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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 County planning documents in the 1995 Toll Road Plan and 1995 Countywide Transportation Plan. The 2001 Revised General Plan also contemplated the development of transit nodes as refinements to the previous plans. Today, in 2016, the stations have been formally named as the Loudoun Gateway Station and Ashburn Station and Metrorail is 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 Silver Line must be a dynamic process that changes and 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 over time to ensure that the County is always achieving a land development pattern that positions the County to be successful in ensuring a high quality of life for its residents. As such, understanding the history and rationale for the policies in this document, and the conditions that led to their adoption is comparatively important as the newly derived plan and policies themselves.
**Study Area Boundary**

For the purposes of this document, the area covered by this Plan is referred to as the “Silver Line 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 division of planned land use types. In addition to planned land use, this Small Area Plan also considers transportation needs and constraints and seeks to improve connectivity to the Metrorail stations and develop new roadway design guidelines consistent with the desired form and character of the planning area.

Examples of boundaries used include natural boundaries like the Broad Run, manmade boundaries like major roads including Waxpool Road and Pacific Boulevard, and neighborhood boundaries like lines between existing HOAs or development types. This Small Area Plan seeks to connect certain areas to Metrorail and “bridge” some boundaries while respecting other boundaries that separate the Metrorail area from other portions of the County.

**Small Area Plan History**

On December 5, 2012 the Board of Supervisors established a Dulles Metrorail Service District which is a tax district created to help fund construction costs associated with Metrorail operations. Given the establishment of this Tax District, the Loudoun County Board of Supervisors initiated a process to begin a Silver Line/Metrorail Tax District Comprehensive Plan Amendment on October 16, 2013 to evaluate the development potential of the Dulles 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 the desired 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**

As a first step in developing a refined plan for the Metrorail area, 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 TAP was charged with conducting an initial, broad analysis of development opportunities and constraints using a multidisciplinary team of experts with
regional knowledge. The TAP discussed planned land use in the context of today’s market conditions and cutting edge trends in land development. While the TAP made several key recommendations that led to subsequent steps in the planning process, they also identified key real estate and demographic trends that form the basis for the future land use plan provided in this document.

The most significant trend identified by the TAP, that forms the basis for this document, is a change in the workplace environment. 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 showed that private sector office tenants were taking 18 percent less space when leases were renegotiated.

Secondly, the TAP described an overall trend in office space moving away from post-World War II suburban environments and back towards walkable more urban environments with amenities for employees within walking distance. In the Washington region, specifically, the TAP noted that most office development is occurring immediately surrounding Metrorail stations.

Based on the ULI report, the Board of Supervisors initiated two additional studies to lay the groundwork for future planning around the Silver Line Stations. These two studies were the Market Analysis and Best Practices Study and the Land Use Scenario Planning Study.

**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 Washington Dulles International Airport and its aircraft flight paths. The Market Analysis and Best Practices Study was conducted by the consultant team of HRA Advisors and Kimley-Horn Associates.

Overall the study recommendations reflected two themes of limited demand for office development and the importance of limiting residential development in the Dulles Airport flight path.

With regard to office development, the study addressed constraining factors like US Government sequestration, lower General Services Administration (GSA) space requirements, live-work environment preferences of millennials, ongoing recovery from the recent recession, and an overall existing surplus in office development. 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 has occurred in locations within a half mile of Metro stations. This key point also reinforces the County’s vision for focusing growth at the Metrorail Stations and reserving this land for uses that will maximize tax revenues and other benefits to the local jurisdictions. The study also emphasizes the need for patience in order to realize long term development goals; as exhibited by case studies of existing Metrorail stations in the region.
Since significant development of the station areas is recognized to be a process that will evolve over several decades, the study recommended a range of initiatives that can be used to incentivize or expedite development including financial incentives, public private partnerships, upfront infrastructure investments, interim uses, and anchor projects to catalyze development.

A second key theme throughout the Study final report relates to residential development in airport flight paths. While the study notes that most airports have residential development nearby, it is common for most airport operators and jurisdictions to actively seek ways to restrict residential development underneath airport flight paths due to potential conflicts of airport operations and their associated environmental impacts. 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 a specific portion of the Silver Line area that is currently covered primarily by vacant land. The study was intended to measure the impacts of different land use decisions and to evaluate 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 scenario planning study was used to test the tradeoffs associated with different land use patterns recognizing that previous land use plans calling for significant office development were not realistic and that new types of development were necessary. The study built off 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 study 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 Small Area Plan. Several planning principles that should be considered specifically for the study area were also discussed. These recommendations and principles are discussed in further detail below under “Rationale for the Plan.”

**Consultant Recommendations**

The Consultant Recommended Scenario was developed as a means of striking 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 Small Area Plan 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. This plan is essential in guiding land development applications that are submitted prior to the stations’ openings in 2020 and in setting forth a long term vision for the study area that extends to 2040 and beyond.

Planning Context
The Plan has been developed to recognize existing conditions and to appropriately embrace those conditions or effectuate change. In some instances, the existing land use patterns cannot be reasonably changed or are deemed appropriate for the long term Silver Line 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. In these instances, the Plan strategically seeks to phase out existing uses by allowing for redevelopment and ensuring that new development accommodates County’s long term vision. As such, all development in the Silver Line Area should be holistically integrated into the existing environment and into the County’s long-term vision established by land owners, stakeholders and the public input received during the planning process.

Public Process
The scenario planning process included two public workshops and two stakeholder sessions, as well as several meetings with the Board of Supervisors. The first public workshop was intended to better understand issues that are important to the community. The workshop was held within the community and approximately 75 people attended. Attendees were comprised primarily of Loudoun residents and included the general public and the development community. The primary purpose of the workshop was to help the project team get a better understanding of the issues concerns most important to the community and to begin developing alternative land use scenarios that reflected the desires of the general public. 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 more for schools, roads, and other infrastructure.
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) County funding should be directed toward
7) Station areas should be developed as destinations to live, work, and play.
8) Roadways should be developed as complete streets to accommodate multiple modes of transportation
9) The Silver Line Area should accommodate parks, passive open spaces, and large active gathering spaces
10) Density of development should reflect an urban environment
When asked do you strongly agree, agree, feel neutral, disagree, or strongly disagree, 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.
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.

**Summary of Board Feedback**

The Board of Supervisors was engaged at several points in the process leading to the development of this Small Area Plan and their feedback was used in developing priorities and planning principals that shaped the planned land use and concepts in this document. The Board overwhelmingly emphasized that the key focus of the Plan should be to maximize long term tax revenue generation and to ensure adequate infrastructure and 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 Small Area Plan which places a strong emphasis on long-term goals rather than on allowing for short term development opportunities and more immediate tax revenues. The Plan also places heavy emphasis on ensuring a transportation system that is appropriate for an urban environment and providing the community facilities and services necessary to support the community.

**Existing Conditions**

The Silver Line Small Area Plan covers an area approximately 4,275 acres in size. Roughly 1,975 of this acreage has already been developed while 2,300 acres are undeveloped or minimally developed. Most of the undeveloped land does have entitlements. The developed areas included in the Plan area are largely proposed to remain in their current state. However, some areas have a new land use plan that allows for redevelopment to make those areas 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 this Plan

A primary purpose of this Plan is to guide land development proposals and provide a framework for the specific aspects of land development that are important in each portion of the Silver Line Area. This Plan has been developed with a high level of detail in recognition of the unique conditions, circumstances, and goals for the Silver Line Area. As such land development applications are expected to provide a sufficient level of site planning detail that demonstrates how new development will be seamlessly integrated into the development pattern called for by this Plan.
Each chapter of this Plan provides a specific set of criteria that apply to the entire Silver Line Area or to specific locations based on current conditions or the long term goals for the study area and specific parcels of land. 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 specific criteria that must be met for each application as well as graphic examples to demonstrate the intent of tangible and intangible concepts. The County seeks to have land development applications demonstrate how they meet criteria outlined in this Plan by providing detailed development plans, design guidelines, and proffers that address each of the policies and topical areas.

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 HR&A Advisors Market Analysis and Best Practices Study Final Report, and the Loudoun County Land Use Scenario Planning Study. Deviations from this plan can be considered but applicants are expected to describe through research or case studies, the rationale for those deviations, what has changed since previous County studies, or why any such changes better achieve the County’s Goals and Vision.
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Chapter 2 - Vision

**Vision Statement**

The Silver Line community will be a strong and diverse regional economic center that will be a leader in innovation in the Washington D.C. Metropolitan Area providing economy-driving employment uses while balancing new development with the needs of Dulles International Airport. It will be a superior urban community that is rich in amenities, a mixed-use, balanced community of business, 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. 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 place of community activity and identity, a center of culture and the arts. It 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 efficiency and livability.
Goals of the Silver Line Plan

The Loudoun County Board of Supervisors established four long term goals for the Silver Line Plan.

1. Prompt Realization of Tax Revenues to Support Future Metrorail Operations

   This goal endeavors to 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 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

   This goal aims to 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 Plan 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

   This goal strives to develop a mix of land uses, densities, and housing options in the Silver Line Plan 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

   This goal looks to best prepare the Silver Line Plan 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, will help alleviate demands on the transportation system of both the Silver Line Plan Area and the County.
Objectives of the Silver Line Plan

Economic Development and Job Creation
The long-term economic well-being of the Silver Line Plan Area is fundamental to its future. This Plan provides for new development types, new land use patterns, and intensities of land development that are needed to grow the tax base, 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 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 will 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 “Data Center Alley” and a global internet capital. To maximize the quality of life and facilitate other economic development opportunities, new data centers will be focused farther from Metrorail and in locations that minimize visual, noise, and other impacts on surrounding development.

Interim uses and development patterns will be considered to 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 and 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 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 multifamily 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 Plan 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 use when market forces support denser mixed-use development in the future. 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. In no way should interim development types, locations, or intensities 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 Plan 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.

There will be 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 facades set at the back of the sidewalk, ground floor retail uses with transparent facades, 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 place. There will be active public plaza gathering places and spaces that promote culture and the arts. There will be 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 Plan Area will be a place where walking and bicycling can be travel modes of choice; 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 developed incorporating complete street principles, appropriate street spacing standards, parking, and both urban and suburban design treatments. This will help prevent traffic congestion, maximize travel mode choices, and provide several route options that create a transportation system that safely and efficiently moves people throughout the area.
Small Area Plan Rationale

Existing Conditions
The Silver Line Plan Area includes 4,275 acres that encompass the Loudoun Gateway and the Ashburn Metrorail Stations. 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. Immediately south of the Silver Line Plan Area is land owned by Dulles International Airport.

Considering the existing land uses within the Silver Line Plan Area was an integral part in planning future land uses around the future metro stops. Incorporating existing development into 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, a planned Transit Oriented Development. While currently vacant, it along with Loudoun Station will set the stage for urban mixed use in and around the Ashburn metro stop. Ryan Park center, a ‘big box’ retail center, is an area where redevelopment is envisioned to occur as an extension of the existing Loudoun Station’s urban mixed use development. Spreading outward from the metro stops themselves, medium intensity mixed use and urban residential is planned taking into consideration the location of the existing residential land uses within the Regency and Vantage Pointe which have already developed in this area. Walkable urban uses are key in providing a transition and connection to these existing developments.

Several data centers have developed or are under development recognizing the fiber optic and power infrastructure in this area. The Silver Line Small Area Plan continues to support data center development in strategic locations where they will not conflict with proposed mixed-use 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 will redevelop into a non-residential mixed use office setting. Another key existing feature that the Silver Line Plan takes into consideration is the Broad Run and its associated floodplain. These features provide opportunities for active and passive uses within a network of green infrastructure as an amenity for residents and as a connection to other open space areas of the County.
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 Plan 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. Development interests are positioning themselves 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. The Rosslyn-Ballston Corridor continues to develop 35 years after the Metrorail stations opened and decades after the initial planning began. Not many landowners can afford to wait that long.

