tr>
<tr>
<td>Brush Truck</td>
<td>1.72</td>
<td>-</td>
<td>1.78</td>
<td>-</td>
</tr>
<tr>
<td>Recreation Center</td>
<td>0.21</td>
<td>16,756,541</td>
<td>0.22</td>
<td>17,324,207</td>
</tr>
<tr>
<td>Community Center</td>
<td>0.38</td>
<td>-</td>
<td>0.39</td>
<td>-</td>
</tr>
<tr>
<td>Teen Center</td>
<td>0.09</td>
<td>1,117,767</td>
<td>0.09</td>
<td>1,155,634</td>
</tr>
<tr>
<td>Senior Center</td>
<td>0.31</td>
<td>3,929,380</td>
<td>0.32</td>
<td>4,062,497</td>
</tr>
<tr>
<td>Adult Day Center</td>
<td>0.20</td>
<td>1,400,460</td>
<td>0.21</td>
<td>1,447,903</td>
</tr>
<tr>
<td>Satellite Maintenance Facility</td>
<td>0.10</td>
<td>161,562</td>
<td>0.11</td>
<td>167,035</td>
</tr>
<tr>
<td>Regional Park</td>
<td>0.17</td>
<td>31,513,194</td>
<td>0.18</td>
<td>32,580,774</td>
</tr>
<tr>
<td>District Park</td>
<td>0.28</td>
<td>17,858,635</td>
<td>0.29</td>
<td>18,463,636</td>
</tr>
<tr>
<td>Community Park</td>
<td>0.69</td>
<td>18,468,052</td>
<td>0.71</td>
<td>19,093,699</td>
</tr>
<tr>
<td>Neighborhood Park</td>
<td>1.72</td>
<td>26,429,781</td>
<td>1.78</td>
<td>27,325,150</td>
</tr>
<tr>
<td>Recreational Trails</td>
<td>11.16</td>
<td>6,707,461</td>
<td>11.54</td>
<td>6,934,691</td>
</tr>
<tr>
<td>DS Group Residence</td>
<td>0.45</td>
<td>1,197,382</td>
<td>0.47</td>
<td>1,237,946</td>
</tr>
<tr>
<td>MH Group Residence</td>
<td>0.94</td>
<td>2,272,156</td>
<td>0.97</td>
<td>2,349,130</td>
</tr>
<tr>
<td>Library</td>
<td>0.26</td>
<td>7,571,970</td>
<td>0.27</td>
<td>7,828,488</td>
</tr>
<tr>
<td>Juvenile Detention Center</td>
<td>0.03</td>
<td>-</td>
<td>0.04</td>
<td>-</td>
</tr>
<tr>
<td>Emergency Homeless Shelter</td>
<td>0.03</td>
<td>-</td>
<td>0.04</td>
<td>-</td>
</tr>
<tr>
<td>Youth Shelter</td>
<td>0.07</td>
<td>-</td>
<td>0.07</td>
<td>-</td>
</tr>
<tr>
<td>Adolescent Living Residence</td>
<td>0.03</td>
<td>276,044</td>
<td>0.04</td>
<td>285,396</td>
</tr>
<tr>
<td>General Government Support Space (SF)</td>
<td>68,680</td>
<td>32,529,913</td>
<td>71,006.69</td>
<td>33,631,937</td>
</tr>
<tr>
<td>Bus Maintenance Facility</td>
<td>0.03</td>
<td>-</td>
<td>0.04</td>
<td>-</td>
</tr>
<tr>
<td>Park and Ride Lot</td>
<td>0.66</td>
<td>5,561,649</td>
<td>0.68</td>
<td>5,750,063</td>
</tr>
<tr>
<td>Transit Buses</td>
<td>3.47</td>
<td>2,081,212</td>
<td>3.59</td>
<td>2,151,718</td>
</tr>
<tr>
<td>Recycling Drop Off Center</td>
<td>0.31</td>
<td>-</td>
<td>0.32</td>
<td>-</td>
</tr>
<tr>
<td>Special Waste Drop Off Center</td>
<td>0.03</td>
<td>-</td>
<td>0.04</td>
<td>-</td>
</tr>
<tr>
<td>Extra Lane Miles based on plan (lane miles and cost per mile)</td>
<td>0.65</td>
<td>$2,596,000</td>
<td>0.65</td>
<td>$2,596,000</td>
</tr>
<tr>
<td><strong>Total Costs</strong></td>
<td><strong>$ 356,931,822</strong></td>
<td></td>
<td><strong>419,303,087</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total Acres</strong></td>
<td><strong>199</strong></td>
<td></td>
<td><strong>226</strong></td>
<td></td>
</tr>
</tbody>
</table>

---

*Capital facility needs shown reflect the incremental additional needs, above and beyond capital facilities needed under the current plan.*
To the extent proffers do not offset these costs, debt financing and County cash payments ("pay-go") would be used. Debt service results from payments for bonds not just issued in one year, but also payments for bonds issued in prior years. When development occurs over a shorter period, annual expenditures are higher, therefore, Table 6 includes illustrative "slow" (23 year, from 2018 through 2040) and "fast" (10 year, from 2031 through 2040) growth periods.

Table 6. Annual Costs of Projected Capital Facility Needs

*In constant dollars*

<table>
<thead>
<tr>
<th>Scenario 1: assuming small multi-family units throughout the plan area</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential development over 23 years</td>
<td>$22,887,000</td>
</tr>
<tr>
<td>Residential development over 10 years</td>
<td>$29,378,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario 2: using current multi-family household sizes and pupil generation rates</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential development over 23 years</td>
<td>$26,893,000</td>
</tr>
<tr>
<td>Residential development over 10 years</td>
<td>$34,544,000</td>
</tr>
</tbody>
</table>

The impact to the County depends on how quickly residential development occurs. If residential development occurs slowly (at an even rate over the entire 23 year period from 2018 to 2040), annual capital expenditures will be less. If residential development occurs quickly (for this example, over a span of ten years), annual capital expenditures will be higher. While Table 6 presents the total costs in 2040, expenditures past 2040 could be higher, as development continues.

For each scenario, the cost in 2040 ranges from $23 to $35 million. Table 6 shows full costs in 2040, including those that could be paid through both debt service and pay-go payments. These forecasts do not include the impact of offsetting proffers, and are based on the County's practice of selling debt in tranches and amortizing over 20 years. These additional payments in 2040 would be in addition to payments for capital facilities supporting growth already anticipated under the current plan.

These payments equate to 13 to 20 percent of current debt service expenditures. The County has a ten-year debt payout ratio above 60%, therefore, the full impact of adding this additional cost would be mitigated to an extent by retiring old debt.

It is important to note that the County has a self-imposed debt issuance guideline currently set at $225 million per year. While the fiscal policy requires review of this guideline every five years, the current guideline, set through FY 2022, is not sufficient to accommodate the additional debt issuance assumed in the “slow growth” scenarios which begin with the issuance of an additional $14 to 16 million in debt in 2018. The fiscal policy further defines the debt issuance guideline as based on the Consumer Price Index five-year rolling average. Based on this, it is unknown what the incremental adjustment to the debt issuance guideline could be beyond FY 2022.
While Table 6 provides projected costs in the year 2040, Table 7 below provides the total costs for facilities needed for development through 2040 over time. This cost includes both payments through 2040, and those that would continue afterwards. For comparability to Table 6, data are presented for both the slower and faster growth options, although overall costs for facilities would be about the same in either case.

Table 7. Total Costs of Projected Capital Facility Needs from 2018 to 2040

In constant dollars

<table>
<thead>
<tr>
<th>Scenario 1: assuming small multi-family units throughout the plan area</th>
<th>Residential Development Over 23 Years</th>
<th>Residential Development Over 10 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal</td>
<td>$321,239,000</td>
<td>$321,239,000</td>
</tr>
<tr>
<td>Interest payments</td>
<td>168,568,000</td>
<td>168,714,000</td>
</tr>
<tr>
<td>Total Debt Service</td>
<td>$489,807,000</td>
<td>$489,953,000</td>
</tr>
<tr>
<td>Pay-Go (Cash)</td>
<td>$35,693,000</td>
<td>$35,693,000</td>
</tr>
<tr>
<td>Total Costs</td>
<td>$525,500,000</td>
<td>$525,646,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario 2: using current multi-family household sizes and pupil generation rates</th>
<th>Residential Development Over 23 Years</th>
<th>Residential Development Over 10 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal</td>
<td>$377,373,000</td>
<td>$377,373,000</td>
</tr>
<tr>
<td>Interest payments</td>
<td>198,202,000</td>
<td>198,175,000</td>
</tr>
<tr>
<td>Total Debt Service</td>
<td>$575,575,000</td>
<td>$575,548,000</td>
</tr>
<tr>
<td>Pay-Go (Cash)</td>
<td>$41,930,000</td>
<td>$41,930,000</td>
</tr>
<tr>
<td>Total Costs</td>
<td>$617,505,000</td>
<td>$617,478,000</td>
</tr>
</tbody>
</table>

Offsetting Capital Costs through Proffers

In the past, proffers have been utilized to help mitigate the impacts of residential development. County policy has been to request payments, whether as cash, or in kind through donation of land and/or facilities, to offset 100% of costs for residential development above the base density allowed in the zoning district, other than for costs associated with affordable dwelling units.

Currently, the zoning within the plan area largely is for nonresidential uses (residential base density equals zero) or is already rezoned for transit-oriented development. If this zoning is retained, changes to development consistent with the proposed plan would require a rezoning. To the extent that proffers have offset 100% of costs, they have lessened the impact of capital costs on the County’s fiscal balance.

4 Slight differences in interest payments result from modeling principal payments in $5,000 increments.
Facilities proffered do not always offset the total costs of capital facility development as reflected in the County’s Capital Facility Standards (see the list shown in Table 5). For example, developers have sought capital facility credits to provide roadway improvements or other facilities not shown on this list. Doing so reduces the funding available for the other capital facilities, increasing the amount of funding the County needs to provide to construct them.

By existing policy, the County has sought to offset 100% of capital facility development costs related to increased residential densities allowed as part of rezoning applications in the Suburban policy area. Proffers can include provision of cash, land and facilities.

Cash proffers currently only offset 4% of total CIP project costs, and 6% of non-transportation related CIP costs. This is due to the following factors:

1. Capital facility contribution credits are granted for residential units allowed under the base density zoning of the rezoned land.
2. Capital facility contribution credits are granted for affordable dwelling units (ADU) proposed as part of a rezoning application.
3. Capital facility contribution credits are granted for the value of any proffered land or in-kind dedications accepted by the County.
4. Cash proffer contributions are paid to the County upon issuance of zoning or occupancy permits. The timing of the issuance of these zoning permits depends upon the economy, the housing market, and consumer trends.
5. Cash proffers are programmed for use in the CIP only after they have been collected and cash is on hand. Due to the uncertain nature of when cash proffers will be collected, the County does not prospectively program the use of cash proffers in the CIP, but waits until sufficient balances have been accumulated to program onto capital projects to drive down the amount of debt required to be issued on projects.
6. Cash proffers can only be programmed for the stated programmatic purpose provided in the approved proffer statement. Many cash proffers have very specific uses, which if that use is not currently in the CIP, the proffer cannot be programmed for use.
7. Cash proffers can only be programmed in the same planning subarea of the County as the approved rezoning application it is related to. There are geographic limitations as to where and what projects cash proffers can be programmed for. For example, cash proffers collected in the Sterling area cannot be programmed into the CIP if there are no capital projects in the Sterling area planned for development.

It is anticipated that a higher amount of cash proffers will be programmed for use in the Silver Line area than the typical amount programmed into the six-year CIP. This is because most of the remaining land in the Silver Line area has no underlying, existing base residential density that would be credited to rezoning applicants. Capital facility contributions credits that would be granted to applicants would be related to ADU credits and credits on the value of land or in-kind proffers dedicated to the County.
Furthermore, most of the Silver Line area is in the Ashburn planning subarea. Cash proffers collected would be eligible for use on projects in the Silver Line area, and also predominantly in the Ashburn planning subarea.

The amount of debt financing required to offset capital facility development costs in the Silver Line area will largely be dependent on the timing of the collection of capital facility cash proffer contributions, and the level of capital facility credits granted to rezoning applications for ADU’s. There is a likelihood that some capital facilities will be triggered for development before sufficient amounts of cash proffers are collected to offset 100% of the facility costs. Also, due to the provision of some capital facility credits (primarily related to ADU’s), 100% of capital facility costs will not be able to be offset using proffers. The timing of cash proffer contributions is hard to determine and is dependent on housing market demand for residential units in the Silver Line area. Therefore, the use of debt financing and local tax funding may be required to offset capital facility development costs in the Silver Line area when there is uncertainty in the timing and issuance or residential zoning or occupancy permits.
Changes to the County's Fiscal Balance

Revenues and Operating Expenditures

To investigate how and the extent to which Loudoun County’s ability to pay for services could be impacted by changes to the planned land uses, the balance of the revenues and operating expenditures in the year 2040 was examined (Table 8). These results can indicate the general direction and magnitude of potential fiscal impacts, prior to subtracting capital expenditures.

To illustrate the level of variance in fiscal results that could occur from differing pupil generation rates and household sizes in multi-family units, fiscal results for the two scenarios are presented in Attachment 3. Annual capital financing costs, not including any offset from proffer contributions, are also included in this attachment, for slower/sooner and faster/later development. The difference between revenues and operating expenditures is identified as the “net operating flows.” Then figures less capital financing costs are shown below this row.

As noted above, tests of the results with the development of 1) only residential uses (single family attached and multi-family development) and 2) only townhouses (single-family attached) are included along with modeling the forecasted mix of development (office, single-family attached, and multi-family development).

Table 8. Revenues less Operating Expenditures in the Year 2040, Additional Development under the Proposed Plan

In constant dollars

<table>
<thead>
<tr>
<th>Scenario 1: assuming small multi-family units throughout the plan area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forecast mix of residential and office development</td>
</tr>
<tr>
<td>Residential development only</td>
</tr>
<tr>
<td>Townhouse (SFA) development only</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario 2: using current multi-family household sizes and pupil generation rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forecast mix of residential and office development</td>
</tr>
<tr>
<td>Development Type</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>Residential only</td>
</tr>
<tr>
<td>Townhouse (SFA)</td>
</tr>
</tbody>
</table>

The mix of development (both office and residential) under Scenario 1 provides a positive fiscal impact over one penny on the tax rate (roughly $7 million for two collections, based on FY 2016/calendar year 2015 assessments), prior to taking into account capital payments. Office along with residential development under scenario 2 achieves a little more than one half penny. Table 8 demonstrates that:

- Achievement of small household sizes and pupil generation rates in multi-family units is important to achieving positive fiscal results.
- Office development provides a large positive fiscal impact, helping to offset the costs of residential development.
- While a mix of residential and office development is a goal of the plan, to the extent residential precedes office development, net operating flows could be lower, or even negative.

### Annual Expenditures on Capital Costs

When a rezoning is submitted, a capital contribution amount has typically been calculated using a worksheet that incorporates the adopted Capital Intensity Factors (the “CIF”). There are different factors by unit type and area of the County, so that the anticipated capital needs of a given type of unit in a given location can be estimated. These factors are estimates based on averages.

The CIF is revised every two years. For the purposes of this analysis, it is assumed that the CIF matches capital costs, although in practice, it can become somewhat out-of-date before it is revised. It should be noted that the CIF is based on the anticipated capital needs of the County. When there is a large scale change in future development as is proposed with this plan, additional facilities – such as additional schools – are needed, which can lead to increases in the CIF.

The capital needs of affordable dwelling units (ADUs) and also of any units that could be developed by-right are not included in present capital facility impact calculations. By-right units are negligible in this area.

For the purposes of this analysis, the annual cost to provide for the portion of capital facilities attributable to 12.5% of the residential units is being considered the annual cost to the County. Based on the Recommended Plan’s policies, multi-family buildings (including those with elevators that are four or more stories) are assumed to include housing designated to be affordable, such as Unmet Housing Needs Units and ADUs. While the County is responsible for the capital costs for ADUs, but not for Unmet Housing Needs Units, 12.5% has been used in the fiscal modeling to be conservative.
The section discussing proffers above highlighted issues with relying on proffers to fully offset the costs of capital facilities. If proffer contributions do not mitigate capital costs, the amount paid by the County will be higher.

**Table 9. Capital Expenditures Needed as a Result of Units Designated Affordable in the Year 2040, from Additional Development under the Proposed Plan**

<table>
<thead>
<tr>
<th>Annual Cost in 2040</th>
<th>Scenario 1: assuming small multi-family units throughout the plan area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential development over 23 years</td>
<td>$3,110,000</td>
</tr>
<tr>
<td>Residential development over 10 years</td>
<td>$3,774,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario 2: using current multi-family household sizes and pupil generation rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential development over 23 years</td>
</tr>
<tr>
<td>Residential development over 10 years</td>
</tr>
</tbody>
</table>

As is shown in Table 9, affordable unit-related capital costs could range from $3 to $4 million per year in 2040.

**Net Fiscal Impact**

As shown on Table 8, there is a range of possibilities for changes in revenues and operating expenditures. The most fiscally positive possibility is the forecasted mix of development (both office and residential) under Scenario 1, which assumes smaller multi-family units. Net operating flows are negative when residential development is not accompanied by office development.

When the intended mix of office and residential development occurs along with smaller household sizes and pupil generation rates, net operating flows are greater than the capital costs for affordable units shown in Table 9. If smaller household sizes and pupil generation rates are not achieved, the net fiscal impact is roughly neutral. Attachment 3, “Change Loudoun County’s Fiscal Balance,” summarizes operating flow and capital cost data for Scenarios 1 and 2, both for development over longer and shorter time periods.

**Additional Analysis**

Two other attachments to the report provide additional information.

Attachment 4 provides detail on revenues and operating expenditures (operating flows) in scenarios 1 and 2, along with capital costs. Capital costs are substantial, highlighting the importance of securing proffers to help offset these costs.
Attachment 5, “Illustrative Fiscal Impacts,” provides a high-level illustration of both changes to fiscal balance (County fiscal impacts) and to tax district revenues that was provided to the Planning Commission. It shows possible annual impacts for both 2030 and 2040. The purposes of this document were to both demonstrate possible impacts prior to 2040, and to provide data that the reader could use to calculate fiscal results for other levels of development as desired. Data shown in Attachment 5 can deviate somewhat from the detailed calculations in this report, given differences in timing assumptions and rounding. One example of differences in timing assumptions is that the data in Attachment 5 were calculated based on development occurring over ten years whereas, as part of sensitivity testing, some of the figures in this report that are based on development occurring over 23 years.

There is another important difference that impacts the multi-family units in Scenario 1. Attachment 5 solely represents the impact of additional units allowed under the Recommended Plan not allowed under the current plan. In contrast, Scenario 1 in this report includes the assumption that multi-family units already allowed under the current plan also would have smaller household sizes and lower pupil generation rates, just like the units added by the Recommended Plan. This difference increases the net fiscal impact of Scenario 1 by approximately $1.4 million.
Tax District Revenues

Metrorail Tax Districts

Three Metrorail tax Districts (see the map in Figure 5) were adopted by the Board in December 2012 to fund the capital and operating costs of the Silver Line extension into Loudoun County. Each district can have a maximum special levy (in addition to the general real property tax levy) of $0.20 per $100 of assessed value.

A special levy of $0.20 has been in effect for the large Metrorail Service Tax District, which encompasses the two Metrorail station service districts plus some additional areas, since January 1, 2013. The primary purpose of the special levy in the Metrorail Service District is to service the debt incurred by the County to fund its portion of the cost of constructing the Metrorail extension into Loudoun.

Figure 5. Map of the Three Districts

Figure 6 provides a closer view of the planned land uses within and outside of the Metrorail Service Tax District (shown by the red outline) along with the two Metrorail station service districts (dotted lines).
To date, no special levies have been authorized for the Route 606-Airport Stations Service District or for the Route 772 Station Service District. However, revenue from special levies in these districts would be a source of funding for the County’s ongoing annual payments to the Washington Metropolitan Area Transit Authority (WMATA) for providing Metrorail service to these stations.

**Rt. 28 Tax District**

Approximately the eastern third of the plan area lies within the Route 28 Highway Transportation Improvement District. The Route 28 Special Tax District was created by Loudoun and Fairfax Counties in response to a joint petition by the owners of real property located near Route 28. Commercial and industrial real property within this district is subject to a maximum special levy of $0.20 per $100 of assessed value. The proceeds of this special levy are used to finance improvements to Route 28, including debt service for improvements financed by bond issuance.

When commercial and industrially zoned land is rezoned to allow residential uses (including to mixed-use zoning districts), a “buy-out” payment is required. The Route 28 District contract requires payment by the property owner of a sum representing the present value of the future special improvement taxes to be lost as a result of a zoning change from a nonresidential to a residential zoning district. This payment offsets the value of the taxes that would have been paid to the district if the land had remained
commercial/industrial. Any rezonings within the tax district pursuant to the proposed land use plan would mitigate their impact on the district through the buy-out payment.

**Increase in Metrorail Service Tax District Revenues**

Table 10 presents the increase in Metrorail Service Tax District revenue in the year 2040. As with the other calculations, this is based on the forecast increase in development beyond what would occur with the current land use plan. Residential development levels shown are somewhat less, since the tax district overlaps with much of, but not all of, the plan area. Office levels are somewhat higher, reflecting a concentration of office uses in this area, in addition to increased development with the plan. Levels of other types of nonresidential development are expected to both increase (retail) and decrease (all other types) within the tax district. Changes in the level of each use are much less than forecast for office development and these impacts were not included in the fiscal modeling. Calculations use a 20 cent tax rate.

**Table 10. Increase in Metrorail Service Tax District Revenues in the Year 2040, from Additional Development under the Proposed Plan**

*In constant dollars*

<table>
<thead>
<tr>
<th>Increased Development through 2040 (SF or unit)</th>
<th>Additional Real Property Value as of 2040</th>
<th>Additional Tax District Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nonresidential Development</strong>^5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>2,583,622</td>
<td>$421,130,000</td>
</tr>
<tr>
<td>Residential Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SFD</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SFA</td>
<td>2,199</td>
<td>$925,735,570</td>
</tr>
<tr>
<td>MF</td>
<td>4,417</td>
<td>$897,424,000</td>
</tr>
<tr>
<td><strong>Additional Tax District Revenues in 2040</strong></td>
<td></td>
<td>$4,488,000</td>
</tr>
</tbody>
</table>

As Table 10 provides revenues for the year 2040, it shows the highest amount of revenue anticipated in a single year. Since development is ongoing, there would be fewer structures to tax and lower real property revenues in earlier years.

Table 11 shows the forecasted cumulative increase in revenues through 2040, both using the slower and sooner option and the faster and later option. The impact of development beginning earlier is evident.

^5 The impact of the increase in office development is shown here. The change resulting from other types of nonresidential development is much less.
The primary means of funding the capital costs of the Silver Line extension into Loudoun is a loan of $195 million (the TIFIA loan), which finances approximately 71 percent of the total capital construction costs. Payments on this loan are expected to be complete by April 2042. Additional appropriation-backed debt will need to be issued to fund the remaining portion, currently estimated to be approximately $61 million. Payments on this debt also would be expected to be complete by 2042 or 2043. Together, the maximum debt service payment is expected to be around $16 million.

Note that revenues are presented in constant dollars. With inflation, revenues would be expected to increase, increasing the revenue available to pay debt service on the TIFIA loan and additional debt.

Table 11. Cumulative Increase in Metrorail Service Tax District Revenues as of 2040, from Additional Development under the Proposed Plan

*In constant dollars*

<table>
<thead>
<tr>
<th></th>
<th>Slower/Sooner Development</th>
<th>Delayed, then Rapid Development 2031-2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonresidential Development</td>
<td>$ 8,844,000</td>
<td>$ 4,632,000</td>
</tr>
<tr>
<td>Residential Development</td>
<td>$ 43,756,000</td>
<td>$ 20,055,000</td>
</tr>
<tr>
<td>Total Additional Revenues</td>
<td>$ 52,600,000</td>
<td>$ 24,687,000</td>
</tr>
</tbody>
</table>
Redevelopment

In developing the forecast of development under the Recommended Plan as of 2040, DPZ considered whether any existing uses would be replaced by other uses. Attachment 6 provides maps which identify, in blue, areas where changes in use (“redevelopment”) were assumed to occur. In most cases, these areas reflect infill development (such as building on parking lots around existing structures) and the use of land with conservation easements that are assumed to be transferred. Only in a small area are market forces expected to possibly cause a replacement of existing structures, such as the area occupied by the data centers east of the existing Loudoun Station development. Given the limited amount of redevelopment anticipated through 2040, its impact is not reflected in the calculations within this report.
Conclusion

In 2013, the Loudoun County Board of Supervisors identified these four goals to pursue in considering planning for this area:

1) Prompt realization of tax revenues to support future Metrorail operations,
2) Maximizing future employment generation,
3) Achieving the desired land use pattern, and
4) Minimizing demands on the county's transportation infrastructure.

This study addresses the first goal, by forecasting future Metrorail Service Tax District revenues. It also looks more broadly at the potential change to the fiscal balance within the County as a whole based on choosing the path envisioned by the proposed land use plan.

Metrorail Service Tax District Revenues

By 2040, based on forecasts provided by DPZ, this tax district is forecast to produce $4.5 million more in revenue than it would without the plan change. About eighty percent of this increase is forecast to result from residential development.

Cumulative revenues available to help support the district are strongly influenced by the timing of development.

2040 is near the end of the timeframe for payment of debt service funding Loudoun County's share of the construction of the Silver Line. The two smaller station districts, created to generate revenues to cover ongoing operating expenses, overlap with smaller portions of the plan area. Development within the two smaller districts can help support the operation of Metrorail into the future.

Changes to the County's Fiscal Balance

The results of this study show that the additional development allowed under this plan, as compared to the current plan, has the potential to be fiscally positive. However, to achieve that, three things are needed:

- a balance of nonresidential and residential development,
- residential development that generates fewer residents and school children, and
- developer contributions that offset capital costs.

With a plan and policies to guide this development, market conditions may still lead development to be fiscally negative, if residential development occurs without accompanying nonresidential development.
Attachments:

1. Planned Land Use Map with Metrorail Tax District Boundaries
2. Assumptions
3. Change to Loudoun County’s Fiscal Balance, 2040
5. Illustrative Fiscal Impacts, 2030 and 2040
6. Redevelopment Areas
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Attachments, page 2

Attachment 2: Assumptions

Assumptions: Capital, Debt Service, and Metrorail Service Tax District Calculations

Development Amounts and Timing: scenarios and options (timing within each scenario)

Changes between current and proposed land use plans are provided by the Loudoun County Department of Planning and Zoning (DPZ).

<table>
<thead>
<tr>
<th>Change in SF</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,000,000</td>
<td>COUNTYWIDE; DPZ 3/13/17</td>
</tr>
<tr>
<td>2,583,622</td>
<td>INSIDE OF TAX DISTRICT; DPZ 3/13/17</td>
</tr>
</tbody>
</table>

Scenarios: for sensitivity testing of differences in household sizes and school children in multi-family units

Scenario 1: Development data based on iteration 3 draft land use map as of 9/30/16; demographic factors (household sizes, pupil generation rates, vacancy rates) per DPZ.

Scenario 2: Development data based on iteration 3 draft land use map as of 9/30/16; demographic factors from the 2015 Fiscal Impact Committee Guidelines.

Options for Timing of Residential Development (Annual Time Lines): to enable Debt Service and Tax District Revenue Modeling

A: Slower development, starting in 2018: flat (same average values each year)
B: Faster development, starting later (in 2031): flat (same average values each year)

Options for Timing of Nonresidential Development (Annual Time Lines): to enable Tax District Revenue Modeling

A: Slower development, starting in 2021: flat (same average values each year)
B: Faster development, starting later (in 2031): flat (same average values each year)

Mix of Rental versus Condo Multi-Family Units

- 60.0% Share of rental units, based on 2012 RCLCO assumptions used in modeling the impact of the Silver Line extension
- 40.0% Share of condo units

Affordable Dwelling Unit Shares

- 12.5% Single-Family Detached (SFD)
- 12.5% Single-Family Attached (SFA)
- 12.5% Multi-Family (MF) Condo
- 12.5% Multi-Family (MF) Rental

Per the draft plan’s policies, all multi-family buildings (including those with elevators that are four or more stories) are assumed to include housing designated to be affordable, such as Unmet Housing Needs Units and Affordable Dwelling Units.

Other Demographics

- 494,180 County Population, end of forecast period (2045): 2015 Fiscal Impact Committee Guidelines
- 5.0% Share of population ages 12-14. DPZ, interpolation of U.S. Census Bureau data
- 17.9% Share of population ages 55+. U.S. Census Bureau, 2015 Population Estimates Program

School Children

- 100.0% Share of school-aged children attending public schools
- 46.2% Elementary school student share of total (6 out of 13 grades)
- 23.1% Middle school student share of total (3 out of 13 grades)
- 30.8% High school student share of total (4 out of 13 grades)

Real Property Values, January 1, 2015

<table>
<thead>
<tr>
<th>Property Type</th>
<th>Market Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFD</td>
<td>$676,017</td>
</tr>
<tr>
<td>SFA</td>
<td>$480,406</td>
</tr>
<tr>
<td>MF Condo -- per unit</td>
<td>$300,000</td>
</tr>
<tr>
<td>MF Rental -- per unit</td>
<td>$160,000</td>
</tr>
<tr>
<td>Office -- per square foot</td>
<td>$163</td>
</tr>
</tbody>
</table>

Value for Urban Multifamily Attached, Figure 2, TischlerBise, Fiscal Impact Assistance Technical Memorandum, 12/22/15

Loudoun County Department of Management and Budget, analysis of average values for rental units at Loudoun Station

2015 assessment data from the Office of the Commissioner of the Revenue.

2015 Fiscal Impact Committee Guidelines, Table A-9

2015 Fiscal Impact Committee Guidelines, Table A-9

2015 Fiscal Impact Committee Guidelines, Table B-8

Silver Line Fiscal Impact Analysis, April 2017
Affordable Dwelling Units

<table>
<thead>
<tr>
<th>Type</th>
<th>Cost</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFD</td>
<td>$222,000</td>
<td>Loudoun County Department of Family Services.</td>
</tr>
<tr>
<td>SFA</td>
<td>$145,000</td>
<td>Loudoun County Department of Family Services.</td>
</tr>
<tr>
<td>MF Condo -- per unit</td>
<td>$120,000</td>
<td>Loudoun County Department of Family Services.</td>
</tr>
<tr>
<td>MF Rental -- per unit</td>
<td>$103,000</td>
<td>Loudoun County Department of Management and Budget</td>
</tr>
</tbody>
</table>

Real Property Taxation, Metrorail Service Tax District

<table>
<thead>
<tr>
<th>Property Taxation</th>
<th>Rate</th>
<th>Collection rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$0.20</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Debt Service
Debt service calculations are amortized over 20 years, the length used for funding the construction of buildings. No refinancing is assumed.

