

Resolution No.: 20-616
Introduced: September 24, 2024
Adopted: September 24, 2024

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

Lead Sponsor: District Council

SUBJECT: APPLICATION NO. H-149 FOR AMENDMENT TO THE ZONING ORDINANCE MAP, Elizabeth Rogers, Esquire, and Steven A. Robins, Esquire, Attorneys for the Applicant, Glenmont Forest Investors, LP; OPINION AND RESOLUTION ON APPLICATION; Tax Account Nos. 13-00975447 and 13-00975436.

Opinion

Glenmont Forest Investors, LP (Applicant or Glenmont) filed its Local Map Amendment (LMA) Application No. H-149 on January 23, 2024. The application seeks to rezone approximately 34.87 acres of property from R-30 multi-family to CRF 1.75, C-0.25, R-1.5, H-75' (Commercial Residential Floating). Exhibit 1. The subject property is located at the southeast quadrant of the intersection of Randolph Road and Georgia Avenue, Silver Spring, Maryland as part of Parcel A, Plat No. 6337 and Parcel B, Plat No. 8065 in the "Americana Glenmont" subdivision, and the "Americana Glenmont Apartments" subdivision (Tax Account Nos. 13-00975447 and 13-00975436). *Id.*

Staff of the Montgomery County Planning Department (Planning Staff or Staff) transmitted its report and the Planning Board's written recommendation on June 4, 2024. Exhibit 46. Staff recommended approval of the application with three binding elements and required the Applicant to address additional issues at Sketch Plan, Preliminary Plan, and/or Site Plan approval. *Id.* The Planning Board recommended approval of the application and approved the associated Forest Conservation Plan (No. F20240450). *Id.* OZAH's public hearing proceeded as scheduled on June 14, 2024. The Applicant presented five witnesses, one representing a principal of Glenmont, and four expert witnesses. Six members of the community testified in opposition of the Application. The Hearing Examiner issued a Report and Recommendation (HE Report) recommending approval with the binding elements suggested by Staff, but also with a condition that the Applicant remove Erskine Avenue from the Floating Zone Plan as a vehicle through street.

Subject Property

The subject property contains approximately 34.87 acres of land and is bounded by Randolph Road to the north along with the County's 4th District Police Station and a parking lot

owned by the Maryland Department of Transportation State Highway Authority, Georgia Avenue to the west along with a church at the southwest corner, a two-story townhouse community to the south, a single-family neighborhood to the east, and a small private lot between it and Wheaton Regional Park. Exhibit 46, Attachment 1, p. 3. The Property contains 19 two-to-three story buildings operating a garden-style apartment complex known as the Americana Glenmont Forest Apartments constructed in 1962, with a total of 482 dwelling units. *Id.*

Surrounding Area

The surrounding area is typically identified and characterized in a Floating Zone case. The boundaries are defined by those properties that will experience the direct impacts of the use. This area is then characterized to determine whether the Floating Zone Plan will be compatible with the impacted area

Staff identified the neighborhood boundaries as, “bordered by Glenallan Avenue to the north, Wheaton Regional Park to the east, Shorefield Road to the south, and Georgia Avenue to the west.” Exhibit 46 p. 3. Staff further identified the neighborhood zoning patterns as “varied” and the uses as “mixed-use in character with a variety of housing, commercial, and institutional uses” further noting the Glenmont Shopping Center and Glenmont Metro Station to be within the neighborhood boundaries. *Id.* at 4. The Hearing Examiner agreed with Staff that the uses and zones are varied but found the most intense uses were located across Randolph Road from the subject property. The Hearing Examiner also noted the subject property immediately abuts to the east without a road break a R-90 single family detached community consisting of approximately 20 single-family lots.

Proposed Development

Glenmont proposes to redevelop the property with a “mixed-use, predominately residential development” that will “include up to 5,000 square feet of neighborhood-serving commercial use and up to 2,275 multi-family living units” Exhibit 45, p. 5. The residential units will be primarily rental with the associated parking, open space, public benefits, and amenities. *Id.* In addition, the Applicant will evaluate a possible for sale option in the future. *Id.*

The Applicant intends to redevelop the property in phases. *Id.* at 27. The project places the multi-family buildings into smaller blocks connected by a series of internal private streets with the tallest buildings up to 75 feet to be located closer to Georgia Avenue and Randolph Road, while those buildings within 100 feet of the single-family detached neighborhood to the east will be no higher than 45 feet. Exhibit 46, p. 9.

The Floating Zone Plan (FZP) contains three binding elements with four additional issues for the Applicant to address at the time of sketch plan, preliminary plan, and/or site plan approval. These are listed on Appendix A and attached hereto and herein.

Criteria for Approval

Every application for rezoning to a Floating Zone must be accompanied by an FZP that meets certain requirements. *Zoning Ordinance*, Section 59-7.2.1.B.2.g. The Applicant has filed an FZP (Exhibit 30 and related documents) which is described in the Hearing Examiner's Report. *HE Report* p. 13-15.

As stated, a Floating Zone application must meet the standards required by the Zoning Ordinance and State law. Generally, these standards fall into five categories: (1) conformity to the applicable Master Plan, (2) compatibility with adjacent uses and the surrounding area, (3) the adequacy of public services to support the proposed development, (4) technical requirements regarding whether the property is eligible to apply for a Floating Zone, and (5) whether the FZP meets the development standards of the zone requested.

Conformance with the Master Plan¹

The property is located in an area governed by the *2013 Glenmont Sector Plan* (Sector Plan). The Hearing Examiner and Staff concluded that the project substantially conforms to the *2013 Sector Plan* and *Thrive Montgomery 2050* (General Plan). Exhibit 46, p. 16. The Sector Plan offered specific guidance for the future of the property noting that "it may be suitable for future rezonings through a Local Map Amendment to a CR Zone or an equivalent zone to encourage a multifamily redevelopment of four-to-six story buildings." *Id.* The Sector Plan recommended the following should the property be rezoned.

- Provide, as a priority, the CR Zone public benefits of Public Open Space to retain the open and green character of the site, and Affordable Housing to obtain more than the 12.5 percent required minimum MPDUs.
- Encourage the achievement of greater than minimum required Public Use Space through compact footprint.
- Protect and restore areas of environmental buffer and investigate options for stream restoration with redevelopment.
- Preserve as much existing tree canopy as possible.
- Connect new internal streets with Erskine and/or Wallace Avenues.
- Construct a hiker/biker path between Randolph Road and the existing Wheaton Regional Park's hard surface trail network.

Staff and the Hearing Examiner found the proposal satisfied the objectives identified in the Sector Plan. Staff specifically referenced that the affordable housing proposal is greater than 12.5

¹ Section 59-7.2.1.E.2.a. of the Zoning Ordinance requires the District Council to find that the FZP "substantially conforms with the recommendations of the applicable master plan, general plan, and other applicable County plans." Section 59-7.2.1.E.2.b requires the FZP to be "in the public interest", which includes a review of conformity with County plans and policies and whether the development will be consistent with the coordinated and systematic development in the Regional District under State law. Section 59-7.2.1.E.2.c requires the application to further the intent of Floating Zones. The intent of Floating Zones incorporates compliance with the applicable master plan. *Zoning Ordinance*, §59-5.1.2.A.1.

percent, maintains a compact footprint, maintains a 100-foot-wide buffer along the eastern property line, and seeks to connect Erskine with internal streets. In addition, the proposal conforms with the recommendations of the General Plan by increasing the number of income-restricted affordable housing units and offering a wide choice of housing types for all people close to public transportation. Based on this record the District Council finds that the LMA substantially conforms to the Master Plan.

Compatibility with Adjacent Uses and the Surrounding Area²

Multiple standards for approval require the District Council to find that the FZP be compatible with adjacent uses and the surrounding area. The District Council agrees with the Planning Staff that the project will be compatible with the surrounding area because it provides generous setbacks to the south and east and the buildings will stepdown in height approaching the detached residential neighborhood to the east. District Council disagrees with the Hearing Examiner that the FZP is not compatible with the area to the east, and rejects the Hearing Examiner's recommendation that Erskine not be connected as a vehicle through Street. The District Council finds that the interconnection of streets follows Council approved policy, allows for flexibility, creates connectivity, and maintains the compact development design and is compatible with all of the surrounding areas. The setbacks and height restrictions will be maintained through use of a binding element. *HE Report*, p. 23. The Applicant's expert testified that the FZP is conceptual and seeks to create a development framework establishing compatibility along the eastern margin by creating some combination of either multi-family or townhouse. T. 77. The FZP flexibility is established in the second binding element.

Staff note the proposed redevelopment provides modern residential housing at a prominent location within walking distance of the Glenmont Metro. The design of the project redevelopment seeks to grow up not out, thereby reducing the footprint of disturbance on the site. Staff further note the proposed eight buildings with the tallest buildings closer to Georgia Avenue and Randolph Road provide an appropriate transition from west to east along the site. Exhibit 46 p. 10. The Applicant's expert testified that a conservative approach was used to create the maximum setbacks to the east and south. T. 100-101. Further he opined that the setbacks, building heights, and maintenance of the existing forest achieves compatibility by going above and beyond requirements. T. 109.

The Planning Board approved the associated Forest Conservation Plan No. F20240450. The Applicant's expert opined that the connection of Erskine creates the contiguous characteristics of the valley buffer being proposed with the forest conservation preservations and planting. T. 92. Members of the community voiced concerns over the compatibility of the site access through the

² The FZP must further the intent of the Floating Zones in general and the purpose of the CR Zone. *Zoning Ordinance* §§59-7.2.1.E.2.c; 59-5.1.2.C; 59-5.3.2. Floating zones are intended to (1) establish compatible relationships between new development and existing neighborhoods through limits on applicability, density, and uses, (2) provide development standards and general compatibility standards to protect the character of adjacent neighborhoods; and (3) allow design flexibility to mitigate any negative impacts found to be caused by the new use. *Id.*, §59-5.1.2.C. One purpose of the CR Zone is to "allow development of mixed-use centers and community at a range of densities and heights flexible enough to respond to various settings." *Id.*, §59-5.3.2.C. Similarly, Section 59-7.2.1.E.2.d of the Zoning Ordinance requires the Council to find that the FZP is "compatible with existing and approved adjacent development."

interconnection of Erskine as a through public street. The Applicant's experts described the connection of Erskine as a through street that further integrates development and creates a circulation network laying patterns and natural features. T. 92 From a traffic and safety perspective, the Applicant's experts opined that the right in/right out at Erskine meets the code requirements. T. 175. Further the Applicant's experts opined that the Erskine connection would more than likely not be signalized. T. 147. In addition, the Applicant's expert explained that the funds provided by the developer would be spent off site to improve roads, pedestrian, and bicycle access. T. 154 Further the Applicant's experts opined that the Erskine connection was important for traffic circulation and ultimately the decision on how the intersection is established would come during the preliminary plan phase and be a decision of the Department of Transportation. T. 256-257.

Based on the findings in the Staff Report and expert testimony provided from the Applicant's land planner, civil engineer, and transportation planning, the District Council finds the proposed development to be compatible with the adjacent uses and surrounding area. Specifically, the transition in building height from west to east and the binding element that limits the height of buildings along the eastern property line to 45 feet for a distance of 100 feet ensures compatibility with the adjacent residential developments. The District Council agrees with the Planning Staff and Board that the establishment of Erskine as a through street creates connectivity and follows the recommendations of the Sector and Master Plans. In addition, the final determination on the extension of or any connection of Erskine is made during the preliminary plan stage during which the community may comment and participate. *See* expert testimony at T. 174.

Adequacy of Public Facilities/Public Interest

The District Council must also find that the public facilities will be adequate to serve the FZP. While a more detailed review will occur later in the public development process, a threshold analysis must be performed at the rezoning stage.³

The Applicant submitted a traffic study to determine multi-modal adequacy because the development will generate more than 50 new weekday peak hour trips. *Zoning Ordinance* §59.7.2.1.E.2.e and *LATR Guidelines*. *See* Exhibit 40. The Applicant was asked to analyze seven intersections within the Glenmont Policy area for informational purposes only.⁴ In addition, the Applicant's expert notes that specific traffic analysis will be conducted again during preliminary plan. The Applicant's expert explained that the study considers not just vehicle trips, but also

³ Section 59.7.2.1.E.2.e requires that an Applicant demonstrate that traffic generated from the proposed development "does not exceed the critical lane volume or volume/capacity ratio standard as applicable under the Planning Board's LATR Guidelines, or, if traffic exceeds the applicable standard, that the applicant demonstrate an ability to mitigate such adverse impacts . . .". The adequacy of other facilities is part of the Council's determination that an application will be "in the public interest..." and that "it will be consistent with a coordinated and systematic development of the Regional District" under State law. *Zoning Ordinance*, §59-7.2.1.E.2.b; *Md. Land Use Art.*, §21-101(a) and (b). The intent of the Floating Zones is to "implement comprehensive planning objectives by...ensuring that the proposed uses are in balance with and supported by the existing and planned infrastructure..." *Zoning Ordinance*, §59-7.2.1.E.2.b; 59-5.1.2.A.2.

⁴ Staff noted the property is within an "orange policy area" and is immediately adjacent to a "red policy area." Red policy areas do not require a vehicle analysis. Orange policy areas require "vehicle, pedestrian, bike, transit, vision zero." *See HE Report*, p. 38

pedestrian and bicycle trips. T. 151-152. The study concluded that the developer would be required to spend a maximum of \$9,988,160 on vehicle, pedestrian, and bicycle improvements. The Applicant's expert opined that none of the intersections studied would exceed the LATR standards in either the red or orange zones. *HE Report* p. 38.

Today no modern stormwater management facilities exist on site. An adjoining neighbor in opposition to the Application hired an engineer to review the submitted stormwater management concept plan due to his negative history with stormwater from the property. This neighbor also testified to his concerns. The Applicant's expert opined that modern stormwater management will capture, manage, and treat stormwater and that the finalization of the stormwater management plan for the property is a twostep process that will be completed during site plan and permitting. *HE Report* p. 39. Further the expert opined that the proposed plan will meet or exceed applicable county and state law.

The Hearing Examiner found the transportation study and testimony of the Applicant's traffic planning expert persuasive. The Hearing Examiner also found the expert testimony of Applicant's civil engineer regarding to stormwater management compelling, specifically the progress made under today's stormwater management law that will apply to the redevelopment compared to the current non-existent stormwater management on the property. Based on this record the District Council agrees with the Hearing Examiner and finds public facilities will be adequate to serve the proposed use and that the specific details of those public facilities will be determined with the opportunity for public comment as the development process proceeds.

Regarding the public interest, the Hearing Examiner agreed with Planning Staff that the location of 1,793 additional units including 15 percent MPDUs within a half a mile of the Glenmont Metro Station to be in the public interest. Further the Sector Plan specifically called for redevelopment of the property because of its location near transit. In addition, the Hearing Examiner and Planning Staff agreed that the design of the buildings with the structured parking and the development restored and enhanced the natural features of the property. *HE Report* p. 40. Based on the evidence presented the District Council finds the project to be in the public interest.

Intent of the Floating Zones (Section 59.5.1.2)

The District Council must determine whether the FZP fulfills the intent of the Floating Zones. Several of these have already been addressed.⁵ The remaining (from Section 59.5.1.2) are:

Section 59-5.1.2.A.3. Implement comprehensive planning objectives by:

3. *allowing design flexibility to integrate development into circulation networks, land use patterns, and natural features within and connected to the property;*
and

Planning Staff concluded that the project met this intent by capitalizing on the project's convenient and transit-accessible location to significantly increase the amount of housing in an

⁵ The intent of Floating Zones contained in Sections 59-5.1.2.A.1 and 2 and 59-5.1.2.C of the Zoning Ordinance has already been addressed in the Council's findings relating to the compatibility of the FZP with surrounding uses and the adequacy of public facilities. The balance of the Floating Zone intent clauses is discussed here.

area with the infrastructure to support it. Exhibit 46, p. 19-20. The Hearing Examiner agreed with Staff that the project design responded to the transit-oriented nature of the surrounding neighborhood with the structures placed for flow, promotion of open space, and that the bulk of the property's use will remain residential multi-family. *HE Report*, p. 42. The gradual elevation changes lessen the impact of the properties to the east. *HE Report*, p. 42. The District Council finds that the project meets this intent of the Floating Zones.

Section 5.1.2.B. Encourage the appropriate use of land by:

1. *providing flexible applicability to respond to changing economic, demographic, and planning trends that occur between comprehensive District or Sectional Map Amendments;*
2. *allowing various uses, building types, and densities as determined by a property's size and base zone to serve a diverse and evolving population;*
3. *ensuring that development satisfies basic sustainability requirements, including open space standards and environmental protection and mitigation; and*

Staff cited the Sector Plan recommending a floating Commercial/Residential Zone would be appropriate given the Property's proximity to transit and commercial services. Exhibit 46, p. 20. Staff concluded that FZP will allow the replacement of the aging garden apartments providing a significant amount of additional housing with modern amenities helping to alleviate the acute housing need. *Id.* In addition, Planning Staff determined the project satisfies basic sustainability principals though "infill redevelopment" well-served by existing infrastructure, public transportation, preservation of existing forest, afforestation and the establishment of stormwater management where none currently exists. *Id.* The Hearing Examiner agreed with Planning Staff that the project is an appropriate use of land because it is in conformance with the Sector Plan, redevelops an infill lot capitalizing on existing infrastructure, preserving forested area and will cause the construction of modern stormwater management. *HE Report* p. 43. The District Council Finds that the development project meets the intent of the Floating Zones.

Applicability of the Zone (Section 59.5.1.3)

Section 59-5.1.3 B states if a Floating Zone is recommended in a master plan no prerequisites or locational criteria are required for a Local Map Amendment. The Sector Plan recommends the property for a "CRF-1.75, C-0.25, R-1.5, H-75 and CRNF-1.5, C-0.25, R-1.5, H-45 or other similar zones." Exhibit 46, p. 19. The District Council finds that the requirements of this section are met as did the Hearing Examiner. *HE Report*, p. 43.

The Purpose of Commercial/Residential Floating Zones, Permitted Uses, and Permitted Building Types (Sections 59.5.3.2 through 59.5.3.4)

Zoning Ordinance Division 59-5.3 specifies the purposes of the Commercial/Residential Floating Zone, and establishes the allowed uses, building types, and development standards. The

FZP must fulfill the purposes of the Commercial/Residential Floating Zones and meet all technical standards.

Section 59.5.3.3 of the Zoning Ordinance limits the uses permitted in the CRF Zone to “only” those uses permitted in the CR Zone. Townhouse and multi-unit living are both permitted in a CR Zone⁶. In addition, certain commercial uses are also permitted in a CR Zone.

The District Council has already found that the FZP is compatible with adjacent development, one of the purposes of the Commercial/Residential Zones. *Zoning Ordinance*, Section 59.5.3.2.C. The remaining purposes are:

Section 5.3.2. Purpose

The purpose of the Commercial/Residential Floating zones is to:

- A. allow development of mixed-use centers and communities at a range of densities and heights flexible enough to respond to various settings;*
- B. allow flexibility in uses for a site; and*
- C. provide mixed-use development that is compatible with adjacent development.*

The District Council has already found the FZP features the taller buildings closest to the Georgia Avenue and Randolph Road intersection and uses the maximum setbacks to the east and south as a binding element to accomplish compatibility with the adjacent residential uses. The FZP follows the Sector Plan’s recommendations for rezoning and development proposes maintaining a primarily residential use. The District Council finds this standard has been met.

Development Standard of the Zone (Section 5.3.5)

Planning Staff prepared a table comparing the development standards in the CRF Zone with those shown on the FZP. Exhibit 46, pp. 21-22. The table demonstrates that the proposed development may meet all the development standards of the required zone. The Approved Floating Zone Plan determines the setbacks from the Site Boundary. *Zoning Ordinance* Section 59.5.3.5.B.2. Remaining development standards may be finalized later during the site plan process unless so restricted by a binding element. The District Council agrees with the Hearing Examiner that the FZP meets all the development standards of the Zone.

General Development Standards (Article 59.6)

Article 59.6 of the Zoning Ordinance contains general development standards for most developments. These standards regulate the number and design of parking spaces, drive aisles, landscaping, lighting, and public and private open space. Based on the undisputed evidence at this stage the Applicant’s proposal will be able to meet these standards subject to review and modification of the specific requirements during site plan review.

⁶ See *Zoning Ordinance* Use Table 3.1.6.

Conclusion

Based on the foregoing analysis and after a thorough review of the entire record, including the Hearing Examiner's Report and Recommendation issued August 19, 2024, and oral arguments presented on September 24, 2024, the District Council concludes that the proposed reclassification and development will meet the standards set forth in the Zoning Ordinance, and that it will be consistent with the coordinated and systematic development of the Regional District under State law.

Action

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

Local Map Amendment Application No. H-149, requesting reclassification from the existing R-30 Zone to CRF-1.75 C-0.25, R-1.5, H-75' (Commercial Residential Floating) for property located at 2300 Glenmont Circle, Silver Spring, Maryland as part of Parcel A, Plat No. 6337 and Parcel B, Plat No. 8065 in the "Americana Glenmont" subdivision and the "Americana Glenmont Apartments" subdivision (Tax Account Nos. 13-00975447 and 13-00975436), is hereby approved in the amount requested and subject to the specifications and requirements of the Floating Zone Plan, Exhibit 30. In addition, at the time of Preliminary Plan, the Montgomery County Department of Transportation and the Planning Board will further evaluate all access points for the project and the Planning Board will determine whether or not the vehicular connection to Erskine Avenue is needed to accommodate traffic flow. If a decision is made that the connection is not needed and existing right-in/right-out along Randolph Road is retained, the Erskine Avenue connection must be removed from the plan. Should the Erskine Avenue connection be removed, no improvements will be required along Erskine Avenue. The Applicant must file a final executed Declaration of Covenants reflecting the binding elements in the land records and submit to the Hearing Examiner for certification a true copy of the Floating Zone Plan approved by the District Council within 10 days of approval, in accordance with Section 59.7.2.1.H.1.a. and b. of the Zoning Ordinance.

This a correct copy of Council action.



Sara R. Tenenbaum
Clerk of the Council

APPENDIX A

Binding Elements

1. The maximum building height is limited to 45 feet, for a distance of 100 feet from the eastern Property boundary.
2. The use of the Property will be limited to multi-unit living, townhouse living and up to 5,000 square feet of non-residential use.
3. The development must provide a minimum of 15 percent (15%) Moderately Priced Dwelling Units (MPDUs) or Montgomery County Department of Housing and Community Affairs (MCDHCA)-approved equivalent consistent with the requirements of Chapter 25A.

The Applicant must address at the time of Sketch Plan, Preliminary Plan and/or Site Plan approval the following:

1. Update the LATR Transportation Study to include new vehicle counts and develop a list of LATR off-site mitigations and associated costs.
2. Coordinate with M-NCPPC and Montgomery County Department of Transportation (MCDOT) staff to determine:
 - a) if a right-in-right-out access proposed to the east of the Randolph Road/Glenmont Circle intersection is operationally feasible;
 - b) the appropriate road classification and right-of-way width for internal roadways;
 - c) if Street B will be a public or private road; and
 - d) the appropriate phasing of transportation infrastructure.
3. Ensure that public open space is usable, minimally encumbered by conservation areas or stormwater management facilities, and sufficient for the number of dwelling units proposed.
4. Strive to provide at least:
 - a) 273 two-bedroom units and 49 three-bedroom units; and
 - b) Ten (10) percent market-rate affordable units (for households earning 80% Area Median Income) under rental agreements, as approved by MCDHCA.

**BEFORE THE COUNTY COUNCIL FOR MONTGOMERY COUNTY, MARYLAND
SITTING AS THE DISTRICT COUNCIL FOR THE MARYLAND-
WASHINGTON REGIONAL DISTRICT IN MONTGOMERY COUNTY, MARYLAND**

**Office of Zoning and Administrative Hearings
Stella B. Werner Council Office Building
100 Maryland Avenue, Room 200
Rockville, Maryland 20850
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IN THE MATTER OF:

Glenmont Forest Investors, LP
Applicant

Brian Alford
Steve Allison
Matthew Leakan
Randall Rentfro
Anne Randall

For the Application

Local Map Amendment
Application No. H-149

* * * * *

Elizabeth Rogers, Esq.
Steven Robins, Esq.
Attorneys for the Applicant

* * * * *

Before: Kathleen E. Byrne, Hearing Examiner

HEARING EXAMINER’S REPORT AND RECOMMENDATION

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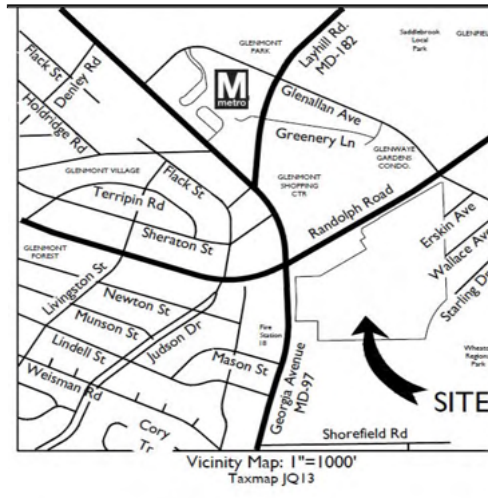
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I. CASE SUMMARY

Applicant: Glenmont Forest Investors, LP

LMA No. & Date of Filing: H-149, filed January 23, 2024



Current Zone: R-30 multi-family.

Current Use: 19 two-to-three story garden style apartment complex buildings containing 458 dwelling units.

Requested Zone: CRF-1.75, (C-0.25, R-1.5, H-75' (Commercial Residential Floating Zone).

Proposed Use: Construct mixed-use residential development containing up to 2,275 residential dwelling units and up to 5,000 square feet of commercial use.

Consistency with Master Plan: Consistent with the *2013 Glenmont Sector Plan* and consistent with *Thrive Montgomery 2050*, General Plan.

MPDUs Provided: 15%

Neighborhood Response: Opposition received at the hearing and via letters from individuals located in the surrounding neighborhood. Neighbors expressed concern that the 5-fold increase in dwelling units and the opening of Erskin was not compatible with the surrounding neighborhood. In addition, neighbors expressed concern with the impact to the natural environment through the loss of mature

trees and increase in impervious surface on the stormwater management.

Planning Board Recommends: Approval

Technical Staff Recommends: Approval

Hearing Examiner Recommends: Approval with condition that Erskine Ave not be connected as a vehicle through street

District Council Votes Needed to Approve: 6

II. STATEMENT OF THE CASE

Glenmont Forest Investors, LP (Applicant or Glenmont) filed its LMA Application on January 23, 2024. LMA No. H-149 seeks to rezone approximately 34.87 acres of property from R-30 multi-family to CRF 1.75, C-0.25, R-1.5, H-75' (Commercial Residential Floating). Exhibit 1. The subject property is located at southeast quadrant of the intersection of Randolph Road and Georgia Avenue, Silver Spring, Maryland as part of Parcel A, Plat No. 6337 and Parcel B, Plat No. 8065 in the "Americana Glenmont" subdivision and the "Americana Glenmont Apartments" subdivision (Tax Account No. 13-00975447 and 13-00975436). *Id.* Notice of the public hearing was mailed on May 14, 2024 and posted on OZAH's website. Exhibit 25. The notice established a hearing date of June 14, 2024. Staff of the Montgomery County Planning Department (Planning Staff or Staff) transmitted its report and the Planning Board's written recommendation on June 4, 2024. Exhibit 46. Staff recommended approval of the application with three binding elements, required the Applicant address additional issues at Sketch Plan, Preliminary Plan and/or Site Plan approval and recommended approval with conditions of the Preliminary Forest Conservation Plan (FCP) No. F20240450. *Id.* The Planning Board also recommended approval of the application and approved the associated Forest Conservation Plan (No. F20240450). *Id.*

The public hearing proceeded as scheduled on June 14, 2024. The Applicant presented five witnesses, one representing a principal of the Applicant and four expert witnesses. The following community members testified in opposition of the Application: Leopoldo Villegas, Beverly O'Brien, Cecilia Castro De Anderson, Lindsay Roe, Richard Takamoto, and Vicki Vergagni. The Hearing Examiner held the record open for 21 days to receive the transcript of the proceedings as well as a written statement from the Applicant with its closing statement. As requested by the Hearing Examiner, the Applicant in its closing statement provided an explanation of the Notice process under the Zoning Ordinance and OZAH's rules as followed with this Application. The Hearing Examiner received the transcript on June 24, 2024, and the written statement from the Applicant later in the day on June 3, 2024. Due to the 4th of July holiday, the Hearing Examiner closed the record on June 5, 2024.

III. NOTICE QUESTIONS

Several members of the community who testified in opposition as well as correspondence received from community members expressed frustration and confusion over the notice process. These individuals stated they received notices that they considered late and did not understand why some neighbors received notices and others did not. Exhibit 63 and T. 282. The Hearing Examiner asked the Applicant in its written statement to explain how the list of who gets a notice is generated and how those notices are sent. T. 281. Section 7.5 of the Article 59, the Zoning Ordinance, governs Notice Standards.¹ Section 7.5.1 requires that the LMA property to be physically posted with a sign, the hearing date be posted on the OZAH website, and a hearing notice be mailed. On March 28, 2024, OZAH posted LMA 149 on its website identifying the June 14, 2024 hearing date. Regarding the physical posting requirement, Section 59.7.5.2.C.1 requires 1 sign be posted for every 500 feet of frontage². The Applicant posted the physical sign on January 30, 2024, along every frontage, including the stubbed rights-of-way of Wallace Avenue and Erskine Avenue and the paper street (known as “Starling Drive”) to the south. Exhibits 57 and 69. Section 59.7.5.2.D requires the Applicant to prepare and submit a notice list, i.e. a list of individual property owners that must receive a notice by mail, that includes all “abutting³ and confronting⁴ property owners; civic, homeowners and renters associations that are registered with the Planning Board and located within ½ mile of the site; and any municipality within ½ mile of the site;...” This list, generated by the Applicant and submitted to Planning with its application, included all abutting and confronting property owners as defined by the Zoning Ordinance and also “conservatively” included a few additional homes on Wallace and Erskine Avenue. Exhibit 69. Section 59.7.5.2.E.a. requires the Hearing Examiner to mail notice a minimum of 30 days before the scheduled hearing date to the individual property owners identified on the Applicant’s list. On May 14, 2024, the Notice of Hearing was mailed to those individual property owners required to receive written

¹ *Montgomery County, Md. Code, §59.7.5 (2024)*,

(https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco_md_zone2014/0-0-0-5900)

² Frontage is defined as “[a] property line shared with an existing or master-planned public or private road, street, highway, or alley right-of-way, open space, or easement boundary.” *See* Section 59.1.4.2.

³ Abutting is defined as “2 properties are abutting if they share a property line or easement line” *Id.*

⁴ Confronting is defined as “[p]roperties that are directly across a right-of-way with a master plan width of less than 80 feet from each other based on a line between the 2 properties that is drawn perpendicular to the right-of-way. Properties within a 45 degree diagonal across an intersection are also confronting.” *Id.*

notice. Exhibit 25. The requirement of “abutting and confronting” as defined in the Zoning Ordinance explains why the occupants of 2012 Glenallan Avenue received a physical notice, but the occupants of 2008 Glenallan Avenue did not. While it may seem random that two neighbors would not receive the same notice, who does and does not receive a notice is not based on what properties front existing street surrounding the development, but rather how a boundary line of an existing property “lines up” with the boundary lines of the proposed development. Hearing Examiner understands how when one neighbor gets a notice and another does not, it can be perceived as problematic and that neighbors were “missed.” However, upon review of the list generated by the Applicant pursuant to the requirements set forth in Section 59.7.5.2.D, Hearing Examiner finds that the Applicant properly identified those individual property owners to receive notice and the three vehicles for notice, posting, website and mail, were proper in the instant case.

IV. FACTUAL BACKGROUND

A. Subject Property

The subject property contains approximately 32.64 acres of land and is bounded by Randolph Road to the north along with the County’s 4th District Police Station and a parking lot owned by the Maryland DOT SHA, Georgia Avenue to the west along with a church at the southwest corner, a two-story townhouse community to the south and a single-family neighborhood to the east and a small private lot between it and Wheaton Regional Park. Exhibit 46, Attachment 1, pg. 3. Further across Randolph Road to the north is the Glenmont Shopping Center containing a grocery store, restaurants and other retail businesses and the Glenmont Metro Station is approximately ½ mile northwest of the property. *Id.* Across from Georgia Avenue is a fire station and beyond that is a single-family detached neighborhood. *Id.*



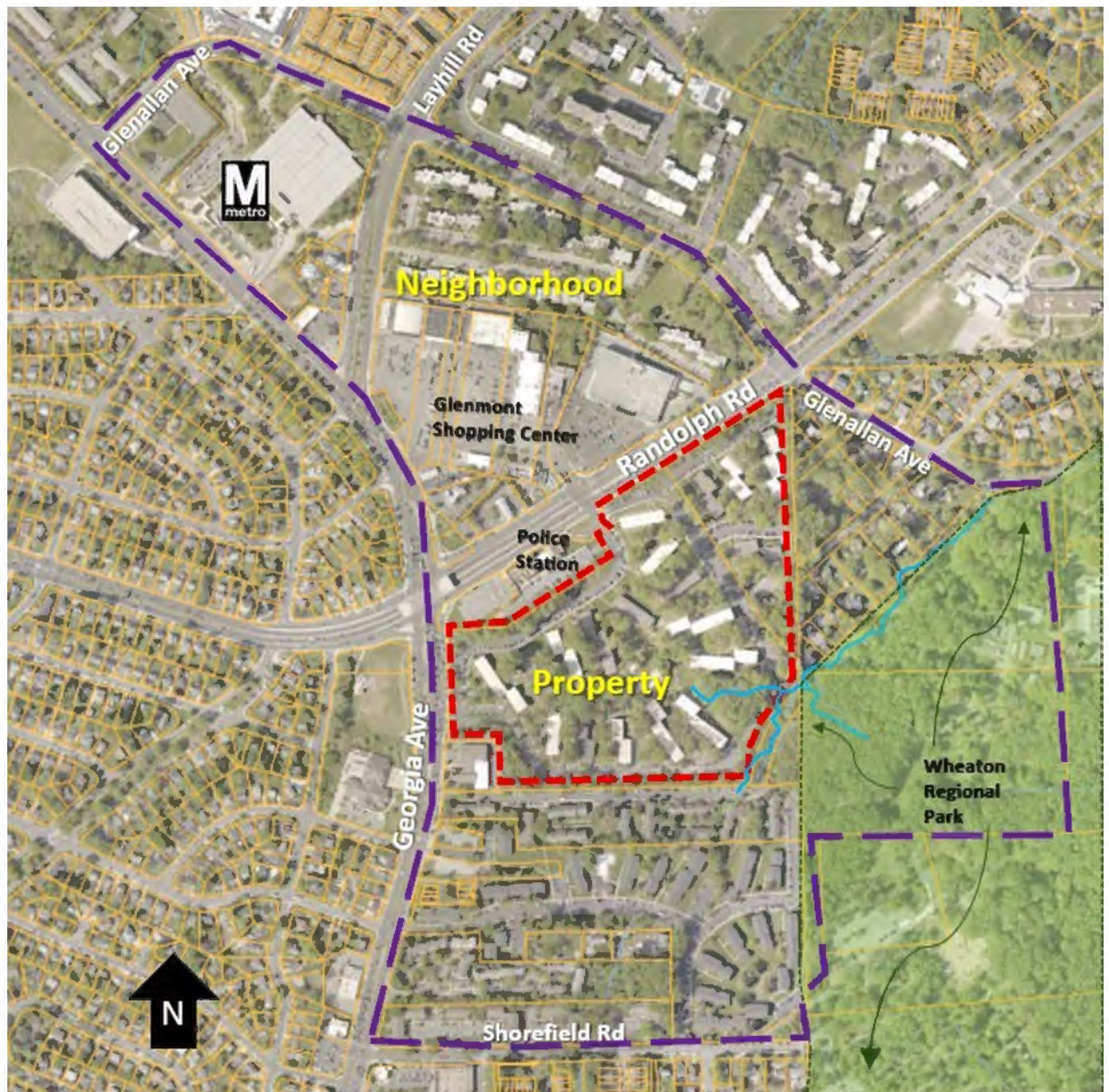
Staff Report – Exhibit 46, Figure 3

Currently, the Property contains 19 two-to-three story buildings operating a garden-style apartment complex known as the Americana Glenmont Forest Apartments. *Id.* at pg. 6. Constructed in 1962, the complex contains a total of 482 dwelling units. *Id.* Staff notes that none of the 482 dwelling units are regulated affordable housing. *Id.* Brian Alford, an employee of Grady Management and representing the management and ownership at the hearing, testified that the existing development, buildings and improvements are “nearing the end of their useful life span and will be in need of significant reinvestment in the next coming years.” T. 23.

B. Surrounding Area

The surrounding area is typically identified and characterized in a Floating Zone case. The boundaries are defined by those properties that will experience the direct impacts of the use. This area is then characterized to determine whether the Floating Zone Plan will be compatible with the impacted area.

Staff defined the neighborhood boundaries as, “bordered by Glenallan Avenue to the north, Wheaton Regional Park to the east, Shorefield Road to the south, and Georgia Avenue to the west.” *Id.* at 3. Staff further identified the Neighborhood as “mixed-use in character with a variety of housing, commercial, and institutional uses,” further noting the Glenmont Shopping Center and Glenmont Metro Station to be within the Neighborhood boundaries. *Id.* (*See Neighborhood image on the next page.*)



Staff Report – Exhibit 46, Figure 1

Staff described the Neighborhood zoning patterns and uses to be “varied” with the Glenmont Shopping Center operating the most intense zone with a total density of up to 3.0 floor area ratio (FAR) and building heights up to 120 feet and that properties close to the Glenmont Metro Station permit building maximum densities of 2.0 FAR and also building heights of up to 120 feet. Id. pg. 4. The Hearing Examiner notes that both intense uses/developments are located across Randolph Road from the subject property. The defined neighborhood also contains multi-unit residential zones R-20 and R-30, a Townhouse House Zone RT-15 and residential detached zones R-60 and R-90. Id. The

Hearing Examiner notes via the arrow on the image below depicting the zoning in the Staff defined neighborhood that the only existing R-90 single family development rests immediately adjacent to the east of the subject property.



Staff Report, Exhibit 46, Figure 2

Based on the record, the Hearing Examiner agrees with Staff that the uses and zones are varied with the most intense uses located across Randolph Road from the subject property. In addition, it is undisputed that the subject property immediately abuts without a “road break” R-30, R-90, and RT-

150 zones. The uses in non-road break R-30 zones contain a church and a police station and the approximately 20 single-family lots are located in R-90 zone properties between the subject property, Glenallan Avenue and Wheaton Regional Park. (*See map above.*)

C. The Applicant's Proposal

The Applicant plans to redevelop the property with a “mixed-use, predominately residential development” that will “include up to 5,000 square feet of neighborhood-serving commercial use and up to 2,275 multi-family living units.” Exhibit 45, pg. 6. The residential units will be primarily rental with a “for sale option” to be evaluated as an option at a later date, and the project will include associated parking, open space, public benefits, and various residential amenities. *Id.* The Applicant proposes providing 15% moderately priced dwelling units (MPDUs) representing a 2.5% above the County Code requirement for MPDUs, meaning that if the full 2,275 units become developed, 342 would be preserved as affordable for 99 years. *Id.*

Brian Alford, representing the ownership group, testified that the Applicant is comfortable with the recommended conditions as set forth by the Planning Board. T. 24. Specifically, Mr. Alford stated with respect to condition number four, the Applicant will “strive to incorporate at least 273 two bedrooms and 49 three-bedroom units.” T. 25. Further, Mr. Alford stated his belief that rather than spend resources on the existing apartments, the proposed redevelopment project meets the County’s anticipated demand for additional housing and its close proximity to transit brings the community into alignment with the County’s current goals. T. 23. The Applicant’s amended statement of justification described the “project layout” as follows:

The multi-family buildings have been strategically arranged to create a sense of community and encourage pedestrian activity. The Project is broken down into smaller blocks by a series of internal private streets to promote connectivity within the site and to the surrounding areas. The Project is organized around an internal spine road that runs east-west. Erskine Drive is proposed to be extended into the site, to connect with Randolph Road, as a public street. Additionally, several north-south private roads connect the internal spine road to Randolph Road, with the western-most

private road, also providing for a future connection to Georgian Woods Place (to the south). The buildings have been pulled up to the street to define and enhance the pedestrian environment both along the external site frontages and along the internal streets. The commercial component of the Project is currently anticipated to be located on the ground floor on future Parcel C, with clear visibility from Randolph Road, to define and activate the main entrance to the Property and complement the retail uses on the north side of Randolph Road. The final building layout and internal programming will be determined at the time of Site Plan.

Exhibit 45, pg. 8. (See cover page image from the Amended Statement of Justification/Land Use Report below.)

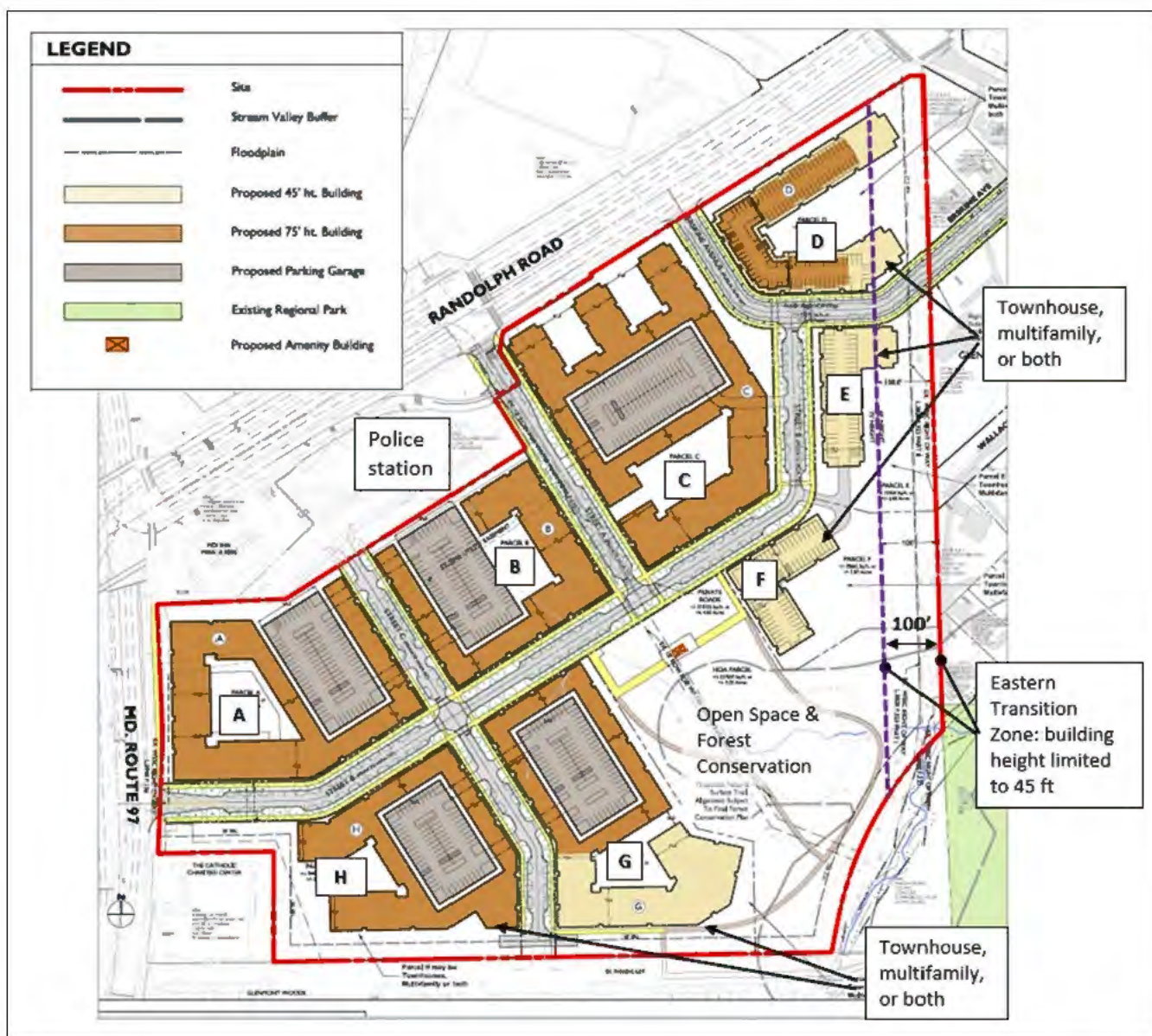


Amended Land Use Report, Exhibit 45, pg.1

1. Floating Zone Plan

Under Zoning Ordinance §59.7.2.1.B.2.g., every application for rezoning to a Floating Zone

must be accompanied by a Floating Zone Plan (FZP) that contains required information and often a list of “binding elements” that restrict future development of the property. The Applicants have submitted the required plan. Exhibit 30. An excerpt of the FZP showing the proposed building layouts, frontage on Randolph Road, possible townhouse locations to the east and south, open space/forest conservation area to the southeast and “eastern transition zone” is taken from the Staff report and shown on the next page.



Staff Report – Exhibit 46, Figure 6 – Floating Zone Plan

The Project is organized around a grid of streets that create small blocks, with buildings positioned close to the roads. Proposed buildings front on an east-west spine road (Street B, transitioning into Erskine Avenue) that connects Georgia Avenue and Randolph Road. The Applicant proposes to extend Erskine Avenue as a public road through the Property. The rest of the proposed roads are intended to be private and will be further evaluated at Preliminary Plan.

Exhibit 46, pg. 13.

Mr. Matthew Leakan testified on behalf of the Applicant and was admitted as an expert in land planning. T. 65. Mr. Leakan detailed the existing conditions noting the existing improvements, location of the property to the adjacent uses and parcels, that there are three points of vehicular access to the site, explained that “there’s a significant topography on site, approximately 50 to 70 feet vertical topography from Randolph Road and George Avenue...and the property falls away from” those roads and the property contains no modern stormwater management. T. 57-60. Mr. Leakan testified that the development is “compact” with the design going “up” not “out.” T. 73. He further described 8 buildings with in a “multifamily format and are different building typologies with structured parking... in a facility parking garage screened from public view.” T. 74. Further, he testified that the building heights are limited to 45 feet for those structures that are within 100 feet of the single family detached neighborhood to the east, while the tallest buildings of up to 75 feet will be located closer to Georgia Avenue and Randolph Road. T. 74-75 and Exhibit 46, pg. 9. When the Hearing Examiner asked if the Applicant proposes townhouses or apartments along the perimeter, Mr. Leakan responded the Applicant wanted flexibility to have either multi-family or townhouse, both or some combination. T. 76-77.

2. Binding Elements

The Staff Report includes four binding elements (Exhibit 46, pg. 6):

1. The maximum building height is limited to 45 feet, for a distance of 100 feet from the eastern Property boundary.
2. The use of the Property will be limited to multi-unit living, townhouse living and up to 5,000 square feet of non-residential use.

3. The development must provide a minimum of 15 percent (15%) Moderately Priced Dwelling Units (MPDUs) or Montgomery County Department of Housing and Community Affairs (MCDHCA)-approved equivalent consistent with the requirements of Chapter 25A.

Staff further required the Applicant address at the time of Sketch Plan, Preliminary Plan

and/or Site Plan approve the following:

1. Update the LATR Transportation Study to include new vehicle counts and develop a list of LATR off-site mitigations and associated costs.
2. Coordinate with M-NCPPC and Montgomery County Department of Transportation (MCDOT) staff to determine:
 - a. if a right-in-right-out access proposed to the east of the Randolph Road/Glenmont Circle intersection is operationally feasible;
 - b. the appropriate road classification and right-of-way width for internal roadways;
 - c. if Street B will be a public or private road; and
 - d. the appropriate phasing of transportation infrastructure.
3. Ensure that public open space is usable, minimally encumbered by conservation areas or stormwater management facilities, and sufficient for the number of dwelling units proposed.
4. Strive to provide at least:
 - a. 273 two-bedroom units and 49 three-bedroom units; and
 - b. Ten (10) percent market-rate affordable units (for households earning 80% Area Median Income) under rental agreements, as approved by MCDHCA.

Id.

3. Access

Mr. Randall Rentfro testified to the existing access points and those proposed for the FZP. T. 121. Specifically, he identified the 3 main points of access that exist today, two along Randolph Road and one along Georgia Avenue. T. 121. Mr. Rentfro identified the northeast entrance and the southwest entrance as both being right in/right out with the central exit along Randolph Road being a “full movement signalized intersection.” T. 121. (*See Exhibit 12, Existing Conditions Site Plan with notations on existing access points on the following page.*) Mr. Rentfro further testified that the Applicant will be adding a proposed connection between Erskine Avenue and Randolph Road which will be a public street, along with proposed private street connections from the “north/south to the future ... redevelopment of the police property and to the south which is currently the HOC property.” T. 121. Along with these street connections, Mr. Rentfro testified no pedestrian connection is available directly to Wheaton Regional Park without further collaboration with the

Housing Opportunities Commission because of “the paper street and private property.” T. 122. (See Exhibit 36, Revised Vehicular Circulation Plan on page 18 below.)

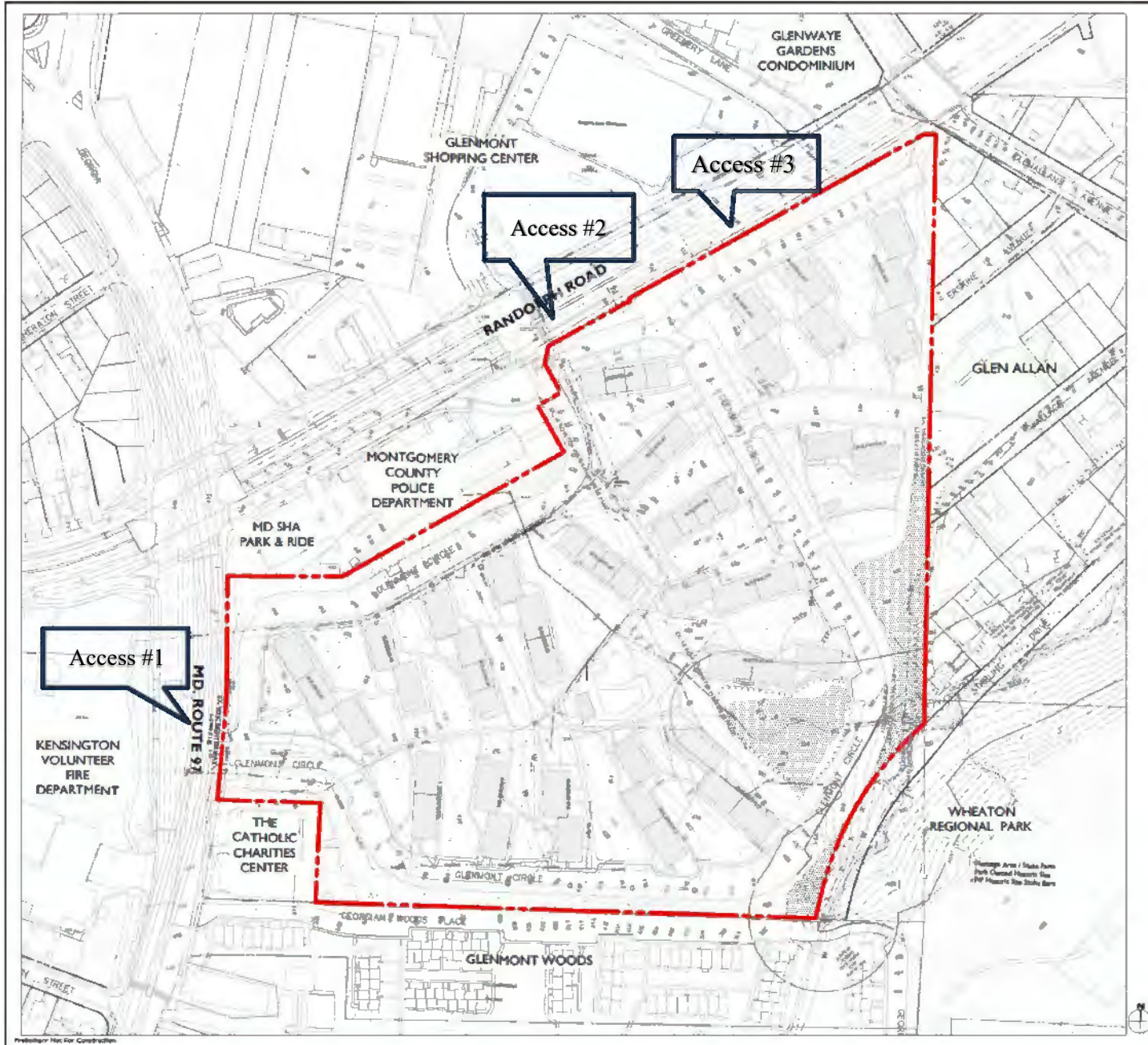


Exhibit 12 – Existing Conditions Site Plan – Access points noted

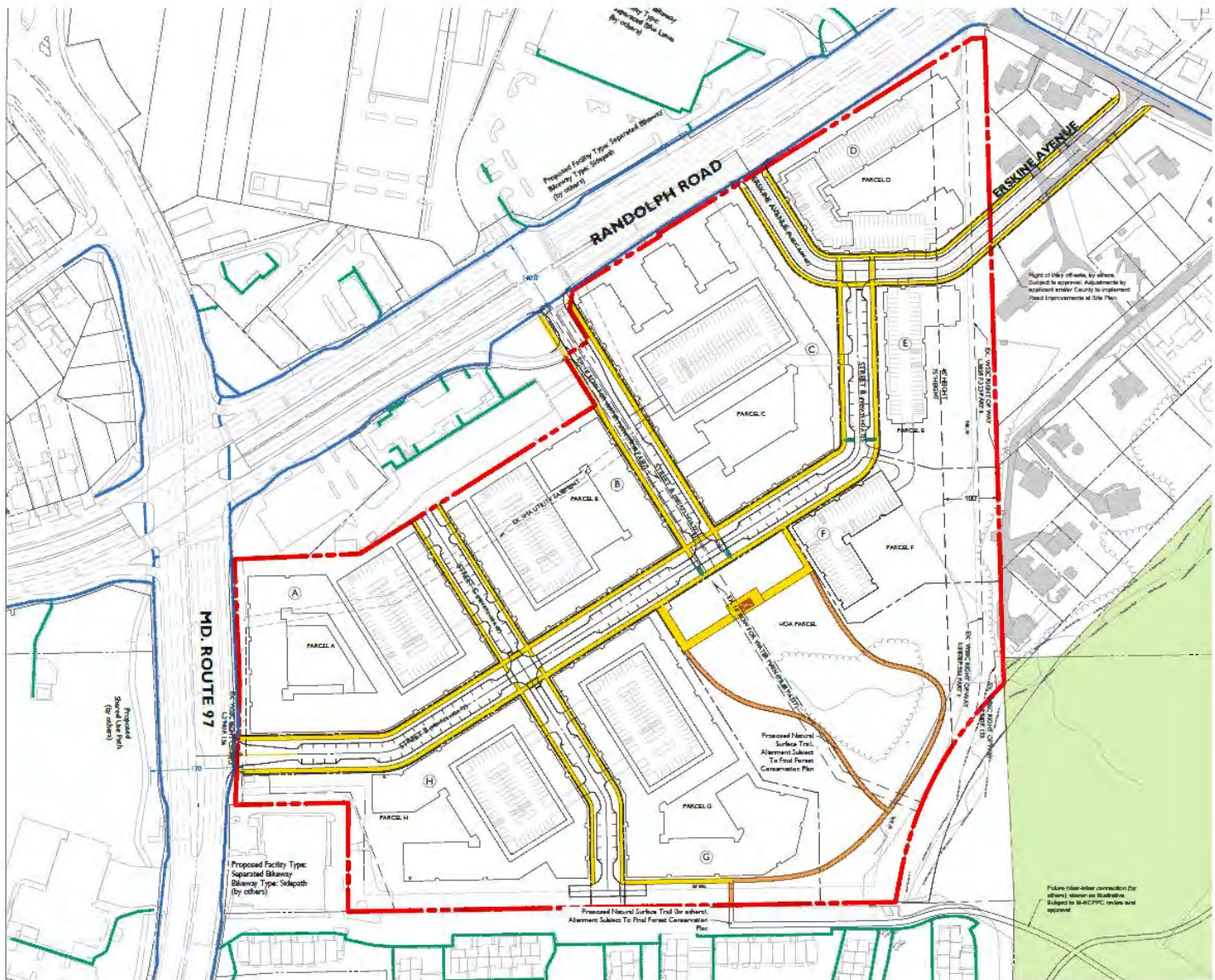
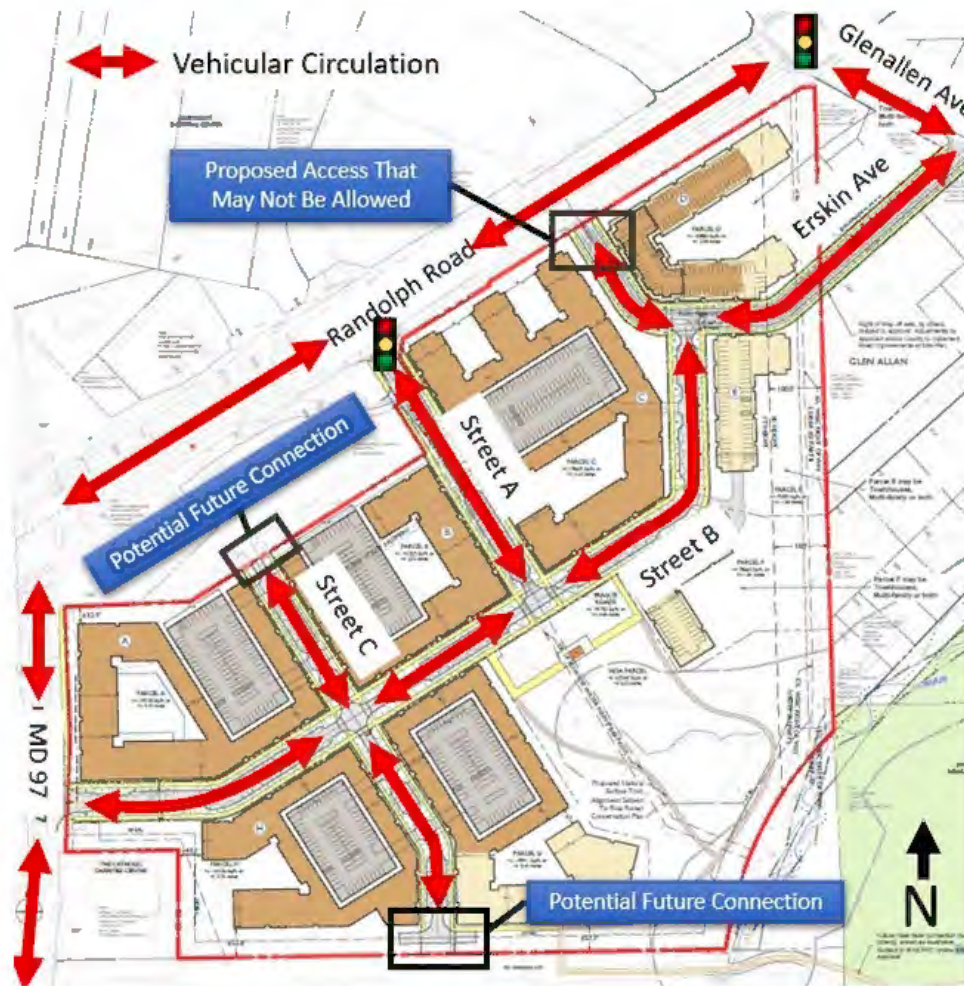


Exhibit 36 – Revised Vehicular Access

Mr. Rentfro testified at length to the sight distance requirements and opined in his expert opinion that vehicular access will be safe and adequate from a sight distance perspective. T. 122-126. Ms. Anne Randall, Applicant's traffic expert, also reviewed the access plan. T. 145-148. She reiterated that only one signalized intersection will remain, at the intersection of Randolph and Glenallan Circle. T. 147. She further identified that the new Erskine Avenue extension would not be signalized and would be a right in/right out only and further opined that the new connection would not be used often. T. 147.

Several neighbors voiced concerns over the proposed extension of Erskine Avenue creating an access point through the existing single-family neighborhood to the east. Specifically, Mr. Villegas, testified that he believed creating an Erskine connection would lead to “every single mom and parents ... go through the shortcuts.” T. 190. Ms. Roe, who lives on Erskine, testified the congestion on Glenallan in the morning backs up past the existing Erskine entrance. T. 210.



Staff Report Exhibit 36,
Vehicular Circulation – Figure 9

4. Environment

The Preliminary Forest Conservation Plan (FCP) submitted concurrently with the Local Map Amendment application shows 1.32 acres of forest retention and all forest conservation requirements

met onsite with 3.33 acres of forest planting. Exhibit 36, pg. 13. Further, the plan identifies all existing and planted areas of forest will be protected by Category I Conservation Easements. *Id.*

The Applicant proposes to utilize a mix of practices for stormwater management which will include Environmental Site Design features such as micro-bioretenion facilities, bioswales, and non-rooftop disconnects. *Id.* at 14. The stormwater management strategy will be further refined during subsequent regulatory review.

Mr. Leakan testified that no modern stormwater management system currently serves the property other than a simple drain conveyance system. T. 60. Mr. Rentfro stated that while a formal stormwater concept plan is not required during the LMA process, he noted the Applicant has begun collaboration with DPS on the concept and the plan is currently in review and that it will be finalized prior to preliminary plan. T. 132. Further, he testified that once the concept plan is approved, the stormwater plan will go through a second review as part of the site plan approval process and that the public will have an opportunity to review and comment during each phase. T. 133. Mr. Rentfro testified he reviewed the neighbor's correspondence and concerns over runoff. T. 135. He opined that while he understands those concerns, the subject property is not the direct cause of the stormwater management issues that exist today nor will it be the cause once the future development is complete. T. 136. Mr. Rentfro went into great detail testifying to the drainage patterns, the "fall" of the property, the drainage points and the plan to address stormwater on site. T. 136-140. Specifically, Mr. Rentfro stated the redevelopment will allow the property to meet the 2010 MDE stormwater management regulations through a sign design that includes "storage and filtration structural" best management practices "that will meet or exceed the applicable county and state laws." T. 140.

D. Community Concerns

Staff noted that the Applicant complied with all submittal and signage requirements. Exhibit 36, pg. 19. In addition, the Applicant met with the Glenmont Exchange Community Group on April

11, 2024. *Id.* Staff received email inquiries about the Project, one from a resident asking for information, and another from a Montgomery County Public Schools (MCPS) demographer asking about Project phasing. *Id.* OZAH received 10 letters from close by neighbors in opposition. Two of letters contained signatures of 6 different neighbors on each letter. Exhibits 48-56 and 63-67. The following neighbors testified during the hearing in opposition to the application: Leopoldo Villegas, Beverly O'Brien, Cecilia Castro De Anderson, Lindsay Roe, Richard Takamoto and Vicki Vergagni. The opposition testimony raised concerns about stormwater management, deforestation/tree removal, traffic, pedestrian safety, and the overall negative impact the extension of Erskine would have to the neighborhood immediately to the east of the proposed development. T. 187-234.

V. FINDINGS AND CONCLUSIONS

A floating zone is a flexible device that allows a legislative body to establish development standards and uses for a particular district before “attaching” to individual properties. The zone may be applied to individual properties with the approval of a Local Map Amendment.

For approval, the District Council must find that the proposal will meet the standards required by the Zoning Ordinance and that it will be consistent with a coordinated and systematic development of the Regional District. (*See, Md. Land Use Art., §21-101(a) and (b).*) While many of the site-specific requirements for development are addressed by later approvals, the Zoning Ordinance contains various standards, or “Necessary Findings” that the Council must make. These standards incorporate the requirements of other sections of the Zoning Ordinance, as set forth below.

A. The “Necessary Findings” Required by Zoning Ordinance §59.7.2.1.E.2.

1. Substantial Conformance with the Master Plan

Several sections of the Zoning Ordinance require an applicant to demonstrate that the proposed rezoning conforms to the applicable Master Plan:

Section 7.2.1.E.2.a. For a Floating zone application the District Council must find that the floating zone plan will:

a. substantially conform with the recommendations of the applicable

master plan, general plan, and other applicable County plans;

* * *

Section 59.7.2.1.E.2.b: ...further the public interest...

* * *

Section 59.7.2.2.c: ...satisfy the intent and standards of the proposed zone...

* * *

Section 59.5.1.2.A.1. (Intent of Floating Zones): Implement comprehensive planning policies by... furthering the goals of the general plan, applicable master plan, and functional master plan...