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 Plan 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 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. The Plan should prepare for these new types of residential developments while allowing for modifications to density and use when appropriate. Finally, the study 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 Plan 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.
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Chapter 3 - Planned Land Use

Priority Development Areas

This Small Area 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 designated priority development areas with specific objectives and development characteristics desired in each. These are (1) areas within ¼-mile of the Ashburn station, (2) areas within ½-mile of the Ashburn Station, (3) areas within ½-mile of the Loudoun Gateway Station, and (4) new mixed-use neighborhoods. The County endeavors to accelerate development in these areas will work collaboratively with land owners to ensure that development proposals best achieve the plan vision.

Priority Development Area Policies

1. Temporary incentives should be considered for non-residential development in priority development areas that accelerate the market’s delivery of desirable land use patterns.

2. Development of the conceptual street network and multi-modal transportation system is integral to the overall development of the priority development areas and expedited development of the network and multi-modal capabilities will greatly aid in minimizing the demands on the County’s transportation system.

3. A variety of creative 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. No new stand-alone data centers will be permitted within the priority development areas.
**Ashburn Station ¼-Mile Buffer**

Land within approximately ¼-mile of the Ashburn Metrorail 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 developed that maintains a long term vision for high-density development. Market research indicates that most office absorption within the Washington region occurs with ¼-mile of Metrorail Stations so land in the ¼-mile should be programmed with the highest concentrations of office development.

**Ashburn Station ¼ Mile Buffer Policies**

1. Development proposals for land within ¼-mile of the Ashburn Station should accommodate significant office development.

2. Densities below place typology guidelines will have an adverse impact on the County’s long-term tax revenue generation potential and should be avoided.

3. Areas within ¼-mile of the Ashburn station will have the tallest buildings and land area should be reserved until market conditions support 10-story construction, or greater.

**Ashburn Station ½-Mile Buffer**

Land between ¼-mile and approximately ½-mile of the Ashburn Metrorail 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. Given the lower densities it is reasonable to assume that this area may develop before the ¼-mile area because of smaller buildings and cheaper construction types. 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 office development, 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 to ultimately be 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 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 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 for Metrorail riders and should include appropriate uses like office, employment, retail, institutional uses, or special activities that have a regional or even global draw and that can benefit from proximity to the Washington Dulles International Airport and the Metrorail. The area should be developed with high-densities that maximize transit ridership and that have global appeal.

The Loudoun Gateway Station Area should be a high priority area for programming infrastructure projects that support walkable, urban development principles. The County may also consider offering development incentives such as public-private partnerships that result in a catalytic anchor use that creates demand for additional development.

This land is largely constrained by areas of floodplain and the Airport Impact Overlay Zone. These constraints limit the areas potential to develop as a vertically integrated mixed-use community with residential development but a walkable urban environment is still desirable.

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 area.
2. The Loudoun Gateway Station should be developed as an urban, walkable, mixed-use environment.
3. The Loudoun Gateway Station will serve as a transit hub and development proposals should reflect this intended purpose by accommodating the needs of commuters.
4. Special activity uses are desirable at the Loudoun Gateway Stations but proposals will be evaluated on a case-by-case basis to evaluate unforeseen adverse impacts.
New Mixed-Use Neighborhoods

This Small Area Plan 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 2001 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 and is therefore intended to be developed as self-sustaining neighborhood with its own “core” areas. The neighborhoods will be generally organized within ¼-mile of a core area that functions as the “neighborhood center” or “town center.”

Each neighborhood should be an attractive place to live, work, shop and play for young professionals and other segments of the population searching for a more urban environment. The neighborhood should complement higher-density development activities within the ¼ and ½-mile buffer areas described above. The neighborhoods should be organized around
their own core and should provide a walkable mixed-use environment with urban housing options, retail, and office uses.

**General Mixed-Use Neighborhood Policies**

1. Each neighborhood should be organized around a neighborhood center with features like main streets, community gathering areas, central parks, plazas, and other neighborhood amenities.
2. Mixed-use neighborhoods should accommodate plans for near-term and long-term transit circulator service with bus stops at the center of the community.
3. Each neighborhood should accommodate 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 and libraries should be located to allow as many residents as possible to be within short walking distance.
5. Mixed-use neighborhoods should support a high level of pedestrian connectivity.
6. Neighborhoods should be designed to maximize connections to surrounding neighborhoods.

**Mixed Use Neighborhood #1 Policies**

1. This neighborhood should be designed with a “Main Street” that extends from Shellhorn Road to Loudoun County Parkway. This main street will serve as the primary location for vertically integrated mixed use buildings with ground floor retail.
2. This area should be carefully planned to avoid impacts to existing single-family homes at the Regency HOA.
3. Development in this neighborhood should be accompanied by a plan that addresses safe pedestrian and bicycle connectivity to the Ashburn Station.
4. Protection of existing low density residential neighborhoods, such as the Regency will be accomplished through appropriate building setbacks and buffers.
5. Existing vegetation adjacent to the Regency community should be preserved to the greatest extent practicable and supplemented with additional landscaping to screen higher density uses from the single-family detached residential neighborhood.

**Mixed Use Neighborhood #2 Policies**

1. This area is envisioned as long-term redevelopment opportunity that maximizes proximity to the Ashburn Metrorail Stations.
2. Development in this neighborhood should be designed with high quality architecture fronting along the Dulles Greenway.
Mixed Use Neighborhood #3 Policies
1. Plans for this area should provide long-term plans and concepts to enhance connectivity and integrate existing suburban non-residential uses along Loudoun County Parkway and Centergate Drive into the urban fabric.
2. Development along Centergate Drive should be designed to function as the “Main Street” in this neighborhood.
3. Development in this neighborhood should be designed with high quality architecture fronting along the Dulles Greenway and Centergate Drive.

Mixed Use Neighborhood #4 Policies
1. This neighborhood should be developed with a new “Main Street” north of Barrister Street.
2. Existing residential development south of this neighborhood should be integrated into 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 constrained 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 Airport Impact Overlay zone and has areas planned for high quality office development accordingly.
6. Areas designated for office development can be considered for other alternative non-residential development patterns if applicants demonstrate that they will not have an adverse impact on the neighborhood or other portions of the Silver Line Area.
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.
8. Development in of this neighborhood should accommodate high levels of pedestrian connectivity to existing neighborhoods south of Barrister Street.

Other Development Areas
Portions of the Silver Line Area not designated as priority development areas are expected to provide a land development pattern that supports the priority 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.

Non-residential Neighborhoods
Non-residential neighborhoods are intended to support large, master-planned retail developments including lifestyle centers, employment campuses, institutional uses, or special activity centers. Non-residential neighborhoods are comprised of compact walkable employment, and other compact walkable non-residential uses. These neighborhoods are designated based on their walkable proximity to the Loudoun Gateway
Station or mixed-use neighborhoods and their location relative to the Airport Impact Overlay Zone which limits residential development. These areas will offer high degree of flexibility for innovative design proposals that maximize value and transit ridership from proximity to the Loudoun Gateway Station while managing impacts to the County.

**Non-residential Neighborhood Policies**

1. Residential development is not permitted in non-residential neighborhoods.
2. Areas designated as non-residential neighborhoods should maintain high level of pedestrian mobility to maintain connectivity to the station areas.
3. Buildings should be oriented toward walkable street frontages containing adequate sidewalks with pedestrian amenities such as outdoor furnishings, street trees, and storefronts where appropriate.

**Suburban Employment Areas**

Suburban employment areas support low-density, single-use development patterns with sites generally isolated from one another. These areas outside of easy walking distance 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 Area. In general, these areas are a lower priority for development since the County seeks to maximize growth and density in areas with greater proximity to Metrorail. However, 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 flex uses, data centers, low density offices, and limited retail uses.

Suburban Employment Areas effectively serve to create employment opportunities with uses that typically demand greater amounts of land area and proximity to roadway infrastructure. Since such uses can adversely affect the aesthetic character of the Silver Line Area, they should be developed in a manner that recognizes their function as a gateway into the core station areas. Accordingly, appropriate building placement, design, and landscape buffering is deemed to be critically important.

**Suburban Employment Policies**

1. Suburban employment areas should consider their location along major roadways that serve as a gateway to other station areas and should implement appropriate building placement, design, and landscape buffering.
2. Suburban employment centers should accommodate pedestrian and bicycle connectivity to other portions of the Silver Line Area.
3. Limited retail uses are permitted in the Suburban Employment Area but such uses should be subordinate to and supportive of office and other employment uses.
Residential Neighborhood
Residential neighborhoods include areas designated as urban townhomes and urban multi-family attached. These areas serve an important function in the overall development pattern as they provide a critical mass of residences to patronize businesses and create the vibrancy desired in the priority growth areas. Residential neighborhoods are expected to develop with little or no employment or retail uses. Most of these areas are within walking distance to a Metrorail Station or mixed-use neighborhood that will provide residents with access to 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 between focused toward the Metrorail Stations and nearby mixed-use neighborhoods. These areas are intended to maximize value based on their pedestrian and bicycle connectivity to mixed-use neighborhoods.

In general, these areas are a lower priority for development since the County seeks to maximize growth and density in areas with greater proximity to Metrorail. However, 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 flex uses, data centers, and low density offices.

Residential Area Policies
1. Residential neighborhoods will develop with little or no employment or retail uses.
2. Residential neighborhoods will provide access to transit services.
3. Residential neighborhoods will provide high levels pedestrian and bicycle connectivity to nearby mixed-use neighborhoods.
### DEVELOPMENT AREA Appropriateness

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<th>NON-RESIDENTIAL NEIGHBORHOODS</th>
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## Development Area Appropriateness

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<th>Non-Residential Neighborhoods</th>
<th>Suburban Employment</th>
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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 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 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 study area that responds to the Board of Supervisor’s four stated priorities for development in the Silver Line Area.
Economic Development
A primary objective of this plan is to promote economic development in the County, including 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’ Metrorail Stations and other high-quality mixed use areas.

Land Use Vision Contribution
The County recognizes that a well-defined land use vision contributes to successful economic development. The Small Area Plan demonstrates the County’s long-term vision to potential investors. By demonstrating a vision for a high quality environment surrounding the Metrorail Stations, the County has the potential the potential to attract economic development that would not be realized with more generalized plans.

Economic Development Initiatives
Create an Innovation District
An innovation district attracts the highest levels of well-educated, creative, and talented persons that have the ability to create new jobs and businesses in the County to support families and individuals with employment opportunities and amenities necessary for complete neighborhoods.

Attract Land Uses with Long-Term Revenue Potential
The Silver Line Area has the potential to attract a wide variety of land uses given the proximity to two Metrorail Stations and the Washington Dulles International Airport. Ultimately, the County envisions the area to be developed with uses that generate the highest potential for long-term revenue generation. All development applications in the Silver Line Area should be evaluated and discussed in terms of potential revenue generation and how well they make use of Metrorail and Airport infrastructure.

The County also recognizes that there are a wide range of land uses that can attract significant attention and activity without necessarily creating direct revenue generation. Many of these uses can, however, generate secondary or supporting development that does create substantial indirect revenue. The County will carefully analyze such uses in determining their appropriateness for the Silver Line Area based on both direct and indirect revenue generation potential. For example, the transportation assets in the Silver Line Area make the area particularly attractive as a tourist destination that can result in significant need for hotels, restaurants, and other supporting uses with high revenue generating potential.

