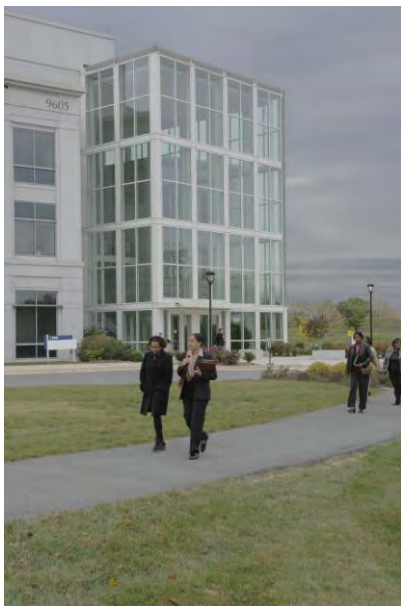
June 2010

approved and adopted

great seneca science corridor master plan

The Life Sciences Center



Montgomery County Planning Department
The Maryland-National Capital Park and Planning Commission

MontgomeryPlanning.org

great seneca science corridor master plan

The Life Sciences Center

Abstract

This plan for areas of western Gaithersburg within the County's planning jurisdiction contains the text and supporting maps for a comprehensive amendment to the approved and adopted 1982 *Oakmont Special Study Plan,* the 1985 *Gaithersburg Vicinity Master Plan*, and the 1990 *Shady Grove Study Area Master Plan*. It also amends *The General Plan (On Wedges and Corridors) for the Physical Development of the Maryland-Washington Regional District in Montgomery and Prince George's Counties,* as amended, the *Master Plan of Highways within Montgomery County,* as amended, and the *Countywide Bikeways Functional Master Plan,* as amended. This Plan makes recommendations for land use, zoning, urban design, transportation, environment, and community facilities.

Source of Copies

The Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue
Silver Spring, MD 20910-3760

and online at:
www.montgomeryplanning.org/community/gaithersburg

The Maryland-National Capital Park and Planning Commission

Master and sector plans convey land use policy for defined geographic areas and should be interpreted together with relevant Countywide functional plans and County laws and regulations. Plan recommendations provide comprehensive guidelines for the use of public and private land and should be referred to by public officials and private individuals when making land use decisions. Public and private land use decisions that promote plan goals are essential to fulfilling a plan's vision.

Master and sector plans look ahead 20 years from the date of adoption, although they are intended to be revised every 10 to 15 years. Moreover, circumstances when a plan is adopted will change and the specifics of a plan may become less relevant over time. Plans do not specify all development possibilities. Their sketches are for illustrative purposes only, intended to convey a sense of desirable future character rather than a recommendation for a particular design.

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great seneca science corridor master plan

The Life Sciences Center

Prepared by the Maryland-National Capital Park and Planning Commission
July 31, 2009

Approved by the Montgomery County Council
May 4, 2010

Adopted by the Maryland-National Capital Park and Planning Commission
June 23, 2010

CERTIFICATION OF APPROVAL AND ADOPTION

GREAT SENECA SCIENCE CORRIDOR MASTER PLAN

This Comprehensive Amendment to the approved and adopted 1990 *Shady Grove Study Area Master Plan,* as amended; portions of the 1985 *Gaithersburg Vicinity Master Plan,* as amended; the 1982 *Oakmont Special Study Plan; The General Plan (On Wedges and Corridors) for the Physical Development of the Maryland-Washington Regional District Within Montgomery and Prince George's Counties,* as amended; the *Master Plan of Highways Within Montgomery County,* as amended; and the *Countywide Bikeways Functional Master Plan,* as amended, has been approved by the Montgomery County Council, sitting as the District Council, by the Resolution No. 16-1325 on May 4, 2010, and has been adopted by The Maryland-National Capital Park and Planning Commission by Resolution No. 10-06 on June 23, 2010 after a duly advertised public hearing as required by Article 28 of the Annotated Code of Maryland.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

Samuel J. Parker, Jr.
Chairman

Françoise Carrier
Vice Chair

Barbara Walsh
Acting Secretary-Treasurer

MCPB NO. 10-53
M-NCPPC NO. 10-06

RESOLUTION

WHEREAS, The Maryland-National Capital Park and Planning Commission, by virtue of Article 28 of the Annotated Code of Maryland, is authorized and empowered, from time to time, to make and adopt, amend, extend and add to *The General Plan (On Wedges and Corridors) for the Physical Development of the Maryland-Washington Regional District Within Montgomery and Prince George's Counties*; and

WHEREAS, the Montgomery County Planning Board of The Maryland-National Capital Park and Planning Commission, pursuant to procedures set forth in the Montgomery County Code, Chapter 33A, held a duly advertised public hearing on March 26, 2009 on the Public Hearing Draft Gaithersburg West Master Plan, being also an amendment to the approved and adopted 1990 *Shady Grove Study Area Master Plan*, as amended; the 1985 *Gaithersburg Vicinity Master Plan*, as amended; the 1982 *Oakmont Special Study Plan*; *The General Plan (On Wedges and Corridors) for the Physical Development of the Maryland-Washington Regional District Within Montgomery and Prince George's Counties*, as amended; the *Master Plan of Highways Within Montgomery County*, as amended; and the *Countywide Bikeways Functional Master Plan*, as amended; and

WHEREAS, the Montgomery County Planning Board, after said public hearing and due deliberation and consideration, on July 16, 2009, approved the Planning Board Draft Gaithersburg West Master Plan, recommended that it be approved by the District Council, and forwarded it to the County Executive for recommendations and analysis; and

WHEREAS, the Montgomery County Executive reviewed and made recommendations on the Planning Board Draft Gaithersburg West Master Plan and forwarded those recommendations and analysis to the District Council on September 10, 2009; and

WHEREAS, the Montgomery County Council sitting as the District Council for the portion of the Maryland-Washington Regional District lying within Montgomery County, held a public hearing on September 15 and 17, 2009, wherein testimony was received concerning the Planning Board Draft Gaithersburg West Master Plan; and

WHEREAS, the District Council, on May 4, 2010 approved the Planning Board Draft Great Seneca Science Corridor Master Plan (previously named Gaithersburg West Master Plan) subject to the modifications and revisions set forth in Resolution No. 16-1325.

NOW, THEREFORE BE IT RESOLVED, that the Montgomery County Planning Board and The Maryland-National Capital Park and Planning Commission do hereby adopt the said Great Seneca Science Corridor Master Plan, together with the *General Plan for the Physical Development of the Maryland-Washington Regional District within Montgomery and Prince George's Counties*, as amended, and as approved by the District Council in the attached Resolution No. 16-1325; and

BE IT FURTHER RESOLVED, that copies of said Amendment must be certified by The Maryland-National Capital Park and Planning Commission and filed with the Clerk of the Circuit Court of each of Montgomery and Prince George's Counties, as required by law.

****

This is to certify that the foregoing is a true and correct copy of a resolution adopted by the Montgomery County Planning Board of The Maryland-National Capital Park and Planning Commission on motion of Commissioner Wells-Harley, seconded by Commissioner Presley, with Commissioners Hanson, Wells-Harley, Alfandre, Presley, and Dreyfuss voting in favor of the motion at its regular meeting held on Thursday, May 20, 2010, in Silver Spring, Maryland.

Patricia Colihan Barney
Executive Director

****

This is to certify that the foregoing is a true and correct copy of Resolution #10-06, adopted by the Maryland-National Capital Park and Planning Commission on motion of Commissioner Wells-Harley, seconded by Commissioner Clark, with Commissioners Parker, Dreyfuss, Cavitt, Vaughns, and Alfandre, voting in favor of the motion and with Commissioner Presley absent during its meeting scheduled on Wednesday, June 23, 2010.

Patricia Colihan Barney
Executive Director

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plan summary

The *Great Seneca Science Corridor (GSSC) Master Plan* envisions a vibrant Life Sciences Center (LSC) where the foundation of health care, biotechnology, and academia combine to create a dynamic and sustainable science and medical hub. Knowledge will drive its agenda, attracting international scientists, business leaders, physicians, and professors who will contribute ideas and insights for the future. Labs, classrooms, research centers, and universities will encourage and foster cutting-edge discoveries. The LSC should evolve into a place where the physical form—buildings, open spaces, and amenities—is as inspiring as the discoveries occurring inside.

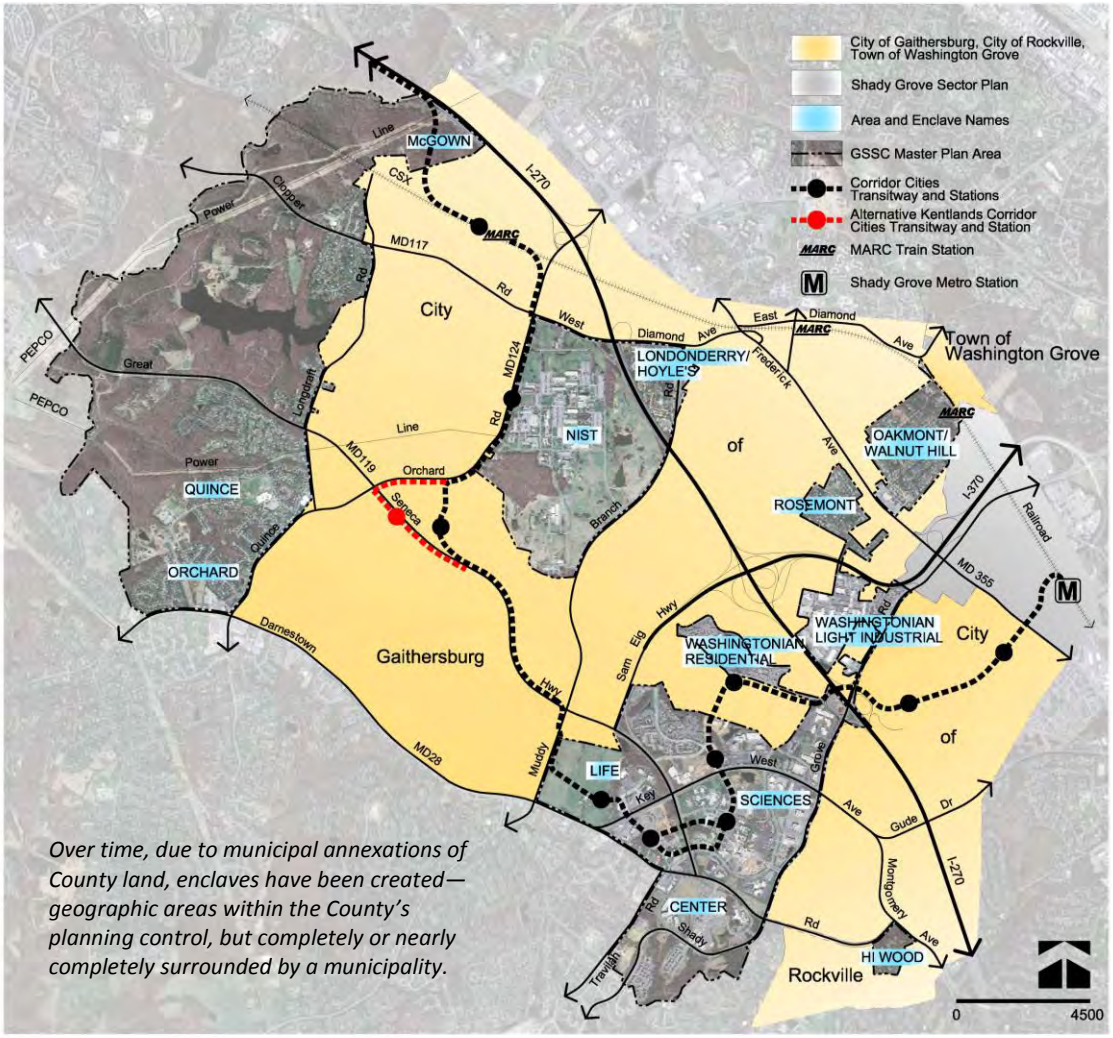
This Plan's vision will develop over 25 to 35 years. During that time, the local and national economy will experience three or four business cycles. These economic cycles make it imperative to periodically check the Plan's progress and recommendations. Regardless of the pace of growth, it is essential to establish a vision and provide a blueprint for the future that will enable the LSC to evolve over time.

While this Plan is about providing opportunities for future world-leading scientific research, it is also concerned with protecting residential neighborhoods and investments made by businesses and institutions in the area. Growth and change in the LSC must occur in a way that does not overburden the surrounding communities. This Plan's explicit staging recommendations are essential to preserving the quality of life that residents enjoy. Infrastructure—particularly transit—must be provided before significant amounts of development can be built. Staging development ensures that growth will be managed and timed with the delivery of the infrastructure necessary to support it.

Key Recommendations

- Transform the LSC into a dynamic live/work community while ensuring growth opportunities for research, medical, and bioscience interests.
- Align the Corridor Cities Transitway (CCT) through the LSC and provide four transit stations that will be the focal point of new development in the LSC North, Central, West, and Belward districts.
- Concentrate density, building height, and civic green spaces at the CCT stations. Provide appropriate transitions to adjacent neighborhoods and to the historic Belward Farm.
- Create a grid pattern of new streets that improve local circulation and connectivity among the LSC districts, promote alternatives to car use, and enhance access to the future transit stations.

map 1 Great Seneca Science Corridor Master Plan



- Create the LSC Loop as the organizing element of the open space plan to connect districts and destinations, incorporate natural features, and provide opportunities for recreation and non-motorized transportation.

- Replace the Public Safety Training Academy (PSTA) in the LSC West District with a new residential community that includes supporting retail, open spaces, and community facilities.

- Maintain the established residential neighborhoods throughout the GSSC Master Plan area.

- Create a sustainable community that will attract nationwide interest with design and materials that minimize carbon emissions, maximize energy conservation, and preserve water and air quality.

- Ensure that development in the Piney Branch Special Protection Area uses the best available stormwater management treatment techniques to protect the watershed's headwaters.

- Meet the recreation needs of the GSSC area by identifying and acquiring a site for a new local public park in the Quince Orchard area and requiring the dedication of parkland for new parks and open spaces in the LSC Districts.

- Support the County's Agricultural Reserve with zoning that requires acquisition of Building Lot Termination (BLT) easements to achieve maximum densities.

Forty-five years ago, the County identified the I-270 Corridor as a place for higher densities in a series of Corridor Cities supported by a comprehensive transportation network. Since then, jobs and business opportunities have attracted skilled workers and business investment that have in turn enabled local government to provide quality schools, amenities, and services.

The GSSC Master Plan area covers 4,360 acres in the heart of the I-270 Corridor. It includes the Life Sciences Center, the western Quince Orchard neighborhoods and enclave areas such as the National Institute of Standards and Technology (NIST) and Rosemont, which are completely or nearly completely surrounded by a municipality. The City of Gaithersburg occupies 10 square miles in the center of the Plan area. The City of Rockville borders the Plan area on the east and the Town of Washington Grove is located to the northeast. The incorporated municipalities have their own planning and zoning authority and are not part of the County's master plans.

The Life Sciences Center has played a significant role in establishing the Corridor as a globally known center for science and technology-driven industry, home to biotechnology companies, higher education facilities, and a quality medical center. This Plan provides a blueprint for the future that will transform the LSC into a vibrant place served by transit and enhanced by activating uses, open spaces, and amenities.

Planning Framework

The Plan's recommendations are consistent with State and County planning policies.

- The 1964 General Plan identifies the I-270 Corridor (which includes the LSC) for concentrated, high-density development supported by a comprehensive transportation system including a major highway network, rail lines, and centers called Corridor Cities.

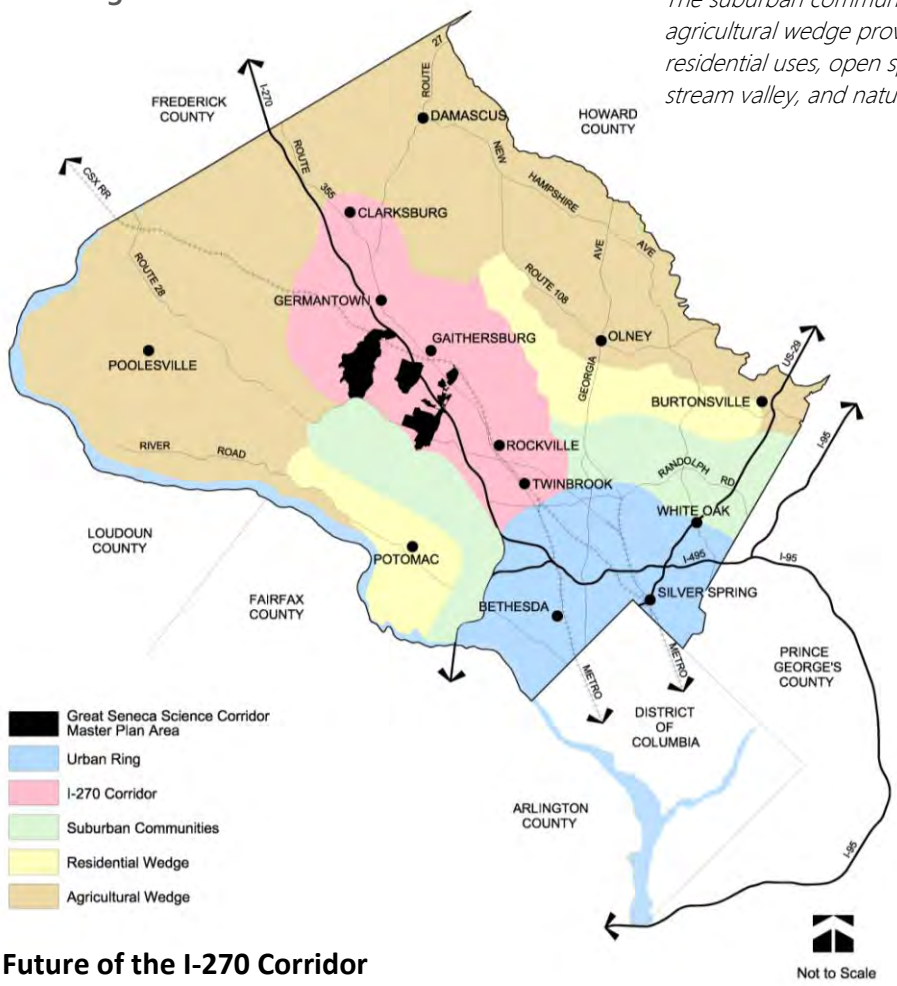
- The 1992 Economic Growth, Resources Protection and Planning Act requires local plans to protect sensitive environmental resources.

- The 1993 *General Plan Refinement* supported the Corridor Cities concept but acknowledged that it had not yet fully evolved.

- The 1997 Priority Funding Areas Act directs State spending to support smart growth, typically to existing communities and places where local governments want investment to support future growth. The entire Master Plan area is within a Priority Funding area and is eligible for State funding.

map 2 Wedges and Corridors

The suburban communities, residential wedge, and agricultural wedge provide areas for lower density residential uses, open space, as well as farmland, stream valley, and natural resources protection.



The Future of the I-270 Corridor

The I-270 Corridor is the County's economic engine and the biotechnology industry is a critical driver. Area businesses benefit from proximity to the federal government—the world's largest technology buyer. Locally based federal research centers support a major biotechnology industry cluster and offer promising future opportunities such as nanotechnology.

Economic expansion, population growth, and diversification will stimulate new development. New residents—many from highly skilled backgrounds—will augment an extraordinary talent pool. This larger, more varied skill base could open new creative and entrepreneurial business directions—from digital media to international market development to technology commercialization. New and expanding opportunities combined with a "quality of place" that fosters innovation could encourage younger residents and recruits to stay in the area.
By channeling development into existing centers served by transit, highways and infrastructure, the County will protect its natural environment and agricultural land that contribute to our quality of life while making better use of existing transportation and service infrastructure.

This Plan's recommendations work within the comprehensive overview of the 2008 *MD 355/I-270 Corridor Study,* which provides a policy framework for the Corridor master and sector plans. The County's approach to managing growth could bolster the Corridor's competitive strengths—a high quality of life, exceptional talent base, strong employment resources and the potential for enhanced economic opportunity. Creating higher density, mixed-use communities at transit stations epitomizes smart growth and sound planning principles by:

- balancing land use and transportation
- providing opportunities to live near work
- maximizing public investments in infrastructure
- reducing sprawl and protecting the environment
- reducing the carbon footprint and reliance on fossil fuels
- producing more sustainable forms of development.

The 2006 *Shady Grove Sector Plan* recommends that the area around the Shady Grove Metro Station be transformed from a light industrial service park to a high-density mixed-use community with a residential focus that makes the best use of Metro proximity.

The 2009 *Twinbrook Sector Plan* builds on the area's proximity to the Metro station and allows growth for technology-oriented businesses as well as a complementary mix of housing and service uses.

The 2009 *Germantown Master Plan* builds on the Corridor City concept and envisions an up-County center for community life with mixed uses and density focused at transit stations.

The 2010 *White Flint Sector Plan* envisions the Metro station area and Rockville Pike as a vibrant and sustainable urban center that can adapt to future challenges.

This Plan focuses development around future transit stations in the LSC with bicycle and pedestrian systems that enhance access. The Corridor Cities Transitway (CCT) will enable people who work at the LSC to live in nearby communities connected by transit. The Plan also recommends new housing in the LSC to create more opportunities to live near work. In addition to promoting a compact form of development, the Plan seeks to promote healthy, active living by fostering walking, creating new opportunities for recreation, and providing growth potential for important medical services. The result will be a sustainable form of development and a community where people want to live and work.

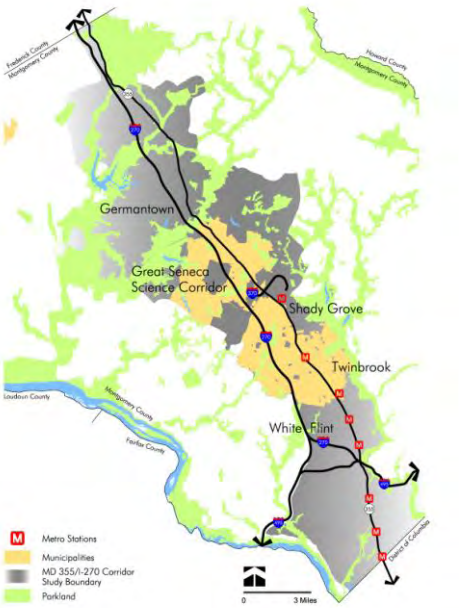
Annexation

Municipalities establish Maximum Expansion Limits (MEL) to set boundaries for future potential annexations of unincorporated land. The Maryland State Code (Article 23A, Section 19) requires that municipalities produce a Municipal Growth Plan delineating the MEL. Only land within the MEL and adjoining the municipal boundaries can be considered for annexation.

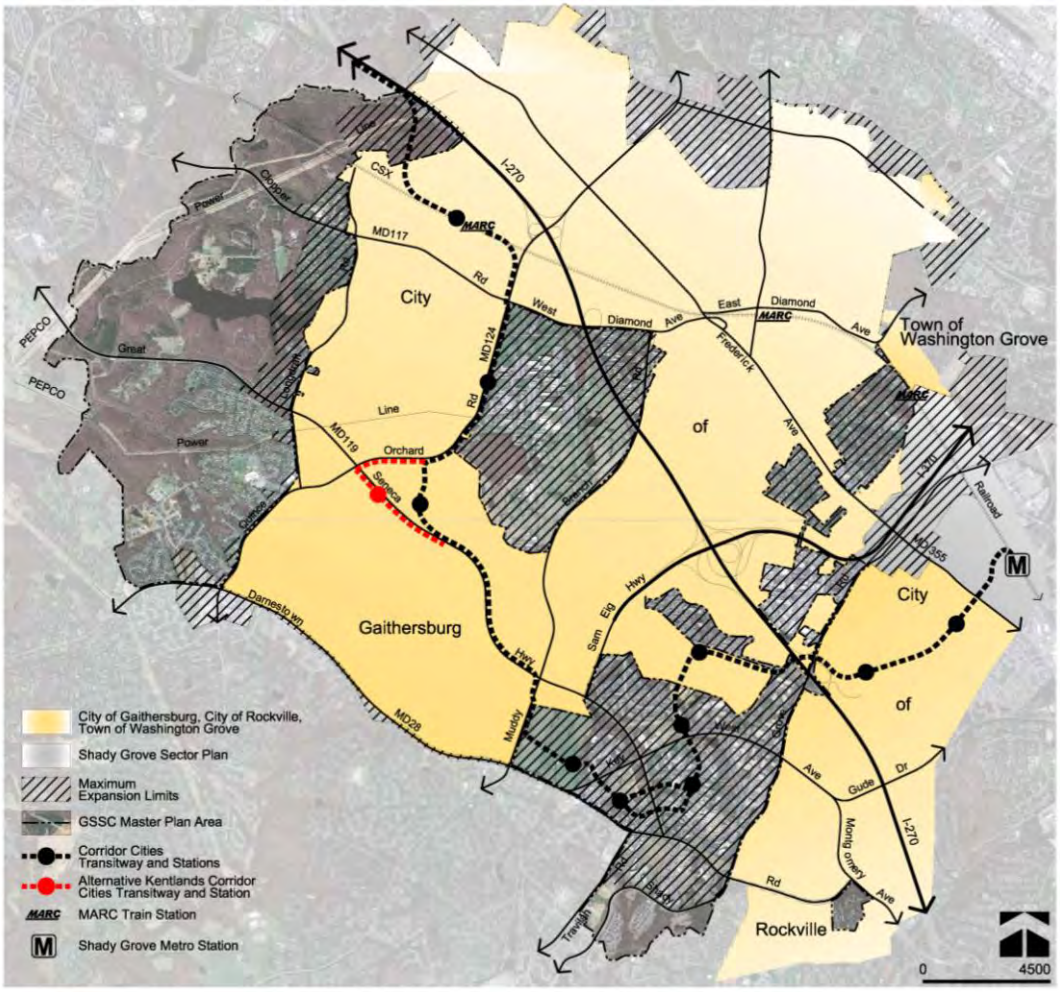
In 2009, the City of Gaithersburg established a new MEL as part of its adopted *Municipal Growth Element*. The City's new MEL includes nearly all of the GSSC Master Plan area, including the Life Sciences Center. This Master Plan recognizes that future annexations may occur and that annexing properties surrounded by municipalities would help create coherent boundaries.

Ideally, the boundaries between the County and the municipalities would be logical and well-defined, following roads or natural features such as streams. This Plan strongly opposes annexation of any portion of the Life Sciences Center, which is not an enclave. Over the past 30 years, the County has invested substantial resources to create and develop the LSC. Annexing any of the LSC would leave the County without control of a significant element of its economic development strategy and create irretrievable revenue losses.

map 3 MD 355/I-270 Corridor



map 4 City of Gaithersburg Maximum Expansion Limits



Planning for Science, Health Care, and Transit

The Plan's vision for the LSC builds on the strong foundation of existing institutions and businesses, and the County's land use plan that brought together health services, academia, and research and development companies. Today, the LSC has the largest concentration of, and is the premier location for, research and biotechnology companies in the County.

The future viability of the LSC requires the following components:

- opportunities for growth and expansion of existing enterprises
- a dynamic environment that will attract skilled workers and investment
- infrastructure and services to support future development
- staging development to balance growth and minimize adverse impacts
- sustainable practices that provide a quality of place.

Transit is an essential element of this Plan and is the basis for the land use and zoning recommendations. A strong public and private commitment to the Plan's transit proposals will help ensure that the LSC is connected internally as well as to the rest of the Corridor.

Vision

"It's heading right at us, but we never see it coming…The most important things happening in the world today won't make tomorrow's front page…They'll be happening in laboratories—out of sight, inscrutable and unhyped until the very moment when they change life as we know it."
— "The Future is Now," The Washington Post, April 13, 2008

This Plan establishes a blueprint for the LSC that includes an expanded, first-class medical center, research facilities, academic institutions, and an array of services and amenities for residents, workers, and visitors. It will have an open space system that incorporates the area's natural environmental features into a larger network, connecting destinations by paths and trails, and providing opportunities for a range of outdoor experiences.

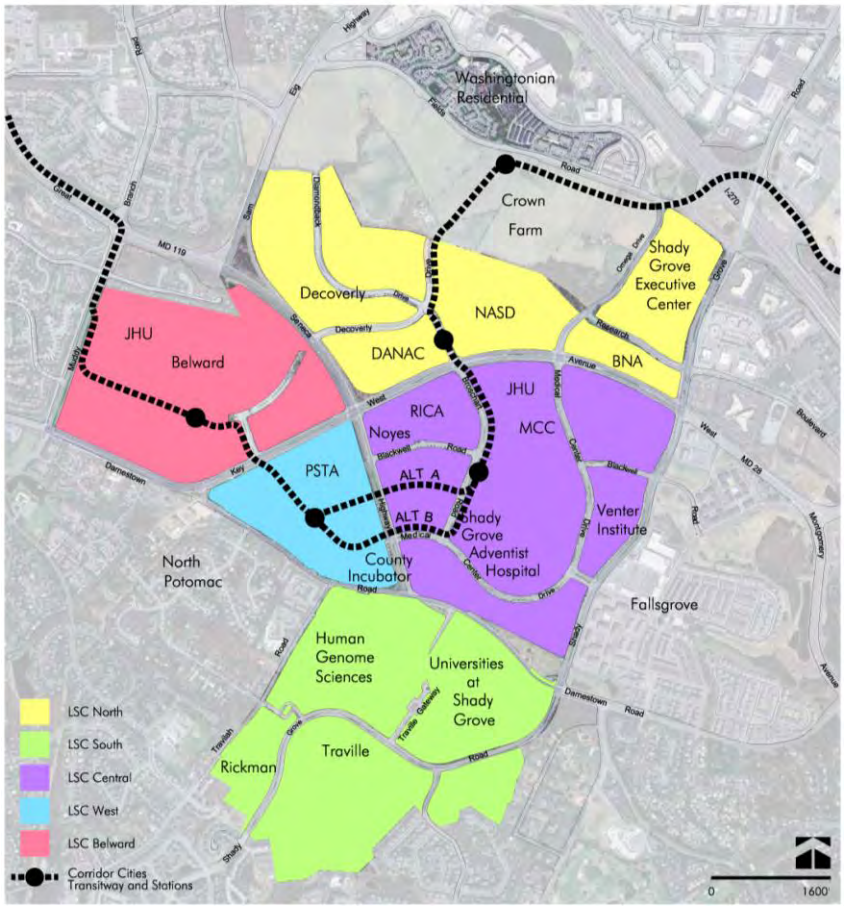
The LSC of the future will be served by a fully integrated transit system that links mid-County activity centers via the Corridor Cities Transitway (CCT). Access to high quality transit is increasingly important to businesses trying to attract knowledge-based, creative class workers. The LSC will continue to be a specialized employment center but it will be connected by transit with nearby residential communities at the Shady Grove Metro Station, the King Farm, the Crown Farm, Kentlands, and the Watkins Mill Town Center.

The following objectives will help implement the Plan's vision:

- Life science uses should be given priority.
- Density and height should be concentrated at transit stations amid transit-oriented mixed-use development at LSC Central, LSC West, Belward, and LSC North.
- Historic and environmental resources should be protected.

- Buildings within one-eighth mile of the future CCT stations should be at least 60 feet high. In all other areas, the desired minimum building height is 36 feet (three stories of occupied space) in order to retain land for future higher densities.
- Mixed-use development is emphasized; single purpose or free standing retail buildings are inconsistent with the Plan's vision in any phase of development.
- Structured parking should be hidden from the street; although surface parking is inconsistent with the Plan's vision, it is anticipated and acceptable on an interim basis.

map 5 Life Sciences Center Districts



In previous plans, the Life Sciences Center was identified as the block that includes Shady Grove Adventist Hospital and the larger area was called the R&D Village. This Plan applies the term LSC more broadly to five districts, incorporating the Belward property to the west and the Universities at Shady Grove to the south.

Today's LSC

The LSC's two academic institutions—the Universities at Shady Grove (USG) and the Johns Hopkins University-Montgomery County Campus (JHU-MCC)—have increased its prominence and expanded opportunities for collaboration. Shady Grove Adventist Hospital provides the broader community with a full range of health care services. A number of biotechnology companies, including Human Genome Sciences, BioReliance, and the J. Craig Venter Institute, are located here. Many of the goals for the LSC have been realized. As originally envisioned, the LSC had a specific land use purpose with a unique employment niche. Residential and retail development was planned for large tracts surrounding the LSC, rather than integrated within the Center. The LSC and R&D Zones ensured that land would be reserved for life sciences to concentrate these uses and accomplish the original vision for the LSC. Housing and retail were specifically excluded from the LSC and R&D zones to enable the

primary land uses of medical, life science, and academia to become established and have room to grow.

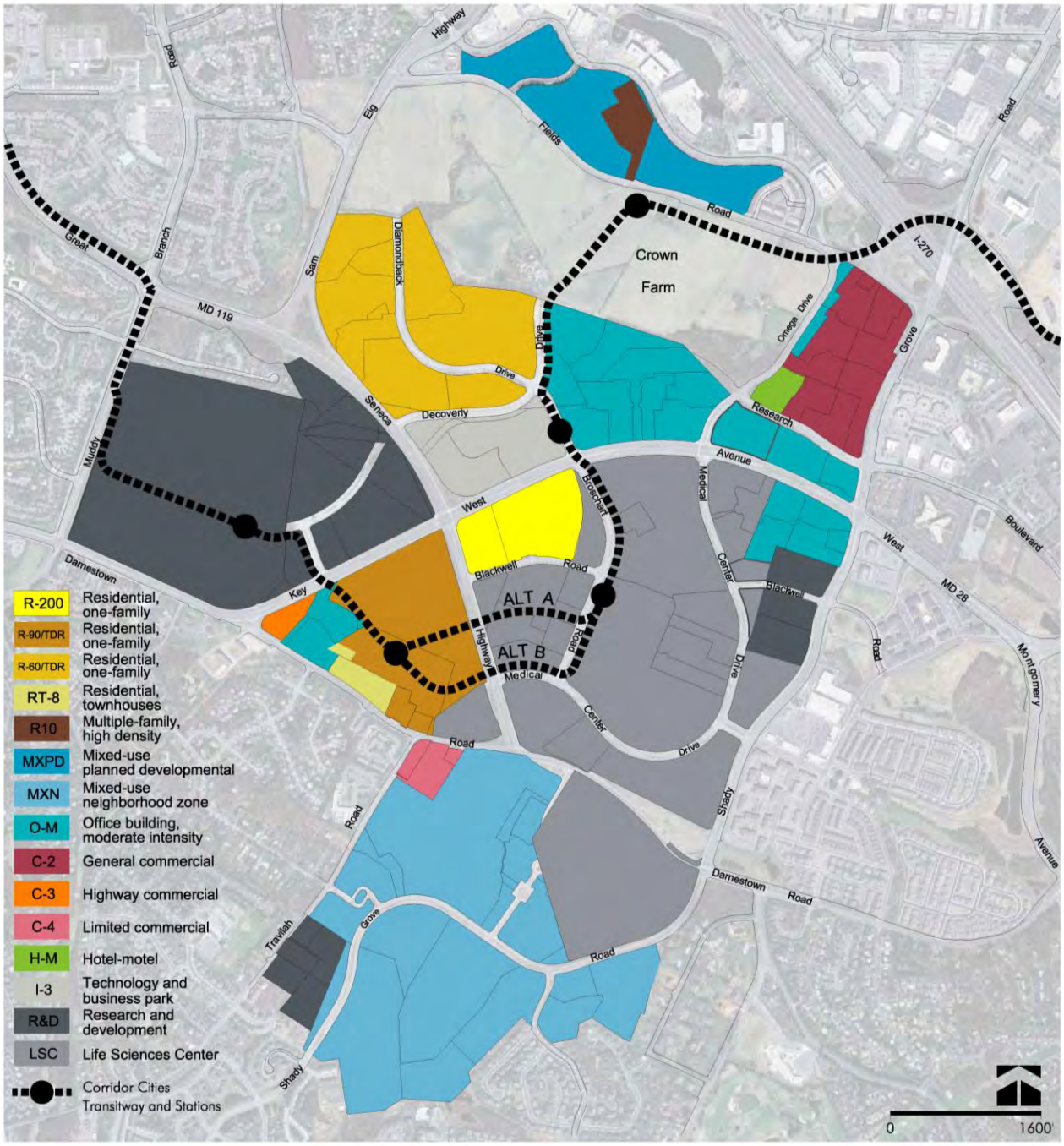
Today, the LSC contains nearly seven million square feet of commercial development and has 3.7 million square feet of approved development in the pipeline. Many LSC sites have maximized their development potential under the existing zoning.

The LSC's physical framework is modeled on a 20-year-old development program for suburban research parks. The LSC looks and functions like a conventional office park, with single-purpose clusters separated by wide highways and surrounded by parking lots. This model ensures auto-dependence and discourages walking. There is so little variety of uses in the LSC today that employees often drive to lunch spots because there are no services within easy walking distance.

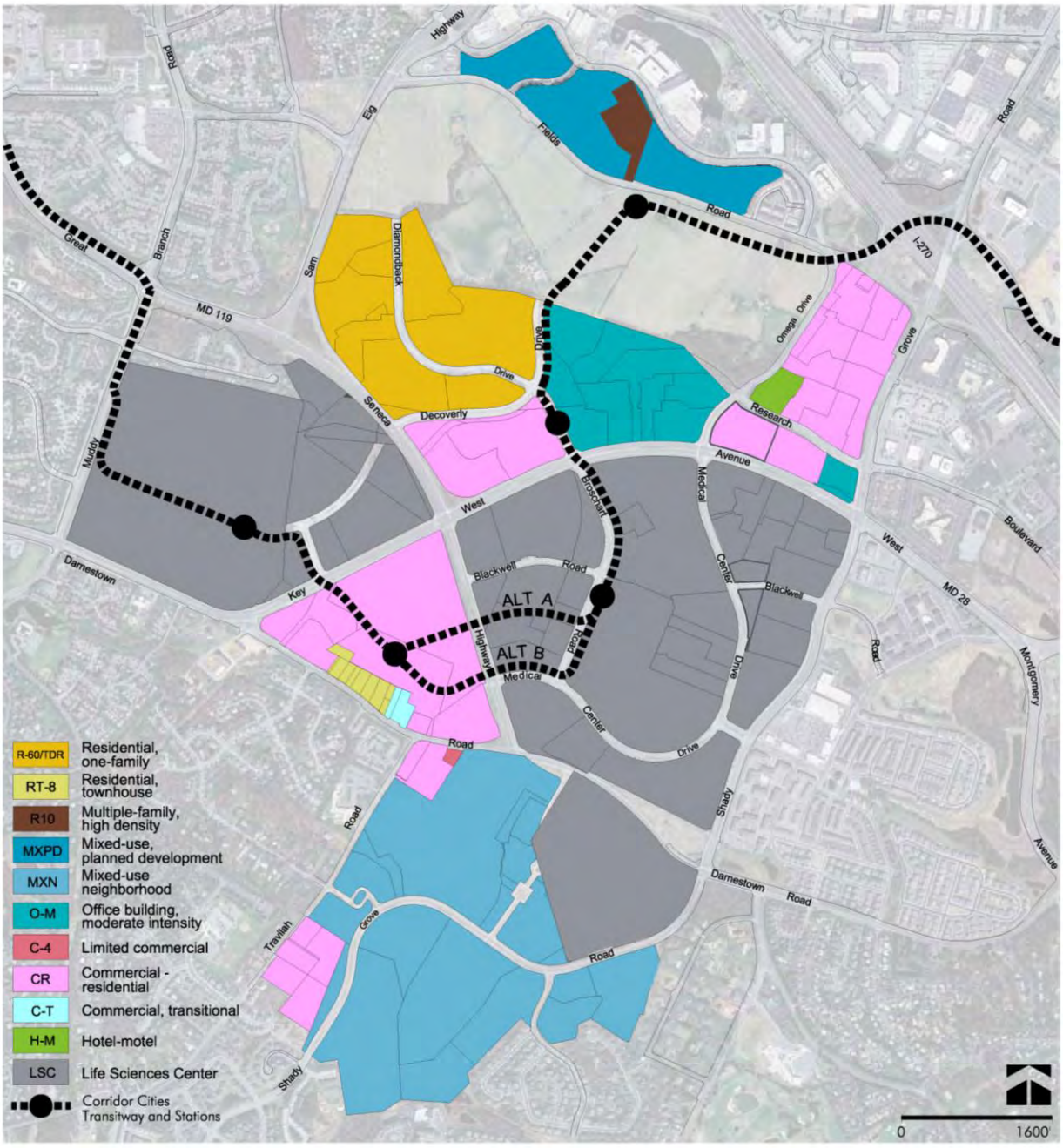
table 1 life sciences center: existing and proposed zoning

Zone	Description	Existing Acreage	Proposed Acreage
LSC	Life Science Center	226	419
CR	Commercial-Residential	0	162
R&D	Research and development	167	0
O-M	Office building, moderate intensity	85	51
I-3	Technology and business park	24	0
H-M	Hotel-motel	3	3
C-2	General commercial	42	0
C-3	Highway commercial	3	0
C-4	Limited commercial	4	1
C-T	Commercial, transitional	0	2
MXN	Mixed-use neighborhood	192	192
MXPD	Mixed-use planned development	42	42
R-10	Multiple-family, high density residential	7	7
R-60/TDR	Residential, one-family/TDR	60	60
R-90/TDR	Residential, one-family/TDR	62	0
R-200	Residential, one-family	22	0
RT-8	Residential, townhouses	5	5

map 6 LSC Existing Zoning



map 7 LSC Proposed Zoning



Tomorrow's LSC: Linking Land Uses/Connecting Communities

This Plan envisions the LSC with an enhanced role as the County's premier life sciences location. Transforming today's suburban, auto-oriented LSC into tomorrow's walkable, vibrant science center requires changing the built environment and the mix of uses over time. The CCT is the centerpiece of the Plan's vision for the LSC.

The CCT in the I-270 Corridor will:

- provide a transit option among the Corridor Cities
- improve mobility within the Corridor
- alleviate congestion on I-270
- extend transit service west and north of the Shady Grove Metro Station (the terminus of the Red Line).

The 14-mile CCT transit line will run from the Shady Grove Metro Station to the Comsat site in Clarksburg. Fourteen stations are planned, with park-and-ride facilities at seven. The alignment is planned as an exclusive, dedicated facility for either light rail transit (LRT) or bus rapid transit (BRT) with limited interaction with vehicular traffic at local street crossings. It is planned to include a multi-use path.