Sector Plan Discussion

The property is located in an area governed by the 2013 Glenmont Sector Plan. *(See image from Sector Plan on the following page.)*

Map 1: Sector Plan Area



2013 Glenmont Sector Plan, pg. 4

Staff concluded that the project substantially conforms to the 2013 Glenmont Sector Plan (Sector Plan) and Thrive Montgomery 2050 (General Plan). Exhibit 46, pg. 16. Specifically, Staff identified “high-level vision” of the Sector plan quoting the following:

Glenmont is envisioned as a predominantly residential neighborhood with new transit-oriented, mixed-use development concentrated in and around the Glenmont Shopping Center and Metro station. The Glenmont of the future will be a walkable, diverse, and sustainable community with services and amenities primarily for the local residents and workers.

Id. and See 2013 Glenmont Sector Plan, p. 5.

Staff also identified that the Sector Plan offers “detailed guidance for the future of the Glenmont Forest block, which aligns with the proposed Local Map Amendment.” Specifically, page 29 of the Sector Plan states:

Because of the property’s location within easy walking distance of the Metro, its proximity to the Glenmont Shopping Center, its single ownership, and its size, it may be suitable for future rezoning through a Local Map Amendment to CR Zone or an equivalent zone to encourage a multifamily redevelopment of four- to six-story buildings.

The Staff Report further notes that the Sector Plan provides additional direction for the property including a 100-foot-wide transition zone of CRN-1.5, C-0.25, R-1.5, H-45 (or similar) as being an appropriate buffer between redevelopment and the adjacent single-family detached houses. *Id.* Staff points out that rather than split-zone the Property, the Project seeks to “accomplish the same compatible transition through the use of a binding element” limiting building heights to 45 feet for a distance of 100 feet from the eastern property line. *Id.* at 16. The Sector Plan also provides that “if the Property is rezoned, redevelopment should use a compact building footprint and structured parking to emulate the existing open space character.” 2013 Glenmont Sector Plan, pg. 29.

The Sector Plan lays out specific objectives that should be achieved if the Property is rezoned:

- Provide, as a priority, the CR Zone public benefits of Public Open Space to retain the open and green character of the site, and Affordable Housing to obtain more than the 12.5 percent required minimum MPDUs.
- Encourage the achievement of greater than minimum required Public Use Space through compact footprint.
- Protect and restore areas of environmental buffer and investigate options for stream restoration with redevelopment.
- Preserve as much existing tree canopy as possible.
- Connect new internal streets with Erskine and/or Wallace Avenues.
- Construct a hiker/biker path between Randolph Road and the existing Wheaton Regional Park’s hard surface trail network

Id. pg. 30.

Staff addressed these recommendations, first noting that the Applicant proposes a binding element of 15% MPDUs. Exhibit 46, pg. 17. Regarding the “Public Use Space,” such benefits will

be determined at the time of Sketch Plan and while the Open Space Exhibit submitted shows 11 percent of Public Open Space, this plan is conceptual and will be reevaluated seeking a balance between open space/green character and urban fabric for a new housing development close to a Metro Station. *Id.* For the “protection and restore areas of environmental buffer” recommendation, Staff notes “[t]he stream buffer area will be protected and reforested within a Category I Forest Conservation Easement. A portion of the onsite stream will be restored by the Parks Department in conjunction with the stream restoration on the adjacent Wheaton Regional Park property (as approved by Forest Conservation Plan No. F2023009A).” *Id.* Regarding preservation of the existing tree canopy, Staff notes that the Applicant is requesting removal of most of the onsite trees outside the forest area. *Id.* Further, Staff notes that the FZP is “conceptual in nature and “recognizes that removal of many of the variance trees will be necessary due to building demolition impacts, but Staff will work closely with the Applicant to save trees where possible.” *Id.* Regarding the final two recommendations, connecting Erskine and/or Wallace Avenues and construction of a hiker/biker path between Randolph Road and the existing Wheaton Regional Park, Staff notes the Erskine connection to Randolph Road is planned in this ZFP and a future connection of the hiker/biker path is infeasible at this time, but the Applicant will pursue a connection in coordination with Montgomery Parks and the HOC property owner to the south. *Id.*

Applicant’s expert, Matthew Leakan testified at length to how the proposed development is in substantial conformance with the overall goals of the Sector Plan and opined that the project not only conforms with the Sector Plan but also the General Plan. T. 80-108. He specifically addressed the 6 recommendations for redevelopment of the site as identified in the Sector Plan by noting the project calls for 15% MPDUs, restricting the height of the buildings near the neighborhood to the east at 45’, improves connectivity by connecting Erskine, and that the development is designed to avoid the natural resource area. T. 80-83. He further testified to an 11% open space proposal and that the Applicant seeks to preserve as much existing tree canopy as possible through the compact development. T. 83-85. Regarding the recommendation to connect “Erskine and/or Wallace,” Mr.

Leakan opined connecting Wallace to be infeasible due to the topography and that Erskine “had a lot more desirability in terms of being able to extend the street grid as recommended in the sector plan.”

T. 86.

General Plan Discussion

Staff notes the County’s General Plan (*Thrive Montgomery 2050*) provides recommendations intended to diversify the housing stock across incomes, building types, and geography. Exhibit 46, pg. 18, *citing Thrive Montgomery 2050*, pg. 23. The General Plan also states that “[t]he construction of a wider variety of sizes and types of housing and a focus on affordability and attainability will help diversify the mix of incomes in neighborhoods across the county, improving access to services, amenities, and infrastructure for low- and moderate-income residents, who are disproportionately people of color.” *Id.*

Staff found that the project will provide an increase in the number of units within walking distance to a Metro station, provides regulated affordable housing where none currently exists and determined that the Application is strongly aligned with policies in the housing for all chapters of the General Plan, in particular the recommendation to provide more housing of all typologies. *Id. citing* pg. 136 and 121.

The specific policies from the General Plan addressed by the Applicant are as follows:

- Increase the number of income-restricted affordable housing units, especially for low-income households with particular attention to high-income areas to ensure that people who work in retail, service and other low-wage earning employment sectors have the option not to commute. (p. 132).
- Facilitate the development of a variety of housing types in every part of the county but especially in areas near transit, employment, and educational opportunities. (p. 132).

Id. at 18-19.

Mr. Leakan explained the “sector plan ... affirms a lot of the position statements, policy recommendations, goals and objectives that the general plan does.” T. 70. Further, he testified that both the General Plan and the Sector Plan established goals to “incentivize development of the County near its transit facilities and in its corridors.” T. 107. Mr. Leakan testified that Georgia

Avenue is planned for more transit service accessibility in the future. T. 108. In Mr. Leakan's description of the neighborhood, he noted that the Glenmont Shopping Center is identified specifically in the General Plan as a "major center for development predominately inducing higher intensities and higher heights are planned for that location." T. 62. In wrapping up his discussion on both the General Plan and the Sector Plan, Mr. Leakan opined that the project complies with the intent, purposes and standards of the "CR floating zone as well as the applicable development standards."

Public Interest Discussion

Staff determined that the Project will further the public interest by yielding up to 1,793 additional units at a convenient, transit accessible location of which 15% will be MPDUs, in a location where none currently exist. Exhibit 46, pg. 19. Additionally, the redevelopment is across the street from the Glenmont Shopping Center offering many amenities to residents and is within walking distance (approximately ½ mile) of the Glenmont Metro Station. *Id.* Mr. Leakan opined that the redevelopment of an aging multi-family development with desirable new housing close to existing infrastructure and amenities, other regulatory requirements to be required such as modern stormwater management and forest conservation are all in the public interest. T. 107.

Conclusion: Aside from the explicit requirement to "substantially conform" to the Master Plan, OZAH has interpreted the "public interest" requirement as conformance to adopted County plans and policies, including the relevant land use plans. The Hearing Examiner agrees with both Staff's and Mr. Leakan's characterization of the goals and recommendations of both the Sector Plan and the General Plan for the property.

The Hearing Examiner agrees with Staff and Mr. Leakan's testimony that the proposed redevelopment is inline with the recommendations of the Sector Plan including "affordable housing to obtain more than 12.5 percent of the required minimum MPDUs," maintains a "100-foot wide buffer along the eastern property line," and seeks to connect internal streets. The Hearing Examiner

finds the increased number of dwelling units sought, the design of the redevelopment locating the taller buildings to the north and west of the property with the four-story buildings to the east (also keeping in line with the goals of the General Plan) to provide a wide choice of housing types for all people of all income levels close to amenities and public transportation. The Hearing Examiner also finds the project will take an underutilized and aging apartment complex, in a location with amenities and easy access to Metro and upgraded housing with 15% MPDUs to be in conformance with both the Sector and General Plans and to be in public interest.

The Hearing Examiner also finds Staff's review and application of the Sector Plan to the proposed redevelopment to be correct. She further finds that the Application satisfies the intent and standards of the proposed zone. The Hearing Examiner finds it significant that the Sector Plan identified the subject property as one ripe for a rezoning and recommended the specific rezoning sections as submitted by the Applicant. (*See Glenmont Sector Plan, pg. 35.*)

2. Compatibility

Several sections of the Zoning Ordinance require the District Council to analyze the compatibility of the proposed FZP with adjacent uses and the surrounding area. The application must:

Section 7.2.1.E.2.c.: satisfy the intent and standards of the proposed zone and, to the extent the Hearing Examiner finds it necessary to ensure compatibility, meet other applicable requirements of this Chapter;

* * *

Section 5.1.2.C. (Intent of Floating Zones). Ensure protection of established neighborhoods by:

- 1. establishing compatible relationships between new development and existing neighborhoods through limits on applicability, density, and uses;***
- 2. providing development standards and general compatibility standards to protect the character of adjacent neighborhoods; and***
- 3. allowing design flexibility to provide mitigation of any negative impacts found to be caused by the new use.***

* * *

Section 5.3.2. (Purpose of Commercial/Residential Zones). The purpose of the Commercial/Residential Zones is to:

- A. allow development of mixed-use centers and communities at a range of densities and heights flexible enough to respond to various settings;***
- B. allow flexibility in uses for a site; and***
- C. provide mixed-use development that is compatible with adjacent development... provide mixed-use development that is compatible with adjacent development.***

Section 7.2.1.E.2.d. be compatible with existing and approved adjacent development...

Regarding compliance with Section 5.1.2.C, Staff determined that:

The proposed development will provide a compatible relationship with existing adjacent residential development to the south and east. The Project provides generous setbacks to the south and east, and proposed buildings will step down in height approaching the detached residential neighborhood to the east. Buildings will be restricted to 45 feet in height within a distance of 100 feet from the eastern Property line.

Exhibit 46, pg. 20-21.

The Applicant, in addressing Section 5.3.2 in its land use report, stated as follows:

The CRF Zone is an appropriate zoning classification for the Property. The intent of the CRF Zone is to allow mixed-use development at a range of densities and heights flexible enough to respond to various settings. It also allows flexibility in uses which can be located on a site. It seeks to provide mixed use development which is compatible with adjacent development. As described previously in this Report, the proposed Project facilities redevelopment of the Property with additional, modern residential housing on this prominent site, which is located within walking distance of the Glenmont Metro Station.

Exhibit 45, pgs. 22-24.

The Applicant further asserts the proposed development satisfies the purpose of the commercial/residential zone through the binding elements that limit the height of the structures to 45 feet for a distance of 100 feet from the eastern property boundary and the use of the property will be limited to multi-family/townhouse living and retail/service establishments (up to 5,000 square feet and restaurant use). *Id.*

When asked about the type of housing stock to be constructed, the Applicant's expert, Mr.

Leakan testified that as the floating zone plan is “conceptual,” the Applicant wanted the flexibility to construct one or both or some combination of multi-family or townhouse. T.77. He further stated that the Applicant seeks to create a development framework “setting the compatibility edges along the eastern property” line. T. 77. Mr. Leakan testified at length to the efforts taken by the Applicant to ensure compatibility of all surrounding neighborhoods. He referred to Exhibit 39 to opine that a conservative approach was used to create the maximum setbacks to the east and south of the property and how from the eastern property boundary the 45-foot maximum building height within the 100-foot setback zone and the 75-foot building height maximum being all aggregated to the far west portion of the property satisfies the compatibility requirement of 5.1.2.C. T. 100-101. Further, Mr. Leakan opined that the setbacks, building heights, maintenance of the existing forest achieves “multiple policy goals, and in this case compatibility ... going above and beyond.” T. 109.

Randall Rentfro, the Applicant’s expert in civil engineering, explained the proposed connection of Erskine, a public road, as a “right in/right out” from Randolph Road through the property to Glenallan Avenue, was analyzed and found to be in conformance based on roadway classifications. T. 129-130. See Exhibit 36. Anne Randall, Applicant’s expert in transportation planning, identified the intersection of Glenallan and Randolph as being signalized, but noted that the intersection of Erskine and Glenallan will not be signalized and more than likely a “stop controlled intersection” because “the volume of traffic anticipated at this time is light. It’s not going to be heavily used” and that, based on the distribution tables, the majority of the traffic is headed toward the south. T. 147-148. Anne Randall further testified that currently Erskine is a narrow road with no sidewalks. T. 155.

Testimony from those arguing in opposition, that the development is not compatible with the surrounding residential neighborhoods, focused on the impact on the surrounding residential neighborhoods. Mr. Leopoldo Villegas testified to his belief that once Erskine is open, parents trying to get to school will cut through the development from Georgia Avenue and proceed through Erskine to Glenallan. T. 190. Further, he testified that “rush hour” is not 8:00 am, but when schools start and

that extension of Erskine will completely change the neighborhood characteristics. T. 191-193.

Ms. Cecilia Castro De Anderson, who has lived on Erskine Avenue since 2005, echoed Mr. Villegas testimony that the extension of Erskine is not compatible with the neighborhood surroundings and further testified to that the current neighborhood adjacent to the property to the east is “surrounded by nature, in a “unique setting” and the character needs to be preserved. T. 196-97, 205. Specifically, she stated that a 5-fold increase in population density would seriously impact the quality of life for residents to the east. T. 197. Ms. Castro De Anderson testified to her observations that traffic on Glenallan during rush hour backs up now and from Erskine, traffic would be forced to turn right or left onto Glenallan. T. 197. She described Erskine as a “three house long street that dead ends into another secondary street.” T. 200. An additional concern raised by Ms. Castro De Anderson was the level of noise that would come from Erskine once the road is opened to Randolph Road. T. 199. Ms. Castro De Anderson specifically testified to her personal observation of opening the windows in the rear of her house and hearing the traffic from Randolph Road and then opening the windows in the front of the house and hearing birds and quiet, stating that once the Erskine connection is created, it will destroy the peace of the neighborhood. T. 199, 205.

Ms. Lindsay Roe, another neighbor in opposition, testified to her concern over the dozens of trees to be cut down and that the new trees cannot replace the ecological function of the mature trees. T. 208-209. Further, she stated that the opening of Erskine would be more of a “headache than a benefit.” T. 209. Specifically, she described Erskine as a “driveway... a one-lane road that leads to four driveways.” T. 209. Ms. Roe observed that the existing apartment complex has access from both Georgia and Randolph. T. 210. Ms. Roe also noted the Applicant’s expert testified that the Erskine extension road would not be used much anyway, so what is the “utility in taking the nature out ...in order that people can be a few seconds quicker to get to the nature center.” T. 210. She further testified she regularly observes that congestion on Glenallan exists now in the morning for local residents trying to get to Randolph from Glenallan and that traffic gets backed up past Erskine in the morning. T. 210.

Ms. Vicki Vergagni, a neighbor in opposition and an elected representative of the Glen Way Gardens Condominium directly across from the development, testified to the fact that the intersection at Randolph and Glenallan has two school populations that come across the roads, an elementary school and Kennedy High School. T. 219, 221. Ms. Vergagni expressed shock at the “enormity of the request” specifically the density, size and form of the structures. T. 222. It is her belief that the “gigantic redevelopment will have a dangerous impact on the community and the quality of life of its residents.” T. 222. Ms. Vergagni questioned how nearly 5 times the number of pedestrians would travel from the new complex to the Metro given the difficulty of crossing Randolph Road and Georgia Avenue. T. 228. It is Ms. Vergagni’s belief that the LMA should be denied for the Applicant’s failure to address transportation compatibility and the public interest. T. 230.

As part of the Applicant’s rebuttal testimony to the question of whether Erskine should be extended, Mr. Leakan opined on the “difficult decision” surrounding the customary use of an existing dead-end street, in that it feels permanent, but the public policy behind inter-parcel connectivity exists and that it is an AICP and an APA policy that connectivity is a relief to traffic congestion. T. 262. He further opined the roads that were “stubbed” to the property were always intended to be a connection. He added that if, at the time of construction, the County intended otherwise it, would have been made a cul-de-sac. T. 261.

Conclusion: As identified at the start of this section, the Zoning Ordinance requires review of several different sections to determine a proposed development’s “compatibility” with the surrounding established neighborhoods and existing development. In reviewing the boundaries of the Sector Plan, the Hearing Examiner notes that the R-90 single family neighborhood to the immediate east of the property is not located within the boundaries of the Glenmont Sector Plan. (*See Sector Plan Image on page 21 above.*) In addition, this area to the east of the property contains the only single-family detached residential development in the entire “surrounding neighborhood” as described by Staff. (*See Surrounding Neighborhood Image on pages 10 and 11 above.*) The Hearing

Examiner agrees with Staff and Mr. Leakan that the placement of the structures, design of the structures, setbacks, graduated heights of the proposed buildings from the east to the west, open space areas, and designated forest conservation areas are compatible with the surrounding neighborhoods, to the extent that visually, the intensity of the use will front the major roads. With that said, the Hearing Examiner finds that the proposed connection of Erskine through the adjacent single-family neighborhood to not be compatible with that portion of the surrounding neighborhood. Upon consideration of the exhibits presented, testimony of the Applicant's expert and the testimony in opposition, the Hearing Examiner finds persuasive the observations of the neighbors, characterizing the "unique" setting created by the mature trees and small "driveway" like street of Erskine.



Staff Report – Exhibit 46, Figure 3 -Aerial View of Existing Conditions
Close-up of Erskine Connection to the Property

The Hearing Examiner also finds the R-90 single-family detached homes to the immediate east of the property and the immediate west of Glenallan to be unique in their lot shape and house configuration on the lots as compared to those homes east of Glenallan and the single-family homes beyond the Fire Station west of Georgia Avenue. The Hearing Examiner agrees with the opposition that to make Erskine connect directly to Randolph Road for vehicle traffic and create a through connection from Georgia Avenue through a development expanded from the existing 482 units to up to 2,275 units to Glenallan to be in opposite to this detached single-family home existing adjacent development.

While the Hearing Examiner does not disagree with Mr. Leakan's testimony regarding the public policy of creating interconnectivity of public streets or with the recommendations of the Glenmont Sector Plan and the General Plan to connect said streets, she notes that the neighborhood to the east is not in the Glenmont Sector Plan and the LMA process requires a public hearing for thorough review of the specifics of project in order to determine compatibility with adjacent properties. While it is important to adhere to public policy and plan recommendations, it was the testimony of Applicant's transportation expert that the Erskine connection would not be heavily used and if so, then is the connection being made simply because of a general policy? Shouldn't the question we are asking be what impact does this general policy have on the immediately adjacent neighborhood to the east of the property?

The Hearing Examiner further finds that a vehicle roadway connection from a 2,275-unit complex through this single-family development to the east to not be compatible with properties immediately adjacent that front Erskine to the west of Glenallan, nor is it compatible with the homes all along Glenallan south of Randolph Road. Creating Erskine as a vehicle through street from Randolph will negatively alter the quality of life for those adjacent residents.

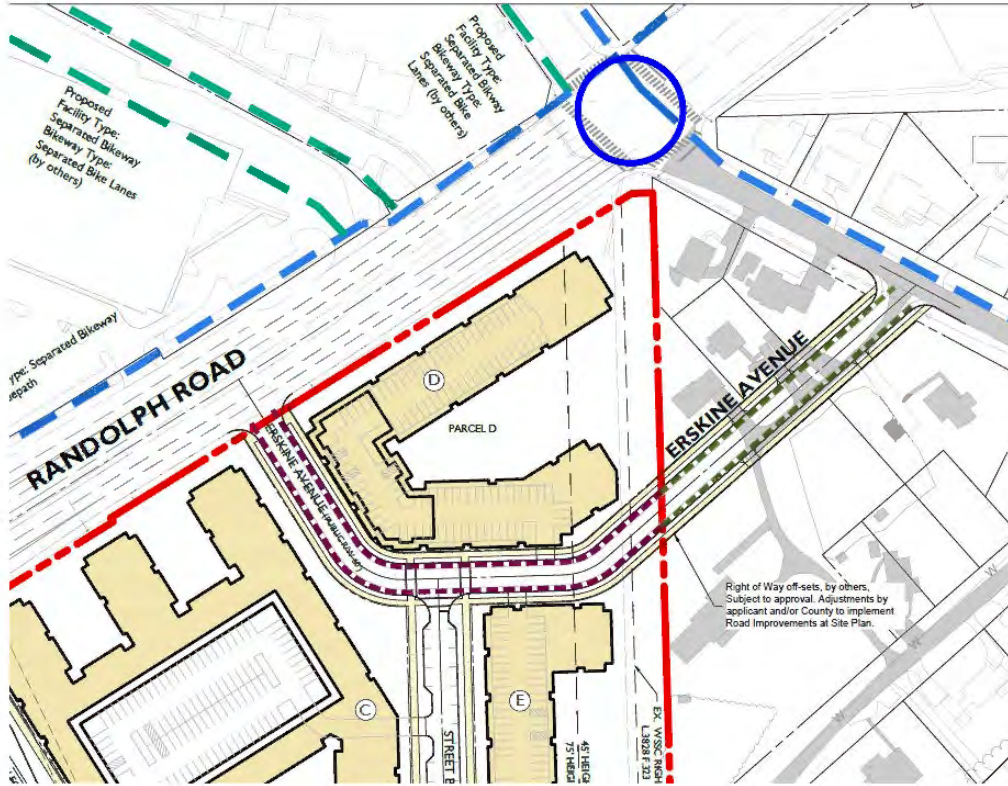


Exhibit 37 – Revised Bicycle Circulation Plan – Close up of the Erskine Extension through the east.



Exhibit 40 – LATR – Figure 1-2

Without the creation of a vehicle street connection to Erskine, the Hearing Examiner finds that the Applicant will have the ability to retain more mature trees along the eastern boundary of the property further protecting the natural environment and the tree canopy per the General Sector recommendations and still establish connectivity via a pedestrian and/or bike path. As a point of clarity, the Hearing Examiner only finds that the Erskine vehicle roadway connection to be incompatible with the neighborhood to the east. The project itself is compatible with the surrounding properties to the extent that it plans for generous setbacks and proposes a binding element limiting building heights to 45 feet for a distance of 100 feet from the eastern property line. The project also places the higher buildings and massing toward the west. In addition, the buildings will be setback at least 30 feet from the existing townhouse development to the south and satisfy height restrictions along the southern property line. The Applicant's proposed design anticipates above-using "diverse range of materials and design techniques" to reduce the bulk of the structures and the above-ground structured parking to be visually concealed either by the residential buildings or other architectural treatments.⁵ While final design of the open space occurs at Site Plan review, the proposal to place the open space to southeast of the property adjacent to the forest conservation area will provide a natural transition from the property the adjacent treed areas. Those individuals opposing the project argue the jump from 482 units to 2,275 units creates an increase in density incompatible with the adjacent/surrounding neighborhood. The Hearing Examiner understands this concern, but she finds the proposed design, the location of the property at the corner of Georgia and Randolph Roads within ½ mile of the Metro, the other intense uses of properties in the surrounding neighborhood, aside from the one immediately to the east, to be compatible upon the removal of Erskine as a through vehicle street. With the elimination of Erskine as a vehicle through street, this standard has been met.

⁵ Exhibit 45, pg. 7

3. Adequate Public Facilities/Public Interest

Several sections of the Zoning Ordinance require an applicant for a Floating Zone to demonstrate that public facilities will be adequate to serve the property. The Council must find that the application meets the following standards:

Section 7.2.1.E.2.e: generate traffic that does not exceed the critical lane volume or volume/capacity ratio standard as applicable under the Planning Board’s LATR Guidelines, or, if traffic exceeds the applicable standard, that the applicant demonstrate an ability to mitigate such adverse impacts; and...

* * *

Section 7.2.1.E.2.b: further the public interest...

* * *

Section 7.2.1.E.2.c.: satisfy the intent and standards of the proposed zone and, to the extent the Hearing Examiner finds it necessary to ensure compatibility, meet other applicable requirements of this Chapter;

* * *

Section 5.1.2.A.2: (Intent of the Floating Zones). “...implement comprehensive planning objectives by...ensuring that the proposed uses are in balance with and supported by the existing and planned infrastructure...”

Traffic & Stormwater Discussion

Because the project is estimated to generate more than “50 or more net new peak hour person trips,” the Applicant was required to submit a Transportation Impact Study to determine multimodal adequacy. Exhibit 45, pg. 23. Staff notes the site is located within an “orange policy area” that it is immediately adjacent to a “red policy area” and that the applicant was asked to analyze seven intersections within the Glenmont Policy area for informational purposes only. *Id.* Upon review of the documents submitted, Staff confirmed that “none of the studied intersections are anticipated to exceed the congestion standard.” *Id.* Staff further affirmed that “all study intersections will operate within the policy area’s congestion standards” and that “additional traffic analysis will be completed at the time of Preliminary Plan.” *Id.* at 24.

Land Use	Morning Peak Hour	Evening Peak Hour
Existing (credit)		
Multifamily Housing (Low-Rise) 482 units	265	351
Proposed		
Multifamily Housing (Mid-Rise) 2,275 units	1,523	1,367
Net New Person Trips		
	+1,258	+1,016

Staff Report – Exhibit 46, Table 3, pg. 23

The Applicant’s transportation planning expert, Ms. Anne Randall, testified at length to the LATR⁶, roadway design and the traffic in and surrounding the project. Ms. Randall explained that in preparing the LATR, she considered whether the project is going to cause more than 50 “person” trips, not just vehicle, but also pedestrian and bicycle, which required an LATR study even though for an LMA only vehicle trips are required to be reviewed. T. 151-152. As part of the review and preparation of a scoping agreement, it is determined the maximum amount of money that the developer will be required to pay for deficiencies in the system based on a “fee per dwelling unit.” T. 153. The study determined that the developer would be required to spend a maximum of \$9,988,160⁷ on pedestrian, bicycle and vehicular improvements looking at a 1,500-foot radius from the site. T. 153, 155. Ms. Randall further explained that this money is spent off-site, not on-site, and can be used to improve existing deficiencies including, sidewalks, crosswalks, pedestrian signals, ADA requirements, street lighting, etc. and can resolve the pedestrian issues raised by the community. T. 154.

In reviewing motor vehicle adequacy, Ms. Randall reviewed a total of 13 intersections and noted that these 13 intersections are in a “red policy area,” which no longer requires a vehicle analysis, while an “orange policy area” requires vehicle, pedestrian, bike, transit, vision zero.” T.

⁶ See Exhibit 40 – LATR Study

⁷ The amount of this “cap” is determined at the preliminary plan stage. T. 158.

160. Ms. Randall advised that her team included vehicle analysis even though it was not required. T. 160.

160. In explaining the difference between orange and red policy areas, Ms. Randall stated “orange areas are where the County wants to see development and red areas around Metro stations are where they want to see more intense transit-oriented kind of growth to support that transit service.” T. 162.

Ms. Randall opined that in a “red policy area you want the congestion which is why in the red policy areas they no longer ask for the vehicular test.” T. 163. She further opined that “all of the study intersections, both the red policy area as well as the orange policy area intersections ... were well below the threshold, the max allowed in either the red policy area or the orange policy area.” T. 164-165.

Specifically, she stated that the delay standard for these intersections in the orange is 80 seconds overall and delay in the red is 120 seconds. T. 164. The study revealed that the max at the intersection of Georgia Avenue and Randolph Road was 92.3 seconds, below the 120-max allowed for a red policy area, and in the orange policy area intersections at Georgia and Arcola was at 30.8 seconds, well below the 80 maximum. T. 165-166. Ms. Randall opined that none of the studied intersections either in the red or orange area would exceed the LATR standards. T. 166

Ms. Randall further testified that the Montgomery County Department of Transportation asked that the right in/right out on Randolph Road coming out of the project be studied “with and without” it. T. 167. She further explained that these final traffic determinations will be made at the time of preliminary plan, another review will be completed, all of the turning movement counts will be redone, and another scoping agreement prepared. T. 167. She stated “we'll go through this whole process again and it will be determined at that time based on the analyses that we do” during preliminary plan. T. 167. In addition, Ms. Randall opined that for this LMA application “everything passed and they did not request or require any road improvements for this project in relation to the vehicle... or any of the other tests that we provided.” T. 167.

During the rebuttal portion of the testimony, Mr. Leakan explained that this application process is the catalyst to correcting a “perception that there's a substandard or a nonstandard or a poor condition today as it relates to either stormwater or traffic” and that while the LMA process does not

provide a firm commitment to do these things today, zoning comes first. T. 263. He further opined that “the APFO process is very thorough in Montgomery County. It is very rigorous, and what I would suggest is the solution to a lot of these problems really lie in the adequate public facilities test and a faithful sort of notion that those catalysts ... are really the solution to create ... to solve those problems.” T. 263.

Mr. Rentfro, Applicant’s civil engineering expert, testified that no modern stormwater management controls, other than a simple conveyance system, exist on the property. T. 60. Mr. Rentfro participated in the preparation of the site layout including the stormwater management strategy narrative and is in collaboration with DPS on the stormwater management concept plan, which will be finalized during the next steps and approved prior to preliminary plan approval. T. 37, 132. Mr. Rentfro further explained that stormwater approvals require a 2-step process, the first being the site plan and second a final permitting set that must be reviewed and approved by DPS and satisfy current code requirements. T. 133. He further explained that the proposed layout of the project will satisfy 2010 MDE stormwater regulations and fully “accommodate stormwater management facilities that meet or exceed applicable county and state law.” T. 140.

Mr. Takamoto, a neighbor in opposition to the Application, testified that he understands the stormwater management is a “concept plan” but, based on his previous history with the property, he is very concerned about stormwater runoff coming from Glenmont Forest Apartments and in his observations, the statements made during hearing testimony that “no runoff coming from Glenmont Forest Apartments” is untrue. T. 216. Mr. Takamoto engaged the services of an engineering company and asserted the report⁸ he personally obtained conflicts with that statement that no runoff comes from the Glenmont Forest Apartment.” T. 216. He further testified that a “riprap drain” that runs along the edge of the property when properly maintained keeps water off his property, but

⁸ See Exhibit 63 – Takamoto opposition and engineering report. The Hearing Examiner acknowledged during the hearing notes in this Report that the engineer who prepared the report was not available for cross examination.

expressed concern about runoff and sediment during construction that would negatively impact his property. T. 217.

During rebuttal, Mr. Rentfro explained briefly how modern stormwater management works. T. 271. He explained that a storage capacity computation is required and, when computations are done based on existing conditions, roughly 80,000 cubic feet of water would need to be treated that is not currently being treated and that the site contains approximately 40% impervious surfaces. T. 272. Further, he explained the proposed impervious surface for the development is approximately 54%, and while an increase, the law requires providing over 114,000 cubic feet of storage and adding 63 facilities on the property where today there are none. T. 272. Essentially, Mr. Rentfro opined that while there is a 14% impervious surface none of the stormwater is being currently treated and with the new stormwater management facilities installed almost double the amount of water will be managed and treated.

Public Interest and Satisfaction of Intent and Standards of the Proposed Zone Discussion

Staff advised that the project furthers the public interest by providing up to 1,793 additional units at a transit accessible location including 15 percent MPDUs where currently none exist. Exhibit 46, pg. 19. The location of the development across from the Glenmont Shopping Center and within a ½ mile of the Glenmont Metro Station further supports the proposition that the redevelopment is in the public interest. *Id.* Staff also determined that this location is convenient to transit, has the infrastructure in place to support the development and that the structured parking allows for enhancement and restoration of the property's natural features. *Id.* at pgs. 19-20. As discussed in Part V. A.1. above, the Sector Plan recommends a floating zone for the property and focuses on its location near transit. *Id.*

Conclusion: Based upon the testimony of the Applicant's experts, the determinations made in the Staff report, and as stated in Part V. A.1. above the Hearing Examiner finds again the project to

be in the public interest. While the opposition questioned the adequacy of the stormwater management plan and area transportation, based on the LATR submitted, the testimony of Mr. Rentfro and Ms. Randall, and the Staff report, the Hearing Examiner finds that public facilities will be adequate to serve the proposed use and the finer details, regarding stormwater and transportation, will be determined at a later stage of the development process. In addition, the Hearing Examiner finds the overall proposed development to be in balance with the existing and planned infrastructure. The Hearing Examiner still finds the connection a vehicle through street of Erskine from Randolph to Glenallen to be incompatible with the surrounding neighborhood, given the fact that final transportation plan is not adopted until the preliminary plan stage, the public facilities without the Erskine connection are still adequate.

B. The Intent and Standards of the Zone (Section 59.7.2.1.E.2.c)

As already stated, Section 59.7.2.1.E.2.c of the Zoning Ordinance requires the District Council to find that the FZP “satisfy the intent and standards of the proposed zone.” The Zoning Ordinance includes an “intent” clause for all Floating Zones and a “purpose” clause for the particular zone requested. Several of these have already been analyzed in Part V.A of this Report. The balance of the intent findings for Floating Zones and the purposes of the CRF Zone are discussed below.

1. Intent of Floating Zones (Section 59.5.1.2)

The intent of Floating Zones is in Section 59.5.1.2 of the Zoning Ordinance. The Hearing Examiner has already discussed whether the application has met the intent Sections 59.5.1.2.A.1 and 2. This section discusses whether the FZP meets the remaining intents of the CRF Zone.

Section 59.5.1.2.A.3 ... The intent of the Floating zones is to:

A. Implement comprehensive planning objectives by...

3. allowing design flexibility to integrate development into circulation networks, land use patterns, and natural features within and connected to the property...

In analyzing Section 59.5.1.2.A., Staff determined the proposed redevelopment “capitalizes

on the Project's convenient and transit accessible location to significantly increase the amount of housing available in an area with the infrastructure to support it...[the] street grid will better integrate the new development into the existing circulation infrastructure [and the] Compact development with structured parking allows for enhancement and restoration of the Property's natural features." *Id.* at 19-20. The Applicant's civil engineering expert, Mr. Rentfro and its land use expert, Mr. Leakan, both contributed to the Applicant's land use report which states that the "project responds to its surroundings and has been designed to respond to its transit-oriented nature, while simultaneously promoting the open space character envisioned by the Sector Plan and providing a compatible transition to the adjacent single family residential land." T. 57, 120 and Exhibit 45, pg. 21.

Conclusion: The Hearing Examiner agrees with Staff and the Applicant that the project has been designed to respond to the transit-oriented nature of much of the surrounding neighborhood. It is important to note the fact that the bulk of the property will remain a residential multi-family use. In addition, the project design modernizes the property, replacing the aging garden style apartment complex with structures laid out for better flow and appearance. The gradual elevation change of the proposed structures lessens the visual impact of the properties to the east property.

B. Encourage the appropriate use of land by:

1. providing flexible applicability to respond to changing economic, demographic, and planning trends that occur between comprehensive District or Sectional Map Amendments;

2. allowing various uses, building types, and densities as determined by a property's size and base zone to serve a diverse and evolving population; and

3. ensuring that development satisfies basic sustainability requirements including open space standards and environmental protection and mitigation; and

Both Staff and the Applicant point to the fact that the Sector Plan acknowledges that a floating Commercial/Residential Zone would be appropriate given the Property's proximity to transit and commercial services. Exhibit 46, pg. 20 and Exhibit 45, pg. 21-22. Both Staff and the Applicant

also agree that the Floating Zone will allow the replacement of the aging garden apartments, providing a significant amount of additional housing with modern amenities, helping to alleviate the acute housing need. *Id.* Staff and the Applicant assert the project satisfies basic sustainability principals though “infill redevelopment,” well-served by existing infrastructure, public transportation, preservation of existing forest, afforestation and the establishment of a stormwater management where none currently exists.

Conclusion: The Hearing Examiner agrees with Staff and the Applicant that the project meets the intent of the floating zone. This project will provide additional transit-accessible housing in conformance with the Sector Plan. The development satisfies the sustainability requirements through redevelopment of an infill lot, taking advantage of existing infrastructure, provides an opportunity for preservation of forested area and the addition of open green space, and the creation of modern stormwater management.

2. Purpose of the Commercial Residential Floating Zones (Section 59.5.3.2)

In addition to meeting the intent of Floating Zones, the FZP must meet the purpose of the zone requested. The purposes of the CRF Zone are in Section 59.5.3.2. The Hearing Examiner has already discussed Section 59.5.3.2 above

Conclusion: The Hearing Examiner already found in Part V.A.2 of this Report (relating to compatibility of the use with surrounding development) that with the removal of Erskine as a through vehicle street from Randolph to Glenallen, the FZP furthers the purpose of §5.3.2. To discuss again the remaining purposes are redundant considering the findings already made. The FZP has been designed in response to the property’s transit-oriented setting, maintains a multi-family/residential use and will be compatible with the community and surrounding properties as noted above. This standard has been met with the removal of Erskine as a vehicle through street from Randolph to Glenallen.

C. Applicability of a Floating Zone (§59.5.1.3)

Section 59.5.1.3. of the Zoning Ordinance sets up a series of threshold tests to determine

whether a Floating Zone may be applied to properties current in an Agricultural or Rural Residential Zone. The Hearing Examiner finds that the property is in neither an Agricultural or Rural Residential Zone, and additionally, the Hearing Examiner finds that the Sector Plan recommends rezoning the property to a CR Zone in the future. Considering this fact, no prerequisites are required for this application.

D. Development Standards and Uses Permitted in the CRF Zone (Div. 59.5.3)

1. Uses and Building Types Permitted (§§59.5.3.3 and 59.3.3.4)

Section 59.5.3.3 of the Zoning Ordinance limits the uses permitted in the CRF Zone to “only” those uses permitted in the CR Zone. Townhouse and multi-unit living are both permitted in a CR Zone⁹. In addition, certain commercial uses are also permitted in a CR Zone. Those specific commercial uses are to be determined later.

2. Development Standards of the CRF Zone

Section 5.3.5 Development Standards.

Staff correctly notes that the design of the development will be finalized and reviewed by the Planning Board at the time of subsequent Sketch, Preliminary, and Site Plan review. Exhibit 46, pg. 21. Staff determined that the FZP meets the development standards of the CRF (Zoning Ordinance, §59.5.3.5), as demonstrated in the table from the Staff Report (Exhibit 46, pgs. 21-22, shown on the next page).

⁹ See Use Table 3.1.6.

	Required/Permitted	Proposed
Tract Area	N/A	34.87 ac (1,518,942 sf)
Previous ROW Dedications	N/A	2.23 ac (97,220 sf)
Proposed ROW Dedications	N/A	0.74 ac (32,261 sf)
Site Area	N/A	31.90 ac (1,389,461 sf)
Density (max)		
Total	1.75 FAR (2,658,149 sf)	1.5 FAR (2,283,413 sf)
Commercial	0.25 FAR (379,736 sf)	5,000 sf
Residential	1.5 FAR (2,278,413 sf)	1.5 FAR (2,278,413 sf)
Setbacks from Property Boundary (min)		
<i>From Public Streets</i>	Established by Floating Zone Plan	Apartment Building- 0 ft Townhouse- 5ft
<i>From Abutting Lots</i>		
Rear/East (R-90) Rear/South (RT-15)	37.5 ft 1 30 ft 2	45 ft 30 ft
Open Space (min)	10% of site area (3.2 acres/138,946 sf)	±11% of site area (3.5 acres/152,840 sf)
Building Height (max.)	75 feet, and height compatibility requirements	75 feet, and height compatibility requirements of 59-4.1.8.B.3, 4, 5
Public Benefits	100 points required	Determined at Sketch/Site Plan
<p>1 Under Section 59-4.1.8.A, the rear setback requirement is 1.5 x 25 (rear setback for detached house in R-90).</p> <p>2 Under Section 59-4.1.8.A, the rear setback requirement is 1.5 x 20 (RT-15 Zone setback). To be conservative, the Applicant is considering both east and south setbacks as "rear."</p> <p>3 Per binding element, all buildings within 100 feet of the eastern lot line will be limited to 45 feet.</p> <p>4 Per Section 4.5.2.C.7, the height limit of the zone and master plan do not apply to the extent required to provide more than 12.5% MPDUs.</p> <p>5 Height of individual buildings will be determined during Sketch/Site Plan review.</p>		

**Development Standards for the
CRF 1.75, C 0.25, R 1.5, H-75 Zone
Staff Report, Exhibit 45, pg. 21**

3. Requirements of Article 59.6

Article 59.6 of the Zoning Ordinance contains general development standards for most developments. These standards regulate the number and design of parking spaces, drive aisles, landscaping, lighting, and public and private open space. As properly identified by Staff, these final design determinations will be made during the sketch, preliminary site plan stages. Staff identified the number of proposed units against the parking requirements.

	Min/Max Spaces	Proposed Spaces
Studio (93)	47/93	2,275
1- bedroom (1191)	596/1,489	
2-bedroom (804)	402/1,206	
3-bedroom (187)	94/374	
2,275 units	1,138/3,162	

Table 2 - Vehicle Parking – Staff Report pg. 23.

Staff footnotes the table above stating that parking counts and types will be determined at the time of Site Plan and parking adjustments for NADMS and unbundling under section 540-6.2.3.1.

Id. The Hearing Examiner agrees with Staff and finds that project meets the development standards for the CRF-1.75, C-0.25, R-1.5, H-75 Zone.

VI. RECOMMENDATION

For the foregoing reasons, the Hearing Examiner concludes that the proposed reclassification and Floating Zone Plan will meet the standards set forth in the Zoning Ordinance with one adjustment, the removal of the vehicle through street of Erskine connecting Randolph to Glenallan, and that it will be consistent with a coordinated and systematic development of the Regional District, under State law. Therefore, I recommend that Local Map Amendment Application No. H- 149, requesting reclassification from the existing R-30 Zone to CRF-1.75 C-0.25, R-1.5, H-75' (Commercial Residential Floating) located at 2300 Glenmont Circle, Silver Spring, Maryland as part of Parcel A, Plat No. 6337 and Parcel B, Plat No. 8065 in the “Americana Glenmont” subdivision and the “Americana Glenmont Apartments” subdivision (Tax Account No. 13-00975447, 13-00975436), be **approved** in the amount requested and subject to

the specifications and requirements of the Floating Zone Plan (Exhibit 30) to be amended to remove Erskine as a vehicle through street from Randolph to Glenallan and provided that the Applicant files a final executed Declaration of Covenants reflecting the binding elements in the land records and submits to the Hearing Examiner for certification a true copy of the Floating Zone Plan with the Erskine change approved by the District Council within 10 days of approval, in accordance with §§59.7.2.1.H.1.a. and b. of the Zoning Ordinance.

Issued: August 19, 2024.

Respectfully submitted,



Kathleen E. Byrne
Hearing Examiner

OFFICE OF ZONING AND ADMINISTRATIVE HEARINGS
MONTGOMERY COUNTY, MARYLAND
100 Maryland Avenue, Room 200
Rockville, Maryland, 20850
(240) 777-6660
{Form Revised 2-7-19}

OZAH LMA No. H- 149
Date Certified by Planning 1/17/24
Date OZAH Accepts for Filing 1/23/24
Scheduled Hearing Date 5/17/24

Application for Local Map Amendment to the Zoning Ordinance
Montgomery County, Maryland

Glenmont Forest Investors LP, c/o Grady Management, Inc.

Name of Applicant(s)

hereby makes application with the County Council for Montgomery County, Maryland, sitting as a District Council for that portion of the Maryland-Washington Regional District within Montgomery County, for the reclassification of property located in the 13-63 Election District of Montgomery County and known as

"Americana Glenmont" Subdivision & "Americana Glenmont Apartments" Subdivision

Lot, Block and Subdivision if boundaries conform to lot boundaries a subdivision for which a plat is recorded among the land records, or a description by metes, bounds, courses and distances, and plat references.

Part of Parcel A, Plat No. 6337 & Parcel B, Plat No. 8065

located at the southeast quadrant of the intersection of Randolph Road & Georgia Avenue (MD-97), Silver Spring, Maryland
City, town, village or community and street number, or if none, the location with respect to nearby public roads in common use.

consisting of approximately 34.87 acres

Area in square feet if less than 1 acre, or in acres if one or more

from the R-30

Present classification

Zone to the CRF-1.75 (C-0.25, R-1.5, H-75)

Requested classification

Zone

Tax account number(s) 00975447, 00975436

Name and address of owner(s), if other than applicant Glenmont Forest Investors LP, c/o Grady Management, Inc.

8630 Fenton Street, Suite 625, Silver Spring, MD 20910

List all persons having at least a 5% interest in property, including those holding mortgages, liens, etc., and all contract purchasers, optional purchasers and persons holding mortgages, etc.

Glenmont Forest Investors LP, c/o Grady Management, Inc.

Listed below are the Application numbers, dates of filing and actions taken on all applications filed within 3 years prior to this date on any land lying anywhere within the same larger lot, parcel or tract of land in which the above-described land is located.

Application Number	Date	Action Taken
_____	_____	_____
_____	_____	_____

LMA Application (Form Revised 2/7/19) - Page 2


Please note that if previous Local Map Amendment applications were filed for the subject property, filing of subsequent Local Map Amendment applications are limited as specified in Zoning Ordinance §59.7.2.1.G.

I have read the REVISED NOTICE REGARDING LOCAL MAP AMENDMENT APPLICATIONS FILED AFTER MAY 1, 2014 and the CHECKLIST FOR LOCAL MAP AMENDMENT (LMA) APPLICATIONS accompanying this form on OZAH's website, and I am filing herewith all of the required accompanying information. I hereby affirm that all of the statements and information contained in or filed with this Application are true and correct.

 STEVEN A. ROBINS
Signature of Attorney - (Please print next to signature)

Lerch Early & Brewer 7600 Wisconsin Ave, Suite 700, Bethesda, MD 20814
Address of Attorney

301-657-0474 sarobins@lercheary.com
Telephone Number Email Address

 JEAN PAUL SAVARY
Signature of Applicant(s) - (Please print next to signature)

8630 Fenton Street, Suite 625, Silver Spring, MD 20910
Address of Applicant(s)

301.495.1976 jp.savary@gradymgt.com, gunterberg@rodgers.com
Telephone Number Email Address

Subscribed and sworn before me by the Applicant(s), this 30th day of November, 20 23.




Notary Public

Payment of appropriate filing fee must accompany this application. See Fee Schedule. Twenty-five percent of the specified fee must be paid directly to the Planning Department when this application is submitted for review of completeness. The remaining 75 per cent of the specified fee and all sign fees must be paid directly to OZAH when the application is filed with OZAH after it has been certified by the Planning Department.. No part of such fee shall be refunded unless such refund and amount thereof is allowed under Zoning Ordinance Section 59.7.6.5.B.

Applicant is required to post the property covered by this application within 5 days from acceptance of filing, in accordance with Zoning Ordinance Section 59.7.5.2.C., with a sign or signs to be furnished by the Office of Zoning and Administrative Hearings. An affidavit of posting, as required by the Zoning Ordinance, must be presented at the hearing on the application.

Under Zoning Ordinance §59.7.2.1.B.7, new public notice must be provided for any modification to an application requesting an increase in the area proposed to be reclassified or requesting a change to the zoning classification.



LEGEND		GENERAL NOTES	
	Site	1.	All existing zoning information shown is per Glenmont Sector Plan that was last updated on December 2013.
	Stream Valley Buffer	2.	The site is currently zoned R-30, multi-family, low-density residential.
	Floodplain	3.	The site is proposed zone CRF-1.75 (C-0.25, R-1.5, H-75)
	Proposed 45' ht. Building	4.	The site is comprised of parcels N766 (26.31 acres) and N610 (6.67 acres), currently in use as the Americana Glenmont Forest Apartments (Approximately 482 existing dwelling units).
	Proposed 75' ht. Building	5.	Boundary lines, calculated areas and adjoiner information shown hereon were taken from deeds and plats of record. A boundary survey has not been completed by Rodgers Consulting, Inc.
	Proposed Parking Garage	6.	Building footprints and square footages of buildings, open space, landscaping and recreation space to be decided at time of Site Plan.
	Existing Regional Park	7.	Building height may be increased above 75' to allow for inclusion of MPDUs above 12.5%.
	Proposed Amenity Building	8.	The FZAP includes more than 12.5% MPDUs. Bonus density may be achieved for future development per Sec. 4.5.2.C.1.
		9.	Zero foot (0') setback due to variable width public R/W along Randolph Rd and Georgia Avenue.
		10.	The minimum side setback is equal to 1.5 times the minimum side setback required for a detached house on the abutting property.
		11.	The minimum rear setback is equal to 1.5 times the minimum rear setback required for a detached house on the abutting property.

BINDING ELEMENTS	
1.	The maximum building height is limited to 45 feet, for a distance of 100 feet from the eastern property boundary.
2.	The use of the property will be limited to Multi-Unit Living, Townhouse Living, and up to 5,000 sf of non-residential use.
3.	The development must provide a minimum of 15 percent (15%) Moderately Priced Dwelling Units (MPDUs) or Montgomery County Department of Housing and Community Affairs (MCDHCA)-approved equivalent consistent with the requirements of Chapter 25A.

CRF Zone Optional Method Development Standards		
Current Zoning	R-30 multi-family, low-density residential zone	
Requested Zoning	CRF-1.75 C-0.25 R-1.5 H-75 ¹	
Development Method	Optional Method	
Gross Tract Area:	ac	sf
Gross Tract Area	34.87 ac	1,518,942 sf
Prior Dedication	2.23 ac	97,220 sf
Proposed Public Road Dedication (Erskine Ave extended)	0.74 ac	32,261 sf
Net Tract Area	31.90 ac	1,389,461 ac

Article 59-3, Uses and Use Standards, Division 3.1 Use Table			
3.1.6 Use Table		permitted / required	proposed
Multi-Unit ²	3.3.1.E	Permitted Use	up to 2,275 du
Townhouse ²	3.3.1.D	Permitted Use	up to 250 du
Retail/Service Establishment (up to 5,000 square feet) ²	3.5.11.B	Permitted Use	up to 5,000 sf

Commercial Program		
Commercial SF	existing	proposed
	0 sf	up to 5,000 sf

Article 59-4 Development Standards for Euclidean Zones, Division 4.5 Commercial / Residential Zones		
4.5. - Commercial / Residential Zones	permitted / required	proposed
4.5.3. Standard Method Development		
4.5.3.C.4 Height (max.)	CRF-1.75 C-0.25 R-1.5 H-75 ¹	CRF-1.75 C-0.25 R-1.5 H-75 ¹
Principal Building		
Building A	75'	75'
Building B	75'	75'
Building C up to 5,000 sf of commercial and restaurant use	75'	75'
Building D Parcel D may be Townhouses, Multi-family or both	45 / 75 ¹	45 / 75 ¹
Building E Parcel E may be Townhouses, Multi-family or both	45 / 75 ¹	45 / 75 ¹
Building F Parcel F may be Townhouses, Multi-family or both	45 / 75 ¹	45 / 75 ¹
Building G Parcel G may be Townhouses, Multi-family or both	75'	75'
Building H Parcel H may be Townhouses, Multi-family or both	75'	75'
Inclusion of 15% MPDU ³	Mapped	75 ¹

¹Binding element: The maximum building height is limited to 45 feet, for a distance of 100 feet from the eastern property boundary.
²Binding element: The use of the property will be limited to Multi-Unit Living, Townhouse Living, Retail/Service Establishments (up to 5,000 sf) and Restaurant use.
³Building height may be increased above 75 feet to allow for inclusion of greater than 12.5% MPDUs.

CRF Zoning Ordinance Conformance			
Ordinance Reference	Permitted/Required	Provided	
5.3.5.A	Density of Development a. Max Overall FAR b. Commercial Density c. Residential Density	Established by Floating Zone Plan	CRF-1.75 (C-0.25, R-1.5, H-75 ¹) a. 1.75 FAR (up to 2,658,149 sf) b. 0.25 Commercial FAR (up to 379,736 sf) c. 1.5 Residential FAR (up to 2,278,413 sf)
5.3.5.B.1	Building Height	Established by Floating Zone Plan	75 ¹
4.1.8.B	Height Compatibility	45 degree angular plane required, measured from a height equal to the height allowed for a detached house in the abutting R-90 Zone at the required site and rear yard setback line (per Section 4.1.8.B)	Complies
5.3.5.B	Building Setbacks (min.) from the boundary	Established by Floating Zone Plan (All others established by site plan)	Principal Building Setbacks: From Public Street: Apartment Building = 0' Townhouse = 5' From Adjoining Lot: East Setback: Apartment Building = 45' ² Townhouse = 45' ² South Setback: Apartment Building = 30' ³ Townhouse = 30' ³
4.1.8.A	Setback Compatibility	East Setback = 37.5' R-90 Zoned property rear setback = 25' (25' x 1.5 = 37.5') South Setback = 30' RT-15.0 Zoned property setback = 20' (20' x 1.5 = 30')	Complies East Setback: Apartment Building = 45' ² Townhouse = 45' ² South Setback: Apartment Building = 30' ³ Townhouse = 30' ³
5.3.5.C	Lot Size (min.)	Established by site plan	n/a
5.3.5.D	Open Space Provided Under 4.5.4.B.1. (net area between > 6.01 acres)	10% of site area (138,946 sf)	±11%

¹ Building height restricted to 45' for a depth of 100' from the eastern property line, as recommended in the Glenmont Sector Plan.
² The minimum side setback is equal to 1.5 times the minimum side setback required for a detached house on the abutting property.
³ The minimum rear setback is equal to 1.5 times the minimum rear setback required for a detached house on the abutting property.



19847 Century Boulevard, Suite 200, Germantown, Maryland 20874
 Ph: 301.948.4700 (Main), Fx: 301.948.6236, www.rodgers.com

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 c/o Grady Management, Inc.**
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 Attn: Brian Alford

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Wells + Associates
 7200 Wisconsin Avenue, Suite 500
 Bethesda, Maryland 20814
 301.971.3415
 Attn: Nancy Randall



PROFESSIONAL CERTIFICATION
 I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 42356, Expiration Date: 12/19/24.

**GLENMONT FOREST
 CR FLOATING ZONE**
 Montgomery County, Maryland, Election District No. 13

ISSUE DATE	DESCRIPTION

PROJECT NUMBER	1103B
DATE	APRIL 2024
SCALE	1" = 100'
DRAWING TITLE	Floating Zone Plan

OFFICE OF ZONING AND ADMINISTRATIVE HEARINGS CERTIFICATION
 THIS IS A TRUE COPY OF THE FLOATING ZONE PLAN (EXHIBIT NUMBER _____)
 APPROVED BY THE DISTRICT COUNCIL ON _____ BY RESOLUTION NUMBER _____
 IN APPLICATION NUMBER _____

HEARING EXAMINER _____ DATE _____

HEARING EXAMINER NAME (PRINTED) _____

Preliminary Not For Construction

**Exhibit 30
 H-149**



GLENMONT FOREST

LOCAL AREA TRANSPORTATION REVIEW

October 17, 2023

Revised March 26, 2024

Exhibit 40
H-149





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Prepared by:

Revised March 26, 2024

October 17, 2023

Local Area Transportation Review Montgomery County, Maryland

GLENMONT FOREST

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GLENMONT FOREST

Section 1 INTRODUCTION

OVERVIEW

This report details a Local Area Transportation Review (LATR) for Glenmont Forest, located at 2300 Glenmont Circle in Silver Spring, Maryland. The subject site is located along the east side of Georgia Avenue and south of Randolph Road, as shown on Figure 1-1. The site is located within the Kensington/Wheaton Orange Policy Area of Montgomery County. The study intersections are in both the Kensington Wheaton Orange Policy Area and Glenmont Metro Station Red Policy Area. This study was prepared in support of the Local Map Amendment (LMA) application in accordance with the Maryland-National Capital Park and Planning Commission (M-NCPPC) 2023 LATR Guidelines.

The Applicant, Glenmont Forest Investors LP., C/O Grady Management, Inc., is proposing to replace 482 low-rise apartment dwelling units, built in 1962, with up to 2,275 mid-rise apartment dwelling units and less than 15,000 square feet of retail space. The proposed development is expected to occur over approximately a 10 build-out. The site has two existing access points on Randolph Road and one Georgia Avenue: a full access driveway on Randolph Road via Glenmont Circle, a right-in/out access on Randolph Road east of Glenmont Circle, and a right-in/right-out access on Georgia Avenue. The Applicant is proposing one new point of access via the extension of Erskine Avenue into the property. The site plan is shown on Figure 1-2.

An LATR Transportation Study is required for this Local Map Amendment application since the proposed development is expected to generate 50 or more new peak hour person trips during the AM and PM peak periods. The scope of this LATR traffic study was established in consultation with M-NCPPC, Maryland State Highway Administration and Montgomery County Department of Transportation (MCDOT) Staff. The Scope of Work Agreement is included in Appendix A.

This report provides an update to the October 17, 2023, study in order to address MNCPPC, State Highway Administration (SHA), and Montgomery County comments.

EXECUTIVE SUMMARY

The proposed Glenmont Forest redevelopment, which includes removing 482 low-rise apartment units that will be replaced by up to 2,275 mid-rise apartment buildings. This project is subject to the LATR system adequacy tests, based on the number of peak hour person trips the site will generate, as outlined in Montgomery County's Growth and Infrastructure Policy (GIP) and the LATR 2023 Guidelines. Following are the findings and conclusions of the adequacy tests.

1. Glenmont Forest is expected to generate 1,257 AM peak hour and 1,017 PM peak hour new person trips, and 743 AM peak hour and 601 PM peak hour new auto-driver (vehicle) trips.
2. The AM and PM peak hour average vehicle delays for the study intersections within the Kensington/Wheaton Orange Policy Area are operating below the congestion standard of 80 seconds per vehicle. **The study intersections within the Glenmont Metro Station Red Policy Area are not subject to the Motor Vehicle Test. However, for information purposes only, an analysis was conducted for each of Red Policy Area intersections.**
3. Under future conditions, without and with the proposed Glenmont Forest redevelopment, the study intersections within the Kensington/Wheaton Policy Area will continue to operate below congestion standard threshold during both the AM and PM peak hours.
4. For the Pedestrian System Adequacy Test, mitigation will be required to bring the existing undesirable pedestrian level of comfort ratings for segments along Randolph Road, Glenallan Avenue and MD-97 (Georgia Avenue), and to address ADA noncompliance for crosswalk ramps within the study area. At the time of Preliminary Plan/Site Plan, the Applicant will work with Staff to determine the improvements and/or the fair share contribution to improve the PLOC in the study area.
5. Mitigation will be required to pass the Bicycle System Adequacy Test because there is high level of traffic stress under existing conditions along Randolph Road and MD-97 (Georgia Avenue). The Applicant will, at the time of Preliminary Plan/Site Plan, coordinate with Planning Staff to determine the improvement and/or fair share contribution toward the mitigation.
6. Several bus stops within the study area do not have bus shelters. Mitigation is required to pass the Bus Transit System Adequacy Test. The Applicant will, at the time of Preliminary Plan/Site Plan, coordinate with Planning Staff to determine the improvements and/or fair share contribution toward the mitigation.
7. A review of crash history within the 1,000 feet study area radius found that 531 crashes occurred between 2018 and 2023. Of the 531 report crashes, 214 were reported as injury crashes, and four (4) were classified as fatal. According to Montgomery Planning, the most serious injuries and fatalities are located along the County's arterials, such as Georgia

Avenue. The site is located within a High Injury Network along Georgia Avenue south of Randolph Road. Randolph Road east of Glenallan Avenue and Georgia Avenue north of Layhill Road are considered high injury networks.

8. The speed study shows that the 85th percentile speed exceeds 120% of the posted speed limit on Randolph Road, Georgia Avenue and Layhill Road. Therefore, the County should consider speed reduction measures and enforcement.
9. The location and design of the proposed site access roads minimizes turning movement conflicts on Georgia Avenue and Randolph Road. Sidewalks and crosswalks will be provided within and along the property frontage to ensure safe pedestrian access to and from the site. The bike lane along the Georgia Avenue frontage provides a low level of traffic stress for bicyclists travelling to or from the site.

DESCRIPTION OF MULTI-MODAL ADEQUACY TESTS

The following section describes the various multi-modal tests for determining transportation adequacy per the 2023 LATR Guidelines and the Montgomery County Growth and Infrastructure Policy:

Motor Vehicle Adequacy. This test is required for any development generating 50 or more peak hour person trips. Intersections within Orange Policy Areas are evaluated for adequacy using the Highway Capacity Manual (HCM) analyses methodology. The congestion standard (HCM delay based) for intersections within the Orange/Kensington/Wheaton Policy Area is an overall average vehicle delay of 80 seconds per vehicle.

The intersections within the Glenmont Metro Station Red Policy Areas are not subject to the Vehicle Test; however, an analysis was conducted for informational purposes. The capacity analysis and results for those intersections in the Red Policy Area are presented in the Appendix F of this report. The Policy Area designation for each of the study intersections is noted below.

The scope of the study intersections is based on the motor vehicle trip generation. For sites generating more than 250 peak hour vehicle trips, the study area is required to include a minimum of two (2) significant intersection transportation studies in each direction. The proposed development will generate 743 AM and 601 PM new peak hour vehicle trips. The following study area was identified in consultation with Staff during the scoping process:

1. Randolph Road / Livingston Street- Red Policy Area
2. Randolph Road / Georgia Avenue -Red Policy Area
3. Randolph Road / Glenmont Circle -Red Policy Area
4. Randolph Road / Residential Driveway (East of Glenmont Circle) -Red Policy Area
5. Randolph Road / Glenallan Avenue -Red Policy Area
6. Randolph Road / Middlevale Lane / Garden Gate Road -Orange Policy Area

7. Georgia Avenue / Layhill Road -Red Policy Area
8. Georgia Avenue / Glenmont Circle -Orange Policy Area
9. Georgia Avenue / Shorefield Road-Orange Policy Area
10. Layhill Road / Glenallan Avenue -Red Policy Area
11. Georgia Avenue / Arcola Avenue-Orange Policy Area
12. Glenallan Avenue / Eskine Avenue-Orange Policy Area
13. Randolph Road / Heurich Road-Orange Policy Area

Pedestrian System Adequacy is defined by the criteria described in section V.A of the Guidelines. The Pedestrian System Adequacy test consists of three components:

Pedestrian Level of Comfort (PLOC). Per the Guidelines, pedestrian system adequacy is defined as providing a “Somewhat Comfortable” (PLOC-2) or “Very Comfortable” (PLOC-1) score on streets and intersections for roads classified as Primary Residential or higher (excluding Controlled Major Highways and Freeways, and their ramps), within a certain walkshed from the site frontage, specified in the LATR Guidelines. Specific improvements to be constructed are to be identified in consultation with MNCPPC and MCDOT.

Street Lighting. As stated in the Guidelines, the Applicant must evaluate existing street lighting based on MCDOT standards along roadways or paths from the development to destinations within a certain walkshed from the site frontage as specified in the LATR Guidelines. The Guidelines also identifies the maximum span of street lighting that the Applicant must provide beyond the frontage. Where standards are not met, the Applicant must upgrade the street lighting to meet the applicable standards.

ADA Compliance. The Guidelines state that the Applicant must address Americans with Disabilities Act (ADA) noncompliance issues within a certain walkshed from the site frontage equivalent to half the walkshed specified in the LATR Guidelines. The maximum span of ADA improvements that the Applicant must provide beyond the frontage is also identified in the Guidelines.

Based on the expected peak hour person trips to be generated by this site, the required distances for the three components of the pedestrian study area are as follows:

- Pedestrian Level of Comfort and Street Lighting Study Area
1,000 feet in all directions from the property
- ADA Compliance Study Area
500 feet in all directions from the site

Bicycle System Adequacy. This analysis considers the following:

Bicycle system adequacy is defined by the criteria described in Section VI.A of the LATR Guidelines. Per the Guidelines, the determination of adequacy is the achievement of a low Level of Traffic

Stress (LTS-2) for bicyclists. As stated in the Guidelines, bicycle system analysis is based on the following standards and scoping:

For any site generating at least 50 net new weekday peak-hour person trips, the Applicant is to conduct an analysis of existing and programmed conditions to ensure low Level of Traffic Stress (LTS-2) conditions on all transportation rights-of-way within a certain distance of the site frontage, specified in the LATR Guidelines. If current and programmed connections will not create adequate conditions, the Applicant must construct side paths, separated bike lanes, or trails, consistent with the Bicycle Master Plan, that create or extend LTS-2 conditions up to the specified distance from the site frontage.

Based on the expected person trips to be generated by this site, the required distance for the bicycle study area is within 1,000 feet of the site.

Bus Transit System Adequacy. This analysis considers the following:

Bus transit system adequacy is defined by the criteria described in Section VII.A of the LATR Guidelines. As stated in the Guidelines, for any site generating at least 50 net new weekday peak-hour person trips in Red, Orange, and Yellow Policy Areas, the Applicant is to conduct an analysis of existing and programmed conditions to ensure that there are bus shelters outfitted with real-time travel information displays and other standard amenities, along with a safe, efficient, and accessible path between the site and a bus stop, at a certain number of bus stops within a certain distance of the site frontage, specified in the LATR Guidelines. Where shelters and associated amenities are not provided, an Applicant must construct up to the number of shelters and amenities specified in the Guidelines.