<table>
<thead>
<tr>
<th>Interest rate</th>
<th>5.00%</th>
</tr>
</thead>
</table>

Capital Costs

<table>
<thead>
<tr>
<th>CIP</th>
<th>Basis for costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10% PAYGO Percentage -- school facilities</td>
</tr>
<tr>
<td></td>
<td>10% PAYGO Percentage -- remaining costs</td>
</tr>
</tbody>
</table>

Notes:

1. The per capita factors used to calculate the number of capital facilities triggered for development are based on the 2014 Adopted Capital Facility Standards.
2. For capital facility standards that are not based on a per capita measure, the total population estimate for 2045 is divided by the number of facilities called for by the Capital Facility Standard.
3. All facilities included in the 2014 Adopted Capital Facility Standards are listed. The costs related to facilities that are already developed and accounted for have been provided with zero values as these facilities will not need to be developed with net population growth, although in some cases expansion may be necessary.
4. Total acreage required and estimated land acquisition costs are based upon a "worst case scenario" if each facility required land acquisition as a component of its development.
5. Per lane mile costs for additional road improvements associated with the plan are based on data submitted to the Fiscal Impact Committee for its October 6, 2016 meeting.
### Cost assumptions: CIP Basis

<table>
<thead>
<tr>
<th>Element</th>
<th>Acreage/Lane Mile</th>
<th>Cost Per Acre/Lane Mile</th>
<th>Total Acreage/Lane Mile Costs</th>
<th>Facility Costs</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Projected New Facilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary School</td>
<td>928</td>
<td>$630,000</td>
<td>$12,600,000</td>
<td>$41,300,000</td>
<td>$53,900,000</td>
</tr>
<tr>
<td>Middle School</td>
<td>1,350</td>
<td>$630,000</td>
<td>$22,050,000</td>
<td>$60,820,000</td>
<td>$62,870,000</td>
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<tr>
<td>High School</td>
<td>1,800</td>
<td>$630,000</td>
<td>$47,250,000</td>
<td>$126,265,000</td>
<td>$173,515,000</td>
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<tr>
<td>Animal Shelter</td>
<td>494,180</td>
<td>$900,000</td>
<td>$4,500,000</td>
<td>$11,720,000</td>
<td>$16,220,000</td>
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<tr>
<td>Sheriff Stations</td>
<td>100,000</td>
<td>$900,000</td>
<td>$4,500,000</td>
<td>$15,675,000</td>
<td>$20,175,000</td>
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<tr>
<td>Fire Engine</td>
<td>10,000</td>
<td>$900,000</td>
<td>$4,500,000</td>
<td>$800,000</td>
<td>$800,000</td>
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<tr>
<td>ALS Ambulance</td>
<td>10,000</td>
<td>$900,000</td>
<td>$4,500,000</td>
<td>$350,000</td>
<td>$350,000</td>
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<tr>
<td>Aerial Truck</td>
<td>25,000</td>
<td>$900,000</td>
<td>$4,500,000</td>
<td>$1,000,000</td>
<td>$1,000,000</td>
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<tr>
<td>Heavy Rescue Squad</td>
<td>50,000</td>
<td>$900,000</td>
<td>$4,500,000</td>
<td>$800,000</td>
<td>$800,000</td>
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<td>Fire Tanker Truck</td>
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<td>$900,000</td>
<td>$4,500,000</td>
<td>$800,000</td>
<td>$800,000</td>
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<tr>
<td>Brush Truck</td>
<td>10,000</td>
<td>$900,000</td>
<td>$4,500,000</td>
<td>$800,000</td>
<td>$800,000</td>
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<tr>
<td>Recreation Center</td>
<td>82,363</td>
<td>$630,000</td>
<td>$9,450,000</td>
<td>$70,930,000</td>
<td>$80,380,000</td>
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<tr>
<td>Community Center</td>
<td>45,000</td>
<td>$630,000</td>
<td>$9,450,000</td>
<td>$70,930,000</td>
<td>$80,380,000</td>
</tr>
<tr>
<td>Teen Center</td>
<td>10,000</td>
<td>$900,000</td>
<td>$4,500,000</td>
<td>$8,520,000</td>
<td>$13,020,000</td>
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<tr>
<td>Senior Center</td>
<td>10,000</td>
<td>$900,000</td>
<td>$4,500,000</td>
<td>$8,285,000</td>
<td>$12,785,000</td>
</tr>
<tr>
<td>Adult Day Center</td>
<td>15,000</td>
<td>$900,000</td>
<td>$3,600,000</td>
<td>$3,235,000</td>
<td>$6,835,000</td>
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<tr>
<td>Satellite Maintenance Facility</td>
<td>164,727</td>
<td>$900,000</td>
<td>$1,550,000</td>
<td>$1,550,000</td>
<td>$1,550,000</td>
</tr>
<tr>
<td>Regional Park</td>
<td>98,836</td>
<td>$630,000</td>
<td>$126,000,000</td>
<td>$55,400,000</td>
<td>$181,400,000</td>
</tr>
<tr>
<td>District Park</td>
<td>61,773</td>
<td>$630,000</td>
<td>$47,250,000</td>
<td>$17,000,000</td>
<td>$64,250,000</td>
</tr>
<tr>
<td>Community Park</td>
<td>25,000</td>
<td>$630,000</td>
<td>$18,900,000</td>
<td>$7,990,000</td>
<td>$26,890,000</td>
</tr>
<tr>
<td>Neighborhood Park</td>
<td>10,000</td>
<td>$630,000</td>
<td>$9,450,000</td>
<td>$5,943,000</td>
<td>$15,393,000</td>
</tr>
<tr>
<td>Recreational Trails</td>
<td>1,000</td>
<td>0.63 $900,000</td>
<td>$567,000</td>
<td>$34,000</td>
<td>$601,000</td>
</tr>
<tr>
<td>DS Group Residence</td>
<td>38,000</td>
<td>0.5 $900,000</td>
<td>$450,000</td>
<td>$2,200,000</td>
<td>$2,650,000</td>
</tr>
<tr>
<td>MH Group Residence</td>
<td>18,325</td>
<td>0 $900,000</td>
<td>$225,000</td>
<td>$2,200,000</td>
<td>$2,425,000</td>
</tr>
<tr>
<td>Library</td>
<td>7</td>
<td>$900,000</td>
<td>$6,300,000</td>
<td>$23,100,000</td>
<td>$29,400,000</td>
</tr>
<tr>
<td>Juvenile Detention Center</td>
<td>494,180</td>
<td>7 $900,000</td>
<td>-</td>
<td>$23,100,000</td>
<td>$29,400,000</td>
</tr>
<tr>
<td>Emergency Homeless Shelter</td>
<td>494,180</td>
<td>0 $900,000</td>
<td>-</td>
<td>$23,100,000</td>
<td>$29,400,000</td>
</tr>
<tr>
<td>Youth Shelter</td>
<td>247,090</td>
<td>2 $900,000</td>
<td>-</td>
<td>$23,100,000</td>
<td>$29,400,000</td>
</tr>
<tr>
<td>Adolescent Living Residence</td>
<td>494,180</td>
<td>1 $900,000</td>
<td>$1,800,000</td>
<td>$6,145,000</td>
<td>$7,945,000</td>
</tr>
<tr>
<td>General Government Support Space (SF)</td>
<td>4</td>
<td>0 $900,000</td>
<td>83</td>
<td>$391</td>
<td>$474</td>
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<tr>
<td>Bus Maintenance Facility</td>
<td>494,180</td>
<td>10 $900,000</td>
<td>-</td>
<td>$2,596,000</td>
<td>$2,596,000</td>
</tr>
<tr>
<td>Park and Ride Lot</td>
<td>100</td>
<td>6 $900,000</td>
<td>$4,500,000</td>
<td>$3,950,000</td>
<td>$8,450,000</td>
</tr>
<tr>
<td>Recycling Drop Off Center</td>
<td>54,909</td>
<td>0 $900,000</td>
<td>-</td>
<td>$600,000</td>
<td>$600,000</td>
</tr>
<tr>
<td>Special Waste Drop Off Center</td>
<td>494,180</td>
<td>1 $900,000</td>
<td>-</td>
<td>$600,000</td>
<td>$600,000</td>
</tr>
<tr>
<td>Extra Lane Miles based on plan (lane miles and cost per mile)</td>
<td>-</td>
<td>0.649 $4,000,000</td>
<td>$2,596,000</td>
<td>-</td>
<td>$2,596,000</td>
</tr>
</tbody>
</table>

Silver Line Fiscal Impact Analysis, April 2017

Attachments, page 4
Assumptions: Revenues and Operating Expenditures -- County General Fund, Schools, and General Fund Transfers

Development Amount and Mix Assumptions

Changes between current and proposed land use plans as of 2040 provided by the Loudoun County Department of Planning and Zoning (DPZ).

2,000,000 Change in office SF as of 3/13/17

Scenarios: for sensitivity testing of differences in household sizes and school children in multi-family units

Scenario 1 Development data based on draft land use map as of 10/27/16 demographic factors (household sizes, pupil generation rates, vacancy rates) per DPZ.

Scenario 2 Development data based on draft land use map as of 10/27/16; demographic factors from the 2015 Fiscal Impact Committee Guidelines.

Options for Mix of Development: sensitivity tests

A Mix of office and residential (SFA, MF) development, as forecast

C SFA and MF development only

Mix of Rental versus Condo Multi-Family Units

60.0% Share of rental units, based on 2012 RCLCO assumptions used in modeling the impact of the Silver Line extension.

40.0% Share of condo units

Affordable Dwelling Unit Shares

12.5% Single-Family Detached (SFD)

12.5% Single-Family Attached (SFA)

12.5% Multi-Family (MF) Condo

12.5% Multi-Family (MF) Rental

Per the recommended plan's policies, all multi-family buildings (including those with elevators that are four or more stories) are assumed to include housing designated to be affordable, such as Unmet Housing Needs Units and Affordable Dwelling Units.

Revenue Assumptions

Real Property

Market Rate Real Property Values, January 1, 2015

<table>
<thead>
<tr>
<th>Property Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFD</td>
<td>$676,017</td>
</tr>
<tr>
<td>SFA</td>
<td>$460,406</td>
</tr>
<tr>
<td>MF Condo -- per unit</td>
<td>$300,000</td>
</tr>
<tr>
<td>MF Rental -- per unit</td>
<td>$160,000</td>
</tr>
<tr>
<td>Office -- per square foot</td>
<td>$163</td>
</tr>
</tbody>
</table>

2015 Fiscal Impact Committee Guidelines, Table A-9

Value for Urban Multifamily Attached, Figure 2, TischlerBise, Fiscal Impact Assistance Technical Memorandum, 12/22/15.

Loudoun County Department of Management and Budget, analysis of average values for rental units at Loudoun Station; 2015 assessment data from the Office of the Commissioner of the Revenue.

2015 Fiscal Impact Committee Guidelines, Table B-8
### Affordable Dwelling Unit Values

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFD</td>
<td>$222,000</td>
<td>Loudoun County Department of Family Services.</td>
</tr>
<tr>
<td>SFA</td>
<td>$145,000</td>
<td>Loudoun County Department of Family Services.</td>
</tr>
<tr>
<td>MF Condo -- per unit</td>
<td>$129,000</td>
<td>Loudoun County Department of Family Services.</td>
</tr>
<tr>
<td>MF Rental -- per unit</td>
<td>$103,000</td>
<td>Loudoun County Department of Management and Budget.</td>
</tr>
</tbody>
</table>

### Real Property Taxation

<table>
<thead>
<tr>
<th>Description</th>
<th>Rate</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Fund Tax Rate, 2015</td>
<td>$1.135</td>
<td>FY 2016 Budget</td>
</tr>
<tr>
<td>Metrorail Service District Tax Rate</td>
<td>$0.20</td>
<td>FY 2016 Budget</td>
</tr>
<tr>
<td>Collection rate</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

### Personal Property and Sales Tax

Personal property and sales tax figures below were derived, by TischlerBise for market rate for sales units and by County staff for rental and affordable dwelling units, by adjusting Countywide personal property and sales tax receipts proportional to unit values.

<table>
<thead>
<tr>
<th>Description</th>
<th>Rate</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Assessed Value per Unit, 2015</td>
<td>$415,000</td>
<td>Figure 9, TischlerBise, Fiscal Impact Assistance Technical Memorandum, 12/22/15.</td>
</tr>
<tr>
<td>Average Personal Property Tax per Unit</td>
<td>$867</td>
<td>Loudoun County Department of Management and Budget.</td>
</tr>
<tr>
<td>Average Sales Tax per Unit</td>
<td>$90</td>
<td>Figure 11, TischlerBise, Fiscal Impact Assistance Technical Memorandum, 12/22/15.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Rate</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFD</td>
<td>$1,413</td>
<td><strong>Property</strong></td>
</tr>
<tr>
<td>SFA</td>
<td>$902</td>
<td><strong>Property</strong></td>
</tr>
<tr>
<td>MF Condo -- per unit</td>
<td>$627</td>
<td><strong>Property</strong></td>
</tr>
<tr>
<td>MF Rental -- per unit</td>
<td>$334</td>
<td><strong>Property</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Rate</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFD</td>
<td>$464</td>
<td><strong>Sales Tax</strong></td>
</tr>
<tr>
<td>SFA</td>
<td>$303</td>
<td><strong>Sales Tax</strong></td>
</tr>
<tr>
<td>MF Condo -- per unit</td>
<td>$270</td>
<td><strong>Sales Tax</strong></td>
</tr>
<tr>
<td>MF Rental -- per unit</td>
<td>$215</td>
<td><strong>Sales Tax</strong></td>
</tr>
</tbody>
</table>

### Office (per job)

<table>
<thead>
<tr>
<th>Type</th>
<th>Rate</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFD</td>
<td>$794</td>
<td>Figure 8, TischlerBise, Fiscal Impact Assistance Technical Memorandum, 12/22/15.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Rate</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office (per job)</td>
<td>$440</td>
<td>Figure 8, TischlerBise, Fiscal Impact Assistance Technical Memorandum, 12/22/15.</td>
</tr>
</tbody>
</table>

### Other County Revenues

<table>
<thead>
<tr>
<th>Description</th>
<th>Rate</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential (per capita)</td>
<td>$275</td>
<td>Figure 8, TischlerBise, Fiscal Impact Assistance Technical Memorandum, 12/22/15.</td>
</tr>
<tr>
<td>Office (per job)</td>
<td>$440</td>
<td>Figure 8, TischlerBise, Fiscal Impact Assistance Technical Memorandum, 12/22/15.</td>
</tr>
</tbody>
</table>
School Revenues

Residential (per capita) $  -  Loudoun County Department of Management and Budget.
Residential (per student) $  3,875  Loudoun County Department of Management and Budget.

Expenditure Assumptions

County Expenditures

Residential (per capita) $  1,026.70  Figure 13, TischlerBise, Fiscal Impact Assistance Technical Memorandum, 12/22/15, less transfer to the CIP Fund, and plus DTCI expenditures.
Office (per job) $  322.11  Figure 13, TischlerBise, Fiscal Impact Assistance Technical Memorandum, 12/22/15, less transfer to the CIP Fund, plus DTCI expenditures.

School Expenditures

Residential (per student) $  13,091  Figure 14, TischlerBise, Fiscal Impact Assistance Technical Memorandum, 12/22/15.

Debt Service in the Year 2040

Timing Option A from Cap_DS_TDRev Model

Slower development, starting in 2018 (residential) and 2021 (office)

Mix of office and residential development, as forecast

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 21,320,523</td>
<td>$ 25,055,237</td>
</tr>
</tbody>
</table>

Affordable units only

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 2,886,227</td>
<td>$ 3,148,383</td>
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</tbody>
</table>

Timing Option B from Cap_DS_TDRev Model

Faster, later development, starting in 2031 (both residential and office)

Mix of office and residential development, as forecast

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 25,834,599</td>
<td>$ 30,376,638</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 3,318,867</td>
<td>$ 3,582,923</td>
</tr>
</tbody>
</table>

Cash (PAYGO) in the Year 2040

Timing Option A from Cap_DS_TDRev Model

Slower development, starting in 2018 (residential) and 2021 (office)

Mix of office and residential (SFA, MF) development, as forecast

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 1,566,551</td>
<td>$ 1,837,730</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 223,799</td>
<td>$ 240,015</td>
</tr>
</tbody>
</table>

Timing Option B from Cap_DS_TDRev Model

Faster, later development, starting in 2031 (both residential and office)

Mix of office and residential (SFA, MF) development, as forecast

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 3,543,358</td>
<td>$ 4,167,071</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 455,029</td>
<td>$ 492,326</td>
</tr>
</tbody>
</table>
### Attachment 3: Change to Loudoun County's Fiscal Balance

**Change to Loudoun County's Fiscal Balance, Year 2040**

*In 2016 constant dollars.*

<table>
<thead>
<tr>
<th>Change in Development, Countywide</th>
<th>Revenues</th>
<th>Operating Expenditures</th>
<th>Net Operating Flow</th>
<th>Capital Costs - Affordable Units</th>
<th>Net Fiscal Impact, Operating Flow Minus Capital Costs for Affordable Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scenario 1:</strong> assuming small multi-family units throughout the study area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Residential development over 23 years</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-Family Detached</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
</tr>
<tr>
<td>Single-Family Attached</td>
<td>3,255 $</td>
<td>27,821,000 $</td>
<td>31,656,000 $</td>
<td>(3,835,000)</td>
<td>- $</td>
</tr>
<tr>
<td>Multi-family, small units</td>
<td>4,726 $</td>
<td>17,928,000 $</td>
<td>15,573,000 $</td>
<td>2,355,000</td>
<td>- $</td>
</tr>
<tr>
<td>Office (SF)</td>
<td>2,000,000 $</td>
<td>12,872,000 $</td>
<td>2,310,000 $</td>
<td>10,562,000</td>
<td>3,110,000 $</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>5,972,000 $</td>
</tr>
<tr>
<td><strong>Residential development over 10 years</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-Family Detached</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
</tr>
<tr>
<td>Single-Family Attached</td>
<td>3,255 $</td>
<td>27,821,000 $</td>
<td>31,656,000 $</td>
<td>(3,835,000)</td>
<td>- $</td>
</tr>
<tr>
<td>Multi-family, small units</td>
<td>4,726 $</td>
<td>17,928,000 $</td>
<td>15,573,000 $</td>
<td>2,355,000</td>
<td>- $</td>
</tr>
<tr>
<td>Office (SF)</td>
<td>2,000,000 $</td>
<td>12,872,000 $</td>
<td>2,310,000 $</td>
<td>10,562,000</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5,308,000 $</td>
</tr>
</tbody>
</table>
### Change in Development, Countywide Revenue, Operating Expenditures, Net Operating Flow, Capital Costs, Affordable Units, Net Fiscal Impact, Operating Flow Minus Capital Costs for Affordable Units

**Scenario 2:** using current multi-family household sizes and pupil generation rates

#### Residential development over 23 years

<table>
<thead>
<tr>
<th></th>
<th>Change in Development, Countywide</th>
<th>Revenues</th>
<th>Operating Expenditures</th>
<th>Net Operating Flow</th>
<th>Capital Costs - Affordable Units</th>
<th>Net Fiscal Impact, Operating Flow Minus Capital Costs for Affordable Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family Detached</td>
<td></td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>-</td>
</tr>
<tr>
<td>Single-Family Attached</td>
<td>3,255</td>
<td>27,821,000</td>
<td>31,656,000</td>
<td>(3,835,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-family, average units</td>
<td>4,726</td>
<td>19,411,000</td>
<td>22,123,000</td>
<td>(2,712,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office (SF)</td>
<td>2,000,000</td>
<td>12,872,000</td>
<td>2,310,000</td>
<td>10,562,000</td>
<td>3,388,000</td>
<td>627,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$60,104,000</td>
<td>$56,089,000</td>
<td>$4,015,000</td>
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</tbody>
</table>

#### Residential development over 10 years

<table>
<thead>
<tr>
<th></th>
<th>Change in Development, Countywide</th>
<th>Revenues</th>
<th>Operating Expenditures</th>
<th>Net Operating Flow</th>
<th>Capital Costs - Affordable Units</th>
<th>Net Fiscal Impact, Operating Flow Minus Capital Costs for Affordable Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family Detached</td>
<td></td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>-</td>
</tr>
<tr>
<td>Single-Family Attached</td>
<td>3,255</td>
<td>27,821,000</td>
<td>31,656,000</td>
<td>(3,835,000)</td>
<td></td>
<td></td>
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<tr>
<td>Multi-family, average units</td>
<td>4,726</td>
<td>19,411,000</td>
<td>22,123,000</td>
<td>(2,712,000)</td>
<td></td>
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</tr>
<tr>
<td>Office (SF)</td>
<td>2,000,000</td>
<td>12,872,000</td>
<td>2,310,000</td>
<td>10,562,000</td>
<td>4,075,000</td>
<td>(60,000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$60,104,000</td>
<td>$56,089,000</td>
<td>$4,015,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

1. Net operating flow figures reflect the difference between annual revenues and operating expenditures for the County Government and Loudoun County Public Schools. The net fiscal impact subtracts the capital costs related to housing units designated to be affordable. In the past, proffers have been utilized to help mitigate the impacts of residential development. County policy has been to request contributions to offset 100% of the costs of residential development, other than for affordable units and units allowed by-right.

2. Per the housing policies in the recommended plan, all multi-family buildings are assumed to have 12.5% of its units designated to be affordable (such as Affordable Dwelling Units or Unmet Housing Needs Units). This is a conservative assumption, given that the mix of units designated to be affordable is unknown.
### Scenario 1: assuming small multi-family units throughout the plan area

<table>
<thead>
<tr>
<th></th>
<th>Market Rate Residential Units</th>
<th>Affordable Dwelling Units</th>
<th>Nonresidential SF Office</th>
<th>Totals, Year 2040</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SFD</td>
<td>SFA</td>
<td>MF Condo</td>
<td>MF Rental</td>
</tr>
<tr>
<td>Housing Units</td>
<td>-</td>
<td>2,848</td>
<td>1,654</td>
<td>2,481</td>
</tr>
<tr>
<td>Households</td>
<td>-</td>
<td>2,762</td>
<td>1,538</td>
<td>2,307</td>
</tr>
<tr>
<td>Population</td>
<td>-</td>
<td>7,957</td>
<td>2,827</td>
<td>4,240</td>
</tr>
<tr>
<td>School Children</td>
<td>-</td>
<td>1,492</td>
<td>191</td>
<td>286</td>
</tr>
<tr>
<td>Square Feet</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jobs</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Fiscal Impact Analysis: Operating Flows

<table>
<thead>
<tr>
<th></th>
<th>Market Rate Residential Units</th>
<th>Affordable Dwelling Units</th>
<th>Nonresidential SF Office</th>
<th>Totals, Year 2040</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SFD</td>
<td>SFA</td>
<td>MF Condo</td>
<td>MF Rental</td>
</tr>
<tr>
<td>County Government</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenues</td>
<td>$</td>
<td>-</td>
<td>$ 14,883,185</td>
<td>$ 5,632,211</td>
</tr>
<tr>
<td>Personal Property</td>
<td>$</td>
<td>-</td>
<td>$ 2,739,896</td>
<td>$ 1,037,121</td>
</tr>
<tr>
<td>Sales Tax</td>
<td>$</td>
<td>-</td>
<td>$ 284,813</td>
<td>$ 107,517</td>
</tr>
<tr>
<td>Other</td>
<td>$</td>
<td>-</td>
<td>$ 2,188,044</td>
<td>$ 791,077</td>
</tr>
<tr>
<td></td>
<td>$</td>
<td>-</td>
<td>$ 20,095,937</td>
<td>$ 7,567,925</td>
</tr>
<tr>
<td>Annual Capital Financing, without offset by proffer contributions, 2040</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slower development, starting in 2018 (residential) and 2021 (office)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt Service</td>
<td>$21,320,523</td>
</tr>
<tr>
<td>Cash (PAYGO)</td>
<td>$1,566,551</td>
</tr>
</tbody>
</table>

**Operating Flows Less Capital Costs**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$ (13,804,777)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annual Capital Financing, without offset by proffer contributions, 2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faster, later development, starting in 2031 (both residential and office)</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt Service</td>
<td>$25,834,599</td>
</tr>
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<td>Cash (PAYGO)</td>
<td>$3,543,358</td>
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</table>

**Operating Flows Less Capital Costs**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$ (20,295,661)</td>
</tr>
</tbody>
</table>
### Scenario 2: using current multi-family household sizes and pupil generation rates

<table>
<thead>
<tr>
<th></th>
<th>Market Rate Residential Units</th>
<th>Affordable Dwelling Units</th>
<th>Nonresidential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SFD</td>
<td>SFA</td>
<td>MF Condo</td>
</tr>
<tr>
<td>Housing Units</td>
<td>-</td>
<td>2,848</td>
<td>1,654</td>
</tr>
<tr>
<td>Households</td>
<td>-</td>
<td>2,763</td>
<td>1,538</td>
</tr>
<tr>
<td>Population</td>
<td>-</td>
<td>7,957</td>
<td>3,030</td>
</tr>
<tr>
<td>School Children</td>
<td>-</td>
<td>1,492</td>
<td>467</td>
</tr>
<tr>
<td>Housing Units</td>
<td>2,848</td>
<td>1,654</td>
<td>2,481</td>
</tr>
<tr>
<td>Households</td>
<td>2,763</td>
<td>1,538</td>
<td>2,307</td>
</tr>
<tr>
<td>Population</td>
<td>7,957</td>
<td>3,030</td>
<td>4,546</td>
</tr>
<tr>
<td>School Children</td>
<td>1,492</td>
<td>467</td>
<td>701</td>
</tr>
<tr>
<td>Square Feet</td>
<td>2,000,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jobs</td>
<td>7,171</td>
<td></td>
<td></td>
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</tbody>
</table>

### Fiscal Impact Analysis: Operating Flows

<table>
<thead>
<tr>
<th></th>
<th>Market Rate Residential Units</th>
<th>Affordable Dwelling Units</th>
<th>Nonresidential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SFD</td>
<td>SFA</td>
<td>MF Condo</td>
</tr>
<tr>
<td>County Government</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real Property</td>
<td>$</td>
<td>-</td>
<td>14,883,185</td>
</tr>
<tr>
<td>Personal Property</td>
<td>$</td>
<td>-</td>
<td>2,739,896</td>
</tr>
<tr>
<td>Sales Tax</td>
<td>$</td>
<td>-</td>
<td>284,813</td>
</tr>
<tr>
<td>Other</td>
<td>$</td>
<td>-</td>
<td>2,188,044</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$</td>
<td>-</td>
<td>20,095,937</td>
</tr>
<tr>
<td>Expenditures</td>
<td>$</td>
<td>-</td>
<td>8,168,980</td>
</tr>
<tr>
<td>County Government Subtotal</td>
<td>$</td>
<td>-</td>
<td>11,926,957</td>
</tr>
<tr>
<td>Schools</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenues</td>
<td>$</td>
<td>-</td>
<td>5,781,263</td>
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<tr>
<td>Expenditures</td>
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<tr>
<td>Schools Subtotal</td>
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<td>-</td>
<td>(13,748,517)</td>
</tr>
<tr>
<td>Net Operating Flows</td>
<td>$</td>
<td>-</td>
<td>(1,821,560)</td>
</tr>
</tbody>
</table>
Annual Capital Financing, without offset by proffer contributions, 2040
*Slower development, starting in 2018 (residential) and 2021 (office)*

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt Service</td>
<td>$25,055,237</td>
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<tr>
<td>Cash (PAYGO)</td>
<td>$1,837,730</td>
</tr>
<tr>
<td><strong>Operating Flows Less Capital Costs</strong></td>
<td><strong>$(22,877,047)</strong></td>
</tr>
</tbody>
</table>

Annual Capital Financing, without offset by proffer contributions, 2040
*Faster, later development, starting in 2031 (both residential and office)*

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt Service</td>
<td>$30,376,638</td>
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<tr>
<td>Cash (PAYGO)</td>
<td>$4,167,071</td>
</tr>
<tr>
<td><strong>Operating Flows Less Capital Costs</strong></td>
<td><strong>$(30,527,789)</strong></td>
</tr>
</tbody>
</table>
Illustrative Fiscal Impacts, 2030 and 2040: provided to the Planning Commission

The Planning Commission was provided a high-level summary of potential changes to both the fiscal balance (County fiscal impacts) and tax district revenues, based on additional development forecast if the Recommended Plan is adopted.

Annual fiscal impacts and tax revenues in 2040, along with figures for 2030, were provided by the following “Illustrative Fiscal Impacts” page. Fiscal impacts to the County as a whole are based on the Countywide change in levels of development. The increase in Metrorail Service Tax District revenues reflects additional development expected within that tax district. The two scenarios shown illustrate the difference in County fiscal impacts resulting from additional multi-family units that achieve smaller household sizes and pupil generation rates, as compared to those achieving average rates.

One purpose of this document was to provide a tool that would allow the user to calculate fiscal impacts from any mix of new development. At the top of the page are figures providing results per 1,000 residents and per 1 million square feet of office space. These figures allow the reader to determine the fiscal balance and tax district revenues for any combination of residential units and office space.

Since the data in this summary focuses on the impacts of new development only, it does not take into account an additional positive increase in the fiscal balance of Scenario 1 incorporated into the more detailed calculations included in this report. This additional positive increase, of approximately $1.4 million, results from an assumption that the multi-family development already allowed under the current plan and entitlements also would be fairly small and of urban format, resulting in fewer residents and school children within these units as well if the Recommended Plan is adopted.
Illustrative Fiscal Impacts, Net Change Beyond the Current Plan and Entitlements, 2030 and 2040
Based on the Planning Commission Recommended Land Use Plan.

Using Results per 1,000 Units/1 M SF to Calculate Fiscal Scenarios
in millions of constant 2016 $s

<table>
<thead>
<tr>
<th></th>
<th>Office</th>
<th>Multi-family (small)</th>
<th>Multi-family (average)</th>
<th>Townhomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,000,000 SF</td>
<td>1,000,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>0.3</td>
<td>-0.1</td>
<td>-0.9</td>
<td>-1.9</td>
<td></td>
</tr>
<tr>
<td>0.33</td>
<td>0.41</td>
<td>0.41</td>
<td>0.84</td>
<td></td>
</tr>
</tbody>
</table>

Illustration: Additional townhomes assumed to arrive over 10 years finishing by 2030.
Relocation of multi-family units to the tax district area begins prior to 2030. Additional multi-family units that would not occur in the County without the increase in development potential allowed by this plan assumed to arrive over 10 years beginning after 2030.
Additional office development assumed to arrive throughout the plan horizon.

| Scenario 1: assuming small MF units (1.87 residents and 0.15 school-aged children per unit) |
|---------------------------------------------|---------------------------------------------|
| Annual Impacts in 2030                      | Annual Impacts in 2040                      |
| Countywide Metrorail Service Tax District County Fiscal Impact ($M) Tax District Revenues ($M) Countywide Metrorail Service Tax District County Fiscal Impact ($M) Tax District Revenues ($M) | | |
| Office                                      | 1,000,000 SF                               | 5.3 | 0.3 | 2,000,000 SF | 2,580,000 SF | 10.6 | 0.9 |
| Multi-family (small)                        | 0 | 1,000 units | 0 | 0.4 | 4,700 | 4,400 units | -0.5 | 1.8 |
| Townhomes                                   | 3,300 | 2,200 units | -6.3 | 1.8 | 3,300 | 2,200 units | -6.3 | 1.8 |

| Scenarios 2: assuming average MF units (1.97 residents and 0.23 school-aged children per unit) |
|---------------------------------------------|---------------------------------------------|
| Annual Impacts in 2030                      | Annual Impacts in 2040                      |
| Countywide Metrorail Service Tax District County Fiscal Impact ($M) Tax District Revenues ($M) Countywide Metrorail Service Tax District County Fiscal Impact ($M) Tax District Revenues ($M) | | |
| Office                                      | 1,000,000 SF                               | 5.3 | 0.3 | 2,000,000 SF | 2,580,000 SF | 10.6 | 0.9 |
| Multi-family (average)                      | 0 | 1,000 units | 0 | 0.4 | 4,700 | 4,400 units | -4.2 | 1.8 |
| Townhomes                                   | 3,300 | 2,200 units | -6.3 | 1.8 | 3,300 | 2,200 units | -6.3 | 1.8 |

Notes:
1) Assumptions regarding development levels provided by the Loudoun County Department of Planning and Zoning, April 6, 2017. Development levels reflect the Planning Commission proposed land use mid-range densities and forecasted market conditions.

2) Development figures reflect the overall increase in development within either the County or the tax district as compared to the current land use plan and entitlements.

3) Assumptions underlying County fiscal impact and Metrorail Service Tax District revenue reflect those used in the Potential Fiscal Impacts of the Land Use Changes Proposed in the Silver Line Plan report as of January 4, 2017. Results from this study can be used to help assess the general direction and magnitude of fiscal changes.

4) Calculations using the per 1,000 unit and per 1 M SF figures shown here may deviate somewhat from detailed calculations such as those shown in the Potential Fiscal Impacts report, given 1) differences resulting from rounding and 2) in the case of Scenarios, achieving small multi-family household sizes and pupil generation rates in multi-family units already covered by existing entitlements.

5) Townhome calculations are based on 2016 Countywide averages and values, rather than data for urban-style units.

6) Due to rounding, totals may not equal the sums of components.
Attachment 6: Redevelopment Areas

2015-2040 Single-Family Attached Forecast
Map 3 of 3

<table>
<thead>
<tr>
<th>SFA Vacant Not Entitled</th>
<th>SFA Units: 1,864</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFA Vacant Entitled</td>
<td>SFA Units: 2,157</td>
</tr>
<tr>
<td></td>
<td>Includes approved by rezoning, approved site plans &amp; increased density</td>
</tr>
<tr>
<td>SFA Redevelopment</td>
<td>SFA Units: 443</td>
</tr>
<tr>
<td>Total</td>
<td>SFA Units: 4,464</td>
</tr>
</tbody>
</table>

Legend
- Small Area Plan Boundary
- SFA Vacant Not Entitled
- SFA Vacant Entitled
- SFA Redevelopment

Silver Line Area - Proposed Plan Iteration #3
Comprehensive Plan Amendment

Single-Family Attached Residential - Map #3
(Proposed plan areas that are undeveloped/partially developed and allow for residential)
Silver Line Fiscal Impact Analysis, April 2017

**2015-2040 Multi-Family Forecast**

**Map 3 of 3**

**MF Vacant Not Entitled**
- MF Units: 3,912

**MF Vacant Entitled**
- Includes approved by rezoning, approved site plans & increased density
- MF Units: 6,314

**MF Redevelopment**
- MF Units: 388

**Total**
- MF Units: 10,614

- The additional 1,776 MF Units created from Moorefield Station Land Use Change Will Be Absorbed After 2040

---

**Silver Line Area - Proposed Plan Iteration #3**

**Comprehensive Plan Amendment**

**Multi-Family Residential - Map #3**

(Proposed plan areas that are undeveloped/partially developed and allow for residential)
General Notes:
- Planned roadway alignments shown are conceptual and subject to further engineering. Alignments will be further refined as part of the planning process and through the land development application process.
- Sidewalks are required on both sides of all streets except where a road-adjacent trail is indicated by the plan.
- Existing privately-maintained roadways are not shown in this plan.

