

April 13, 2010

**MEMORANDUM**

April 9, 2010

TO: County Council

FROM: Marlene L. Michaelson, <sup>NLM</sup> Senior Legislative Analyst

SUBJECT: Gaithersburg West Master Plan

The Gaithersburg West area covers 4,360 acres in the I-270 Corridor. While the primary focus of the Plan is on the Life Sciences Center (LSC), it also includes the western Quince Orchard neighborhoods, and enclave areas surrounded by the City of Gaithersburg including the National Institute of Standards and Technology (NIST), Rosemont, Oakmont/Walnut Hill and the Washingtonian Light Industrial and Residential areas. A map of the planning area is shown on page 12 of the Master Plan. The Planning, Housing, and Economic Development (PHED) Committee met seven times to discuss the Master Plan. Their recommendations are provided below.

**Councilmembers should bring a copy of the Sector Plan to the meeting for reference.**

**BACKGROUND**

The Master Plan vision is described on page 13:

“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 Plan's key recommendations appear on pages 7-8 and are summarized below:

- Transform the LSC into a dynamic live work community with growth opportunities in research, medical and bioscience interests.
- Realign the Corridor Cities Transitway (CCT) to provide 3 transit stops in LSC Central, West and Belward.
- Concentrate density at the CCT stops and provide appropriate transitions to adjacent neighborhoods and the historic Belward Farm.
- Improve circulation and connectivity and increase the use of transit.
- Provide an open space plan with opportunities for recreation and non-motorized transportation.
- Replace the PSTA with a new residential community.
- Maintain established residential neighborhoods.
- Create a sustainable community.
- Minimize the impacts of development on the Piney Branch Special Protection Area.
- Meet the recreation needs of Gaithersburg West with a new park.
- Support the Agricultural Reserve with the purchase of Building Lot Termination (BLT) easements.

Although the Council received oral testimony from over 70 speakers and written testimony from several hundred more, most of the testimony related to a single issue: whether the recommended density is too great and will overburden the surrounding neighborhoods, or whether it is appropriate and necessary to continue to attract science and health related institutions and businesses and thereby meet the County's economic development goals. This is a complex question and one the Committee addressed via questions to the Planning Department/Board and discussion. The Planning Department's response to Committee questions regarding the overall density recommendations are attached at ©1A to 53.

### **Fiscal Impact Analysis**

The County Executive contracted for a fiscal impact analysis to help prepare the fiscal analysis he is required to submit to the Council under Article 28. Although he does not typically submit the background materials used to prepare his analysis, some Councilmembers requested a copy. There was an error in the analysis related to moderately priced dwelling units (MPDUs). In addition, the original analysis used assumptions regarding job creation that were inconsistent with the M-NCPPC assumptions. The Executive has prepared a revised analysis that corrects the number of MPDUs, uses the same job assumptions as the Planning Department, and also uses the same time frame as the fiscal analysis for the White Flint Sector Plan (40 years).<sup>1</sup> The detailed revised analysis is not attached to this packet due to the length, but is available on the Council's website.

**The net change from correcting the error related to the number of moderately priced dwelling units (MPDUs), using the M-NCPPC job assumptions and a 40 year time frame is a 120% increase in the net fiscal impact over 40 years, increasing the positive impact from \$1.49 billion to \$3.29 billion, assuming 20 million square feet of commercial development. (The change in MPDUs and jobs reduce the net benefit approximately 500 million dollars and increasing the period of analysis by 10 years significantly increases the net fiscal benefit.)** Staff believes that virtually any reasonable

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<sup>1</sup> Since some Councilmembers were interested in comparing the fiscal impact of White Flint and Gaithersburg, Staff asked Executive staff to use the same time period of analysis.

adjustment to the assumptions used to create the fiscal impact analysis (assuming the same level of development) would still result in a positive fiscal impact for the County.

While Staff believes it is useful to prepare this type of fiscal analysis, it should not be the sole basis for any land use decision because it would lead to a far greater amount of commercial development relative to residential development (since commercial development provides greater net revenues than residential development). This is true because residents pay less in taxes than businesses, while requiring more services (education, health and human services, etc.). Planning areas in the County that are primarily residential do not provide enough revenues to pay for the services they require, and Staff suspects that a majority of planning areas fall into this category. Providing a greater amount of commercial development in targeted areas helps the County generate the revenues to cover the costs of serving primarily residential areas and meet other important policy goals, such as providing quality schools and services. A focus on fiscal impact over other planning objectives would compromise other County goals.<sup>2</sup>

The Shady Grove Life Sciences Center in the Gaithersburg West Planning Area has always been designated for commercial development. **In Gaithersburg West the primary way to achieve better fiscal returns is to increase commercial development and/or decrease residential development.** The Executive estimated that decreasing commercial development from 20 million square feet to 18 million square feet would reduce the net fiscal impact from approximately \$1.42 billion to \$1.06 billion, using a 30-year analysis with corrected MPDU estimates.) Staff strongly recommends against any further increases in allowed commercial development (due to the impact on traffic) or decreases in residential development, which would detract from the mixed-use element of the plan and increase the jobs-housing ratio.

### **Estimates of Build-Out**

Page 27 of the Plan shows the amount of existing and approved development and what would be allowed under the Master Plan's recommendations if it builds out to the full amount allowed under the zone. Planning Department Staff have prepared the revised estimates below to indicate their best estimate of likely build out. The column entitled "Potential New" shows what they believe is likely given existing development. On undeveloped property like the Belward Farm, they are assuming they can achieve the maximum allowed by the zone; on properties with existing development, they believe that existing structures will limit redevelopment potential. They estimate that commercial development is more likely to reach 16.2 million square feet, rather than the 20 million square feet shown in the Master Plan. In addition, they note that historically commercial properties in the County have not built to the limit allowed in the zone and are more likely to develop at 75% of potential capacity. If the properties in the Life Sciences Center Districts develop at 75%, the total development would be 14.7 million square feet, 26 percent less than shown on page 27 in the Plan.

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<sup>2</sup> Jurisdictions that focus on maximizing net revenues over other policy goals generally end up not achieving a balanced jobs-housing ratio, not protecting agricultural lands or open space, and also tend to maximize density, even when it negatively impacts the environment or quality of life.

<b>Commercial Development Potential in the Life Sciences Center</b>						
<b>District</b>	<b>Existing</b>	<b>Pipeline</b>	<b>Existing &amp; Pipeline</b>	<b>Potential New</b>	<b>75% of New</b>	<b>Potential Total</b>
Central	2,642,000	886,000	3,528,000	1,750,000	1,312,500	4,840,500
Belward	572,500*			4,600,000	3,450,000	4,022,500
West	330,000			200,000		530,000
North	1,950,000	638,000	2,588,000	370,000	277,500	2,865,500
South	1,434,000	1,028,500	2,462,500			2,462,500
<b>Totals</b>	<b>6,927,800</b>	<b>2,552,500</b>	<b>9,480,300</b>	<b>6,720,000</b>	<b>5,040,000</b>	<b>14,721,000</b>

\*Developed portion of Belward that is no longer owned by JHU.

The Life Sciences Center (LSC) Districts include 5 areas: LSC North, LSC South, LSC Central, LSC West, and LSC Belward. While some areas are recommended to be rezoned to the LSC or Commercial/Residential (CR) zones, most of the area will retain its existing zoning as shown on the existing and proposed zoning maps on pages 16 to 17. Perhaps even more significant than the recommended changes in zoning are the proposed amendments to the Life Sciences Center (LSC) zone that will allow a mix of uses in that zone and increase the maximum allowable density from 0.5 floor area ratio (FAR) to 1.5 FAR. The Plan only recommends the maximum density for a small portion of the LSC Central District. Since LSC sites have maximized their development potential under the existing zone, the increase in density is needed to allow for redevelopment.

Existing development in the LSC districts is predominantly low-density, auto dependent single use buildings (office, university and medical). A significant amount of land is devoted to surface parking. The County (and progressive jurisdictions around the country) has moved away from this suburban park type of development to more transit-oriented, mixed-use development, and the Plan recommendations strive to achieve that objective for Gaithersburg West.

### **Comparison of Gaithersburg West Densities**

This memorandum will address the densities recommended for each property on a property by property basis, but since so much of the testimony the Council received on the Master Plan addressed the overall increase in density, this overriding issue is addressed first. The primary concern expressed by those who oppose the Plan is that the increased development will have a negative impact on the surrounding residential communities and that the Plan's assessment of the impact on the transportation system is problematic, especially since it uses unrealistic assumptions.

During the PHED Committee worksessions Planning Department Staff presented information they collected about the densities of other centers of development in and outside Montgomery County. Attached on ©54-55 is a summary of the floor area ratios (FARs) of other high density centers along the MD 355/I-270 Corridor and elsewhere in the region. Perhaps the most comparable location in terms of the provision of transit is Germantown, which will also be served by the Corridor Cities Transit (CCT) project. There the densities at the transit stations range from 1.0 to 2.0 FAR with 143 to 180 foot height limits.

Generally, Staff supports the densities recommended in the Master Plan for 3 main reasons:

1. Sufficient density must be provided to prevent further development of new low-density office parks with surface parking and to encourage redevelopment of existing properties. The existing form of development does not serve the existing property owners or surrounding communities as well as transit-oriented, mixed-use development.
2. The LSC area provides one of the most unique opportunities to further the County's goal to continue to attract and retain biotechnology companies and institutions. Staff believes that the Council is well aware of the significant resources the County has invested in fostering these opportunities over the past 30 years and the benefits of continued growth in these industries and will not repeat them here. It is worth noting that the existing presence of a hospital, two major universities, federal research establishments, numerous biotechnology companies, as well as vacant and redevelopable land makes this one of the most attractive areas in the County to promote partnerships and the emerging emphasis on translational research initiatives. Staff believes that the County is very fortunate to have both Johns Hopkins University (JHU) and the University of Maryland interested in expanding their presence in the Life Sciences Center.
3. Although surrounding residential communities always express concern when densities are increased at transit centers, the County's experience thus far has been that surrounding residential communities have retained or increased value with the new development. This has been particularly true in Bethesda and Friendship Heights, where the concerns of adjacent communities were very similar to those expressed by the existing residential communities near the LSC. This point was made in the testimony of Roger Lewis (a noted professor and columnist who comments on urban planning issues):

“Some worry that approving the Master Plan will adversely affect nearby residential neighborhoods or spoil suburban lifestyles embraced by many county residents. But I have seen no evidence, from either Montgomery County or elsewhere, showing adverse impact on neighborhoods caused by well planned, properly staged development or redevelopment with higher densities and contrasting uses. On the contrary, I believe the Gaithersburg West Master Plan, developed in stages with appropriate urban and architectural design guidelines promises to yield a community that will be aesthetically, functionally and economically desirable....The Gaithersburg West planning approach represents a “both-and”, win-win strategy, not an “either-or”, urban vs. suburban planning choice in a zero-sum game where some win and some lose.

Staff notes that although many have indicated that this is a suburban area and new development should be suburban in character, this area has always been designated for growth and development as part of the I-270 Corridor and is not part of the designated suburban communities in the General Plan.

## **LAND USE ISSUES FOR LIFE SCIENCES CENTER DISTRICTS**

### **LSC Central**

**Committee Recommendation: Support the land use and densities recommended for LSC Central and allow for a transfer of density (at the property owner's discretion) from LSC Belward to LSC Central, provided the total density is no greater than 0.5 FAR more than recommended in the Master Plan.**

The Plan's recommendations for the LSC Central District are presented on pages 28 to 30. This 230-acre district includes Shady Grove Adventist Hospital, several medical office buildings, the Johns

Hopkins University – Montgomery County Campus, the Regional Institute for Children and Adolescents (RICA) and Noyes Institute facilities, and some County social service uses. It also includes several private companies. Highlights of the recommendations are as follows:

- The Plan reconfirms the LSC zoning on most properties in the district and recommends rezoning the R-200, R&D and LSC zoned properties to the LSC zones.
- FAR is limited to 1.0 except at the center of the district where it can go to 1.5 FAR.
- Properties closest to the proposed transit station can be up to 150 feet tall.
- A maximum of 30% may be developed as housing and at least 15 percent must be public use space.

**Staff comments:** As the name implies, this is the center of the Life Sciences Center and the appropriate location for the highest densities recommended in the planning area (with the exception of one parcel on the DANAC property recommended for CR 2.0). It will also be a challenging location for redevelopment given the existing structures and the Plan’s vision for higher density mixed-use redevelopment may not occur for a very long time. Some have suggested that densities elsewhere in the planning area be reduced with an offsetting increase in this area. While Staff does not support the mandatory reductions suggested by some, Staff does support the option of allowing for transfers of density from the other LSC zoned property to LSC Central, **at the property owner’s option**. This should be limited to a 0.5 FAR increase over what the Plan allows and 50 feet additional height (up to the limits in the zone), if there is an offsetting reduction in FAR on LSC Belward.

## LSC West

**Committee Recommendation:** Support the Plan recommendations and require that on the PSTA property a meaningful portion of the additional bonus density allowed under the CR zone be obtained via the provision of additional affordable housing and the purchase of more than the minimum amount of building lot termination (BLT) easements. Revise Master Plan language to elaborate on connections with and transitions to existing neighborhoods (including connections between the civic green and existing neighborhoods).

The Plan’s recommendations for the LSC West District are presented on pages 31 to 33. Most of this district is the Public Service Training Academy (PSTA) which takes up 52 of the 75-acre district. Highlights of the recommendations are as follows:

- Recognizing that the PSTA has no relationship to the LSC, the Plan supports relocating it and redeveloping the site with a residential community.
- The Plan recommends the CR zone for the PSTA property, the PEPCO parcels, 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 (CR 1.0: C 0.5, R 1.0, H 150).
- The corner of Great Seneca Highway and Darnestown Road has the potential to become a signature site.
- The Plan recommends that the 2 special exception uses be rezoned from R-90/TDR to C-T and confirms the RT-8 zone for the remainder of parcels along Darnestown Road.
- The new LSC West community should include retail, civic spaces, and, if needed, a new public elementary school.

- A new local park should be provided in conjunction with the elementary school or on its own if the school is not needed.
- A new public green space of one-half to one acre should be created near the CCT station as a gathering place and focal point for the community.

**Staff Comments:** The Committee supports the general recommendations of this section and the proposed rezoning to the CR zone to allow a significant increase in residential development. As noted in testimony by several different experts, the research and science communities are gravitating towards mixed-use communities where researchers and entrepreneurs can live where they work. Providing additional housing in the Life Sciences Center along the CCT route will help achieve this goal and provide the additional demand for retail and entertainment uses that will add to the vibrancy of this area. The recommended density is appropriate for an area adjacent to a CCT station.

Since this is County-owned land, the County can impose conditions on its redevelopment that are not otherwise required under the CR zone, but could be referenced in the Master Plan. For example, the County could require a higher percentage of affordable housing than otherwise required (similar requirements have been included for publicly owned land in other master plans) and/or a greater percentage of building lot termination (BLT) easements. Staff proposed that the Master Plan recommend a minimum of **30 percent** of any housing built on the site be affordable (MPDUS or workforce housing) and that **10 or 20 percent** of development over 0.5 FAR be obtained using BLTs (the zone requires a minimum of 5 percent, but allows up to 30%). While these could reduce the price that will be paid to the County by a potential buyer, they would serve other policy objectives.

Recognizing that if the requirements to develop this site are too great, the County may have trouble finding a developer, the Executive now recommends that at least **35%** of the incentive density under the CR zone be obtained via affordable housing **or** the purchase of BLTs, if it is commercially feasible to do so. The Executive recommends the following language be added to Master Plan:

“The Public Safety Training Academy site in the LSC West is the primary site for housing for the live/work community envisioned for the Life Sciences Center. Recognizing that this site is expected to provide a public school/park parcel, a civic green, a CCT station and right-of-way, structured parking and a road network and is traversed by a significant water main, to the extent that it is commercially reasonable to do so and without impairing the ability to achieve the envisioned uses and density for the site, this plan recommends, as an objective that at least 35% of the incentive density attainable for the site be achieved through use of BLTs and affordable housing.”

In this District and others addressed below, the Committee concurred with the Staff belief that the Master Plan does not full describe the relationship between this neighborhood and the existing residential community to the south. The Committee believes the Plan should be expanded to address the following issues:

- What are the appropriate connections between LSC West and the existing residential community to the south?
- How can the Plan address the transition to the existing residential neighborhood? Additional guidance should be added about the heights at the edges (rather than a diagram on page 32 that indicates that the height at the edge can range from 50 to 100 feet). Although the details of design should be included in design guidelines, the Master Plan should include some guidance as to how these developments will relate to the adjacent communities (e.g., will buildings be

oriented towards the communities or is it possible existing communities will face rear walls or parking garages?)

- Is the civic green intended to serve just the new residents or existing ones as well? Staff believes it should serve existing as well as new residents and therefore the access points will be important, but they are not mentioned in the Master Plan.

Based on the Committee concerns, Planning Department Staff have prepared suggested changes to the Master Plan that are attached at ©58-60 (additions are highlighted in bold). The Committee believes these changes significantly improve the Plan.

## **LSC Belward**

**Committee Recommendation:** The majority of the Committee supported the Master Plan-recommended densities and heights for the Belward Farm property. Councilmember Elrich believes that the Master Plan recommendations for this property were too dense. The entire Committee supported the Staff recommendations to (1) allow density to be transferred to the LSC Central property, (2) enhance the Master Plan's park and open space recommendations, and (3) address the connections with and transitions to surrounding neighborhoods.

The Plan's recommendations for the LSC Belward District are presented on pages 34 to 37. The Belward property is owned by JHU and surrounded by major roads and residential neighborhoods on three sides. Highlights of the recommendations are as follows:

- Rezone the 107 acre property from the Research and Development (R&D) zone to the LSC zone to allow a mix of uses and greater densities.<sup>3</sup>
- The density will increase from the 0.3 FAR allowed under the R&D zone to 1.0. (The proposed changes to the LSC zone allows up to 1.5 FAR but the master plan may limit it to a lower height.) A diagram showing the approved development plan under the existing R&D zone is attached at ©67. A diagram of the potential development under the LSC zone is attached at ©68. Renderings prepared by JHU of their proposed development are attached at ©69 to 70.
- Concentrate the highest densities and building heights (150 feet) near the CCT station.
- Expand the historic setting for the Belward Farm historic buildings from the 7-acres in the approved plan to 10 to 12-acres.
- Provide two rectangular fields within the designated buffer area along Muddy Branch Road.
- Create the "LSC Loop" along Medical Center Drive and Decoverly Drive, the network of natural pathways along the stream buffers, and the open spaces.

**Staff Comments:** The recommended change in density for the Belward Farm generated more comments than any other issue in the Master Plan with numerous groups and individuals requesting a reduction in density and/or preservation of the farmland/open space. This is not surprising, given that the existing pastoral setting will be changed significantly with a dense development and the presence of a CCT stop. Numerous individuals who submitted testimony or correspondence to the Council appear to be under the mistaken impression that the existing zoning and plans would better retain the rural character of the farm and/or provide a greater buffer between the commercial development and the adjacent neighborhoods. As the diagram on ©67 shows, the property would be fully developed except for the 7-acre area directly around the farm buildings and some open space; the parking lots would

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<sup>3</sup> The original property was 138 acres but a portion was sold and developed.

extend directly to the edge of the property boundaries. This style of development represents a continuation of the low density sprawling commercial development present in other Life Sciences Center properties. To avoid this unattractive layout, some have suggested that development be kept at the existing density but cluster it on the east side of the property with structured parking, something Staff does not believe is feasible. To nullify the existing preliminary plan, the Council would have to rezone the property to a zone that would not allow this development and also eliminate any grandfathering provision in the zone (which could impact other property owners). Staff cannot think of any zone which would not allow the approved development, but would achieve the Plan vision and comply with the deed restrictions. Moreover, Staff does not believe it would be economically feasible to build structured parking at the approved density of 0.3 Floor Area Ratio (FAR). The 1.0 FAR recommended in the Master Plan appears to be the minimum density needed to support structured parking.

The reality is that JHU has an approved development plan that would allow them to build a low density office project with a significant amount of surface parking. Given this fact, Staff knows of no way the County can prevent the development of the farm or require the preservation of open space with the existing density. Without the incentive created by the additional density to submit a new plan for development, JHU would most likely build the approved plan.

Some of the key differences between the approved plan and what would be allowed under the Master Plan are as follows:

APPROVED DEVELOPMENT	MASTER PLAN RECOMMENDED DEVELOPMENT
0.3 FAR	1.0 FAR
1.8 million square feet (on 138 acres)	4.6 million square feet (on 107 acres)
72 percent imperviousness	54% imperviousness
Surface parking (33 acres)	Structured parking (6 acres)
Approximately 25 foot buffer	300 foot buffer on west side of property with soccer fields; 200 foot buffer on the northern edge
7 acres environmental setting for historic farm buildings	10-12 acres environmental setting for historic farm buildings
30 acres (22%) Green Space	49 acres (46%) Green Space

In Staff's view the **approved** development would allow the type of low-density auto-oriented development that currently exists elsewhere in the Life Science's Center. Additional density is necessary to achieve transit-oriented development. This is true not only in Gaithersburg West, but in all areas of the County and nationally where the goal is transit-oriented development. While there is no specific threshold below which transit-oriented development is not feasible, literature on the subject appears to support densities of 1.0 and higher.<sup>4</sup> This also appears to be the minimum density for constructing financially viable structured parking.

<sup>4</sup> The Federal Transit Administration's Center for Transit-Oriented Development indicate that the FARs of transit-oriented developments range from a 1.0 FAR for a residentially oriented "Transit Neighborhood" to 5.0 for a "Regional Center". In

The Council had heard concerns that JHU wanted to maximize development potential with no real plans to increase its presence or further the life sciences in the Gaithersburg West area. A recently signed Memorandum of Understanding (MOU) between JHU and the County indicates that the University is interested in partnering with the County for the following purposes:

“reflecting the Parties’ shared objectives and vision of advancing the biosciences industry, higher education and workforce development within the County and for forging long-lasting collaborative relationships among private industry, public and private higher educational institutions and government interests involved with the biosciences industry.” (See ©71 to 75.)

The MOU describes the goals of JHU and the County to creation an international center of discovery and education in biomedical translational science in a community with a mix of land uses. **In Staff’s view, the MOU and the partnership it establishes creates additional justification for the Master Plan recommendations and its vision to provide new opportunities for the development of the life sciences.**

While Staff believes the recommended FAR is appropriate for this site, Staff does have questions regarding the appropriate balance of height and open space. Staff believes that decisions as to whether to limit the maximum height to less than 150 feet (or how many building to allow to be 150 feet) or provide greater public open space should be made by the Planning Board at the time of development, but the Master Plan language can emphasize that these are decisions the Planning Board will make. It can more clearly indicate that the Planning Board should maximize open space adjacent to existing residential communities, provided it can do so without creating inappropriate heights or masses of buildings on other parts of the site.

### **Transfers of Density**

One of the ideas raised in testimony was to transfer some of the density allowed on the Belward Farm to LSC Central, however LSC Central does not have any significant tracts of undeveloped land that could provide the same opportunities as the Belward Farm and Staff is also concerned about the encouraging a less compact form of development on Belward. As noted above, Staff supports the concept of allowing a transfer of density from Belward to LSC Central or from the western portion of LSC Belward to the eastern portion which is no longer owned by Johns Hopkins **at the property owners’ request**. If this occurs, it should be done to provide additional open space on the Belward Farm, while maintaining compact development on the area that is developed. With such a provision, there may an opportunity for some creative negotiations between property owners (including the County and JHU if the County decides to relocate uses it currently has in LSC Central). To accomplish this, Staff recommends that the text amendment for the LSC zone be amended to allow a transfer of density between two LSC properties if recommended in a master plan. The Gaithersburg West Plan should include a recommendation to allow transfers of density from the LSC Belward to LSC Central and from the western portion of LSC Belward to the eastern portion, provided that the increased density in LSC Central is not more than 0.5 floor area ratio (FAR) above or 50 feet taller than what is recommended in the Master Plan.

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their typology, Special Use/Employment Districts and Suburban Centers should have densities of 2.5 and 4.0 FAR respectively.

The Committee has the same concerns for this neighborhood as for LSC West: that the Master Plan does not full describe the relationship between this neighborhood and the existing adjacent residential communities. Once again, the Committee asked that the Plan should be expanded to address the following issues:

- What are the appropriate connections between LSC Belward and the existing residential communities?
- How can the Plan address the transition to the existing residential neighborhood? Additional guidance should be added about the heights at the edges (rather than a diagram on page 36 that indicates that the height at the edge can range from 50 to 100 feet). Although the design details should be included in design guidelines, the Master Plan should include some guidance as to how these developments will relate to the adjacent communities (e.g., will buildings be oriented towards the communities or is it possible existing communities will face rear walls or parking garages?)

The Plan recommends a 300 foot buffer with two soccer fields on the west side of the Belward campus, but given the significant increase in density, should be a substantial park with sufficient amenities (rather than a buffer) to be an attractive destination for residents of the existing communities, as well as the new residents. As noted above, Staff recommends refining the Plan's recommendations to maximize open space to the extent feasible, which could help to ensure an adequate size park. Ultimately the Planning Board will need to make the tradeoff between height and open space at the time of development. The Master Plan should reflect the fact that is park is likely to be privately constructed and maintained, while remaining publicly accessible.

For this property, Planning Department Staff drafted new language to address concerns raised by the PHED Committee. Attached on ©61 to 64 are revisions that address many of the Committee's concerns regarding transitions and connections to neighborhoods and open space requirements. Circle 62 provides new descriptions of a Muddy Branch Park (which replaces the 300 foot buffer), a Mission Hills Preserve, a Darnestown Promenade, a Belward Commons/Historic Farmstead, and an Urban Square at the CCT station. While Staff believes this text needs further refinements, **this is, overall, a significant improvement to the Plan.** In particular, Staff believes the plan should highlight the need for special features in the Muddy Branch Park that will make this an attractive destination for existing residents. Staff will continue to work with Planning Department Staff, community representatives and the property owner to refine this language.

As noted in the memorandum on staging, the Committee (and Staff) believe it would be appropriate to include development of the Muddy Branch Park in the Master Plan's staging element.

## LSC North

**Committee Recommendation: Support the Master Plan recommendation for Lot 7 on the DANAC property and rezone the remaining portion of the property to CR 1.0: C 0.5, R 1.0, H 80 to provide the opportunity to have infill development be primarily residential. Rezone the Shady Grove Executive Center and BNA properties CR 1.5: C 1.5, R 1.5, H 100 (instead of the PD recommended in the Master Plan).**

The Plan's recommendations for the 195-acre LSC North District are presented on pages 38 to 39. Highlights of the recommendations are as follows:

- Rezone the DANAC property from I-3 to CR with higher densities to take advantage of the transit station location.
- The parcel adjacent to the CCT station (parcel 7) should be zoned CR 2: C 1.5, R 1.5, H 150 and the remainder of the DANAC property should be zoned CR 1.0: C 0.5, R 0.5, H 80.
- Building heights adjacent to the residential community to the north is limited to 50 feet.
- To increase the possibility of infill residential development on the remaining sites in LSC North, the plan recommends allowing the Shady Grove Executive Center and Bureau of National Affairs BNA properties to develop under the Planned Development (PD) zone with “urban, high density housing”.

**Staff Comments:** The Plan does not show the location of Lot 7 on the DANAC property recommended for CR 2.0 and the Plan should be amended to more clearly indicate the location of this area recommended for a different zone. The Committee supported the recommended CR 2.0: C 1.5, R 1.5, H 150. The remainder of the DANAC parcel is recommended for CR 1.0: C 0.5, R 0.5. Staff was concerned that the zoning might not allow the property owner to achieve the Master Plan’s goal of having any infill development be primarily residential. (It is unclear whether the requirement for 50% commercial would be applied to the entire property, including the previously developed area, or just the infill area.) **The Committee (and Staff) recommends that the zoning be changed to CR 1.0: C 0.5, R 1.0, H 80 with language in the Master Plan indicating the intent of having infill development have a primarily residential focus.** This zoning change would clarify that up to 100 percent of any new development could be residential.

Staff notes that the attached revisions to the Master Plan prepared by Planning Department staff do not yet recommend this change in the residential portion of the zoning for the DANAC property. The revisions do reflect a technical adjustment regarding the width of the area recommended for a 50 foot height limit.

The Master Plan recommends PD zoning for the Shady Grove Executive Center and BNA properties, but does not specify a density. Staff is generally not supportive of the PD zone because it provides fewer public benefits and amenities than any of the other mixed-use zone. Staff questioned why the CR zone was not recommended for this property and Planning Department worked with the property owners to consider zoning alternatives. They now recommend that that these properties be rezoned CR 1.5: C 1.5, R 1.5, H 100. The Committee (and Staff) supports the revised zoning recommendation.

## LSC South

**Committee Recommendation: Rezone the Rickman property to the CR zone to allow either residential or commercial uses, and provide the ability to minimize imperviousness and impact on the environment.**

The Plan’s recommendations for the LSC South District are presented on pages 40 to 41. This 245-acre district south of Darnestown Road includes the Traville community’s retail and residential uses, Human Genome Sciences, and the Universities at Shady Grove. 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. The 13-acre Rickman property is the only undeveloped property. Highlights of the recommendations are as follows:

- Support the existing R&D zoning on the Rickman property but recommend an option for the Planned Development (PD) zone at 22 units per acre.
- 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.
- Construct Traville Local Park and provide connections to the LSC Loop.

**Staff Comments:** The Master Plan recommends retaining the Research and Development (R&D) zone on the undeveloped 13-acre Rickman property and providing an option for PD22 zoning. (The general location of this property is shown on page 14 of the Master Plan, and Staff has asked Planning Department Staff to bring a better map to the meeting.) Staff had recommended that Planning Department consider whether this was the best zoning option for this property, given its environmental sensitivities (including that a portion is in a Special Protection Area (SPA)). Staff also suggested that the Master Plan provide guidance related to environmental protection.

The attached language on 65 and 66 provides new text with the new zone and some guidance as to how to minimize impacts on the environment. While the Staff believed that the PD zone would be appropriate for this site, the base R&D zone, which requires only 30% open space and limits heights to 50 feet (under standard method) would not provide the opportunity to address the unique environmental limitations on this property or ensure consistency with Master Plan recommendations. The Committee recommends rezoning this property to the CR zone to achieve these objectives. **The CR 0.5, C 0.5, R 0.5, H 80 zone would allow approximately the same density as the PD 22 zone** but would also provide a commercial option with far greater ability to minimize impacts on the environment than the R&D zone. The Plan should indicate that although the density is limited to the standard method density of 0.5 FAR, it allows for greater height than allowed by standard method to minimize impervious surfaces.