Based on the expected person trips to be generated by this site, the required distance for the transit study area is 4 bus shelters within 1,500 feet of the site.

Vision Zero

According to the LATR Guidelines, all LATR studies for a site that will generate 50 or more net new weekday peak-hour person trips must develop a Vision Zero Statement. This statement must assess high injury network, review traffic speeds, and describe in detail how safe site access will be provided. With concurrence of the responsible agency, projects must implement or contribute to the implementation of safety countermeasures. The Planning Board must find a nexus to the Project's impact and that any countermeasure is proportional to that impact. The County Council may adopt predictive safety analysis as part of this statement, when available. The components of the Vision Zero Statement are described below, as stated in the LATR Guidelines.

1. **Review High Injury Network segments:** Document any segments on the High Injury Network (HIN) that are within a certain distance of the site frontage, as specified in the LATR Guidelines.

- a. *HIN Attributes*: Document attributes of the roadway segment(s), including number of lanes, posted speed limit, presence of pedestrian or bicycle infrastructure and crossings, and annual average daily traffic (if available).
 - b. *HIN Crashes*: Summarize the crashes on the relevant segment(s) within the past five years, noting the severity and mode of crashes. Review the crash attributes and summarize any trends (e.g., collision type, time of day of crashes, contributing factors).
 - c. *HIN Improvements*: Identify any recent improvements to the segment(s) or if safety improvements for the segment are included in the approved Capital Improvement Program.
2. **Assess proximate safety issues**: Review the crash history for all segments and crossings within a certain distance of the site frontage, as specified in the LATR Guidelines.
- a. *Crash Summary*: Summarize the crashes within the past five years, noting the overall severity and mode of crashes. For any severe or fatal crashes, document the collision type, mode, and whether the crash occurred at an intersection or along a segment.
3. **Review traffic speeds**: Conduct speed studies within a certain distance from the site frontage, specified in the LATR Guidelines. Speed studies should be conducted mid-week (Tuesday, Wednesday, or Thursday) on days when school is in session. Locations will be determined by Planning Staff in collaboration with MCDOT Staff and will prioritize filling in gaps in the inventory of speed studies. Relevant speed studies that have been completed within the past three years may be used to fulfill this requirement if gaps do not remain in the inventory of speed studies.
- a. *Observed Speeds*: For each speed study, document the 50th and 85th percentile speed for each direction.
 - b. *10-mile per hour (mph) Pace*: For each speed study, document the range of speed at which the majority of cars are traveling.
4. **Describe site access**: Summarize the safety issues identified in components 1 through 3 and describe how site circulation promotes safety, outlining how safe access will be provided to the site. Planning Staff will note if the Applicant is contributing a fee in lieu of constructing a countermeasure. Reference the Vision Zero Community Toolkit (forthcoming) or national best practices and research in outlining the appropriate treatments to address identified safety issues.
- a. *High Injury Network*: If applicable, summarize how the project's right-of-way improvements along the HIN will address identified safety issues.
 - b. *Proximate Safety Issues*: Record how the project's right-of-way improvements within the vicinity of the site will address identified safety issues for motorists, transit riders, bicyclists, and pedestrians.

- c. *Traffic Speeds*: If observed 85th percentile speed for any day or direction exceeds the posted speed by 20 mph, summarize speed management improvements that could reduce speeds along the roadway. For example, traffic calming would be warranted on a roadway with a 25-mph posted speed limit if the observed 85th percentile speed is greater than 30 mph.
- d. *Site Circulation*: Document how site design promotes bicycle, pedestrian, and motor vehicle occupant safety. For example, limiting vehicle access points and locating and designing parking to reduce conflicts with pedestrians and bicyclists both passing by and visiting the site.

Tasks undertaken in this study included the following:

- Review of the proposed plans, background materials provided, and the Local Area Transportation Review Guidelines requirements for the Kensington/Wheaton Policy Area.
- Calculation of the number of peak hour person trips generated by the proposed redevelopment based on the LATR Guidelines methodology.
- Coordination with M-NCPPC Staff to identify the necessary scope and analyses to be included in the LATR study.
- Preparation of Motor Vehicle Adequacy Test
 - Collection of new vehicular turning movement, bicycle, and pedestrian counts at the study intersections.
 - Calculation of existing conditions average vehicle delay.
 - Identify pipeline developments located within the proximity of the site development.
 - Forecast of background future traffic volumes by combining the adjusted existing peak hour traffic volumes and the traffic expected to be generated by pipeline projects that are currently approved or planned for development.
 - Calculation of future background peak hour conditions average vehicle delay for each study intersection based on the future background traffic forecasts and existing or planned intersection geometrics.
 - Calculation of the number of AM and PM peak hour vehicle trips that will be generated by the proposed redevelopment based on the LATR Guidelines and Trip Generation, 11th Edition, published by the Institute of Transportation Engineers (ITE).
 - Assignment of the site trips based on previously approved distributions for the subject site.
 - Forecast of total future traffic volumes by combining the site trips with the background traffic forecasts.
 - Calculation of total future peak hour conditions average vehicle delay for each study intersection based on the total future traffic forecasts and existing or planned intersection geometrics.
- Preparation of Bicycle System Adequacy Test
- Preparation of Pedestrian System Adequacy Test

- Preparation of Bus Transit System Adequacy Test
- Preparation of Vision Zero Statement

Sources of data for this study include: the M-NCPPC, the MCDOT, the Maryland State Highway Administration (SHA), Institute of Transportation Engineers (ITE), Grady Management, Inc., and Wells + Associates Inc.

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Figure 1-1
Site Location and Study Intersections

- Study Intersection (Orange Policy Area)
- Study Intersection (Red Policy Area)



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Proposed Site Access Point



Figure 1-2
Site Plan

PLAN PROVIDED BY: RODGERS CONSULTING



SECTION 2 BACKGROUND DATA

OVERVIEW

This section presents the following background information for the LATR:

- Description of the proposed site user
- Description of the existing vehicular ingress/egress
- Description of the study area public road network and transportation facilities
- Programmed and Planned Improvements
- Definition of the study area
- Vehicular, pedestrian and bicycle traffic counts

PLANNED SITE USES

The proposed Glenmont Forest project includes replacing the 482 low-rise apartment buildings with up to 2,275 mid-rise apartment buildings. The proposed development is expected to occur over approximately a 10-year build out.

VEHICULAR ACCESS

The site access to the public road network is provided via two driveways on Randolph Road and one driveway on Georgia Avenue. One new access point to the property will be provided and the existing access points will remain unchanged. The existing access points are (1) a right-in/right-out access along Georgia Avenue, (2) a full access driveway on Randolph Road via Glenmont Circle, and (3) an existing right-in/out access on Randolph Road east of the existing full access driveway. Erskine Avenue, on the east side of the property, will be extended into the property providing a fourth point of access for the site. The vehicular access for the site is shown on Figure 1-2.

PUBLIC ROAD NETWORK

Existing Network/Site Access

Regional access is provided by Georgia Avenue (MD 97) and Randolph Road. Local access to the site is provided via, Erskine Avenue, Layhill Road, and Glenallan Avenue.

Georgia Avenue (MD 97) is a state-maintained, six-lane divided Town Center Boulevard. Traffic signals and additional turn lanes are typically provided at major intersections. Georgia Avenue (MD 97) has a posted speed limit of 35 mph.

Randolph Road is a six-lane divided boulevard per the Master Plan of Highways and Transitways Functional Classification. Traffic signals and additional turn lanes are typically provided at major intersections. Randolph Road provides regional access and has a posted speed limit of 40 mph.

Layhill Road is a four-lane divided Town Center Boulevard and provides local access to the proposed development. Traffic signals and additional turn lanes are typically provided at major intersections. Layhill Road has a posted speed limit of 40 mph.

Glenallan Avenue is a two-lane undivided area collector road per the Master Plan of Highways and Transitways Functional Classification. Glenallan Avenue has a posted speed limit of 25 mph.

NON-AUTO TRANSPORTATION FACILITIES

The following bicycle, pedestrian, and transit infrastructure are either currently provided near the subject site or are planned.

Bicycle Facilities

Per the Montgomery County Bicycle Master Plan, a conventional bicycle lane is provided along both sides of Georgia Avenue between Mason Street and Layhill Road. However, there is a sign that indicates bikers may use the full lane along Georgia Avenue south of Mason Street and north of Layhill Road. There is an existing sidepath along the west side of Georgia Avenue between Urbana Drive, north of the study area, and Mason Street. Bicycle facilities are not currently provided along other roadways in the study area.

Per the Bicycle Master Plan, in the study area, sidepaths are planned along the east side of Georgia Avenue, along the north side of Randolph Road, along Shorefield Road, the east side of Glenallan Avenue, and from Saddlebrook Local Park south to Randolph Road. Separated bike lanes are planned along the west side of Glenallan Avenue and both sides of private streets that extend north of Randolph Road. An exhibit showing the Bicycle Master Plan is shown in Section 4 of this report.

Sidewalks

Sidewalks are provided along all public roads within the study area except for a section of the west side of Glenallan Avenue south of Randolph Road.

Transit Service

Glenmont Forest is well served by served by both Ride-On and Metrobus routes, as well as Metrorail at the Glenmont station. The following bus routes are proximate to the subject site:

- Ride-On Route 10 provides service between the Twinbrook station and New Hampshire Avenue at Powder Mill Road. This bus route makes a stop at the Glenmont station.

- Ride-On Route 26 provides service between Montgomery Mall and Glenmont Station.
- Ride-On Route 31 provides service between the Wheaton Station and the Glenmont Station.
- Ride-On Route 33 provides service between the Glenmont Station and the National Institute of Health (NIH) Medical Center station.
- Ride-On Route 39 provides service between Briggs Chaney Park and ride (at Gatehead Manor Way and Briggs Chaney Road) and the Glenmont station.
- Ride-On Route 41 provides service between Aspen Hill (at Grand Road and Bel Pre Road) and the Glenmont station.
- Ride-On Route 49 provides service between the Rockville station and the Glenmont station
- Ride-On Route 51 provides service between the Norbeck park and ride (at Georgia Avenue and Norbeck Road) and the Glenmont station.
- Ride-On Route 53 provides service between the Shady Grove station and the Glenmont station.
- Metrobus Route C8 provides service between the College Park Station and Rockville Pike.
- Metrobus Route Y2 provides service between the Silver Spring station and Montgomery General Hospital.
- Metrobus Route Y7 provides service between the Georgia Avenue-ICC Park and ride lot to the Silver Spring station.
- Metrobus Route Y8 provides service between Montgomery General Hospital and the Silver Spring Station.

All bus routes and schedules are included in Appendix B.

Glenmont Station, north of the subject sites provides Red Line Metrorail service to Washington DC, Union Station, and the MARC train.

PROGRAMMED and PLANNED IMPROVEMENTS

The MD State Highway Administration (MD SHA) completed the redesign and construction of the Georgia Avenue and Randolph Road interchange in 2018. There are no programmed or planned improvements within the site vicinity.

STUDY AREA DEFINITION

The LATR study area was established in accordance with M-NCPPC's LATR Guidelines and through consultation with M-NCPPC, MCDOT, and MD SHA Staff. The signed scoping agreement is provided in Appendix A. The following intersections and driveways are included in the study:

1. Randolph Road / Livingston Street
2. Randolph Road / Georgia Avenue
3. Randolph Road / Glenmont Circle
4. Randolph Road / Residential Driveway (East of Glenmont Circle)
5. Randolph Road / Glenallan Avenue
6. Randolph Road / Middlevale Lane / Garden Gate Road

7. Georgia Avenue / Layhill Road
8. Georgia Avenue / Glenmont Circle
9. Georgia Avenue / Shorefield Road
10. Layhill Road / Glenallan Avenue
11. Georgia Avenue / Arcola Avenue
12. Glenallan Avenue / Eskine Avenue
13. Randolph Road / Heurich Road

Figure 2-1 shows the existing lane use and traffic control for the study area.

EXISTING TRAFFIC COUNTS

Existing AM and PM peak hour vehicular, pedestrian, and bicycle traffic counts were conducted at the study intersections on Tuesday October 4, 2022, from 6:30 AM to 9:30 AM and from 4:00 PM to 7:00 PM. Figure 2-2 shows the existing AM and PM peak hour vehicular traffic volumes. Pedestrian and bicycle volumes at the study intersections are summarized on Figures 2-3 and 2-4, respectively, and the detailed count data is provided in Appendix C.

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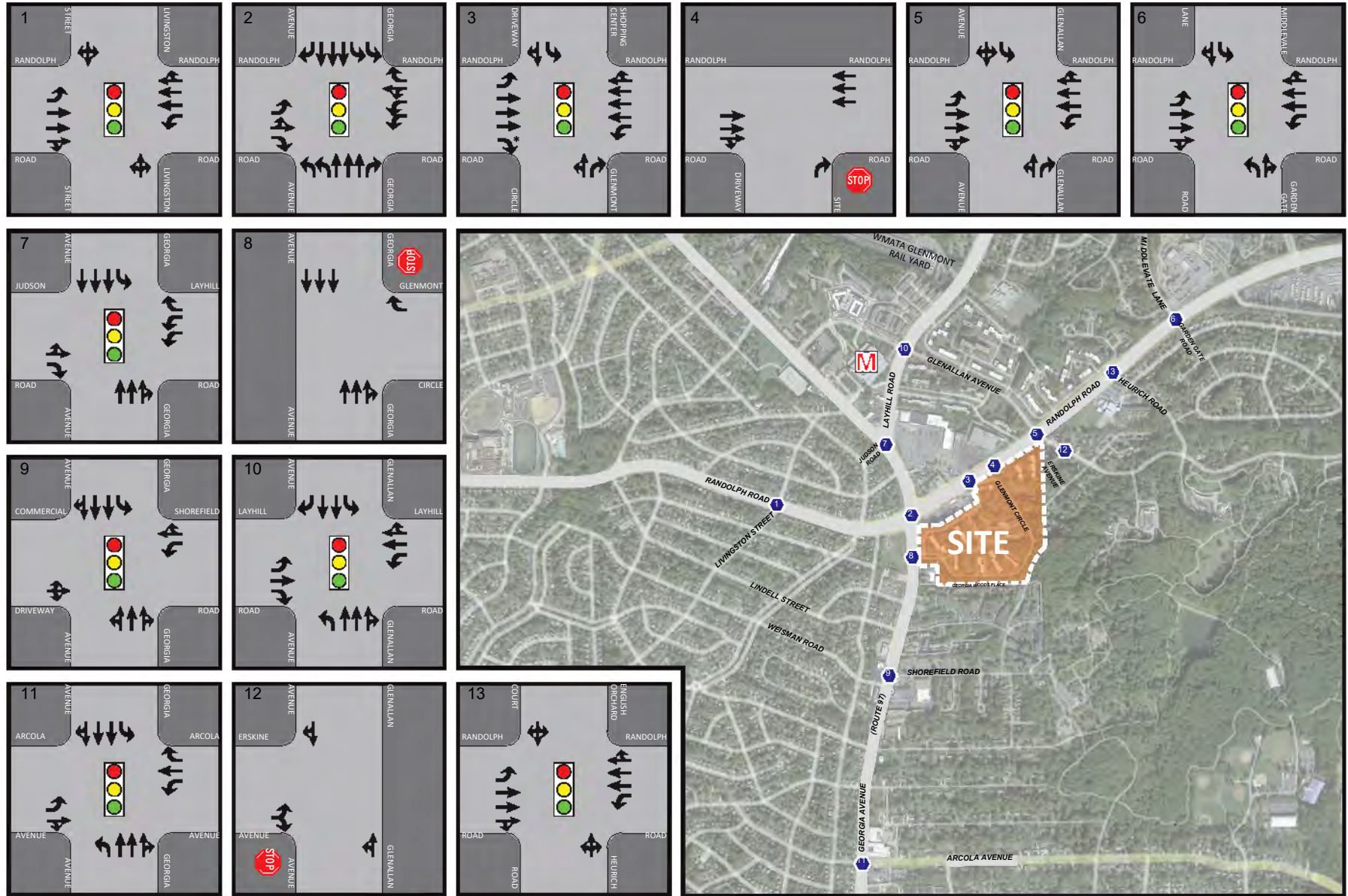


Figure 2-1
Existing Lane Use and Traffic Controls

- * Channelized Right Turn Ramp
- ← Represents One Travel Lane
- 🚦 Signalized Intersection
- 🛑 Stop Sign



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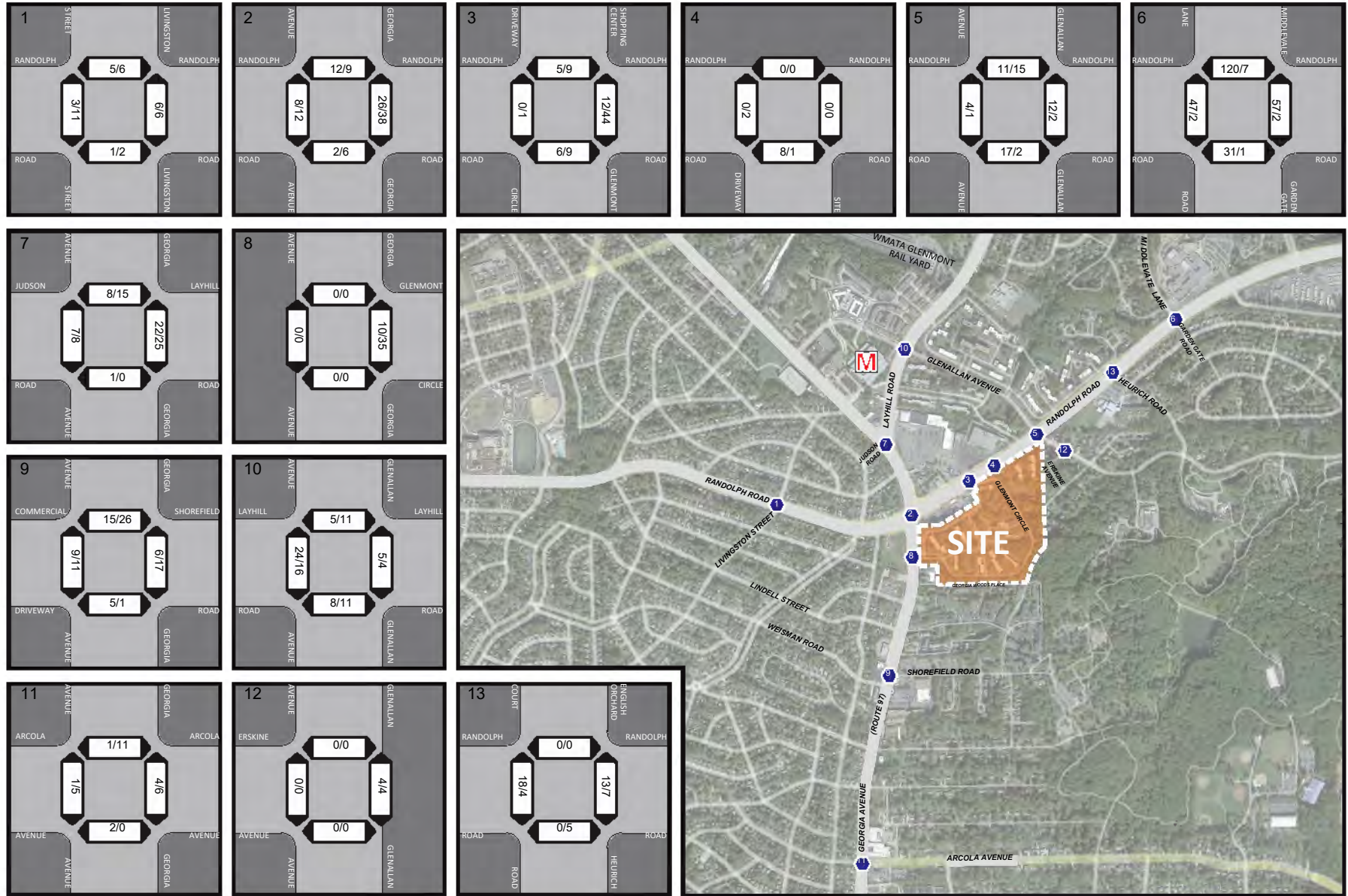


Figure 2-3
Existing Pedestrian Counts

AM/PM Peak Hour



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Figure 2-4
Existing Bicycle Counts

AM PEAK HOUR
PM PEAK HOUR
000 / 000

* Channelized Right Turn Ramp
Traffic Volumes Traveling To/From
Randolph Road Underpass
(Arrows do not Represent Lane Use)



Glenmont Forest
Montgomery County, MD



SECTION 3 MOTOR VEHICLE ADEQUACY TEST

OVERVIEW

This section of the Report presents the details of the Motor Vehicle Adequacy Test for the LATR. It includes: the applicable congestion standard for the Policy Area; analysis of existing average vehicle delay at key intersections; a summary of site and pipeline trip generation projections; and analysis of future average vehicle delay without and with the site development.

CONGESTION STANDARD

The study intersections, including the site driveways, are located within either the Kensington/Wheaton Orange Policy Area of Montgomery County or the Red Glenmont Metro Station Policy Area. In Orange Policy Areas, the level of congestion is determined using the Highway Capacity Manual delay-based level of service methodology. **In the Red Policy Area, intersections are not subject to a Motor Vehicle test; however, delay-based level of service results are presented in the appendix of this Report.**

The congestion standard (HCM delay based) for intersections within the Kensington/Wheaton Policy Area is an overall average vehicle delay of 80 seconds per vehicle at the studied intersections during the AM and PM peak hours.

EXISTING CONDITIONS

Vehicular Analysis

Existing peak hour average vehicle delays were analyzed for each of the study intersections per the LATR Guidelines methodology. The intersection analysis for the intersection in the Red Policy Area has been provided for informational purposes only.

The existing peak hour delays were calculated based on the existing lane use and traffic control shown on Figure 2-1, existing traffic signal phasing/timing obtained from the Montgomery County Department of Transportation (MCDOT) shown in Appendix D, the existing vehicular traffic volumes shown on Figure 2-2, and the HCM 6th Edition methodology for signalized and unsignalized intersections where available. HCM worksheets for each study intersection are presented in Appendix E. The results of the existing analyses are summarized in Table 3-1.

The analysis shows that under existing conditions, the study intersections in the Orange Policy Area operate within the 80 second per vehicle delay standard.

The HCM worksheets and results for intersections in the Red Policy Area are shown in Appendix F.

Table 3-1
 Glenmont Forest
 Levels of Service Summary¹

Group	Policy (Standard)	Existing (Level of Service)	Level of Service		Level of Service		Level of Service		Level of Service	
			Day (Hour)	PM (Hour)	Day (Hour)	PM (Hour)	Day (Hour)	PM (Hour)	Day (Hour)	PM (Hour)
Randolph Road/Middlevale Lane/Garden Gate Road (Signalized) - Orange Zone										
Overall	80	21.5	8.1	21.8	8.0	21.6	8.0	21.6	8.0	8.0
Georgia Avenue/Glenmont Circle (Unsignalized) - Orange Zone										
Overall	80	0.2	0.2	0.2	0.3	1.5	3.2	1.5	3.2	3.2
Georgia Avenue/Shorefield Road (Signalized) - Orange Zone										
Overall	80	8.0	9.8	8.3	9.8	9.1	9.7	9.1	9.7	9.7
Georgia Avenue/Arcola Avenue (Signalized) - Orange Zone										
Overall	80	19.5	27.9	19.6	28.7	20.1	30.8	20.1	30.8	30.8
Glenallan Avenue/Eskine Avenue (Unsignalized) - Orange Zone										
Overall	80	0.0	0.1	0.0	0.1	0.9	0.5	2.5	1.4	1.4
Randolph Road/Heurich Road (Signalized) - Orange Zone										
Overall	80	1.6	2.3	1.5	2.3	1.5	2.2	1.5	2.2	2.2

1. Capacity analysis based on Highway Capacity Manual 6th Edition methodology where available, using Synchro 11.

FUTURE BACKGROUND CONDITIONS

Four (4) pipeline developments (approved, planned, or under construction and within the site vicinity) were identified during the scoping process and are included in this study. The pipeline development locations are shown on Figure 3-1.

- **Glenmont Metro Center**: The development program for Glenmont Metro Center includes a total of 1073_unbuilt residential dwelling units and 90,000 S.F. retail use. Glenmont Metro Center is located north of Georgia Avenue and west of Layhill Road.
- **4010 Randolph Road**: The development program for 4010 Randolph Road includes a total of 197 mid-rise apartments, 3 single-family detached housing dwelling units, a 1,000 SF Day-Care center, and a 1,000 SF clinic. It is located south of Randolph Road and west of the subject site.
- **Kaiser Permanente**: This development includes a 180,000 SF medical office building during total buildout. Kaiser Permanente is located northwest of the site in the northwest corner of Aspen Hill Road and Connecticut Avenue (MD 185).
- **Wheaton Gateway**: The site is located west of Georgia Avenue, south of Veirs Mill Road, and north of the Wheaton Mall. It is planned to be developed with 800 mid-rise residential dwelling units and 1st floor commercial.

Pipeline Trip Generation

The trip generation for the pipeline development was either obtained from the respective LATR traffic study for the development or estimated based on the LATR Guidelines methodology. The pipeline developments are forecast to add 1,298 AM peak hour trips (705 inbound and 593 outbound) and 2,033 PM peak hour trips (897 inbound and 1,136 outbound) to the area road network at full capacity. The trip generation for the pipeline development is shown on Table 3-2.

Pipeline Trip Assignments

The peak hour trip distribution for the pipeline developments were developed on information from the respective traffic study or the LATR methodology. The trips anticipated to be generated by the pipeline developments were then assigned to the roadway network based on these distributions. It is noted that not all pipeline development trips will travel through the studied intersections due on the development location. The total pipeline development peak hour traffic volumes traveling through the study intersections are shown on Figure 3-2.

Future Background Traffic Forecasts

The future background traffic forecasts represent future conditions without Glenmont Forest. AM and PM peak hour background traffic forecasts were estimated by adding the pipeline traffic

assignments (Figure 3-2) to the existing peak hour traffic counts (Figure 2-2). The resulting background future traffic forecasts are summarized on Figure 3-3. Traffic forecasting worksheets are provided in Appendix G.

Vehicular Analysis

The future background peak hour average vehicle delays were calculated based on the existing lane use and traffic control shown on Figure 2-1, existing traffic signal phasing/timing obtained from MCDOT shown in Appendix D, the future background traffic forecasts shown on Figure 3-3, and the HCM 6th Edition methodology for signalized and unsignalized intersections where available. HCM worksheets for each study intersection are presented in Appendix H. The results of the future background analyses are summarized in Table 3-1. As shown in Table 3-1, under the future background conditions, the study intersections in the Orange Policy Area will operate within the congestion standard.

The HCM worksheets for the study intersections in the Red Policy Area are shown in Appendix F.

Table 3-2
 Glenmont Forest
 Auto Driver Pipeline Trip Generation (1)

Use	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area
1. Glenmont Metrocenter (2)										
Shopping Plaza (40-150K)	821	90,000	S.F.	189	116	305	373	404	777	
Multifamily Housing (Mid-Rise)	221	1,073	DU	95	320	415	230	147	377	
Subtotal	284	436		720	603	551	1,154			
2. 4010 Randolph Road (2)										
Existing Use										
Government Office Building	730	35,600	S.F.	82	27	109	14	42	56	
Approved Uses										
Multifamily Housing (Mid-Rise)	221	197	DU	16	52	68	43	27	70	
Single-Family Detached Housing	210	3	DU	1	2	3	2	2	4	
Day Care Center	565	1,000	S.F.	5	5	10	5	5	10	
Clinic	630	1,000	S.F.	8	2	10	1	3	4	
Subtotal	30	61		91	51	37	88			
Net New Trips	-52	34		-18	37	-5	32			
3. Kaiser Permanente Aspen Hill (3)										
Medical-Dental Office Building	720	180,000	S.F.	317	84	401	214	500	714	
4. Wheaton Gateway (4)										
Existing Use										
Automobile Sales - New	840	29,849	S.F.	32	11	43	14	43	57	
Approved Uses										
Mid-Rise Residential with Ground-Floor Commercial	231	800	DU	188	50	238	57	133	190	
Net New Trips	156	39		195	43	90	133			
Total Pipeline Development Trips	705	593		1,298	897	1,136	2,033			

Notes:
 (1) Trip Generation based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition and the LATR mode split adjustments and percentages.
 (2) Glenmont Metro Station Policy Area
 (3) Kensington / Wheaton Policy Area
 (4) Aspen Hill Policy Area
 (5) Wheaton CBD Policy Area

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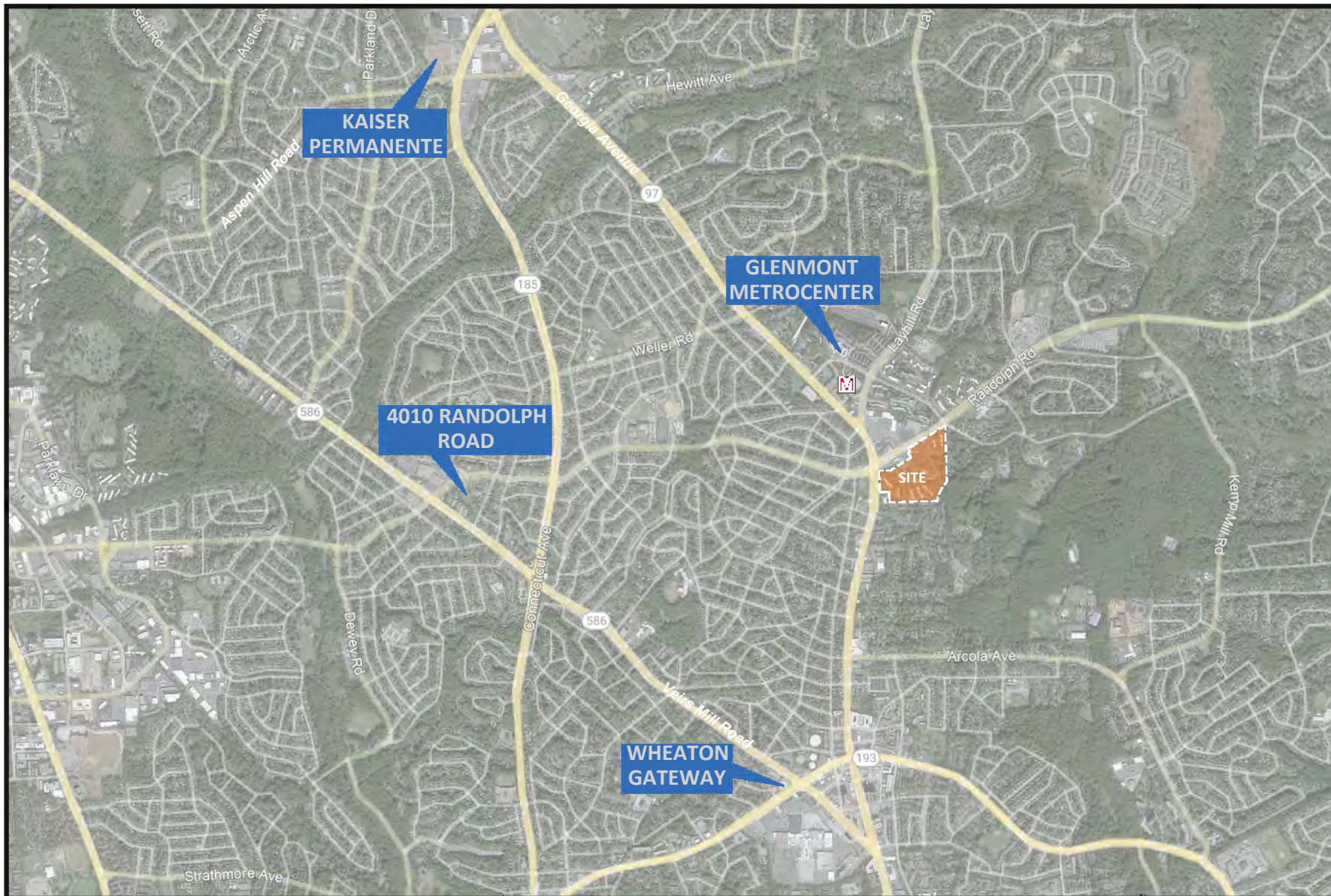


Figure 3-1
Pipeline Development Locations



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Figure 3-2
Pipeline Trip Assignments

AM PEAK HOUR
PM PEAK HOUR
000 / 000

* Channelized Right Turn Ramp
Traffic Volumes Traveling To/From
Randolph Road Underpass
(Arrows do not Represent Lane Use)



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TOTAL FUTURE CONDITIONS

The total future condition analyzes the impact of the Glenmont Forest proposed development, which includes removing 482 low-rise apartment dwelling units. The proposed use would be replaced with up to 2,275 mid-rise apartment dwelling units with ancillary retail space of less than 15,000 square feet located within the ground floor of an apartment building and no parking is provided for the retail space.

Trip Generation

Trip generation calculations for Glenmont Forest were based on ITE trip generation rates and the Kensington/Wheaton Policy Area adjustment factors and non-auto mode split percentages provided in the LATR Guidelines. The MNCPPC guidelines specifically state that retail of less than 15,000 square feet should not be included in the trip generation calculations when the retail space is less than 15,000 square feet, located within a residential or office building and no parking is provided for the retail space. The trip generation summary is shown in Table 3-3.

Glenmont Forest, as shown in the Multimodal Trip Generation section of Table 3-3, is expected to generate 1,523 AM peak hour and 1,367 PM peak hour total person trips, and 900 AM peak hour and 808 PM peak hour total auto-driver (vehicle) trips, based on the LATR Guidelines methodology for calculating person and vehicle trips. The existing uses generate 266 AM peak hour and 350 PM peak hour person trips, and 157 AM peak hour and 207 PM peak hour vehicle trips. Therefore, the proposed re-development will generate 1,257 AM peak hour and 1,017 PM peak hour new person trips and 743 AM peak hour and 601 PM peak hour new vehicle trips.

As noted in Table 3-3, the peak hour vehicle trips generated by the existing uses were not removed from the road network, resulting in a conservative capacity analysis.

Site Trip Distributions

The peak hour site trip distributions were developed based on assumptions documented in the LATR Guidelines, and confirmed through the scoping process. (See Appendix A). The site vehicle trips were assigned to the area road network based on the following distributions:

	<u>Percent</u>
West on Randolph Road	25
North on Georgia Avenue	15
Layhill Road	5
East on Randolph Road	10
South on Georgia Avenue	<u>45</u>
Total	100

Site Trip Assignments

The new site-generated traffic volumes were assigned to the public road network according to the directional distribution described above. The resulting site traffic assignments are shown on Figure 3-4.

Total Future Forecasts

The total future traffic forecasts represent future conditions with Glenmont Forest. The AM and PM peak hour total future traffic forecasts were developed by adding the proposed new site traffic assignments, shown on Figure 3-4, to the future background traffic forecasts, shown on Figure 3-3. The AM and PM total future traffic forecasts are shown on Figure 3-5. Traffic forecasting worksheets are provided in Appendix F.

Future Forecasts without Right-In/Right-Out Access to Randolph Road

Per the request of MCDOT, we have analyzed the site's impact with and without the existing right-in right-out access site on Randolph Road (intersection #4).

The site trip assignments without right-in/right out access are shown on Figure 3-6, The traffic adjustments to the baseline traffic volumes due to the closure of the existing entrance are shown on Figure 3-7. The total future traffic forecasts without right-in/right-out access to Randolph Road are shown on Figure 3-8. Traffic forecasting worksheets are provided in Appendix F.

Vehicular Analysis

The total future peak hour delays were calculated based on the existing lane use and traffic control for the off-site intersections shown on Figure 2-1, existing traffic signal phasing/timing obtained from MCDOT shown in Appendix D, the total future traffic forecasts shown on Figures 3-5 and 3-8, and the HCM 6th Edition methodology for signalized and unsignalized intersections where available. HCM worksheets for each study intersection are presented in Appendix I. The results of the total future analyses are summarized in Table 3-1.

Under total future conditions, the study intersections in the Orange Policy Area are expected to operate below the delay congestion standard. Therefore, the motor vehicle adequacy test is passed, and mitigation is not required.

The HCM worksheets for the intersections in the Red Policy Area are shown in Appendix F.

Table 3-3
 Glenmont Forest
 Site Trip Generation (1)(2)

Existing / Approved Use	DU	DU	DU	ITE Trip Generation Manual, 11th Edition																
				Out	Total	In	Out	Total	In	Out	Total	In	Out	Total						
Existing / Approved Use Multifamily Housing (Low-Rise)	220	482	41	131	172	144	84	228	157	68	22	20	42	266	207	89	28	26	54	350
Proposed Use Multifamily Housing (Mid-Rise)	221	2,275	227	762	989	542	346	888	900	387	123	113	236	1,523	808	347	111	101	212	1,367
			Net New Trips	631	817	398	262	660	743	319	101	93	194	1,257	601	258	83	75	158	1,017

Notes:
 (1) Trip Generation based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition.
 (2) Kensington / Wheaton Policy Area
 (3) The ITE equation for the AM and PM Peak Hour of Adjacent Street Traffic were used.

Table 3-4
 Glenmont Forest
 Auto Driver Trip Generation

Existing / Approved Use	DU	DU	DU	Auto Driver Trip Generation (1)(2)	
				Out	Total
Existing / Approved Use Multifamily Housing (Low-Rise)	220	482	38	119	157
Proposed Use Multifamily Housing (Mid-Rise)	221	2,275	207	693	900
			Net Site Trips (Proposed vs. Existing)	574	743

Existing / Approved Use	DU	DU	DU	Auto Driver Trip Generation (1)(2)	
				Out	Total
Existing / Approved Use Multifamily Housing (Low-Rise)	220	482	38	119	157
Proposed Use Multifamily Housing (Mid-Rise)	221	2,275	207	693	900
			Net Site Trips (Proposed vs. Existing)	574	743

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Figure 3-4
Proposed Site Trips Assignments
With Right-In/Right-Out Access to Randolph Road

AM PEAK HOUR
PM PEAK HOUR
000 / 000

* Channelized Right Turn Ramp
Traffic Volumes Traveling To/From
Randolph Road Underpass
(Arrows do not Represent Lane Use)



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Figure 3-5
Total Future Traffic Forecasts
With Right-In/Right-Out Access to Randolph Road

AM PEAK HOUR
PM PEAK HOUR
000 / 000

* Channelized Right Turn Ramp
Traffic Volumes Traveling To/From
Randolph Road Underpass
(Arrows do not Represent Lane Use)



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Figure 3-6
Proposed Site Trips Assignments
Without Right-In/Right-Out Access to Randolph Road

AM PEAK HOUR
PM PEAK HOUR
000 / 000

* Channelized Right Turn Ramp
Traffic Volumes Traveling To/From
Randolph Road Underpass
(Arrows do not Represent Lane Use)



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Figure 3-7
Traffic Adjustments for the Closure of the Existing Site Driveway

AM PEAK HOUR
PM PEAK HOUR
000 / 000

* Channelized Right Turn Ramp
Traffic Volumes Traveling To/From Randolph Road Underpass
(Arrows do not Represent Lane Use)



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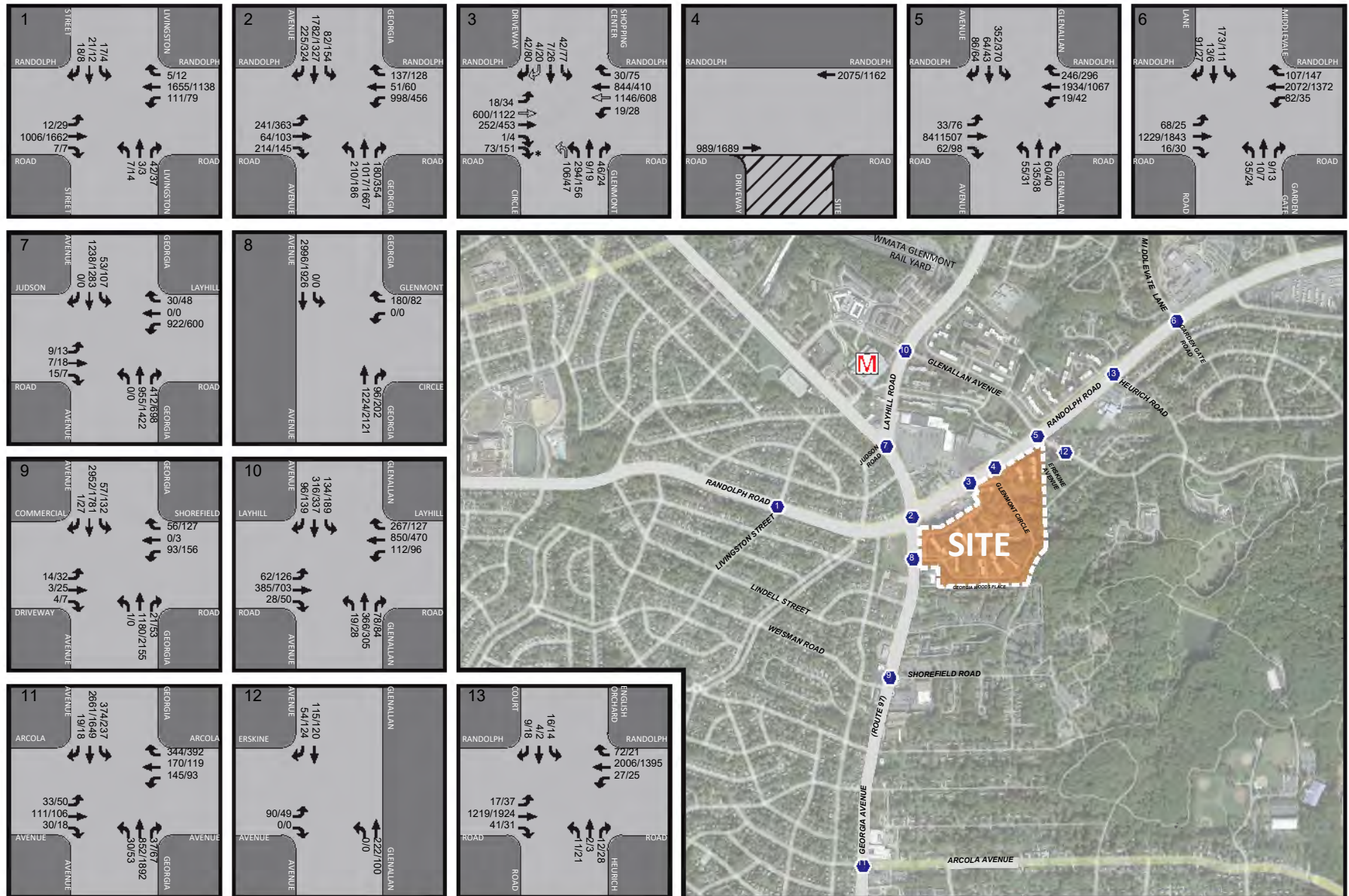


Figure 3-8
Total Future Traffic Forecasts
Without Right-In/Right-Out Access to Randolph Road

AM PEAK HOUR
PM PEAK HOUR
000 / 000

* Channelized Right Turn Ramp
Traffic Volumes Traveling To/From
Randolph Road Underpass
(Arrows do not Represent Lane Use)



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SECTION 4 PEDESTRIAN, BICYCLE, and BUS TRANSIT SYSTEM ADEQUACY TESTS

OVERVIEW

This section of the Report discusses the scope and results of the Pedestrian, Bicycle, and Bus Transit System Adequacy tests, following the LATR Guidelines.

PEDESTRIAN SYSTEM ADEQUACY

As previously discussed, the Pedestrian System Adequacy Test consists of the following three components:

- Pedestrian Level of Comfort (PLOC)
- Street Lighting
- ADA Compliance

Following is a discussion of the results of each evaluation:

Pedestrian Level of Comfort (PLOC)

The requirements for the PLOC portion of the Pedestrian Adequacy Test are described in the LATR Guidelines. Per the Guidelines, the applicable value for the proposed redevelopment is 1,000 feet in all directions based on a peak-hour person trip generation of 350 or more and the site location within an Orange Policy Area.

The PLOC Map found at <https://mcatlas.org/pedplan/> was reviewed to identify the PLOC for the pedestrian facilities with the 1,000-foot radius of the property. Field work was performed in November 2022, and a field verification in December 2022, to verify the PLOC within the 1,000-foot radius for the Pedestrian System Adequacy Test.

Figure 4-1 shows the existing pedestrian facilities in the study area and Figure 4-2 shows the current PLOC within the applicable 1,000 feet from the site boundary. Tables 4-1 and 4-2 list the PLOC Value and comfort level along with conditions and characteristics for sidewalks and crosswalks that affect the PLOC.

Of the segments reviewed, a large majority have an uncomfortable, undesirable, or unacceptable rating, especially those along the east side of Georgia Avenue and the south side of Randolph Road. Each of these segments are off-site. Widening the buffer between the vehicle travel lane and the sidewalk would improve the rating. One segment on the west side of Glenallan Avenue south of Randolph Road does not have a sidewalk. Building a sidewalk would improve the PLOC.

At the time of Preliminary Plan/Site Plan, the Applicant will work with Planning Staff and MCDOT to identify what improvements are feasible for off-site improvements and within the Proportionality Guide Calculation.

Street Lighting

According to the LATR Guidelines, streetlights are to be inventoried and inspected to determine if they are operational. The Applicant must upgrade the street lighting if standards are not met or they are not operational.

Based on the person trip generation, the applicable radius for the proposed development is 1,000 feet from the property boundaries. A field verified inventory of streetlights within the 1,000-foot study area boundary, is provided on Figure 4-3. An inspection of the streetlights in January 2023 verified that each of the streets along Georgia Avenue, Randolph Road, and Glenallan Avenue are operating except one along the southwest (SW) ramp of Randolph Road. As shown on Figure 4-3, there are streetlights along MD 97, Randolph Road, and the field verification confirmed they are in operation. Details on the streetlight standards are presented in the appendix. The Applicant will work with Staff at the time of Preliminary Plan/Site Plan to identify improvements, if needed.

ADA Compliance

The requirements for the ADA Compliance portion of the Pedestrian Adequacy Test are described in the LATR Guidelines. The applicable value for the proposed development is one-half of 1,000 ft (500 ft) based on peak hour person trip generation of 350 or more and located within an Orange Policy Area. Table 4-3 lists the ramp and the location. The table lists if detectable warning strips are provided, the ramp width, and landing area for each ramp.

At the time of Preliminary Plan/Site Plan the non-compliant ramps will be reviewed with staff to determine those that should be fixed to meet mitigation requirements.

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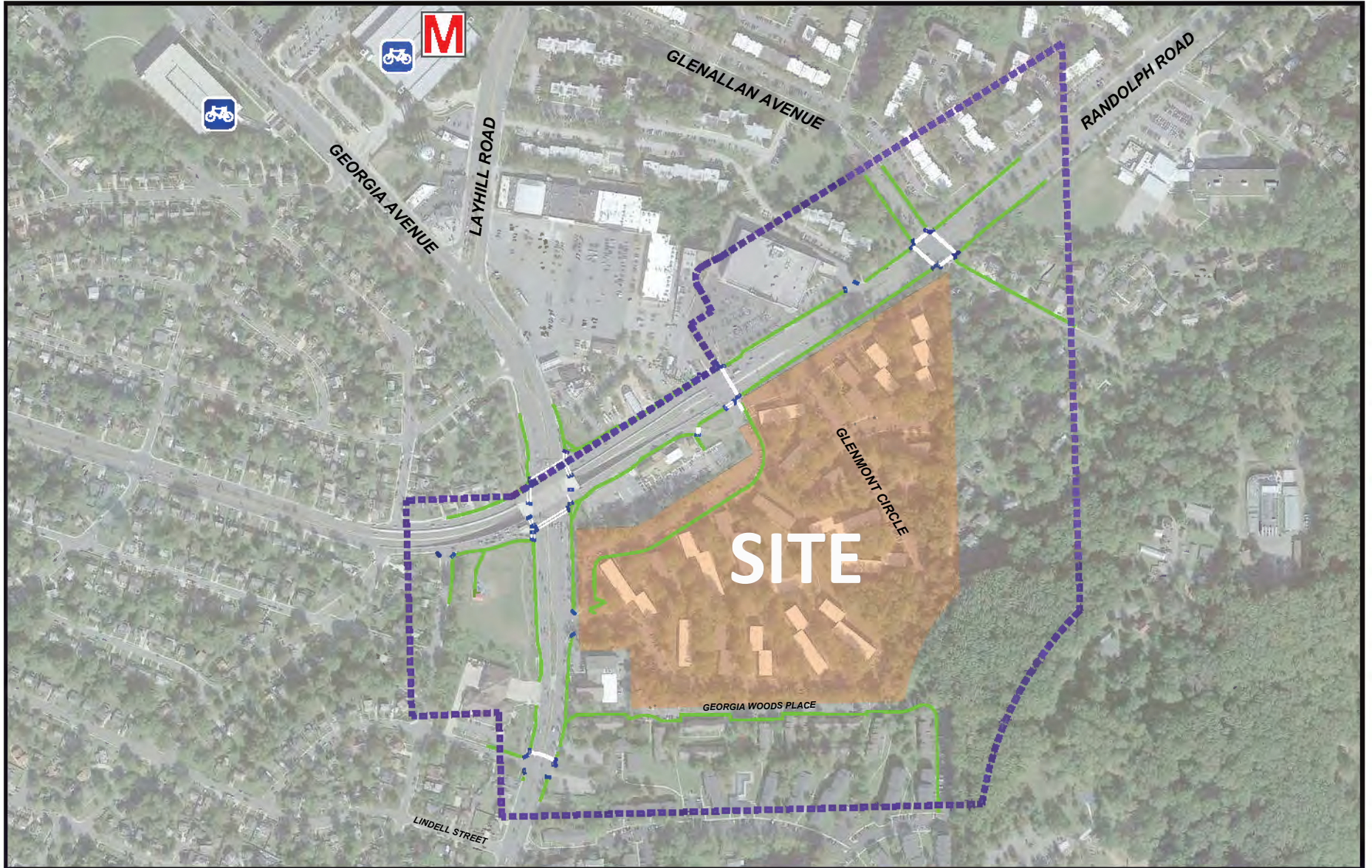


Figure 4-1
Pedestrian and Bicycle Facilities

-  500' Radius
-  Sidewalk
-  Pedestrian Crosswalk
-  Curb Ramp
-  Bicycle Parking Station



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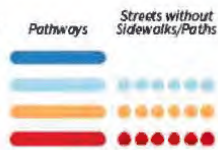


Figure 4-2
Pedestrian Level of Comfort (PLOC) Study Area

1000' Radius

Pedestrian Level of Comfort

- Very Comfortable
- Somewhat Comfortable
- Uncomfortable
- Undesirable



NORTH

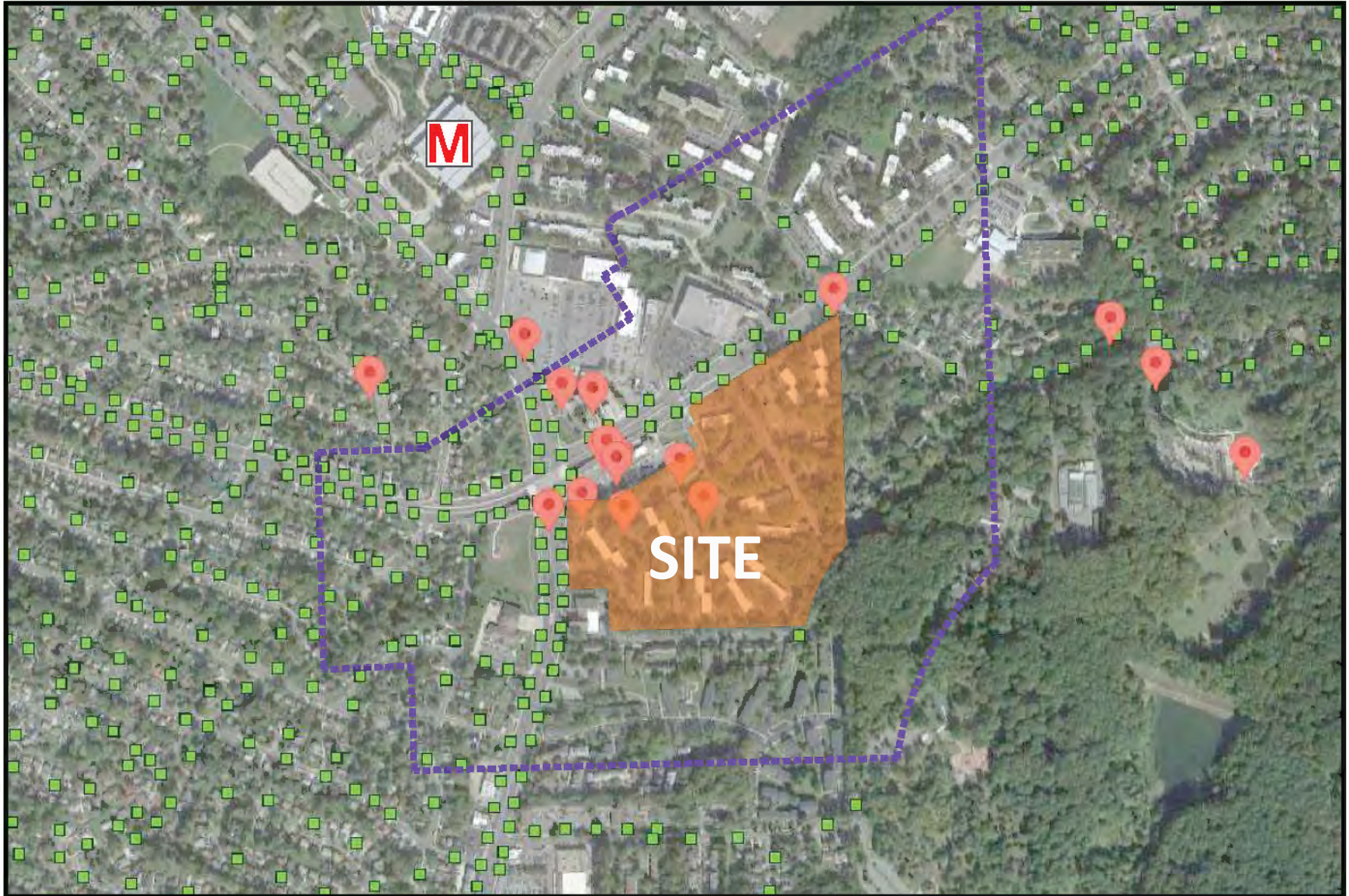
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Table 4-1
 Glenmont Forest
 Sidewalk and Pathway/Pedestrian Level of Comfort

Item #	Location	Material	Width	Height	Notes	Level of Comfort
1	MD 97. Between Layhill and Randolph (E side)	concrete	5-8ft	0-2ft	No	Somehow comfortable (2)
2	MD 97. Between Layhill and Randolph (E side)	concrete	8-10ft	0-2ft	No	Somehow comfortable (2)
3	MD 97. Between Layhill and Randolph (W side)	concrete	5-8ft	5-8ft	No	Somehow comfortable (2)
4	MD 97. Between Layhill and Randolph (W side)	concrete	8-10ft	0-2ft	No	Somehow comfortable (2)
5	MD 97. Between Layhill and Randolph (W side)	concrete	5-8ft	5-8ft	No	Somehow comfortable (2)
6	MD 97. Between Layhill and Randolph (W side)	concrete	5-8ft	5-8ft	No	Somehow comfortable (2)
7	MD 97. Adjacent to the station (W side)	concrete	5-8ft	0-2ft	No	Somehow comfortable (2)
8	MD 97. South of freestation (W side)	concrete	5-8ft	5-8ft	No	Somehow comfortable (2)
9	MD 97. Between Randolph and Glenmont Cir (E side)	concrete	5-8ft	5-8ft	No	Somehow comfortable (2)
10	MD 97. Between Glenmont Cir and Georgian Woods (E side)	concrete	5-8ft	0-2ft	No	Somehow comfortable (2)
11	MD 97. Between Georgian Woods and Mason St (E side)	concrete	5-8ft	5-8ft	No	Somehow comfortable (2)
12	MD 97. South of Mason St (E side)	concrete	3-5-5ft	0-2ft	No	Somehow comfortable (2)
13	Randolph rd (SW ramp)	concrete	8-10ft	5-8ft	No	Somehow comfortable (2)
14	Randolph rd (W ramp)	concrete	5-8ft	0-2ft	No	Somehow comfortable (2)
15	Randolph rd (SW ramp)	concrete	5-8ft	5-8ft	No	Somehow comfortable (2)
16	Randolph rd (between Judson and Grandview) (SW ramp)	concrete	5-8ft	3-5ft	No	Somehow comfortable (2)
17	Randolph rd (between Judson and Grandview) (SW ramp)	concrete	5-8ft	0-2ft	No	Somehow comfortable (2)
18	Randolph rd (between Grandview and MD 97) (SW ramp)	concrete	5-8ft	5-8ft	No	Somehow comfortable (2)
19	Randolph rd (SE ramp)	concrete	5-8ft	5-8ft	No	Somehow comfortable (2)
20	Randolph rd (SE ramp) (W of police station entrance)	concrete	5-8ft	0-2ft	No	Somehow comfortable (2)
21	Randolph rd (SE ramp) (Police station entrance)	concrete	5-8ft	5-8ft	No	Somehow comfortable (2)
22	Randolph rd (Adjacent to police station)	concrete	5-8ft	0-2ft	No	Somehow comfortable (2)
23	Randolph rd (Between police station and Glenmont Cir)	concrete	5-8ft	5-8ft	No	Somehow comfortable (2)
24	Randolph rd (Between Glenmont Cir and Glenallan Ave)	concrete	5-8ft	0-2ft	No	Somehow comfortable (2)
25	Randolph rd (Between MD 97 and Starbuck's)	concrete	8-10ft	5-8ft	No	Somehow comfortable (2)
26	Randolph rd (Between Starbucks and shopping centre entrance)	concrete	8-10ft	0-2ft	No	Somehow comfortable (2)
27	Randolph rd (Between shopping centre entrance and back of Lidl)	concrete	8-10ft	5-8ft	No	Somehow comfortable (2)
28	Randolph rd (Between back of Lidl and Glenallan Ave)	concrete	5-8ft	0-2ft	No	Somehow comfortable (2)
29	Randolph rd (E of Glenallan Ave) (South side)	concrete	5-8ft	0-2ft	No	Somehow comfortable (2)
30	Randolph rd (E of Glenallan Ave) (North side)	concrete	5-8ft	0-2ft	No	Somehow comfortable (2)
31	Glenalla Ave (North of Randolph rd) (East side)	concrete	3-5-5ft	0-2ft	No	Somehow comfortable (2)
32	Glenalla Ave (North of Randolph rd) (West side)	concrete	3-5-5ft	0-2ft	No	Somehow comfortable (2)
33	Glenalla Ave (South of Randolph rd) (East side)	concrete	5-8ft	0-2ft	No	Somehow comfortable (2)

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MAP SOURCE: MONTGOMERY COUNTY DOT WEBSITE

Figure 4-3
Streetlight Inventory

■■■■■ 1000' Radius

- Street Light Outage has not been reported
- Streetlight Outage has been reported
- _R Streetlight Outage just reported



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Glenmont Forest
Local Area Transportation Review
March 2024

Table 4-3
Glenmont Forest
ADA Ramp Evaluation

Road Segment	In between	Road Segment	Ramps					
			DWS (Y/N)	DWS Type	DWS Color	DWS Size	Ramp Width	Ramp Landing Area (5' x 5')
1	Layhill Road	Shopping Center Entrance	N	N/A	N/A	N/A	N/A	N/A
2	MD 97 (SE island) (channelized right)	Layhill Rd	Y	Cast in Place	Red	5x2	5	5x5
3	MD 97 (SE island)	Layhill Rd	Y	Cast in Place	Red	9x2	9	9x9
4	MD 97 (NE island)	Layhill Rd	Y	Cast in Place	Red	7x2	7	7x7
5	MD 97 (NE island) (crossing channelized right)	Layhill Rd	Y	Cast in Place	Red	5x2	5	5x5
6	MD 97 (N median island)	Layhill Rd	N	N/A	N/A	N/A	N/A	N/A
7	MD 97 (E median island)	Layhill Rd	Y	Cast in Place	Red	8.5x2	8.5	8.5x8.5
8	MD 97 (E median island)	Layhill Rd	Y	Cast in Place	Red	11x2	11	11x11
9	MD 97	Judson Rd (N side)	Y	Cast in Place	Red	10x2	10	10x10
10	MD 97	Judson Rd (N side)	Y	Cast in Place	Red	7x2	7	7x7
11	MD 97	Judson Rd (S side)	Y	Cast in Place	Red	8x2	8	8x8
12	MD 97	Sheraton St	Y	Cast in Place	Red	7x2	7	7x7
13	MD 97 (NE side)	Shopping entrance(s)	Y	Cast in Place	Red	7x2	7	7x7
14	MD 97 (NE side)	Shopping entrance(s) (sunoco)	Y	Cast in Place	Red	5x2	5	5x5
15	MD 97 (NE side)	Shopping entrance(s) (mcdonalds)	Y	Cast in Place	Red	5x2	5	5x5
16	MD 97 (NW side)	Randolph Rd	Y	Cast in Place	Red	7x2	7	7x7
17	MD 97 (NE island)	Randolph Rd	Y	Cast in Place	Red	7x2	7	7x7
18	MD 97 (NE sidewalk)	Randolph Rd	Y	Cast in Place	Red	8x2	8	8x8
19	MD 97 (SW island)	Randolph Rd	Y	Cast in Place	Red	10x2	10	10x10
20	MD 97 (SE side)	Randolph Rd	Y	Cast in Place	Red	7x2	7	7x7
21	MD 97 (NW island)	Randolph Rd	Y	Cast in Place	Red	5x2	5	5x5
22	MD 97 (N island)	Randolph Rd	Y	Cast in Place	Red	8x2	8	8x8
23	MD 97 (S island)	Randolph Rd	Y	Cast in Place	Red	8x2	5	5x5
24	MD 97 (E island)	Randolph Rd	Y	Cast in Place	Red	7x2	7	7x7
25	MD 97 (W island)	Randolph Rd	Y	Cast in Place	Red	7x2	7	7x7
26	Randolph Rd	Police Station Entrance	N	N/A	N/A	N/A	N/A	N/A
27	Randolph Rd	Glenmont Cir (West entrance)	Y	Cast in Place	Red	7x2	7	7x7
28	Randolph Rd	Glenmont Cir (East entrance)	N	N/A	N/A	N/A	N/A	N/A
29	Randolph Rd (W side)	Shopping Entrance	Y	Cast in Place	Red	8x2	8	8x8
30	Randolph Rd (E side) (crossing Randolph)	Shopping Entrance	Y	Cast in Place	Red	5x2	5	5x5
31	Randolph Rd (crossing shopping center)	Shopping Entrance	Y	Cast in Place	Red	8x2	8	8x8
32	Randolph Rd (E median)	Shopping Entrance	Y	Cast in Place	Red	7x2	7	7x7
33	Randolph Rd	Starbucks Exit	Y	Cast in Place	Yellow	8x2	8	8x8
34	Randolph Rd	Starbucks Entrance	Y	Cast in Place	Red	8x2	8	8x8
35	Randolph Rd	McDonalds Entrance	N	N/A	N/A	N/A	N/A	N/A
36	Randolph Rd	Lidl entrance	N	N/A	N/A	N/A	N/A	N/A
37	Randolph Rd	Lidl loading zone	N	N/A	N/A	N/A	N/A	N/A
38	Randolph Rd	Greenery Lane	N	N/A	N/A	N/A	N/A	N/A
39	Randolph Rd (NW side)	Glenallan Ave	Y	Cast in Place	Yellow	6.5x2	6.5	6.5x6.5
40	Randolph Rd (SE side)	Glenallan Ave	Y	Cast in Place	Yellow	7x2	7	7x7
41	Randolph Rd (SW side) (crossing Glenallan)	Glenallan Ave	Y	Cast in Place	Yellow	8x2	8	8x8
42	Randolph Rd (SW side) (crossing Randolph)	Glenallan Ave	Y	Cast in Place	Yellow	6x2	6	6x6
43	Randolph Rd (NE side)	Glenallan Ave	Y	Cast in Place	Yellow	6x2	6	6x6
44	Glenallan Ave	Wallace Ave	Y	Cast in Place	Red	4x2	4	4x4
45	Randolph Rd	Wineburg Manor Dr	N	N/A	N/A	N/A	N/A	N/A
46	MD 97	Glenmont Cir	Y	Cast in Place	Red	8x2	8	8x8
47	MD 97	Catholic Charities Center	N	N/A	N/A	N/A	N/A	N/A
48	MD 97	Georgian Way	N	N/A	N/A	N/A	N/A	N/A
49	MD 97	Georgian Woods Place	N	N/A	N/A	N/A	N/A	N/A
50	MD 97 (NW side)	Mason St	Y	Cast in Place	Red	9x2	9	9x9
51	MD 97 (NE side)	Mason St	Y	Cast in Place	Red	5x2	5	5x5
52	MD 97 (SE side)	Mason St	Y	Cast in Place	Red	5x2	5	5x5
53	MD 97 (SW side)	Mason St	Y	Cast in Place	Red	5x2	5	5x5
54	MD 97 (N median)	Mason St	Y	Cast in Place	Red	7x2	7	7x7
55	Randolph Rd	Judson Ave (TK&S)	Y	Cast in Place	Red	7x2	7	7x7
56	Randolph Rd	Grandview Ave (E&W)	Y	Cast in Place	Red	5x2	5	5x5

BICYCLE SYSTEM ADEQUACY

As previously discussed, per the LATR Guidelines, bicycle system adequacy is defined as providing a low Level of Traffic Stress (LTS-2) for bicyclists. The requirements for the Bicycle System Adequacy test are described in the LATR Guidelines. The applicable value for the proposed development is 1,000 feet based on peak hour person trip generation of 350 or more and the site location within an Orange Policy Area. Figure 4-4 shows existing and proposed bicycle facilities, per the Bicycle Master Plan.

