

PHED COMMITTEE #1  
October 26, 2009

**M E M O R A N D U M**

October 22, 2009

TO: Planning, Housing, and Economic Development (PHED) Committee

FROM: *MLM* Marlene L. Michaelson, Senior Legislative Analyst  
*GO* Glenn Orlin, Deputy Council Staff Director

SUBJECT: Gaithersburg West Master Plan

This is the Planning, Housing, and Economic Development (PHED) Committee's third worksession on the Gaithersburg West Master Plan. This worksession will enable the Committee members to discuss the general issues raised in the questions sent to the Planning Board. The Planning Board's responses are attached on © A-C and 1 to 49.

Staff recommends that the Committee review the responses one by one providing the Planning Department with an opportunity to present their response and the Committee members a chance to ask follow-up questions. Staff recommends that the questions related to the Planned Development (PD) zone and annexation be deferred for a future worksession where these issues will be the focus of the discussion.

***Belward Farm.*** Staff also recommends that the Committee provide the Planning Department with the opportunity to clarify what is currently approved for development on the Belward Farm, since this provides important background for future decisions. 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 © 50 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 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 same density but clustered 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). Staff has asked Planning Department Staff to indicate whether there have been any analyses of the minimum density needed to support structured parking and they will either respond at this or a future worksession.

***Life Science Center Policy Area*** (© 16-17). The Planning Board is recommending carving out the LSC Central, LSC West, and LSC Belward portions of the Gaithersburg West Master Plan area from the existing R&D Village Policy Area (see ©17 A). This new policy area would be similar to the Germantown Town Center Policy Area, with an LATR standard of 1,600 CLV (more tolerant of congestion than the R&D Village's 1,450 CLV standard).

**Council staff believes it would be premature to establish a Life Science Center Policy Area with a 1600 CLV standard as part of the 2009-2011 Growth Policy.** This might be considered once the Corridor Cities Transitway (CCT) is within the Growth Policy horizon for "counting" transportation projects (currently, 4 years), but not now. No other new policy areas around future transitway stations on the Purple Line or CCT are proposed as part of the Growth Policy. The Germantown Town Center Policy Area has a 1600 CLV standard, but that is due to the presence of a transitway-type express bus service between it and the Shady Grove Metro Station, operating at 5-minute headways during the peak of the peak period.

This does not mean that the land use/transportation balance point in the Gaithersburg West Master Plan should not be predicated on a 1600 CLV standard, however. There is precedent for a duality of standards. Twenty years ago the Germantown Master Plan was approved based on a buildout and an ultimate transportation network that would produce average congestion at the boundary of Level of Service C and D (C/D). The plan recognized that the then-current Growth Policy level of service standard for Germantown was mid-LOS C. But it also acknowledged that the standard should be loosened to C/D when the CCT was within the Growth Policy's counting window.

Since this is a Growth Policy issue, the Committee's recommendation at this worksession will be presented to the full Council at its Growth Policy worksession on October 27.

***CCT alignment.*** The Council has just received a letter from the Maryland Transit Administration summarizing its evaluation of the Master Plan's proposed realignment of the CCT through the Gaithersburg West area (©52-53). MTA states that the proposed realignment would generate 15-40% more boardings while increasing its capital cost by 11-16%. Therefore, the realignment would produce a project with a better cost-effectiveness rating by the Federal Transit Administration, enhancing its competitiveness for New Starts funding.



**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.

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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?