### **Zoning for C-4 Property at Corner of 28 and Travilah Road**

**Committee Recommendation: Rezone this C-4 property to CR 0.75: C 0.5, R 0.75, which would retain the existing density but allow for the mixed-use redevelopment including residential.**

The Council received correspondence requesting that the C-4 property at the southeast corner of the intersection of Darnestown Road (MD 28) and Travilah road (which currently has a strip shopping center with a Walgreen's, Burger King and other assorted retail and office uses) be rezoned from C-4 to the Commercial-Residential (CR) zone.

The property is south of LSC west, which is recommended for CR zoning and although the property owner has no near term plans to redevelop, they would like the option of future mixed-use development and have requested a CR 1.0: C 1.0, R 0.5, H 80-100 for the site. (The Master Plan recommends rezoning the Public Service Training Academy (PSTA) to the north CR 1.0: C 0.5, R 1.0, H 150 and confirms the Mixed-Use Neighborhood Zone (MXN) on most of the remaining area in LSC South.) The Planning Department supports the request for CR zoning but recommends limiting the density to CR 0.75: C 0.5, R 0.75, H 80. This is comparable to the density under the existing zoning, but allows a housing option. The Committee (and Staff) supports this recommendation.

## **LAND USE ISSUES OTHER THAN LIFE SCIENCES CENTER**

The map on page 19 of the Plan displays the areas in the planning area highlighting the impact of annexations on geography of the County and municipal boundaries. There are several areas of County land that are partially or primarily surrounded by City of Gaithersburg land; they are referred to in the Master Plan as “areas and enclaves” and described beginning on page 45 of the Plan. 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 the Plan supports annexation. Each area/property is described below.

### **Quince Orchard Area**

**Committee Recommendation:** Support the Master Plan recommendations and reflect the recommendation for a new park in the community facilities section of the Master Plan.

The Quince Orchard area is in the western portion of the planning area and is composed primarily of Seneca Creek State Park, but also includes the residential neighborhoods of Quince Orchard, Orchard Hills, Willow Ridge, and Parkridge. The recommendations are to retain the existing residential and commercial zones and maintain the established character of these neighborhoods. Additional recommendations address the demands for active recreation in this area by acquiring land for a local public park, providing a natural surface trail connecting Quince Orchard Valley Neighborhood Park to the Seneca Greenway Corridor, and promoting planting street trees and neighborhood trees. The Master Plan recommends **against annexation**, since it could preclude the opportunity to acquire a new local park.

**Staff Comment:** Staff supports the recommendations in the Master Plan but is somewhat concerned that the recommendation for parkland acquisition is not highlighted in a community facilities section of the Plan. Staff has discussed formatting changes with Planning Department staff that could ensure this recommendation is adequately highlighted and will incorporate those changes into the resolution.

### **McGown Property**

**Committee Recommendation:**

**Size of Property:** 75-acres

**Location Map:** Page 52

**Existing Zoning:** 65 acre parcel zoned 1-3 and 10 acres zoned R-200

**Summary of land use recommendations** (see page 51): The McGown property is a largely undeveloped property within the City of Gaithersburg’s Maximum Expansion Limits. Since the property is somewhat isolated and disconnected from any centers of growth planned in the County, annexation into the City of Gaithersburg may be appropriate. Recommendations are to coordinate planning with the City of Gaithersburg; consider the Planned Development (PD) 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; and provide right-of-way for Watkins Mill Road extended.

**Testimony:** None

**Staff Comments:** Staff supports the Master Plan recommendation to allow the option of mixed-use development, particularly since the adjacent development in the City of Gaithersburg is mixed-use. However, Staff questioned whether the PD zone, in its current form, is the right zone, since it only allows for a limited amount of mixed-use and, although it requires a significant amount of “green area”, it has only a limited option for the purchases of transferable development rights (TDRs), and does not require the purchase of Building Lot Termination (BLT) rights or the provision of amenities, public benefits provided by other new mixed-use zones.<sup>5</sup> The Committee supports the PD zoning but has asked the Planning Department to explore whether there should be amendments to the PD zone (either as a text amendment or as part of the zoning ordinance rewrite) to require the provision of some public benefits.

## **National Institute of Standards and Technology (NIST)**

**Committee Recommendation: Support the Master Plan recommendations.**

**Size of Property:** 580-acres

**Location Map:** Page 54

**Existing Zoning:** R-200

**Summary of land use 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; and target stream buffer areas for forest planting and removal of invasive plants. Retain existing R-200 zoning.

**Testimony:** None

**Staff Recommendation:** Support the Master Plan recommendations

## **Londonderry and Hoyle’s Addition**

**Committee Recommendation: Support the Master Plan recommendation.**

**Location Map:** Page 55

**Location Map:** Page 54

**Existing Zoning:** R-200 and R-20

**Summary of land use 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, and use low-impact development techniques to minimize runoff to stream systems. Hoyle’s Addition may be appropriate for townhouse zoning in the future.

**Testimony:** None

**Staff Recommendation:** Support the Master Plan recommendations

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<sup>5</sup> The PD zone allows for a density bonus of 10% above the maximum density in the master plan for the provision of TDRs, if the use of TDRs is recommended for the site.

## **Rosemont, Oakmont, and Walnut Hill**

**Committee Recommendation:** Support the Master Plan recommendation.

**Location Map:** 58

**Existing Zoning:** R-200, C-1, C-2 and C-T

**Summary of land use recommendations:** These primarily residential communities have little development potential and the stable residential areas should be preserved. Remove the proposed C-T zoning option on the R-200 properties in the vicinity of Oakmont Avenue since the Plan recommends removing the transit easement along Oakmont Avenue. 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.

**Testimony:** None

**Staff Recommendation:** Support the Master Plan recommendations.

## **Washington Light Industrial Park**

**Committee Recommendation:** Support the Master Plan recommendation for a mixed-use center at the Shady Grove Center and indicate that mixed-use zoning may be appropriate for the other small areas zoned C-3. Do not indicate the recommended FAR in advance of a decision regarding the zone.

**Size of property:** 103-acres

**Location Map:** 61

**Existing Zoning:** Light industrial area primarily zoned I-1 with a few C-3 parcels.

**Summary of land use recommendations:** Consider future mixed-use redevelopment of the Shady Grove Center (which is zoned I-1 but grandfathered with 108,000 square feet of retail space on a six-acre site); retain the I-1 Zone and C-3 Zone for all other properties in the Washington Light Industrial Park; reduce imperviousness; improve stormwater management; and implement other green building techniques if there is redevelopment.

**Testimony:** William Kominers supports the Staff's recommendation on page 60 of the proposed Master Plan that the Shady Grove Center should be considered for a new medium-density commercial mixed-use. The Property is most suitable for long-term development of mixed non-residential uses (office/retail). He recommends that a density of approximately 1.5 FAR be included in the Master Plan for this property.

**Staff Recommendation:** Staff supports the Master Plan recommendation for this property but notes that if a new mixed-use zone is identified for this property, it should be considered for 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. Staff does not support including a Master Plan recommendation related to floor area ration (FAR) until a zone is identified.

## SUSTAINABILITY

**Committee Recommendation:** The Committee supports the revised Master Plan text on sustainability prepared by Planning Department environmental staff.

The sustainability section of the Master Plan appears on page 24. It is more limited in scope and depth than similar sections in most master plans. The Committee asked the Planning Department to rewrite this section of the Master Plan to describe the unique environmental features of the planning area (e.g., the Piney Branch Special Protection Area). It should indicate whether/how the proposed increases in density and likely changes in urban form will have a negative or positive impact on the environment. In addition the Master Plan should include environmental goals that are plan specific (e.g., while this Master Plan indicates that adding urban tree canopy reduces local carbon concentrations, the White Flint Sector Plan includes a specific target for increasing tree canopy.)

Based on the Committee's request, the Planning Department revised this section of the Plan. Attached on ©77 to 80 is a memorandum from Planning Department Staff related to environmental issues, followed by a new section on sustainability that they recommend replace the text on page 24 (©81 to 86). The Committee believes that this new language is a significant improvement over what was included in the Master Plan.

## PARKS AND OPEN SPACE PLAN

**Committee Recommendation:** The Committee believes that the Master Plan, with the refinements suggested in this memorandum, will provide sufficient parkland for the planning area. The Committee supports the enhanced language prepared by the Planning Department Staff regarding the functions of different parks and open spaces in the planning area.

The Plan's open space recommendations are described on pages 23 and 26 to 27. This section of the Plan is also more limited in scope and depth than most master plans, and the once again asked Planning Department staff to revise this section prior to the meeting on March 22. At a minimum, the Master Plan's recommendations for parks and open space that appear in property specific descriptions should be summarized in this section (e.g., the Plan recommends new local parks in the Quince Orchard Area and LSC West which are not referenced in the section on Open Spaces, and a civic green in LSC West is only briefly referenced in the last paragraph on page 25 and again briefly in the description of the LSC West). While this information appears in the Appendix, it should also be included (in an abbreviated form) in the Plan. The location of proposed public use spaces, which is usually shown on a master plan map, does not appear in this Plan. (The map on page 26 shows the proposed location of public parks, but not public open space.) Finally, the Committee believed the Master Plan should include additional language to better describe the functional goals for these open spaces and ensure that they will be an asset for existing as well as new residents.

A draft of an expanded section on parks and open spaces appears on ©56 to 57 and additional comments on parks and open space are also in the descriptions of the specific districts (e.g. see new description of open space system for Belward Farm on ©63). **The Committee believes that Planning Department staff addressed its concerns, and this language provides a clearer vision of what is intended for the planning area.**

## **Community Facilities and Amenities**

**Committee Recommendation:** Expand the description of the Master Plan of the proposed amenities and support new language description the potential location of a privately funded, publicly accessible science library.

Community facilities and amenities are discussed on pages 25 to 27 of the Plan. The Master Plan addresses the potential need for a new school and fire station and describes the planned community recreation center on Travilah Road. The Master Plan indicates that “a library specializing in science and medical research may be desirable” and also indicates that it could be publicly accessible and funded through private sector contributions to an amenity fund. This could be a new model for a public-private partnership for the construction and/or operation of a library. Staff believes that the Sector Plan should identify potential locations for the library, so that the Planning Department is reminded to consider this recommendation as part of the development process. Planning Department Staff has drafted new language to identify potential locations for the library.

The Plan also describes the recommended multi-use path loop and stream buffers and open spaces. Although it appears that the Master Plan intends to designate these facilities (and the proposed library) as plan amenities, the Life Science Center (LSC) zone, which is recommended for much of the planning area, does not require the provision of amenities. (Staff questions whether such a requirement should be added to the zone as it transitions from an exclusively commercial zone to a mixed-use zone that will allow residential development.) Since the CR zone does have an amenity component (and in case the LSC zone is amended to require amenities), Staff believes this language could be strengthened so that it is clear what amenities are recommended (e.g., park facilities, landscaping, etc.).

## **NEW MASTER PLAN NAMES**

**Committee Recommendation:** The names that appealed most to Committee members are Great Seneca Science Center, Great Seneca Life Sciences Center or Great Seneca Corridor.

Several Councilmembers have indicated their desire to change the name of the Gaithersburg West Master Plan. The following are options suggested by Councilmembers and Staff:

- Life Sciences Center West
- Life Sciences Village West
- Western Life Sciences Center Village
- Great Seneca Science Center
- Great Seneca Corridor
- R&D Village and Vicinity
- Mid-Seneca
- Shady Grove West



**MONTGOMERY COUNTY PLANNING BOARD**  
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

**OFFICE OF THE CHAIRMAN**

October 19, 2009

The Honorable Phil Andrews, President  
Councilmember Michael Knapp, Chair, PHED Committee  
Stella B. Werner Council Office Building  
100 Maryland Avenue  
Rockville, Maryland 20850  
Montgomery County Council

Dear Gentleman:

We have received a series of detailed questions regarding the Gaithersburg West Master Plan from Council staff and Council President Andrews. Attachment A provides our responses to the Council staff questions in the September 25, 2009 memorandum to the PHED Committee. Attachment B provides our responses to questions that we received from Council President Andrews on October 1, 2009. Attachment C is an addendum of Transportation-related information.

In addition to our responses to specific questions, we would like the Council to consider several overarching issues related to this Master Plan. Some of these points were made in my testimony to the Council, but I would like to take this opportunity to highlight some key issues.

Forty years ago, the General Plan identified the I-270 Corridor as an appropriate location for growth and it has evolved into the economic engine of not only the County, but the State. The Shady Grove Life Sciences Center, in the center of the Corridor, is the County's premier location for research and biotechnology and is a keystone of our economic development strategy. Major investments have been made to attract and grow our bioscience industry, health care, and research institutions. The Gaithersburg West Master Plan provides a blueprint for how the Life Sciences Center (LSC) could grow over the next 40 years. It is a Plan for the first half of the 21<sup>st</sup> century.

While the 1990 *Shady Grove Study Area Master Plan* helped preserve and protect land for life sciences, it did not help create an appealing and supportive work environment. It is based on a research park model of the 1980s that is not competitive or sustainable. The segregation of uses adds to traffic congestion and trip generation, which are major frustrations for LSC employees who have no choice but to drive to and from work, drive to restaurants at lunch, and drive to meetings. Congestion is also a major concern for nearby residents, who must cope with traffic to and through the area.

This Draft Master Plan proposes to transform the LSC into an integrated, transit-served center that provides for expanded medical, research, and academic facilities that are complemented by an array of services and amenities for residents, workers, and visitors. New housing recommended in the Plan will provide opportunities to live near work.

1 (A)

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Employers and employees in life sciences and health care are highly educated and mobile. We need to plan for a diversity of opportunities and maintain a high quality of life for companies and workers. We have a limited supply of land available to accommodate new firms and significant expansions of existing firms and federal life science agencies. The County must position itself to capture future opportunities to protect our investments as well as remain competitive in the global life sciences industry. We must be strategic about how we use the land we have left. And we must build on the strengths of today's LSC to create a place where future businesses and workers will want to live and work.

We firmly disagree with the assertion (from groups such as the Coalition for Smart Growth and Action Committee for Transit) that allowing growth of our premier LSC constitutes sprawl because it is not located at a Metro station. Growth that is planned, managed, and controlled is not sprawl. For the past 25 years, the County has followed a policy of increasing density at Metro stations. We must now look to other transit options, such as the Corridor Cities Transitway. As we did in Germantown, the Gaithersburg West Master Plan recommends transit-oriented development at densities that are appropriate for a light rail or bus rapid transit system. We are not recommending Metro station densities at CCT stations. For example, the White Flint Sector Plan recommends three times the density (4 FAR) in an area half the size of the LSC. Stated another way, the LSC is twice the geographic area but has only two-thirds of the development potential recommended in White Flint.

The LSC was created by the County as an employment center, with zoning that precluded housing. The LSC Zoning Text Amendment will allow housing and other uses in the zone, but they are secondary to medical and life sciences uses in order to maintain the integrity of the area for its primary purpose. As the County's premier life sciences center, a perfect balance of jobs/housing is not possible in this small geographic area. The *countywide goal* of 1.6 jobs for every dwelling unit cannot be achieved in each and every master or sector plan. Certain areas have been planned with an employment focus (LSC, Germantown, Twinbrook, Rock Spring Park) while other areas have a residential emphasis (Shady Grove Metro Station, Grosvenor). As shown in the answer to Question #7 (Attachment B), the jobs/housing ratio for the I-270 Corridor Planning Area as a whole is 1.51.

The LSC is a key center in the mid-and-up-County Corridor of communities that will be linked by the CCT. Those who work at the LSC will have opportunities to live along the CCT/Metro Red line and take transit to work. We are increasing the housing opportunities within the LSC, but all the housing needed to support the jobs does not need to be within walking distance of the jobs. At transit stations in Phase 1 of the CCT, over 10,000 dwelling units are planned in mixed-use developments, including the Shady Grove Metro Station, the Crown Farm, and Watkins Mill Town Center. As the substantial amount of existing housing stock in the area turns over in the course of natural cycles, current or future LSC employees may chose to live in these nearby neighborhoods as well.

Development in the LSC will not occur at the expense of the surrounding communities. We are planning for future growth, but we are not planning a City. The term "Science City" does not accurately describe the Plan's vision of a Life Sciences Center that develops in a more sustainable manner and that can retain and attract knowledge-based workers and companies, which are keys to the County's long-term prosperity.

This Plan provides a reasonable and responsible blueprint for the LSC. The focus on the end-state envisioned in the Plan is understandable, but the implementation of the Plan will occur incrementally over 40 years. We believe the Plan provides sufficient safeguards to ensure both the long-term viability of the LSC and a high quality of life for existing and future residents in the area. The staging element in the Plan will ensure that development will not occur without the infrastructure needed to support it. We have also recommended that the Plan be reviewed in 6-10 years to ensure that it is properly balanced.

Thank you for your consideration of our responses.

Sincerely,



Royce Hanson  
Chairman

Attachment A – Council Staff Questions/Responses  
Attachment B – Council President Questions/Responses  
Attachment C – Transportation Addendum

## Attachment A - Council Staff Questions

1. How did the Planning Board determine that 20 million square feet was the appropriate amount of commercial development needed to serve the life science institutions and businesses the County wants to continue to attract? There appears to be little disagreement that there should be some potential growth of the existing health, academic and life sciences organizations and businesses and that a denser pattern of development can provide a better alternative to the existing single-use, automobile driven developments which have large surface parking lots and little appeal for pedestrians or surrounding residents. However, there is significant debate regarding the level of development needed to achieve these objectives.

The Planning staff held extended work sessions with stakeholders, carefully reviewing each property in the planning area. Community meetings were held to discuss tentative recommendations and hear comments from the public and stakeholders. The transportation model was run with 13 and 22 million square feet maximum non-residential densities. The former density represents the existing 1990 Master Plan; the latter a zoning envelope that can fit within the transportation capacity for the area. In reviewing public testimony on the Public Hearing Draft of the Plan and in a series of work sessions with property owners and citizen groups, the Planning Board examined each major district within the Life Sciences Center (LSC), the existing and proposed uses and densities, and the adequacy of transportation and modal split assumptions and model results. The proposed realignment of the CCT provides the opportunity to create several LSC centers that are linked by transit, creating a sustainable model of development for the future.

The build-out number of 20 million square feet is based on a careful review of all properties in the LSC and our best professional judgment regarding 1) what density increases are appropriate to allow expansion potential for existing businesses and 2) what is the appropriate zoning envelope, particularly on Belward, that would accommodate a significant institutional employer such as an expansion of the National Institutes of Health. We took particular care to ensure that sufficient density was allowed to support the CCT, as realigned. Densities proposed for the Belward tract were established a third lower (at 1.0 FAR) than the owner—JHU—originally sought (1.5 FAR). In the LSC Central District, maximum densities for properties in the core are slightly higher (1.5 FAR) than densities at the perimeter (1.0 FAR). The higher densities in the core of the Central area are immediately adjacent to the proposed CCT station and allow some latitude for more robust growth in the heart of the life sciences center, recognizing that much of the land in this area will have to be redeveloped and some of it is unlikely to redevelop within the time horizon of the Plan because of the age and use of existing structures. Over the past ten years, property owners in LSC Central have discussed the need for additional density with the Department of Economic Development and the Planning Department. Overall, this draft Master Plan recommends density that is equitably distributed among the LSC properties and districts that will be served by the CCT and that will, in turn, generate ridership to make the CCT more cost effective.

Every Master Plan has a maximum theoretical build-out number. For a variety of reasons, the maximum development capacity is rarely realized. The potential build-out number is developed for the purposes of determining what infrastructure and services would be needed to support this level of development. This is a conservative approach to long-range planning because it assumes all property owners will utilize the maximum zoning potential when experience has shown that properties develop at 75-85% of the allowed zoning.

In the Life Sciences Center, the maximum theoretical build-out number for commercial development is 20 million square feet, which includes 7 million square feet of existing development. The following table shows comparisons.

Life Sciences Center: Commercial Square Feet

	Base (Commercial SF)	Recommended Increase	Final Build Out
Existing	7,000,000	13,000,000	20,000,000
Existing & Approved	10,700,000	9,300,000	20,000,000
1990 Master Plan	13,000,000	7,000,000	20,000,000
2009 Draft Plan	20,000,000	0	20,000,000

If the maximum potential of 20 million square feet developed at the levels that zoning typically performs (75-85% of allowed), the total build-out amount would be 15-17 million, of which 7-8 million square feet would be new development.

Growth and change in the LSC must occur in a way that does not overburden the surrounding communities. In recognition of the concern about densities possibly exceeding transportation capacity during Plan implementation, the Board recommended a staging element that triggers additional increments of growth on the prior commitment to fund or construct specific major transportation facilities or establishment of their equivalent in capacity due to shifts in modal split toward transit and other non-auto trips. This Plan represents a vision for the LSC that allows a reasonable amount of growth that is controlled and managed in increments that will evolve over the next 40 years. Staging development ensures that growth will be timed with the delivery of the infrastructure necessary to support it.

2. What is the Planning Board's assessment of alternative density recommendations of the Residents for Reasonable Development (RRD) (for 12.7 million square feet of commercial development--approximately the same amount allowed under the 1990 Plan), the Montgomery County Civic Federation (for a 1/6 reduction in jobs from the 60,000 jobs recommended in the Plan to 50,000 jobs) and the County Executive's recommendation (for a 2 million square foot reduction in commercial development to 18 million square feet). What are the advantages and disadvantages of each of these alternatives?

The alternative density recommendations are made in the interest of either reducing the total amount of traffic or the cost of mitigating the impacts of the traffic. The Planning Board examined a range of alternative densities during fall 2008 and concluded that an increase in mixed-use, transit-oriented development at CCT stations improves transportation efficiency. The Draft Plan decreases the percentage of Life Sciences area employees who drive to work from 84% to 70%, and increases the percentage of drivers making shorter trips from 3% to about 12%. Both of these efficiencies increase as development levels increase. Additional information on these findings is provided in Part 1 of Attachment C.

The Executive Branch comments demonstrate that the increase in development density also increases the County's bottom line in terms of economic development. The Executive's September 10 correspondence notes that the Planning Board Draft Plan would generate an annual gain for the County of \$43 million per year, and scaling the development back by 2 million square feet (about a 10 percent loss) would reduce that net gain by \$12 million per year (about a 28 percent loss). **All three alternative land use recommendations; from the Residents for Reasonable Development (RRD), from the Civic Federation (MCCF), and from the County Executive; would reduce the economic potential to the County.**

#### Residents for Reasonable Development (RRD) Proposal

The RRD alternative is actually a reduction in density from the 1990 Shady Grove Sector Plan. The Planning Board reviewed the RRD proposal in 2008 and did not discover a coherent persuasive rationale for its recommendations. Its effect would be to place the Shady Grove Life Sciences Center at risk into the future as the clear trend for research communities is a live/work environment with access to transit. The RRD alternative would not help create a place for knowledge based jobs for future generations – the horizon to which the plan is directed – and would essentially maintain the suburban industrial/office park character of the area. An important aspect of the plan is to create the capacity for life sciences community members, including federal uses such as NIH, to have the capability to grow as needs expand. The RRD plan would not adequately address this need and would, at worst, continue the existing pattern of development, which the Sector Plan seeks to correct. It would make it even more difficult than it already is to overcome the mistake of the 1990 Plan, which established a pattern of development that was already on the verge of being outmoded.

#### Montgomery County Civic Federation (MCCF) Proposal

The MCCF proposal reduces the density of the plan area by approximately 3.3 million square feet. This proposal makes it more difficult to create a science based community with capacity to grow into the future. The capacity for expansion and a ready workforce is an important draw for both existing and start-up companies. Higher education growth coupled with private research partners and a place for medical testing are important ingredients for the type of research community that is envisioned both by the existing Life Sciences Center and by the draft plan. This reduction translates to a total plan density of 16.7 million square feet. This level of development would have a negative impact on the competitiveness of the CCT. It is

important to recognize that Clarksburg, Germantown and this area have been considered together and that what is done in the Gaithersburg West area will impact the ability of these other plan areas to realize their vision as they are both dependent upon the Corridor Cities Transitway. It is altogether likely that the total number of jobs in the area will not reach 60,000, or that the maximum allowable 20,000,000 square feet of non-residential development will not occur, since it is likely that for various market and design reasons, less density, and thus, fewer jobs will develop.

#### County Executive Proposal

The County Executive has recommended a two million square feet reduction in the commercial density with a second review of the plan in six years. The Executive made his recommendation on the belief that the reduction of overall commercial density by two million square feet will result in an achievable plan that ensures retaining a critical mass for life sciences with the capacity to attract enduring bioscience companies with growth capabilities into the future. The County Executive expressed his recommendation because he believes that it i) respects the Year 2030 ridership assumed by MTA; ii) reaps environmental benefits through elimination of interchanges by reducing impervious areas and avoiding wetlands and sensitive areas; iii) saves money through the elimination of interchanges; and iv) has greater likelihood to achieve realization of the CCT by making it more cost competitive. The County Executive did not propose parcels from which density should be reduced but did suggest that a strategic approach be taken to meet the plan's objectives and suggested that the Planning Board should have an active role in determining how to strategically reduce the plan density by two million square feet.

The County Executive has asked that the Planning Board examine whether adding an extension of Sam Eig Highway into the Belward tract coupled with a total commercial density of 18 million square feet of biosciences development would result in elimination of 2 interchanges. It should be noted that if such an extension is contemplated both the County Executive and the Planning Board would seek to direct such an extension away from the Mission Hills subdivision. Thus, the lower density is a function of the reduced transportation capacity. It is not based on a land use analysis, careful examination of its effect on the alignment or ridership of the CCT, or consultation with stakeholders. As we understand the proposal, it remains an untested concept. The Executive proposes that the density reductions be made outside 0.25 mile radii of the CCT stations. Much of the area outside the quarter-mile radii includes existing bio-tech and other firms that have invested in this area and have potential for expansion.

#### Planning Board Recommendation

The Planning Board's figure was based, as explained, on a parcel-by-parcel discussion and analysis, and then checked for balance using the transportation model. As described in Part 1 of Attachment C, the Planning Board recognized the concern of each of the stakeholder groups that despite the increased efficiency of higher density development, the additional development will generate additional travel demand. This is a challenge in all of our smart

growth areas: **for any given sector plan area, additional mixed-use, transit-oriented development reduces per capita VMT and carbon footprint, but still results in some increases in total VMT and carbon footprint.** Transportation capacity, therefore, is ultimately a real constraint on development capacity. The Planning Board's transportation system recommendations:

- recognized the constraints imposed by current development patterns,
- maximized the investment in the built and already planned infrastructure, and
- proposed revisions that improved cost-effectiveness (by better matching the CCT alignment and potential growth areas), increased walkability (by implementing the most robust local grid street network achievable given built and natural resource constraints), and made slight adjustments to match highway infrastructure investments (by relocating 1990 Plan interchange locations to better match the needs of the current plan).

We believe some improvements can be made in the plan recommendations. As indicated in Part 3 of Attachment C, we now believe that one interchange (Great Seneca Highway at Key West Avenue) recommended in the Planning Board Draft plan can be removed from the plan to reduce the cost of implementation. As indicated in Part 3 of Attachment C, we also believe that innovative interchange designs can be applied to further reduce implementation costs and impacts at those locations where interchanges should continue to be recommended (and implemented when needed).

Ultimately, **the Planning Board recommended zoning that would promote needed economic development and would not allow more development than can be accommodated by the planned transportation system.** A lower maximum density implies less successful, or at least different, transportation infrastructure results for the CCT and limits the critical mass needed to create a vibrant place for knowledge based jobs with capacity to grow into the future. That can also occur within the proposed Board Plan, as a result of the staging recommendations.

Given the long range horizon of this plan and its strong staging element, the Planning Board thinks one purported advantage of the Executive proposal—saving the cost and impact of two interchanges—could occur without reduction of the development ceiling if transportation performance goals are being met, since the maximum density theoretically achievable under the zoning envelope is unlikely to be reached. The staging proposed in the draft plan is essential to assuring satisfaction of transportation performance goals. *If full development occurs at either 18 or 20 million square feet of non-residential development, one interchange could be removed, provided Key West Avenue is widened. But lowering the zoning development ceiling, as the Executive proposes, seems contrary to the core purpose of the plan to encourage growth of the life sciences as a basic sector for the County and state economy.*

3. Did the Planning Board consider a greater concentration of the density on the portions of the Life Sciences Center that is not adjacent to lower density residential

neighborhoods? What would be the impact of further concentrating the recommended density?

Yes, we did. The Plan recommends two main areas for the Life Sciences Center Zone—the LSC Belward District and the LSC Central District, which contains the hospital, medical offices, biotech companies, and the JHU-Montgomery County Campus. The Plan recommends the highest density (1.5 FAR) in the core of the LSC Central District (the hospital, JHU-MCC), which is not adjacent to residential neighborhoods. The Plan recommends a 1.0 FAR for Belward, which is one-third less than requested by JHU (whose original request was 1.5 FAR).

We concluded that it was impracticable to increase the density in LSC Central beyond that recommended by the Public Hearing Draft because of the extent of existing development that includes the hospital and surrounding uses. Substantial expansion of the hospital will occur over time, but given the size of its tract, the FAR recommended is adequate. The amount of additional FAR that would be necessary to make redevelopment of much of the remainder of LSC central attractive would overwhelm even the most optimistic assumptions regarding modal split and traffic capacity. While some housing may be developed in LSC Central, the primary mission of most property owners in the area does not envision significant land dedicated to residential use.

Much of the LSC Central area is largely developed and in diverse ownership. Therefore, LSC Central provides limited opportunities to accommodate large scale users such as NIH or major, new private sector life sciences companies. Some additional development on the JHU-MCC site is likely, and there is adequate FAR for that to occur. As a theoretical exercise, increasing density on LSC Central could be done, but only by reducing it on Belward where there is the greatest potential for development of new life sciences enterprises and research facilities, since the land is vacant. If it was 1979, and we knew then what we know now, building a more complete mixed-use urban center where the hospital now sits might have been a great idea.

4. What is the impact of the Plan recommendations on the surrounding neighborhoods and can the Master Plan better address the transitions from the contemplated commercial development to those neighborhoods? The Plan recommends buffers but otherwise says little about the transition at the edges of the commercial development.