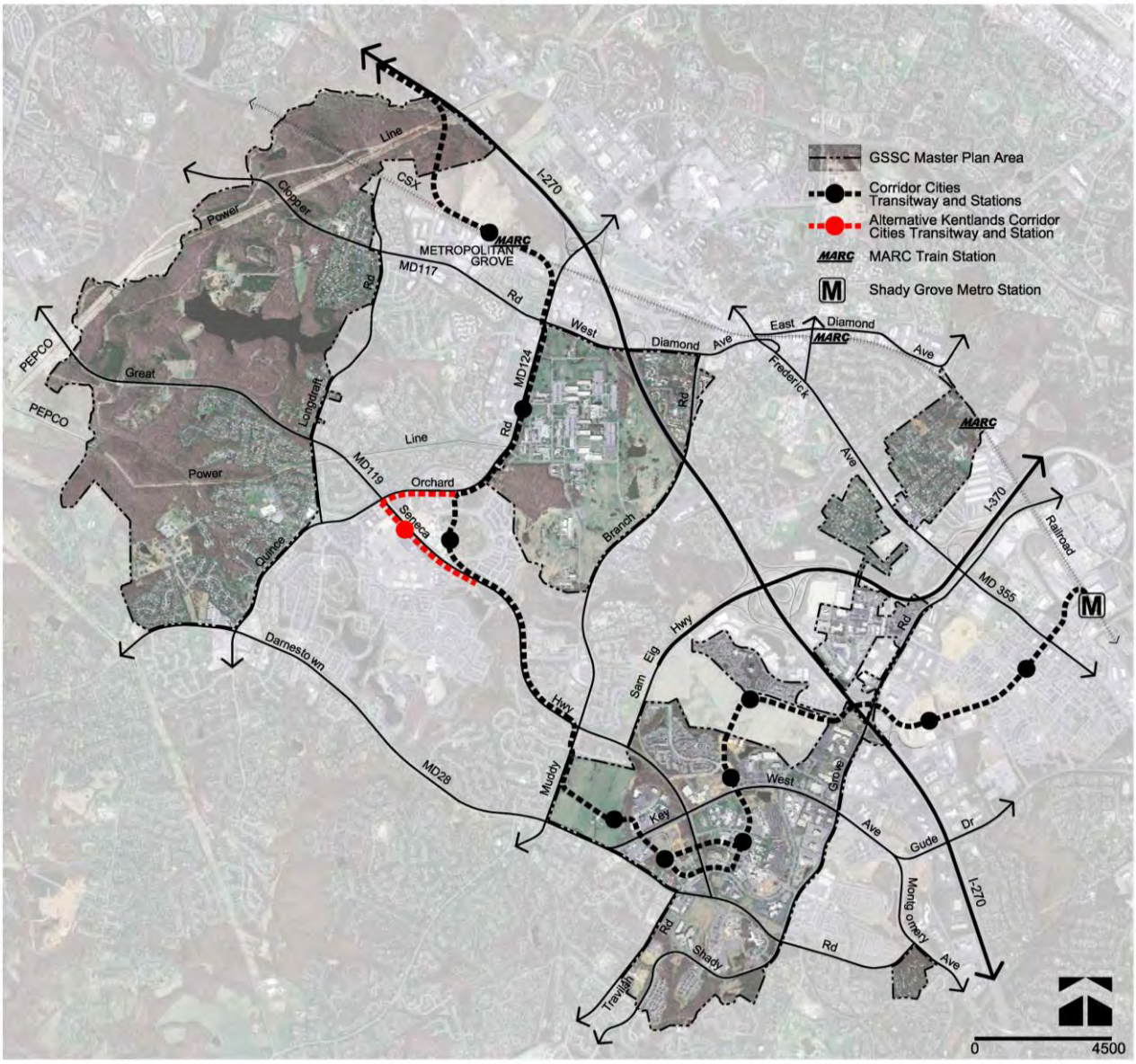
Both the 1964 General Plan and the 1970s Gaithersburg and Germantown plans included the concept of a transitway. It has been recommended in all subsequent I-270 Corridor master plans, including the 1994 *Clarksburg Master Plan and Hyattstown Special Study Area* and the 1993 *Frederick County Comprehensive Plan*.

This Plan recommends aligning the CCT through the heart of the LSC where it can serve businesses, institutions, and other users.

The Plan builds a pattern of density focused on the four LSC districts where CCT transit stations are proposed: North, Central, West, and Belward. Increased density is recommended at proposed transit stations and development can only proceed in stages that are linked to the provision of infrastructure, most importantly, the CCT.

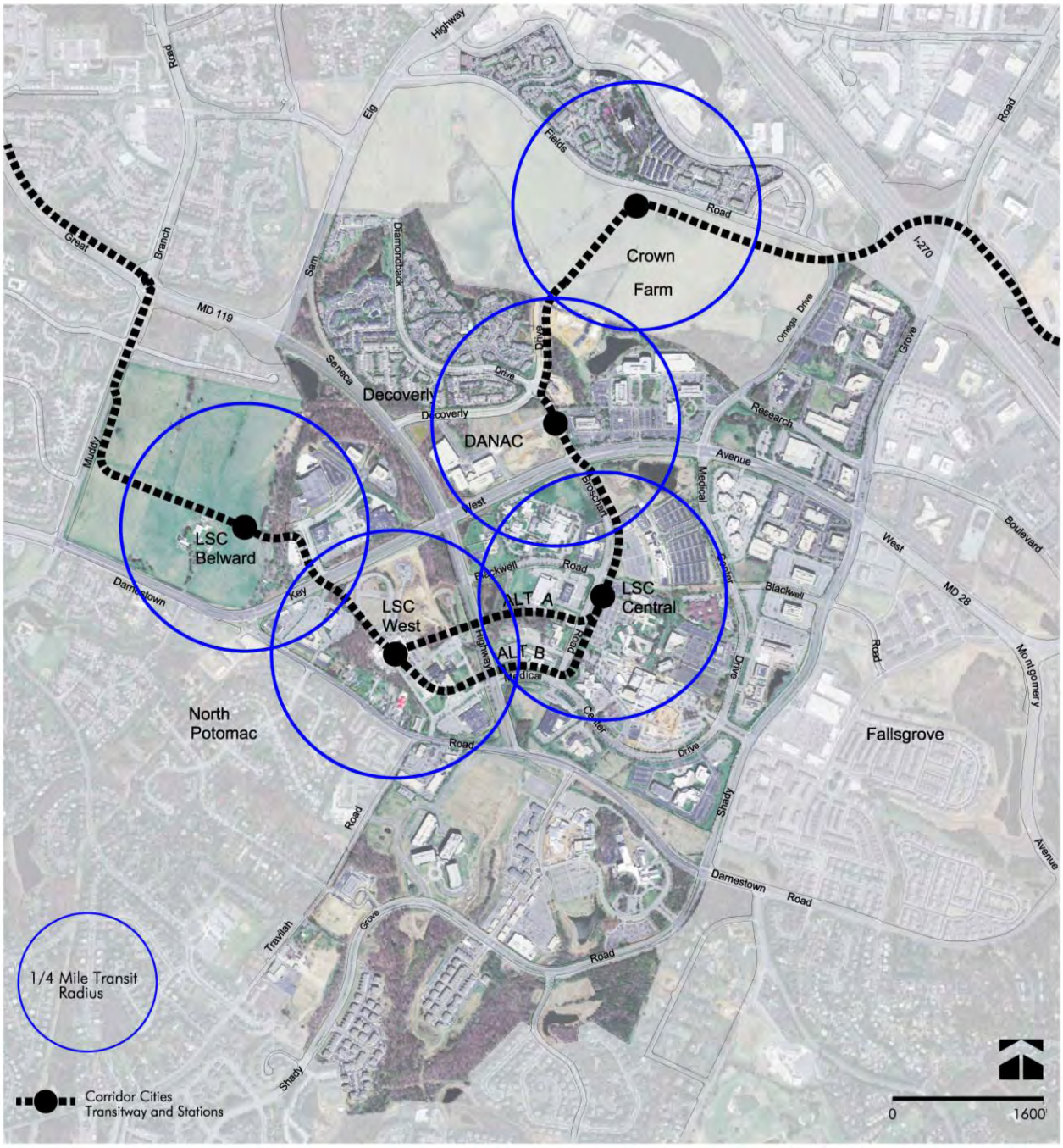
The LSC South District is not recommended for increased densities largely because it is within the Piney Branch Special Protection Area. The CCT route will bring transit close to LSC South, where it can serve the Universities at Shady Grove, Human Genome Sciences, and the Traville community. The alignment offers two alternatives between the LSC Central and LSC West stations.

map 8 Corridor Cities Transitway (Phase 1)



The CCT's first phase will be from the Shady Grove Metro Station to the Metropolitan Grove MARC Station. The second phase would extend the line from Metropolitan Grove north to Germantown and Clarksburg. The CCT route and design will not only connect people and places, but its stations will be the focal point of new development in the Corridor.

map 9 Corridor Cities Transitway: LSC Alignments and Stations



The Plan's four proposed LSC stations are located where new development and redevelopment is expected, increasing the number of potential CCT riders within a quarter-mile radius, or a five-minute walk.

Housing

This Plan's primary goal is to create a world class life sciences center. A range of housing options and amenities is needed to support this development and help achieve County housing goals, including Moderately Priced Dwelling Units and workforce housing. The transportation infrastructure proposed in this Plan will link the LSC districts in a sustainable development pattern where people can walk, bike, or use transit to reach their destinations.

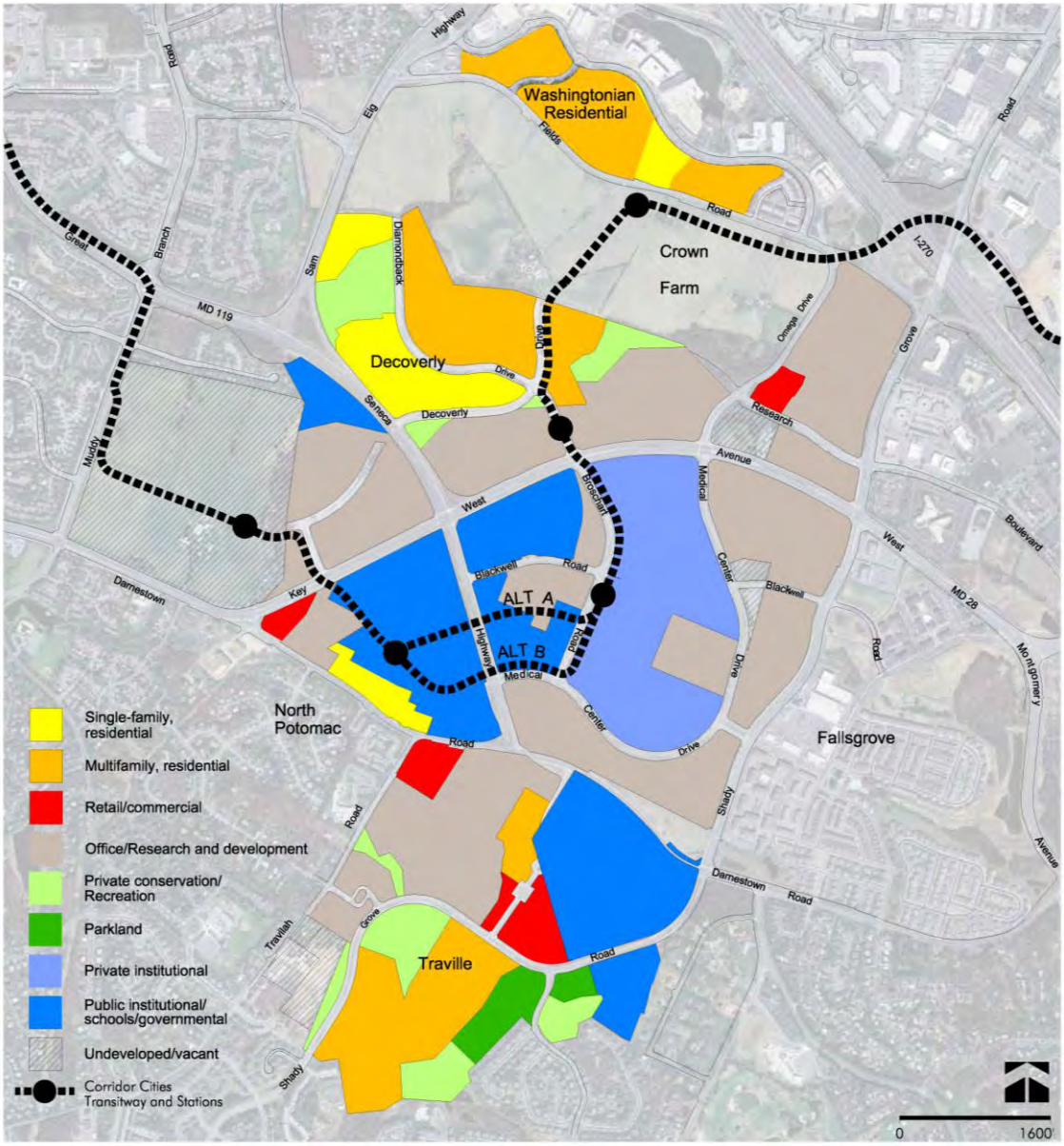
One of the County's fundamental planning tools is the jobs-housing balance—the ratio of jobs to housing units in an area. Creating a balance provides the opportunity for people to live near work, which can reduce traffic congestion. While a balanced jobs-housing ratio does not guarantee that the housing will be occupied by those who work nearby, opportunities to live near work should be provided.

To date, the LSC has developed as a single-purpose, single-use employment center. Housing has not been a permitted use so the jobs-housing ratio within this area is not balanced. Because the LSC's focus has been on economic development and jobs, not housing, achieving the optimal jobs-housing balance within this small geographic area is unrealistic. However, over a broader area, the appropriate ratio can be achieved.

The 1990 Plan proposed new residential neighborhoods on large tracts of land near the LSC, including new neighborhoods at the King Farm, the Crown Farm, and the Thomas Farm (Fallsgrove). King Farm and Fallsgrove were annexed into the City of Rockville and are nearly built-out. The Crown Farm was annexed into the City of Gaithersburg, which approved a mixed-use community with 2,250 dwelling units that is not yet under construction. Existing housing that is near the LSC and within the Plan boundaries totals 3,262 dwelling units (of which 230 are senior units) at the Decoverly and Traville communities and the Washingtonian cluster north of Crown Farm.

This Plan recommends a new residential community on the current site of the County's Public Safety Training Academy (PSTA), LSC West. Housing development on this site could yield 2,000 new dwelling units. In addition, the Plan recommends that housing be allowed as a secondary use in the LSC Central District, which, along with several other sites in the greater LSC, could yield 3,750 new dwelling units. In LSC Central, the Plan allows 30 percent of the density to be used for housing. If all LSC Central property owners utilized this option, the total dwelling units in the district could be 2,225. This maximum theoretical amount will not be achieved in LSC Central due to the existing built environment and the business objectives of the property owners.

map 10 LSC Existing Land Use



There are 3,262 dwelling units in the LSC area—

- *1,368 units in the Washingtonian residential cluster*
- *1,144 at Decoverly*
- *750 (including 230 senior units) at Traville*

Overall, the potential residential land use for the greater LSC could yield a maximum of 5,750 additional dwelling units to complement a projected total of 52,500 jobs (based on existing, approved, and proposed development). The resulting ratio of 5.8 jobs per dwelling unit is based on the existing housing in the greater LSC area (3,262 dwelling units, including the Traville, Decoverly, and Washingtonian residential cluster) combined with the potential new housing (5,750 dwelling units) for a total of 9,012. This jobs-housing ratio reflects the Plan's emphasis on the life sciences and health care services but does not include the substantial amount of existing housing nearby in Rockville, Gaithersburg, and Potomac. Within an approximate two mile radius of the LSC, there are over 25,000 existing households and the jobs-housing ratio is 2.8.

The LSC will be part of a continuum of communities linked by the CCT, enabling people to live and work within the corridor and get where they need to go by transit. At CCT stations to the east and west of the LSC, over 10,000 dwelling units are planned in pedestrian-oriented, mixed-use communities, including the Shady Grove Metro Station, the Crown Farm, and Watkins Mill Town Center. Creating such places fosters sustainable development and helps reduce sprawl as well as our dependence on autos.

Urban Form and Open Spaces

The LSC districts will be connected through a refined street network, transit, and trails. The highest density and building height will be concentrated at the proposed CCT stations. People may live and work in the same district, but interact with colleagues in another district. Overall, mobility will be enhanced through options other than cars, and shorter trips.

The streets, buildings, and open spaces will create a physical environment that supports the research community and enhances opportunities for people to interact. Design guidelines for the LSC, in a separate document, provide detail to guide new development and implement the urban form recommendations in this Plan.

The Plan's urban design recommendations set the scale and character for the LSC.

- Circulation on a pedestrian-oriented street grid that creates pedestrian and bicycle connections to transit and between uses and districts.
- Buildings that define the public spaces, streets, plazas, parks, and views.
- A system of public open spaces that provides a setting for community activity and also preserves natural resources.
- A standard for sustainability that reflects the LSC's cutting edge science.

Circulation

The LSC will have a walkable street system with a grid network. Streets and transit will tie the districts together. The LSC Loop, described below, will unify the pedestrian and bicycle circulation system of sidewalks, bikeways, trails, and paths that provide mobility and recreation options. The CCT will include a multi-use path that will enhance connectivity among the LSC districts.

- Grid network of streets
- Sidewalks connecting districts, providing access to transit and public spaces
- CCT transit stations and multi-use path

Buildings

Buildings oriented to the streets and public spaces will be built based on development standards that accommodate a variety of uses, including laboratories, prototype manufacturing, offices, academic buildings, residences, and retail spaces. Allowing mixed uses is critical to achieving the Plan's vision. Building standards will also ensure that new development provides compatible transitions to adjacent neighborhoods along Darnestown and Muddy Branch Roads.

- Buildings and residential entrances oriented to streets
- Parking garages located on block interiors
- Visible retail focused at CCT stations

Sustainability

Sustainability is defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs. A sustainable community integrates economic viability,

environmentally conscious design, social equity, and renewable energy sources. The compact, walkable, and green community envisioned for the plan area integrates many aspects of sustainability. It accommodates new residents and businesses while reducing land consumption and vehicle miles traveled, thereby reducing the carbon footprint from new development in the County.

Urban development patterns served by transit can reduce dependence on the automobile. Outside of the Belward site, most new development will take place over existing surface parking lots. An expanded street grid with adequate sidewalks and street trees along with the LSC Loop will encourage people to walk or bicycle to local services or destinations. Energy conservation, onsite energy generation, or renewable energy sources will reduce the costs of energy transmission and the carbon footprint of the new development. Energy efficient building design will reduce energy costs for building materials and energy usage. On-site stormwater management improves water quality and quantity. Street trees add to the tree canopy and reduce the heat island effect. Mixed uses put services in easy reach of residents. New residential development will provide more affordable housing and expand opportunities for economic diversity located near transit and services.

Sustainable development first preserves existing resources and then improves environmental conditions.

Resource Protection and Preservation

This Plan recommends ways to restore environmental functions in the Plan area as it redevelops, including: water quality protection (intercepting, detaining, evaporating, transpiring, and filtering precipitation and infiltrating it into ground water tables, preventing erosion and sedimentation, controlling flooding), air quality protection (filtering pollutants from air, producing oxygen), climate protection (sequestering and storing carbon, reducing urban heat island effect), protection of biological diversity (provision of habitat), and health benefits (clean air and water, recreational benefits, mental health benefits). Redevelopment of already disturbed areas will avoid losses of natural resources in the outer portions of the County. To preserve and enhance natural resources and their associated functions in the Life Sciences Center, this Plan:

- Creates a local street network that avoids impact to natural resource areas as much as possible (see page 53).
- Recommends that facility plans for any new roads minimize impacts to existing resources.
- Recommends creation of the Life Sciences Center Loop (see page 32). Existing natural resource areas are preserved through the Planning Board's Environmental Guidelines and connected by the LSC Loop.
- Where possible, use required forest and tree planting to enhance and expand existing resources.

Water Quality

Wherever development occurs, water quality impacts result primarily from the creation of impervious surfaces that seal off the soil layer and remove forests and tree canopy. Increases in imperviousness and decreases in forest cover have been associated with declines in water quality. Pollution from vehicles and road salts accumulates on roads and parking lots, and is washed off and carried into nearby streams in rain and snow events. In summer, rain water is heated on contact with unshaded impervious surfaces, creating temperature spikes in aquatic systems that can be damaging to aquatic organisms. Rainfall and snowmelt runs off impervious surfaces quickly, creating erosive flows that damage streams and carry harmful sediments into streams, rivers, and the Chesapeake Bay. Infiltration is the most difficult of the environmental functions to restore, as it requires reconnecting runoff with the soil. Approaches for improving water quality in urbanizing areas should recognize opportunities presented by both horizontal and vertical surfaces at various levels throughout the development.

Many of the techniques recommended in this Plan are included in the Environmental Site Design (ESD) stormwater treatment approaches now required by State and local laws and regulations. In addition, the County will be undertaking retrofit programs consistent with the requirements of the state stormwater permit. The result of this combination of regulation, County retrofit programs and master plan recommendations will be the restoration of natural resources and environmental functions that can be incorporated into the concentrated development pattern envisioned for this area.

To protect water quality, this Plan:

- Recommends site design and construction options that minimize imperviousness. These options include:
  - Compact development.
  - Parking options such as reduced parking requirements and the use of structured parking and/or shared parking facilities (see page 55).
- Recommends the use of bioswales, planter beds, rain gardens, pervious pavement, the incorporation of non-paved areas into open spaces, and similar techniques included in Environmental Site Design. Techniques that increase soil volume and porosity under paved areas are recommended to enhance infiltration opportunities.
- Recommends the use of vegetated roofs and walls.
- Recommends increasing tree canopy. Specific tree canopy goals are:
  - Predominantly commercial mixed-use areas: 15-20 percent minimum canopy coverage.
  - Predominantly residential mixed-use areas: 20-25 percent minimum canopy coverage.
  - The Belward Campus, with its specialized institutional use and protection of existing natural resources, should have minimum canopy coverage of 30 percent.

  These goals should be met by combining forest conservation requirements with street tree plantings and landscaping plantings (see page 86). Public and private open space areas should strive for a minimum of 25 percent canopy coverage. Surface parking areas should meet or exceed 30 percent canopy coverage.
- Recommends incorporating tree canopy and infiltration techniques into portions of the LSC Loop that connect existing natural areas.
- Recommends incorporating tree canopy and infiltration techniques into other open spaces wherever feasible.
- Recommends landscaping with plants that do not require extensive watering or fertilization. Native plants that are adapted to grow in our area are preferred.
- Recommends the use of low-flow plumbing fixtures in buildings.
- Promotes using techniques that capture and re-use stormwater and/or graywater (graywater is water from sinks, bathtubs and showers that can be safely used for watering plants or flushing toilets). This may include the use of rain barrels and cisterns. These uses must be consistent with County health regulations.

Piney Branch SPA

Portions of the Life Sciences Center area are included in the Piney Branch Special Protection Area for water quality and contain remnants of the rare habitat provided by the serpentinite rocks that underlie parts of this area. Special Protection Areas require that a water quality plan be prepared detailing how impervious surfaces will be minimized and how advanced and redundant stormwater treatment measures will be achieved. Most of the Special Protection Area is in the LSC South District, where this Plan recommends that development be restricted to existing and approved development, with the exception of the Rickman Property. Development on this property should minimize new impervious surfaces especially on that portion of the property that drains to the Special Protection Area. A small portion of the SPA extends north of Darnestown Road into the southern portion of the LSC Central District. Most of this area is already developed.

- Future redevelopment in this area should minimize imperviousness in their site designs, particularly in the Special Protection Area (see page 50).
- Any development that involves or is adjacent to serpentinite habitat should preserve this area and provide additional buffering wherever possible.

Air Quality

Most impacts to air quality result from the operation of motorized vehicles and regional energy production involving the combustion of fossil fuels. Impacts include the emissions of precursors of ground-level ozone, volatile organic compounds, carbon monoxide, oxides of nitrogen and sulfur, and fine particulates. Amelioration of air quality impacts involves restoring air filtering and oxygen-producing functions, reducing vehicle miles traveled, and reducing use of energy produced by burning fossil fuels.

To restore air filtering and oxygen-producing functions, this Plan:

- Recommends increasing vegetation through the use of planter beds, bioswales and rain gardens, landscaping, street trees, and vegetated roofs and walls to the maximum extent feasible through aggressive application of Environmental Site Design.

To reduce vehicle miles traveled, this Plan:

- Recommends creating compact, mixed-use development that encourages and facilitates non-motorized travel and reduces travel distances.
- Recommends providing alternatives to automobile travel, including:
  - Public transit in the form of the CCT and local bus service.
  - Incorporating trails into the LSC Loop. Trails in regulated areas such as stream buffers and forest conservation easements should be natural surface; trails outside of environmentally regulated areas may be hard-surfaced to facilitate travel by bicycle (see page 92).
  - Incorporate other pedestrian and bicycle trails throughout the Life Sciences Center, and make connections to other Countywide and local jurisdiction trail systems (see pages 92).
  - Make the existing area more walkable by improving road crossings (see page 86).
- Encourages other measures, such as the provision of bicycle parking facilities, to promote and facilitate non-motorized travel.

Climate Protection

Carbon dioxide and other greenhouse gasses are released into the atmosphere by combustion of fossil fuels to power motorized vehicles and to provide power for lighting, heating and cooling buildings and powering electronics and appliances, and by deforestation. Summertime energy use is driven higher by urban heat island effects from radiant heating of hard surfaces. Approaches to mitigating climate impacts focus on reducing energy consumption, increasing use of renewable energy, restoring carbon sequestration and storage functions, and reducing urban heat island effect.

The carbon footprint analysis contained in the Appendix to this Plan shows that, even if we cannot account for potential improvements to building and vehicle technology or behavioral changes to reduce energy consumption, per capita carbon dioxide emissions will be significantly less with compact, transit served development than would be the case if the same number of new homes and jobs were built on vacant land in other parts of the County.

Taken in isolation, the carbon footprint of new development in the Plan area will be greater than would occur under the 1990 Master Plan; however, the increase in the carbon footprint for the entire County will be less under this Plan. The compact, walkable, transit served community will enable people and employers to make even greater reductions in the carbon footprint. The following recommendations are aimed at reducing the carbon footprint through reduced energy consumption,

promotion of renewable energy generation, increased carbon sequestration and reduced urban heat island effect.

To reduce carbon footprint, this Plan:

- Recommends development that is compact, features a mixture of land uses, is walkable and served by public transit to make efficient use of land and resources, to reduce vehicle miles traveled and facilitate non-motorized travel.
- Creates opportunities for new development and redevelopment that take advantage of existing infrastructure and adaptive re-use of existing structures where feasible.
- Recommends that development meeting LEED or equivalent certification of any level obtain as many points as possible from approaches that reduce carbon emissions, including:
  - Site and building design and orientation that takes advantage of passive solar heating and lighting opportunities, maximizes potential for use of renewable solar energy systems, and permits passive cooling through proper shading and ventilation.
  - A commitment to reduce energy and water consumption.
  - A commitment to use recycled building materials, locally produced materials, and local labor.
  - A commitment to use building deconstruction techniques to facilitate re-use and/or recycling of building materials.
  - A commitment that new buildings meet the minimum energy efficiency standards of 17.5 percent below the calculated baseline performance or meet the appropriate ASHRAE advanced energy design guide. Renovated buildings should commit to meet a 10.5 percent energy efficiency standard below the calculated baseline performance or meet the appropriate ASHRAE advanced energy design guide.
  - Incorporates renewable energy systems to supply a portion of a building's energy needs, where feasible. Such systems may include:
    - solar power
    - wind power
    - geothermal heating and cooling systems.
- Recommends maximizing tree canopy coverage. (See goals for tree canopy coverage in the water quality section).
- Recommends the use of green roofs and walls.
- Recommends the use of light-reflecting roof surfaces where green roofs cannot be used.
- Recommends increasing vegetation throughout the Life Sciences Center. Approaches include:
  - Targeting unforested portions of regulated areas for reforestation.
  - Incorporating street trees and landscaping trees throughout the Life Sciences Center.
  - Use of vegetated roofs and walls.
  - Use of planter beds, bioswales and rain gardens.
  - Incorporating vegetation into hardscaped open space areas.

Protection of Biological Diversity

Protection of biological diversity focuses on preserving existing habitat, and on restoring habitat where feasible. Biological diversity is maintained when habitat is protected and invasive species are controlled. Control of invasive species and reducing wildlife overpopulations are operational issues not appropriate to address in a master plan. While an urban environment cannot typically support highly diverse plant and wildlife populations, much can be done to improve conditions for native plants and animals.

To protect biological diversity, the Plan:

- recommends preservation of existing natural areas, including the forest at the corner of Key West Avenue and Great Seneca Highway
- recommends the use of native plants and trees in landscaping and street tree planting to the maximum extent possible

- recommends the use of plants that serve as hosts for butterflies and other pollinator insect species
- recommends preservation of the 10-acre forested tract west of the power line and north of Game Preserve Road on the McGown property
- recommends preservation and additional buffering of the endangered Krigia dandelion population.

Health and Wellness

Health and wellness are promoted by providing an environment with clean air and water, by providing opportunities to exercise and recreate, and by establishing an environment that helps reduce stress. The recommendations detailed in the above sections will all help contribute to health and wellness.

In addition, this Plan:

- encourages that walkways and bicycle trails be safe and attractive to encourage walking, jogging and biking
- recommends that public open spaces be attractively designed destinations within the community to draw in pedestrians and cyclists
- encourages using some open spaces and green roofs as community gardens to promote the consumption of locally-grown seasonal fruits and vegetables
- creates the 3.5-mile LSC Loop path which incorporates natural features, and provides non-motorized connectivity for the districts and destinations throughout the Life Sciences Center.

Community Facilities, Open Spaces, and Connectivity

Community facilities, services, and amenities contribute to making great places to live, work, and play. The LSC's proposed redevelopment offers an opportunity to enhance public facilities, amenities, and recreational options. An interconnected pedestrian and bike system will link neighborhoods—both existing and future—to each other, parks, transit, and other destinations. This Plan recommends using urban design, parks, and trails to create an open space network for the LSC that will provide a range of experiences and a sense of place, integrating the built and natural environments and passive and active spaces. Where possible, connections to existing neighborhoods surrounding the LSC should be created or enhanced.

This Plan provides a site for a future elementary school in the LSC West District, should it be needed to accommodate students that could be generated from build-out of the potential residential densities. In addition, a future high school site has been reserved on the Crown Farm in the City of Gaithersburg.

A fire station is needed in this area, and the northwest corner of Shady Grove Road and Darnestown Road has been selected.

A new community center, the North Potomac Recreation Center, is planned on Travilah Road adjacent to Big Pines Local Park, as recommended in the 2002 *Potomac Subregion Master Plan*. This Plan recommends that consideration be given to the purchase of a site for a new local park in the Quince Orchard area.

As the LSC grows into a major hub for life sciences research and development, a library specializing in science and medical research may be desirable. A high technology library could provide an inspiring environment for innovation and entrepreneurship, a place where students of all ages can rub shoulders with the industry's best minds. A publically accessible specialized library could be funded through private sector development contributions to an amenity fund and could be located at Belward or the JHU-MCC site, or another appropriate location in LSC Central.

Open Spaces

Thriving places rely on a high quality public realm. Parks and open spaces offer community gathering places, foster a sense of place and civic pride, and encourage environmental stewardship; essential components of community life. The best communities incorporate substantial green elements and open spaces that provide opportunities for recreation, outdoor socializing, collaborating, and connecting to nature. This Plan recommends that parks, publicly accessible open spaces, civic gathering places, and trails be designed as part of a comprehensive system that contributes to a sustainable community. To achieve this goal, an interconnected pedestrian and bike path system should link new and existing neighborhoods to parks and other destinations.

Additional parks and open spaces (described more fully in each District) will be created to provide recreational opportunities that support and enhance the vision of the LSC. The future open space system will support a vibrant and sustainable work life community by creating open spaces that will be easily accessible by walking or transit and will provide a range of experiences for a variety of people.

This Plan recommends a series of open spaces provided through a combination of public and private efforts. Both residential and commercial development projects should provide recreational facilities, open spaces, and trail connections that shape the public realm, help implement the Plan recommendations, and serve existing and future employees and residents.

The open space system will include:

- an extensive open space network on the Belward property with a variety of passive, active, and cultural experiences
- completion of the Muddy Branch Trail Corridor along the western edge of the Belward property
- civic greens at each CCT station
- a shared park/school site in LSC West as well as a public civic green
- development of Traville Local Park in LSC South
- green corridors between and through major blocks linked by the LSC Loop to connect destinations and integrate passive and active spaces
- an additional active use Local Park in the Quince Orchard area (outside the LSC; see page 60).

Community Connectivity and the LSC Loop

The organizing element of the LSC open space plan is a 3.5-mile multi-use path loop connecting the districts and destinations with extensions from the core loop that link to the surrounding communities, including the cities of Gaithersburg and Rockville (see Map 11 on page 33). Connectivity between the LSC Districts and adjacent neighborhoods is described more fully in the following District section. The LSC Loop will run alongside existing streets, such as Medical Center Drive and Omega Drive, and be completed on new streets in LSC West. It will incorporate the proposed multi-use path next to the CCT through LSC West and onto the Belward property.

The LSC Loop will link activity centers and community facilities, including the planned high school on the Crown Farm (in the City of Gaithersburg), the historic Belward Farm, and the civic green and retail center on LSC West. Creation of the loop (including landscaping and facilities such as benches) will be the primary amenity requested of property owners. CCT stations along the Loop include the Crown Farm, Belward, and LSC West. Each CCT station in the LSC will have a public open space and property

owners will also be requested to contribute to the implementation of this amenity. From the Loop, paths will connect with other destinations and activities in the area, including Fallsgrove and Traville. Traville Local Park, in LSC South, is proposed to include a small rectangular field, half-court basketball, older children's playground, and a tot lot, and should be accessible from an extension of the LSC Loop.

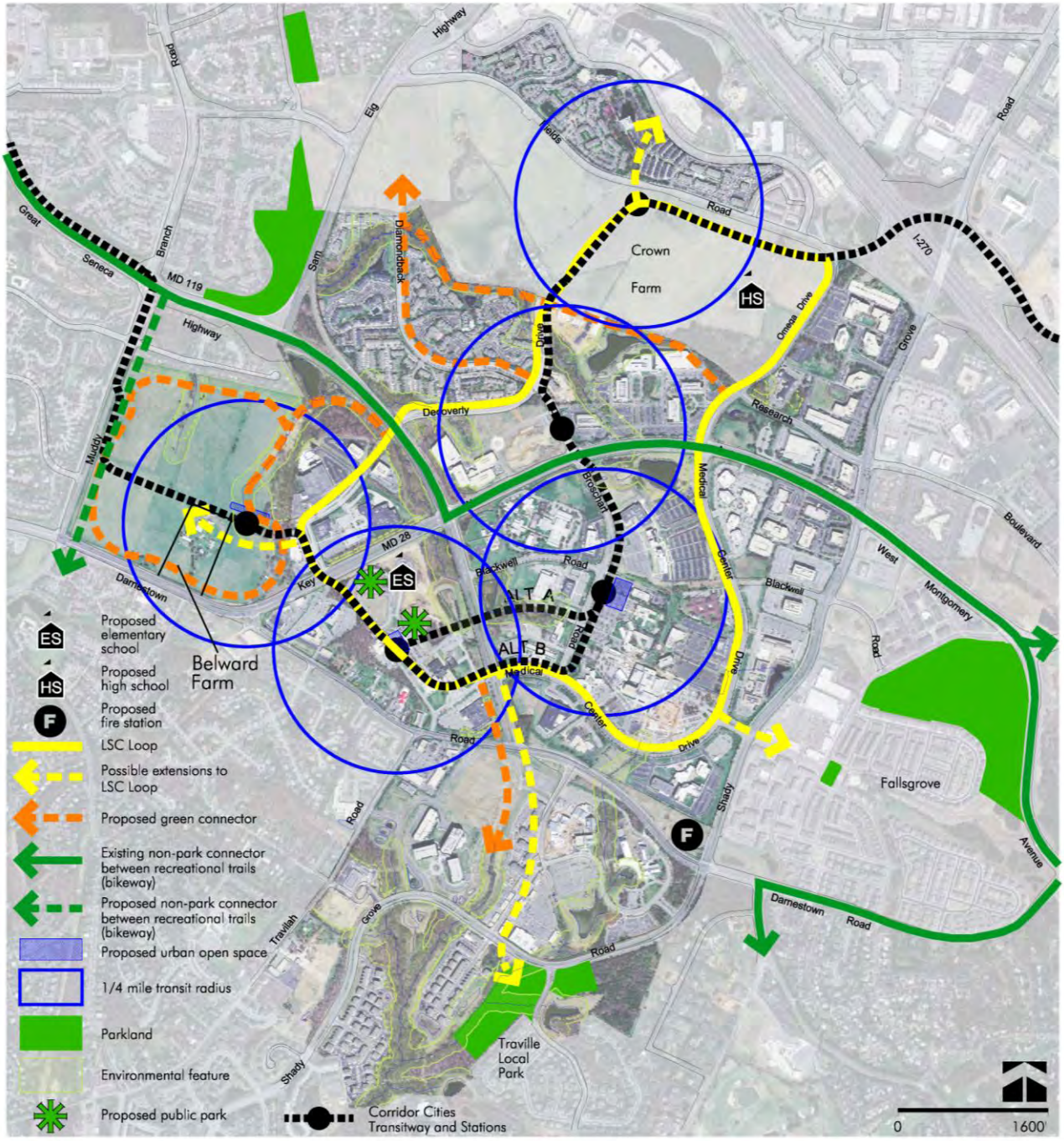
The LSC's existing stream buffer areas should be integrated with the Loop, offering passive outdoor experiences. The on-road hard surface portion of the Muddy Branch Trail Corridor intersects the Plan area at the southwest corner of the Belward property, and should connect to the rest of the Countywide trail system.

Not all open space can or should be publicly owned and managed. Public amenity spaces in new developments will provide recreation and open space. Public parks and publicly accessible facilities and open spaces should complement each other and be seamlessly integrated to create a cohesive pattern of open space.

The LSC Loop will:

- create extensions (from the main loop) that connect surrounding neighborhoods with the LSC, providing residents of these communities with access to the transit stations, activities, amenities, and open spaces in the LSC Districts
- create a primary recreational feature that connects the districts, destinations, and open spaces throughout the area
- provide connections to area amenities, including the historic Belward Farm, retail destinations, the proposed high school and elementary school, and the natural path system through the stream buffer areas
- connect destinations by paths, including stream valley park trails such as Muddy Branch
- integrate regulated green spaces such as wetlands, streams, and forest conservation easements to provide passive recreational experiences
- provide connections to Traville Local Park in LSC South.

map 11 Community Facilities and Open Space Network



The LSC Districts

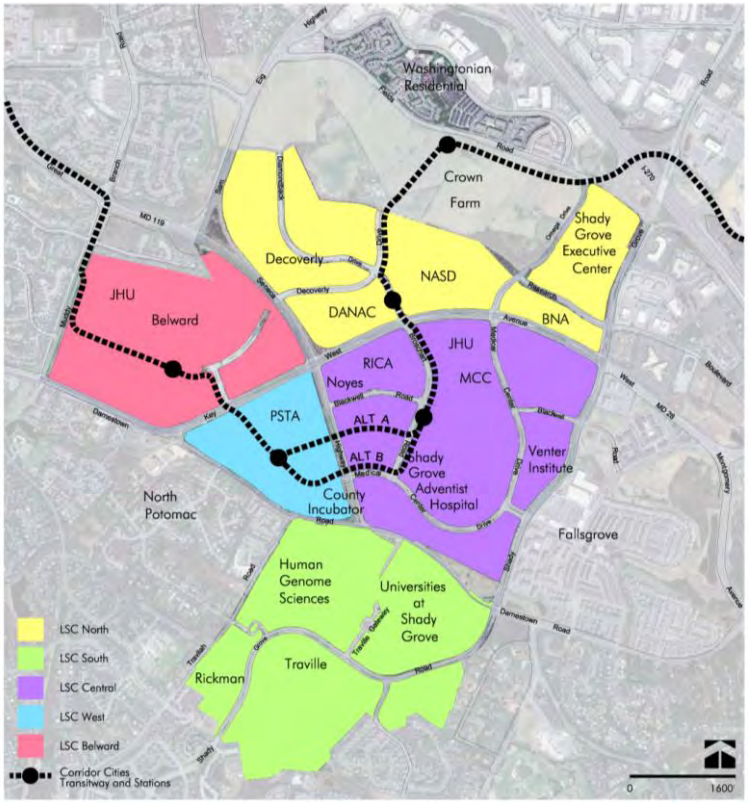
The Plan's land use, zoning, circulation, and design recommendations for the LSC districts focus density at the proposed CCT stations to fulfill the Plan's vision of connected centers.

table 2 life sciences center: existing and proposed development

	existing	existing and approved	1990 Master Plan	proposed 2010 Plan
commercial (sf)	6,940,000	10,700,000	13,000,000	17,500,000*
dwelling units	3,300	3,300	3,800	9,000
jobs	21,200	30,550	38,000	52,500
jobs-housing ratio	6.4	9.2	10.0	5.8

*Although zoning would allow up to 20 million square feet of development, the staging plan limits development to 17.5 million square feet.

The largest property owners (20 acres or more) at the proposed CCT stations—JHU's Belward and MCC sites, Shady Grove Adventist HealthCare, DANAC, and the future developers of LSC West (the PSTA site)—will be required to submit concept plans that demonstrate how their site will achieve the Plan's vision—highest densities and heights at the stations, mixed uses, a local street network, neighborhood buffers, the LSC Loop, historic properties, and open spaces.



LSC Central: A Medical and Biotech Center

This 230-acre district includes Shady Grove Adventist Hospital, several medical office buildings, the Johns Hopkins University-Montgomery County Campus (JHU-MCC), the Regional Institute for Children and Adolescents (RICA) and Noyes Institute facilities, and some County social service uses. This area also includes the Key West Corporate Center and biotech companies such as the J. Craig Venter Institute, BioReliance, and Otsuka.

Today, LSC Central is a single-purpose destination for workers, students, and hospital visitors. While it should continue to focus on medical and biotech uses, other uses should be introduced, including retail and a limited amount of housing (approximately 30 percent of permitted floor area ratio). The Plan recommends a CCT station on Broschart Road near Blackwell Road, and those streets should be enlivened with activating uses. Future development, in its design and use, should be carefully planned to take advantage of transit and contribute to creating a vibrant LSC hub.

Adventist HealthCare (AHC) and JHU, as the district's largest property owners, will play a significant role in achieving the land use vision. Population growth, combined with demographic shifts and aging baby boomers, is fueling demand for additional capacity at the Shady Grove Adventist Hospital. To meet these needs, the 48-acre facility will continue to evolve, including centers of cardiac and vascular services, oncology, and women's and children's services.