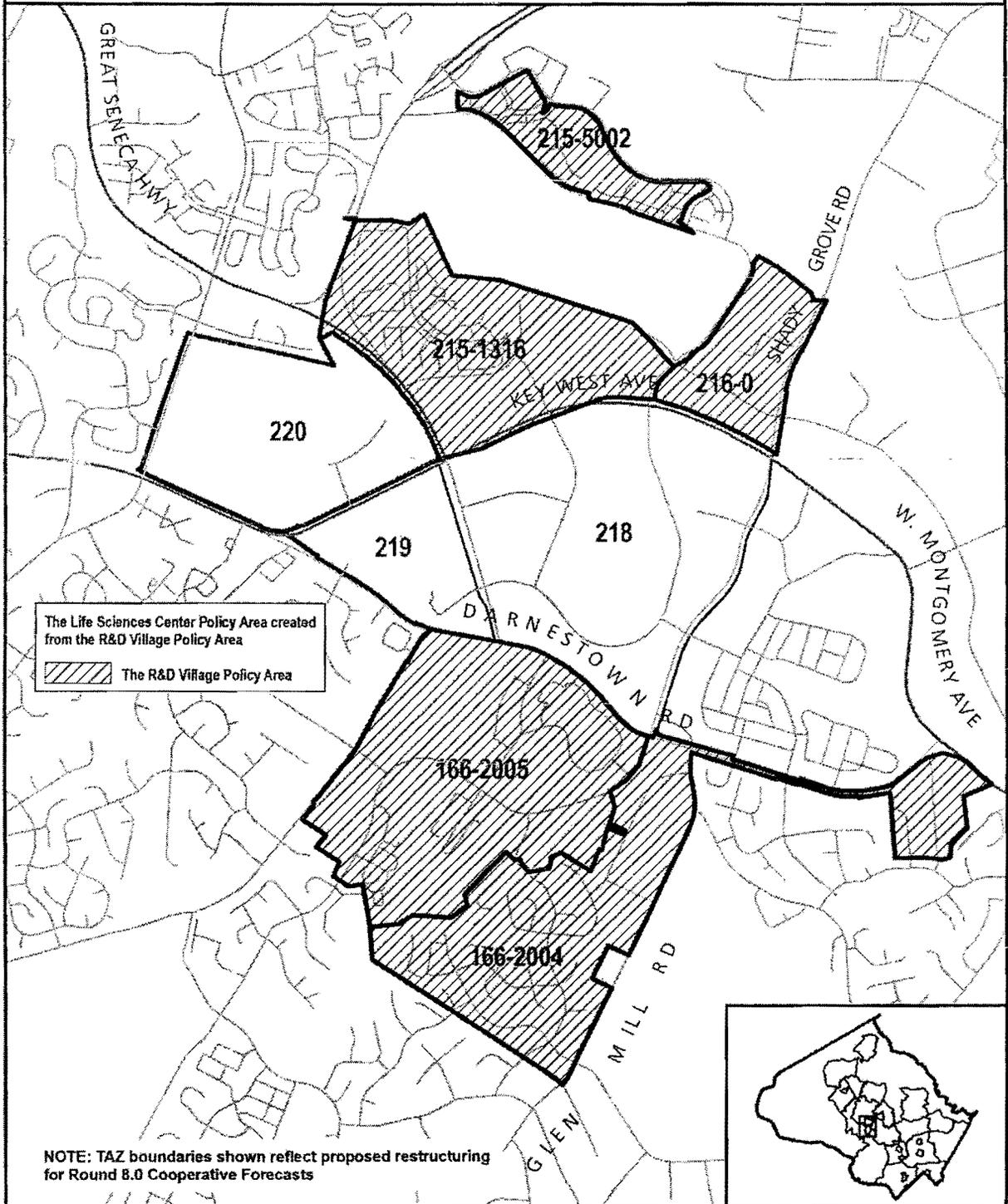
The question of an appropriate CLV standard for the Life Sciences Center Policy Area will be discussed as part of the Growth Policy. We believe that it remains appropriate to establish a 1600 CLV standard for current development to begin designing the LSC area, from both land use and zoning perspectives, 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, Falls Grove, 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.

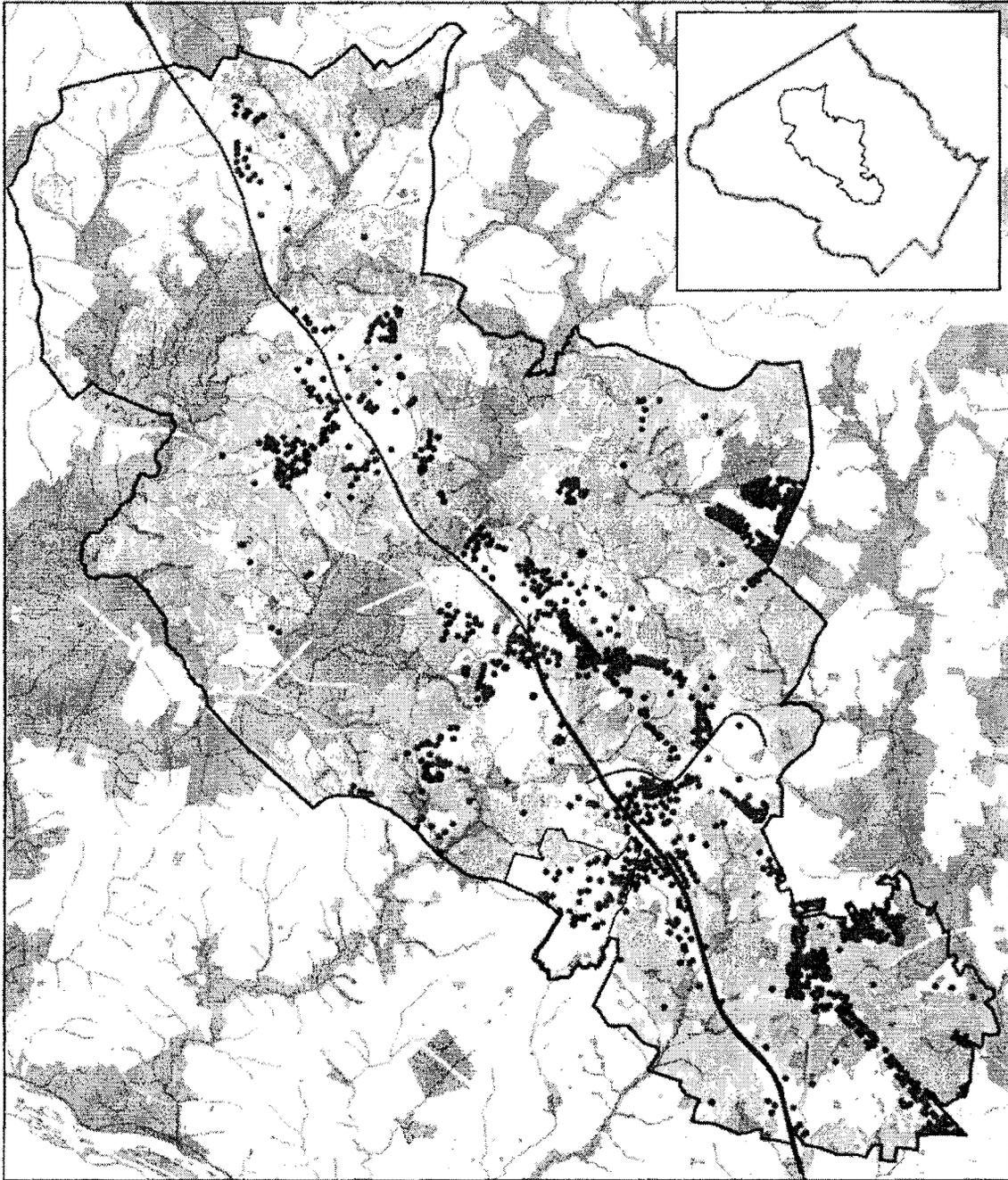
	LSC Area	½ mile	1 mile	1.5 miles	2 miles	3 miles	I-270 Corridor
Commercial SF	6,940,000	12,587,304	18,443,522	21,351,528	26,658,062	42,422,513	57,727,792
Jobs	21,200	35,964	52,696	61,004	76,166	121,207	164,937
Dwelling Units	3,262	9,205	16,217	26,157	36,082	58,987	106,995
Jobs/Housing	6.49	3.91	3.25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