Map Notes
A. Additional north-south connections through this area will be evaluated as part of any redevelopment proposal.
B. An additional Broad Run crossing should be considered at this location as part of any redevelopment proposal.
C. Broad Run crossings will be constructed to accommodate parallel trails on both sides of the Broad Run where indicated by the plan.
D. Local access, interchange locations, and ultimate alignment of Route 606 between Route 28 and Loudoun County Parkway to be determined by later study with consideration of adjacent development/stakeholders.

Legend
- Silver Metrorail Station
- Silver Metrorail (Planned)
- Policy Area Boundary
- Airport Property
- Floodplain/Designated Open Space
- Existing Interchange
- Planned Interchange
- Planned Roundabout
- Freeway
- Design Complete or In-Progress
- CIP Included in the FY 2017 - FY 2022 Capital Improvement Program (CIP)

Note: See map notes for further information on map callouts (A)

CTP Built, Unbuilt, Under Design CIP Map

Attachment 11
Prentice Drive and Shellhorn Drive Parcel Reservation Map

**Alignments shown are conceptual. Parcels identified (PIN #) may be impacted by planned roadway corridors. Exact impacts will be determined as part of design-engineering.**

**Attachment 12**
Shellhorn MWAA Lands Map

**Alignments shown are conceptual. Parcels identified (PIN #) may be impacted by planned roadway corridors. Exact impacts will be determined as part of design-engineering.**
Proposed Revised General Plan Revisions

CTP Chapter 9 Implementation

Implementation Recommendations

G. Other

<table>
<thead>
<tr>
<th>G. OTHER</th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| Rural/Historic Roads | 1. Preserve the rural and historic character of roads through documented heritage areas, entrance corridors to historic districts and context-sensitive designs. | 1. Designate Route 50 as either an Historic Access Corridor or Historic Roadway District and Route 626 as an Historic Access Corridor.  
2. Work with the Town of Leesburg to designate Edwards Ferry Road from Battlefield Parkway east to River Creek Parkway as a Historic Access Corridor.  
3. Work with VDOT to find low-impact, case-by-case design solutions to solve traffic calming and safety issues in unique and sensitive environments. |

| Area Planning Efforts | Provide ongoing transportation planning in conjunction with other Board strategic and land use planning initiatives. | 1. Detailed transportation and mobility planning will be conducted in conjunction with community and small area planning including the Silver Line Comprehensive Plan Amendment and similar efforts.  
2. Policies of the small area plans shall supersede any conflicting policies in the CTP as they may apply to the same planning area. |

General Plan Chapter 6 Suburban Policy Area

Land Use Pattern and Design Policies

4. The County will develop four Community Plans that will provide for the development of the Suburban Policy Area. The four communities are Sterling, Potomac, Dulles, and Ashburn, as shown on the Suburban Community Boundaries Map.

4. The County will develop three Small Area Plans encompassing the suburban communities and the three Silver Line Metro Stations within the County. These plans, which may be redefined in the future will provide for the development of the Suburban Policy Area. The communities are Sterling, Potomac, Dulles, and Ashburn, as shown on the Suburban Community Boundaries Map. Other small area, corridor and strategic plans may be adopted by the Board to refine planning in specific areas of the Suburban Policy Area.

(Policy four is currently before the Board for adoption with the Proffer CPAM. The last sentence is the add on for the Silver Line CPAM.)
Chapter 2
County Road Network

Loudoun County’s roads form the backbone of its transportation network. This chapter outlines the vision and associated policies that govern the planning, design and operation of Loudoun County’s road system. It features a revised road network that attempts to address future congestion concerns, reflecting vehicular travel needs through the year 2030.

I. Development of the Road Network

II. The Road Network

A. Countywide Transportation Plan Map

The structure of the revised road network is described graphically by the CTP map, which has been divided into sections for ease of use and is shown in Figures 2-1a-g. It should be noted that the road network featured on the CTP map and within this document consists of what are referred to as “CTP roads.” CTP roads include those roads that have a significant impact on the function of the network, classified as arterials and collectors. Within the Silver Line Policy Area, roads are defined by both functional classification and by the Virginia Department of Rail and Public Transportation’s Multimodal System Design Guidelines (DRPT Guidelines), with classifications including Multimodal Through Corridors, Boulevards, Major Avenues, Avenues, and Local Streets. These roads require careful long-range planning to ensure that the network functions adequately as they carry the majority of the traffic throughout the County. Local roads are not individually considered in the analysis of the County road network, although their net effect on the operation of the network is taken into account in the analysis process. For reference, local roads are shown on the map in a subdued gray color within the Rural, Suburban, and Transition Policy Areas, and the CTP document itself contains some policies regarding specific aspects of local roads. In the Silver Line Policy Area, some local streets are included as well, due to the nature of existing and planned development in the area, and to conform to the DRPT Guidelines.

B. Countywide Transportation Plan Road Planning Guidelines

The structure of the revised road network is further detailed in Appendix 1, Planning Guidelines for Major Roadways Countywide, which includes the functional classification, number of lanes, right-of-way required, planning-level design criteria, and bicycle/pedestrian facilities guidelines descriptions for each road segment in its current, existing, interim, and ultimate conditions, as appropriate. Appendix 1 will be updated as necessary and may be modified by resolution of the Board of Supervisors through land development applications or as otherwise deemed appropriate by the Board.

III. Road Network Concepts and Policies

Within this section are contained the road network concepts and policies that provide for the orderly development and implementation of the road network as defined on the CTP map and described in Appendix 1. The policies contained herein are critical to ensuring that the long-range vision for the network comes to fruition.
A. Functional Classification and Access Management
   1. Functional Classification
   2. Access Management

B. Road Policies by Geographic Policy Area
   1. Suburban Policy Area Roads
   2. Rural Policy Area Roads
   3. Transition Policy Area Roads
      4. Silver Line Policy Area Roads
         For all policies related to roadways within the Silver Line Policy Area, including design and construction policies, traffic calming policies, and private streets policies, refer to the Silver Line Comprehensive Plan Amendment.
      5. Town Joint Land Management Area (JLMA) Roads
         Each of Loudoun County’s seven incorporated towns controls their own transportation planning functions within their corporate limits. Additionally, both Leesburg and Purcellville are responsible for the maintenance and operation of all public roads within their boundaries. However, the County works cooperatively with each Town regarding transportation matters both within the Towns and in unincorporated areas outside the Towns’ boundaries. As outlined in detail in Chapter 9 of the Revised General Plan, Joint Land Management Areas (JLMAs) have been established by the County around four of the Towns: Hamilton, Leesburg, Purcellville, and Round Hill. As the name implies, the JLMAs are areas of joint Town-County interest and their boundaries set the limits for municipal water and sewer extensions. In that respect, the JLMAs can be viewed as the “urban growth boundary” around each of the four Towns.
Chapter 3
Transit and Other Mobility Options

The County supports and promotes the use of commuting options to the citizens, employees and visitors of Loudoun County. These commuting options include carpooling, vanpooling, transit, biking, telework and work schedule alternatives. Transit, also known as public transportation, can take many forms. It includes regional rail transit, such as Washington, DC’s Metrorail service and Maryland’s MARC train, as well as various types of bus service.

The County employs Transportation Demand Management (TDM) which is a group of strategies and policies designed to facilitate mobility options for residents, employees and visitors of the County, and to reduce single occupant vehicle (SOV) travel. These TDM strategies can increase the efficiency of the transportation system through the encouragement and facilitation of alternatives such as transit, car and van pooling, bicycling and walking. By providing these mobility choices, air and water quality can be improved, congestion can be reduced and citizens may enjoy a better quality of life. TDM measures also support the County’s goal of creating walkable mixed-use communities because they help to reduce the need to build multi-lane roadways. In addition, alternative modes serve the mobility needs of a growing and diverse population, and help attract employers to the County. A balanced transportation system is vital to Loudoun citizens.

For all policies related to transit and TDM within the Silver Line Policy Area, refer to the Silver Line Comprehensive Plan Amendment.

I. Transportation Demand Management

Over the next twenty years, Loudoun County and the Washington Metropolitan Region will face great challenges in managing its transportation system. The population of Virginia is expected to grow 20-25% by 2025. This region is also the second most congested in the nation (2007). The state and the county can no longer build their way out of congestion. Instead the focus must be on how to best manage what is already in place and plan for the anticipated growth.

Transportation Demand Management (TDM) is key to improving utilization of existing facilities and services while accommodating growth. TDM programs help manage travel demand to make the systems more efficient. Its core mission is to move more people in fewer vehicles, move travel time out of the peak period, or, in the case of teleworking, eliminate travel time altogether. TDM focuses on people-oriented transportation choices and shared ride transportation solutions.
Chapter 4
Bicycle and Pedestrian Facilities

Loudoun County aspires to be a place where pedestrians and bicyclists of all abilities have a safe, secure and convenient alternative transportation network of walkways and bikeways that enable everyone to move efficiently to and from such places as work, school, transit, shopping, libraries, parks and recreation sites. As such, planning for the bicyclist and pedestrian is integrated with the entire process of planning, design, and implementation by both the public and private sectors and effectively advocated within that process. Contained within this chapter are policies and recommendations to implement the County’s vision for bicycle and pedestrian accommodations along CTP roads. Planning guidelines for the provision of these facilities along CTP roads are contained in Appendix 6: Bicycle and Pedestrian Facilities General Planning Guidelines. The information contained in the CTP with respect to bicycle and pedestrian facilities supplements the recommendations and guidelines that are specific to the facilities contained in the Loudoun County Bicycle and Pedestrian Mobility Master Plan. For location of bicycle and pedestrian facilities within Leesburg Town limits, refer to the Leesburg Town Plan, as amended.

For all policies related to bicycle and pedestrian facilities within the Silver Line Policy Area, refer to the Silver Line Comprehensive Plan Amendment.

I. Pedestrian Mobility

Pedestrian-friendly communities are a key component of an efficient multi-modal transportation system. Every trip starts with walking. Walking is an affordable, clean, and healthy form of transportation. The County has worked to improve provisions for pedestrians, including sidewalk networks, pedestrian-oriented intersection designs, and traffic calming measures to encourage pedestrian travel. While much progress has been made with respect to pedestrian accommodations, much still needs to be accomplished to ensure that walking is reliably a safe and convenient option.
Appendix 1
Planning Guidelines for Major Roadways Countywide

I. Introduction
The purpose of this appendix is to provide County staff, the development community and the general public with a guide for the planning, design, and coordination of improvements to the major roadways within Loudoun County. The County understands that in order for the actual roadway improvement or construction to be accepted into the state system, VDOT must approve the roadway design; therefore, VDOT standards must be utilized in conjunction with these guidelines. If any differences occur between this document and the adopted transportation maps, the maps govern.

For each roadway or roadway segment, there may be up to three phasing conditions: existing, interim, and ultimate. Roadway segments are listed in numerical order by VDOT route number. Where no VDOT route number has been assigned, roadway segments are listed alphabetically. The conditions are not linked to a specific implementation schedule or time horizon (i.e., 10, 20, or more years). The following components are outlined in each condition for each roadway segment:

1. The SEGMENT represents the location and end points for the route or portion of the route in question (i.e., for Route 7—Fairfax County Line west to the Algonkian Parkway/Atlantic Boulevard interchange). The segment remains the same for each condition, unless specified otherwise.

2. The POLICY AREA identifies the distinct geographic policy areas, as defined in the Revised General Plan, in which the segment of the route in question is located. In the Suburban Policy Area, the specific community or communities (i.e., Ashburn, Dulles, Potomac and Sterling) are also noted. A route may traverse more than one policy area. Incorporated towns through which a road segment passes are also noted. Each policy area has a preferred development pattern that is distinct and that will determine the location of public infrastructure and facilities. The Silver Line Policy Area defines the area included within the Silver Line Comprehensive Plan Amendment. Chapter 2 of the CTP details the road policies that apply to each policy area.

3. The FUNCTIONAL CLASSIFICATION of each roadway segment ranges from local/secondary to principal arterial. The functional classification for the existing roadways is consistent with the current VDOT classification system. The classification for the planned roadways expands upon the VDOT classification system. Roads within the Silver Line Policy Area also reference the Virginia Department of Rail and Public Transportation’s multimodal corridor typology. The range and definitions of the VDOT functional classifications are provided in the Glossary within this document, while the range and definitions of the multimodal corridor typologies are provided in the Silver Line Small Comprehensive Plan Amendment.

4. The total NUMBER OF LANES and RIGHT-OF-WAY (ROW) are identified for each roadway segment (e.g., four lanes/120 foot ROW). Additional ROW may be required for interchanges, turn lanes, and/or bicycle and pedestrian facilities.

5. A DESCRIPTION of the roadway segment includes the typical cross-section (undivided vs. divided and curb vs. shoulder and ditch), design speed, and for future conditions, other additional improvements (i.e., turn lanes and interchanges).
6. **BICYCLE/PEDESTRIAN FACILITIES** planning guidelines are either provided in Appendix 6 or, in certain instances, specific definitions are provided in this appendix for certain roadway segments (generally within the Silver Line Policy Area).

The ultimate condition for each roadway or roadway segment stated in this document is foreseen by the County as the final condition. Also, the ultimate condition may include roadway link improvements, such as increasing the number of lanes, and intersection improvements, such as turn lanes and/or interchanges. These improvements may or may not occur at the same time. For new road construction on new alignments, construction of the four outside lanes in the interim condition will be required in the design of ultimate U6M and U8M roads. The planning guidelines are not intended to propose roadway improvements within the incorporated towns beyond those identified in the town plans.

II. Road Type Descriptions, Typical Sections and Planning Guidelines

**ROAD TYPE DESCRIPTIONS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2</td>
<td>Rural two-lane undivided section with shoulder and ditch</td>
</tr>
<tr>
<td>U2</td>
<td>Urban two-lane undivided section with curb and gutter and a raised or at-grade median</td>
</tr>
<tr>
<td>U2b</td>
<td>Urban two-lane undivided section with curb and gutter and striped bicycle lanes and a raised or at-grade median</td>
</tr>
<tr>
<td>U2B</td>
<td>Urban two-lane undivided section with curb and gutter and buffered bicycle lanes and a raised or at-grade median</td>
</tr>
<tr>
<td>U3</td>
<td>Urban three-lane undivided section with curb and gutter (limited use)</td>
</tr>
<tr>
<td>R4</td>
<td>Rural four-lane undivided section with shoulder and ditch</td>
</tr>
<tr>
<td>U4</td>
<td>Urban four-lane undivided section with curb and gutter</td>
</tr>
<tr>
<td>U4b</td>
<td>Urban four-lane undivided section with curb and gutter and striped bicycle lanes</td>
</tr>
<tr>
<td>U4B</td>
<td>Urban four-lane undivided section with curb and gutter and buffered bicycle lanes</td>
</tr>
<tr>
<td>R4M</td>
<td>Rural four-lane median divided section with shoulder and ditch</td>
</tr>
<tr>
<td>U4M</td>
<td>Urban four-lane median divided section with curb and gutter</td>
</tr>
<tr>
<td>U4Mb</td>
<td>Urban four-lane median divided section with curb and gutter and striped bicycle lanes</td>
</tr>
<tr>
<td>U4MB</td>
<td>Urban four-lane median divided section with curb and gutter and buffered bicycle lanes</td>
</tr>
<tr>
<td>R6M</td>
<td>Rural six-lane median divided section with shoulder and ditch</td>
</tr>
<tr>
<td>U6M/F</td>
<td>Urban six-lane median divided section with curb and gutter/Urban six-lane freeway</td>
</tr>
<tr>
<td>U8M/F</td>
<td>Urban eight-lane median divided section with curb and gutter/Urban eight-lane freeway</td>
</tr>
<tr>
<td>U10M/F</td>
<td>Urban ten-lane median divided section with curb and gutter/Urban ten-lane freeway</td>
</tr>
<tr>
<td>ROW</td>
<td>Right-of-Way</td>
</tr>
</tbody>
</table>

**TYPICAL CROSS-SECTIONS** are shown below – specific roadway descriptions
MAY INCLUDE ADDITIONAL ROADWAY SECTION FEATURES

**R2**

RURAL TWO-LANE UNDIVIDED SECTION WITH SHOULDERS AND DITCHES

*Note:* Provisions for bicycle and pedestrian accommodations will vary depending on the type of facility and location; refer to Appendix 6 the specific definitions in this appendix for planning guidelines for bicycle and pedestrian facilities.

**R4**

RURAL FOUR-LANE UNDIVIDED SECTION WITH SHOULDERS AND DITCHES

*Note:* Provisions for bicycle and pedestrian accommodations will vary depending on the type of facility and location; refer to Appendix 6 the specific definitions in this appendix for planning guidelines for bicycle and pedestrian facilities.
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Primary Roads

1. VA Route 7 - Harry Byrd Highway

Segment: Fairfax County Line west to VA Route 1582 (Algonkian Parkway)/VA Route 1902 (Atlantic Boulevard) interchange

Policy Area: Suburban (Potomac, Sterling)

**Existing Condition**
- **Functional Class**: Principal Arterial
- **Lanes/Right of Way**: 6/Varies
- **Description**: U6M. Local access median divided urban arterial. Grade-separated interchanges at VA Route 1794 (Cascades Parkway) and VA Route 1582 (Algonkian Parkway)/VA Route 1902 (Atlantic Boulevard). Individual site access occurs along segment. Design speed varies.

**Ultimate Condition**
- **Functional Class**: Principal Arterial
- **Lanes/Right of Way**: 6/ROW subject to DTCI Review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- **Description**: U6M. Controlled access median divided urban arterial. Grade-separated interchanges at VA Route 1794 (Cascades Parkway) and VA Route 1582 (Algonkian Parkway)/VA Route 1902 (Atlantic Boulevard). Individual site access will be terminated. Median crossovers will not increase from Existing Condition. Left and right turn lanes required at all intersections. Design speed determined by VDOT and DTCI.

**Bicycle/Pedestrian Facilities**: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

2. VA Route 7 - Harry Byrd Highway / East Market Street

Segment: VA Route 1582 (Algonkian Parkway)/VA Route 1902 (Atlantic Boulevard) interchange west to VA Route 7/US Route 15 (Leesburg Bypass) interchange

Policy Areas: Suburban (Potomac, Sterling, Ashburn), Leesburg JLMA, Town of Leesburg

**Existing Condition**
- **Functional Class**: Principal Arterial
- **Lanes/Right of Way**: 6/Varies
- **Description**: U6M. Controlled access median divided urban arterial. Grade-separated interchanges at VA Route 1582 (Algonkian Parkway)/VA Route 1902 (Atlantic Boulevard), VA Route 28 (Sully Road), VA Route 607 (Loudoun County Parkway), VA Route 901 (Claiborne Parkway)/VA Route 2400 (Lansdowne Boulevard), VA Route 653
Relocated (Crosstrail Boulevard)/VA Route 773 (River Creek Parkway), and VA Route 7/US Route 15 (Leesburg Bypass). Design speed varies.

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Principal Arterial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>8/200 feet – Additional ROW may be needed for interchange(s)</td>
</tr>
<tr>
<td>Description</td>
<td>U8M. Limited access median divided urban arterial. Additional grade-separated interchanges beyond Existing Condition at VA Route 2020 (Ashburn Village Boulevard), VA Route 659 (Belmont Ridge Road) and Battlefield Parkway. All at-grade access is terminated. Study of alternative uses (e.g., HOV, bus lanes) to be considered for segment between VA Route 28 (Sully Road) and VA Route 7/US Route 15 (Leesburg Bypass) when facility is expanded to Ultimate Condition. Design speed determined by VDOT, Town of Leesburg and DTCI.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

3. **VA Route 7 - Harry Byrd Highway**

**Segment**

VA Route 7 Business (West Market Street) interchange west to VA Route 9 (Charles Town Pike) interchange

**Policy Areas**

Town of Leesburg, Rural

**Existing Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Principal Arterial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4/200 feet</td>
</tr>
<tr>
<td>Description</td>
<td>R4M. Controlled access median divided rural arterial. Grade-separated interchanges at VA Route 7 Business (West Market Street) and VA Route 9 (Charles Town Pike). Design speed varies.</td>
</tr>
</tbody>
</table>

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Principal Arterial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>8/200 feet – Additional ROW may be required for interchange(s)</td>
</tr>
<tr>
<td>Description</td>
<td>R8M. Limited access median divided rural arterial. Additional grade-separated interchange beyond Existing Condition at White Gate Place. All at-grade access is terminated. Design speed determined by VDOT and DTCI.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

4. **VA Route 7 Bypass - Harry Byrd Highway**

**Segment**

VA Route 9 (Charles Town Pike) interchange west to VA Route 7 Business (West Loudoun Street) intersection (west of Round Hill)
Policy Areas: Rural, Purcellville JLMA, Town of Purcellville, Round Hill JLMA, Town of Round Hill

**Existing Condition**
- **Functional Class**: Principal Arterial
- **Lanes/Right of Way**: 4/200 feet
- **Description**: R4M. Limited access median divided rural arterial. Grade-separated interchanges at VA Route 9 (Charles Town Pike), VA Route 704 (Hamilton Station Road), VA Route 287 (Berlin Turnpike), and VA Route 7 Business (East Loudoun Street) (east of Round Hill). Design speed varies.

**Ultimate Condition**
- **Functional Class**: Principal Arterial
- **Lanes/Right of Way**: 6/200 feet – Additional ROW may be needed for interchange(s)
- **Description**: R6M. Limited access median divided rural arterial. Additional grade-separated interchanges beyond Existing Condition at VA Route 690 (Hillsboro Road) and west of Round Hill at VA Route 7 Business (West Loudoun Street)/VA Route 1320 (Evening Star Drive). Location of the VA Route 690 interchange to be determined by further study and in consultation with the Town of Purcellville and VDOT. Location of the western Round Hill interchange and six-lane transition to be determined by further study and in consultation with the Town of Round Hill and VDOT. Design speed determined by VDOT and DTCI.

**Bicycle/Pedestrian Facilities**: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**5. VA Route 7 - Harry Byrd Highway**
- **Segment**: VA Route 7 Business (West Loudoun Street) intersection (west of Round Hill) west to Clarke County Line
- **Policy Areas**: Round Hill JLMA, Rural

**Existing Condition**
- **Functional Class**: Principal Arterial
- **Lanes/Right of Way**: 4/200 feet
- **Description**: R4M. Controlled access median divided rural arterial. Design speed varies.

**Ultimate Condition**
- **Functional Class**: Principal Arterial
- **Lanes/Right of Way**: 4/200 feet – Additional ROW may be needed interchange(s), turn lanes and bicycle/pedestrian facilities
<table>
<thead>
<tr>
<th>Description</th>
<th>R4M. Controlled access median divided rural arterial. Grade-separated interchange west of Round Hill at VA Route 7 Business (West Loudoun Street)/VA Route 1320 (Evening Star Drive). Location of the western Round Hill interchange to be determined by further study and in consultation with the Town of Round Hill and VDOT. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. Design speed determined by VDOT and DTCI.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

6. **VA Route 7 Business - East Colonial Highway (Clarke's Gap to Hamilton)**

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 9 (Charles Town Pike) at VA Route 7 Bypass west to VA Route 704 (Hamilton Station Road)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Areas</td>
<td>Rural, Hamilton JLMA</td>
</tr>
</tbody>
</table>

**Existing/Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector/Virginia Byway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass. In Rural Policy Area, left and right turn lanes provided where required for safety. In JLMA, left and right turn lanes recommended at major intersections. Design speed varies. Any improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

7. **VA Route 7 Business - East Colonial Highway / West Colonial Highway / East Main Street / West Main Street (Hamilton to Purcellville)**

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 704 (Hamilton Station Road) west to VA Route 690 (32nd Street South/Silcott Springs Road)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Areas</td>
<td>Hamilton JLMA, Town of Hamilton, Purcellville JLMA, Town of Purcellville</td>
</tr>
</tbody>
</table>

**Existing/Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector/Virginia Byway east of VA Route 287 (Berlin Turnpike)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. Ultimate ROW width within Town of Hamilton and Town of Purcellville determined by respective Town.</td>
</tr>
</tbody>
</table>

| Description | U2. Local access undivided urban collector. Roundabout at VA Route 287 (Berlin Turnpike) / Purcellville South Collector Road ("A" Street). |
Left and right turn lanes recommended at major intersections. Design speed varies. Any improvements along the portion of this segment designated as a Virginia Byway will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within the Town of Hamilton and Town of Purcellville subject to Town review.

8. **VA Route 7 Business - West Main Street / East Loudoun Street (Purcellville to Round Hill)**

Segment VA Route 690 (32nd Street South/Silcott Springs Road) west to VA Route 7 Bypass interchange (east of Round Hill)

Policy Areas Town of Purcellville, Rural, Round Hill JLMA

Existing/Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies – Additional ROW may be needed for turn lanes. Ultimate ROW width within Town of Purcellville determined by Town.</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass (east of Round Hill). In Town and JLMA, left and right turn lanes recommended at major intersections. In Rural Policy Area, left and right turn lanes where required for safety. Design speed varies.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within the Town of Purcellville subject to Town review.</td>
</tr>
</tbody>
</table>

9. **VA Route 7 Business - East Loudoun Street / West Loudoun Street (Round Hill)**

Segment VA Route 7 Bypass interchange (east of Round Hill) west to VA Route 7 Bypass intersection (west of Round Hill)

Policy Area Town of Round Hill, Round Hill JLMA

Existing Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies</td>
</tr>
<tr>
<td>Description</td>
<td>U2. Local access undivided urban collector. Grade-separated interchange at VA Route 7 Bypass (east of Round Hill). Design speed varies.</td>
</tr>
</tbody>
</table>
Ultimate Condition
Functional Class Major Collector
Lanes/Right of Way 2/ROW subject to DTCI review – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities. ROW width within Town of Round Hill determined by Town.
Description U2. Local access undivided urban collector. Additional grade-separated interchange beyond Existing Condition at VA Route 7 Bypass/Evening Star Drive (west of Round Hill). Location of the western Round Hill interchange to be determined by further study and in consultation with the Town of Round Hill. Left and right turn lanes recommended at major intersections. Design speed determined by VDOT, Town of Round Hill and DTCI.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within the Town of Round Hill subject to Town review.

10. VA Route 7 - Leesburg Bypass
Segment VA Route 267 (Dulles Greenway) interchange west and north to VA Route 7 Business (West Market Street) interchange
Policy Area Town of Leesburg

Existing Condition
Functional Class Principal Arterial
Lanes/Right of Way 4/200 feet
Description R4M. Limited access median divided rural arterial. Grade-separated interchanges at VA Route 267 (Dulles Greenway), US Route 15 (South King Street), and VA Route 7 Business (West Market Street). Design speed varies.

Ultimate Condition
Functional Class Principal Arterial
Lanes/Right of Way 6/200 feet
Description U6M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 267 (Dulles Greenway), US Route 15 (South King Street), and VA Route 7 Business (West Market Street). Design speed determined by VDOT and Town of Leesburg.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review.

11. VA Route 9 - Charles Town Pike
Segment West Virginia State Line east to VA Route 7 Bypass
Policy Areas Rural, Town of Hillsboro
Existing Condition

Functional Class Minor Arterial/Virginia Byway

Lanes/Right of Way 2/Varies

Description R2. Local access undivided rural arterial. Grade-separated interchange at VA Route 7 Bypass. Design speed varies.

Ultimate Condition

Functional Class Minor Arterial/Virginia Byway

Lanes/Right of Way 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes. ROW width within Town of Hillsboro determined by Town.

Description R2. Local access undivided rural arterial. Grade-separated interchange at VA Route 7 Bypass. Roundabouts at VA Route 719 (Stony Point Road) and VA Route 690 (Hillsboro Road). Left and right turn lanes provided where required for safety. Design speed determined by VDOT, Town of Hillsboro and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within the Town of Hillsboro subject to Town review.

12. VA Route 7/US Route 15 - Leesburg Bypass

Segment VA Route 7 (East Market Street) interchange south and west to VA Route 267 (Dulles Greenway) interchange

Policy Area Town of Leesburg

Existing Condition

Functional Class Principal Arterial

Lanes/Right of Way 4/200 feet

Description R4M. Controlled access median divided rural arterial. Grade-separated interchanges at VA Route 7 (East Market Street) and at VA Route 267 (Dulles Greenway). Left and right turn lanes at Sycolin Road intersection. Design speed varies.

Ultimate Condition

Functional Class Principal Arterial

Lanes/Right of Way 6/200 feet

Description U6M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 7 (East Market Street) and at VA Route 267 (Dulles Greenway). Sycolin Road to cross over the bypass; existing
intersection/at-grade access to/from Sycolin Road terminated. Design speed determined by VDOT and Town of Leesburg.

Bicycle/Pedestrian Facilities
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review.

13. **US Route 15 - Leesburg Bypass**

   **Segment**
   VA Route 7 (East Market Street) interchange north to Battlefield Parkway

   **Policy Area**
   Town of Leesburg

**Existing Condition**

- **Functional Class**
  Principal Arterial

- **Lanes/Right of Way**
  4/200 feet – Additional ROW may be needed for turn lanes

- **Description**
  R4M. Controlled access median divided rural arterial. Grade-separated interchange at VA Route 7 (East Market Street). Design speed varies.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**Ultimate Condition**

- **Functional Class**
  Principal Arterial

- **Lanes/Right of Way**
  4/200 feet – Additional ROW may be required for interchange(s)

- **Description**
  U4M. Limited access median divided urban arterial. Additional grade-separated interchanges beyond Existing Condition at Edwards Ferry Road and Battlefield Parkway. All existing at-grade access terminated. Design speed determined by VDOT and Town of Leesburg.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review.

14. **US Route 15 - Leesburg Bypass**

   **Segment**
   Battlefield Parkway north to US Route 15 Business (North King Street)

   **Policy Areas**
   Town of Leesburg, Rural

**Existing Condition**

- **Functional Class**
  Principal Arterial

- **Lanes/Right of Way**
  2-4/200 feet

- **Description**
  R2/R4M. Controlled access undivided and divided rural arterial. Design speed varies.
Ultimate Condition

Functional Class  Principal Arterial

Lanes/Right of Way  4/200 feet – Additional ROW may be needed for interchange(s)

Description  U4M. Limited access median divided urban arterial. Grade-separated interchange at Battlefield Parkway. Grade-separated and/or rotary options to be explored at US Route 15 Business (North King Street) by later study. All other at-grade access terminated. Design speed determined by VDOT, Town of Leesburg and DTCI.

Bicycle/Pedestrian Facilities  Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within the Town of Leesburg subject to Town review.

15. US Route 15 - James Monroe Highway

Segment  Prince William County Line north to VA Route 704 (Harmony Church Road)

Policy Area  Rural

Existing/Ultimate Condition

Functional Class  Minor Arterial/Virginia Byway

Lanes/Right of Way  2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description  R2. Local access undivided rural arterial. Traffic calming measures implemented in accordance with the US Route 50 Traffic Calming Project. Roundabouts at the US Route 15/50 Connector (Howser Branch Drive) and at US Route 50 (John Mosby Highway). Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

Bicycle/Pedestrian Facilities  Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

16. US Route 15 – James Monroe Highway / South King Street

Segment  VA Route 704 (Harmony Church Road) north to VA Route 7/US Route 15 (Leesburg Bypass)

Policy Areas  Rural, Town of Leesburg

Existing Condition

Functional Class  Minor Arterial/Virginia Byway

Lanes/Right of Way  2/Varies

Description  R2/U2/U4M. Local access undivided and median divided rural and urban arterial; four-lane divided (U4M) section north of VA Route 621
(Evergreen Mills Road). Grade-separated interchange at VA Route 7/US Route 15 (Leesburg Bypass). Design speed varies.

**Ultimate Condition**

**Functional Class**
Minor Arterial/Virginia Byway

**Lanes/Right of Way**
4/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town.

**Description**
U4M. Controlled access median divided urban arterial. Grade-separated interchange at VA Route 7/US Route 15 (Leesburg Bypass). Left and right turn lanes required at all intersections. Design speed determined by VDOT, DTCI and Town of Leesburg. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within the Town of Leesburg subject to Town review.