AHC intends to develop medical offices, diagnostic and outpatient treatment facilities, and convenience retail. Accompanying these physical improvements will be structured parking, landscaped open spaces, and other public amenities. Under the current zoning, AHC would not be able to expand its facilities substantially. This Plan supports an expanded, first-class medical center and recommends zoning changes to accommodate future growth.

Most of the land in LSC Central is zoned LSC. To implement the vision of a mixed-use, transit oriented center, this Plan recommends modifying the LSC Zone to permit more uses, density, and height. The revised zone would allow housing and the Plan recommends that up to 30 percent of the floor area ratio (FAR) in LSC Central could be residential. LSC Central properties zoned R-200, O-M, and R&D are recommended for rezoning to the revised LSC Zone. One zone for all LSC Central properties will enhance development or redevelopment possibilities, provide consistent land use options and development standards, and improve design cohesiveness.

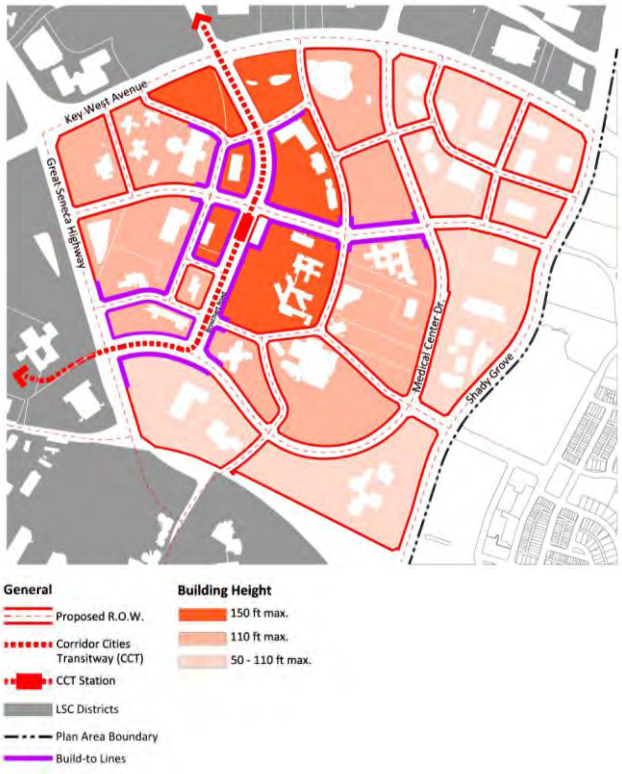
The LSC Zone allows for a transfer of density from one LSC-zoned property to another LSC-zoned property. This provision would allow a transfer of density from Belward to LSC Central, but it is completely voluntary and could only occur at the property owners' initiative. With a transfer of density, if there is an offsetting reduction in FAR on Belward, the density and height in LSC Central could be increased by 0.5 FAR and by 50 feet above what the Plan allows for this district.

The Plan envisions redeveloping portions of the block surrounded by Broschart Road, Medical Center Drive, Great Seneca Highway, and Blackwell Road. Currently, this area is developed with low-density, low-scale uses. With a transit station along Broschart Road, portions of this block could redevelop to higher densities with a mix of housing, retail, and employment uses. The Plan recommends rezoning the RICA and Noyes facilities (from R-200 to LSC) to accommodate redevelopment consistent with the vision for LSC Central if these uses are relocated.

A fire station is needed in this area and the selected location is the northwest corner of Shady Grove Road and Darnestown Road. The 1990 *Shady Grove Study Area Master Plan* identified this intersection for a possible grade-separated interchange, which is being removed by this Plan.

map 12 LSC Central: Proposed Zoning

map 13 LSC Central: Urban Form



Recommendations

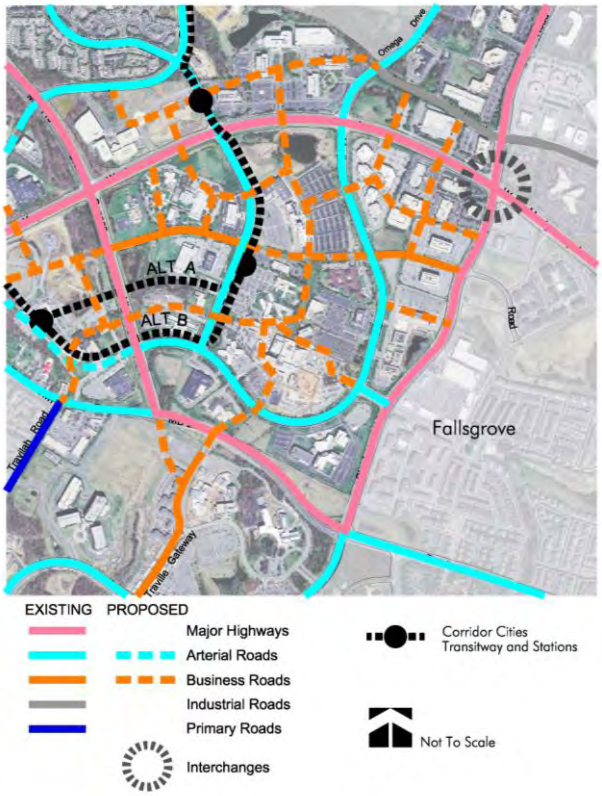
Land Use and Zoning

- Amend the LSC Zone to allow mixed uses and increased density and height.
- Amend the LSC zoning standards to reflect current technology and allow future flexibility.
- Allow a maximum of 1.0 FAR for properties in LSC Central.
- Allow a maximum of 1.5 FAR for properties in the center of the district (bounded by Key West Avenue, Medical Center Drive, and Broschart Road): AHC, JHU, and 9707, 9711, and 9715 Medical Center Drive.
- Allow a maximum of 30 percent of permitted FAR to be used for housing.
- Rezone the RICA and Noyes properties from the R-200 Zone to the LSC Zone.
- Rezone the R&D and O-M parcels to the LSC Zone.
- Require submission of a Concept Plan prior to approval of any future individual development projects for AHC and JHU to address the Plan's guidelines, including the location of the CCT, the highest densities and height at transit, the mix of uses, creation of a local street network, and provision of open spaces.
- Accommodate a fire station on the northwest corner of Shady Grove Road and Darnestown Road.

Urban Form and Open Spaces

- Locate the highest density and tallest buildings (150 feet) adjacent to the transit station to form an identifiable center. Future developments should be well-integrated with each other.
- Create an identifiable LSC Loop along Medical Center Drive that connects pedestrians to other transit centers, the network of natural pathways along the stream buffers, and the open spaces.
- Design Broschart Road as an urban street, lined with buildings and activating street-level uses. The east side of Broschart Road is shared by AHC and JHU, and both property owners have opportunities to create a lively street edge that takes full advantage of transit station proximity.
- Design Blackwell Road between the AHC and JHU properties with a building edge and improved connections.
- Provide at least 15 percent of the net tract area as public use space.
- Include the following public open spaces:
  - LSC Loop
  - stream buffers
  - urban square at the CCT station
  - urban promenade to connect between buildings and public spaces.

map 14 LSC Central: Mobility



Mobility

- Locate a CCT Station along Broschart Road near Blackwell Drive in the vicinity of AHC and JHU.
- Extend Blackwell Road between Medical Center Drive and Broschart Road.
- Create additional streets to encourage an urban building form and to improve access and circulation for pedestrians and vehicles.
- Widen Key West Avenue (MD 28) to 8 lanes divided.
- Construct an interchange at Key West Avenue (MD 28) and Shady Grove Road.

LSC West: A New Residential Community

Most of this 75-acre district is the County's Public Safety Training Academy (PSTA), on 52 acres. The PSTA has been at this site, bordered by Key West Avenue, Great Seneca Highway, and Darnestown Road, since 1973 when the area was mostly farmland. Since the 1980s, when the County decided to create the LSC, the uses around the PSTA have changed dramatically.

This training facility for firefighters, police officers, and operators of large vehicles is next to the County's Innovation Center (Incubator), which provides space for biotech start-up businesses. On the north side of Darnestown Road are a small retail center, medical office buildings, and several single-family homes that have been assembled and are proposed for townhouse development (RT-8 Zone).

While the PSTA is an important public facility, it has no relationship to the LSC. The County recognizes that all of the PSTA's needs cannot be satisfied at this location with its limited expansion capability and has identified a site where the PSTA could be relocated.

The Plan supports relocating the PSTA and redeveloping the site with a residential community that includes amenities and services, bringing housing opportunities within walking distance of jobs in the LSC. The corner of Great Seneca Highway and Darnestown Road has the potential to become a signature site. The Innovation Center could remain at this location or, ideally, be incorporated into redevelopment of the PSTA or elsewhere in the LSC.

Creating a new community on publicly-owned land in the LSC West District provides an opportunity for the County to engage outstanding practitioners of sustainable town planning, layout, and design to help implement this Plan's vision. Located between LSC Central and Belward, the new LSC West community will be a hub of activity that draws people from the other LSC Districts as well as surrounding neighborhoods. Residents of the new high density housing in this District will enliven and activate the retail uses and open spaces. An interconnected street grid will create walkable blocks with a synergistic mix of uses, including ground-floor retail and wide sidewalks to accommodate outdoor cafes. The central, civic green at the CCT station should be framed by buildings and be large enough for major outdoor activities and gatherings, such as a summer concert series.

The Plan recommends the Commercial Residential (CR) Zone with a 1.0 FAR that could yield 2,000 dwelling units with supporting retail, services, open spaces, and community uses. The CR Zone is recommended for the PSTA and PEPCO parcels (currently zoned R-90/TDR), the Innovation Center (LSC Zone), the small retail center (C-3), and medical office buildings (O-M) at the intersection of Darnestown Road and Key West Avenue. The following CR components will promote development of the new residential community envisioned for LSC West: CR 1.0: C 0.5, R 1.0, H 150. The Plan recommends that the two special exception uses (at 10109 and 10111 Darnestown Road) be rezoned from R-90/TDR to C-T (Commercial, transitional) and confirms the RT-8 Zone for the remainder of parcels along Darnestown Road.

Residential buildings with the most density and height should be adjacent to the CCT station and the new LSC West community should include retail, civic spaces, and, if needed, a new public elementary school. If a new elementary school is needed, it could be combined with a local park on the northern portion of LSC West. If the school is needed and if the northern area is chosen, the proposed local street (see B-5 on Map 29 on page 54) should be eliminated to create adequate space for a park/school site. If the school is not needed, a local public park for active recreation should be provided. This park should be large enough to accommodate a regulation size rectangular field. In addition to the park/school site, development should be accompanied by a new public urban park to serve as the central civic open space for the residential community. This public green space should be near the CCT station and one-half to one acre in size to create a gathering place and focal point for the community.

LSC West is the primary site for housing for the live/work community envisioned for the LSC. This site is expected to provide a public school/park parcel, a civic green, a CCT station and right-of-way, a road network, and structured parking. In addition, a significant water main traverses the property. Without impairing the ability to achieve the uses and density for LSC West, this Plan recommends that at least 35 percent of the incentive density attainable for this site be achieved through the use of building lot termination (BLTs) easements and affordable housing.

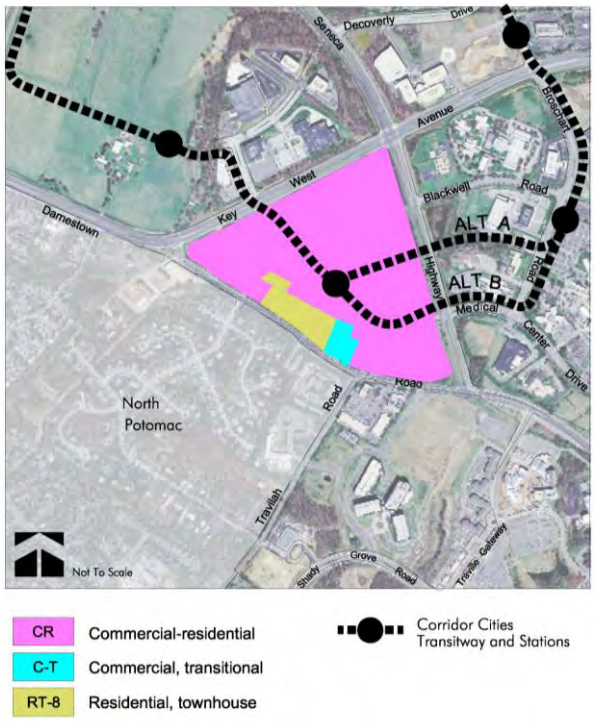
The Plan recommends that impacts to the forested area at the corner of Great Seneca Highway and Key West Avenue be minimized. Since rare, threatened, or endangered species information has never been gathered for this site, a Natural Resources Inventory should be prepared when the site is redeveloped.

Future development or redevelopment of the Darnestown Road side of LSC West should be compatible with the existing residential community of Hunting Hill Woods to the south (in the 2002 *Potomac Subregion Master Plan*). A proposed townhouse development (on the RT-8 parcels) in LSC West along the north side of Darnestown Road addresses land use compatibility and design (with a maximum building height limit of 35 feet). If there is future redevelopment of the existing retail and office uses at the corner of Darnestown Road and Key West Avenue (zoned C-3 and O-M; recommended for CR), compatibility with Hunting Hill Woods must be addressed.

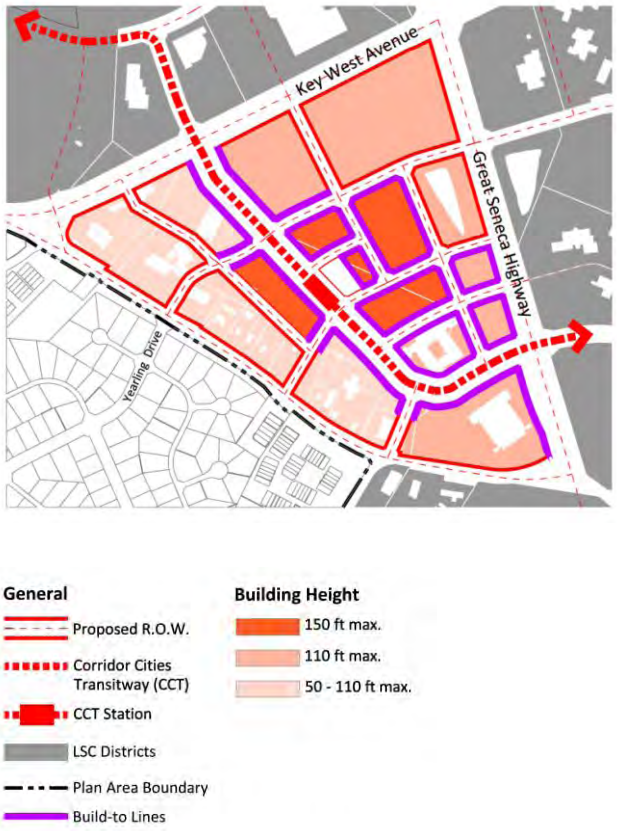
This Plan encourages improved connectivity from the residential neighborhoods south of Darnestown Road to the LSC West District. As the core of the District develops into a new community with retail, open spaces, and a CCT station, adjacent communities should have access to these amenities. The Plan recommends a Dual Bikeway/Shared Use Path along Darnestown Road (DB-16) and there is an existing off-road shared-use path along Travilah Road (SP-57) that is recommended to extend into LSC West (LB-5). In addition, an LSC Loop extension is recommended from LSC West into LSC South (see Map 11 on page 33).

Opportunities to create new connections are limited by the character of existing neighborhoods to the south, which are inward-facing with numerous cul-de-sacs, rear yards along Darnestown, and only one access point at Yearling Drive. As shown on Map 16 on page 40, an extension of Yearling Drive (which is aligned with the access driveway to the existing office uses on the north side of Darnestown Road) may provide the best future opportunity for improved access to the LSC West District. Opportunities for a public easement through the proposed townhouse development could also be explored.

map 15 LSC West: Proposed Zoning



map 16 LSC West: Urban Form



Recommendations

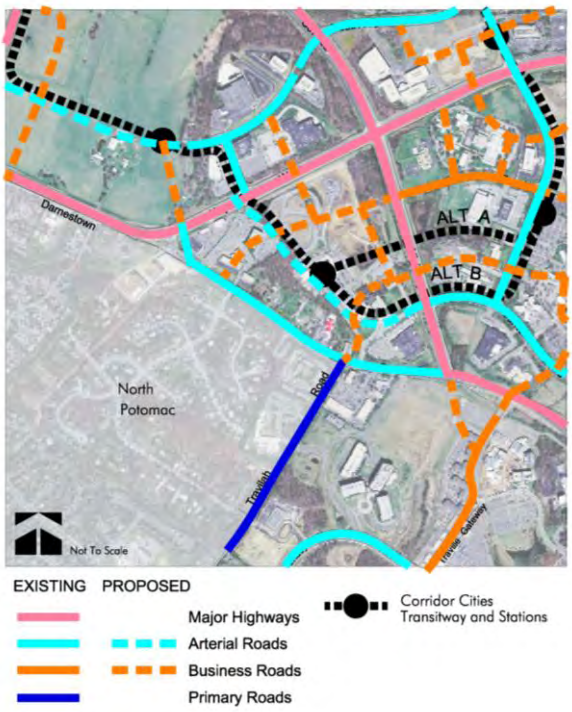
Land Use and Zoning

- Relocate the PSTA and create a new residential community on the site with supporting retail, open space, transit, and community facilities.
- Rezone the PSTA and PEPCO parcels from R-90/TDR to the CR Zone.
- Rezone the County's Innovation Center site from the LSC Zone to the CR Zone.
- Rezone the C-3 and O-M parcels to the CR Zone.
- Properties rezoned to CR have the following components: CR 1.0: C 0.5, R 1.0, H 150.
- Rezone 10109 and 10111 Darnestown Road (special exception uses) from R-90/TDR to C-T (Commercial, transitional) to reflect the existing uses.
- Require a Concept Plan for LSC West with the first Preliminary Plan application to address the CCT location, the placement of highest densities and building height at transit, creation of a local street network, public open spaces, and the LSC Loop.
- Locate highest density housing and retail uses and the tallest buildings (150 feet) closest to the CCT station to provide convenience and activity.
- Minimize impacts to the forest at the corner of Key West Avenue and Great Seneca Highway.
- Accommodate a new public elementary school combined with a local park, and a central public open space near the proposed CCT station.

Urban Form and Open Spaces

- Extend the LSC Loop along Medical Center Drive to connect pedestrians to other transit centers, the network of natural pathways along the stream buffers, and the open spaces.
- Locate a multi-story elementary school, if needed.
- Provide facilities for active recreation on the park/school site.
- Provide at least 15 percent of the net tract area as public use space.
- Integrate the following public open spaces:
  - LSC Loop
  - stream buffers
  - forest area along Great Seneca Highway and Key West Avenue
  - civic green at the CCT Station
  - urban promenade to connect between buildings and public spaces.
- Use the visible corner at Darnestown Road and Great Seneca as a signature site for a significant building.

map 17 LSC West: Mobility



Mobility

- Locate a CCT station along Medical Center Drive extended near the center of the LSC West site.
- Create a grid of streets on LSC West as part of the new residential community.
- Widen Key West Avenue (MD 28) to 8 lanes divided.

LSC Belward: A New Science and Research Community

The Belward property, owned by JHU, is surrounded by major roads and residential neighborhoods on three sides. The 1990 *Shady Grove Study Area Master Plan* designated Belward as part of the greater Life Sciences Center and recommended it be developed as a research campus with a limited amount of employee housing. JHU received Preliminary Plan approval in 1996 for 1.8 million square feet on 138 acres, a density of 0.3 FAR in the R&D Zone. The eastern portion of the property, with access from Key West Avenue, was sold and developed. The remaining 107 acres is undeveloped.

This Plan recommends increased density on the Belward property (1.0 FAR), served and supported by a CCT transit station. The Plan recommends that both the 107-acre undeveloped Belward property as well as the developed, eastern portion, be rezoned from the R&D Zone to the revised LSC Zone to allow higher densities and height focused at the CCT station. Development on the Belward property may include housing for the employees and/or visiting researchers. Plan recommendations allow a concentrated and compact form of development for Belward that is centered around transit. This denser building pattern (with structured parking) creates opportunities for an extensive open space system. Previous plans for Belward were a conventional suburban office park model with sprawling, low-density, auto-dependent development, vast amounts of surface parking lots, and few community amenities intended for use by residents or workers not on the Belward campus. Compatible transitions and buffers for the adjacent single-family neighborhoods are critical.

As discussed in the LSC Central section, the LSC Zone allows for a transfer of density from one LSC-zoned property to another LSC-zoned property if recommended in the master plan. This Plan provides the option for a transfer of density from Belward to LSC Central. A density transfer is completely voluntary and could only occur at the property owner's initiative and discretion. With a transfer of density, if there is an offsetting reduction in FAR on Belward, the density and height in LSC Central could be increased by 0.5 FAR and by 50 feet above what the Plan allows for in this district.

The design and layout of Belward should be sensitive to the residential neighborhoods that surround the site. To create appropriate transitions and minimize impacts, the Plan recommends substantial open spaces, particularly on the three sides of Belward that are adjacent to neighborhoods. Development around the north, west, and south perimeters—adjacent to the Mission Hills buffer, the Muddy Branch Park, and Darnestown Road—should be compatible with surrounding neighborhoods in bulk, scale, and building height. Heights should transition from the highest (150 feet maximum) in the blocks immediately surrounding the CCT station to lowest at the edges of the property (50 feet maximum) and immediately adjacent to the historic area (60 feet maximum). Ultimately, the Planning Board will need to make the tradeoff between height and open space at the time of development. Rear walls and service areas should not face the surrounding neighborhoods. Generally, parking should be located in garages that are placed in the center of blocks and surrounded by buildings.

The property's historic Belward Farm includes the 1891 farmhouse, barns, and outbuildings. A 6.98-acre environmental setting was established for the historic properties by the 1996 Preliminary Plan approval, and includes the driveway from Darnestown Road to preserve views of the site.

Due to the proposed increase in development recommended for Belward, this Plan recommends expanding the historic farmstead's environmental setting to between 10 and 12 acres. New development adjacent to and near the farmstead must be compatible in scale and graduated in height (no higher than 60 feet immediately adjacent to the historic site) to be sensitive to the historic resource. Views of the farmstead from Darnestown Road, as well as other vantage points within Belward should be incorporated into future site planning and design. Reuse of the Belward Farm offers opportunities for community-serving uses such as a cultural, recreational, or educational center that could become a destination on the CCT and the LSC Loop.

The open space system for the Belward District includes an extensive network of passive and active recreation linked by an internal path system with connections to the LSC Loop and the surrounding communities. By concentrating density in a compact form (with a limited amount of taller buildings and parking garages), substantial amounts of open space can be created. Placing parks and open spaces around the edges of Belward provides compatible transitions and buffers for the adjacent single-family neighborhoods. From natural, passive areas with trails next to streams to an activated urban square at the CCT station, a range of outdoor experiences are planned, all of which would be connected by trails that allow visitors to go from one open area to another by foot. As outlined below and shown on Map 18, the Plan recommends nearly 50 acres of open space.

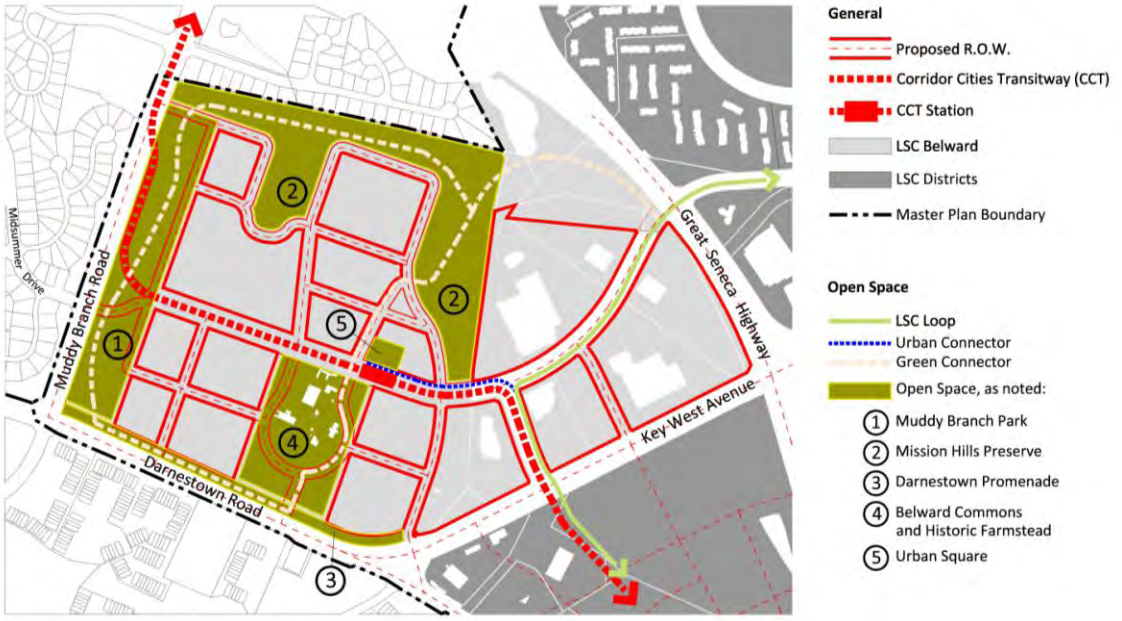
- Muddy Branch Park will consist of a minimum of 12 acres (with a minimum width of 100 feet along Muddy Branch Road) for active and passive recreation, including informal and organized playing areas and tree-lined edges at the perimeter. One rectangular field for active recreation could be provided in this area. The landmark tree in this area should be a focal point in the design of the park and open space. The park should be designed to create a sense of place and destination for existing and future residents with attractive amenities such as gardens, walking paths and water features. The Muddy Branch Trail Corridor and a countywide bikeway connection (DB-24; dual bikeway/shared use path) must be completed on the Belward side of Muddy Branch Road.
- Mission Hills Preserve will create a 200-foot wide buffer between the rear property line of the nearest Mission Hills homes and any buildings on the northern side of Belward. In addition, 200-foot wide stream buffers will be created around two tributaries of the Muddy Branch, limiting development in this portion of the property. Mission Hills Preserve, combined with the two stream buffers, will create a 20-acre area for reforestation and passive recreation that should include natural surface trails that connect with the other open spaces on the site.
- Darnestown Promenade will include a three-acre landscaped buffer (60-feet wide) along Darnestown Road that maintains vistas to the historic farmstead, includes the landmark sign (boulder and plaque), and creates a tree-lined pedestrian path that connects to the on-site path system as well as the LSC Loop. The buffer will be significantly deeper on the western portion of the site where it merges with the Muddy Branch Park. In addition, a countywide bikeway (DB-16) must be completed along Darnestown Road.
- Belward Commons and Historic Farmstead will include 10 to 12 acres of open space surrounding and including the historic farmstead buildings. Views of the farmstead from Darnestown Road and residential neighborhoods to the south and west, as well as other vantage points within the site, should be preserved to the extent practicable, consistent with other Master Plan objectives for this site. Reuse of the historic buildings offers opportunities for community-serving uses that could include active indoor recreation or cultural activities. A weekend farmers market could be established here.
- Urban Square at the CCT Station is envisioned as a hub of daily activity with space for special events and gatherings and some community retail for the convenience of CCT riders, workers, and area residents.

When a development plan application for Belward is submitted, the Planning Board should seek to maximize open space adjacent to existing residential neighborhoods and, to the extent feasible, maintain views of the historic farmstead. The Muddy Branch Park and all open spaces proposed on Belward are to be publicly accessible while remaining privately owned, constructed, and maintained. At the time of development plan approval, the Planning Board will ensure that the recreation and open space facilities in the approved development plans are built to suitable recreation standards and that the Muddy Branch Park will be substantially completed before the property owner receives building permits for more than 25 percent of the total development allowed on the property.

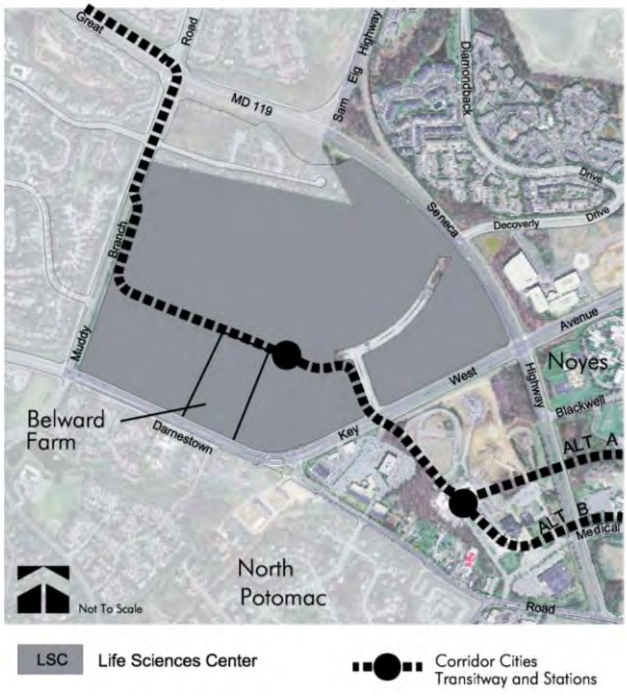
Development in accordance with this Plan should add value and enhance the quality of life in the area by creating substantial amenities, recreational opportunities, and phasing new development with

the provision of transit and infrastructure to support it. This Plan recommends that connections be created so that residents from surrounding neighborhoods have access to these amenities. Residents should be engaged throughout all phases of the Belward development review process to provide comments and suggestions on issues such as connectivity, plans for open space, and other amenities. As shown on Map 20, the Plan recommends new streets on Belward, including one aligned with Midsummer Drive that can provide access from the Washingtonian Woods neighborhood. The bikeway and trail connections mentioned above will improve access. Options for more direct links from the surrounding communities to Belward should be explored as development proceeds.

map 18 LSC Belward: Open Space



map 19 LSC Belward: Proposed Zoning



Recommendations

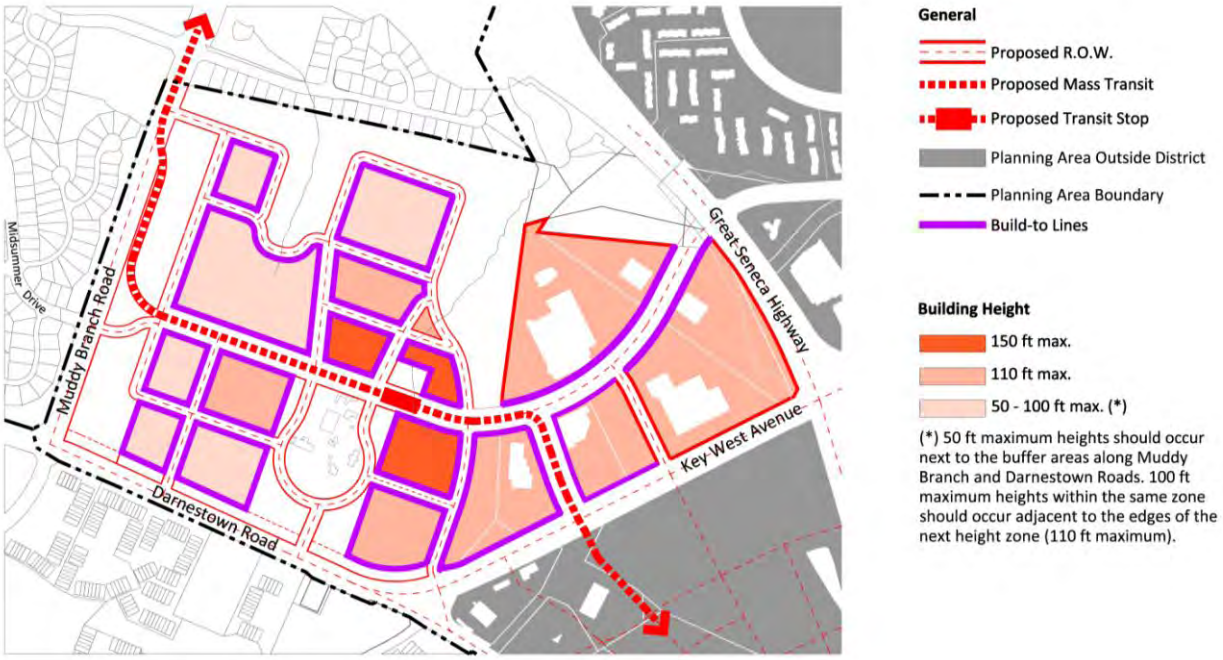
Land Use and Zoning

- Rezone the Belward property from R&D to the LSC Zone and allow up to 1.0 FAR.
- Require a Concept Plan with the first Preliminary Plan application to address the Plan's guidelines, including the CCT location, the highest densities and height at transit, preservation of the historic property and views of the farmstead, creation of a local street network and the LSC Loop, the open space system, neighborhood buffers, and connections from surrounding residential neighborhoods.
- Maintain Belward as an open campus development.
- Provide a network of active and passive open spaces.

Historic Belward Farm

- Preserve views of the farmstead, to the extent practicable, from Darnestown Road and residential neighborhoods to the south and west, consistent with other Master Plan objectives for this site.
- Step new buildings down to 60 feet (four stories) adjacent to the Belward Farm.
- Use the site, including the house and barns, for recreational, educational, social, or cultural uses that complement the community and new development.
- Preserve open space and mature trees surrounding the farmstead. Retain an environmental setting large enough to convey the agricultural character of the historic resource, between 10 and 12 acres.

map 20 LSC Belward: Urban Form

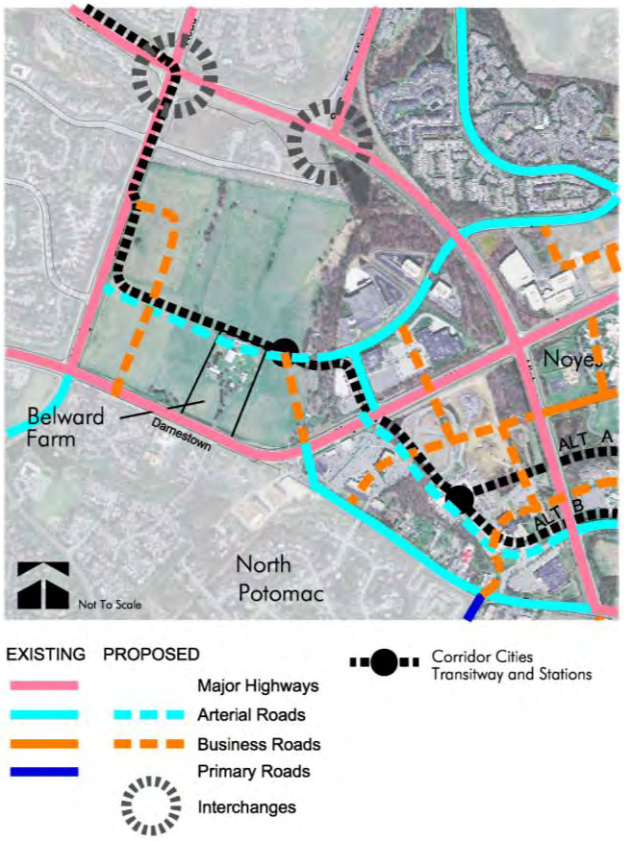


To the north and immediately adjacent to Belward is the Mission Hills neighborhood, a subdivision of 52 single-family homes in the City of Gaithersburg. Across Muddy Branch Road to the west are the Washington Woods and Westleigh neighborhoods, also in the City of Gaithersburg. South of Darnestown Road are the North Potomac neighborhoods, in the County's 2002 Potomac Subregion Master Plan.

Urban Form and Open Spaces

- Concentrate the highest density and building heights (150 feet) near the CCT station.
- Organize the significant roads and buildings to provide views of the historic Belward Farm.
- Complete the Muddy Branch Trail Corridor from Dufief Mill Road and Darnestown Road to Great Seneca Highway along the Belward property on the east side of Muddy Branch Road.
- Create the LSC Loop along Medical Center Drive and Decoverly Drive to connect pedestrians with other transit centers, the network of natural pathways along the stream buffers, and the open spaces.
- Preserve the landmark tree on the Muddy Branch Road side of the property.
- Include the following public open spaces:
  - LSC Loop
  - stream buffers that may include natural surface trails
  - Belward Farm environmental setting
  - urban square at the CCT station
- Provide at least 20 percent of the net tract areas as public use space.
- Create an open space along Muddy Branch Road with a minimum width of 100 feet and a 60-foot landscaped buffer along Darnestown Road.
- Provide one rectangular field for active recreation in the Muddy Branch Park, with permitting by the Parks Department.
- Preserve and augment the trees along the northern boundary as a transition to the existing single-family houses in Mission Hills.
- Provide a 200-foot buffer along the property's northern edge, adjacent to Mission Hills, between the property line of the single-family homes and any buildings on Belward.
- Provide a 100-foot wide stream buffer on either side of the two tributaries of the Muddy Branch.

map 21 LSC Belward: Mobility



Mobility

- Provide a CCT station on the Belward property along Decoverly Drive extended near the intersection with Medical Center Drive extended.
- Extend Decoverly Drive across Great Seneca Highway into and through the Belward site to Muddy Branch Road.
- Create a network of new streets with short blocks.
- Provide a comprehensive pedestrian network throughout Belward with an emphasis on easy and convenient access to the proposed CCT station.
- Implement the LSC Loop, including natural surface trails through the stream valleys and connected paths and sidewalks throughout the site and in the perimeter buffer areas.
- Build the proposed trail connection (a non-park connector between recreational trails/bikeway) on the east side of Muddy Branch Road from Darnestown Road to Great Seneca Highway.
- Improve connections and access from surrounding neighborhoods to enable residents to easily access the CCT station, the LSC Loop, the historic site, as well as other amenities in the Belward District.
- Widen Key West Avenue (MD 28) to 8 lanes divided.
- Construct interchanges at Great Seneca Highway (MD 119) and Sam Eig Highway and at Great Seneca Highway (MD 119) at Muddy Branch Road.

LSC North and Washingtonian Cluster: Residential and Office

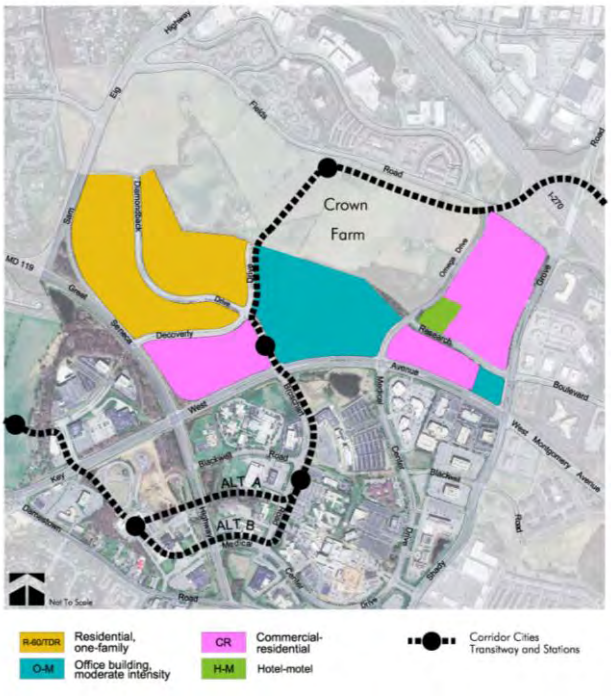
The 195-acre LSC North District is developed with several office parks, including DANAC, the National Association of Securities Dealers, Shady Grove Executive Center, and the Bureau of National Affairs. These properties are zoned I-3, O-M, and C-2. LSC North also includes the residential communities of Decoverly, with 1,144 townhouse and multifamily units along Diamondback Drive west of Decoverly Drive. The Washingtonian residential area is part of this Master Plan, but is geographically separated from the Life Sciences Center by the Crown Farm, which is in the City of Gaithersburg. The Washingtonian cluster is a housing resource for those who work in the LSC. As such, for purposes of staging, this area is included in the total amount of existing and approved dwelling units (3,300).

The LSC North CCT station is located on the east side of the DANAC property as part of the CCT alignment through the LSC. The Plan recommends that the DANAC property be rezoned from the I-3 Zone to a CR Zone. Rezoning DANAC to a mixed use zone with higher density will take better advantage of this transit station location. The DANAC parcel on the southeast corner of Key West Avenue and Diamondback Drive (the 6.93-acre Lot 7) is largely undeveloped and is adjacent to the proposed CCT station on the east side of the property. The recommended Zone for this parcel (Lot 7) is: CR 2: C 1.5, R 1.5, H 150. The remainder of the DANAC property should be zoned CR 1.0: C 0.5, R 1.0, H 80. Building height along Decoverly Drive adjacent to the residential community to the north is limited to 50 feet within 100 feet of the Decoverly Drive right-of-way (not including the 50-foot transit right-of-way).

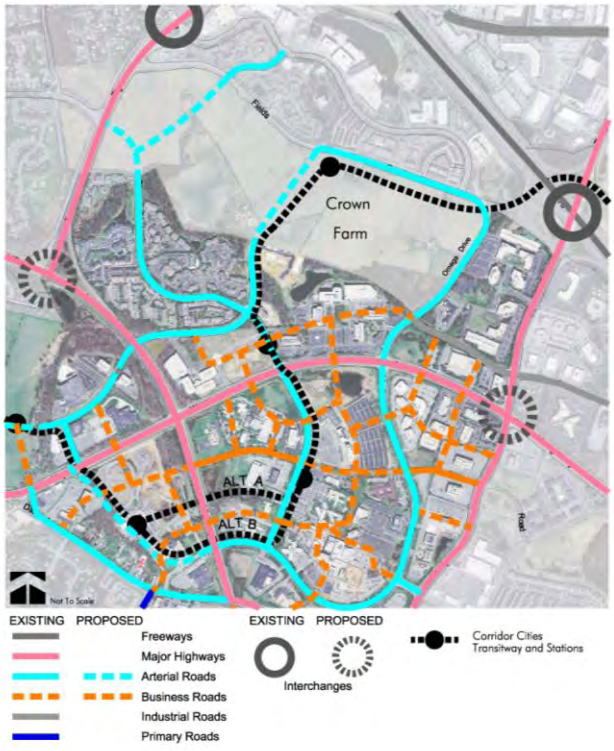
The Plan does not recommend any zoning change to the National Association of Securities Dealers site. The Plan encourages mixed-use infill for the Shady Grove Executive Center and Bureau of National Affairs sites and recommends CR 1.5: C 1.5, R 1.5, H 100. Residential uses are encouraged, as are pedestrian-oriented local retail facilities that are compatible with and provide convenience for residents. Public benefits that improve connectivity and mobility or add to the diversity of uses and activity are encouraged. These should include the LSC Loop along Omega Drive as well as pedestrian connections to CCT stations at DANAC and Crown Farm.

map 22 LSC North: Urban Form

map 23 LSC North: Proposed Zoning



map 24 LSC North: Mobility



Recommendations

- Extend Decoverly Drive north from its current terminus, into and through the Crown Farm to Fields Road.
- Extend Diamondback Road north from its current terminus into and through the Crown Farm to Fields Road.
- Rezone DANAC from the I-3 Zone to the CR Zone.
- Rezone the Shady Grove Executive Center property from the C-2 and O-M zones to the CR Zone.
- Rezone the Bureau of National Affairs property from the O-M Zone to the CR Zone.
- Provide for the LSC Loop, to be accompanied with the CCT from Fields Road to Diamondback Drive, and then along Decoverly Drive and across Great Seneca to the Belward site.
- Widen Key West Avenue (MD 28) to eight lanes divided.
- Construct interchanges at Great Seneca Highway (MD 119) and Sam Eig Highway and at Key West Avenue (MD 28) at Shady Grove Road.