In response to community concerns, the proposed CCT station and the highest buildings are in the eastern portion of the property, furthest from residential neighborhoods. The buffering of Belward provides a significant amenity for the residential community: the Plan recommends that the area around the farmstead be expanded (10-12 acres), that a buffer along Muddy Branch Road (about 13 acres) and adjacent to Mission Hills (8-10 acres) be provided, that setbacks along Darnestown Road be at least 60 feet, and that the two streams have 100-foot wide buffers. The Plan recommends that approximately 45 acres of Belward (42 percent of the 107-acre site) be reserved for open space or buffers, including community-serving reuse of the Belward farmstead, active and passive recreation, trails, the LSC Loop, an open space at the CCT

station, promenades connecting buildings and public open spaces. (The buffers and open spaces on Belward are discussed on pages 34-37 of the Plan.)

The existing neighborhoods will undoubtedly experience some increase in traffic on the arterial system during the earliest stages of development, but probably less than would occur if the 1990 Plan remained unchanged, due to the CCT realignment and the staging plan. Belward has an approved plan for development with approximately 1,200,000 square feet of research/office uses remaining. It is not as well buffered as the development proposed by the Master Plan.

The realignment of the CCT better serves existing residential communities for their commuting needs and has potential for major changes in commuting habits of workers in the area as well as new residents on the PSTA site. Heights are lowest in areas closest to existing residential neighborhoods. The Plan calls for a new fire station that will serve the residential areas as well as the LSC and a new elementary school on PSTA, if needed. Civic spaces are provided at each CCT Station. In the Quince Orchard area, a new local park is proposed on the Johnson property on Darnestown Road. Trail connections are provided into the stream valley system.

5. What is the likely timeframe for the build out of this Master Plan and is it appropriate to rezone the area to a density that is not likely to be achieved in the lifetime of the Master Plan or a significant period beyond? While the Plan should definitely provide a long-term vision for the area at build-out, might it be more appropriate to zone for a more realistic 20-year time frame (or stage the zoning)?

We should zone for the density that is reasonable for the future of the area and that allows for companies to identify long-range growth opportunities. Otherwise, we could face in 20 years the same kind of problem we face today. The area was zoned in 1990 for a short time horizon. While it contemplated substantial improvements in the transportation system, it did not include either the mixture of uses needed to make a complete community or even one that could support the life science uses it desired. One of the most serious consequences of short-range planning is the failure to reserve the land that may be required for transportation or other infrastructure improvements that would be necessary to restore density that would be removed from the Plan now. If we delay a rezoning or stage the zoning in the future, we will perpetuate the current form -- a low-density research park model -- that could then require a much greater boost in density than the increment now contemplated in order to provide the necessary incentives for redevelopment. And that will increase the political difficulty of making changes that may be necessary to achieve the long term economic benefits that this Plan offers for the County's future. The Plan will need some revisions over the next 30-40 years, but it will be easier to reduce total density than to increase it, both physically and politically. As the Council heard during the public hearing, the County could lose its competitive edge if it does not capitalize on its strengths and allow economic growth and investment in appropriate locations like the LSC.

6. The Maryland Department of Transportation, State Highway Administration, and Maryland Transit Administration have raised significant concerns about the land use and

transportation assumptions in the Draft Plan. Council staff does not agree with the State's argument that Master Plan approval should wait until the State has decided on a preferred alternative for the 1-270 improvements and the Corridor Cities Transitway; the time-frame for the State's study is 2030, while the Master Plan time-frame is the area's ultimate build-out, which presumably will occur decades later. However, the other remarks in the State's letter are worthy of comprehensive review and response from the Planning Board.

The September 25 letter from the state clarifies the position described in its September 15 correspondence and suggests that the plan need not be delayed because the appropriate decisions are likely just weeks away. The Board concurs with the Council staff's judgment. Both the Executive and the Council requested the accelerated completion of this plan, and the Board put its completion on a fast track. The State has worked with us on the transportation aspects of the plan throughout the development of the plan. Not only did MTA know of the schedule, the recommendations, and the analysis, MTA encouraged us to move quickly so the data would be available for the next steps of analysis for the Corridor Cities Transitway. In fact, the State in its September 25, 2009 letter acknowledged that the proposed land use plan will "strengthen the CCT and increase the transit mode within the Sector Plan area."

The Board and the Executive branch concur on the preferred alignment for the CCT. While there remains uncertainty about the mode—BRT vs. LRT—both the densities recommended in the plan and the alignment are critical to justification of the investment in a mass transit system serving the area and Germantown and Clarksburg. Conversely, without the CCT, the appropriate development of the Life Sciences Center, which is critical to the economic future of the County, will be stunted. Clarksburg will be a transit-oriented community without transit (and with all of the headaches that accompany that status) and Germantown will continue without the jobs it needs to be a thriving community.

In the 2009 AA/DEIS, the MTA projected a CCT ridership of approximately 26,000 to 30,000 riders per day. We estimate that the additional LSC densities absorbed by the year 2030 could result in an additional 6,000 riders per day at those stations. We estimate that there would be a loss of perhaps 2,000 riders due to the longer distance of the LSC alignment, but that the net gain of some 4,000 riders per day would positively affect the CCT cost-effectiveness. Additional information on modal share information is provided in Part 1 of Attachment C. We understand that the County Executive's recommendation of a two million square feet reduction of the commercial space is respectful of the 2030 projections. As described in Part 1 of Attachment C, we believe that the CCT will remain well within current FTA cost-effectiveness thresholds as a BRT project under the Planning Board Draft Plan, the Executive's proposal, or the Montgomery County Civic Federation proposal. The differences among the alternatives would contribute to competitiveness for funding with similarly-scored projects around the country, with higher densities improving competitiveness.

**We believe the transportation / land use balance is sound, and based on practical, even conservative, assumptions.** The land use assumptions assume build out of as-yet untested

zones. The modal split assumptions are not reliant on the probable changes in national policy that would increase personal travel costs at a higher rate than inflation. Such a divergence between travel costs and other personal costs could occur as increased energy costs and stricter national and state requirements for energy efficiency set pricing signals to reduce VMT, resulting in changes in personal preferences for travel. The combination of a “build out” that is below the maximum allowable, as has been the case in all planning areas, and a higher modal split may result in sufficient reductions in the growth of auto traffic to defer indefinitely the need for some roadway improvements. The staging element allows for such contingencies while reserving the ability to provide the capacity if it becomes necessary.

7. What combination of transportation facilities, services, and policies would be needed to provide land-use transportation balance for each of the alternative land use scenarios described in Question #1?

We believe that a common set of land use and transportation system needs are appropriate for each of the three scenarios proposed by the Planning Board, County Executive, and Montgomery County Civic Federation. **The CCT is a critical component of achieving balance in any scenario.** One interchange can be reduced from the plan under all three scenarios. Planning for the remaining interchanges remains sound under all three scenarios, as described in greater detail in Attachment C.

For the RRD proposal, the CCT alignment would not change from the 1990 plan, except possibly on the Crown Farm. Belward densities and LSC central would be insufficient to justify realignment for stops there. However, at the alignment in the 1990 plan, the environmentally sensitive area at the Decoverly Drive stop would need to be addressed. The PSTA would still need an elementary school site. The interchanges would need to be retained, although there may be some shift in the location of one or more of them. The fire station is needed in all development scenarios.

The Executive’s recommendations have about the same effect as stopping development at Stage 3. As we have said above, we believe the maximum density ceiling must be set sufficiently high to recognize that some projects may not take advantage of their allowed density. Lower density proposals make it more difficult to achieve the levels of development that would result in the production of other amenities throughout the area, as well as implementation of the street network and green loop recommended in the plan, since most of these elements will be achieved through the development process.

8. Under the Draft Plan's land use recommendations, and under any of the alternative land use scenarios, does an extension of Sam Eig Highway into Belward Farm obviate the need for an interchange at Muddy Branch Road/Great Seneca Highway or at Key West Avenue/Great Seneca Highway? What are the impacts of each project?

We have worked extensively with the interagency group on the examination of the transportation system. Our conclusion is that an extension of Sam Eig Highway onto the

Belward campus would not affect the ultimate need for Great Seneca Highway interchanges with either Muddy Branch Road or Key West Avenue.

The interchange at Key West Avenue was contained in the 1990 Plan and was not removed by the Planning Board Draft Plan. However, if at buildout, Key West Avenue is widened to eight lanes, then an interchange is not needed for capacity purposes, as indicated in the Plan appendix (the volume-to-capacity ratio would be 0.98). Furthermore, access to the Belward campus from Great Seneca Highway is via the unbuilt portion of Decoverly Drive, a “grade separation” in the 1990 Plan that is no longer needed or recommended in the current draft Plan, as the CCT realignment and Key West interchange reconfiguration make the at-grade connection between Great Seneca and Decoverly workable.

At Muddy Branch Road, we have found that the extension of Sam Eig Highway onto the Belward campus would have some benefit in the morning peak hour, but provide virtually no relief during the PM peak hour, as the prevailing flows (westbound along Great Seneca Highway and southbound along Muddy Branch Road) would be unaffected by the new connection onto the Belward campus.

Extension of Sam Eig into Belward may require condemnation of several homes in Mission Hills, although an alternative alignment may be possible that saves the homes but impacts environmental resources instead. What happens once the extension reaches Belward requires additional stakeholder coordination. Additional connectivity is always generally beneficial as a transportation network element to disperse traffic flows. To be beneficial, therefore, the extension of Sam Eig would need to be a public street capable of carrying some through traffic, and the degree to which connections through the campus to Key West Avenue would affect the campus layout remains unknown.

9. Staff believes that a staging plan is a critical element of this Plan and is particularly supportive of triggers that are **performance based** (e.g., the increase in non-driver mode share). Staff also supports the linkage to-the CCT, given the importance of this transit option to achieving the densities in the Plan. With these two triggers in place, Staff questions whether there is a need to include other specific transportation projects since the reducing the non-driver mode share and providing capacity are more important than the specific projects used to accomplish those goals. Staff also believes it is worth exploring the advantages and disadvantages of staging the zoning recommendations, rather than recommending the full zoning planned for build-out and then limiting density in a separate staging plan. (Based on the recommended zones, this would probably mean staging the floor area ratio (FAR) rather than the zone itself.)

We agree with Council staff that performance triggers are appropriate. However, we think it prudent for the Plan to identify where interchanges should be located, if needed, and the type of interchange that should be planned for. Otherwise there is no basis for reservation of land that may be needed for them if and when they are necessary. It is also important in a staging plan to include other facilities, such as the CCT, “but for which” development should not

proceed beyond certain levels. We have commented above on the wisdom of under-zoning on the theory that if it turns out to be too restrictive a future Council can fix it.

Staging zoning is undesirable and would not provide a sufficiently definitive zoning envelope to support the ridership numbers necessary for the realignment and funding decisions for the CCT. A lack of sufficient zoning capacity would undermine the ability to attract users who need, at a minimum, the underlying zoning in place for decision-making and future expansion planning. The marketplace would view zoning that is staged as fundamentally uncertain and subject to change at any point. In this regard, both public and private users view base, non-staged zoning as the basic enabling provision for setting forth the Plan's vision. Potential users are accustomed to compliance with site plan, urban design, and adequacy of facilities requirements in order to secure development approval, but an uncertainty as to basic zoning and density would likely be a major impediment to the medical and life sciences businesses we aim to retain and attract to the area. This is a particular concern with a Plan vision that is so important to the County's economic development strategy given the risk aversion of the private development sector and financial markets. Given the current economic conditions, the risk aversion will be even greater. Approved zoning consistent with the Master Plan establishes the essential foundation for achieving the Plan's vision.

Page 3 of Council staff's September 25 memo states:

The Master Plan recommendations raise two other issues unrelated to the overall density questions that may require additional input from the Planning Board:

- The Plan recommends Planned Development (PD) zoning for two properties. Since PD zoning does not provide any of the public benefits of the Transit Mixed-Use (TMX-2) or CR zones or other higher density zones that require the purchase of Transferable Development Rights (TDRs), Staff has generally advised against use of the PD zone. Staff recommends the Committee ask the Planning Board to explore whether there is an alternative zone with greater public benefits that could achieve the Master Plan land use objectives for these properties.
- The Council has just introduced the CR zone and it is unclear whether the Council will complete its work on the CR zone in time to coincide with the completion of this Master Plan. If not, the Council should be prepared with an alternative zoning option such as the TMX-2 zone. The Committee should ask the Planning Board to assess the impact of zoning the 2 areas recommended for CR as TMX-2 (or any other zone they believe would be an appropriate alternative).

Page 2 of Council staff's October 8 memo addressed the PD recommendation for the McGown property specifically:

- Staff supports the Master Plan recommendation to allow the option of mixed-use development, particularly since the adjacent development in the City of Gaithersburg is mixed-use. However, Staff questions whether the PD zone is the right zone, since it only allows for a limited amount of mixed-use and, although it requires a significant amount

of “green area,” it has only a limited option for the purchases of transferable development rights (TDRs), and does not require the purchase of Building Lot Termination (BLT) rights or the provision of amenities or public benefits provided by other new mixed-use zones.<sup>1</sup> Staff has asked the Planning Department to consider whether this property might be more appropriate for the proposed Commercial Residential (CR) zone or one of the other mixed-use zones with greater public benefits, or alternatively, whether it would be appropriate to amend the PD zone to provide for additional public benefits.

(Footnote 1: The PD zone allows for a density bonus of 10% above the maximum density in the Master Plan for the provision of TDRs, if the use of TDRs is recommended for the site. Staff has asked the Planning Department staff whether any property owner has opted to purchase TDRs under this provision.)

The Planning Board Draft recommends the option of the PD Zone, to be applied by local map amendment, for four properties: the Shady Grove Executive Center and the Bureau of National Affairs (adjacent sites in LSC North), the Rickman property (on Travilah Road in LSC South), and the McGown property.

The Planning Board considered and debated the best approach to adding residential development to the office park parcels in LSC North – the Shady Grove Executive Center and the Bureau of National Affairs sites. We recognized the limitations with the PD Zone and considered using the new CR zones instead. The problem with several of the LSC North parcels is that these properties have been developed under other zones, and the office buildings on them are unlikely to undergo redevelopment during the life of the Plan, since they are relatively new. Some of these parcels have approved plans for expansion of office facilities. The objective is to add housing and some supporting retail, but these are basically infill sites that are not expected to be truly mixed-use projects.

With regard to the Rickman property on Travilah Road in LSC South, the PD-22 option recommended in the draft Master Plan provides for a potential multi-family housing development through a local map amendment, but this property is also not intended for mixed-use. The Rickman property was included in the 2002 *Potomac Subregion Master Plan*, which states on page 77: “Dedicate sufficient land for a regulation size soccer field on this site or elsewhere in the Subregion or, in the alternative, provide funding in lieu of land.” According to Mr. Rickman’s attorney, he has provided a public benefit related to this property (which is still vacant), by contributing funds for a soccer field, in lieu of land.

The McGown property is isolated and disconnected from any centers of growth planned in the County and, for this reason, the draft Plan suggests that annexation into the City of Gaithersburg may be appropriate. The City has approved mixed-use development for the Watkins Mill Town Center project adjacent to McGown. The intent of the draft Master Plan is to indicate that residential development of the McGown property would be appropriate, which would allow for reclassification to a residential zone by the City of Gaithersburg at the time of annexation. Since the Watkins Mill Town Center project includes retail, it is unlikely that the

development of the McGown property could support a true mixed-use project, but would likely be mostly residential.

In the PD Zone, Section 59-C-7.14(e) of the Zoning Ordinance states: "The District Council may approve a density bonus of up to 10% above the maximum density specified in the approved and adopted master plan for the provision of TDRs, if the use of TDRs is recommended for the site." Council staff inquired whether any property owner has opted to purchase TDRs under this provision. This addition to the Ordinance is a result of the 2002 *Potomac Subregion Master Plan*, which included the following recommendations for the 170-acre Hanson Farm (page 72):

- Rezone the site from RE-2 to PD-2 with a TDR option, to encourage more compact development, expand the regional stream valley system, protect sensitive areas, provide community facilities, and promote walking and biking.
- Limit the allowable density to a maximum of 170 dwelling units, including MPDUs. The Council is considering a text amendment to provide a TDR option in the PD zone. If this change is approved, TDR density incentives may be used to increase the maximum number of dwelling units by 10%, to 187.
- Dedicate land for the North Potomac Community Recreation Center if the County Council does not select the preferred site for the center on Travilah Road.
- Provide links from the local park to the Muddy Branch Stream Valley Park.

A local map amendment to rezone the Hanson Farm property from RE-2 to PD-2 has recently been submitted to the Planning Department. It is being reviewed by staff and is scheduled for Planning Board consideration on November 19, 2009. The application is the first to provide TDRs in the PD Zone, as well as additional amenities per the Potomac Master Plan, as follows:

- The proposed development is for 187 dwelling units (including MPDUs), which includes 17 TDRs.
- The County determined that the North Potomac Community Recreation Center will be located to the west of the Big Pines Local Park on the 13800 block of Travilah Road. A 10-acre local park will be dedicated along the Quince Orchard Road side of the Hanson Farm in lieu of a recreation center and will accommodate ball fields and parking.
- The development includes a network of paths to connect the local park with trails in the Muddy Branch Stream Valley Park.
- The proposal expands the stream valley park by dedicating forested areas along the tributaries, steep slopes, a 200 foot buffer along the main stem of Muddy Branch, among other features.

To address Council staff's concerns that the PD Zone does not provide adequate public benefits, language can be added to the Gaithersburg West Master Plan for the properties with a PD option indicating that a density bonus for the provision of TDRs is recommended. Design guidelines will also be utilized to ensure quality development.

In summary, after considerable discussion, the Board concluded that, even with the limitations of the PD zones, it was preferable to provide a housing option made by local map amendment

with development plans that can better address the rather unique conditions for these parcels. The Council can require binding elements to assure sufficient public benefits. For the LSC North parcels, we proposed a maximum density category, but have not recommended a specific PD density because we thought it premature to make that judgment, given the circumstances on the ground. Because the CR zones establish both densities and mix, we concluded that the situation here is sufficiently different from the other places we are recommending the zone, we should not use it. It may be that as the zoning ordinance revisions are completed, the PD zone will be superseded or substantially changed. And it may be that the CR zones will be allowed by local map amendment in certain circumstances. We are just not at the stage that would give us confidence that that is the right thing to do in these cases. As for the TMX zone, the same reasoning applies. We thought there was too much uncertainty about the appropriate density of housing and retail on the site to provide the kind of Master Plan guidance necessary for the TMX to be workable. We recommended the zoning we thought most appropriate for these sites.

Page 3 of Council staff's September 25 memo states:

- The Committee should seek the Planning Board's input as to whether any of the Master Plan recommendation are likely to either encourage or discourage annexation of properties in the LSC district and what strategies, if any, could prevent against an annexation that would result in development inconsistent with Master Plan objectives. (This question is not meant to apply to those enclave properties clearly recommended for annexation.)

In general we think the recommendations of the Master Plan will discourage annexation because LSC property owners will have more certainty about the future in the County than if annexed by the City. We do think, however, that major reductions from the proposed Plan density, as suggested by RRD and others, will make the affected property owners more interested in annexation if the City held out prospects of increases in density. In such a scenario, the densities could be provided without the coordinated, staged balance achieved by the Gaithersburg West Master Plan.

Page 3 of Council staff's September 25 memo states:

- The Council received testimony from several individuals indicating that the Master Plan recommendations are inconsistent with the deed restrictions on the Belward Farm. While the Planning Board does not generally get involved in private deed restrictions between two private parties, the Council should understand whether there are potentially viable legal challenges that could prevent implementation of the Master Plan as recommended.

The deed restrictions on Belward have to do with uses, and the relevant portion of the deed is as follows: "Grantee shall further limit its use of such portion of Parcel B, if any use thereof is made, for agricultural, academic, research and development, delivery of health and medical care and services, or related purposes only, which uses may specifically include but not be limited to the development of a research campus in affiliation with one or more of the divisions

of the Grantee.” We do not believe that this use restriction impairs the ability of the Plan to be implemented. JHU proposes a mix of educational, research and development, healthcare and related uses on Belward. The deed only addresses use and does not address the density, height, form, or character of future development on Belward. The permissible uses under the deed cover broad categories and related purposes and we do not see a conflict between JHU’s proposed use of the property and the restrictions in the deed.

Enforcement of private deed restrictions or easements should not affect the judgment of the Board or Council with respect to appropriate land uses and densities. If public policies affecting land are more restrictive than private encumbrances, the public policies will be enforced. If the private restrictions are more severe, their enforcement depends upon successful court action by the benefiting party. There is always the prospect that a court will uphold a covenant or restriction. There is also the prospect that the parties will renegotiate the restriction or agree to its removal. Such restrictions are a fact of life, and just one among the many factors that can cause property to develop less intensively than the law allows. It is interesting, but not a major concern absent an existing court determination. Even then, the current or subsequent owner may succeed in negotiating a change or removal of the restriction. Interpretation and enforcement of private restrictions to which we are not a party is a matter for the court.

## **Attachment B - Council President Questions**

- 1) Where are commuters to Life Science Center jobs expected to come from? An origin-destination table of commuting trips is needed. Since the Growth Policy aims to “reduce our footprint” what is the estimated vehicles miles travelled at build out, and how does that compare to the current number, as well as to what would be allowed under the 1990 Master Plan, and to the Residents for Reasonable Development Plan?

The Planning Board Draft Plan improves transportation system efficiency by concentrating transit-oriented development at new CCT stations where potential exists to accommodate growth. **The combination of CCT realignment and planned densities decreases the percentage of Life Sciences area employees who drive to work from 84% to 70%, and increases the percentage of drivers making shorter trips from 3% to about 12%. Both of these efficiencies increase as development levels increase.** Additional information on these findings is provided in Part 1 of Attachment C.

The vehicle miles of travel VMT in the R&D Village Policy Area is estimated to increase as development increases, but at a slower rate, due to efficiencies inherent in denser, transit-oriented development. As indicated in Part 1 of Attachment C, **the LSC Policy Area development in the Planning Board Draft Plan is about twice that in the 1990 Plan, but results in only a 30% increase in R&D Village Policy area VMT.** The RRD plan is essentially the same as the 1990 Plan.

One goal of the Planning Board Draft Plan is to make it possible for more workers in the LSC to live within the planning area, in nearby communities such as Crown Farm, and in other communities served by the CCT. The issue is not whether all will live in the area—they won’t—but whether concentration of jobs and some housing in the LSC provides more efficient use of facilities and better opportunities to reduce the total carbon footprint from commuting, housing, and jobs than a continuation of current patterns, in which jobs and homes would be distributed in lower density communities throughout the county and elsewhere, requiring longer commutes by more workers.

- 2) What is the breakout for the assumed 30% non-auto share of trips among the Corridor Cities Transitway, other transit, carpooling, bicycling, walking? What are the current mode shares for each of these modes of travel?

The Planning Board Draft Plan includes a staging plan that requires steady progress from the current 16% non-auto driver mode share (NADMS) to the planned 30% NADMS at end state. We estimate that about half of that NADMS will occur via transit use (both the CCT and other bus services), carpooling will account for about a third, and walking or biking will account for the remaining one-sixth. Additional information is included in Part 1 of Attachment C.

- 3) The current Growth Policy report recommends raising the standard to 1600 CLV for “policy areas with the highest transit level of service” which is defined as Transit LOS

(level of service) B or better, but the R and D policy area has a current transit LOS of D, which according to the draft Growth Policy requires a road LOS of C. After completion of the Corridor Cities Transitway to Clarksburg, which is not required under the proposed staging plan until Stage 4 when most development would have occurred, the transit LOS in the Life Sciences Center (LSC) would be a low C. Wouldn't this require a road LOS of at least D in the LSC -- around the current standard of 1450 CLV rather than the proposed 1600 CLV?

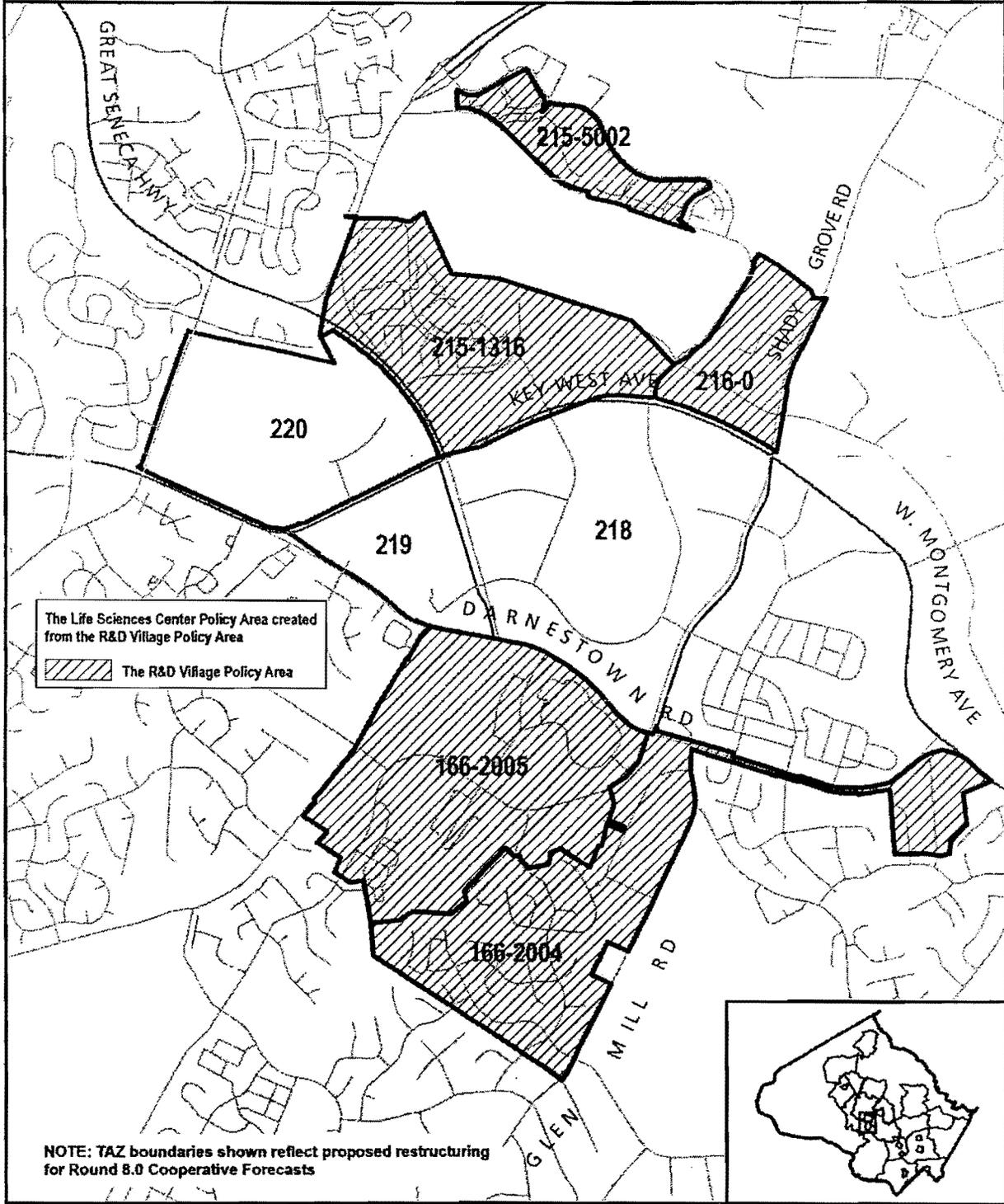
The question of an appropriate CLV standard for the Life Sciences Center Policy Area will be discussed as part of the Growth Policy. We believe that it remains appropriate to establish a 1600 CLV standard for current development to begin designing the LSC area, from both land use and zoning perspectives, as a more urban area. Given the long timeframe for LSC implementation, however, the effect of changing the CLV standard to 1600 from 1450 in the 2009 Growth Policy or in a subsequent Growth Policy effort will probably not have a significant effect on the appearance or function of the end-state development.

- 4) The Draft Gaithersburg West Master Plan contains extraordinary assumptions about acceptable traffic levels and infrastructure additions – recommending 1,600 CLV in the Life Sciences Center, seven new grade-separated interchanges (five within or on the border of the LSC), and a 30% non-single occupancy vehicle share of trips heavily reliant on construction of the Corridor Cities Transitway. Even so, the Plan barely passes the County's traffic standards and would leave the area much more heavily congested than now. Since County tests do not sufficiently factor in the impact of regional traffic, it is reasonable to assume that traffic congestion would worsen even more than projected. The proposed Staging Plan would allow much development to occur before the CCT and before the Sam Eig interchanges are under construction. Given all this, why is the Planning Board comfortable recommending this transportation plan? (Before responding please see question #11 and read the excerpt from the Sept. 15 letter from the State Transportation Planners that asserts that the huge imbalance of jobs and housing proposed in the Draft Plan will lead to substantial auto commuting from out of the area.)

The Planning Board Draft Plan provides a multimodal approach to an urbanizing, transit-oriented development. It must build upon the suburban legacy left by the partial implementation of the 1990 Plan, the recognition that the travel needs of adjacent communities must continue to be served, and the many months of coordination with state and federal transportation agencies. Ultimately, **the best way to both promote CCT implementation and transportation system efficiency is to allow sufficient zoning capacity so that the transportation system, much of which is already in our master plans, is used to maximum effectiveness.** While total VMT will increase and speeds will decrease, this is consistent with the 1990 Plan vision. As indicated in the response to Question 1 above, the fact that a 100% increase in Life Sciences Center Policy Area development from the 1990 Plan to the Planning Board Draft Plan can result in only a 30% increase in VMT in the R&D Village Policy Area is testimony to the increased efficiency of smart growth.

# Life Sciences Center Policy Area with Traffic Zones

## MAP 17



We have discussed the apparent disconnect between our Plan recommendations and the state's September 10 letter. In fact, our travel demand forecasting does account for regional traffic growth and the planned expansion of both state-funded and locally funded transportation system elements.

- 5) The current 1990 approved Master Plan allows up to 38,000 jobs, more than 16,000 more than the current actual number. The draft plan would allow up to 60,000 jobs. What number of jobs would be supportable if the five grade-separated interchanges proposed to be added in or bordering the Life Sciences Center were eliminated? If four? If three? If two? If one? What would be supportable with different combinations of two, three or four interchanges? At what level of development would the proposed interchange at Great Seneca Highway and Quince Orchard Road no longer be needed?

The need for interchanges is based in part on forecast congestion and in part based on qualitative considerations for functionality, access, and safety. In a well-planned network, the quantitative and qualitative considerations described above are synchronized. Staff recommends that the Council retain all interchanges except one (the Great Seneca Highway interchange with Key West Avenue) under any development scenario. Additional information is presented in both Parts 2 and 3 of Attachment C.