17. **US Route 15 - James Monroe Highway**

**Segment**
US Route 15 Business (North King Street) north to Maryland State Line

**Policy Area**
Rural

**Existing Condition**

**Functional Class**
Principal Arterial/Virginia Byway

**Lanes/Right of Way**
2/Varies

**Description**
R2. Local access undivided rural arterial. Design speed varies.

**Ultimate Condition**

**Functional Class**
Principal Arterial/Virginia Byway

**Lanes/Right of Way**
2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**
R2. Local access undivided rural arterial. Grade-separated and/or rotary options to be explored at US Route 15 Business (North King Street) by later study. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.
18.  **VA Route 28 - Sully Road (Darrell Green Boulevard)**  
Segment: Fairfax County line north to VA Route 606 (Old Ox Road)  
Policy Area: Suburban (Dulles, Sterling)  

**Existing Condition**  
Functional Class: Principal Arterial  
Lanes/Right of Way: 6/180 feet  
Description: U6M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 267 (Dulles Toll/Access Road), VA Route 209 (Innovation Avenue), and VA Route 606 (Old Ox Road). Design speed varies.  

**Ultimate Condition**  
Functional Class: Principal Arterial  
Lanes/Right of Way: 10/200 feet – Additional ROW may be needed for interchange(s)  
Description: U10M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 267 (Dulles Toll/Access Road) and VA Route 606 (Old Ox Road). Study of alternative uses (e.g., HOV, bus lanes) to be considered when facility is expanded to Ultimate Condition. Design speed determined by VDOT and DTCI.  
Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.  

19.  **VA Route 28 - Sully Road (Darrell Green Boulevard)**  
Segment: VA Route 606 (Old Ox Road) north to VA Route 7 (Harry Byrd Highway)  
Policy Area: Silver Line, Suburban (Sterling)  

**Existing/Interim Condition**  
Functional Class: Principal Arterial  
Lanes/Right of Way: 6/180 feet  
Description: U6M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 606 (Old Ox Road), VA Route 846 (Sterling Boulevard), VA Route 625 (Waxpool Road/Church Road), VA Route 1793 (Nokes Boulevard) and VA Route 7 (Harry Byrd Highway). Partial northbound interchange to eastbound Warp Drive. Design speed varies.  

**Ultimate Condition**  
Functional Class: Principal Arterial  
Lanes/Right of Way: 8/200 feet – Additional ROW may be needed for interchange(s)
### Description
U8M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 606 (Old Ox Road), VA Route 846 (Sterling Boulevard), VA Route 625 (Waxpool Road/Church Road), [VA Route 2150](https://www.vDOT.gov) VA Route 1793 ([Gloucester Parkway](https://www.vDOT.gov)/Nokes Boulevard) and VA Route 7 ([Harry Byrd Highway](https://www.vDOT.gov)). Partial northbound interchange to eastbound Warp Drive. Study of alternative uses (e.g., HOV, bus lanes) to be considered when facility is expanded to Ultimate Condition. Design speed determined by VDOT and DTCI.

### Bicycle/Pedestrian Facilities
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. Bicycle and pedestrian facilities are not anticipated along limited-access roadways. Bicycle and pedestrian facilities are called for on parallel roadways along both sides of Route 28, and on overpasses crossing the freeway.

### 20. US Route 50 - John Mosby Highway

<table>
<thead>
<tr>
<th>Segment</th>
<th>Fairfax County Line west to VA Route 659 Relocated (Northstar Boulevard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Suburban (Dulles)</td>
</tr>
</tbody>
</table>

#### Existing Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Arterial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4-6/Varies</td>
</tr>
</tbody>
</table>

| Description | R4M/R6M. Controlled access and local access median divided rural arterial. Currently six-lane (R6M) section between VA Route 742 (Poland Road) and VA Route 606 (Loudoun County Parkway). Individual site access occurs along entire segment. Median crossover spacing varies. Design speed varies. |

#### Interim Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Principal Arterial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>6/200 feet – Additional ROW may be needed for turn lanes</td>
</tr>
</tbody>
</table>

| Description | U6M. Controlled access median divided urban arterial. Individual site access will be terminated. Left and right turn lanes required at all intersections. Design speed determined by VDOT and DTCI. |

| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

#### Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Principal Arterial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>6/200 feet – Additional ROW may be needed for interchange(s)</td>
</tr>
</tbody>
</table>

| Description | U6M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 2200 (Tall Cedars Parkway), VA Route 2201 (South Riding Boulevard), VA Route 606 (Loudoun County Parkway), VA Route 606 Extended (Arcola Boulevard/West Spine Road), and VA Route 659 Relocated (Northstar Boulevard). Grade-separated options to be explored at VA Route 609 (Pleasant Valley Road). All at-grade |

A1-20
access is terminated. Functionality of planned interchanges within the segment of the planned limited access corridor between VA Route 606 (Loudoun County Parkway) and VA Route 659 Relocated (Northstar Boulevard) to be reviewed by a later study. Design speed determined by VDOT and DTCI.

Bicycle/Pedestrian Facilities


   **Segment**
   VA Route 659 Relocated (Northstar Boulevard) west to Lenah Loop Road
   
   **Policy Area**
   Transition

   **Existing Condition**
   - **Functional Class**: Minor Arterial
   - **Lanes/Right of Way**: 2-4/Varies
   - **Description**: R2/R4M. Controlled access and local access median divided and undivided rural arterial. Individual site access occurs along two-lane (R2) section. Median crossover spacing varies on four-lane (R4M) section. Design speed varies.

   **Ultimate Condition**
   - **Functional Class**: Minor Arterial
   - **Lanes/Right of Way**: 4/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
   - **Description**: R4M. Controlled access median divided rural arterial. Grade-separated interchange at VA Route 659 Relocated (Northstar Boulevard). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. Design speed determined by VDOT and DTCI.

   **Bicycle/Pedestrian Facilities**
   Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

22. **US Route 50 - John Mosby Highway**

   **Segment**
   Lenah Loop Road west to Village of Aldie
   
   **Policy Areas**
   Transition, Rural

   **Existing Condition**
   - **Functional Class**: Minor Arterial
   - **Lanes/Right of Way**: 2/Varies
   - **Description**: R2. Local access undivided rural arterial. Roundabouts at VA Route 860 (Watson Road), the US Route 15/50 Connector (Howsers Branch...
Drive), and US Route 15 (James Monroe Highway). Design speed varies.

### Ultimate Condition

- **Functional Class**: Minor Arterial/Proposed Virginia Byway
- **Lanes/Right of Way**: 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- **Description**: R2. Local access undivided rural arterial. Traffic calming measures implemented in accordance with the US Route 50 Traffic Calming Project. Roundabouts at VA Route 860 (Watson Road), the US Route 15/50 Connector (Howsers Branch Drive), and US Route 15 (James Monroe Highway). In Transition Policy Area, left and right turn lanes required at major intersections. In Rural Policy Area, left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

- **Bicycle/Pedestrian Facilities**: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### 23. US Route 50 - John Mosby Highway

- **Segment**: Village of Aldie west to Middleburg Town Limits
- **Policy Area**: Rural

### Existing Condition

- **Functional Class**: Minor Arterial/Proposed Virginia Byway
- **Lanes/Right of Way**: 2/Varies
- **Description**: R2. Local access undivided rural arterial. Design speed varies.

### Ultimate Condition

- **Functional Class**: Minor Arterial/Proposed Virginia Byway
- **Lanes/Right of Way**: 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- **Description**: R2. Local access undivided rural arterial. Traffic calming measures implemented in accordance with the US Route 50 Traffic Calming Project. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

- **Bicycle/Pedestrian Facilities**: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.
24. **US Route 50 – Washington Street (Middleburg)**

**Segment**
Existing alignment in Town of Middleburg

**Policy Area**
Town of Middleburg

**Existing/Ultimate Condition**

**Functional Class**
Minor Arterial/Proposed Virginia Byway

**Lanes/Right of Way**
2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. Ultimate ROW width determined by Town of Middleburg.

**Description**
R2. Local access undivided rural arterial. Traffic calming measures implemented in accordance with the US Route 50 Traffic Calming Project. Left and right turn lanes recommended at major intersections. Design speed varies. Any improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Middleburg review.

25. **VA Route 209 - Innovation Avenue**

**Segment**
VA Route 28 (Sully Road) east to Fairfax County line

**Policy Area**
Suburban (Sterling)

**Existing Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
4/Varies

**Description**
U4M. Controlled access median divided urban collector through Dulles World Center site. Grade separated interchange at VA Route 28 (Sully Road). 40 mph design speed.

**Ultimate Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

**Description**
U6M. Controlled access median divided urban collector. Road to be realigned along northern boundary of Dulles World Center site. Connection to VA Route 605 (Rock Hill Road) in Fairfax County. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. Refer to Note G on the CTP Map for additional information regarding this roadway.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

26. VA Route 267 - Dulles Greenway

Segment VA Route 267 (Dulles Airport Access/Toll Road) northwest to VA Route 7/US Route 15 (Leesburg Bypass)

Policy Areas Silver Line, Suburban (Sterling, Dulles, Ashburn), Transition, Rural, Leesburg JLMA, Town of Leesburg

Existing Condition

Functional Class Principal Arterial (DRPT: Multimodal Through Corridor)

Lanes/Right of Way 6/250 feet

Description R6M*. Limited access median divided rural arterial. Toll road. Grade-separated interchanges at VA Route 28 (Sully Road), VA Route 606 (Old Ox Road), VA Route 4950-607 (Loudoun County Parkway), VA Route 772/2298 (Ashburn Village Boulevard/Mooreview Parkway), VA Route 901 (Clairborne Parkway), VA Route 659 (Belmont Ridge Road), VA Route 653 (Shreve Mill Road/Crosstrail Boulevard), Battlefield Parkway, and VA Route 7/US Route 15 (Leesburg Bypass). 60 mph or greater design speed.

Bicycle/Pedestrian Facilities Bicycle and pedestrian facilities do not exist along the Dulles Greenway. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

Ultimate Condition

Functional Class Principal Arterial

Lanes/Right of Way 8/250 feet – Additional ROW may be needed for interchange(s)

Description R8M. Limited access median divided rural arterial. Toll road. Additional grade-separated interchange beyond Existing Condition at westernmost VA Route 625 (Sycolin Road) crossing and partial westbound interchange between Crosstrail Boulevard and Battlefield Parkway. 60 mph or greater design speed. Metrorail guideways in the median from south of VA Route 606 (Old Ox Road) to VA Route 772/2298 (Ashburn Village Boulevard/Mooreview Parkway) with two stations (Loudoun Gateway and Ashburn). Transit-Priority Roadway west of VA Route 772/2298 (Ashburn Village Boulevard/Mooreview Parkway).

Bicycle/Pedestrian Facilities Bicycle and pedestrian facilities are not anticipated along limited-access roadways. Bicycle and pedestrian facilities are called for on parallel roadways along both sides of the Dulles Greenway, and on grade-separated crossings of the freeway. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

27. VA Route 267 - Dulles Airport Access Road

Segment Fairfax County line west to Washington Dulles International Airport
**Policy Area**
Suburban (Dulles)

**Existing/Ultimate Condition**

**Functional Class**
Principal Arterial

**Lanes/Right of Way**
6/Varies

**Description**
R6M. Limited access median divided rural arterial. Grade-separated interchange at VA Route 28 (Sully Road). 60 mph or greater design speed. Metrorail guideways in the median from the Fairfax County Line to Washington Dulles International Airport with one station (Dulles Airport).

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

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**28. VA Route 287 - Berlin Turnpike**

**Segment**
VA Route 7 Business (East Main Street) (opposite Purcellville South Collector Road) north to Purcellville VA Route 7 North Collector Road

**Policy Areas**
Town of Purcellville, Purcellville JLMA

**Existing Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
2/Varies

**Description**
R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass. Roundabout at VA Route 7 Business/Purcellville South Collector Road. Design speed varies.

**Ultimate Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
4/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Purcellville determined by Town.

**Description**
U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 Bypass. Roundabout at VA Route 7 Business/Purcellville South Collector Road. Left and right turn lanes required at all intersections. Design speed determined by VDOT, Town of Purcellville and DTCI.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within the Town of Purcellville subject to Town review.

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**29. VA Route 287 - Berlin Turnpike**

**Segment**
Purcellville VA Route 7 North Collector Road north to Lovettsville Town Limits
<table>
<thead>
<tr>
<th>Policy Areas</th>
<th>Purcellville JLMA, Rural</th>
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**Existing Condition**

<table>
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<tr>
<th>Functional Class</th>
<th>Major Collector</th>
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<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Design speed varies.</td>
</tr>
</tbody>
</table>

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
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<tbody>
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<td>Lanes/Right of Way</td>
<td>2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. In JLMA, left and right turn lanes required at major intersections. In Rural Policy Area, left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI.</td>
</tr>
</tbody>
</table>

**Bicycle/Pedestrian Facilities**

- Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**30. VA Route 287 - Berlin Pike (Lovettsville)**

<table>
<thead>
<tr>
<th>Segment</th>
<th>Existing alignment in Town of Lovettsville</th>
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<tbody>
<tr>
<td>Policy Area</td>
<td>Town of Lovettsville</td>
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</table>

**Existing Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Design speed varies.</td>
</tr>
</tbody>
</table>

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/ROW determined by Town of Lovettsville – Additional ROW may be needed for turn lanes</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Left and right turn lanes recommended at major intersections. Design speed determined by VDOT and Town of Lovettsville.</td>
</tr>
</tbody>
</table>

**Bicycle/Pedestrian Facilities**

- Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Lovettsville review.

**31. VA Route 287 - Berlin Turnpike**

<table>
<thead>
<tr>
<th>Segment</th>
<th>Lovettsville Town Limits north to MD Route 17 at Maryland State Line</th>
</tr>
</thead>
</table>
Policy Area | Rural
---|---

**Existing Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Design speed varies.</td>
</tr>
</tbody>
</table>

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

**32. US Route 340 - Jefferson Pike**

<table>
<thead>
<tr>
<th>Segment</th>
<th>Maryland State Line west to West Virginia State Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Rural</td>
</tr>
</tbody>
</table>

**Existing/Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Arterial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies – Additional ROW may be needed for turn lanes</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural arterial. Left and right turn lanes provided where required for safety. Design speed varies.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>
Secondary Roads

33. **US Route 15 / 50 Connector - Howsers Branch Drive**
    
    **Segment**
    US Route 15 (James Monroe Highway) north and east to US Route 50 (John Mosby Highway)
    
    **Policy Area**
    Rural
    
    **Existing/Ultimate Condition**
    
    **Functional Class**
    Minor Arterial
    
    **Lanes/Right of Way**
    2/50 feet
    
    **Description**
    R2. Connection between US Route 15 south of Gilberts Corner and US Route 50 east of Gilberts Corner as part of the US Route 50 Traffic Calming Project. Roundabouts at US Route 15 (James Monroe Highway) and US Route 50 (John Mosby Highway). 30 mph design speed.
    
    **Bicycle/Pedestrian Facilities**
    Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

34. **VA Route 604 - Sugarland Road**
    
    **Segment**
    Fairfax County Line west to VA Route 625 (Church Road)
    
    **Policy Area**
    Suburban (Sterling)
    
    **Existing/Ultimate Condition**
    
    **Functional Class**
    Minor Collector
    
    **Lanes/Right of Way**
    4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
    
    **Description**
    U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.
    
    **Bicycle/Pedestrian Facilities**
    Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

35. **VA Route 605 - Rock Hill Road**
    
    **Segment**
    VA Route 606 (Old Ox Road) south west to future VA Route 868 (Davis Drive)
    
    **Policy Area**
    Suburban (Sterling)
    
    **Existing Condition**
    
    **Segment**
    VA Route 606 (Old Ox Road) south to Fairfax County Line
    
    **Functional Class**
    Minor Collector
    
    **Lanes/Right of Way**
    2/Varies
**Description**
R2. Local access undivided rural collector. Design speed varies.

**Ultimate Condition**

**Functional Class**
Minor Collector

**Lanes/Right of Way**
2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**
U2. Local access undivided urban collector. Road to be realigned to connect with future VA Route 868 (Davis Drive). Left and right turn lanes required at major intersections. Design speed determined by VDOT and DTCI. Refer to Note G on the CTP Map for additional information regarding this roadway.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

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36. **VA Route 606 - Loudoun County Parkway**

**Segment**
VA Route 606 (Old Ox Road) at VA Route 842 (Arcola Road/future Arcola Boulevard) intersection south to US Route 50 (John Mosby Highway), following existing VA Route 606 alignment

**Policy Area**
Suburban (Dulles)

**Existing Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
2-4/varies

**Description**
R2/U4M. Local access undivided and median divided urban collector road; two-lane (R2) section north of VA Route 621 (Evergreen Mills Road); four-lane divided (U4M) section elsewhere. Design speed varies.

**Interim Condition**

**Functional Class**
Minor Arterial

**Lanes/Right of Way**
4/120 feet – Additional ROW may be needed for turn lanes

**Description**
U4M. Controlled access median divided urban arterial. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**Ultimate Condition**

**Functional Class**
Principal Arterial

**Lanes/Right of Way**
8/200 feet – Additional ROW may be needed for turn lanes and interchange(s)
Description

U8M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 606 (Old Ox Road) and US Route 50 (John Mosby Highway). Additional grade-separated options to be explored at other existing intersections along segment. Study of alternative uses (e.g., HOV, bus lanes) to be considered when facility is expanded to Ultimate Condition. Design speed determined by VDOT and DTCI.

Bicycle/Pedestrian Facilities

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

37. VA Route 606 - Loudoun County Parkway

Segment

US Route 50 (John Mosby Highway) south to VA Route 620 (Braddock Road)

Policy Area

Suburban (Dulles)

Existing/Interim Condition

Functional Class

Minor Arterial

Lanes/Right of Way

4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description

U4M. Controlled access median divided urban arterial. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Bicycle/Pedestrian Facilities

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

Ultimate Condition

Functional Class

Principal Arterial

Lanes/Right of Way

6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description

U6M. Controlled access median divided urban arterial. Grade-separated interchange at US Route 50 (John Mosby Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Bicycle/Pedestrian Facilities

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

38. VA Route 606 - Loudoun County Parkway (formerly Tri-County Parkway)

Segment

VA Route 620 (Braddock Road) south to Fairfax County Line

Policy Area

Transition

Interim Condition

Functional Class

Major Collector
<table>
<thead>
<tr>
<th>Lanes/Right of Way</th>
<th>4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>R4M. Controlled access median divided urban collector. Will follow portions of VA Route 613 (Ticonderoga Road) and VA Route 621 (Bull Run Post Office Road) alignments. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

**Ultimate Condition**

**Functional Class** Major Collector

**Lanes/Right of Way** 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description** R6M. Controlled access median divided urban collector. Will follow portions of VA Route 613 (Ticonderoga Road) and VA Route 621 (Bull Run Post Office Road) alignments. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.

**Bicycle/Pedestrian Facilities** Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### 39. VA Route 606 - Old Ox Road

**Segment** Fairfax County Line/Herndon Town Limits west to VA Route 28 (Sully Road) interchange

**Policy Area** Suburban (Sterling)

**Existing Condition**

**Functional Class** Major Collector

**Lanes/Right of Way** 4/120 feet

**Description** U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). 45 mph design speed.

**Bicycle/Pedestrian Facilities** Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**Ultimate Condition**

**Functional Class** Major Collector

**Lanes/Right of Way** 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description** U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Refer to VDOT
Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. Refer to Note G on the CTP Map for additional information regarding this roadway.

**Bicycle/Pedestrian Facilities**  
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### 40. VA Route 606 - Old Ox Road

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 28 (Sully Road) interchange west to VA Route 267 (Dulles Greenway) interchange</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy Area</strong></td>
<td>Silver Line, Suburban (Sterling)</td>
</tr>
<tr>
<td><strong>Existing Condition</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Functional Class</strong></td>
<td>Major Collector</td>
</tr>
<tr>
<td><strong>Lanes/Right of Way</strong></td>
<td>4-6/120 feet</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>U4M/U6M. Controlled access median divided urban collector. Grade-separated interchanges at VA Route 28 (Sully Road) and VA Route 267 (Dulles Greenway). 45 mph design speed.</td>
</tr>
<tr>
<td><strong>Interim Condition</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Functional Class</strong></td>
<td>Major Collector Minor Arterial (DRPT: Multimodal Through Corridor)</td>
</tr>
<tr>
<td><strong>Lanes/Right of Way</strong></td>
<td>6/120 feet – Additional ROW may be needed for turn lanes</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>U6M. Controlled access median divided urban collector. Grade-separated interchanges at VA Route 28 (Sully Road) and VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.</td>
</tr>
<tr>
<td><strong>Bicycle/Pedestrian Facilities</strong></td>
<td>10-foot wide asphalt shared-use paths within the ROW or along both sides of the roadway. Crosswalks at all approaches to signalized intersections. Grade-separated pedestrian crossings to be studied at locations with high pedestrian volumes as part of development applications and roadway projects. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
<tr>
<td><strong>Ultimate Condition</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Functional Class</strong></td>
<td>Principal Arterial (DRPT: Multimodal Through Corridor)</td>
</tr>
<tr>
<td><strong>Lanes/Right of Way</strong></td>
<td>6/200 feet – Additional ROW may be needed for interchange(s)</td>
</tr>
</tbody>
</table>
| **Description** | U6M*. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 28 (Sully Road), VA Route 1072 (Randolph Drive), and VA Route 267 (Dulles Greenway). Local access, additional interchange locations, and ultimate alignment to be determined by a later study with consideration of adjacent development/stakeholders. Study of alternative uses (e.g., HOV, bus
lanes) to be considered when facility is expanded to Ultimate Condition. Design speed determined by VDOT and DTCI.

Bicycle/Pedestrian Facilities

10-foot wide asphalt shared-use paths within the ROW or along both sides of the roadway. Crosswalks at all approaches to signalized intersections. Grade-separated pedestrian crossings to be studied at locations with high pedestrian volumes as part of development applications and roadway projects. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

41. VA Route 606 - Old Ox Road
Segment VA Route 267 (Dulles Greenway) interchange south to VA Route 607 (Loudoun County Parkway)

Policy Area Suburban (Dulles)

**Existing Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Design speed varies.</td>
</tr>
</tbody>
</table>

**Interim Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4/120 feet – Additional ROW may be needed for turn lanes</td>
</tr>
<tr>
<td>Description</td>
<td>U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.</td>
</tr>
</tbody>
</table>

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Principal Arterial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>6/200 feet – Additional ROW may be needed for interchange(s)</td>
</tr>
<tr>
<td>Description</td>
<td>U6M. Limited access median divided urban arterial. Additional grade-separated interchanges beyond Existing and Interim Conditions at Horsepen Run Connector, VA Route 645 Extended (Westwind Drive) and at VA Route 607 (Loudoun County Parkway). Local access, interchange locations and ultimate alignment to be determined by a later study with consideration of adjacent development/stakeholders. Study of alternative uses (e.g., HOV, bus lanes) to be considered when facility is expanded to Ultimate Condition. Design speed determined by VDOT and DTCI.</td>
</tr>
</tbody>
</table>
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

42. VA Route 607 - Loudoun County Parkway

Segment VA Route 1050 (George Washington Boulevard) south to VA Route 625 (Waxpool Road)

Policy Area Suburban (Ashburn)

Existing Condition

Functional Class Minor Arterial

Lanes/Right of Way 2-4/120 feet

Description U2/U4M. Controlled access undivided and median divided urban arterial. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Two-lane (U2) section from VA Route 2150 (Gloucester Parkway) south to just north of the W & OD Trail. Design speed varies.

Interim Condition

Functional Class Minor Arterial

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban arterial. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

Ultimate Condition

Functional Class Minor Arterial

Lanes/Right of Way 6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

Description U6M. Controlled access median divided urban arterial. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.
43. VA Route 607 - Loudoun County Parkway

Segment: VA Route 625 (Waxpool Road) south to VA Route 267 (Dulles Greenway) interchange

Policy Area: Suburban (Ashburn) Silver Line

Existing/Interim Condition

- **Functional Class**: Minor Arterial
- **Lanes/Right of Way**: 4-6/120 feet
- **Description**: U4M/U6M. Controlled access median divided urban arterial. Grade-separated interchange at VA Route 267 (Dulles Greenway). Four-lane divided (U4M) section between VA Route 643 (Shellhorn Road) and VA Route 267 (Dulles Greenway). Design Speed Varies.

Ultimate Condition

- **Functional Class**: Minor Principal Arterial (DRPT: Multimodal Through Corridor)
- **Lanes/Right of Way**: 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- **Description**: U6M. Controlled access median divided urban arterial. Grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. Transit-Priority Roadway.

- **Bicycle/Pedestrian Facilities**: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. 40-foot wide asphalt shared-use paths within the ROW or along both sides of the roadway. Crosswalks at all approaches to signalized intersections. Grade-separated pedestrian crossings to be studied at locations with high pedestrian volumes as part of development applications and roadway projects.

44. VA Route 607 - Loudoun County Parkway

Segment: VA Route 267 (Dulles Greenway) interchange west and south to VA Route 606 (Old Ox Road) (near existing VA Route 842 (Arcola Road/future Arcola Boulevard)/VA Route 606 (Old Ox Road) intersection)

Policy Area: Silver Line, Suburban (Ashburn-Dulles)

Existing/Interim Condition

- **Existing Segment**: VA Route 267 (Dulles Greenway) interchange south to approximately 2,800 feet south of VA Route 901 (Claiborne Parkway)
- **Functional Class**: Minor Arterial
- **Lanes/Right of Way**: 4/120 feet – Additional ROW may be needed for turn lanes
### Description

**U4M.** Controlled access median divided urban arterial. Grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

**Bicycle/Pedestrian Facilities**

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### Ultimate Condition

**Functional Class**

Principal Arterial (DRPT: Multimodal Through Corridor)

**Lanes/Right of Way**

6/200 feet – Additional ROW may be needed for interchange(s), turn lanes, and bicycle/pedestrian facilities

**Description**

U6M. Controlled access median divided urban arterial. Grade-separated interchanges at VA Route 267 (Dulles Greenway) and at VA Route 606 (Old Ox Road). Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. Transit-Priority Roadway.

**Bicycle/Pedestrian Facilities**

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. 10-foot wide shared-use paths within the ROW or along both sides of the roadway. Crosswalks at all approaches to signalized intersections. Grade-separated pedestrian crossings to be studied at locations with high pedestrian volumes as part of development applications and roadway projects.

### VA Route 609 - Pleasant Valley Road

**Segment**

Quarry Road (US Route 50 North Collector Road) south to Fairfax County Line

**Policy Area**

Suburban (Dulles)

### Existing Condition

**Functional Class**

Local/Secondary Road

**Lanes/Right of Way**

2/Varies

**Description**

R2. Local access undivided rural secondary road. Design speed varies.

### Ultimate Condition

**Functional Class**

Minor Collector

**Lanes/Right of Way**

4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**

U4. Local access undivided urban collector. Grade-separated options to be explored at US Route 50 (John Mosby Highway). Left and right turn lanes required at major intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

46. VA Route 611 - St. Louis Road

Segment: US Route 50 (John Mosby Highway) at Fauquier County Line north to VA Route 734 (Snickersville Turnpike)

Policy Area: Rural

**Existing Condition**
- **Functional Class:** Major Collector
- **Lanes/Right of Way:** 2/Varies
- **Description:** R2. Local access undivided rural collector. Design speed varies. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District.

**Ultimate Condition**
- **Functional Class:** Major Collector
- **Lanes/Right of Way:** 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes
- **Description:** R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

47. VA Route 620 - Braddock Road

Segment: Fairfax County Line west to VA Route 659 Relocated (Northstar Boulevard)

Policy Areas: Suburban (Dulles), Transition

**Existing Condition**
- **Functional Class:** Minor Collector
- **Lanes/Right of Way:** 2/Varies
- **Description:** R2/U2. Local access undivided rural and urban collector road. Design speed varies.

**Ultimate Condition**
- **Functional Class:** Major Collector
Lanes/Right of Way        4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description            U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

48. VA Route 620 / VA Route 705 - Braddock Road
Segment          VA Route 659 Relocated (Northstar Boulevard) west to US Route 15 (James Monroe Highway)

Policy Area        Transition, Rural

Existing Condition
Functional Class    Minor Collector
Lanes/Right of Way  2/Varies
Description         R2. Local access undivided rural collector. Design speed varies.

Ultimate Condition
Functional Class    Minor Collector
Lanes/Right of Way  2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description         R2. Local access undivided rural collector. In Transition Policy Area, left and right turn lanes required at major intersections. In Rural Policy Area, left and right turn lanes provided where required for safety. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

49. VA Route 621 - Evergreen Mills Road
Segment          VA Route 606 (Loudoun County Parkway) northwest to VA Route 659 Relocated (Northstar Boulevard)

Policy Area        Suburban (Dulles)

Existing Condition
Existing Segment   VA Route 606 (Loudoun County Parkway) northwest to future VA Route 659 Relocated (Northstar Boulevard)
Functional Class   Major Collector
Lanes/Right of Way  2/Varies
Description         R2. Local access undivided rural collector. Design speed varies.
Ultimate Condition
Functional Class          Major Collector
Lanes/Right of Way        4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description              U4M. Local access median divided urban collector. Left and right turn lanes required at all intersections. Design speed determined by VDOT and DTCI.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

50. VA Route 621 - Evergreen Mills Road
Segment                   VA Route 621 Relocated (Shreveport Drive) northwest to Battlefield Parkway
Policy Areas              Suburban (Dulles), Transition, Rural, Town of Leesburg

Existing Condition
Functional Class          Major Collector
Lanes/Right of Way        2/Varies
Description              R2. Local access undivided rural collector. Design speed varies.

Ultimate Condition
Functional Class          Major Collector
Lanes/Right of Way        4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description              R4M. Controlled access median divided rural collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. Design speed determined by VDOT and DTCI.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

51. VA Route 621 - Evergreen Mills Road
Segment                   Battlefield Parkway north and west to US Route 15 (South King Street)
Policy Area               Town of Leesburg

Existing Condition
Functional Class          Major Collector
Lanes/Right of Way        2/Varies
Description              R2. Local access undivided rural collector. Design speed varies.
Ultimate Condition
Functional Class Major Collector
Lanes/Right of Way 4/ROW determined by Town of Leesburg – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review.

52. VA Route 621 Relocated - Shreveport Drive
Segment VA Route 621 (Evergreen Mills Road) (just west of VA Route 659 Relocated (Northstar Boulevard)) east to VA Route 607 (Loudoun County Parkway)
Policy Area Suburban (Dulles)

Ultimate Condition
Functional Class Major Collector
Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

53. VA Route 623 - Willisville Road
Segment US Route 50 (John Mosby Highway) at Fauquier County Line north to VA Route 743 (Millville Road)
Policy Area Rural

Existing Condition
Functional Class Minor Collector
Lanes/Right of Way 2/Varies
Description R2. Local access undivided rural collector. Design speed varies. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District.

Ultimate Condition
Functional Class Minor Collector
Lanes/Right of Way 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes

Description R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

54. VA Route 625 / VA Route 1516 - Church Road / Oak Tree Lane
Segment VA Route 604 (Sugarland Road) west to VA Route 846 (Sterling Boulevard)
Policy Area Suburban (Sterling)
Existing/Ultimate Condition
Functional Class Minor Collector
Lanes/Right of Way 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description U2. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. Design speed varies.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

55. VA Route 625 - Church Road
Segment VA Route 846 (Sterling Boulevard) west to VA Route 637 (Cascades Parkway)
Policy Area Suburban (Sterling)
Existing/Ultimate Condition
Functional Class Minor Collector
Lanes/Right of Way 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description U2. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

56. VA Route 625 - Church Road
Segment VA Route 637 (Cascades Parkway) west to VA Route 1902 (Atlantic Boulevard)/VA Route 868 (Davis Drive)
Policy Area  Suburban (Sterling)

Existing/Ultimate Condition

Functional Class  Major Collector

Lanes/Right of Way  4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description  U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities  Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

57. VA Route 625 - Church Road

Segment  VA Route 1902 (Atlantic Boulevard)/VA Route 868 (Davis Drive) west to VA Route 28 (Sully Road) interchange

Policy Area  Suburban (Sterling)

Existing Condition

Functional Class  Major Collector

Lanes/Right of Way  4/Varies

Description  U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Design speed varies.

Ultimate Condition

Functional Class  Major Collector

Lanes/Right of Way  6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description  U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Left and right turn lanes required at all intersections. 50 mph design speed.

Bicycle/Pedestrian Facilities  Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

58. VA Route 625 - Waxpool Road

| Segment | VA Route 28 (Sully Road) interchange west to VA Route 607 (Loudoun County Parkway)-1036 (Pacific Boulevard) |
| Policy Area | Silver Line, Suburban (Sterling, Ashburn) |
**Existing/Ultimate Condition**

**Functional Class**
Major Collector Principal Arterial (DRPT: Multimodal Through Corridor)

**Lanes/Right of Way**
6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**
U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Grade-separated interchange at VA Route 28 (Sully Road). Left and right turn lanes required at all intersections. 50 mph design speed.