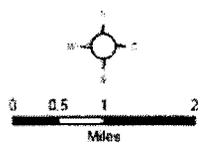
One way in which the plan addresses the question of housing affordability is through the Life Sciences Center ZTA. The ZTA is the first ZTA to include a requirement for Workforce Housing (currently required in all Metro Station Policy Areas, regardless of the zone). As proposed, the ZTA would require 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



- Residential Units
- Commercial Units
- Parks
- LSC Boundary
- I-270 Corridor Planning Area



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 (900s)					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	195	1577	1594	6870	14015	498	3504	3188	21196	705	2595	3300
1990 Plan	1	04/30/08	5973	265	3898	2401	12537	23832	663	8662	4802	38019	705	3095	3800
High Scenario	8	05/30/09	8130	674	8408	4713	21925	32520	1635	18884	5426	62315	685	12918	13619
Final (Planning Board)	9	03/30/09	7950	693	6405	5579	20637	31630	1748	14242	11158	58948	705	7595	8300
M-NCPPC Scenario 1	10	10/05/09	7462	592	5769	4795	18628	29848	1480	12864	9590	53782	705	7595	8300

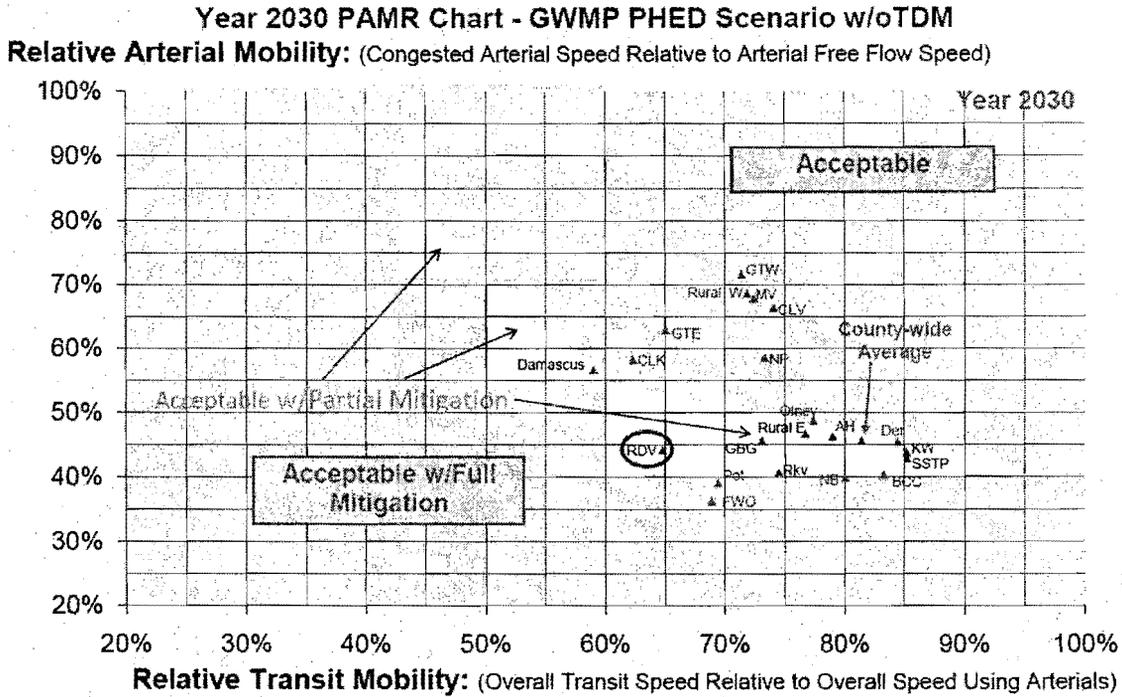
Demographics listed for Local Area Model portion in Gaithersburg West Master Plan area