- 6) The County Executive proposes eliminating the interchange at Great Seneca Highway and Muddy Branch Road by reducing the density from 20 million square feet to 18 million and extending Sam Eig Highway into Belward Farm. Would this 2 million square feet reduction in density be sufficient to eliminate the need for a grade-separated interchange at Great Seneca Highway and Muddy Branch Road?

Neither the reduction of 2 million square feet of commercial development nor the construction of a new access roadway connecting Sam Eig Highway to the Belward campus would eliminate the need for an interchange at Great Seneca Highway and Muddy Branch Road. We believe innovative interchange designs can reduce the cost and impact of the interchange as it was described in the Executive's September 10 testimony, as well as facilitate the passage of the CCT through this area. Further design work would be needed; these design efforts could be added to the staging plan. As noted elsewhere in this correspondence, we now believe the Great Seneca Highway interchange at Key West Avenue can be removed from the Plan.

- 7) The jobs housing balance in the surrounding area within a two-mile radius is 2.8 to 1. A balance of jobs to housing would be 1.6 to 1. The proposed Gaithersburg West Master Plan would add up to 22,000 jobs and up to 5,200 housing units. For the additional jobs to balance the additional housing (irrespective of the baseline approved now of jobs and housing, which is not in balance), the number of jobs added would need to be reduced to approximately 8,300, nearly 14,000 less than proposed, but still an increase of about 8,000 above the 1990 Master Plan level of 38,000. Those 14,000 workers would need about 9,000 homes to live in (average of 1.6 jobs per home). How would adding so many

more jobs than houses as proposed by the Planning Board not a) increase housing costs (a concern expressed by the Housing Opportunities Commission in a letter sent to the Council) and b) not result in longer, more auto-dependent commutes (a concern expressed by the State Department of Transportation in their September 15 letter to the Council) than if the number of additional jobs and the number of additional housing units proposed to be allowed were in balance? How can the Life Sciences Center envisioned in the Draft Plan be credibly described as a live/work community if the great majority of people who would work there couldn't possibly live there because of the imbalance of jobs and housing?

The ratio of 1.6 jobs for each household is a *Countywide goal* that does not and cannot apply to every sector or master plan area. The ratios cited in the question are a function of geographic bounding. If the area boundary is small enough, the ratio of jobs to housing is 100:0, and vice-versa. The current Countywide ratio is 1.4 jobs per household. Land use forecasts over the planning horizon of 2030 or 2040 (used by the Council of Government's cooperative forecast) indicate a ratio of 1.57 jobs per household.

The General Plan and all master plans that have since been approved over almost 50 years have expected a higher ratio of jobs to households in the I-270/MD 355 Corridor than elsewhere in the County. Certain areas have been planned with an employment focus (the LSC, Germantown, Twinbrook, Rock Spring Park) while other areas have a residential emphasis (Shady Grove Metro Station, Grosvenor). Recent policy has sought to increase the amount of housing in the Corridor.

In any major employment area, the ratio of jobs to housing is likely to be much higher than it is for the County average. This is especially the case in places like the LSC where housing has not been a permitted use in the zones that currently cover the area. What makes sense is to introduce some housing—as we recommend—into an area rich in jobs and to calculate the jobs-housing ratio on a reasonable distance surrounding the center of a master or sector plan area. This is also one of the reasons why there should be a strong public transportation spine for the area, with frequent stops, as we recommend through the LSC.

As shown in the table on page 27 of the Master Plan, the jobs-housing ratio that could result from the Plan's land use recommendations is a significant improvement from the ratio in the 1990 Plan (6.6 versus 10.0). The Gaithersburg West Master Plan provides a development envelope that could allow an additional 22,000 jobs and 5,200 new homes (above the 1990 Master Plan levels), if land is developed to the maximum density theoretically available. One of the best ways to improve the jobs-housing balance in the LSC is to relocate the Public Safety Training Academy (PSTA) and redevelop this site as a new residential community in the heart of this employment area. And, if the County is able to time the disposition of the PSTA and its subsequent residential development with an increase in new jobs (on Belward, for example), then the chances that new employees might live nearby would be increased.

The following table is compiled from property tax records of existing commercial space (excluding government facilities and schools) and the number of dwelling units. As the data shows, the I-270 Corridor Planning Area, from Montrose Road on the south to Clarksburg on the north (see map on next page), is relatively in balance with 162,000 jobs and nearly 107,000 households for a jobs-housing ratio of 1.51. The existing jobs-housing ratio for the area that is defined as the LSC in this Master Plan is not “in balance” since this area has long been an employment center that, for the most part, precludes housing. Again, jobs-housing calculations are a function of geographic boundaries. The existing jobs-housing ratio for the LSC (6.4) is based on a narrowly defined area in the County’s Master Plan – the five LSC districts and the Washingtonian residential enclave (the County area between the Crown Farm and Rio, which are both in the City of Gaithersburg). Existing housing immediately adjacent to the LSC, much of which is in the city of Gaithersburg or Rockville (Mission Hills, Washingtonian Woods, Fallsgrrove, as well as North Potomac in the County), is not included in this calculation of existing jobs-housing because it falls outside the boundaries of the Gaithersburg West Master Plan. As the table shows, as the radius around the LSC expands, the jobs-housing ratio improves, reflecting the significant amount of housing in the I-270 Corridor today.

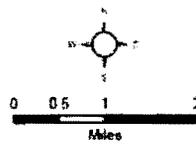
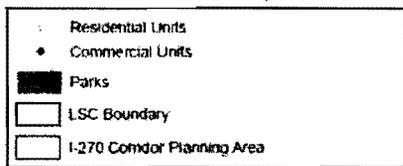
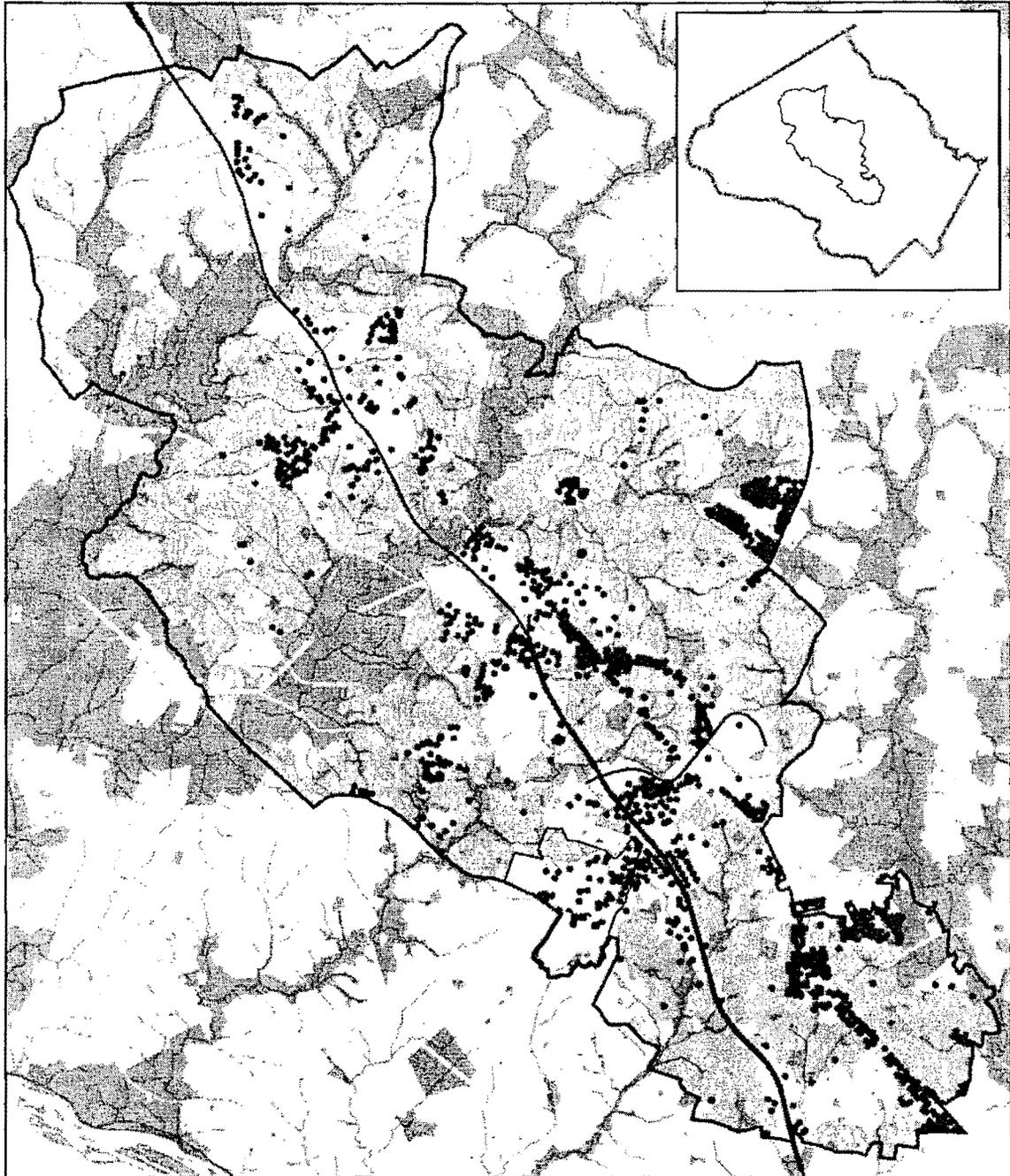
	LSC Area	½ mile	1 mile	1.5 miles	2 miles	3 miles	I-270 Corridor
Commercial SF	6,940,000	12,587,304	18,443,522	21,351,528	26,658,062	42,422,513	57,727,792
Jobs	21,200	35,964	52,696	61,004	76,166	121,207	164,937
Dwelling Units	3,262	9,205	16,217	26,157	36,082	58,987	106,995
Jobs/Housing	6.49	3.91	3.25	2.33	2.11	2.05	1.54

Regarding housing costs, while improving the County’s jobs-housing balance would probably improve housing affordability in the County, staff is not aware that that specific hypothesis has been tested. Furthermore, staff is not aware of any study that would support the position that jobs-housing balance within a particular master plan area would improve housing affordability within that same geography.

One way in which the plan addresses the question of housing affordability is through the Life Sciences Center ZTA. The ZTA is the first ZTA to include a requirement for Workforce Housing (currently required in all Metro Station Policy Areas, regardless of the zone). As proposed, the ZTA would require Workforce Housing units equal to 5% of the number of market rate units for developments of a certain size. This would result in an increase in the Master Plan’s yield of inclusionary zoning units.

The PSTA is recommended for CR zoning, and is not in a Metro Station Policy Area. As such, the inclusionary zoning requirement is that 12.5% of the units must be MPDU. The CR zone provides zoning incentives for MPDU in excess of the 12.5% required and for providing Workforce Housing units (for locations in and outside of Metro Station Policy Areas).

In addition to the inclusionary zoning units within the Gaithersburg West Master Plan boundary, there are additional housing resources adjacent to or surrounding the Master Plan



Commercial Sq. Ft.	57,727,792
Jobs (1/350 Sq. Ft.)	164,937
Dwelling Units	106,995
Jobs to Housing Ratio	1.54

area, including 3,262 existing dwelling units (at Decoverly, Traville, and the Washingtonian enclave) and 2,250 approved units on the Crown Farm in the City of Gaithersburg.

- 8) Car trips per 1,000 square feet would be higher within the LSC than, say, at White Flint? In addition, the zone proposed for the LSC would allow up to 50% office uses, yet the transportation analysis appears to assume only a third of the space would be office uses, which has the greatest intensity of employees (and thus car trips) of the assumed uses. If so, why?

White Flint is more urban than LSC. The former is at a Metro stop, where a second entrance is recommended. There is also other public transportation available, and the White Flint area is more compact. There will, indeed, be more auto traffic in the LSC per square foot of development. The provision for office uses is not an assumption that 50% will be office, but that no more than 50% can be office uses in the LSC zone.

- 9) What growth scenarios have been modeled? In each case, what is the growth assumed – the 2030 Round 7.1 forecast, the 2030 Round 7.2 forecast or build out? For each of the growth scenarios modeled, were mode shares modeled as output, rather than as input, to assure both relevancy and apples-to-apples comparisons. Again, show the non-auto mode share broken out among CCT, other transit, carpooling, bicycling and walking.

The travel demand forecasting process applied regional demographic and transportation system improvements through the year 2030, using Round 7.1 demographic assumptions. The mode share analysis utilizes the regional model to project base mode shares, as they are an outcome of land use and transportation system input assumptions. These mode shares are then adjusted slightly to account for additional TDM actions not included in the input assumptions. The modeling process and assumptions are described in greater detail on pages 87 through 99 of the Draft Plan Appendix. Additional details are included in Attachment C.

- 10) How does the plan recommended by Residents for Reasonable Development compare to the Final Draft Plan with regard to additional auto trips, congestion levels, percentage of new development within a quarter mile of transit, and the number of interchanges required?

The Residents for Reasonable Development scenario is similar to the 1990 Plan scenario, which would result in about three-quarters of the total VMT in the High Scenario, as indicated in Attachment 3. However, the amount of travel is indirectly linked to the type and amount of local development, due to latent demand effects on trip distribution, mode choice, and traffic assignment. Staff recommends that the same number of interchanges be retained in the Plan regardless of which development level (1990 Plan through to High Scenario) is recommended.

- 11) What is your response to the red flags raised by the State Transportation Planners in their letter to the Council of September 15: “We took careful note of the discrepancy between the number of households and the number of jobs in the area. In the scenario

of high households and high jobs, this discrepancy becomes over 47,000 more jobs than households. With the M-NCPPC staff recommendations for the medium number of households and the high number of jobs, this discrepancy becomes more severe. As a result of this imbalance, our concern is that employees have little choice than to commute in from areas throughout the Washington region. Toward this end, the SHA conducted a regional analysis to determine the effects of the new trips on the larger regional system. The results indicated that there will be a significant number of new trips along I-270 between north of Muddy Branch Road to MD 28, along Sam Eig Highway and the interchange at I-270 at MD 28. To mitigate these new trips, a new lane in each direction along I-270, an additional lane in each direction on Sam Eig Highway from I-270 to Great Seneca Highway, and ramp modifications to MD 28 at I-270 would be needed on top of current planned highway efforts. Without these improvements, the over 21,000 new daily trips will be forced onto the local road network resulting in severe congestion. We suggest that this impact can be reduced if the gap between households and jobs were more in balance with one another."

We agree in concept with MDOT that accommodating planned growth with transportation infrastructure needs to be carefully planned and implemented over time. We also agree with MDOT that additional capacity on I-270 is needed to accommodate growth in the plan area as well as the corridor; this was assumed in our regional travel demand forecasting. We agree that improvements to Sam Eig Highway are needed although we believe that the additional lane should be dedicated to bus priority treatments and that implementing grade separation between I-270 and Great Seneca Highway is the most effective treatment for this important gateway to the LSC. We also concur that improvements will be needed on I-270 south of the current AA/DEIS expansion limits at Shady Grove Road. Our subsequent tests have added the I-270/Gude Drive interchange (included in the City of Rockville's master plan) to the planned network.

We agree that the Life Sciences Center area is currently a jobs center (so that traffic pulses in during the morning and out during the evening) and that improving the jobs-housing balance will increase the potential for residents to live near their work. The Planning Board Draft Plan improves the J/H balance over the 1990 Plan conditions, reducing a 10.0 J/H ratio in the 1990 Plan to 6.6 under the Planning Board Draft Plan. The recommended zoning in the plan provides some flexibility for jobs and housing to be better coordinated; this is function where master plans, zoning, and growth policy initiatives (such as the Planning Board's Smart Growth Criteria) all are tools to achieve an appropriate balance on the live/work continuum. It is also appropriate to consider a range of geographic areas when considering the J/H balance; while we believe there are practical and legal limitations that require the LSC Policy Area to be a jobs center for the foreseeable future, the surrounding community is a rich housing resource so that the J/H balance within different commuter "sheds" tells a different story.

However, we disagree with MDOT on two procedural methods by which their correspondence assessed the impact of the proposed Plan. First, the changes in the Plan should not be assessed by comparing Plan build out to the either current conditions or 2030 forecasts under the

region's Constrained Long Range Plan (CLRP). Rather, the effects of this plan should be measured against the effects of the 1990 Plan and we believe that the Planning Board Draft Plan does a much better job than the 1990 Plan in making efficient use of already planned resources, whether those resources are the CCT, additional improvements on I-270, or arterial system interchanges. Second, while the MDOT analysis did use a travel demand model to establish a CLRP base, it assumed the planned growth beyond 2030 would follow the shortest path to its destination rather than seek an equilibrium among alternative routes. Their analysis therefore overstated the relative value of Sam Eig Highway and I-270, and underestimated the effect on parallel routes such as Great Seneca Highway (which is already master planned to ultimately be six lanes through the City of Gaithersburg).

The SHA and MNCPPC staff both reviewed each other's regional analyses and both agencies agree that the proposed land use would lead to the generation of new and diverted trips. SHA and MNCPPC also both understand that there are limitations in the travel demand models and methodologies. From the discussions between SHA and MNCPPC staff, it is apparent that the current modeling and capacity constraints in the network do not allow for a straight-forward impact assessment of the proposed land use. Therefore, there is a need to evaluate the impacts using different approaches. The approaches taken by SHA and MNCPPC provide a reasonable range of impacts and should serve as two complementary data points for planning purposes. The SHA compared the new/diverted trips to the Master Plan area in an origin-destination context. All comparisons were done using MWCOG Round 7.1 land use and 2030 CLRP as a base; the intent was to evaluate the impact to I-270, Sam Eig Highway, and the interchange at I-270 and MD 28. Those results showed that there is a demand to access the LSC from I-270, Sam Eig Highway, and MD 28 that cannot be met unless improvements are made. Without further improvements, the traffic would have to travel on the existing arterials (such as MD 119) and local roads which are already congested. This augments the MNCPPC findings where several highway improvements are recommended within the Master Plan area. The SHA analysis mainly focused on the impacts outside the Master Plan area and confirmed that there would be impacts on the regional system.

The SHA analysis showed that the Gaithersburg West Master Plan high land use scenario generates about 23,400 more (new and diverted) AM period trips compared to 2030 Round 7.1 land use. The trips that get captured within the Master Plan area increase from 13% in Round 7.1 to 28% in the Gaithersburg West Master Plan high scenario. The 21,000 new trips noted in the SHA letter dated September 15, 2009 is a small percentage of the total trips generated by the Gaithersburg West Master Plan and we feel that it is a conservative estimate. For planning purposes, in the vicinity of the study area, the total trips on highways is important; whether the trips are new or diverted is not particularly relevant. The increase in density results in more local trips, but the overall effect on the regional highways system is still substantial.

- 12) Traffic congestion around the Life Sciences Center is substantial. With regard to the Gaithersburg West Master Plan, is it the position of the Planning Board that existing communities and pass-through commuters must accept much worse congestion than would otherwise occur to allow for 22,000 more jobs above the 38,000 already allowed (16,000 of which have not yet been created) in the Life Sciences Center? If so, why does

the Planning Board think that the far worse congestion that would occur is an acceptable tradeoff for the many thousands of current and future residents of existing communities in and around the Life Sciences Center, and the many thousands of pass-through commuters who travel near and through the Life Sciences Center?

It is our position that the staging proposed will maintain a reasonable balance between the growth in development and the growth in traffic. As previously noted, there is also a difference between the maximum allowable development and the amount that can be reasonably expected to occur. There is no basis in experience or logic for supposing that the every square foot of development allowable will be built. **The plan addresses the most intense case, and it works according to our adopted transportation policies.**

- 13) Testimony by David Hauck, Chair of the Sierra Club's Montgomery County Group, at the public hearing noted the most recent Council of Government forecasts that project that adding the very large numbers of jobs proposed for Gaithersburg West would reduce the number of jobs that would be added at Metro Stations, in the East County and in the urban ring inside the Beltway. This result would undermine the County's goal of encouraging the most development where there is the greatest capacity to support it. How would that be consistent with Smart Growth?

First, it is important to distinguish between jobs and zoning capacity. It is true that this Master Plan is adding non-residential zoning capacity in the LSC; however, the Master Plan is not adding jobs. Jobs will come to the LSC when, bit by bit over many years, the zoning capacity is used by new development.

Second, locations within Montgomery County should be competitive with other locations in the entire region, and should not be competing only with other locations within Montgomery County. A goal of this Master Plan is to make the County's premier location for life sciences more competitive with other locations in the region and the nation. One element of that is providing sufficient density to support transit and a vibrant community, which promotes the interaction of people and the exchange of ideas. Another element is trying to provide a zoning envelope capable of accommodating a significant institutional employer, such an expansion of the National Institutes of Health.

Third, competition between sites within Montgomery County does not occur on a level playing field. Land uses, industries, and individual firms all have locational preferences. Office uses prefer good transportation access, and tend to value that access more highly than do residential uses. Some industries prefer to cluster and locate together, in order to draw from a particular base of potential employees and in order to achieve a more productive interaction of ideas.

Biotechnology is an industry that likes to locate in proximity to educational institutions, government regulators, or other government entities. Biotechnology firms will choose to locate in a specific location for a number of reasons—some firms choose to locate in close proximity to the homes of CEO's or company founders. Some biotech firms will value proximity to the FDA above proximity to the Shady Grove Life Sciences Center, and thus will prefer locations in East County. Some biotech firms will value locations near Metro or inside the beltway (as did United Therapeutics). Firms that are not biotech firms, but who provide goods or services to biotech firms, may be willing to pay a rent premium to be located close to their customers/clients, thus making the Life Sciences Center more attractive for some types of non-biotech users than it will be for others. In sum, there are a variety of factors other than zoning capacity that will influence the locational decisions of firms in the region.

Fourth, creating life sciences or other non-residential zoning capacity in the LSC specifically, or in the I-270 Corridor generally, does not necessarily result in a loss for other locations within Montgomery County. In fact, in the long run it may have the opposite effect. If the density at this location improves the County's overall economic competitiveness or strengthens the County's biotechnology cluster, then other locations in the County could benefit as well. The testimony of Jonathan Genn, representing Percontee, Inc., bears this out.

Finally, while the Planning Board is striving to maximize existing capacity, there is no abundance of capacity near Metro, within the urban ring, or in East County. Metro ridership, this summer's problems aside, is very high. The rights of way in the urban ring are constrained by existing development, and the roadway capacity (as determined in the Growth Policy) is constrained as well. Most of the neighborhoods within the urban ring are stable and unlikely to redevelop. East County is severely transportation constrained, and in the absence of a solution to its transportation capacity problems, faces significant hurdles in achieving employment growth. Those are all important issues, and the Planning Board is addressing all of them, to some extent, in our current and upcoming work program.

- 14) How close in feet to the Belward Farm homestead could there be 100 to 150 foot buildings under the Draft Plan? Other than directly in front of the homestead entrance on Darnestown Road, at build out would any existing communities have a line of sight to the historic homestead?

The Plan recommends that views of the farmstead be preserved from Darnestown Road as well as other vantage points within the larger Belward site. The Plan recommends that buildings immediately adjacent to the Belward farmstead buffer be no higher than 60 feet (4 stories). The closest 100-150 foot tall buildings could be located approximately 190 feet from the existing historic Belward house.

The Belward farmhouse is located ¼ mile from the nearest house in the Washingtonian Woods development and 1/3 mile from the nearest house in the Mission Hills subdivision. Because of the topography and existing landscape, the historic Belward farmhouse is not visible from most adjacent neighborhoods. The existing landscape will be preserved, including the mature trees around the house. The Master Plan will also provide a “line of sight” toward the farmstead along several proposed streets on the Belward property.

## **Attachment C. Transportation Addendum**

This addendum provides background materials for the responses to questions from Council President Andrews and the Council staff memorandum. These materials supplement the July 2009 Appendix and reflect subsequent coordination with the Maryland Department of Transportation (MDOT), Maryland Transit Administration (MTA), State Highway Administration (SHA), and Montgomery County Department of Transportation (MCDOT).

This addendum is organized as follows:

- Part 1 describes the alternative land use and transportation system scenarios examined during Plan development, with additional details on transportation system performance. These materials demonstrate how levels of transportation system efficiency improve with greater density and a better balance between jobs and housing. However, since the efficiencies of smart growth do generate increased total levels of traffic, the extent of development was bounded by transportation system balance as guided by the Policy Area Mobility Review (PAMR) tool. This section also describes the effect of alternative development scenarios on expected CCT ridership and cost-effectiveness.
- Part 2 describes the development and evaluation of the “PHED Committee Alternative” in response to interagency coordination and Councilmember and Council staff interest in the effects of a lower development scenario that includes removal of one of the planned interchanges. The PHED Committee Alternative and High Scenarios can be used in conjunction to project the relative effect of lower land use scenarios. In general, we find that the Planning Board Draft Plan recommendations remain appropriate for the PHED Committee Alternative scenario; the change in 2 million square feet dispersed throughout the LSC area is not significant enough to substantially alter long-range transportation system needs (other than those identified as part of the scenario development).
- Part 3 addresses concerns regarding the highway system, demonstrating that the Planning Board Draft Plan essentially reallocates interchange system resources already contained in the 1990 Plan and addresses recently proposed options for minimizing interchange resource costs and impacts.

### **Part 1. Alternative Scenarios**

Staff examined several alternative scenarios during the course of the plan development effort, beginning in spring 2008. In general, three levels of development were tested, as summarized in the Draft Plan Appendix Figure 30 and described below:

- A “Low” scenario, approximating 1990 Plan levels of development
- A “High” scenario, approximating levels of development indicated by property owner or representative interest, and
- A “Medium” scenario, reflecting emerging knowledge about public system capacities and implementation feasibility.

This range and process of scenario testing is common to most area master plans. These three scenarios evolved as slightly different land use densities, transportation system networks, and TDM strategies were evaluated. The focus of the land use changes was on the three proposed new CCT stations that comprise the proposed Life Sciences Center Policy Area:

- LSC Central (TAZ 218)
- LSC West (TAZ 219)
- LSC Belward (TAZ 220)

Staff reported to the Planning Board on preliminary results on October 10, 2008 and primary assessment of the system performance was based on analyses of the PAMR results for the Research and Development Village policy area presented in Attachments 4 through 9 of the staff report:

[http://montgomeryplanning.org/community/gaithersburg/documents/20081002\\_gaithersburg-w\\_master\\_plan\\_staff\\_report.pdf](http://montgomeryplanning.org/community/gaithersburg/documents/20081002_gaithersburg-w_master_plan_staff_report.pdf)

[http://montgomeryplanning.org/community/gaithersburg/documents/20081002\\_gaithersburg\\_west\\_attachments\\_print.pdf](http://montgomeryplanning.org/community/gaithersburg/documents/20081002_gaithersburg_west_attachments_print.pdf)

As indicated in Exhibit C-1, the three scenarios for the R&D Village Policy Area showed a lower variability of travel demand and system performance than indicated by the difference in LSC Policy Area demographics.

**Exhibit C-1. PAMR System Performance for R&D Village Policy Area – October 2008 Scenarios**

Scenario	Commercial square feet in LSC Policy Area	Dwelling units in LSC Policy Area	Vehicle Miles of Travel	Vehicle Hours of Travel	Average Transit Travel Time (minutes)	Relative Arterial Mobility	Plan in Balance?
Low Scenario	7.2M	500	63,000	5,200	48	54%	Yes
Medium Scenario	12.4M	4,800	75,000	7,700	44	43%	Yes
High Scenario	16.1M	9,700	82,000	9,200	43	39%	No (<40%)

The High Scenario had more than twice the number of commercial square feet than the Low Scenario and nearly twenty times the number of dwelling units. Total VMT, however, increased by just 30%, due to a combination of factors including a conversion of through traffic to local traffic brought on by both an improved jobs-to-housing balance, an improved non-auto driver mode share, and a redistribution of origins and destinations.

Travel Patterns of LSC Area Employees

The development of the Life Sciences Center as a mixed-use transit-oriented development increases transit use and walk/bike opportunities. The existing and forecast non-auto driver mode shares are based on forecasted R&D Village policy area journey-to-work trends using the Department's travel demand model. We estimate the current non-auto driver mode share (NADMS) at 16%. For comparison purposes, the NADMS for the Shady Grove Adventist Hospital employees has been estimated at 14% based on a 2008 employee survey provided by the hospital. Additional information on mode share would be obtained from more comprehensive and robust survey information obtained by the Greater Shady Grove Transportation Management District when it is funded and operating. The operation of the

GSG TMD is therefore a critical element in the first stage of the Sector Plan and the assessment of progress toward the ultimate 30% NADMS must be calibrated against initial survey results.

Most LSC area employees will live north and east of the study area, with about half located in the I-270 corridor from Clarksburg to Rockville. Employee locations tend to be fairly dispersed, a trend that will continue for the foreseeable future. As indicated in Appendix C-4, under the High scenario, the origins of study area employees would include:

- 11% from the R&D Village Policy Area (compared to just 3% in 2005)
- 10% from Gaithersburg City (11% in 2005)
- 7% from Germantown West (8% in 2005)
- 7% from Montgomery Village/Airpark (down from 10% in 2005, as the area is largely built out)
- 5% from Rockville City (7% in 2005)
- 5% from North Potomac (7% in 2005)
- 5% from Frederick County (5% in 2005)
- 5% from Clarksburg (up from 1% in 2005, as the area is still developing)

Exhibit C-2 shows how the mode split percentages of employees arriving by transit, as an auto (or vanpool) passenger, and walking or biking to work is expected to change by scenario. Detailed information on travel demand model mode shares is provided in Appendices C-1 through C-4; the mode shares are slightly different than in the appendices as the travel model does not assign intra-zonal trips or walk/bike trips, tends to slightly overestimate auto occupancy, and the effectiveness of localized TDM programs is not explicitly incorporated in the model forecasts.

**Exhibit C-2 – Estimated Journey to Work Mode Share for R&D Village Policy Area Employees**

Scenario	Total Trips	By Transit	By Auto	By Walk/Bike	Total Non-Driver
2005	18,600	6%	8%	2%	16%
Low Scenario	24,300	9%	10%	3%	22%
Medium Scenario	56,800	14%	10%	4%	28%
High Scenario	70,200	15%	10%	7.5%	32.5%

The Low Scenario is essentially the 1990 Plan; the CCT alignment serves just the Crown Farm and DANAC stations where the adjacent land uses are predominantly residential. By adjusting the CCT alignment to serve additional commercial development on the CCT stations, the transit ridership can be significantly increased, from 9% without LSC development to about 15% in the high scenario. The Planning Board draft plan recommends a 30% non-auto driver mode share (between the Medium and High Scenarios). In general, with planned levels of development, about half of those not driving will take transit, about a third will be auto passengers, and the remaining one-sixth will walk or bike to work.