Develop Branding Strategies
Identifying the Silver Line Area as a unique and special place requires building designs and uses that are unique and desired by the larger community. However it also entails communicating a perception of a unique place to the public through branding strategies. The combined
efforts of private developers, the County, and organizations like business improvement districts should be explored to create amenities and programming. A combination of shared public and private investment in new facilities, investments, and advertising materials can make the Silver Line Area more attractive to businesses seeking a new location.

**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 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 to 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 attempt to 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 5 of the Silver Line Small Area Plan.
5. Applicants are encouraged to designate land surrounding new storm water facilities as open space.
TYPICAL CHARACTER OF FLOODPLAIN AND OPEN SPACE AREAS
Parks/Community Facilities

Parks and Community Facilities are generally publically owned or publically accessible land uses that benefit or serve the community with space of active or passive use. Within the Silver Line Area, the Planned Land Use Map generally reflects only existing parks and community facilities. The County anticipates updating the planned land use map as new facilities are constructed per the guidance in this document. This Small Area Plan also identifies locations that can be considered for future parks and community facilities based on their location and characteristics of the facilities.

Parks and Community Facilities Policies

1. The County will pursue opportunities to create new parks and community facilities as the Silver Line Area develops.
2. New parks and community facilities shall be developed in accordance with the policies and guidance outlined in the Community Facilities Chapter of this Small Area Plan.
3. New and existing storm water facilities should be considered for publically accessible recreation land.

TYPICAL PARKS AND COMMUNITY FACILITIES LAND USES

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Secondary Land Uses

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PARKS AND COMMUNITY FACILITIES FORM AND PATTERN

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<td>Athletic Fields / Courts / Community Gardens / Dog Parks / Plazas / Amphitheater / Buffers / Greenways / Ponds</td>
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<th>Primary Transportation Modes</th>
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<td>Auto, Walk, Bike</td>
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| Parking Provision | N/A |
| Building Orientation | N/A |
| Building Placement  | N/A |
Single-Family Detached Neighborhoods

Single-family detached neighborhoods have a relatively uniform housing type and density throughout and are typically formed with a homeowners association. The neighborhoods generally have densities of 1 to 4 dwelling units per acre with home sizes ranging from 2,500 to 3,500 square feet. This Small Area Plan recognizes existing single family home neighborhoods in the Silver Line Area and seeks to protect them but no new single family homes are 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 neighborhoods will be built in the Silver Line Area.
2. The County encourages efforts to increase connectivity of existing single-family neighborhoods to nearby neighborhoods.
3. New developments adjacent to single family developments shall be designed with buffering and other appropriate treatments to prevent dramatic changes in the character of existing single-family detached neighborhoods.
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 contain a minimum of 8 dwelling units per acre with no individual portion of the neighborhood falling below that threshold. The 8 dwelling units per acre minimum includes all of the parks, roads, and community facilities necessary to support the neighborhoods. Densities of 16 dwelling units per acre or higher should be targeted for individual blocks of residential development. A key characteristic of these neighborhoods is the urban character. Appropriate housing types include: urban format townhomes, condominiums, senior housing, and apartments. Townhomes that are more characteristic of suburban neighborhoods 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 but other compatible housing types like apartments and condominiums are encouraged and should be part of urban residential neighborhoods. Smaller housing units are encouraged since they have the potential to be more affordable to County Residents and since they will have lower community facility impacts.
Heights in urban residential neighborhoods are expected to range from 3 to 6 stories. Buildings will be constructed with no or minimal setbacks to foster the desired urban atmosphere. 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 multiple residents with minimal front, rear yards, and side yards.

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, 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 be developed to maximize connectivity between neighborhoods and to neighborhood amenities, businesses, community facilities, and transit stops.
3. Land development applications should demonstrate that the application is well integrated with the surrounding neighborhoods.
4. Primary vehicular access to buildings in Urban Residential Neighborhoods should be through rear alleys.
5. On-street parking is desirable in urban residential neighborhoods to complement on-site parking.
6. Urban residential neighborhoods should include a minimum of 10 percent common open space areas like parks, plazas, and seating areas.
7. Schools, community facilities, and civic uses should be integrated into urban residential neighborhoods based on need.
8. Urban residential neighborhoods should be built with minimal setbacks to maximize density and foster a high quality pedestrian environment.
9. Applications for urban residential neighborhoods should be designed and built to accommodate transit routes and stops.
10. Urban Residential Neighborhoods may have a variety of residential unit types but the unit sizes should not exceed 2,000 square feet.
11. Designs that include front load garages, surface parking lots at the front of buildings, large setbacks, and other distinctly suburban elements are discouraged.

### RESIDENTIAL DEVELOPMENT TYPES DESIRED IN URBAN RESIDENTIAL NEIGHBORHOODS
TYPICAL CHARACTER OF URBAN RESIDENTIAL NEIGHBORHOODS

- Grid like street pattern
- Common Open Space Areas
- Entrances fronting on pedestrian roads
- Generally 3 to 6 Stories
- On-street parking
- No or minimal setbacks
Urban Multi-Family Attached

Urban multi-family attached neighborhoods support a mix of moderate- to high-density housing options. They are relatively compact, and may contain condominiums or apartments. Buildings are oriented toward the street and range in size from four to six stories. Parking is satisfied with on-street parking, structured parking, or shared rear-lot parking strategies. The design and scale of development in an urban multi-family neighborhood encourages active living and walking with a complete network of streets nearby and a range of non-residential uses and facilities in close proximity. Buildings in these neighborhoods are expected to have numerous on-site amenities like theatres, community rooms, fitness centers, and swimming pools.

Typical densities in these neighborhoods range from 24.0 to 48.0 dwelling units per acre. Home sizes typically range from 400 to 1,000 square feet. A key characteristic of these neighborhoods is a lower household size, student generation rate, and need for county facilities due to the small unit size and large number of on-site amenities.

**Urban Multi-Family Neighborhood Policies**

1. Urban Multi-Family 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 be developed to maximize connectivity between multi-family neighborhoods and nearby commercial areas.
3. Land development applications should demonstrate that the application is well integrated and connected with the surrounding neighborhoods.
4. On-street parking is desirable in urban residential neighborhoods to complement on-site parking.
5. Urban multi-family neighborhoods should include common open space areas like parks, plazas, and seating areas.

6. Urban multi-family neighborhoods should be built with minimal setbacks to maximize density and foster a high quality pedestrian environment.

7. Urban multi-family neighborhoods should be designed to accommodate transit ridership.

8. Limited small scale retail uses like coffee shops, take out restaurants, or delicatessens can be considered but the majority of retail uses serving urban multi-family neighborhoods should be in adjacent mixed-use or non-residential centers.

9. Buildings in urban multi-family neighborhoods should be designed with particular attention given to potential aircraft noise and ensuring the low noise levels within units.
Compact, Walkable Non-Residential

Compact, walkable non-residential centers are identified for land near the Loudoun Gateway Station Metrorail Station. This area presents a unique land use planning challenge created by its location within the Washington Dulles International Airport flightpath and along the Broad Run floodplain. The County has adopted an Airport Impact Overlay Zone which prohibits residential development with the LDN 65 noise contours. This prohibition is intended to minimize noise complaints and ensure unencumbered operations of Washington Dulles International Airport.

The County intends to have this area develop through unique and innovative ideas and land uses that can benefit from being one stop away from Washington Dulles International Airport. Appropriate non-residential uses may include one or more regional destinations within ½ mile of Metrorail, including: sports stadiums, convention centers, exhibit halls or museums, shopping malls, etc. 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 will engage the design cabinet or similar tasked

**COMPACT, WALKABLE NON-RESIDENTIAL LAND USES**

**Primary Land Uses**
- Sports stadium (within ½ mile)
- Convention Center (within ½ mile)
- Exhibit hall or museum (within ½ mile)
- Regional shopping mall (within ½ mile)
- Restaurants
- Retail Sales
- Banks
- Corporate Office Buildings
- Multi-tenant Professional Offices
- Research-and-Development

**Secondary Land Uses**
- Amphitheater
- Movie Theater
- Neighborhood Parks
- Public Plazas
- Outdoor Seating
- Community Facilities

**Undesirable Land Uses**
- Residential
- Auto oriented uses (Gas Stations, Drive-through restaurants)

**COMPACT, WALKABLE NON-RESIDENTIAL FORM AND PATTERN**

<table>
<thead>
<tr>
<th>Land Use Mix</th>
<th>Mix of Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>N/A</td>
</tr>
<tr>
<td>Typical Home Size</td>
<td>N/A</td>
</tr>
<tr>
<td>Non-Residential Intensity</td>
<td>0.5 – 4.0 FAR</td>
</tr>
<tr>
<td>Prevailing Building Height</td>
<td>2-6 Stories (90’ Max)</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 Parks / Plazas</td>
</tr>
<tr>
<td>Primary Transportation Mode</td>
<td>Transit, Walk, Bike, Auto</td>
</tr>
<tr>
<td>Parking Provision</td>
<td>Parking Structure, On-Street, 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>
groups in planning and designing land in compact non-residential areas. 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 active living 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 as well as a complimentary high-density residential neighborhood to the east that will be well connected with pedestrian infrastructure.

**Compact, Walkable Non-Residential Use Policies**

1. Compact, Walkable Non-Residential Areas will offer a large number 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 transit 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 highest densities within ½ mile of transit (up to 4.0 FAR), densities up to 3.0 FAR will be permitted outside of the ½ mile radius east of the Broad Run. Lower densities, up to 1.0 FAR are anticipated west of the Broad Run. The County may consider FAR above 1.0 west of the Broad Run if a unified development plan is provided establishing clear pedestrian and transit linkages between the areas east and west of the Broad Run and impacts to the river and stream corridor resource are minimized.

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

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

7. Ground-floor retail uses are encouraged to activate the street.

8. Freestanding or drive-through retail uses are discouraged due to their adverse effects on walkability and the pedestrian environment.
9. Ground floor retail and civic space or other uses that activate the street frontage should be provided within Compact, Walkable Non-Residential Areas.

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

11. Land development applications should demonstrate integration with adjoining existing and planned neighborhoods.

12. Land use plans in Compact, Walkable Non-Residential Areas should accommodate transit ridership and should recognize the function of the Loudoun Gateway Station as a transit hub.

**DESIRED CHARACTER OF COMPACT, WALKABLE NON-RESIDENTIAL CENTERS**
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 Area, Suburban Employment Centers are located in close proximity 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 mapped in the Silver Line Area could offer long term redevelopment opportunities. This Small Area Plan places greatest focus on development of mixed-use neighborhoods currently mapped in the Small Area Plan given limited market demand and the desire to strategically focus resources and create concentrated development opportunities as quickly as possible. However, areas mapped 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 into the Silver Line Area and location along major vehicular thoroughfares.

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

3. Retail development can be integrated into suburban employment centers but should be secondary to employment focused land uses.

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

5. Applications for development of Suburban Employment areas should address transit infrastructure where appropriate and feasible.
Compact Walkable Office

Compact, walkable office centers are primarily intended to accommodate professional offices 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 focused uses that capitalize on proximity to Metrorail will also be considered. Compact walkable offices are primarily located in areas where airport noise impacts can limit the appropriateness of residential development and where high visibility along major vehicular routes can create an attractive location for potential office tenants. The design and scale of development in these centers encourages active living with a complete and comprehensive network of walkable streets nearby. Buildings are located directly behind the sidewalk, and some uses may extend out to the street in the form of sidewalk cafes or outdoor seating areas.

Compact Walkable Office neighborhoods support driving, transit, bicycling and walking as viable modes of transportation. Their location along major roadways reflects the relatively high vehicular transportation demands these uses will have but bicycle, pedestrian and transit access should also be accommodated. Parking is satisfied using on-street parking, structured parking, or shared rear-lot parking strategies. Compact Walkable Office neighborhoods can accommodate single tenant or secure office campus but will typically be well integrated with the adjoining mixed-use and walkable non-residential neighborhoods so that employees can have safe and convenient pedestrian access to restaurants and other similar retail uses. Office neighborhoods should also accommodate transit routes to connect future employees with nearby neighborhoods and Metrorail Stations.