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 MPO/COG Round 7.1)  
 LAM includes Crown Farm and Washingtonian Center in Gaithersburg with 1.6M GSF commercial and 100 DU current, 2.6M GSF commercial and 2300 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

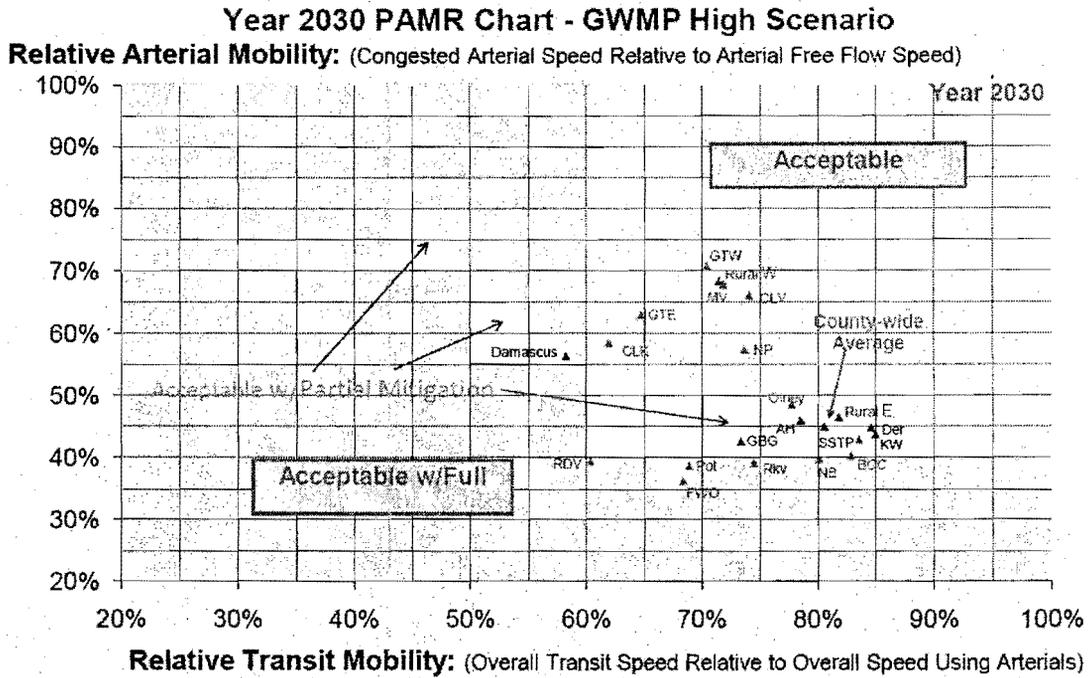


Derivation of Year 2030 PAMR Results by Policy Area - Gaithersburg West Master Plan "PHED Committee" LU Scenario (no TDM)

Policy Area	VMT	VMT		Free-flow Speeds	Congested Speeds	Relative Arterial Mobility	Average		Relative Transit Mobility
		Free-flow	(Congested)				Arterial Travel Time	Transit Travel Time	
Aspen Hill	185,121	5,760	12,474	32.8	15.2	46%	40.9	52.8	75%
Bethesda/Chevy Chase	397,168	35,585	36,735	25.5	10.3	42%	30.9	37.1	83%
Clarksburg	101,060	3,635	6,249	30.0	17.5	58%	38.1	61.2	62%
Cloverly	95,205	2,352	3,647	40.5	26.8	66%	43.7	59.0	74%
Damascus	90,451	2,244	3,862	40.3	22.8	57%	38.5	62.1	59%
Darwin/Shady Grove	139,392	4,950	10,908	28.2	12.8	49%	37.4	44.3	84%
Fairland/White Oak	294,798	10,135	27,550	37.3	13.7	36%	39.9	57.9	69%
Gaithersburg City	331,624	8,496	18,582	27.6	12.6	46%	34.5	49.5	73%
Germanstown East	106,826	5,583	6,705	29.6	18.4	63%	34.5	56.0	65%
Greenbelt West	151,130	5,926	6,897	30.6	23.9	72%	36.5	55.2	74%
Kingston/Wheaton	465,715	14,595	33,339	31.9	14.0	44%	36.9	48.3	85%
Montgomery Village/Airpark	143,718	4,766	2,015	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	90%
North Potomac	67,114	2,420	4,340	27.7	16.2	58%	38.2	53.4	73%
Olin	167,993	4,743	9,749	35.4	17.2	49%	46.9	60.7	77%
Potomac	201,556	6,056	15,489	33.3	13.0	39%	37.9	54.7	69%
P.E.C. Village	75,521	3,493	7,839	22.7	15.0	44%	28.1	43.3	85%
Rockville City	371,296	11,793	29,021	23.1	9.4	41%	31.4	42.1	75%
Silver Spring/Taloma Park	271,545	30,452	24,401	26.2	11.2	43%	33.3	39.0	85%
Rural East	607,047	35,470	31,180	39.2	18.3	47%	47.0	63.3	77%
Rural West	243,060	6,610	9,642	36.8	25.2	69%	46.6	64.9	72%
Montgomery County Total	4,654,741	152,102	334,119	30.6	13.9	46%	37.6	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\_DB2\2030\_PAMR\_Chart\_GWMP\_JHU