**Bicycle/Pedestrian Facilities**
10-foot wide shared-use paths within the ROW or along both sides of the roadway. Crosswalks at all approaches to signalized intersections. Grade-separated pedestrian crossings to be studied at locations with high pedestrian volumes as part of development applications and roadway projects. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

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**59. VA Route 625 - Waxpool Road / Farmwell Road**

**Segment**
VA Route 607 (Loudoun County Parkway) to VA Route 2020 (Ashburn Village Boulevard)

**Policy Area**
Silver Line, Suburban (Ashburn)

**Existing Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
4-6/Varies

**Description**
U4M. Controlled access median divided urban arterial. Third westbound through lane continues west to VA Route 1950 (Smith Switch Road). 50 mph design speed.

**Ultimate Condition**

**Functional Class**
Minor Arterial (DRPT: Multimodal Through Corridor)

**Lanes/Right of Way**
6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**
U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

**Bicycle/Pedestrian Facilities**
10-foot wide shared-use paths within the ROW or along both sides of the roadway. Crosswalks at all approaches to signalized intersections. Grade-separated pedestrian crossings to be studied at locations with high pedestrian volumes.
**59-60. VA Route 625 - Waxpool Road / Farmwell Road**

Segment: VA Route 2020 (Ashburn Village Boulevard) VA Route 1036 (Pacific Boulevard) west to VA Route 641 (Ashburn Road)

Policy Area: Suburban (Sterling, Ashburn)

**Existing Condition**

- **Functional Class:** Major Collector
- **Lanes/Right of Way:** 4-6/Varies
- **Description:** U4M/U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Six-lane divided (U6M) section between VA Route 1036 (Pacific Boulevard) and VA Route 607 (Loudoun County Parkway); third westbound through lane continues west to VA Route 1950 (Smith Switch Road). 50 mph design speed.

**Ultimate Condition**

- **Functional Class:** Major Collector
- **Lanes/Right of Way:** 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- **Description:** U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.
- **Bicycle/Pedestrian Facilities:** Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**60-61. VA Route 625 - Ashburn Farm Parkway**

Segment: VA Route 641 (Ashburn Road) at VA Route 625 (Farmwell Road) west to VA Route 659 (Belmont Ridge Road) (opposite VA Route 625 (Sycolin Road))

Policy Area: Suburban (Ashburn)

**Existing/Olimate Condition**

- **Functional Class:** Major Collector
- **Lanes/Right of Way:** 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- **Description:** U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.
- **Bicycle/Pedestrian Facilities:** Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.
**64-62. VA Route 625 - Sycolin Road**

**Segment**

VA Route 659 (Belmont Ridge Road) northwest to Battlefield Parkway

**Policy Areas**

Suburban (Ashburn), Transition, Leesburg JLMA, Town of Leesburg

**Existing Condition**

**Functional Class**

Minor Collector

**Lanes/Right of Way**

2-4/Varies

**Description**

R2/U4M. Local access undivided rural and urban collector. Four-lane divided (U4M) section between Tolbert Lane and Battlefield Parkway in Town of Leesburg. Design speed varies.

**Ultimate Condition**

**Functional Class**

Major Collector

**Lanes/Right of Way**

4/90 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town.

**Description**

U4M. Controlled access median divided urban collector. Grade-separated interchange at westernmost crossing of VA Route 267 (Dulles Greenway). Road to be realigned north of the Sycolin Creek bridge to accommodate planned runway extension at Leesburg Executive Airport. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review.

**62-63. VA Route 625 - Sycolin Road**

**Segment**

Battlefield Parkway north to VA Route 7/US Route 15 (Leesburg Bypass)

**Policy Area**

Town of Leesburg

**Existing Condition**

**Functional Class**

Minor Collector

**Lanes/Right of Way**

2-4/Varies

**Description**

R2/U4. Local access undivided rural and urban collector. Design speed varies.

**Ultimate Condition**

**Functional Class**

Minor Collector

**Lanes/Right of Way**

4/ROW determined by Town of Leesburg – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
### Description

U4. Local access undivided urban collector. Bridge over VA Route 7/US Route 15 (Leesburg Bypass); existing intersection/at-grade access to/from bypass terminated. Left and right turn lanes required at major intersections. Design speed determined by VDOT and Town of Leesburg.

### Bicycle/Pedestrian Facilities

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review.

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### 64. VA Route 634 - Moran Road

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 846 (Sterling Boulevard) / VA Route 789 (Lockridge Road) to VA Route 636 (Shaw Road)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Silver Line</td>
</tr>
</tbody>
</table>

### Existing Condition

<table>
<thead>
<tr>
<th>Existing Segment</th>
<th>VA Route 789 (Lockridge Road) at the Dulles North Transit Center to Pacific Boulevard (VA Route 1036)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Class</td>
<td>Major Collector</td>
</tr>
<tr>
<td>Lanes/Right of Way</td>
<td>2-4/Varies</td>
</tr>
<tr>
<td>Description</td>
<td>R2/U4. Local access undivided rural and urban collector. Design speed varies.</td>
</tr>
</tbody>
</table>

### Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector (DRPT: Major Avenue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U2B. Local access undivided urban collector. Terminates at an intersection with Sterling Boulevard and Lockridge Road approximately 2,000 east of the current western terminus. Will follow a new alignment east of VA Route 1036 (Pacific Boulevard) intersection with a bridge over VA Route 28 (Sully Road) to VA Route 636 (Shaw Road) at Belfort Park Drive. Left turn lanes required at major intersections with center-median lane for left turn access at minor intersections. Right turn lanes required where warranted. 30 mph design speed. Bicycle/Pedestrian Facilities</td>
</tr>
</tbody>
</table>

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### 63.65 VA Route 634 / VA Route 634 Extended - Moran Road/Belfort Park Drive

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 789.636 (Lockridge Road Shaw Road) at Moran Road to VA Route 868 (Davis Drive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Suburban (Sterling)</td>
</tr>
</tbody>
</table>
**Existing/Ultimate Condition**

**Existing Segment**
VA Route 789 (Lockridge Road) northeast to just west of VA Route 28 (Sully Road)

**Functional Class**
Major Collector

**Lanes/Right of Way**
2-4/Varies

**Description**
R2/U4. Local access undivided rural and urban collector. Design speed varies.

**Ultimate Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**
U4. Local access undivided urban collector. Will follow a new alignment east of VA Route 1036 (Pacific Boulevard) intersection with a bridge over VA Route 28 (Sully Road) to VA Route 636 (Shaw Road). Will continue east of VA Route 636 (Shaw Road) to VA Route 868 (Davis Drive) following east-west segment of existing Cedar Green Road alignment. Left and right turn lanes required at major intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

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**64.66. VA Route 636 - Shaw Road**

**Segment**
VA Route 209 (Innovation Avenue) north to VA Route 606 (Old Ox Road)

**Policy Area**
Suburban (Sterling)

**Existing Condition**

**Existing Segment**
Just north of VA Route 209 (Innovation Avenue) north to VA Route 606 (Old Ox Road)

**Functional Class**
Local/Secondary Road

**Lanes/Right of Way**
2/Varies

**Description**
R2. Local access undivided rural secondary road. Design speed varies.

**Ultimate Condition**

**Functional Class**
Minor Collector

**Lanes/Right of Way**
4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**
U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. Refer to Note G on the CTP Map for additional information regarding this roadway.
Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**65.67. VA Route 636 - Shaw Road**

Segment: VA Route 606 (Old Ox Road) north to VA Route 634 Extended (Moran Road/Belfort Park Drive)

Policy Area: Suburban (Sterling)

**Existing Condition**
- Functional Class: Minor Collector
- Lanes/Right of Way: 2-4/Varies
- Description: R2/U4. Local access undivided rural and urban collector. Design speed varies.

**Ultimate Condition**
- Functional Class: Minor Collector
- Lanes/Right of Way: 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- Description: U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**
- Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**66.68. VA Route 637 - Cascades Parkway**

Segment: VA Route 625 (Church Road) north to VA Route 1793 (Nokes Boulevard)/VA Route 637 (Potomac View Road)

Policy Area: Suburban (Sterling)

**Existing/Ultimate Condition**
- Functional Class: Major Collector
- Lanes/Right of Way: 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- Description: U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**
- Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.
67-69. VA Route 637 - Potomac View Road
Segment
VA Route 1794 (Cascades Parkway) at VA Route 1793 (Nokes Boulevard) east and north to just south of Benedict Drive/VA Route 1010 (Connemara Drive)

Policy Area
Suburban (Sterling)

Existing/Ultimate Condition
Functional Class
Minor Collector

Lanes/Right of Way
2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description
R2. Local access undivided rural collector. Left and right turn lanes recommended at major intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

68-70. VA Route 637 - Potomac View Road
Segment
Just south of Benedict Drive/VA Route 1010 (Connemara Drive) north to VA Route 7 (Harry Byrd Highway)

Policy Area
Suburban (Sterling)

Existing/Ultimate Condition
Functional Class
Minor Collector

Lanes/Right of Way
4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description
U4/U4M. Local access undivided and median divided urban collector. U4M section for short segment just south of VA Route 7 (Harry Byrd Highway); four-lane undivided (U4) section elsewhere. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

69-71. VA Route 637 - Potomac View Road
Segment
VA Route 7 (Harry Byrd Highway) north to VA Route 1582 (Algonkian Parkway)

Policy Area
Suburban (Potomac)

Existing/Ultimate Condition
Functional Class
Major Collector

Lanes/Right of Way
4/110 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description
R4M/U4M. Controlled access median divided rural and urban collector. Refer to VDOT Road Design Manual for median crossover
spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### 70-72. VA Route 639 Relocated - Willard Road

**Segment**
Washington Dulles International Airport property south to US Route 50 (John Mosby Highway) (opposite VA Route 2200 (Tall Cedars Parkway))

**Policy Area**
Suburban (Dulles)

**Existing Condition**

- **Functional Class**: Local/Secondary Road
- **Lanes/Right of Way**: 2/Varies
- **Description**: R2. Local access undivided rural secondary road. Design speed varies.

**Ultimate Condition**

- **Functional Class**: Major Collector
- **Lanes/Right of Way**: 4/90 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities
- **Description**: U4M. Controlled access median divided urban collector. Grade-separated interchange at US Route 50 (John Mosby Highway); Willard Road to be relocated east of existing roadway between Quarry Road (US Route 50 North Collector Road) and US Route 50 to align with VA Route 2200 (Tall Cedars Parkway) interchange. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### 74-73. VA Route 640 - Waxpool Road

**Segment**
VA Route 625 (Waxpool Road/Farmwell Road) / VA Route 1950 (Smith Switch Road) intersection west to VA Route 2119 (Waxpool Road) / VA Route 640 (Faulkner Parkway) intersection (Ryan Bypass)

**Policy Area**
Silver Line, Suburban (Ashburn)

**Existing Condition**

- **Functional Class**: Minor Collector
- **Lanes/Right of Way**: 2-4/Varies
- **Description**: R2/R4/U4M. Local access undivided rural and median divided urban collector. Four-lane divided (U4M) section between VA Route 625 (Farmwell Road) and Unbridled Way. Design speed varies.
### Ultimate Condition

**Functional Class**: Major Collector *(DRPT: Boulevard)*

**Lanes/Right of Way**: 4/90 feet — Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**: U4M/U4Mb. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. Roundabouts to be studied at Faulker Parkway/Waxpool Road intersection and North-South Connector/Lockridge Road West/Waxpool Road intersection.

**Bicycle/Pedestrian Facilities**: East of North-South Connector (Lockridge Road West), an 8-foot wide sidewalk on the north side of the roadway and a 10-foot wide shared use path on the south side of the roadway, and 5-foot wide bicycle lanes with 3-foot striped buffer area in each direction. West of North-South Connector (Lockridge Road West), 10-foot wide shared use paths on each side of the roadway. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### VA Route 640 – Faulkner Parkway (Ryan Bypass)/Broadlands Boulevard

**Segment**: VA Route 640 (Waxpool Road) northwest to VA Route 659 (Belmont Ridge Road)

**Policy Area**: Suburban (Ashburn)

#### Existing/Ultimate Condition

**Functional Class**: Major Collector

**Lanes/Right of Way**: 4/90 feet — Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**: U4M. Controlled access median divided urban collector. Passes under VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. Roundabout to be studied at Waxpool Road intersection.

**Bicycle/Pedestrian Facilities**: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### VA Route 641 - Ashburn Road

**Segment**: VA Route 1061 (Russell Branch Parkway) south to VA Route 647 (Stubble Road), just north of the Village of Ashburn

**Policy Area**: Suburban (Ashburn)

#### Existing Condition

**Functional Class**: Minor Collector

**Lanes/Right of Way**: 3-4/Varies
Description U4. Local access undivided urban collector. Only one southbound lane in some segments. Design speed varies.

Ultimate Condition
Functional Class Minor Collector
Lanes/Right of Way 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

74.76.VA Route 641 - Ashburn Road
Segment VA Route 647 (Stubble Road) south through Village of Ashburn to Beaverdam Run bridge
Policy Area Suburban (Ashburn)

Existing Condition
Functional Class Minor Collector
Lanes/Right of Way 2/Varies
Description R2. Local access undivided rural collector. Design speed varies.

Ultimate Condition
Functional Class Minor Collector
Lanes/Right of Way 2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description U2. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

75.77.VA Route 641 - Ashburn Road
Segment Beaverdam Run bridge south to VA Route 640 (Waxpool Road)
Policy Area Suburban

Existing Condition
Functional Class Minor Collector
Lanes/Right of Way 2-4/Varies
Description R2/U4. Local access undivided rural and urban collector. Design speed varies.
**Ultimate Condition**

**Functional Class**: Minor Collector  
**Lanes/Right of Way**: 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities  
**Description**: U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**76-78. VA Route 642 - Hay Road**

**Segment**: VA Route 659 (Belmont Ridge Road) east to approximately 3,200 feet east of VA Route 901 (Claiborne Parkway)

**Policy Area**: Suburban (Ashburn)

**Existing/Ultimate Condition**

**Functional Class**: Minor Collector  
**Lanes/Right of Way**: 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities  
**Description**: U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**77-79. VA Route 642 - Hay Road**

**Segment**: Approximately 3,200 feet east of VA Route 901 (Claiborne Parkway) east to VA Route 641 (Ashburn Road)

**Policy Area**: Suburban (Ashburn)

**Existing Condition**

**Functional Class**: Minor Collector  
**Lanes/Right of Way**: 2/Varies  
**Description**: R2. Local access undivided rural collector road. Design speed varies.

**Ultimate Condition**

**Functional Class**: Minor Collector  
**Lanes/Right of Way**: 2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities  
**Description**: U2. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**78.80** VA Route 643 - Shellhorn Road

**Segment** VA Route 640 (Waxpool Road) south to VA Route 789 (Prentice Drive) (opposite Metro Center Drive) 772 (Ashburn Village Boulevard)

**Policy Area** Suburban (Ashburn) Silver Line

**Existing/Ultimate Condition**

**Functional Class** Major Collector

**Lanes/Right of Way** 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description** U4. Local access undivided and divided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.

**Ultimate Condition**

**Functional Class** Major Collector (DRPT: Boulevard)

**Lanes/Right of Way** 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description** U4MB. Local access median divided urban collector. Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Left turn lanes required at major intersections. Right turn lanes required where warranted. 40 mph design speed. Transit-Priority Roadway.

**Bicycle/Pedestrian Facilities** 8-foot wide sidewalks on each side of the roadway, and minimum 5-foot wide bicycle lanes with 3-foot striped buffer area in each direction. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**79.81** VA Route 643 - Shellhorn Road

**Segment** VA Route 789 (Prentice Drive) 772 (Ashburn Village Boulevard) southeast (opposite Metro Center Drive) to VA Route 607 (Loudoun County Parkway)

**Policy Area** Silver Line Suburban (Ashburn)

**Existing/Ultimate Condition**

**Functional Class** Major Collector (DRPT: Boulevard)

**Lanes/Right of Way** 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description** U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing
requirements. Left and right turn lanes required at all major intersections. 40 mph design speed.

**Ultimate Condition**

**Functional Class**  
Minor Collector

**Lanes/Right of Way**  
4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**  
U4MB. Controlled access median divided urban collector. Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Left and right turn lanes required at all intersections. 30 mph design speed. On-street parking stalls on each side of the roadway. Transit-Priority Roadway. Study of alternative uses (e.g., HOV, bus lanes) to be considered when facility is expanded to Ultimate Condition. Reclassified as a minor collector when VA Route 1071 (Prentice Drive) is open to traffic between VA Route 789 (Lockridge Road) and VA Route 643 (Shellhorn Road)/Metro Center Drive intersection.

**Bicycle/Pedestrian Facilities**  
8-foot wide sidewalks on each side of the roadway, and minimum 5-foot wide bicycle lanes with a 2-foot striped buffer area on either side of each bicycle lane in each direction to buffer cyclists from roadway traffic and from parking stalls. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate. On-street parking stalls on each side of the roadway. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**80.82. VA Route 643 Extended - Shellhorn Road**

**Segment**  
VA Route 607 (Loudoun County Parkway) east to VA Route 789 (Lockridge Road)

**Policy Area**  
Suburban (Ashburn) Silver Line

**Ultimate Condition**

**Functional Class**  
Minor Collector **(DRPT: Boulevard)**

**Lanes/Right of Way**  
4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**  
U4MB. Controlled access median divided urban collector. Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Left and right turn lanes required at all intersections. 30 mph design speed. On-street parking stalls on each side of the roadway. Roundabout at intersection with VA Route 789 (Lockridge Road). Transit-Priority Roadway. Study of alternative uses (e.g., HOV, bus lanes) to be considered when VA Route 1071 (Prentice Drive) is built to its ultimate condition between Shellhorn Road and VA Route 1036 (Pacific Boulevard).

**Bicycle/Pedestrian Facilities**  
8-foot wide sidewalks on each side of the roadway, and minimum 5-foot wide bicycle lanes with a 2-foot striped buffer area on either side of each bicycle lane in each direction to buffer cyclists from roadway traffic.
traffic and from parking stalls. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate.

Description U4M. Controlled access median divided urban collector. Left and right turn lanes required at all intersections. 40-30 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

81-83. VA Route 645 - Croson Lane

Segment VA Route 659 (Belmont Ridge Road) east to VA Route 2298 (Mooreview Parkway) Existing VA Route 772 (Old Ryan Road)

Policy Area Suburban (Ashburn)

Existing Condition

Functional Class Major Collector

Lanes/Right of Way 2/Varies

Description U2. Controlled access undivided urban collector. Design speed varies.

Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

84. VA Route 645 - Croson Lane

Segment VA Route 2298 (Mooreview Parkway) east to VA Route 772 (Old Ryan Road)

Policy Area Silver Line

Existing Condition

Functional Class Major Collector

Lanes/Right of Way 2/Varies

Description U2. Controlled access undivided urban collector. Design speed varies.

Ultimate Condition

Functional Class Minor Collector (DRPT: Major Avenue)
Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Refer to DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Left and right turn lanes required at all intersections. 30 mph design speed.

Bicycle/Pedestrian Facilities 8-foot wide sidewalks on each side of the roadway, and minimum 5-foot wide bicycle lanes with 3-foot striped buffer area in each direction.

82.85. VA Route 645 - Croson Lane

Segment Existing VA Route 772 (Old Ryan Road) to approximately 500 feet east of Moorefield Boulevard in Moorefield Station.

Policy Area Suburban (Ashburn) Silver Line

Ultimate Condition

Functional Class Minor Collector (DRPT: Major Avenue)

Lanes/Right of Way 2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U3U2. Local access undivided urban collector. Left and right turn lanes required at all intersections. 30 mph design speed. On street parking provided along each side of the roadway.

Bicycle/Pedestrian Facilities 8-foot wide sidewalks on each side of the roadway, and minimum 6-foot wide bicycle lanes in each direction. Crosswalks at all approaches to intersections with public roads. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

83. VA Route 645 Extended2988 - Westwind Drive

Segment VA Route 607 (Loudoun County Parkway) (opposite Moorefield Boulevard Jefferson Park Drive) south to the Broad Run.

Policy Area Suburban (Ashburn) Silver Line

Existing/Ultimate Condition

Existing Segment VA Route 1950 (Loudoun County Parkway) south to 1,000 feet south of State Street

Functional Class Major Collector (DRPT: Boulevard)

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Bridge over Broad Run. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.
84. **VA Route 645 Extended**

**Segment**: Broad Run south to VA Route 606 (Old Ox Road)

**Policy Area**: Suburban (Dulles)

**Existing Condition**

**Existing Segment**: Ladbrook Drive – 1,700 feet north of VA Route 606 (Old Ox Road) to VA Route 606 (Old Ox Road)

**Functional Class**: Major Collector

**Lanes/Right of Way**: 4/70 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

**Description**: U4. Local access urban collector. Bridge over Broad Run. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**Ultimate Condition**

**Functional Class**: Major Collector (DRPT: Boulevard)

**Lanes/Right of Way**: 4/70 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

**Description**: U4. Local access urban collector. Bridge over Broad Run. Grade-separated interchange at VA Route 606 (Old Ox Road). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

85. **VA Route 653 - Cochran Mill Road**

**Segment**: Russell Branch Parkway southwest to VA Route 625 (Sycolin Road)

**Policy Areas**: Leesburg JLMA, Transition

**Existing Condition**

**Functional Class**: Local/Secondary Road

**Lanes/Right of Way**: 2-4/Varies
### Description
R2/U4. Local access undivided rural and urban secondary road. Four-lane (U4) section between vicinity of future Trailview Boulevard intersection and just north of the W & OD Trail. Design speed varies.

### Ultimate Condition
**Functional Class**  |  Minor Collector  
**Lanes/Right of Way**  |  4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities  
**Description**  |  U4. Local access undivided urban collector. Segment between Sycolin Creek and VA Route 625 (Sycolin Road) to be realigned to avoid floodplain and will intersect Sycolin Road to the south of the existing Cochran Mill Road/Sycolin Road intersection. Left and right turn lanes required at major intersections. 40 mph design speed.  
**Bicycle/Pedestrian Facilities**  |  Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### VA Route 653 Relocated - Crosstrail Boulevard

#### Segment
VA Route 7 (East Market Street) interchange (opposite VA Route 773 (River Creek Parkway)) southwest to the VA Route 267 (Dulles Greenway) interchange

#### Policy Areas
Town of Leesburg, Leesburg JLMA

### Existing/Interim Condition
**Existing Segments**  |  VA Route 7 (East Market Street) interchange southwest to Russell Branch Parkway; VA Route 267 (Dulles Greenway) interchange (on Existing VA Route 653 (Shreve Mill Road))
**Functional Class**  |  Major Collector  
**Lanes/Right of Way**  |  4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities  
**Description**  |  U4M. Controlled access median divided urban collector. Grade-separated interchanges at VA Route 7 (East Market Street) and at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.  
**Bicycle/Pedestrian Facilities**  |  Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### Ultimate Condition
**Functional Class**  |  Major Collector  
**Lanes/Right of Way**  |  6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town.  
**Description**  |  U6M. Controlled access median divided urban collector. Grade-separated interchanges at VA Route 7 (East Market Street) and at VA
Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review.

**87.88. VA Route 653 Relocated - Crosstrail Boulevard**

Segment VA Route 267 (Dulles Greenway) interchange west to VA Route 621 (Evergreen Mills Road)

Policy Area Rural

**Ultimate Condition**

Functional Class Major Collector

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Road to align with existing grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**88.89. VA Route 659 - Belmont Ridge Road**

Segment VA Route 2401 (Riverside Parkway) south to VA Route 7 (Harry Byrd Highway)

Policy Area Suburban (Ashburn)

**Existing/Interim Condition**

Functional Class Major Collector

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**Ultimate Condition**

Functional Class Major Collector
Lanes/Right of Way 6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

Description U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

89.90. VA Route 659 - Belmont Ridge Road
Segment VA Route 7 (Harry Byrd Highway) south to VA Route 645 Croson Lane
Policy Area Suburban (Ashburn)

Existing Condition
Functional Class Major Collector
Lanes/Right of Way 2-4/Varies
Description R2/U4M. Local access undivided rural and divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Four-lane divided (U4M) section from just north of VA Route 642 (Hay Road) to VA Route 267 (Dulles Greenway) interchange and from VA Route 267 (Dulles Greenway) interchange to just south of Broadlands Boulevard. Design speed varies.

Ultimate Condition
Functional Class Minor Arterial
Lanes/Right of Way 4/150 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities
Description U4M. Controlled access median divided urban arterial. Grade-separated interchanges at VA Route 7 (Harry Byrd Highway) and VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

90.91. VA Route 659 – Belmont Ridge Road
Segment VA Route 645 (Croson Lane) south to VA Route 659 Relocated (Northstar Boulevard)
Policy Area Suburban (Ashburn)

Existing/Interim Condition
Functional Class Minor Arterial
<table>
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<tr>
<th>Lanes/Right of Way</th>
<th>4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</th>
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<tr>
<td>Description</td>
<td>U4M. Controlled access median divided urban arterial. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.</td>
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</tbody>
</table>

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor Arterial</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Lanes/Right of Way</th>
<th>6/150 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>U6M. Controlled access median divided urban arterial. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.</td>
</tr>
</tbody>
</table>

**Bicycle/Pedestrian Facilities**

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### 91-92 VA Route 659 - Belmont Ridge Road

#### Segment

VA Route 659 Relocated (Northstar Boulevard) south to VA Route 621 (Evergreen Mills Road)

#### Policy Area

Suburban (Ashburn, Dulles)

#### Existing Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
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<tbody>
<tr>
<td>Major Collector</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lanes/Right of Way</th>
<th>2-4/Varies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>R2/U4/U4M. Local access undivided rural and urban collector and divided urban collector. Four-lane undivided (U4) section north of VA Route 772 (Ryan Road); four-lane divided (U4M) section in Brambleton development south of VA Route 772 (Ryan Road). Design speed varies.</td>
</tr>
</tbody>
</table>

#### Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
</tr>
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<tbody>
<tr>
<td>Minor Collector</td>
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<table>
<thead>
<tr>
<th>Lanes/Right of Way</th>
<th>4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</th>
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</thead>
<tbody>
<tr>
<td>Description</td>
<td>U4/U4M. Controlled access undivided and divided urban collector. Four-lane undivided (U4) section north of VA Route 772 (Ryan Road); four-lane divided (U4M) section south of VA Route 772 (Ryan Road). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. Reclassified as a minor collector when VA Route 659 Relocated (Northstar Boulevard) is open to traffic south to US Route 50 (John Mosby Highway). 40 mph design speed.</td>
</tr>
</tbody>
</table>

A1-62
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**92.93.VA Route 659 - Gum Spring Road Relocated (VA Route 606 Extended / West Spine Road)**

**Segment** US Route 50 (John Mosby Highway) south to VA Route 2200 (Tall Cedars Parkway)

**Policy Area** Suburban (Dulles)

**Existing Condition**

- **Functional Class** Major Collector
- **Lanes/Right of Way** ½ of a four-lane divided (U4M) section (northbound lanes); ROW varies – Additional ROW necessary for future southbound lanes.
- **Description** ½ of a U4M section. Road currently operates as one-lane, one-way northbound to eastbound US Route 50 (John Mosby Highway) only. Controlled access median divided urban collector. Intersection with US Route 50 (John Mosby Highway) opposite future Arcola Boulevard (approximately 1,000 feet east of the Existing VA Route 659 (Gum Spring Road)/US Route 50 (John Mosby Highway) intersection). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

**Ultimate Condition**

- **Functional Class** Major Collector
- **Lanes/Right of Way** 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities
- **Description** U4M. Controlled access median divided urban collector. Grade-separated interchange at US Route 50 (John Mosby Highway). US Route 50 (John Mosby Highway) interchange to be located approximately 1,000 feet east of the Existing VA Route 659 (Gum Spring Road)/US Route 50 (John Mosby Highway) intersection. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

**Bicycle/Pedestrian Facilities** Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**93.94.VA Route 659 - Gum Spring Road (VA Route 606 Extended / West Spine Road)**

**Segment** VA Route 2200 (Tall Cedars Parkway) south to VA Route 620 (Braddock Road)

**Policy Area** Suburban (Dulles)
Existing/Ultimate Condition

Functional Class: Major Collector

Lanes/Right of Way: 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description: U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

94.95. VA Route 659 - Gum Spring Road (VA Route 606 Extended / West Spine Road)

Segment: VA Route 620 (Braddock Road) south to Prince William County Line

Policy Area: Transition

Existing Condition

Functional Class: Major Collector

Lanes/Right of Way: 2/Varies

Description: R2. Local access undivided rural collector. Design speed varies.

Ultimate Condition

Functional Class: Major Collector

Lanes/Right of Way: 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description: R4M. Controlled access median divided rural collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

95.96. VA Route 659 Relocated - Northstar Boulevard

Segment: VA Route 659 (Belmont Ridge Road) just south of VA Route 645 (Croson Lane) intersection south to VA Route 620 (Braddock Road)

Policy Areas: Suburban (Ashburn, Dulles), Transition

Existing Condition

Existing Segments: VA Route 659 (Belmont Ridge Road) south to future VA Route 621 Relocated (Shreveport Drive) in Brambleton development; VA Route 2200 (Tall Cedars Parkway) south to VA Route 620 (Braddock Road)
Functional Class | Minor Arterial
---|---
Lanes/Right of Way | 2-4/Varies -- Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description | U2/U4M. Controlled access median divided (U4M) urban arterial from VA Route 659 (Belmont Ridge Road) south to future VA Route 621 Relocated (Shreveport Drive). Two-lane (U2) section from VA Route 2200 (Tall Cedars Parkway) south to VA Route 620 (Braddock Road). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Interim Condition
Functional Class | Minor Arterial
---|---
Lanes/Right of Way | 4/120 feet— Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description | U4M. Controlled access median divided urban arterial. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Ultimate Condition
Functional Class | Minor Arterial
---|---
Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities
Description | U6M. Controlled access median divided urban arterial. Grade-separated interchange at US Route 50 (John Mosby Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 60 mph design speed.
Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

96.97.VA Route 659 Relocated - Northstar Boulevard
Segment | VA Route 620 (Braddock Road) south to Prince William County Line
Policy Areas | Transition
Ultimate Condition
Functional Class | Minor Arterial
---|---
Lanes/Right of Way | 6/150 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities
Description | U6M. Controlled access median divided urban arterial. Will follow portions of VA Route 705 (Lightridge Farm Road) alignment. Road to connect with an extension of the VA Route 234 Bypass in Prince
William County. Left and right turn lanes required at all intersections.  
60 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and 
Pedestrian Mobility Master Plan for facilities requirements.

97.98. VA Route 662 - Clarkes Gap Road

Segment VA Route 9 (Charles Town Pike) north to VA Route 665 (High Street) in Village of Waterford

Policy Area Rural

Existing Condition
Functional Class Major Collector / Virginia Byway
Lanes/Right of Way 2/Varies
Description R2. Local access undivided rural collector. Design speed varies.

Ultimate Condition
Functional Class Major Collector / Virginia Byway
Lanes/Right of Way 2/ROW subject to DTCI review – Additional ROW may be needed for 
turn lanes
Description R2. Local access undivided rural collector. Left and right turn lanes 
provided where required for safety. Design speed determined by 
VDOT and DTCI. Improvements will be constructed in conformance 
with the Heritage Resource Policies of the CTP and the Scenic Areas 
and Corridor Policies of the Revised General Plan and the Heritage 
Preservation Plan.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and 
Pedestrian Mobility Master Plan for facilities requirements.

98.99. VA Route 663 - Taylorstown Road

Segment VA Route 665 (Loyalty Road) in Village of Taylorstown west to VA 
Route 663 (Downey Mill Road)/VA Route 668 (Taylorstown Road) 
intersection just west of Catoctin Creek bridge

Policy Area Rural

Existing Condition
Functional Class Major Collector
Lanes/Right of Way 2/Varies
Description R2. Local access undivided rural collector. Design speed varies.

Ultimate Condition
Functional Class Major Collector
<table>
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<tr>
<th>Lanes/Right of Way</th>
<th>2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes</th>
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<tbody>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
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</tbody>
</table>

### 99.100. VA Route 665 - High Street / Loyalty Road

**Segment**
VA Route 662 (Clarkes Gap Road/Factory Street) north and east through Village of Waterford to VA Route 666 (Browns Lane)

**Policy Area**
Rural

**Existing Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector / Virginia Byway</th>
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<tbody>
<tr>
<td>Lanes/Right of Way</td>
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<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Design speed varies.</td>
</tr>
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</table>

**Ultimate Condition**

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<tr>
<td>Lanes/Right of Way</td>
<td>2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
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</table>

### 100.101. VA Route 665 - Loyalty Road

**Segment**
VA Route 666 (Browns Lane) just north of Village of Waterford north to VA Route 663 (Taylorstown Road) in Village of Taylorstown

**Policy Area**
Rural

**Existing Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector / Virginia Byway</th>
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<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies</td>
</tr>
</tbody>
</table>
Description

R2. Local access undivided rural collector. Design speed varies.