**Compact Walkable Office Policies**

1. Compact Walkable Office Development should be oriented toward a main street or intersection of main streets with pedestrian activity.

<table>
<thead>
<tr>
<th>Primary Land Uses</th>
<th>Separated Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Office</td>
<td>N/A</td>
</tr>
<tr>
<td>Multi-tenant Professional Office</td>
<td>N/A</td>
</tr>
<tr>
<td>Research and Development</td>
<td>N/A</td>
</tr>
<tr>
<td>Secondary Land Uses</td>
<td>0.50 – 3.00 FAR</td>
</tr>
<tr>
<td>Copy and Printing</td>
<td>3 - 6 Stories (90’ Max)</td>
</tr>
<tr>
<td>Sit-down Restaurant</td>
<td>400 – 800 LF</td>
</tr>
<tr>
<td>Bank</td>
<td>Grid</td>
</tr>
<tr>
<td>Public Plaza</td>
<td>Pocket Parks / Plazas</td>
</tr>
<tr>
<td>Outdoor Seating</td>
<td>Transit, Walk, Bike, Auto</td>
</tr>
<tr>
<td>Undesirable Land Uses</td>
<td>Parking Deck, On-Street, Rear Surface Lot</td>
</tr>
<tr>
<td>Data Centers</td>
<td>Facing Street</td>
</tr>
<tr>
<td>Strip retail</td>
<td>Behind Sidewalk</td>
</tr>
<tr>
<td>Auto oriented uses (Gas Stations, Drive-through restaurants)</td>
<td></td>
</tr>
</tbody>
</table>
2. Ground floor retail is desirable but not required for office buildings.
3. 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.
4. Applications for development of Compact Walkable Offices should demonstrate how the application integrates with adjoining neighborhoods.
5. Applications for Compact Walkable Office Centers should provide short and long-term transit plans.
Medium Urban Mixed-Use Neighborhoods

Urban mixed-use neighborhoods with medium buildings offer residents the ability to live, work, shop and play in one community. They include a mixture of housing types and residential densities throughout, which are integrated with various goods and services nearby to create a more walkable community. 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. Mixed-use neighborhoods support driving, transit, bicycling and walking as viable modes of transportation. Mixed-use neighborhoods are expected to be built around elements like community focal points, gather places, plazas, and “main streets.” Buildings that front on “main street” areas are expected to have ground floor retail. Mixed-use neighborhoods also provide key locations for office development in the County.

Typical densities in these neighborhoods range from 24.0 to 32.0 dwelling units per acre. Home sizes can typically range from 700 to 1,300 square feet as apartments and condominiums are the predominant housing type. 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.

The majority of dwelling units in Medium Mixed-Use areas should be in multi-family units but a small amount of urban townhomes may be appropriate to address compatibility and transitions from existing lower density development. Any

<table>
<thead>
<tr>
<th>Primary Land Uses</th>
<th>Secondary Land Uses</th>
<th>Undesirable Land Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Apartment Buildings</td>
<td>• Community Facilities</td>
<td>• Single Family Detached Homes</td>
</tr>
<tr>
<td>• Restaurants</td>
<td>• Schools</td>
<td>• Suburban style townhomes</td>
</tr>
<tr>
<td>• Grocery Stores</td>
<td>• Neighborhood Parks</td>
<td>• Auto oriented uses (Gas Stations,</td>
</tr>
<tr>
<td>• Banks</td>
<td>• Public Plazas</td>
<td>Drive- through restaurants)</td>
</tr>
<tr>
<td>• Integrated Retail Sales</td>
<td>• Urban style townhomes</td>
<td></td>
</tr>
<tr>
<td>• Doctor Offices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Multi-tenant Office Buildings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Corporate Office Buildings</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Land Use Mix</th>
<th>Mix of Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Density</td>
<td>24 – 32 du/ac</td>
</tr>
<tr>
<td>Typical Home Size</td>
<td>700 – 1300 SF</td>
</tr>
<tr>
<td>Non-Residential Intensity</td>
<td>1.0 – 4.0 FAR</td>
</tr>
<tr>
<td>Prevailing Building Height</td>
<td>4 - 6 Stories (90' Max)</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 Parks / Plazas</td>
</tr>
<tr>
<td>Primary Transportation Modes</td>
<td>Transit, Walk, Bike, Auto</td>
</tr>
<tr>
<td>Parking Provision</td>
<td>Parking Structure, 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>
townhomes in mixed-use neighborhoods should have distinctly urban characteristics with a minimum of 4 stories and maximum unit sizes of 2000 square feet. Despite these urban characteristics, household size, student generation, and need for county facilities and services in townhomes is expected to be similar to suburban neighborhoods.

**Medium Urban Mixed-Use Policies**

1. Medium mixed-use neighborhoods should be oriented to a main street or intersection of main streets with ground floor retail and civic space. The majority of buildings fronting on that main street should include ground floor retail or other uses that activate the street frontage.

2. Most residential units in medium mixed-use neighborhoods are anticipated to consist of multi-family apartments and condominiums.

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

4. Medium urban mixed use neighborhoods are expected to 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 displays, flower gardens, and seating and picnic areas, are encouraged.

5. The County anticipates that new school sites will be provided within all new mixed-use neighborhoods to offset demand generated by new development. These school sites will count toward the 10% civic space requirement.

6. The lowest densities in mixed-use neighborhoods should be located around the periphery of the neighborhood.

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

8. Applications for mixed-use neighborhoods should provide short and long-term transit plans.

9. The County anticipates a land use mix in medium mixed-use neighborhoods where total floor area consists of a minimum of 10% retail and 10% office and compatible employment uses. These minimums establish the general land use mix for the plan area and are not site specific.
10. Suburban style development consisting of auto-oriented uses are not desirable in mixed-use neighborhoods as they detract from the pedestrian environment. Auto-oriented uses include uses like gas-stations, drive-through restaurants, pad sites, and stand-alone retail use with large surface parking areas.
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 the most streets in the neighborhood. Tall mixed-use neighborhoods are different from medium mixed-use neighborhoods in that the entire urban grid of streets is expected to have active street frontage whereas medium mixed-use neighborhoods are more oriented around intersecting “main streets.” 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 buildings. Buildings typically stand ten to fifteen stories tall.

Tall Urban Mixed-Use Policies

1. Tall 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.

<table>
<thead>
<tr>
<th>TYPICAL MIXED-USE TALL BUILDINGS LAND USES</th>
<th>MIXED-USE TALL BUILDINGS 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>• Condominium</td>
<td><strong>Residential Density</strong></td>
</tr>
<tr>
<td>• Apartment</td>
<td><strong>Typical Home Size</strong></td>
</tr>
<tr>
<td>• Sit-down Restaurant</td>
<td><strong>Non-Residential Intensity</strong></td>
</tr>
<tr>
<td>• Integrated Retail Sales</td>
<td><strong>Prevailing Building Height</strong></td>
</tr>
<tr>
<td>• Bank</td>
<td><strong>Typical Block Length</strong></td>
</tr>
<tr>
<td>• Grocery Store</td>
<td><strong>Street Pattern</strong></td>
</tr>
<tr>
<td>• Night Club</td>
<td><strong>Open Space Elements</strong></td>
</tr>
<tr>
<td>• Multi-tenant Professional Office</td>
<td><strong>Primary Transportation Modes</strong></td>
</tr>
<tr>
<td><strong>Secondary Land Uses</strong></td>
<td><strong>Parking Provision</strong></td>
</tr>
<tr>
<td>• Community Facilities</td>
<td><strong>Building Orientation</strong></td>
</tr>
<tr>
<td>• Neighborhood Park</td>
<td><strong>Building Placement</strong></td>
</tr>
<tr>
<td>• Public Plaza</td>
<td><strong>Outdoor Seating</strong></td>
</tr>
<tr>
<td>• Outdoor Seating</td>
<td><strong>Undesirable Land Uses</strong></td>
</tr>
<tr>
<td>• Single-Family Attached and Detached homes</td>
<td></td>
</tr>
<tr>
<td>• Auto oriented uses (Gas Stations, Drive-through restaurants)</td>
<td></td>
</tr>
</tbody>
</table>
2. Given their location immediately adjacent to the Ashburn Metrorail Station, Tall mixed-use areas are envisioned to be among the most significant employment areas in the County.

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

4. Land development applications in tall mixed-use neighborhoods should demonstrate integration with adjoining existing and planned neighborhoods.

5. Applications for tall mixed-use neighborhoods should recognize proximity of the Metrorail Station and anticipate large volumes of Metrorail riders passing through the neighborhood.

6. Tall 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 mixed use neighborhoods where total floor area consist 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 and are not site specific.

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

9. Tall urban mixed-use neighborhoods are expected to have a minimum of 5 percent 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 displays, flower gardens, and seating and picnic areas, are encouraged.
Data Centers
This Small Area Plan establishes a data center policies to identify specific areas of the Silver Line Area that can be appropriate for data center uses. Data centers are generally considered incompatible with urban environments due to their industrial appearance and the fact that they occupy large areas, utilize security fencing, and have street frontages that are not conducive to pedestrian activity. However, the County also recognizes that data centers can create significant revenues without creating a significant demand on community facilities and infrastructure significant fiber optic infrastructure exists in the Silver Line Area. 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 ½-mile or more from the Metrorail Stations. The data centers should also be focused in areas auto-oriented uses are more likely as opposed to location intended to be walkable environments. Data centers should be located away from urban areas where noise and visual character can have adverse effects on people’s enjoyment of those urban areas. A critical element of data center compatibility is ensuring that strict performance standards related to site design, buffers and building architecture are adhered to.

Data Center Policies
1. New data centers built in the Silver Line require high quality site and building design, landscape design and buffering between uses that reflects their location along major vehicular thoroughfares and as a gateway into the Silver Line Area.
2. Applications for development of data centers should include landscape plans and illustratives to demonstrate their design and compatibility with surrounding neighborhoods.
3. Noise impacts from data centers in the Silver Line Area should be mitigated to ensure that there are no adverse impacts on surrounding neighborhoods.

TYPICAL CHARACTER OF DATA CENTERS
Urban Design Guidelines

The Silver Line Plan calls for multiple high-density, mixed-use communities near the two Metrorail stations. They should be places where people can live, work, shop and play. Several communities located near one another — connected via local bus circulator, bicycle lanes or sidewalks — provide additional opportunities to meet daily needs inside the study area without a vehicle. Metrorail service for longer trips connects residents, employees or visitors to destinations throughout the Greater Washington Metropolitan Region via rail transit. Purpose of the Silver Line CPAM Urban Design Guidelines is to guide property owners, developers, architects, engineers, and all community members in creating enhanced building forms, building elevations and facades, pedestrian movement, access, comfort, and safety—contributing to the

KEY FEATURES OF URBAN RESIDENTIAL NEIGHBORHOODS

- Buildings Oriented Towards Streets
- Minimal Building Setbacks
- Wide Sidewalks
- Street Furniture
- Street Trees
- Pedestrian Scale Lighting
- On-Street Parking
- Planting Strips
- Bicycle Accommodations
livability walkability of the Silver Line Planning 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 is ‘placemaking’, which can be defined as the art of designing buildings, streets, and landscapes to increase attractiveness to and compatibly with the people who use them, 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 common characteristics of successful transit-oriented developments, dense urban environments and elements of traditional neighborhoods that are linked by multi-modal transit and walkability. This section is organized by General Urban Design Policies providing the overall guidance and objectives to be achieve with new development and redevelopment in the planning area and 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 CPAM Planning Area. Development application should address the entirety of the design guidelines with specificity to ensure that the component guideline design intent is met for the following topical areas:

- Building orientation and setback
- Building design and facades
- Street Furnishing and Lighting
- Public Spaces
- On-street parking
- Sidewalks
- Street trees and plantings
Urban Design Policies

1. The policy goals of 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 inviting spaces for activity
   - Create a sense of place and uniqueness

2. All applications for development in the Silver Line Area are expected to include design guidelines, site plans, illustrative, landscape plans, building elevations, and other similar materials that demonstrate specific consistency with the urban design guidelines and planning principles in this document.