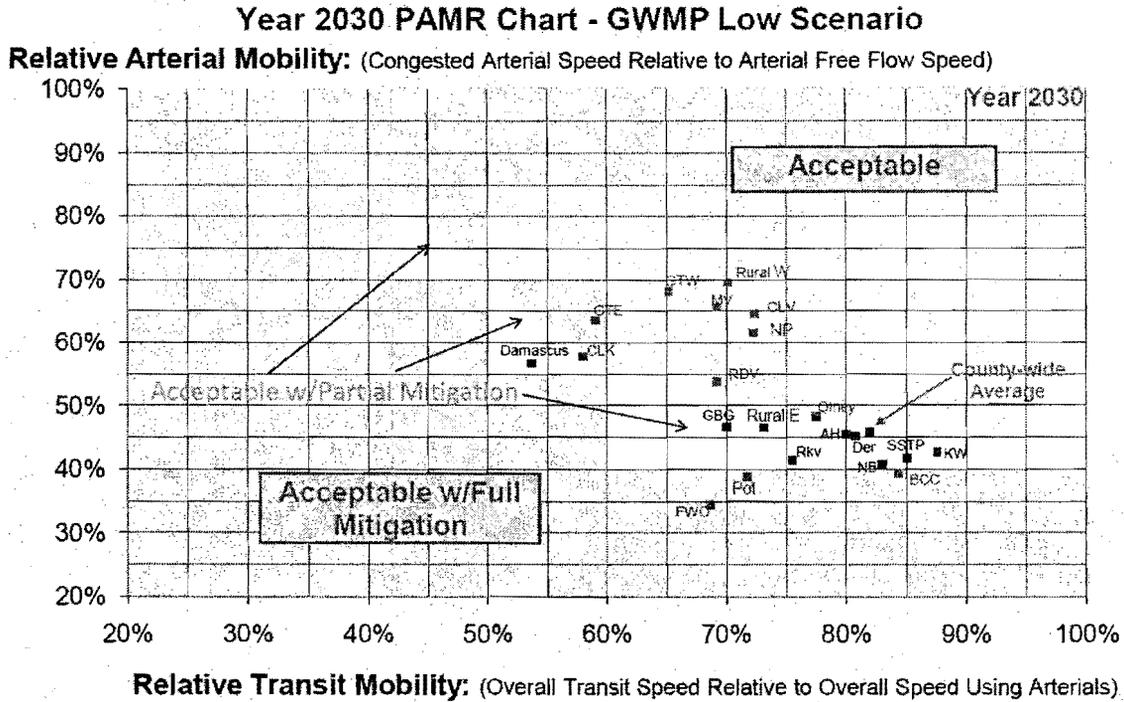
9/19/2008

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	VHT (Free-flow)	VHT (Congested)	Free-Flow Speeds	Congested Speeds	Relative Arterial Mobility	Average Arterial Travel Time	Average Transit Travel Time	Relative Transit Mobility
Aspen NP	189,564	5,776	12,545	32.8	15.1	46%	40.7	51.8	75%
Bethesda/Chevy Chase	396,816	15,569	38,653	25.5	10.3	40%	30.8	37.1	83%
Clarksburg	309,654	3,557	6,259	30.0	17.5	50%	37.4	60.4	62%
Gloverby	95,364	2,356	3,566	40.5	26.7	66%	43.6	58.9	74%
Damascus	90,726	2,351	3,980	40.3	22.7	56%	48.0	82.4	58%
Derswood/Shady Grove	140,528	4,999	11,544	28.1	12.6	45%	36.9	43.7	84%
Fairland/White Oak	384,340	10,138	27,900	37.9	13.8	36%	39.5	57.9	68%
Gaithersburg City	244,948	8,735	20,504	28.0	11.9	43%	33.8	36.1	73%
Germanstown East	106,132	3,508	5,703	25.6	16.6	63%	35.9	55.5	65%
Germanstown West	155,970	5,096	7,004	30.6	23.7	71%	35.9	51.9	70%
Kensington/Wheaton	465,708	14,593	32,331	31.9	14.0	44%	36.8	43.3	85%
Montgomery Village/Airpark	143,831	4,771	7,034	30.1	20.4	50%	40.7	56.7	72%
North Bethesda	238,659	10,724	25,191	23.8	9.5	40%	30.1	37.5	80%
North Potomac	87,404	2,414	4,199	27.9	16.1	57%	35.6	52.6	73%
Olney	168,437	4,758	9,802	35.4	17.2	49%	46.7	60.1	78%
Potomac	204,580	6,150	15,699	33.3	12.9	39%	37.7	54.8	69%
F & D Village	51,521	3,021	4,576	22.5	8.9	39%	25.9	42.8	60%
Rockville City	279,637	12,066	30,760	23.1	9.1	39%	31.1	41.2	75%
Silver Spring/Takoma Park	273,333	10,443	24,348	26.2	11.2	43%	33.1	39.6	84%
Rural East	608,784	19,622	33,377	39.2	16.2	47%	46.7	57.0	82%
Rural West	243,888	6,538	9,710	36.7	25.1	68%	45.1	64.5	71%
Montgomery County Total	4,688,996	153,165	340,302	30.6	13.8	45%	37.1	46.0	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-8. PAMR Results for Low (1990 Plan) Scenario