Bicycle system adequacy is measured by the LTS (Level of Traffic Stress). The stress is determined based on the comfort or skill level of a cyclist in reference to a roadway. Per the Guidelines, appropriate adequacy for a bicycle system provides an LTS-2. Potential mitigation involves the Applicant providing necessary adjustments to promote low level of traffic stress facilities LTS-2 conditions within 1,000 ft of the development's site boundary.

Per the County's Bicycle Stress Map, MD 97 (Georgia Avenue), Randolph Road, and Glenallan Avenue north of Randolph Road are currently rated with high & moderate stress levels.

At the time of Preliminary Plan/Site Plan, the Applicant will work with Staff to determine what, if any, bicycle or side path improvements along Georgia Avenue and Randolph Road should be constructed to meet the Bicycle Low Level of Stress standard and Proportionality Guide Calculation cap for off-site improvements.

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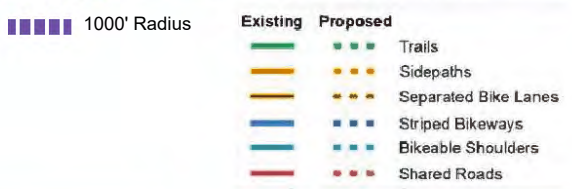
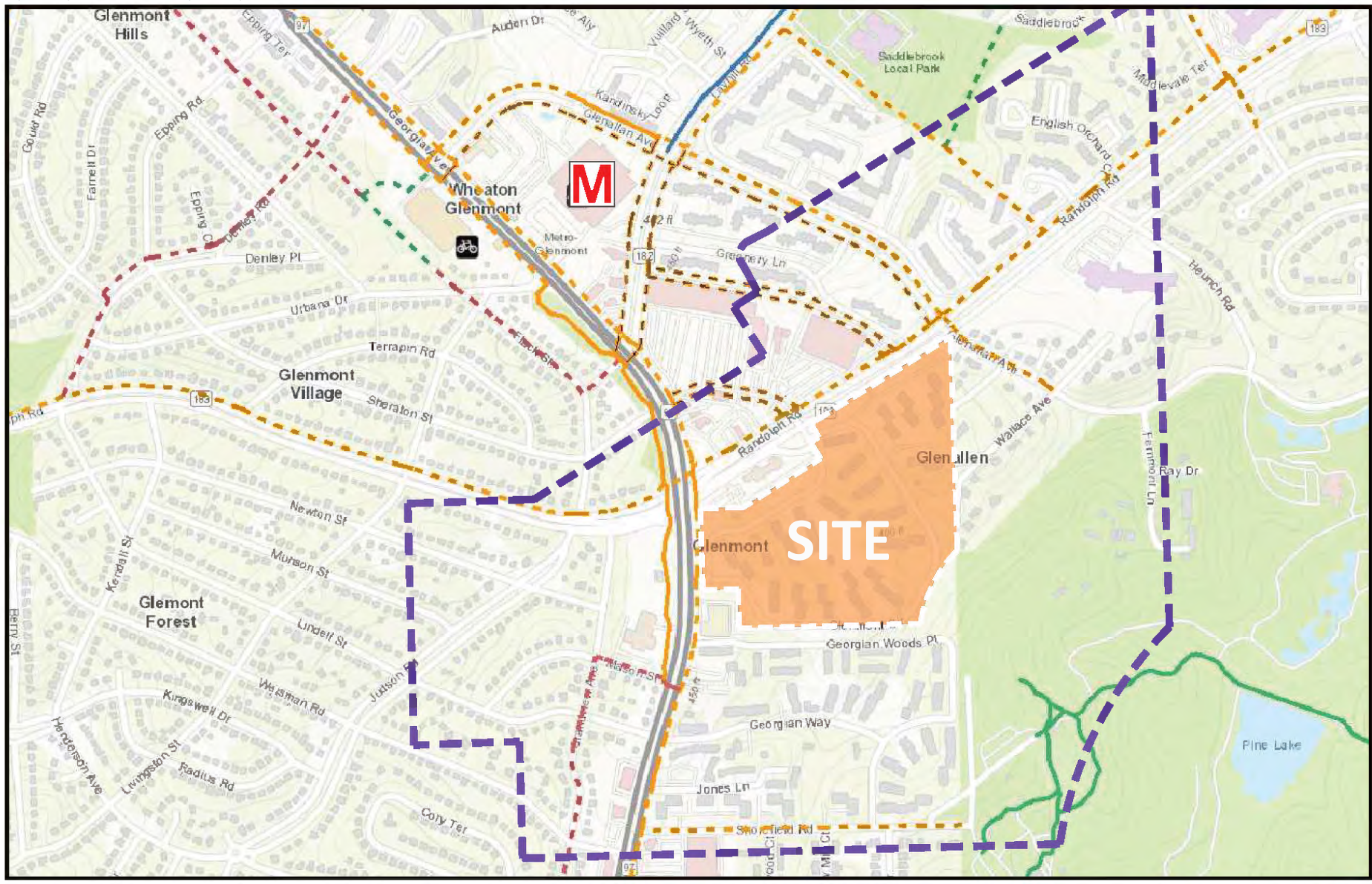


Figure 4-4
Bicycle Master Plan


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BUS TRANSIT SYSTEM ADEQUACY

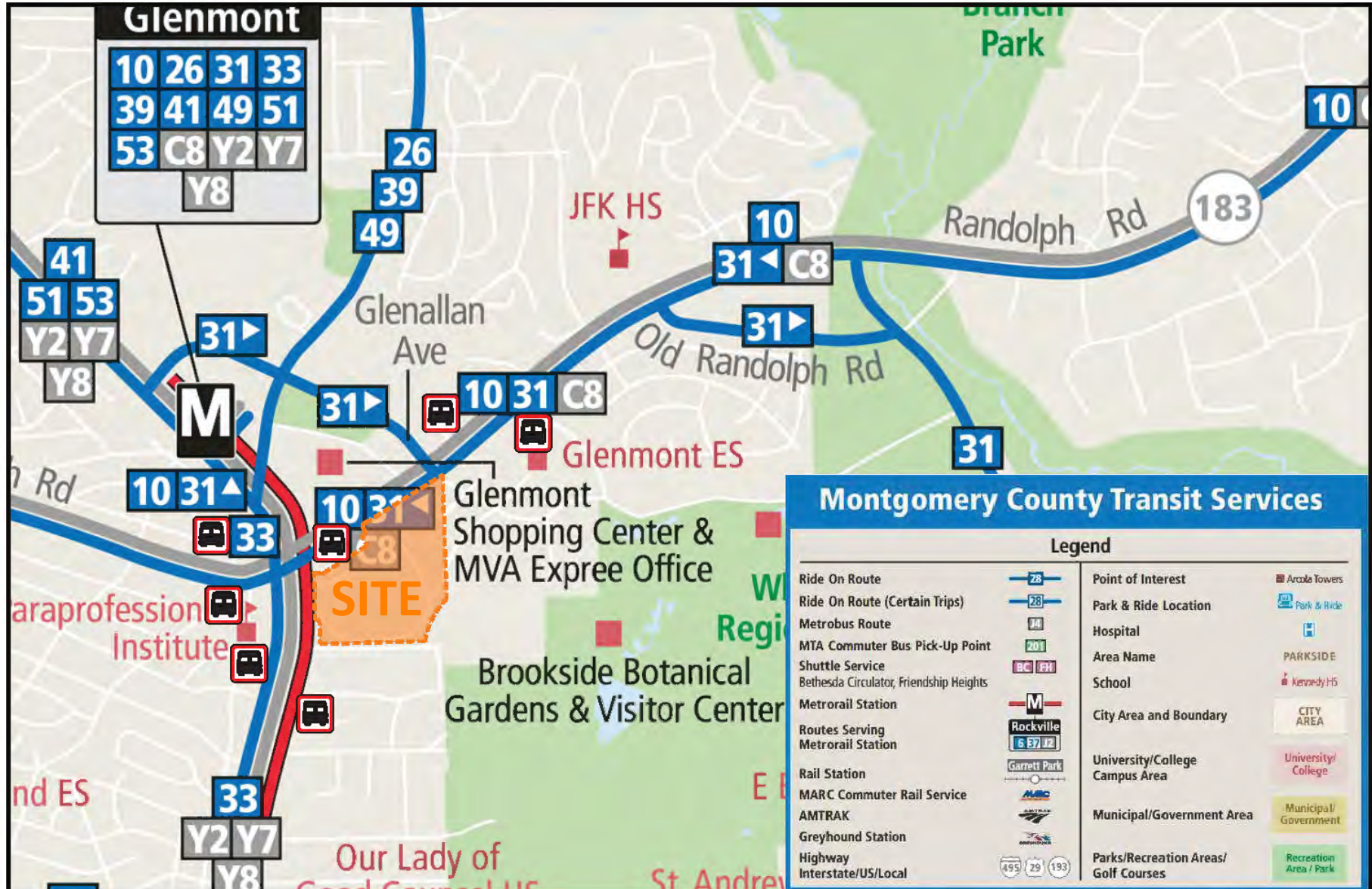
The requirements for the Bus Transit Adequacy test are described in the LATR Guidelines. The applicable requirement for the proposed development is four (4) shelters within 1,500 feet of the site based on a peak hour person trip generation of 350 or more and the site located within an Orange Policy Area.

There are 19 bus stops within the study area, as shown on Figure 4-5 and listed on Table 4-3. Of the 19 bus stops, eight (8) have shelters and 11 do not have shelters. At the time of Preliminary Plan/Site Plan the Applicant will coordinate with MCDOT Staff to identify four (4) stops that may be appropriate for bus shelters to meet the mitigation requirement and if they will be prioritized to reach the Proportionality Guide Calculation cap for off-site improvements.

Table 4-4
 Glenmont Forest
 Bus Stops

Site #	Site Name	Route	Capacity	Yes	No	Yes
1	2000696	10, C8, Y2, Y7, Y8	13x5	Yes	No	Yes
2	2005510	10, C8, Y2, Y7, Y8	N/A	Yes	No	No
3	22842	10	17x5	Yes	No	Yes
4	2000671	10, C8	13x5	Yes	No	Yes
5	2001117	10, C8	N/A	Yes	No	No
6	2001118	10, C9	7x3	Yes	No	No
7	2000677	10, C8	7x3	Yes	No	No
8	2000676	R61 R83 R78	N/A	Yes	No	No
9	2000693	10, C8	13x5	Yes	No	Yes
10	2000701	10, C8	N/A	Yes	No	No
11	2000698	10, C8	N/A	Yes	No	No
12	2000717	10, C8	N/A	Yes	No	No
13	2000716	10, C8	N/A	Yes	No	No
14	2000635	Y2, Y7, Y8	5x3	Yes	No	No
15	2000629	Y2, Y7, Y8	17x5	Yes	No	Yes
16	2000600	R98 R97	13x5	Yes	No	Yes
17	2000607	R98 R97	13x5	Yes	No	Yes
18	29976	26,39,49	13x5	Yes	No	Yes
19	10002	26,39,49	N/A	Yes	No	No

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Bus Stop

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Figure 4-5
Bus Transit Stops



LATR PROPORTIONALITY FOR OFF-SITE IMPROVEMENTS

Per the LATR Guidelines, the Planning Board established a maximum cost for off-site improvements that an applicant is required to construct or fund to mitigate deficiencies identified in Pedestrian, Bicycle and Bus Transit Systems Adequacy tests.

With the proposed 2,275 mid-rise apartments, at this time the Applicant would have a maximum \$9,988,160 improvement cap for off-site improvements.

Using the Proportionality Calculator, Version 1.3, the improvement cap is calculated by the number of dwelling units, times the LATR Proportionality Guide Rate, times the Adjustment Factor for the policy area. For Glenmont Forest, the cap is calculated as:

$$2,275 \times \$10,976 \times 40\% = \$9,988,160$$

At the time of Preliminary Plan/Site Plan, the Proportionality Guide will be recalculated and the Applicant will work with MCDOT and Planning Staff to identify which improvement options should be pursued to meet Glenmont Forest requirements to mitigate deficiencies in the Pedestrian, Bicycle, and Bus Transit Systems.

The Proportionality Cap cost estimate above reflects a full density build-out. This may be adjusted at the time of Preliminary Plan/Site Plan based on the proposed density and the requirements contained in the applicable Growth and Infrastructure Policy (GIP).

SECTION 5

VISION ZERO STATEMENT

This section provides a Vision Zero Statement following the LATR Guidelines. The LATR Vision Zero Statement requirement consists of the following:

1. **Review High Injury Network segments:** Document any segments on the High Injury Network (HIN) that are within a certain distance of the site frontage, as specified in Table 6 of the LATR Guidelines.

The site is located within a High Injury Network. Specifically, Georgia Avenue north of University Boulevard and south of Hewitt Avenue is classified as a high injury network. In addition, it is noted that Randolph Road west of Georgia Avenue is classified as a high injury network.

2. **Assess proximate safety issues:** Review the crash history for all segments and crossings within a certain distance of the site frontage, as specified in the LATR Guidelines. A summary of crashes within the past five years, noting the overall severity and mode of crashes, is to be provided. For any severe or fatal crashes, documentation of the collision type, mode, and whether the crash occurred at an intersection or along a segment is to be provided.

Per the LATR Guidelines, the applicable Vision Zero study area and requirement for the proposed development is collecting crash data within 1,000 feet in all directions within the past five (5) years. All crash data was collected from Montgomery County Interactive Crash Map. Table 5-1 provides a summary of the number of crashes within the study area. A map showing the location of the fatal and severe injury crashes is shown on Figure 5-1.

Within 1,000 feet of the site boundaries, a total of 531 crashes were reported from 2018 through January 2023. 214 of the crashes were reported as injury crashes, and four (4) were classified as fatal. All fatal crashes involved pedestrians. 2 of them occurred along an intersection and the other 2 occurred along a segment.

3. **Review traffic speeds:** Speed studies were conducted within the required 1000-foot distance from the site frontage as specified in the LATR Guidelines. The speed studies were conducted along Georgia Avenue, Randolph Road, and Layhill Road. The study began on January 19, 2023, at 12:00 AM and concluded on January 20, 2023, at 12:00 AM, lasting a total of 24 hours. The posted speed limit and results from the data collection are summarized in Table 5-2.

Speed studies conducted along Randolph Road east of Glenallan Avenue indicate the average speed was 38 mph and the 85th percentile speed was 47mph. The posted speed is 40mph. Along Randolph Road east of Livingston Street, 50th percentile speed was 37mph and the 85th percentile speed was 46mph.

Along Georgia Avenue between Arcola Drive and Shorefield Drive, the 50th percentile speed was 34mph and the 85th percentile speed was 36mph. The posted speed on Georgia Avenue is 35mph. Along Georgia Avenue between Glenallan Avenue and Urbana Drive, the 50th percentile speed was 34mph and the 85th percentile speed was 44mph.

Along Layhill Road between Glenallan Avenue and Georgia Avenue, the 50th percentile speed was 30mph and the 85th percentile speed was 39mph. The posted speed is 30mph.

As shown in Table 5-2, the 85th percentile speeds exceeded 120% of the posted speed limit on Randolph Road, Georgia Avenue and Layhill Road. Therefore, it is recommended that speed reduction measures and enforcement be considered by the County.

- 4. Site access:** The site layout of site minimizes conflicts between bicycles, pedestrians, and vehicles. Access to Glenmont Forest will be provided via a private drive on MD 97 (Georgia Avenue), a private drive on Randolph Road and Erskine Avenue, and a public street on Randolph Road. Erskine Avenue is planned to extend east and intersect with Glenallen Avenue. Sidewalks will be provided on both sides of the internal streets with landscaping and on-street parking buffering pedestrians from the vehicular travel way. The parking garages and loading docks for the residential buildings will be located within the interior of Glenmont Forest with no direct access to Randolph Road or Georgia Avenue.

Table 5-1
 Glenmont Forest
 Crash Analysis Summary ⁽¹⁾

Category	Subcategory	July 2018 - 2019	2023-present
Severity	Minor/No Injury	76	11
	Injury	129	531
	Severe Injury/Fatal	214	313
	Vehicles Only	4	214
	Bicyclist Related	494	4
Mode	Bicyclist Related	9	9
	Pedestrian Related	28	28
Year	July 2018 - 2019	76	11
	2019	129	11
	2020	86	11
	2021	107	11
	2022	122	11
Total		531	531

Note:
 (1) Dataset taken from Montgomery County Interactive Crash Map.
<https://mcpplanning.maps.arcgis.com/apps/webappviewer/index.html?id=3bec8baf0ca4cc182cc042ed38af0e7>

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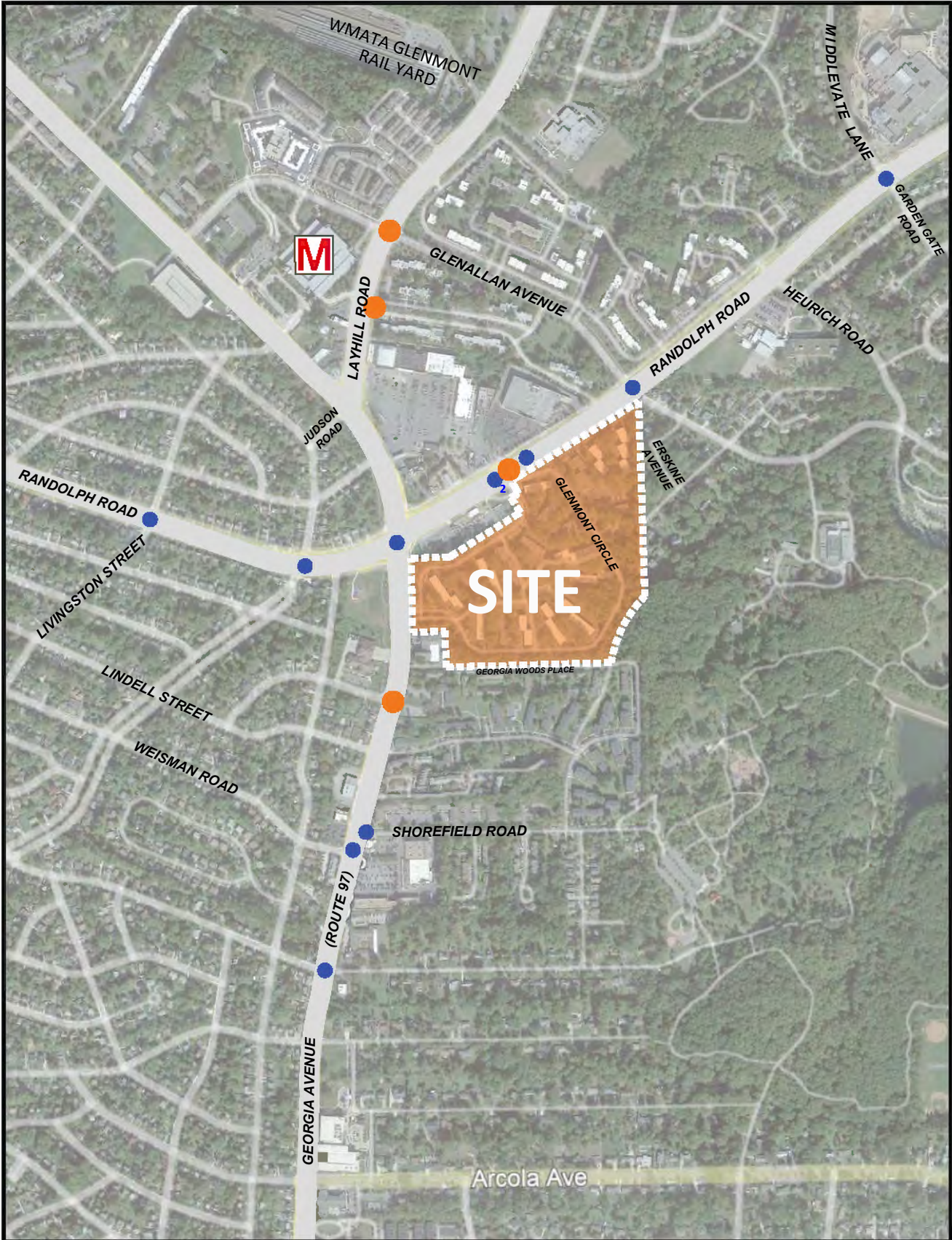


Figure 5-1
Location of Severe Injury and Fatal Crashes

- Severe Injury Crash
- Fatal Crash



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Montgomery County, MD



Table 5-2
Glennmont Forest
Speed Study Analysis

35-45	Lane								
35-45	35	35	35	35-45	35	35	35-45	40	35-45
35-45	42	42	42	35-45	42	42	35-45	48	35-45
35-45	35	35	35	35-45	35	35	35-45	40	35-45
35-45	45	47	46	35-45	45	47	35-45	50	35-45
35-45	Y	Y	Y	35-45	N	Y	35-45	Y	35-45
35-45	35	35	35	35-45	35	35	35-45	36	35-45
35-45	42	42	42	35-45	42	42	35-45	48	35-45
35-45	35	35	35	35-45	35	35	35-45	40	35-45
35-45	45	47	46	35-45	45	47	35-45	50	35-45
35-45	Y	Y	Y	35-45	N	Y	35-45	Y	35-45
35-45	Lane								
35-45	30	30	30	35-45	30	30	35-45	30	35-45
35-45	36	36	36	35-45	36	36	35-45	36	35-45
35-45	35	30	30	35-45	35	30	35-45	25	35-45
35-45	45	40	41	35-45	35	36	35-45	36	35-45
35-45	Y	Y	Y	35-45	N	Y	35-45	N	35-45
35-45	Lane								
35-45	30	30	30	35-45	30	30	35-45	30	35-45
35-45	36	36	36	35-45	36	36	35-45	36	35-45
35-45	35	30	30	35-45	35	30	35-45	24	35-45
35-45	45	40	41	35-45	35	36	35-45	35	35-45
35-45	Y	Y	Y	35-45	N	Y	35-45	N	35-45

Section 6 CONCLUSIONS

The Applicant proposing to remove 482 low-rise apartment dwelling units and replace the development with up to 2,275 mid-rise apartment dwelling units. The proposed development is expected to occur over a 10-year build-out. The existing property is occupied with 482 low-rise apartments built in 1962. The site is currently provided via two driveways on Randolph Road and one driveway on Georgia Avenue. The Applicant is proposing that the existing right-in/right-out access along Georgia Avenue, full movement driveway on Randolph Road via Glenmont Circle, and right-in/out access on Randolph Road east of the existing full access driveway, plus a new access to Erskine Avenue will provide access to Glenmont Forest. The site is subject to the Local Area Transportation Review system adequacy tests and a Vision Zero statement, based on the number of peak hour person trips the site will generate, as outlined in Montgomery County's Growth and Infrastructure Policy and the LATR 2023 Guidelines.

Following are the findings and conclusions of the four adequacy tests and Vision Zero evaluations.

1. Glenmont Forest is expected to generate 1,257 AM peak hour and 1,017 PM peak hour new person trips, and 743 AM peak hour and 601 PM peak hour new auto-driver (vehicle) trips.
2. The AM and PM peak hour average vehicle delays for the study intersections within the Kensington/Wheaton Orange Policy Area are operating below the congestion standard of 80 seconds per vehicle. The study intersections within the Glenmont Metro Station Red Policy Area are not subject to the Motor Vehicle Test. However, for information purposes, an analysis was conducted at each of these intersections.
3. Under future conditions, without and with the proposed Glenmont Forest redevelopment, the study intersections within the Kensington/Wheaton Policy Area will continue to operate below congestion standard threshold during both the AM and PM peak hours.
4. For the Pedestrian System Adequacy Test, mitigation is required to bring the existing undesirable pedestrian level of comfort ratings for segments along Randolph Road, Glenallan Avenue and MD-97 (Georgia Avenue) and to address ADA noncompliance for crosswalk ramps within the study area. At the time of Preliminary Plan/Site Plan, the Applicant will work with Staff to determine the improvements and the fair share contribution to improve the PLOC in the study area.
5. Mitigation is required to pass the Bicycle System Adequacy Test because there is high level of traffic stress under existing conditions along Randolph Road and MD-97 (Georgia Avenue). The Applicant will, at the time of Preliminary Plan/Site Plan, coordinate with Planning Staff to determine the fair share contribution toward the mitigation.

6. Several bus stops within the study area do not have bus shelters. Mitigation is required to pass the Bus Transit System Adequacy Test. The Applicant will, at the time of Preliminary Plan/Site Plan, coordinate with Planning Staff to determine the fair share contribution toward the mitigation.
7. A review of crash history within the 1,000 feet study area radius found that 531 crashes occurred between 2018 and 2023. Of the 531 report crashes, 214 were reported as injury crashes, and four (4) were classified as fatal. According to Montgomery Planning, the most serious injuries and fatalities are located along the County's arterials, such as Georgia Avenue. The site is located within a High Injury Network along Georgia Avenue south of Randolph Road. Randolph Road east of Glenallan Avenue and Georgia Avenue north of Layhill Road are considered high injury networks.
8. The speed study shows that the 85th percentile speed exceeds 120% of the posted speed limit on Randolph Road, Georgia Avenue and Layhill Road. Therefore, the County should consider speed reduction measures and enforcement.
9. The location and design of the proposed site access roads minimizes turning movement conflicts on Georgia Avenue and Randolph Road. Sidewalks and crosswalks will be provided within and along the property frontage to ensure safe pedestrian access to and from the site. The bike lane along the Georgia Avenue frontage provides a low level of traffic stress for bicyclists travelling to or from the site.

**APPENDIX A
SCOPE FORM**





MONTGOMERY COUNTY PLANNING DEPARTMENT
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

Local Area Transportation Review

TRANSPORTATION IMPACT STUDY SCOPE OF WORK AGREEMENT

Updated Winter 2021

<p>Scoping Approval - Prior to initiating a Local Area Transportation Review study or supplemental traffic study, scoping <i>must be approved</i> by relevant agencies, including the Planning Department, the Montgomery County Department of Transportation, and the State Highway Administration (where relevant). It is the responsibility of the Applicant to obtain approval, which is demonstrated below via signature or electronic signature of the relevant agency representatives. Generally, the Applicant should anticipate a turnaround time of ten (10) business days for form review. Substantially large projects may require additional time and/or may warrant a scoping meeting.</p>				
<p>Montgomery County Planning Department Name (print): <u>Alex Rixey</u> Signature: <u><i>Alex Rixey</i></u> Date: <u>11/30/2022</u></p>				
<p>Montgomery County Department of Transportation Name (print): <u>Rebecca Torma</u> Signature: <u><i>Rebecca Torma</i></u> Date: <u>12/1/22</u></p>				
<p>State Highway Administration (where relevant) Name (print): <u>Kwesi Woodroffe</u> Signature: <u><i>[Signature]</i></u> Date: <u>12/01/2022</u></p>				
<p>Applicant Contact Information</p>				
Transportation Consultant (company, contact name, email, and phone number)	Nancy Randall, AICP - Wells + Associates - amrandall@wellsandassociates.com - C: (410) 353-7340 Christine Bairan, EIT - Wells + Associates - cgbairan@wellsandassociates.com - C: (310) 971-3421			
Name of Applicant / Developer	Grady Management, Inc. Jean Paul Savary			
<p>Project Information <i>Include Tables/Graphics, As Needed</i></p>				
Project Name (include plan no. if known)	Glenmont Forest			
Project Location (include address if known)	Located along the southeast quadrant of the Randolph Road / Georgia Avenue intersection Bordered along Glenallan Avenue, Randolph Road, and Georgian Woods Place			
Policy Area(s) (subdivision staging policy map)	Kensington / Wheaton	Master Plan(s) / Sector Plan Area(s)	Glenmont Sector Plan	
Application Type(s)	<input type="checkbox"/> Preliminary Plan	<input type="checkbox"/> Site Plan	<input type="checkbox"/> Sketch/Concept/Pre-Preliminary (Optional)	<input type="checkbox"/> Amendment
	<input type="checkbox"/> Conditional Use (formerly special exception)	<input checked="" type="checkbox"/> Local Map Amendment	<input type="checkbox"/> APF at Building Permit	<input type="checkbox"/> Other:

<p>Project Description & Previous Approvals</p> <p>(proposed land uses, zoning, no. of units, square footage, construction phasing, prior approvals and proposals, existing uses, site operations, year built, status of Adequate Public Facilities [APF], other relevant info)</p>	<p>The Applicant is proposing to remove 482 low-rise apartment dwelling units and replace the development with up to 1,810 mid-rise apartment dwelling units.</p>		
<p>1.Site Access</p> <p>(proposed access location(s), existing/adjacent/opposite curb cuts, interparcel connections, access configurations and restrictions, internal circulation, private roads, parking/loading areas, other relevant info)</p>	<p>The access to the proposed development is assumed to remain with one right-in/right-out access along Georgia Avenue, a full access driveway on Randolph Road via Glenmont Circle, and existing right-in/out access on Randolph Road east of the existing full access driveway, and provide new access to Erskine Avenue.</p>		
<p>2.Transportation Analysis Requirement</p>	<p><input checked="" type="checkbox"/> Transportation Impact Study</p> <p>Generates <u>50 or more</u> total weekday peak hour person trips (vehicular, transit, bicycle, and/or pedestrian) with no reductions other than a credit for existing developments over 12 years old, <u>AND</u> is outside of the White Flint and White Oak Policy Areas. Fill out remainder of this form and include in transportation impact study appendix.</p>	<p><input type="checkbox"/> Transportation Study Exemption Statement</p> <p>Generates <u>49 or fewer</u> total weekday peak hour person trips (vehicular, transit, bicycle, and/or pedestrian) with no reductions other than a credit for existing developments over 12 years old, <u>OR</u> within White Flint and White Oak Policy Areas.</p>	
<p>3.Project-based Transportation Demand Management Plan Required (see Chapter 42, Articles I and II)</p>	<p><input checked="" type="checkbox"/> No</p>	<p><input type="checkbox"/> Yes (In Transportation Management District [TMD])</p> <p>** will coordinate with MCDOT</p>	<p><input type="checkbox"/> Amend Existing TMAg</p>
<p>4.Established Transportation Management District (TMD)?</p>	<p><input checked="" type="checkbox"/> No</p>	<p><input type="checkbox"/> Yes TMD Name: _____</p>	
<p>Transportation Impact Study Assumptions <i>Include Tables/Graphics, As Needed</i></p>			
<p>5.Study Years / Phases</p>	<p>Existing Year: 2022</p>	<p>Phases / Build-out Year(s): 2022 (10 year build out)</p>	
<p>6.Study Periods</p>	<p><input checked="" type="checkbox"/> AM <input checked="" type="checkbox"/> PM <input type="checkbox"/> Mid-day <input type="checkbox"/> Saturday <input type="checkbox"/> Sunday <input type="checkbox"/> Other: _____</p>		

<p>7. Study Intersections (For projects generating 50 or more person trips, list all signalized & significant unsignalized intersections, and site driveways traffic counts must be collected within 12-months of completed and accepted application)</p>	<p># of tiers of intersections to study (refer current LATR Guidelines): <u>2</u> <i>For the purpose of determining the number of tiers of study intersections, trip calculation for the subject site should also include nearby unbuilt properties in common ownership. No trip reductions should be taken in this calculation other than a credit for existing developments over 12 years old.</i></p>				
	1) Randolph Road / Livingston Street		7) Georgia Avenue / Layhill Road		
	2) Georgia Avenue / Randolph Road		8) Georgia Avenue / Glenmont Circle		
	3) Randolph Road / Glenmont Circle		9) Georgia Avenue / Shorefield Road		
	4) Randolph Road / Residential Driveway (East of Glenmont Circle)		10) Layhill Road / Glenallen Avenue		
	5) Randolph Road / Glenallen Avenue		11) Georgia Avenue / Arcola Avenue		
	6) Randolph Road / Middlevale Lane / Garden Gate Road		12) Glenallen Avenue / Eskine Avenue 13. Randolph Road / Heurich Road		
<p>8. Trip Generation (clearly cite sources and methodology including use of average rates vs. equation; include trip generation for existing site, current approvals, proposed uses, and net changes)</p>	<p>Total Person Trips</p> <p>AM: 942 PM: 736</p>	<p>Vehicle Trips* (Auto Driver)</p> <p>AM: 557 PM: 435</p>	<p>Transit Trips*</p> <p>AM: 76 PM: 60</p>	<p>Walking Trips* (non-motorized + transit)</p> <p>AM: 145 PM: 114</p>	<p>Bicycling Trips* (non-motorized)</p> <p>AM: 69 PM: 54</p>
	<p><i>* Only required if total peak hour person trips are 50 or more in either the AM or PM peak hour. Sum of all vehicle, transit, and non-motorized trips shall be the equivalent of total person trips. Use table at the end of the form to show all calculations and assumptions for mode breakout.</i></p>				
<p>9. Trip Reductions (include justification and supporting documentation for internal capture, pass-by, diverted, Transportation Demand Management)</p>	<p>No reductions proposed at this time.</p>				
<p>10. Trip Distribution % (include a map of the proposed project in addition to a list or table)</p>	<p>West Randolph Road - 25% North Georgia Avenue - 15% Layhill Road - 5% East Randolph Road - 10% South Georgia Avenue - 45%</p>				<p>* See attached for assignment matrix and map</p>
<p>11. Pipeline Developments to be considered as background traffic (include name, plan #, land uses, and sizes for approved but unbuilt developments or concurrently pending applications; info can be obtained from the M-NCPPC Pipeline website: - website is updated quarterly)</p>	<p>Glenmont Metrocenter (120130080) - includes a total of 714 unbuilt residential dwelling units and 90,000 S.F. retail use.</p> <p>4010 Randolph Road (820210080) - includes a total of 197 mid-rise apartments, 3 single-family detached housing dwelling units, 1,000 SF day care center, and 1,000 SF clinic.</p> <p>Kaiser Permanente Aspen Hill (82018007A) - includes a 180,000 SF medical office building during total buildout.</p> <p>Wheaton Gateway (320210060) - includes 800 mid-rise residential dwelling units with 1st floor commercial.</p>				
<p>12. Pipeline Transportation Projects to be considered as background condition (fully funded for construction in County Capital Improvement Program, State Consolidated Transportation Program, developer projects, etc. within the next 6 years)</p>	<p>No pipeline transportation or CIP projects have been identified.</p>				

<p>13. Vision Zero Statement</p>	<ul style="list-style-type: none"> • Trigger: All LATR studies for a site that generates 50 or more weekday peak hour person trips must develop a Vision Zero Statement. • Requirements: The Vision Zero Statement consists of four components: <ol style="list-style-type: none"> 1. Review High Injury Network segments: Document any segments on the High Injury Network (HIN) that are within a certain distance of the site frontage. 2. Assess proximate safety issues: Review the crash history for all segments and crossings within a certain distance of the site frontage. 3. Review traffic speeds: Conduct speed studies within a certain distance from the site frontage. 4. Describe site access: Address the safety issues identified in steps 1 through 3 and describe how site circulation promotes safety, outlining how safe access will be provided to the site. <p>The applicant should refer to the <i>LATR Guidelines</i> to determine the applicable scoping distance pertaining to steps 1 through 3 and requirements pertaining to steps 1 through 4.</p>
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Preliminary Mitigation Analysis <i>*Refer to the LATR Guidelines for details on how to mitigate</i>	
<p>14. Vehicular Analysis</p>	<p><input checked="" type="checkbox"/> Vehicular Analysis Anticipated (Vehicular mitigation to be determined after study)</p> <ul style="list-style-type: none"> • TEST: The motor vehicle adequacy test will not be applied in "Red" policy areas and these areas will not be subject to LATR motor vehicle mitigation requirements. If the plan generates 50 or more weekday peak hour person trips, HCM Analysis is required to be provided for all intersections analyzed in studies for: 1) "Orange" policy areas, and 2) intersections with a CLV of more than 1,350 in "Yellow & Green" policy areas. 3) With the exception of intersections located within "Red" policy areas, CLV analysis required for all intersections regardless of policy area. CLV assessment and signal timing worksheets are to be included in the study appendix. • MITIGATION: The applicant must mitigate its impact on vehicle delay or down to the applicable policy area standard, whichever is less.
<p>15. Pedestrian Analysis</p>	<p><input checked="" type="checkbox"/> Pedestrian Mitigation Anticipated</p> <ul style="list-style-type: none"> • TEST: If the plan generates 50 or more weekday peak hour person trips, mitigation of surrounding pedestrian conditions is required. MITIGATION: Mitigation consists of three components: <ol style="list-style-type: none"> (1) Pedestrian Level of Comfort (PLOC). Pedestrian system adequacy is defined by providing a "Somewhat Comfortable" or "Very Comfortable PLOC score on streets and intersections for roads classified as Primary Residential or higher within a certain walkshed from the site. (2) Street Lighting. The applicant must evaluate existing street lighting based on MCDOT standards along roadways and paths from the development within a certain walkshed from the site frontage. Where standards are not met, the applicant must upgrade the street lighting to meet the applicable standard. (3) ADA Compliance. The applicant must fix ADA noncompliance issues within a certain walkshed from the site frontage equivalent to half the walkshed specified in

	<p>the required scoping distance.</p> <p>The applicant should refer to the <i>LATR Guidelines</i> to determine the applicable scoping walkshed distance requirement for each component described above.</p>		
16. Bicycle Analysis	<input checked="" type="checkbox"/> Bicycle Mitigation Anticipated	<ul style="list-style-type: none"> • TEST: If the plan generates 50 or more peak hour weekday person trips mitigation of surrounding bicycle conditions is required • MITIGATION: Required to ensure a low Level of Traffic Stress (LTS-2) on all existing transportation rights-of-way within a certain distance of the site frontage ; Alternatively, the project may provide a master planned improvement that provides an equivalent improvement in the level of traffic stress for cyclists within a certain distance of the site frontage. <p>The applicant should refer to the <i>LATR Guidelines</i> to determine the applicable scoping distance requirement.</p>	
17. Bus Transit Analysis	<input checked="" type="checkbox"/> Transit Mitigation Anticipated	<ul style="list-style-type: none"> • TEST: If the plan generates 50 or more peak hour person trips mitigation of surrounding transit conditions is required. Projects located within "Green" policy areas are exempt from the bus transit adequacy test. • MITIGATION: Required to ensure that there are bus shelters outfitted with realtime traveler information displays and other standard amenities, along with a safe, efficient, and accessible path between the site and a bus stop, at a certain number of bus stops within a certain distance from the site. <p>The applicant should refer to the <i>LATR Guidelines</i> to determine the applicable number of bus stop and scoping distance requirement.</p>	
Additional Analysis or Software Required	<input checked="" type="checkbox"/> Queuing Analysis <input checked="" type="checkbox"/> Signal Warrant Analysis <input type="checkbox"/> Weaving/Merge Analysis	<input checked="" type="checkbox"/> Accident Analysis <input checked="" type="checkbox"/> Synchro <input type="checkbox"/> SIDRA	<input type="checkbox"/> VISSIM <input type="checkbox"/> CORSIM <input type="checkbox"/> Other _____
M-NCPPC Clarifications		Additional Assumptions & Special Circumstances for Discussion	
<ul style="list-style-type: none"> • Transportation impact study will comply with all other requirements of the LATR Guidelines not listed on this form. • If physical improvements are proposed as mitigation, the transportation impact study will demonstrate feasibility with regards to right-of-way and utility relocation (at a minimum). • If the development proposal significantly changes after this transportation impact study scope has been agreed to, the Applicant will work with M-NCPPC staff to amend the scope to accurately reflect the new proposal. • A receipt from MCDOT showing that the transportation impact study review fee has been paid will be provided to M-NCPPC DARC at the time the development application is submitted. • Minimum of seven paper copies (more if near the County line or an incorporated City) and two PDF copies of the transportation impact study and appendices will be provided. 			

Project: Glenmont Forest

Policy Area: Kensington / Wheaton (Orange)

Person Trip Generation: 350 or more Net New Person Trips based on AM peak hour

Pedestrian System Adequacy

1. Pedestrian Level of Comfort: From Table 12 – 1,000'
2. Street Lighting: From Table 12 = 1,000'
3. ADA Compliance: ½ of Table 12 – 500'

Table 12. Pedestrian Adequacy Test Scoping

Peak-Hour Person Trips Generated	Red and Orange Policy Area Walkshed*	Yellow and Green Policy Area Walkshed*
50 – 99	400'	250'
100 – 199	750'	400'
200 – 349	900'	500'
350 or more	1,000'	600'

* The maximum required length of sidewalk and streetlighting improvements beyond the frontage is 4 times the appropriate value in this column. The maximum span required for ADA improvements beyond the frontage is equal to the appropriate value in this column.

Bicycle System Adequacy

1. LTS-2: From Table 13 – 1,000'

Table 13. Bicycle Adequacy Test Scoping

Peak-Hour Person Trips Generated	Red and Orange Policy Areas	Yellow and Green Policy Areas
50 – 99	400'	250'
100 – 199	750'	400'
200 – 349	900'	500'
350 or more	1,000'	600'

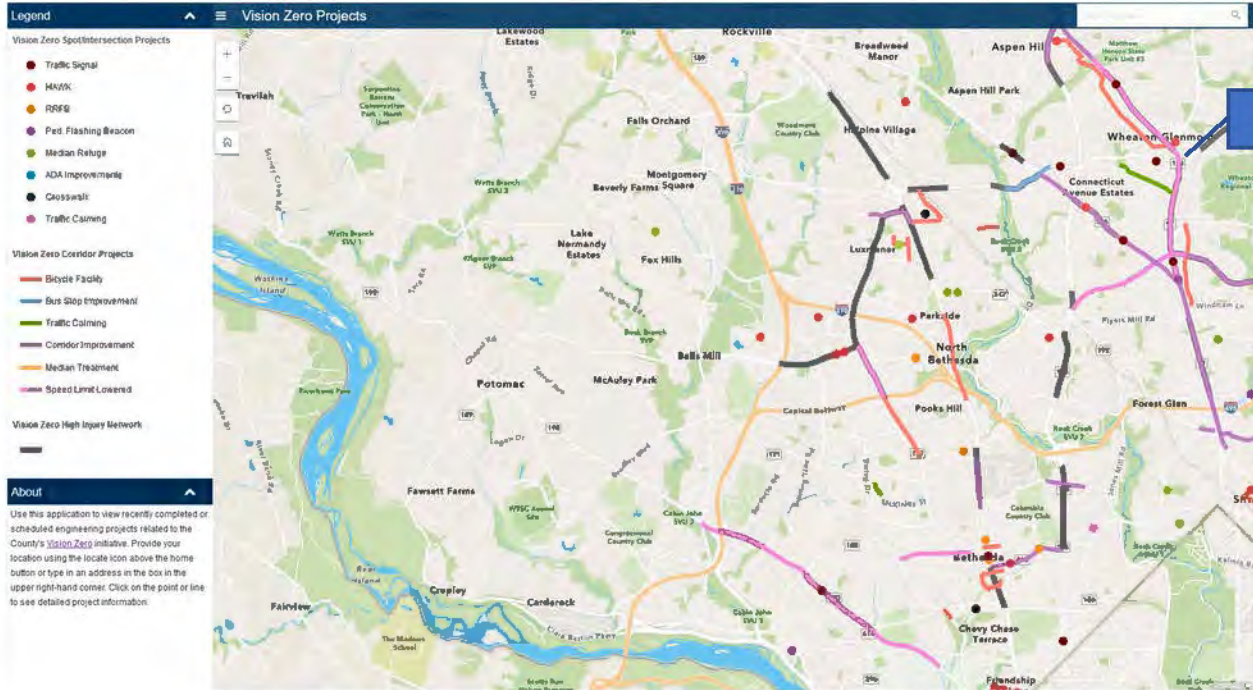
Bus Transit System Adequacy

1. Bus Shelters: From Table 14 – 4 shelters within 1,500'

Table 14. Bus Transit Adequacy Test Scoping

Peak-Hour Person Trips Generated	Red and Orange Policy Areas	Yellow Policy Areas
50 – 99	2 shelters within 500'	1 shelter within 500'
100 – 199	2 shelters within 1,000'	2 shelters within 1,000'
200 – 349	3 shelters within 1,300'	2 shelters within 1,300'
350 or more	4 shelters within 1,500'	3 shelters within 1,500'

Vision Zero: Site is located within a High Injury Network along Georgia Avenue south of Randolph Road. In addition, it is noted that Randolph Road east of Glenallen Ave and Georgia Avenue north of Layhill Road are considered as high injury networks.



Up to 8 Speed Studies within 1,000' from site frontage. Speed study locations will be coordinated with County staff, if necessary.

Proposed Speed Study Locations:

1. Randolph Road, east of Glenallen Avenue (EB/WB direction)
2. Georgia Avenue, between Arcola Avenue and Shorefield Road (NB/SB direction)
3. Randolph Road, east of Livingston Road (EB/WB direction)
4. Layhill Road, between Glenallen Avenue and Georgia Avenue (EB/WB direction)
5. Georgia Avenue, between Glenallen Avenue and Urbana Drive

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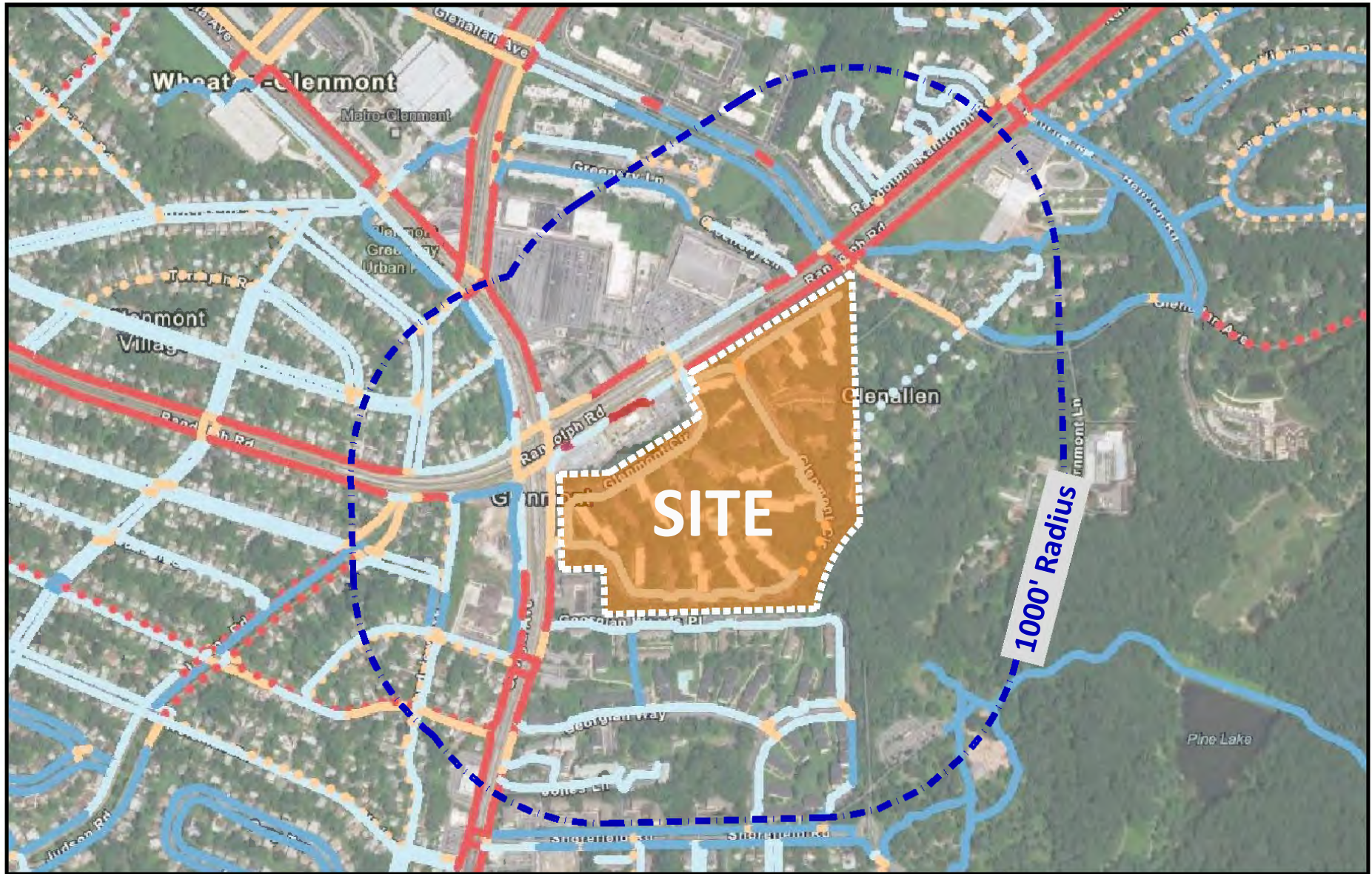


Figure 1
Pedestrian Level of Comfort (PLOC) Study Area



NORTH

Glenmont Forest
Montgomery County, MD



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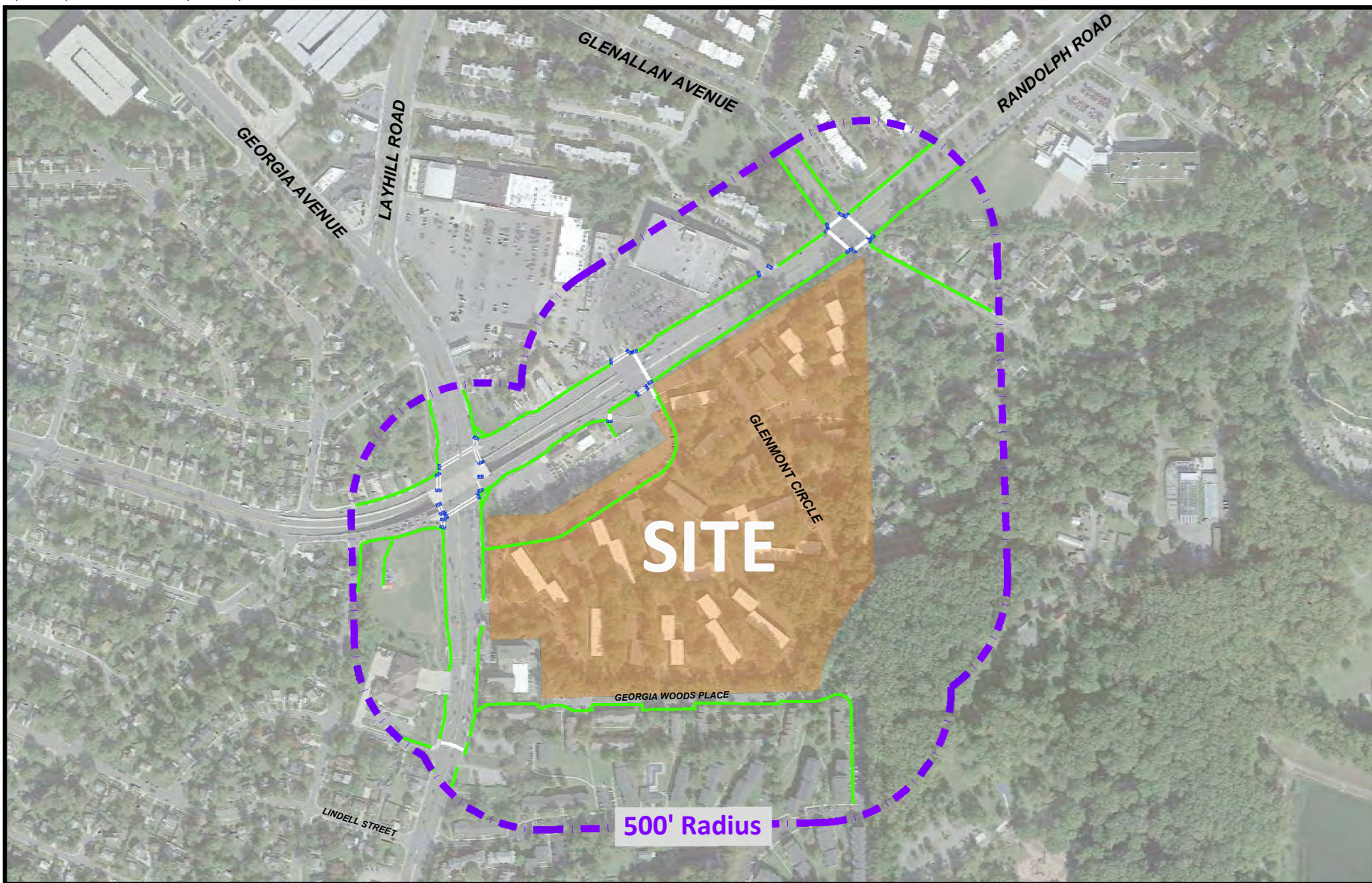


Figure 2
ADA Compliance Study Area

- SIDEWALK
- ||||| PEDESTRIAN CROSSWALK
- / / / / CURB RAMP



NORTH

Glenmont Forest
Montgomery County, MD



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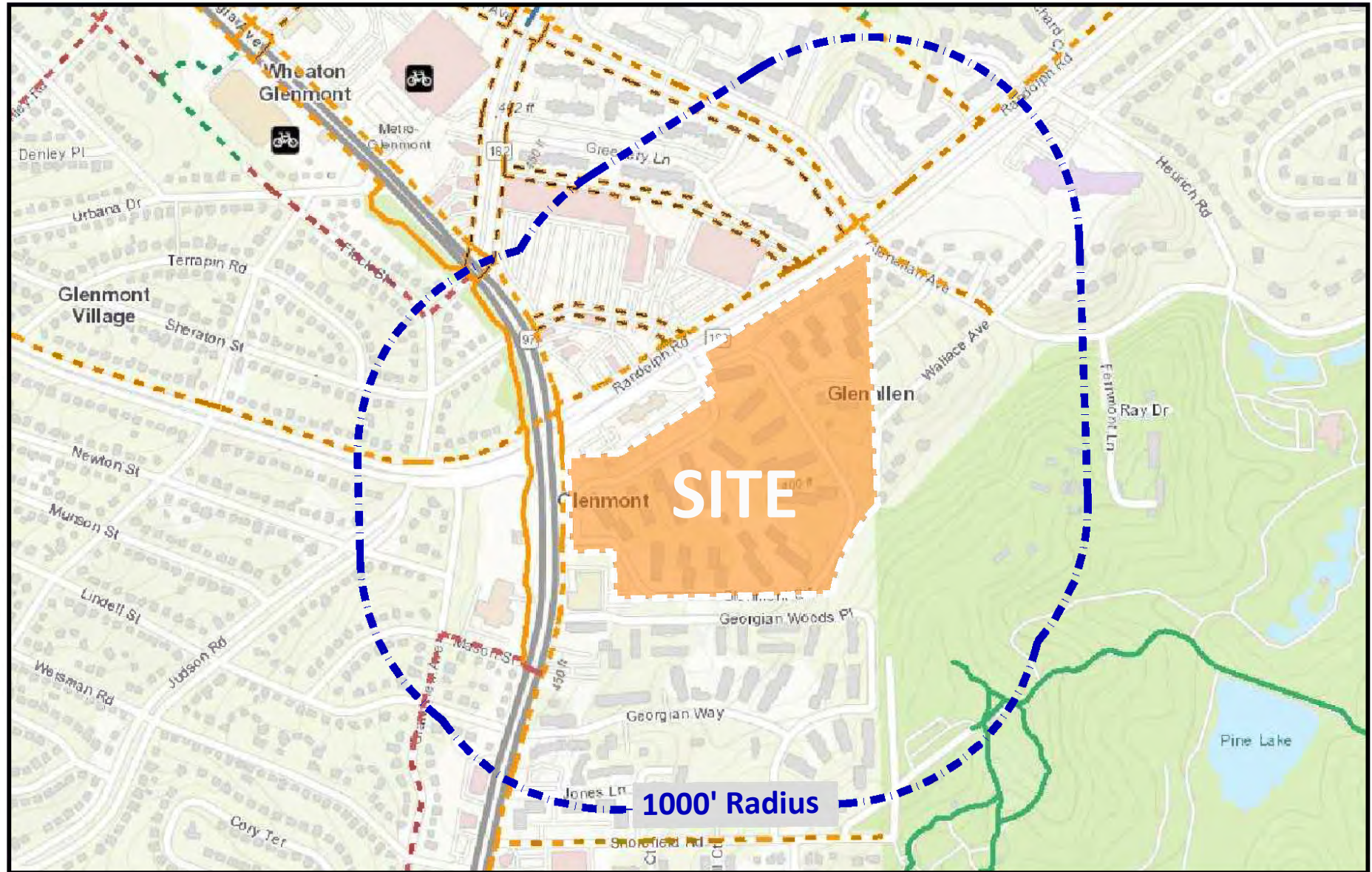


Figure 3
Bicycle System Study Area



Glenmont Forest
Montgomery County, MD



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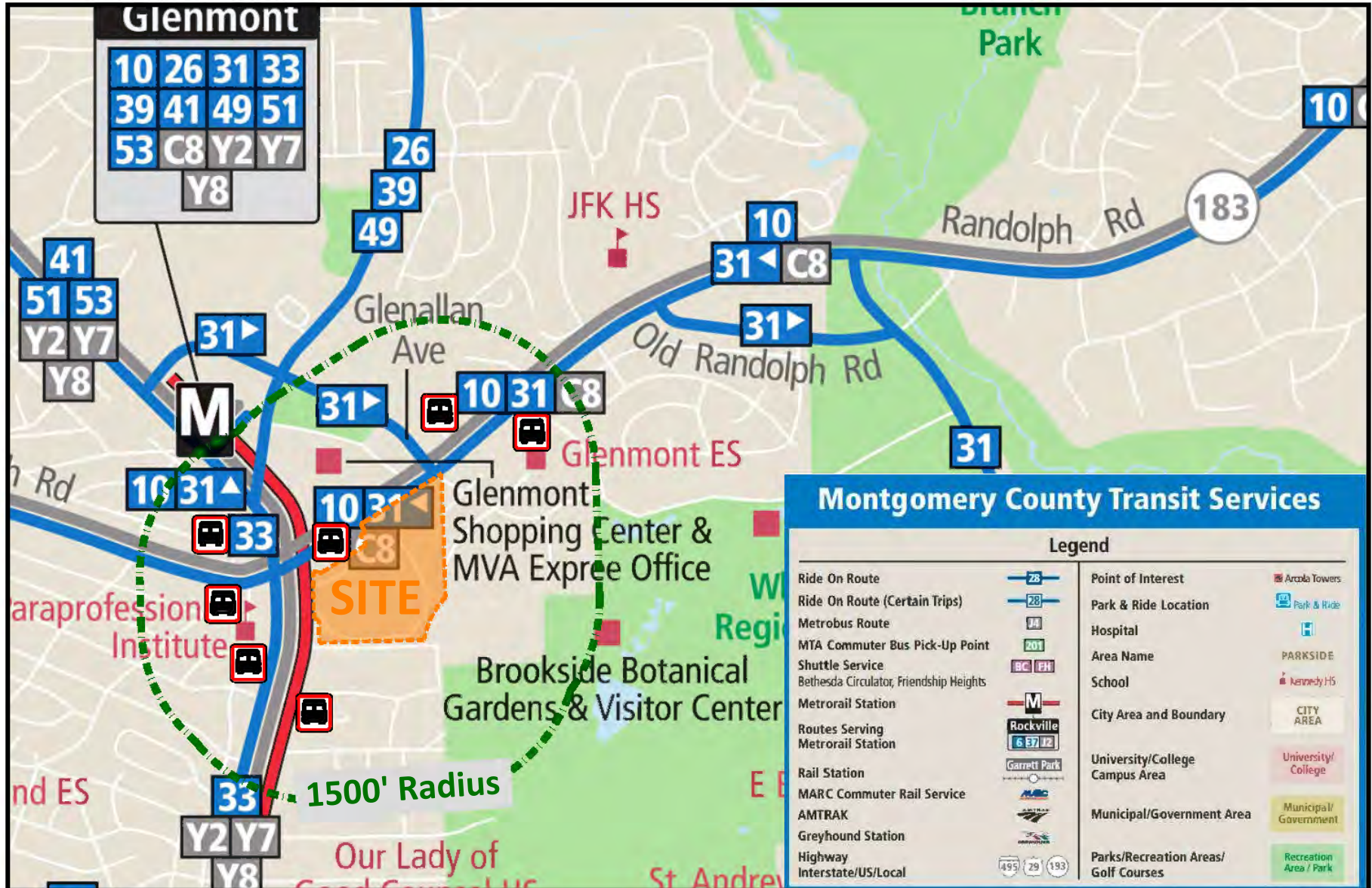


Figure 4
Bus Transit System Adequacy


NORTH
Glenmont Forest
Montgomery County, MD



Table 1A
Glenmont Forest
Site Trip Generation ^{(1) (2)}

Land Use	LUC	Amount	Unit	ITE Trip Generation						2022 LATR Trip Generation Rate Adjustment Factors / Mode Split Adjustments											
				AM Peak Hour ³			PM Peak Hour ³			AM Peak Hour					PM Peak Hour						
				In	Out	Total	In	Out	Total	Auto Driver (Vehicle Trips)	Auto Passenger	Transit Trips	Non-Motorized (Bicycle Trips)	Pedestrian (Walking Trips)	Total Person Trips	Auto Driver (Vehicle Trips)	Auto Passenger	Transit Trips	Non-Motorized (Bicycle Trips)	Pedestrian (Walking Trips)	Total Person Trips
Existing / Approved Use																					
Multifamily Housing (Low-Rise)	220	482	DU	41	131	172	144	84	228	157	68	22	20	42	266	207	89	28	26	54	350
Proposed Use																					
Multifamily Housing (Mid-Rise)	221	1,810	DU	181	604	785	431	275	706	714	307	98	89	187	1,208	642	276	88	80	168	1,086
Net New Trips				140	473	613	287	191	478	557	239	76	69	145	942	435	187	60	54	114	736

Notes:
 (1) Trip Generation based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition.
 (2) Kensington / Wheaton Policy Area
 (3) The ITE equation for the AM and PM Peak Hour of Adjacent Street Traffic were used.