LSC South: Mixed-Use Center

This 245-acre district south of Darnestown Road includes the Traville community's retail and residential uses, Human Genome Sciences (HGS), and the Universities at Shady Grove, an innovative academic center that is part of the University System of Maryland.

LSC South is in the Watts Branch Watershed and is part of the Piney Branch sub-watershed, which was designated a Special Protection Area (SPA) due to its fragile ecosystem, unusually good water quality, and susceptibility to development pressures. SPAs require approval of a water quality plan demonstrating a high level of stormwater control and treatment. Accordingly, this Plan recommends minimal additional development.

The retail and residential developments at Traville are built-out, with approximately 100,000 square feet of retail and 750 dwelling units, 230 of which are senior housing. The HGS site is approximately half built-out. The Universities at Shady Grove have produced a master land use plan for their site, which is approximately half built-out.

This Plan recommends that the 5.2-acre property on the southeast corner of Darnestown Road and Travilah Road be rezoned from C-4 to CR 0.75: C 0.5, R 0.75, H 80 to allow the possibility of mixed-use or residential development at this corner.

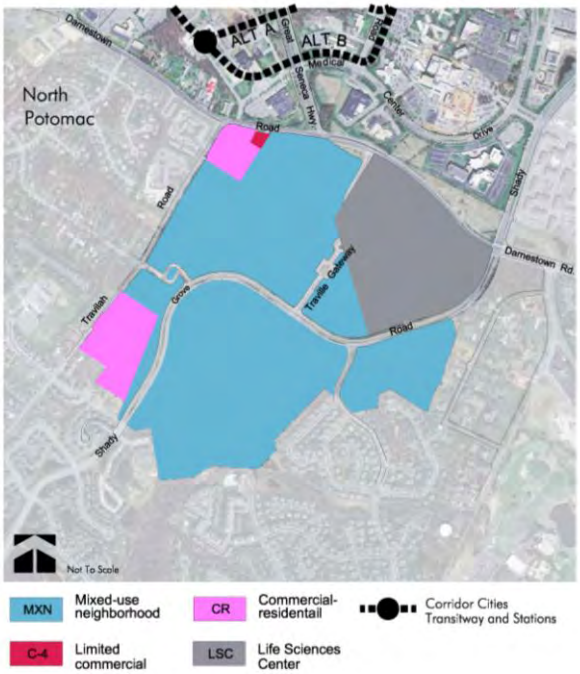
Only the 13-acre Rickman property on Travilah Road is undeveloped. The Plan recommends the Rickman property be rezoned from the R&D Zone to CR 0.5: C 0.5, R 0.5, H 80. The CR Zone has a height limit of 40 feet for standard method development. However, a maximum height of 80 feet on this property could be considered to minimize imperviousness and encourage compact development, which may include parking underneath buildings (ground-level). The Rickman property is not subject to the Staging requirements.

The Piney Branch SPA bisects the Rickman Property. A key to protecting water quality in the SPA is limiting impervious surfaces. Development within this SPA requires a water quality plan that details how stormwater runoff will be managed to prevent further degradation to water quality in the SPA. The water quality plan is prepared by the developer and reviewed and approved during the development review process. Guidelines for the development of the Rickman property are provided below. In addition, a population of state endangered Krigia dandelion is located east of the property along Shady Grove Road. The road was specifically aligned to avoid disturbance of this plant. Further development in this area should avoid disturbance of this population and provide a buffer area from new uses.

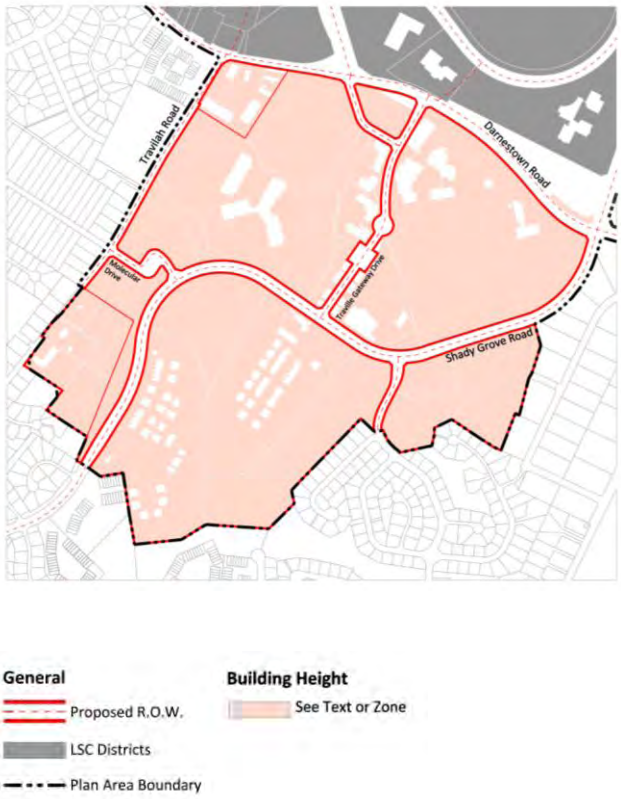
This Plan encourages the physical and visual integration of LSC South with the areas north of Darnestown Road, through building design and massing, street character and improved connections across Darnestown Road, and access to the CCT stations at LSC Central and West. These stations are between one-half to three-quarters of a mile (a 10-15 minute walk) from LSC South destinations. With higher density development around the CCT stations, the transit locations will become more visible and recognizable as landmark features.

HGS and USG, along the south side of Darnestown Road, have developed as campus-style, inward-focused designs with parking lots adjacent to Darnestown Road. Future development at these sites should create a building edge along Darnestown Road near Great Seneca Highway. On the north side of Darnestown Road, redevelopment of the PSTA site will also create opportunities for new buildings to address the street edge, especially the corner of Darnestown Road and Great Seneca Highway.

map 25 LSC South: Proposed Zoning

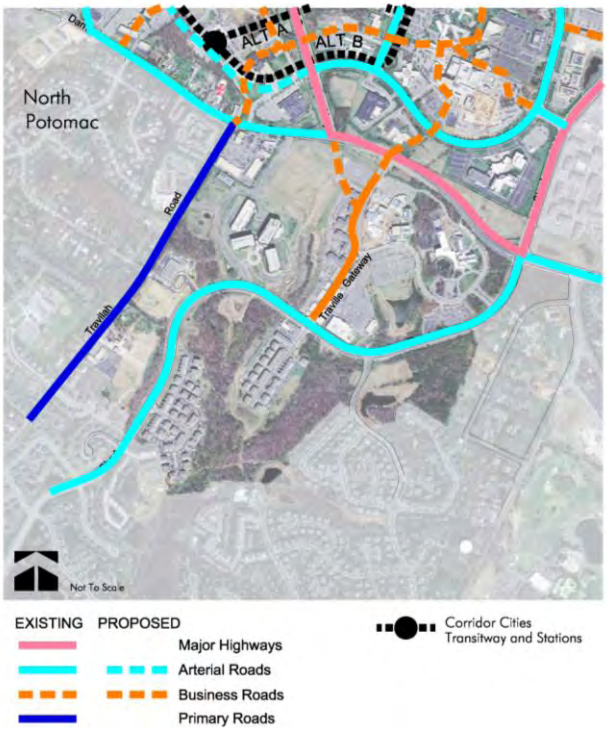


map 26 LSC South: Urban Form

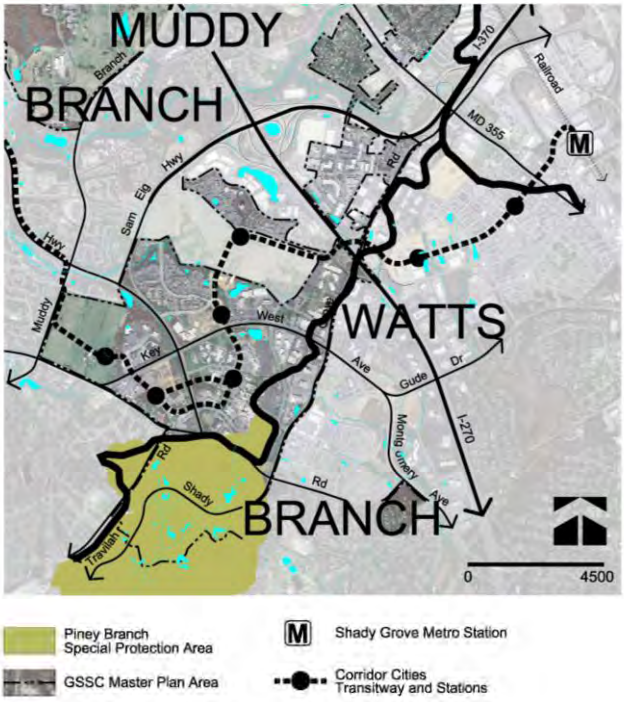


Extending Great Seneca Highway as a local business district street south of Darnestown Road provides an additional, signalized access point for LSC South. This proposed improvement should be coordinated with HGS's and USG's future plans, including their internal street network. A major benefit of improving the intersection of Great Seneca Highway and Darnestown Road would be to provide direct access, particularly for pedestrians and bicyclists, between LSC South and the proposed CCT station at LSC West.

map 27 LSC South: Mobility



map 28 Watersheds



Recommendations

- Rezone the Rickman site to CR 0.5: C 0.5, R 0.5, H 80. Development of the property must address the following guidelines.
  - Minimize impacts to the SPA by orienting buildings and parking nearer Travilah Road, outside the SPA boundary to the extent feasible.
  - Ensure proper sediment control during construction.
  - Consider parking underneath buildings (ground-level), compact development design, and other techniques to minimize impervious surfaces.
  - Consider placing recreation facilities that are not noise-sensitive closer to Shady Grove Road.
  - Consider meeting afforestation requirements in the area adjacent to the existing protective strip along Shady Grove Road to enhance protection of the Krigia dandelion population.
- Rezone the property at the southeast corner of Darnestown Road and Travilah Road from the C-4 Zone to CR 0.75: C 0.5, R 0.75, H 80.
- Protect the Piney Branch sub-watershed and support the SPA by limiting development in LSC South beyond existing and approved projects to only the undeveloped Rickman parcels on Travilah Road.
- Extend Great Seneca Highway as a business district street south of Darnestown Road.
- Improve pedestrian connections between LSC South and areas to the north—LSC West and LSC Central—emphasizing pedestrian access to the future transit stations.
- Construct Traville Local Park and provide connections to the LSC Loop.

LSC Circulation

The Plan provides a comprehensive transportation network for all modes of travel, including bicycle and pedestrian routes and constructing the the CCT through the LSC. The local street network will supplement existing arterials by extending and connecting existing roads, and by creating new streets. In addition to the specific mobility recommendations for each district, this section provides overall transportation goals and guidelines for the LSC.

An enhanced and expanded transportation network will:

- better integrate and connect the five LSC districts
- improve local circulation and take trips off the major roads
- improve the pedestrian environment
- provide access to transit by creating short, walkable blocks directly connected to CCT stations.

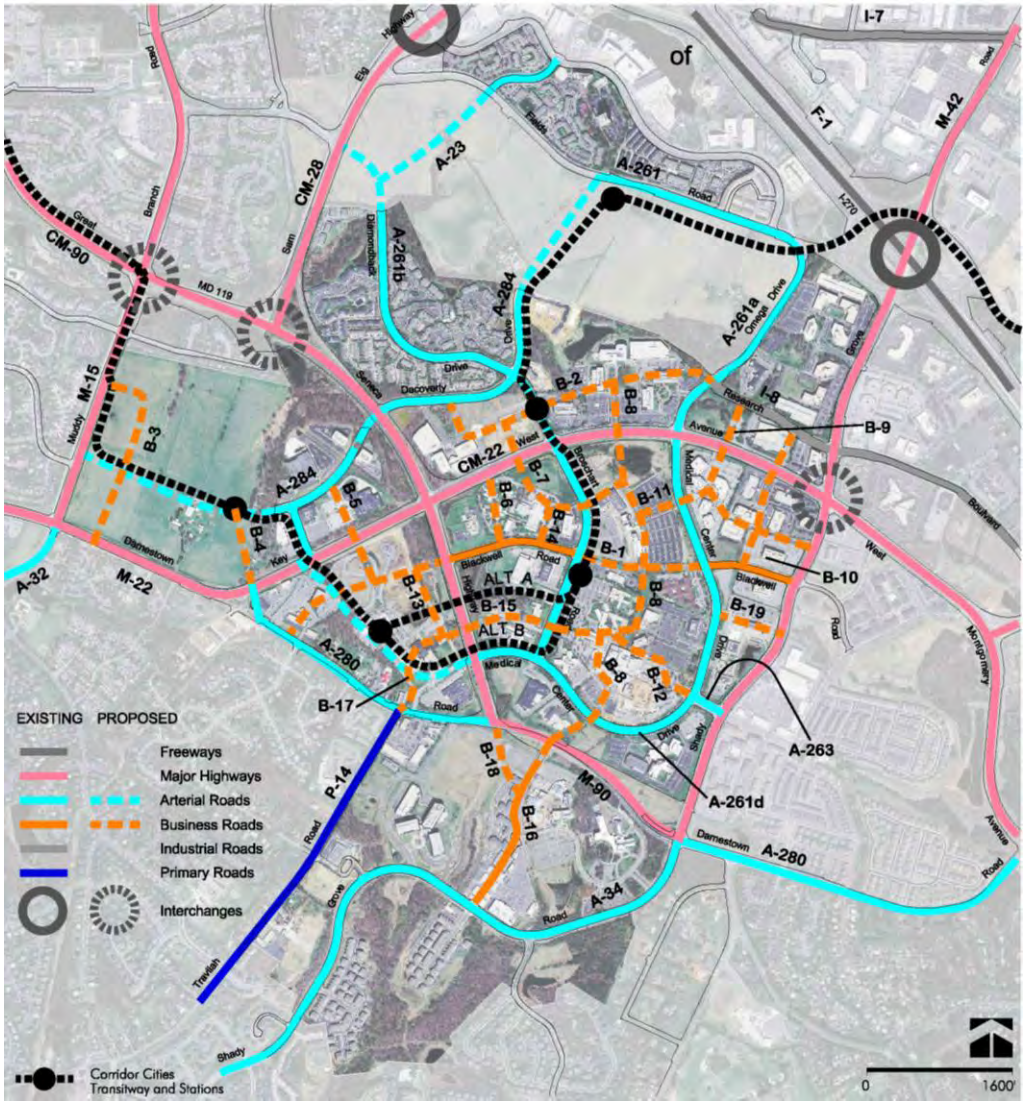
Street System

This Plan recommends a network of major highways, arterial roads, and local streets that provide safe access and help shape the community's character. The Plan includes recommendations for major infrastructure projects to support future growth and development based on buildout of the LSC to the proposed maximum zoning capacity. Maximum zoning capacity is not always achieved and some of the street network recommendations may not be necessary. Staging of development and infrastructure provision, particularly the CCT, is addressed in the Implementation section. A biennial monitoring program will assess the pace of buildout and the need for infrastructure delivery.

The proposed local street network will create a finer grid and improve vehicular and pedestrian connections between the districts. Streets and transit tie the districts together. The LSC Loop unifies the pedestrian and bicycle circulation system with sidewalks, bikeways, trails, and paths that provide mobility and recreation options.

The local street network should be built to business district street standards with sidewalks on both sides. Business district streets are generally two lanes with parking on one side (60-foot right-of-way) or both sides (70- or 100-foot right-of-way) and should include curb extensions at crosswalks to further reduce pedestrian exposure to vehicular traffic. The proposed streets on the LSC Circulation map are intended to show the general locations of new streets, not the actual alignments. Specific alignments of proposed streets will be determined through the regulatory development review process.

map 29 LSC Circulation



Recommendations

- Augment the master planned street network to include a grid of business district streets with 60-, 70-, and 100-foot right-of-ways. Master planned streets should be consistent with the design standards in the County Code. Exceptions to this treatment include portions of Key West Avenue and Sam Eig Highway, which will require separate design treatments.
- Design local streets and intersections with pedestrian-friendly characteristics such as minimal corner radii, special crosswalk pavement, wide sidewalks, and street trees.
- Reconstruct Sam Eig Highway as a grade-separated highway within a 250-foot right-of-way or other right-of-way necessary to adequately provide: three through lanes in each direction; bus rapid transit (BRT); two-lane, one-way frontage roads connecting to Washingtonian Boulevard, Fields Road, and Diamondback Drive; necessary slip ramps between frontage roadways and Sam Eig Highway; and a full movement grade-separated interchange between Great Seneca Highway and Sam Eig Highway.
- Reconstruct Key West Avenue within a 200-foot right-of-way between Darnestown Road and Shady Grove Road to provide a consistent design treatment including a wide landscaped median, eight through travel lanes (four in each direction), and a separate curb lane that can serve as a through lane for transit vehicles and a right turn lane for other vehicles during peak periods.

- Construct urban diamond, grade-separated interchanges at two LSC locations: Great Seneca Highway at Muddy Branch Road and Key West Avenue at Shady Grove Road.
- Delete the proposed grade-separated interchange from the intersection of Shady Grove and Darnestown Roads and from the intersection of Darnestown Road and Glen Mill Road (previously recommended in the 1990 *Shady Grove Study Area Master Plan*).
- Delete the proposed grade-separated interchange at Great Seneca Highway and Key West Avenue (previously recommended in the 1990 *Shady Grove Study Area Master Plan*).
- Develop a LSC bicycle network that facilitates bicycle travel in mixed traffic along local streets. This network should include an interconnected system of shared use paths (Class I bikeways) and shared signed roadways with wide curb lanes (Class III bikeways) or paved shoulders (Class II bikeways).
- Implement the LSC Local Bikeway network described in the Implementation section.

Transit System

Project planning for the CCT takes into account the potential need to reconfigure existing bus service to avoid duplication and ensure the most efficient allocation of vehicles and personnel. There are currently six Ride On routes from the Shady Grove Metro Station, three of which provide service to the LSC area, including Shady Grove Adventist Hospital and the Traville Transit Center. When the CCT is in place, these routes may need to be adjusted to ensure the most efficient service.

Recommendations

- To reduce delays for transit and vehicles, CCT grade-separations at Key West Avenue and Great Seneca Highway may be required.
- Explore express bus service using value-priced lanes from I-270 and the Intercounty Connector (ICC) to serve the LSC.
- Explore shuttle bus routes serving the LSC area.

Travel Demand Management

With development focused in the LSC, the Plan recommends an aggressive non-auto driver mode share goal. The current mode share in the LSC area is roughly 16 percent. The proposed goal of 30 percent relies on a combination of land use (density, diversity, and design) and zoning requirements, transit improvements (including the CCT), Travel Demand Management (TDM) programs, and staging.

Recommendations

- Actively manage parking supply and demand and promote shared parking efficiencies, particularly relieving the requirement for smaller properties to self-park. Public/private parking agreements should be encouraged as private properties redevelop and potentially act as a funding source for the CCT.
- Define public garage sites at Preliminary Plan for publicly-owned properties in LSC Central (near Shady Grove Adventist Hospital) and LSC West.
- Establish long-term parking space capacity limits in LSC Central, LSC West, and LSC Belward.
- Establish a 30 percent non-auto driver mode share goal for LSC employees.

areas and enclaves

The areas and enclaves are the portions of this Plan outside of the Life Sciences Center.

The *areas* include the western communities of Quince Orchard and the McGown property that are contiguous to County land. Over time, due to municipal annexations, *enclaves* have been created—geographic areas that are within the County's jurisdiction, but are completely or nearly completely surrounded by a municipality.

Five of the enclave areas are within the City of Gaithersburg and one (Hi Wood) is within the City of Rockville:

- The National Institute of Standards and Technology (NIST)/Londonderry-Hoyle's Addition
- Rosemont
- Oakmont and Walnut Hill
- Washingtonian Residential
- Washingtonian Light Industrial Park
- Hi Wood.

For the most part, these areas are built-out with stable, mature residential neighborhoods, long-term institutional uses, or light industrial uses. While significant change is not anticipated or recommended for most of these areas, this section highlights several issues, including the need for a new local park in the Quince Orchard area. Existing land use and zoning maps for the Plan area are included in this section.

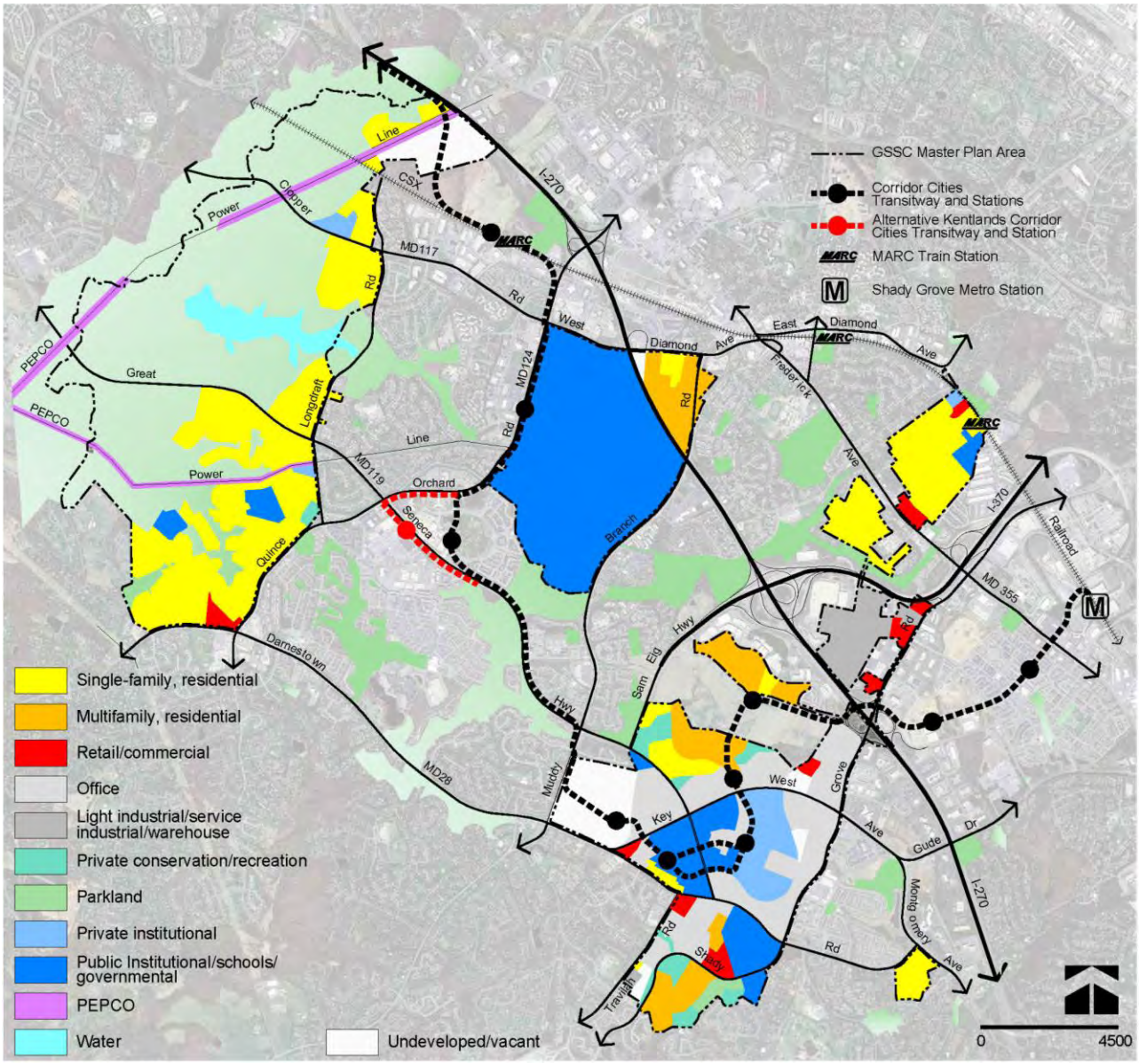
Areas

Quince Orchard

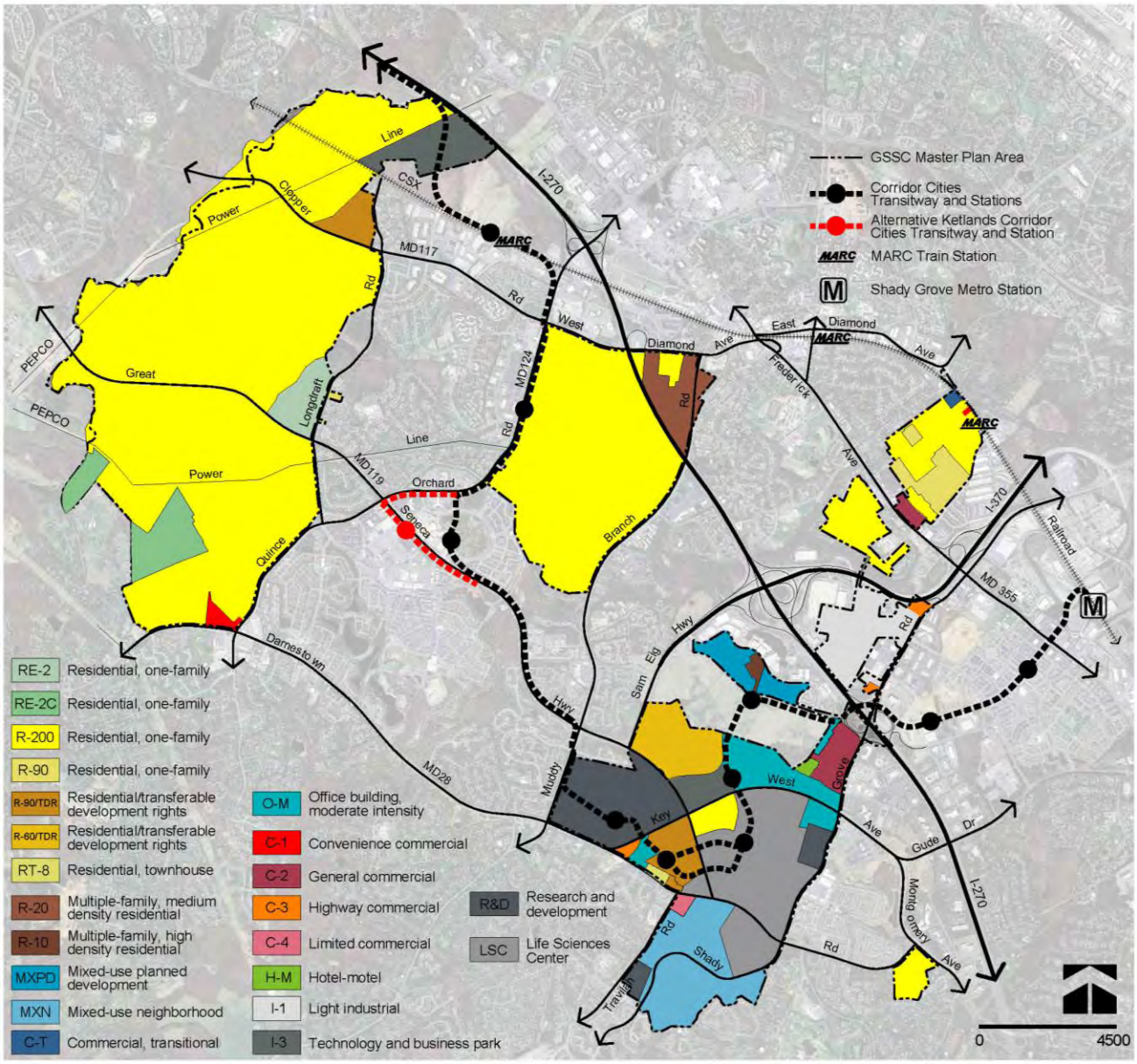
The communities in the westernmost part of the Plan area are Quince Orchard, Orchard Hills, Willow Ridge, and Parkridge. The Plan recommends that these residential neighborhoods be maintained and preserved.

Quince Orchard and Longdraft Roads divide the County from the City of Gaithersburg. The City's 2009 Maximum Expansion Limits (MEL) include extensive areas in the vicinity of Quince Orchard. This Plan does not support annexation, which would alter the logical boundaries that currently divide the County and the City and could result in the loss of potential sites for County parks, as occurred when the Crown Farm was annexed into the City of Gaithersburg.

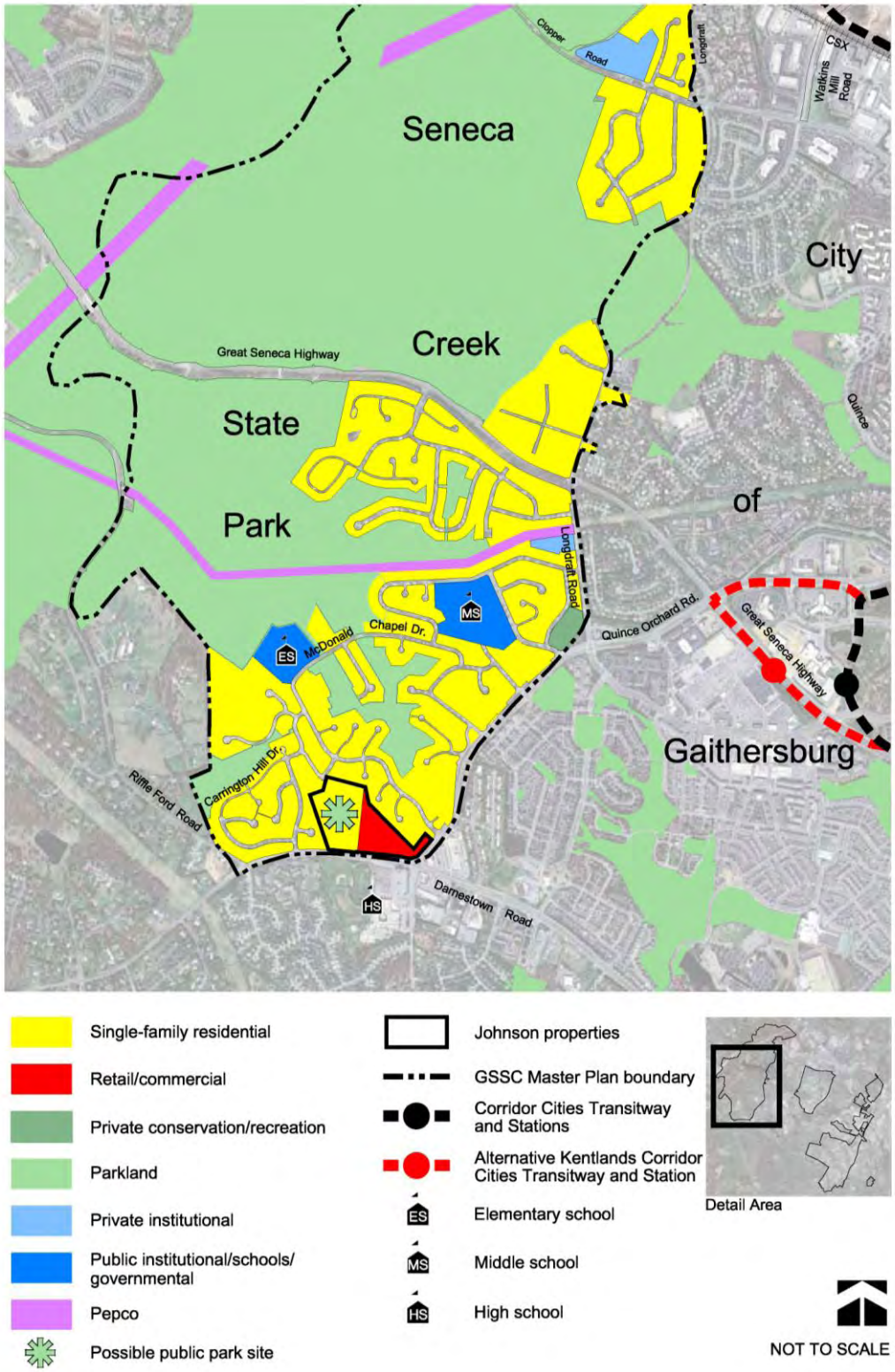
map 30 Area-wide Existing Land Use



map 31 Area-wide Existing Zoning



map 32 Quince Orchard: Existing Land Use



Areas east of Quince Orchard and Longdraft Roads are generally within the City of Gaithersburg. Areas west of these roads and east of Seneca Creek State Park are in the GSSC Master Plan. Areas south of Darnestown Road are covered by the County's 2002 Potomac Subregion Master Plan.

Parks

Parks are essential components of community life that protect the environment, establish neighborhood identity, and provide valuable recreational opportunities. They should be designed as part of a comprehensive open space system that supports recreation, a sense of place, and a sustainable community.

The Quince Orchard Area includes:

- Seneca Creek State Park (1,842 acres)
- Orchard Neighborhood Park (12.3 acres) – Carrington Hill Drive
- Quince Orchard Valley Neighborhood Park (89.2 acres) – Suffolk Terrace.

The *Countywide Park Trails Plan* proposes a 250-mile interconnected system of hard surface and natural surface trails in eight greenway corridors. The Seneca Greenway Corridor forms the Plan area's western boundary and provides a continuous 25-mile natural surface trail along Seneca Creek between the Potomac and Patuxent Rivers. Connections to Seneca Greenway Corridor from Quince Orchard Valley Neighborhood Park should be provided.

The *Land Preservation, Parks, and Recreation Plan* (LPPRP) provides recommendations and policy guidelines for future park development. The LPPRP noted the need for additional recreation facilities in the I-270 Corridor including four rectangular fields.

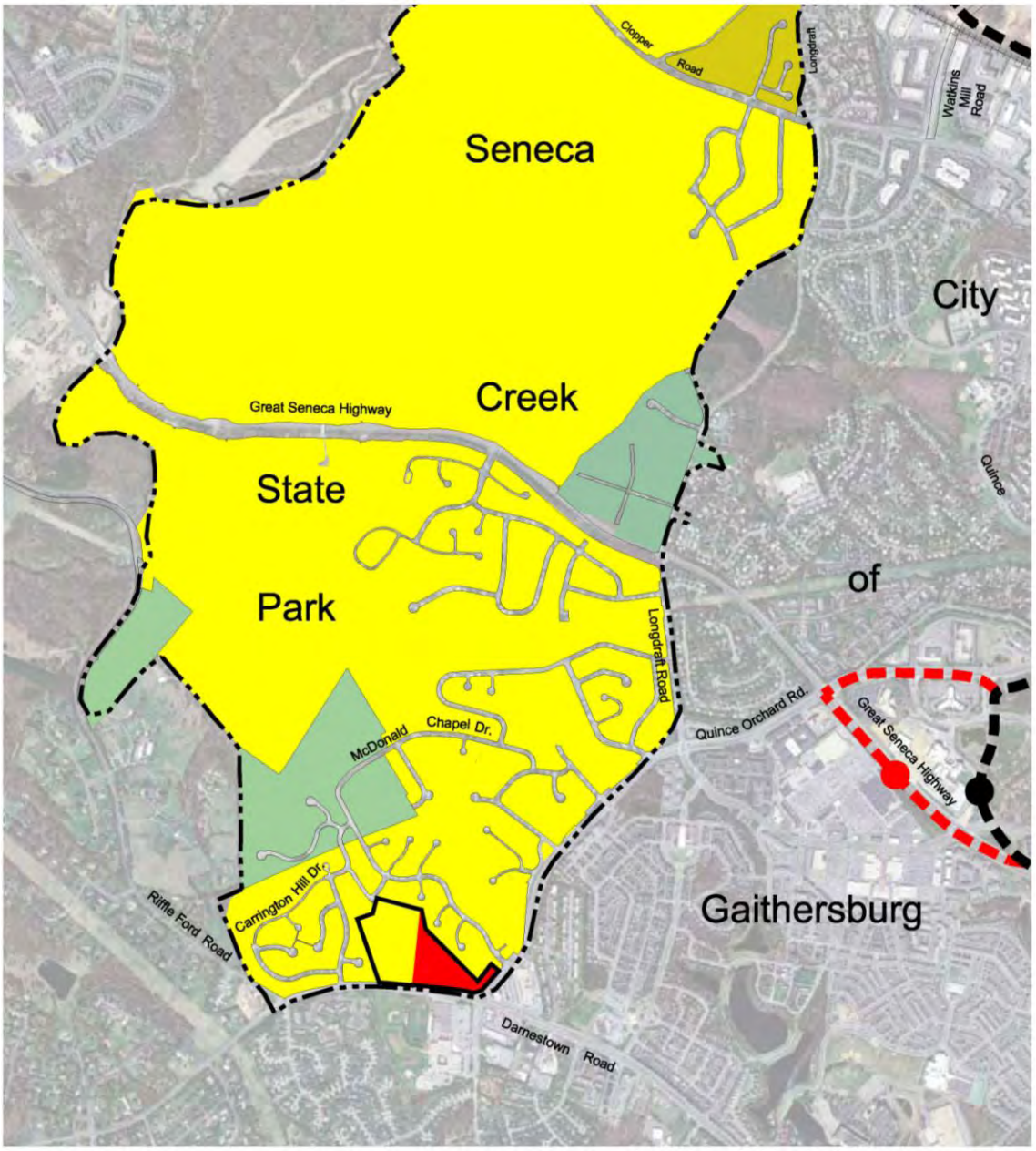
The 1985 *Gaithersburg Vicinity Master Plan* and the 1990 *Shady Grove Study Area Master Plan* both recommended a 10-acre local park on the Crown Farm, which has since been annexed into the City of Gaithersburg and is no longer available for a County park site. Consideration should be given, but not limited to the Johnson property at 12311 Darnestown Road. The Johnson family owns the largely vacant R-200 14-acre parcel on Darnestown Road along with the adjacent C-1 commercial property. Ideally, a new local park would provide two rectangular fields for active recreation. If the R-200 parcel is not acquired as an active recreation park site, the parcel may be appropriate for residential use including single family detached and townhouse units. Townhouse development could be requested through a Local Map Amendment.

Longdraft Road

In 2008, the Montgomery County Department of Transportation (MCDOT) completed a Facility Planning Study of Longdraft Road between Clopper and Quince Orchard Roads and made recommendations for upgrades. The County Council chose not to proceed with Phase II of the Longdraft Road facility plan.

Longdraft Road is currently two lanes, and for most of its length it has no curbs, gutters, shoulders, or sidewalks. Along the 1.5-mile stretch that was studied, 30 residential driveways and 13 intersections result in a large number of turning movements. Due to travel demand forecasts and the extension of other area roads, improvements to Longdraft Road may be needed to reduce existing and future congestion and improve vehicular and pedestrian safety. This Plan recommends that Longdraft Road be retained in the *Master Plan of Highways* as a four-lane arterial road.

map 33 Quince Orchard: Existing Zoning



- Retain the existing residential and commercial zones and maintain the established character of these neighborhoods.
- Address the demands for active recreation in this area by acquiring land for a local public park.
- Provide a natural surface trail connecting Quince Orchard Valley Neighborhood Park to the Seneca Greenway Corridor.
- Retain Longdraft Road as a potential four-lane arterial road.
- Promote planting street trees and neighborhood trees.

McGown Property

The McGown property is a largely undeveloped tract south of I-270 adjacent to the City of Gaithersburg. It includes a 65-acre parcel zoned I-3 and a 10-acre parcel zoned R-200. Access is currently via Game Preserve Road, a narrow, two-lane road adjacent to Seneca Creek State Park that includes a one-lane tunnel under the CSX tracks.

Much of the property is wooded, including some high quality forest. Seneca Creek State Park lies near the property to the west and the topography includes some significant steep slope areas. Large scale development in this area will have the potential for significant negative impacts to stream conditions unless the development is carefully designed to maintain the natural topography, and the infiltration and runoff rate of the existing landscape.

The Plan recommends that Environmental Site Design (ESD) techniques be employed to minimize any negative water quality impacts, but negative impacts will occur. The degree of recovery of the stream will depend on the extent to which ESD design is successfully applied to the area. Tributary streams draining the northern and southern portions of the McGown property and streams south of Great Seneca Highway east of the Seneca Creek mainstem in the Quince Orchard area are among those identified as priorities for stream restoration in the Great Seneca and Muddy Branch Watershed Study.

The 10-acre, R-200 parcel features steep slopes, a mature oak-hickory forest with birds common to an interior woodland, as well as mature mountain laurel in the understory with a minimal presence of invasive species. The Plan recommends that this high quality forest be preserved through a forest conservation easement or other method to be determined through the development review process.

The proposed CCT is planned to run diagonally across the McGown property, with a stop co-located with the MARC Metropolitan Grove Station. A CCT maintenance facility is also being considered adjacent to the CSX rail line.