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector / Virginia Byway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes</td>
</tr>
</tbody>
</table>

**Description**

R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

**Bicycle/Pedestrian Facilities**

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**101.102. VA Route 668 - Taylorstown Road**

**Segment**

VA Route 663 (Taylorstown Road/Downey Mill Road) just west of Catoctin Creek bridge in Village of Taylorstown north to VA Route 672 (Lovettsville Road)

**Policy Area**

Rural

**Existing Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies</td>
</tr>
</tbody>
</table>

**Description**

R2. Local access undivided rural collector. Design speed varies.

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes</td>
</tr>
</tbody>
</table>

**Description**

R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

**Bicycle/Pedestrian Facilities**

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**102.103. VA Route 671 - Harpers Ferry Road**

**Segment**

VA Route 9 (Charles Town Pike) north to US Route 340 (Jefferson Pike)

**Policy Area**

Rural
**Existing Condition**

Functional Class  | Major Collector / Virginia Byway
Lanes/Right of Way | 2/Varies
Description       | R2. Local access undivided rural collector. Design speed varies.

**Ultimate Condition**

Functional Class  | Major Collector / Virginia Byway
Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes
Description       | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

Bicycle/Pedestrian Facilities  | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**103.104. VA Route 672 - Lovettsville Road**

Segment  | US Route 15 (James Monroe Highway) west to VA Route 673 (Milltown Road) at Lovettsville Town Limits
Policy Area  | Rural

**Existing/Ultimate Condition**

Functional Class  | Major Collector
Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes
Description       | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed varies.

Bicycle/Pedestrian Facilities  | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**404.105. VA Route 673 - Broad Way (Lovettsville)**

Segment  | Existing alignment in Town of Lovettsville
Policy Area  | Town of Lovettsville

**Existing/Ultimate Condition**

Functional Class  | Major Collector
Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes. Ultimate ROW width determined by Town of Lovettsville.
Description
R2. Local access undivided rural collector. Left and right turn lanes recommended at major intersections. Design speed varies.

Bicycle/Pedestrian Facilities
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Lovettsville review.

**405.106.** VA Route 673 / VA Route 681 - Milltown Road

Segment
VA Route 673 (East Broad Way)/VA Route 672 (Lovettsville Road) at Lovettsville Town Limits south to VA Route 698 (Old Wheatland Road) just west of the Village of Waterford

Policy Area
Rural

**Existing Condition**

Functional Class
Major Collector / Virginia Byway

Lanes/Right of Way
2/Varies

Description
R2. Local access undivided rural collector. Design speed varies.

**Ultimate Condition**

Functional Class
Major Collector / Virginia Byway

Lanes/Right of Way
2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes

Description
R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

Bicycle/Pedestrian Facilities
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**406.107.** VA Route 673 / VA Route 690 - Irish Corner Road / Mountain Road

Segment
Lovettsville Town Limits west and south to VA Route 9 (Charles Town Pike)

Policy Area
Rural

**Existing Condition**

Functional Class
Major Collector / Virginia Byway (VA Route 690 segment only)

Lanes/Right of Way
2/Varies

Description
R2. Local access undivided rural collector. Design speed varies.

**Ultimate Condition**

Functional Class
Major Collector / Virginia Byway (VA Route 690 segment only)
<table>
<thead>
<tr>
<th>Lanes/Right of Way</th>
<th>2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

**407.108. VA Route 679 - Woodland Road**

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 637 (Cascades Parkway) west to VA Route 1902 (Atlantic Boulevard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Suburban (Sterling)</td>
</tr>
</tbody>
</table>

**Existing/Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

**408.109. VA Route 690 - Silcott Springs Road / 32nd Street South**

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 734 (Snickersville Turnpike) north to VA Route 7 Business (West Main Street)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Areas</td>
<td>Rural, Purcellville JLMA, Town of Purcellville</td>
</tr>
</tbody>
</table>

**Existing/Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. Ultimate ROW width within Town of Purcellville determined by Town.</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. In Rural Policy Area, left and right turn lanes provided where required for safety. In JLMA and Town, left and right turn lanes recommended at major intersections. Design speed varies.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Purcellville subject to Town review.</td>
</tr>
</tbody>
</table>
109.110. **VA Route 690 - 23rd Street North / 21st Street North / Hillsboro Road**

**Segment**
VA Route 7 Business (West Main Street) north to VA Route 9 (Charles Town Pike)

**Policy Areas**
Town of Purcellville, Purcellville JLMA, Rural

**Existing Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
2/Varies

**Description**
R2. Local access undivided rural collector. Roundabout at VA Route 711 (Allder School Road). Design speed varies.

**Ultimate Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
2/50 feet – Additional ROW may be needed for turn lanes. ROW width within Town of Purcellville determined by Town.

**Description**
R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass. Roundabouts at VA Route 711 (Allder School Road) and VA Route 9 (Charles Town Pike). Location of interchange to be determined by further study and in consultation with the Town of Purcellville and VDOT. In Town and JLMA, left and right turn lanes recommended at major intersections. In Rural Policy Area, left and right turn lanes provided where required for safety. Design speed determined by VDOT, Town of Purcellville and DTCI.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Purcellville subject to Town review.

110.111. **VA Route 698 / VA Route 662 / VA Route 785 – Old Wheatland Road / 1st Street / Main Street (Waterford)**

**Segment**
VA Route 681 (Milltown Road) southeast through Village of Waterford to VA Route 665 (High Street)

**Policy Area**
Rural

**Existing Condition**

**Functional Class**
Major Collector / Virginia Byway

**Lanes/Right of Way**
2/Varies

**Description**
R2. Local access undivided rural collector. Design speed varies.

**Ultimate Condition**

**Functional Class**
Major Collector / Virginia Byway

**Lanes/Right of Way**
2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes
**Description**

R2. Local access undivided rural collector. Left and right turn provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

**Bicycle/Pedestrian Facilities**

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**111.112. VA Route 704 - Harmony Church Road**

**Segment**

US Route 15 (James Monroe Highway) west and north to VA Route 7 Business (East Colonial Highway)

**Policy Areas**

Rural, Hamilton JLMA, Town of Hamilton

**Existing/Ultimate Condition**

**Functional Class**

Major Collector / Virginia Byway

**Lanes/Right of Way**

2/Varies – Additional ROW may be needed for turn lanes. Ultimate ROW within Town of Hamilton determined by Town.

**Description**

R2. Local access undivided rural collector. In Rural Policy Area, left and right turn lanes provided where required for safety. In JLMA and Town, left and right turn lanes recommended at major intersections. Design speed varies. Any improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

**Bicycle/Pedestrian Facilities**

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Hamilton subject to Town review.

**112.113. VA Route 704 - Hamilton Station Road**

**Segment**

VA Route 7 Business (East Colonial Highway) north and east to VA Route 662 (Clarkes Gap Road)

**Policy Areas**

Hamilton JLMA, Rural

**Existing Condition**

**Functional Class**

Major Collector

**Lanes/Right of Way**

2/Varies

**Description**

R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass. Design speed varies.

**Ultimate Condition**

**Functional Class**

Major Collector
Lanes/Right of Way 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass. In JLMA, left and right turn lanes recommended at major intersections. In Rural Policy Area, left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

113.114. VA Route 719 - Greengarden Road / Airmont Road

Segment VA Route 743 (Millville Road) north to VA Route 734 (Snickersville Turnpike)

Policy Area Rural

Existing Condition

Functional Class Minor Collector

Lanes/Right of Way 2/Varies

Description R2. Local access undivided rural collector. Design speed varies. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District.

Ultimate Condition

Functional Class Minor Collector

Lanes/Right of Way 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes

Description R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

114.115. VA Route 719 - Airmont Road / New Cut Road

Segment VA Route 734 (Snickersville Turnpike) north to VA Route 7 Business (Loudoun Street)

Policy Areas Rural, Town of Round Hill

Existing/Ultimate Condition

Functional Class Major Collector
Lanes/Right of Way 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. Ultimate ROW width within Town of Round Hill determined by Town.

Description R2. Local access undivided rural collector. Passes under VA Route 7 Bypass. In Rural Policy Area, left and right turn lanes provided where required for safety. In Town, left and right turn lanes recommended at major intersections. Design speed varies.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Round Hill subject to Town review.

VA Route 719 – Main Street / Woodgrove Road / Stony Point Road
Segment VA Route 7 Business (Loudoun Street) north to VA Route 9 (Charles Town Pike)

Policy Areas Town of Round Hill, Round Hill JLMA, Rural

**Existing Condition**
- Functional Class Major Collector / Virginia Byway
- Lanes/Right of Way 2/Varies
- Description R2. Local access undivided rural collector. Design speed varies.

**Ultimate Condition**
- Functional Class Major Collector / Virginia Byway
- Lanes/Right of Way 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Round Hill determined by Town.
- Description R2. Local access undivided rural collector. Roundabout at VA Route 9 (Charles Town Pike). In Town and JLMA, left right turn lanes recommended at major intersections. In Rural Policy Area, left and right turn lanes provided where required for safety. Design speed determined by VDOT, Town of Round Hill and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.
- Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Round Hill subject to Town review.

VA Route 733 - Lime Kiln Road
Segment US Route 15 (James Monroe Highway) west to VA Route 734 (Snickersville Turnpike)

Policy Area Rural
Existing/Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/50 feet – Additional ROW may be needed for turn lanes</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed varies.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

VA Route 734 - Snickersville Turnpike

Segment | US Route 50 (John Mosby Highway) northwest to VA Route 7 (Harry Byrd Highway) |
Policy Area | Rural |

Existing/Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector / Virginia Byway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

VA Route 742 - Poland Road

Segment | VA Route 2201 (South Riding Boulevard) east and south to VA Route 2200 (Tall Cedars Parkway) |
Policy Area | Suburban (Dulles) |

Existing Condition

| Existing Segment | US Route 50 (John Mosby Highway) to VA Route 2200 (Tall Cedars Parkway) |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2-4/Varies |
| Description | R2/U4. Local access undivided rural and urban collector road. Design speed varies. |

Ultimate Condition

<p>| Functional Class | Minor Collector |</p>
<table>
<thead>
<tr>
<th>Lanes/Right of Way</th>
<th>4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>U4. Local access undivided urban secondary road. VA Route 742 will be realigned to connect with Defender Drive; existing VA Route 742 (Poland Road)/US Route 50 (John Mosby Highway) intersection will be closed and access to US Route 50 terminated when US Route 50 becomes limited access. Left and right turn lanes required at major intersections. 40 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

**449.120. VA Route 742 - Poland Road**

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 2200 (Tall Cedars Parkway) south and east to Fairfax County Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Suburban (Dulles)</td>
</tr>
</tbody>
</table>

**Existing Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural secondary road. Design speed varies.</td>
</tr>
</tbody>
</table>

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural secondary road. Left and right turn lanes required at major intersections. 40 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

**120.121. VA Route 743 - Millville Road**

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 623 (Willisville Road) west to VA Route 719 (Greengarden Road)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Rural</td>
</tr>
</tbody>
</table>

**Existing Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Design speed varies. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District.</td>
</tr>
</tbody>
</table>
Ultimate Condition
Functional Class Minor Collector
Lanes/Right of Way 2/ROW subject to DTCl review – Additional ROW may be needed for turn lanes
Description R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCl. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

121. VA Route 772 2020 – Ashburn Village Boulevard
Segment VA Route 625 (Farmwell Road) south to VA Route 267 (Dulles Greenway) interchange
Policy Area Silver Line, Suburban (Ashburn)

Existing Condition
Functional Class Major Collector
Lanes/Right of Way 2-4/120 feet
Description U2/U4M. Controlled access undivided and median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Two-lane undivided (U2) section currently in place along portion of segment between VA Route 625 (Farmwell Road) and VA Route 640 (Waxpool Road); four-lane divided (U4M) section elsewhere. Design speed varies.

Ultimate Condition
Functional Class Major Collector
Lanes/Right of Way 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities
Description U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

122. VA Route 772 – Old Ryan Road
Segment Moorefield Boulevard to Foundation Drive
Policy Area: Silver Line

**Existing/Ultimate Condition**

**Functional Class**  
Minor Collector (DRPT: Avenue)

**Lanes/Right of Way**  
2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**  
U2. Local access undivided urban collector. Transit-Priority Roadway. Left and right turn lanes required at major intersections. 30 mph design speed.

**Bicycle/Pedestrian Facilities**  
10-foot wide shared-use paths within the ROW or along the east side of the roadway and an 8-foot wide sidewalk along the west side of the roadway. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate.

123. VA Route 772 – Old Ryan Road

**Segment**  
Foundation Drive to Amendola Terrace

**Policy Area**  
Silver Line

**Existing/Ultimate Condition**

**Functional Class**  
Minor Collector (DRPT: Avenue)

**Lanes/Right of Way**  
4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**  
U4M. Controlled access median-divided urban collector. Transit-Priority Roadway. Left and right turn lanes required at major intersections. 30 mph design speed.

**Bicycle/Pedestrian Facilities**  
8-foot wide sidewalk each side of the roadway and, between Mooreview Parkway and Amendola Terrace, minimum 6-foot wide bicycle lanes in each direction. Crosswalks at other intersections where appropriate.

124. VA Route 772 – Old Ryan Road

**Segment**  
Amendola Terrace to VA Route 772 (Ryan Road)

**Policy Area**  
Silver Line

**Existing/Ultimate Condition**

**Functional Class**  
Minor Collector (DRPT: Avenue)

**Lanes/Right of Way**  
2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
| Description | U2. Local access undivided urban collector. Transit-Priority Roadway. Left and right turn lanes required at major intersections. 30 mph design speed. |
| Bicycle/Pedestrian Facilities | 8-foot wide sidewalk each side of the roadway. Between Amendola Terrace and Windsor Locks Square, minimum 6-foot wide bicycle lanes in each direction, and between Windsor Locks Square and Ryan Road bicycles share the road with vehicles. Signage and pavement markings indicate the shared roadway. Crosswalks at all approaches to intersections with public roads. |

**422-125. VA Route 772 - Ryan Road**

**Segment**

VA Route 607 (Loudoun County Parkway) west to VA Route 659 Relocated (Northstar Boulevard)

**Policy Area**

Silver Line, Suburban (Ashburn, Dulles)

**Existing Condition**

- **Functional Class**: Major Collector
- **Lanes/Right of Way**: 4/120 feet
- **Description**: R4M/U4M. Controlled access median divided rural and urban collector. 50 mph design speed.

**Interim Condition**

- **Functional Class**: Major Collector Minor Arterial (DRPT: Multimodal Through Corridor)
- **Lanes/Right of Way**: 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- **Description**: U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. Transit-Priority Roadway west of VA Route 772 (Old Ryan Road).

- **Bicycle/Pedestrian Facilities**: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**Ultimate Condition**

- **Functional Class**: Major Collector Minor Arterial (DRPT: Multimodal Through Corridor)
- **Lanes/Right of Way**: 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- **Description**: U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. Transit-Priority Roadway west of VA Route 772.
Study of alternative uses (e.g., HOV, bus lanes) to be considered when facility is expanded to Ultimate Condition.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**VA Route 772 - Ryan Road**

**Segment** VA Route 659 Relocated (Northstar Boulevard) west to VA Route 621 (Evergreen Mills Road)

**Policy Areas** Suburban (Dulles), Transition

**Existing Condition**
- **Functional Class** Minor Collector
- **Lanes/Right of Way** 2/Varies
- **Description** R2. Local access undivided rural collector road. Design speed varies.

**Ultimate Condition**
- **Functional Class** Minor Collector
- **Lanes/Right of Way** 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- **Description** R4. Local access undivided rural collector. Left and right turn lanes required at major intersections. 40 mph design speed.
- **Bicycle/Pedestrian Facilities** Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**VA Route 773 - Edwards Ferry Road**

**Segment** US Route 15 (Leesburg Bypass) east to Battlefield Parkway

**Policy Area** Town of Leesburg

**Existing Condition**
- **Functional Class** Minor Collector
- **Lanes/Right of Way** 4/Varies
- **Description** U4/U4M. Local access undivided and divided urban collector. Design speed varies.

**Ultimate Condition**
- **Functional Class** Minor Collector
- **Lanes/Right of Way** 4/ROW determined by Town of Leesburg – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities
- **Description** U4/U4M. Local access median divided urban collector. Grade-separated interchange at US Route 15 (Leesburg Bypass). Left and
right turn lanes required at all intersections. Median crossover spacing and design speed determined by VDOT and Town of Leesburg.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town review.

**425.128.** VA Route 773 - Edwards Ferry Road
Segment Battlefield Parkway east to VA Route 773 (River Creek Parkway)
Policy Areas Town of Leesburg, Leesburg JLMA

**Existing Condition**
Functional Class Minor Collector
Lanes/Right of Way 2/Varies
Description R2. Local access undivided rural collector. Design speed varies.

**Ultimate Condition**
Functional Class Minor Collector
Lanes/Right of Way 2/ROW subject to DTCI and Town review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description R2. Local access undivided rural collector. Road will be studied for alternate typical sections in consultation with the Town of Leesburg and VDOT and with consideration of historic and scenic resources. Traffic calming measures should be considered for this road segment.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**426.129.** VA Route 773 - River Creek Parkway
Segment VA Route 773 (Edwards Ferry Road) south to Fort Evans Road/VA Route 2401 (Riverside Parkway)
Policy Area Leesburg JLMA

**Existing/Ultimate Condition**
Functional Class Minor Collector
Lanes/Right of Way 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 45 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.
427.130. VA Route 773 - River Creek Parkway

Segment
Fort Evans Road/VA Route 2401 (Riverside Parkway) south to VA Route 7 (East Market Street) interchange (opposite VA Route 653 Relocated (Crosstrail Boulevard))

Policy Areas
Leesburg JLMA, Town of Leesburg

Existing/Interim Condition

Functional Class
Minor Collector

Lanes/Right of Way
4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

Description
U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (East Market Street). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.

Bicycle/Pedestrian Facilities
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review.

Ultimate Condition

Functional Class
Minor Collector

Lanes/Right of Way
6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town.

Description
U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (East Market Street). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.

Bicycle/Pedestrian Facilities
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review.

428.131. VA Route 774 - Creighton Road

Segment
VA Route 659 Relocated (Northstar Boulevard) east to VA Route 607 (Loudoun County Parkway)

Policy Area
Suburban (Dulles)

Existing/Ultimate Condition

Functional Class
Minor Collector

Lanes/Right of Way
4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
<table>
<thead>
<tr>
<th>Description</th>
<th>U4. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. 40 mph design speed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

### 129.132. VA Route 775 - Relocation Drive

**Segment**
VA Route 606 (Old Ox Road) northeast to VA Route 1036 (Pacific Boulevard)

**Policy Area**
Suburban (Sterling) Silver Line

**Existing Condition**

**Functional Class**
Minor Collector (DRPT: Avenue)

**Lanes/Right of Way**
2/70 feet

**Description**
R2. Local access undivided rural secondary road. Design speed varies.

**Ultimate Condition**

**Functional Class**
Major Minor Collector (DRPT: Avenue)

**Lanes/Right of Way**
2/75.4/110 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**
U4MU2B. Controlled access median divided urban collector. Refer to VDOT Road Design Manual and DRPT Multimodal Design Guidelines for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40-30 mph design speed.

**Bicycle/Pedestrian Facilities**
8-foot wide sidewalks on each side of the roadway, and minimum 5-foot wide bicycle lanes with 3-foot striped buffer area in each direction. Crosswalks at all approaches to intersections with public roads. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### 133. VA Route 789 - Lockridge Road

**Segment**
VA Route 846 (Sterling Boulevard)/VA Route 634 (Moran Road) to VA Route 643 (Shellhorn Road)

**Policy Area**
Silver Line

**Existing Condition**

**Existing Segment**
VA Route 606 (Old Ox Road) to future VA Route 643 (Shellhorn Road)

**Functional Class**
Minor Collector

**Lanes/Right of Way**
2-4/Varies

**Description**
R2/U4.
### Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector (DRPT: Boulevard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U4MB. Controlled access median divided urban collector. Left and right turn lanes required at all intersections. 40 mph design speed between VA Route 846 (Sterling Boulevard) and VA Route 634 (Moran Road) and Loudoun Gateway station entrance; 30 mph design speed between Loudoun Gateway station entrance and VA Route 643 (Shellhorn Road). Transit-Priority Roadway. Provides access to the planned Loudoun Gateway Metrorail station. Study of alternative uses (e.g., HOV, bus lanes) to be considered when VA Route 1071 (Prentice Drive) is completed between VA Route 1036 (Pacific Boulevard) and VA Route 643 (Shellhorn Road).</td>
</tr>
</tbody>
</table>

| Bicycle/Pedestrian Facilities | 8-foot wide sidewalks on each side of the roadway, and minimum 5-foot wide bicycle lanes with 3-foot striped buffer area in each direction. Crosswalks at all approaches to signalized intersections. |

### 134. VA Route 789 - Lockridge Road

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 643 (Shellhorn Road) to Broad Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Silver Line</td>
</tr>
</tbody>
</table>

### Existing Condition

<table>
<thead>
<tr>
<th>Existing Segment</th>
<th>Future VA Route 643 (Shellhorn Road) to VA Route 1071 (Prentice Drive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Class</td>
<td>Minor Collector</td>
</tr>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies</td>
</tr>
<tr>
<td>Description</td>
<td>R2.</td>
</tr>
</tbody>
</table>

### Interim Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector (DRPT: Boulevard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U2b. Undivided urban collector. 30 mph design speed. Transit-Priority Roadway. Roadway to be restriped to accommodate one direction of the ultimate condition, including on-street parking and bicycle lanes, when built to ultimate condition.</td>
</tr>
</tbody>
</table>

| Bicycle/Pedestrian Facilities | 8-foot wide sidewalks on each side of the roadway, and a 6-foot bicycle lane in each direction. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate. |

### Ultimate Condition

<p>| Functional Class | Major Collector (DRPT: Boulevard) |</p>
<table>
<thead>
<tr>
<th>Lanes/Right of Way</th>
<th>4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>U4MB. Controlled access median divided urban collector. Left turn lanes and right turn lanes required at all intersections. 35 mph design speed. Roundabout intersection with Shellhorn Road. On-street parking along both sides of roadway. Transit-Priority Roadway. To be constructed to ultimate condition with extension northward across the Broad Run.</td>
</tr>
<tr>
<td><strong>Bicycle/Pedestrian Facilities</strong></td>
<td>8-foot wide sidewalks on each side of the roadway, and minimum 5-foot wide bicycle lanes with a 2-foot striped buffer area on either side of each bicycle lane in each direction to buffer cyclists from roadway traffic and from parking stalls. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate.</td>
</tr>
</tbody>
</table>

### 130.135. VA Route 789 Extended – North-South Connector (Lockridge Road West)

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 1071 Extended/Route 789 Extended (Prentice Drive) north to VA Route 640 (Waxpool Road)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy Area</strong></td>
<td>Suburban (Ashburn)-Silver Line</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Ultimate Condition</strong></th>
<th><strong>Functional Class</strong></th>
<th>Major Collector (<a href="#">DRPT: Boulevard</a>)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lanes/Right of Way</strong></td>
<td>4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
<td></td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>U4MB. Controlled access median divided urban collector. Refer to VDOT Road Design Manual and <a href="#">DRPT Multimodal System Design Guidelines</a> for median crossover spacing requirements. Left and right turn lanes required at all intersections. Right turn lanes required where warranted. 40 mph design speed.</td>
<td></td>
</tr>
<tr>
<td><strong>Bicycle/Pedestrian Facilities</strong></td>
<td>8-foot wide sidewalks on each side of the roadway, and minimum 5-foot wide bicycle lanes with 3-foot striped buffer area in each direction. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
<td></td>
</tr>
</tbody>
</table>

### 131.136. VA Route 846 Extended - Sterling Boulevard

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 634 (Moran Road) and VA Route 789 (Lockridge Road) east to VA Route 1036 (Pacific Boulevard)VA Route 28 (Sully Road) interchange</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy Area</strong></td>
<td>Suburban (Sterling)-Silver Line</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Existing/Ultimate Condition</strong></th>
<th><strong>Existing Segment</strong></th>
<th>VA Route 1036 (Pacific Boulevard) east to VA Route 28 (Sully Road) interchange</th>
</tr>
</thead>
</table>
## Functional Class Major Collector (DRPT: Boulevard)

<table>
<thead>
<tr>
<th>Lanes/Right of Way</th>
<th>4/120 feet – Additional ROW may be needed for turn lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. Transit-Priority Roadway. Study of alternative uses (e.g., HOV, bus lanes) to be considered when VA Route 1071 (Prentice Drive) is completed from VA Route 1036 (Pacific Boulevard) to VA Route 643 (Shellhorn Road).</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>8-foot wide sidewalks on each side of the roadway, and minimum 6-foot wide bicycle lanes in each direction. Bicycle lane width and sidewalk width and placement may be impacted by ROW constraints. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

### VA Route 846 - Sterling Boulevard

#### Segment

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 1036 (Pacific Boulevard) VA Route 28 (Sully Road) interchange northeast east to VA Route 868 (Davis Drive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Silver Line, Suburban (Sterling)</td>
</tr>
</tbody>
</table>

#### Existing Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Arterial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4/110 feet</td>
</tr>
<tr>
<td>Description</td>
<td>U4M. Controlled access median divided urban arterial. Median crossover spacing varies. 40 mph design speed.</td>
</tr>
</tbody>
</table>

#### Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Arterial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U6M. Controlled access median divided urban arterial. Median crossovers will not increase from Existing Condition. Left and right turn lanes required at all intersections. 40 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>8-foot wide sidewalks on each side of the roadway, and minimum 6-foot wide bicycle lanes in each direction. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>
VA Route 846 - Sterling Boulevard

Segment: VA Route 868 (Davis Drive) northeast to VA Route 7 (Harry Byrd Highway)
Policy Area: Suburban (Sterling)

Existing Condition
Functional Class: Minor Arterial
Lanes/Right of Way: 4/Varies
Description: U4M. Controlled access median divided urban arterial. Local service roads east and west of main roadway in some locations. Median crossover spacing varies. 40 mph design speed.

Ultimate Condition
Functional Class: Minor Arterial
Lanes/Right of Way: 4/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description: U4M. Controlled access median divided urban arterial. Local service roads east and west of main roadway in some locations. Median crossovers will not increase from Existing Condition. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

VA Route 864 - Glenn Drive

Segment: VA Route 846 (Sterling Boulevard) north to VA Route 634 Extended (Moran Road)
Policy Area: Suburban (Sterling)

Existing Condition
Existing Segment: VA Route 846 (Sterling Boulevard) north to approximately 400 feet north of First Potomac Drive
Functional Class: Local/Secondary Road
Lanes/Right of Way: 4/70 feet
Description: U4. Local access undivided urban secondary road. Design speed varies.

Ultimate Condition
Functional Class: Minor Collector
Lanes/Right of Way: 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
**Description**  
U4. Local access undivided urban collector road. Road extended from current northern terminus to Route 634 Extended (Moran Road). Left and right turn lanes recommended at major intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**  
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### VA Route 868 - Davis Drive (VA Route 28 East Collector Road)

**Segment**  
Fairfax County line at the future bridge over VA Route 267 (Dulles Toll Road) north to VA Route 625 (Church Road)

**Policy Area**  
Suburban (Sterling)

**Existing/Ultimate Condition**

**Existing Segment**  
Yeager Court (approximately 3,300 feet south of VA Route 846 (Sterling Boulevard)) north to VA Route 625 (Church Road)

**Functional Class**  
Major Collector

**Lanes/Right of Way**  
4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**  
U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. Refer to Note G on the CTP Map for additional information regarding this roadway.

**Bicycle/Pedestrian Facilities**  
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### VA Route 901 - Claiborne Parkway

**Segment**  
VA Route 7 (Harry Byrd Highway) interchange (opposite VA Route 2400 (Lansdowne Boulevard)) south to VA Route 607 (Loudoun County Parkway)

**Policy Area**  
Suburban (Ashburn, Dulles)

**Existing/Ultimate Condition**

**Existing Segments**  
VA Route 7 (Harry Byrd Highway) interchange to VA Route 645 (Croson Lane); VA Route 772 (Ryan Road) to VA Route 607 (Loudoun County Parkway)

**Functional Class**  
Major Collector

**Lanes/Right of Way**  
4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

**Description**  
U4M. Controlled access median divided urban collector. Grade-separated interchanges at VA Route 7 (Harry Byrd Highway) and at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.
| Segment | VA Route 28 (Sully Road) at VA Route 209 (Innovation Avenue) interchange west and north to VA Route 606 (Old Ox Road) |
| Policy Area | Suburban (Sterling) |

**Ultimate Condition**

| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |

**Description**

U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

---

| Segment | VA Route 606 (Old Ox Road) north to VA Route 625 (Waxpool Road) |
| Policy Area | Silver Line, Suburban (Sterling) |

**Existing/Ultimate Condition**

| Functional Class | Major Collector |
| Lanes/Right of Way | 4/110 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |

**Description**

U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Transit Priority Roadway north of VA Route 1071 (Prentice Drive). Left and right turn lanes required at all intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. 10-foot shared use paths along both sides of the roadway. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate.

---

| Segment | VA Route 625 (Waxpool Road) north to VA Route 1748 (Severn Way) |
| Policy Area | Suburban (Sterling) |
Existing/Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

VA Route 1036 - Pacific Boulevard (VA Route 28 West Collector Road)

Segment
VA Route 1748 (Severn Way) north to VA Route 2150 (Gloucester Parkway)

Policy Area
Suburban (Sterling)

Existing Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2-4/70 feet</td>
</tr>
<tr>
<td>Description</td>
<td>U2/U4. Local access undivided urban collector. Currently four-lane (U4) section from VA Route 1748 (Severn Way) to a point approximately 700 feet north; two-lane (U2) section elsewhere. Design speed varies.</td>
</tr>
</tbody>
</table>

Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

VA Route 1036 - Pacific Boulevard (VA Route 28 West Collector Road)

Segment
VA Route 2150 (Gloucester Parkway) north to Broad Run

Policy Area
Suburban (Sterling)

Ultimate Condition

| Functional Class | Major Collector |
Lanes/Right of Way 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

142.147. VA Route 1036 - Pacific Boulevard (VA Route 28 West Collector Road)
Segment Broad Run west to VA Route 1061 (Russell Branch Parkway)
Policy Area Suburban (Ashburn)

Ultimate Condition
Functional Class Major Collector
Lanes/Right of Way 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

143.148. VA Route 1050 - George Washington Boulevard
Segment VA Route 1061 (Russell Branch Parkway) north and west to VA Route 1052 (Riverside Parkway) in University Center
Policy Area Suburban (Ashburn)

Existing Condition
Existing Segment Research Place to Riverside Parkway
Functional Class Minor Collector
Lanes/Right of Way 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description U4. Local access undivided urban collector. Left and right turn lanes required at all intersections. 40 mph design speed.

Ultimate Condition
Functional Class Minor Collector
Lanes/Right of Way 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description: U4. Local access undivided urban collector. Bridge over VA Route 7 (Harry Byrd Highway) between the VA Route 28 and the Loudoun County Parkway (VA Route 607) interchanges. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

144-149. **VA Route 1050 - George Washington Boulevard**

Segment: VA Route 1052 (Riverside Parkway) west to VA Route 607 (Loudoun County Parkway) in University Center

Policy Area: Suburban (Ashburn)

Existing/Ultimate Condition

Functional Class: Major Collector

Lanes/Right of Way: 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description: U6M. Controlled access median divided urban collector. Traffic calming to be considered along this segment of roadway. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

145-150. **VA Route 1061 - Russell Branch Parkway (VA Route 7 South Collector Road)**

Segment: VA Route 1036 (Pacific Boulevard) west to VA Route 901 (Claiborne Parkway)

Policy Area: Suburban (Ashburn)

Existing/Interim Condition

Existing Segments: Approximately 700 feet east of VA Route 1060 (Richfield Way / Waverly Court) to VA Route 2020 (Ashburn Village Boulevard); VA Route 641 (Ashburn Road) to VA Route 901 (Claiborne Parkway)

Functional Class: Major Collector

Lanes/Right of Way: 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description: U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.
Ultimate Condition

Functional Class    Major Collector
Lanes/Right of Way  6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description        U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

146.151. VA Route 1061 - Russell Branch Parkway (VA Route 7 South Collector Road)

Segment        VA Route 901 (Claiborne Parkway) west over Goose Creek to VA Route 653 (Cochran Mill Road)
Policy Area     Suburban (Ashburn), Leesburg JLMA

Existing/Ultimate Condition
Existing Segment   VA Route 901 (Claiborne Parkway) to 2,000 feet west of Tournament Parkway
Functional Class  Major Collector
Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description        U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

152. VA Route 1070 – Broderick Drive

Segment        VA Route 625 (Waxpool Road) to VA Route 1071 (Prentice Drive)
Policy Area     Silver Line

Existing Condition

Functional Class  Local Secondary Road
Lanes/Right of Way  4/70 feet
Description        U4 (striped median). Local access undivided urban street.