CCT Ridership and Cost-Effectiveness

Another way of looking at the information is to consider the number of transit riders who journey to work in the R&D Village:

- 1,100 riders today
- 2,200 riders in the Low Scenario
- 8,000 transit riders in the Medium Scenario, and

- 10,500 transit riders in the High Scenario

The Planning Board Draft Plan is between the Medium and High Scenarios and would result in about 9,000 daily journey-to-work trips to the LSC area on transit. This is an increase of nearly 7,000 additional riders which would help increase CCT boardings. Staff estimates that the number of daily CCT boardings associated with changes associated with the LSC Alignment stations at about 6,000 per day by the year 2030. The two ridership forecasts in the preceding sentences are only indirectly linked as there are three variables that are different; absorption of planned development by 2030, transit riders not using the CCT, and transit trips for purposes other than the journey to work locations in the LSC area.

The MTA is providing an assessment of the Crown Farm, LSC, and Kentlands alignment options under separate cover. Their analysis of cost-effectiveness is critical to obtaining Federal Transit Administration support for the CCT. We are therefore not publishing any independent estimates of cost-effectiveness to avoid creating confusion on this particularly important topic. However, we support the 2009 AA/DEIS cost-effectiveness calculations for the CCT (which concluded that the BRT options would have a cost of \$18 to \$19 per hour of transportation system user benefits and that the LRT options would cost \$32 to \$33 per hour). Our independent sketch level assessments lead us to believe that, given current design standards for the CCT:

- The LSC alignment and Planning Board Draft Plan, in tandem, should improve CCT cost effectiveness. Staff estimates that, all else held equal, cost effectiveness might improve by one or two dollars per hour.
- The Planning Board Draft Plan, the Executive Branch proposal, and the Montgomery County Civic Federation proposal would all provide sufficient ridership on the LSC alternative to keep BRT cost-effective.
- While a small change in cost-effectiveness may not cause the CCT to cross relevant FTA thresholds, small changes can still affect competitiveness for scarce federal funding among projects across the country.

#### Vehicle Trip Lengths

Exhibit C-3 shows the degree to which the balance of jobs and housing results in shorter vehicle trips. The Low Scenario retains the high jobs-housing ratio currently found in the LSC area, resulting in an estimated 84% auto driver mode share and only 3% of those auto travelers originating within the policy area to work. For the Medium and High Scenarios, the non-auto driver mode share was targeted at 25%.

in October 2008 (rather than 30% in the Draft Plan) and for those who did drive, 12% of High Scenario employees originate within the policy area. Additional information is provided in Appendices C-1 through C-4.

**Exhibit C-3. Home-Based Work Auto Driver Trips Internal to the R&D Village Policy Area – October 2008 Scenarios**

Scenario	Internal trips	Total trips	Internal Trip Percentage
2005	412	15,684	3%
Low Scenario	1,017	19,880	5%
Medium Scenario	3,122	42,265	7%
High Scenario	5,847	48,601	12%

Staff also considered the degree to which the CCT alignment modifications and additional density would increase CCT ridership and cost effectiveness. In general, staff has deferred reporting on CCT results to the MTA analysis and findings, recognizing that their analysis of year 2030 conditions (including a partial absorption of planned build-out densities) would yield slightly lower ridership numbers than any estimates we would develop of build-out ridership.

In general, the results of the October 2008 analyses presented to the Planning Board indicated that the mixed-use transit-oriented development did create greater levels of total traffic, but provided a more efficient per-capita utilization of transportation system capacity. One staff objective for subsequent efforts was therefore to develop a plan that would maximize traveler efficiency while retaining the level of transportation system balance described in the PAMR process.

Some might argue that the PAMR analysis for Gaithersburg West is an artificial constraint because the White Flint Sector Plan proposes an amendment to the PAMR standard of LOS D (a Relative Arterial Mobility of 40% or more). Both staff and the Planning Board recommend allowing LOS E conditions (a Relative Arterial Mobility score of less than 40%) in White Flint because the Relative Transit Mobility is LOS B. In each of the Gaithersburg West plan scenarios the Relative Transit Mobility is LOS C, so the staff and Planning Board have respected the LOS D Relative Arterial Mobility definition of Plan balance.

**Part 2. PHED Committee Scenario**

The public hearing generated many requests for additional transportation and land use scenarios. This addendum provides additional information from which the sensitivity of transportation system performance to different input variables can be gauged. Based on the combination of interests in examining a lower land use and three specific transportation network assumptions, the interagency team coordinated on a new scenario in response to the direction obtained at the September 29 PHED Committee meeting. This PHED Committee Scenario consists of the following:

- A reduction of two million square feet of commercial development from the Planning Board Draft Plan, taken proportionately from all commercial properties in the Life Sciences Center according to the difference between the amount of development assumed in the 1990 Plan scenario and that assumed in the Planning Board Draft Plan.
- The inclusion of the I-270/Gude Drive interchange included in the City of Rockville’s master plan. This interchange would provide another point of access to the Gaithersburg West plan area and could address some of the MDOT and City of Rockville concerns about the impact of additional traffic on the existing MD 28 interchange.
- The removal of the Great Seneca Highway / Key West interchange, based on the Draft Plan Appendix finding that an at-grade improvement can provide needed capacity at this location.

- The removal of the portion of Diamondback Drive directly east of the Sam Eig Highway interchange in response to City of Gaithersburg concerns.

Exhibit C-4 compares the total plan area levels of development for the scenarios described in this section of the report. The High Scenario incorporates some slight changes from the High Scenario as described in the Draft Plan Appendix. The scenario defined as “M-NCPPC Scenario 1” in Exhibit C-4 is described as the “PHED Committee Scenario” elsewhere in Attachment C.

### Exhibit C-4. Current Transportation System Scenario Land Uses

Gaithersburg West Master Plan  
 JHU / LSC Local Area Model  
 Demographic Analysis Summary

Scenario	LAM #	Date	Commercial					Residential							
			Gross Square Feet (000s)					Jobs					DU		
			Office	Retail	Industrial	Other	TOTAL	Office	Retail	Industrial	Other	TOTAL	SF	MF	TOTAL
			250	400	450	500									
Existing	0	04/30/08	3504	193	1577	1594	6870	14015	488	3504	3188	21196	705	2595	3300
1990 Plan	1	04/30/08	5973	265	3858	2401	12537	23852	863	8662	4802	38019	705	3095	3800
High Scenario	8	09/30/09	8130	674	8406	4713	21925	32520	1695	18684	5426	62315	885	12918	13513
Final (Planning Board)	9	09/30/09	7950	659	6405	3579	20637	31800	1748	14242	11158	58948	705	7595	8300
M-NCPPC Scenario 1	10	10/05/09	7462	582	5785	4795	18639	29648	1480	12864	5560	53782	705	7595	8300

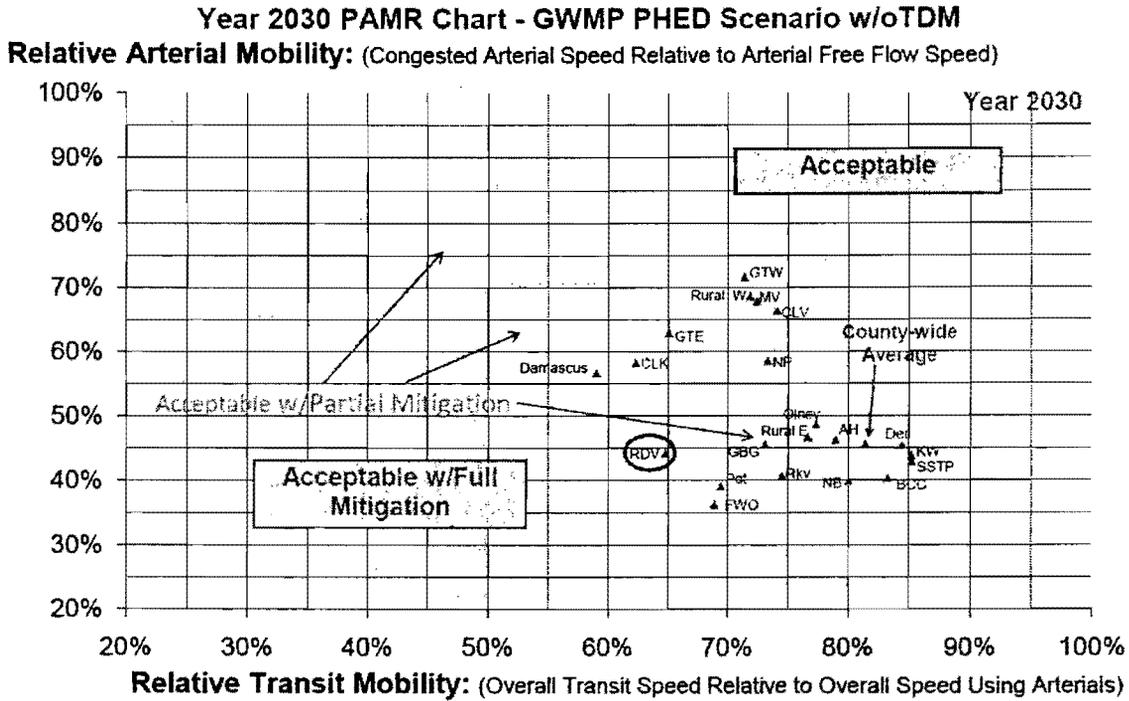
Demographics listed for Local Area Model portion in Gaithersburg West Master Plan area

LAM includes portion of City of Rockville west of I-270 and north of Darnestown Road, with 4.4M GSF commercial and 1400 DU current, 5.4M GSF commercial and 1400 DU future (per M/COG Round 7.1)  
 LAM includes Crown Farm and Washington Center in Gaithersburg with 1.6M GSF commercial and 100 DU current, 2.6M GSF commercial and 2360 DU future.

### PAMR Results

The PAMR analysis of the PHED Committee Scenario is presented in Appendix C-6. These results show that the R&D Village would be balanced under the PHED Committee Scenario, with a Relative Transit Mobility of 65% and a Relative Arterial Mobility of 44% if no additional TDM actions were taken to increase mode shares beyond those that would result from the combination of land uses and transit services included as model assumptions. The PHED Committee Scenario is similar to the “Medium Scenario” presented to the Planning Board on October 10, 2008, and falls in between the Low (or 1990 Plan) and High Scenarios.

Appendix C-6. PAMR Results for PHED Committee Alternative

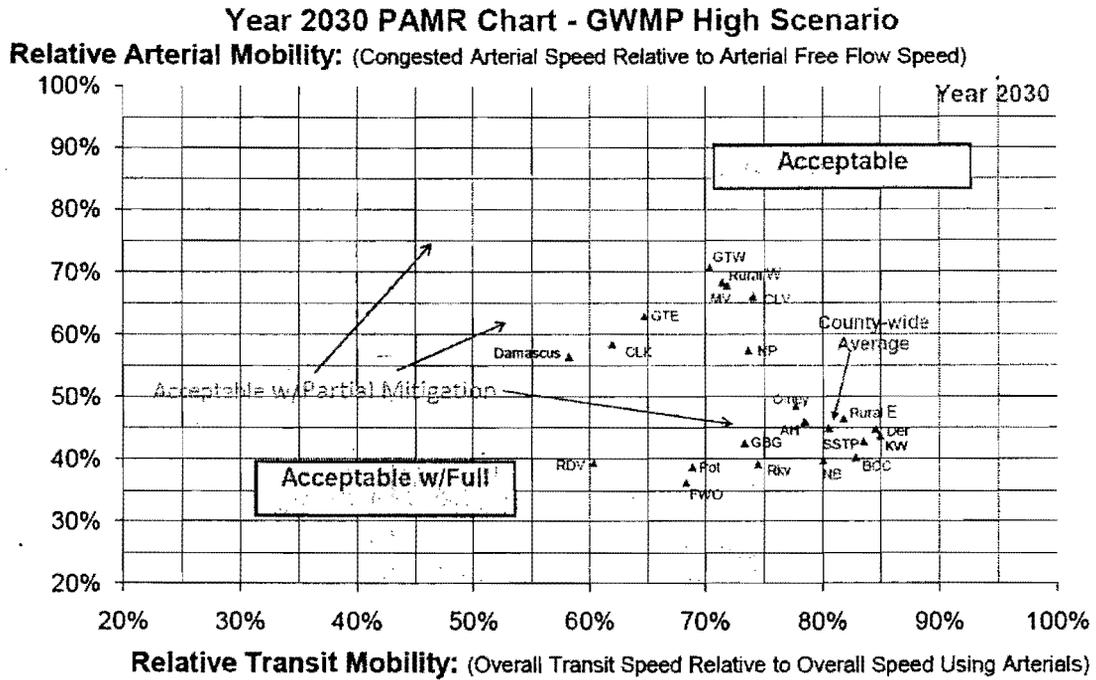


Derivation of Year 2030 PAMR Results by Policy Area - Gaithersburg West Master Plan "PHED Committee" LU Scenario (no TDM)

Policy Area	Relative Arterial Mobility					Relative Transit Mobility			
	VMT	VMT (Free-flow)	VMT (Congested)	Free-Flow Speeds	Congested Speeds	Relative Arterial Mobility	Average Arterial Travel Time	Percentage Transit Travel Time	Relative Transit Mobility
Aspen Hill	189,121	5,760	12,474	32.8	15.2	46%	40.9	51.8	79%
Bethesda/Chevy Chase	397,168	15,385	36,735	25.5	10.3	40%	30.9	37.1	83%
Chertburg	109,060	3,635	6,249	30.0	17.5	58%	38.1	61.2	62%
Gloverly	95,205	2,352	3,547	40.5	26.8	66%	45.7	59.0	74%
Damascus	90,492	2,248	3,962	40.3	22.8	57%	48.5	82.1	59%
Dorwood/Shady Grove	139,392	4,950	10,908	28.2	12.8	45%	37.4	44.3	84%
Fairland/White Oak	384,295	10,135	27,950	37.9	13.7	36%	39.9	57.9	69%
Gaithersburg City	231,531	8,896	18,582	27.8	12.5	46%	34.5	47.2	73%
Greenstone East	106,826	3,283	5,704	28.6	18.8	63%	36.5	56.0	65%
Greenstone West	153,198	5,008	9,997	30.6	21.9	72%	36.6	51.2	71%
Kensington/Wheaton	465,716	18,596	33,339	31.9	14.0	44%	36.9	43.3	85%
Montgomery Village/Airpark	143,718	4,766	7,035	30.2	20.4	68%	41.2	57.0	72%
North Bethesda	238,334	10,010	25,125	23.8	9.5	40%	30.1	37.6	80%
North Potomac	97,114	2,420	4,190	27.2	16.2	59%	39.2	53.9	73%
Diney	167,993	4,743	9,749	35.4	17.2	49%	46.9	60.7	77%
Potomac	201,556	6,056	15,999	33.3	13.0	39%	37.9	54.7	69%
P.E. O Villages	75,821	1,464	7,859	27.3	10.0	44%	28.1	45.3	65%
Rockville City	272,296	11,783	29,021	23.1	9.4	41%	31.4	48.3	70%
Silver Spring/Takoma Park	273,545	10,452	24,401	26.2	11.2	43%	33.3	39.0	85%
Rural East	607,047	15,470	23,180	39.2	16.3	41%	47.0	61.3	77%
Rural West	243,060	6,810	9,642	36.8	25.2	69%	46.6	64.9	72%
Montgomery County Total	4,654,741	152,102	334,129	30.6	13.9	45%	37.4	46.2	81%

Relative Arterial Mobility measures total PM Peak Period vehicular travel on arterial roadways within each policy area  
 Relative Transit Mobility measures AM Peak Period travel times for journey-to-work trips originating within each policy area  
 VMT = Vehicle Miles of Travel  
 VHT = Vehicle Hours of Travel

Appendix C-7. PAMR Results for the High Scenario



GWMP\_PAMR\_Analysis\_DB22030\_PAMR\_Chart\_GWMP\_JHU

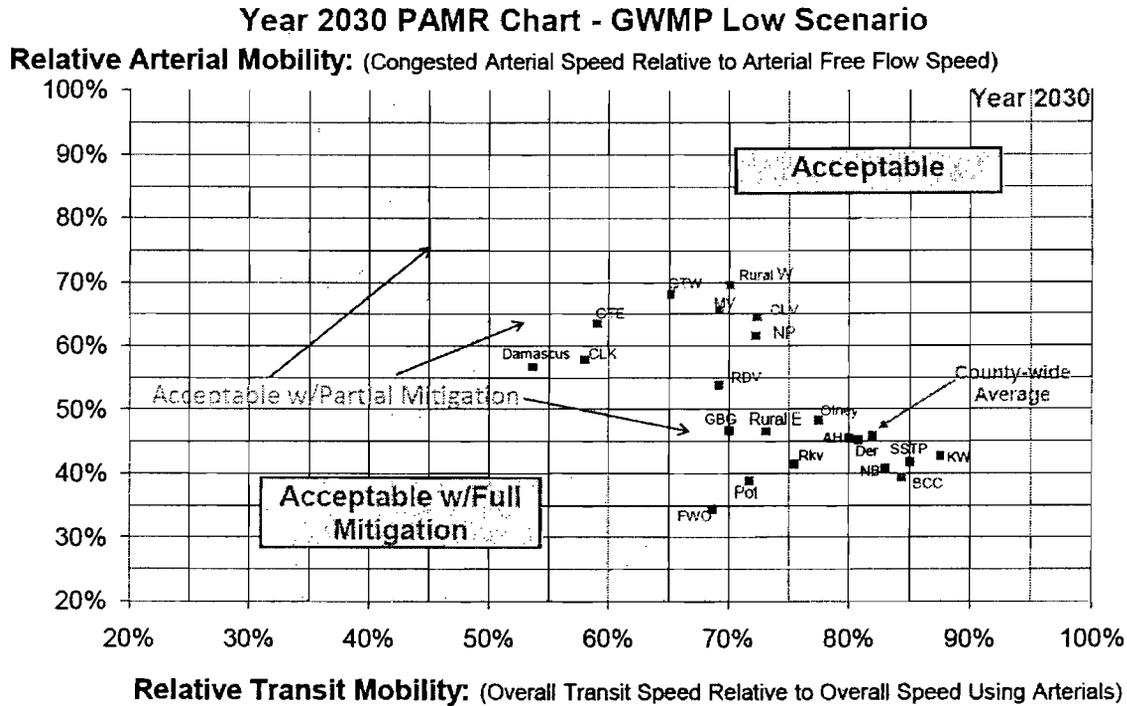
9/19/2008

Derivation of Year 2030 PAMR Results by Policy Area - Gaithersburg West Master Plan "High" LU Scenario

Policy Area	Relative Arterial Mobility					Relative Transit Mobility			
	VMT	VMT (Free-flow)	VMT (Congested)	Free-Flow Speeds	Congested Speeds	Relative Arterial Mobility	Average Arterial Travel Time	Percentage Transit Travel Time	Relative Transit Mobility
Aspen HR	199,524	5,776	12,545	32.8	15.1	46%	40.7	51.8	79%
Bethesda/Creve Coeur	396,816	15,549	38,653	25.5	30.3	40%	30.8	37.1	83%
Clarkburg	109,854	3,557	6,258	30.0	17.5	58%	17.4	60.4	62%
Cloverly	15,264	2,156	3,566	40.5	26.7	66%	43.6	58.9	74%
Damascus	90,726	2,251	3,388	40.3	22.7	56%	48.0	82.4	58%
Derwood/Shady Grove	140,528	4,999	11,144	28.1	32.6	45%	36.9	48.7	64%
Fairland/White Oak	384,340	10,138	27,900	37.3	13.8	36%	39.5	57.9	68%
Gaithersburg City	244,848	8,785	20,504	28.0	11.9	43%	33.8	46.1	73%
Germantown East	406,232	3,886	5,703	29.6	16.4	43%	29.8	35.5	83%
Germantown West	155,370	6,095	7,206	30.6	23.7	71%	35.9	53.9	70%
Kensington/Wheaton	455,808	14,593	33,331	31.9	14.0	44%	36.8	43.3	65%
Montgomery Village/Airpark	143,832	4,771	7,034	30.1	20.4	68%	40.7	56.7	72%
North Bethesda	238,859	10,024	25,191	23.8	9.5	40%	30.1	37.5	80%
North Potomac	47,404	2,424	4,199	27.9	16.3	57%	38.6	52.6	79%
Olney	162,437	4,758	8,802	35.4	17.2	49%	46.7	60.1	78%
Potomac	204,580	6,150	15,859	33.3	12.9	39%	37.7	54.8	68%
R & D Villages	51,591	3,625	6,176	21.5	8.9	39%	25.9	42.9	60%
Rockville City	278,637	11,266	30,768	28.2	9.3	38%	31.7	43.7	73%
Silver Spring/Takoma Park	273,333	10,443	24,948	26.2	11.2	43%	33.1	39.6	64%
Rural East	608,784	15,522	33,377	39.2	18.2	47%	46.7	57.0	62%
Rural West	243,888	6,638	5,710	36.7	25.1	68%	45.1	64.5	71%
<b>Montgomery County Total</b>	<b>4,688,996</b>	<b>153,165</b>	<b>340,362</b>	<b>30.6</b>	<b>13.8</b>	<b>45%</b>	<b>37.1</b>	<b>46.0</b>	<b>61%</b>

Relative Arterial Mobility measures total PM Peak Period vehicular travel on arterial roadways within each policy area.  
 Relative Transit Mobility measures AM Peak Period travel times for journey-to-work trips originating within each policy area.  
 VMT = Vehicle Miles of Travel  
 VHT = Vehicle Hours of Travel

Appendix C-8. PAMR Results for Low (1990 Plan) Scenario



Sum 2030 VHT\_VMT\_ff-RMW\_v4biYear\_2030\_PAMR\_Chart

9/24/2008

Derivation of Year 2030 PAMR Results by Policy Area: GWMP Low Scenario

Policy Area	Relative Arterial Mobility					Relative Transit Mobility			
	VMT	VHT (free-flow)	VMT (congested)	Free-Flow Speeds	Congested Speeds	Relative Arterial Mobility	Average Arterial Travel Time	Average Transit Travel Time	Relative Transit Mobility
Aspen Hill	191,333	5,826	12,800	32.8	14.9	46%	41.6	52.0	80%
Bethesda/Creve Chase	410,521	15,862	40,326	25.9	10.2	39%	31.1	39.6	79%
Clarksburg	108,593	3,617	6,254	30.0	17.4	58%	36.5	62.9	58%
Cloverly	99,648	2,487	3,855	40.1	25.8	65%	44.8	61.9	72%
Damascus	91,820	2,269	4,005	40.5	22.9	57%	44.8	87.3	54%
Derwood/Shady Grove	139,862	4,947	10,836	38.2	12.9	46%	37.4	46.5	80%
Fairland/White Oak	397,287	10,878	31,510	36.5	12.6	35%	40.4	58.9	69%
Galtsburg City	238,596	8,027	17,199	29.7	13.9	47%	34.6	68.2	70%
Germantown East	118,232	3,512	6,590	31.8	19.9	64%	35.2	59.6	59%
Germantown West	336,390	8,824	6,443	30.3	20.5	68%	36.4	56.6	64%
Kensington/Wheaton	474,747	15,003	35,036	32.6	13.6	43%	37.7	43.3	86%
Montgomery Village/Airpark	259,844	5,004	7,638	31.9	21.0	66%	40.2	58.1	69%
North Bethesda	238,934	10,081	24,557	23.8	9.7	41%	31.1	38.4	81%
North Potomac	65,559	2,334	3,569	29.4	18.4	62%	40.4	57.8	72%
Olney	172,821	4,898	10,125	35.3	17.1	48%	47.3	62.2	77%
Potomac	203,269	6,027	15,475	33.7	13.1	39%	39.9	55.4	73%
R & D Village	61,321	2,812	5,221	22.5	12.2	54%	32.8	47.6	69%
Rockville City	278,231	11,888	28,317	23.1	9.6	42%	33.0	48.7	76%
Silver Spring/Takoma Park	278,054	10,654	25,456	26.1	10.9	42%	33.7	40.1	84%
Rural East	614,526	15,709	33,719	39.1	18.2	47%	46.3	63.3	73%
Rural West	239,170	6,489	9,319	36.9	25.6	70%	47.7	64.0	70%
Montgomery County Total	4,704,520	152,478	337,244	30.9	13.9	45%	37.9	47.0	61%

Relative Arterial Mobility measures total PM Peak Period vehicular travel on arterial roadways within each policy area  
 Relative Transit Mobility measures AM Peak Period travel times for journey-to-work trips originating within each policy area  
 VMT = Vehicle Miles of Travel  
 VHT = Vehicle Hours of Travel

## Local Area Model Results

The need to plan for expanded highway system capacity at LSC area choke points is fairly independent of the total amount of commercial space in the LSC area. Rather, most of the areas identified are already congested and will continue to be under any of the development scenarios examined, requiring additional transportation infrastructure.

Appendix C-5 presents a comparison of the intersection congestion results for existing conditions with the three scenarios with detailed input assumptions and output analysis (the High Scenario, Planning Board Draft Scenario, and PHED Committee Scenario). For each intersection, the AM and PM peak hour Critical Lane Volume (CLV) results are presented, as well as a volume-to-capacity (V/C) ratio for the worst case (AM or PM). For all intersections in this chart, a constant "capacity" of 1600 CLV is assumed for ease of comparison. The 1600 CLV is the threshold between LOS E and LOS F conditions and it is the Planning Board's proposed congestion standard for the new Life Sciences Center policy area. The R&D Policy Area currently has a congestion standard of 1450 CLV (which is the threshold between LOS D and LOS E).

In Appendix C-5, intersections recommended for grade separation are indicated by shading and locations with a V/C ratio greater than 1.0 are indicated with bold text. There is not a direct relationship between the V/C ratio and a recommendation to plan for an interchange. Most of the interchange locations are just outside of the proposed Life Sciences Center policy area boundary, and clearly, the identification of a CLV greater than the prevailing 1450 CLV standard should not be a mandate for grade separation. While the 1450 CLV standard is current policy in these areas, it is not effective planning to assume a ~\$100M improvement for an intersection that may perform at LOS E (between 1450 and 1600 CLV, or a 0.91 to 1.00 V/C ratio in Appendix C-5).

At the same time, it is not prudent to assume that interchanges will never be needed until a CLV exceeds a certain higher number, such as a CLV of 1800 or 2000 (V/C ratios of 1.12 or 1.25 in Appendix C-5). Generally, staff has viewed a V/C ratio of about 1.1 as the logical breakpoint where a grade separation should be recommended.

There are two differences between this chart and Figure 24 in the Planning Board Draft Plan Appendix. First, there are some revisions in the Existing Conditions and High Scenario to reflect updated traffic counts and High Scenario assumptions since November 2008, when the analysis that was reported in the July 2009 Appendix was originally prepared. Second, the CLV and V/C ratios shown for locations with recommended grade separations are shown; these reflect at-grade conditions with feasible intersection widening. This information helps summarize the alternative approach to grade separation.

Appendix C-5 demonstrates that most of the intersections recommended for interchanges in the Planning Board Draft Plan will be congested regardless of whether the total amount of commercial development is 18 million, 20 million, or 22 million square feet. In fact, the difference in forecast intersection congestion and **the need for interchanges is more a factor of the location and type of commercial development than the total development assumed in the area.** There are four basic reasons for this finding:

First, the localized development assumptions have varied from alternative to alternative. The trip generation can vary depending on the type of development assumed. The Planning Board scenario has about 3,400 fewer jobs (a 5% reduction) than the High Scenario, but the reduction was customized and

therefore was not evenly distributed across different job types. In fact, the number of retail jobs actually rose slightly (by 4%). As indicated in Figure 29 of the Planning Board Draft Appendix, the retail trip generation rates applicable to the analysis are three times that of the industrial and other commercial development for PM peak period travel.

The general office rates are also 20% higher than the industrial/other commercial. Since industrial/other commercial developments have similar trip generation characteristics in the LSC area, the changes in those job types between the High Scenario and the Planning Board Draft scenario; industrial down by 24% and other commercial up by 18%, tend to have a cancelling effect.

The trip generation rates used for the Life Sciences Center analysis are lower than those contained in the Department's Local Area Transportation Review/Policy Area Transportation Review Guidelines for most commercial uses because they incorporate pass-by trips for retail, available observed utilization of life sciences center office space, and ultimate achievement of the 30% non-auto driver mode share. The commercial land use trip generation rates are slightly higher than those used in the White Flint Sector Plan analysis, where higher mode shares can be achieved but employee density is higher due to real estate costs and the prevailing type of office activity.

For instance, the following PM peak hour vehicle trip generation rates for each 1,000 square feet of development are described in each Plan's appendix:

- Office space, 1.20 in LSC, 1.16 in White Flint
- Retail space, 3.00 in LSC, 1.70 in White Flint
- Industrial space, 1.00 in LSC, 1.03 in White Flint
- Other space, 1.00 in LSC, 1.21 in White Flint
- High rise residential (per unit), 0.48 in LSC, 0.46 in White Flint

The types of developments on different parcels also varied somewhat as scenarios were developed during the past two years. The difference between commercial and residential development can have a similar effect on trip generation rates, an effect that can be magnified due to differences in peaking between the uses (residences tend to have a high arrival rate during the evening peak whereas offices have a high departure rate). In some cases, residential development in the High Scenario was "converted" to commercial development in the Planning Board scenario, based on an assessment of development feasibility. The term "converted" is merely a term of art; as the scenarios are independent, the development types are also independent.

Second, the location of development has an effect on localized traffic congestion.

For instance, the area in the southwest quadrant of the Shady Grove / Key West intersection had a similar total amount of total square footage in both the High Scenario and the Planning Board Draft Scenario, but about 300 high rise residential units were "converted" to office space (as was some other commercial space). Therefore, the Planning Board Draft Scenario generated 1,160 outbound vehicle trips during the PM peak hour as compared to 780 in the High Scenario, contributing to the higher CLVs at the Key West / Shady Grove intersection in the Planning Board Draft Plan scenario.