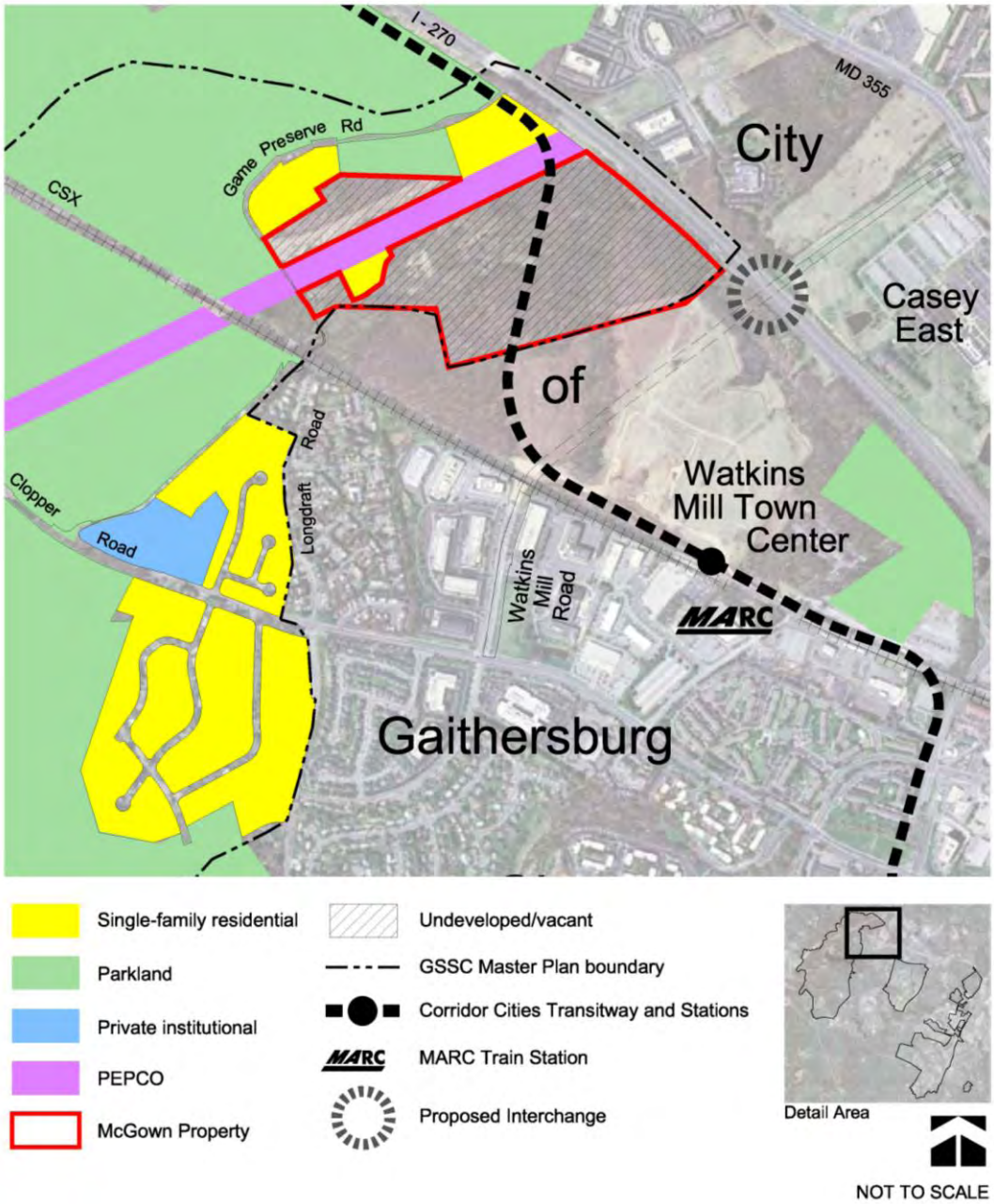
The City of Gaithersburg has approved two mixed-use developments adjacent to the McGown property: Watkins Mill Town Center to the south and Casey East between I-270 and MD 355. The Town Center project includes a 27-acre city park and the Casey East project includes a site for the 6th District Police Station. To provide access to the City's mixed-use developments, several new roadway improvements would be required, including access ramps to I-270 that extend onto the McGown property.

The McGown property is within the City of Gaithersburg's Maximum Expansion Limits (MEL). Since this property is somewhat isolated and disconnected from any centers of growth planned in the County, annexation into the City of Gaithersburg may be appropriate. Annexation would allow for a comprehensive and coordinated development that would be compatible with the adjacent mixed-use projects approved by the City of Gaithersburg. This Plan supports a moderate density, mixed-use development on the McGown property.

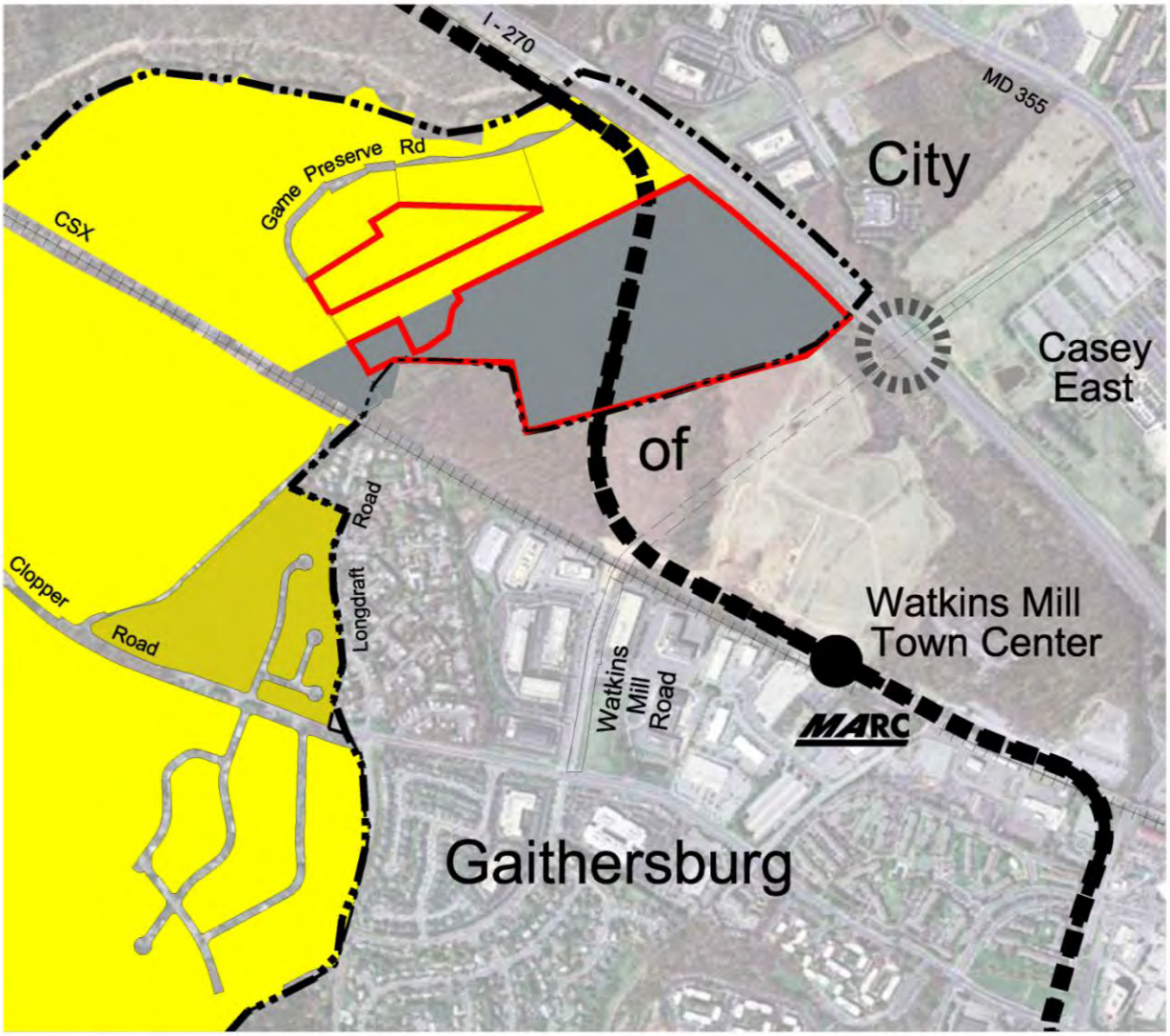
Recommendations

- Coordinate planning with the City of Gaithersburg.
- Consider the Planned Development Zone at a moderate density (10-15 units per acre).
- Preserve the property's natural resources, particularly the high quality, mature forest on the 10-acre parcel.
- Preserve and create connections to Seneca Creek State Park.
- Provide right-of-way for Watkins Mill Road extended.

map 34 McGown Property: Existing Land Use



The McGown property is two parcels divided by the PEPCO right-of-way: a 65-acre site zoned I-3 and a 10-acre site zoned R-200. It borders Seneca Creek State Park to the northwest and the City of Gaithersburg to the south and east.


I-270
MD 355
City
of
Casey
East
Game Preserve Rd
CSX
Clopper
Road
Longdraft
Road
Watkins Mill
Town Center
Watkins
Mill
Road
MARC
Gaithersburg
R-200 Residential, one-family
R-90/TDR Residential/transferable development rights
I-3 Technology and business park
McGown Property
GSSC Master Plan boundary
Corridor Cities Transitway and Stations
MARC Train Station
Proposed Interchange
Detail Area
NOT TO SCALE

- Establish access points to the McGown property from Watkins Mill Road extended.
- Provide off-ramp right-of-way for the proposed new interchange at I-270 and Watkins Mill Road.
- Establish and provide CCT right-of-way and provide for a transit station co-located with the MARC station in the City of Gaithersburg.

Enclaves

©Robert Rathe

The five enclaves that are completely or nearly completely surrounded by the City of Gaithersburg are all within the City's Maximum Expansion Limits (MEL) and could be considered for annexation. This Plan does not recommend significant changes for these areas.

National Institute of Standards and Technology (NIST)

NIST is a federal agency that promotes innovation and industrial competitiveness by advancing measurement sciences, standards, and technology. NIST researchers work with industry, academic institutions, and other government agencies. The 580-acre Gaithersburg facility has 3.4 million square feet in a campus style research, development, and office complex. There are no plans to significantly expand the facility, which is zoned R-200.

A CCT station is planned on the western side of the NIST facility. With 5,000 employees (2,700 permanent and 2,300 contract), this station offers an opportunity to change commuting patterns and is an important link in the future public transit network.

Recommendations

- Coordinate with NIST to plan for the proposed CCT station along Quince Orchard Road.
- Refer all plans for development at NIST, including campus master plans, to the Montgomery County Planning Board as part of the mandatory referral process.
- Preserve mature trees and forest.
- Target stream buffer areas for forest planting and removal of invasive plants.

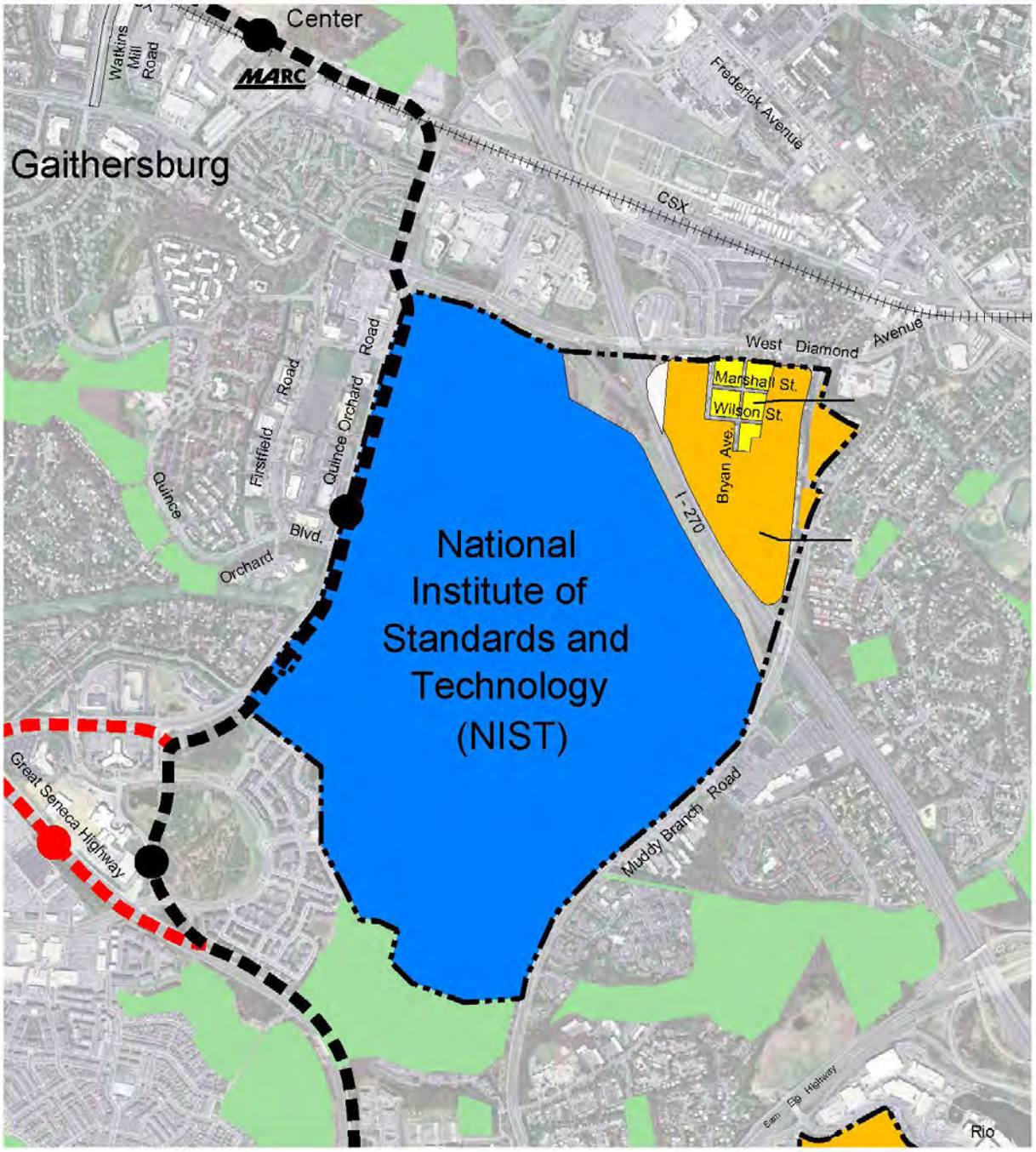
Londonderry and Hoyle's Addition

Both the Londonderry and Hoyle's Addition areas are appropriate for annexation into the City of Gaithersburg. Hoyle's Addition may be appropriate for townhouse zoning in the future. Any future development should provide appropriate transitions to the surrounding residential areas and protect the natural features.

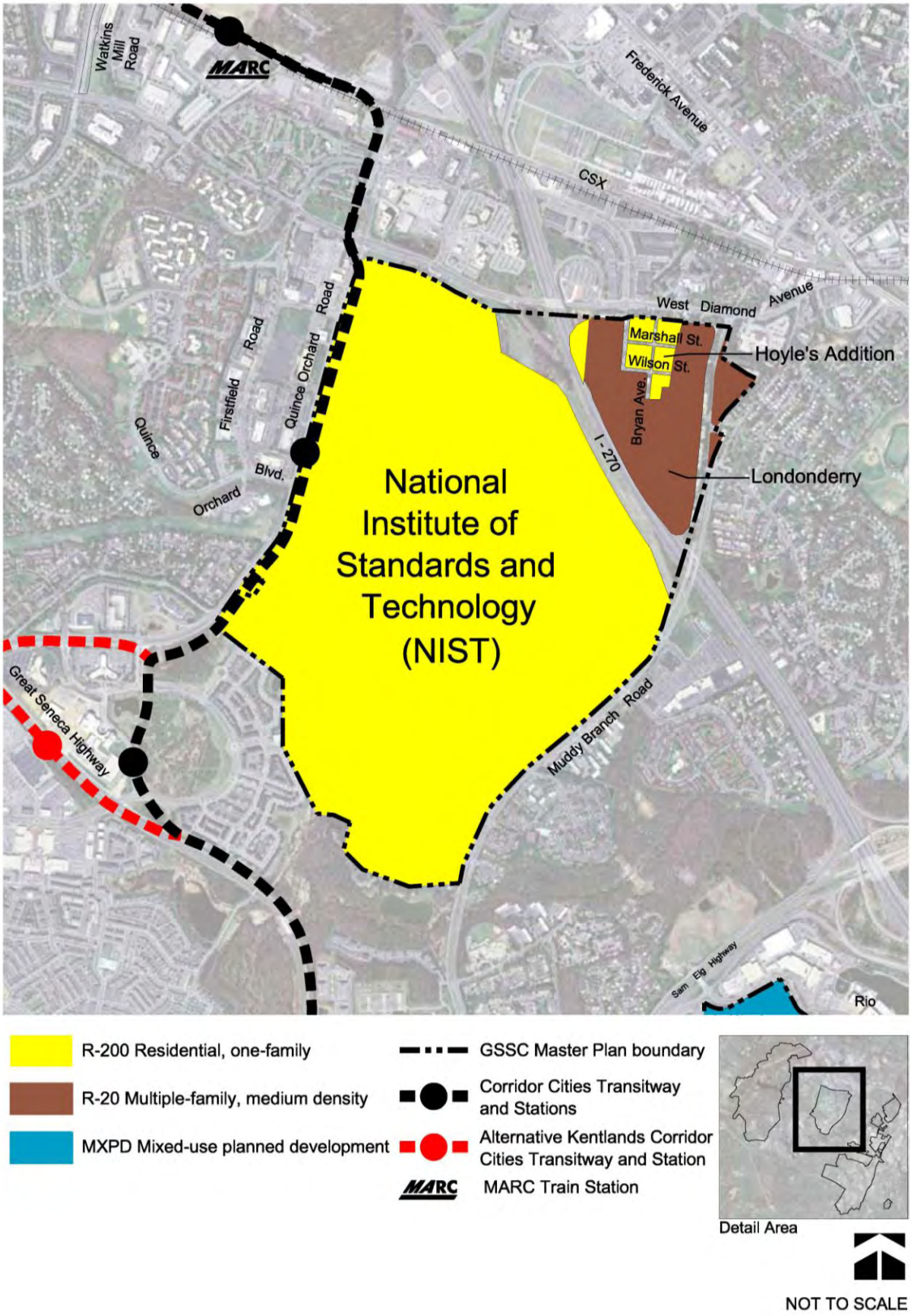
Recommendations

- Annexation of these areas into the City of Gaithersburg is logical and consistent with the City's MEL.
- Maintain the existing zoning.
- Target stream buffer areas for forest planting and removal of invasive plants.
- Use low-impact development techniques to minimize runoff to stream systems.

map 36 NIST/Londonderry and Hoyle's Addition: Existing Land Use



map 37 NIST/Londonderry and Hoyle's Addition: Existing Zoning



Rosemont, Oakmont, and Walnut Hill

These primarily residential communities have little development potential and the stable residential areas should be preserved. Several recommendations for this area reflect consistency with the 2006 *Shady Grove Sector Plan*, particularly removing the CSX Transitway easement along Oakmont Avenue and maintaining Oakmont Avenue as a two-lane arterial.

The 1982 *Oakmont Special Study Plan* recommended the C-T Zone for several single-family houses along Oakmont Street at its intersection with Oakmont Avenue near the CSX tracks. The C-T option was intended to buffer the single-family houses from the proposed transit easement north of the CSX tracks and from the possible widening of Oakmont Avenue to four lanes. Given the recommendations to remove the transit easement and maintain Oakmont as two lanes, this Plan recommends removing the proposed C-T option.

Deer Park Bridge

Deer Park Bridge, known as the Humpback Bridge, was built in 1945 and added to the *Locational Atlas and Index of Historic Sites* in 2005. The bridge spans the CSX railroad tracks, providing a connection between Gaithersburg and the historic Town of Town of Washington Grove. The bridge is near the Washington Grove MARC station and reflects the origin and development of Washington Grove, Oakmont, and Gaithersburg. As a local landmark, the Humpback Bridge is a familiar visual feature. A timber bridge has been at this location since the 1880s. The bridge was rehabilitated in 1988 and 2000.

The bridge is maintained by the Montgomery County Department of Transportation (MCDOT), which evaluated its structural condition in 2008. MCDOT initiated a facility planning study several years ago, which has been delayed due to concerns raised by the City of Gaithersburg and the Town of Washington Grove. This Plan supports the ongoing efforts of MCDOT to assess the bridge's condition and explore appropriate alternatives, including rehabilitation or replacement that address safety, mobility, preservation, and fiscal considerations.

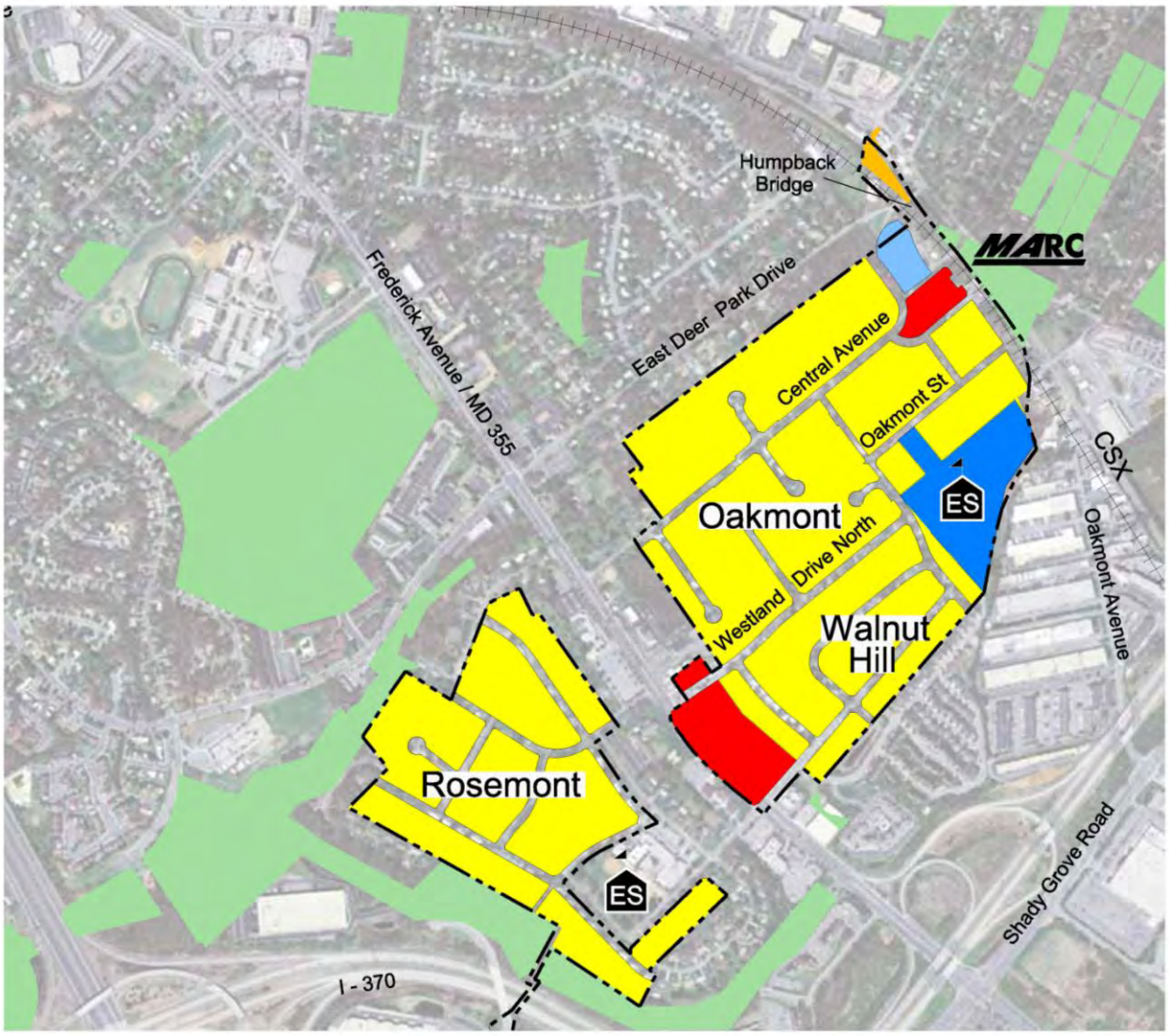
A life cycle cost analysis is also being conducted by MCDOT to compare bridge rehabilitation with bridge replacement. MCDOT will share the result of the life cycle cost analysis with the City of Gaithersburg and Town of Washington Grove, and then conclude the Deer Park Drive Bridge Facility Planning Study.

Future restoration or rehabilitation work should preserve the bridge's form, scale, and location. The traditional use of wood is important, but materials should be considered with some leniency. If deemed unsuitable for further rehabilitation for vehicular traffic, new uses may be identified that would be compatible with its preservation, including exclusive use by bicyclists and pedestrians. Heritage tourism goals include a railroad theme that could connect with this resource.

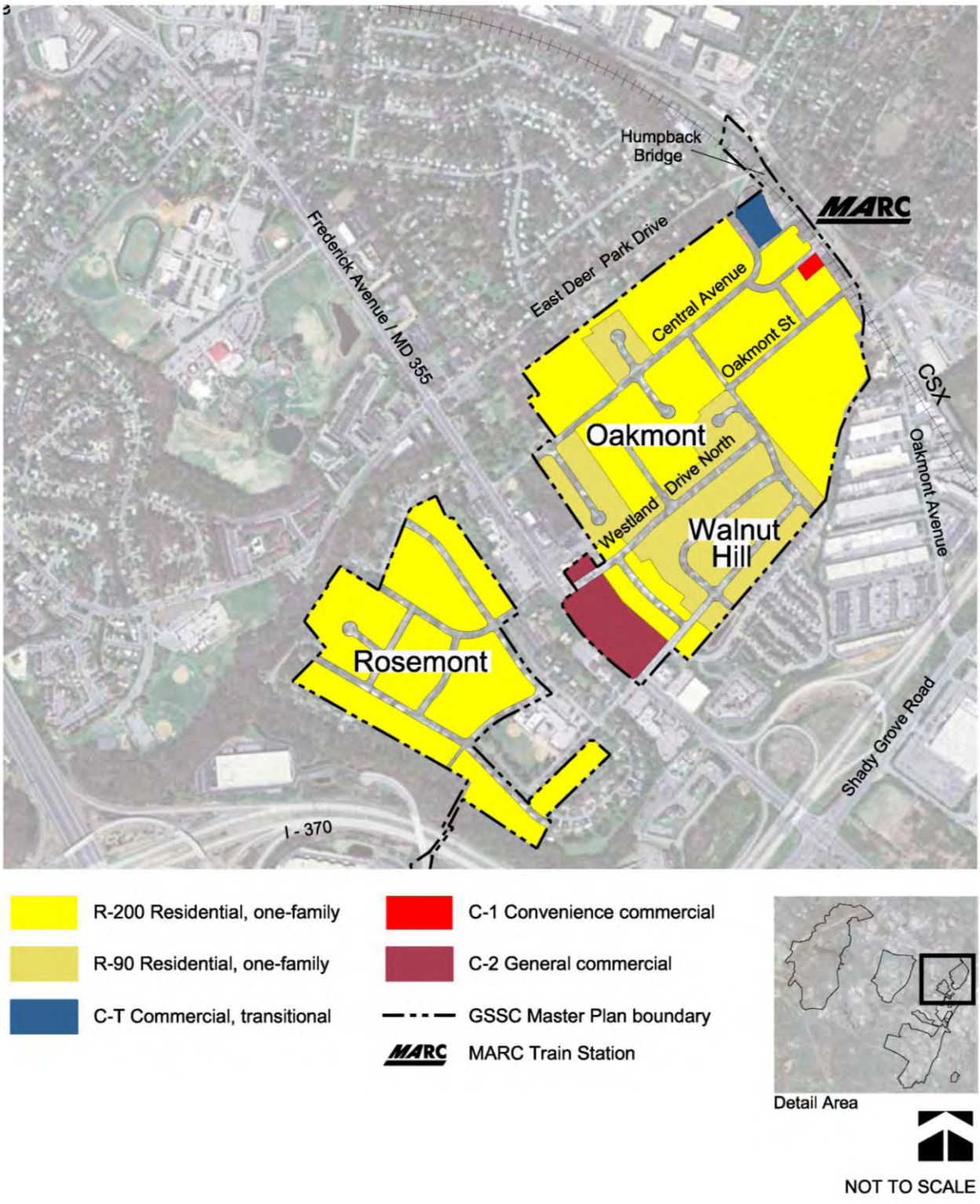
Recommendations

- Remove the proposed C-T zoning option on the R-200 properties in the vicinity of Oakmont Street.
- Designate Oakmont Avenue from the southern Plan boundary to Central Avenue with an 80-foot minimum right-of-way and two travel lanes, consistent with the 2006 *Shady Grove Sector Plan.*
- Plan for a grade-separated arterial roadway connection over the CSX tracks in the general location of the Deer Park Bridge that respects the resource value of the existing bridge.
- Remove the CSX Transitway easement along Oakmont Avenue, consistent with the 2006 *Shady Grove Sector Plan.*

map 38 Rosemont, Oakmont, Walnut Hill: Existing Land Use



map 39 Rosemont, Oakmont, Walnut Hill: Existing Zoning



- Improve stormwater management, reduce impervious surface, increase street tree planting, and incorporate other low impact development and green building techniques if the Walnut Hill Shopping Center redevelops.
- Preserve and create connections following Muddy Branch parallel to Central Avenue.

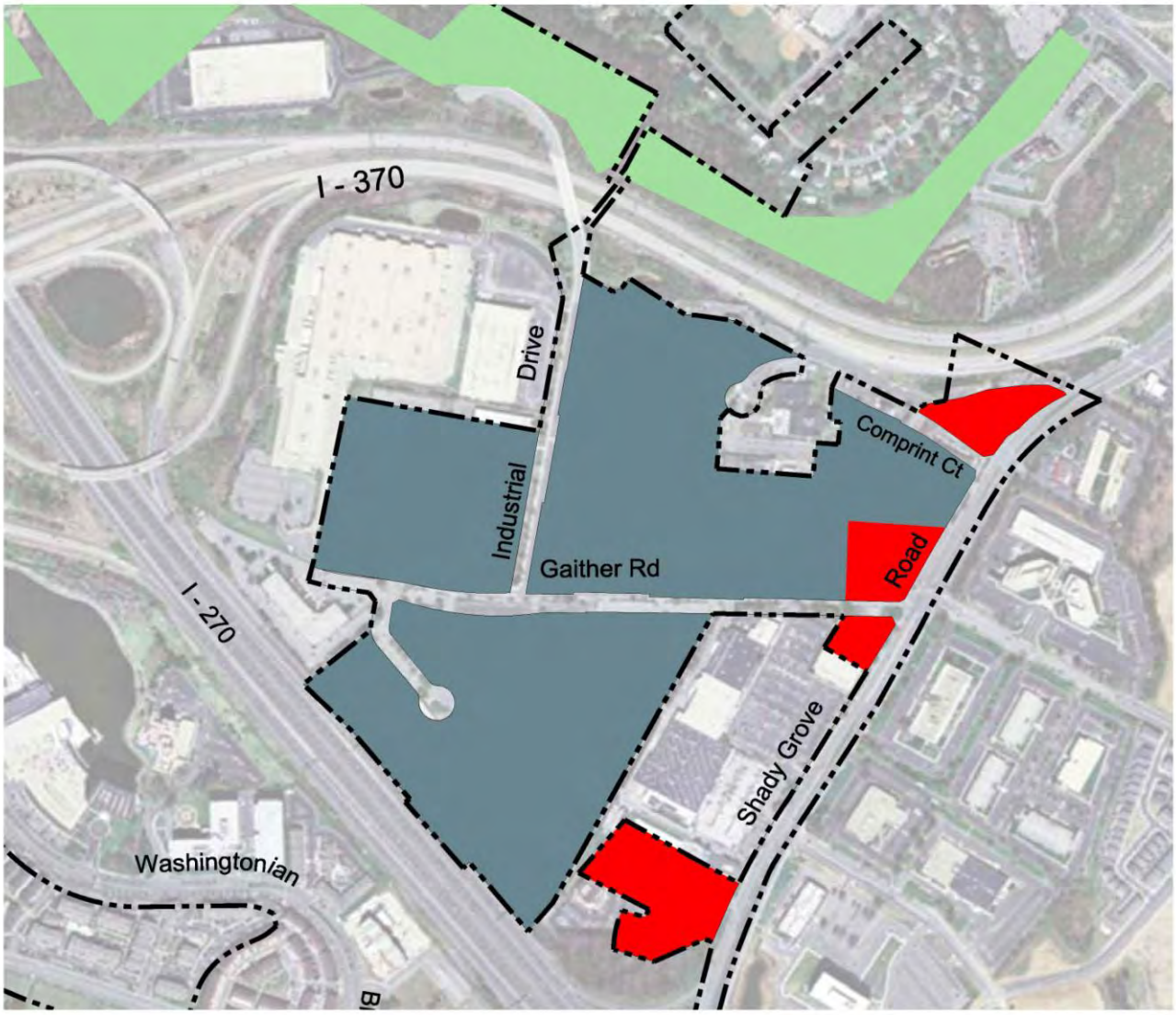
Washingtonian Light Industrial Park

This 103-acre enclave is a light industrial area primarily zoned I-1 with a few C-3 parcels. The Shady Grove Center north of Gaither Road was built in 1971 and has 108,000 square feet of retail space on a six-acre site. If a new mixed-use zone emphasizing retail and office uses is identified, it should be considered for the Shady Grove Center and other similar properties in this area (i.e., the other I-1 properties with grandfathered retail uses) and may also be appropriate for the two small areas zoned C-3.

Recommendations

- Consider future commercial mixed-use redevelopment of the Shady Grove Center.
- Retain the I-1 Zone and the C-3 Zone for all other properties in the Washingtonian Light Industrial Park.
- Reduce imperviousness, improve stormwater management, and implement other green building techniques if there is redevelopment.

map 40 Washingtonian Light Industrial Park: Existing Land Use



Parkland

Retail/commercial

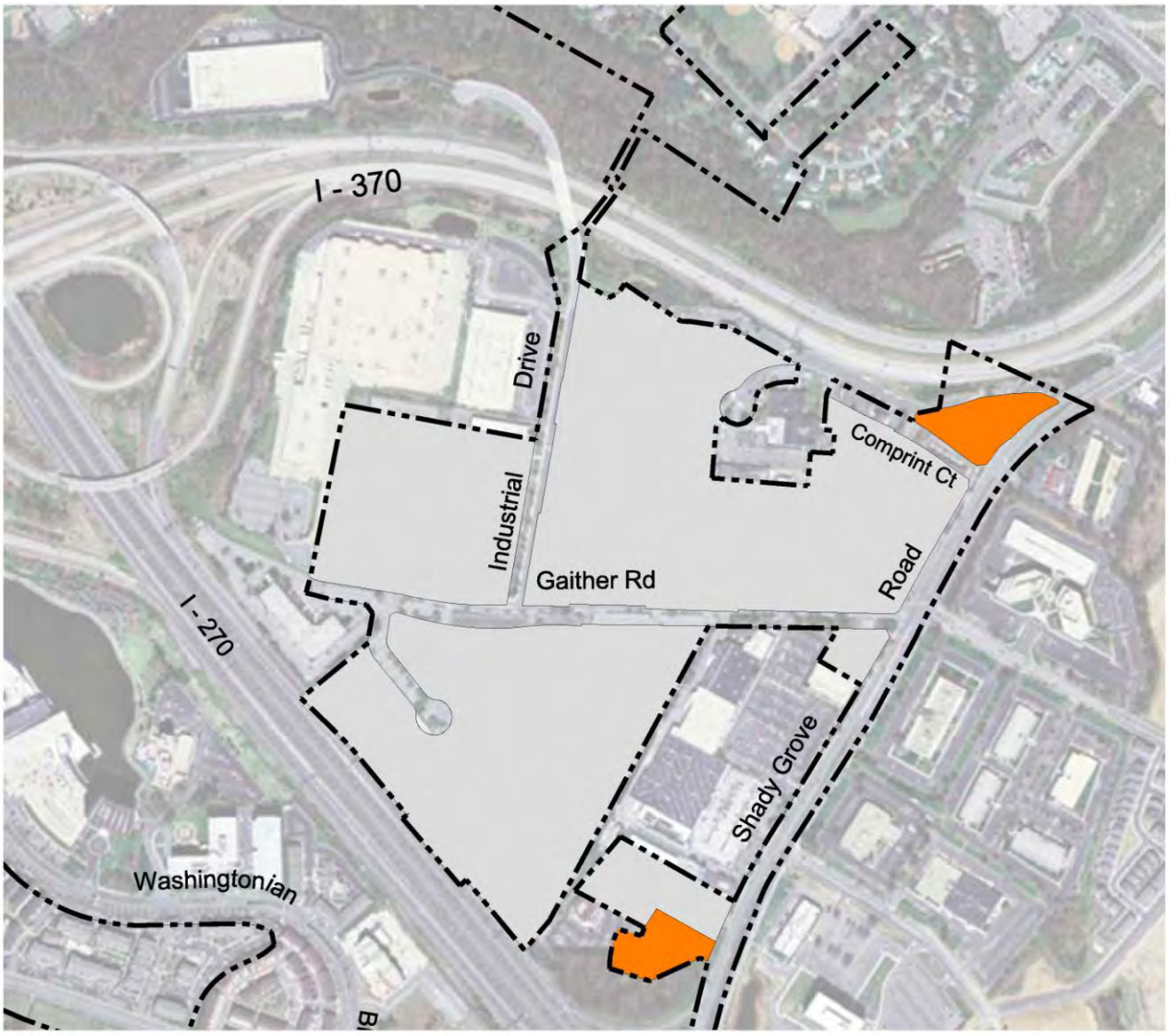
Light industrial/
Service industrial\warehouses

GSSC Master Plan boundary

Detail Area

NOT TO SCALE

map 41 Washingtonian Light Industrial Park: Existing Zoning



C-3 Highway commercial

I-1 Light industrial

GSSC Master Plan boundary

Detail Area

NOT TO SCALE

This Plan recommends implementation strategies for zoning and staging public facilities and infrastructure, and provides guidance for regulatory review.

Zoning

Life Sciences Center (LSC) Zone

For the LSC to achieve its potential, this Plan recommends retaining the LSC Zone but modifying it to reflect contemporary standards, contribute to preserving the Agricultural Reserve through Building Lot Termination (BLT) easements, and allow more density and uses without diminishing the area's primary mission as a medical and biotechnology hub. The original LSC Zone and the R&D Zone are similar and both zones were applied to properties in the LSC through the 1996 Sectional Map Amendment. This Plan recommends using a single zone for properties where life science uses are encouraged. The revised LSC Zone would preserve the zone's primary purpose while introducing additional uses to help transform the LSC from a single-use research park into a more vibrant center. After the Plan is approved and adopted, along with a text amendment revising the LSC Zone, the zoning changes will be implemented through a Sectional Map Amendment.

Commercial Residential (CR) Zones

The CR Zones allow a wide range of uses and require the designation of four elements: total allowed floor area ratio (FAR), maximum commercial/non-residential (C) floor area ratio, maximum residential (R) floor area ratio, and maximum building height (H). The CR Zone is applied through a Sectional Map Amendment consistent with the recommendations of a sector or master plan.

The CR Zone has two methods: standard and optional. The standard method allows up to 0.5 FAR and requires compliance with a specific set of development standards. The optional method allows for greater density and height when supported by additional public benefits, facilities, and amenities. The additional density may be achieved through a series of incentive increases that can be combined to achieve the maximum allowable density.

The CR Zone and the LSC Zone allow contributions to a fund for off-site amenities that benefit the public, subject to Planning Board approval. These projects must be identified in a master or sector plan and appear in the CIP for contributions to be made.

The following projects would be eligible for private sector contributions.

- Design and construct the public local park (the park/school site) on LSC West (PSTA).
- Design and construct the public civic green space on LSC West (PSTA).
- Design and construct amenities and open spaces proposed on the Belward site.
- Fund a study of adaptive reuse options for the historic Belward Farm buildings.
- Provide and construct a publicly accessible research library focused on science and biotechnology.
- Construct portions of the LSC Loop, including trails in stream valleys that connect to the main path as well as to other destinations, open spaces, and activities in the LSC area.

Concept Plans

This Plan recommends that the largest property owners (20 acres or more) surrounding the proposed CCT stations submit concept plans that demonstrate how their sites will achieve the Plan's vision, including placing the highest densities and building heights at the stations, providing a mix of uses, creating a local street network, providing appropriate neighborhood buffers, creating the LSC Loop, preserving historic properties, and providing open spaces. Concept plans should be submitted by JHU for Belward and the JHU-MCC site, by Shady Grove Adventist HealthCare, by DANAC, and by the future developers of LSC West (the PSTA site) with the Preliminary Plan application (for unapproved projects) or with Site Plan amendments (for approved projects).

Staging

Master plan staging addresses the timing of development and the provision of key public facilities. Staging assures sufficient capacity for the next phase of growth, provides essential place-making facilities, helps achieve a desired form of development, as well as necessary connections for efficient mobility within and around an area. Experience shows that all density allowed by zoning is rarely built and certainly not all at once. Market absorption rates are one limiting factor. Realizing the vision in this Plan will take time; its implementation should be monitored to evaluate how development is achieving the vision.

The Annual Growth Policy (AGP) is used to establish the policies and procedures for administration of the Adequate Public Facilities Ordinance (APFO). The LSC is in the R&D Village policy area, where the AGP indicates that, by suburban standards, area roads are congested and certain school clusters are overcrowded. Any new development will need to mitigate a percentage of its impact before it can move forward. The goal of the APFO is to ensure that transportation and school facilities have sufficient capacity for the Planning Board to approve specific development projects.

In addition to the APFO standards, this Plan recommends staging to ensure that infrastructure, particularly the CCT, is in place before development is allowed to proceed. Staging is applied to all five LSC districts with the exception of the Rickman property in LSC South. Each development stage will be initiated when all of the triggers for that stage are met. After a stage has been triggered, individual properties can proceed with Preliminary Plan approval.

The CCT is the centerpiece of the Plan's vision for the LSC. The Plan promotes transit-oriented development by concentrating higher density uses near future CCT stations. Staging principles seek to prevent the construction of low intensity uses at transit stations that could preclude or delay the recommended higher intensity uses. To achieve the vision, a mix of uses, particularly at transit stations, should be part of new development and redevelopment to enliven these areas, increase and encourage transit use, and help create a more dynamic Life Sciences Center.

The Plan provides stages and amounts of development that are tied to the CCT's funding, construction, and operation to ensure that transit is available as development proceeds. Relocation of the PSTA from the LSC West District is a part of staging to ensure that the alignment through the LSC can be achieved and to provide new housing with increases in jobs. Staging also requires that the non-driver mode share be documented and that increases be achieved over time, a goal that results in reduced traffic congestion and increased transit use. Public institutions are not subject to staging because these projects are reviewed as mandatory referrals.

Staging Requirements

In 2010, the LSC contains 7 million square feet of commercial development. Approximately 3.7 million square feet of commercial (non-residential) development has been approved but is not yet built in the five LSC districts. The total existing and approved commercial development in all five LSC districts is 10.7 million square feet. The total existing and approved dwelling units in the LSC area is 3,300.

This Plan recommends that the staging plan and its requirements be applied to all five LSC districts except the Rickman property in LSC South. The 3.7 million square feet of development in the pipeline is not subject to the Plan's staging requirements unless a project's Preliminary Plan expires. The owner of a property approved for commercial development may re-subdivide and convert to residential development and still be exempt from staging, provided that the change in development will not increase the number of vehicle trips. This may require an administrative adjustment in the number of approved jobs and housing units exempt from staging. If a Preliminary Plan expires, the development capacity associated with it becomes available to all eligible applicants. This released capacity would

essentially shift from the category of approved, pipeline development to the category of additional new development, while the total in the stage would remain unchanged.

In Stage 1, the Plan provides for the current 10.7 million commercial square feet (existing development and the approved pipeline), plus an additional increment of 400,000 square feet. Health care services are exempt from the requirements of Stage 1. Development above 11.1 million commercial square feet cannot proceed until all the prerequisites for Stage 2 have been met, including full funding of the CCT from the Shady Grove Metro Station to Metropolitan Grove within the first six years of the County's CIP or the State CTP.