Ultimate Condition

Functional Class  Major Collector (DRPT: Boulevard)
Lanes/Right of Way  4/90 feet
Description  U4M. Controlled access median-divided urban collector. 40 mph design speed.
Bicycle/Pedestrian Facilities 10-foot wide shared-use paths within the ROW or along both sides of the roadway. Crosswalks at all approaches to signalized intersections. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate.

153. VA Route 1070 – Broderick Drive
Segment  VA Route 1071 (Prentice Drive) to VA Route 634 (Moran Road)
Policy Area  Silver Line

Existing Condition

Functional Class  Local Secondary Road
Lanes/Right of Way  4/70 feet
Description  U4M (undivided). Local access undivided urban street.

Ultimate Condition

Functional Class  Minor Collector (DRPT: Avenue)
Lanes/Right of Way  2/70 feet
Description  U2b. Local access undivided urban collector. Transit-Priority Street. 30 mph design speed. On-street parking stalls on each side of the roadway. Existing segment between Randolph Drive and Waxpool Road to be realigned and become part of Randolph Drive.
Bicycle/Pedestrian Facilities  8-foot wide sidewalks on each side of the roadway, and minimum 6-foot wide bicycle lanes in each direction. Crosswalks at all approaches to intersections with public roads.

147.154. VA Route 1071 – Prentice Drive
Segment  VA Route 1036 (Pacific Boulevard) west to VA Route 789 (Lockridge Road)
Policy Area  Suburban (Sterling) Silver Line

Existing/Ultimate Condition

Existing Segment  VA Route 1036 (Pacific Boulevard) west to VA Route 789 (Lockridge Road)
Functional Class  Major Collector
Lanes/Right of Way  4/Varies
### Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector (DRPT: Boulevard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U4MB. Controlled access median divided urban collector. Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Transit-Priority Street. Left and right turn lanes required at all intersections. 40 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>8-foot wide sidewalks on each side of the roadway, and minimum 5-foot wide bicycle lanes with 3-foot striped buffer area in each direction. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

### 148.155. VA Route 1071 Extended/VA Route 789 Extended – Prentice Drive

**Segment**
VA Route 789 (Lockridge Road) west over Broad Run to VA Route 789 Extended (North-South Connector (Lockridge Road West))

**Policy Area**
Suburban (Ashburn, Sterling)-Silver Line

<table>
<thead>
<tr>
<th>Ultimate Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Class</td>
</tr>
<tr>
<td>Lanes/Right of Way</td>
</tr>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
</tr>
</tbody>
</table>
### VA Route 1071 Extended – Prentice Drive

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 789 Extended (North-South Connector (Lockridge Road West)) southwest to Greenway Transit Connector (VA Route 643 (Shellhorn Road) (opposite Metro Center Drive))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Suburban (Ashburn)Silver Line</td>
</tr>
</tbody>
</table>

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector (DRPT: Boulevard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
</tbody>
</table>

**Description**

U4MB. Controlled access median divided urban collector. Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Transit-Priority Street. Left and right turn lanes required at all intersections. Right turn lanes required at major intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**

8-foot wide sidewalks on each side of the roadway, and minimum 5-foot wide bicycle lanes with 3-foot striped buffer area in each direction. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

### VA Route 1072 – Randolph Drive

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 1071 (Prentice Drive) to VA Route 606 (Old Ox Road)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Silver Line</td>
</tr>
</tbody>
</table>

**Existing Condition**

<table>
<thead>
<tr>
<th>Existing Segment</th>
<th>VA Route 1071 (Prentice Drive) to VA Route 634 (Moran Road)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Class</td>
<td>Local Secondary Road</td>
</tr>
<tr>
<td>Lanes/Right of Way</td>
<td>4/70 feet</td>
</tr>
</tbody>
</table>

**Description**

U4. Local access undivided urban collector. 40 mph design speed.

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector (DRPT: Boulevard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4/90 feet</td>
</tr>
</tbody>
</table>

**Description**

U4M. Controlled access median-divided urban collector. 40 mph design speed. Grade-separated interchange at VA Route 606 (Old Ox Road) integrated into the existing VA Route 267 (Dulles Greenway) / VA Route 606 (Old Ox Road) interchange. Existing segments of VA Route 789 (Lockridge Road) to be incorporated into the extension of the existing roadway to the south.
Bicycle/Pedestrian Facilities: 10-foot wide shared-use paths within the ROW or along both sides of the roadway. Crosswalks at all approaches to signalized intersections. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate.

### 150.158. VA Route 1320 - Evening Star Drive (Round Hill North Collector Road)

**Segment**
VA Route 7 Business (East Loudoun Street) north and west to VA Route 719 (Woodgrove Road)

**Policy Area**
Town of Round Hill, Round Hill JLMA

**Existing Condition**
- **Functional Class**: Minor Collector
- **Lanes/Right of Way**: 2/90 feet
- **Description**: U2. Local access undivided urban collector. Design speed varies.

**Ultimate Condition**
- **Functional Class**: Minor Collector
- **Lanes/Right of Way**: 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- **Description**: U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.
- **Bicycle/Pedestrian Facilities**: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Round Hill subject to Town review.

### 151.159. VA Route 1320 - Evening Star Drive (Round Hill North Collector Road)

**Segment**
VA Route 719 (Woodgrove Road) west and south to VA Route 7 (Harry Byrd Highway) just west of VA Route 7 Business (West Loudoun Street) intersection

**Policy Area**
Round Hill JLMA, Rural

**Existing/Ultimate Condition**
- **Existing Segment**: VA Route 719 (Woodgrove Road) to VA Route 1319 (Lee Drive); from approximately 500 feet north to approximately 1,000 feet south of VA Route 1311 (Pickett Road)
- **Functional Class**: Minor Collector
Lanes/Right of Way 2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass (Harry Byrd Highway)/VA Route 1320 (Evening Star Drive) (west of Round Hill). Location of the western Round Hill interchange to be determined by further study and in consultation with the Town of Round Hill. In JLMA, left and right turn lanes recommended at major intersections. In Rural Policy Area, left and right turn lanes provided where required for safety. Design speed varies.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

152.160. VA Route 1570 - Countryside Boulevard
Segment VA Route 7 (Harry Byrd Highway) north and west to VA Route 1582 (Algonkian Parkway)
Policy Area Suburban (Potomac)

Existing/Ultimate Condition
Functional Class Major Collector
Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description R4M. Controlled access median divided rural collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

153.161. VA Route 1582 - Algonkian Parkway
Segment VA Route 7 (Harry Byrd Highway) interchange (opposite VA Route 1902 (Atlantic Boulevard)) north and east to VA Route 1825 (Cedarhurst Drive) (opposite Potomac Falls High School entrance)
Policy Area Suburban (Potomac)

Existing/Ultimate Condition
Functional Class Minor Arterial
Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description R4M. Controlled access median divided rural arterial. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.
154.162. **VA Route 1582 - Algonkian Parkway**

Segment: VA Route 1825 (Cedarhurst Drive) (opposite Potomac Falls High School entrance) east and south to Fairfax County Line

Policy Area: Suburban (Potomac)

**Existing/Ultimate Condition**

- Functional Class: Minor Arterial
- Lanes/Right of Way: 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- Description: U4M. Controlled access median divided urban arterial. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

- Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

155.163. **VA Route 1793 - Nokes Boulevard**

Segment: VA Routes 637/1794 (Cascades Parkway) (opposite VA Route 637 (Potomac View Road)) west to VA Route 1902 (Atlantic Boulevard)

Policy Area: Suburban (Sterling)

**Existing/Ultimate Condition**

- Functional Class: Major Collector
- Lanes/Right of Way: 4/110 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
- Description: U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.

- Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

156.164. **VA Route 1793 - Nokes Boulevard**

Segment: VA Route 1902 (Atlantic Boulevard) west to VA Route 28 (Sully Road) interchange

Policy Area: Suburban (Sterling)

**Existing/Interim Condition**

- Functional Class: Major Collector
<table>
<thead>
<tr>
<th>Lanes/Right of Way</th>
<th>4/120 feet – Additional ROW may be needed for turn lanes and interchange(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Left and right turn lanes required at all intersections. 45 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

**Ultimate Condition**

**Functional Class** Major Collector

<table>
<thead>
<tr>
<th>Lanes/Right of Way</th>
<th>6/120 feet – Additional ROW may be needed for interchange(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>U6M. Limited access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Left and right turn lanes required at all intersections. 45 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

**VA Route 1794 - Cascades Parkway**

**Segment** VA Route 637 (Potomac View Road) at VA Route 1793 (Nokes Boulevard) north to VA Route 1582 (Algonkian Parkway)

**Policy Area** Suburban (Sterling, Potomac)

**Existing/Ultimate Condition**

**Functional Class** Major Collector

<table>
<thead>
<tr>
<th>Lanes/Right of Way</th>
<th>4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

**VA Route 1795 - Palisade Parkway**

**Segment** VA Route 7 (Harry Byrd Highway) north and east to VA Route 637 (Potomac View Road)

**Policy Area** Suburban (Potomac)

**Existing/Ultimate Condition**

**Functional Class** Minor Collector
Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
--- | ---
Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.
Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**VA Route 1902 - Atlantic Boulevard (VA Route 28 East Collector Road)**

Segment | VA Route 625 (Church Road) north to VA Route 7 (Harry Byrd Highway) interchange (opposite VA Route 1582 (Algonkian Parkway))
Policy Area | Suburban (Sterling)

**Existing/Ultimate Condition**

Functional Class | Major Collector
Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**VA Route 1949 - City Center Boulevard**

Segment | VA Route 1793 (Nokes Boulevard) north to VA Route 7 (Harry Byrd Highway) (opposite VA Route 1570 (Countryside Boulevard))
Policy Area | Suburban (Sterling)

**Existing/Ultimate Condition**

Functional Class | Major Collector
Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.
VA Route 1950 - Smith Switch Road

Segment: VA Route 625 (Waxpool Road/Farmwell Road) north and east to VA Route 2150 (Gloucester Parkway)

Policy Area: Suburban (Ashburn)

Existing Condition

Functional Class: Local/Secondary Road

Lanes/Right of Way: 2-4/Varies

Description: R2/U2/U4. Local access undivided rural and urban secondary road. Four-lane (U4) section between Route 625 (Waxpool Road/Farmwell Road) and Hastings Drive. Design speed varies.

Ultimate Condition

Functional Class: Minor Collector

Lanes/Right of Way: 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description: U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

VA Route 2020 Extended – Ashburn Village Boulevard

Segment: VA Route 2401 (Riverside Parkway) south to VA Route 7 (Harry Byrd Highway)

Policy Area: Suburban (Ashburn)

Existing/Interim Condition

Functional Class: Major Collector

Lanes/Right of Way: 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description: U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

Ultimate Condition

Functional Class: Major Collector

Lanes/Right of Way: 6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities
Description U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

163.171. VA Route 2020 - Ashburn Village Boulevard
Segment VA Route 7 (Harry Byrd Highway) south to VA Route 625 (Farmwell Road)

Policy Area Suburban (Ashburn)

Existing/Interim Condition
Functional Class Major Collector
Lanes/Right of Way 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities
Description R4M. Controlled access median divided rural collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

Ultimate Condition
Functional Class Major Collector
Lanes/Right of Way 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities
Description U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

172. VA Route 2020 - Ashburn Village Boulevard
Segment VA Route 625 (Farmwell Road) south to VA Route 640 (Waxpool Road)

Policy Area Silver Line, Suburban (Ashburn)

Existing Condition
Functional Class Major Collector
Lanes/Right of Way 4/120 feet

Description U4M. Controlled access undivided and median divided urban collector. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate.

Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Transit-Priority Street. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities 10-foot wide shared use path along each side of the roadway. Crosswalks at all approaches to signalized intersections and any other four-legged intersections.

173. VA Route 772 - Ashburn Village Boulevard

Segment VA Route 640 (Waxpool Road) southwest to VA Route 267 (Dulles Greenway) interchange (opposite VA Route 2298 (Mooreview Parkway)).

Policy Area Silver Line, Suburban (Ashburn)

Existing Condition

Functional Class Major Collector

Lanes/Right of Way 4/120 feet

Description U4M. Controlled access undivided and median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Design speed varies.

Ultimate Condition

Functional Class Major Collector (DRPT: Boulevard)

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

Description U4MB. Controlled access median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Transit-Priority Street. Left and right turn lanes required at all intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities: 8-foot wide sidewalks on each side of the roadway, and minimum 5-foot wide bicycle lanes with 3-foot striped buffer area in each direction. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate.

174. VA Route 2070 - Demott Drive
Segment: VA Route 640 (Waxpool Road) to VA Route 2298 (Mooreview Parkway)
Policy Area: Silver Line

Existing Condition
- Functional Class: Local Secondary Road
- Lanes/Right of Way: 4/70 feet
- Description: U4. Local access undivided urban street. 40 mph design speed.

Ultimate Condition
- Functional Class: Minor Collector (DRPT: Major Avenue)
- Lanes/Right of Way: 2/70 feet
- Description: U2b. Local access undivided urban collector. 30 mph design speed.

Bicycle/Pedestrian Facilities: 8-foot wide sidewalks on each side of the roadway, and minimum 6-foot wide bicycle lanes in each direction with striped buffer where feasible. On-street parking except at approaches to major intersections, where turn lanes should be evaluated. Crosswalks at all approaches to intersections with public roads.

164.175. VA Route 2119 - Waxpool Road
Segment: VA Route 640 (Faulkner Parkway) (Ryan Bypass) west to just west of bridge over VA Route 267 (Dulles Greenway)

Policy Area: Silver Line, Suburban (Ashburn)

Existing Condition
- Functional Class: Minor Collector
- Lanes/Right of Way: 2-4/Varies
- Description: R2/U4. Local access undivided rural and urban collector. Four-lane (U4) section west of VA Route 641 (Ashburn Road); two-lane (R2) section elsewhere. Design speed varies.

Ultimate Condition
- Functional Class: Minor Collector (DRPT: Major Avenue)
- Lanes/Right of Way: 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description: U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. Roundabout to be studied at Faulkner Parkway intersection. Transit-Priority Street west of VA Route 643 (Shellhorn Road). 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

165.176. VA Route 2119 - Waxpool Road
Segment: Just west of bridge over VA Route 267 (Dulles Greenway) west to VA Route 901 (Claiborne Parkway)
Policy Area: Silver Line, Suburban (Ashburn)

Existing/Ultimate Condition
Functional Class: Minor Collector (DRPT: Boulevard)
Lanes/Right of Way: 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description: U4M. Local access undivided urban collector. Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Transit-Priority Street. Left and right turn lanes required at major intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

166.177. VA Route 2119 - Waxpool Road / Truro Parish Drive
Segment: VA Route 901 (Claiborne Parkway) west to VA Route 659 (Belmont Ridge Road)
Policy Area: Suburban (Ashburn)

Existing/Ultimate Condition
Functional Class: Major Collector
Lanes/Right of Way: 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description: U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Transit-Priority Street. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

167.178. VA Route 2150 - Gloucester Parkway
Segment: VA Route 28 (Sully Road) interchange west to VA Route 607 (Loudoun County Parkway)
Policy Area: Suburban (Sterling, Ashburn)

**Existing/Interim Condition**

**Existing Segment**
VA Route 28 (Sully Road) interchange to VA Route 1036 (Pacific Boulevard)

**Functional Class**
Major Collector

**Lanes/Right of Way**
4/120 feet – Additional ROW may be needed for turn lanes and interchange(s)

**Description**
U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Left and right turn lanes required at all intersections. 45 mph design speed.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**Ultimate Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
6/120 feet – Additional ROW may be needed for turn lanes and interchange(s)

**Description**
U6M. Limited access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Left and right turn lanes required at all intersections. 45 mph design speed.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

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168.179. VA Route 2150 - Gloucester Parkway

**Segment**
VA Route 607 (Loudoun County Parkway) west to VA Route 659 (Belmont Ridge Road) (opposite Trailview Boulevard)

**Policy Area**
Suburban (Sterling, Ashburn)

**Existing/Ultimate Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**
U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.
VA Route 2200 - Tall Cedars Parkway (US Route 50 South Collector Road)

Segment
US Route 50 (John Mosby Highway) (opposite VA Route 639 Relocated (Willard Road)) south and west to VA Route 659 Relocated (Northstar Boulevard)

Policy Area
Suburban (Dulles)

Existing/Interim Condition

Existing Segments
US Route 50 (John Mosby Highway) to Riding Center Drive; Existing VA Route 659 (Gum Spring Road) to VA Route 659 Relocated (Northstar Boulevard)

Functional Class
Major Collector

Lanes/Right of Way
4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

Description
U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

Ultimate Condition

Functional Class
Major Collector

Lanes/Right of Way
4/120 – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

Description
U4M. Controlled access median divided urban collector. Grade-separated interchange at US Route 50 (John Mosby Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

VA Route 2200 - Tall Cedars Parkway (US Route 50 South Collector Road)

Segment
VA Route 659 Relocated (Northstar Boulevard) west to Lenah Loop Road

Policy Area
Transition

Ultimate Condition

Functional Class
Major Collector

Lanes/Right of Way
2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description | R2. Local access undivided rural collector. Left and right turn lanes required at major intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

VA Route 2201 - South Riding Boulevard
Segment | Quarry Road (US Route 50 North Collector Road) south to VA Route 742 Extended (Defender Drive/Poland Road)

Policy Area | Suburban (Dulles)

Existing Condition
Existing Segment | US Route 50 (John Mosby Highway) to Defender Drive
Functional Class | Minor Collector
Lanes/Right of Way | 4/120 feet
Description | U4M. Controlled access median divided urban collector. 40 mph design speed.

Ultimate Condition
Functional Class | Minor Collector
Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities
Description | U6M. Controlled access median divided urban collector. Grade-separated interchange at Route 50 (John Mosby Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

VA Route 2201 - South Riding Boulevard
Segment | VA Route 742 Extended (Defender Drive/Poland Road) south to VA Route 2200 (Tall Cedars Parkway)

Policy Area | Suburban (Dulles)

Existing/Ultimate Condition
Functional Class | Minor Collector
Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing
requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

173.184. VA Route 2237 - Edgewater Street
Segment VA Route 2200 (Tall Cedars Parkway) south to VA Route 742 (Poland Road)
Policy Area Suburban (Dulles)
Existing/Ultimate Condition
Functional Class Minor Collector
Lanes/Right of Way 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

174.185. VA Route 2237 - Edgewater Street
Segment VA Route 742 (Poland Road) south and west to VA Route 606 (Loudoun County Parkway)
Policy Area Suburban (Dulles)
Existing/Ultimate Condition
Functional Class Minor Collector
Lanes/Right of Way 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description U4. Local access undivided urban collector. A short segment just south of VA Route 742 (Poland Road) is built as a two-lane (R2) section. Left and right turn lanes required at major intersections. Design speed varies.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

175.186. VA Route 2298 (Formerly VA Route 772 Relocated) - Mooreview Parkway
Segment VA Route 267 (Dulles Greenway) interchange (opposite VA Route 2020/772 (Ashburn Village Boulevard/Old Ryan Road) west and south to VA Route 607–(Loudoun County Parkway)
Policy Area Suburban (Ashburn) Silver Line
**Existing/Interim Condition**

**Existing Segments**
VA Route 267 (Dulles Greenway) interchange to Amberleigh Farm Drive; Existing–VA Route 772 (Old Ryan Road) to VA Route 607 (Loudoun County Parkway)

**Functional Class**
Major Collector

**Lanes/Right of Way**
4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**
U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

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**Ultimate Condition**

**Functional Class**
Major Collector (DRPT: Boulevard)

**Lanes/Right of Way**
64/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**
U6MB. Controlled access median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). To be constructed as a four-lane divided (U4M) section from VA Route 645 (Crosun Lane) south to Existing–VA Route 772 (Old Ryan Road) to function as a six-lane divided (U6M) facility in tandem with Old Ryan Road. Refer to VDOT Road Design Manual and DRPT Multimodal System Design Guidelines for median crossover spacing requirements. Left and right turn lanes required at all intersections. Transit-Priority Street between VA Route 772 (Old Ryan Road) and VA Route 607 (Loudoun County Parkway). 45 mph design speed.

**Bicycle/Pedestrian Facilities**
8-foot wide sidewalks on each side of the roadway, and minimum 5-foot wide bicycle lanes with 3-foot striped buffer area in each direction. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

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**187. VA Route 2394 – Wynridge Drive**

**Segment**
VA Route 901 (Claiborne Parkway) east to VA Route 2298 (Mooreview Parkway)

**Policy Area**
Silver Line, Suburban (Ashburn)

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**Existing/Ultimate Condition**

**Functional Class**
Minor Collector (DRPT: Major Avenue)
Lanes/Right of Way 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 30-40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

188. VA Route 2394 – Claude Moore Drive

Segment VA Route 2298 (Mooreview Parkway) east to Centergate Drive

Policy Area Silver Line

Existing Condition

Existing Segment VA Route 2298 (Mooreview Parkway) east to VA Route 772 (Old Ryan Road)

Functional Class Minor Collector

Lanes/Right of Way 4/90 feet

Description U4M. Controlled-access divided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.

Ultimate Condition

Functional Class Minor Collector (DRPT: Avenue)

Lanes/Right of Way 2/90 feet west of Old Ryan Road and 70 east of Old Ryan Road – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U2/U2B. Local access divided and undivided urban collector. Left and right turn lanes at Mooreview Parkway. Right turn lanes not permitted at other intersections. 20 mph design speed.

Bicycle/Pedestrian Facilities Minimum 8-foot wide sidewalks along both side of the roadway. West of Old Ryan Road, minimum 5-foot wide bicycle lanes with 3-foot striped buffer area in each direction. East of Old Ryan Road, bicycles share the road with vehicles. Signage and pavement markings indicate the shared roadway. Crosswalks at all approaches to intersections with public roads.

189. VA Route 2394 Extended – Claude Moore Drive

Segment Centergate Drive to VA Route 607 (Loudoun County Parkway)

Policy Area Silver Line

Ultimate Condition

Functional Class Minor Collector (DRPT: Major Avenue)
<table>
<thead>
<tr>
<th>Lanes/Right of Way</th>
<th>4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>U4. Local access undivided urban collector. Left and right turn lanes required at Loudoun County Parkway. 20 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Minimum 8-foot wide sidewalks along both side of the roadway. Bicycles share the road with vehicles. Signage and pavement markings indicate the shared roadway. Crosswalks at all approaches to intersections with public roads.</td>
</tr>
</tbody>
</table>

**176.190. VA Route 2400 - Lansdowne Boulevard**

**Segment**
VA Route 2401 (Riverside Parkway) south to VA Route 7 (Harry Byrd Highway) interchange

**Policy Area**
Suburban (Ashburn)

**Existing/Interim Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4-6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U4M/U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

**177.191. VA Route 2401 - Riverside Parkway (VA Route 7 North Collector Road)**

**Segment**
VA Route 607 (Loudoun County Parkway) west to VA Route 659 (Belmont Ridge Road/Upper Belmont Place)
Policy Area: Suburban (Ashburn)

**Existing/Interim Condition**

Existing Segments: VA Route 7 (Harry Byrd Highway) at VA Route 3000 (Lexington Drive) to west of VA Route 823 (Smith Circle); VA Route 2020 Extended (Ashburn Village Boulevard) west to VA Route 659 (Belmont Ridge Road/Upper Belmont Place).

Functional Class: Major Collector

Lanes/Right of Way: 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description: U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**Ultimate Condition**

Functional Class: Major Collector

Lanes/Right of Way: 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description: U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

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**VA Route 2401 - Riverside Parkway (VA Route 7 North Collector Road)**

Segment: VA Route 659 (Belmont Ridge Road/Upper Belmont Place) west to Fort Evans Road/VA Route 773 (River Creek Parkway)

Policy Area: Suburban (Ashburn), Leesburg JLMA

**Existing Condition**

Functional Class: Major Collector

Lanes/Right of Way: 2-4/120 feet

Description: U2/U4M. Controlled access undivided and median divided urban collector. Two-lane (U2) section between Goose Creek bridge and VA Route 773 (River Creek Parkway); four-lane divided (U4M) section elsewhere. Design speed varies.
Ultimate Condition

Functional Class: Major Collector

Lanes/Right of Way: 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description: U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

179.193. VA Route 2700 – Augusta Drive

Segment: VA Route 7 (Harry Byrd Highway) north to Maple Leaf Place (VA Route 7 North Collector Road)

Policy Area: Suburban (Potomac)

Existing/Ultimate Condition

Functional Class: Minor Collector

Lanes/Right of Way: 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description: U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

194. VA Route 2703 – Red Rum Drive

Segment: VA Route 2020 (Ashburn Village Boulevard) to VA Route 640 (Waxpool Road)

Policy Area: Silver Line

Existing Condition

Functional Class: Local Secondary Road

Lanes/Right of Way: 4/70 feet

Description: U4. Local access undivided urban collector. 40 mph design speed.

Ultimate Condition

Functional Class: Minor Collector (DRPT: Avenue)

Lanes/Right of Way: 2/70 feet

Description: U2b. Local access undivided urban collector. 30 mph design speed.
Bicycle/Pedestrian Facilities 8-foot wide sidewalks on each side of the roadway, and minimum 6-foot wide bicycle lanes in each direction. Crosswalks at all approaches to intersections with public roads.

195. VA Route 2988 - Westwind Drive

Segment VA Route 607 (Loudoun County Parkway) (opposite Jefferson Park Drive) south to the Broad Run.

Policy Area Silver Line

Existing Condition

Existing Segment VA Route 607 (Loudoun County Parkway) south to 1,000 feet south of State Street

Functional Class Major Collector

Lanes/Right of Way 4/120 feet

Description U4M. Controlled access median divided urban collector. 40 mph design speed.

Bicycle/Pedestrian Facilities 10-foot wide shared-use paths within the ROW or along both sides of the roadway.

Ultimate Condition

Functional Class Major Collector (DRPT: Boulevard)

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Bridge over Broad Run. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities 10-foot wide shared-use paths within the ROW or along both sides of the roadway. Crosswalks at all approaches to signalized intersections.

196. VA Route 2988 - Westwind Drive

Segment Broad Run south to VA Route 606 (Old Ox Road)

Policy Area Suburban (Dulles)

Existing Condition

Existing Segment Ladbrook Drive – 1,700 feet north of VA Route 606 (Old Ox Road) to VA Route 606 (Old Ox Road)

Functional Class Major Collector

Lanes/Right of Way 4/70 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities
### Ultimate Condition

| Description | U4. Local access urban collector. Bridge over Broad Run. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycles/Pedestrians Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

| Functional Class | Major Collector (DRPT: Boulevard) |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |

### Airport Area Connector

| Segment | Battlefield Parkway south to VA Route 653 Relocated (Crosstrail Boulevard) just east of VA Route 267 (Dulles Greenway) |
| Policy Area | Town of Leesburg, Leesburg JLMA |

### Ultimate Condition

| Functional Class | Major Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town. |

### Arcola Boulevard (VA Route 606 Extended / West Spine Road)

| Segment | VA Route 606 (Old Ox Road) and VA Route 607 (Loudoun County Parkway) (near existing VA Route 842 (Arcola Road)/VA Route 606 (Old Ox Road) intersection) south and west to US Route 50 (John Mosby Highway) |
| Policy Area | Suburban (Dulles) |
**Existing Condition**

**Existing Segment**
VA Route 842 (Arcola Road) from VA Route 606 (Old Ox Road) south and west to VA Route 621 (Evergreen Mills Road)

**Functional Class**
Local/Secondary Road

**Lanes/Right of Way**
2/Varies

**Description**
R2. Local access undivided rural secondary road. Design speed varies.

**Interim Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**
U4M. Controlled access median divided urban collector. Intersection with US Route 50 (John Mosby Highway) opposite Gum Spring Road Relocated (approximately 1,000 feet east of the Existing VA Route 659 (Gum Spring Road)/US Route 50 intersection). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**Ultimate Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**
U6M. Controlled access median divided urban collector. Grade-separated interchanges at VA Route 607 (Loudoun County Parkway) and at US Route 50 (John Mosby Highway). US Route 50 interchange to be located approximately 1,000 feet east of the Existing VA Route 659 (Gum Spring Road)/US Route 50 intersection. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**199. Barrister Street**

**Segment**
VA Route 607 (Loudoun County Parkway) north to VA Route 643 Extended (Shellhorn Road)

**Policy Area**
Silver Line

**Existing Condition**

**Existing Segment**
VA Route 607 (Loudoun County Parkway) to State Street

**Functional Class**
Minor Collector
Lanes/Right of Way | 4/70 feet
---|---
Description | U4. 40 mph design speed.

**Ultimate Condition**

**Functional Class** | Major Collector (DRPT: Major Avenue)
---|---
Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description | U4b/U4B. Local access undivided urban collector. Grade-separated crossing of VA Route 267 (Dulles Greenway). Transit-Priority Street. Left turn lanes required at major intersections. 30 mph design speed.

**Bicycle/Pedestrian Facilities**

- 8-foot wide sidewalks on each side of the roadway. Minimum 5-foot wide bicycle lanes with a 2-foot striped buffer area on either side of each bicycle lane in each direction between Loudoun County Parkway and the Dulles Greenway Overpass approach to buffer cyclists from roadway traffic and from parking stalls, and minimum 5-foot wide bicycle lanes with 3-foot striped buffer area in each direction from the south approach of the Dulles Greenway overpass to Shellhorn Road. Crosswalks at all approaches to intersections with public roads.

### 200. Barrister Street

**Segment**

- VA Route 643 Extended (Shellhorn Road) north to VA Route 1071 Extended/789 Extended (Prentice Drive)

**Policy Area** | Silver Line

**Ultimate Condition**

**Functional Class** | Minor Collector (DRPT: Avenue)
---|---
Lanes/Right of Way | 2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description | U2. Local access undivided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at major intersections. 30 mph design speed.

**Bicycle/Pedestrian Facilities**

- 8-foot wide sidewalks on each side of the roadway. Minimum 5-foot wide bicycle lanes with 3-foot striped buffer area in each direction from Shellhorn Road where no on-street parking exists, and minimum 5-foot wide bicycle lanes with a 2-foot striped buffer area on either side of each bicycle lane in each direction between where on-street parking stalls are in place to buffer cyclists from roadway traffic and from parking stalls. Crosswalks at all approaches to signalized intersections and at other intersections where appropriate.

### 182.201. Battlefield Parkway

**Segment** | US Route 15 (Leesburg Bypass) east and south to Fort Evans Road

**Policy Area** | Town of Leesburg
### Existing/Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Determined by Town of Leesburg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4/ROW determined by Town of Leesburg – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U4M. Local access median divided urban collector. Left and right turn lanes required at all intersections. Median crossover spacing and design speed determined by VDOT and Town of Leesburg.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review.</td>
</tr>
</tbody>
</table>

### Battlefield Parkway

#### Segment
Fort Evans Road south and west to US Route 15 (South King Street) (opposite Meade Drive)

#### Policy Area
Town of Leesburg

### Existing Condition

| Existing Segment | Fort Evans Road to VA Route 621 (Evergreen Mills Road) |
| Functional Class | Determined by Town of Leesburg |
| Lanes/Right of Way | 2-4/Varies |
| Description      | U2/U4M. Local access undivided and median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Two-lane (U2) section between VA Route 267 (Dulles Greenway) interchange and VA Route 621 (Evergreen Mills Road); four-lane divided (U4M) section elsewhere. Design speed varies. |

### Interim Condition

| Functional Class | Determined by Town of Leesburg |
| Lanes/Right of Way | 4/ROW determined by Town of Leesburg – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description      | U4M. Local access median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Left and right turn lanes required at all intersections. Median crossover spacing and design speed determined by VDOT and Town of Leesburg. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review. |

### Ultimate Condition

| Functional Class | Determined by Town of Leesburg |
| Lanes/Right of Way | 6/ROW determined by Town of Leesburg – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
Description

U6M. Local access median divided urban collector. Grade-separated interchange at VA Route 7 (East Market Street) and at VA Route 267 (Dulles Greenway). Left and right turn lanes required at all intersections. Median crossover spacing and design speed determined by VDOT and Town of Leesburg.

Bicycle/Pedestrian Facilities

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review.

### 184.203. Centergate Drive

**Segment**

VA Route 607 (Loudoun County Parkway) (opposite Barrister Street) to Moorefield Boulevard to Claude Moore Drive

**Policy Area**

Silver Line

**Existing Condition**

**Existing Segment**

Approximately 1,000 feet west of Loudoun County Parkway to Loudoun County Parkway/Barrister Street.