Table 1B
Glenmont Forest
Auto Driver Trip Generation

Land Use	LUC	Amount	Unit	Auto Driver Trip Generation						
				AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
Existing / Approved Use										
Multifamily Housing (Low-Rise)	220	482	DU	38	119	157	130	77	207	
Proposed Use										
Multifamily Housing (Mid-Rise)	221	1,810	DU	164	550	714	392	250	642	
Net Site Trips (Proposed vs. Existing)				126	431	557	262	173	435	

Table 2
Trip Distribution/Assignment Matrix
Hypothetical Case - Kensington / Wheaton for Residential Component

Trip Distribution by Super District	Residential Development	West on Randolph Road	North on Georgia Avenue	Layhill Road	East on Randolph Road	South on Georgia Avenue	Total
01. Bethesda / Chevy Chase	8.6%	4.0%	0.0%	0.0%	0.0%	4.6%	8.6%
02. Silver Spring / Takoma Park	6.9%	0.0%	0.0%	0.0%	0.0%	6.9%	6.9%
03. Potomac / Darnestown / Travilah	2.2%	2.0%	0.0%	0.0%	0.0%	0.2%	2.2%
04. Rockville / North Bethesda	13.9%	11.0%	0.0%	0.0%	0.0%	2.9%	13.9%
05. Kensington / Wheaton	20.7%	3.0%	6.0%	2.0%	3.7%	6.0%	20.7%
06. White Oak / Fairland / Cloverly	5.8%	0.0%	0.0%	1.0%	4.8%	0.0%	5.8%
07. Gaithersburg / Shady Grove	3.9%	1.9%	1.0%	1.0%	0.0%	0.0%	3.9%
08. Aspen Hill / Olney	5.3%	0.0%	4.3%	1.0%	0.0%	0.0%	5.3%
09. Germantown / Clarksburg	0.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.5%
10. Rural West of I-270	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
11. Rural East of I-270	0.5%	0.0%	0.5%	0.0%	0.0%	0.0%	0.5%
12. Washington, DC	16.6%	0.0%	0.0%	0.0%	0.0%	16.6%	16.6%
13. PG / AA / Cal / St. M / Chis Cos., MD	8.6%	0.0%	0.0%	0.0%	2.6%	6.0%	8.6%
14. VA / WV	5.5%	3.0%	0.0%	0.0%	0.0%	2.5%	5.5%
15. Frederick Co., MD	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%
16. Howard Co./Carroll Co., MD	0.9%	0.0%	0.9%	0.0%	0.0%	0.0%	0.9%
Total	100.0%	25.4%	12.8%	5.0%	11.1%	45.7%	100.0%
	Use ->	25%	15%	5%	10%	45%	100.0%

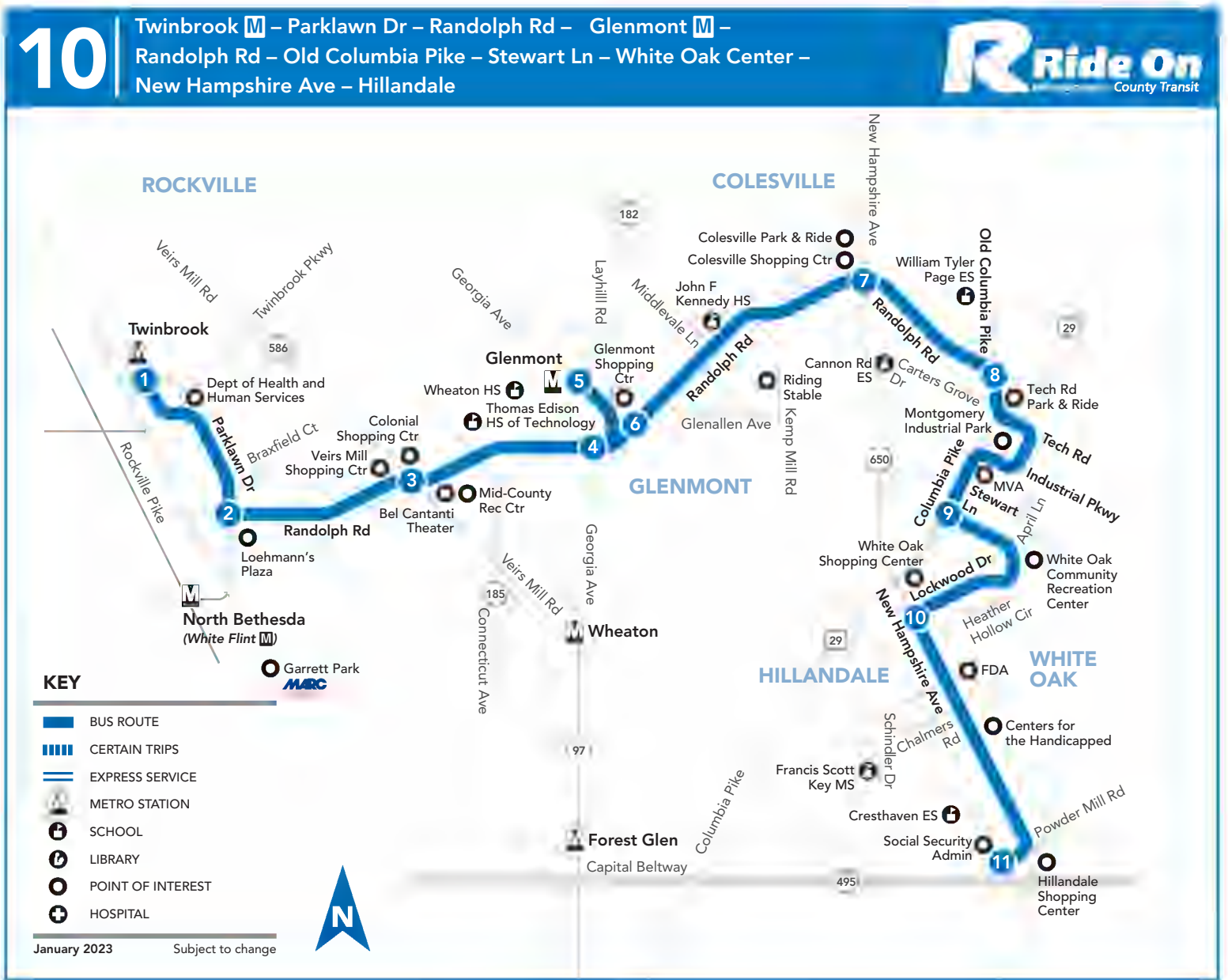
PROPOSED TRIP DISTRIBUTIONS





**APPENDIX B
BUS ROUTES**





HOW TO RIDE A BUS

- Check schedule for timepoint nearest your location. Wait at the blue and white **RIDE ON** bus stop sign. Arrive several minutes before scheduled time. Have exact fare ready (drivers do not make change).
- Not all stops are listed on a public timetable.
- If you are unfamiliar with your stop, sit or stand behind the line near the front of the bus and ask the bus driver to notify you when your stop is approaching.
- Ask the bus driver if you are not sure if the bus goes to your stop.
- If you have internet access (at home or somewhere else, such as a public library), it may be easier for you to use an online trip planner rather than a paper timetable.
- Be mindful of changes in the schedule, for holidays or bad weather.
- Please observe the following rules for all patrons: No eating, drinking, or smoking.
- Electronic devices may be played with earphones set at low level.

HOW TO READ A TIMETABLE

- Find the schedule for the day of the week and the direction you wish to ride.
- Find the timepoints closest to your origin and destination. The timepoints are shown on the route map and indicate the time the bus is scheduled to be at the particular location. Your nearest bus stop may be between timepoints.
- Read down the column to see the times when a trip will be at the given timepoint. Read the times across to the right to see when the trip reaches other timepoints. If no time is shown, that trip does not serve that timepoint.

FARES

Effective August 2022

Regular Fare, Token, or SmartTrip®	\$1.00
Transfer from MetroRail to Ride On buses	\$1.00
SmartTrip® Transfer from MetroRail to Metrobuses	FREE
Ride On Bus-to-Bus Transfer with SmartTrip®	FREE
Ride On to Metrobus Transfer with SmartTrip®	\$1.00
Metrobus to Ride On Transfer with SmartTrip®	FREE
Seniors age 65 years or older with a Senior SmartTrip® card or valid Medicare Card and Photo ID	FREE
Person with disability with Metro Disabled ID Card	FREE
Person with disability with Metro Disability ID Card – Attendant Eligible	FREE
Attendant also rides free.	
MetroAccess - Certified Customer with ID	
MetroAccess - Companion	
Children under age 5	
Children 5 to 18 with a Youth Cruiser SmartTrip® Card or student ID	FREE
Anytime	

GUARANTEED RIDE HOME

When you take Metrobus, Metrorail and Ride On to work, you are eligible to participate in the free Commuter Connections Guaranteed Ride Home Program. To register and to receive program details call: Commuter Services at 301-770-POOL(7665).

METROACCESS

Alternative paratransit service to this Ride On route for people with certified disabilities is available. Call MetroAccess at 301-562-5360.

WELCOME TO RIDE ON

RIDE ON is a community bus service operated by the Montgomery County Department of Transportation. RIDE ON operates over 75 routes that serve all 13 Montgomery County Metrorail stations and 7 MARC stations. For detailed information, or to have timetables mailed, call 311. Outside Montgomery County: 240-777-0311

Visit our web site at: www.rideonbus.com
Regular Mailing Address: Montgomery County DOT, Division of Transit Services, 101 Monroe Street, 5th Floor, Rockville, MD 20850
www.rideonrealtime.com

For more information, or to request this document in an alternate format or translated into another language, please call 311, or outside Montgomery County 240-777-0311.

Para más información o para pedir este documento en un formato diferente o traducido a otro idioma, por favor, llame al 311 o de fuera del Condado de Montgomery al 240-777-0311.

如需更多信息，請撥打311。如果您不在蒙哥馬利郡，請撥打240-777-0311。

자세한 정보를 원하시거나 본 문서를 다른 형식 또는 다른 언어로 번역해 달라고 원하실 경우, 전화번호 311, 또는 몽고메리 카운티 이외의 지역에서는 240-777-0311로 연락하십시오.

Để tìm hiểu thêm, hoặc để yêu cầu cung cấp tài liệu này theo định dạng khác hay chuyển ngôn ngữ khác, vui lòng gọi 311 hoặc số 240-777-0311 nếu gọi từ bên ngoài Quận Montgomery.

HOLIDAY SCHEDULE

Weekday Schedule operates on Indigenous Peoples' Day
Saturday Schedule operates on Independence Day
Sunday Schedule operates on New Year's Day,
Memorial Day, Labor Day, Thanksgiving Day, Christmas Day
Special Schedule operates on MLK, Jr. Day, Presidents' Day, Juneteenth, Veterans Day

- Like us on Facebook: www.facebook.com/RideOnMCT
- Follow us on Twitter: twitter.com/RideOnMCT
- Subscribe to email alerts at: www.montgomerycountymd.gov/govdelivery
- Subscribe to text alerts by texting MONTGOMERY RIDEON to 468311
- YouTube: youtube.com/RideOnMCT
- Instagram: instagram.com/RideOnMCT

Thank You for Riding with Us!

Printed on recycled paper with soy-based ink

EFFECTIVE: JANUARY 29, 2023



10

Approximate travel time between stops

- 4-8 mins: Twinbrook
- 4-7 mins: Randolph Rd & Parklawn Dr
- 4-7 mins: Randolph & Veirs Mill Rds
- 5-9 mins: Randolph Rd & Georgia Ave
- 2-4 mins: Glenmont
- 2-4 mins: Georgia Ave & Randolph Rd
- 5-13 mins: Randolph Rd & New Hampshire Ave
- 5-8 mins: Old Columbia Pike & Randolph Rd
- 5-9 mins: Stewart Ln & Old Columbia Pike
- 4-7 mins: Lockwood Dr & New Hampshire Ave
- 4-5 mins: Hillandale & Powder Mill Rd

SERVICE DAYS

DAILY

Montgomery County Transit
Telephone 311
Online at www.rideonbus.com
Real Time Info at www.rideonrealtime.com

10 To Hillandale

MONDAY THROUGH FRIDAY
SEE TIMEPOINT LOCATION ON ROUTE MAP

Twinbrook (East) | Randolph Rd & Parklawn Dr | Randolph & Veirs Mill Rds | Randolph Rd & Georgia Ave | Glenmont | Georgia Ave & Randolph Rd | Randolph Rd & New Hampshire Ave | Old Columbia Pike & Randolph Rd | Stewart Ln & Old Columbia Pike | Lockwood Dr & New Hampshire Ave | Hillandale (NH Ave & Powder Mill Rd)

Table with 11 columns (1-11) and 36 rows of time points for Monday through Friday.

NOTES: AM PM

10 To Twinbrook

MONDAY THROUGH FRIDAY
SEE TIMEPOINT LOCATION ON ROUTE MAP

Hillandale (NH Ave & Powder Mill Rd) | New Hampshire Ave & Lockwood Dr | Old Columbia Pike & Stewart Ln | Old Columbia Pike & Randolph Rd | Randolph Rd & New Hampshire Ave | Georgia Ave & Randolph Rd | Glenmont | Randolph Rd & Georgia Ave | Randolph & Veirs Mill Rds | Randolph Rd & Parklawn Dr | Twinbrook (East)

Table with 11 columns (11-1) and 36 rows of time points for Monday through Friday.

NOTES: AM PM

10 To Hillandale

SATURDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

Twinbrook (East) | Randolph Rd & Parklawn Dr | Randolph & Veirs Mill Rds | Randolph Rd & Georgia Ave | Glenmont | Georgia Ave & Randolph Rd | Randolph Rd & New Hampshire Ave | Old Columbia Pike & Randolph Rd | Stewart Ln & Old Columbia Pike | Lockwood Dr & New Hampshire Ave | Hillandale (NH Ave & Powder Mill Rd)

Table with 11 columns (1-11) and 36 rows of time points for Saturday.

NOTES: AM PM

10 To Twinbrook

SATURDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

Hillandale (NH Ave & Powder Mill Rd) | New Hampshire Ave & Lockwood Dr | Old Columbia Pike & Stewart Ln | Old Columbia Pike & Randolph Rd | Randolph Rd & New Hampshire Ave | Georgia Ave & Randolph Rd | Glenmont | Randolph Rd & Georgia Ave | Randolph & Veirs Mill Rds | Randolph Rd & Parklawn Dr | Twinbrook (East)

Table with 11 columns (11-1) and 36 rows of time points for Saturday.

NOTES: AM PM

10 To Hillandale

SUNDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

Twinbrook (East) | Randolph Rd & Parklawn Dr | Randolph & Veirs Mill Rds | Randolph Rd & Georgia Ave | Glenmont | Georgia Ave & Randolph Rd | Randolph Rd & New Hampshire Ave | Old Columbia Pike & Randolph Rd | Stewart Ln & Old Columbia Pike | Lockwood Dr & New Hampshire Ave | Hillandale (NH Ave & Powder Mill Rd)

Table with 11 columns (1-11) and 36 rows of time points for Sunday.

NOTES: AM PM

10 To Twinbrook

SUNDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

Hillandale (NH Ave & Powder Mill Rd) | New Hampshire Ave & Lockwood Dr | Old Columbia Pike & Stewart Ln | Old Columbia Pike & Randolph Rd | Randolph Rd & New Hampshire Ave | Georgia Ave & Randolph Rd | Glenmont | Randolph Rd & Georgia Ave | Randolph & Veirs Mill Rds | Randolph Rd & Parklawn Dr | Twinbrook (East)

Table with 11 columns (11-1) and 36 rows of time points for Sunday.

NOTES: AM PM

Please arrive at your stop several minutes ahead of your bus' scheduled arrival. Since safe service is a priority at Ride On, buses may be delayed due to traffic or weather.

26 To Montgomery Mall Transit Center
MONDAY THROUGH FRIDAY
SEE TIMEPOINT LOCATION ON ROUTE MAP

Glenmont M, Bel Pre & Layhill Rds, Homcrest Rd & Longmead King Dr, Connecticut & Georgia Aves, Parkland Dr & Aspen Hill Rd, Twinbrook Pkwy & Veirs Mill Rd, Twinbrook (East), Jefferson St & Montrose Rd, North Bethesda (White Flint) M, Rockledge & Rock Spring Dr, Montgomery Mall Transit Center

1	2	3	4	5	6	7	8	9	10	11
4:55	5:01	5:06	5:14	5:17	5:23	5:28	5:37	5:42	5:49	5:52
5:30	5:36	5:41	5:49	5:52	5:58	6:03	6:12	6:17	6:24	6:27
6:00	6:08	6:13	6:21	6:24	6:30	6:35	6:47	6:53	7:03	7:06
6:25	6:33	6:38	6:46	6:50	6:58	7:03	7:15	7:21	7:31	7:34
6:45	6:53	6:58	7:06	7:10	7:18	7:23	7:35	7:41	7:51	7:54
7:05	7:13	7:18	7:26	7:30	7:38	7:43	7:55	8:01	8:11	8:14
7:25	7:33	7:38	7:46	7:50	7:58	8:03	8:15	8:21	8:31	8:34
7:45	7:53	7:58	8:06	8:10	8:18	8:23	8:35	8:41	8:51	8:54
8:05	8:13	8:18	8:26	8:30	8:38	8:43	8:55	9:01	9:11	9:14
8:25	8:33	8:38	8:46	8:50	8:58	9:03	9:15	9:21	9:31	9:34
8:45	8:53	8:58	9:06	9:09	9:15	9:20	9:32	9:38	9:47	9:50
9:05	9:13	9:18	9:26	9:29	9:35	9:40	9:52	9:58	10:07	10:10
9:25	9:33	9:38	9:46	9:49	9:55	10:00	10:12	10:18	10:27	10:30
9:45	9:53	9:58	10:06	10:09	10:15	10:19	10:31	10:37	10:46	10:49
10:10	10:18	10:23	10:31	10:34	10:40	10:44	10:56	11:02	11:11	11:14
10:40	10:48	10:53	11:01	11:04	11:10	11:14	11:26	11:32	11:41	11:44
11:10	11:18	11:23	11:31	11:34	11:40	11:44	11:56	12:02	12:11	12:14
11:40	11:48	11:53	12:01	12:04	12:10	12:14	12:26	12:32	12:41	12:44
12:10	12:18	12:23	12:31	12:34	12:40	12:44	12:56	1:02	1:11	1:14
12:40	12:48	12:53	1:01	1:04	1:10	1:14	1:26	1:32	1:41	1:44
1:10	1:18	1:23	1:31	1:34	1:40	1:44	1:56	2:02	2:11	2:14
1:40	1:48	1:53	2:01	2:04	2:10	2:14	2:26	2:32	2:41	2:44
2:10	2:18	2:23	2:31	2:34	2:40	2:44	2:56	3:02	3:11	3:14
2:35	2:43	2:48	2:56	2:59	3:05	3:09	3:22	3:28	3:37	3:40
3:00	3:08	3:13	3:21	3:24	3:30	3:34	3:47	3:53	4:02	4:05
3:20	3:29	3:35	3:44	3:47	3:53	3:57	4:11	4:17	4:28	4:31
3:40	3:49	3:55	4:04	4:07	4:13	4:17	4:31	4:37	4:48	4:51
3:55	4:04	4:10	4:19	4:22	4:28	4:32	4:46	4:52	5:03	5:06
4:10	4:19	4:25	4:34	4:37	4:43	4:47	5:01	5:07	5:18	5:21
4:25	4:34	4:40	4:49	4:52	4:58	5:02	5:16	5:22	5:33	5:36
4:40	4:49	4:55	5:04	5:07	5:13	5:17	5:31	5:37	5:48	5:51
4:55	5:04	5:10	5:19	5:22	5:28	5:32	5:46	5:52	6:03	6:06
5:10	5:19	5:25	5:34	5:37	5:43	5:47	6:01	6:07	6:18	6:21
5:25	5:34	5:40	5:49	5:52	5:58	6:02	6:16	6:22	6:33	6:36
5:45	5:54	5:59	6:08	6:11	6:17	6:21	6:34	6:39	6:50	6:53
6:05	6:14	6:19	6:28	6:31	6:37	6:41	6:54	6:59	7:10	7:13
6:25	6:34	6:39	6:48	6:51	6:57	7:01	7:14	7:19	7:30	7:33
6:50	6:59	7:04	7:13	7:16	7:22	7:26	7:39	7:44	7:55	7:58
7:15	7:23	7:28	7:36	7:39	7:45	7:49	8:00	8:05	8:13	8:16
7:50	7:58	8:03	8:11	8:14	8:20	8:24	8:35	8:40	8:48	8:51
8:25	8:33	8:38	8:46	8:49	8:55	8:59	9:10	9:15	9:23	9:26
9:00	9:08	9:13	9:21	9:24	9:30	9:34	9:45	9:50	9:58	10:01
9:45	9:51	9:56	10:03	10:06	10:12	10:16	10:24	10:29	10:36	10:39
10:30	10:36	10:41	10:48	10:51	10:57	11:01	11:09	11:14	11:21	11:24
11:15	11:21	11:26	11:33	11:36	11:42	11:46	11:54	11:59	12:06	12:09
12:05	12:11	12:16	12:23	12:26	12:32	12:36	12:44	12:49	12:56	12:59

NOTES:
AM PM

26 To Glenmont M
MONDAY THROUGH FRIDAY
SEE TIMEPOINT LOCATION ON ROUTE MAP

Montgomery Mall Transit Center, Rockledge & Rock Spring Dr, North Bethesda (White Flint) M, Jefferson St & Montrose Rd, Twinbrook (East), Twinbrook Pkwy & Veirs Mill Rd, Parkland Dr & Aspen Hill Rd, Connecticut & Georgia Aves, Homcrest Rd & Longmead King Dr, Bel Pre & Layhill Rds, Glenmont M

11	10	9	8	7	6	5	4	3	2	1
4:25	4:29	4:35	4:39	4:50	4:55	5:00	5:05	5:11	5:16	5:21
5:00	5:04	5:10	5:14	5:25	5:30	5:35	5:40	5:46	5:51	5:56
5:30	5:34	5:40	5:45	5:58	6:03	6:09	6:14	6:21	6:27	6:32
6:00	6:04	6:12	6:19	6:33	6:38	6:44	6:49	6:56	7:02	7:07
6:25	6:29	6:37	6:44	6:58	7:03	7:09	7:14	7:21	7:27	7:32
6:45	6:49	6:57	7:04	7:18	7:24	7:30	7:35	7:42	7:48	7:53
7:05	7:09	7:17	7:24	7:38	7:44	7:50	7:55	8:02	8:08	8:13
7:25	7:29	7:37	7:44	7:58	8:04	8:10	8:15	8:22	8:28	8:33
7:45	7:49	7:57	8:04	8:18	8:24	8:30	8:35	8:42	8:48	8:53
8:05	8:09	8:17	8:24	8:38	8:44	8:50	8:55	9:02	9:08	9:13
8:25	8:29	8:36	8:43	8:57	9:02	9:08	9:13	9:20	9:25	9:30
8:45	8:49	8:56	9:03	9:17	9:22	9:28	9:33	9:40	9:45	9:50
9:05	9:09	9:16	9:23	9:37	9:42	9:48	9:53	10:00	10:05	10:10
9:30	9:34	9:41	9:48	10:02	10:07	10:13	10:18	10:25	10:30	10:35
9:55	9:59	10:06	10:13	10:27	10:32	10:38	10:43	10:50	10:55	11:00
10:25	10:29	10:36	10:43	10:57	11:02	11:08	11:13	11:20	11:25	11:30
10:55	10:59	11:06	11:13	11:27	11:32	11:38	11:43	11:50	11:55	12:00
11:25	11:29	11:36	11:43	11:57	12:02	12:08	12:13	12:20	12:25	12:30
11:55	11:59	12:06	12:13	12:27	12:32	12:38	12:43	12:50	12:55	1:00
12:25	12:29	12:36	12:43	12:57	1:02	1:08	1:13	1:20	1:25	1:30
12:55	12:59	1:08	1:16	1:31	1:37	1:43	1:48	1:55	2:00	2:06
1:25	1:29	1:38	1:46	2:01	2:07	2:13	2:18	2:25	2:30	2:36
1:55	1:59	2:08	2:16	2:31	2:37	2:43	2:48	2:55	3:00	3:06
2:15	2:19	2:28	2:36	2:51	2:57	3:03	3:08	3:15	3:20	3:26
2:35	2:39	2:48	2:56	3:11	3:17	3:23	3:28	3:35	3:40	3:46
2:55	2:59	3:08	3:16	3:31	3:37	3:43	3:48	3:55	4:00	4:06
3:10	3:14	3:23	3:31	3:46	3:52	3:58	4:03	4:10	4:15	4:21
3:25	3:29	3:38	3:46	4:01	4:07	4:13	4:18	4:25	4:30	4:36
3:40	3:45	3:54	4:02	4:17	4:23	4:29	4:34	4:41	4:46	4:51
3:55	4:00	4:09	4:17	4:32	4:38	4:44	4:49	4:56	5:01	5:06
4:10	4:15	4:24	4:32	4:47	4:53	4:59	5:04	5:11	5:16	5:21
4:25	4:30	4:39	4:47	5:02	5:08	5:14	5:19	5:26	5:31	5:36
4:40	4:45	4:54	5:02	5:17	5:23	5:29	5:34	5:41	5:46	5:51
4:55	5:00	5:09	5:17	5:32	5:38	5:44	5:49	5:56	6:01	6:06
5:10	5:15	5:24	5:32	5:47	5:53	5:59	6:04	6:11	6:16	6:21
5:25	5:30	5:39	5:47	6:02	6:08	6:14	6:19	6:26	6:31	6:36
5:40	5:45	5:54	6:02	6:17	6:23	6:29	6:34	6:41	6:46	6:51
6:10	6:14	6:22	6:29	6:43	6:49	6:55	7:00	7:07	7:12	7:17
6:40	6:44	6:52	6:59	7:13	7:19	7:25	7:30	7:37	7:42	7:47
7:15	7:19	7:27	7:34	7:48	7:54	8:00	8:05	8:12	8:17	8:22
7:50	7:54	8:02	8:09	8:23	8:29	8:35	8:40	8:47	8:52	8:57
8:25	8:29	8:37	8:44	8:57	9:02	9:08	9:13	9:19	9:24	9:29
9:00	9:04	9:12	9:19	9:32	9:37	9:43	9:48	9:54	9:59	10:04
9:35	9:39	9:47	9:54	10:07	10:12	10:18	10:23	10:29	10:34	10:39
10:10	10:14	10:22	10:29	10:42	10:47	10:53	10:58	11:04	11:09	11:14
10:50	10:54	11:02	11:09	11:22	11:27	11:33	11:38	11:44	11:49	11:54
11:35	11:39	11:47	11:54	12:07	12:12	12:18	12:23	12:29	12:34	12:39
12:25	12:29	12:35	12:40	12:51	12:56	1:00	1:05	1:11	1:15	1:19

NOTES:
AM PM

26 To Montgomery Mall Transit Center
SATURDAY
SEE TIMEPOINT LOCATION ON ROUTE MAP

Glenmont M, Bel Pre & Layhill Rds, Homcrest Rd & Longmead King Dr, Connecticut & Georgia Aves, Parkland Dr & Aspen Hill Rd, Twinbrook Pkwy & Veirs Mill Rd, Twinbrook (East), Jefferson St & Montrose Rd, North Bethesda (White Flint) M, Rockledge & Rock Spring Dr, Montgomery Mall Transit Center

1	2	3	4	5	6	7	8	9	10	11
5:25	5:31	5:35	5:42	5:45	5:51	5:56	6:06	6:12	6:19	6:22
6:10	6:16	6:20	6:27	6:30	6:36	6:41	6:51	6:57	7:04	7:07
6:45	6:51	6:55	7:02	7:05	7:11	7:16	7:26	7:32	7:39	7:42
7:15	7:21	7:25	7:32	7:35	7:41	7:46	7:56	8:02	8:09	8:12
7:45	7:51	7:55	8:02	8:05	8:11	8:16	8:26	8:32	8:39	8:42
8:15	8:21	8:25	8:32	8:35	8:41	8:46	8:56	9:02	9:09	9:12
8:45	8:52	8:56	9:03	9:06	9:13	9:18	9:28	9:34	9:42	9:45
9:15	9:22	9:26	9:33	9:36	9:43	9:48	9:58	10:04	10:12	10:15
9:45	9:52	9:56	10:03	10:06	10:13	10:18	10:28	10:34	10:42	10:45
10:15	10:22	10:26	10:33	10:36	10:43	10:48	10:58	11:04	11:12	11:15
10:45	10:53	10:57	11:05	11:08	11:15	11:20	11:31	11:37	11:47	11:50
11:15	11:23	11:27	11:35	11:38	11:45	11:50	12:01	12:07	12:17	12:20
11:45	11:53	11:57	12:05	12:08	12:15	12:20	12:31	12:37	12:47	12:50
12:15	12:23	12:27	12:35							



WELCOME TO RIDE ON

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Visit our web site at: www.rideonbus.com
Real Time information is available at: www.rideonrealtime.com

Regular Mailing Address:
Montgomery County DOT
Division of Transit Services
101 Monroe Street, 5th
Floor Rockville, MD 20850

For more information, or to request this document in an alternate format or translated into another language, please call 311, or outside Montgomery County 240-777-0311.

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자세한 정보를 원하시거나 본 문서를 다른 형식 또는 다른 언어로의 번역본으로 원하실 경우, 전화번호 311, 또는 몽고메리 카운티 이외의 지역에서는 240-777-0311로 연락하시기 바랍니다.

ለተጨማሪ መረጃ፣ ወይም ደህንነ ጽ-ኩመንት በተለዋጭ መልክ ለመጠየቅ ወይም ወደሌላ ቋንቋ ለማስተርጓም፣ ክብካታንን በ 311 ወይም ከሞንትጎመሪ ካውንቲ ውጪ 240-777-0311 ይደውሉ።

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HOLIDAY SCHEDULE

Weekday Schedule operates on Indigenous Peoples' Day
Saturday Schedule operates on Independence Day
Sunday Schedule operates on New Year's Day, Memorial Day, Labor Day, Thanksgiving Day, Christmas Day
Special Schedule operates on MLK, Jr. Day, Presidents' Day, Juneteenth, Veterans Day

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MONTGOMERY RIDEON to 468311
- YouTube**
youtube.com/RideOnMCT
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instagram.com/RideOnMCT

Thank You for Riding with Us!

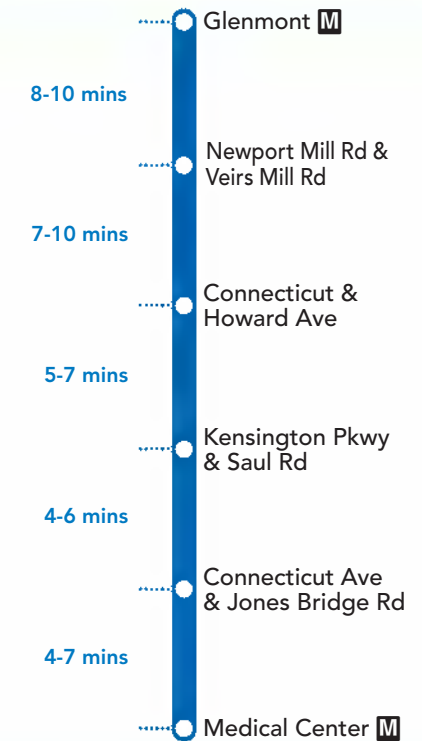
Printed on recycled paper with soy-based ink

EFFECTIVE: JANUARY 29, 2023



33

Approximate travel time between stops



SERVICE DAYS

MONDAY - FRIDAY



Telephone 311

Online at www.rideonbus.com

Real Time Info at www.rideonrealtime.com

33 To Medical Center

MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

Glenmont	ewport Mill Rd & Veirs Mill Rd	Connecticut & Howard Aves	ensington Pkwy & Saul Rd	Connecticut Ave & ones Bridge Rd	Medical Center
1	2	3	4	5	6
5:15	5:26	5:31	5:36	5:41	5:44
5:50	6:01	6:06	6:11	6:16	6:19
6:25	6:37	6:43	6:48	6:54	6:58
6:55	7:07	7:13	7:18	7:24	7:28
7:25	7:37	7:43	7:48	7:54	7:58
7:55	8:07	8:13	8:19	8:24	8:28
8:25	8:37	8:43	8:49	8:54	8:58
9:00	9:12	9:18	9:24	9:29	9:33
2:30	2:42	2:48	2:53	2:57	3:01
3:15	3:27	3:33	3:38	3:42	3:46
3:55	4:07	4:13	4:19	4:25	4:29
4:25	4:37	4:43	4:49	4:55	4:59
4:55	5:07	5:13	5:19	5:25	5:29
5:25	5:37	5:43	5:49	5:55	5:59
5:55	6:07	6:13	6:18	6:23	6:26
6:35	6:47	6:53	6:58	7:03	7:06
7:20	7:32	7:38	7:43	7:48	7:51

NOTES: AM PM

33 To Glenmont

MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

Medical Center	Connecticut Ave & ones Bridge Rd	ensington Pkwy & Saul Rd	Connecticut & Howard Aves	ewport Mill Rd & Veirs Mill Rd	Glenmont
6	5	4	3	2	1
5:50	5:55	5:59	6:04	6:09	6:20
6:30	6:35	6:39	6:44	6:49	7:00
7:05	7:11	7:15	7:20	7:26	7:38
7:35	7:41	7:45	7:50	7:56	8:08
8:10	8:17	8:21	8:25	8:30	8:42
2:30	2:35	2:39	2:44	2:50	3:02
3:10	3:17	3:21	3:26	3:32	3:45
3:40	3:47	3:51	3:56	4:02	4:15
4:10	4:17	4:21	4:26	4:32	4:45
4:40	4:47	4:51	4:56	5:02	5:15
5:10	5:17	5:21	5:26	5:32	5:45
5:40	5:47	5:51	5:56	6:02	6:15
6:10	6:16	6:20	6:25	6:30	6:41
6:40	6:46	6:50	6:55	7:00	7:11
7:15	7:21	7:25	7:30	7:35	7:46
8:00	8:06	8:10	8:15	8:20	8:31

NOTES: AM PM

NOTES: AM PM

NOTES: AM PM

Please arrive at your stop several minutes ahead of your bus' scheduled arrival. Since safe service is a priority at Ride On, buses may be delayed due to traffic or weather.

There is **NO Saturday or Sunday service** on this route

HOW TO RIDE A BUS

Check schedule for timepoint nearest your location. Wait at the blue and white **RIDE ON** bus stop sign. Arrive several minutes before scheduled time. Have exact fare ready (drivers do not make change).

- Not all stops are listed on a public timetable.
- If you are unfamiliar with your stop, sit or stand behind the line near the front of the bus and ask the bus driver to notify you when your stop is approaching.
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Ride On Bus-to-Bus Transfer with SmarTrip®	FREE
Ride On to Metrobus Transfer with SmarTrip®	\$1.00
Metrobus to Ride On Transfer with SmarTrip®	FREE
Seniors age 65 years or older with a Senior SmarTrip® card or valid Medicare Card and Photo ID	FREE
Person with disability with Metro Disabled ID Card	
Person with disability with Metro Disability ID Card – Attendant Eligible Attendant also rides free.	FREE
MetroAccess - Certified Customer with ID MetroAccess - Companion	
Children under age 5	FREE
Children 5 to 18 with a Youth Cruiser SmarTrip® Card or student ID Anytime	

GUARANTEED RIDE HOME

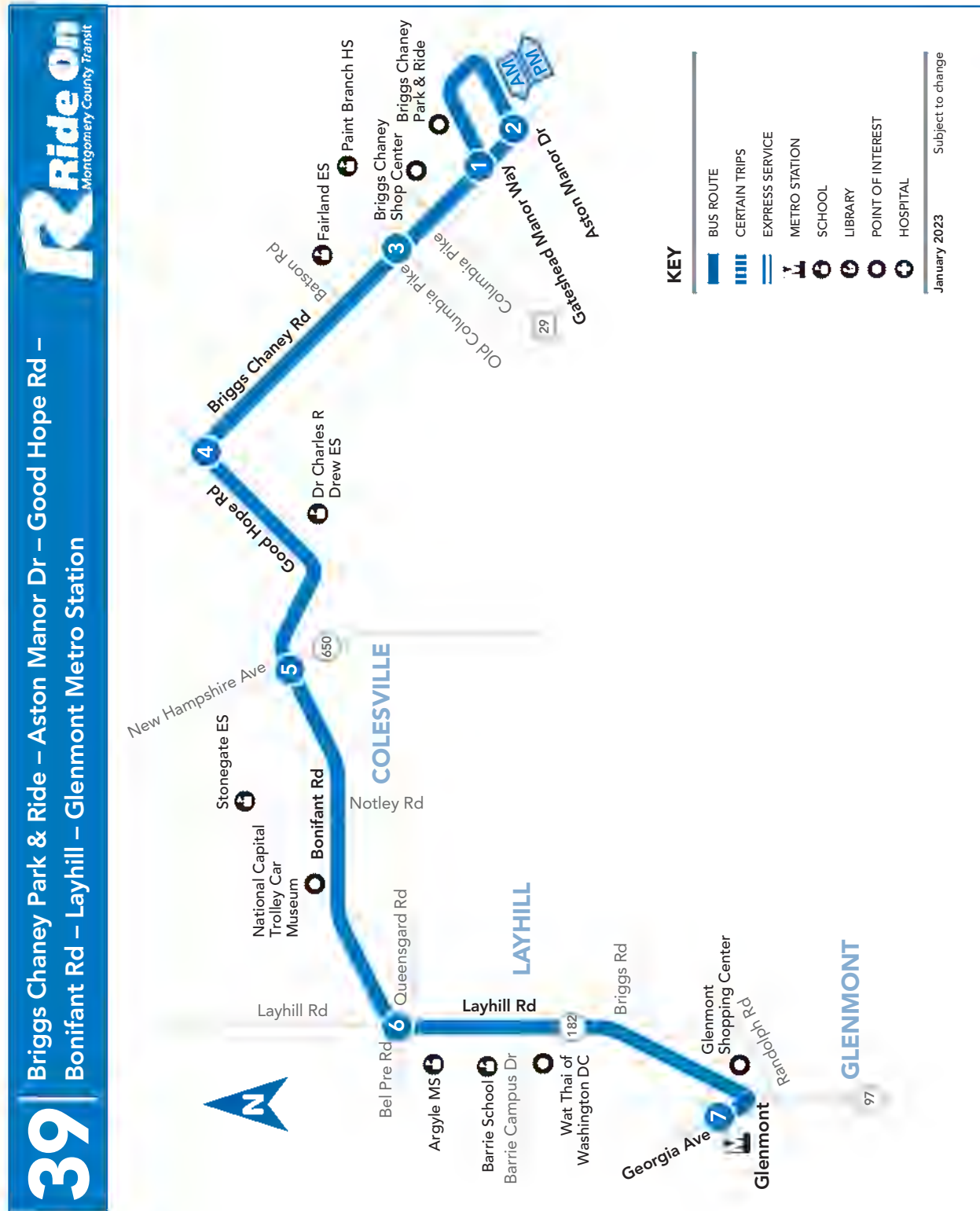
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Regular Mailing Address:
Montgomery County DOT
Division of Transit Services
101 Monroe Street, 5th
Floor Rockville, MD 20850

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- Subscribe to text alerts by texting**
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EFFECTIVE: JANUARY 29, 2023



39



SERVICE DAYS
MONDAY - FRIDAY

Ride On
Montgomery County Transit
Telephone 311
Online at www.rideonbus.com
Real Time Info at www.rideonrealtime.com

SS-Revised

39 To Glenmont M

MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

1	2	3	4	5	6	7
5:25	5:27	5:31	5:35	5:40	5:46	5:51
6:00	6:02	6:06	6:10	6:15	6:21	6:26
6:35	6:37	6:42	6:46	6:51	7:01	7:07
7:10	7:12	7:17	7:21	7:26	7:36	7:42
7:45	7:47	7:52	7:56	8:01	8:11	8:17
8:20	8:22	8:26	8:30	8:35	8:42	8:47
9:00	9:02	9:06	9:10	9:15	9:22	9:27
9:40	9:42	9:46	9:50	9:55	10:02	10:07
3:05	3:10	3:14	3:19	3:25	3:30	
3:50	3:55	3:59	4:04	4:10	4:15	
4:35	4:40	4:44	4:49	4:55	5:00	
5:15	5:20	5:24	5:29	5:35	5:40	
5:50	5:55	5:59	6:04	6:10	6:15	
6:25	6:30	6:34	6:39	6:45	6:50	
7:00	7:05	7:09	7:14	7:20	7:25	

NOTES: AM PM

Please arrive at your stop several minutes ahead of your bus' scheduled arrival. Since safe service is a priority at Ride On, buses may be delayed due to traffic or weather.

39 To Briggs Chaney Park & Ride

MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

7	6	5	4	3	2	1
6:00	6:05	6:09	6:13	6:17		6:19
6:40	6:46	6:52	6:56	7:00		7:02
7:15	7:21	7:27	7:31	7:35		7:37
7:50	7:56	8:02	8:06	8:10		8:12
8:25	8:31	8:37	8:41	8:45		8:47
9:00	9:06	9:13	9:17	9:22		9:24
2:30	2:36	2:43	2:47	2:51	2:55	2:57
3:15	3:21	3:29	3:33	3:37	3:41	3:43
4:00	4:06	4:14	4:18	4:22	4:26	4:28
4:35	4:43	4:51	4:56	5:00	5:04	5:06
5:10	5:18	5:26	5:31	5:35	5:39	5:41
5:45	5:53	6:01	6:06	6:10	6:14	6:16
6:20	6:27	6:34	6:39	6:43	6:47	6:49
7:00	7:07	7:14	7:19	7:23	7:27	7:29
7:50	7:57	8:04	8:09	8:13	8:17	8:19

NOTES: AM PM

There is NO Saturday or Sunday service on this route

HOW TO RIDE A BUS

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- Not all stops are listed on a public timetable.
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Ride On Bus-to-Bus Transfer with SmarTrip®	FREE
Ride On to Metrobus Transfer with SmarTrip®	\$1.00
Metrobus to Ride On Transfer with SmarTrip®	FREE
Seniors age 65 years or older with a Senior SmarTrip® card or valid Medicare Card and Photo ID	FREE
Person with disability with Metro Disabled ID Card	
Person with disability with Metro Disability ID Card – Attendant Eligible	FREE
Attendant also rides free.	
MetroAccess - Certified Customer with ID MetroAccess - Companion	FREE
Children under age 5	
Children 5 to 18 with a Youth Cruiser SmarTrip® Card or student ID Anytime	FREE

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41

Aspen Hill - Connecticut Ave –
Weller Rd – Georgia Ave – Glenmont



KEY

- BUS ROUTE
- ▬▬▬ CERTAIN TRIPS
- ▬▬▬▬ EXPRESS SERVICE
- METRO STATION
- SCHOOL
- LIBRARY
- POINT OF INTEREST
- HOSPITAL

May 2022 Subject to change

41 To Glenmont

SUNDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

Grand Pre & Bel Pre Rds	Connecticut & Georgia Aves	Connecticut Ave & Weller Rd	Glenmont
1	2	3	4
8:00	8:05	8:10	8:13
8:40	8:45	8:50	8:53
9:20	9:25	9:30	9:33
10:00	10:05	10:10	10:13
10:40	10:45	10:50	10:53
11:20	11:25	11:31	11:35
12:00	12:05	12:11	12:15
12:40	12:45	12:51	12:55
1:20	1:25	1:31	1:35
2:00	2:05	2:11	2:15
2:40	2:45	2:51	2:55
3:20	3:25	3:31	3:35
4:00	4:05	4:11	4:15
4:40	4:45	4:51	4:55
5:20	5:25	5:31	5:35
6:00	6:04	6:09	6:12
6:40	6:44	6:49	6:52
7:20	7:24	7:29	7:32
8:00	8:04	8:09	8:12
8:40	8:44	8:49	8:52

NOTES: AM PM

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- Read down the column to see the times when a trip will be at the given timepoint. Read the times across to the right to see when the trip reaches other timepoints.

41 To Grand Pre & Bel Pre Roads

SUNDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

Glenmont	Connecticut Ave & Weller Rd	Connecticut & Georgia Aves	Grand Pre & Bel Pre Rds
4	3	2	1
7:40	7:44	7:49	7:51
8:20	8:24	8:29	8:31
9:00	9:04	9:09	9:11
9:40	9:44	9:49	9:51
10:20	10:24	10:29	10:31
11:00	11:04	11:10	11:12
11:40	11:44	11:50	11:52
12:20	12:24	12:30	12:32
1:00	1:04	1:10	1:12
1:40	1:44	1:50	1:52
2:20	2:24	2:30	2:32
3:00	3:04	3:12	3:14
3:40	3:44	3:52	3:54
4:20	4:24	4:32	4:34
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- YouTube youtube.com/RideOnMCT
- Instagram instagram.com/RideOnMCT

Thank You for Riding with Us!

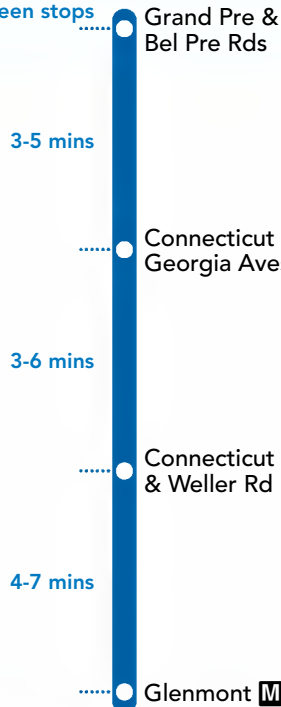
Printed on recycled paper with soy-based ink

Attachment to Resolution No. 20-616
Exhibit 40
EFFECTIVE: MAY 6, 2022



41

Approximate travel time between stops



SERVICE DAYS

DAILY



Telephone 311

Online at www.rideonbus.com
Real Time Info at www.rideonrealtime.com

41 To Glenmont M

MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP



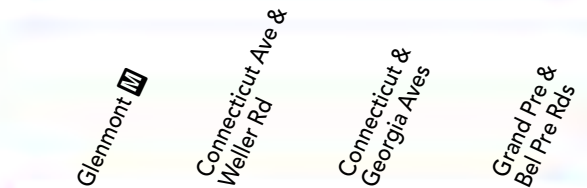
1	2	3	4
5:20	5:24	5:28	5:32
6:00	6:04	6:09	6:14
6:40	6:48	6:55	7:00
7:20	7:28	7:35	7:40
8:00	8:08	8:15	8:20
8:40	8:48	8:55	9:00
9:20	9:25	9:31	9:35
10:00	10:05	10:11	10:15
10:40	10:45	10:51	10:55
11:20	11:25	11:31	11:35
12:00	12:05	12:11	12:15
12:40	12:45	12:51	12:55
1:20	1:25	1:31	1:35
2:00	2:06	2:12	2:16
2:40	2:46	2:52	2:56
3:20	3:26	3:32	3:36
4:00	4:06	4:12	4:16
4:40	4:46	4:52	4:56
5:20	5:26	5:32	5:36
6:00	6:06	6:12	6:16
6:40	6:46	6:52	6:56
7:20	7:25	7:30	7:34
8:00	8:05	8:10	8:14
8:40	8:45	8:50	8:54
9:20	9:25	9:30	9:34
10:00	10:05	10:10	10:14
10:40	10:45	10:50	10:54
11:20	11:25	11:30	11:34

NOTES: AM PM

41 To Grand Pre & Bel Pre Roads

MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP



4	3	2	1
5:40	5:43	5:50	5:52
6:20	6:23	6:30	6:32
7:00	7:04	7:11	7:13
7:40	7:44	7:51	7:53
8:20	8:24	8:31	8:33
9:00	9:04	9:11	9:13
9:40	9:44	9:51	9:53
10:20	10:24	10:31	10:33
11:00	11:04	11:11	11:13
11:40	11:44	11:51	11:53
12:20	12:24	12:31	12:33
1:00	1:04	1:11	1:13
1:40	1:44	1:51	1:53
2:20	2:24	2:31	2:33
3:00	3:04	3:11	3:13
3:40	3:44	3:51	3:53
4:20	4:25	4:32	4:34
5:00	5:05	5:12	5:14
5:40	5:45	5:52	5:54
6:20	6:24	6:31	6:33
7:00	7:04	7:11	7:13
7:40	7:44	7:51	7:53
8:20	8:24	8:31	8:33
9:00	9:04	9:11	9:13
9:40	9:44	9:51	9:53
10:20	10:24	10:30	10:32
11:00	11:04	11:10	11:12

NOTES: AM PM

41 To Glenmont M

SATURDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP



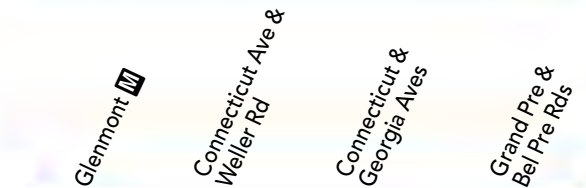
1	2	3	4
5:20	5:24	5:28	5:31
6:00	6:04	6:08	6:11
6:40	6:44	6:48	6:51
7:20	7:25	7:31	7:34
8:00	8:05	8:11	8:14
8:40	8:45	8:51	8:54
9:20	9:25	9:31	9:34
10:00	10:05	10:11	10:14
10:40	10:45	10:51	10:54
11:20	11:25	11:31	11:34
12:00	12:05	12:11	12:14
12:40	12:45	12:51	12:54
1:20	1:25	1:31	1:35
2:00	2:05	2:11	2:15
2:40	2:45	2:51	2:55
3:20	3:25	3:31	3:35
4:00	4:05	4:11	4:15
4:40	4:45	4:51	4:55
5:20	5:25	5:31	5:35
6:00	6:05	6:11	6:15
6:40	6:45	6:51	6:55
7:20	7:25	7:31	7:35
8:00	8:05	8:10	8:13
8:40	8:45	8:50	8:53
9:20	9:25	9:30	9:33
10:00	10:05	10:10	10:13
10:40	10:45	10:50	10:53
11:20	11:25	11:30	11:33

NOTES: AM PM

41 To Grand Pre & Bel Pre Roads

SATURDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP



4	3	2	1
5:40	5:43	5:48	5:50
6:20	6:23	6:28	6:30
7:00	7:03	7:08	7:10
7:40	7:43	7:48	7:50
8:20	8:23	8:28	8:30
9:00	9:03	9:08	9:10
9:40	9:43	9:48	9:50
10:20	10:24	10:31	10:33
11:00	11:04	11:11	11:13
11:40	11:44	11:51	11:53
12:20	12:24	12:31	12:33
1:00	1:04	1:11	1:13
1:40	1:44	1:52	1:54
2:20	2:24	2:32	2:34
3:00	3:04	3:12	3:14
3:40	3:44	3:52	3:54
4:20	4:24	4:32	4:34
5:00	5:04	5:12	5:14
5:40	5:44	5:52	5:54
6:20	6:24	6:32	6:34
7:00	7:04	7:12	7:14
7:40	7:43	7:49	7:51
8:20	8:23	8:29	8:31
9:00	9:03	9:09	9:11
9:40	9:43	9:49	9:51
10:20	10:23	10:29	10:31
11:00	11:03	11:09	11:11

NOTES: AM PM

HOW TO RIDE A BUS

Check schedule for timepoint nearest your location. Wait at the blue and white **RIDE ON** bus stop sign. Arrive several minutes before scheduled time. Have exact fare ready (drivers do not make change).

- Not all stops are listed on a public timetable.
- If you are unfamiliar with your stop, sit or stand behind the line near the front of the bus and ask the bus driver to notify you when your stop is approaching.
- Ask the bus driver if you are not sure if the bus goes to your stop.
- If you have internet access (at home or somewhere else, such as a public library), it may be easier for you to use an online trip planner rather than a paper timetable.
- Be mindful of changes in the schedule, for holidays or bad weather.
- Please observe the following rules for all patrons: No eating, drinking, or smoking.
- Electronic devices may be played with earphones set at *low level*.

HOW TO READ A TIMETABLE

- Find the schedule for the day of the week and the direction you wish to ride.
- Find the timepoints closest to your origin and destination. The timepoints are shown on the route map and indicate the time the bus is scheduled to be at the particular location. Your nearest bus stop may be between timepoints.
- Read down the column to see the times when a trip will be at the given timepoint. Read the times across to the right to see when the trip reaches other timepoints. If no time is shown, that trip does not serve that timepoint.

SEE REVERSE FOR SUNDAY SERVICE

Please arrive at your stop several minutes ahead of your bus' scheduled arrival. Since safe service is a priority at Ride On, buses may be delayed due to traffic or weather.

SEE REVERSE FOR SUNDAY SERVICE

FARES

Regular Fare, Token, or SmarTrip®	\$2.00
SmarTrip® Fare Transfer from MetroRail	\$1.50
Seniors age 65 years or older with a Senior SmarTrip® card or valid Medicare Card and Photo ID	FREE
Person with disability with Metro Disabled ID Card	
Person with disability with Metro Disability ID Card – Attendant Eligible Attendant also rides free.	
MetroAccess - Certified Customer with ID MetroAccess - Companion	
Children under age 5	FREE
Local Bus Transfer with SmarTrip®	
Children 5 to 18 with a Youth Cruiser SmarTrip® Card or student ID Anytime	

GUARANTEED RIDE HOME

When you take Metrobus, Metrorail and Ride On to work, you are eligible to participate in the free Commuter Connections Guaranteed Ride Home Program. To register and to receive program details call: Commuter Services at **301-770-POOL(7665)**.

METROACCESS

Alternative paratransit service to this Ride On route for people with certified disabilities is available. Call MetroAccess at **301-562-5360**.



Montgomery County assures that no person shall, on the grounds of race, color, or national origin, as provided by Title VI of the Civil Rights Act of 1964 and the Civil Rights Act of 1987, be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity. For more information or to file a complaint, please contact the Montgomery County Office of Human Rights.



49 To Glenmont M

SUNDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

	Rockville (East) M	Norbeck Rd & Bauer Dr	Bel Pre Rd & Georgia Ave	Bel Pre & Layhill Rds	Glenmont M
	1	2	3	4	5
	5:45	5:50	5:56	6:02	6:07
	6:25	6:30	6:36	6:42	6:47
	7:05	7:10	7:16	7:22	7:27
	7:45	7:50	7:56	8:02	8:07
	8:20	8:25	8:31	8:37	8:42
	8:50	8:55	9:01	9:07	9:12
	9:20	9:25	9:31	9:37	9:42
	9:50	9:55	10:01	10:07	10:12
	10:20	10:26	10:33	10:40	10:45
	10:50	10:56	11:03	11:10	11:15
	11:20	11:26	11:33	11:40	11:45
	11:50	11:56	12:03	12:10	12:15
	12:20	12:26	12:33	12:40	12:45
	12:50	12:56	1:03	1:10	1:15
	1:20	1:26	1:33	1:40	1:45
	1:50	1:56	2:03	2:10	2:15
	2:20	2:26	2:33	2:40	2:45
	2:50	2:56	3:03	3:10	3:15
	3:20	3:26	3:33	3:40	3:45
	3:50	3:56	4:03	4:10	4:15
	4:20	4:26	4:33	4:40	4:45
	4:50	4:56	5:03	5:10	5:15
	5:25	5:31	5:38	5:45	5:50
	6:00	6:06	6:13	6:20	6:25
	6:35	6:40	6:46	6:53	6:58
	7:10	7:15	7:21	7:28	7:33
	7:45	7:50	7:56	8:03	8:08
	8:25	8:30	8:36	8:43	8:48
	9:05	9:10	9:16	9:23	9:28
	9:45	9:50	9:56	10:03	10:08

NOTES: AM PM

49 To Rockville M

SUNDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

	Glenmont M	Bel Pre & Layhill Rds	Bel Pre Rd & Georgia Ave	Norbeck Rd & Bauer Dr	Rockville (East) M
	5	4	3	2	1
	5:40	5:46	5:52	5:59	6:04
	6:20	6:26	6:32	6:39	6:44
	7:00	7:06	7:12	7:19	7:24
	7:40	7:46	7:52	7:59	8:04
	8:20	8:26	8:32	8:39	8:44
	8:55	9:01	9:07	9:14	9:19
	9:25	9:31	9:37	9:44	9:49
	9:55	10:01	10:07	10:14	10:19
	10:25	10:31	10:37	10:44	10:49
	10:55	11:01	11:07	11:14	11:19
	11:25	11:31	11:37	11:44	11:49
	11:55	12:02	12:09	12:16	12:22
	12:25	12:32	12:39	12:46	12:52
	12:55	1:02	1:09	1:16	1:22
	1:25	1:32	1:39	1:46	1:52
	1:55	2:02	2:09	2:16	2:22
	2:25	2:32	2:39	2:46	2:52
	2:55	3:02	3:09	3:16	3:22
	3:25	3:32	3:39	3:46	3:52
	3:55	4:02	4:09	4:16	4:22
	4:25	4:32	4:39	4:46	4:52
	4:55	5:02	5:09	5:16	5:22
	5:25	5:32	5:39	5:46	5:52
	6:00	6:07	6:14	6:21	6:27
	6:35	6:42	6:48	6:55	7:00
	7:10	7:17	7:23	7:30	7:35
	7:45	7:52	7:58	8:05	8:10
	8:20	8:27	8:33	8:40	8:45
	9:00	9:07	9:13	9:20	9:25
	9:40	9:47	9:53	10:00	10:05

NOTES: AM PM

Please arrive at your stop several minutes ahead of your bus' scheduled arrival. Since safe service is a priority at Ride On, buses may be delayed due to traffic or weather.

WELCOME TO RIDE ON

RIDE ON is a community bus service operated by the Montgomery County Department of Transportation. RIDE ON operates over 75 routes that serve all 13 Montgomery County Metrorail stations and 7 MARC stations. For detailed information, or to have timetables mailed, call 311. Outside Montgomery County 240-777-0311

Visit our web site at: www.rideonbus.com
Real Time information is available at: www.rideonrealtime.com
Regular Mailing Address: Montgomery County DOT Division of Transit Services 101 Monroe Street, 5th Floor Rockville, MD 20850

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如需更多信息、需要以其它格式提供本文档或需要将本文档翻译成其它语言, 请拨打311。如果您不在蒙哥马利郡, 请拨打 240-777-0311。

자세한 정보를 원하시거나 본 문서를 다른 형식 또는 다른 언어로의 번역본으로 원하실 경우, 전화번호 311, 또는 몽고메리 카운티 이외의 지역에서는 240-777-0311로 연락하시기 바랍니다.

ለተጨማሪ መረጃ፣ ወይም ደህንነ ደኩሙንት በተለዋዌ ሙልክ ለመጠየቅ ወይም ወደሌላ ቋንቋ ለማስተርጎም፣ እስከዎትን በ 311 ወይም ከሞንትጎመሪ ካውንቲ ውጪ 240-777-0311 ይደውሉ።

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Để tìm hiểu thêm, hoặc để yêu cầu cung cấp tài liệu này theo định dạng khác hay chuyển ngữ sang ngôn ngữ khác, vui lòng gọi 311 hoặc số 240-777-0311 nếu gọi từ bên ngoài Quận Montgomery.

HOLIDAY SCHEDULE

Weekday Schedule operates on Indigenous Peoples' Day
Saturday Schedule operates on Independence Day
Sunday Schedule operates on New Year's Day, Memorial Day, Labor Day, Thanksgiving Day, Christmas Day
Special Schedule operates on MLK, Jr. Day, Presidents' Day, Juneteenth, Veterans Day

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Follow us on Twitter twitter.com/RideOnMCT

Subscribe to email alerts at www.montgomerycountymd.gov/govdelivery

Subscribe to text alerts by texting MONTGOMERY RIDEON to 468311

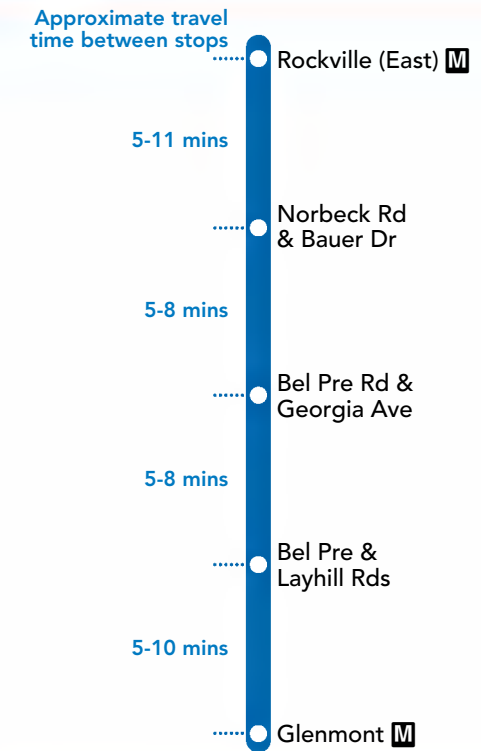
YouTube youtube.com/RideOnMCT
Instagram instagram.com/RideOnMCT

Thank You for Riding with Us!

Printed on recycled paper with soy-based ink



49



SERVICE DAYS
DAILY

Telephone 311
Online at www.rideonbus.com
Real Time Info at www.rideonrealtime.com

49 To Glenmont M

MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP



Table with 5 columns (1-5) and 30 rows of departure times for 49 To Glenmont M Monday through Friday.

NOTES: AM PM

49 To Rockville M

MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP



Table with 5 columns (5-1) and 30 rows of departure times for 49 To Rockville M Monday through Friday.

NOTES: AM PM

49 To Glenmont M

SATURDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP



Table with 5 columns (1-5) and 30 rows of departure times for 49 To Glenmont M Saturday.

NOTES: AM PM

SEE REVERSE FOR SUNDAY SERVICE

49 To Rockville M

SATURDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP



Table with 5 columns (5-1) and 30 rows of departure times for 49 To Rockville M Saturday.

NOTES: AM PM

SEE REVERSE FOR SUNDAY SERVICE

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HOW TO RIDE A BUS

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FARES

Table with 2 columns: Fare Type and Amount. Includes Regular Fare (\$2.00), SmarTrip® Fare Transfer (\$1.50), Seniors (FREE), MetroAccess (FREE), Children under age 5 (FREE), Local Bus Transfer (FREE), Children 5 to 18 (FREE).

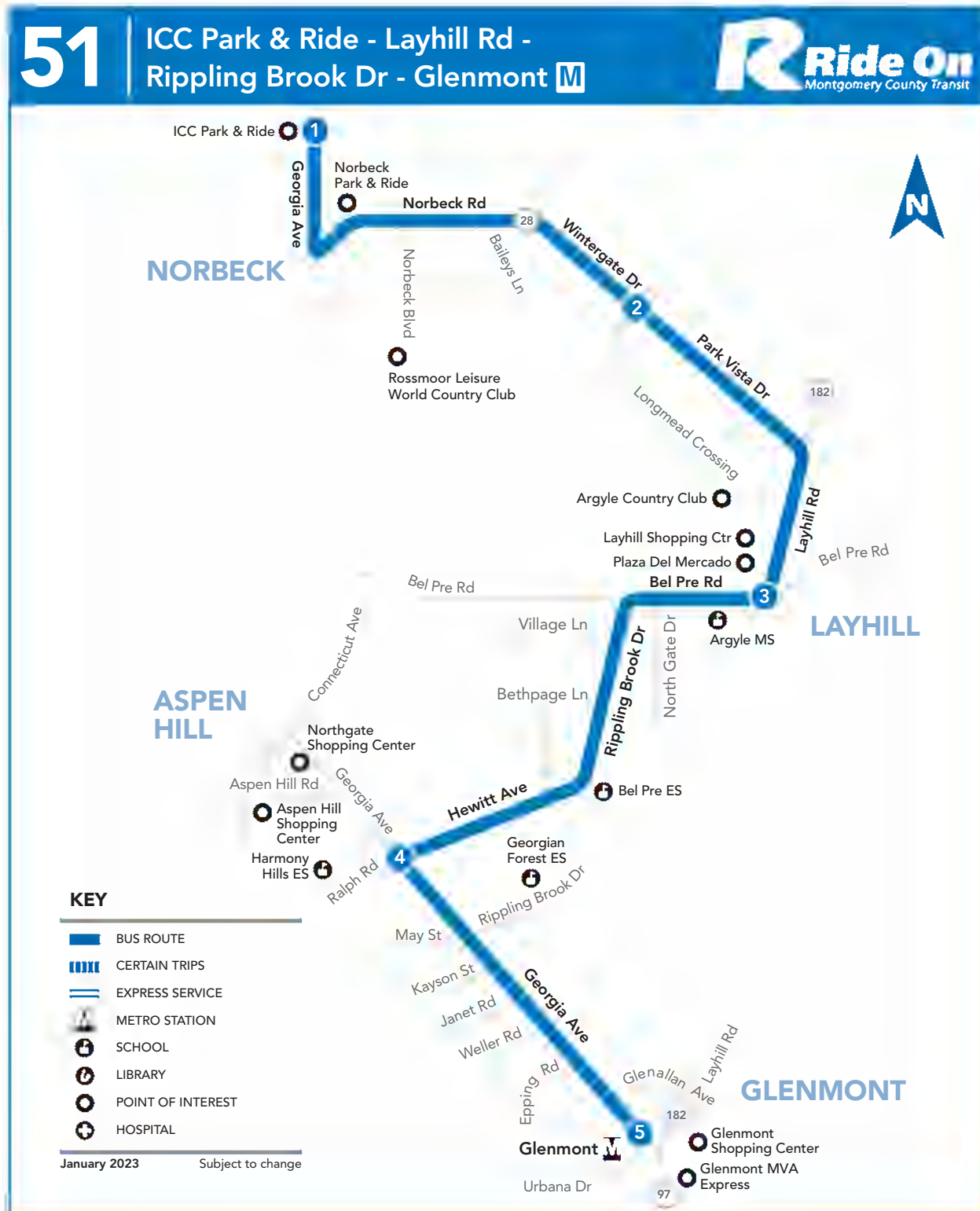
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Visit our web site at: www.rideonbus.com
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Regular Mailing Address:
Montgomery County DOT
Division of Transit Services
101 Monroe Street, 5th
Floor Rockville, MD 20850

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ለተጨማሪ መረጃ፣ ወይም ደህንነ ጽኑ መንገድ በተለዋጭ መልክ ለመጠየቅ ወይም ወደሌላ ቋንቋ ለማስተርጎም፣ ከባለስልጣን በ 311 ወይም ከሞንትጎመሪ ካውንቲ ውጪ 240-777-0311 ይደውሉ።

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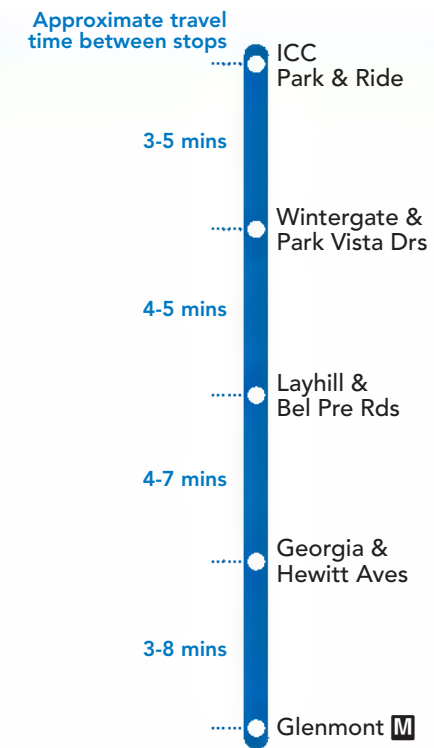
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twitter.com/RideOnMCT
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www.montgomerycountymd.gov/govdelivery
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MONTGOMERY RIDEON to 468311
- YouTube**
youtube.com/RideOnMCT
- Instagram**
instagram.com/RideOnMCT

Thank You for Riding with Us!