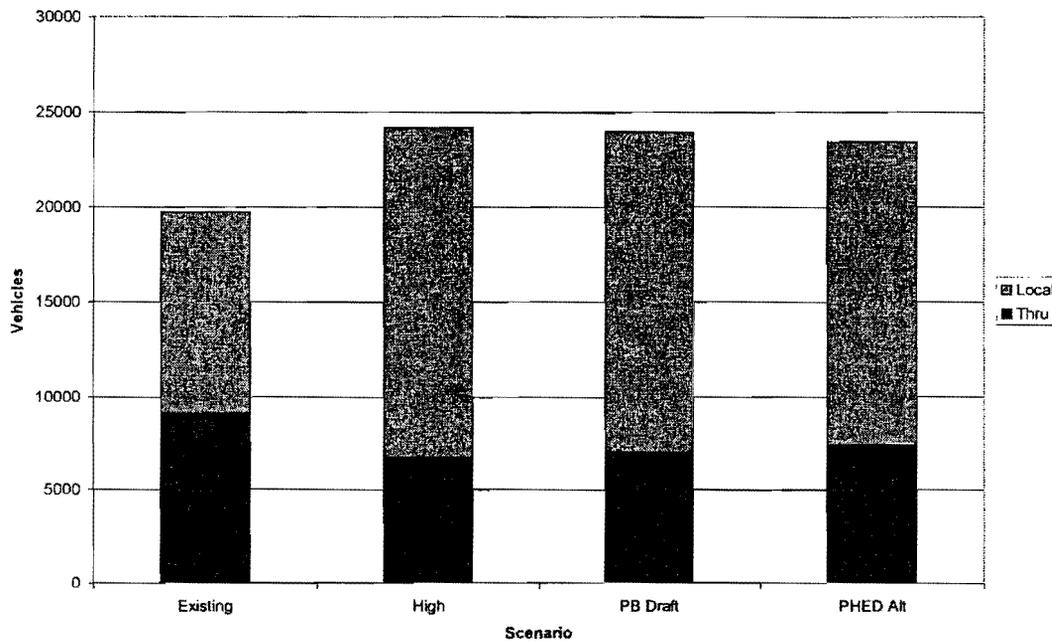
Third, the transportation network assumptions affect system performance from both the areawide and site-specific perspective. The addition of the I-270/Gude Drive interchange into the PHED Committee Scenario creates additional access to the LSC area, redistributing traffic destined both to and across I-270. This increases congestion slightly at the Gude Drive intersections with Research Drive and Key

West Avenue and decreases congestion slightly along Shady Grove Road. Similarly, the removal of the planned segment of Diamondback Drive directly east of Sam Eig Highway has a ripple affect along Sam Eig; congestion at the Diamondback intersection itself would be reduced but congestion at Fields Road would be increased (as Fields Road would be the access point for traffic to or through the Crown Farm development).

Finally, the forecasts are developed using a regional model that reflects latent demand in the redistribution of origins and destinations, the reassessment of modal splits, and the reassignment of traffic volumes. As development totals increase, the amount of through traffic decreases. This is due in large part to the redistribution of traffic (some folks who would pass through the area if local living, working, or shopping opportunities are insufficient instead find a desirable trip-end in the area). Exhibit C-5 shows the comparison of local and through traffic in the LSC area. As development increases, the LSC Area is less of an impediment on the way to somewhere else and becomes more of a destination in its own right. The reduction in through traffic is also due to some extent on the reassignment of traffic. Congestion will increase in the LSC area, and this congestion makes the area slightly less attractive for those who have a choice of routes on longer distance trips (such as whether to accept congestion on I-270 or congestion on MD 119 and MD 28 as the better option on a trip from west Germantown to the Rockville Town Center).

**Exhibit C-5. Comparison of Through and Local Traffic in LSC Area**

Gaithersburg West Plan PM Peak Hour Outbound Traffic



Staff makes several findings from Appendix C-5:

- The intersection of Key West Avenue / Shady Grove Road warrants a grade separated recommendation in any scenario, as the V/C ratio is consistently above 1.10 in any development scenario.
- The intersection of Great Seneca Highway / Muddy Branch Road warrants a grade separated recommendation, as the V/C ratio is consistently above 1.10 in any development scenario. This location is a true constraint to accessibility as the location is at the boundary of the Life Sciences Center area and surrounded by low to moderate density residential development and environmental constraints that make alternative network options or new connections unfeasible. The adjacent community concerns and environmental constraints make this location the focus of testimony and additional review of alternative options is presented in Part 3 of this Attachment.
- The 1990 Plan recommendation to grade separate Sam Eig Highway between I-270 and Great Seneca Highway should be retained. The V/C ratios at the three individual intersections in Appendix C-5 (Fields Road, Diamondback Road, and Great Seneca Highway) vary from 0.90 to 1.13 in the various horizon year development scenarios, not as indicative of a congestion concern as at the two intersections described in the two previous bullets. However, Sam Eig Highway warrants grade separation for a variety of other reasons:
  - It is the primary gateway point into the Life Sciences Center Area development and the best connection between jobs in the Life Sciences Center and residences located at points north along I-270 and east along the ICC.
  - While the I-270/Gude Drive interchange increases access to the LSC area, Sam Eig Highway will remain the access point with the highest traffic volume, so that peak and off-peak travelers alike would benefit from the access and safety provided by grade separation as opposed to three congested traffic signals in close proximity.
  - The Plan recommends bus priority treatment to provide access for routes serving the I-270 express lanes and the ICC value-priced facility. While the CCT is the primary trunk line for the LSC area, it is even conceivable that some bus or shuttle services would use I-370, the ICC, and Sam Eig Highway to connect LSC and Crown Farm/Washingtonian areas beyond CCT station walk "sheds" with the Shady Grove Metrorail station.
  - The City of Gaithersburg remains interested in minimizing the barrier effect of Sam Eig Highway between the separate pods of Crown Farm development on either side of the roadway. Grade separation would provide better connectivity for both pedestrians and vehicles.
- The intersection of Great Seneca Highway and Key West Avenue does not warrant grade separation as the V/C ratio is below 0.90 in all development scenarios.

The intersection of Great Seneca Highway and Quince Orchard Road is outside the immediate focus area of the supplemental local area model analysis. Staff has assessed this intersection with a simplified sensitivity analysis. The current V/C ratio at this location (on a 1600 CLV base) is 0.90. Forecast daily traffic volumes entering the intersection are between 22% (PHED Committee Scenario) and 36% (High Scenario) higher than the base year, translating to estimated V/C ratios of 1.10 to 1.23. Staff recognizes that additional analysis here would need to be performed by the State Highway Administration in conjunction with the City of Gaithersburg since the location is outside the Gaithersburg West Plan boundary, but we suggest that an interchange at this location continue to be investigated.

### Part 3. Highway System Needs and Affordability

The following paragraphs describe the analysis of highway system needs and the consideration of interchange recommendations. The Planning Board Draft Plan builds upon, and refines, the 1990 Plan network, recognizing limitations for a much more robust and urban street grid typical of central business districts. Alternative means for minimizing community impacts along Great Seneca Highway and Muddy Branch Road are described, including review of proposals for direct access from Sam Eig Highway onto the Belward campus and innovative interchange treatments.

#### Context for Grade Separated Interchange Recommendations

The Planning Board Draft Plan, like the 1990 Plan, recommends interchanges at key entry points and junctions between major highways. The need for interchanges incorporates the following concerns:

- The general transportation system layout of the area is classically suburban, with six-lane major highways on a grid of roughly one-mile spacing and fairly little local street interconnectivity. The Draft Plan features an improved grid of business district streets within the Life Sciences Center.
- Interchanges are generally justified in the long run when demand exceeds intersection capacity. This capacity is estimated at about 1760 (a V/C ratio of 1.10) to 1800 CLV, not the policy congestion standards of 1450 or 1600 CLV. At this point, equivalent at-grade solutions typically require more than seven lanes per approach, creating significant right-of-way needs, hindering pedestrian access and safety, and impacting adjacent properties. In some cases, interchanges may also be warranted in consideration of transportation network functionality (as in the case of the Montrose Parkway interchange at MD 355) or community access and safety needs (as in the case of the US 29 interchanges in Fairland / White Oak). In general, interchanges are more appropriate for Controlled Major Highways, where the provision of through movement dictates strong access control, higher operating speeds, and longer distances between adjacent intersections.
- The consideration of interchange suitability also needs to consider the prevailing policy expectations for mobility, the availability of transit service, and the feasibility of alternative options for grade separations or alternative treatments (as in the case of the Takoma/Langley Crossroads recommendation for a local grid system of short blocks in lieu of an interchange between University Boulevard and New Hampshire Avenue).
- The High Scenario forecasts reflect substantial travel demand management (TDM) measures to achieve the planned 30% non-auto driver mode share (NADMS) and do not reflect free-flowing conditions. Alternative treatments to enhance roadway system performance could include the prohibition of left turns at key intersections and a greater reliance on local roadway networks. However, state and local transportation agencies have concluded that the network spacing is not conducive to left turn prohibitions and that interchanges are a preferable approach to neighborhood cut-through traffic. The sensitivity to cut-through traffic is such that the PHED Committee Alternative scenario has removed the segment of Diamondback Road classified as an arterial in the 1990 Plan and assumed in the Planning Board Draft Plan, to respect the cohesion of the planned Crown Farm community in the City of Gaithersburg.

As shown in Exhibit C-6, both the 1990 Plan and the Planning Board Draft Plan recommend roadway grade separations at six or seven locations in the Life Sciences Center area.

**Exhibit C-6. Interchange Locations in the Life Sciences Center Area**

Location	1990 Plan	Planning Board Draft Plan	Notes
Sam Eig Highway / Washingtonian	Yes	Yes	Neither Plan showed a circle at Fields Road. However, connections to Fields Road in the 1990 Plan would not be practical (as indicated in the 1990 Plan appendix page 142) without a service road concept similar to that described in Draft Plan on page 43 and depicted in the Draft Plan Appendix on page 80
Sam Eig Highway / Fields	No	Yes	
Sam Eig Highway / Diamondback	Yes	Yes	
Sam Eig Highway / Great Seneca Highway	Yes	Yes	
Great Seneca Highway / Muddy Branch Road	No	Yes	
Great Seneca Highway / Key West Avenue	Yes	Yes	<b>Retained from 1990 Plan for system continuity but could be removed from Draft Plan based on forecasted V/C ratio of 0.98 in Figure 24 of Draft Plan Appendix</b>
Key West Avenue / Shady Grove Road	No	Yes	Travel demands higher along Key West Avenue than Darnestown Road
Darnestown Road / Shady Grove Road	Yes	No	
Great Seneca Highway / Decoverly Drive	Yes	No	1990 Plan recommended three-level grade separation with CCT over Great Seneca Highway and under Decoverly Drive

In summary, retention of the 1990 Plan would not be expected to greatly reduce planned interchange infrastructure costs. However, the MDOT comments on transportation system funding in their September 15 correspondence are apt. The current climate for funding transportation system capacity improvements appears quite bleak, yet this master plan, as with all plans Countywide, will be implemented over a period of several decades.

### Direct Access From Sam Eig Highway to Belward Campus

The Executive has expressed interest in a direct access to the Belward campus from Sam Eig Highway that would eliminate the need for traffic destined to the campus from I-270 to divert either eastbound or westbound onto Great Seneca Highway via planned interchanges at Muddy Branch Road or Key West Avenue. Staff has determined that the Executive's proposal to extend Sam Eig Highway to directly connect to the Belward campus would not materially change the need for interchanges in the Plan area at build out.

Exhibit C-7 compares CLV calculations for two versions of an at-grade junction between MD 119 and Muddy Branch Road under the High Scenario (as defined in November 2008) conditions:

#### **Exhibit C-7. Effect of Alternative Access to Belward Campus on MD 119/ Muddy Branch CLV**

Option	Description	AM CLV	PM CLV
1	Master Plan scenario, but with wider at-grade intersection	1933	1912
2	Traffic between east leg of Great Seneca Highway and south leg of Muddy Branch Road diverted to new Belward Access Road	1419	1831

Option 2 represents a liberal estimate of the type of traffic flow relief that might be achieved with a more direct connection between Sam Eig Highway and the Belward campus. Such a connection would reduce traffic volumes accessing Belward via the dog-leg movement between Sam Eig Highway, MD 119, and Muddy Branch Road. In other words, Option 2 "zeroes out" all the traffic volumes turning right from northbound Muddy Branch Road to eastbound Sam Eig Highway and turning left from westbound Sam Eig Highway to southbound Muddy Branch Road. These volumes are assumed to be diverted to the direct access roadway between Sam Eig Highway and the Belward campus. Version 2 is liberal in that it overestimates the effect (only about half of the traffic making the NBR and WBL movements in Version 1 is generated by Belward).

The removal of this traffic has a noticeable effect in the AM peak hour (reducing the CLV from 1933 to 1419) where the westbound left from MD 119 taking traffic toward Belward conflicts with the regional prevailing flow eastbound along MD 119. In the PM, however, the effect is much lower (reducing the CLV from 1912 to 1831) because only a slight reduction in westbound left turn volumes from MD 119 is needed before that movement is no longer critical to the intersection. Rather, the primary traffic flow conflict is between westbound through traffic on MD 119 and northbound through traffic along Muddy Branch Road.

The direct Belward access would not have any direct impact on the traffic volumes on Key West Avenue, as traffic heading from Sam Eig Highway to the eastern portion of the Belward campus would use the Decoverly Drive extension. At any rate, the interchange at Great Seneca Highway and Key West Avenue is not needed for transportation system performance, based on the 0.98 V/C ratio shown in Figure 24 of the Draft Plan Appendix.

### Right-of-way Needs at Great Seneca Highway / Muddy Branch Road

During the coordination meetings with state and County agencies the physical constraints affecting the feasibility of the Great Seneca Highway interchange with Muddy Branch Road were discussed at some length. The community constraints and sparse level of network connectivity at this junction makes it perhaps the most sensitive constraint to the transportation system. The analysis of this junction is further complicated by the need to provide sufficient right-of-way for CCT priority treatment.

Staff performed an initial assessment of the right-of-way requirements to construct a single-point urban interchange (SPUI) based on the designs for the similar interchange configuration planned at the Montrose Parkway junction with Parklawn Drive. These initial assessments suggested that access to the Washingtonian Woods community along the Hillside Lake Terrace would be compromised, yielding the Executive Branch concern that some 60 residential displacements might be required, and hence the interest in examining an alternative access route to the Belward campus with fewer displacements.

Subsequent analysis has indicated that an "Echelon interchange" treatment would be sufficient to accommodate High Scenario travel demands at this location. An Echelon interchange is one in which opposing through movements are grade-separated, but coupled together in a twin-signal configuration.

The State Highway Administration and the University of Maryland have additional information and a conceptual animation of an Echelon interchange at the following location:

[http://attap.umd.edu/UAID\\_gss.php?UAIDType=12&iFeature=3](http://attap.umd.edu/UAID_gss.php?UAIDType=12&iFeature=3)

At the location of Great Seneca Highway and Muddy Branch Road, this concept could retain the southbound and eastbound movements with a signal at grade and place the northbound and westbound movements at a signalized intersection on a structure. This concept would also facilitate routing of the CCT around the roadway junction by crossing Muddy Branch Road several hundred feet to the south of Great Seneca Highway.

Staff estimates that this configuration might still require two residential property displacements at the western end of Mission Drive if the CCT crossing was to remain at grade.

Appendix C-1. 2005 Journey To Work Trips

HBW Person Trips to R & D Village PA		Existing (2005) Conditions					
No.	Policy Area 1-31/ Jurisdiction	Auto_Driver	Auto_Non-Driver	Transit	Total_Person	Transit %	NonDriver %
1	Aspen Hill	481	55	16	552	3%	10%
2	Bethesda CBD	31	5	9	45	20%	11%
3	Bethesda/Chevy Chase	292	28	14	334	4%	8%
4	Clarksburg	129	16	9	154	6%	10%
5	Cloverly	80	10	0	90	0%	11%
6	Damascus	263	33	3	299	1%	11%
7	Derwood	486	48	31	565	5%	8%
8	Fairland/White Oak	202	29	8	239	3%	12%
9	Friendship Heights	11	2	3	16	19%	13%
10	Gaithersburg City	1770	180	120	2,070	6%	9%
11	Germantown East	428	50	30	508	6%	10%
12	Germantown Town Center	23	2	2	27	7%	7%
13	Germantown West	1282	133	95	1,510	6%	9%
14	Glenmont	12	0	0	12	0%	0%
15	Grosvenor	34	3	6	43	14%	7%
16	Kensington/Wheaton	312	43	21	376	6%	11%
17	Montgomery Village/Airpark	1499	159	97	1,755	6%	9%
18	North Bethesda	237	30	14	281	5%	11%
19	North Potomac	1089	100	51	1,240	4%	8%
20	Olney	566	64	5	635	1%	10%
21	Potomac	564	55	8	627	1%	9%
22	R & D Village	412	27	32	471	7%	6%
23	Rockville City	1013	99	95	1,207	8%	8%
24	Shady Grove	13	2	2	17	12%	12%
25	Silver Spring CBD	18	3	4	25	16%	12%
26	Silver Spring/Takoma Park	168	23	4	195	2%	12%
27	Twinbrook	0	0	0	-	n/a	n/a
28	Wheaton CBD	18	1	1	20	5%	5%
29	White Flint	13	3	1	17	6%	18%
30	Rural East	749	80	16	845	2%	9%
31	Rural West	580	61	3	644	0%	9%
32	DC Core	5	0	9	14	64%	0%
33	DC non-Core	141	21	49	211	23%	10%
34	Prince George's Co. MD	303	16	34	353	10%	5%
35	Arlington Core VA	4	1	1	6	17%	17%
36	Arlington non-Core VA	80	6	19	105	18%	6%
37	Alexandria Co. VA	43	2	5	50	10%	4%
38	Fairfax Co. VA	406	41	10	457	2%	9%
39	Loudoun Co. VA	132	13	0	145	0%	9%
40	Prince William's Co. VA	24	5	1	30	3%	17%
41	Frederick Co. MD	782	61	24	867	3%	7%
42	Carroll Co. MD	63	9	0	72	0%	13%
43	Howard Co. MD	183	9	1	193	1%	5%
44	Anne Arundel Co. MD	25	12	0	37	0%	32%
45	Calvert Co. MD	2	2	0	4	0%	50%
46	St. Mary's MD	0	0	0	-	n/a	n/a
47	Charles Co. MD	1	0	0	1	0%	0%
48	Fauquier Co. VA	0	0	0	-	n/a	n/a
49	Stanford Co. VA	0	0	0	-	n/a	n/a
50	Clark & Jefferson Co. WV	36	12	1	49	2%	24%
51	Federicksburg/Spotsylvania VA	0	0	0	-	n/a	n/a
52	King George Co. VA	0	0	0	-	n/a	n/a
53	Externals	679	101	0	780	0%	13%
	<b>From Montgomery County</b>	<b>12,775</b>	<b>1,554</b>	<b>854</b>	<b>17,413</b>	<b>5%</b>	<b>9%</b>
	<b>From All Region</b>	<b>15,684</b>	<b>1,655</b>	<b>854</b>	<b>18,193</b>	<b>5%</b>	<b>9%</b>

Appendix C-2. Low Scenario Journey To Work Trips

HBW Person Trips to R & D Village PA		GWMP "Low" Scenario					
No.	Policy Area 1-31/ Jurisdiction	Auto_Driver	Auto Non-Driver	Transit	Total	Transit %	NonDriver %
1	Aspen Hill	399	57	34	490	7%	12%
2	Bethesda CBD	50	8	16	74	22%	11%
3	Bethesda/Chevy Chase	246	29	11	286	4%	10%
4	Clarksburg	811	120	79	1,110	7%	11%
5	Cloverly	108	19	6	133	5%	14%
6	Damascus	295	41	10	346	3%	12%
7	Derwood	529	57	39	625	6%	9%
8	Fairland/White Oak	234	51	16	301	5%	17%
9	Friendship Heights	10	0	2	12	17%	0%
10	Gaithersburg City	2299	250	252	2,801	9%	9%
11	Germantown East	447	56	40	543	7%	10%
12	Germantown Town Center	93	13	14	120	12%	11%
13	Germantown West	1441	166	140	1,747	8%	10%
14	Glenmont	21	3	2	26	8%	12%
15	Grosvenor	43	6	6	55	11%	11%
16	Kensington/Wheaton	280	42	19	341	6%	12%
17	Montgomery Village/Airpark	1471	167	122	1,760	7%	9%
18	North Bethesda	242	30	18	290	6%	10%
19	North Potomac	1077	105	68	1,250	5%	8%
20	Olney	737	102	51	890	6%	11%
21	Potomac	538	55	13	606	2%	9%
22	R & D Village	1017	68	44	1,129	4%	6%
23	Rockville City	1085	117	94	1,296	7%	9%
24	Shady Grove	216	26	36	278	13%	9%
25	Silver Spring CBD	31	6	11	48	23%	13%
26	Silver Spring/Takoma Park	152	19	7	178	4%	11%
27	Twinbrook	18	2	7	27	26%	7%
28	Wheaton CBD	30	3	2	35	6%	9%
29	White Flint	59	9	15	83	18%	11%
30	Rural East	899	106	35	1,040	3%	10%
31	Rural West	673	68	20	761	3%	9%
32	DC Core	4	0	7	11	64%	0%
33	DC non-Core	146	13	47	206	23%	6%
34	Prince George's Co. MD	252	22	40	314	13%	7%
35	Arlington Core VA	5	0	1	6	17%	0%
36	Arlington non-Core VA	61	3	24	88	27%	3%
37	Alexandria Co. VA	23	2	2	27	7%	7%
38	Fairfax Co. VA	261	17	11	289	4%	6%
39	Loudoun Co. VA	124	10	0	134	0%	7%
40	Prince William's Co. VA	13	2	0	15	0%	13%
41	Frederick Co. MD	998	112	57	1,167	5%	10%
42	Carroll Co. MD	79	4	0	83	0%	5%
43	Howard Co. MD	294	24	12	330	4%	7%
44	Anne Arundel Co. MD	23	12	2	37	5%	32%
45	Calvert Co. MD	1	0	1	2	50%	0%
46	St. Mary's MD	0	0	0	-	n/a	n/a
47	Charles Co. MD	0	0	0	-	n/a	n/a
48	Fauquier Co. VA	0	0	0	-	n/a	n/a
49	Stanford Co. VA	0	0	0	-	n/a	n/a
50	Clark & Jefferson Co, WV	20	7	1	28	4%	25%
51	Federicksburg/Spotsylvania VA	0	0	0	-	n/a	n/a
52	King George Co. VA	0	0	0	-	n/a	n/a
53	Externals	1925	271	0	2,196	0%	12%
	<b>From Montgomery County</b>	<b>15,651</b>	<b>2,029</b>	<b>1,434</b>	<b>21,418</b>	<b>7%</b>	<b>9%</b>
	<b>From All Region</b>	<b>19,880</b>	<b>2,300</b>	<b>1,434</b>	<b>23,614</b>	<b>6%</b>	<b>10%</b>

Appendix C-3. Medium Scenario Journey To Work Trips

HBW Person Trips to R & D Village PA		GWMP "Medium" Scenario					
No.	Policy Area 1-31/ Jurisdiction	Auto Driver	Auto Non-Driver	Transit	Total	Transit %	NonDriver %
1	Aspen Hill	834	151	141	1,126	13%	13%
2	Bethesda CBD	118	25	49	192	26%	13%
3	Bethesda/Chevy Chase	604	85	51	740	7%	11%
4	Clarksburg	1901	316	340	2,557	13%	12%
5	Cloverly	225	55	38	318	12%	17%
6	Damascus	662	117	73	852	9%	14%
7	Derwood	1104	137	180	1,421	13%	10%
8	Fairland/White Oak	505	157	114	776	15%	20%
9	Friendship Heights	21	5	12	38	32%	13%
10	Gaithersburg City	4418	597	929	5,944	16%	10%
11	Germantown East	862	134	174	1,170	15%	11%
12	Germantown Town Center	101	16	28	145	19%	11%
13	Germantown West	3018	427	577	4,022	14%	11%
14	Glenmont	53	9	7	69	10%	13%
15	Grosvenor	97	17	21	135	16%	13%
16	Kensington/Wheaton	629	105	90	824	11%	13%
17	Montgomery Village/Airpark	2866	406	493	3,765	13%	11%
18	North Bethesda	507	81	75	663	11%	12%
19	North Potomac	2439	286	323	3,048	11%	9%
20	Olney	1593	274	240	2,107	11%	13%
21	Potomac	1231	149	77	1,457	5%	10%
22	R & D Village	3122	231	308	3,661	8%	6%
23	Rockville City	2213	300	405	2,918	14%	10%
24	Shady Grove	462	71	135	668	20%	11%
25	Silver Spring CBD	81	20	38	139	27%	14%
26	Silver Spring/Takoma Park	339	55	40	434	9%	13%
27	Twinbrook	37	6	15	58	26%	10%
28	Wheaton CBD	72	14	17	103	17%	14%
29	White Flint	116	20	49	185	26%	11%
30	Rural East	1806	268	202	2,276	9%	12%
31	Rural West	1564	202	81	1,847	4%	11%
32	DC Core	9	0	34	43	79%	0%
33	DC non-Core	329	52	178	559	32%	9%
34	Prince George's Co. MD	528	52	201	781	26%	7%
35	Arlington Core VA	6	0	3	9	33%	0%
36	Arlington non-Core VA	140	16	67	223	30%	7%
37	Alexandria Co. VA	65	7	20	92	22%	8%
38	Fairfax Co. VA	680	44	67	791	8%	6%
39	Loudoun Co. VA	282	43	6	331	2%	13%
40	Prince William's Co. VA	22	2	2	26	8%	8%
41	Frederick Co. MD	2363	356	341	3,060	11%	12%
42	Carroll Co. MD	151	23	0	174	0%	13%
43	Howard Co. MD	606	55	84	745	11%	7%
44	Anne Arundel Co. MD	40	26	13	79	16%	33%
45	Calvert Co. MD	2	1	2	5	40%	20%
46	St. Mary's MD	0	0	0	-	n/a	n/a
47	Charles Co. MD	5	1	2	8	25%	13%
48	Fauquier Co. VA	0	0	0	-	n/a	n/a
49	Stanford Co. VA	1	0	0	1	0%	0%
50	Clark & Jefferson Co, WV	38	12	3	53	6%	23%
51	Federicksburg/Spotsylvania VA	0	0	0	-	n/a	n/a
52	King George Co. VA	0	0	0	-	n/a	n/a
53	Externals	3398	499	0	3,897	0%	13%
<b>From Montgomery County</b>		<b>33,600</b>	<b>5,426</b>	<b>6,345</b>	<b>50,638</b>	<b>13%</b>	<b>11%</b>
<b>From All Region</b>		<b>42,265</b>	<b>5,925</b>	<b>6,345</b>	<b>54,535</b>	<b>12%</b>	<b>11%</b>

Appendix C-4. High Scenario Journey To Work Trips

		HBW Person Trips to R&D Village PA			GWMP "High" Scenario		
	Policy Area 1-31/ Jurisdiction	Auto Driver	Auto Non-Driver	Transit	Total	Transit%	Non-Driver %
1	Aspen Hill	901	197	184	1,282	14%	15%
2	Bethesda CBD	131	29	63	223	28%	13%
3	Bethesda/Chevy Chase	688	115	76	879	9%	13%
4	Clarksburg	2071	414	445	2,930	15%	14%
5	Cloverty	240	70	47	357	13%	20%
6	Damascus	721	149	97	967	10%	15%
7	Derwood	1216	185	237	1,638	14%	11%
8	Fairland/White Oak	541	200	152	893	17%	22%
9	Friendship Heights	23	4	14	41	34%	10%
10	Gaithersburg City	4813	784	1221	6,818	18%	11%
11	Germantown East	926	176	228	1,330	17%	13%
12	Germantown Town Center	111	21	38	170	22%	12%
13	Germantown West	3285	561	766	4,612	17%	12%
14	Glenmont	58	10	11	79	14%	13%
15	Grosvenor	109	22	29	160	18%	14%
16	Kensington/Wheaton	691	134	116	941	12%	14%
17	Montgomery Village/Airpark	3112	528	658	4,298	15%	12%
18	North Bethesda	552	101	91	744	12%	14%
19	North Potomac	2478	355	392	3,225	12%	11%
20	Olney	1727	360	321	2,408	13%	15%
21	Potomac	1357	209	109	1,675	7%	12%
22	R & D Village	5847	489	643	6,979	9%	7%
23	Rockville City	2438	395	531	3,364	16%	12%
24	Shady Grove	504	92	171	767	22%	12%
25	Silver Spring CBD	88	23	46	157	29%	15%
26	Silver Spring/Takoma Park	369	73	51	493	10%	15%
27	Twinbrook	39	9	20	68	29%	13%
28	Wheaton CBD	76	18	19	113	17%	16%
29	White Flint	129	25	60	214	28%	12%
30	Rural East	1965	352	270	2,587	10%	14%
31	Rural West	1732	266	116	2,114	5%	13%
32	DC Core	8	0	33	41	80%	0%
33	DC non-Core	355	61	222	638	35%	10%
34	Prince George's Co. MD	549	48	256	853	30%	6%
35	Arlington Core VA	7	0	5	12	42%	0%
36	Arlington non-Core VA	156	12	77	245	31%	5%
37	Alexandria Co. VA	82	8	30	120	25%	7%
38	Fairfax Co. VA	731	90	89	910	10%	10%
39	Loudoun Co. VA	309	46	13	368	4%	13%
40	Prince William's Co. VA	30	8	1	39	3%	21%
41	Frederick Co. MD	2565	422	446	3,433	13%	12%
42	Carroll Co. MD	160	29	0	189	0%	15%
43	Howard Co. MD	672	73	112	857	13%	9%
44	Anne Arundel Co. MD	39	30	18	87	21%	34%
45	Calvert Co. MD	5	1	1	7	14%	14%
46	St. Mary's MD	1	0	1	2	50%	0%
47	Charles Co. MD	4	1	3	8	38%	13%
48	Fauquier Co. VA	0	0	0	-	n/a	n/a
49	Stanford Co. VA	0	0	0	-	n/a	n/a
50	Clark & Jefferson Co, WV	33	19	3	55	5%	35%
51	Federicksburg/Spotsylvania VA	0	0	0	-	n/a	n/a
52	King George Co. VA	0	0	0	-	n/a	n/a
53	Externals	3957	593	0	4,550	0%	13%
<b>From Montgomery County</b>		<b>38,938</b>	<b>7,214</b>	<b>8,532</b>	<b>60,390</b>	<b>14%</b>	<b>12%</b>
<b>From All Region</b>		<b>48,601</b>	<b>7,807</b>	<b>8,532</b>	<b>64,940</b>	<b>13%</b>	<b>12%</b>