**Functional Class**

Minor Collector

**Lanes/Right of Way**

4/70 feet

**Description**

U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 20 mph design speed.

**Ultimate Condition**

**Functional Class**

Minor Collector (DRPT: Major Avenue)

**Lanes/Right of Way**

2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**

U2b. Local access undivided urban collector. Transit-Priority Street east of Vinegar Hill Drive. Left and right turn lanes required at major intersections. 20 mph design speed.

**Bicycle/Pedestrian Facilities**

8-foot wide sidewalks on each side of the roadway, and minimum 6-foot wide bicycle lanes in each direction. Crosswalks at all approaches to intersections with public roads.

### 185.204. Centergate Drive

**Segment**

Claude Moore Avenue to Moorefield Boulevard to Claude Moore Drive

**Policy Area**

Suburban (Ashburn) Silver Line
Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Collector (DRPT: Avenue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U3U2. Local access undivided urban collector. Left and right turn lanes required at major intersections. 20 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Minimum 8-foot wide sidewalks along both side of the roadway. Bicycles share the road with vehicles. Signage and pavement markings indicate the shared roadway. Crosswalks at all approaches to intersections with public roads. Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

205. Charitable Street

Segment Moorefield Boulevard (opposite Jefferson Park Drive) to VA Route 2298 (Mooreview Parkway)

Policy Area Silver Line

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Collector (DRPT: Avenue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U2. Local access undivided urban collector. Left and right turn lanes not permitted. 20 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Minimum 8-foot wide sidewalks along both side of the roadway. Bicycles share the road with vehicles. Signage and pavement markings indicate the shared roadway. Crosswalks at all approaches to intersections with public roads.</td>
</tr>
</tbody>
</table>

206. Dresden Street

Segment VA Route 1036 (Pacific Boulevard) to VA Route 1070 (Broderick Drive)

Policy Area Silver Line

**Existing Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Local Secondary Road</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4/70 feet</td>
</tr>
<tr>
<td>Description</td>
<td>U4. Local access undivided urban collector. 40 mph design speed.</td>
</tr>
</tbody>
</table>

**Ultimate Condition**

| Functional Class | Minor Collector (DRPT: Avenue) |
Lanes/Right of Way 2/70 feet

Description U2b. Local access undivided urban collector. 30 mph design speed.

Bicycle/Pedestrian Facilities 8-foot wide sidewalks on each side of the roadway, and minimum 6-foot wide bicycle lanes in each direction. Crosswalks at all approaches to intersections with public roads.

207. East-West Connector (Devin Shafron Drive)

Segment Metro Center Drive to VA Route 643 (Shellhorn Road)

Policy Area Silver Line

Existing Condition

Functional Class Minor Collector

Lanes/Right of Way 4/70 feet

Description U4. Local access undivided urban collector. 40 mph design speed.

Ultimate Condition

Functional Class Minor Collector (DRPT: Avenue)

Lanes/Right of Way 2/70 feet

Description U2b. Local access undivided urban collector. 30 mph design speed.

Bicycle/Pedestrian Facilities 8-foot wide sidewalks on each side of the roadway, and minimum 6-foot wide bicycle lanes in each direction. Crosswalks at all approaches to intersections with public roads.

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East-West Connector

Segment VA Route 643 (Shellhorn Road) to Barrister Street

Policy Area Silver Line

Ultimate Condition

Functional Class Minor Collector (DRPT: Avenue)

Lanes/Right of Way 2/70 feet

Description U2. Local access undivided urban collector. 30 mph design speed. On-street parking stalls on each side of the roadway. Single lane urban roundabout at Barrister Street.

Bicycle/Pedestrian Facilities 8-foot wide sidewalks on each side of the roadway and bicycles share the road with vehicles. Signage and pavement markings indicate the shared roadway. Crosswalks at all approaches to intersections with public roads.
**486.208. East Gate View Drive**
Segment VA Route 609 (Pleasant Valley Road) west to VA Route 2200 (Tall Cedars Parkway)
Policy Area Suburban (Dulles)

**Existing/Ultimate Condition**
Functional Class Minor Collector
Lanes/Right of Way 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**487.209. Foley Branch Boulevard (formerly Dulles South Boulevard)**
Segment VA Route 606 (Loudoun County Parkway) (approximately 2,300 feet south of VA Route 620 (Braddock Road)) west to VA Route 659 Relocated (Northstar Boulevard) (approximately 2,000 feet north of the Prince William County Line)
Policy Area Transition

**Ultimate Condition**
Functional Class Minor Collector
Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
Description R4M. Controlled access median divided rural collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.
Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**488.210. Fort Evans Road**
Segment VA Route 773 (River Creek Parkway) (opposite VA Route 2401 (Riverside Parkway)) west to Battlefield Parkway
Policy Area Town of Leesburg, Leesburg JLMA

**Existing Condition**
Functional Class Minor Collector
Lanes/Right of Way 2-4/Varies
Description R2/U4M. Local access undivided rural and median divided urban collector. Design speed varies.
**Ultimate Condition**

**Functional Class**  Minor Collector

**Lanes/Right of Way**  4/ROW determined by Town of Leesburg – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**  U4M. Local access median divided urban collector. Left and right turn lanes required at major intersections. Design speed determined by VDOT and Town of Leesburg.

**Bicycle/Pedestrian Facilities**  Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review.

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**189.211. Glascock Boulevard (US Route 50 North Collector Road)/Dulles South Parkway**

**Segment**  VA Route 606 (Loudoun County Parkway) west to VA Route 659 Relocated (Northstar Boulevard)

**Policy Area**  Suburban (Dulles)

---

**Interim Condition**

**Functional Class**  Major Collector

**Lanes/Right of Way**  4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**  U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**  Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

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**Ultimate Condition**

**Functional Class**  Major Collector

**Lanes/Right of Way**  6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**  U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**  Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.
### 190-212. Glascock Boulevard (US Route 50 North Collector Road)/Midnight Run Drive

**Segment**
VA Route 659 Relocated (Northstar Boulevard) west to Lenah Loop Road

**Policy Areas**
Suburban (Dulles), Transition

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Major Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Left and right turn lanes required at all intersections. 40 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

### 191-213. Greenwood Drive (Round Hill)

**Segment**
VA Route 719 (Main Street/Woodgrove Road) east to VA Route 1320 (Evening Star Drive)

**Policy Area**
Round Hill JLMA

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities.</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural collector. Left and right turn lanes recommended at major intersections. Design speed determined by VDOT, Town of Round Hill and DTCI.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

### 192-214. High Street Extended (Round Hill)

**Segment**
VA Route 719 (Main Street) west and south to VA Route 7 Business (West Loudoun Street)

**Policy Area**
Town of Round Hill, Round Hill JLMA

**Existing Condition**

<table>
<thead>
<tr>
<th>Existing Segment</th>
<th>VA Route 719 (Main Street) to a point approximately 1,000 feet west</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Class</td>
<td>Local/Secondary Road</td>
</tr>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies</td>
</tr>
<tr>
<td>Description</td>
<td>R2. Local access undivided rural secondary road. Design speed varies.</td>
</tr>
</tbody>
</table>
**Ultimate Condition**

**Functional Class**  Minor Collector

**Lanes/Right of Way**  2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Round Hill determined by Town.

**Description**  R2. Local access undivided rural collector. Left and right turn lanes recommended at major intersections. Design speed determined by VDOT, Town of Round Hill and DTCI.

**Bicycle/Pedestrian Facilities**  Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Round Hill subject to Town review.

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**193.215. Hope Parkway**

**Segment**  Battlefield Parkway north and east to Sycolin Road

**Policy Area**  Town of Leesburg

**Existing/Ultimate Condition**

**Functional Class**  Determined by Town of Leesburg

**Lanes/Right of Way**  4/ROW determined by Town of Leesburg – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**  U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. Design speed varies.

**Bicycle/Pedestrian Facilities**  Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review.

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**216. Horsepen Run Connector (Commerce Center Court)**

**Segment**  Barrister Street to VA Route 606 (Old Ox Road)

**Policy Area**  Silver Line

**Existing Condition**

**Existing Segment**  VA Route 606 (Old Ox Road) to Broad Run Floodplain

**Functional Class**  Local Secondary Road

**Lanes/Right of Way**  2/Private

**Ultimate Condition**

**Functional Class**  Minor Collector (DRPT: Major Avenue)

**Lanes/Right of Way**  4/90 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities
Description | U4. Urban collector. Bridge over Broad Run. Left and right turn lanes required at all major intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities | 10-foot wide shared-use paths within the ROW or along both sides of the roadway. Crosswalks at all approaches to signalized intersections.

### 217. Jefferson Park Drive

Segment | Mooreview Parkway to Centergate Drive

Policy Area | Silver Line

**Ultimate Condition**

**Functional Class** | Major Collector (DRPT: Avenue)

**Lanes/Right of Way** | 2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description** | U2. Left and right turn lanes required at major intersections. 20 mph design speed.

**Bicycle/Pedestrian Facilities** | Minimum 8-foot wide sidewalks along both side of the roadway. Bicycles share the road with vehicles. Signage and pavement markings indicate the shared roadway. Crosswalks at all approaches to intersections with public roads.

### 218. Jefferson Park Drive

Segment | Centergate Drive to VA Route 607 (Loudoun County Parkway) (opposite VA Route 2988 (Westwind Drive))

Policy Area | Silver Line

**Ultimate Condition**

**Functional Class** | Minor Collector (DRPT: Major Avenue)

**Lanes/Right of Way** | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description** | U4. Left and right turn lanes required at major intersections. 20 mph design speed.

**Bicycle/Pedestrian Facilities** | Minimum 8-foot wide sidewalks along both side of the roadway. Bicycles share the road with vehicles. Signage and pavement markings indicate the shared roadway. Crosswalks at all approaches to intersections with public roads.

### 194.219. Kincaid Boulevard Extended

Segment | Battlefield Parkway south to VA Route 653 Relocated (Crosstrail Boulevard)

Policy Area | Town of Leesburg, Leesburg JLMA
**Existing/Ultimate Condition**

Existing Segment: Battlefield Parkway to Rhonda Place

Functional Class: Minor Collector

Lanes/Right of Way: 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town.

Description: U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review.

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### Lenah Loop Road

**195.220.** Lenah Loop Road

Segment: VA Route 621 (Evergreen Mills Road) south to Glascock Boulevard (US Route 50 North Collector Road)

Policy Area: Transition

**Ultimate Condition**

Functional Class: Minor Collector

Lanes/Right of Way: 2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description: R2. Local access undivided rural collector. May incorporate portions of existing VA Route 616 (Fleetwood Road) alignment. Left and right turn lanes required at major intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

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### Lenah Loop Road

**196.221.** Lenah Loop Road

Segment: Glascock Boulevard (US Route 50 North Collector Road) south to VA Route 2200 (Tall Cedars Parkway) (US Route 50 South Collector Road)

Policy Area: Transition

**Ultimate Condition**

Functional Class: Minor Collector

Lanes/Right of Way: 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
<table>
<thead>
<tr>
<th>Description</th>
<th>U4. Local access undivided urban collector. May incorporate portions of existing VA Route 600 (Lenah Road) alignment. Left and right turn lanes required at major intersections. 40 mph design speed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

**197.222. Lenah Loop Road**

*Segment* VA Route 2200 (Tall Cedars Parkway) south and east VA Route 659 Relocated (Northstar Boulevard)

*Policy Area* Transition

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
</tbody>
</table>

*Description* R2. Local access undivided rural collector. Left and right turn lanes required at major intersections. 40 mph design speed.

*Bicycle/Pedestrian Facilities* Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

**223. Loudoun Station Drive**

*Segment* VA Route 643 (Shellhorn Road) to Ashburn Metrorail Station North Transit Center

*Policy Area* Silver Line

**Existing Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Local Secondary Road</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>4/70 feet</td>
</tr>
</tbody>
</table>

*Description* U4. Local access undivided urban collector. 40 mph design speed.

**Ultimate Condition**

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Collector (DRPT: Avenue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/70 feet</td>
</tr>
</tbody>
</table>

*Description* U2b. Local access undivided urban collector. Transit-Priority Street. 30 mph design speed.

*Bicycle/Pedestrian Facilities* 8-foot wide sidewalks on each side of the roadway, and minimum 6-foot wide bicycle lanes in each direction. Crosswalks at all approaches to intersections with public roads.
### 198.224. Maple Leaf Place / Jennings Farm Drive (VA Route 7 North Collector Road)

<table>
<thead>
<tr>
<th>Segment</th>
<th>VA Route 2700 (Augusta Drive) east to VA Route 821 (Lakeland Drive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Suburban (Potomac)</td>
</tr>
</tbody>
</table>

#### Existing/Ultimate Condition

<table>
<thead>
<tr>
<th>Existing Segments</th>
<th>Maple Leaf Place – VA Route 2700 (Augusta Drive) east to just beyond Tamarack Ridge Square; Jennings Farm Drive – VA Route 821 (Cedar Drive) east to VA Route 821 (Lakeland Drive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Class</td>
<td>Minor Collector</td>
</tr>
<tr>
<td>Lanes/Right of Way</td>
<td>2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U2. Local access undivided urban collector. ROW reservation in place for future connection of existing segments. Left and right turn lanes recommended at major intersections. 40 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.</td>
</tr>
</tbody>
</table>

### 225. Metro Center Drive

<table>
<thead>
<tr>
<th>Segment</th>
<th>Moorefield Boulevard to VA Route 643 (Shellhorn Road), including Transit Connector Bridge over VA Route 267 (Dulles Greenway)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Silver Line</td>
</tr>
</tbody>
</table>

#### Ultimate Condition

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Minor Collector (DRPT: Avenue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes/Right of Way</td>
<td>2/60 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U2. Local access undivided urban collector. Transit Connector Bridge over VA Route 267 (Dulles Greenway) to be a maximum of 46 feet in width. Left and right turn lanes required at major intersections. 25 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Minimum 10-foot wide shared use path along the northwest side of the roadway. Minimum 8-foot wide sidewalk along the ground-level segments along the southeast side of the roadway. Crosswalks at all approaches to intersections with public roads.</td>
</tr>
</tbody>
</table>

### 199.226. Miller Drive

<table>
<thead>
<tr>
<th>Segment</th>
<th>Hope Parkway east and south to Sycolin Road</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Area</td>
<td>Town of Leesburg</td>
</tr>
</tbody>
</table>

A1-127
Existing/Ultimate Condition

Existing Segments: Hope Parkway to Tolbert Lane; Blue Seal Drive to Sycolin Road

Functional Class: Determined by Town of Leesburg

Lanes/Right of Way: 4/ROW determined by Town of Leesburg – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description: U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. Design speed varies.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review.

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200.227. Moorefield Boulevard

Segment: VA Route 772 / 2298 Relocated (Mooreview Parkway) (opposite Dulles Greenway Eastbound Off-Ramp) southeast to 360 feet south of VA Route 772 (Old Ryan Road) VA Route 607 (Loudoun County Parkway) / VA Route 2988 (Westwind Drive) (opposite VA Route 645 Extended (Westwind Drive))

Policy Area: Suburban (Ashburn), Silver Line

Ultimate Condition

Functional Class: Minor Collector

Lanes/Right of Way: 3-4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description: U2/U4. U2 section between Beth Street and Centergate Drive; U4 section between VA Route 772 Relocated (Mooreview Parkway) and Beth Street, and between Centergate Drive and VA Route 607 (Loudoun County Parkway). Local access undivided urban collector. Transit-Priority Street. Left and right turn lanes required at major intersections. 20 mph design speed.

Bicycle/Pedestrian Facilities: Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. Minimum 8-foot wide sidewalks along both side of the roadway. Bicycles share the road with vehicles. Signage and pavement markings indicate the shared roadway. Crosswalks at all approaches to intersections with public roads.

228. Moorefield Boulevard

Segment: 620 feet north of VA Route 645 (Croson Lane) to Centergate Drive

Policy Area: Silver Line

Ultimate Condition

Functional Class: Minor Collector (DRPT: Major Avenue)

Lanes/Right of Way: 2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities
| Description | U2. Left and right turn lanes required at major intersections. 20 mph design speed. |
| Bicycle/Pedestrian Facilities | Minimum 8-foot wide sidewalks along both side of the roadway. Bicycles share the road with vehicles. Signage and pavement markings indicate the shared roadway. Crosswalks at all approaches to intersections with public roads. |

**229. Moorefield Boulevard**

| Segment | Centergate Drive to VA Route 607 (Loudoun County Parkway) |
| Policy Area | Silver Line |

**Ultimate Condition**

| Functional Class | Minor Collector (DRPT: Major Avenue) |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |

| Description | U4. Left and right turn lanes required at major intersections. 20 mph design speed. |
| Bicycle/Pedestrian Facilities | Minimum 8-foot wide sidewalks along both side of the roadway. Bicycles share the road with vehicles. Signage and pavement markings indicate the shared roadway. Crosswalks at all approaches to intersections with public roads. |

**201.230. Purcellville VA Route 7 North Collector Road**

| Segment | Eastern Purcellville JLMA Boundary (east of VA Route 287 (Berlin Turnpike)) west to VA Route 690 (Hillsboro Road) |
| Policy Area | Purcellville JLMA, Town of Purcellville |

**Ultimate Condition**

| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Purcellville determined by Town. |

| Description | U4. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Purcellville subject to Town review. |
202.231. **Purcellville South Collector Road (“A” Street)**

**Segment**
VA Route 7 Business (East Main Street) (opposite VA Route 287 (Berlin Turnpike)) south and west to VA Route 690 (32nd Street South)

**Policy Area**
Town of Purcellville, Purcellville JLMA

**Existing/Ultimate Condition**

**Existing Segments**
Approximately 1,800 feet south of VA Route 7 Business (East Main Street) to VA Route 690 (32nd Street South)

**Functional Class**
Minor Collector

**Lanes/Right of Way**
2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. Ultimate ROW width determined by Town of Purcellville.

**Description**
U2. Local access undivided urban collector. Roundabout at VA Route 7 Business/VA Route 287 (Berlin Turnpike). Left and right turn lanes recommended at major intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Purcellville subject to Town review.

203.232. **Quarry Road (US Route 50 North Collector Road)**

**Segment**
VA Route 609 (Pleasant Valley Road) west to VA Route 2201 (South Riding Boulevard)

**Policy Area**
Suburban (Dulles)

**Ultimate Condition**

**Functional Class**
Major Collector

**Lanes/Right of Way**
4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

**Description**
U4. Controlled access median divided urban collector. Will follow existing Route 873 (Wade Drive) alignment. Left and right turn lanes required at major intersections. 40 mph design speed.

**Bicycle/Pedestrian Facilities**
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

204.233. **Russell Branch Parkway (Leesburg)**

**Segment**
VA Route 653 (Cochran Mill Road) west to Trailview Boulevard

**Policy Area**
Leesburg JLMA, Town of Leesburg

**Ultimate Condition**

**Functional Class**
Minor Collector
Lanes/Right of Way
4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town.

Description
U4. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities
Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review.

234. State Street
Segment
Barrister Street to VA Route 2298 (Westwind Drive)

Policy Area
Silver Line

Existing Condition
Functional Class
Local Secondary Road

Lanes/Right of Way
4/70 feet

Description
U4. Local access undivided urban collector. 40 mph design speed.

Ultimate Condition
Functional Class
Minor Collector (DRPT: Avenue)

Lanes/Right of Way
2/70 feet

Description
U2b. Local access undivided urban collector. 30 mph design speed.

Bicycle/Pedestrian Facilities
8-foot wide sidewalks on each side of the roadway, and minimum 6-foot wide bicycle lanes in each direction. On-street parking where feasible. Crosswalks at all approaches to intersections with Avenues and Major Avenues and at signalized intersections with Boulevards and Multimodal Through Corridors.

205.235. Trailview Boulevard
Segments
VA Route 659 (Belmont Ridge Road) (opposite VA Route 2150 (Gloucester Parkway)) west over Goose Creek to future Keystone Drive in the Town of Leesburg; Battlefield Parkway west to Lawson Road

Policy Area
Suburban (Ashburn), Leesburg JLMA, Town of Leesburg

Existing/Ultimate Condition
Existing Segment
Approximately 800 feet east of Cardinal Park Drive west to Lawson Road

Functional Class
Major Collector
<table>
<thead>
<tr>
<th>Lanes/Right of Way</th>
<th>4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review.</td>
</tr>
</tbody>
</table>
Local Streets within the Silver Line Policy Area

Local streets may be added, realigned, or removed as approved through legislative rezoning applications, as approved by the Board of Supervisors. Street names are subject to change. Streets added to the Silver Line Policy Area will need to be identified within one of the three classifications defined below, and adhere to the policies for that classification. Further description and information on these Roadway Purpose Classifications can be found in the Silver Line Comprehensive Plan Amendment.

236. Industrial Streets

The following attributes will apply to industrial public streets within the Silver Line Policy Area.

<table>
<thead>
<tr>
<th>Policy Area</th>
<th>Silver Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Class</td>
<td>Local Secondary Road (DRPT: Local Street)</td>
</tr>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies – Additional ROW may be needed for turn lanes</td>
</tr>
<tr>
<td>Description</td>
<td>U2. Local access. Left and right turn lanes required at major intersections where warranted. 30 mph design speed. On-street parking stalls where space allows.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>6-foot wide sidewalks along both sides of the roadway. Crosswalks at all approaches to intersections with Avenues and Major Avenues and at signalized intersections with Boulevards and Multimodal Through Corridors</td>
</tr>
</tbody>
</table>

List of Existing/Planned Industrial Public Streets within the Silver Line Policy Area

<table>
<thead>
<tr>
<th>Street Name</th>
<th>Location Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>VA Route 741 (Markey Court)</td>
<td>VA Route 634 (Moran Road) to dead end</td>
</tr>
<tr>
<td>VA Route 865 (Acacia Lane)</td>
<td>VA Route 634 (Moran Road) to VA Route 1072 (Randolph Drive)</td>
</tr>
<tr>
<td>VA Route 866 (Underwood Lane)</td>
<td>Republic Drive West to VA Route 775 (Relocation Drive)</td>
</tr>
<tr>
<td>VA Route 869 (Bryant Court)</td>
<td>VA Route 775 (Relocation Drive) to dead end</td>
</tr>
<tr>
<td>VA Route 885 (Executive Drive)</td>
<td>VA Route 775 (Relocation Drive) to dead end</td>
</tr>
<tr>
<td>VA Route 886 (Lane Court)</td>
<td>VA Route 885 (Executive Drive) to dead end</td>
</tr>
<tr>
<td>VA Route 1029 (Dulles Summit Court)</td>
<td>230 feet north of VA Route 606 (Old Ox Road) to dead end</td>
</tr>
<tr>
<td>VA Route 1029 Relocated (Dulles Summit Court Relocated)</td>
<td>VA Route 775 (Relocation Drive) to VA Route 1029 (Dulles Summit Court)</td>
</tr>
<tr>
<td>Republic Drive West</td>
<td>VA Route 1036 (Pacific Boulevard) to VA Route 775 (Relocation Drive)</td>
</tr>
</tbody>
</table>
237. Commercial Mixed-Use Streets

The following attributes will apply to commercial mixed-use public streets within the Silver Line Policy Area.

<table>
<thead>
<tr>
<th>Policy Area</th>
<th>Silver Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Class</td>
<td>Local Secondary Road (DRPT: Local Street)</td>
</tr>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies</td>
</tr>
<tr>
<td>Description</td>
<td>U2. Local access. Left and right turn lanes prohibited. 20 mph design speed. On-street parking stalls along both sides of the roadway where feasible.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>Minimum 8-foot wide sidewalks along both sides of the roadway. Bicycles share the road with vehicles. Signage and pavement markings indicate the shared roadway.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>List of Existing/Planned Commercial Mixed-Use Public Streets within the Silver Line Policy Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albemarle Street</td>
</tr>
<tr>
<td>Buckler Street</td>
</tr>
<tr>
<td>Grandmoore Street</td>
</tr>
<tr>
<td>Malone Street</td>
</tr>
<tr>
<td>Massie Street</td>
</tr>
<tr>
<td>Metro Center Drive</td>
</tr>
<tr>
<td>Midmoore Drive</td>
</tr>
<tr>
<td>Vinegar Hill Drive</td>
</tr>
</tbody>
</table>
238. Residential Streets

The following attributes will apply to residential public streets within the Silver Line Policy Area.

<table>
<thead>
<tr>
<th>Policy Area</th>
<th>Silver Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Class</td>
<td>Local Secondary Road (DRPT: Local Street)</td>
</tr>
<tr>
<td>Lanes/Right of Way</td>
<td>2/Varies feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities</td>
</tr>
<tr>
<td>Description</td>
<td>U2. Local access. Left and right turn lanes prohibited. 20 mph design speed. On-street parking stalls are recommended along both sides of the roadway.</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Facilities</td>
<td>6-foot wide sidewalks along both sides of the roadway. Bicycles share the road with vehicles. Signage and pavement markings indicate the shared roadway.</td>
</tr>
</tbody>
</table>

### List of Existing/Planned Residential Public Streets within the Silver Line Policy Area

<table>
<thead>
<tr>
<th>Street Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VA Route 2175 (Regency Drive)</td>
<td>VA Route 640 (Waxpool Road) to Hyde Park Drive</td>
</tr>
<tr>
<td>VA Route 2176 (Loganwood Court)</td>
<td>VA Route 2175 (Regency Drive) to dead end</td>
</tr>
<tr>
<td>VA Route 2177 (Vendome Court)</td>
<td>VA Route 2175 (Regency Drive) to dead end</td>
</tr>
<tr>
<td>VA Route 2178 (Hyde Park Drive)</td>
<td>Dead end 450 feet west of VA Route 2182 (Castle Hill Court) to dead end 500 feet west of VA Route 2175 (Regency Drive)</td>
</tr>
<tr>
<td>VA Route 2179 (Cobham Court)</td>
<td>VA Route 2179 (Hyde Park Drive) to dead end</td>
</tr>
<tr>
<td>VA Route 2180 (Hartley Place)</td>
<td>Dead end 250 feet northeast of VA Route 2181 (Bellair Court) to VA Route 643 (Shellhorn Road)</td>
</tr>
<tr>
<td>VA Route 2181 (Bellair Court)</td>
<td>VA Route 2180 (Hartley Place) to dead end</td>
</tr>
<tr>
<td>VA Route 2182 (Castle Hill Court)</td>
<td>VA Route 2178 (Hyde Park Drive) to dead end</td>
</tr>
<tr>
<td>Bowens Wharf Place</td>
<td>Clarendon Square to VA Route 772 (Old Ryan Road)</td>
</tr>
<tr>
<td>Centergate Drive</td>
<td>Claude Moore Drive to Foundation Drive</td>
</tr>
<tr>
<td>Foundation Drive</td>
<td>VA Route 645 (Crosun Lane) to VA Route 772 (Old Ryan Road)</td>
</tr>
<tr>
<td>Grandmoore Street</td>
<td>Claude Moore Drive to VA Route 772 (Old Ryan Road)</td>
</tr>
<tr>
<td>Hammersmith Place</td>
<td>VA Route 772 (Old Ryan Road) to Witham Square</td>
</tr>
<tr>
<td>Philanthropic Drive</td>
<td>Grandmoore Street to Foundation Drive</td>
</tr>
<tr>
<td>Southland Street</td>
<td>Foundation Drive to VA Route 2298 (Mooreview Parkway)</td>
</tr>
<tr>
<td>Willington Square</td>
<td>VA Route 772 (Old Ryan Road) to VA Route 772 (Ryan Road)</td>
</tr>
</tbody>
</table>
Appendix 6
Planning Guidelines for Bicycle and Pedestrian Facilities

The County has generated guidelines for the provision of bicycle and pedestrian facilities as detailed in the table below. The purpose of these guidelines is to direct future developments on providing adequate bicycle and pedestrian facilities along Countywide Transportation Plan (CTP) Roads and to implement the policies of the Silver Line Comprehensive Plan Amendment and the Loudoun County Bicycle and Pedestrian Mobility Master Plan. They take into consideration general safety standards and are considered to be the minimum standards for provision of bicycle and pedestrian facilities. These guidelines do not preclude the County from asking for measures that are over and above the minimum criteria. All facilities shall be designed in accordance with the American Association of State Highway and Transportation Officials’ (AASHTO) design guidelines and standards and VDOT design guidelines and standards, and the Loudoun County Pedestrian and Bicycle Design Toolkit, as appropriate.

<table>
<thead>
<tr>
<th>Type of Road Corridor</th>
<th>Facility - Bicycle and Pedestrian Facilities to be provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eight (8) and Six (6) Lane Roads</td>
<td>Two – 10’ wide Shared Use Path or amended dimensions by AASHTO in the future, one on each side, over 14’ wide right-of-way or public easement if required by the County.</td>
</tr>
<tr>
<td></td>
<td>If a 10’ wide Shared Use Path is not feasible, a narrower shared use path may be accepted based on the Loudoun County Bicycle and Pedestrian Design Toolkit and AASHTO’ standards and design guidelines.</td>
</tr>
<tr>
<td></td>
<td>For on-road bicycle facilities (bike lanes) where proposed and in accordance with the Loudoun County Bicycle &amp; Pedestrian Mobility Master Plan, refer to Loudoun County Pedestrian and Bicycle Design Toolkit for design guidelines. Pedestrian facilities need to be provided as well and designed as per the Loudoun County Bicycle &amp; Pedestrian Mobility Master Plan</td>
</tr>
<tr>
<td>Four (4) Lane Road</td>
<td>One – 10’ wide Shared Use Path over 14’ wide right-of-way or public easement if required by the County. The County will make the final decision on the location of the Shared Use Path.</td>
</tr>
<tr>
<td></td>
<td>and One 6’ wide sidewalk designed as per the Loudoun County Bicycle &amp; Pedestrian Mobility Master Plan (Walkway and Sidewalk Policies) or a Shared Use Path. The County will make the final decision on the type and location of the facility. Sidewalks will not typically be provided along rural road sections with no or few adjacent housing units.</td>
</tr>
<tr>
<td></td>
<td>and On road bicycle facilities (bike lanes) in accordance with the Loudoun County Bicycle &amp; Pedestrian Mobility Master Plan (except when determined to be infeasible according to AASHTO’ standards and guidelines); refer to Loudoun County Pedestrian and Bicycle Design Toolkit for design guidelines.</td>
</tr>
<tr>
<td></td>
<td>If a 10’ wide Shared Use Path is not feasible, a narrower shared use path may be accepted based on the Loudoun County Bicycle and Pedestrian Design Toolkit and AASHTO’ standards and design guidelines.</td>
</tr>
<tr>
<td>Two (2) Lane Road</td>
<td>Two 6’ wide sidewalks designed as per the Loudoun County Bicycle &amp; Pedestrian Mobility Master Plan (Walkway and Sidewalk Policies). Such sidewalks shall be provided on both sides in Suburban Policy, Transition Policy and Joint Land Management Areas, and where feasible in Villages in the Rural Policy Area.</td>
</tr>
<tr>
<td></td>
<td>and On-road bicycle accommodations or a Shared Use Path. The County will make the final decision on the type and location of the facility. Sidewalks will not typically be provided along rural road sections with no or few adjacent housing units.</td>
</tr>
<tr>
<td></td>
<td>For on-road bicycle facilities (bike lanes) where proposed and in accordance with the Loudoun County Bicycle &amp; Pedestrian Mobility Master Plan, refer to Loudoun County Pedestrian and Bicycle Design Toolkit for design guidelines.</td>
</tr>
<tr>
<td>Off-Road Trail Not Adjacent to a Roadway</td>
<td>Public off-road trails identified in the Silver Line Comprehensive Plan Amendment or Countywide Transportation Plan which are not adjacent to a roadway shall be one 16’ wide asphalt pathway within either a public access easement or a 20’ wide right-of-way with a painted striped down the center to indicate the presence of bidirectional travel along the trail.</td>
</tr>
</tbody>
</table>
Table Notes:

The County may approve alternative shared use path or sidewalk alignments to avoid damaging sensitive environmental, historic or cultural features or to avoid engineering constraints, provided the alternative alignment serves the planned purpose of the planned shared use path or sidewalk to an equivalent degree.

The County does not anticipate bicycle and pedestrian facilities along limited access roadways, as defined in Appendix 1. Off-road shared use paths will be provided along limited access roadways, as permitted by state statutes.

The Bicycle and Pedestrian Facilities will be constructed at the interim condition (and ultimate condition if there is no interim condition) but designed for the ultimate condition of the roadway.

Within the Silver Line Policy Area, facilities are to be constructed in strict accordance with the bicycle and pedestrian facilities definition in Appendix 1. If no specific definition is provided for bicycle and pedestrian facilities for a roadway within the Silver Line Policy Area, please refer to the table above.