Sum 2030 VHT\_VMT\_ff-RMW\_v4b\Year\_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)	VHT (Congested)	Free-Flow Speeds	Congested Speeds	Relative Arterial Mobility	Average Arterial Travel Time	Average Transit Travel Time	Relative Transit Mobility
Aroon Hill	191,333	5,826	12,800	32.6	14.9	45%	41.6	52.0	80%
Bethesda/Chevy Chase	410,521	15,862	40,326	35.9	10.2	39%	31.1	39.6	75%
Clarksburg	108,593	3,627	6,254	30.0	17.4	58%	36.5	61.9	53%
Gloverly	99,646	2,487	3,855	40.1	25.8	65%	44.2	61.9	71%
Damascus	91,810	2,269	5,005	40.5	22.9	57%	46.2	87.3	54%
Darwood/Slady Grove	139,862	4,267	10,836	28.2	12.9	46%	37.4	46.5	80%
Fairland/White Oak	397,297	10,872	31,510	56.5	12.6	35%	40.4	58.9	69%
Gaithersburg City	238,596	8,027	17,199	29.7	18.9	47%	34.3	49.2	70%
Germancton East	110,232	3,512	5,970	31.4	19.9	64%	35.2	59.6	59%
Germancton West	136,396	4,828	6,611	30.1	20.5	68%	36.4	56.6	68%
Kensington/Wheaton	474,747	15,093	35,036	32.6	13.6	43%	37.7	43.8	86%
Montgomery Village/Airpark	159,344	5,004	7,628	32.9	21.0	60%	40.2	58.1	69%
North Bethesda	238,934	10,031	24,597	23.8	9.7	41%	31.1	38.4	81%
North Potomac	65,259	2,194	3,565	29.9	18.4	62%	41.4	57.9	72%
Olney	172,821	4,892	10,125	35.3	17.1	48%	47.3	61.2	71%
Potomac	203,269	6,927	15,475	33.7	13.1	38%	39.9	55.4	71%
R & D Village	63,221	2,812	5,281	22.9	12.1	54%	32.9	47.6	69%
Rodney City	270,133	11,888	28,177	23.1	9.6	43%	32.0	49.7	76%
Silver Spring/Takoma Park	278,054	20,654	25,456	26.1	10.3	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	9,329	36.9	25.6	70%	47.7	68.0	70%
Montgomery County Total	4,704,520	152,478	337,244	30.9	13.9	45%	37.9	47.0	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

## 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.

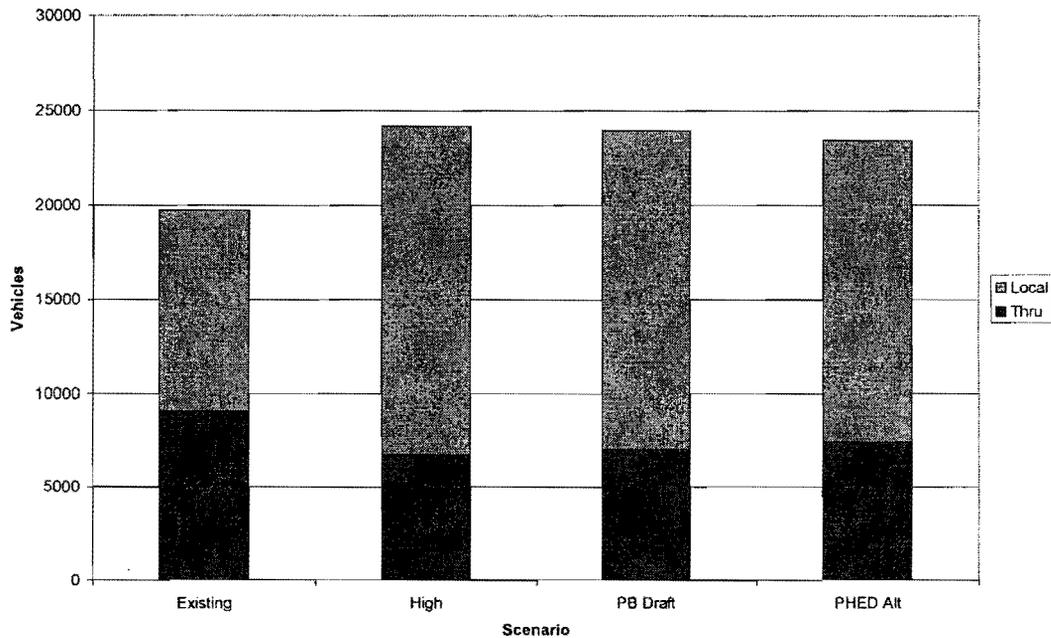
Third, the transportation network assumptions affect system performance from both the areawide and site-specific perspective. The addition of the I-270/Gude Drive interchange into the PHED Committee Scenario creates additional access to the LSC area, redistributing traffic destined both to and across 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	588	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	911	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	58	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	318	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	Cloverly	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	891	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	1618	1734	1.08	1717	2044	1.28	1537	1826	1.14
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	1354	1314	0.85	1230	1224	0.77	1305	1075	0.82
370 Great Seneca (MD 119) @ Muddy Branch	1825	1932	1.21	2039	1808	1.27	1828	1818	1.14	1812	1639	1.13
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 Sam Eig @ Fields	1271	1297	0.81	1447	1426	0.90	1501	1587	0.99	1624	1579	1.05
570 Sam Eig @ Diamondback	1649	1334	1.03	1699	1682	1.06	1787	1824	1.12	1470	1572	0.98
572 Great Seneca (MD 119) @ Sam Eig	1436	1943	1.21	1662	1814	1.13	1582	1668	1.04	1622	1648	1.03
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 interchange recommendation  
BOLD text indicates V/C ratio > 1.0 for CLV Standard = 1600