## Appendix C-5. Intersection Performance

### Gaithersburg West Master Plan

Comparison of Intersection Performance  
Life Sciences Center Study Area

Intersection	Existing CLV			High Scenario			Planning Board Draft			PHED Committee Alt			
	AM	PM	Max	AM	PM	Max	AM	PM	Max	AM	PM	Max	
84 Shady Grove @ Corporate	1096	1467	0.92	1077	1327	0.83	1028	1288	0.81	971	1165	0.73	
85 Shady Grove @ Research	1074	1089	0.68	1268	1222	0.79	1234	1089	0.77	1209	1041	0.76	
86 Shady Grove @ Key West (MD 28)	1391	1640	1.03	<del>1614</del> 1734	<del>1734</del> 1.08	<del>1717</del> 2044	<del>1717</del> 2044	<del>1717</del> 2044	<del>1717</del> 2044	<del>1537</del> 1828	<del>1828</del> 1.14	<del>1537</del> 1828	<del>1.14</del>
87 Shady Grove @ Medical Center Way	744	868	0.54	808	851	0.53	857	829	0.54	698	714	0.45	
88 Shady Grove @ Darnestown	1098	794	0.69	1270	1117	0.79	1225	1013	0.77	1208	1024	0.76	
134 Darnestown @ Travilah	907	974	0.61	1069	1184	0.74	927	1226	0.77	885	1067	0.67	
368 Great Seneca (MD 119) @ Darnestown	1028	1009	0.64	1607	1292	1.00	1351	1086	0.84	1281	1109	0.80	
369 Great Seneca (MD 119) @ Key West (MD 28)	1227	1114	0.77	<del>1354</del> 1314	<del>1314</del> 0.85	1230	1224	0.77	1305	1075	0.82		
370 Great Seneca (MD 119) @ Muddy Branch	1825	1932	1.21	<del>2039</del> 1808	<del>1808</del> 1.27	<del>1828</del> 1818	<del>1828</del> 1818	<del>1828</del> 1818	<del>1828</del> 1818	<del>1812</del> 1639	<del>1639</del> 1.13	<del>1812</del> 1639	<del>1.13</del>
415 Key West (MD 28) @ Brochar/Diamondback	1563	1195	0.98	1300	1574	0.98	1288	1389	0.87	1191	1440	0.90	
446 Darnestown (MD 28) @ Muddy Branch	1697	1250	1.06	1334	1294	0.83	1161	1051	0.73	1128	1035	0.71	
466 Key West (MD 28) @ Omega/Medical Center	1313	1359	0.85	1461	1534	0.96	1363	1574	0.98	1584	1569	0.99	
479 Key West (MD 28) @ Darnestown (MD 28)	1085	1058	0.68	1525	1147	0.95	1233	1145	0.77	1015	1081	0.68	
567 Fields @ Washingtonian	455	747	0.47	482	776	0.49	499	697	0.44	633	864	0.54	
568 Fields @ Rio	440	1029	0.64	649	611	0.41	793	813	0.51	747	1181	0.74	
569 Sarn Eig @ Fields	1271	1297	0.81	<del>1447</del> 1428	<del>1428</del> 0.90	<del>1501</del> 1567	<del>1501</del> 1567	<del>1501</del> 1567	<del>1501</del> 1567	<del>1624</del> 1679	<del>1679</del> 1.05	<del>1624</del> 1679	<del>1.05</del>
570 Sarn Eig @ Diamondback	1649	1334	1.03	<del>1699</del> 1652	<del>1652</del> 1.06	<del>1787</del> 1634	<del>1787</del> 1634	<del>1787</del> 1634	<del>1787</del> 1634	<del>1470</del> 1572	<del>1572</del> 0.98	<del>1470</del> 1572	<del>0.98</del>
572 Great Seneca (MD 119) @ Sarn Eig	1436	1943	1.21	<del>1662</del> 1614	<del>1614</del> 1.13	<del>1662</del> 1666	<del>1662</del> 1666	<del>1662</del> 1666	<del>1662</del> 1666	<del>1822</del> 1848	<del>1848</del> 1.03	<del>1822</del> 1848	<del>1.03</del>
700 Key West @ Gude	942	1304	0.82	1133	1191	0.74	1009	1280	0.80	1477	1163	0.92	
901 Great Seneca (MD 901) @ Decoverly				1524	1438	0.95	1221	1387	0.87	1280	1402	0.88	
902 Key West (MD 28) @ JHU Access				1213	1622	1.01	1145	1202	0.75	1064	983	0.67	
903 Great Seneca (MD 119) @ Medical Center				1086	1370	0.86	990	1017	0.64	889	1160	0.73	
904 Shady Grove @ Blackwell				1106	1207	0.75	1214	1315	0.82	1157	1202	0.75	
905 Key West (MD 28) @ PSTA Access				1430	1230	0.89	1195	1007	0.75	1194	951	0.75	
906 Diamondback @ Decoverly				1023	1091	0.68	951	1115	0.70	913	1059	0.66	
907 Muddy Branch @ JHU Access				971	1092	0.68	832	988	0.62	858	1071	0.67	
908 Great Seneca (MD 119) @ Blackwell				1052	1080	0.68	1011	886	0.63	935	829	0.58	
999 West Gude @ Research				1368	1447	0.90	1484	1563	0.98	1507	1651	1.03	

~~Shaded cells indicate intersection performance~~  
BOLD text indicates V/C ratio > 1.0 for CLV Standard = 1600

Intersections listed in order of intersection number

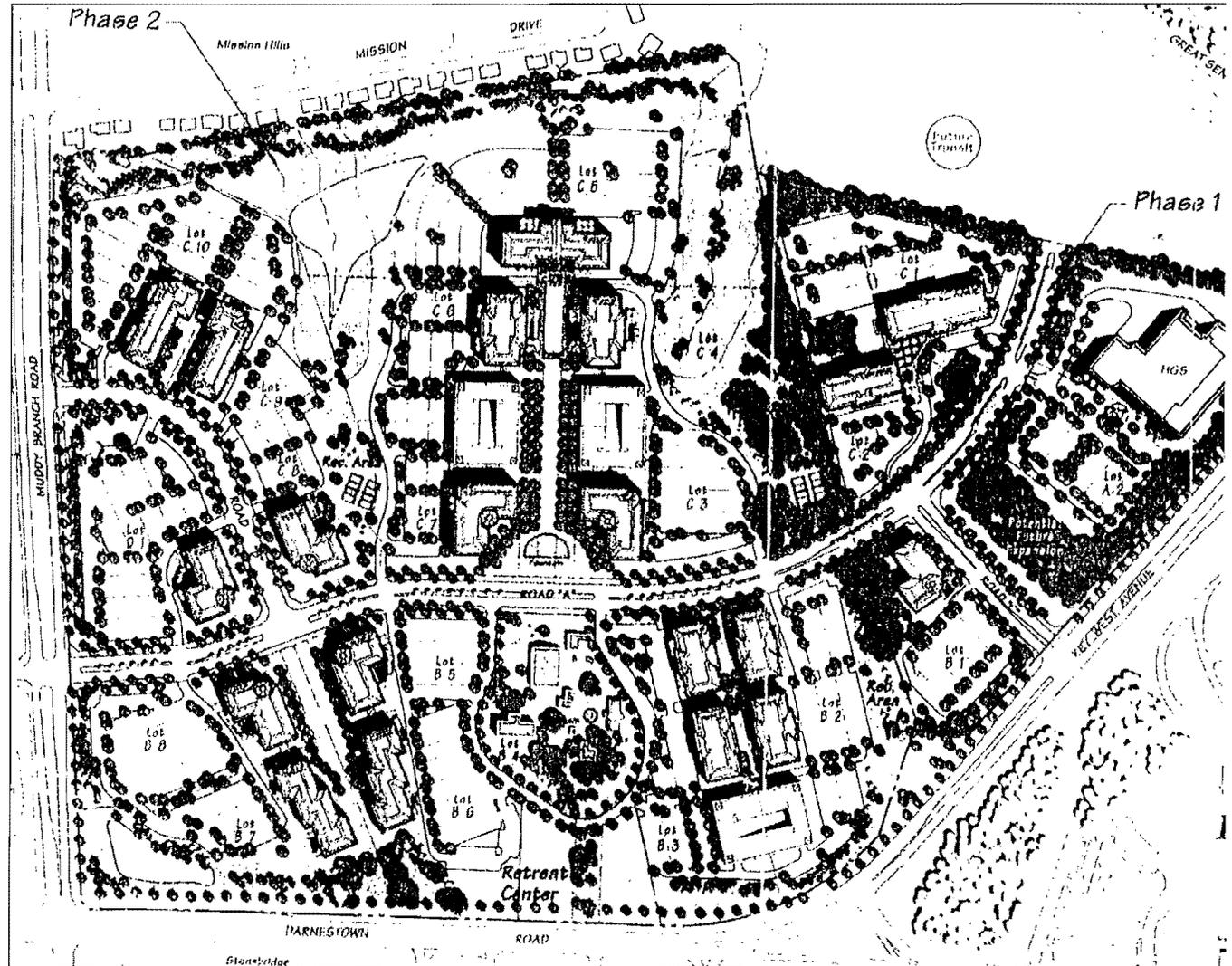
# Gaithersburg West Master Plan

1996 Approved Preliminary Plan for Belward Research Campus

1996 Preliminary Plan  
Approved for 1.8  
million SF (.3 FAR)

Zoning maximum  
was 3 million SF  
(.5 FAR)

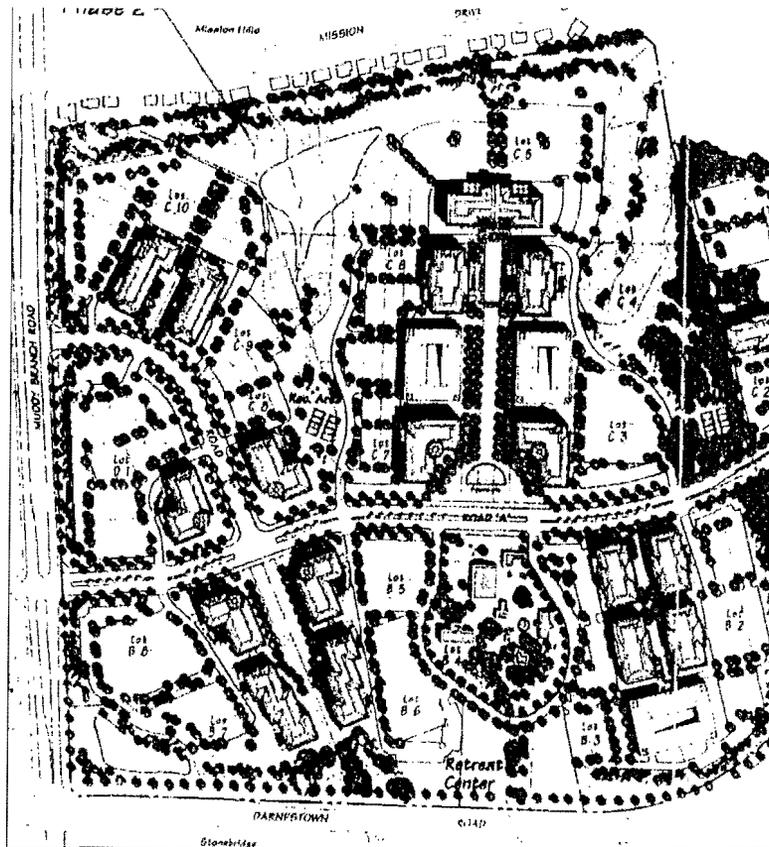
APF Requirements  
included turn lanes on  
WB 28 at MB  
NB SG at 28  
NB & SB at MB & GS  
WB Key West Lane



# Gaithersburg West Master Plan

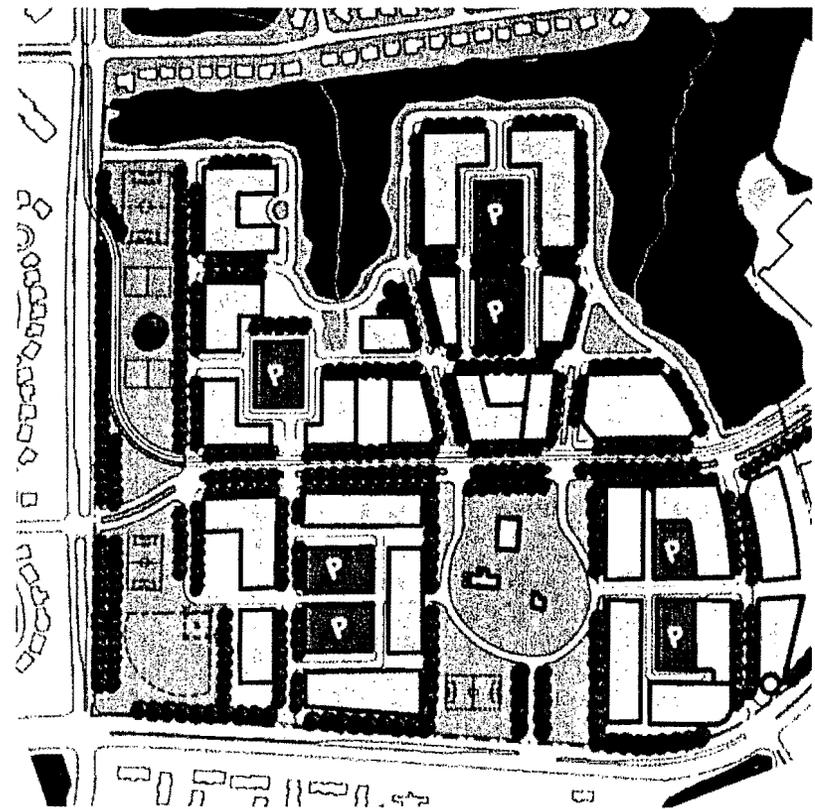
## LSC Belward

1996 Approved Preliminary Plan



M-NCPPC

2009 Proposed Master Plan



M-NCPPC



**Maryland Department of Transportation**  
The Secretary's Office

October 22, 2009

**Martin O'Malley**  
Governor

**Anthony G. Brown**  
Lt. Governor

**Beverley K. Swaim-Staley**  
Secretary

**Harold M. Bartlett**  
Deputy Secretary

The Honorable Phil Andrews  
President, Montgomery County Council  
100 Maryland Avenue  
Rockville MD 20850

Dear Council President Andrews:

The Maryland Transit Administration (MTA) was requested by the Maryland-National Capital Park and Planning Commission and the City of Gaithersburg to analyze several alignment alternatives to the Corridor Cities Transitway (CCT) that is currently undergoing study as part of the I-270/US 15 Multi-Modal Corridor Study Alternatives Analysis/Environmental Assessment. These alignment alternatives include shifts to service the Life Sciences Center (LSC) in the Gaithersburg West Master Plan area of Montgomery County and the Crown Farm within the City of Gaithersburg. Preliminary results of our study are now available. Because we understand the findings may be relevant to your consideration of the proposed Gaithersburg West Master Plan we are pleased to provide the following for your consideration.

The major assumptions made for this analysis are as follows:

- 7.2A Socioeconomic forecast;
- Capital costs in 2007 dollars;
- Proposed stations at LSC Central, LSC West and LSC Belward only (no DANAC station); and,
- Regional model used in this analysis is the same that was used for the Alternatives Analysis/ Environmental Assessment (May 2009).

It is important to note that these assumptions may change as further analysis of the CCT is conducted in the context of obtaining federal environmental and funding approvals.

The MTA found that both the LSC and Crown Farm re-alignments have a strongly positive impact on the CCT's ridership and cost effectiveness. Using the same methodology used on the currently approved Master Plan alignment in the I-270/US 15 study, estimated increases in daily guideway boardings range from approximately 15 to 40 percent.

My telephone number is \_\_\_\_\_  
Toll Free Number 1-888-713-1414 TTY Users Call Via MD Relay  
7201 Corporate Center Drive, Hanover, Maryland 21076

52

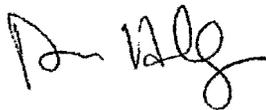
The Honorable Phil Andrews  
Page Two

While capital costs increased approximately 11 to 16 percent reflecting the increase in distance of these alignments over the current Master Plan alignment, this is more than offset by increases in ridership and transportation system user benefits which result in a strongly positive impact on the project's cost effectiveness. As you may know, cost effectiveness is a critical aspect of the project's competitiveness for federal funds. In particular, with the alignment shifts and proposed land uses we see a significant improvement in the overall cost effectiveness rating of the alternatives. This is in contrast to the current master plan where, generally speaking, we would likely see a lower overall cost effectiveness rating by the Federal Transit Administration thereby precluding some options.

Timely approval of the Gaithersburg West Master Plan, as proposed by the Planning Board, will allow MTA to initiate the process of seeking federal approval for the modified alignment, and thereby maintain the current schedule for the CCT.

Thank you for your continued support of the CCT and other transit initiatives in Montgomery County. If you have any questions regarding these preliminary results, do not hesitate to contact me at 410-865-1275, toll-free at 888-713-1414 or via email at [dhalligan@mdot.state.md.us](mailto:dhalligan@mdot.state.md.us).

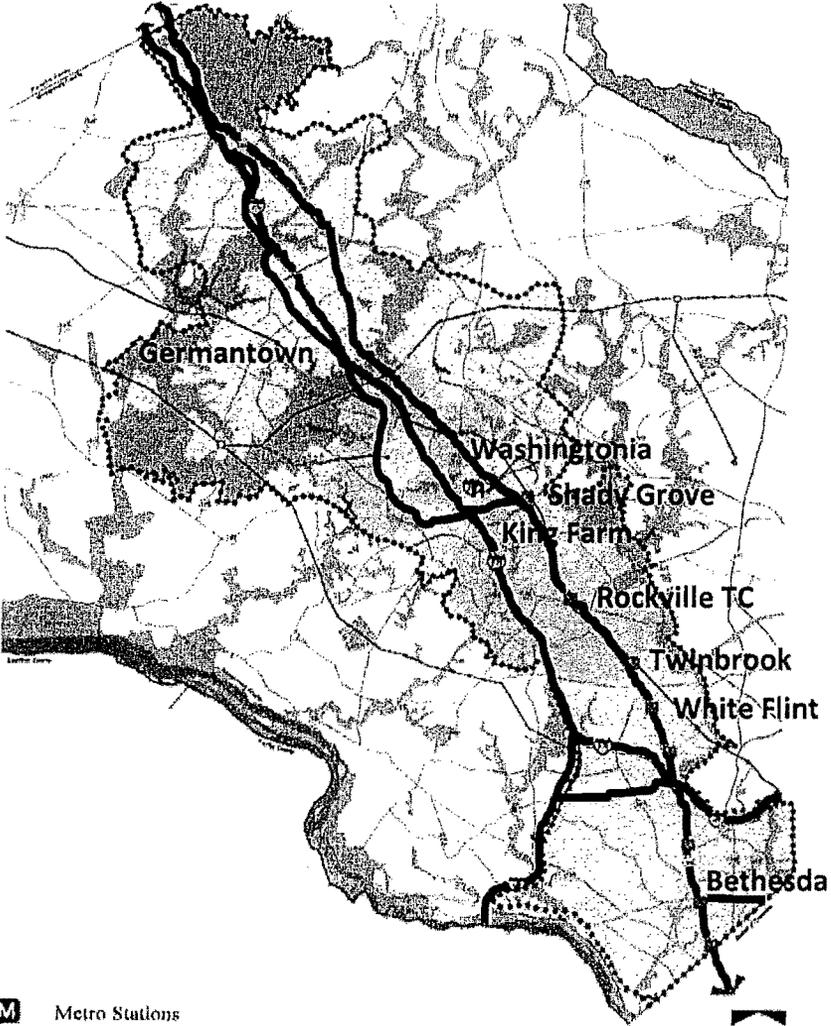
Sincerely,



Donald A. Halligan, Director  
Office of Planning and Capital Programming

cc: Mr. Harold Bartlett, Deputy Secretary, Maryland Department of Transportation  
The Honorable Isiah Leggett, Montgomery County Executive  
Mr. Rick Kiegel, Corridor Cities Transitway Project Manager, Office of Planning,  
Maryland Transit Administration  
Ms. Diane Ratcliff, Director, Office of Planning, Maryland Transit Administration  
Ms. Beverley Swaim-Staley, Secretary, Maryland Department of Transportation

# Comparison of Place



Rosslyn	10.0 FAR
Ballston	4.0 - 6.0 FAR
Bethesda	4.0 - 5.0 FAR*
Clarendon	4.0 FAR
Rockville TC	2.5 FAR
Reston TC	2.0 FAR
Carlyle	2.0 FAR
Twinbrook	1.9 FAR*
Shady Grove	1.5-2.0 FAR*
Germantown	1.0-2.0 FAR*
King Farm	0.4 FAR

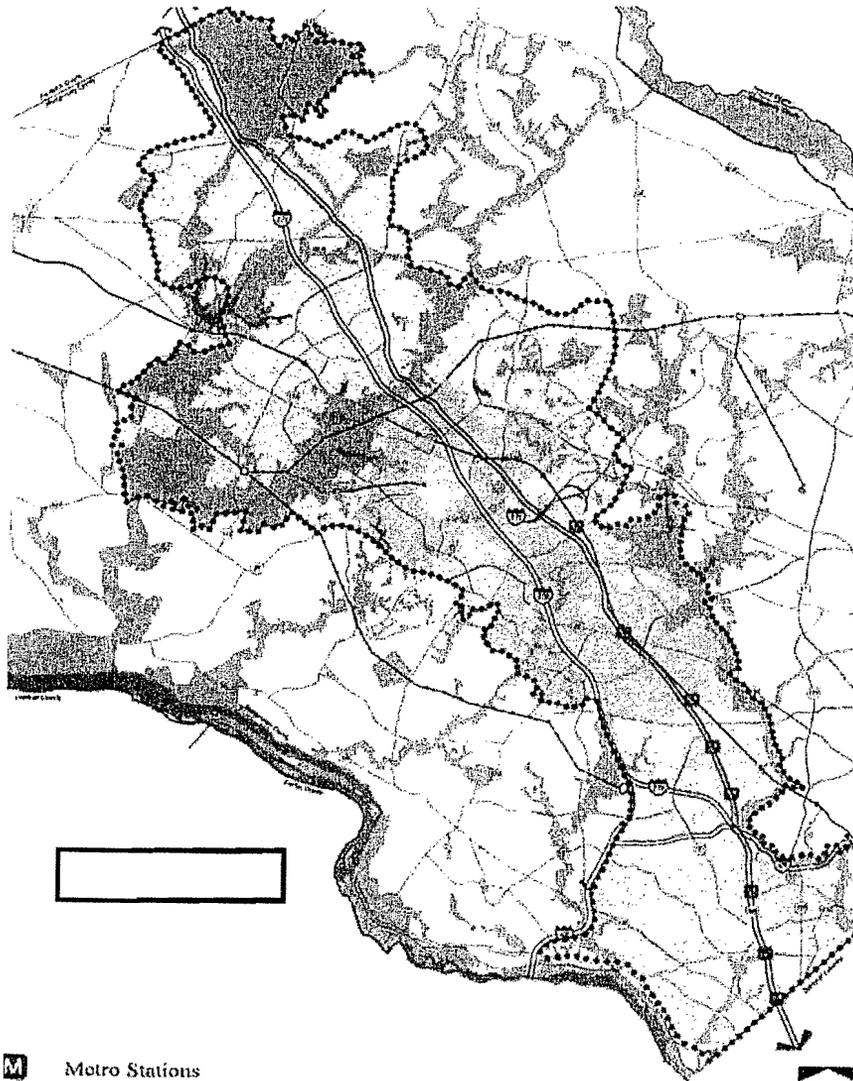
\* Not including any density bonus (e.g. 30 percent) for MPDUs or Workforce housing)

54

- M** Metro Stations
- Municipalities
- Project Area Boundary



# Gaithersburg West Master Plan Implementation



## I-270 Mixed-Use Transit Stations

### FAR

#### Germantown CCT Stations:

▪ Dorsey Mill	1.0
▪ Manekin	1.0
▪ Cloverleaf	1.0
▪ Town Center	2.0

#### Gaithersburg CCT Stations:

▪ LSC Central	1.0-1.5
▪ LSC (PSTA)	1.0
▪ LSC Belward	1.0

Shady Grove Metro Station 2.0

Rockville Town Center 2.5

Twinbrook Metro Station 2.0

White Flint Metro Station 4.0

Bethesda CBD 4.0 - 5.0

Friendship Heights CBD 3.0 - 4.0

# Revisions

Prepared by Planning Department Staff

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## 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.

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## Public Open Spaces

A comprehensive system of public open spaces for collaboration, recreation, and other community activities will preserve important resources including streams, forests, and historic properties. This open space system will also provide the setbacks and green spaces that contribute to compatibility with the adjacent neighborhoods.

- Public open spaces at each CCT station
- Stream valley parks
- Transitional green areas

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## Community Facilities and Amenities, 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 is under consideration.

(56)

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*.

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 library could be funded through private sector development contributions to an amenity fund. The Plan recommends Belward or the JHU-MCC site in LSC Central for a specialized library.

## **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, publically 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).**

## **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 the map on page 26). 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. CCT stations along the Loop include the Crown Farm, Belward, and LSC West. From the Loop, paths will connect with other destinations and activities in the area, including Falls Grove 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 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.
- **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.**

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### **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.

58

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 publically-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 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), and 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 that the Plan envisions 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, Transition) 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 (B-5 on the LSC Circulation Map) 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.

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**

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**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 to 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.**

## 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: 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
- **Building heights along Darnestown Road should be limited to 50 feet. The building height for the RT-8 property is a maximum of 35 feet.**
- 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

#### 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

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### 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 ~~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.**

**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 around the historic area (60 feet maximum). 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**) to be sensitive to the historic resource. Views of the farmstead from Darnestown Road, as well as other vantage points within Belward

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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 buffers around the edges of Belward provides compatible transitions and buffers for the adjacent single-family neighborhoods are critical. 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. 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 width of 300 feet along Muddy Branch Road) for active and passive recreation, including informal and organized playing fields, and tree-lined edges at the perimeter. The landmark tree in this area should be a focal point in the design of the park and open space. 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-foot wide) along Darnestown Road that maintains vistas to the historic farmstead, includes the landmark sign, and creates a tree-lined pedestrian path that connects to the on-site path system as well as the LSC Loop. 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, as well as other vantage points within the site, should be preserved. 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.

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 XX Map, 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.**

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.

## **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 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, creation of a local street network and the LSC Loop, neighborhood buffers, **and connections.**
- Maintain Belward as an open campus development
- Provide a network of active and passive open spaces

### **Historic Belward Farm**

- Preserve views of the farmstead from Darnestown Road, looking north, east, and west as well as other vantage points within the larger Belward 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

### **Urban Form and Open Spaces**

- Engage residents throughout all phases of the Belward development review process to provide input on issues such as connectivity, plans for open space, and other amenities.
- Concentrate the highest density and building heights (150 feet) near the CCT station
- Organize the significant roads 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
  - - Urban promenade connecting buildings and public spaces.
- Provide at least ~~15~~ **20** percent of the net tract areas as public use space

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- Create a ~~300-foot buffer~~ park along Muddy Branch Road and a 60-foot landscaped buffer along Darnestown Road
- Provide two rectangular fields for active recreation in these buffer areas, 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** ~~around~~ the two tributaries of the Muddy Branch

### **LSC South: Mixed-Use Center**

This 245-acre district south of Darnestown Road includes the Trville 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 Trville 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.

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 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 on the east side 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

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## 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.

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, including parking underneath buildings (ground-level).**

**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.

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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.