Stage 1

Stage 1 allows an additional 400,000 square feet of commercial (nonresidential) development and 2,500 additional dwelling units. Existing and approved development totals 10.7 million square feet and Stage 1 allows 400,000 additional square feet for a total of up to 11.1 million square feet. Health care services are exempt from the requirements of Stage 1. Stage 1 allows 2,500 additional residential dwelling units.

7,000,000 existing development
3,700,000 approved development
400,000 additional new development
11,100,000 Total Stage 1 commercial development

3,300 existing and approved dwelling units
2,500 additional new dwelling units
5,800 Total Stage 1 residential dwelling units

Stage 2

Stage 2 allows a total of 13.4 million square feet of commercial development and 7,300 dwelling units, of which up to 11.1 million square feet of commercial development and 5,300 dwelling units may have been built in Stage 1. After all the prerequisites required before Stage 2 have been met, development above 11.1 million can proceed, including an additional 2.3 million square feet of additional commercial development, up to a total of 13.4 million square feet. Stage 2 allows 2,000 additional residential dwelling units.

11,100,000 Stage 1 development
2,300,000 Stage 2 additional new development
13,400,000 Total Stage 2 commercial development

5,800 Stage 1 dwelling units
2,000 Stage 2 additional dwelling units
7,800 Total Stage 2 residential dwelling units

Stage 3

Stage 3 allows a total of 15.7 million square feet of commercial development and 9,000 dwelling units, of which 13.4 million square feet of commercial development and 7,300 dwelling units may have been built in Stages 1 and 2. After all the prerequisites required before Stage 3 have been met, development above 13.4 million square feet can proceed, including an additional 2.3 million square feet of new development, up to a total of 15.7 million square feet. Stage 3 allows 1,200 additional residential dwelling units.

13,400,000 Stage 2 development
2,300,000 Stage 3 additional new development
15,700,000 Total Stage 3 commercial development

7,800 Stage 2 dwelling units
1,200 Stage 3 additional dwelling units
9,000 Total Stage 3 residential dwelling units

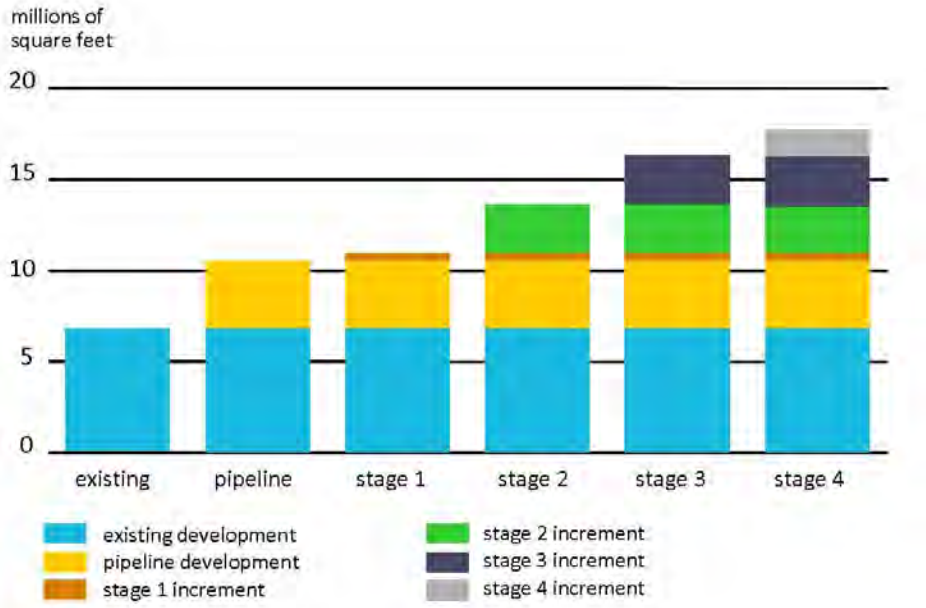
Stage 4

Stage 4 allows a total of 17.5 million square feet of commercial development and 9,000 dwelling units, of which 15.7 million square feet of commercial development and all the residential development may have been built in the previous stages. After all the prerequisites required before Stage 4 have been met, development above 15.7 million square feet can proceed, including an additional 1.8 million square feet of new commercial development, up to a total of 17.5 million square feet.

15,700,000 Stage 3 development
1,800,000 Stage 4 additional new development
17,500,000 Total Stage 4 development at full buildout

9,000 Stage 3 dwelling units
No Stage 4 additional dwelling units
9,000 Total Stage 4 residential dwelling units

table 3 staging of commercial development



stages of development and requirements at each stage

Before Stage 1 begins, all of the following must occur:

- Approve and adopt the Sectional Map Amendment.
- Fund and begin operating the Greater Shady Grove Transportation Management District (TMD).
- Designate the LSC Central, West, Belward, and North Districts as a Road Code Urban Area.
- Include the entirety of the Rickman property on Travilah Road in the R&D Policy Area.
- Document the baseline of non-driver mode share through monitoring and traffic counts.
- Develop a monitoring program for the Master Plan within 12 months of adopting the sectional map amendment that addresses the following:
  - The Planning Board must develop a biennial monitoring program for the LSC. This program will include a periodic assessment of development approvals, traffic issues (including intersection impacts), public facilities and amenities, the status of new facilities, and the CIP and Growth Policy as they relate to the LSC. The program should conduct a regular assessment of the staging plan and determine if any modifications are necessary. The biennial monitoring report must be submitted to the Council and Executive prior to the development of the biennial CIP.
  - The Planning Board must establish an advisory committee of property owners, residents, and interested groups (including adjacent neighborhoods in Gaithersburg and Rockville), with representation from the Executive Branch, the City of Rockville, and the City of Gaithersburg that are stakeholders in the redevelopment of the Plan area – to evaluate the assumptions made regarding congestion levels, transit use, and parking. The committee's responsibilities should include monitoring the Plan recommendations, monitoring the CIP and Growth Policy, and recommending action by the Planning Board and County Council to address issues that may arise, including, but not limited to, community impacts and design, and the status and location of public facilities and open space.
  - Dependent on availability of outside funding, the Planning Board must initiate an ongoing health impact assessment of development in the Plan area, with the participation of the Montgomery County Department of Health and Human Services, Department of Environmental Protection, Department of Transportation, the City of Gaithersburg, and the City of Rockville.

Stage 1		
	New Commercial Development Allowed	400,000 square feet
	Total Commercial Development Allowed	11.1 million square feet
	New Residential Development Allowed	2,500 dwelling units
	Total Residential Development Allowed	5,800 dwelling units

Before Stage 2 begins, all of the following must occur:

- Fully fund construction of the CCT from the Shady Grove Metro Station to Metropolitan Grove within the first six years of the County's CIP or the State CTP.
- Fully fund relocation of the Public Safety Training Academy from LSC West to a new site.
- Fund the LSC Loop trail in the County's six-year CIP and/or through developer contributions as part of plan approvals.
- Attain an 18 percent non-auto driver mode share (NADMS).

Stage 2	New Commercial Development Allowed	2.3 million square feet
	Total Commercial Development Allowed	13.4 million square feet
	New Residential Development Allowed	2,000 dwelling units
	Total Residential Development Allowed	7,800 dwelling units

Before Stage 3 begins, all of the following must occur:

- CCT is under construction from Shady Grove Metro Station to Metropolitan Grove and at least 50 percent of the construction funds have been spent.
- Program for completion within six years any needed master-planned transportation improvement identified by the most recent biennial monitoring review to be needed at this time.
- Construct and open at least one public street (such as Medical Center Drive extended) across LSC West and Belward to provide a direct connection across major highways and between the districts, contributing to place-making and connectivity.
- Attain a 23 percent NADMS.

Stage 3	New Commercial Development Allowed	2.3 million square feet
	Total Commercial Development Allowed	15.7 million square feet
	New Residential Development Allowed	1,200 dwelling units
	Total Residential Development Allowed	9,000 dwelling units

Before Stage 4 begins, all of the following must occur:

- Begin operating the CCT from the Shady Grove Metro Station to Clarksburg.
- Program for completion within six years any needed master-planned transportation improvement identified by the most recent biennial monitoring review to be needed at this time.
- Attain a 28 percent NADMS.

Stage 4	New Commercial Development Allowed	1.8 million square feet
	Total Commercial Development Allowed	17.5 million square feet
	Total Residential Development Allowed	9,000 dwelling units

Plan Evaluation

Revisiting this Plan in regular intervals—focusing on the LSC—is particularly important to assess how the area is developing, the need for infrastructure delivery, and if the vision is being achieved.

The review of the Plan should examine:

- the CCT's delivery schedule
- traffic generation and roadway performance
- the jobs to housing balance—are local workers occupying the housing
- the built form's evolution
- absorption rates to determine the rate of needed infrastructure delivery
- costs to the County
- the area institutions' investment in the Plan's vision.

Transportation Network

This Plan provides a comprehensive transportation network for all modes of travel, including transit, roads, bicycles, and pedestrians, to guide implementation of the Plan's street and highway system and bikeway and trails networks.

Street and Highway Classifications

This Plan proposes the following changes to the *Master Plan of Highways.*

- Classify Sam Eig Highway as a Controlled Major Highway with grade-separated cross streets and a frontage road system as described in the LSC Circulation section.

- Remove roadways that have been annexed by the City of Gaithersburg:
  - Louis Sullivan Drive
  - portions of Fields Road
  - portions of Diamondback Drive (although connection to Sam Eig Highway within City of Gaithersburg is needed for network connectivity).

- Delete the proposed Shady Grove Road/Darnestown Road and Darnestown Road/Glen Mill Road interchanges recommended in the 1990 *Shady Grove Study Area Master Plan.*

- Delete the proposed interchange at Great Seneca Highway (MD 119) and Key West Avenue (MD 28) recommended in the 1990 *Shady Grove Study Area Master Plan.*

- Retain the 1990 *Shady Grove Study Area Master Plan* recommendations for grade-separated interchanges at:
  - Sam Eig Highway and Great Seneca Highway (MD 119)
  - I-270 at Watkins Mill Road extended (in the City of Gaithersburg).

- Add new grade-separated interchanges at:
  - Key West Avenue (MD 28) at Shady Grove Road
  - Great Seneca Highway at Muddy Branch Road (in coordination with City of Gaithersburg)
  - Quince Orchard Road at Great Seneca Highway (in coordination with City of Gaithersburg)
  - I-270 and Gude Drive (in coordination with the City of Rockville).

- Change the number of lanes for Oakmont Avenue from four to two, as recommended in the 2006 *Shady Grove Sector Plan.*

- Remove the CSX Transitway easement along Oakmont Avenue, as recommended in the 2006 *Shady Grove Sector Plan.*

- Change the number of lanes for Key West Avenue from six to eight within the plan area.

- Classify Game Preserve Road as a Rustic Road.

- Change the number of lanes for Longdraft Road from four to two.

It is recognized that future social and technological changes may allow for equivalent mobility and capacity to be achieved without building additional grade-separated interchanges. Such mobility and capacity enhancements would need to be considered as alternative solutions to a grade-separated interchange during a transportation project planning study, or the review of a land development project. These enhancements include, without being limited to, increased transit services, implementation of a robust street system that promotes walking and bicycling, managed parking supply, provision of proactive travel demand management services, and operational improvements to at-grade intersections, streets, arterials and highways. Emerging state and federal sustainable

community initiatives incorporating climate change and energy concerns may significantly reduce future demand for single occupancy vehicle travel, potentially reducing the need for interchanges.

Prior to any interchange design, a feasibility study will examine the alternative mobility enhancements described above and develop context-sensitive solutions. The Plan supports context-sensitive improvements that are designed to facilitate community connections, minimize right-of-way needs, and address visual and noise concerns through design elements such as depressing roadways and ramps below grade. The feasibility study will include participation by adjacent community representatives to help define community needs and context. All transportation improvements should be planned, designed and constructed under the lens of sustainability, balancing their effects on the natural environment, social community, and economic resources.

map 42 Transportation Network

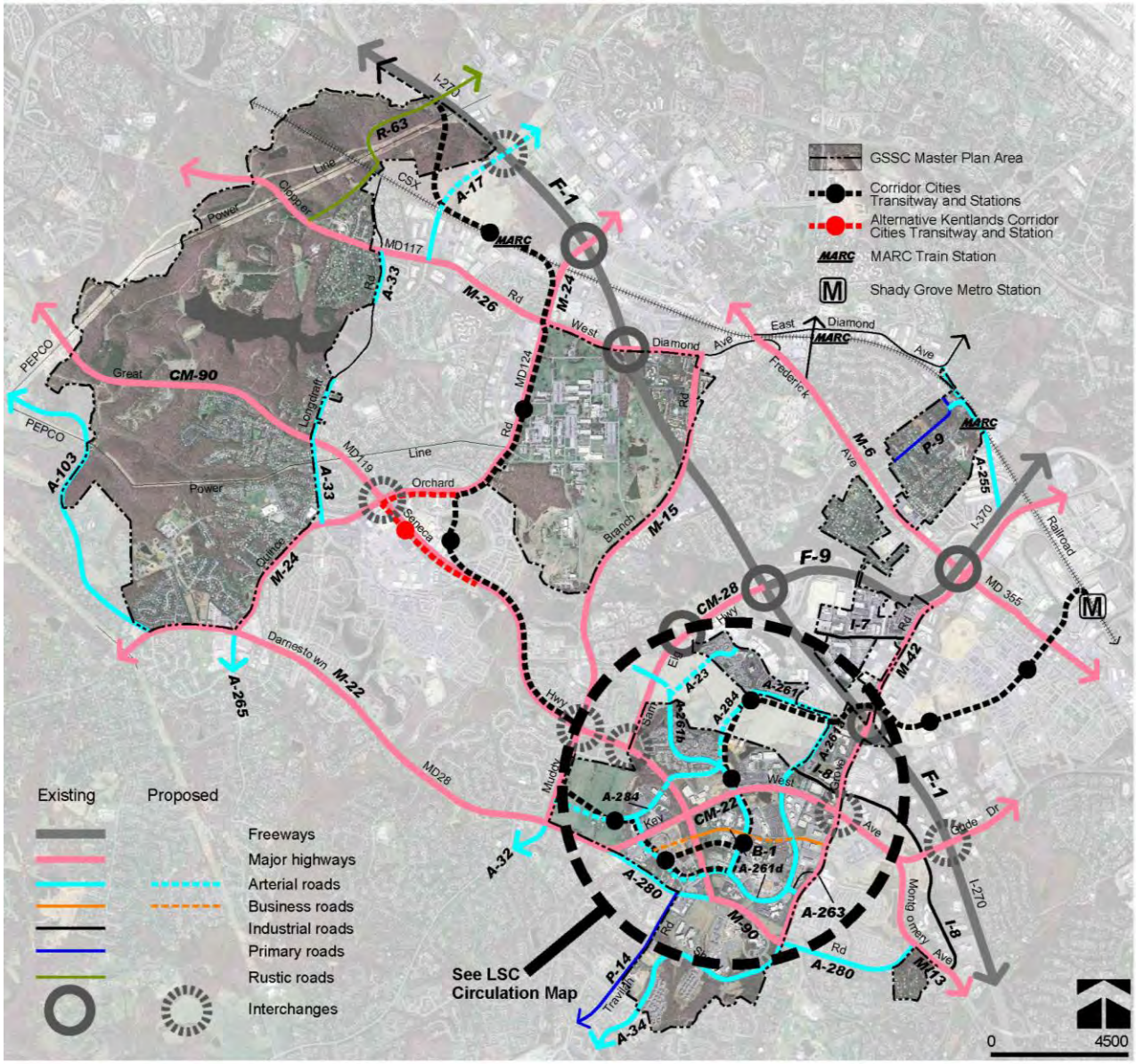


table 4 street and highway classifications

road number	name	limits	minimum r.o.w.	lanes[1]	target speed (m.p.h.)	design standard
Freeways						
F-1	I-270	Great Seneca Creek to Shady Grove Rd	300'	12	-	-
F-9	I-370	I-270 to Frederick Rd (MD 355)	300'	6	-	-
Controlled Major Highways						
CM-22	Key West Ave (MD 28)	Darnestown Rd (MD 28) to Shady Grove Rd	200'	8	40	Custom
CM-28	Sam Eig Hgwy	Great Seneca Hgwy (MD 119) to I-270	250'	6+BRT	50	Custom (see LSC Circulation Section)
CM-90	Great Seneca Hgwy (MD 119)	Great Seneca Creek to Gaithersburg city limit	150'	6	50	2008.10
		Sam Eig Hgwy to Key West Ave (MD 28)	150'-200'[2]	6	45	2008.10
		Key West Ave to Darnestown Rd	150'	6	45	2008.10
Major Highways						
M-6	Frederick Ave (MD 355)	Gaithersburg city limit to Gaithersburg city limit	120'	6	40	2008.01
M-13	West Montgomery Ave (MD 28)	Darnestown Rd to 800' east along Darnestown Rd (see Map 42)	150'	6	-	2008.04
M-15	Muddy Branch Rd	Darnestown Rd (MD 28) to Decoverly Dr (extended)	150'	6	45	2008.04 or .08
	Muddy Branch Rd	Gaithersburg city limit to West Diamond Ave (MD 117)	150'	6	45	2008.04 or .08
	Muddy Branch Rd	Decoverly Drive (extended) to Gaithersburg city limit	170' [2]	6	45	2008.04
M-22	Darnestown Rd (MD 28)	Riffle Ford Rd to Muddy Branch Rd	120'	4	40	2008.04
	Darnestown Rd (MD 28)	Muddy Branch Rd to Key West Ave (MD 28)	150'	6	40	2008.04
M-24	Quince Orchard Rd (MD 124)	Darnestown Rd (MD 28) to Longdraft Rd	150'	6	40	2008.04
	Quince Orchard Rd (MD 124)	Gaithersburg city limit to Gaithersburg city limit	170' [2]	6	40	2008.04
M-26	Clopper Rd (MD 117)	Great Seneca Creek to Longdraft Rd	150'	4 to 6	45	2008.04
	West Diamond Ave (MD 117)	Quince Orchard Rd (MD 124) to Muddy Branch Rd	120'	4 to 6	45	2008.01
M-42	Shady Grove Rd	Darnestown Rd to 1,200' west of Frederick Rd (MD 355)	150'	6	40	2008.04
M-90	Darnestown Rd	Great Seneca Hgwy to Shady Grove Rd	150'	6	45	2008.10
Arterial Roads						
A-17	Watkins Mill Rd	Clopper Rd (MD 117) to MD 355 (City of Gaithersburg)	NA[3]	4	-	-
A-23	Rio Blvd	Washingtonian Blvd (City of Gaithersburg) to Fields Rd	80'	4	30	As built
A-33	Longdraft Rd	Quince Orchard Rd (MD 124) to 180' north of Longdraft Ct (City of Gaithersburg)	80'	2	30	Custom
	Longdraft Rd	Golden Post Ln (City of Gaithersburg) to Clopper Rd (MD 117)	80'	2	30	Custom

road number	name	limits	minimum r.o.w.	lanes[1]	target speed (m.p.h.)	design standard
A-34	Shady Grove Rd	Darnestown Rd to Cavanaugh Dr	100’	4	35	2004.09
A-103	Riffle Ford Rd	Great Seneca Creek to 700' north of Woodsboro Dr	80'	4		-
	Riffle Ford Rd	220' east of Hallman Ct to Darnestown Rd (MD 28)	80'	4	40	2004.08
A-255	Oakmont Ave	East Diamond Ave/Washington Grove Ln to Plan boundary	80'	2	30	Custom
A-261	Fields Rd	from 1500' east of Rio Blvd (City of Gaithersburg) to 675' west of Washingtonian Blvd (City of Gaithersburg)	150’[2]	4	30	2004.10
	Fields Rd	from150' west of Omega Dr (City of Gaithersburg) to Omega Dr	150’[2]	4	30	2004.10
A-261a	Omega Dr	Fields Rd to Key West Ave (MD 28)	100'	4	30	2004.10
A-261b	Diamondback Dr	Plan boundary to Key West Ave	100'-150’[2]	4	30	2004.09
	Broschart Rd	Key West Ave to Medical Center Dr	100'-150’[2]	4	30	2004.09
A-261d	Johns Hopkins Dr	Key West Ave (MD 28) to Decoverly Dr	100'-150’[2]	4	30	2004.10
	Medical Center Dr	Key West Ave to Key West Ave	100'-150’[2]	4	30	2004.10
A-263	Medical Center Wy	Shady Grove Rd to Medical Center Dr	100'	4	30	As built
A-280	Darnestown Rd	Key West Ave (MD 28) to Great Seneca Hgwy	100'	4	40	2004.10
	Darnestown Rd	Shady Grove Rd to West Montgomery Ave (MD 28)	100'	4	40	2004.10
A-284	Decoverly Dr	Muddy Branch Rd to Plan boundary	100'-150’[2]	4	30	2004.09
Business District Streets						
B-1	Blackwell Rd	Great Seneca Hgwy to Broschart Rd	100’	4	30	2005.03
	Blackwell Rd	Broschart Rd to Shady Grove Rd	100’	4	30	2005.03
	Blackwell Rd	Darnestown Rd to Great Seneca Hgwy	70’	2	30	2005.02
B-2	Road A	proposed new road	60’	2	30	2005.01
B-3	Road B	proposed new road	70’	2	30	2005.02
B-4	Road C	proposed new road	70’	2	30	2005.02
B-5	Road D	proposed new road	70’	2	30	2005.02
B-6	Road E	proposed new road	70’	2	30	2005.02
B-7	Road F	proposed new road	60’	2	30	2005.01
B-8	Road G	proposed new road	70’	2	30	2005.02
B-9	Road H	proposed new road	60’	2	30	2005.01
B-10	Road I	proposed new road	70’	2	30	2005.02
B-11	Road J	proposed new road	60’	2	30	2005.01
B-12	Road K	proposed new road	60’	2	30	2005.01
B-13	Road L	proposed new road	70’	2	30	2005.02
B-14	Road M	proposed new road	60’	2	30	2005.01
B-15	Road N	proposed new road	70’	2	30	2005.02
B-16	Traville Gateway Dr	Shady Grove Rd to Medical Center Dr	70’	2	30	2005.02
B-17	Travilah Rd	Darnestown Rd to Medical Center Dr Extended	70’	2	30	2005.02
B-18	Road Q	proposed new road	70’	2	30	2005.02
B-19	Road R	proposed new road	60’	2	30	2005.01

road number	name	limits	minimum r.o.w.	lanes[1]	target speed (m.p.h.)	design standard
I-7	Gaither Rd	Shady Grove Rd to Gaithersburg city limit	100’	4	30	Custom
I-8	Research Blvd	Omega Dr to Shady Grove Rd	80'	4	30	2006.03
Primary Residential Streets						
P-9	Central Ave	500' east of Frederick Ave (MD 355, City of Gaithersburg) to 350' north of Oakmont Ave (City of Gaithersburg)	70'	2	25	2003.12
P-14	Travilah Rd	Darnestown Rd to Unicorn Wy	70’	2	30	2003.10
Rustic Roads						
R-63	Game Preserve Rd	Clopper Rd (MD 117) to Frederick Ave (MD 355)	70’	2	N/A	N/A

[1]The number of planned through travel lanes for each segment, not including lanes for turning, parking, acceleration, deceleration, or other auxiliary purposes.

[2] Fifty feet of right-of-way is intended for provision of an exclusive transitway; where a range is specified, the lower figure refers to non-transitway sections.

[3] Watkins Mill Road is an arterial within city limits. As a significant connection to I-270, it is included in this table; right-of-way requirements are deferred to the City of Gaithersburg.

Pedestrian Network

Every trip starts or ends with a pedestrian trip. The pedestrian element of the transportation network should emphasize the need for safe, contiguous, and accessible walking routes to local destinations, especially transit. Providing a safe and pleasant pedestrian experience is a challenge in areas designed for cars. Signal timing at intersections impacts pedestrian safety and comfort. The County should continue to improve operations and infrastructure to meet national guidelines, including the *Manual for Uniform Traffic Control Devices* and Americans with Disabilities Act best practices.

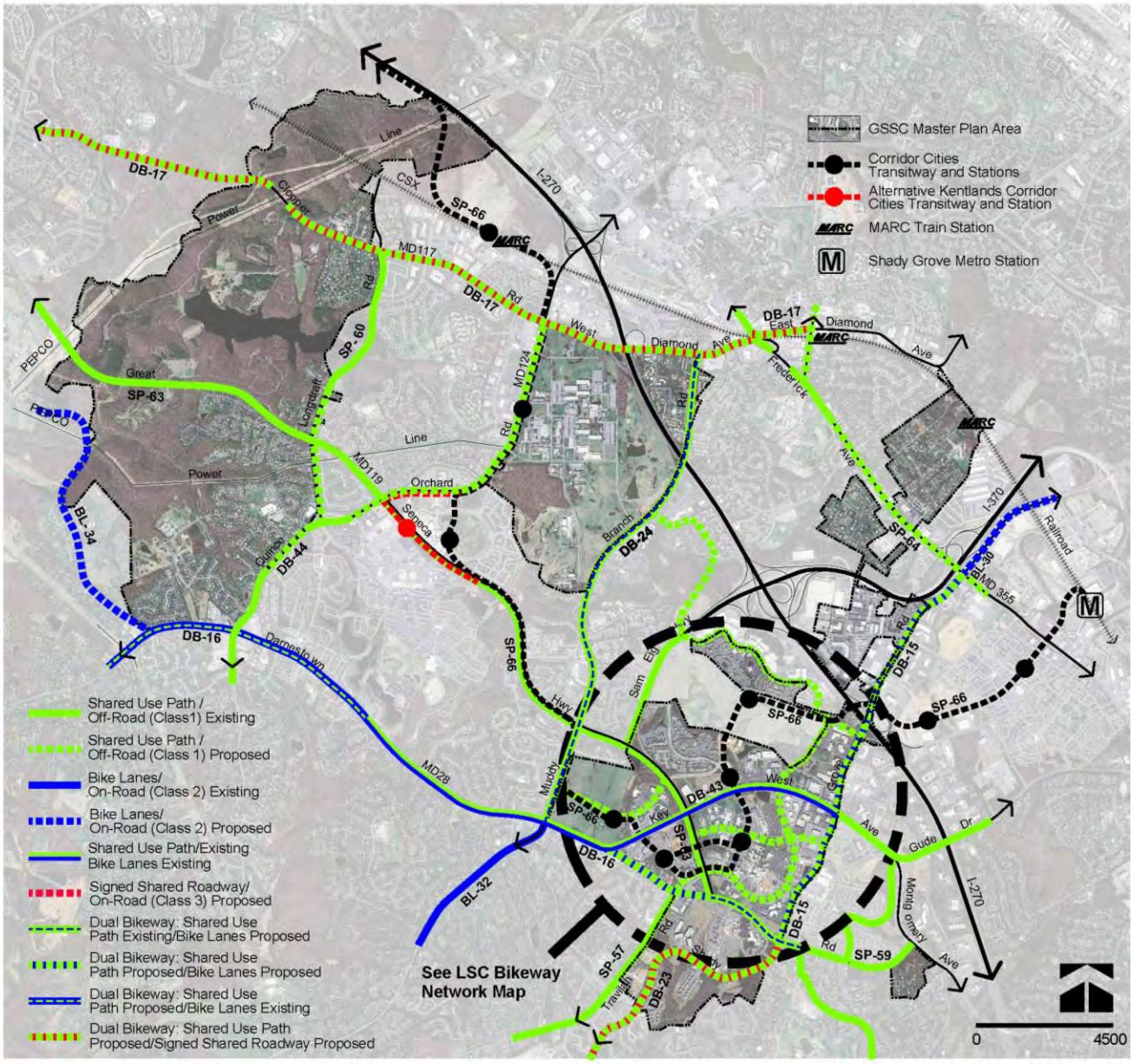
Recommendations

- Design local streets and intersections with pedestrian-friendly characteristics such as minimal corner radii, special crosswalk pavement, wide sidewalks, and street trees.
- Place sidewalks sufficiently away from curbs and travel lanes to separate pedestrians from moving traffic.
- Provide four-way crosswalks at intersections.
- Provide sidewalks on both sides of public streets.
- Create a grid of intersecting streets and short blocks in new developments or redevelopment areas to support and encourage walking.
- Design streets that are defined with buildings, animated with active uses, and include streetscape and landscape features to encourage pedestrian activity.

Bikeway and Trail Systems

This Plan encourages walking and biking as an alternative to automobiles as well as for recreation. This Plan supports efforts to implement safe and convenient pedestrian and bicycle facilities through an inter-connected system of bikeways, trails, and sidewalks. The Plan area is served by a network of existing bikeways and trails.

map 43 Area-wide Bikeway Network



The recommended Countywide and local LSC bikeway networks must be coordinated with the cities of Gaithersburg and Rockville to ensure a linked system. Together, the Countywide and local bikeways and the trails network will provide a framework for an interconnected system.

table 5 area-wide bikeways recommended by the *countywide bikeways functional master plan* (CBFMP)

route number	name	type	limits	status/condition	description
BL-30	Shady Grove Rd east	bike lanes	Frederick Rd (MD 355) to Muncaster Mill Rd (MD 115)	implemented between MD 115 and Crabbs Branch Wy proposed between MD 355 and Crabbs Branch Wy	part of a direct route to Shady Grove Metrorail station
BL-32	Dufief Mill Rd	bike lanes	Darnestown Rd (MD 28) to Travilah Rd	existing	roadway shoulder functions as bike lanes
BL-34	Riffle Ford Rd	bike lanes	Darnestown Rd to Germantown Rd (MD 118)	new proposal in 2005 CBFMP	important connection to South Germantown Park
DB-15	Shady Grove Rd west	dual bikeway: shared use path and bike lanes	Darnestown Rd to Frederick Rd	proposed	forms part of connection to Shady Grove Metrorail station; shared use path to be implemented by Rockville, bike lanes to be implemented by County
DB-16	Darnestown Rd north	dual bikeway: shared use path and bike lanes	Seneca Rd to Glen Mill Rd	shared use path and bike lanes exist in segments; bike lanes installed by SHA from Seneca Road to Muddy Branch Road	provides direct connection to Rockville and forms part of connection to Gaithersburg from Poolesville; SHA-provided 16' wide curb lanes should be striped as bike lanes
DB-17	Clopper Rd/ Diamond Ave	dual bikeway: shared use path and signed shared roadway	Summit Ave to Clarksburg Rd (MD 121)	mostly proposed; shared use path exists in segments	provides direct connection to City of Gaithersburg as well as several MARC stations; improvements by SHA underway within Gaithersburg city limits
DB-23	Shady Grove Rd extended	dual bikeway: shared use path and signed shared roadway	Darnestown Rd to River Rd (MD190)	modified proposal in 2005 CBFMP	suitable for both on-road and off-road facilities; important east-west connector between Potomac communities and cities of Rockville and Gaithersburg
DB-24	Muddy Branch Rd	dual bikeway: shared use path and bike lanes	Darnestown Rd to Diamond Ave	shared use path existing; bike lane proposed	direct connection to City of Gaithersburg; indirect connection to Gaithersburg MARC station; need consistent-width path for entire roadway; adequate r.o.w. exists for bike lanes if road is improved in the future
DB-43	Key West Ave	dual bikeway: shared use path and bike lanes	Darnestown Rd to Gude Dr	existing	connection between countywide bikeway network and City of Rockville bikeway system

route number	name	type	limits	status/condition	description
DB-44	Quince Orchard Rd	dual bikeway: shared use path and bike lanes	Clopper Rd to Darnestown Rd	exists in segments; mostly proposed	provides direct connection to Gaithersburg; portion along NIST frontage coterminous with SP-66, the CCT shared use path
SP-57	Travilah Rd	shared use path	Darnestown Rd to River Rd	Proposed; exists in segments	connects to two major bikeways and several local destinations; forms part of alternate route to C&O canal
SP-59	Darnestown Rd south	shared use path	Wootton Pkwy to West Montgomery Ave (MD 28)	existing	forms part of important connection to City of Rockville and Rockville Metrorail station
SP-60	Longdraft Rd	shared use path	Quince Orchard Rd to Clopper Rd (MD 117)	exists in segments	connects to two major bikeways and to City of Gaithersburg
SP-63	Great Seneca Hgwy (MD 119)	shared use path	Darnestown Rd to Middlebrook Rd	existing	provides excellent off-road connections between Germantown and Gaithersburg
SP-64	Frederick Rd (MD 355)	shared use path	Gude Dr to Watkins Mill Rd	exists in segments; mostly proposed	provides connection to downtown Rockville and Gaithersburg
SP-66	Corridor Cities Transitway	shared use path	Shady Grove Metro Station to Clarksburg	mostly proposed; segments exist as part of other bikeways	connects major employment centers in the I-270 Corridor north of Rockville; intended to parallel the CCT and be implemented as part of CCT project, regardless of mode or alignment

SP=Shared Use Path BL=Bike Lanes DB=Dual Bikeway

LSC Bikeways

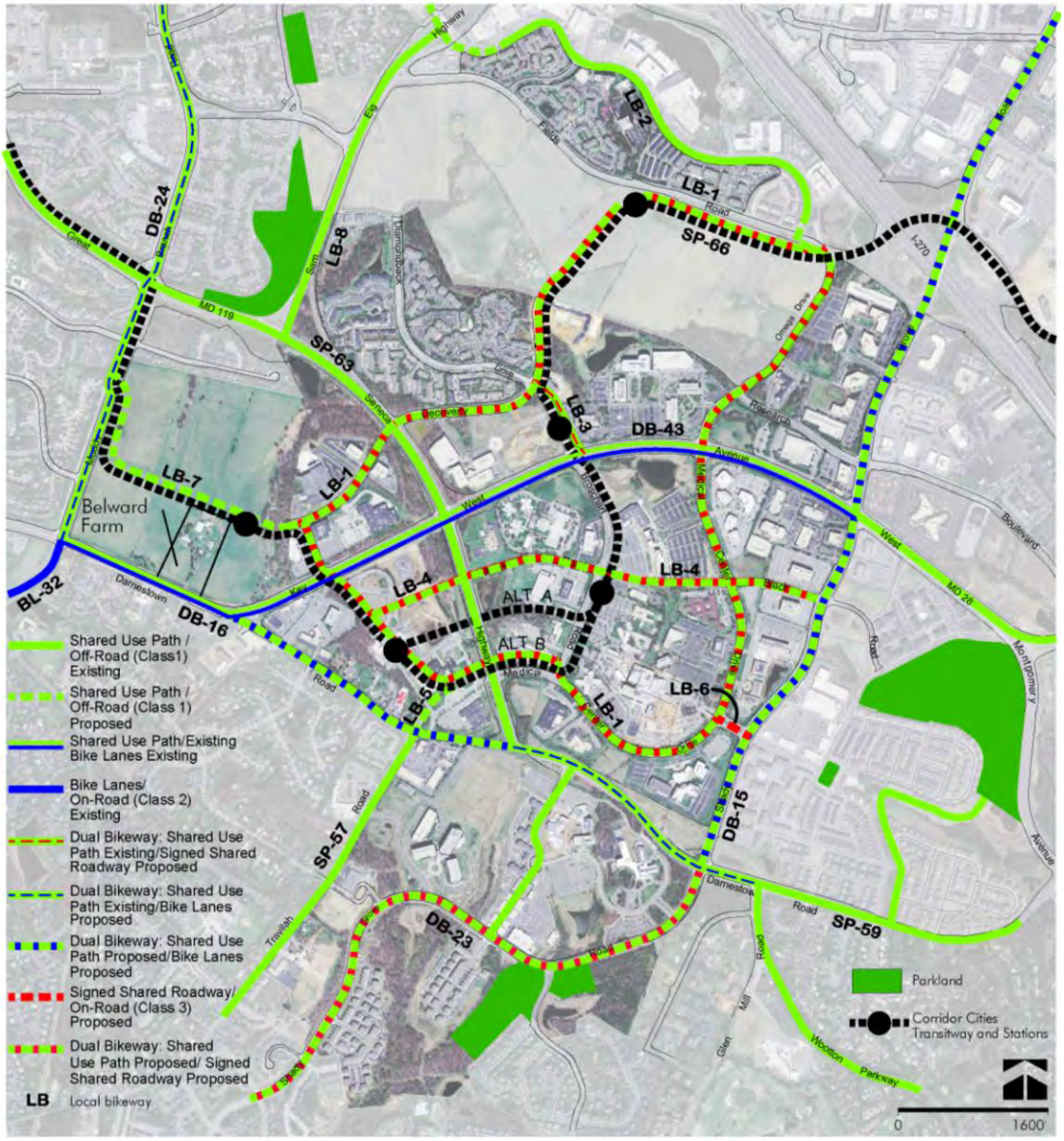
This Plan's recommended local bikeway network supplements the regional framework provided by the *Countywide Bikeways Functional Master Plan* and the *Countywide Park Trails Plan*. The local LSC bikeway network will connect to area schools, parks, open spaces, and commercial centers as well as to the Countywide system.

table 6 LSC bikeways

name	type	limits	status/condition	discussion
LB-1 LSC Loop	dual bikeway: shared use path with signed shared roadway	circular loop through the LSC	proposed	3.5- mile recreational path connecting major destinations in the LSC districts. Portions coterminous with SP-66, the CCT shared use path
LB-2 Washingtonian Blvd	shared use path	Sam Eig Hgwy to 850' northwest of Fields Rd (City)	existing and proposed, short segments exist	connects mixed-use area to the local and City of Gaithersburg bikeway networks
LB-3 Diamondback Dr	dual bikeway: shared use path with signed shared roadway	Key West Ave to Decoverly Dr	existing path; signed shared roadway proposed	connects mixed-use areas to the countywide bikeway network on Key West; should extend through Crown Farm to Fields Road; coterminous with SP-66, the CCT shared use path
LB-4 Blackwell Rd	dual bikeway: shared use path with signed shared roadway	Shady Grove Rd to Medical Center Dr extended	proposed	connect countywide bikeway on Shady Grove Rd to LSC and City of Rockville
LB-5 PSTA	shared use path	Medical Center Dr extended through PSTA to Darnestown Rd	proposed	connect LSC Loop on Medical Center Dr to the PSTA site and across Darnestown Rd to countywide SP-57 and DB-16
LB-6 Medical Center Wy	Signed shared roadway	Medical Center Dr to Shady Grove Rd	proposed	connect LSC Central to the countywide network and City of Rockville paths and destinations
LB-7 Belward Property	shared use path along the CCT alignment	Key West Ave to Muddy Branch Rd	proposed	connect to LSC Loop, CCT station, historic farm, and countywide DB-24 on Muddy Branch Rd; coterminous with SP-66, the CCT shared use path
LB-8 Sam Eig Hgwy	shared use path	Washingtonian Blvd to Great Seneca Hgwy	existing	connects Rio and future Crown Farm development to the countywide bikeways; to be reconstructed along the west side of frontage road system described in LSC Circulation section

LB=Local Bikeway

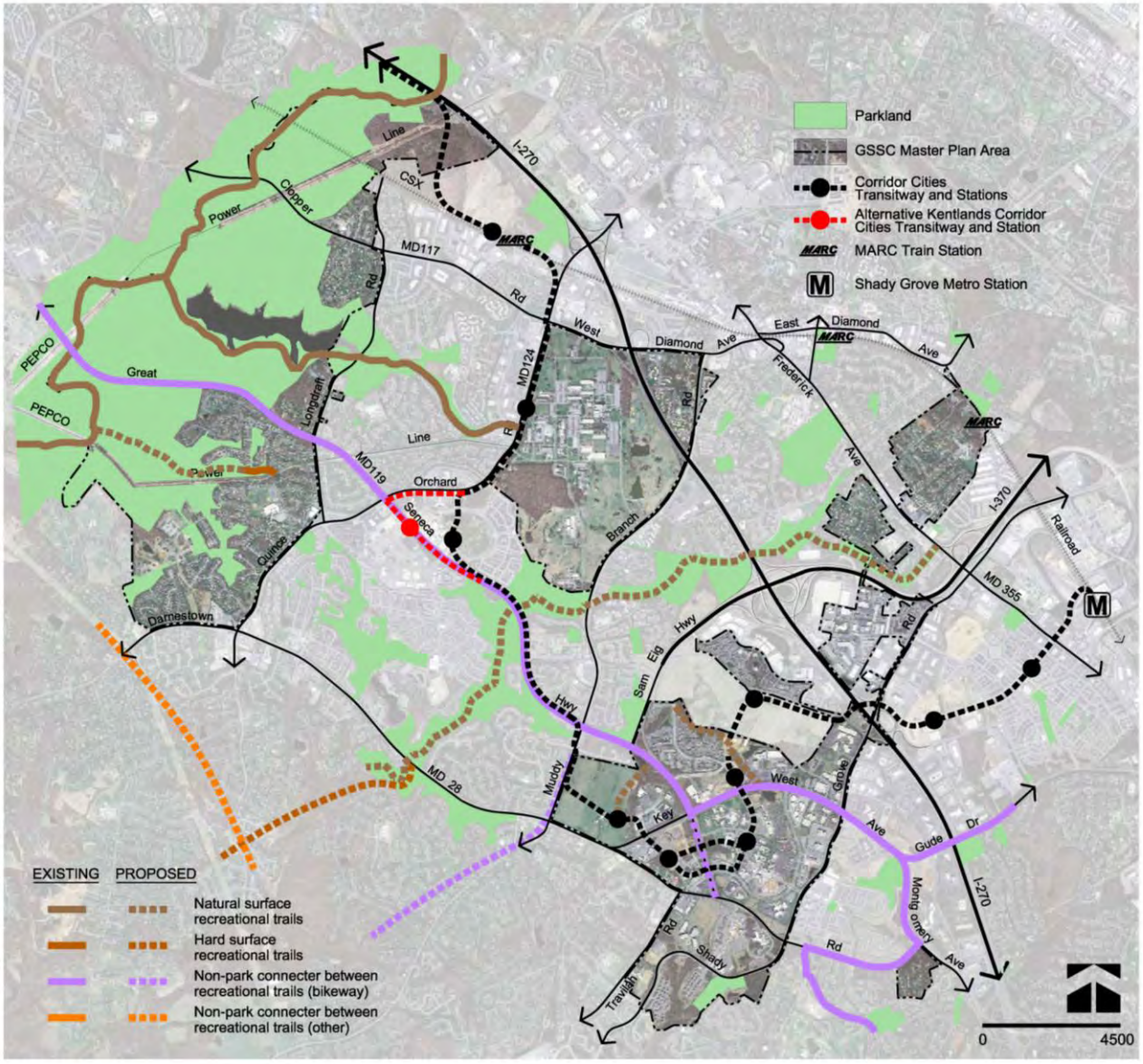
map 44 LSC Bikeway Network



Recommendations

- Provide Countywide and local bikeways as recommended on the bikeway tables and maps.
- Provide a continuous bikeway as part of the CCT.
- Include bikeway and pedestrian paths as part of all grade-separated interchanges.
- Complete the trails network, including:
  - the Muddy Branch Trail Corridor from Dufief Mill Road and Darnestown Road to Great Seneca Highway on the east side of Muddy Branch Road adjacent to the Belward property
  - a natural surface trail connection between Quince Orchard Valley Park and the Seneca Greenway Corridor.

map 45 Trail Network



Proposed Capital Improvement Projects

The Capital Improvements Program (CIP) funded by the County Council and implemented by County agencies, establishes how and when construction projects are completed. The CIP cycle starts every two years when regional advisory committees and the M-NCPPC hold forums to discuss proposed items for the six-year CIP. The land use and staging recommendations contained in this Plan will require the following capital improvement projects. Some projects may include private sector participation.

table 7 proposed capital improvement projects

project name	location/limits	road number	category	coordinating agency
Greater Shady Grove TMD			Transp.	MC-DOT
Travilah Fire Station	Shady Grove Rd and Darnestown Rd		Safety	MC-DGS
PSTA Relocation				MC-DGS
CCT Funded	Shady Grove Metro-Metropolitan Grove		Transit	MSHA/MTA Private Sector
LSC Recreation Loop			Recreation	Private Sector
CCT under construction	Shady Grove Metro-Metropolitan Grove		Transit	MSHA/MTA
Elementary School	LSC West/PSTA		Schools	MCPS
Park (with school)	LSC West/PSTA		Recreation	M-NCPPC
Civic Green (PSTA)	LSC West/PSTA		Open Space	M-NCPPC/ Private Sector
Medical Center Dr Extended	Great Seneca Hwy to Key West Ave	A-261d	Transp.	MC-DOT/ Private Sector
LSC Central	Central Green		Open Space	Private Sector
Decoverly Dr extended	Johns Hopkins Dr to Muddy Branch Rd	A-284	Transp.	MC-DOT/ Private Sector
Sam Eig Hgwy/ Great Seneca Hgwy	intersection interchange		Transp.	MC-DOT/ MSHA
JHU Belward	active recreation/ fields and trails		Recreation	Private Sector
JHU Belward	Muddy Branch Trail Connector		Recreation	M-NCPPC Private Sector
Key West Ave widening	Darnestown Rd to Shady Grove Rd	M-22	Transp.	MC-DOT/ MSHA
Shady Grove Rd/ Key West Ave	intersection interchange		Transp.	MC-DOT/ MSHA
Great Seneca Hgwy/ Muddy Branch Rd	intersection interchange		Transp.	MC-DOT/ MSHA

Agencies *MC-DOT: Montgomery County Department of Transportation MCPS: Montgomery County Public Schools*
M-NCPPC: Maryland-National Capital Park and Planning Commission
MC-DGS: Montgomery County Department of General Services
MSHA/MTA: Maryland State Highway Administration/Maryland Transit Administration

Resolution No.: 16-1325
Introduced: May 4, 2010
Adopted: May 4, 2010

COUNTY COUNCIL FOR MONTGOMERY COUNTY, MARYLAND SITTING AS THE DISTRICT COUNCIL FOR THAT PORTION OF THE MARYLAND-WASHINGTON REGIONAL DISTRICT WITHIN MONTGOMERY COUNTY, MARYLAND

By: District Council

SUBJECT: Approval of Planning Board Draft Great Seneca Science Corridor (Gaithersburg West) Master Plan

1. On July 31, 2009 the Montgomery County Planning Board transmitted to the County Executive and the County Council the Planning Board Draft Gaithersburg West Master Plan.