Intersections listed in order of intersection number

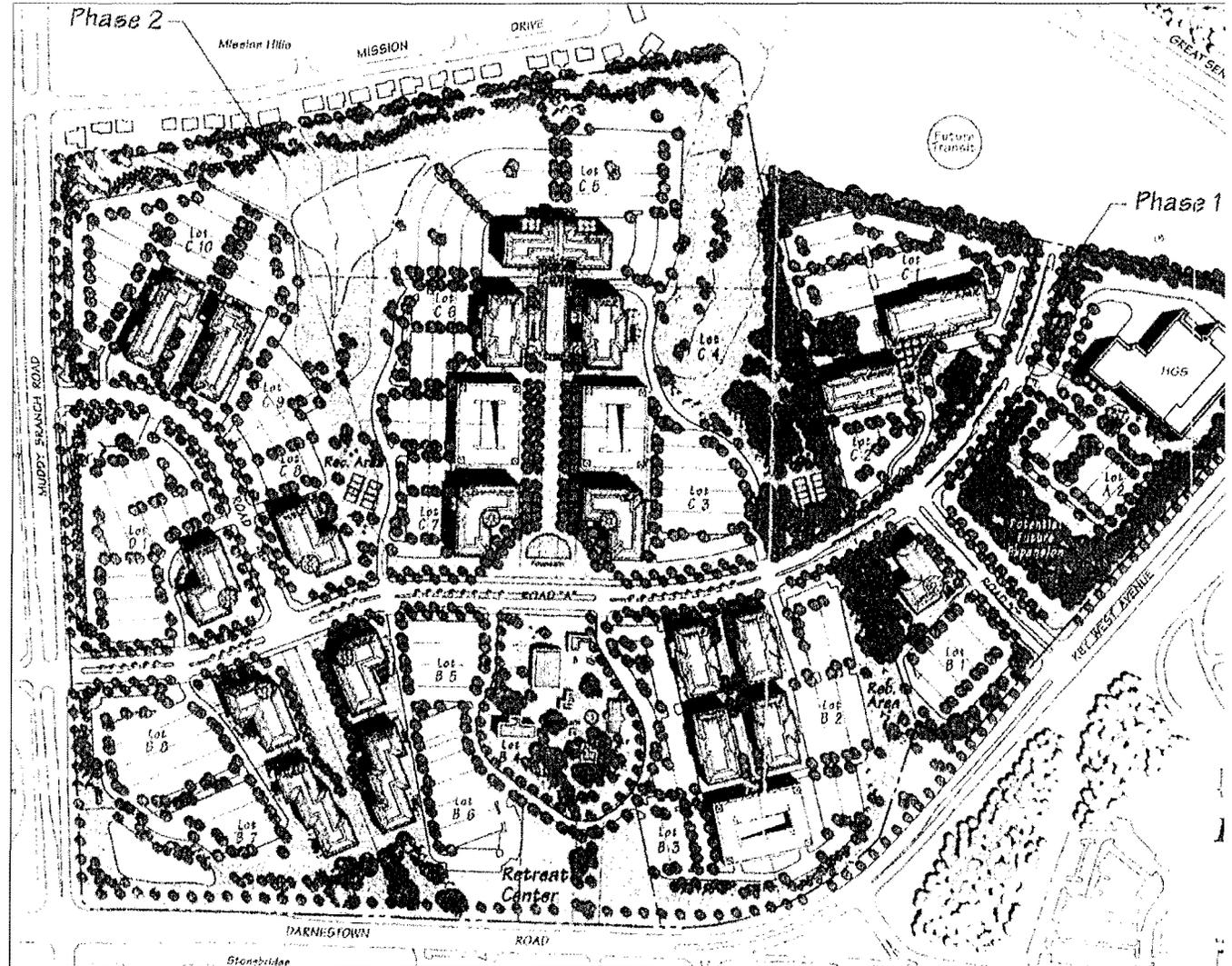
# Gaithersburg West Master Plan

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)