Urban Design Guidelines

Building Orientation and Setbacks

Buildings, particularly along urban typed streets and main streets should have common design strategies with 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 required setback to create a strong passageways with adequate space for sidewalks, plantings, street furnishings and lighting along buildings. Where additional setback is necessary, that area can be used to create an “outdoor room” adjacent to the street, incorporating activity space, outdoor seating, landscape features or water features for example.

2. Design grade level entrances visible and accessible to and from the public right-of-way for pedestrians. Provide 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 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) and Universal Design 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 pedestrian movement through the depth of the block to the front of the next parallel block. Pedestrians need not 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 and safe spaces.

**Building Design and Facades**

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 textures, colors, materials, and distinctive architectural features that add visual interest throughout the planning 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 facade by articulated massing. Blank or long expansive walls with no detail or variation in form, openings or material are not desired, particularly in activity centers and along pedestrian pathways or linkages.

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

4. Reinforce the existing facade rhythm along the street with architectural elements.

5. Include overhead architectural features, such as awnings, canopies, trellises or cornice treatments that provide 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”.

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**EXAMPLE OF BUILDING DESIGN AND FACADES**
7. Devote 75% of facades for ground floor retail uses to pedestrian entrances and pedestrian-level display windows.

**Sidewalks, Streets Trees and Plantings**

Sidewalks, in conjunction with street design and building placement, support ease of pedestrian movement, link people from their homes to community amenities such as parks and public spaces, retail and commercial areas, and transit stops, nodes and station while enriching 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 of 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 environmental impacts, street trees and ground level plantings contribute greatly to the visual appeal of outdoor spaces.

1. Create a continuous and predominantly straight sidewalk and open space to support two-way pedestrian traffic with enough space for streetscape amenities such as street furnishings, street trees, ground cover plantings areas, street lighting 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).
3. Utilize street furnishings to create a consistent rhythm (i.e., consistent height of light poles 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 doors where on street parking is designed and planned.
Street Furnishings and Lighting
Street furnishings and lighting should be designed to strengthen the pedestrian experience, encourage outdoor use and at 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. Utilize 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 are “dark sky” compliant.

EXAMPLES OF STREET FURNISHINGS AND LIGHTING

![Street Furnishings and Lighting Example 1](image1)

![Street Furnishings and Lighting Example 2](image2)

![Street Furnishings and Lighting Example 3](image3)
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 proximity of people utilizing car to community amenities, businesses and retail uses as well as to pedestrian linkages.

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

Public Spaces

Public spaces are areas that design 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 space could include plazas, promenades, paseos, courtyards, parks spaces that are landscape 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 to 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 an abundance of on-site features, including but not limited to:
   - Water features / public art
   - Outdoor furnishings
   - Vegetative ground cover
   - 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
This document is a working draft of the Silver Line Comprehensive Plan Amendment as of September 10, 2016. The text and the policies contained herein are solely intended to demonstrate the general content and vision of the Plan to the public. The content of this document continues to be vetted and is subject to change to ensure accuracy and consistency.

It should also be noted that the text and policies in this Chapter do not reflect the most recent proposed land use map. Policies and text will be modified to ensure that the text is made consistent with the current proposed land use map.
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Chapter 4 - Transportation

The transportation system is a quintessential component of the Silver Line Area (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 great 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. Therefore, the dense, urban land use plans proposed in the Silver Line Area are dependent on development of a street system that can facilitate their development, helping this area reach its greatest potential.

Land Use and Transportation

While land use and transportation are often considered as separate planning elements, they are integrally related. This wide intersection is defined by the relationship between a street and a building. In the Silver Line 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 idyllic land use, 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 plan seeks to strike that ultimate balance.

Introduction to Mobility and Access

When evaluating transportation systems, mobility and access are the two most important concepts, whether in a dense urban development, sprawling suburban area, or pastoral rural setting. Mobility refers to a person’s ability to travel distances quickly. For example, a driver on a wide and uncongested highway has high mobility, while a transit rider living a mile from a single low-frequency and meandering bus route with frequent stops has low mobility. Mobility defines a person’s travel shed or travel range. For example, a pedestrian might appear to be able to walk a certain distance from his current location, only to find that his mobility is limited by the existence of a wide highway and the lack of a safe crossing. A driver might find that her mobility is limited by the existence of a freeway without a convenient road across. In these cases, mobility could be improved by new crossings.

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 retail and office development nearby means that the pedestrian is unable to walk to work or a supermarket. Meanwhile, a well-connected roadway grid provides the most direct routes for drivers and transit riders to access their destinations, allowing for increased access to goods and services.

The Silver Line Area seeks to create high levels of mobility and access. This can be achieved through density that supports retail and office development, as well as a fully-connected and integrated transportation network where developments flow seamlessly into one another and pedestrian crossings are frequent and practical.

How Densities and Connectivity Impact Transportation

Successful urban areas are defined by density – not density of buildings or roads – but of people. The Silver Line Area is planned to encourage development that draws people. In turn, these people will allow the Silver Line 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. As such, this plan helps to meet the high demand to live in Loudoun County without overburdening the roadway network for those in other parts of the County.

**Multimodal Transportation**

**Multimodality**

The Silver Line Area transportation network focuses on the concept of multimodality. This idea provides that 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. For many, this provides options, allowing for choice that may depend 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.

**Connectivity**

The most important component of the urban multimodal network proposed in the Silver Line Area is connectivity. 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.
Concepts of Multimodal Transportation

The Silver Line 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 for redundant routes and 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, and;
4) Incorporation of amenities that encourage and provide adequate access to all types of uses for all travelers.

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 visions of the Silver Line Area as an urban, multimodal center, the County has incorporated these guidelines into the plans within this document.

Streets within the Silver Line Area will be identified by a hierarchy as defined by the Virginia Department of Rail and Public Transportation. Descriptions of roadway typologies as defined in the DRPT Multimodal System Design Guidelines are provided below:

Multimodal Through Corridor

The Multimodal Through Corridor 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. Multimodal Through Corridors 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 separate facilities for these modes if they are needed. The design of the adjacent buildings should be oriented away from Multimodal Through Corridors 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 Multimodal Through Corridors. Design speeds for Multimodal Through Corridors 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 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.

**Creating a Multimodal System**

The Silver Line Area plan and policies are critical because development of a multimodal system cannot happen haphazardly or through piecemeal efforts. Just as a comprehensive street network is necessary to attract cars and move traffic efficiently, so are 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 Routes**, 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 Bicycle Routes**, 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 Area. Meanwhile, this also means 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 loading and unloading, and limits the frequency of driveways to provide limited interruptions and conflict points in the pedestrian network.

### MULTIMODAL STREET DEVELOPMENT POLICIES

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

   General policies for these facilities are outlined below. Appendix 1 of the Countywide Transportation Plan provides specific descriptions of the street section typology for each roadway identified in the plan. 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.

2. **Block Size** – Small urban block sizes are a critical component to maximizing access and walkability. Development in the Silver Line Area will provide connected internal streets (including 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. **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.
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.

MULTIMODAL STREET DEVELOPMENT POLICIES

4. **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.

5. **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 interparcel 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.

6. **Landscaped Buffers** – The buffer between sidewalks and roadways, also known as the amenity panel is an important element of transportation system design. Buffers should depend on the speed of a roadway and the character of the surrounding development. They will also need to conform to VDOT Road Design Manual Appendix B(2) and DRPT Multimodal System Design Guidelines. Please see Chapter 5 of the DRPT Multimodal System Design Guidelines for further guidance on landscaped buffers.

7. **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 network.
While specific corridors and network elements are discussed in detail later on in this chapter, the overall network is forecast to function acceptably for all modes, allowing the Silver Line Area to develop while not burdening other residents and businesses in the County.

For a detailed description of each roadway within the Silver Line Area, please see Appendix 1 of the Countywide Transportation Plan.

Please refer to the Countywide Transportation Plan for transportation policies related to airports, regional coordination, protection of the environment, and funding.

Discussion of Network Changes
The primary changes to the road network with this plan help to fulfill the goals of the Silver Line Area. 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, and 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. This is because the Model primarily forecasts private vehicle trips across the County and the surrounding metropolitan region (MWCOG), rather than trips distributed more evenly across different modes. Within the Silver Line 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 small area are more conservative than anticipated in this area. Regardless, the model showed that the Silver Line Small Area Plan network will adequately support the planned land use and anticipated growth by 2040.

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 Area transportation network supports and encourages the development typologies proposed herein.

Urban Roadways
The Silver Line 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 people throughout Loudoun County.

**Comparison to Suburban Roadways**

In a suburban roadway network, connectivity is replaced by funneling. Traffic in a 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, more evenly dispersing traffic through the network and allowing for more direct travel routes.

**Characteristics of Urban Roadways**

Urban multimodal streets feature many elements already found in Loudoun County. In the Silver Line Area, these elements include:

- **Parallel Roads** – With other redundant travel options, there are other routes and travelers can disperse more evenly and efficiently throughout the system.
- **Frequent Intersections** – Long blocks limit pedestrian access and opportunities to reach key corridors. Human-scaled block sizes ensure greater mobility for all system users.
- **Crosswalks and Midblock Crossings** – While traveling ¼ mile out of the way may be nearly imperceptible when driving, pedestrians travel approximately three miles per hour. This means that if someone wants to get across the street and the nearest crossing is ¼ mile in either direction, that person has to travel an additional 10 minutes just to cross the street. Therefore, frequent and well-marked crosswalks make a substantial difference for pedestrians. Along main streets, midblock crossings may also be installed for additional convenience.
- **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 zone may be appropriate.
- **Bike Lanes** – These striped bike-only zones create a safe and dependable routes for cyclists that are not blocked by pedestrians and do not require sharing of travel lane with cars. They encourage bicycle commutes and increase comfort for cyclists and drivers.
- **Transit Shelters** – Enhanced transit shelters are critical in making transit a choice mode during the heat of the summer, cold of the 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.
**Roadway Purpose Classifications**

The Silver Line Area transportation network features different street typologies to accommodate the diverse needs within the Silver Line Area. 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 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 Area. Serving as main streets for a particular area, these 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 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.