2. The Planning Board Draft Gaithersburg West Master Plan amends the approved and adopted 1990 Shady Grove Study Area Master Plan, the 1985 Gaithersburg Vicinity Master Plan, and the 1982 Oakmont Special Study Plan; The General Plan (On Wedges and Corridors) for the Physical Development of the Maryland-Washington Regional District in Montgomery and Prince George's Counties; the Master Plan of Highways within Montgomery County; and the Countywide Bikeways Functional Master Plan.

3. On September 10, 2009 the County Executive transmitted to the County Council the fiscal analysis and Executive Branch technical comments on the Gaithersburg West Master Plan.

4. On September 15 and 17, 2009 the County Council held a public hearing regarding the Planning Board Draft Gaithersburg West Master Plan. The Master Plan was referred to the Planning, Housing, and Economic Development Committee for review and recommendation.

5. On September 29, October 12, October 26, October 29, 2009 and February 1, March 10, March 22, and April 5, 2010, the Planning, Housing, and Economic Development Committee held worksessions to review the issues raised in connection with the Planning Board Draft Gaithersburg West Master Plan.

6. On April 6, 2010 and April 13, 2010 the County Council reviewed the Planning Board Draft Gaithersburg West Master Plan and the recommendations of the Planning, Housing, and Economic Development Committee.

Action

The County Council for Montgomery County, Maryland, sitting as the District Council for that portion of the Maryland-Washington Regional District in Montgomery County, Maryland, approves the following resolution:

The Planning Board Draft Gaithersburg West Master Plan, dated July 2009, is approved with revisions. County Council revisions to the Planning Board Draft Gaithersburg West Master Plan are identified below. Deletions to the text of the Plan are indicated by [brackets], additions by underscoring. All page references are to the July 2009 Planning Board Draft Plan. The Council has changed the name of the planning area to the Great Seneca Science Corridor planning area; throughout the document, all references to the Gaithersburg West Master Plan should be changed accordingly.

Page 8: Revise the fifth bullet as follows:

- Meet the recreation needs of the [Gaithersburg West] Great Seneca Science Corridor Master Plan by identifying and acquiring a site for a new local public park in the Quince Orchard area and requiring the dedication of parkland for new parks and open spaces in the LSC Districts.

Page 11: Revise text in the text box as follows:

The [proposed] 2009 *Germantown Master Plan* builds on the Corridor City concept and envisions an up-County center for community life with mixed uses and density focused at transit stations.

The [proposed 2009] 2010 *White Flint Sector Plan* envisions the Metro station area and Rockville Pike as a vibrant and sustainable urban center that can adapt to future challenges.

Page 15: Revise the "Proposed Acreage" column of the "Existing and Proposed Life Sciences Center Zoning" table to reflect the zoning changes made by the District Council.

Page 17: Revise proposed zoning map on page 17 and throughout the Master Plan to reflect all Council changes in zoning.

Page 22: Revise the first two sentences in the paragraph as follows:

Overall, the potential residential land use for the greater LSC could yield a maximum of 5,750 additional dwelling units to complement a projected total of [60,000] 52,500 jobs (based on existing, approved, and proposed development). The resulting ratio of [6.6] 5.8 jobs per dwelling unit is based on the existing housing in the greater LSC area (3,262 dwelling units, including the Traville, Decoverly, and Washingtonian residential cluster) combined with new housing (5,750 dwelling units) for a total of 9,012.

Page 24: Delete the entire section entitled Public Open Spaces (to be replaced with a new section on open spaces on page 25).

Page 24: Revise the text under the "Sustainability" heading as follows:

[New development must feature building, site, and street designs that respect natural systems, respond to sun, shade and topography, and make maximum use of renewable resources, reducing disruption of the natural environment to the highest extent feasible. Development should be compact and feature a diversity of land uses, making more efficient use of land, energy and building materials, and enabling people to live, work and shop in one area. The CCT, trails, and attractively designed sidewalks will connect the districts and adjacent neighborhoods, encouraging walking instead of driving. Trail systems within developed areas will connect with trails surrounding parks.

This Plan recommends reinforcing and expanding the use of green buildings to emphasize green site design and energy conservation practices. Development should incorporate approaches and technology to maximize energy conservation and increase renewable energy use such as solar, wind and geothermal. Environmental site design and stormwater management techniques should be used to improve water conservation and reduce energy required for water treatment and distribution. Building re-use, deconstruction techniques that recover reusable building materials, and recycling should be employed to further reduce energy associated with development.

Minimizing imperviousness will be necessary to reduce construction energy costs, but also reduce urban heat island effect and improve water conservation. Improving connectivity through the provision of trails, transit, and sidewalks will reduce automobile use. Forestation approaches are recommended, including preserving existing forest, adding urban tree canopy and landscaping to reduce local carbon concentrations. All these building and site design approaches will benefit air quality, water quality, and human health.

- **Air Quality Protection**
  The Washington Metropolitan region, including the Gaithersburg West Master Plan area, has been identified as a non-attainment area for ground-level ozone and fine particulate matter. The same recommendations this Plan makes for creating a sustainable community and improving climate protection, including forestation, green buildings, reducing imperviousness, and improving connectivity, will provide overall air quality benefits.

- **Water Quality Protection**
  County, State and Federal regulations establish water quality protection goals. In addition, this Plan recommends protecting existing streams and wetlands and their buffers through site design. Stormwater management should include best management practices that capture stormwater on-site for re-use in non-potable water applications.

- **Active Living**
  All of the environmental recommendations can contribute to maintenance of the physical and mental well-being of the residents and employees in Gaithersburg West. Besides the direct health benefits of protecting the climate, air quality and water quality, compact, pedestrian-friendly design will encourage walking and bicycle riding, increasing physical fitness.]

Sustainability

Sustainability is defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs. A sustainable community integrates economic viability, environmentally conscious design, social equity, and renewable energy sources. The compact, walkable, and green community envisioned for the plan area integrates many aspects of sustainability. It accommodates new residents and businesses while reducing land consumption and vehicle miles traveled, thereby reducing the carbon footprint from new development in the County.

Urban development patterns served by transit can reduce dependence on the automobile. Outside of the Belward site, most new development will take place over existing surface parking lots. An expanded street grid with adequate sidewalks and street trees along with the LSC Loop will encourage people to walk or bicycle to local services or destinations. Energy conservation, onsite energy generation, or renewable energy sources will reduce the costs of energy transmission and the carbon footprint of the new development. Energy efficient building design will reduce energy costs for building materials and energy usage. On-site stormwater management improves water quality and quantity. Street trees add to the tree canopy and reduce the heat island effect. Mixed uses put services in easy reach of residents. New residential development will provide more affordable housing and expand opportunities for economic diversity located near transit and services.

Sustainable development first preserves existing resources and then improves environmental conditions.

Resource Protection and Preservation

This Plan recommends ways to restore environmental functions in the Plan area as it redevelops, including: water quality protection (intercepting, detaining, evaporating, transpiring, and filtering precipitation and infiltrating it into ground water tables, preventing erosion and sedimentation, controlling flooding), air quality protection (filtering pollutants from air, producing oxygen), climate protection (sequestering and storing carbon, reducing urban heat island effect), protection of biological diversity (provision of habitat), and health benefits (clean air and water, recreational benefits, mental health benefits). Redevelopment of already disturbed areas will avoid losses of natural resources in the outer portions of the County. To preserve and enhance natural resources and their associated functions in the Life Sciences Center, this Plan:

- Creates a local street network that avoids impact to natural resource areas as much as possible (see page 43).

- Recommends that facility plans for any new roads minimize impacts to existing resources.
- Recommends creation of the Life Sciences Center Loop (see pages 25-26). Existing natural resource areas are preserved through the Planning Board's Environmental Guidelines and connected by the LSC Loop.
- Where possible, use required forest and tree planting to enhance and expand existing resources.

Water Quality

Wherever development occurs, water quality impacts result primarily from the creation of impervious surfaces that seal off the soil layer and remove forests and tree canopy. Increases in imperviousness and decreases in forest cover have been associated with declines in water quality. Pollution from vehicles and road salts accumulates on roads and parking lots, and is washed off and carried into nearby streams in rain and snow events. In summer, rain water is heated on contact with unshaded impervious surfaces, creating temperature spikes in aquatic systems that can be damaging to aquatic organisms. Rainfall and snowmelt runs off impervious surfaces quickly, creating erosive flows that damage streams and carry harmful sediments into streams, rivers, and the Chesapeake Bay. Infiltration is the most difficult of the environmental functions to restore, as it requires reconnecting runoff with the soil. Approaches for improving water quality in urbanizing areas should recognize opportunities presented by both horizontal and vertical surfaces at various levels throughout the development.

Many of the techniques recommended in this Plan are included in the Environmental Site Design (ESD) stormwater treatment approaches now required by State and local laws and regulations. In addition, the County will be undertaking retrofit programs consistent with the requirements of the state stormwater permit. The result of this combination of regulation, County retrofit programs and master plan recommendations will be the restoration of natural resources and environmental functions that can be incorporated into the concentrated development pattern envisioned for this area.

To protect water quality, this Plan:

- Recommends site design and construction options that minimize imperviousness. These options include:
    - Compact development.
    - Parking options such as reduced parking requirements and the use of structured parking and/or shared parking facilities (see page 44).
- Recommends the use of bioswales, planter beds, rain gardens, pervious pavement, the incorporation of non-paved areas into open spaces, and similar techniques included in Environmental Site Design. Techniques that increase soil volume and porosity under paved areas are recommended to enhance infiltration opportunities.
- Recommends the use of vegetated roofs and walls.

- Recommends increasing tree canopy. Specific tree canopy goals are:
  - Predominantly commercial mixed-use areas: 15 - 20 % minimum canopy coverage.
  - Predominantly residential mixed-use areas: 20-25 % minimum canopy coverage.
  - The Belward Campus, with its specialized institutional use and protection of existing natural resources, should have a minimum canopy coverage of 30%.

  These goals should be met by combining forest conservation requirements with street tree plantings and landscaping plantings (see page 74). Public and private open space areas should strive for a minimum of 25% canopy coverage. Surface parking areas should meet or exceed 30% canopy coverage.
- Recommends incorporating tree canopy and infiltration techniques into portions of the LSC Loop that connect existing natural areas.
- Recommends incorporating tree canopy and infiltration techniques into other open spaces wherever feasible.
- Recommends landscaping with plants that do not require extensive watering or fertilization. Native plants that are adapted to grow in our area are preferred.
- Recommends the use of low-flow plumbing fixtures in buildings.
- Promotes using techniques that capture and re-use stormwater and/or graywater (graywater is water from sinks, bathtubs and showers that can be safely used for watering plants or flushing toilets). This may include the use of rain barrels and cisterns. These uses must be consistent with County health regulations.

Piney Branch SPA

Portions of the Life Sciences Center area are included in the Piney Branch Special Protection Area for water quality and contain remnants of the rare habitat provided by the serpentenite rocks that underlie parts of this area. Special Protection Areas require that a water quality plan be prepared detailing how impervious surfaces will be minimized and how advanced and redundant stormwater treatment measures will be achieved. Most of the Special Protection Area is in the LSC South District, where this Plan recommends that development be restricted to existing and approved development, with the exception of the Rickman Property. Development on this property should minimize new impervious surfaces especially on that portion of the property that drains to the Special Protection Area. A small portion of the SPA extends north of Darnestown Road into the southern portion of the LSC Central District. Most of this area is already developed.

- Future redevelopment in this area should minimize imperviousness in their site designs, particularly in the Special Protection Area (see page 41).
- Any development that involves or is adjacent to serpentenite habitat should preserve this area and provide additional buffering wherever possible.

Air Quality

Most impacts to air quality result from the operation of motorized vehicles and regional energy production involving the combustion of fossil fuels. Impacts include the emissions of precursors of ground-level ozone, volatile organic compounds, carbon monoxide, oxides of nitrogen and sulfur, and fine particulates. Amelioration of air quality impacts involves

restoring air filtering and oxygen-producing functions, reducing vehicle miles traveled, and reducing use of energy produced by burning fossil fuels.

To restore air filtering and oxygen-producing functions, this Plan:

- Recommends increasing vegetation through the use of planter beds, bioswales and rain gardens, landscaping, street trees, and vegetated roofs and walls to the maximum extent feasible through aggressive application of Environmental Site Design.

To reduce vehicle miles traveled, this Plan:

- Recommends creating compact, mixed-use development that encourages and facilitates non-motorized travel and reduces travel distances.
- Recommends providing alternatives to automobile travel, including:
    - Public transit in the form of the CCT and local bus service.
    - Incorporating trails into the LSC Loop. Trails in regulated areas such as stream buffers and forest conservation easements should be natural surface; trails outside of environmentally regulated areas may be hard-surfaced to facilitate travel by bicycle (see page 79).
    - Incorporate other pedestrian and bicycle trails throughout the Life Sciences Center, and make connections to other Countywide and local jurisdiction trail systems (see page 79).
    - Make the existing area more walkable by improving road crossings (see page 74).
- Encourages other measures, such as the provision of bicycle parking facilities, to promote and facilitate non-motorized travel.

Climate Protection

Carbon dioxide and other greenhouse gasses are released into the atmosphere by combustion of fossil fuels to power motorized vehicles and to provide power for lighting, heating and cooling buildings and powering electronics and appliances, and by deforestation. Summertime energy use is driven higher by urban heat island effects from radiant heating of hard surfaces. Approaches to mitigating climate impacts focus on reducing energy consumption, increasing use of renewable energy, restoring carbon sequestration and storage functions, and reducing urban heat island effect.

The carbon footprint analysis contained in the Appendix to this Plan shows that, even if we cannot account for potential improvements to building and vehicle technology or behavioral changes to reduce energy consumption, per capita carbon dioxide emissions will be significantly less with compact, transit served development than would be the case if the same number of new homes and jobs were built on vacant land in other parts of the County.

Taken in isolation, the carbon footprint of new development in the Plan area will be greater than would occur under the 1990 Master Plan; however, the increase in the carbon footprint for the entire County will be less under this Plan. The compact, walkable, transit served community will enable people and employers to make even greater reductions in the carbon footprint. The following recommendations are aimed at reducing the carbon footprint through

reduced energy consumption, promotion of renewable energy generation, increased carbon sequestration and reduced urban heat island effect.

To reduce carbon footprint, this Plan:

- Recommends development that is compact, features a mixture of land uses, is walkable and served by public transit to make efficient use of land and resources, to reduce vehicle miles traveled and facilitate non-motorized travel.
- Creates opportunities for new development and redevelopment that take advantage of existing infrastructure and adaptive re-use of existing structures where feasible.
- Recommends that development meeting LEED or equivalent certification of any level obtain as many points as possible from approaches that reduce carbon emissions, including:
    - Site and building design and orientation that takes advantage of passive solar heating and lighting opportunities, maximizes potential for use of renewable solar energy systems, and permits passive cooling through proper shading and ventilation.
    - A commitment to reduce energy and water consumption.
    - A commitment to use recycled building materials, locally produced materials, and local labor.
    - A commitment to use building deconstruction techniques to facilitate re-use and/or recycling of building materials.
    - A commitment that new buildings meet the minimum energy efficiency standards of 17.5% below the calculated baseline performance or meet the appropriate ASHRAE advanced energy design guide. Renovated buildings should commit to meet a 10.5% energy efficiency standard below the calculated baseline performance or meet the appropriate ASHRAE advanced energy design guide.
    - Incorporates renewable energy systems to supply a portion of a building's energy needs, where feasible. Such systems may include:
        - Solar power.
        - Wind power.
        - Use of geothermal heating and cooling systems.
- Recommends maximizing tree canopy coverage. (See goals for tree canopy coverage in the water quality section).
- Recommends the use of green roofs and walls.
- Recommends the use of light-reflecting roof surfaces where green roofs cannot be used.
- Recommends increasing vegetation throughout the Life Sciences Center. Approaches include:
    - Targeting unforested portions of regulated areas for reforestation.
    - Incorporating street trees and landscaping trees throughout the Life Sciences Center.
    - Use of vegetated roofs and walls.

- Use of planter beds, bioswales and rain gardens.
- Incorporating vegetation into hardscaped open space areas.

Protection of Biological Diversity
Protection of biological diversity focuses on preserving existing habitat, and on restoring habitat where feasible. Biological diversity is maintained when habitat is protected and invasive species are controlled. Control of invasive species and reducing wildlife overpopulations are operational issues not appropriate to address in a master plan. While an urban environment cannot typically support highly diverse plant and wildlife populations, much can be done to improve conditions for native plants and animals.

To protect biological diversity, the Plan:

- Recommends preservation of existing natural areas, including the forest at the corner of Key West Avenue and Great Seneca Highway.
- Recommends the use of native plants and trees in landscaping and street tree planting to the maximum extent possible.
- Recommends the use of plants that serve as hosts for butterflies and other pollinator insect species.
- Recommends preservation of the 10-acre forested tract west of the power line and north of Game Preserve Road on the McGown property.
- Recommends preservation and additional buffering of the endangered Krigia dandelion population.

Health and Wellness
Health and wellness are promoted by providing an environment with clean air and water, by providing opportunities to exercise and recreate, and by establishing an environment that helps reduce stress. The recommendations detailed in the above sections will all help contribute to health and wellness.

In addition, this Plan:

- Encourages that walkways and bicycle trails be safe and attractive to encourage walking, jogging and biking.
- Recommends that public open spaces be attractively designed destinations within the community to draw in pedestrians and cyclists.
- Encourages using some open spaces and on green roofs for use as community gardens to promote the consumption of locally-grown seasonal fruits and vegetables.
- Creates the 3.5-mile LSC Loop path which incorporates natural features, and provides non-motorized connectivity for the districts and destinations throughout the Life Sciences Center.

Page 25: Revise the heading on page 25 as follows:

Community Facilities [and Amenities], Open Spaces, and Connectivity

Page 25: Add the following sentence at the end of the first full paragraph:

Where possible, connections to existing neighborhoods surrounding the LSC should be created or enhanced.

Page 25: Revise the third paragraph as follows:

A fire station is needed in this area, and the northwest corner of Shady Grove Road and Darnestown Road [is under consideration] has been selected.

Page 25: Add the following sentence after the first sentence in the fourth paragraph:

This Plan recommends that consideration be given to the purchase of a site for a new local park in the Quince Orchard area.

Page 25: Revise the last sentence in the fifth paragraph as follows:

A publicly accessible specialized library could be funded through private sector development contributions to an amenity fund and could be located at Belward or the JHU-MCC site, or another appropriate location, in LSC Central.

Page 25: Add the following section after the fifth paragraph:

Open Spaces

Thriving places rely on a high quality public realm. Parks and open spaces offer community gathering places, foster a sense of place and civic pride, and encourage environmental stewardship; essential components of community life. The best communities incorporate substantial green elements and open spaces that provide opportunities for recreation, outdoor socializing, collaborating, and connecting to nature. This Plan recommends that parks, publicly accessible open spaces, civic gathering places, and trails be designed as part of a comprehensive system that contributes to a sustainable community. To achieve this goal, an interconnected pedestrian and bike path system should link new and existing neighborhoods to parks and other destinations.

Additional parks and open spaces (described more fully in each District) will be created to provide recreational opportunities that support and enhance the vision of the LSC. The future open space system will support a vibrant and sustainable work life community by creating open spaces that will be easily accessible by walking or transit and will provide a range of experiences for a variety of people.

This Plan recommends a series of open spaces provided through a combination of public and private efforts. Both residential and commercial development projects should provide recreational facilities, open spaces, and trail connections that shape the public realm, help implement the Plan recommendations, and serve existing and future employees and residents.

The open space system will include:

- An extensive open space network on the Belward property with a variety of passive, active, and cultural experiences.
- Completion of the Muddy Branch Trail Corridor along the western edge of the Belward property.
- Civic greens at each CCT station.
- A shared park/school site in LSC West as well as a public civic green.
- Development of Traville Local Park in LSC South.
- Green corridors between and through major blocks linked by the LSC Loop to connect destinations and integrate passive and active spaces.
- An additional active use Local Park in the Quince Orchard area (outside the LSC; see page 49).

Page 25: Add the following heading before the sixth paragraph:

Community Connectivity and the LSC Loop

Page 25: Revise the first sentence of the sixth paragraph and add a second sentence, as follows:

The organizing element of the LSC open space plan is a 3.5-mile multi-use path loop connecting the districts and destinations with extensions from the core loop that link to the surrounding communities, including the cities of Gaithersburg and Rockville (see the map on page 26). Connectivity between the LSC Districts and adjacent neighborhoods is described more fully in the following District section.

Page 25: Revise the beginning of the last paragraph as follows:

The LSC Loop will link activity centers and community facilities, including the planned high school on the Crown Farm (in the City of Gaithersburg), the historic Belward Farm, and the civic green and retail center on LSC West. Creation of the loop (including landscaping and facilities such as benches) will be the primary amenity requested of property owners. CCT Stations along the Loop include the Crown Farm, Belward, and LSC West. Each CCT station in the LSC will have a public open space and property owners will also be requested to contribute to the implementation of this amenity.

Page 25: Revise the last sentence on the page as follows:

Traville Local Park, in LSC South, is proposed to [have] include a small rectangular field, half-court basketball, older children's playground, and a tot lot, and should be accessible from an extension of the LSC Loop.

Page 27: Add the following to the bullet list:

- Create extensions (from the main loop) that connect surrounding neighborhoods with the LSC, providing residents of these communities with access to the transit stations, activities, amenities, and open spaces in the LSC Districts.

Page 27: Revise the table to update the amount of existing development and revise the proposed 2010 Plan numbers to reflect Council changes to the total allowed commercial development as follows:

life sciences center: existing and proposed development

	Existing	Existing & Approved	1990 Master Plan	Proposed 20[09]10 Plan
Commercial (sf)	6,940,000	10,700,000	13,000,000	[20,000,000] 17,500,000*
Dwelling units	3,300	3,300	3,800	9,000
Jobs	21,200	30,550	38,000	[60,000] 52,500
Jobs-Housing Ratio	6.4	9.2	10.0	[6.6] 5.8

* Although zoning would allow up to 20 million square feet of development, the staging plan limits development to 17.5 million square feet.

Page 28: Add the following paragraph after the fifth paragraph:

The LSC Zone allows for a transfer of density from one LSC-zoned property to another LSC-zoned property. This provision would allow a transfer of density from Belward to LSC Central, but it is completely voluntary and could only occur at the property owners' initiative. With a transfer of density, if there is an offsetting reduction in FAR on Belward, the density and height in LSC Central could be increased by 0.5 FAR and by 50 feet above what the Plan allows for this district.

Page 28: Revise the first sentence of the last paragraph as follows:

A fire station is needed in this area and [a possible location] the selected location is the northwest corner of Shady Grove Road and Darnestown Road.

Pages 29 and 30: Modify the graphics to reconfigure the proposed business road connections in the vicinity of Shady Grove Adventist Hospital and the 9700 block of Medical Center Drive to minimize property impacts and include all road number labels.

Page 30: Add two bullets as follows:

- Widen Key West Avenue (MD 28) to 8 lanes divided
- Construct an interchange at Key West Avenue (MD 28) and Shady Grove Road

Page 31: Add the following text after the fourth paragraph:

Creating a new community on publicly-owned land in the LSC West District provides an opportunity for the County to engage outstanding practitioners of sustainable town planning, layout, and design to help implement this Plan's vision. Located between LSC Central and Belward, the new LSC West community will be a hub of activity that draws people from the other LSC Districts as well as surrounding neighborhoods. Residents of the new high density housing in this District will enliven and activate the retail uses and open spaces. An interconnected street grid will create walkable blocks with a synergistic mix of uses, including ground-floor retail and wide sidewalks to accommodate outdoor cafes. The central, civic green at the CCT station should be framed by buildings and be large enough for major outdoor activities and gatherings, such as a summer concert series.

Page 31: Revise the first sentence of the fifth paragraph as follows:

The Plan recommends the Commercial Residential (CR) Zone with a 1.0 FAR that could yield 2,000 dwelling units with supporting retail, services, open spaces, and community uses.

Page 31: Add the following sentence to the sixth paragraph after the fourth sentence:

This park should be large enough to accommodate a regulation size rectangular field.

Page 31: Revise the fifth sentence in the sixth paragraph as follows:

In addition to the park/school site, development should be accompanied by a new public urban park to serve as the central, civic open space for the residential community.

Page 31: Add the following paragraph after the sixth paragraph:

LSC West is the primary site for housing for the live/work community envisioned for the LSC. This site is expected to provide a public school/park parcel, a civic green, a CCT station and right-of-way, a road network, and structured parking. In addition, a significant water main traverses the property. Without impairing the ability to achieve the uses and density for LSC West, this Plan recommends that at least 35 percent of the incentive density attainable for this site be achieved through the use of building lot termination (BLTs) easements and affordable housing.

Page 31: Add the following three paragraphs after the last paragraph on the page:

Future development or redevelopment of the Darnestown Road side of LSC West should be compatible with the existing residential community of Hunting Hill Woods to the south (in

the 2002 *Potomac Subregion Master Plan*). A proposed townhouse development (on the RT-8 parcels) in LSC West along the north side of Darnestown Road addresses land use compatibility and design (with a maximum building height limit of 35 feet). If there is future redevelopment of the existing retail and office uses at the corner of Darnestown Road and Key West Avenue (zoned C-3 and O-M; recommended for CR), compatibility with Hunting Hill Woods must be addressed.

This Plan encourages improved connectivity from the residential neighborhoods south of Darnestown Road to the LSC West District. As the core of the District develops into a new community with retail, open spaces, and a CCT station, adjacent communities should have access to these amenities. The Plan recommends a Dual Bikeway/Shared Use Path along Darnestown Road (DB-16) and there is an existing off-road shared-use path along Travilah Road (SP-57) that is recommended to extend into LSC West (LB-5). In addition, an LSC Loop extension is recommended from LSC West into LSC South (see map on page 26).

Opportunities to create new connections are limited by the character of existing neighborhoods to the south, which are inward-facing with numerous cul-de-sacs, rear yards along Darnestown, and only one access point at Yearling Drive. As shown on the XX map, an extension of Yearling Drive (which is aligned with the access driveway to the existing office uses on the north side of Darnestown Road) may provide the best future opportunity for improved access to the LSC West District. Opportunities for a public easement through the proposed townhouse development could also be explored.

Page 33: Add a bullet as follows:

- Widen Key West Avenue (MD 28) to 8 lanes divided

Page 34: Revise the second paragraph as follows:

This Plan recommends increased density on the Belward property (1.0 FAR), served and supported by a CCT transit station. The Plan recommends that both the 107-acre undeveloped Belward property as well as the developed, eastern portion, be rezoned from the R&D Zone to the revised LSC Zone to allow [a mix of uses and] higher densities and height focused [on] at the CCT station. Development on the Belward property may include housing for the employees and/or visiting researchers. Plan recommendations allow a concentrated and compact form of development for Belward that is centered around transit. This denser building pattern (with structured parking) creates opportunities for an extensive open space system. Previous plans for Belward were a conventional suburban office park model with sprawling, low-density, auto-dependent development, vast amounts of surface parking lots, and few community amenities intended for use by residents or workers not on the Belward campus.

Page 34: Add the following after the second paragraph:

As discussed in the LSC Central section, the LSC Zone allows for a transfer of density from one LSC-zoned property to another LSC-zoned property if recommended in the Master Plan.

This Plan provides the option for a transfer of density from Belward to LSC Central . A density transfer is completely voluntary and could only occur at the property owners' initiative and discretion. With a transfer of density, if there is an offsetting reduction in FAR on Belward, the density and height in LSC Central could be increased by 0.5 FAR and by 50 feet above what the Plan allows for in this district.

The design and layout of Belward should be sensitive to the residential neighborhoods that surround the site. To create appropriate transitions and minimize impacts, the Plan recommends substantial open spaces, particularly on the three sides of Belward that are adjacent to neighborhoods. Development around the north, west, and south perimeters -- adjacent to the Mission Hills buffer, the Muddy Branch Road park, and Darnestown Road -- should be compatible with surrounding neighborhoods in terms of bulk, scale, and building height. Heights should transition from the highest (150 feet maximum) in the blocks immediately surrounding the CCT station to lowest at the edges of the property (50 feet maximum) and immediately adjacent to the historic area (60 feet maximum). Ultimately, the Planning Board will need to make the tradeoff between height and open space at the time of development. Rear walls and service areas should not face the surrounding neighborhoods. Generally, parking should be located in garages that are placed in the center of blocks and surrounded by buildings.

Page 34: Revise the second sentence of the fourth paragraph as follows:

New development adjacent to and near the farmstead must be compatible in scale and graduated in height (no higher than 60 feet immediately adjacent to the historic site) to be sensitive to the historic resource.

Page 34: Delete the last paragraph and replace with the following text. Add a new graphic that shows the proposed open space system on Belward.

[To meet the recreation needs of this area, as well as provide facilities for those working on-site at Belward, areas should be reserved for both active and passive recreation. Two rectangular fields for active recreation should be provided within the designated buffer areas along Muddy Branch and Darnestown Roads.]

The open space system for the Belward District includes an extensive network of passive and active recreation linked by an internal path system with connections to the LSC Loop and the surrounding communities. By concentrating density in a compact form (with a limited amount of taller buildings and parking garages), substantial amounts of open space can be created. Placing parks and open spaces around the edges of Belward provides compatible transitions and buffers for the adjacent single-family neighborhoods. From natural, passive areas with trails next to streams to an activated urban square at the CCT station, a range of outdoor experiences are planned, all of which would be connected by trails that allow visitors to go from one open area to another by foot. As outlined below and shown on map XX, the Plan recommends nearly 50 acres of open space:

- Muddy Branch Park will consist of a minimum of 12 acres (with a minimum width of 100 feet along Muddy Branch Road) for active and passive recreation, including informal and organized playing areas, and tree-lined edges at the perimeter. One rectangular field for active recreation could be provided in this area. The landmark tree in this area should be a focal point in the design of the park and open space. The park should be designed to create a sense of place and destination for existing and future residents with attractive amenities such as gardens, walking paths and water features. The Muddy Branch Trail Corridor and a countywide bikeway connection (DB-24; dual bikeway/shared use path) must be completed on the Belward side of Muddy Branch Road.

- Mission Hills Preserve will create a 200-foot wide buffer between the rear property line of the nearest Mission Hills homes and any buildings on the northern side of Belward. In addition, 200-foot wide stream buffers will be created around two tributaries of the Muddy Branch, limiting development in this portion of the property. Mission Hills Preserve, combined with the two stream buffers, will create a 20-acre area for reforestation and passive recreation that should include natural surface trails that connect with the other open spaces on the site.

- Darnestown Promenade will include a three-acre landscaped buffer (60-feet wide) along Darnestown Road that maintains vistas to the historic farmstead, includes the landmark sign (boulder and plaque), and creates a tree-lined pedestrian path that connects to the on-site path system as well as the LSC Loop. The buffer will be significantly deeper on the western portion of the site where it merges with the Muddy Branch Park. In addition, a countywide bikeway (DB-16) must be completed along Darnestown Road.

- Belward Commons and Historic Farmstead will include 10 to 12 acres of open space surrounding and including the historic farmstead buildings. Views of the farmstead from Darnestown Road and residential neighborhoods to the south and west, as well as other vantage points within the site, should be preserved to the extent practicable, consistent with other Master Plan objectives for this site. Reuse of the historic buildings offers opportunities for community-serving uses that could include active indoor recreation or cultural activities. A weekend farmers market could be established here.

- Urban Square at the CCT Station is envisioned as a hub of daily activity with space for special events and gatherings and some community retail for the convenience of CCT riders, workers, and area residents.

When a development plan application for Belward is submitted, the Planning Board should seek to maximize open space adjacent to existing residential neighborhoods and, to the extent feasible, maintain views of the historic farmstead. The Muddy Branch Park and all open spaces proposed on Belward are to be publicly accessible while remaining privately owned, constructed, and maintained. At the time of development plan approval, the Planning Board

will ensure that the recreation and open space facilities in the approved development plans are built to suitable recreation standards and that the Muddy Branch Park will be substantially completed before the property owner receives building permits for more than 25 percent of the total development allowed on the property.

Development in accordance with this Plan should add value and enhance the quality of life in the area by creating substantial amenities, recreational opportunities, and phasing new development with the provision of transit and infrastructure to support it. This Plan recommends that connections be created so that residents from surrounding neighborhoods have access to these amenities. Residents should be engaged throughout all phases of the Belward development review process to provide comments and suggestions on issues such as connectivity, plans for open space, and other amenities. As shown on the graphic on page 36, the Plan recommends new streets on Belward, including one aligned with Midsummer Drive that can provide access from the Washingtonian Woods neighborhood. The bikeway and trail connections mentioned above will improve access. Options for more direct links from the surrounding communities to Belward should be explored as development proceeds.

Page 35: Revise the second bullet under "Land Use and Zoning" as follows:

- Require a Belward Concept Plan with the first Preliminary Plan application to address the Plan's guidelines, including the CCT location, the highest densities and height at transit, preservation of the historic property and views of the farmstead, creation of a local street network and the LSC Loop, [and] the open space system, neighborhood buffers, and connections from surrounding residential neighborhoods

Page 35: Revise the first bullet under "Historic Belward Farm" as follows:

- Preserve views of the farmstead, to the extent practicable, from Darnestown Road[, looking north, east, and west as well as other vantage points within the larger Belward site] and residential neighborhoods to the south and west, consistent with other master plan objectives for this site

Page 36: Revise the second bullet under "Urban Form and Open Spaces" as follows:

- Organize the significant roads and buildings to provide views of the historic Belward Farm

Page 36: Revise the seventh and eighth bullets under "Urban Form and Open Spaces" as follows:

- Provide at least [15] 20 percent of the net tract areas as public use space
- Create an [300-foot buffer] open space along Muddy Branch Road with a minimum width of 100 feet and a 60-foot landscaped buffer along Darnestown Road

Page 36: Revise the ninth bullet under "Urban Form and Open Spaces" as follows:

- Provide one [two] rectangular field[s] for active recreation in the Muddy Branch Park [in these buffer areas], with permitting by the Parks Department

Page 36: Revise the last bullet under "Urban Form and Open Spaces" as follows:

- Provide a 100-foot wide stream buffer on either side of [around] the two tributaries of the Muddy Branch

Page 37: Add two bullets as follows:

- Widen Key West Avenue (MD 28) to 8 lanes divided
- Construct interchanges at Great Seneca Highway (MD 119) and Sam Eig Highway and at Great Seneca Highway (MD 119) at Muddy Branch Road

Page 38: Revise the heading at the top of the page as follows:

LSC North and Washingtonian Cluster: Residential and Office

Page 38: Add the following sentences at the end of the first paragraph:

The Washingtonian residential area is part of this Master Plan, but is geographically separated from the Life Sciences Center by the Crown Farm, which is in the City of Gaithersburg. The Washingtonian cluster is a housing resource for those who work in the LSC. As such, for purposes of staging, this area is included in the total amount of existing and approved dwelling units (3,300).

Page 38: Revise the last four sentences of the second paragraph as follows:

The DANAC parcel on the southeast corner of Key West Avenue and Diamondback Drive (the 6.93-acre Lot 7) is largely undeveloped and is adjacent to the proposed CCT station on the east side of the property. The recommended Zone for this parcel (Lot 7) is: CR 2, C 1.5, R 1.5, H 150. The remainder of the DANAC property should be zoned CR 1.0, C 0.5, [R 0.5] R 1.0, H 80. Building height along Decoverly Drive adjacent to the residential community to the north is limited to 50 feet within 100 feet of the Decoverly Drive right-of-way (not including the 50-foot transit right-of-way).

Page 38: Delete the third paragraph:

[Each of the other office parks in LSC North has some remaining development capacity. Current zones for several of the office parks allow relatively high density for the area (1.5 FAR) and the Plan does not recommend increases because the objective is to concentrate additional density at the proposed CCT stations and achieve an overall balance between land use and transportation infrastructure.]

Page 38: Remove the fourth paragraph and add the following paragraph:

[The possibility of residential as an infill use on remaining developable sites in LSC North would increase the amount of housing near the jobs in the greater LSC. To create a sense of community, the Plan encourages clustering any housing to create a residential neighborhood rather than isolated housing sites in scattered office parks. The Plan recommends the Planned Development (PD) Zone option for the 6.9-acre site in the Shady Grove Executive Center and for the 11.34-acre Bureau of National Affairs (BNA) site. These sites would be appropriate for urban, high density housing and the zoning can be requested through a Local Map Amendment. Pedestrian-oriented local retail facilities that are compatible with and provide convenience for residents are encouraged. Community-serving amenities should be provided, including the LSC Loop along Omega Drive as well as pedestrian connections to CCT stations at DANAC and Crown Farm.]

The Plan does not recommend any zoning change to the National Association of Securities Dealers site. The Plan encourages mixed-use infill for the Shady Grove Executive Center and Bureau of National Affairs sites and recommends CR 1.5, C 1.5, R 1.5, H 100. Residential uses are encouraged, as are pedestrian-oriented local retail facilities that are compatible with and provide convenience for residents. Public benefits that improve connectivity and mobility or add to the diversity of uses and activity are encouraged. These should include the LSC Loop along Omega Drive as well as pedestrian connections to CCT stations at DANAC and Crown Farm.

Page 39: Revise the map on page 39 to indicate the location of properties described in the text, including Lot 7 on the DANAC property.

Page 39: Delete the fourth bullet under "Recommendations" and replace with the following two bullets:

- [Allow a Planned Development option for high density residential use at the Shady Grove Executive Center and the Bureau of National Affairs sites]
- Rezone the Shady Grove Executive Center property from C-2 and O-M zones to the CR Zone
- Rezone the Bureau of National Affairs property from the O-M Zone to the CR Zone

Page 39: Add two bullets as follows:

- Widen Key West Avenue (MD 28) to 8 lanes divided
- Construct interchanges at Great Seneca Highway (MD 119) and Sam Eig Highway and at Key West Avenue (MD 28) at Shady Grove Road

Page 40: Add the following sentence after the third paragraph:

This Plan recommends that the 5.2-acre property on the southeast corner of Darnestown Road and Travilah Road by rezoned from C-4 to CR 0.75: C 0.5, R 0.75, H 80 to allow the possibility of mixed-use or residential development at this corner.

Page 40: Revise the fourth paragraph as follows:

Only the 13-acre Rickman property on Travilah Road [(zoned R&D)] is undeveloped. [The Plan supports R&D uses on this site, but housing would also be compatible with surrounding properties. The Plan recommends the Planned Development option (PD-22) for the Rickman property and supports a waiver of the percentage requirements for dwelling unit types to encourage a compact design that respects this environmentally sensitive area. The property owner can initiate the rezoning by filing a Local Map Amendment. A Development Plan and Site Plan are required in the PD Zone.] The Plan recommends the Rickman property be rezoned from the R&D Zone to CR 0.5, C 0.5, R 0.5, H 80. The CR Zone has a height limit of 40 feet for standard method development. However, a maximum height of 80 feet on this property could be considered to minimize imperviousness and encourage compact development, which may include parking underneath buildings (ground-level). The Rickman property is not subject to the Staging requirements.

Page 40: Add the following paragraph after the fourth paragraph:

The Piney Branch SPA bisects the Rickman Property. A key to protecting water quality in the SPA is limiting impervious surfaces. Development within this SPA requires a Water Quality Plan that details how stormwater runoff will be managed to prevent further degradation to water quality in the SPA. The Water Quality Plan is prepared by the developer and reviewed and approved during the development review process. Guidelines for the development of the Rickman property are provided below. In addition, a population of state endangered Krigia dandelion is located east of the property along Shady Grove Road. The road was specifically aligned to avoid disturbance of this plant. Further development in this area should avoid disturbance of this population and provide a buffer area from new uses.