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EFFECTIVE: JANUARY 29, 2023

51



SERVICE DAYS
MONDAY - FRIDAY

Ride On
Montgomery County Transit

Telephone **311**
Online at www.rideonbus.com
Real Time Info at www.rideonrealtime.com

51 To Glenmont

MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

1	2	3	4	5
5:45	5:50	5:55	6:03	6:07
6:20	6:28	6:35	6:43	6:48
6:55	7:03	7:10	7:18	7:23
7:25	7:33	7:40	7:48	7:53
7:55	8:03	8:10	8:18	8:23
8:35	8:43	8:50	8:58	9:03
9:20	9:27	9:34	9:42	9:46
3:20	3:27	3:34	3:42	3:46
4:00	4:07	4:12	4:19	4:22
4:40	4:47	4:52	4:59	5:02
5:10	5:17	5:22	5:29	5:32
5:40	5:47	5:52	5:59	6:02
6:15	6:22	6:27	6:34	6:37

NOTES:

AM	PM
----	----

51 To ICC Park & Ride

MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

5	4	3	2	1
6:25	6:28	6:35	6:40	6:47
6:55	6:58	7:05	7:10	7:17
7:25	7:28	7:35	7:40	7:47
8:05	8:11	8:18	8:23	8:30
8:50	8:56	9:03	9:08	9:16
2:45	2:51	2:58	3:03	3:11
3:25	3:31	3:39	3:44	3:53
4:05	4:11	4:19	4:24	4:33
4:35	4:41	4:49	4:54	5:03
5:05	5:11	5:19	5:24	5:33
5:40	5:46	5:54	5:59	6:08
6:25	6:30	6:37	6:42	6:50
7:10	7:15	7:22	7:27	7:35

NOTES:

AM	PM
----	----

HOW TO RIDE A BUS

Check schedule for timepoint nearest your location. Wait at the blue and white **RIDE ON** bus stop sign. Arrive several minutes before scheduled time. Have exact fare ready (drivers do not make change).

- Not all stops are listed on a public timetable.
- If you are unfamiliar with your stop, sit or stand behind the line near the front of the bus and ask the bus driver to notify you when your stop is approaching.
- Ask the bus driver if you are not sure if the bus goes to your stop.
- If you have internet access (at home or somewhere else, such as a public library), it may be easier for you to use an online trip planner rather than a paper timetable.
- Be mindful of changes in the schedule, for holidays or bad weather.
- Please observe the following rules for all patrons: No eating, drinking, or smoking.
- Electronic devices may be played with earphones set *at low level*.

HOW TO READ A TIMETABLE

- Find the schedule for the day of the week and the direction you wish to ride.
- Find the timepoints closest to your origin and destination. The timepoints are shown on the route map and indicate the time the bus is scheduled to be at the particular location. Your nearest bus stop may be between timepoints.
- Read down the column to see the times when a trip will be at the given timepoint. Read the times across to the right to see when the trip reaches other timepoints.

FARES

Effective August 2022

Regular Fare, Token, or SmarTrip®	\$1.00
Transfer from MetroRail to Ride On buses	\$1.00
SmarTrip® Transfer from MetroRail to Metrobus	FREE
Ride On Bus-to-Bus Transfer with SmarTrip®	FREE
Ride On to Metrobus Transfer with SmarTrip®	\$1.00
Metrobus to Ride On Transfer with SmarTrip®	FREE
Seniors age 65 years or older with a Senior SmarTrip® card or valid Medicare Card and Photo ID	FREE
Person with disability with Metro Disabled ID Card	
Person with disability with Metro Disability ID Card – Attendant Eligible Attendant also rides free.	FREE
MetroAccess - Certified Customer with ID MetroAccess - Companion	
Children under age 5	FREE
Children 5 to 18 with a Youth Cruiser SmarTrip® Card or student ID Anytime	

GUARANTEED RIDE HOME

When you take Metrobus, Metrorail and Ride On to work, you are eligible to participate in the free Commuter Connections Guaranteed Ride Home Program. To register and to receive program details call: Commuter Services at **301-770-POOL(7665)**.

METROACCESS

Alternative paratransit service to this Ride On route for people with certified disabilities is available. Call MetroAccess at **301-562-5360**.



Please arrive at your stop several minutes ahead of your bus' scheduled arrival. Since safe service is a priority at Ride On, buses may be delayed due to traffic or weather.

There is **NO Saturday or Sunday service on this route**

Montgomery County assures that no person shall, on the grounds of race, color, or national origin, as provided by Title VI of the Civil Rights Act of 1964 and the Civil Rights Act of 1987, be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity. For more information or to file a complaint, please contact the Montgomery County Office of Human Rights.

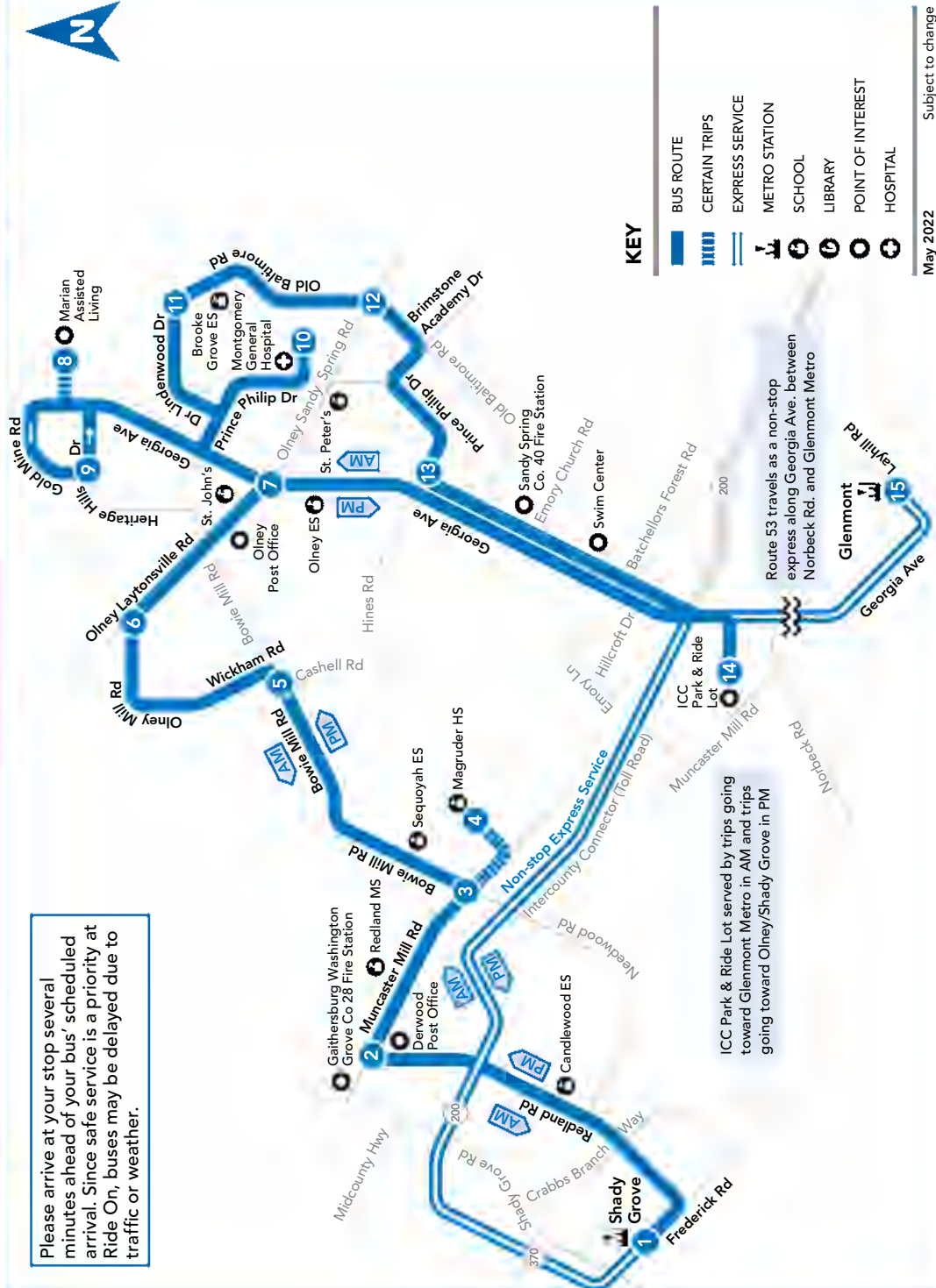
53

Shady Grove - MD 115 & Bowie Mill Rd - Gold Mine Rd - Lindenwood Dr - Montgomery General Hospital - Prince Phillip Dr - ICC Park & Ride Lot - Georgia Ave - Norbeck Rd - Glenmont

Ride On

Montgomery County Transit

Please arrive at your stop several minutes ahead of your bus' scheduled arrival. Since safe service is a priority at Ride On, buses may be delayed due to traffic or weather.



Route 53 travels as a non-stop express along Georgia Ave. between Norbeck Rd. and Glenmont Metro

ICC Park & Ride Lot served by trips going toward Glenmont Metro in AM and trips going toward Olney/Shady Grove in PM

WELCOME TO RIDE ON

RIDE ON is a community bus service operated by the Montgomery County Department of Transportation. **RIDE ON** operates over 75 routes that serve all 13 Montgomery County Metrorail stations and 7 MARC stations. For detailed information, or to have timetables mailed, call **311**. Outside Montgomery County **240-777-0311**

Visit our web site at: www.rideonbus.com
Real Time information is available at: www.rideonrealtime.com

Regular Mailing Address:
Montgomery County DOT
Division of Transit Services
101 Monroe Street, 5th
Floor Rockville, MD 20850

For more information, or to request this document in an alternate format or translated into another language, please call 311, or outside Montgomery County 240-777-0311.

Para más información o para pedir este documento en un formato diferente o traducido a otro idioma, por favor, llame al 311 o de fuera del Condado de Montgomery al 240-777-0311.

如需更多信息、需要以其它格式提供本文档或需要将本文档翻译成其它语言、请拨打311。如果您不在蒙哥马利郡、请拨打240-777-0311。

자세한 정보를 원하시거나 본 문서를 다른 형식 또는 다른 언어로의 번역본으로 원하실 경우, 전화번호 311, 또는 몽고메리 카운티 이외의 지역에서는 240-777-0311로 연락하시기 바랍니다.

ለተጨማሪ መረጃ፣ ወይም ደህንነት ደብዳቤ ለመጠየቅ ወይም ለመጠየቅ ወይም ወደሌላ ቋንቋ ለማስተርጎም፣ ክብካቤዎን በ 311 ወይም ከሞንትጎመሪ ካውንቲ ውጪ 240-777-0311 ይደውሉ።

Pour plus d'informations ou pour recevoir un exemplaire de ce document sous un format différent ou traduit dans une autre langue, veuillez composer le 311 ou le 240-777-0311, à l'extérieur du comté de Montgomery.

Để tìm hiểu thêm, hoặc để yêu cầu cung cấp tài liệu này theo định dạng khác hay chuyển ngữ sang ngôn ngữ khác, vui lòng gọi 311 hoặc số 240-777-0311 nếu gọi từ bên ngoài Quận Montgomery.

HOLIDAY SCHEDULE

Weekday Schedule operates on Indigenous Peoples' Day
Saturday Schedule operates on Independence Day
Sunday Schedule operates on New Year's Day, Memorial Day, Labor Day, Thanksgiving Day, Christmas Day
Special Schedule operates on MLK, Jr. Day, Presidents' Day, Juneteenth, Veterans Day

Like us on Facebook facebook.com/RideOnMCT
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Subscribe to text alerts by texting MONTGOMERY RIDEON to 468311

YouTube youtube.com/RideOnMCT
 Instagram instagram.com/RideOnMCT

Thank You for Riding with Us!

Printed on recycled paper with soy-based ink



53



SERVICE DAYS
MONDAY - FRIDAY

Telephone 311
Online at www.rideonbus.com
Real Time Info at www.rideonrealtime.com

How to use this timetable

- Use the map to find the stops closest to where you will get on and off the bus.
- Select the schedule (Weekday, Saturday, Sunday) for when you will travel. Along the top of the schedule, find the stop at or nearest the point where you will get on the bus. Follow that column down to the time you want to leave.
- Use the same method to find the times the bus is scheduled to arrive at the stop where you will get off the bus.
- If the bus stop is not listed, use the time shown for the bus stop before it as the time to wait at the stop.
- The end-of-the-line or last stop is listed in ALL CAPS on the schedule.

Cómo Usar este Horario

- Use este mapa para localizar las paradas más cercanas a donde se subirá y bajará del autobús.
- Seleccione el horario (Entre semana, sábado, domingo) de cuando viajará. A lo largo de la parte superior del horario, localice la parada o el punto más cercano a la parada en la que se subirá al autobús. Siga esa columna hacia abajo hasta la hora en la que desee salir.
- Utilice el mismo método para localizar las horas en que el autobús está programado para llegar a la parada en donde desea bajarse del autobús.
- Si la parada del autobús no está listada use la hora que se muestra en la parada anterior como la hora de espera en la parada.
- El final de la ruta o la última parada del autobús aparece en letras MAYÚSCULAS en el horario.

Washington Metropolitan Area Transit Authority

A District of Columbia,
Maryland and Virginia
Transit Partnership

English-Español

Effective 9-11-22

C8

College Park - North Bethesda Line

metrobus



Serves these locations-
Brinda servicio a estas ubicaciones

- North Bethesda station
- Randolph Road
- Glenmont station
- Colesville
- White Oak
- Food & Drug Administration/
Federal Research Center
- Hillandale
- Adelphi
- Archives II
- University of Maryland
- College Park-U of Md station

www.wmata.com
Information Anytime 202-637-7000 TTY 202-982-2133



C8

College Park - White Flint Line

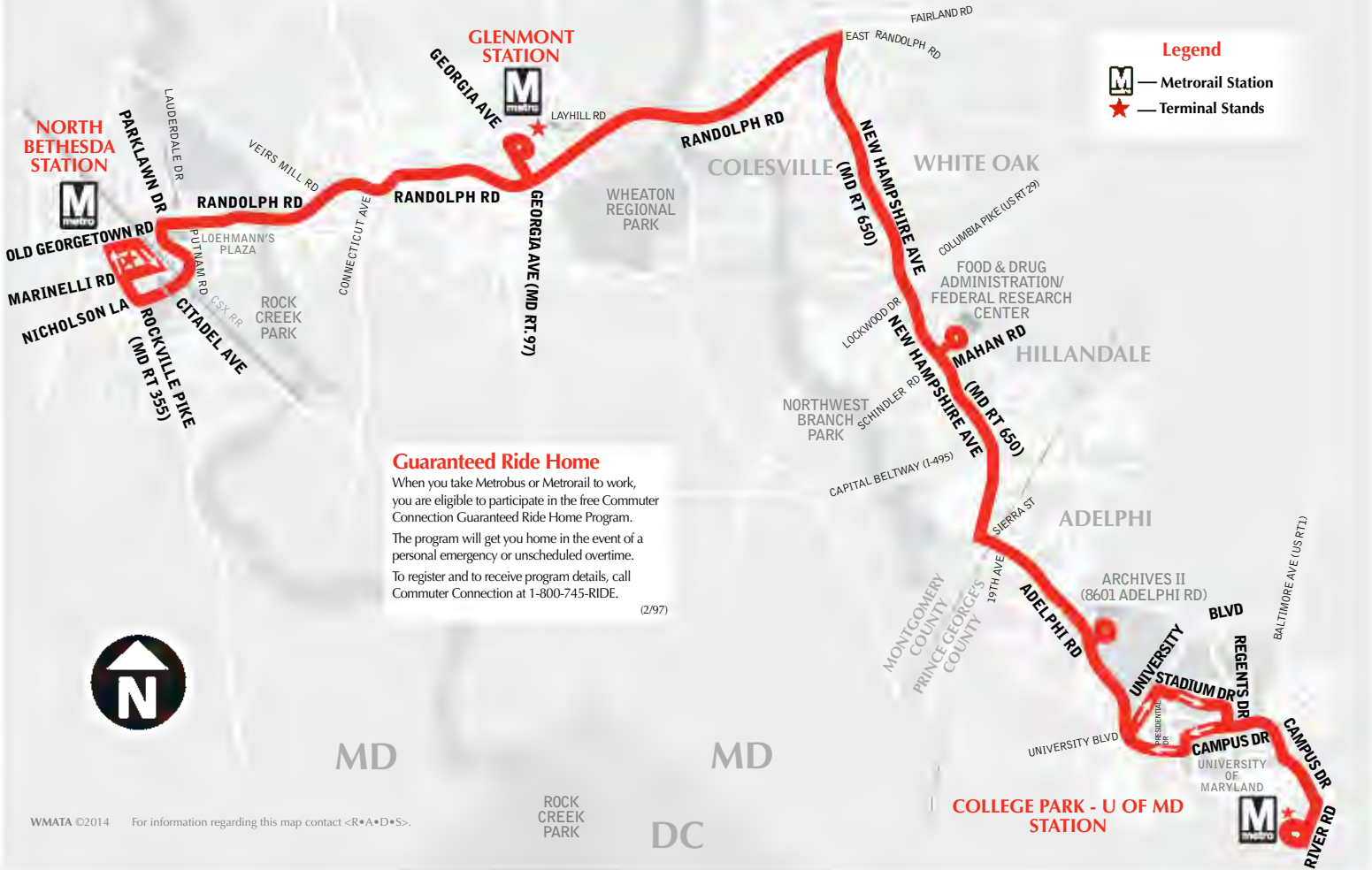
Effective Sunday, September 11, 2022

A partir del domingo, 11 de septiembre de 2022

C8

College Park-North Bethesda Line

For route and schedule information
Call 202-637-7000
www.wmata.com



Legend

- Metrorail Station
- Terminal Stands

Guaranteed Ride Home
 When you take Metrobus or Metrorail to work, you are eligible to participate in the free Commuter Connection Guaranteed Ride Home Program. The program will get you home in the event of a personal emergency or unscheduled overtime. To register and to receive program details, call Commuter Connection at 1-800-745-RIDE. (2/97)



WMATA ©2014 For information regarding this map contact <R*A*D*S>.



College Park - White Flint Line

Effective Sunday, September 11, 2022

A partir del domingo, 11 de septiembre de 2022

► Eastbound To College Park-U of MD station

Monday thru Friday — De Lunes a viernes

Route Number	North Bethesda M	Randolph Rd. & Putnam Rd. (Loehmann's Plaza)	Randolph Rd. & Veirs Mill Rd.	Glenmont M	New Hampshire Ave. & Randolph Rd. (Colesville)	New Hampshire Ave. & Lockwood Dr. (White Oak)	FDA/FRC	Adelphi Rd. & Sierra St. (New Hampshire Ave.)	Archives II	Stadium Dr. & University Blvd.	COLLEGE PARK- U of MD M
AM Service — Servicio matutino											
C8	4:57	5:02	5:09	5:20	5:30	5:37	5:41	5:48	5:53	6:00	6:07
C8	5:27	5:32	5:39	5:50	6:00	6:07	6:11	6:18	6:23	6:30	6:37
C8	5:56	6:02	6:09	6:20	6:32	6:39	6:43	6:51	6:57	7:04	7:12
C8	6:23	6:31	6:38	6:50	7:04	7:13	7:17	7:26	7:32	7:40	7:48
C8	6:53	7:01	7:08	7:20	7:34	7:43	7:47	7:56	8:02	8:10	8:18
C8	7:23	7:31	7:38	7:50	8:04	8:13	8:17	8:26	8:32	8:40	8:48
C8	7:53	8:01	8:08	8:20	8:34	8:43	8:47	8:56	9:02	9:10	9:18
C8	8:23	8:31	8:38	8:50	9:04	9:13	9:17	9:26	9:32	9:40	9:48
C8	8:55	9:03	9:09	9:20	9:31	9:39	9:43	9:51	9:56	10:03	10:11
C8	9:25	9:33	9:39	9:50	10:01	10:09	10:13	10:21	10:26	10:33	10:41
C8	9:55	10:03	10:09	10:20	10:31	10:39	10:43	10:51	10:56	11:03	11:11
C8	10:25	10:33	10:39	10:50	11:01	11:09	11:13	11:21	11:26	11:33	11:41
C8	10:55	11:03	11:09	11:20	11:31	11:39	11:43	11:51	11:56	12:03	12:11
C8	11:25	11:33	11:39	11:50	12:01	12:09	12:13	12:21	12:26	12:33	12:41
C8	11:55	12:03	12:09	12:20	12:31	12:39	12:43	12:51	12:56	1:03	1:11
PM Service — Servicio vespertino											
C8	12:25	12:33	12:39	12:50	1:01	1:09	1:13	1:21	1:26	1:33	1:41
C8	12:55	1:03	1:09	1:20	1:31	1:39	1:43	1:51	1:56	2:03	2:11
C8	1:25	1:33	1:39	1:50	2:01	2:09	2:13	2:21	2:26	2:33	2:41
C8	1:55	2:03	2:09	2:20	2:31	2:39	2:43	2:51	2:56	3:03	3:11
C8	2:18	2:28	2:36	2:50	3:02	3:11	3:15	3:27	3:34	3:42	3:50
C8	2:48	2:58	3:06	3:20	3:32	3:41	3:45	3:57	4:04	4:12	4:20
C8	3:18	3:28	3:36	3:50	4:02	4:11	4:15	4:27	4:34	4:42	4:50
C8	3:48	3:58	4:06	4:20	4:32	4:41	4:45	4:57	5:04	5:12	5:20
C8	4:18	4:28	4:36	4:50	5:02	5:11	5:15	5:27	5:34	5:42	5:50
C8	4:48	4:58	5:06	5:20	5:32	5:41	5:45	5:57	6:04	6:12	6:20
C8	5:18	5:28	5:36	5:50	6:02	6:11	6:15	6:27	6:34	6:42	6:50
C8	5:48	6:01	6:08	6:20	6:31	6:38	-	6:47	6:53	7:00	7:07
C8	6:21	6:34	6:41	6:53	7:04	7:11	-	7:20	7:26	7:33	7:40
C8	6:54	7:02	7:09	7:20	7:30	7:37	-	7:46	7:52	7:58	8:05
C8	7:24	7:32	7:39	7:50	8:00	8:07	-	8:16	8:22	8:28	8:35
C8	7:54	8:02	8:09	8:20	8:30	8:37	-	8:46	8:52	8:58	9:05



College Park - White Flint Line

Effective Sunday, September 11, 2022
A partir del domingo, 11 de septiembre de 2022

▶ **Westbound To North Bethesda station**

Monday thru Friday — De Lunes a Viernes

Route Number	College Park U of Md	Campus Dr. & Regents Circle	Campus Dr. & Presidential Dr.	Archives	Hampshire Ave)	FDA/RRC	New Hampshire Ave. (White Oak) (Colesville)	New Hampshire Rd. & New Hampshire Ave.	Clmont	Randolph Mill Rd.	Randolph Dr. (opposite Loehmann's Plaza)	NORTH BETHESDA
AM Service — Servicio matutino												
C8	5:36	5:46	5:49	5:54	6:00	6:08	6:11	6:18	6:30	6:40	6:45	6:48
C8	5:54	6:03	6:07	6:12	6:19	6:29	6:33	6:43	7:00	7:12	7:18	7:21
C8	6:24	6:33	6:37	6:42	6:49	6:59	7:03	7:13	7:30	7:42	7:48	7:51
C8	6:54	7:03	7:07	7:12	7:19	7:29	7:33	7:43	8:00	8:12	8:18	8:21
C8	7:27	7:36	7:41	7:47	7:54	8:03	8:07	8:16	8:30	8:40	8:45	8:49
C8	7:57	8:06	8:11	8:17	8:24	8:33	8:37	8:46	9:00	9:10	9:15	9:19
C8	8:27	8:36	8:41	8:47	8:54	9:03	9:07	9:16	9:30	9:40	9:45	9:49
C8	8:57	9:06	9:11	9:17	9:24	9:33	9:37	9:46	10:00	10:10	10:15	10:19
C8	9:31	9:40	9:45	9:50	9:56	10:04	10:08	10:17	10:30	10:39	10:44	10:48
C8	10:01	10:10	10:15	10:20	10:26	10:34	10:38	10:47	11:00	11:09	11:14	11:18
C8	10:31	10:40	10:45	10:50	10:56	11:04	11:08	11:17	11:30	11:39	11:44	11:48
C8	11:01	11:10	11:15	11:20	11:26	11:34	11:38	11:47	12:00	12:09	12:14	12:18
C8	11:31	11:40	11:45	11:50	11:56	12:04	12:08	12:17	12:30	12:39	12:44	12:48
PM Service — Servicio vespertino												
C8	12:01	12:10	12:15	12:20	12:26	12:34	12:38	12:47	1:00	1:09	1:14	1:18
C8	12:31	12:40	12:45	12:50	12:56	1:04	1:08	1:17	1:30	1:39	1:44	1:48
C8	1:01	1:10	1:15	1:20	1:26	1:34	1:38	1:47	2:00	2:09	2:14	2:18
C8	1:31	1:40	1:45	1:50	1:56	2:04	2:08	2:17	2:30	2:39	2:44	2:48
C8	2:01	2:10	2:15	2:20	2:26	2:34	2:38	2:47	3:00	3:09	3:14	3:18
C8	2:31	2:40	2:45	2:50	2:56	3:04	3:08	3:17	3:30	3:39	3:44	3:48
C8	2:55	3:04	3:10	3:16	3:23	3:33	3:37	3:47	4:00	4:09	4:14	4:18
C8	3:25	3:34	3:40	3:46	3:53	4:03	4:07	4:17	4:30	4:39	4:44	4:48
C8	3:55	4:04	4:10	4:16	4:23	4:33	4:37	4:47	5:00	5:09	5:14	5:18
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C8	4:55	5:04	5:10	5:16	5:23	5:33	5:37	5:47	6:00	6:09	6:14	6:18
C8	5:25	5:34	5:40	5:46	5:53	6:03	6:07	6:17	6:30	6:39	6:44	6:48
C8	6:04	6:13	6:18	6:23	6:29	-	6:40	6:48	7:00	7:08	7:13	7:16
C8	6:34	6:43	6:48	6:53	6:59	-	7:10	7:18	7:30	7:38	7:43	7:46
C8	7:04	7:13	7:18	7:23	7:29	-	7:40	7:48	8:00	8:08	8:13	8:16
C8	7:34	7:43	7:48	7:53	7:59	-	8:10	8:18	8:30	8:38	8:43	8:46
C8	8:12	8:21	8:24	8:29	8:34	-	8:43	8:50	9:00	9:07	9:11	9:14
C8	8:42	8:51	8:54	8:59	9:04	-	9:13	9:20	9:30	9:37	9:41	9:44
C8	9:12	9:21	9:24	9:29	9:34	-	9:43	9:50	10:00	10:07	10:11	10:14

How to use this timetable

- Use the map to find the stops closest to where you will get on and off the bus.
- Select the schedule (Weekday, Saturday, Sunday) for when you will travel. Along the top of the schedule, find the stop at or nearest the point where you will get on the bus. Follow that column down to the time you want to leave.
- Use the same method to find the times the bus is scheduled to arrive at the stop where you will get off the bus.
- If the bus stop is not listed, use the time shown for the bus stop before it as the time to wait at the stop.
- The end-of-the-line or last stop is listed in ALL CAPS on the schedule.

Cómo Usar este Horario

- Use este mapa para localizar las paradas más cercanas a donde se subirá y bajará del autobús.
- Seleccione el horario (Entre semana, sábado, domingo) de cuando viajará. A lo largo de la parte superior del horario, localice la parada o el punto más cercano a la parada en la que se subirá al autobús. Siga esa columna hacia abajo hasta la hora en la que desee salir.
- Utilice el mismo método para localizar las horas en que el autobús está programado para llegar a la parada en donde desea bajarse del autobús.
- Si la parada del autobús no está listada use la hora que se muestra en la parada anterior como la hora de espera en la parada.
- El final de la ruta o la última parada del autobús aparece en letras MAYÚSCULAS en el horario.

English-Español

Effective 12-26-21

Y2,7,8**Georgia Avenue-Maryland Line****metrobus****Serves these locations-
Brinda servicio a estas ubicaciones**

- Medstar Montgomery Medical Center (Y2,Y8)
- Olney (Y2,Y8)
- Georgia Ave - ICC Park & Ride Lot (Y7)
- Leisure World (Y7,Y8)
- Aspen Hill
- Glenmont station
- Wheaton station
- Forest Glen station
- Paul S. Sarbanes Transit Center
(Silver Spring station)

www.wmata.com
Information Anytime 202-637-7000 TTY 202-982-2033**Washington
Metropolitan Area
Transit Authority***A District of Columbia,
Maryland and Virginia
Transit Partnership*

Y2,7,8

Georgia Avenue-Maryland Line

Effective Sunday, December 26, 2021

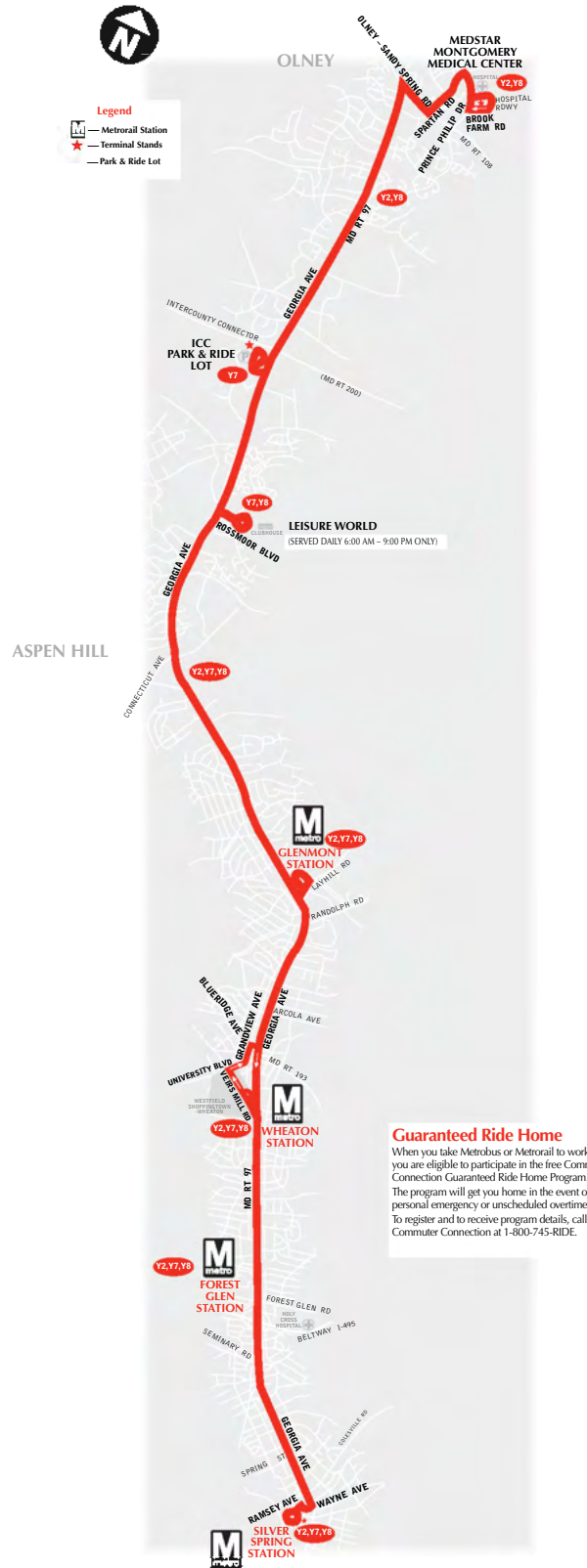
A partir del domingo, 26 de diciembre de 2021

Y2,Y7,Y8

Georgia Ave. - Maryland Line

For route and schedule information

Call 202-637-7000
www.wmata.com



Y2,7,8

Georgia Avenue-Maryland Line

Effective Sunday, December 26, 2021

A partir del domingo, 26 de diciembre de 2021

▶ Southbound to Silver Spring station

Monday thru Friday — De Lunes a viernes

Route Number	Medstar Montgomery Medical Center	Georgia Ave. & Rt. 108 (Olney)	ICC Park & Ride Lot	Georgia Ave. & Norbeck Rd.	Leisure World (club-house)	Georgia & Connecticut Aves. (Aspen Hill)	Glenmont (M)	Georgia Ave. & Randolph Rd. (Glenmont)	Wheaton (M)	Georgia Ave. & Forest Glen (Forest Glen) (M)	Georgia Ave. & Spring St. Paul S. Sarbanes Transit Center	(SILVER SPRING) (M)
AM Service — Servicio matutino												
Y2	4:18	4:25	-	4:30	-	4:36	4:46	4:48	4:57	5:05	5:11	5:15
Y2	4:40	4:47	-	4:52	-	4:58	5:08	5:10	5:19	5:27	5:33	5:37
Y2	5:00	5:07	-	5:12	-	5:18	5:28	5:30	5:39	5:47	5:53	5:57
Y2	5:20	5:27	-	5:32	-	5:38	5:48	5:50	5:59	6:07	6:13	6:17
Y2	5:35	5:42	-	5:47	-	5:53	6:03	6:05	6:14	6:22	6:28	6:32
Y7	-	-	5:53	5:58	6:02	6:08	6:18	6:20	6:29	6:37	6:43	6:47
Y2	6:05	6:12	-	6:17	-	6:23	6:33	6:35	6:44	6:52	6:58	7:02
Y7	-	-	6:21	6:26	6:30	6:36	6:46	6:48	6:57	7:05	7:11	7:15
Y2	6:30	6:37	-	6:42	-	6:48	6:58	7:00	7:09	7:17	7:23	7:27
Y7	-	-	6:43	6:48	6:52	6:58	7:08	7:10	7:19	7:27	7:33	7:37
Y2	6:46	6:54	-	7:01	-	7:08	7:18	7:20	7:30	7:39	7:45	7:49
Y7	-	-	7:01	7:06	7:10	7:17	7:27	7:29	7:39	7:48	7:54	7:58
Y2	7:05	7:13	-	7:20	-	7:27	7:37	7:39	7:49	7:58	8:04	8:08
Y7	-	-	7:21	7:26	7:30	7:37	7:47	7:49	7:59	8:08	8:14	8:18
Y2	7:25	7:33	-	7:40	-	7:47	7:57	7:59	8:09	8:18	8:24	8:28
Y7	-	-	7:41	7:46	7:50	7:57	8:07	8:09	8:19	8:28	8:34	8:38
Y2	7:45	7:53	-	8:00	-	8:07	8:17	8:19	8:29	8:38	8:44	8:48
Y7	-	-	8:01	8:06	8:10	8:17	8:27	8:29	8:39	8:48	8:54	8:58
Y2	8:05	8:13	-	8:20	-	8:27	8:37	8:39	8:49	8:58	9:04	9:08
Y7	-	-	8:21	8:26	8:30	8:37	8:48	8:50	9:00	9:09	9:15	9:20
Y2	8:22	8:30	-	8:39	-	8:46	8:57	8:59	9:09	9:18	9:24	9:29
Y7	-	-	8:40	8:45	8:49	8:56	9:07	9:09	9:19	9:28	9:34	9:39
Y2	8:42	8:50	-	8:59	-	9:06	9:17	9:19	9:29	9:38	9:44	9:49
Y7	-	-	9:00	9:05	9:09	9:16	9:27	9:29	9:39	9:48	9:54	9:59
Y2	9:02	9:10	-	9:19	-	9:26	9:37	9:39	9:49	9:58	10:04	10:09
Y7	-	-	9:20	9:25	9:29	9:36	9:47	9:49	9:59	10:08	10:14	10:19
Y8	9:18	9:26	-	9:35	9:39	9:46	9:57	9:59	10:09	10:18	10:24	10:29
Y7	-	-	9:45	9:50	9:54	10:01	10:12	10:14	10:24	10:33	10:39	10:44
Y8	9:48	9:56	-	10:05	10:09	10:16	10:27	10:29	10:39	10:48	10:54	10:59
Y7	-	-	10:15	10:20	10:24	10:31	10:42	10:44	10:54	11:03	11:09	11:14
Y8	10:18	10:26	-	10:35	10:39	10:46	10:57	10:59	11:09	11:18	11:24	11:29
Y7	-	-	10:45	10:50	10:54	11:01	11:12	11:14	11:24	11:33	11:39	11:44
Y8	10:48	10:56	-	11:05	11:09	11:16	11:27	11:29	11:39	11:48	11:54	11:59
Y7	-	-	11:15	11:20	11:24	11:31	11:42	11:44	11:54	12:03	12:09	12:14
Y8	11:18	11:26	-	11:35	11:39	11:46	11:57	11:59	12:09	12:18	12:24	12:29
Y7	-	-	11:45	11:50	11:54	12:01	12:12	12:14	12:24	12:33	12:39	12:44
Y8	11:48	11:56	-	12:05	12:09	12:16	12:27	12:29	12:39	12:48	12:54	12:59

Y2,7,8

Georgia Avenue-Maryland Line

Effective Sunday, December 26, 2021

A partir del domingo, 26 de diciembre de 2021

▶ Southbound to Silver Spring station

Monday thru Friday — De Lunes a viernes

Route Number	Medstar Montgomery Medical Center	Georgia Ave. & Rt. 108 (Olney)	ICC Park & Ride Lot	Georgia Ave. & Norbeck Rd.	Leisure World (club-house)	Georgia & Connecticut Aves. (Aspen Hill)	Glenmont (M)	Georgia Ave. & Randolph Rd. (Glenmont)	Wheaton (M)	Georgia Ave. & Forest Glen Rd. (Forest Glen) (M)	Georgia Ave. & Spring St. Paul S. Sarbanes Transit Center	(SILVER SPRING) (M)
PM Service — Servicio vespertino												
Y7	-	-	12:15	12:20	12:24	12:31	12:42	12:44	12:54	1:03	1:09	1:14
Y8	12:18	12:26	-	12:35	12:39	12:46	12:57	12:59	1:09	1:18	1:24	1:29
Y7	-	-	12:45	12:50	12:54	1:01	1:12	1:14	1:24	1:33	1:39	1:44
Y8	12:48	12:56	-	1:05	1:09	1:16	1:27	1:29	1:39	1:48	1:54	1:59
Y7	-	-	1:15	1:20	1:24	1:31	1:42	1:44	1:54	2:03	2:09	2:14
Y8	1:18	1:26	-	1:35	1:39	1:46	1:57	1:59	2:09	2:18	2:24	2:29
Y7	-	-	1:45	1:50	1:54	2:01	2:12	2:14	2:24	2:33	2:39	2:44
Y8	1:48	1:56	-	2:05	2:09	2:16	2:27	2:29	2:39	2:48	2:54	2:59
Y7	-	-	2:15	2:20	2:24	2:31	2:42	2:44	2:54	3:03	3:09	3:14
Y8	2:17	2:26	-	2:36	2:41	2:48	2:59	3:01	3:12	3:21	3:27	3:32
Y7	-	-	2:46	2:51	2:56	3:03	3:14	3:16	3:27	3:36	3:42	3:47
Y2	2:52	3:01	-	3:11	-	3:18	3:29	3:31	3:42	3:51	3:57	4:02
Y7	-	-	3:16	3:21	3:26	3:33	3:44	3:46	3:57	4:06	4:12	4:17
Y8	3:17	3:26	-	3:36	3:41	3:48	3:59	4:01	4:12	4:21	4:27	4:32
Y7	-	-	3:41	3:46	3:51	3:58	4:09	4:11	4:22	4:31	4:37	4:42
Y2	3:42	3:51	-	4:01	-	4:08	4:19	4:21	4:32	4:41	4:47	4:52
Y7	-	-	4:01	4:06	4:11	4:18	4:29	4:31	4:42	4:51	4:57	5:02
Y8	3:57	4:06	-	4:16	4:21	4:28	4:39	4:41	4:52	5:01	5:07	5:12
Y7	-	-	4:21	4:26	4:31	4:38	4:49	4:51	5:02	5:11	5:17	5:22
Y2	4:24	4:32	-	4:43	-	4:50	5:01	5:03	5:13	5:22	5:27	5:32
Y7	-	-	4:42	4:47	4:53	5:00	5:11	5:13	5:23	5:32	5:37	5:42
Y8	4:38	4:46	-	4:57	5:03	5:10	5:21	5:23	5:33	5:42	5:47	5:52
Y7	-	-	5:02	5:07	5:13	5:20	5:31	5:33	5:43	5:52	5:57	6:02
Y2	5:04	5:12	-	5:23	-	5:30	5:41	5:43	5:53	6:02	6:07	6:12
Y7	-	-	5:22	5:27	5:33	5:40	5:51	5:53	6:03	6:12	6:17	6:22
Y8	5:18	5:26	-	5:37	5:43	5:50	6:01	6:03	6:13	6:22	6:27	6:32
Y7	-	-	5:43	5:48	5:54	6:00	6:09	6:11	6:20	6:27	6:32	6:37
Y2	5:50	5:57	-	6:05	-	6:11	6:20	6:22	6:31	6:38	6:43	6:48
Y7	-	-	6:06	6:11	6:17	6:23	6:32	6:34	6:43	6:50	6:55	7:00
Y8	6:06	6:13	-	6:21	6:27	6:33	6:42	6:44	6:53	7:00	7:05	7:10
Y7	-	-	6:26	6:31	6:37	6:43	6:52	6:54	7:03	7:10	7:15	7:20
Y2	6:32	6:39	-	6:47	-	6:53	7:02	7:04	7:13	7:20	7:25	7:30
Y7	-	-	6:51	6:56	7:02	7:08	7:17	7:19	7:28	7:35	7:40	7:45
Y8	6:56	7:03	-	7:11	7:17	7:23	7:32	7:34	7:43	7:50	7:55	8:00
Y7	-	-	7:21	7:26	7:32	7:38	7:47	7:49	7:58	8:05	8:10	8:15
Y2	7:32	7:39	-	7:47	-	7:53	8:02	8:04	8:13	8:20	8:25	8:30
Y7	-	-	7:51	7:56	8:02	8:08	8:17	8:19	8:28	8:35	8:40	8:45
Y8	7:56	8:03	-	8:11	8:17	8:23	8:32	8:34	8:43	8:50	8:55	9:00
Y7	-	-	8:21	8:26	8:32	8:38	8:47	8:49	8:58	9:05	9:10	9:15
Y2	8:41	8:48	-	8:56	-	9:02	9:11	9:13	9:22	9:29	9:34	9:39
Y2	9:01	9:08	-	9:16	-	9:22	9:31	9:33	9:42	9:49	9:54	9:59
Y2	9:30	9:36	-	9:42	-	9:47	9:54	9:56	10:03	10:08	10:12	10:16
Y2	9:55	10:01	-	10:07	-	10:12	10:19	10:21	10:28	10:33	10:37	10:41
Y2	10:28	10:34	-	10:40	-	10:45	10:52	10:54	11:01	11:06	11:10	11:14
Y2	10:58	11:04	-	11:10	-	11:15	11:22	11:24	11:31	11:36	11:40	11:44
Y2	11:28	11:34	-	11:40	-	11:45	11:52	11:54	12:01	12:06	12:10	12:14
Y2	11:58	12:04	-	12:10	-	12:15	12:22	12:24	12:31	12:36	12:40	12:44
After Midnight Service — Servicio después de la medianoche												
Y2	12:28	12:34	-	12:40	-	12:45	12:52	12:54	1:01	1:06	1:10	1:14
Y2	12:58	1:04	-	1:10	-	1:15	1:22	1:24	1:31	1:36	1:40	1:44
Y2	1:28	1:34	-	1:40	-	1:45	1:52	1:54	2:01	2:06	2:10	2:14
Y2	1:58	2:04	-	2:10	-	2:15	2:22	2:24	2:31	2:36	2:40	2:44

Y2,7,8





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AM Service — Servicio matutino												
Y2	4:55	5:01	5:05	5:12	5:21	5:24	5:31	-	5:36	-	5:43	5:47
Y2	5:25	5:31	5:35	5:42	5:51	5:54	6:01	-	6:06	-	6:13	6:17
Y2	5:55	6:01	6:05	6:12	6:21	6:24	6:31	-	6:36	-	6:43	6:47
Y2	6:10	6:16	6:20	6:27	6:36	6:39	6:46	-	6:51	-	6:58	7:02
Y8	6:25	6:31	6:35	6:42	6:51	6:54	7:01	7:06	7:09	-	7:16	7:20
Y7	6:40	6:46	6:50	6:57	7:06	7:09	7:16	7:21	7:24	7:27	-	-
Y8	6:50	6:56	7:00	7:07	7:16	7:19	7:26	7:31	7:34	-	7:41	7:45
Y7	7:00	7:06	7:10	7:17	7:26	7:29	7:36	7:41	7:44	7:47	-	-
Y8	7:10	7:16	7:20	7:27	7:36	7:39	7:46	7:51	7:54	-	8:01	8:05
Y7	7:20	7:26	7:30	7:37	7:46	7:49	7:56	8:01	8:04	8:07	-	-
Y8	7:30	7:37	7:41	7:49	7:58	8:01	8:08	8:13	8:16	-	8:23	8:27
Y7	7:40	7:47	7:51	7:59	8:08	8:11	8:18	8:23	8:26	8:30	-	-
Y8	7:55	8:02	8:06	8:14	8:23	8:26	8:33	8:38	8:41	-	8:48	8:52
Y7	8:10	8:17	8:21	8:29	8:38	8:41	8:48	8:53	8:56	9:00	-	-
Y8	8:25	8:32	8:36	8:44	8:53	8:56	9:03	9:08	9:11	-	9:18	9:22
Y7	8:40	8:47	8:51	8:59	9:08	9:11	9:18	9:23	9:26	9:30	-	-
Y8	8:55	9:02	9:06	9:14	9:23	9:26	9:33	9:38	9:41	-	9:48	9:52
Y7	9:10	9:17	9:21	9:29	9:38	9:41	9:48	9:53	9:56	10:00	-	-
Y8	9:25	9:32	9:36	9:44	9:53	9:56	10:03	10:08	10:11	-	10:18	10:22
Y7	9:40	9:47	9:51	9:59	10:08	10:11	10:18	10:23	10:26	10:30	-	-
Y8	9:55	10:02	10:06	10:14	10:23	10:26	10:33	10:38	10:41	-	10:48	10:52
Y7	10:10	10:17	10:21	10:29	10:38	10:41	10:48	10:53	10:56	11:00	-	-
Y8	10:25	10:32	10:36	10:44	10:53	10:56	11:03	11:08	11:11	-	11:18	11:22
Y7	10:40	10:47	10:51	10:59	11:08	11:11	11:18	11:23	11:26	11:30	-	-
Y8	10:55	11:02	11:06	11:14	11:23	11:26	11:33	11:38	11:41	-	11:48	11:52
Y7	11:10	11:17	11:21	11:29	11:38	11:41	11:48	11:53	11:56	12:00	-	-
Y8	11:25	11:32	11:36	11:44	11:53	11:56	12:03	12:08	12:11	-	12:18	12:22
Y7	11:40	11:47	11:51	11:59	12:08	12:11	12:18	12:23	12:26	12:30	-	-
Y8	11:55	12:02	12:06	12:14	12:23	12:26	12:33	12:38	12:41	-	12:48	12:52

Y2,7,8








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PM Service — Servicio vespertino												
Y7	12:10	12:17	12:21	12:29	12:40	12:43	12:51	12:58	1:00	1:03	-	-
Y8	12:25	12:32	12:36	12:44	12:55	12:58	1:06	1:13	1:15	-	1:22	1:26
Y7	12:40	12:47	12:51	12:59	1:10	1:13	1:21	1:28	1:30	1:33	-	-
Y8	12:55	1:02	1:06	1:14	1:25	1:28	1:36	1:43	1:45	-	1:52	1:56
Y7	1:10	1:17	1:21	1:29	1:40	1:43	1:51	1:58	2:00	2:03	-	-
Y8	1:25	1:32	1:36	1:44	1:55	1:58	2:06	2:13	2:15	-	2:22	2:26
Y7	1:40	1:47	1:51	1:59	2:10	2:13	2:21	2:28	2:30	2:33	-	-
Y8	1:55	2:02	2:06	2:14	2:25	2:28	2:36	2:43	2:45	-	2:52	2:56
Y7	2:10	2:18	2:25	2:34	2:47	2:50	2:59	3:05	3:07	3:09	-	-
Y8	2:20	2:28	2:35	2:44	2:57	3:00	3:08	3:14	3:16	-	3:23	3:27
Y7	2:30	2:38	2:45	2:54	3:07	3:10	3:19	3:25	3:27	3:29	-	-
Y8	2:40	2:48	2:55	3:04	3:17	3:20	3:28	3:34	3:36	-	3:43	3:47
Y7	2:50	2:58	3:05	3:14	3:27	3:30	3:39	3:45	3:47	3:49	-	-
Y8	3:00	3:08	3:15	3:24	3:37	3:40	3:48	3:54	3:56	-	4:03	4:07
Y7	3:10	3:18	3:25	3:34	3:47	3:50	3:59	4:05	4:07	4:09	-	-
Y8	3:20	3:28	3:35	3:44	3:57	4:00	4:08	4:14	4:16	-	4:23	4:27
Y7	3:30	3:38	3:45	3:54	4:07	4:10	4:19	4:25	4:27	4:29	-	-
Y8	3:40	3:48	3:55	4:04	4:17	4:20	4:28	4:34	4:36	-	4:43	4:47
Y7	3:50	3:58	4:05	4:14	4:27	4:30	4:39	4:45	4:47	4:49	-	-
Y2	4:00	4:08	4:16	4:25	4:40	4:43	4:51	-	4:56	-	5:04	5:08
Y7	4:10	4:18	4:26	4:35	4:50	4:53	5:01	5:10	5:13	5:15	-	-
Y2	4:20	4:28	4:36	4:45	5:00	5:03	5:11	-	5:16	-	5:24	5:28
Y7	4:30	4:38	4:46	4:55	5:10	5:13	5:21	5:30	5:33	5:35	-	-
Y8	4:40	4:48	4:56	5:05	5:20	5:23	5:31	5:40	5:43	-	5:51	5:55
Y7	4:50	4:58	5:06	5:15	5:30	5:33	5:41	5:50	5:53	5:55	-	-
Y2	5:00	5:08	5:16	5:25	5:40	5:43	5:51	-	5:56	-	6:04	6:08
Y7	5:10	5:18	5:26	5:35	5:50	5:53	6:01	6:10	6:13	6:15	-	-
Y2	5:20	5:28	5:36	5:45	6:00	6:03	6:11	-	6:16	-	6:24	6:28
Y7	5:30	5:38	5:46	5:55	6:10	6:13	6:21	6:30	6:33	6:35	-	-
Y8	5:40	5:48	5:56	6:05	6:20	6:23	6:31	6:40	6:43	-	6:51	6:55
Y7	5:50	5:58	6:06	6:15	6:30	6:33	6:41	6:50	6:53	6:55	-	-
Y2	6:00	6:08	6:16	6:25	6:40	6:43	6:51	-	6:56	-	7:04	7:08
Y7	6:10	6:18	6:26	6:35	6:50	6:53	7:01	7:10	7:13	7:15	-	-
Y2	6:20	6:28	6:36	6:45	7:00	7:03	7:11	-	7:16	-	7:24	7:28
Y7	6:30	6:37	6:44	6:53	7:08	7:11	7:19	7:27	7:29	7:31	-	-
Y8	6:40	6:47	6:54	7:03	7:18	7:21	7:29	7:37	7:40	7:42	-	-
Y7	6:55	7:02	7:09	7:18	7:33	7:36	7:44	7:52	7:55	7:57	-	-
Y2	7:10	7:17	7:24	7:33	7:48	7:51	-	7:56	-	8:04	8:08	8:12
Y7	7:25	7:32	7:39	7:48	8:03	8:06	8:14	8:22	8:25	8:27	-	-
Y8	7:40	7:47	7:54	8:03	8:18	8:21	8:29	8:37	8:40	8:42	-	-
Y7	7:55	8:02	8:09	8:18	8:33	8:36	8:44	8:52	8:55	8:57	-	-
Y2	8:05	8:12	8:19	8:28	8:43	8:46	-	8:51	-	9:00	9:04	9:08
Y2	8:25	8:32	8:39	8:48	9:03	9:06	-	9:11	-	9:20	9:24	9:28
Y2	8:40	8:47	8:54	9:03	9:18	9:21	-	9:26	-	9:35	9:39	9:43
Y2	8:55	9:02	9:09	9:18	9:33	9:36	-	9:41	-	9:50	9:54	9:58
Y2	9:10	9:17	9:24	9:33	9:48	9:51	-	9:56	-	10:05	10:09	10:13
Y2	9:25	9:32	9:39	9:48	10:03	10:06	-	10:11	-	10:20	10:24	10:28
Y2	9:45	9:52	10:00	10:09	10:24	10:27	-	10:32	-	10:41	10:45	10:49
Y2	10:05	10:12	10:20	10:29	10:44	10:47	-	10:52	-	11:01	11:05	11:09
Y2	10:30	10:37	10:45	10:54	11:09	11:12	-	11:17	-	11:26	11:30	11:34
Y2	10:55	11:02	11:10	11:19	11:34	11:37	-	11:42	-	11:51	11:55	11:59
Y2	11:25	11:32	11:40	11:49	12:04	12:07	-	12:12	-	12:21	12:25	12:29
Y2	11:55	12:02	12:10	12:19	12:34	12:37	-	12:42	-	12:51	12:55	12:59
After Midnight Service — Servicio después de la medianoche												
Y2	12:25	12:30	12:33	12:39	12:48	12:51	12:57	-	1:01	-	1:08	1:11
Y2	12:55	1:00	1:03	1:09	1:18	1:21	1:27	-	1:31	-	1:38	1:41
Y2	1:25	1:30	1:33	1:39	1:48	1:51	1:57	-	2:01	-	2:08	2:11
Y2	1:55	2:00	2:03	2:09	2:18	2:21	2:27	-	2:31	-	2:38	2:41

Y2,7,8

Georgia Avenue-Maryland Line

Effective Sunday, December 26, 2021

A partir del domingo, 26 de diciembre de 2021

▶ Southbound to Silver Spring station

Saturday — Sábados

Route Number	Medstar Montgomery Medical Center	Georgia Ave. & Rt. 108 (Olney)	Georgia Ave. & Norbeck Rd.	Leisure World	Georgia Ave. & Connecticut Ave. (Aspen Hill)	Glenmont (M)	Georgia Ave. & Randolph Rd. (Glenmont)	Wheaton (M)	Georgia Ave. & Forest Glen Rd. (Forest Glen)	Georgia Ave. & Spring St. Paul S. Sarbanes Transit Center	(SILVER SPRING) (M)
AM Service — Servicio matutino											
Y2	4:56	5:01	5:07	-	5:11	5:18	5:20	5:27	5:33	5:37	5:40
Y2	5:18	5:23	5:29	-	5:33	5:40	5:42	5:49	5:55	5:59	6:02
Y2	5:40	5:45	5:51	-	5:55	6:02	6:04	6:11	6:17	6:21	6:24
Y8	5:58	6:03	6:09	6:13	6:17	6:24	6:26	6:33	6:39	6:43	6:46
Y2	6:22	6:27	6:33	-	6:37	6:44	6:46	6:53	6:59	7:03	7:06
Y8	6:35	6:40	6:46	6:50	6:57	7:05	7:07	7:14	7:21	7:26	7:29
Y2	6:47	6:52	6:58	-	7:02	7:09	7:11	7:18	7:24	7:28	7:31
Y8	6:55	7:00	7:06	7:10	7:17	7:25	7:27	7:34	7:41	7:46	7:49
Y2	7:21	7:26	7:32	-	7:37	7:47	7:49	7:56	8:03	8:08	8:11
Y8	7:35	7:40	7:46	7:50	7:57	8:05	8:07	8:14	8:21	8:26	8:29
Y2	8:01	8:06	8:12	-	8:17	8:27	8:29	8:36	8:43	8:48	8:51
Y8	8:15	8:20	8:26	8:30	8:37	8:45	8:47	8:54	9:01	9:06	9:09
Y2	8:41	8:46	8:52	-	8:57	9:07	9:09	9:16	9:23	9:28	9:31
Y8	8:53	8:58	9:06	9:10	9:17	9:27	9:29	9:38	9:45	9:53	9:56
Y2	9:19	9:24	9:32	-	9:37	9:47	9:49	9:58	10:05	10:13	10:16
Y8	9:33	9:38	9:46	9:50	9:57	10:07	10:09	10:18	10:25	10:33	10:36
Y2	9:59	10:04	10:12	-	10:17	10:27	10:29	10:38	10:45	10:53	10:56
Y8	10:13	10:18	10:26	10:30	10:37	10:47	10:49	10:58	11:05	11:13	11:16
Y2	10:39	10:44	10:52	-	10:57	11:07	11:09	11:18	11:25	11:33	11:36
Y8	10:51	10:57	11:06	11:10	11:17	11:27	11:29	11:39	11:47	11:52	11:56
Y2	11:16	11:22	11:31	-	11:37	11:47	11:49	11:59	12:07	12:13	12:17
Y8	11:31	11:37	11:46	11:50	11:57	12:07	12:09	12:19	12:27	12:32	12:36
Y2	11:56	12:02	12:11	-	12:17	12:27	12:29	12:39	12:47	12:53	12:57
PM Service — Servicio vespertino											
Y8	12:11	12:17	12:26	12:30	12:37	12:47	12:49	12:59	1:07	1:12	1:16
Y2	12:36	12:42	12:51	-	12:57	1:07	1:09	1:19	1:27	1:33	1:37
Y8	12:51	12:57	1:06	1:10	1:17	1:27	1:29	1:39	1:47	1:52	1:56
Y2	1:16	1:22	1:31	-	1:37	1:47	1:49	1:59	2:07	2:13	2:17
Y8	1:31	1:37	1:46	1:50	1:57	2:07	2:09	2:19	2:27	2:32	2:36
Y2	1:56	2:02	2:11	-	2:17	2:27	2:29	2:39	2:47	2:53	2:57
Y8	2:11	2:17	2:26	2:30	2:37	2:47	2:49	2:59	3:07	3:12	3:16
Y2	2:36	2:42	2:51	-	2:57	3:07	3:09	3:19	3:27	3:33	3:37
Y8	2:51	2:57	3:06	3:10	3:17	3:27	3:29	3:39	3:47	3:52	3:56
Y2	3:16	3:22	3:31	-	3:37	3:47	3:49	3:59	4:07	4:13	4:17
Y8	3:31	3:37	3:46	3:50	3:57	4:07	4:09	4:19	4:27	4:32	4:36
Y2	3:56	4:02	4:11	-	4:17	4:27	4:29	4:39	4:47	4:53	4:57
Y8	4:11	4:17	4:26	4:30	4:37	4:47	4:49	4:59	5:07	5:12	5:16
Y2	4:36	4:42	4:51	-	4:57	5:07	5:09	5:19	5:27	5:33	5:37
Y8	4:51	4:57	5:06	5:10	5:17	5:27	5:29	5:39	5:47	5:52	5:56
Y2	5:16	5:22	5:31	-	5:37	5:47	5:49	5:59	6:07	6:13	6:17
Y8	5:32	5:38	5:46	5:50	5:57	6:07	6:09	6:18	6:25	6:30	6:33
Y2	5:58	6:03	6:11	-	6:17	6:26	6:28	6:37	6:44	6:49	6:52
Y8	6:12	6:18	6:26	6:30	6:37	6:47	6:49	6:58	7:05	7:10	7:13
Y2	6:38	6:43	6:51	-	6:57	7:06	7:08	7:17	7:24	7:29	7:32
Y8	6:54	7:00	7:07	7:11	7:17	7:27	7:29	7:38	7:45	7:50	7:53
Y2	7:19	7:24	7:31	-	7:37	7:46	7:48	7:56	8:03	8:08	8:11
Y8	7:34	7:40	7:47	7:51	7:57	8:07	8:09	8:18	8:25	8:30	8:33
Y2	7:59	8:04	8:11	-	8:17	8:26	8:28	8:36	8:43	8:48	8:51
Y2	8:19	8:24	8:31	-	8:37	8:46	8:48	8:56	9:03	9:08	9:11
Y2	8:39	8:44	8:51	-	8:57	9:06	9:08	9:16	9:23	9:28	9:31
Y2	9:01	9:06	9:13	-	9:19	9:27	9:29	9:37	9:44	9:48	9:51
Y2	9:23	9:28	9:35	-	9:41	9:49	9:51	9:59	10:06	10:10	10:13
Y2	9:45	9:50	9:57	-	10:03	10:11	10:13	10:21	10:28	10:32	10:35
Y2	10:12	10:17	10:23	-	10:27	10:34	10:36	10:44	10:50	10:54	10:57
Y2	10:34	10:39	10:45	-	10:49	10:56	10:58	11:06	11:12	11:16	11:19
Y2	10:56	11:01	11:07	-	11:11	11:18	11:20	11:28	11:34	11:38	11:41
Y2	11:21	11:26	11:32	-	11:36	11:43	11:45	11:53	11:59	12:03	12:06
Y2	11:51	11:56	12:02	-	12:06	12:13	12:15	12:23	12:29	12:33	12:36
After Midnight Service — Servicio después de la medianoche											
Y2	12:21	12:26	12:32	-	12:36	12:43	12:45	12:53	12:59	1:03	1:06
Y2	12:51	12:56	1:02	-	1:06	1:13	1:15	1:23	1:29	1:33	1:36
Y2	1:21	1:26	1:32	-	1:36	1:43	1:45	1:53	1:59	2:03	2:06
Y2	1:51	1:56	2:02	-	2:06	2:13	2:15	2:23	2:29	2:33	2:36

On five Federal holidays, Juneteenth, Columbus Day, Veterans' Day, Martin Luther King, Jr. Day, and Presidents' Day, the Saturday schedule will be in effect.

Metrobus proveerá servicio con horario de sábado durante los cinco días festivos de Juneteenth, Columbus Day, Veterans Day, Martin Luther King Jr. Day, y Presidents' Day.