### **Recommendations**

- 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.
- Maintain the R&D Zone on the Rickman site, but recommend rezoning to PD-22 by a Local Map Amendment to encourage residential development.
  - **Minimize impacts to the SPA by orienting buildings and parking nearer Travilah Road, outside the SPA boundary**
  - **Ensure proper sediment control during construction**
  - **Consider parking underneath buildings (ground-level) for multi-family units, 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**

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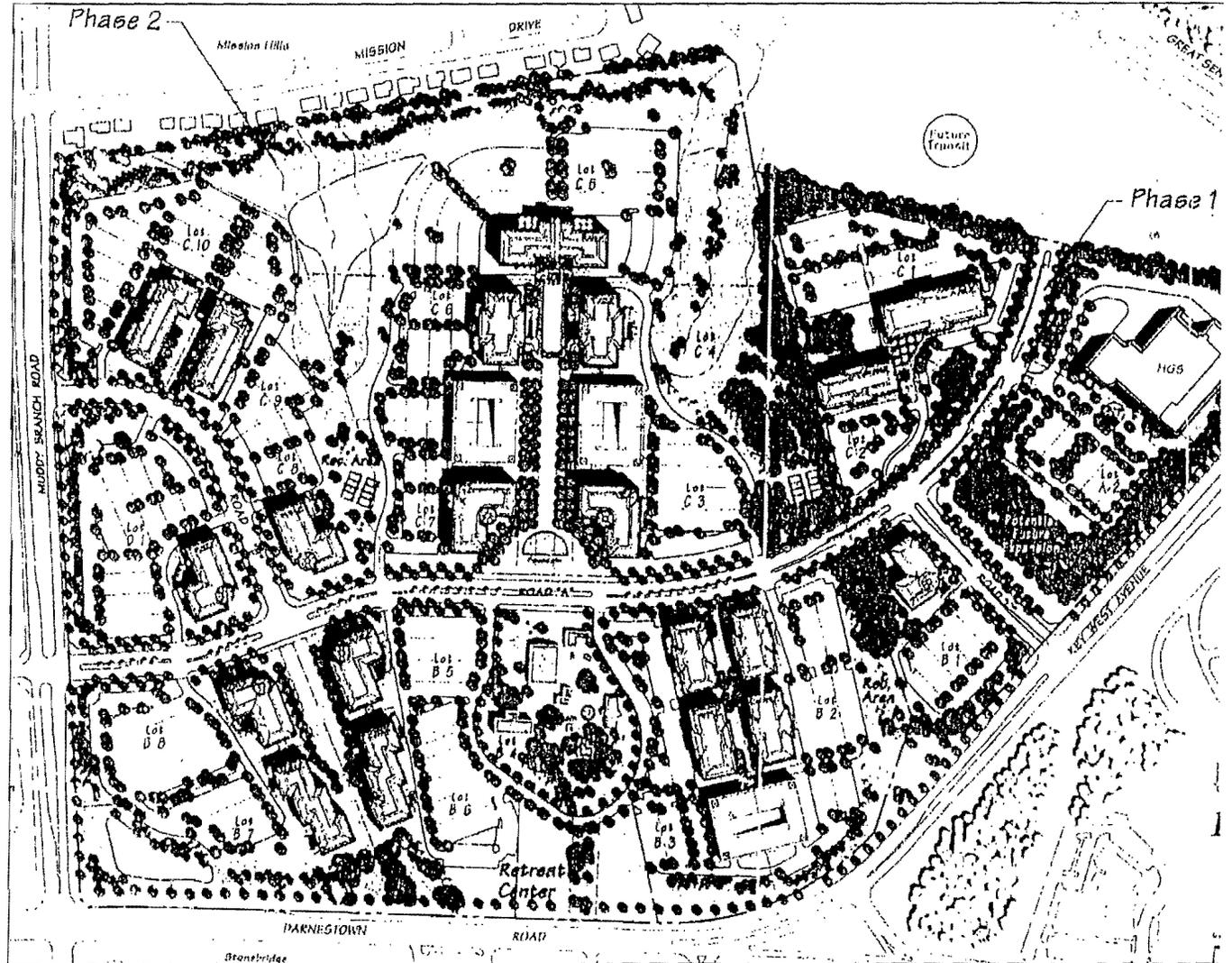
# Gaithersburg West Master Plan

1996 Approved Preliminary Plan for Belward Research Campus

1996 Preliminary Plan  
Approved for 1.8  
million SF (.3 FAR)

Zoning maximum  
was 3 million SF  
(.5 FAR)

APF Requirements  
included turn lanes on  
WB 28 at MB  
NB SG at 28  
NB & SB at MB & GS  
WB Key West Lane

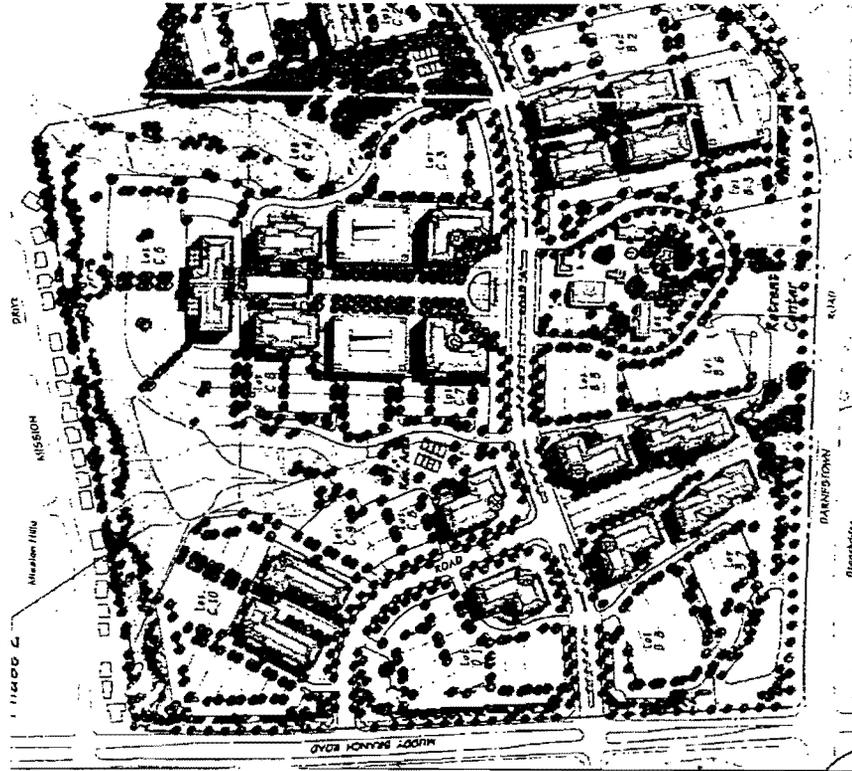


67 M-NCPPC

# Gaithersburg West Master Plan

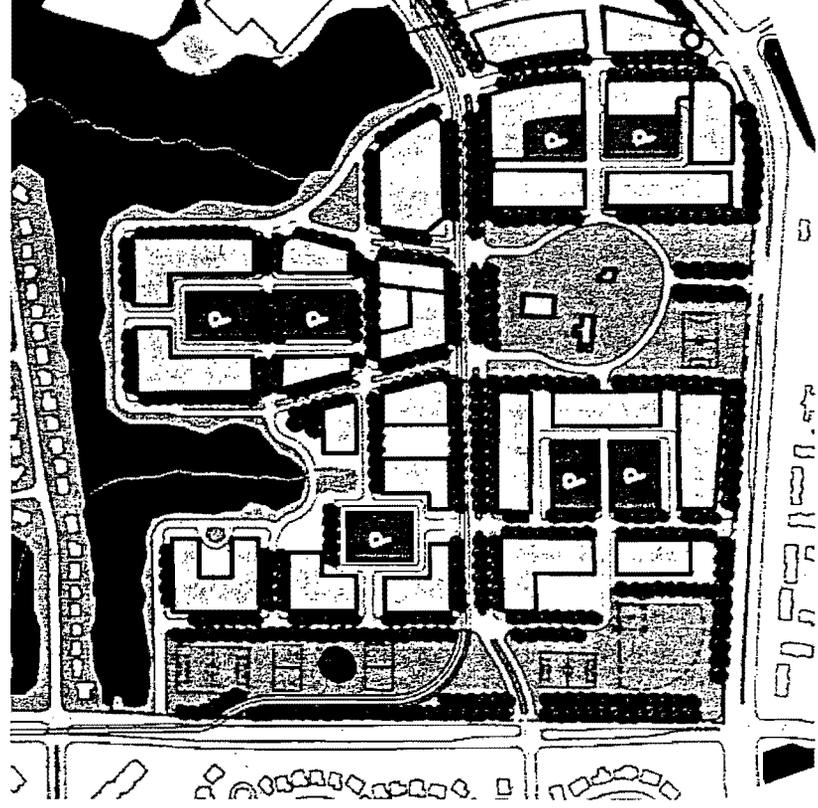
## LSC Belward

1996 Approved Preliminary Plan



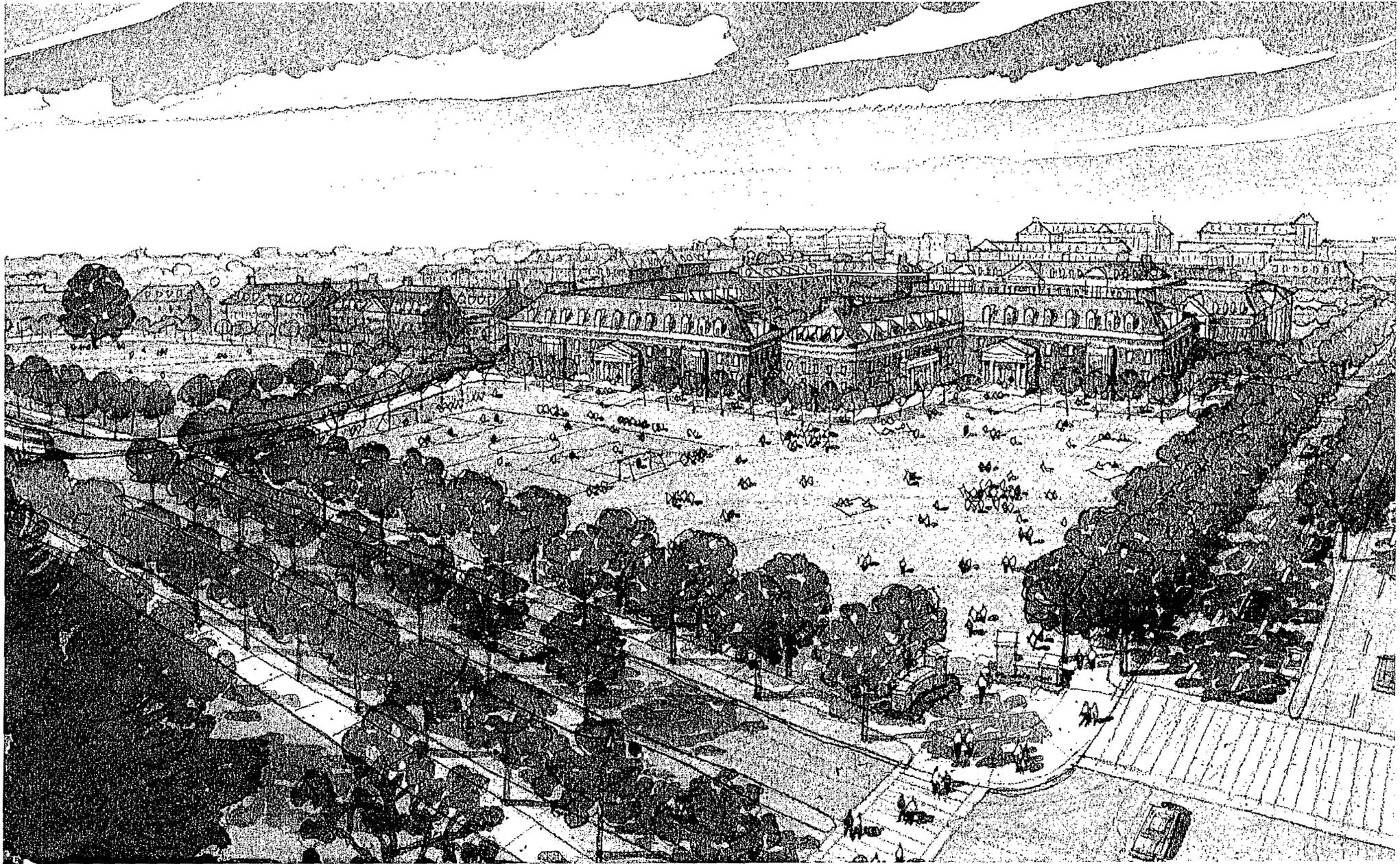
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2009 Proposed Master Plan

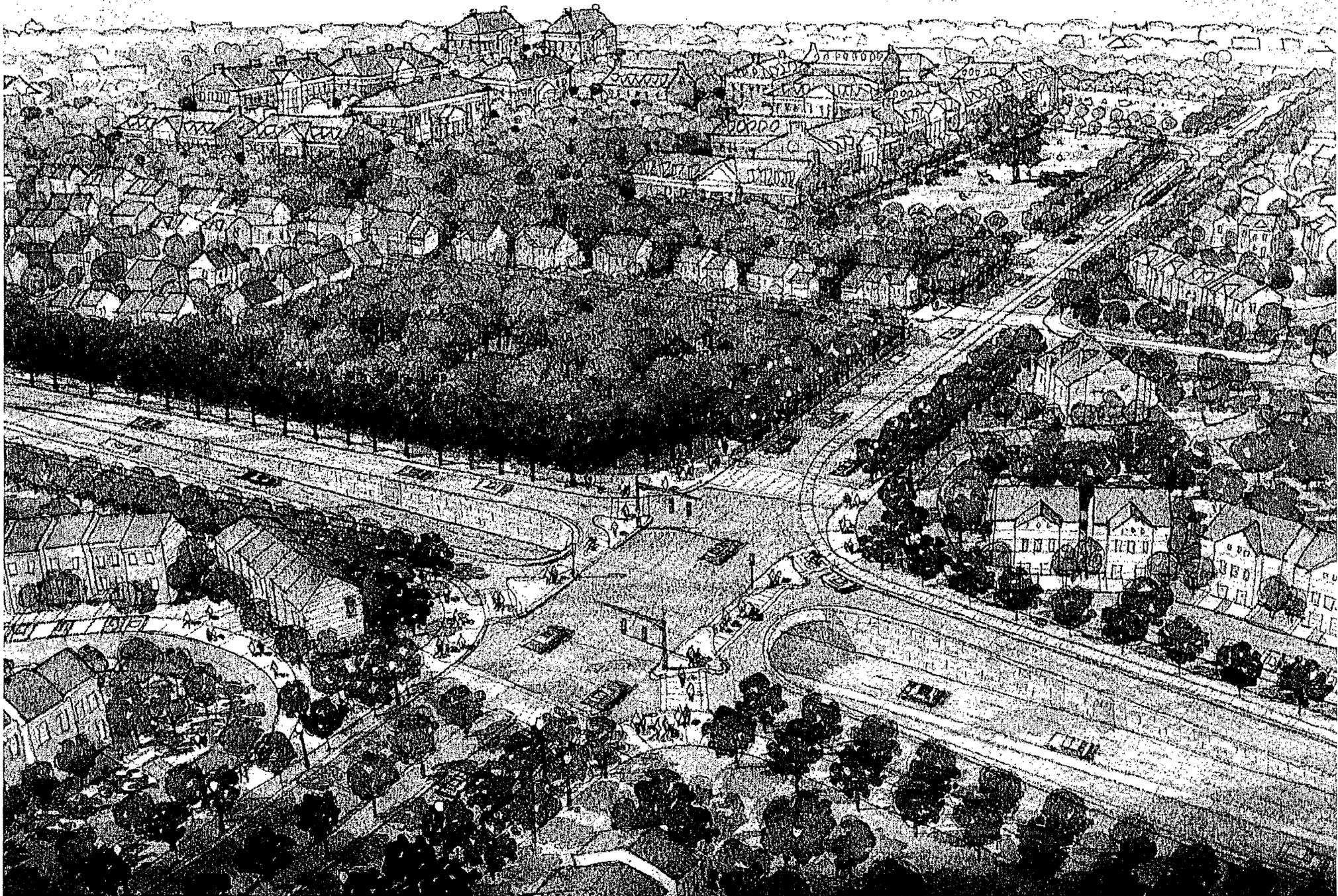


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John's Hopkins University Belward Research Campus  
Preferred Design Concept February 2010



Potential Intersection at Muddy Branch Road and Great Seneca Highway  
Design Concept March 2010

**MEMORANDUM OF UNDERSTANDING BETWEEN JOHNS HOPKINS UNIVERSITY  
AND MONTGOMERY COUNTY, MARYLAND FOR THE ADVANCEMENT OF THE  
BIOSCIENCES INDUSTRY, HIGHER EDUCATION AND WORKFORCE  
DEVELOPMENT**

THIS NON-BINDING MEMORANDUM OF UNDERSTANDING is entered into this 24th day of February, 2010 between Johns Hopkins University ("JHU") and Montgomery County, Maryland ("County") (collectively, the "Parties") for the purposes of reflecting the Parties' shared objectives and vision of advancing the biosciences industry, higher education and workforce development within the County and for forging long-lasting collaborative relationships among private industry, public and private higher educational institutions and government interests involved with the biosciences industry.

**BACKGROUND**

WHEREAS, the County is home to many assets including a diverse, multi-national population of approximately one million people; a highly educated workforce; a nationally acclaimed public school system; and a thriving biosciences community including private companies, non-profits, federal installations, Montgomery College; JHU and the Universities at Shady Grove.

WHEREAS, JHU is an internationally-respected private research university with educational programs and partnerships that bridge all levels of the biosciences community and which, for more than a century, has had as its over-riding mission "the encouragement of research ... and the advancement of individual scholars, who by their excellence will advance the sciences they pursue, and the society where they dwell."

WHEREAS, the County has a longstanding commitment to the advancement of biosciences and higher education within the County with its creation of the Shady Grove Life Sciences Center, creation and support of research company incubators, and donation of land to JHU for its Montgomery County Campus ("MCC") and to the University System of Maryland for its Universities at Shady Grove.

WHEREAS, the Parties recognize that biosciences research and development provides great opportunities for world health and welfare and contributes significantly to the economy with the creation of higher paying jobs.

WHEREAS, the Parties recognize that Belward, MCC, and the Gaithersburg West Master Plan area as a whole have great potential to be a center of excellence for research and development.

WHEREAS, the Parties recognize that federal assets create opportunities for federal collaboration with higher education and private interests within the County including Gaithersburg West area, East County and Germantown, as well as other areas and desire to promote and create opportunities for greater collaboration.

WHEREAS, the Parties recognize that healthy biosciences development within Montgomery County contributes significantly to healthy biosciences development within the State and that JHU can facilitate collaboration between activities in Montgomery County, Baltimore City and other areas.

WHEREAS, the Parties recognize that in addition to their own growth potential for partnerships, programs and activities there are untapped opportunities through collaboration and growth of the assets and resources within the County that the Parties desire to facilitate, foster and create.

WHEREAS, the Parties desire to create links and synergies among assets within the County including academic institutions, private research companies, private development, venture capital firms, federal laboratories and administrative offices, medical services delivery, and non-profit research organizations with the objective of becoming a leading example in the world for development and delivery of services and products for global health and welfare.

WHEREAS, the National Institutes of Health, with the support of Congress, emphasize translating laboratory discoveries into treatments for patients. The Parties recognize that these discoveries should be extended beyond treatments for individual patients toward improved health for whole populations. This involves a two step process of "bench to bedside to population". This second stage is achieved by mobilizing basic, clinical, and population scientists to discover and teach how to: prevent disease through healthy living; diagnose and treat disease early; use novel biologic and medical information to improve the quality and reduce the costs of maintaining health and treating disease; and organize globally competitive health systems. Working together, scientists and entrepreneurs can achieve the goal of commercializing these discoveries.

WHEREAS, JHU seeks to expand its translational science programs, research, development, partnerships and relationships, building upon strengths in basic biological and clinical research. Collaborations with other academic institutions, federal labs, and private research companies in MC and around the region will advance JHU towards this goal.

WHEREAS, the parties' shared vision is to create an international center of discovery and education in biomedical translational science with the ultimate goal of advancing local, national and global population health.

WHEREAS, Montgomery County as home to the NIH, FDA, NIST, strong biotechnology and information science companies, a strong network of local hospitals for expanding clinical research including Suburban, Adventist, Holy Cross, and Montgomery General Hospitals, a leading county Department of Health and Human Services, and a highly educated, diverse and outward looking population, is in a unique position to create an environment in which the essential ingredients to producing healthy populations can be discovered and commercialized.

WHEREAS, Parties' intent is that certain locations including Belward and MCC develop into a scientific and commercial engine with a balanced mix of: education; academic, private and federal research and development.

WHEREAS, the parties recognize that the most fertile environments for life sciences education, research, and business development are in communities in which researchers, employees, students and residents can live, work, learn, shop and enjoy recreation opportunities and that mass transit is an important element of creating such a community.

WHEREAS, Montgomery County is currently considering the Gaithersburg West Master Plan with a proposed density of between 18 -- 20 Million sf of commercial development which has as its core objective the advancement of life sciences activities within Montgomery County and the linkage of academic, private and federal research and development. The draft Master Plan includes up to 9000 dwelling units, and proposes an alignment for the Corridor Cities Transitway that optimizes ridership and serves proposed centers of life sciences and supporting development with the objective of creating an innovation community (collectively, the "Plan").

NOW THEREFORE, the Parties desire to collaborate to create within Montgomery County such a community and therefore are entering into this Memorandum of Understanding to reflect their mutual understandings.

1. Mutual Goals and Commitments

- a. JHU shares with the County the vision for development of Belward and MCC to create a balanced mix of education with research and development.
- b. JHU will, at a minimum, annually identify target areas of academic research in biomedical translational science with the ultimate goal of advancing local, national, and global health. These targeted areas of research will provide a framework for the types of organizations that JHU will seek to attract to locate at Belward and MCC.

- c. The County will include in its economic development strategy efforts to identify and attract companies and organizations that will complement areas of academic vision that JHU will pursue.
- d. The County will develop an economic development strategy to attract complementary activities to JHU's areas of academic research and partnerships located at Belward and MCC with the intent that the parties will collaboratively create a nucleus of world-renowned life sciences activity.

## 2. Collaboration and Communication

- a. The parties intend that the MOU be the beginning of greater collaboration and communication and therefore agree to the following:
  - i. The Parties will hold semi-annual meetings at Belward or MCC among the JHU President, JHU Provost, JHU CFO and the County Executive, Council President and Director of the Department of Economic Development.
  - ii. The parties believe that their respective interests will benefit from cross representation and therefore agree as follows:
    - 1. the County will appoint a senior JHU management official (to be designated by the JHU President) to be on the life sciences implementation body that the County is creating;
    - 2. JHU will appoint the County Executive (or designee) to a strategic Hopkins Committee such as the Oversight Committee for the Institute for Clinical and Translational Research (ICTR) that is relevant to the vision for Belward and MCC.
- b. The parties will by February 28 of each calendar year provide each other with the following reports for the preceding calendar year –
  - 1. The County will provide an annual report to JHU on the life sciences companies located in the County
  - 2. JHU will provide an annual report on programs, partnerships, and courses at Belward and MCC for the previous year and plans for the following year.

## 3. Miscellaneous

- a. Plan Implementation – The parties believe that the Plan provides the framework for a thriving life sciences community. JHU recognizes and acknowledges the County's commitment and support for life sciences activities and to JHUs presence at MCC. JHU agrees that the Plan provides a suitable framework to

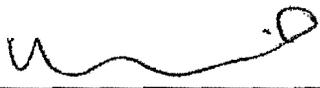
achieve the vision for Belward and MCC and agrees that it will use its best efforts to develop MCC and Belward in accordance with the Plan.

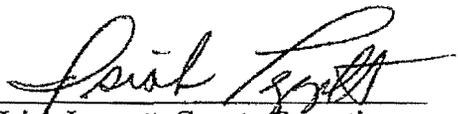
- b. CCT – The Parties will cooperate to advance and achieve the federal and state funding and development of the CCT as expeditiously as is feasible.

IN WITNESS WHEREOF, the Parties have entered into this Memorandum of Understanding on this 24th day of February, 2010.

JOHNS HOPKINS UNIVERSITY

MONTGOMERY COUNTY, MARYLAND

By:   
\_\_\_\_\_  
Ronald J. Daniels, President

  
\_\_\_\_\_  
Isiah Leggett, County Executive

\_\_\_\_\_  
Lloyd Minor, Provost

\_\_\_\_\_  
James T. McGill  
Senior Vice President for Finance and Administration

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achieve the vision for Belward and MCC and agrees that it will use its best efforts to develop MCC and Belward in accordance with the Plan.

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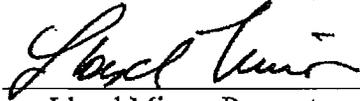
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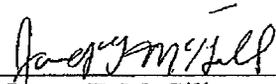
JOHNS HOPKINS UNIVERSITY

MONTGOMERY COUNTY, MARYLAND

By: \_\_\_\_\_  
Ronald J. Daniels, President

\_\_\_\_\_  
Isiah Leggett, County Executive

  
\_\_\_\_\_  
Lloyd Minor, Provost

  
\_\_\_\_\_  
James T. McGill  
Senior Vice President for Finance and Administration



March 31, 2010

## MEMORANDUM

TO: Marlene Michaelson  
County Council Staff

FROM: Nancy Sturgeon, Vision Division  
Mary Dolan, Green Division  
Steve Findley, Green Division  
Montgomery County Planning Department

SUBJECT: Sustainability in Gaithersburg West Master Plan

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This memo is in response to your request to explain the sustainable elements of the Gaithersburg West Master Plan, and to provide additional information for the Plan document (attached).

### **A Sustainable Master Plan**

The compact, walkable, transit-served community proposed for **the Plan area accommodates new homes and employment in a sustainable way.**

Redevelopment of the suburban pattern of sprawling buildings with large surface parking lots will give opportunities to accommodate significant development without further disturbance of natural resources, and in some instances, improve conditions. In the case of new development on vacant properties, impacts will be minimized and environmental enhancements incorporated where appropriate.

The General Plan focuses development around transportation corridors and in an urban ring close to Washington, D.C. The remainder of the County is to be protected in rural and suburban wedges and an Agriculture and Open Space area, primarily in the northern and western parts of the County. So far, the County has been very successful in protecting these large green expanses that provide many environmental benefits to the County and to the Washington D.C. region.

The environmental recommendations for the Master Plan are designed to accommodate the projected growth in the most environmentally sustainable way. The Master Plan identifies likely environmental impacts and **makes**

**recommendations for avoiding and minimizing impacts, and enhancing environmental resources** as development plans are formulated. These recommendations are intended to make certain that development occurs in a way that creates a community that is **more environmentally sustainable in the future**. While certain environmental impacts, such as carbon emissions, will be higher for the Plan area than for the surrounding neighborhoods, **per capita emissions should be lower**, resulting in reduced emissions Countywide. **Stormwater runoff will likely improve** as Environmental Site Design is incorporated into redeveloped sites. While many properties have stormwater management, most of the facilities were built more than 20 years ago with less stringent standards for pollutant removal than will be required under new regulations.

**Urban/Rural Comparisons**

In the Plan area, Montgomery County is making its General Plan a reality. The draft Master Plan proposes to accommodate a growing population in an area that is already largely developed, adjacent to existing transportation corridors and slated for a significant new public transit system. Instead of opening the rural and agricultural areas of the County to new low density development, existing buildings and surface parking lots are to be redeveloped, saving hundreds of acres of fields and forests, avoiding habitat loss and degradation, and reducing impacts associated with new roads, sewer and water lines, and other infrastructure needed to support development. Redevelopment makes more efficient use of land that has already been developed so that other, undisturbed portions of the County can be spared. The fact remains that there is no other area of the County with better projected transit access that can accommodate this amount of additional development. We will need this amount of area plus that programmed in recent plans for Twinbrook, White Flint, and Germantown to reduce pressure on the Agricultural Reserve in the future.

**If the same amount of jobs and homes were accommodated in low density greenfield development elsewhere in the County, it is likely that much more imperviousness would be created.** For example, approximately 100 acres of new imperviousness in the Master Plan area would be created for up to the 4500 homes and 8.1 million square feet of commercial (the difference between the 1990 Plan and the proposed Plan). Just taking the residential component alone, an equal amount of homes would consume much more land and create much more imperviousness. The commercial uses would add considerably more.

	Homes	Total Acres (min.)	Impervious Acres(est.)
½ acre lots	4500	2250	550
6000 sq ft lots	4500	620	160

( 78 )

### The Belward Site

The JHU Belward site exhibits the most difference when comparing the 1990 Plan (and the 1996 approved preliminary plan) and the new Master Plan. This property, encompassing about 107 acres, is “green field” development, as opposed to the redevelopment proposed in most of the rest of the Plan area. Development of this property will have the greatest environmental impacts, particularly in terms of adding impervious surfaces and reducing infiltration and groundwater recharge opportunities. It also has the greatest potential for avoiding, minimizing and mitigating impacts, because it contains areas of forest and vegetated stream buffers, and has not already had the soil layer sealed off by pavement.

The JHU Belward site already has an approved site plan for development of the property. This plan was approved in 1996, and features a traditional “office park” pattern typical of existing development in the Life Sciences Center that spreads impacts out across the site and creates large areas of surface parking. A new concept plan for Belward uses a compact, walkable, transit-served campus. The table below indicates the differences between development under the approved site plan and development projected in the new Master Plan.

Element	Approved Site Plan	Proposed Development
Parking footprint	33 acres	6 acres
Percent Imperviousness	72%	54%
Green Space	18 acres	34 acres
Protected Stream Buffers	12 acres	15 acres
Percent Green space	28%	46%

The new concept represents a substantial improvement over the existing plan when considering environmental impacts.

### Subwatershed Analysis

If the impact by subwatershed is considered, **there is almost no difference in imperviousness or forest cover between the draft Master Plan and the 1990 Plan**, while the new Master Plan accommodates significantly more homes and jobs. This is because while the Belward development has much less imperviousness in the proposed concept plan, the PSTA has considerably more imperviousness when redeveloped. Both facilities are split between two watersheds (MBMB207 and MBMB305).

### Imperviousness and Forest Cover in Key Subwatersheds

Subwatershed Station #	Current Imperviousness	1990 Plan Imperviousness	New Master Plan Projected Imperviousness	Existing Forest Cover	1990 Plan Forest Cover	New Master Plan Forest Cover	CSPS Water Quality Rating
MBMB207	32.0%	46.3%	46.5%	9%	9.8%	10%	Fair
MBMB305	31.5%	35.6%	35.3%	7%	6.9%	6.8%	Fair

### Conclusions

The proposed Master Plan would reduce the per capita rate of carbon emissions and other air pollutants, create about the same amount of imperviousness as the 1990 Plan, improve stormwater management, and protect the rural areas of the County. It will create a walkable, transit-oriented community and greatly expand the jobs and housing opportunities for the county's residents.

**Attachment: Suggested replacement language for Master plan on pages 24-25 starting with Sustainability**

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 travelled, 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 also 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 p.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 p. 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 p. 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 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 p. 41).
- 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 travelled, 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 travelled, 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 p. 79).
  - Incorporate other pedestrian and bicycle trails throughout the Life Sciences Center, and make connections to other Countywide and local jurisdiction trail systems (see p. 79).
  - Make the existing area more walkable by improving road crossings (see p. 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 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 travelled 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.

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- 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.

Insert on page 51:

The McGown property occupies about 70 mostly wooded acres near Seneca Creek State Park. The topography here includes some significant steep slope areas. Large scale development in this area will have the high 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 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.

ADDENDUM

AGENDA ITEM #7  
April 13, 2010

**MEMORANDUM**

April 9, 2010

TO: County Council

FROM: Marlene L. Michaelson, Senior Legislative Analyst *MM sm*

SUBJECT: Gaithersburg West Master Plan

There a few additions/corrections to the Staff packet.

1. Circle 65 reflects the PHED Committee's recommendation to rezone Rickman to CR 0.5: C 0.5, R 0.5, H 80. The bulleted list on © 66 was inadvertently not updated and still has the Planning Board Draft recommendation, not the Committee recommendation. The bullet on © 66 should be revised to show the new CR zoning recommendation.
2. The text revisions reflecting the Committee's recommendations for LSC North were not included in the packet. They are attached on © 1.
3. The Committee recommendation for the McGown Property (page 14) was inadvertently omitted from the Staff memorandum. The Committee supports the Master Plan recommendation for PD zoning on this property, but recommends that the Planning Department explore potential amendments to the PD zone (either as a text amendment or as part of the zoning ordinance rewrite) to require the provision of some public benefits.

### LSC North: 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 current CCT alignment includes a station on the north side of the DANAC property. The DANAC station should be relocated to the east side of the 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 parcel on the southeast corner of Key West Avenue and Diamondback Drive (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).**

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.

~~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 on the portion of LSC North that is east of Omega Drive, north of Key West Avenue, and west of Shady Grove Road. To implement the mixed-use vision, the Plan 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.**

- 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 area east of Omega Drive from the O-M, H-M and C-2 zones 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