Page 41: Delete the first bullet and replace with the following:

- [Maintain the R&D Zone on the Rickman site, but recommend rezoning to PD-22 by a Local Map Amendment to encourage residential development.]
- Rezone the Rickman site to the CR Zone: CR 0.5, C 0.5, R 0.5, H 80. Development of the property must address the following guidelines:
    - Minimize impacts to the SPA by orienting buildings and parking nearer Travilah Road, outside the SPA boundary to the extent feasible.
    - Ensure proper sediment control during construction.
    - Consider parking underneath buildings (ground-level), compact development design, and other techniques to minimize impervious surfaces.

- Consider placing recreation facilities that are not noise-sensitive closer to Shady Grove Road.
- Consider meeting afforestation requirements in the area adjacent to the existing protective strip along Shady Grove Road to enhance protection of the Krigia dandelion population.

Page 41: Add the following bullet after the first bullet:

- Rezone the property at the southeast corner of Darnestown Road and Travilah Road from the C-4 Zone to the CR Zone: CR 0.75, C 0.5, R 0.75, H 80.

Page 41: Add a proposed zoning map for LSC South that indicates the location of the Rickman property.

Page 42: Revise the last sentence in the first paragraph under "Street System" as follows:

[Revisiting the Plan in six years] A biennial monitoring program will assess the pace of buildout and the need for infrastructure delivery.

Page 43: Modify the graphics to reconfigure the proposed business road connections in the vicinity of Shady Grove Adventist Hospital and the 9700 block of Medical Center Drive to minimize property impacts and include all road number labels.

Page 43: Modify the third bullet as follows:

- Reconstruct Sam Eig Highway as a grade-separated highway within a 250-foot right-of-way or other right-of-way necessary to adequately provide [with]: three through lanes in each direction; [shoulders suitable for peak-period, peak-direction] bus rapid transit (BRT); two-lane, one-way frontage roads connecting to Washingtonian Boulevard, Fields Road, and Diamondback Drive; necessary slip ramps between frontage roadways and Sam Eig Highway; and a [flyover ramp] full-movement grade-separated interchange between [from eastbound] Great Seneca Highway [to northbound] and Sam Eig Highway.

Page 43: Modify the fourth bullet as follows:

- Reconstruct Key West Avenue within a 200-foot right-of-way between Darnestown Road [Great Seneca Highway] and Shady Grove Road to provide a consistent design treatment including a wide landscaped median, eight through travel lanes (four in each direction), and a separate curb lane that can serve as a through lane for transit vehicles and a right turn lane for other vehicles during peak periods.

Page 44: Modify the first complete bullet at the top of the page as follows:

- Construct urban diamond, grade-separated interchanges at two [three] LSC locations: Great Seneca Highway at [over] Muddy Branch Road[, Great Seneca Highway over Key West Avenue,] and Key West Avenue at [over] Shady Grove Road.

Page 44: Modify the second complete bullet at the top of the page as follows:

- Delete the proposed [Remove the] grade-separated interchange from the intersection of Shady Grove and Darnestown Roads and from the intersection of Darnestown Road and [Wootton Parkway] Glen Mill Road (previously recommended in the 1990 *Shady Grove Study Area Master Plan*).

Page 44: Modify the third complete bullet at the top of the page as follows:

- Develop an LSC bicycle network that facilitates bicycle travel in mixed traffic along local streets. This network should include an interconnected system of shared use paths (Class I bikeways) [, signed shared roadways/on-road paths (Class III bikeways along local streets),] and shared signed roadways with wide curb lanes (Class III bikeways) or paved shoulders (Class II bikeways).

Page 44: Modify the second and third bullet under the heading Recommendations as follows:

- [Develop] Explore express bus service using value-priced lanes from I-270 and Intercounty Connector (ICC) to serve the LSC.
- [Develop] Explore shuttle bus routes serving the LSC area.

Page 49: Add the heading "Parks" at the top of the page.

Page 51: Add the following two paragraphs after the first paragraph under McGown Property:

Much of the property is wooded, including some high quality forest. Seneca Creek State Park lies near the property to the west and the topography includes some significant steep slope areas. Large scale development in this area will have the potential for significant negative impacts to stream conditions unless the development is carefully designed to maintain the natural topography, and the infiltration and runoff rate of the existing landscape.

The Plan recommends that Environmental Site Design (ESD) techniques be employed to minimize any negative water quality impacts, but negative impacts will occur. The degree of recovery of the stream will depend on the extent to which ESD design is successfully applied to the area. Tributary streams draining the northern and southern portions of the McGown property and streams south of Great Seneca Highway east of the Seneca Creek mainstem in the Quince Orchard area are among those identified as priorities for stream restoration in the Great Seneca and Muddy Branch Watershed Study.

Page 51: Revise the second paragraph as follows:

[The property contains mature forest, some of high quality. Tributary streams flow to Seneca Creek across the property and are priorities for restoration or retrofit.] The 10-acre, R-200 parcel features steep slopes, a mature oak-hickory forest with birds common to an interior woodland, as well as mature mountain laurel in the understory with a minimal presence of invasive species. The Plan recommends that this high quality forest be preserved through a forest conservation easement or other method to be determined through the development review process.

Page 57: Add bullet after the second bullet at the bottom of the page as follows:

- Plan for a grade-separated arterial roadway connection over the CSX tracks in the general location of the Deer Park Bridge that respects the resource value of the existing bridge.

Page 60: Add the following sentence after the second sentence under the heading "Washingtonian Light Industrial Park"

If a new mixed-use zone emphasizing retail and office uses is identified, it should be considered for the Shady Grove Center and other similar properties in this area (i.e., the other I-1 properties with grandfathered retail uses) and may also be appropriate for the two small areas zoned C-3.

Page 63: Revise the first sentence of the fourth paragraph under "Zoning" as follows:

The CR Zone and the LSC Zone allow[s] contributions to a fund for off-site amenities that benefit the public, subject to Planning Board approval.

Page 63: Revise the third bullet as follows:

- Design and construct [two rectangular fields recommended in the buffer area] amenities and open spaces proposed on the Belward site.

Page 64: Revise the second sentence of the first paragraph under "Staging" as follows:

Staging assures sufficient capacity for the next phase of growth, provides essential place-making facilities, helps achieve a desired form of development, as well as necessary connections for efficient mobility within and around an area.

Page 64: Revise the last sentence in the first paragraph under "Staging" as follows:

Realizing the vision in this Plan will take time [and], its implementation should be [reviewed six years after adoption] monitored to evaluate how development is achieving the vision [and to make any necessary adjustments].

Page 64: Under "Staging," move the first sentence of the third paragraph behind the last sentence of the second paragraph and delete the remainder of the third paragraph and the four bullets.

The goal of the APFO is to ensure that transportation and school facilities have sufficient capacity for the Planning Board to approve specific development projects. [Although the AGP and APFO serve vital functions, they are insufficient to accomplish the purposes of master plan staging, which has a different and complementary set of functions, including:

- Provide early notice of what must be done to realize the long term growth envisioned in a master plan, including programming large capital projects like the CCT. Such projects are often needed to serve the aggregate level of development in an area but are too large to have a regulatory nexus to a specific development project. This type of staging is particularly important where a major infusion of capital is needed for substantial growth to occur.

- Achieve a desired form of development—community building—or accomplish other policy goals, such as a desired level of "environmental adequacy."

- Provide long-term continuity for growth management. Master plans are updated less often than the growth policy, which is revised every two years, so there is less unpredictability. This Plan recommends that the buildout of Gaithersburg West be reevaluated six years after adoption of the Plan to verify that the vision of the Plan is being achieved and to address the need for mid-course corrections.

- Provide assurance that development will be timed with the provision of necessary public facilities to support it. A growth policy that is revised every two years provides less certainty.]

Page 64: Revise the next to last paragraph on the page, as follows:

In addition to the APFO standards, this Plan recommends staging to ensure that infrastructure, particularly the CCT, is in place before development is allowed to proceed. Staging is applied to all five [the] LSC [North, Central, and Belward] districts [where the greatest changes are proposed] with the exception of the Rickman property in LSC South. Each development stage will be initiated when all of the triggers for that stage are met. After a stage has been triggered, individual properties can proceed with Preliminary Plan approval. [Residential development is not subject to the staging amount or sequence since increasing housing in the LSC is encouraged to improve the jobs-housing balance and provide mixed uses.]

Page 65: Add the following sentence at the end of the first full paragraph on page 65:

Public institutions are not subject to staging because these projects are reviewed as mandatory referrals.

Page 65: Move the following text from page 65 to page 13 (after the second paragraph under "Vision") with revisions as shown:

[Staging Principles
Staging] The following objectives will help implement the Plan's vision [as follows]:

- Life science uses should be given priority.
- Density and height should be concentrated at transit stations amid transit-oriented mixed-use development at LSC Central, LSC West, Belward, and DANAC.
- Historic and environmental resources should be protected.
- Buildings within one-eighth mile of the future CCT stations should be at least 60 feet high. In all other areas, the desired minimum building height is 36 feet (three stories of occupied space) in order to retain land for future higher densities.
- Mixed-use development is emphasized; single purpose or free standing retail buildings are inconsistent with the Plan's vision in any phase of development.
- [Public institutions are not subject to staging because these projects are reviewed as mandatory referrals.]
- Structured parking should be hidden from the street; although surface parking is inconsistent with the Plan's vision, it is anticipated and acceptable on an interim basis.

Page 65: Revise the first paragraph under "Staging Requirements" as follows:

In [2009] 2010, the LSC contains [nearly] 7 million square feet of commercial development. Approximately 3.7 million square feet of commercial (non-residential) development has been approved but is not yet built in the five LSC districts. The total existing and approved commercial development in all five LSC districts is 10.7 million square feet. The total existing and approved dwelling units in the LSC area is 3,300.

Page 65: Revise the beginning of the second paragraph under "Staging Requirements" as follows:

This Plan recommends that the staging plan and its requirements be applied to [the LSC North, LSC Central, and LSC Belward] all five LSC districts except the Rickman property in LSC South. [In these three districts in 2009, existing commercial development totaled nearly 5.5 million square feet, with 2.7 million square feet in the pipeline, for a total of 8.2 million square feet.] The [2.7] 3.7 million square feet of development in the pipeline is not subject to the Plan's staging requirements unless a project's Preliminary Plan expires. The owner of a property approved for commercial development may re-subdivide and convert to residential development and still be exempt from staging, provided that the change in development will not increase the number of vehicle trips. This may require an administrative adjustment in the number of approved jobs and housing units exempt from staging.

Page 65: Revise the third paragraph under "Staging Requirements" as follows:

[In the three districts that are subject to staging,] In Stage 1, the Plan provides for the current [8.2] 10.7 million commercial square feet (existing development and the approved pipeline), plus an additional increment of 400,000 square feet [in Stage 1]. Health care services are

exempt from the requirements of Stage 1. Development above [8.6] 11.1 million commercial square feet cannot proceed until all the prerequisites for Stage 2 have been met, including full funding of the CCT from the Shady Grove Metro Station to Metropolitan Grove within the first six years of the County's CIP or the State CTP.

Page 66: Delete the language on the stages and replace with new text on the stages as follows:

[Stage 1
Stage 1 allows an additional 400,000 square feet of commercial (nonresidential) development in LSC North, Central, and Belward. Existing and approved development totals 8.2 million square feet and Stage 1 allows 400,000 additional square feet for a total of up to 8.6 million square feet. Health care services (as defined in the Life Sciences Center Zone) are exempt from the requirements of Stage 1.

5,500,000 existing development
2,700,000 approved development
400,000 additional new development
8,600,000 Total Stage 1 development

Stage 2
Stage 2 allows a total of 11.4 million square feet of commercial development, of which 8.6 million will have been built in Stage 1. After all the prerequisites required before Stage 2 have been met, development above 8.6 million can proceed, including an additional 2.8 million square feet of new commercial development, up to a total of 11.4 million square feet.

8,600,000 Stage 1 development
2,800,000 Stage 2 additional new development
11,400,000 Total Stage 2 development at full buildout

Stage 3
Stage 3 allows a total of 13.2 million square feet of commercial development, of which 11.4 million square feet will have been built in Stages 1 and 2. After all the prerequisites required before Stage 3 have been met, development above 11.4 million square feet can proceed, including an additional 1.8 million square feet of new development, up to a total of 13.2 million square feet.

11,400,000 Stage 2 development
1,800,000 Stage 3 additional new development
13,200,000 Total Stage 3 development at full buildout

Stage 4
Stage 4 allows a total of 17.7 million square feet of commercial development, of which 13.2 million square feet will have been built in the previous stages. After all the prerequisites required before Stage 4 have been met, development above 13.2 million can proceed, including an additional 4.5 million square feet of new development, up to a total of 17.7 million square feet.

13,200,000 Stage 3 development
4,500,000 Stage 4 additional new development
17,700,000 Total Stage 4 development at full buildout]

Stage 1
Stage 1 allows an additional 400,000 square feet of commercial (nonresidential) development and 2,500 additional dwelling units. Existing and approved development totals 10.7 million square feet and Stage 1 allows 400,000 additional square feet for a total of up to 11.1 million square feet. Health care services are exempt from the requirements of Stage 1. Stage 1 allows 2,500 additional residential dwelling units.

7,000,000 existing development
3,700,000 approved development
400,000 additional new development
11,100,000 Total Stage 1 commercial development

3,300 existing and approved dwelling units
2,500 additional new dwelling units
5,800 Total Stage 1 residential dwelling units

Stage 2
Stage 2 allows a total of 13.4 million square feet of commercial development and 7,300 dwelling units, of which up to 11.1 million square feet of commercial development and 5,300 dwelling units may have been built in Stage 1. After all the prerequisites required before Stage 2 have been met, development above 11.1 million can proceed, including an additional 2.3 million square feet of additional commercial development, up to a total of 13.4 million square feet. Stage 2 allows 2,000 additional residential dwelling units.

11,100,000 Stage 1 development
2,300,000 Stage 2 additional development
13,400,000 Total Stage 2 commercial development

5,800 Stage 1 dwelling units
2,000 Stage 2 additional dwelling units
7,800 Total Stage 2 residential dwelling units

Stage 3
Stage 3 allows a total of 15.7 million square feet of commercial development and 9,000 dwelling units, of which 13.4 million square feet of commercial development and 7,300

dwelling units may have been built in Stages 1 and 2. After all the prerequisites required before Stage 3 have been met, development above 13.4 million square feet can proceed, including an additional 2.3 million square feet of new development, up to a total of 15.7 million square feet. Stage 3 allows 1,200 additional residential dwelling units.

13,400,000 Stage 2 development
2,300,000 Stage 3 additional new development
15,700,000 Total Stage 3 commercial development

7,800 Stage 2 dwelling units
1,200 Stage 3 additional dwelling units
9,000 Total Stage 3 residential dwelling units

Stage 4
Stage 4 allows a total of 17.5 million square feet of commercial development and 9,000 dwelling units, of which 15.7 million square feet of commercial development and all the residential development may have been built in the previous stages. After all the prerequisites required before Stage 4 have been met, development above 15.7 million square feet can proceed, including an additional 1.8 million square feet of new commercial development, up to a total of 17.5 million square feet.

15,700,000 Stage 3 development
1,800,000 Stage 4 additional new development
17,500,000 Total Stage 4 development at full buildout

9,000 Stage 3 dwelling units
No Stage 4 additional dwelling units
9,000 Total Stage 4 residential dwelling units

Page 67: Revise color of Stage 1 text highlight to match the Stage 1 color in the bar chart.

Page 67: Delete the third bullet under "Before Stage 1" and replace with new bullet text, as follows:

- [Create a new LSC Policy Area with urban standards and characteristics.]
- Designate the LSC Central, West, Belward, and North Districts as a Road Code Urban Area.

Page 67: Add the following bullets after the fifth bullet under "Before Stage 1"

- Develop a monitoring program for the Master Plan within 12 months of adopting the sectional map amendment that addresses the following:
  - The Planning Board must develop a biennial monitoring program for the LSC. This program will include a periodic assessment of development approvals, traffic issues (including intersection impacts), public facilities and amenities, the status of new facilities, and the CIP and Growth Policy as they relate to the LSC. The program

should conduct a regular assessment of the staging plan and determine if any modifications are necessary. The biennial monitoring report must be submitted to the Council and Executive prior to the development of the biennial CIP.

- The Planning Board must establish an advisory committee of property owners, residents, and interested groups (including adjacent neighborhoods in Gaithersburg and Rockville), with representation from the Executive Branch, the City of Rockville, and the City of Gaithersburg that are stakeholders in the redevelopment of the Plan area – to evaluate the assumptions made regarding congestion levels, transit use, and parking. The committee's responsibilities should include monitoring the Plan recommendations, monitoring the CIP and Growth Policy, and recommending action by the Planning Board and County Council to address issues that may arise, including, but not limited to, community impacts and design, and the status and location of public facilities and open space.
- Dependent on availability of outside funding, the Planning Board must initiate an ongoing health impact assessment of development in the Plan area, with the participation of the Montgomery County Department of Health and Human Services, Department of Environmental Protection, Department of Transportation, the City of Gaithersburg, and the City of Rockville.

Page 67: Revise the Stage 1 text box as follows:

Stage 1 New Commercial Development Allowed: 400,000 square feet
Total Commercial Development Allowed: [8.6] 11.1 million square feet
New Residential Development Allowed: 2,500 dwelling units
Total Residential Development Allowed: 5,800 dwelling units

Page 67: Revise color of Stage 1 text highlight from yellow to brown for consistency with the Stage 1 color in the bar chart.

Page 67: Revise the first bullet under "Before Stage 2" as follows:

- Fully fund construction of the CCT, including the proposed realignment through the LSC, from the Shady Grove Metro Station to Metropolitan Grove [in] within the first six years of the County's [six-year] CIP or the State CTP.

Page 67: Delete the last bullet under "Before Stage 2" and replace as follows:

- [Achieve a five percent increase over the baseline for the non-driver mode share.]
- Attain an 18 percent non-auto driver mode share (NADMS).

Page 67: Revise the Stage 2 text box as follows:

Stage 2 New Commercial Development Allowed: [2.8] 2.3 million square feet
Total Commercial Development Allowed: [11.4] 13.4 million square feet
New Residential Development Allowed: 2,000 dwelling units
Total Residential Development Allowed: 7,800 dwelling units

Page 68: Revise the first bullet under "Before Stage 3" as follows:

- CCT is under construction from Shady Grove Metro Station to Metropolitan Grove and at least 50 percent of the construction funds have been spent.

Page 68: Add a new bullet after the first bullet under "Before Stage 3" as follows:

- Program for completion within six years any needed master-planned transportation improvement identified by the most recent biennial monitoring review to be needed at this time.

Page 68: Delete the third bullet under "Before Stage 3"

- [Fully fund construction of the following two interchanges, or other transportation project(s) providing equivalent mobility and capacity, in the County's six-year CIP or the State CTP:
  - Sam Eig Highway at Great Seneca Highway
  - Great Seneca Highway at Key West Avenue.]

Page 68: Delete the fourth bullet under "Before Stage 3" and replace as follows:

- [Achieve a 10 percent increase over the baseline for the non-drive mode share.]
- Attain a 23 percent NADMS.

Page 68: Revise the Stage 3 text box as follows:

Stage 3 New Commercial Development Allowed: [1.8] 2.3 million square feet
Total Commercial Development Allowed: [13.2] 15.7 million square feet
New Residential Development Allowed: 1,200 dwelling units
Total Residential Development Allowed: 9,000 dwelling units

Page 68: Add a bullet after the first bullet under "Before Stage 4", as follows:

- Program for completion within six years any needed master-planned transportation improvement identified by the most recent biennial monitoring review to be needed at this time.

Page 68: Delete the second, third, and fourth bullets under "Before Stage 4"

- [Fully fund the widening of Key West Avenue, or other transportation projects providing equivalent mobility and capacity, in the County's six-year CIP or the State CTP.

- Complete construction of the two highest priority interchanges identified as prerequisites to Stage 3.

- Fully fund construction of the following three interchanges, or other transportation project(s) providing equivalent mobility and capacity, in the County's six-year CIP or the State CTP:
  - Shady Grove Road at Key West Avenue
  - Sam Eig Highway at Diamondback Drive
  - Great Seneca Highway at Muddy Branch Road.]

Page 68: Delete the fifth bullet under "Before Stage 4" and replace as follows:

- [Achieve a 15 percent increase over the baseline for the non-driver mode share.]
- Attain a 28 percent NADMS.

Page 68: Revise the Stage 4 text box as follows:

Stage 4 New Commercial Development Allowed: [4.5] 1.8 million square feet
Total Commercial Development Allowed: [17.7] 17.5 million square feet
Total Residential Development Allowed: 9,000 dwelling units

Page 68: Delete the first sentence under "Plan Evaluation"

[This Plan should be reviewed approximately six years after adoption.]

Pages 68-69: Delete the entire "Policy Areas" section:

[Policy Areas
Growing strategically means higher densities where transit is or will be, creating greener buildings, providing more services locally, using existing infrastructure, and providing mobility choices. The County's growth policy addresses traffic and school capacity issues. Creating nodes of activity at transit locations with mixed uses can promote a better balance between jobs and housing, reducing the number of vehicle miles traveled. This Plan helps achieve these goals, promoting the opportunity for transit service in the mid-County area.

- Establish a new LSC policy area for the LSC Central, LSC West, and LSC Belward transit station areas.
- Revise the R&D Village policy area to include the entirety of the Rickman property, located on Travilah Road, within its boundary. Presently, the subject property is physically located in two policy areas – R&D Village and North Potomac. This revision would rectify this situation and is consistent with the Plan's land use and transportation objectives.]

Page 69: Add new first bullet under the "Street and Highway Classifications" heading, as follows:

- Classify Sam Eig Highway as a Controlled Major Highway with grade-separated cross streets and a frontage road system as described in the LSC Circulation section.

Page 69: Revise the second bullet as follows:

- [Remove] Delete the proposed Shady Grove Road/Darnestown Road and [Shady Grove Road/Wootton Parkway] Darnestown Road/Glen Mill Road interchanges recommended in the 1990 *Shady Grove Study Area Master Plan*.

Page 69: Revise the third bullet as follows:

- Retain the 1990 *Shady Grove Study Area Master Plan* recommendations for grade-separated interchanges at:
  - [Sam Eig Highway at Diamondback Drive]
  - Sam Eig Highway and Great Seneca Highway (MD 119)
  - [Great Seneca Highway and Key West Avenue (MD 28)]
  - I-270 at Watkins Mill Road extended (in the City of Gaithersburg).

Page 69: Revise the fourth bullet by adding a fourth sub-bullet as follows:

- Add new grade-separated interchanges at:
  - I-270 and Gude Drive (in coordination with the City of Rockville).

Page 69: Add the following new bullets after the sixth and last bullet:

- Change the number of lanes for Key West Avenue from six to eight within the plan area.
- Classify Game Preserve Road as a Rustic Road.
- Change the number of lanes for Longdraft Road from four to two.

Page 69: After the last bullet, add new text as follows:

It is recognized that future social and technological changes may allow for equivalent mobility and capacity to be achieved without building additional grade-separated interchanges. Such mobility and capacity enhancements would need to be considered as alternative solutions to a grade-separated interchange during a transportation project planning study, or the review of a land development project. These enhancements include, without being limited to, increased transit services, implementation of a robust street system that promotes walking and bicycling, managed parking supply, provision of proactive travel demand management services, and operational improvements to at-grade intersections, streets, arterials and highways. Emerging state and federal sustainable community initiatives

incorporating climate change and energy concerns may significantly reduce future demand for single occupancy vehicle travel, potentially reducing the need for interchanges.

Prior to any interchange design, a feasibility study will examine the alternative mobility enhancements described above and develop context-sensitive solutions. The Plan supports context-sensitive improvements that are designed to facilitate community connections, minimize right-of-way needs, and address visual and noise concerns through design elements such as depressing roadways and ramps below grade. The feasibility study will include participation by adjacent community representatives to help define community needs and context. All transportation improvements should be planned, designed and constructed under the lens of sustainability, balancing their effects on the natural environment, social community, and economic resources.

Pages 71-73: Modify the Street and Highway Classifications Table as follows:

street and highway classifications

Road Number	Name	Limits	Minimum r.o.w.	Lanes[1]	Target Speed (m.p.h)	Design Standard
Freeways						
F-1	I-270	Great Seneca Creek to Shady Grove Road	300'	12	-	-
F-9	I-370	I-270 to Frederick Road (MD 355)	300'	6	-	-
Controlled Major Highways						
CM-22	Key West Avenue (MD 28)	Darnestown Road (MD 28) to Shady Grove Road	200'	8	40	Custom
CM-28 6+BRT	Sam Eig Highway	Great Seneca Highway (MD 119) to I-270	250'		[40] 50	Custom (see LSC Circulation section)
					50	[Custom] 2008.10
CM-90	Great Seneca Highway (MD 119)	Great Seneca Creek to Gaithersburg City Limit	150'	6	45	2008.10
		Sam Eig Highway to Key West Avenue (MD 28)	150'-200'[2]	6	45	2008.10
		Key West Avenue to Darnestown Rd.	150'	6		
Major Highways						
M-6	Frederick Avenue (MD 355)	Gaithersburg City Limit to Gaithersburg City Limit	120'	6	40	2008.01
M-13	West Montgomery Avenue (MD 28)	Darnestown Road to 800' east of Darnestown Road	150'	6	-	2008.04 [or .10]
M-15	Muddy Branch Road	Darnestown Road (MD 28) to [Gaithersburg City Limit] Decoverly Drive (extended)	150'	6	45	2008.04 or .08
	Muddy Branch Road	Gaithersburg City Limit to West Diamond Avenue (MD 117)	150'	6	45	2008.04 or .08
	Muddy Branch Road	Decoverly Drive (extended) to Gaithersburg City Limit	170'[2]	6	45	2008.04
M-22	Darnestown Road (MD 28)	Riffle Ford Road to Muddy Branch Road	120'	4	40	2008.04
	Darnestown Road (MD 28)	Muddy Branch Road to Key West Avenue (MD 28)	150'	6	40	2008.04
	[Key West Avenue (MD 28)]	[Darnestown Road (MD 28) to Shady Grove Road]	[200']	[8]	[40]	[Custom]
M-24	Quince Orchard Road (MD 124)	Darnestown Road (MD 28) to Longdraft Road	150'	6	40	2008.04
	Quince Orchard Road (MD 124)	Gaithersburg City Limit to Gaithersburg City Limit	170'[2]	6	40	2008.04
M-26	Clopper Road (MD 117)	Great Seneca Creek to [Muddy Branch] Longdraft Road	150'	4 to 6	45	2008.04
	West Diamond Avenue (MD 117)	Quince Orchard Road (MD 124) to Muddy Branch Road	120'	4 to 6	45	2008.01
[M-28]	[Sam Eig Highway]	[Great Seneca Highway (MD 119) to I-270]	[250']	[6+BRT]	[50]	[Custom]
M-42	Shady Grove Road	Darnestown Road to 1,200' west of Frederick Road (MD 355)	150'	6	40	2008.04
M-90	Darnestown Road	Great Seneca Highway to Shady Grove Road	150'	6	45	2008.10

Road Number	Name	Limits	Minimum r.o.w.	Lanes[1]	Target Speed (m.p.h)	Design Standard
A-17	Watkins Mill Road	Clopper Road (MD 117) to MD 355 (City of Gaithersburg)	NA [3]	4	-	-
A-23	Rio Boulevard	Washingtonian Boulevard (City of Gaithersburg) to Fields Road	80'	4	30	As built
A-33	Longdraft Road	Quince Orchard Road (MD 124) to 180' north of Longdraft Court (City of Gaithersburg)	80'	[4] 2	30	[2004.01] Custom
	Longdraft Road	Golden Post Lane (City of Gaithersburg) to Clopper Road (MD 117)	80'	[4] 2	30	[2004.01] Custom
A-34	Shady Grove Road	Darnestown Road to Cavanaugh Drive	100'	4	35	2004.09
A-103	Riffle Ford Road	Great Seneca Creek to 700' north of Woodsboro Drive	80'	4		-
	Riffle Ford Road	220' east of Hallman Court to Darnestown Road (MD 28)	80'	4	40	2004.08
A-255	Oakmont Avenue	[From] East Diamond Avenue/ Washington Grove Lane [Plan boundary] to Plan boundary	80'	2	30	Custom
A-261	Fields Road	From 1500' east of Rio Boulevard (City of Gaithersburg) to 675' west of Washingtonian Boulevard (City of Gaithersburg)	150'[2]	4	30	2004.10
	Fields Road	From 150' west of Omega Drive (City of Gaithersburg) to Omega Drive	150'[2]	4	30	2004.10
A-261a	Omega Drive	Fields Road to Key West Avenue (MD 28)	100'	4	30	2004.10
A-261b	Diamondback Drive	[Sam Eig Highway] Plan boundary to Key West Avenue	100'-150'[2]	4	30	2004.09
	Broschart Road	Key West Avenue to Medical Center Drive	100'	4	30	2004.09
A-261d	[Medical Center Drive] Johns Hopkins Drive	Key West Avenue (MD 28) to [Key West Avenue (MD 28)] Decoverly Drive	100'[-150'][2]	4	30	2004.10 [(needs SUP)]
A-263	Medical Center Way	Shady Grove Road to Medical Center Drive	100'	4	30	As built
A-280	Darnestown Road	Key West Avenue (MD 28) to Great Seneca Highway	100'	4	40	2004.10
A-280	Darnestown Road	Shady Grove Road to West Montgomery Avenue (MD 28)	100'	4	40	2004.10
A-284	Decoverly Drive	Muddy Branch Road to [Fields Road] Plan boundary	100'-150'[2]	4	30	2004.09

[1] The number of planned through travel lanes for each segment, not including lanes for turning, parking, acceleration, deceleration, or other auxiliary purposes.

[2] Fifty feet of right-of-way is intended for provision of an exclusive transitway; where dual width is specified, the lower figure refers to non-transitway sections.

[3] Watkins Mill Road is an arterial within City Limits. As a significant connection to I-270, it is included in this table; right-of-way requirements are deferred to the City of Gaithersburg.

Road Number	Name	Limits	Minimum r.o.w.	Lanes[1]	Target Speed (m.p.h)	Design Standard
Business District Streets						
B-1	Blackwell Road	Great Seneca Highway to Broschart Road	100'	4	30	2005.03
	Blackwell Road	Broschart Road to Shady Grove Road	100'	4	30	2005.03
	Blackwell Road	[Key West] Darnestown Road to Great Seneca Highway	70'	2	30	2005.02
B-2	*Road A*	proposed new road	60'	2	30	2005.01
B-3	*Road B*	proposed new road	70'	2	30	2005.02
B-4	*Road C*	proposed new road	70'	2	30	2005.02
B-5	*Road D*	proposed new road	70'	2	30	2005.02
B-6	*Road E*	proposed new road	70'	2	30	2005.02
B-7	*Road F*	proposed new road	60'	2	30	2005.01
B-8	*Road G*	proposed new road	70'	2	30	2005.02
B-9	*Road H*	proposed new road	60'	2	30	2005.01
B-10	*Road I*	proposed new road	70'	2	30	2005.02
B-11	*Road J*	proposed new road	60'	2	30	2005.01
B-12	*Road K*	proposed new road	[70'] 60'	2	30	[2005.02] 2005.01
B-13	*Road L*	proposed new road	[60'] 70'	2	30	[2005.01] 2005.02
B-14	*Road M*	proposed new road	60'	2	30	2005.01
B-15	*Road N*	proposed new road	70'	2	30	2005.02
B-16	*Traville Gateway Drive*	Shady Grove Road to Medical Center Drive	70'	2	30	2005.02
B-17	*Travilah Road*	Darnestown to Medical Center Drive Extended	70'	2	30	2005.02
B-18	*Road Q*	proposed new road	70'	2	30	2005.02
B-19	*Road R*	proposed new road	60'	2	30	2005.01
I-7	Gaither Road	Shady Grove Road to Gaithersburg City Limit	100'	4	30	Custom
I-8	Research Boulevard	Omega Drive to Shady Grove Road	80'	4	30	2006.03
Primary Residential Streets						
P-9	Central Avenue	500' east of Frederick Avenue (MD 355, City of Gaithersburg) to 350' north of Oakmont Avenue (City of Gaithersburg)	70'	2	25	2003.12
P-14	Travilah Road	Darnestown Road to Unicorn Way	70'	2	30	2003.10
Rustic Roads						
R-63	Game Preserve Road	Clopper Road (MD 117) to Frederick Avenue (MD 355)	70'	2	N/A	N/A

[1] The number of planned through travel lanes for each segment, not including lanes for turning, parking, acceleration, deceleration, or other auxiliary purposes.

Pages 76-77: Modify the Countywide Bikeways Functional Master Plan Table as follows:

[gaithersburg west] great seneca science corridor bikeways recommended by the *countywide bikeways functional master plan*

Route Number	Name	Type	GWMP Limits	Status/Condition	Description
BL-30	Shady Grove Road east	Bike lanes	Frederick Road (MD 355) to Muncaster Mill Road (MD 115)	Implemented between MD 115 and Crabbs Branch Way. Proposed between MD 355 and Crabbs Branch Way.	Part of a direct route to Shady Grove Metrorail station.
BL-32	Dufief Mill Road	Bike lanes	Darnestown Road (MD 28) to Travilah Road	Existing	Roadway shoulder functions as bike lanes.
BL-34	Riffle Ford Road	Bike lanes	Darnestown Road to Germantown Road (MD 118)	New proposal in 2005 CBFMP	Important connection to South Germantown Park.
DB-15	Shady Grove Road west	Dual bikeway: shared use path and bike lanes	Darnestown Road to Frederick Road	Proposed	Forms part of connection to Shady Grove Metrorail station; shared use path to be implemented by Rockville, bike lanes to be implemented by County.
DB-16	Darnestown Road north	Dual bikeway: shared use path and bike lanes	Seneca Road to [Great Seneca Highway (MD 119)] Glen Mill Road	Shared use path and bike lanes exist in segments. Bike lanes installed by SHA from Seneca Road to Muddy Branch Road.	Provides direct connection to Rockville and forms part of connection to Gaithersburg from Poolesville; SHA-provided 16' wide curb lanes should be striped as bike lanes.
DB-17	Clopper Road/Diamond Avenue	Dual bikeway: shared use path and signed shared roadway	Summit Avenue to Clarksburg Road (MD 121)	Mostly proposed. Shared use path exists in segments.	Provides direct connection to City of Gaithersburg as well as several MARC stations; Improvements by SHA underway within Gaithersburg city limits.
DB-23	Shady Grove Road extended	Dual bikeway: shared use path and signed shared roadway	Darnestown Road to River Road (MD190)	Modified proposal in 2005 CBFMP	Suitable for both on-road and off-road facilities. An important east-west connector between Potomac communities and cities of Rockville and Gaithersburg.
DB-24	Muddy Branch Road	Dual bikeway: shared use path and bike lanes	Darnestown Road to Diamond Avenue	Mostly proposed. Existing 8' concrete path in segments, but narrows in places.	Direct connection to City of Gaithersburg; indirect connection to Gaithersburg MARC station. Need consistent-width path for entire roadway; adequate ROW exists for bike lanes if road is improved in the future.
[SP-56]	Key West Avenue	[Shared use	Darnestown Road to Gude Drive	Existing	Connection between

Route Number	Name	Type	GWMP Limits	Status/Condition	Description
DB-43		path] Dual bikeway; shared use path and bike lanes			countywide bikeway network and City of Rockville bikeway system.
SP-57	Travilah Road	Shared use path	Darnestown Road to River Road	Proposed, exists in segments	Connects to two major bikeways and several local destinations; forms part of alternate route to C&O canal.
[SP-58] DB-44	Quince Orchard Road	[Shared use path] Dual bikeway; shared use path and bike lanes	[Dufief Mill] Clopper Road to Darnestown Road	Exists in segments; mostly proposed	Provides direct connection to Gaithersburg. Portion along NIST frontage coterminous with SP-66, the CCT shared use path.
SP-59	Darnestown Road south	Shared use path	[Key West Avenue to] Wootton Parkway to West Montgomery Avenue (MD 28)	Proposed	Forms part of important connection to City of Rockville and Rockville Metrorail station.
SP-60	Longdraft Road	Shared use path	Quince Orchard Road to Clopper Road (MD 117)	Proposed	Connects to two major bikeways and to City of Gaithersburg.
SP-63	Great Seneca Highway (MD 119)	Shared use path	Darnestown Road to Middlebrook Road	Existing	Provides excellent off-road connections between Germantown and Gaithersburg.
SP-64	Frederick Road (MD 355)	Shared use path	Gude Drive to Watkins Mill Road	Exists in segments; mostly proposed	Provides excellent connection to downtown Rockville and Gaithersburg.
SP-66	Corridor Cities Transitway	Shared use path	Shady Grove Metro Station to Frederick Road (MD 355)	Mostly proposed; segments exist as part of other bikeways	Connects major employment centers in the I-270 Corridor north of Rockville; intended to parallel the CCT and be implemented as part of CCT project, regardless of mode or alignment.

SP=Shared Use Path BL=Bike Lanes DB=Dual Bikeway

Page 78: Revise the LSC Bikeways Table as follows:

LSC bikeways

Name	Type	Limits	Status/Condition	Discussion
LB-1 LSC Loop	[Shared use path] Dual bikeway; shared use path with shared signed roadway	Circular loop through the LSC	Proposed	3.5- mile recreational path connecting major destinations in the LSC districts. Portions coterminous with SP-66, the CCT shared use path.
LB-2 Washingtonian Boulevard	Shared use path	Sam Eig Highway to 850' northwest of Fields Road (City)	Existing and proposed, short segments exist	Connects mixed-use area to the local and City of Gaithersburg bikeway networks.
LB-3 [Decoverly-] Diamondback Drive	[Shared use path] Dual bikeway; shared use path with shared signed roadway	Key West Ave. to [Crown Farm property line] Decoverly Drive	Existing path [segment, proposed through Crown Farm.]	Connects mixed-use areas to the countywide bikeway network on Key West; should extend through Crown Farm to Fields Road. Coterminous with SP-66, the CCT shared use path.
LB-4 Blackwell Road	[Shared use path] Dual bikeway; shared use path with shared signed roadway	Shady Grove Road to [Darnestown Road] Medical Center Drive	Proposed	Connect countywide bikeway on Shady Grove Road to LSC and City of Rockville.
LB-5 PSTA	Shared use Path	Medical Center Drive extended through PSTA to Darnestown Road	Proposed	Connect LSC Loop on Medical Center Drive to the PSTA site and across Darnestown Road to countywide SP-57 and DB-16.
LB-6 Medical Center Way	Signed, shared roadway	Medical Center Drive to Shady Grove Road	Proposed	Connect LSC Central to the countywide network and City of Rockville paths and destinations.
LB-7 Belward Property	Shared use path along the CCT alignment	Key West Avenue to Muddy Branch Road	Proposed	Connect to LSC Loop, CCT station, historic farm, and countywide DB-24 on Muddy Branch Road. Coterminous with SP-66, the CCT shared use path.
LB-8 Sam Eig Highway	Shared use path	Washingtonian Blvd. to Great Seneca Highway	Existing	Connects Rio and future Crown Farm development to the Countywide bikeways. To be reconstructed along the west side of frontage road system described in LSC Circulation section.

LB=Local Bikeway

Page 79: Modify the LSC Bikeways Network map to show designation of SP-66 (CCT bikeway).

Page 81: Remove the 'Stage' column from the table of proposed capital improvements projects. Modify other columns to reflect all changes made by the Council.

General

All illustrations and tables included in the Plan are to be revised to reflect District Council changes to the Planning Board Draft Gaithersburg West Master Plan (July 2009). The name of the Plan should be changed throughout the document to the Great Seneca Science Corridor Master Plan. The text and graphics are to be revised as necessary to achieve and improve clarity and consistency, to update factual information, and to convey the actions of the District Council. Graphics and tables should be revised to be consistent with the text.

Throughout the document, modify the graphics so that the alignment shown in the Planning Board Draft as "Current Corridor Cities Transitway and Stations" is corrected and the word "Proposed" is deleted from the remaining legend designation. Modify any graphics with the legend label "interchanges" with a footnote: "See text for details regarding Sam Eig Highway"

This is a correct copy of Council action.

Linda M. Lauer, Clerk of the Council

the plan process

A master plan or sector plan provides comprehensive recommendations for the use of public and private land. Each plan reflects a vision of the future that responds to the unique character of the local community within the context of a countywide perspective.

Together with relevant policies, plans guide public officials and private individuals when making land use decisions.

The PUBLIC HEARING DRAFT PLAN is the first formal proposal to amend an adopted master plan or sector plan. Its recommendations are not necessarily those of the Planning Board; the draft is prepared for the purpose of receiving public testimony. The Planning Board holds a public hearing and receives testimony, after which it holds public worksessions to review the testimony and revise the Public Hearing Draft Plan as appropriate. When the Planning Board's changes are made, the document becomes the Planning Board Draft Plan.

The PLANNING BOARD DRAFT PLAN is the Board's recommended Plan and reflects its revisions to the Public Hearing Draft Plan. The Regional District Act requires the Planning Board to transmit a master plan or sector plan to the County Council with copies to the County Executive who must, within 60 days, prepare and transmit a fiscal impact analysis of the Planning Board Draft Plan to the County Council. The County Executive may also forward to the County Council other comments and recommendations.

After receiving the Executive's fiscal impact analysis and comments, the County Council holds a public hearing to receive public testimony. After the hearing record is closed, the Council's Planning, Housing, and Economic Development (PHED) Committee holds public worksessions to review the testimony and makes recommendations to the County Council. The Council holds its own worksessions, and then adopts a resolution approving the Planning Board Draft Plan, as revised.

After Council approval, the plan is forwarded to the Maryland-National Capital Park and Planning Commission for adoption. Once adopted by the Commission, the plan officially amends the master plans, functional plans, and sector plans cited in the Commission's adoption resolution.

Staff Acknowledgments

Rollin Stanley, Planning Director

Great Seneca Science Corridor Master Plan Team

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Elected and Appointed Officials

County Council

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Valerie Ervin, Vice President
Philip Andrews
Roger Berliner
Marc Elrich
Michael Knapp
George L. Leventhal
Nancy Navarro
Duchy Trachtenberg

County Executive

Isiah Leggett

The Maryland-National Capital Park and Planning Commission

Samuel J. Parker, Jr., Chairman
Royce Hanson, Vice Chairman

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Montgomery County Planning Board

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Sarah A. Cavitt
Jesse Clark
Colonel John H. Squire

approved and adopted

great seneca science corridor

The Life Sciences Center

master plan

Montgomery County Planning Department
The Maryland-National Capital Park and Planning Commission

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