**Road Network Classifications**
Based upon the DRPT Multimodal System Design Guidelines, roadways within the Silver Line 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 Area:

**Multimodal Through Corridors**
Multimodal Through Corridors 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 – due to their high traffic volumes and speeds – have limited bicycle and pedestrian crossings. 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 Multimodal Through Corridors are shown below:

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**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 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 be completed to meet the policies and intent of the DRPT classification and Roadway Purpose Classification identified for that roadway.
MULTIMODAL THROUGH CORRIDORS

Legend
- Silver Line Small Area Plan
- Silver Metrorail (Planned)
- Small Area Plan Boundary
- Airport Property
- Floodplain/Designated Open Space
- Grade Separated Roadways
- Multimodal Through Corridor

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

Legend:
- Silver Line Small Area Plan
- Existing Interchange
- Planned Interchange
- Planned Roundabout
- Grade Separated Roadways
- Multimodal Through Corridor

Note: See map notes for further information on map callouts (A)
Within the Silver Line 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, Multimodal Through Corridors 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 capacity that move traffic around the northern and southern edges of the Silver Line 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 at-grade roadways.
Loudoun County Parkway provides a high-speed six-lane route through the center of the Silver Line 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 crossing 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 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**, 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. Roadways identified as Boulevards, Avenues, and Major Avenues are shown below:
This map shows the facilities that have been identified as Boulevards and Avenues.
Boulevards will feature elements such as raised, landscaped, medians, four travel lanes, left-turn lanes at most intersections, and provide a park-like atmosphere for vehicles seeking to access, depart, or move across the Silver Line 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 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 far more similar to each other than to any of the Multimodal Through Corridors described above. Conceptual-level cross-sections for Prentice Drive and Shellhorn Road are shown below:

Randolph Drive is a north-south roadway that includes segments of realigned Moran Road and Broderick Drive in order to provide a direct connection between Route 606 and Waxpool Road. This road will serve as the de facto dividing line between the more industrial eastern portion of the Silver Line 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 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. This street will be slower speed than the Boulevards, 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 intersection, and sidewalks along the roadway, bringing the road into the urban grid as much as possible.

Lockridge Road provides a north-south connection between the Loudoun Gateway Metrorail Station and Prentice Drive, possibly continuing north across the Broad Run as part of future redevelopment. The East-West Connector fulfills a similar role, providing a connection from the Ashburn Metrorail Station east to Randolph Drive and into the planned industrial areas of the Silver Line Area. Both Lockridge Road and the East-West Connector are two-lane Avenues, featuring traffic calming measures such as roundabouts, limited turn lanes only at major intersections, wide sidewalks, on-street parking, and either striped bicycle lanes (Lockridge Road) or shared travel lanes (East-West Connector). These roads are not local roads, as they provide through connections, but may feel like local streets to system users.

**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 Area.
Circulation of Traffic

The transportation network provides for optimal circulation of vehicular traffic, allowing travelers from locations within and outside of the Silver Line 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 Area is always possible.
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 the Virginia Department of Transportation, in accordance with an appropriate multimodal street section type approved with this document.

4. **Curb Radii** – Corners at intersections including Boulevards, Avenues, and Local Streets in the Silver Line Policy Area shall be designed to slow turning traffic and shorten the crossing distance for pedestrians and slow turning traffic as to increase safety for all system users. Corners at any intersection of two Multimodal Through Corridors shall be designed to facilitate 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 Countywide Transportation Plan. Free-flow turn lanes are prohibited to or from Boulevards, Avenues, or Local Streets. Dual left-turn lanes are prohibited along all 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 geographic 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 do not apply to this policy.
Several major roadways provide easy access to both the Ashburn and Loudoun Gateway Metrorail stations.
This map shows the network of local roads included in the Silver Line Small Area and potential other roadway connections.
Roadway Features

Good design for the multimodal transportation system in the Silver Line 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.

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.

<table>
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<tr>
<th>ROADWAY FEATURES – TRAVEL LANES</th>
<th>ROADWAY FEATURES – BICYCLE AND PEDESTRIAN</th>
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<tr>
<td>Suburban roadway with wide shoulders; Urban roadway with narrower lanes and on-street parking</td>
<td>Urban roadway</td>
</tr>
</tbody>
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Image source (left to right): Haljackey/Wikipedia Commons; AgnosticPreachersKid/Wikipedia Commons
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 drivers while simultaneously limiting the likelihood that pedestrians will decide to cross the street unexpectedly.

Multimodal streets can serve the needs of drivers, transit uses, cyclists, and walkers all at the same time. The pictures below 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, and 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 less desirable retrofits, such as speed bumps, median dividers, and retrofitted cul-de-sacs, which breakup neighborhoods and negatively impact 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
1. **Lane Striping** – Roadway lanes should be striped at a width appropriate with the DRPT Multimodal System classification, even if they have wider curb to curb widths.

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 along Avenues and Local Streets, particularly at entrance gateways to commercial or residential districts. Roundabouts are not preferred along Transit-Priority Roadways.

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 phases 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 more limited travel-way widths should be incorporated into concept development, special exception, site, and construction plans.

5. **Traffic Calming on Local Streets** – Local streets should be arranged 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 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 rail car or bus than in a personal vehicle with no space needed to park that vehicle. Within the Silver Line Area, transit services are planned to include Metrorail, commuter buses, express buses, local buses, shuttles, and circulators. Together, these services make provide accessibility, convenient, and affordable access for people both inside and outside of Loudoun County.

Metrorail
Transit service in the Silver Line Area is centered around Metrorail. The Dulles Corridor Metrorail Project (Silver Line) will include stations at Ashburn and Loudoun Gateway with frequent service the commercial centers at Dulles Airport, Innovation Center, Reston, Tysons, Arlington, and Washington, DC.
This map shows the Planned Metrorail network and accompanying roadway network.
**Countywide (local) Transit Network**

Metrorail is complemented by a comprehensive and dependable local fixed-route bus service in the vicinity of the Metrorail station areas as well as 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 to important locations throughout the County and more locally to neighborhoods and communities. Within the Silver Line Area, these routes should utilize a limited number of routings between the Metrorail stations and the fringes of the Silver Line Area in order 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 be commensurate with surrounding jurisdictions, and discounts for transfers to/from Metrorail should be studied.

Bus shelters are an important element at stop locations, with stops 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.
This map shows the primary roadways on which transit would be prioritized through the Small Area.
Public Transit Walksheds – Transit-Oriented Developments

The following guidelines shall be applied to planning studies, traffic impact study scoping documents, and land applications when identifying needs and mitigating impacts of proposed transit-oriented developments:

Maximum allowable walkshed reductions:

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

Transit reductions from Metrorail in scoping documents for traffic impact studies shall be based on walk-sheds described above, which may 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 bus stops will vary, not to exceed the rates outlined above, based upon:

- Frequency of existing bus services
- Limited stop or express bus service
- Total bus routes currently serving the stops
- Bus-priority lanes
- The scale of bus facilities existing on the site or proposed with the land development application
- Estimated transit ridership and likelihood of the proposal to generate ridership

Transit reductions shall be permitted for the following uses, at the following rates based upon walk-shed. The site must be designed according to the guidelines for transit-oriented developments within this document and the primary public entrance must be located within the claimed walk-shed for the associated reduction to be utilized.

Residential

- 100% of the walkshed reduction for the following uses:
  - Multi-family (under 1,500 SF)
  - Urban Single-family attached (under 1,800 SF)
- 80% of the walkshed reduction for the following uses:
  - Multi-family (over 1,500 SF)
  - Single-family attached (1,800 to 2,400 SF)
• 50% of the walkshed reduction
  o Single-family attached (over 2,400 SF)
  o Single-family detached

Commercial (Non-Retail Uses)
• 100% of the walkshed reduction for the following uses:
  o Office
  o Artistic studios
  o Educational institutions
  o Research and development parks
  o Technology campuses

  • Reductions may not be applied for any auto-oriented or industrial/shipping-intensive use, including the related office components:
    o Warehouses
    o Data centers
    o Vehicle rental businesses
    o Manufacturing
    o Breweries (non-retail)
    o Moving/Shipping businesses

Commercial (Retail Uses)
• 100% of the walkshed reduction for the following uses:
  o All pedestrian-oriented retail uses

  A. Reductions may not be applied for any auto-oriented retail use, including:
    o Drive-through restaurants
    o Drive-through banks
    o Drive-through pharmacies
    o Car washes
    o Gas stations
    o Automobile service stations
    o Convenience stores (if fronted by gas pumps)
Localized Shuttles and Circulators
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, limited capacities for public transportation amenities transit may limit the effectiveness of these services in the long term.

Aside from countywide bus services or private shuttle service, a circulator service localized within the urban development area can efficiently move people in high-density areas with substantial all-day demands for service between the Metro Stations and the cores of the development areas. This circulator is separate 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, with the greatest frequently in the evening and on weekends, when tourism to the area is most prominent. A 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.
Conceptual circulator routes connecting all of the higher density development areas proposed in the Silver Line Small Area Plan.
1. **Transit-Priority Roadway Elements** – Specific streets within the Silver Line Policy Area identified in the Silver Line Policy Area Transit Infrastructure Plan as Transit-Priority Roadways 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 Roadway 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 Roadways should be prioritized for any future investigation or analysis of transit lanes through the Silver Line Policy Area.

5. **Bus Stop Locations and Spacing** – On Transit-Priority Roadways, transit shelters shall be provided at a frequency of no more than once every 1,320 feet (1/4th of a mile) in one direction and no less than once every 3,168 feet (6/10th of a mile) in one direction, with locations determined in coordination with DTCI staff. 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 the development plan.
1. **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.

2. **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 signage indicating the name of the nearest intersecting streets and wayfinding signage for areas within the vicinity of the bus shelter.

3. **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 elements such as bus bays, sufficient bicycle parking, a raised bus platform, and a unified structure covering the transit waiting, alighting, and departure areas.

4. **Accessible Shelters** – 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.

5. **Park and Ride Lots** – New commuter parking facilities for flexible (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 noise overlay zone where more intensive urban uses may not be feasible.

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**TRANSIT INFRASTRUCTURE DEVELOPMENT POLICIES**

**TRANSIT FEATURES – BUS STOPS AND SHELTERS**

- Bus Bay
- Upgraded Bus Shelter

*Image source (top to bottom): Runner1928/Wikipedia Commons; Kimley-Horn*
Bicycle and Pedestrian Transportation

Bike Lanes and Trails

Bicycle mobility is important for the success of the Silver Line 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 has helped to draw young professionals and dynamic businesses, further growing their local economies.

On-Road Bicycle Lanes and Off-Road 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 Area, with an overall goal of creating a bicycle-friendly environment for residents, workers, and visitors.

On-road bicycle facilities exist in many form 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 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 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 Area’s mobility and development goals.
CYCLING FACILITIES – ON-STREET AND TRAIL COMPARISON

Cyclists Using On-Street Bike Lane

Cyclists on Trail Along Roadway

Cyclists on off-road Trail

Image source: Green Lane Project/Flickr
VISION FOR BICYCLING

This map shows the complete bicycle network including both on-street facilities and trails.
This map shows the network of on-street bicycle facilities by typology.
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 provide off-road access and connectivity between major density areas throughout the Silver Line Small Area Plan District.
Bicycle Amenities
An important part of a comprehensive network along with bike lanes and trails, stationary amenities such as bicycle parking are important to a complete system. Similar to a road network without traffic signals or an adequate supply of parking, a good bicycle network requires quality bicycle parking, including bike racks and bike storage that 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.

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.

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<tr>
<th>BICYCLE CONNECTIVITY POLICIES</th>
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<tr>
<td><strong>1. Bicycle Lanes</strong> – Marked on-street bike lanes (minimum 5 feet in width) shall be provided where called for by the Silver Line Policy Area Bicycle Lane 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.</td>
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<td><strong>2. Trails</strong> – Off-street asphalt trails shall be constructed in accordance with the Silver Line Policy Area Trails 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 plan. Unless specifically indicated otherwise by the plan, all trails shall be paved for ease of use and access for all system users. Trails included in the Silver Line Policy Area 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 along throughout the trail network.</td>
</tr>
</tbody>
</table>
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 minimum 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 Policy Area Bicycle and Pedestrian Plans 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 Area. The promise and economic success of the Silver Line 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.
The proposed Silver Line Small Area Plan proposes optimal connectivity for all modes, including pedestrians.
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 small 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 tree 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 roadway 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 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.
1. **Sidewalks** – Minimum 8-foot sidewalks are required along both sides of all Multimodal Through Corridors, Boulevards, and Avenues, and 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 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. 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.