Y2,7,8







Georgia Avenue-Maryland Line

Effective Sunday, December 26, 2021

A partir del domingo, 26 de diciembre de 2021

▶ Northbound to Olney

Saturday — Sábados

Route Number	Paul S. Sarbanes Transit Center (Silver Spring) 	Georgia Ave. & Spring St.	Georgia Ave. & Forest Glen Rd. (Forest Glen) 	Wheaton 	Georgia Ave. & Randolph Rd. (Glenmont) 	Glenmont 	Georgia Ave. & Connecticut Ave. (Aspen Hill) 	Leisure World	Georgia Ave. & Norbeck Rd.	Georgia Ave. & Rt.108 (Olney)	MEDSTAR MONT-GOMERY MEDICAL CENTER
AM Service — Servicio matutino											
Y2	5:55	5:59	6:03	6:09	6:18	6:20	6:26	-	6:31	6:38	6:41
Y2	6:18	6:22	6:26	6:32	6:41	6:43	6:49	-	6:54	7:01	7:04
Y2	6:40	6:44	6:48	6:54	7:03	7:05	7:11	-	7:16	7:23	7:26
Y8	7:00	7:05	7:09	7:15	7:24	7:26	7:32	7:38	7:40	7:47	7:50
Y2	7:20	7:24	7:28	7:34	7:43	7:45	7:51	-	7:56	8:03	8:06
Y8	7:40	7:45	7:49	7:55	8:04	8:06	8:12	8:18	8:20	8:27	8:30
Y2	8:00	8:04	8:08	8:15	8:25	8:27	8:34	-	8:40	8:47	8:51
Y8	8:20	8:25	8:29	8:35	8:45	8:47	8:55	9:01	9:03	9:10	9:14
Y2	8:40	8:44	8:48	8:55	9:05	9:07	9:14	-	9:20	9:27	9:31
Y8	9:00	9:05	9:09	9:15	9:25	9:27	9:35	9:41	9:43	9:50	9:54
Y2	9:20	9:25	9:30	9:37	9:49	9:51	9:58	-	10:04	10:12	10:15
Y8	9:40	9:45	9:50	9:57	10:09	10:11	10:19	10:25	10:27	10:35	10:38
Y8	10:00	10:05	10:10	10:17	10:29	10:31	10:39	10:45	10:47	10:55	10:58
Y2	10:20	10:25	10:30	10:37	10:49	10:51	10:58	-	11:04	11:12	11:15
Y8	10:40	10:45	10:50	10:57	11:09	11:11	11:19	11:25	11:27	11:35	11:38
Y2	11:00	11:05	11:10	11:17	11:29	11:31	11:38	-	11:44	11:52	11:55
Y8	11:20	11:25	11:30	11:37	11:49	11:51	11:59	12:05	12:07	12:15	12:18
Y2	11:40	11:45	11:50	11:57	12:09	12:11	12:18	-	12:24	12:32	12:35
PM Service — Servicio vespertino											
Y8	12:00	12:05	12:10	12:18	12:32	12:34	12:42	12:48	12:50	12:58	1:01
Y2	12:20	12:25	12:30	12:38	12:52	12:55	1:03	-	1:09	1:17	1:20
Y8	12:40	12:45	12:50	12:58	1:12	1:14	1:22	1:28	1:30	1:38	1:41
Y2	1:00	1:05	1:10	1:18	1:32	1:35	1:43	-	1:49	1:57	2:00
Y8	1:20	1:25	1:30	1:38	1:52	1:54	2:02	2:08	2:10	2:18	2:21
Y2	1:40	1:45	1:50	1:58	2:12	2:15	2:23	-	2:29	2:37	2:40
Y8	2:00	2:05	2:10	2:18	2:32	2:34	2:42	2:48	2:50	2:58	3:01
Y2	2:20	2:25	2:30	2:38	2:52	2:55	3:03	-	3:09	3:17	3:20
Y8	2:40	2:45	2:50	2:58	3:12	3:14	3:22	3:28	3:30	3:38	3:41
Y2	3:00	3:05	3:10	3:18	3:32	3:35	3:43	-	3:49	3:57	4:00
Y8	3:20	3:25	3:30	3:38	3:52	3:54	4:02	4:08	4:10	4:18	4:21
Y2	3:40	3:45	3:50	3:58	4:12	4:15	4:23	-	4:29	4:37	4:40
Y8	4:00	4:05	4:10	4:18	4:32	4:34	4:42	4:48	4:50	4:58	5:01
Y2	4:20	4:25	4:30	4:38	4:52	4:55	5:03	-	5:09	5:17	5:20
Y8	4:40	4:45	4:50	4:58	5:12	5:14	5:22	5:28	5:30	5:38	5:41
Y2	5:00	5:05	5:10	5:18	5:32	5:35	5:43	-	5:49	5:57	6:00
Y8	5:20	5:25	5:30	5:38	5:52	5:54	6:02	6:08	6:10	6:18	6:21
Y2	5:40	5:45	5:50	5:58	6:12	6:15	6:23	-	6:29	6:37	6:40
Y8	6:00	6:05	6:10	6:18	6:32	6:34	6:42	6:48	6:50	6:58	7:01
Y2	6:20	6:25	6:29	6:37	6:50	6:53	7:00	-	7:06	7:13	7:16
Y8	6:40	6:45	6:49	6:57	7:10	7:12	7:20	7:26	7:28	7:35	7:39
Y8	7:00	7:05	7:09	7:17	7:30	7:32	7:40	7:46	7:48	7:55	7:59
Y2	7:20	7:25	7:29	7:37	7:50	7:53	8:00	-	8:06	8:13	8:16
Y8	7:40	7:45	7:49	7:57	8:10	8:12	8:20	8:26	8:28	8:35	8:39
Y2	8:00	8:05	8:10	8:17	8:29	8:31	8:38	-	8:43	8:50	8:53
Y2	8:20	8:25	8:30	8:37	8:49	8:51	8:58	-	9:03	9:10	9:13
Y2	8:40	8:45	8:50	8:57	9:09	9:11	9:18	-	9:23	9:30	9:33
Y2	9:00	9:05	9:10	9:17	9:29	9:31	9:38	-	9:43	9:50	9:53
Y2	9:20	9:25	9:30	9:37	9:49	9:51	9:58	-	10:03	10:10	10:13
Y2	9:40	9:45	9:50	9:57	10:09	10:11	10:18	-	10:23	10:30	10:33
Y2	10:03	10:08	10:13	10:20	10:32	10:34	10:41	-	10:46	10:53	10:56
Y2	10:28	10:32	10:36	10:42	10:52	10:54	11:00	-	11:05	11:11	11:14
Y2	10:51	10:55	10:59	11:05	11:15	11:17	11:23	-	11:28	11:34	11:37
Y2	11:13	11:17	11:21	11:27	11:37	11:39	11:45	-	11:50	11:56	11:59
Y2	11:36	11:40	11:44	11:50	12:00	12:02	12:08	-	12:13	12:19	12:22
Y2	11:58	12:02	12:06	12:12	12:22	12:24	12:30	-	12:35	12:41	12:44
After Midnight Service — Servicio después de la medianoche											
Y2	12:25	12:29	12:33	12:39	12:49	12:51	12:57	-	1:02	1:08	1:11
Y2	12:55	12:59	1:03	1:09	1:19	1:21	1:27	-	1:32	1:38	1:41
Y2	1:25	1:29	1:33	1:39	1:49	1:51	1:57	-	2:02	2:08	2:11
Y2	1:55	1:59	2:03	2:09	2:19	2:21	2:27	-	2:32	2:38	2:41

On five Federal holidays, Juneteenth, Columbus Day, Veterans' Day, Martin Luther King, Jr. Day, and Presidents' Day, the Saturday schedule will be in effect.

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Y2,7,8





Georgia Avenue-Maryland Line

Effective Sunday, December 26, 2021

A partir del domingo, 26 de diciembre de 2021

▶ Southbound to Silver Spring station

Sunday — Domingos

Route Number	Medstar Montgomery Medical Center	Georgia Ave. & Rt. 108 (Olney)	Georgia Ave. & Norbeck Rd.	Leisure World (club-house)	Georgia Ave. & Connecticut Ave. (Aspen Hill)	Glenmont 	Georgia Ave. & Randolph Rd. (Glenmont)	Wheaton 	Georgia Ave. & Forest Glen Rd. (Forest Glen) 	Georgia Ave. & Spring St.	Paul S. Sarbanes Transit Center (SILVER SPRING) 
AM Service — Servicio matutino											
Y2	4:56	5:03	5:08	-	5:11	5:19	5:21	5:29	5:34	5:39	5:42
Y2	5:18	5:25	5:30	-	5:33	5:41	5:43	5:51	5:56	6:01	6:04
Y2	5:40	5:47	5:52	-	5:55	6:03	6:05	6:13	6:18	6:23	6:26
Y8	5:55	6:02	6:07	6:11	6:17	6:25	6:27	6:35	6:40	6:45	6:48
Y2	6:22	6:29	6:34	-	6:37	6:45	6:47	6:55	7:00	7:05	7:08
Y8	6:32	6:39	6:44	6:48	6:54	7:02	7:04	7:12	7:17	7:22	7:25
Y2	6:59	7:06	7:11	-	7:14	7:22	7:24	7:32	7:37	7:42	7:45
Y8	7:11	7:18	7:24	7:28	7:34	7:43	7:45	7:53	7:58	8:04	8:07
Y2	7:36	7:43	7:49	-	7:54	8:03	8:05	8:13	8:18	8:24	8:27
Y8	7:51	7:58	8:04	8:08	8:14	8:23	8:25	8:33	8:38	8:44	8:47
Y2	8:16	8:23	8:29	-	8:34	8:43	8:45	8:53	8:58	9:04	9:07
Y8	8:31	8:38	8:44	8:48	8:54	9:03	9:05	9:13	9:18	9:24	9:27
Y2	8:56	9:03	9:09	-	9:14	9:23	9:25	9:33	9:38	9:44	9:47
Y8	9:08	9:15	9:22	9:27	9:34	9:43	9:46	9:54	10:01	10:08	10:11
Y2	9:33	9:40	9:47	-	9:54	10:03	10:06	10:14	10:21	10:28	10:31
Y8	9:48	9:55	10:02	10:07	10:14	10:23	10:26	10:34	10:41	10:48	10:51
Y2	10:13	10:20	10:27	-	10:34	10:43	10:46	10:54	11:01	11:08	11:11
Y8	10:28	10:35	10:42	10:47	10:54	11:03	11:06	11:14	11:21	11:28	11:31
Y2	10:53	11:00	11:07	-	11:14	11:23	11:26	11:34	11:41	11:48	11:51
Y8	11:07	11:14	11:22	11:27	11:34	11:43	11:47	11:56	12:06	12:14	12:18
Y2	11:32	11:39	11:47	-	11:54	12:03	12:07	12:16	12:26	12:34	12:38
Y8	11:47	11:54	12:02	12:07	12:14	12:23	12:27	12:36	12:46	12:54	12:58
PM Service — Servicio vespertino											
Y2	12:12	12:19	12:27	-	12:34	12:43	12:47	12:56	1:06	1:14	1:18
Y8	12:27	12:34	12:42	12:47	12:54	1:03	1:07	1:16	1:26	1:34	1:38
Y2	12:52	12:59	1:07	-	1:14	1:23	1:27	1:36	1:46	1:54	1:58
Y8	1:07	1:14	1:22	1:27	1:34	1:43	1:47	1:56	2:06	2:14	2:18
Y2	1:32	1:39	1:47	-	1:54	2:03	2:07	2:16	2:26	2:34	2:38
Y8	1:47	1:54	2:02	2:07	2:14	2:23	2:27	2:36	2:46	2:54	2:58
Y2	2:12	2:19	2:27	-	2:34	2:43	2:47	2:56	3:06	3:14	3:18
Y8	2:27	2:34	2:42	2:47	2:54	3:03	3:07	3:16	3:26	3:34	3:38
Y2	2:52	2:59	3:07	-	3:14	3:23	3:27	3:36	3:46	3:54	3:58
Y8	3:07	3:14	3:22	3:27	3:34	3:43	3:47	3:56	4:06	4:14	4:18
Y2	3:32	3:39	3:47	-	3:54	4:03	4:07	4:16	4:26	4:34	4:38
Y8	3:47	3:54	4:02	4:07	4:14	4:23	4:27	4:36	4:46	4:54	4:58
Y2	4:12	4:19	4:27	-	4:34	4:43	4:47	4:56	5:06	5:14	5:18
Y8	4:27	4:34	4:42	4:47	4:54	5:03	5:07	5:16	5:26	5:34	5:38
Y2	4:52	4:59	5:07	-	5:14	5:23	5:27	5:36	5:46	5:54	5:58
Y8	5:09	5:15	5:22	5:27	5:34	5:42	5:47	5:56	6:06	6:14	6:18
Y2	5:35	5:41	5:48	-	5:54	6:02	6:07	6:16	6:26	6:34	6:38
Y8	5:49	5:55	6:02	6:07	6:14	6:22	6:27	6:36	6:46	6:54	6:58
Y2	6:15	6:21	6:28	-	6:34	6:42	6:47	6:56	7:06	7:14	7:18
Y8	6:29	6:35	6:42	6:47	6:54	7:02	7:07	7:16	7:26	7:34	7:38
Y2	6:56	7:02	7:08	-	7:14	7:22	7:26	7:34	7:44	7:51	7:54
Y8	7:12	7:18	7:24	7:28	7:34	7:42	7:46	7:54	8:04	8:11	8:14
Y2	7:36	7:42	7:48	-	7:54	8:02	8:06	8:14	8:24	8:31	8:34
Y8	7:52	7:58	8:04	8:08	8:14	8:22	8:26	8:34	8:44	8:51	8:54
Y2	8:16	8:22	8:28	-	8:34	8:42	8:46	8:54	9:04	9:11	9:14
Y2	8:37	8:43	8:49	-	8:54	9:00	9:03	9:09	9:16	9:22	9:25
Y2	8:57	9:03	9:09	-	9:14	9:20	9:23	9:29	9:36	9:42	9:45
Y2	9:19	9:25	9:31	-	9:36	9:42	9:45	9:51	9:58	10:04	10:07
Y2	9:41	9:47	9:53	-	9:58	10:04	10:07	10:13	10:20	10:26	10:29
Y2	10:01	10:07	10:13	-	10:18	10:24	10:27	10:33	10:40	10:46	10:49
Y2	10:23	10:29	10:35	-	10:40	10:46	10:49	10:55	11:02	11:08	11:11
Y2	10:42	10:48	10:54	-	10:59	11:05	11:08	11:14	11:21	11:27	11:30
Y2	11:07	11:13	11:19	-	11:24	11:30	11:33	11:39	11:46	11:52	11:55
Y2	11:32	11:38	11:44	-	11:49	11:55	11:58	12:04	12:11	12:17	12:20
After Midnight Service — Servicio después de la medianoche											
Y2	12:02	12:08	12:14	-	12:19	12:25	12:28	12:34	12:41	12:47	12:50
Y2	12:32	12:38	12:44	-	12:49	12:55	12:58	1:04	1:11	1:17	1:20
Y2	1:02	1:08	1:14	-	1:19	1:25	1:28	1:34	1:41	1:47	1:50
Y2	1:32	1:38	1:44	-	1:49	1:55	1:58	2:04	2:11	2:17	2:20

Y2,7,8







Georgia Avenue-Maryland Line

Effective Sunday, December 26, 2021

A partir del domingo, 26 de diciembre de 2021

▶ Northbound to Olney

Sunday — Domingos

Route Number	Paul S. Sarbanes Transit Center (Silver Spring) 	Georgia Ave. & Spring St.	Georgia Ave. & Forest Glen Rd. (Forest Glen) 	Wheaton 	Georgia Ave. & Randolph Rd. (Glenmont) 	Glenmont 	Georgia Ave. & Connecticut Ave. (Aspen Hill) 	Leisure World (club-house)	Georgia Ave. & Norbeck Rd.	Georgia Ave. & Rt.108 (Olney) MEDSTAR GOMERY	MEDICAL CENTER
AM Service — Servicio matutino											
Y2	5:55	5:59	6:04	6:09	6:16	6:18	6:23	-	6:27	6:34	6:37
Y2	6:18	6:22	6:27	6:32	6:39	6:41	6:46	-	6:50	6:57	7:00
Y2	6:40	6:44	6:49	6:54	7:01	7:03	7:08	-	7:12	7:19	7:22
Y8	7:00	7:04	7:09	7:14	7:21	7:23	7:28	7:33	7:35	7:43	7:46
Y2	7:20	7:24	7:29	7:34	7:41	7:43	7:48	-	7:52	7:59	8:02
Y8	7:40	7:44	7:49	7:54	8:01	8:03	8:08	8:13	8:15	8:23	8:26
Y2	8:00	8:05	8:10	8:16	8:23	8:25	8:30	-	8:35	8:42	8:45
Y8	8:20	8:25	8:30	8:36	8:43	8:45	8:50	8:55	8:57	9:06	9:09
Y2	8:40	8:45	8:50	8:56	9:03	9:05	9:10	-	9:15	9:22	9:25
Y8	9:00	9:05	9:10	9:16	9:23	9:25	9:30	9:35	9:37	9:46	9:49
Y2	9:20	9:25	9:30	9:36	9:43	9:45	9:50	-	9:55	10:02	10:05
Y8	9:40	9:45	9:50	9:57	10:08	10:10	10:17	10:22	10:24	10:34	10:38
Y2	10:00	10:05	10:10	10:17	10:28	10:30	10:37	-	10:42	10:50	10:54
Y8	10:20	10:25	10:30	10:37	10:48	10:50	10:57	11:02	11:04	11:14	11:18
Y2	10:40	10:45	10:50	10:57	11:08	11:10	11:17	-	11:22	11:30	11:34
Y8	11:00	11:05	11:10	11:17	11:28	11:30	11:37	11:42	11:44	11:54	11:58
Y2	11:20	11:25	11:30	11:37	11:48	11:50	11:57	-	12:02	12:10	12:14
Y8	11:40	11:45	11:50	11:57	12:08	12:10	12:17	12:22	12:24	12:34	12:38
PM Service — Servicio vespertino											
Y2	12:00	12:06	12:11	12:18	12:30	12:33	12:40	-	12:45	12:54	12:58
Y8	12:20	12:26	12:31	12:38	12:50	12:53	1:00	1:06	1:08	1:18	1:22
Y2	12:40	12:46	12:51	12:58	1:10	1:13	1:20	-	1:25	1:34	1:38
Y8	1:00	1:06	1:11	1:18	1:30	1:33	1:40	1:46	1:48	1:58	2:02
Y2	1:20	1:26	1:31	1:38	1:50	1:53	2:00	-	2:05	2:14	2:18
Y8	1:40	1:46	1:51	1:58	2:10	2:13	2:20	2:26	2:28	2:38	2:42
Y2	2:00	2:06	2:11	2:18	2:30	2:33	2:40	-	2:45	2:54	2:58
Y8	2:20	2:26	2:31	2:38	2:50	2:53	3:00	3:06	3:08	3:18	3:22
Y2	2:40	2:46	2:51	2:58	3:10	3:13	3:20	-	3:25	3:34	3:38
Y8	3:00	3:06	3:11	3:18	3:30	3:33	3:40	3:46	3:48	3:58	4:02
Y2	3:20	3:26	3:31	3:38	3:50	3:53	4:00	-	4:05	4:14	4:18
Y8	3:40	3:46	3:51	3:58	4:10	4:13	4:20	4:26	4:28	4:38	4:42
Y2	4:00	4:06	4:11	4:18	4:30	4:33	4:40	-	4:45	4:54	4:58
Y8	4:20	4:26	4:31	4:38	4:50	4:53	5:00	5:06	5:08	5:18	5:22
Y2	4:40	4:46	4:51	4:58	5:10	5:13	5:20	-	5:25	5:34	5:38
Y8	5:00	5:06	5:11	5:18	5:30	5:33	5:40	5:46	5:48	5:58	6:02
Y2	5:20	5:26	5:31	5:38	5:50	5:53	6:00	-	6:05	6:14	6:18
Y8	5:40	5:46	5:51	5:58	6:10	6:13	6:20	6:26	6:28	6:38	6:42
Y2	6:00	6:06	6:11	6:18	6:30	6:33	6:40	-	6:45	6:54	6:58
Y8	6:20	6:27	6:32	6:39	6:48	6:50	6:57	7:02	7:04	7:12	7:16
Y2	6:40	6:47	6:52	6:59	7:08	7:10	7:17	-	7:22	7:30	7:34
Y8	7:00	7:07	7:12	7:19	7:28	7:30	7:37	7:42	7:44	7:52	7:56
Y2	7:20	7:27	7:32	7:39	7:48	7:50	7:57	-	8:02	8:10	8:14
Y8	7:40	7:47	7:52	7:59	8:08	8:10	8:17	8:22	8:24	8:32	8:36
Y2	8:00	8:05	8:09	8:16	8:25	8:27	8:33	-	8:38	8:46	8:49
Y8	8:20	8:25	8:29	8:36	8:45	8:47	8:53	-	8:58	9:06	9:09
Y2	8:40	8:45	8:49	8:56	9:05	9:07	9:13	-	9:18	9:26	9:29
Y2	9:00	9:05	9:09	9:16	9:25	9:27	9:33	-	9:38	9:46	9:49
Y2	9:18	9:23	9:27	9:34	9:43	9:45	9:51	-	9:56	10:04	10:07
Y2	9:40	9:45	9:49	9:56	10:05	10:07	10:13	-	10:18	10:26	10:29
Y2	10:03	10:08	10:12	10:19	10:28	10:30	10:36	-	10:41	10:49	10:52
Y2	10:28	10:33	10:37	10:43	10:51	10:53	10:58	-	11:02	11:09	11:12
Y2	10:51	10:56	11:00	11:06	11:14	11:16	11:21	-	11:25	11:32	11:35
Y2	11:13	11:18	11:22	11:28	11:36	11:38	11:43	-	11:47	11:54	11:57
Y2	11:36	11:41	11:45	11:51	11:59	12:01	12:06	-	12:10	12:17	12:20
Y2	11:58	12:03	12:07	12:13	12:21	12:23	12:28	-	12:32	12:39	12:42
After Midnight Service — Servicio después de la medianoche											
Y2	12:25	12:30	12:34	12:40	12:48	12:50	12:55	-	12:59	1:06	1:09
Y2	12:55	1:00	1:04	1:10	1:18	1:20	1:25	-	1:29	1:36	1:39
Y2	1:25	1:30	1:34	1:40	1:48	1:50	1:55	-	1:59	2:06	2:09
Y2	1:55	2:00	2:04	2:10	2:18	2:20	2:25	-	2:29	2:36	2:39

APPENDIX C
COUNTS



National Data & Surveying Services Intersection Turning Movement Count

Location: Livingston St & Randolph Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035
Date: 10/4/2022

Data - Total

NS/EW Streets:	Livingston St			Livingston St			Randolph Rd			Randolph Rd			TOTAL
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
AM	0	1	0	0	1	0	1	3	0	1	3	0	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:30 AM	2	0	9	2	1	1	3	104	1	8	242	2	375
6:45 AM	2	0	10	5	0	2	2	119	1	13	292	2	448
7:00 AM	2	1	6	3	4	6	2	151	0	23	337	1	536
7:15 AM	3	0	15	5	5	7	4	201	0	19	381	2	642
7:30 AM	4	0	15	6	5	6	4	253	1	26	384	3	707
7:45 AM	0	2	5	4	3	4	2	226	4	31	312	0	593
8:00 AM	0	1	7	2	8	1	2	212	2	35	327	0	597
8:15 AM	2	2	11	3	5	3	1	207	1	29	353	3	620
8:30 AM	7	0	12	5	1	1	4	181	0	33	363	4	611
8:45 AM	5	1	14	4	1	2	0	197	4	18	338	3	587
9:00 AM	1	1	10	0	0	1	5	192	1	10	246	3	470
9:15 AM	2	0	8	5	1	2	2	167	1	10	261	2	461
TOTAL VOLUMES :	30	8	122	44	34	36	31	2210	16	255	3836	25	6647
APPROACH %'s :	18.75%	5.00%	76.25%	38.60%	29.82%	31.58%	1.37%	97.92%	0.71%	6.20%	93.20%	0.61%	
PEAK HR :	07:15 AM - 08:15 AM												TOTAL
PEAK HR VOL :	7	3	42	17	21	18	12	892	7	111	1404	5	2539
PEAK HR FACTOR :	0.438	0.375	0.700	0.708	0.656	0.643	0.750	0.881	0.438	0.793	0.914	0.417	0.898
		0.684			0.824			0.883			0.920		

NS/EW Streets:	Livingston St			Livingston St			Randolph Rd			Randolph Rd			TOTAL
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
PM	0	1	0	0	1	0	1	3	0	1	3	0	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	7	1	10	1	3	2	4	355	3	28	238	2	654
4:15 PM	1	3	14	3	2	2	3	342	5	16	188	4	583
4:30 PM	3	0	9	0	1	2	9	358	3	20	238	1	644
4:45 PM	3	2	5	2	4	0	6	372	2	23	225	5	649
5:00 PM	2	0	10	1	4	5	9	398	1	12	211	4	657
5:15 PM	6	1	13	1	3	1	5	351	1	24	227	2	635
5:30 PM	1	1	11	3	0	2	7	377	4	22	211	4	643
5:45 PM	1	1	9	2	2	1	4	372	1	21	205	3	622
6:00 PM	2	1	9	2	1	2	8	384	1	19	215	1	645
6:15 PM	3	2	5	1	2	2	7	333	9	18	197	2	581
6:30 PM	3	1	10	3	2	0	8	323	4	14	172	3	543
6:45 PM	3	1	10	2	4	1	6	254	4	26	142	1	454
TOTAL VOLUMES :	35	14	115	21	28	20	76	4219	38	243	2469	32	7310
APPROACH %'s :	21.34%	8.54%	70.12%	30.43%	40.58%	28.99%	1.75%	97.37%	0.88%	8.86%	89.98%	1.17%	
PEAK HR :	04:30 PM - 05:30 PM												TOTAL
PEAK HR VOL :	14	3	37	4	12	8	29	1479	7	79	901	12	2585
PEAK HR FACTOR :	0.583	0.375	0.712	0.500	0.750	0.400	0.806	0.929	0.583	0.823	0.946	0.600	0.984
		0.675			0.600			0.928			0.958		

National Data & Surveying Services Intersection Turning Movement Count

Location: Livingston St & Randolph Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Bikes

NS/EW Streets:	Livingston St			Livingston St			Randolph Rd			Randolph Rd				
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	0 NL	1 NT	0 NR	0 SL	1 ST	0 SR	1 EL	3 ET	0 ER	1 WL	3 WT	0 WR		
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	TOTAL	0
APPROACH %'s :														
PEAK HR :	07:15 AM - 08:15 AM												TOTAL	0
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	TOTAL	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	TOTAL	0

PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	0 NL	1 NT	0 NR	0 SL	1 ST	0 SR	1 EL	3 ET	0 ER	1 WL	3 WT	0 WR		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1	0	0	TOTAL	1
APPROACH %'s :										100.00%	0.00%	0.00%		
PEAK HR :	04:30 PM - 05:30 PM												TOTAL	1
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	TOTAL	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	TOTAL	0.250

National Data & Surveying Services Intersection Turning Movement Count

Location: Livingston St & Randolph Rd
City: Silver Spring

Project ID: 22-280035-001
Date: 10/4/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Livingston St		Livingston St		Randolph Rd		Randolph Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
6:30 AM	0	0	1	1	0	0	0	0	2
6:45 AM	0	0	0	0	2	0	2	0	4
7:00 AM	0	0	0	1	1	1	1	0	4
7:15 AM	1	0	0	1	1	0	1	0	4
7:30 AM	1	1	0	0	1	1	1	0	5
7:45 AM	1	1	0	0	3	0	0	0	5
8:00 AM	0	0	0	0	0	0	1	0	1
8:15 AM	0	1	0	0	1	0	2	1	5
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	1	0	0	0	1
9:15 AM	0	0	1	0	1	0	0	0	2
TOTAL VOLUMES :	3	3	2	3	11	2	8	1	33
APPROACH %'s :	50.00%	50.00%	40.00%	60.00%	84.62%	15.38%	88.89%	11.11%	
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	3	2	0	1	5	1	3	0	15
PEAK HR FACTOR :	0.750	0.500	0.250		0.417	0.250	0.750	0.750	0.750
	0.625		0.250		0.500		0.750		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	1	0	0	1	0	0	0	2
4:15 PM	0	0	0	0	0	1	2	0	3
4:30 PM	0	0	0	0	0	0	1	1	2
4:45 PM	0	1	0	0	0	0	0	0	1
5:00 PM	2	3	1	1	1	5	2	6	21
5:15 PM	0	0	0	0	0	0	1	0	1
5:30 PM	0	0	0	0	0	1	0	1	2
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	1	1	0	1	2	0	5
6:15 PM	0	0	0	1	0	2	0	2	5
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	1	0	2	0	3
TOTAL VOLUMES :	2	5	2	3	3	10	10	10	45
APPROACH %'s :	28.57%	71.43%	40.00%	60.00%	23.08%	76.92%	50.00%	50.00%	
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	2	4	1	1	1	5	4	7	25
PEAK HR FACTOR :	0.250	0.333	0.250	0.250	0.250	0.250	0.500	0.292	0.298
	0.300		0.250		0.250		0.344		

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Randolph Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Total

NS/EW Streets:	Georgia Ave			Georgia Ave			Randolph Rd			Randolph Rd			
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	2 NL	3 NT	1 NR	2 SL	3 ST	1 SR	1.5 EL	0.5 ET	1 ER	2.5 WL	0.5 WT	1 WR	
6:30 AM	15	90	20	8	234	20	29	5	18	84	8	15	546
6:45 AM	25	90	26	18	289	28	29	6	35	98	4	18	666
7:00 AM	33	128	21	9	369	25	21	11	26	171	12	17	843
7:15 AM	52	153	52	19	411	36	47	23	38	128	12	27	998
7:30 AM	51	187	44	15	410	29	43	7	62	149	14	36	1047
7:45 AM	39	215	47	11	380	23	44	12	58	185	12	33	1059
8:00 AM	29	207	43	18	396	30	40	14	59	207	9	34	1086
8:15 AM	33	177	44	11	392	30	47	5	32	192	16	28	1007
8:30 AM	30	164	44	9	349	39	50	14	31	135	14	25	904
8:45 AM	26	152	42	13	342	54	39	6	30	154	13	43	914
9:00 AM	18	136	54	13	310	27	41	11	29	122	16	27	804
9:15 AM	28	151	50	23	286	28	34	10	40	103	13	24	790
TOTAL VOLUMES :	379	1850	487	167	4168	369	464	124	458	1728	143	327	10664
APPROACH %'s :	13.95%	68.11%	17.93%	3.55%	88.61%	7.84%	44.36%	11.85%	43.79%	78.62%	6.51%	14.88%	
PEAK HR :	07:30 AM - 08:30 AM												TOTAL
PEAK HR VOL :	152	786	178	55	1578	112	174	38	211	733	51	131	4199
PEAK HR FACTOR :	0.745	0.914	0.947	0.764	0.962	0.933	0.926	0.679	0.851	0.885	0.797	0.910	0.967
		0.927			0.961			0.928			0.915		
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	2 NL	3 NT	1 NR	2 SL	3 ST	1 SR	1.5 EL	0.5 ET	1 ER	2.5 WL	0.5 WT	1 WR	
4:00 PM	39	335	64	21	244	27	63	9	35	84	22	17	960
4:15 PM	32	371	103	19	225	34	56	20	39	71	10	17	997
4:30 PM	52	321	86	16	232	27	52	11	41	83	7	34	962
4:45 PM	50	371	89	20	280	37	60	11	35	95	17	35	1100
5:00 PM	38	318	104	22	223	41	83	14	35	86	10	33	1007
5:15 PM	37	363	71	26	232	42	67	13	44	93	13	29	1030
5:30 PM	34	371	85	22	259	30	60	10	31	73	19	27	1021
5:45 PM	28	384	79	16	264	28	80	8	42	97	14	25	1065
6:00 PM	39	338	74	18	251	41	75	15	29	93	9	21	1003
6:15 PM	35	332	83	21	249	25	54	12	21	75	20	22	949
6:30 PM	28	317	55	23	212	29	77	8	29	88	11	25	902
6:45 PM	29	324	71	17	239	31	70	10	47	69	10	28	945
TOTAL VOLUMES :	441	4145	964	241	2910	392	797	141	428	1007	162	313	11941
APPROACH %'s :	7.95%	74.68%	17.37%	6.80%	82.13%	11.06%	58.35%	10.32%	31.33%	67.95%	10.93%	21.12%	
PEAK HR :	04:45 PM - 05:45 PM												TOTAL
PEAK HR VOL :	159	1423	349	90	994	150	270	48	145	347	59	124	4158
PEAK HR FACTOR :	0.795	0.959	0.839	0.865	0.888	0.893	0.813	0.857	0.824	0.913	0.776	0.886	0.945
		0.947			0.915			0.877			0.901		

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Randolph Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Bikes

NS/EW Streets:	Georgia Ave			Georgia Ave			Randolph Rd			Randolph Rd				
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	2 NL	3 NT	1 NR	2 SL	3 ST	1 SR	1.5 EL	0.5 ET	1 ER	2.5 WL	0.5 WT	1 WR		
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	1	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	1	0	0	0	0	0	0	0	0	TOTAL	1
APPROACH %'s :				100.00%	0.00%	0.00%								
PEAK HR :	07:30 AM - 08:30 AM												TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	TOTAL	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		

PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	2 NL	3 NT	1 NR	2 SL	3 ST	1 SR	1.5 EL	0.5 ET	1 ER	2.5 WL	0.5 WT	1 WR		
4:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	1	0	0	0	0	1	0	0	2	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	
6:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	
TOTAL VOLUMES :	0	3	0	0	2	0	1	0	0	2	0	0	TOTAL	8
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%		
PEAK HR :	04:45 PM - 05:45 PM												TOTAL	
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	0	TOTAL	1
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.250

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Randolph Rd
City: Silver Spring

Project ID: 22-280035-002
Date: 10/4/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Georgia Ave		Georgia Ave		Randolph Rd		Randolph Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
6:30 AM	0	0	0	0	5	1	1	0	7
6:45 AM	1	3	0	0	7	2	0	0	13
7:00 AM	1	2	0	0	3	1	0	0	7
7:15 AM	0	4	1	0	10	2	2	1	20
7:30 AM	3	1	0	0	3	1	2	0	10
7:45 AM	0	3	1	0	6	5	1	0	16
8:00 AM	1	1	1	0	2	4	2	1	12
8:15 AM	0	3	0	0	3	2	0	2	10
8:30 AM	0	0	1	2	3	2	2	2	12
8:45 AM	0	2	0	0	4	3	0	2	11
9:00 AM	0	0	0	0	1	4	1	0	6
9:15 AM	0	3	0	1	4	2	0	1	11
TOTAL VOLUMES :	6	22	4	3	51	29	11	9	135
APPROACH %'s :	21.43%	78.57%	57.14%	42.86%	63.75%	36.25%	55.00%	45.00%	
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	4	8	2	0	14	12	5	3	48
PEAK HR FACTOR :	0.333	0.667	0.500		0.583	0.600	0.625	0.375	0.750
	0.750		0.500		0.591		0.667		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	3	1	0	12	8	0	0	24
4:15 PM	0	1	2	0	1	3	3	3	13
4:30 PM	0	1	0	1	12	13	3	1	31
4:45 PM	2	3	0	1	3	10	0	1	20
5:00 PM	1	0	2	2	1	13	4	2	25
5:15 PM	0	0	0	0	3	3	1	1	8
5:30 PM	0	3	1	0	1	4	1	2	12
5:45 PM	0	0	0	0	3	4	0	0	7
6:00 PM	2	0	0	1	8	11	2	0	24
6:15 PM	1	1	1	2	1	2	0	0	8
6:30 PM	0	0	0	1	1	4	0	2	8
6:45 PM	0	2	0	0	7	8	2	2	21
TOTAL VOLUMES :	6	14	7	8	53	83	16	14	201
APPROACH %'s :	30.00%	70.00%	46.67%	53.33%	38.97%	61.03%	53.33%	46.67%	
PEAK HR :	04:45 PM - 05:45 PM								TOTAL
PEAK HR VOL :	3	6	3	3	8	30	6	6	65
PEAK HR FACTOR :	0.375	0.500	0.375	0.375	0.667	0.577	0.375	0.750	0.650
	0.450		0.375		0.679		0.500		

National Data & Surveying Services Intersection Turning Movement Count

Location: Glenmont Cir & Randolph Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035
Date: 10/4/2022

Data - Total

NS/EW Streets:	Glenmont Cir				Glenmont Cir				Randolph Rd			Randolph Rd							
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND			WESTBOUND				EASTBOUND2			TOTAL
	0.5 NL	0.5 NT	1 NR	0 NL2	0 SL	2 ST	0 SR	0 SR2	0 EL	1 ET	0 ER	1 WL	4 WT	0 WR	0 WT2	0 E2L2	0 E2T2		
6:30 AM	11	0	4	8	8	0	2	0	32	0	3	84	2	213	2	60	429		
6:45 AM	8	1	3	2	8	0	1	0	43	0	3	115	6	226	1	95	512		
7:00 AM	7	4	4	5	5	3	2	1	35	0	1	186	5	288	0	94	640		
7:15 AM	8	2	2	10	11	5	9	2	84	0	4	152	9	279	3	148	728		
7:30 AM	13	1	7	7	11	1	9	2	59	0	6	178	4	296	5	149	748		
7:45 AM	9	1	5	3	9	2	6	0	61	1	2	210	11	264	5	156	745		
8:00 AM	7	6	3	3	7	1	14	1	66	0	5	234	7	283	5	146	788		
8:15 AM	7	1	2	7	15	3	13	1	53	0	6	211	8	303	3	132	765		
8:30 AM	10	7	10	1	18	0	8	1	60	0	11	159	11	312	3	120	731		
8:45 AM	6	4	1	3	19	5	13	1	55	0	15	179	10	271	3	150	735		
9:00 AM	9	2	4	2	16	2	18	1	66	0	13	147	12	206	7	135	640		
9:15 AM	9	1	1	3	20	3	13	2	78	0	3	113	7	193	4	118	568		
TOTAL VOLUMES :	NL	NT	NR	NL2	SL	ST	SR	SR2	EL	ET	ER	WL	WT	WR	WT2	E2L2	E2T2	TOTAL	
APPROACH %'s :	44.44%	12.82%	19.66%	23.08%	50.34%	8.56%	36.99%	4.11%	0.00%	99.86%	0.14%	1.37%	37.37%	1.75%	59.51%	2.66%	97.34%	8029	
PEAK HR :	07:30 AM - 08:30 AM																		TOTAL
PEAK HR VOL :	36	9	17	20	42	7	42	4	0	239	1	19	833	30	1146	18	583	3046	
PEAK HR FACTOR :	0.692	0.375	0.607	0.714	0.700	0.583	0.750	0.500	0.000	0.905	0.250	0.792	0.890	0.682	0.946	0.900	0.934	0.966	
	0.732				0.742				0.909			0.958							
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND			WESTBOUND				EASTBOUND2			TOTAL
	0.5 NL	0.5 NT	1 NR	0 NL2	0 SL	2 ST	0 SR	0 SR2	0 EL	1 ET	0 ER	1 WL	4 WT	0 WR	0 WT2	0 E2L2	0 E2T2		
4:00 PM	7	3	2	1	20	2	21	2	0	88	1	9	90	29	181	3	281	740	
4:15 PM	8	6	6	4	24	6	21	6	0	112	0	7	70	12	128	10	254	674	
4:30 PM	9	6	4	1	12	0	11	4	0	98	1	6	98	23	168	5	262	708	
4:45 PM	13	4	4	1	20	6	19	7	0	104	0	6	121	18	164	8	249	744	
5:00 PM	10	2	5	4	19	7	15	3	0	107	3	9	95	17	127	14	294	731	
5:15 PM	12	5	2	4	23	4	23	7	0	107	0	9	97	21	167	4	275	760	
5:30 PM	14	8	1	2	15	9	23	3	0	103	1	7	90	19	150	8	268	721	
5:45 PM	9	11	3	5	22	1	26	3	0	82	0	9	96	22	164	7	274	734	
6:00 PM	9	5	2	5	19	6	16	4	0	95	1	7	93	21	139	9	281	712	
6:15 PM	10	6	3	5	27	7	22	5	0	102	0	4	87	14	138	8	261	699	
6:30 PM	10	6	1	10	15	2	19	2	0	75	0	11	90	16	110	5	214	586	
6:45 PM	12	4	4	3	17	4	17	10	0	87	0	5	76	15	104	11	166	535	
TOTAL VOLUMES :	NL	NT	NR	NL2	SL	ST	SR	SR2	EL	ET	ER	WL	WT	WR	WT2	E2L2	E2T2	TOTAL	
APPROACH %'s :	45.39%	24.35%	13.65%	16.61%	40.45%	9.38%	40.45%	9.72%	0.00%	99.40%	0.60%	2.82%	34.92%	7.19%	55.08%	2.90%	97.10%	8344	
PEAK HR :	04:45 PM - 05:45 PM																		TOTAL
PEAK HR VOL :	49	19	12	11	77	26	80	20	0	421	4	31	403	75	608	34	1086	2956	
PEAK HR FACTOR :	0.875	0.594	0.600	0.688	0.837	0.722	0.870	0.714	0.000	0.984	0.333	0.861	0.833	0.893	0.910	0.607	0.923	0.972	
	0.910				0.890				0.966			0.904							

National Data & Surveying Services Intersection Turning Movement Count

Location: Glenmont Cir & Randolph Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035
Date: 10/4/2022

Data - Bikes

NS/EW Streets:	Glenmont Cir				Glenmont Cir				Randolph Rd			Randolph Rd							
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND			WESTBOUND				EASTBOUND2		TOTAL	
	0.5 NL	0.5 NT	1 NR	0 NL2	0 SL	2 ST	0 SR	0 SR2	0 EL	1 ET	0 ER	1 WL	4 WT	0 WR	0 WT2	0 E2L2	0 E2T2		
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	NL	NT	NR	NL2	SL	ST	SR	SR2	EL	ET	ER	WL	WT	WR	WT2	E2L2	E2T2	TOTAL	
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR :	07:30 AM - 08:30 AM																		
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND			WESTBOUND				EASTBOUND2		TOTAL	
	0.5 NL	0.5 NT	1 NR	0 NL2	0 SL	2 ST	0 SR	0 SR2	0 EL	1 ET	0 ER	1 WL	4 WT	0 WR	0 WT2	0 E2L2	0 E2T2		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
6:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
6:45 PM	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	3	
TOTAL VOLUMES :	NL	NT	NR	NL2	SL	ST	SR	SR2	EL	ET	ER	WL	WT	WR	WT2	E2L2	E2T2	TOTAL	
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	33.33%	33.33%	33.33%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	7	
PEAK HR :	04:45 PM - 05:45 PM																		
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250

National Data & Surveying Services Intersection Turning Movement Count

Location: Glenmont Cir & Randolph Rd
City: Silver Spring

Project ID: 22-280035-003
Date: 10/4/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Glenmont Cir		Glenmont Cir		Randolph Rd		Randolph Rd				
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		WEST LEG 2		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	
	6:30 AM	0	1	0	0	6	0	0	0	0	7
	6:45 AM	2	2	1	0	6	0	0	0	0	11
	7:00 AM	1	2	1	0	3	1	0	0	0	8
	7:15 AM	1	0	0	3	6	1	0	0	0	11
	7:30 AM	1	0	2	0	5	0	0	0	0	8
	7:45 AM	1	0	0	0	0	0	0	0	0	1
	8:00 AM	2	0	3	0	1	0	0	0	0	6
	8:15 AM	0	1	0	1	4	2	0	0	0	8
	8:30 AM	0	1	1	0	0	0	0	0	0	2
	8:45 AM	2	3	0	2	2	2	0	0	0	11
	9:00 AM	0	1	1	0	4	2	0	0	0	8
	9:15 AM	0	0	1	1	2	0	0	1	0	6
TOTAL VOLUMES :	10	11	10	7	39	8	0	1	0	1	TOTAL 87
APPROACH %'s :	47.62%	52.38%	58.82%	41.18%	82.98%	17.02%	0.00%	100.00%	0.00%	100.00%	
PEAK HR :	07:30 AM - 08:30 AM										TOTAL
PEAK HR VOL :	4	1	5	1	10	2	0	0	0	0	23
PEAK HR FACTOR :	0.500	0.250	0.417	0.250	0.500	0.250					0.719
	0.625		0.500		0.500						
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		WEST LEG 2		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	
	4:00 PM	0	2	0	1	3	1	0	0	0	7
	4:15 PM	0	0	1	2	3	3	0	0	0	9
	4:30 PM	1	0	0	1	1	4	0	0	0	7
	4:45 PM	3	0	0	4	11	3	0	0	0	21
	5:00 PM	2	0	1	0	6	5	0	0	0	14
	5:15 PM	2	0	2	0	3	7	0	1	0	16
	5:30 PM	2	0	1	1	3	6	0	0	0	13
	5:45 PM	0	1	0	0	3	2	0	0	0	6
	6:00 PM	4	0	0	0	2	4	0	0	0	10
	6:15 PM	0	2	0	1	1	4	0	0	0	8
	6:30 PM	1	0	0	0	3	2	0	0	0	6
	6:45 PM	4	0	0	0	0	3	0	0	0	7
TOTAL VOLUMES :	19	5	5	10	39	44	0	1	0	1	TOTAL 124
APPROACH %'s :	79.17%	20.83%	33.33%	66.67%	46.99%	53.01%	0.00%	100.00%	0.00%	100.00%	
PEAK HR :	04:45 PM - 05:45 PM										TOTAL
PEAK HR VOL :	9	0	4	5	23	21	0	1	0	1	64
PEAK HR FACTOR :	0.750		0.500	0.313	0.523	0.750		0.250		0.250	0.762
	0.750		0.563		0.786		0.250		0.250		

National Data & Surveying Services Intersection Turning Movement Count

Location: Residential Dwy/Universal Hardwood & Painting Dwy & Randolph Rd
City: Silver Spring
Control: 1-Way Stop(NB)

Project ID: 22-280035-
Date: 10/4/2022

Data - Total

NS/EW Streets:	Residential Dwy/Universal Hardwood & Painting Dwy			Residential Dwy/Universal Hardwood & Painting Dwy			Randolph Rd			Randolph Rd			
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:30 AM	0	0	9	0	0	0	0	102	1	0	0	0	112
6:45 AM	0	0	6	0	0	0	0	150	1	0	0	0	157
7:00 AM	0	0	8	0	0	0	0	132	0	0	0	0	140
7:15 AM	0	0	10	0	0	0	0	248	0	0	0	0	258
7:30 AM	0	0	11	0	0	0	0	227	2	0	0	0	240
7:45 AM	0	0	4	0	0	0	0	227	0	0	0	0	231
8:00 AM	0	0	7	0	0	0	0	226	0	0	0	0	233
8:15 AM	0	0	5	0	0	0	0	196	1	0	0	0	202
8:30 AM	0	0	20	0	0	0	0	213	1	0	0	0	234
8:45 AM	0	0	8	0	0	0	0	222	1	0	0	0	231
9:00 AM	0	0	2	0	0	0	0	220	0	0	0	0	222
9:15 AM	0	0	3	0	0	0	0	219	0	0	0	0	222
TOTAL VOLUMES :	0	0	93	0	0	0	0	2382	7	0	0	0	2482
APPROACH %'s :	0.00%	0.00%	100.00%				0.00%	99.71%	0.29%				
PEAK HR :	07:15 AM - 08:15 AM												TOTAL
PEAK HR VOL :	0	0	32	0	0	0	0	928	2	0	0	0	962
PEAK HR FACTOR :	0.000	0.000	0.727	0.000	0.000	0.000	0.000	0.935	0.250	0.000	0.000	0.000	0.932
			0.727					0.938					
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	0	5	0	0	0	0	395	2	0	0	0	402
4:15 PM	0	0	6	0	0	0	0	390	3	0	0	0	399
4:30 PM	0	0	6	0	0	0	0	379	2	0	0	0	387
4:45 PM	0	0	9	0	0	0	0	370	1	0	0	0	380
5:00 PM	0	0	7	0	0	0	0	428	3	0	0	0	438
5:15 PM	0	0	7	0	0	0	0	402	4	0	0	0	413
5:30 PM	0	0	6	0	0	0	0	387	4	0	0	0	397
5:45 PM	0	0	3	0	0	0	0	378	3	0	0	0	384
6:00 PM	0	0	3	0	0	0	0	395	5	0	0	0	403
6:15 PM	0	0	4	0	0	0	0	389	4	0	0	0	397
6:30 PM	0	0	2	0	0	0	0	301	3	0	0	0	306
6:45 PM	0	0	3	0	0	0	0	275	4	0	0	0	282
TOTAL VOLUMES :	0	0	61	0	0	0	0	4489	38	0	0	0	4588
APPROACH %'s :	0.00%	0.00%	100.00%				0.00%	99.16%	0.84%				
PEAK HR :	05:00 PM - 06:00 PM												TOTAL
PEAK HR VOL :	0	0	23	0	0	0	0	1595	14	0	0	0	1632
PEAK HR FACTOR :	0.000	0.000	0.821	0.000	0.000	0.000	0.000	0.932	0.875	0.000	0.000	0.000	0.932
			0.821					0.933					

National Data & Surveying Services Intersection Turning Movement Count

Location: Residential Dwy/Universal Hardwood & Painting Dwy & Randolph Rd
City: Silver Spring
Control: 1-Way Stop(NB)

Project ID: 22-280035-
Date: 10/4/2022

Data - Bikes

NS/EW Streets:	Residential Dwy/Universal Hardwood & Painting Dwy			Residential Dwy/Universal Hardwood & Painting Dwy			Randolph Rd			Randolph Rd			
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	0	0	0	0	1	0	0	0	0	1
APPROACH %'s :							0.00%	100.00%	0.00%				
PEAK HR :	07:15 AM - 08:15 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL VOLUMES :	0	0	0	0	0	0	0	2	0	0	1	0	3
APPROACH %'s :							0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services Intersection Turning Movement Count

Location: Residential Dwy/Universal Hardwood & Painting Dwy & Randolph Rd Project ID: 22-280035-004
City: Silver Spring Date: 10/4/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Residential Dwy/Universal Hardwood & Painting Dwy		Residential Dwy/Universal Hardwood & Painting Dwy		Randolph Rd		Randolph Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	1	0	0	0	0	0	1
7:30 AM	0	0	4	0	0	0	0	0	4
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	2	1	0	0	0	0	3
8:15 AM	0	0	0	0	1	0	0	0	1
8:30 AM	0	0	1	0	0	0	0	0	1
8:45 AM	0	0	0	4	0	0	0	0	4
9:00 AM	0	0	1	1	0	0	0	0	2
9:15 AM	0	0	1	0	0	0	0	0	1
TOTAL VOLUMES :	0	0	10	6	1	0	0	0	17
APPROACH %'s :			62.50%	37.50%	100.00%	0.00%			
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	0	0	7	1	0	0	0	0	8
PEAK HR FACTOR :			0.438	0.250			0.500		0.500

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	3	0	0	0	0	0	3
4:15 PM	0	0	1	2	0	0	0	0	3
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	0	0	0	1	0	2
5:30 PM	0	0	0	0	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	5	2	0	0	1	1	9
APPROACH %'s :			71.43%	28.57%			50.00%	50.00%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	0	0	1	0	0	0	1	1	3
PEAK HR FACTOR :			0.250	0.250			0.500		0.375

National Data & Surveying Services Intersection Turning Movement Count

Location: Glenallan Ave & Randolph Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Total

NS/EW Streets:	Glenallan Ave			Glenallan Ave			Randolph Rd			Randolph Rd			
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	0 NL	1 NT	0 NR	0 SL	2 ST	0 SR	1 EL	3 ET	0 ER	1 WL	3 WT	0 WR	
6:30 AM	3	3	0	34	4	15	3	109	1	0	280	54	506
6:45 AM	6	4	0	42	4	21	7	144	3	1	307	49	588
7:00 AM	7	1	1	57	9	25	7	134	1	1	398	43	684
7:15 AM	10	2	1	88	12	25	9	232	8	1	397	48	833
7:30 AM	13	22	0	69	14	24	6	229	13	0	459	51	900
7:45 AM	12	44	0	83	15	13	6	216	9	0	479	66	943
8:00 AM	18	24	0	74	8	25	14	208	7	1	479	46	904
8:15 AM	12	16	0	62	18	24	7	186	6	1	506	35	873
8:30 AM	16	10	1	58	14	20	7	216	16	1	424	37	820
8:45 AM	30	25	0	67	11	21	5	212	8	2	408	37	826
9:00 AM	11	6	1	40	9	19	8	215	4	1	349	40	703
9:15 AM	4	2	2	57	12	14	6	203	11	1	307	31	650
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	142	159	6	731	130	246	85	2304	87	10	4793	537	9230
	46.25%	51.79%	1.95%	66.03%	11.74%	22.22%	3.43%	93.05%	3.51%	0.19%	89.76%	10.06%	
PEAK HR :	07:30 AM - 08:30 AM												TOTAL
PEAK HR VOL :	55	106	0	288	55	86	33	839	35	2	1923	198	3620
PEAK HR FACTOR :	0.764	0.602	0.000	0.867	0.764	0.860	0.589	0.916	0.673	0.500	0.950	0.750	0.960
		0.719			0.966			0.914			0.974		
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	0 NL	1 NT	0 NR	0 SL	2 ST	0 SR	1 EL	3 ET	0 ER	1 WL	3 WT	0 WR	
4:00 PM	9	10	1	49	8	19	11	388	8	0	305	51	859
4:15 PM	5	15	0	52	7	5	14	369	11	0	189	29	696
4:30 PM	6	5	2	83	4	12	13	362	5	2	272	42	808
4:45 PM	7	4	0	44	7	16	17	358	11	2	281	71	818
5:00 PM	8	8	0	74	6	21	27	396	5	0	226	49	820
5:15 PM	10	9	3	50	8	15	19	388	9	1	281	51	844
5:30 PM	14	15	2	56	4	18	25	358	6	3	217	56	774
5:45 PM	7	8	3	39	3	22	17	362	6	1	292	70	830
6:00 PM	9	4	0	63	9	27	18	369	5	1	219	49	773
6:15 PM	6	3	0	49	6	17	20	368	10	1	218	43	741
6:30 PM	3	9	0	46	1	11	18	269	4	2	200	58	621
6:45 PM	5	1	1	43	1	10	15	264	9	1	177	43	570
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	89	91	12	648	64	193	214	4251	89	14	2877	612	9154
	46.35%	47.40%	6.25%	71.60%	7.07%	21.33%	4.70%	93.35%	1.95%	0.40%	82.13%	17.47%	
PEAK HR :	04:30 PM - 05:30 PM												TOTAL
PEAK HR VOL :	31	26	5	251	25	64	76	1504	30	5	1060	213	3290
PEAK HR FACTOR :	0.775	0.722	0.417	0.756	0.781	0.762	0.704	0.949	0.682	0.625	0.943	0.750	0.975
		0.705			0.842			0.940			0.903		

National Data & Surveying Services Intersection Turning Movement Count

Location: Glenallan Ave & Randolph Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Bikes

NS/EW Streets:	Glenallan Ave			Glenallan Ave			Randolph Rd			Randolph Rd			
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	0 NL	1 NT	0 NR	0 SL	2 ST	0 SR	1 EL	3 ET	0 ER	1 WL	3 WT	0 WR	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	1	0	0	0	1	0	0	0	0	TOTAL
APPROACH %'s :				100.00%	0.00%	0.00%	0.00%	100.00%	0.00%				2
PEAK HR :	07:30 AM - 08:30 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	0 NL	1 NT	0 NR	0 SL	2 ST	0 SR	1 EL	3 ET	0 ER	1 WL	3 WT	0 WR	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL VOLUMES :	1	0	0	1	0	0	0	1	0	0	0	1	TOTAL
APPROACH %'s :	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	4
PEAK HR :	04:30 PM - 05:30 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	0	0	0	1	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.500

National Data & Surveying Services Intersection Turning Movement Count

Location: Glenallan Ave & Randolph Rd
City: Silver Spring

Project ID: 22-280035-005
Date: 10/4/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Glenallan Ave		Glenallan Ave		Randolph Rd		Randolph Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
6:30 AM	0	0	1	0	0	0	0	0	1
6:45 AM	1	0	0	2	0	0	2	0	5
7:00 AM	4	1	0	0	0	0	1	0	6
7:15 AM	4	0	5	0	2	3	1	0	15
7:30 AM	5	0	10	0	1	0	2	0	18
7:45 AM	2	0	0	0	0	1	0	0	3
8:00 AM	1	1	1	1	0	1	2	0	7
8:15 AM	2	0	4	1	0	9	0	0	16
8:30 AM	0	3	40	3	3	65	0	0	114
8:45 AM	4	3	22	22	25	11	1	0	88
9:00 AM	4	1	1	1	1	4	0	0	12
9:15 AM	1	4	0	2	4	0	1	0	12
TOTAL VOLUMES :	28	13	84	32	36	94	10	0	297
APPROACH %'s :	68.29%	31.71%	72.41%	27.59%	27.69%	72.31%	100.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	10	1	15	2	1	11	4	0	44
PEAK HR FACTOR :	0.500	0.250	0.375	0.500	0.250	0.306	0.500	0.500	0.611
	0.550		0.425		0.333		0.500		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	5	2	1	0	1	1	3	1	14
4:15 PM	2	2	2	2	0	0	0	2	10
4:30 PM	1	1	0	0	0	2	0	0	4
4:45 PM	0	1	0	0	0	0	0	0	1
5:00 PM	2	6	0	2	0	0	1	0	11
5:15 PM	4	0	0	0	0	0	0	0	4
5:30 PM	1	0	0	0	0	0	0	1	2
5:45 PM	0	1	0	3	0	0	0	0	4
6:00 PM	3	1	0	0	0	1	0	0	5
6:15 PM	0	3	0	0	2	0	0	1	6
6:30 PM	2	0	1	1	0	0	0	1	5
6:45 PM	2	0	0	1	0	0	0	0	3
TOTAL VOLUMES :	22	17	4	9	3	4	4	6	69
APPROACH %'s :	56.41%	43.59%	30.77%	69.23%	42.86%	57.14%	40.00%	60.00%	
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	7	8	0	2	0	2	1	0	20
PEAK HR FACTOR :	0.438	0.333	0	0.250	0	0.250	0.250	0.250	0.455
	0.469		0.250		0.250		0.250		

National Data & Surveying Services Intersection Turning Movement Count

Location: Garden Gate Rd/Middlevale Ln & Randolph Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Total

NS/EW Streets:	Garden Gate Rd/Middlevale Ln			Garden Gate Rd/Middlevale Ln			Randolph Rd			Randolph Rd			
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:30 AM	2	0	5	9	1	3	3	130	0	4	342	17	516
6:45 AM	6	2	2	14	0	8	5	171	3	4	359	11	585
7:00 AM	11	1	2	30	1	20	5	192	4	10	489	9	774
7:15 AM	12	0	0	50	3	38	24	279	3	16	454	14	893
7:30 AM	11	3	5	54	2	32	36	279	4	24	441	27	918
7:45 AM	5	2	2	39	3	16	4	289	1	28	566	44	999
8:00 AM	7	5	2	30	5	5	4	256	8	14	535	22	893
8:15 AM	8	7	7	29	5	6	6	235	1	8	540	36	888
8:30 AM	12	5	2	43	1	12	1	224	1	14	473	17	805
8:45 AM	18	12	21	28	7	12	3	237	4	4	386	19	751
9:00 AM	10	4	5	17	1	6	7	262	2	2	329	18	663
9:15 AM	3	2	3	16	1	8	4	249	1	3	333	18	641
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	105	43	56	359	30	166	102	2803	32	131	5247	252	9326
	51.47%	21.08%	27.45%	64.68%	5.41%	29.91%	3.47%	95.44%	1.09%	2.33%	93.20%	4.48%	
PEAK HR :	07:15 AM - 08:15 AM												TOTAL
PEAK HR VOL :	35	10	9	173	13	91	68	1103	16	82	1996	107	3703
PEAK HR FACTOR :	0.729	0.500	0.450	0.801	0.650	0.599	0.472	0.954	0.500	0.732	0.882	0.608	0.927
		0.711			0.761			0.930			0.856		
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	3	5	3	21	4	5	5	398	9	4	344	42	843
4:15 PM	9	3	3	22	1	9	2	401	2	8	180	42	682
4:30 PM	7	2	5	26	2	8	7	413	6	9	312	48	845
4:45 PM	5	0	3	28	2	9	5	403	7	9	318	33	822
5:00 PM	6	0	2	30	1	5	11	437	9	11	321	31	864
5:15 PM	6	5	3	27	1	5	2	433	8	6	294	35	825
5:30 PM	5	3	5	19	0	4	3	393	7	4	281	54	778
5:45 PM	9	1	2	28	2	6	5	411	6	6	310	38	824
6:00 PM	7	7	1	20	1	5	6	403	4	6	264	26	750
6:15 PM	9	5	2	11	1	13	5	384	8	3	254	29	724
6:30 PM	2	0	1	21	1	1	4	325	9	7	240	36	647
6:45 PM	6	2	1	8	2	6	3	285	6	6	184	27	536
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	74	33	31	261	18	76	58	4686	81	79	3302	441	9140
	53.62%	23.91%	22.46%	73.52%	5.07%	21.41%	1.20%	97.12%	1.68%	2.07%	86.39%	11.54%	
PEAK HR :	04:30 PM - 05:30 PM												TOTAL
PEAK HR VOL :	24	7	13	111	6	27	25	1686	30	35	1245	147	3356
PEAK HR FACTOR :	0.857	0.350	0.650	0.925	0.750	0.750	0.568	0.965	0.833	0.795	0.970	0.766	0.971
		0.786			0.923			0.952			0.967		

National Data & Surveying Services Intersection Turning Movement Count

Location: Garden Gate Rd/Middlevale Ln & Randolph Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Bikes

NS/EW Streets:	Garden Gate Rd/Middlevale Ln			Garden Gate Rd/Middlevale Ln			Randolph Rd			Randolph Rd				
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	0	0	1	0	0	0	0	TOTAL	1
APPROACH %'s :							0.00%	100.00%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM												TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	TOTAL	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		

PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	
4:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	1	1	0	0	0	0	0	TOTAL	2
APPROACH %'s :				0.00%	0.00%	100.00%	100.00%	0.00%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM												TOTAL	
PEAK HR VOL :	0	0	0	0	0	1	0	0	0	0	0	0	TOTAL	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000		0.250

National Data & Surveying Services Intersection Turning Movement Count

Location: Garden Gate Rd/Middlevale Ln & Randolph Rd
City: Silver Spring

Project ID: 22-280035-006
Date: 10/4/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Garden Gate Rd/Middlevale Ln		Garden Gate Rd/Middlevale Ln		Randolph Rd		Randolph Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
6:30 AM	1	0	1	0	3	0	0	0	5
6:45 AM	1	0	7	0	8	0	0	0	16
7:00 AM	6	0	0	1	0	0	0	0	7
7:15 AM	13	1	4	0	5	0	0	0	23
7:30 AM	82	2	5	0	25	0	43	0	157
7:45 AM	12	2	3	0	8	0	0	0	25
8:00 AM	8	0	19	0	19	0	4	0	50
8:15 AM	8	0	2	0	2	0	5	3	20
8:30 AM	6	0	1	0	1	0	4	0	12
8:45 AM	2	0	1	1	4	0	1	0	9
9:00 AM	0	0	1	0	0	0	0	0	1
9:15 AM	4	0	2	0	2	0	1	0	9
TOTAL VOLUMES :	143	5	46	2	77	0	58	3	334
APPROACH %'s :	96.62%	3.38%	95.83%	4.17%	100.00%	0.00%	95.08%	4.92%	
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	115	5	31	0	57	0	47	0	255
PEAK HR FACTOR :	0.351	0.625	0.408		0.570		0.273		0.406
	0.357		0.408		0.570		0.273		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	4	3	0	0	0	0	4	1	12
4:15 PM	0	2	0	1	0	0	0	2	5
4:30 PM	1	1	0	0	0	0	1	0	3
4:45 PM	0	4	0	0	0	0	1	0	5
5:00 PM	1	0	0	0	0	1	0	0	2
5:15 PM	0	0	0	1	0	1	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	1	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	1	0	2	0	2	0	1	1	7
6:30 PM	0	2	0	0	0	0	0	0	2
6:45 PM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	7	12	2	2	2	3	7	4	39
APPROACH %'s :	36.84%	63.16%	50.00%	50.00%	40.00%	60.00%	63.64%	36.36%	
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	2	5	0	1	0	2	2	0	12
PEAK HR FACTOR :	0.500	0.313		0.250		0.500	0.500		0.600
	0.438		0.250		0.500		0.500		

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Layhill Rd/Judson Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Total

NS/EW Streets:	Georgia Ave			Georgia Ave			Layhill Rd/Judson Rd			Layhill Rd/Judson Rd			
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	0 NL	2.5 NT	0.5 NR	1 SL	3 ST	0 SR	0.5 EL	0.5 ET	1 ER	0 WL	2 WT	1 WR	
6:30 AM	0	98	42	12	195	0	0	1	8	95	0	5	456
6:45 AM	0	92	43	8	174	0	0	1	2	148	0	2	470
7:00 AM	0	107	51	13	243	0	0	0	3	176	0	6	599
7:15 AM	0	130	68	14	287	0	2	0	2	223	0	3	729
7:30 AM	0	191	68	14	238	0	5	2	4	224	0	7	753
7:45 AM	0	192	110	14	195	0	1	2	3	219	0	6	742
8:00 AM	0	161	86	12	245	0	3	2	3	217	0	11	740
8:15 AM	0	142	113	13	273	0	0	1	5	206	0	6	759
8:30 AM	0	139	84	8	204	0	2	0	4	172	0	4	617
8:45 AM	0	166	59	20	254	0	2	0	1	182	0	6	690
9:00 AM	0	131	66	17	228	0	1	2	7	140	0	3	595
9:15 AM	0	131	66	12	216	0	1	1	0	130	0	4	561
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	0	1680	856	157	2752	0	17	12	42	2132	0	63	7711
	0.00%	66.25%	33.75%	5.40%	94.60%	0.00%	23.94%	16.90%	59.15%	97.13%	0.00%	2.87%	
PEAK HR :	07:30 AM - 08:30 AM												TOTAL
PEAK HR VOL :	0	686	377	53	951	0	9	7	15	866	0	30	2994
PEAK HR FACTOR :	0.000	0.893	0.834	0.946	0.871	0.000	0.450	0.875	0.750	0.967	0.000	0.682	0.986
		0.880			0.878			0.705			0.970		
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	0 NL	2.5 NT	0.5 NR	1 SL	3 ST	0 SR	0.5 EL	0.5 ET	1 ER	0 WL	2 WT	1 WR	
4:00 PM	0	264	148	26	208	0	1	2	2	105	0	5	761
4:15 PM	0	277	171	20	180	0	4	4	2	127	0	12	797
4:30 PM	0	246	137	27	188	0	1	2	1	125	0	5	732
4:45 PM	0	289	178	25	223	0	5	5	1	133	0	15	874
5:00 PM	0	251	161	30	170	0	4	3	3	142	0	6	770
5:15 PM	0	293	145	21	179	0	3	9	2	125	0	16	793
5:30 PM	0	308	154	31	225	0	1	1	1	115	0	11	847
5:45 PM	0	278	176	17	181	0	2	3	1	139	0	13	810
6:00 PM	0	258	169	25	203	0	5	0	3	125	0	17	805
6:15 PM	0	233	140	22	192	0	1	2	1	128	0	12	731
6:30 PM	0	242	157	26	164	0	2	2	3	114	0	14	724
6:45 PM	0	273	140	23	199	0	0	2	3	107	0	13	760
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	0	3212	1876	293	2312	0	29	35	23	1485	0	139	9404
	0.00%	63.13%	36.87%	11.25%	88.75%	0.00%	33.33%	40.23%	26.44%	91.44%	0.00%	8.56%	
PEAK HR :	04:45 PM - 05:45 PM												TOTAL
PEAK HR VOL :	0	1141	638	107	797	0	13	18	7	515	0	48	3284
PEAK HR FACTOR :	0.000	0.926	0.896	0.863	0.886	0.000	0.650	0.500	0.583	0.907	0.000	0.750	0.939
		0.952			0.883			0.679			0.951		