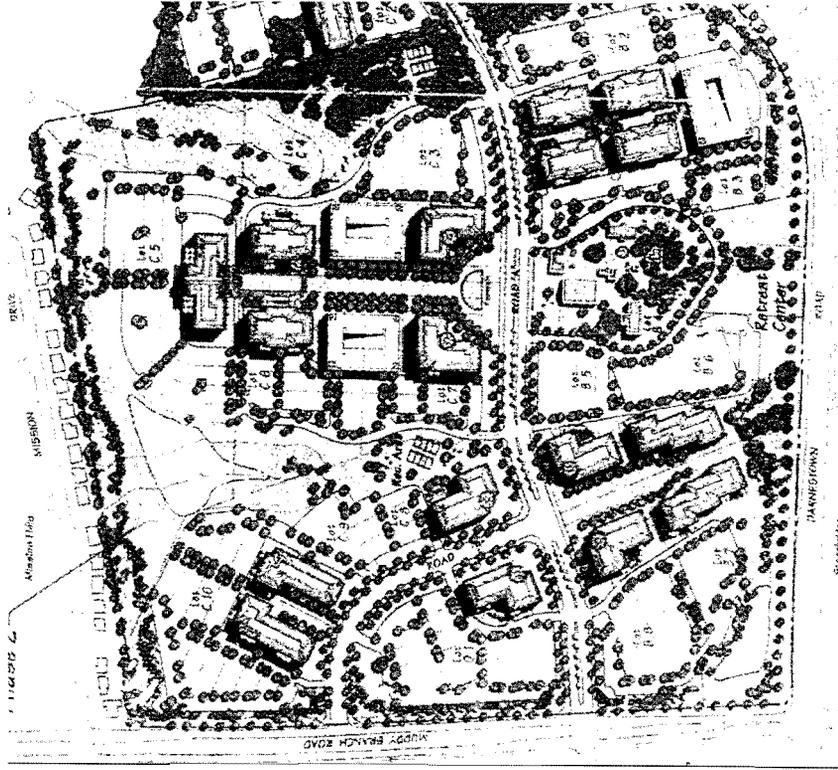
APF Requirements  
included turn lanes on  
WB 28 at MB  
NB SG at 28  
NB & SB at MB & GS  
WB Key West Lane



# Gaithersburg West Master Plan

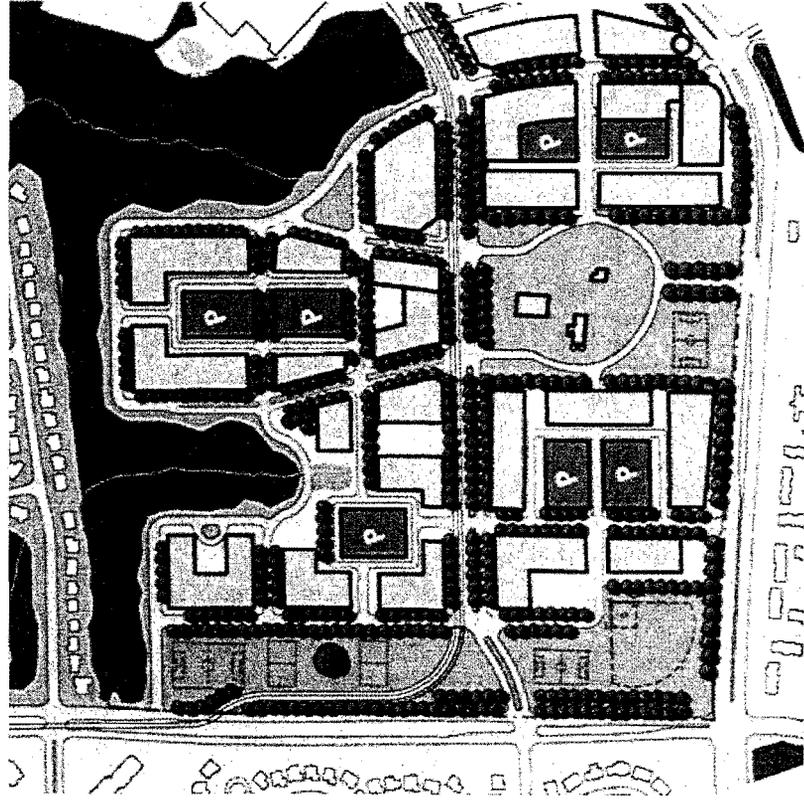
## LSC Belward

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

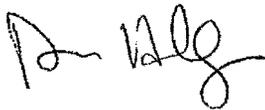
The Honorable Phil Andrews  
Page Two

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. Beverly Swaim-Staley, Secretary, Maryland Department of Transportation