3. **Grade-Separated Pedestrian Crossings** – Grade-separated 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. Tunneld 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.

4. **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 traffic study for a development application transit walksheds are required to provide a high-level of pedestrian access in coordination with plan policies.

5. **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.

6. **Crosswalks** – Crosswalks shall be provided at all intersections within the Silver Line Policy Area. Crosswalks shall be provided along avenues and boulevards a 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 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.

### TDM POLICIES

1. **Live/Work** – The County will work to identify the benefits of working in 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 features as a prominent component of the development proposal.

3. **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.

4. **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.

5. **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.

6. **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 Area.

<table>
<thead>
<tr>
<th>LAND DEVELOPMENT CONNECTIVITY POLICIES</th>
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<tbody>
<tr>
<td>1. <strong>Connectivity</strong> – Land development applications will present connected and unified road, bicycle, and pedestrian networks where feasible in order to promote connectivity within a development and between neighboring developments.</td>
</tr>
<tr>
<td>2. <strong>Public Roads</strong> – 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.</td>
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<tr>
<td>3. <strong>Meeting the Intent of the Typology</strong> – 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.</td>
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<tr>
<td>4. <strong>Traffic Impacts</strong> - During the traffic scoping and traffic study process, the Applicant may elect to take transit or walkability reductions based on ITE, ULI, or other accepted industry standard urban development impact evaluator as determined by County staff. These reductions will be considered as modal shifts, and the Applicant will be responsible for mitigating each of the modal impacts generated by the proposed development.</td>
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<tr>
<td>5. <strong>Pedestrian Corridors</strong> – 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.</td>
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<tr>
<td>6. <strong>Planned Roadways, Sidewalks, and Trails</strong> – Any roadway or trail indicated within this plan shall be constructed in the location shown on this plan as described in this plan, whether built by the County or as part of a land development application.</td>
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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 convenient 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.
Connectivity – The provision of multiple, parallel, and redundant travelways 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 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 to 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.

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.

Walk-Shed – 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.

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 be evaluated at this location as part of any redevelopment proposal
C. Broad Run crossings will be constructed to accommodate parallel trails on either side where indicated by the plan

General Notes:
- Sidewalks are required on both sides of all roads except where a trail is indicated by the plan
- Existing privately-maintained roadways are not included in this plan
This document is a **working draft** of the Silver Line Comprehensive Plan Amendment as of September 10, 2016. The text and the policies contained herein are solely intended to demonstrate the general content and vision of the Plan to the public. The content of this document continues to be vetted and is subject to change to ensure accuracy and consistency.

It should also be noted that the text and policies in this Chapter do not reflect the most recent proposed land use map. Policies and text will be modified to ensure that the text is made consistent with the current proposed land use map.
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Chapter 5 - Community Facilities and Services

Community Facilities
Private companies will provide shopping, office, and residential development. There will also be a variety of plaza, parks, and community amenities that are privately owned. The County will also provide a variety of community facilities to the Silver Line Area such as public safety, fire and rescue services, parks and recreational facilities and schools. In addition there may be a need to provide satellite offices for government agencies and services. State agencies may also want to locate facilities in this densely populated part of the County such as a DMV office.

The County envisions the Silver Line Area to provide a full complement of community facilities to support development and provide amenities to future residents, employees, and visitors. Growth management policies will ensure that appropriate facilities are in place or scheduled to be provided prior to project approvals. All applications for development in the Silver Line Area should include a discussion of existing facilities that will serve the project and an analysis of 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 facilities like community centers and libraries should be located within community cores so that they can be located in proximity to the greatest number of future residents and contribute to the desired active streetscape. Opportunities for colocation of uses and leasing of privately owned space should be explored.

Sheriff’s Office, Fire and Rescue
The new development that occurs in the Silver Line 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 Area grows, there will be an increased need for a public safety 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. As such, review of development applications should include discussions with the sheriff’s office to ensure that any possible site design measures to ensure safety are considered in advance. This is particularly important for any major uses that will attract large crowds such as the stadiums of convention centers being considered at the Loudoun Gateway Station.

Another key function of the Loudoun County Sheriff is to assist in traffic management on area roads. One particular concern specifically related to the Silver Line 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 Area, special attention will need to be given to school site designs to prevent such issues in areas that are envisioned to be urban and more walkable. Strategies to discourage driving and ensure that neighboring uses are not impacted by schools will be necessary. 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 Area increase. There may also be a need for an increased number of bicycle and foot patrols given the focus on a more urban environment. The Silver Line Area is currently served by the University Station and Dulles South Public Safety Centers. As growth in the Silver Line Area occurs and as it becomes population center there may be a need to develop a new public safety center or substation in the Silver Line 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.

**Sheriff’s Office Policies**

1. The Loudoun County Sheriff’s office will seek to maintain a proactive presence in the Silver Line Area as new development occurs.
2. Development proposals considering uses where large crowds are likely shall evaluate the impact on Sheriff’s Office and consider permanent structures, substations, or other facilities that may be necessary to ensure safety.
3. The Loudoun County Sheriff’s office will take an active role in considering traffic management issues related to site design of major uses.
4. Use of special parking districts shall 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 will 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 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 as per guidance in the 2021 to 2030 Capital Needs Assessment. The County should actively work with the development community to identify suitable fire station sites in the Silver Line 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 Areas 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 Area which is envisioned to become more urban in nature.

Another issue to be addressed with planning for the Silver Line is the need for new firefighting equipment and methods. This need arises from increased density and the more urbanized development pattern, taller buildings, and more compact pedestrian friendly roads. With taller buildings the County will need to evaluate the need for equipment 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 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 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 other than single family housing should provide sprinkler service to enhance safety of building occupants and to enhance firefighting capabilities.
2. New applications will be evaluated to ensure adequate emergency access to buildings.
3. The need for new firefighting equipment and locations will be evaluated over time as development occurs.

**Parks, Open Space, and Recreation**

The relatively dense pattern of development envisioned for the Silver Line Area will require a full complement of parks and open space areas to fully serve residents and visitors into the area. The range of new facilities within the neighborhoods will include community greens, playgrounds, recreational fields, and public plazas which could be publically or privately owned. As a general rule, the County will strive to have some form of publically accessible park or open space land available within 1/8 mile of every resident in the Silver Line Area. Another planning challenge faced in the Silver Line Area is that based on current Capital Needs Assessment planning, there is already a significant deficit of parks and recreation facilities in the communities within and surrounding the Silver Line Area. As such, the County will need to carefully review and consider the impacts that new development may have on existing park facilities. During this review, it will be important to ensure that acceptable amounts of park and recreation amenities will be provided to both current and future residents.

Parks and open space areas within the Silver Line Area will consist of civic greens for social gatherings, neighborhood greens, playgrounds, walking paths, urban recreation parks, and natural areas among a host of other amenities. Parks and open space will provide relaxing outdoor spaces for walking, talking, or simply enjoying time alone in the company of others. Since these facilities are intended to serve a more urban population and be located in an urban area, the County’s typical suburban parks and recreation model will need to be refined for the Silver Line Area. Most parks within the Silver Line Area will generally fall under the County’s adopted standard category of Neighborhood Parks (ranging from 0.1 acre up to 29 acres), but three specific types of neighborhoods parks are envisioned for the Silver Line Area. These new park types allow for the development of outdoor recreation opportunities in an urban environment while also helping to address existing parks deficits and provide the recreational amenities needed for future area residents. In addition, the Silver Line Area has the potential to accommodate a large multi-purpose indoor facility.
It is important to note that the likely demographic makeup of future residents of the Silver Line 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 that are currently less typical in the County. These new recreational amenities can include facilities like kickball fields, bocce courts, and volleyball courts and can be programmed through a variety of different organizations.

**Pocket Parks**

Pocket parks (a mini neighborhood park) will be a critical component of the planning area given the relatively high densities in the Silver Line area and the general lack of outdoor space owned by individual home owners. They will typically be located in the center of multifamily residential or 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 1,000 residents and will be generally be less than 1 acre in size.
Urban Recreational Parks

Urban Recreational Parks can serve a wide variety of functions, but within the Silver Line Area, they are specifically envisioned to provide active recreational amenities to Silver Line Area and 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 generally be located within safe walking distance of residential neighborhoods or within the neighborhood itself. Amenities at urban recreation 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. Medium neighborhood 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 recreation 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 recreational options.
Indoor Recreation Facilities
Indoor recreational facilities will provide an important amenity for future Silver Line Area residents and the greater Loudoun Community. Examples of facilities that will be necessary to support the new population include senior centers, teen centers, and other facilities to support indoor recreation like exercise, dance, and educational classes.

With access to Metro and the greater Washington Metropolitan Area as well as the proximity to the Washington Dulles International Airport, a large indoor recreational facility with a regional draw may be also appropriate for the Silver Line Area. An ideal facility would allow for a diversity of programming ranging from local, regional, state, and national events. The Show Place Arena in Upper Marlboro, Maryland provides an example of a facility with a wide variety of accommodations. The facilities there include indoor sporting events, convention and meeting space, wedding facilities, and space for community events like high school graduation ceremonies.

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.

Linear Parks
A linear park along the Broad Run floodplain will serve as an amenity while also providing a north-south connection through the Silver Line Area. The Silver Line Area is envisioned to have an interconnected network of trails that serve as a transportation and recreational amenity. Trails along the Broad Run should connect with this network of trails providing access throughout the Silver Line Area.

Parks and Open Space Policies
1. All applications for development in the Silver Line Area shall include an analysis of available passive open spaces or pocket parks within 1/8 mile of any proposed residence and demonstrate that suitable publically accessible recreation amenities will be provided to future residents.
2. All applications for development in the Silver Line Area shall include an analysis of available active recreation facilities within 1-mile of any proposed residence and demonstrate that suitable publically accessible recreation amenities will be available to future residents.
3. The County will develop urban park standards for each of the different park types envisioned within the Silver Line Area.
4. Ownership of parks, open space, and recreation amenities can either be held by the County’s Department of Parks, Recreation, and Community Service or in private ownership.
5. The County will evaluate other types of nontraditional parks and open space such as rooftop parks on a case by case basis.
6. The County will work collaboratively with land owners to secure a linear path along the Broad Run.
Schools

Planning for Additional School Capacity

Based on estimates of new residential growth, the Silver Line Area can expect to see between 5,300 and 8,000 new school students by 2040. This new student generation creates a planning challenge as existing school capacity is constrained and most land available for new schools is privately held. As such, a prerequisite for any future residential development is creation of new school capacity which requires partnership with land owners and the development community.

Another challenge is the limited amount of land available in the Silver Line Area and the competing interest of developing that land with high revenue generating uses. In order to balance the need for new school sites with the desire to maximize revenues, new schools will need to be designed to fit on smaller sites and move away from the large suburban campus schools typically found elsewhere in the County. The new schools should also be more compatible with the urban character envisioned for the Silver Line 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. Elementary Schools...
in the Silver Line Area should generally be designed to serve a population of approximately 800 to 1,000 students. 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 10 to 15 acres of land and can accommodate facilities like playgrounds, rectangular fields, basketball courts and baseball diamonds. While every school may not necessarily include every one of these facilities, opportunities for co-use to fulfill parks needs should be explored. 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 needed and opportunities for shared parking should be explored.

Middle and high schools will be larger than elementary schools and will generally serve the student population of 3 elementary schools. Middle Schools (Grades 6 to 8) will serve approximately 1,350 students and High Schools (Grades 9 to 12) will serve approximately 1,800 students. Since these schools serve a larger population, a greater amount of bussing and automobile transportation to the schools should 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.
School Policies
1. Extensive collaboration with Loudoun County Public Schools is necessary to identify new school sites in the Silver Line Area and mitigate the demands created by new residential development.
2. Any applications for residential development shall include an analysis of current and projected school capacity and demonstrate that nearby schools will have sufficient capacity to accommodate future growth and the proposed project.
3. The County will consider use of an urban residential school generation factor when appropriate commitments to unit size and type are provided with applications.
4. The Loudoun County Department of Parks, Recreation, and Community Services will continue to collaborate with Loudoun County Public Schools to maximize use of and share facilities where possible.

New School Location and Design Policies
1. County Staff will work collaboratively 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 Area.
2. Current Zoning Ordinance and Facilities Standards Manual standards should be revaluated to ensure that landscape, buffering, storm water management and similar requirements are consistent with the desire for urban school designs in the Silver Line 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.
4. The County recognizes that new school designs and urban school locations may result in increased costs to build schools in the Silver Line 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 Area shall be designed in a manner that minimizes the overall footprint of the school site while maintaining the level of resources and amenities found in other County Schools.

Land and Site Acquisitions
The County will need to identify the full complement of community facilities and services necessary to support development and provide amenities to future residents, employees, and visitors. All applications for development in the Silver Line Area should include a discussion of existing facilities that will serve the project and an analysis of 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 facilities like community centers and libraries should be located within community cores so that they can be located in proximity to the greatest number of future residents and contribute to the desired active streetscape. Opportunities for colocation of uses and leasing of privately owned space should be explored.
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It should also be noted that the text and policies in this Chapter do not reflect the most recent proposed land use map. Policies and text will be modified to ensure that the text is made consistent with the current proposed land use map.
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Chapter 6 - Green Infrastructure

Green infrastructure is a collection of natural, cultural, heritage, environmental, protected, passive, and active resources integrated into a related system. It includes major 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 forest cover, the Silver Line 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 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. Priority preservation areas ensure the protection of critical environmental resources while also taking into consideration the planned densities envisioned for the Silver Line Area.

Broad Run Watershed

The Broad Run is a defining natural feature of the Silver Line Area, draining to the Potomac River. The Silver Line 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) 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, fish consumption, shellfishing, 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 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 included data points that provide information on water quality standards within the Silver Line Study 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 (Figures 1-4). Stress and Severe Stress means these waterways are impaired for aquatic life use, as defined by VDEQ for aquatic life use 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 “pollutant 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 (municipal or industrial discharges), 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 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 related to stormwater. 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 the Bay states, including Virginia, to meet sediment, phosphorus, and nitrogen reduction goals by 2025. Given the anticipated rate of development within the Silver Line 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 avoiding costly and time-consuming processes to restore water quality standards following development.
WATER QUALITY CYCLE

1. Monitor Stream
2. Assess for Designated Use
3. Implement Pollution Reduction
4. Calculate pollution reduction to meet waste load (TMDL)
5. List impaired stream (Integrated Report)
In 2014, the Upper Broad Run Watershed Management (UBRWMP) Pilot Project 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 Area (Figure 5). 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 the 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. 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.

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 Figure below). 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 as well as reforestation in open areas will help to reduce pollutant discharge to the Broad Run by reducing storm water runoff as well as reduce stream bank erosion, a major source of sedimentation. 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 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 only 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 tributaries to Broad Run within the minor floodplain.
RIVER AND STREAM CORRIDOR RESOURCE MEASUREMENT

100-foot Minimum Stream Buffer
(300 feet for Scenic Rivers, the Potomac River, Reservoirs and Bull Run)

50-foot Management Buffer

Adjacent Steep Slope Areas
(Greater than 25%; starting within 50 feet of floodplain; edge and no farther than 100 feet from floodplain edge)

100-Year Floodplain

River or Stream
(Draining 100 acres or more)
Priority preservation areas consist of the Broad Run RSCR, the minor floodplain RSCR, and the forest cover outside of the RSCR as shown in Figure 6. Forest cover outside of the RSCR consists primarily of good quality upland hardwood forest consistent with an oak-hickory stand with other species mixed in, with good understory and regeneration potential. While forest cover outside of the RSCR should be preserved to the greatest extent practicable, the areas identified on the map below are the highest priority.
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.
   e. Wetlands, forests, historic and cultural resources, and archaeological sites that fall within the area of one or more of the above elements.

2. A 100-foot Minimum Stream Buffer will protect rivers and streams when the 100-year floodplain and adjacent steep slope areas do not extend beyond either bank by 100 feet, and will be considered part of the river and stream corridor. The Minimum Stream Buffer is measured from the scar line landward on both sides of the stream. The Minimum Stream Buffer provides a minimum filtration area that will ensure the maintenance of water quality and the integrity of the stream corridor. The 50-foot Management Buffer will not be added to the 100-foot Minimum Stream Buffer.

3. The 50-foot Management Buffer will protect the other river and stream corridor elements from upland disturbances and adjacent development. Only uses consistent with the objectives and functions of the overall river and stream corridor will be permitted in the Management Buffer.

4. 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 elements, and that performance standards and criteria, developed as part of the implementation of the river and stream corridor policies, are met and maintained. Reducing the Management Buffer may also ensure that an undeveloped residential parcel that would otherwise suffer from the placement of the Management Buffer may develop to its potential. The only exception to this is the Broad Run River and Stream Corridor Resource, which will maintain the 50-foot Management Buffer in its entirety with the exception of those uses listed in Policy 5. Local and regional stormwater management facilities are prohibited from locating within the Broad Run RSCR.

5. The County will only allow development and uses in the river and stream corridor that supports or enhances the biological integrity and health of the river and stream corridor. Permitted uses are intended to have minimal adverse effects on 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. Uses will be limited to:
   a. Road crossings, rail crossings, bridges and drive-way crossings (only when the environmental objectives of the river and stream corridor can be maintained or enhanced).
b. Utilities and utility rights-of-way (only when the environmental objectives of the river and stream corridor can be maintained or enhanced).

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 footpaths, biking or hiking paths, and horse trails (of a permeable material only).

h. Passive recreation – limited to hiking, biking, horseback riding, picnicking, camping, climbing, hunting, fishing, and wildlife viewing.

k. 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).

l. Planting native vegetation (subject to appropriate best management practice requirements).

m. Conservation – including stream restoration projects, facilities and activities; Adopt-A-Stream programs; scientific, nature and archaeological studies; and education programs.

6. Full density credit will be provided for the gross area of the river and stream corridor on a given parcel when that parcel is being developed.

7. The County will work to implement the watershed management measures identified in the Upper Broad Run Watershed Management Pilot Project (UBRWMP), including 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; and stormwater pond conversion.

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

9. The County will work with experts and citizen groups to develop a proactive approach to improving water quality in the Broad Run.

10. In an effort to improve water quality within the Broad Run and offset further degradation, the County encourages tree conservation and reforestation of the Broad Run RSCR. To the greatest extent practicable utilities or other uses permitted within the floodplain, exclusive of road crossings will locate outside of the major floodplain and 50-foot Management Buffer. Undisturbed areas of the floodplain and 50-foot Management Buffer shall be forested either through the retention of existing forest cover or through the planting of cleared areas in consultation with the County Urban Forester.
11. To help retain the existing forest cover within the Broad Run RSCR, the County discourages active recreation uses as permitted within other areas of the County.
12. The County encourages stormwater and 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.
13. To offset the development densities recommended in this Plan, the County encourages applicants to consider pollutant control measures above and beyond those required. Such measures could consist of enhanced erosion and sedimentation controls, such as super silt fencing in all perimeter locations; doubling the size of sediment control traps and basins; use of stabilization matting; and phasing development to avoid extensive areas of disturbance for extended periods of time and additional stormwater management pollutant treatment.
14. The County seeks to preserve existing vegetation to the maximum extent practicable with an emphasis on those areas identified as priority tree conservation areas.
15. Natural features should be integrated into park space or on-site open space amenities to expand upon and enhance the River and Stream Corridor Resource.
16. The County will establish a riparian planting program within the study area.
17. The County will establish a funding program for reforestation, stormwater management (SWM)/BMP projects, and SWM/BMP retrofits within the study area.
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Chapter 7 - Implementation

The vision and policy recommendations for the Silver Line Plan have been documented in the preceding sections of this Plan. This section focuses on the necessary action steps for implementing the Plan.

**Plan Adoption**

Loudoun County should adopt the Silver Line Small Area Plan giving the Plan official standing. The Plan will become the policy guide that advances the goals and objectives contained in the Plan reflecting the future vision for the area by the citizens of Loudoun County. It will allow 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 in the Plan.

**Comprehensive Plan Amendments**

Loudoun County should amend the General Plan to adopt the land use changes proposed in the Silver Line Small Area Plan. These amendments will create new land use categories and designate areas in accordance with the policies outlined in the Plan.

**Countywide Transportation Plan Amendments**

Loudoun County should amend the Countywide Transportation Plan to adopt the transportation changes and plans proposed in the Silver Line Small Area Plan. The amendments will introduce policies and practices regarding transit, pedestrians, driving, bicycling and transportation demand management that best respond to the needs of the transit-oriented development planned for the Silver Line Area.

**Zoning Ordinance Amendments**

Loudoun County should develop and adopt Zoning Ordinance Amendments that will create the regulatory tools necessary to implement the land uses and densities proposed in the Silver Line Small Area Plan.

**Planning for Interim Uses**

In many ways, Loudoun County’s plans, policies and ordinances are achieving exactly their objective: low-density, suburban-scale development patterns and uses. The Silver Line Area is intended to be unique and different from the rest of the County. In order to take advantage of the new Silver Line Metro Stations, higher densities and mixed-use development will be needed in the long term. The market demand for some of the densities or intensities and mix of uses called for in the Plan might be 10 to 50 years away before they are fully realized (starting the clock after
both Metrorail stations are open). Therefore, the County should manage development pressures now while holding/phasing land resources in partnership with land owners for a more sustainable future to achieve the highest development potential.

It is clear the County needs tax revenue now to keep pace with capital and operating expenses in the Metrorail Tax Service Districts. There are immediate market demands for new multifamily homes, data centers, and a limited amount of retail and office space in the Silver Line Area. Interim uses can activate sites in the Silver Line Area, provide income for property owners, and generate tax revenue.

It is important that interim uses be positioned 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. In no way should interim development types, locations or intensities be a deterrent or barrier to implementing the long-term vision for a site which will maximize future potential revenues for Loudoun County.

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 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/Phased Development Policies**

1. A master plan and clear phasing schedule will be required for all projects to facilitate orderly development and ensure the ultimate future built out of the project as envisioned.
2. A phasing plan will clearly demonstrate the sequencing of development while permitting some flexibility to adapt to changing market conditions with set parameters.
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**

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.
Residential Development

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.

New urban, multifamily attached housing products with a unit size generally between 700 – 1,000 square feet would meet the needs of the Metrorail neighborhoods. 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 choices currently in Loudoun County. These 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). More traditional housing types in Loudoun County — suburban single family detached, suburban single family attached, suburban multifamily attached and suburban multifamily stacked — should be minimized in the Silver Line Area to take advantage of proximity to Metrorail service and minimize impacts to supporting county facilities and services. Development applications that do not provide commitments to these smaller unit sizes will be evaluated using the County’s standard capital intensity factors for residential development in Loudoun County.

**Non-residential Development**

Non-residential development in Metrorail station areas should be dense, provide street level retail spaces with transparent façades and include streetscapes that meet the needs of pedestrians including high quality street furniture, landscaping and trees. Parking should be underground or in structures screened from view. Buildings should be constructed of high quality durable and attractive materials that will attract high quality tenants.

**Collaboration with the Metropolitan Washington Airports Authority**

The County will work with MWAA to develop a coordinated plan for development of the Loudoun Gateway Station.