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Layhill Rd/Judson Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Bikes

NS/EW Streets:	Georgia Ave			Georgia Ave			Layhill Rd/Judson Rd			Layhill Rd/Judson Rd			
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	0	1	0	0	0	1	0	0	0	2
APPROACH %'s :				0.00%	100.00%	0.00%	0.00%	0.00%	100.00%				
PEAK HR :	07:30 AM - 08:30 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	1	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250

PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	1	1	1	0	2	1	0	0	0	0	0	0	6
APPROACH %'s :	33.33%	33.33%	33.33%	0.00%	66.67%	33.33%							
PEAK HR :	04:45 PM - 05:45 PM												TOTAL
PEAK HR VOL :	0	1	0	0	1	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Layhill Rd/Judson Rd
City: Silver Spring

Project ID: 22-280035-007
Date: 10/4/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Georgia Ave		Georgia Ave		Layhill Rd/Judson Rd		Layhill Rd/Judson Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
6:30 AM	0	2	0	0	4	2	0	0	8
6:45 AM	0	3	0	0	4	2	1	0	10
7:00 AM	2	1	0	0	4	3	1	0	11
7:15 AM	0	1	0	0	1	4	1	0	7
7:30 AM	0	1	0	0	5	4	1	1	12
7:45 AM	1	0	0	0	1	4	1	0	7
8:00 AM	1	2	0	1	1	5	0	1	11
8:15 AM	1	2	0	0	2	0	1	2	8
8:30 AM	2	1	0	0	4	4	2	1	14
8:45 AM	0	1	0	0	3	3	1	0	8
9:00 AM	0	0	0	0	2	2	0	0	4
9:15 AM	0	0	0	0	2	1	1	0	4
TOTAL VOLUMES :	7	14	0	1	33	34	10	5	104
APPROACH %'s :	33.33%	66.67%	0.00%	100.00%	49.25%	50.75%	66.67%	33.33%	
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	3	5	0	1	9	13	3	4	38
PEAK HR FACTOR :	0.750	0.625		0.250	0.450	0.650	0.750	0.500	0.792
	0.667		0.250		0.611		0.583		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	4	0	0	3	5	0	2	14
4:15 PM	0	4	0	0	7	6	0	3	20
4:30 PM	0	2	1	0	3	4	1	0	11
4:45 PM	1	0	0	0	3	4	0	1	9
5:00 PM	4	2	0	0	1	5	2	1	15
5:15 PM	4	2	0	0	0	4	1	2	13
5:30 PM	2	0	0	0	2	6	0	1	11
5:45 PM	0	2	0	0	2	3	0	2	9
6:00 PM	1	4	0	0	1	3	0	0	9
6:15 PM	0	2	0	0	2	3	0	1	8
6:30 PM	1	1	0	0	1	7	0	1	11
6:45 PM	3	1	0	0	1	6	0	0	11
TOTAL VOLUMES :	16	24	1	0	26	56	4	14	141
APPROACH %'s :	40.00%	60.00%	100.00%	0.00%	31.71%	68.29%	22.22%	77.78%	
PEAK HR :	04:45 PM - 05:45 PM								TOTAL
PEAK HR VOL :	11	4	0	0	6	19	3	5	48
PEAK HR FACTOR :	0.688	0.500			0.500	0.792	0.375	0.625	0.800
	0.625				0.781		0.667		

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Glenmont Cir
City: Silver Spring
Control: 1-Way Stop(WB)

Project ID: 22-280035-
Date: 10/4/2022

Data - Total

NS/EW Streets:	Georgia Ave			Georgia Ave			Glenmont Cir			Glenmont Cir			
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:30 AM	0	120	2	0	0	0	0	0	0	0	0	9	131
6:45 AM	0	133	2	0	0	0	0	0	0	0	0	4	139
7:00 AM	0	180	2	0	0	0	0	0	0	0	0	9	191
7:15 AM	0	243	1	0	0	0	0	0	0	0	0	7	251
7:30 AM	0	272	4	0	0	0	0	0	0	0	0	12	288
7:45 AM	0	293	7	0	0	0	0	0	0	0	0	6	306
8:00 AM	0	274	4	0	0	0	0	0	0	0	0	8	286
8:15 AM	0	242	5	0	0	0	0	0	0	0	0	10	257
8:30 AM	0	230	5	0	0	0	0	0	0	0	0	13	248
8:45 AM	0	205	7	0	0	0	0	0	0	0	0	9	221
9:00 AM	0	205	4	0	0	0	0	0	0	0	0	5	214
9:15 AM	0	221	7	0	0	0	0	0	0	0	0	6	234
TOTAL VOLUMES :	0	2618	50	0	0	0	0	0	0	0	0	98	2766
APPROACH %'s :	0.00%	98.13%	1.87%								0.00%	0.00%	100.00%
PEAK HR :	07:30 AM - 08:30 AM												TOTAL
PEAK HR VOL :	0	1081	20	0	0	0	0	0	0	0	0	36	1137
PEAK HR FACTOR :	0.000	0.922	0.714	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.929

PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	441	10	0	0	0	0	0	0	0	0	9	460
4:15 PM	0	486	13	0	0	0	0	0	0	0	0	8	507
4:30 PM	0	470	15	0	0	0	0	0	0	0	0	4	489
4:45 PM	0	488	4	0	0	0	0	0	0	0	0	7	499
5:00 PM	0	461	7	0	0	0	0	0	0	0	0	4	472
5:15 PM	0	463	12	0	0	0	0	0	0	0	0	4	479
5:30 PM	0	489	14	0	0	0	0	0	0	0	0	6	509
5:45 PM	0	481	5	0	0	0	0	0	0	0	0	5	491
6:00 PM	0	451	11	0	0	0	0	0	0	0	0	5	467
6:15 PM	0	435	17	0	0	0	0	0	0	0	0	12	464
6:30 PM	0	391	8	0	0	0	0	0	0	0	0	6	405
6:45 PM	0	424	7	0	0	0	0	0	0	0	0	7	438
TOTAL VOLUMES :	0	5480	123	0	0	0	0	0	0	0	0	77	5680
APPROACH %'s :	0.00%	97.80%	2.20%								0.00%	0.00%	100.00%
PEAK HR :	04:15 PM - 05:15 PM												TOTAL
PEAK HR VOL :	0	1905	39	0	0	0	0	0	0	0	0	23	1967
PEAK HR FACTOR :	0.000	0.976	0.650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.719	0.970

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Glenmont Cir
City: Silver Spring
Control: 1-Way Stop(WB)

Project ID: 22-280035-
Date: 10/4/2022

Data - Bikes

NS/EW Streets:	Georgia Ave			Georgia Ave			Glenmont Cir			Glenmont Cir				
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	TOTAL	0
APPROACH %'s :														
PEAK HR :	07:30 AM - 08:30 AM												TOTAL	0
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0		0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		
4:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	4	0	0	0	0	0	0	0	0	0	0	TOTAL	4
APPROACH %'s :	0.00%	100.00%	0.00%											
PEAK HR :	04:15 PM - 05:15 PM												TOTAL	0
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0		0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Glenmont Cir
City: Silver Spring

Project ID: 22-280035-008
Date: 10/4/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Georgia Ave		Georgia Ave		Glenmont Cir		Glenmont Cir		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
6:30 AM	0	0	0	0	3	2	0	0	5
6:45 AM	0	0	0	0	7	1	0	0	8
7:00 AM	0	0	0	0	4	1	0	0	5
7:15 AM	0	0	0	0	10	2	0	0	12
7:30 AM	0	0	0	0	3	0	0	0	3
7:45 AM	0	0	0	0	3	0	0	0	3
8:00 AM	0	0	0	0	1	1	0	0	2
8:15 AM	0	0	0	0	1	1	0	0	2
8:30 AM	0	0	0	0	3	4	0	0	7
8:45 AM	0	0	0	0	2	5	0	0	7
9:00 AM	0	0	0	0	3	4	0	0	7
9:15 AM	0	0	0	0	3	1	0	0	4
TOTAL VOLUMES :	0	0	0	0	43	22	0	0	65
APPROACH %'s :					66.15%	33.85%			
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	0	0	0	0	8	2	0	0	10
PEAK HR FACTOR :					0.667	0.500			0.833

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	0	9	6	0	0	15
4:15 PM	0	0	0	0	2	4	0	0	6
4:30 PM	0	0	0	0	7	8	0	0	15
4:45 PM	0	0	0	0	2	7	0	0	9
5:00 PM	0	0	0	0	0	5	0	0	5
5:15 PM	0	0	0	0	1	4	0	0	5
5:30 PM	0	0	1	0	1	1	0	0	3
5:45 PM	0	0	0	0	1	4	0	0	5
6:00 PM	0	0	0	0	5	4	0	0	9
6:15 PM	0	0	0	0	0	2	0	0	2
6:30 PM	0	0	0	0	1	1	0	0	2
6:45 PM	0	0	0	0	3	9	0	0	12
TOTAL VOLUMES :	0	0	1	0	32	55	0	0	88
APPROACH %'s :			100.00%	0.00%	36.78%	63.22%			
PEAK HR :	04:15 PM - 05:15 PM								TOTAL
PEAK HR VOL :	0	0	0	0	11	24	0	0	35
PEAK HR FACTOR :					0.393	0.750			0.583

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Shorefield Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Total

NS/EW Streets:	Georgia Ave			Georgia Ave			Shorefield Rd			Shorefield Rd			
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:30 AM	0	98	1	5	345	1	4	0	1	16	0	12	483
6:45 AM	0	113	1	11	428	0	2	0	0	16	0	9	580
7:00 AM	0	170	4	4	547	7	6	2	1	23	0	15	779
7:15 AM	0	216	3	11	597	0	3	1	1	33	0	10	875
7:30 AM	0	232	3	17	591	1	4	0	0	26	0	14	888
7:45 AM	0	270	4	14	647	0	5	1	2	17	0	15	975
8:00 AM	1	243	11	15	643	0	2	1	1	17	0	17	951
8:15 AM	0	225	4	21	562	4	5	1	0	15	0	18	855
8:30 AM	0	181	7	20	479	0	6	1	0	19	0	23	736
8:45 AM	0	176	7	37	518	1	7	3	0	28	0	17	794
9:00 AM	0	188	8	28	443	2	4	3	0	30	0	17	723
9:15 AM	0	209	11	30	375	1	4	2	1	34	1	20	688
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	1	2321	64	213	6175	17	52	15	7	274	1	187	9327
	0.04%	97.28%	2.68%	3.33%	96.41%	0.27%	70.27%	20.27%	9.46%	59.31%	0.22%	40.48%	
PEAK HR :	07:15 AM - 08:15 AM												TOTAL
PEAK HR VOL :	1	961	21	57	2478	1	14	3	4	93	0	56	3689
PEAK HR FACTOR :	0.250	0.890	0.477	0.838	0.957	0.250	0.700	0.750	0.500	0.705	0.000	0.824	0.946
		0.897			0.959			0.656			0.866		

PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	405	13	35	311	3	16	4	3	33	0	40	863
4:15 PM	0	445	7	47	305	3	2	4	1	42	2	40	898
4:30 PM	0	438	10	41	306	4	10	3	1	31	0	34	878
4:45 PM	0	444	12	37	373	8	7	8	1	44	1	24	959
5:00 PM	0	444	12	28	310	5	10	6	4	45	0	32	896
5:15 PM	0	463	14	29	327	4	7	5	2	37	1	32	921
5:30 PM	0	425	15	38	331	10	8	6	0	30	1	39	903
5:45 PM	1	455	10	36	341	16	14	1	2	31	0	27	934
6:00 PM	0	391	9	37	335	8	10	10	1	36	3	34	874
6:15 PM	0	394	13	40	304	6	13	2	2	37	0	26	837
6:30 PM	0	336	10	34	277	2	13	3	0	36	1	36	748
6:45 PM	0	397	13	30	291	9	6	4	0	33	1	24	808
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	1	5037	138	432	3811	78	116	56	17	435	10	388	10519
	0.02%	97.31%	2.67%	10.00%	88.20%	1.81%	61.38%	29.63%	8.99%	52.22%	1.20%	46.58%	
PEAK HR :	04:45 PM - 05:45 PM												TOTAL
PEAK HR VOL :	0	1776	53	132	1341	27	32	25	7	156	3	127	3679
PEAK HR FACTOR :	0.000	0.959	0.883	0.868	0.899	0.675	0.800	0.781	0.438	0.867	0.750	0.814	0.959
		0.959			0.897			0.800			0.929		

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Shorefield Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Bikes

NS/EW Streets:	Georgia Ave			Georgia Ave			Shorefield Rd			Shorefield Rd				
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	1	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	1	1	0	0	0	0	0	0	0	TOTAL	2
APPROACH %'s :				50.00%	50.00%	0.00%								
PEAK HR :	07:15 AM - 08:15 AM												TOTAL	
PEAK HR VOL :	0	0	0	1	0	0	0	0	0	0	0	0	TOTAL	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	TOTAL	0.250

PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	
4:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	2	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	2	0	1	1	0	0	0	0	0	0	1	TOTAL	5
APPROACH %'s :	0.00%	100.00%	0.00%	50.00%	50.00%	0.00%				0.00%	0.00%	100.00%		
PEAK HR :	04:45 PM - 05:45 PM												TOTAL	
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	1	TOTAL	2
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	TOTAL	0.500

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Shorefield Rd
City: Silver Spring

Project ID: 22-280035-009
Date: 10/4/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Georgia Ave		Georgia Ave		Shorefield Rd		Shorefield Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
6:30 AM	0	1	0	0	1	0	0	0	2
6:45 AM	3	1	0	0	0	0	0	0	4
7:00 AM	2	4	0	0	0	0	0	0	6
7:15 AM	0	5	0	0	1	0	0	0	6
7:30 AM	2	4	0	3	0	3	3	1	16
7:45 AM	0	2	2	0	1	0	3	1	9
8:00 AM	1	1	0	0	1	0	0	1	4
8:15 AM	2	5	0	0	0	0	0	0	7
8:30 AM	4	3	1	0	2	0	0	0	10
8:45 AM	0	3	1	0	0	0	0	2	6
9:00 AM	0	1	2	0	3	3	2	1	12
9:15 AM	0	3	0	0	1	1	2	0	7
TOTAL VOLUMES :	14	33	6	3	10	7	10	6	89
APPROACH %'s :	29.79%	70.21%	66.67%	33.33%	58.82%	41.18%	62.50%	37.50%	
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	3	12	2	3	3	3	6	3	35
PEAK HR FACTOR :	0.375	0.600	0.250	0.250	0.750	0.250	0.500	0.750	0.547
	0.625		0.417		0.500		0.563		

NS/EW Streets:	Georgia Ave		Georgia Ave		Shorefield Rd		Shorefield Rd		
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	2	3	0	0	0	3	0	1	9
4:15 PM	0	3	0	3	4	5	4	2	21
4:30 PM	4	3	1	2	0	2	2	1	15
4:45 PM	5	1	0	0	2	2	1	0	11
5:00 PM	6	5	0	0	1	1	3	0	16
5:15 PM	3	2	0	1	4	2	3	2	17
5:30 PM	1	3	0	0	1	4	1	1	11
5:45 PM	1	1	0	3	2	0	4	1	12
6:00 PM	0	3	0	1	0	0	0	1	5
6:15 PM	5	0	0	0	0	1	0	0	6
6:30 PM	2	1	0	0	1	3	0	0	7
6:45 PM	1	2	0	1	0	4	0	0	8
TOTAL VOLUMES :	30	27	1	11	15	27	18	9	138
APPROACH %'s :	52.63%	47.37%	8.33%	91.67%	35.71%	64.29%	66.67%	33.33%	
PEAK HR :	04:45 PM - 05:45 PM								TOTAL
PEAK HR VOL :	15	11	0	1	8	9	8	3	55
PEAK HR FACTOR :	0.625	0.550	0.250	0.250	0.500	0.563	0.667	0.375	0.809
	0.591		0.250		0.708		0.550		

National Data & Surveying Services Intersection Turning Movement Count

Location: Glenallan Ave & Layhill Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Total

NS/EW Streets:	Glenallan Ave			Glenallan Ave			Layhill Rd			Layhill Rd			TOTAL
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
AM	1 NL	2 NT	0 NR	1 SL	1 ST	1 SR	1 EL	3 ET	0 ER	1 WL	2 WT	1 WR	
6:30 AM	1	46	13	12	28	5	1	37	4	10	107	23	287
6:45 AM	4	39	11	19	39	10	5	47	6	7	137	27	351
7:00 AM	6	42	10	21	60	9	4	54	7	23	190	42	468
7:15 AM	6	50	7	24	62	14	10	70	4	34	225	60	566
7:30 AM	1	79	15	34	70	14	5	64	10	29	199	83	603
7:45 AM	5	112	9	32	54	12	5	106	8	21	237	72	673
8:00 AM	8	76	14	40	72	8	11	86	6	21	211	62	615
8:15 AM	5	51	11	23	56	13	8	122	4	32	201	45	571
8:30 AM	4	54	9	27	41	14	8	88	7	22	161	38	473
8:45 AM	2	48	8	18	42	8	8	62	6	27	174	34	437
9:00 AM	4	38	9	16	44	11	10	68	9	18	130	26	383
9:15 AM	2	34	5	17	38	6	8	69	7	26	108	14	334
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	48	669	121	283	606	124	83	873	78	270	2080	526	5761
	5.73%	79.83%	14.44%	27.94%	59.82%	12.24%	8.03%	84.43%	7.54%	9.39%	72.32%	18.29%	
PEAK HR :	07:30 AM - 08:30 AM												TOTAL
PEAK HR VOL :	19	318	49	129	252	47	29	378	28	103	848	262	2462
PEAK HR FACTOR :	0.594	0.710	0.817	0.806	0.875	0.839	0.659	0.775	0.700	0.805	0.895	0.789	0.915
		0.766			0.892			0.812			0.919		

NS/EW Streets:	Glenallan Ave			Glenallan Ave			Layhill Rd			Layhill Rd			TOTAL
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
PM	1 NL	2 NT	0 NR	1 SL	1 ST	1 SR	1 EL	3 ET	0 ER	1 WL	2 WT	1 WR	
4:00 PM	5	39	19	38	47	11	16	179	12	16	101	21	504
4:15 PM	4	41	15	43	40	12	20	174	9	17	103	18	496
4:30 PM	4	41	11	34	67	16	16	161	10	24	124	21	529
4:45 PM	10	62	17	55	59	12	25	166	8	20	105	32	571
5:00 PM	5	48	15	38	60	9	20	184	10	25	130	31	575
5:15 PM	7	59	18	43	60	16	12	156	12	16	104	25	528
5:30 PM	5	47	18	46	48	11	19	190	13	16	120	35	568
5:45 PM	11	68	21	51	50	20	20	171	15	21	111	28	587
6:00 PM	6	46	19	58	59	10	18	168	10	27	113	16	550
6:15 PM	3	39	15	44	55	15	18	140	8	19	97	26	479
6:30 PM	4	49	14	39	39	6	27	173	15	12	105	20	503
6:45 PM	3	34	12	47	42	7	21	137	7	11	84	20	425
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	67	573	194	536	626	145	232	1999	129	224	1297	293	6315
	8.03%	68.71%	23.26%	41.01%	47.90%	11.09%	9.83%	84.70%	5.47%	12.35%	71.50%	16.15%	
PEAK HR :	05:00 PM - 06:00 PM												TOTAL
PEAK HR VOL :	28	222	72	178	218	56	71	701	50	78	465	119	2258
PEAK HR FACTOR :	0.636	0.816	0.857	0.873	0.908	0.700	0.888	0.922	0.833	0.780	0.894	0.850	0.962
		0.805			0.934			0.926			0.890		

National Data & Surveying Services Intersection Turning Movement Count

Location: Glenallan Ave & Layhill Rd
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Bikes

NS/EW Streets:	Glenallan Ave			Glenallan Ave			Layhill Rd			Layhill Rd				
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	1 NL	2 NT	0 NR	1 SL	1 ST	1 SR	1 EL	3 ET	0 ER	1 WL	2 WT	1 WR		
6:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	1	0	0	1	0	0	1	2	TOTAL	5
APPROACH %'s :				0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	33.33%	66.67%		
PEAK HR :	07:30 AM - 08:30 AM												TOTAL	2
PEAK HR VOL :	0	0	0	0	0	0	0	1	0	0	0	1		2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250		0.500

PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	1 NL	2 NT	0 NR	1 SL	1 ST	1 SR	1 EL	3 ET	0 ER	1 WL	2 WT	1 WR		
4:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	0	0	1	0	0	1	0	TOTAL	2
APPROACH %'s :							0.00%	100.00%	0.00%	0.00%	100.00%	0.00%		
PEAK HR :	05:00 PM - 06:00 PM												TOTAL	0
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0		0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0

National Data & Surveying Services Intersection Turning Movement Count

Location: Glenallan Ave & Layhill Rd
City: Silver Spring

Project ID: 22-280035-010
Date: 10/4/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Glenallan Ave		Glenallan Ave		Layhill Rd		Layhill Rd		TOTAL
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	
6:30 AM	0	2	0	0	0	0	3	0	5
6:45 AM	0	0	1	3	0	0	8	0	12
7:00 AM	0	4	1	2	2	1	6	1	17
7:15 AM	1	1	1	3	2	2	3	0	13
7:30 AM	0	1	0	3	2	1	8	1	16
7:45 AM	1	1	2	2	0	1	4	1	12
8:00 AM	0	2	1	0	0	0	5	2	10
8:15 AM	0	0	0	0	0	1	1	2	4
8:30 AM	0	0	0	2	0	0	1	0	3
8:45 AM	0	0	1	1	0	0	3	0	5
9:00 AM	0	2	2	1	1	0	5	1	12
9:15 AM	1	0	0	1	0	3	2	0	7
TOTAL VOLUMES :	EB 3	WB 13	EB 9	WB 18	NB 7	SB 9	NB 49	SB 8	TOTAL 116
APPROACH %'s :	18.75%	81.25%	33.33%	66.67%	43.75%	56.25%	85.96%	14.04%	
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	1	4	3	5	2	3	18	6	42
PEAK HR FACTOR :	0.250	0.500	0.375	0.417	0.250	0.750	0.563	0.750	0.656
	0.625		0.500		0.417		0.667		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	3	2	2	0	1	0		8
4:15 PM	1	1	3	4	0	2	3	7	21
4:30 PM	0	1	4	1	2	1	0	6	15
4:45 PM	3	0	1	0	1	3	0	0	8
5:00 PM	2	3	0	0	0	0	1	3	9
5:15 PM	3	1	6	1	2	1	1	3	18
5:30 PM	0	0	1	2	0	0	0	4	7
5:45 PM	2	0	1	0	0	1	1	3	8
6:00 PM	5	0	6	1	0	5	1	6	24
6:15 PM	3	0	4	1	1	4	1	4	18
6:30 PM	4	0	0	0	0	1	0	0	5
6:45 PM	0	0	0	0	1	2	0	1	4
TOTAL VOLUMES :	EB 23	WB 6	EB 29	WB 12	NB 9	SB 20	NB 9	SB 37	TOTAL 145
APPROACH %'s :	79.31%	20.69%	70.73%	29.27%	31.03%	68.97%	19.57%	80.43%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	7	4	8	3	2	2	3	13	42
PEAK HR FACTOR :	0.583	0.333	0.333	0.375	0.250	0.500	0.750	0.813	0.583
	0.550		0.393		0.333		1.000		

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Arcola Ave
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Total

NS/EW Streets:	Georgia Ave			Georgia Ave			Arcola Ave			Arcola Ave			
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	1 NL	3 NT	0 NR	1 SL	3 ST	0 SR	1 EL	1 ET	0 ER	1 WL	1 WT	1 WR	
6:30 AM	2	81	2	50	340	4	3	5	8	8	11	19	533
6:45 AM	3	79	1	65	351	3	5	16	8	20	11	32	594
7:00 AM	3	122	5	86	470	6	7	15	13	20	19	48	814
7:15 AM	6	163	4	100	542	6	6	24	10	18	29	60	968
7:30 AM	7	147	9	86	533	3	9	30	6	33	46	88	997
7:45 AM	7	169	15	96	564	3	13	35	2	46	59	99	1108
8:00 AM	10	154	9	92	548	7	5	22	12	48	36	97	1040
8:15 AM	4	161	8	67	398	8	15	33	2	23	31	74	824
8:30 AM	4	125	13	63	478	6	5	28	5	25	21	60	833
8:45 AM	10	150	10	81	466	1	10	28	8	27	23	54	868
9:00 AM	7	157	11	86	418	1	7	32	6	20	14	52	811
9:15 AM	2	160	14	66	322	1	6	24	8	30	26	76	735
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	65	1668	101	938	5430	49	91	292	88	318	326	759	10125
	3.54%	90.95%	5.51%	14.62%	84.62%	0.76%	19.32%	62.00%	18.68%	22.67%	23.24%	54.10%	
PEAK HR :	07:15 AM - 08:15 AM												TOTAL
PEAK HR VOL :	30	633	37	374	2187	19	33	111	30	145	170	344	4113
PEAK HR FACTOR :	0.750	0.936	0.617	0.935	0.969	0.679	0.635	0.793	0.625	0.755	0.720	0.869	0.928
		0.916			0.973			0.870			0.808		
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	1 NL	3 NT	0 NR	1 SL	3 ST	0 SR	1 EL	1 ET	0 ER	1 WL	1 WT	1 WR	
4:00 PM	5	366	14	66	278	2	8	39	4	22	37	110	951
4:15 PM	13	352	11	76	269	5	14	26	7	14	29	89	905
4:30 PM	13	374	7	56	244	6	8	30	4	17	34	85	878
4:45 PM	20	389	15	59	344	0	15	21	1	24	33	91	1012
5:00 PM	11	339	17	62	265	9	12	29	4	28	34	111	921
5:15 PM	13	441	18	58	321	6	10	31	5	20	30	85	1038
5:30 PM	9	344	17	58	279	3	13	25	8	21	22	105	904
5:45 PM	7	370	13	53	319	4	9	31	4	15	35	87	947
6:00 PM	10	393	15	46	293	6	7	17	4	26	30	85	932
6:15 PM	12	321	15	55	264	5	8	20	4	16	24	78	822
6:30 PM	5	313	14	40	276	2	8	11	5	21	22	56	773
6:45 PM	8	377	15	57	274	2	4	24	4	20	25	78	888
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	126	4379	171	686	3426	50	116	304	54	244	355	1060	10971
	2.69%	93.65%	3.66%	16.48%	82.32%	1.20%	24.47%	64.14%	11.39%	14.71%	21.40%	63.89%	
PEAK HR :	04:45 PM - 05:45 PM												TOTAL
PEAK HR VOL :	53	1513	67	237	1209	18	50	106	18	93	119	392	3875
PEAK HR FACTOR :	0.663	0.858	0.931	0.956	0.879	0.500	0.833	0.855	0.563	0.830	0.875	0.883	0.933
		0.865			0.908			0.946			0.873		

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Arcola Ave
City: Silver Spring
Control: Signalized

Project ID: 22-280035-
Date: 10/4/2022

Data - Bikes

NS/EW Streets:	Georgia Ave			Georgia Ave			Arcola Ave			Arcola Ave				
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	1 NL	3 NT	0 NR	1 SL	3 ST	0 SR	1 EL	1 ET	0 ER	1 WL	1 WT	1 WR		
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	TOTAL	0
APPROACH %'s :														
PEAK HR :	07:15 AM - 08:15 AM												TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	TOTAL	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0

PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	1 NL	3 NT	0 NR	1 SL	3 ST	0 SR	1 EL	1 ET	0 ER	1 WL	1 WT	1 WR		
4:00 PM	0	2	0	0	1	0	0	0	0	0	0	0	3	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	1	2	0	0	1	0	0	1	0	0	0	0	TOTAL	5
APPROACH %'s :	33.33%	66.67%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%					
PEAK HR :	04:45 PM - 05:45 PM												TOTAL	
PEAK HR VOL :	1	0	0	0	0	0	0	0	0	0	0	0	TOTAL	1
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.250

National Data & Surveying Services Intersection Turning Movement Count

Location: Georgia Ave & Arcola Ave
City: Silver Spring

Project ID: 22-280035-011
Date: 10/4/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Georgia Ave		Georgia Ave		Arcola Ave		Arcola Ave		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
6:30 AM	1	0	0	0	0	0	0	0	1
6:45 AM	2	0	0	0	0	1	0	0	3
7:00 AM	0	0	1	1	1	0	0	0	3
7:15 AM	0	0	0	1	0	0	1	0	2
7:30 AM	0	1	0	1	0	2	0	0	4
7:45 AM	0	0	0	0	0	2	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	1	0	1	2	4
8:30 AM	1	0	0	0	0	0	0	0	1
8:45 AM	0	0	1	1	4	1	1	1	9
9:00 AM	5	0	0	0	1	0	2	1	9
9:15 AM	1	0	0	0	0	2	0	1	4
TOTAL VOLUMES :	EB 10	WB 1	EB 2	WB 4	NB 7	SB 8	NB 5	SB 5	TOTAL 42
APPROACH %'s :	90.91%	9.09%	33.33%	66.67%	46.67%	53.33%	50.00%	50.00%	
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	0	1	0	2	0	4	1	0	8
PEAK HR FACTOR :	0.250		0.500		0.500		0.250		0.500

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	4	5	0	0	0	0	1	4	14
4:15 PM	7	1	0	0	4	1	1	0	14
4:30 PM	2	5	0	0	1	1	0	0	9
4:45 PM	1	1	0	0	0	0	0	1	3
5:00 PM	0	3	0	0	0	3	0	0	6
5:15 PM	0	3	0	0	2	0	2	1	8
5:30 PM	2	1	0	0	1	0	0	1	5
5:45 PM	1	3	0	0	0	1	0	0	5
6:00 PM	0	1	0	1	0	1	1	0	4
6:15 PM	0	0	0	0	1	1	0	3	5
6:30 PM	3	0	0	0	1	0	0	0	4
6:45 PM	0	1	0	0	0	0	0	0	1
TOTAL VOLUMES :	EB 20	WB 24	EB 0	WB 1	NB 10	SB 8	NB 5	SB 10	TOTAL 78
APPROACH %'s :	45.45%	54.55%	0.00%	100.00%	55.56%	44.44%	33.33%	66.67%	
PEAK HR :	04:45 PM - 05:45 PM								TOTAL
PEAK HR VOL :	3	8	0	0	3	3	2	3	22
PEAK HR FACTOR :	0.917				0.500		0.417		0.688

National Data & Surveying Services Intersection Turning Movement Count

Location: Glenmont Cir & Glenmont Cir/Universal Hardwood & Painting Dwy
City: Silver Spring
Control: 2-Way Stop(EB/WB)

Project ID: 22-280035-
Date: 10/4/2022

Data - Total

NS/EW Streets:	Glenmont Cir			Glenmont Cir			Glenmont Cir/Universal Hardwood & Painting Dwy			Glenmont Cir/Universal Hardwood & Painting Dwy			TOTAL
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
AM	0 NL	1 NT	0 NR	0 SL	1 ST	0 SR	0 EL	1 ET	0 ER	0 WL	1 WT	0 WR	
6:30 AM	0	10	0	1	2	0	1	1	0	0	0	11	26
6:45 AM	0	5	0	1	1	0	0	3	1	1	0	9	21
7:00 AM	0	13	1	1	3	0	0	1	3	1	0	7	30
7:15 AM	0	7	0	4	5	0	0	5	4	1	0	15	41
7:30 AM	0	13	1	5	2	0	2	2	1	0	0	14	40
7:45 AM	0	9	0	1	4	0	2	3	2	1	0	6	28
8:00 AM	0	9	1	2	4	0	4	1	1	1	0	6	29
8:15 AM	0	6	0	3	5	0	2	2	0	0	0	9	27
8:30 AM	0	16	3	3	8	0	7	1	4	1	0	5	48
8:45 AM	0	3	1	10	10	0	2	2	2	2	0	9	41
9:00 AM	0	6	0	7	8	0	5	2	2	0	0	6	36
9:15 AM	0	7	1	1	5	0	2	1	2	1	0	5	25
TOTAL VOLUMES :	0	104	8	39	57	0	27	24	22	9	0	102	392
APPROACH %'s :	0.00%	92.86%	7.14%	40.63%	59.38%	0.00%	36.99%	32.88%	30.14%	8.11%	0.00%	91.89%	
PEAK HR :	08:15 AM - 09:15 AM												TOTAL
PEAK HR VOL :	0	31	4	23	31	0	16	7	8	3	0	29	152
PEAK HR FACTOR :	0.000	0.484	0.333	0.575	0.775	0.000	0.571	0.875	0.500	0.375	0.000	0.806	0.792
		0.461		0.675	0.675		0.646	0.646		0.727	0.727		
PM	0 NL	1 NT	0 NR	0 SL	1 ST	0 SR	0 EL	1 ET	0 ER	0 WL	1 WT	0 WR	
4:00 PM	0	5	2	8	4	0	2	5	3	2	0	7	38
4:15 PM	0	9	2	4	7	0	6	5	6	1	0	8	48
4:30 PM	0	7	2	4	3	0	4	8	1	0	0	9	38
4:45 PM	0	10	2	3	9	0	6	7	5	0	0	6	48
5:00 PM	0	7	1	13	6	0	3	10	2	1	0	10	53
5:15 PM	0	8	1	5	6	0	3	3	2	0	0	11	39
5:30 PM	0	10	1	8	7	0	8	6	5	0	0	8	53
5:45 PM	0	15	1	4	5	0	3	7	2	0	0	9	46
6:00 PM	0	9	0	5	7	0	4	6	4	1	0	9	45
6:15 PM	0	7	0	5	6	0	4	7	4	0	0	12	45
6:30 PM	0	12	1	8	4	0	4	5	5	2	0	11	52
6:45 PM	0	11	1	1	6	0	4	6	3	0	0	9	41
TOTAL VOLUMES :	0	110	14	68	70	0	51	75	42	7	0	109	546
APPROACH %'s :	0.00%	88.71%	11.29%	49.28%	50.72%	0.00%	30.36%	44.64%	25.00%	6.03%	0.00%	93.97%	
PEAK HR :	04:45 PM - 05:45 PM												TOTAL
PEAK HR VOL :	0	35	5	29	28	0	20	26	14	1	0	35	193
PEAK HR FACTOR :	0.000	0.875	0.625	0.558	0.778	0.000	0.625	0.650	0.700	0.250	0.000	0.795	0.910
		0.833		0.750	0.750		0.789	0.789		0.818	0.818		

National Data & Surveying Services Intersection Turning Movement Count

Location: Glenmont Cir & Glenmont Cir/Universal Hardwood & Painting Dwy
City: Silver Spring
Control: 2-Way Stop(EB/WB)

Project ID: 22-280035-
Date: 10/4/2022

Data - Bikes

NS/EW Streets:	Glenmont Cir			Glenmont Cir			Glenmont Cir/Universal Hardwood & Painting Dwy			Glenmont Cir/Universal Hardwood & Painting Dwy			
AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	0 NL	1 NT	0 NR	0 SL	1 ST	0 SR	0 EL	1 ET	0 ER	0 WL	1 WT	0 WR	TOTAL
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :													
PEAK HR :	08:15 AM - 09:15 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0

PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	0 NL	1 NT	0 NR	0 SL	1 ST	0 SR	0 EL	1 ET	0 ER	0 WL	1 WT	0 WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
TOTAL VOLUMES :	0	2	0	0	1	0	0	0	0	0	0	0	3
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%							
PEAK HR :	04:45 PM - 05:45 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0

National Data & Surveying Services Intersection Turning Movement Count

Location: Glenmont Cir & Glenmont Cir/Universal Hardwood & Painting Dwy
City: Silver Spring

Project ID: 22-280035-103
Date: 10/4/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Glenmont Cir		Glenmont Cir		Glenmont Cir/Universal Hardwood & Painting Dwy		Glenmont Cir/Universal Hardwood & Painting Dwy				TOTAL
	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		SCRAMBLE (NE/SW)		
AM	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	
6:30 AM	0	0	0	0	4	0	0	0	0	0	4
6:45 AM	0	0	0	0	3	0	0	0	0	0	3
7:00 AM	0	0	0	0	1	1	0	0	0	0	2
7:15 AM	0	0	0	0	6	0	0	0	0	1	7
7:30 AM	0	0	0	0	2	0	0	0	0	1	3
7:45 AM	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	2	1	0	0	0	0	3
8:15 AM	0	0	0	0	3	1	0	0	0	0	4
8:30 AM	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	1	0	0	0	0	2
9:00 AM	0	0	0	0	0	2	0	0	0	0	2
9:15 AM	0	0	0	1	1	0	0	1	0	1	4
TOTAL VOLUMES :	0	0	0	1	23	6	0	1	0	3	34
APPROACH %'s :			0.00%	100.00%	79.31%	20.69%	0.00%	100.00%	0.00%	100.00%	
PEAK HR :	08:15 AM - 09:15 AM										
PEAK HR VOL :	0	0	0	0	4	4	0	0	0	0	8
PEAK HR FACTOR :					0.333	0.500					0.500

NS/EW Streets:	Glenmont Cir		Glenmont Cir		Glenmont Cir/Universal Hardwood & Painting Dwy		Glenmont Cir/Universal Hardwood & Painting Dwy				TOTAL
	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		SCRAMBLE (NE/SW)		
PM	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	
4:00 PM	0	0	0	0	6	0	0	0	0	0	6
4:15 PM	0	0	0	1	2	3	0	0	0	0	6
4:30 PM	0	0	1	0	4	3	0	0	0	0	8
4:45 PM	0	0	0	0	9	2	0	2	0	0	13
5:00 PM	0	0	0	0	5	6	0	0	0	0	11
5:15 PM	0	0	0	0	3	6	0	0	0	0	9
5:30 PM	0	0	0	0	1	5	0	0	0	0	6
5:45 PM	0	0	0	0	3	2	0	0	0	0	5
6:00 PM	0	0	0	0	2	5	0	0	0	0	7
6:15 PM	0	0	0	0	2	3	0	0	0	2	7
6:30 PM	0	0	0	0	2	1	0	0	0	0	3
6:45 PM	0	0	0	0	1	3	0	0	0	0	4
TOTAL VOLUMES :	0	0	1	1	40	39	0	2	0	2	85
APPROACH %'s :			50.00%	50.00%	50.63%	49.37%	0.00%	100.00%	0.00%	100.00%	
PEAK HR :	04:45 PM - 05:45 PM										
PEAK HR VOL :	0	0	0	0	18	19	0	2	0	0	39
PEAK HR FACTOR :					0.500	0.792		0.250			0.750

National Data & Surveying Services Intersection Turning Movement Count

Location: Randolph Rd & Heurich Rd
City: Silver Spring
Control: 2-Way Stop(EB/WB)

Project ID: 22-280038-001
Date: 12/8/2022

Data - Total

NS/EW Streets:	Randolph Rd				Randolph Rd				Heurich Rd				Heurich Rd				TOTAL				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND								
AM	1	3	0	0	1	3	0	0	1	0	0	0	1	0	0	0	1	0	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					
6:00 AM	1	125	0	0	0	178	1	1	2	0	2	0	1	0	0	1	0	0	0	311	
6:15 AM	0	155	1	1	0	283	0	0	4	0	3	0	1	0	2	0	0	0	0	450	
6:30 AM	2	153	1	0	1	379	1	0	1	0	4	0	1	0	1	0	1	0	0	544	
6:45 AM	1	163	5	0	6	411	1	0	2	2	7	0	3	2	2	0	2	0	0	605	
7:00 AM	2	194	1	0	4	491	5	1	11	1	1	0	6	0	0	0	0	0	0	717	
7:15 AM	2	277	5	0	4	505	7	0	5	0	5	0	0	0	2	0	0	0	0	812	
7:30 AM	4	305	9	2	3	515	25	0	6	1	1	0	3	0	1	0	0	0	0	875	
7:45 AM	4	297	10	0	4	442	26	0	2	2	0	0	2	1	3	0	0	0	0	793	
8:00 AM	4	214	17	1	15	468	14	1	3	1	3	0	6	1	6	0	0	0	0	754	
8:15 AM	1	256	27	0	19	445	8	0	3	1	0	0	4	1	4	0	0	0	0	769	
8:30 AM	3	212	51	0	17	408	6	0	4	2	3	0	3	0	4	0	0	0	0	713	
8:45 AM	2	243	36	0	19	362	6	0	4	5	4	0	10	3	8	0	0	0	0	702	
9:00 AM	2	229	9	0	5	332	2	0	3	2	5	0	6	2	4	0	0	0	0	601	
9:15 AM	3	222	4	0	3	319	1	0	1	0	3	0	4	1	1	0	0	0	0	562	
9:30 AM	4	185	1	1	4	273	1	0	0	0	5	0	2	0	2	0	0	0	0	478	
9:45 AM	1	196	4	0	5	352	1	0	3	0	2	0	1	0	1	0	0	0	0	566	
TOTAL VOLUMES :	36	3426	181	5	109	6163	105	3	54	17	48	0	53	11	41	0					10252
APPROACH %'s :	0.99%	93.91%	4.96%	0.14%	1.71%	96.60%	1.65%	0.05%	45.38%	14.29%	40.34%	0.00%	50.48%	10.48%	39.05%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL				
PEAK HR VOL :	14	1093	41	3	26	1930	72	1	16	4	9	0	11	2	12	0					3234
PEAK HR FACTOR :	0.875	0.896	0.603	0.375	0.433	0.937	0.692	0.250	0.667	0.500	0.450	0.000	0.458	0.500	0.500	0.000					0.924
								0.934				0.725				0.481					

NS/EW Streets:	Randolph Rd				Randolph Rd				Heurich Rd				Heurich Rd				TOTAL				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND								
NOON	1	3	0	0	1	3	0	0	1	0	0	0	1	0	0	0	1	0	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					
10:00 AM	4	152	3	1	4	225	3	0	0	0	2	0	3	0	3	0	0	0	0	400	
10:15 AM	0	182	2	0	1	228	1	0	4	0	5	0	3	0	1	0	0	0	0	427	
10:30 AM	4	165	1	1	3	216	0	0	0	0	5	0	1	0	1	0	0	0	0	397	
10:45 AM	1	151	0	1	3	208	2	0	2	0	0	0	4	0	1	0	0	0	0	373	
11:00 AM	2	185	4	0	0	201	2	0	1	0	2	0	2	0	4	0	0	0	0	403	
11:15 AM	4	191	2	0	1	269	1	0	1	0	3	0	4	0	4	0	0	0	0	480	
11:30 AM	2	158	0	1	7	223	2	0	5	0	3	0	8	1	7	0	0	0	0	417	
11:45 AM	4	220	4	0	2	193	3	0	4	0	2	1	2	0	4	0	0	0	0	439	
12:00 PM	4	175	6	1	0	246	1	0	1	0	6	0	4	1	3	0	0	0	0	448	
12:15 PM	1	211	1	0	3	228	2	0	1	0	2	0	6	0	6	0	0	0	0	461	
12:30 PM	5	206	2	0	1	185	4	0	2	0	3	0	1	0	1	0	0	0	0	410	
12:45 PM	3	205	4	0	3	227	1	0	2	0	4	0	5	0	3	0	0	0	0	457	
1:00 PM	4	245	2	1	0	201	2	1	2	0	3	0	8	0	6	0	0	0	0	475	
1:15 PM	5	219	6	0	1	212	4	0	2	0	3	0	7	0	1	0	0	0	0	460	
1:30 PM	3	198	4	0	4	197	2	0	5	2	4	0	3	0	0	0	0	0	0	422	
1:45 PM	6	235	2	1	1	230	3	0	1	1	1	0	5	0	4	0	0	0	0	490	
TOTAL VOLUMES :	52	3098	43	7	34	3489	33	1	33	3	48	1	66	2	49	0					6959
APPROACH %'s :	1.63%	96.81%	1.34%	0.22%	0.96%	98.09%	0.93%	0.03%	38.82%	3.53%	56.47%	1.18%	56.41%	1.71%	41.88%	0.00%					
PEAK HR :	01:00 PM - 02:00 PM																TOTAL				
PEAK HR VOL :	18	897	14	2	6	840	11	1	10	3	11	0	23	0	11	0					1847
PEAK HR FACTOR :	0.750	0.915	0.583	0.500	0.375	0.913	0.688	0.250	0.500	0.375	0.688	0.000	0.719	0.000	0.458	0.000					0.942
				0.924				0.917				0.545				0.607					

NS/EW Streets:	Randolph Rd				Randolph Rd				Heurich Rd				Heurich Rd				TOTAL				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND								
PM	1	3	0	0	1	3	0	0	1	0	0	0	1	0	0	0	1	0	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					
2:00 PM	4	260	6	1	2	242	1	0	3	0	3	0	0	0	4	0	0	0	0	526	
2:15 PM	2	286	2	1	4	264	4	1	2	0	4	0	4	0	4	0	0	0	0	578	
2:30 PM	2	268	5	2	3	311	1	1	2	3	4	0	3	1	2	0	0	0	0	608	
2:45 PM	4	296	15	1	9	265	6	0	1	2	5	0	5	1	3	0	0	0	0	613	
3:00 PM	3	315	16	1	12	256	5	0	3	2	4	0	5	1	5	0	0	0	0	628	
3:15 PM	3	335	23	2	8	297	5	0	3	0	3	0	6	1	4	0	0	0	0	690	
3:30 PM	6	345	19	0	6	285	7	1	2	2	3	0	10	5	15	0	0	0	0	706	
3:45 PM	11	395	6	0	3	291	6	0	1	1	5	0	7	0	8	0	0	0	0	734	
4:00 PM	10	412	4	1	1	273	5	0	4	0	3	0	4	0	15	0	0	0	0	732	
4:15 PM	6	460	5	0	4	260	6	0	2	2	5	0	3	2	8	0	0	0	0	763	
4:30 PM	10	454	16	0	10	313	5	1	3	1	5	0	6	1	12	0	0	0	0	837	
4:45 PM	10	452	8	0	9	296	3	0	4	1	8	0	7	2	5	0	0	0	0	805	
5:00 PM	9	417	4	0	4	355	7	0	3	0	3	0	7	0	9	0	0	0	0	818	
5:15 PM	8	444	3	0	1	304	6	0	4	0	2	0	1	0	2	0	0	0	0	775	
5:30 PM	10	396	10	0	6	329	4	0	6	0	5	0	2	1	5	0	0	0	0	774	
5:45 PM	6	382	7	0	9	328	3	0	2	1	1	0	2	1	1	0	0	0	0	743	
6:00 PM	9	450	7	0	6	316	6	0	5	0	5	0	0	1	2	0	0	0	0	807	
6:15 PM	4	403	6	0	8	312	3	0	5	0	2	0	1	1	2	0	0	0	0	747	
6:30 PM	9	354	3	3	4	276	4	0	2	0	1	0	7	1	4	0	0	0	0	668	
6:45 PM	7	315	4	0	11	234	2	0	0	0	2	0	6	0	4	0	0	0	0	585	
TOTAL VOLUMES :	133	7439	169	12	120	5807	89	4	57	15	73	0	86	19	114	0					14137
APPROACH %'s :	1.72%	95.95%	2.18%	0.15%	1.99%	96.46%	1.48%	0.07%	39.31%	10.34%	50.34%	0.00%	39.27%	8.68%	52.05%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL				
PEAK HR VOL :	37	1767	31	0	24	1268	21	1	14	2	18	0	21	3	28	0					3235
PEAK HR FACTOR :	0.925	0.973	0.484	0.000	0.600	0.893	0.750	0.250	0.875	0.500	0.563	0.000	0.750	0.375	0.583	0.000					0.966
				0.956				0.898				0.654				0.684					

National Data & Surveying Services Intersection Turning Movement Count

Location: Randolph Rd & Heurich Rd
City: Silver Spring
Control: 2-Way Stop(EB/WB)

Project ID: 22-280038-001
Date: 12/8/2022

Data - Bikes

NS/EW Streets:	Randolph Rd				Randolph Rd				Heurich Rd				Heurich Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	1	0	0	0	1	0	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	TOTAL
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	1	0	0	0	1	0	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	TOTAL
APPROACH %'s :					0.00%	100.00%	0.00%	0.00%									
PEAK HR :	01:00 PM - 02:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	1	0	0	0	1	0	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	TOTAL
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%									
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250

National Data & Surveying Services Intersection Turning Movement Count

Location: Randolph Rd & Heurich Rd
City: Silver Spring

Project ID: 22-280038-001
Date: 12/8/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Randolph Rd		Randolph Rd		Heurich Rd		Heurich Rd		TOTAL
	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
AM	EB	WB	EB	WB	NB	SB	NB	SB	
6:00 AM	0	0	0	0	0	0	0	4	4
6:15 AM	0	0	0	1	0	0	0	0	1
6:30 AM	0	0	1	0	0	0	0	0	1
6:45 AM	1	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	1	1
7:15 AM	0	0	0	0	4	0	4	1	9
7:30 AM	0	0	0	0	7	0	6	0	13
7:45 AM	0	0	0	0	1	0	3	1	5
8:00 AM	0	0	0	0	1	0	1	2	4
8:15 AM	0	1	0	0	1	0	3	0	5
8:30 AM	0	0	14	5	1	0	4	4	28
8:45 AM	0	0	10	6	0	0	0	1	17
9:00 AM	0	0	2	1	0	0	0	0	3
9:15 AM	0	0	0	0	0	1	0	0	1
9:30 AM	0	0	0	1	0	0	0	0	1
9:45 AM	0	0	1	0	1	0	1	1	4
TOTAL VOLUMES :	EB 1	WB 1	EB 28	WB 14	NB 16	SB 1	NB 22	SB 15	TOTAL 98
APPROACH %'s :	50.00%	50.00%	66.67%	33.33%	94.12%	5.88%	59.46%	40.54%	
PEAK HR :	07:15 AM - 08:15 AM								TOTAL 31
PEAK HR VOL :	0	0	0	0	13	0	14	4	
PEAK HR FACTOR :					0.464		0.583	0.500	0.596

NS/EW Streets:	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
10:00 AM	0	0	0	0	0	0	1	0	1
10:15 AM	0	0	0	0	0	0	0	1	1
10:30 AM	0	0	0	0	0	0	0	6	6
10:45 AM	0	0	0	0	1	0	1	4	6
11:00 AM	0	0	0	0	0	0	0	2	2
11:15 AM	0	0	0	0	0	1	1	3	5
11:30 AM	0	0	0	1	0	1	4	3	9
11:45 AM	0	0	1	0	1	1	2	0	5
12:00 PM	0	0	1	0	5	2	6	5	19
12:15 PM	0	0	1	1	0	0	0	0	2
12:30 PM	0	0	0	1	0	2	2	0	5
12:45 PM	0	1	0	2	0	0	1	0	4
1:00 PM	0	0	0	0	0	0	2	4	6
1:15 PM	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	2	0	0	0	0	2
1:45 PM	0	0	0	1	0	0	2	1	4
TOTAL VOLUMES :	EB 0	WB 1	EB 3	WB 8	NB 7	SB 7	NB 22	SB 29	TOTAL 77
APPROACH %'s :	0.00%	100.00%	27.27%	72.73%	50.00%	50.00%	43.14%	56.86%	
PEAK HR :	01:00 PM - 02:00 PM								TOTAL 12
PEAK HR VOL :	0	0	0	3	0	0	4	5	
PEAK HR FACTOR :				0.375			0.500	0.313	0.500

NS/EW Streets:	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
2:00 PM	0	0	0	0	0	0	1	2	3
2:15 PM	0	0	0	0	0	1	2	0	3
2:30 PM	0	0	0	0	0	8	0	53	61
2:45 PM	0	0	0	0	2	0	0	5	7
3:00 PM	0	0	4	0	0	0	0	2	6
3:15 PM	0	0	6	5	1	0	0	0	12
3:30 PM	0	0	1	13	0	0	0	0	14
3:45 PM	0	0	0	3	3	0	2	1	9
4:00 PM	0	0	0	0	0	0	0	3	3
4:15 PM	0	0	1	2	0	0	0	0	3
4:30 PM	0	0	0	2	0	0	0	0	2
4:45 PM	0	0	0	0	0	1	3	0	4
5:00 PM	0	0	0	1	2	3	0	1	7
5:15 PM	0	0	0	2	0	1	0	0	3
5:30 PM	0	0	2	0	0	0	0	1	3
5:45 PM	0	0	0	0	1	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	2	2	0	0	0	0	4
6:30 PM	0	0	1	0	0	0	0	1	2
6:45 PM	0	0	0	2	1	0	1	0	4
TOTAL VOLUMES :	EB 0	WB 0	EB 17	WB 32	NB 10	SB 14	NB 9	SB 69	TOTAL 151
APPROACH %'s :			34.69%	65.31%	41.67%	58.33%	11.54%	88.46%	
PEAK HR :	04:30 PM - 05:30 PM								TOTAL 16
PEAK HR VOL :	0	0	0	5	2	5	3	1	
PEAK HR FACTOR :				0.625	0.250	0.417	0.250	0.250	0.571

APPENDIX D
SIGNAL TIMINGS



SEQUENCE OF OPERATION SHEET


TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

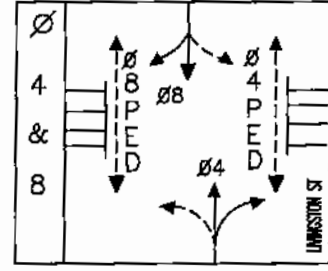
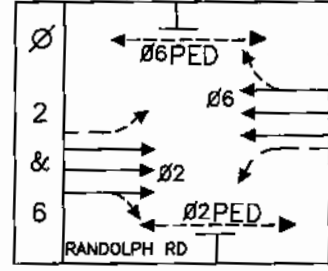
RANDOLPH RD
RUNS IN A
EAST- WEST
DIRECTION

NO. 921-A
SHT. 1 OF 1

INTERSECTION: RANDOLPH ROAD AND LIVINGSTON STREET

PHASING
NORTH

SIGNAL NO.	SIGNAL HEAD INDICATIONS			
	1,2,3,4,5,6,7,8			9,10,11,12 13,14,15,16
TOTAL:	8			8
LEGEND	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; margin-bottom: 5px;"></div> R </div> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; margin-bottom: 5px;"></div> Y </div> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; margin-bottom: 5px;"></div> G </div> <div style="display: flex; flex-direction: column; align-items: center; margin-top: 10px;"> <div style="display: flex; align-items: center; margin-bottom: 5px;"> ← ARROW </div> <div style="display: flex; align-items: center;"> F FLASHING </div> </div>			 16" LED 12"



SIGNAL NO.	SEQUENCE OF OPERATION										FLASH
	INTERVAL										
	1	2	3	4	5	6	7	8	9		
1	G	G	Y	R	R	R	R	R	R		Y
2	G	G	Y	R	R	R	R	R	R		Y
3	G	G	Y	R	R	R	R	R	R		Y
4	G	G	Y	R	R	R	R	R	R		Y
5	R	R	R	R	G	G	G	Y	R		R
6	R	R	R	R	G	G	G	Y	R		R
7	R	R	R	R	G	G	G	Y	R		R
8	R	R	R	R	G	G	G	Y	R		R
9	W	FDW	DW	DW	DW	DW	DW	DW	DW		DARK
10	W	FDW	DW	DW	DW	DW	DW	DW	DW		DARK
11	W	FDW	DW	DW	DW	DW	DW	DW	DW		DARK
12	W	FDW	DW	DW	DW	DW	DW	DW	DW		DARK
13	DW	DW	DW	DW	W	FDW	DW	DW	DW		DARK
14	DW	DW	DW	DW	W	FDW	DW	DW	DW		DARK
15	DW	DW	DW	DW	W	FDW	DW	DW	DW		DARK
16	DW	DW	DW	DW	W	FDW	DW	DW	DW		DARK
PHASE	2 & 6			ALL RED	4 & 8			ALL RED			

NOTES: A.O NEW SIGNAL. APS, CPS,

SUBMITTED: TSET 7-23-18 CHECKED: *K Hamud 10/9/18* APPROVED: *K Hamud 10/9/18*
 IN SERVICE BY: 766/768/784/793 DATE: 10/12/18 TIME: 1027

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PHASE IN USE/PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IN USE		X		X		X		X								
EXCLUSIVE PED																

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MIN GRN	0	10	0	7	5	10	0	7	0	0	0	0	0	0	0	0
BK MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DLY GRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WALK	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
WALK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WLK MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CLR	0	10	0	20	0	10	0	20	0	0	0	0	0	0	0	0
PD CLR2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VEH EXT	0.0	0.0	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VH EXT2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX1	0	50	0	30	0	50	0	30	0	0	0	0	0	0	0	0
MAX2	0	60	0	50	0	60	0	50	0	0	0	0	0	0	0	0
MAX3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM STP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YELLOW	0.0	4.0	0.0	3.5	0.0	4.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED CLR	0.0	2.0	0.0	3.0	0.0	2.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED MAX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED RVT	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX INT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CARS WT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDUC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTREDUC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LOCK DET																
VE RCALL																
PD RCALL		X				X										
MX RCALL		X				X										
SF RCALL																
NO REST																
AI CALC																

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COORDINATOR OPTIONS

MANUAL PATTERN	AUTO	ECPI COORD	X
SYSTEM SOURCE	SYS	SYSTEM FORMAT	STD
SPLITS IN	SECONDS	OFFSET IN	SECONDS
TRANSITION	SMOOTH	MAX SELECT	MAX2
DWELL/ADD TIME	255	FORCE OFF	FIXED
DLY COORD WK-LZ		CAL USE PED TM	X
OFFSET REF	LAG	PED RESERVE	
PED RECALL	X	FO ADD INI GRN	
LOCAL ZERO OVRD		MULTISYNC	
RE-SYNC COUNT	1		

COORDINATOR PATTERN 1

USE SPLIT PATTERN	1	TIMING PLAN	1
CYCLE	120	SEQUENCE	1
OFFSET VAL	100	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	0	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 2

USE SPLIT PATTERN	2	ACTUATED COORD	
CYCLE	120	ACT WALK REST	
OFFSET VAL	71	PHASE RESERVICE	

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COORDINATOR PATTERN 2

MAX SELECT	NONE	FORCE OFF	NONE
STD (COS)	0	VEH PERM 1	0
DWELL/ADD TIME	0	VEH PERM 2	0
TIMING PLAN	1	VEH PERM 2 - DISP	0
SEQUENCE	1	XART PTRN.	0
ACTION PLAN	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 3

USE SPLIT PATTERN	3	TIMING PLAN	1
CYCLE	120	SEQUENCE	1
OFFSET VAL	0	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	0	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 4

USE SPLIT PATTERN	4	TIMING PLAN	1
CYCLE	120	SEQUENCE	1
OFFSET VAL	71	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	0	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 5

USE SPLIT PATTERN	5	PHASE RESERVICE	
CYCLE	100	MAX SELECT	NONE
OFFSET VAL	0	STD (COS)	0
ACTUATED COORD		DWELL/ADD TIME	0
ACT WALK REST		TIMING PLAN	1

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COORDINATOR PATTERN 5

SEQUENCE	1	VEH PERM 2	0
ACTION PLAN	0	VEH PERM 2 - DISP	0
FORCE OFF	NONE	XART PTRN.	0
VEH PERM 1	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

Split 1

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	84	0	36	0	84	0	36
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 1

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	79	0	41	0	79	0	41
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	9	10	11	12	13	14	15	16	PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0	COORD								

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PHASE	9	10	11	12	13	14	15	16
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	84	0	36	0	84	0	36
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT

Split 4

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	79	0	41	0	79	0	41
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT

Split 5

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	64	0	36	0	64	0	36
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 5

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT

ACTION PLAN 1

PATTERN	1	DIMMING ENABLE		PED DET DIAG PLN	0
TIMING PLAN	1	SYS OVERRIDE		PRIORITY RETURN	
VEH DET PLAN	0	SEQUENCE	1	PED PR RETURN	
FLASH		DET LOG	0	QUEUE DELAY	
VEH DET DIAG PLN	0	RED REST		PMT COND DELAY	

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	E	E	E	.	.	.	.	.	.	.	.
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 2

PATTERN	2	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

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LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	E	E	E
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 3

PATTERN	3	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	E	E	E	.	.	.	.	.	.	.	.
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 4

PATTERN	4	VEH DET DIAG PLN	0	DET LOG	0	PED PR RETURN	
TIMING PLAN	1	DIMMING ENABLE		RED REST		QUEUE DELAY	
VEH DET PLAN	0	SYS OVERRIDE		PED DET DIAG PLN	0	PMT COND DELAY	
FLASH		SEQUENCE	1	PRIORITY RETURN			

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	E	E	E	.	.	.	.	.	.	.	.
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 5

PATTERN	5	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

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LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	E	E	E
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

Day Plan 1

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 1

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NextEdit

SIG#0921 Hub-IE

Page 11
October 20, 2022

Day Plan 4

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	6	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	6	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NextEdit

SIG#0921 Hub-IE

Page 12
October 20, 2022

Day Plan 7

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NextEdit

SEQUENCE OF OPERATION SHEET

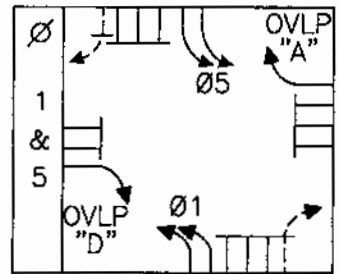
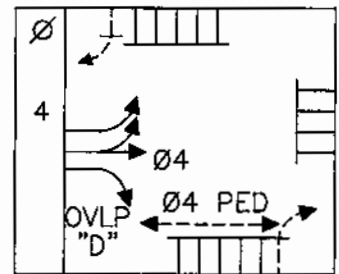
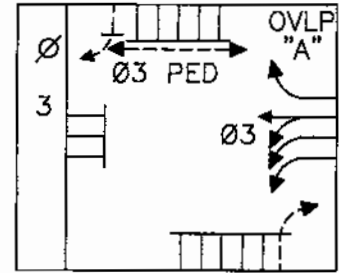
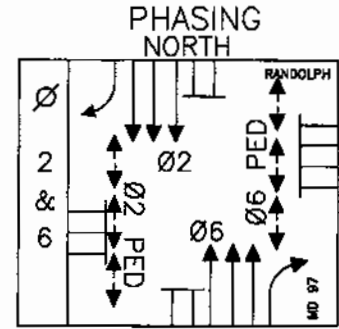
MD 97
RUNS IN A
NORTH-SOUTH
DIRECTION

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 210 - 0
1 OF 3

INTERSECTION: GEORGIA AVENUE (MD 97) & RANDOLPH ROAD

SIGNAL NO.	SIGNAL HEAD INDICATIONS				
	5,6,11,12 15,19,58,59	1,2,3,4 7,8,9,10	48,49,50 51,52,53	13,14,16 17,18,20	21-32 54-57
TOTAL:	8	8	6	6	16
LEGEND	(R)	(←R)	(R→)	(R)	(R→) (←R)
OPTICALLY LIMITED	(Y)	(←Y)	(Y→)	(Y)	(Y→) (←Y)
R RED	(G)	(←G)	(G→)	(G)	(G→) (←G)
Y YELLOW					
G GREEN					
← ARROW					
F FLASHING					
	12"	12"	12"	12"	12" 16"



SIGNAL NO.	SEQUENCE OF OPERATION																	FLASH	
	INTERVAL																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
1&2	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	
3&4	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	
5&6	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
58	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
7&8	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	
9&10	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	
11&12	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
59	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
13&14	R	R	R	R	R	R	R	R	R	G	G	G	Y	R	R	R	R	R	
15	R	R	R	R	R	R	R	R	R	G	G	G	Y	R	R	R	R	R	
16	R	R	R	R	R	R	R	R	R	G	G	G	Y	R	R	R	R	R	
17&18	R	R	R	R	G	G	G	Y	R	R	R	R	R	R	R	R	R	R	
19	R	R	R	R	G	G	G	Y	R	R	R	R	R	R	R	R	R	R	
20	R	R	R	R	G	G	G	Y	R	R	R	R	R	R	R	R	R	R	
48&49	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	
50	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	
51&52	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	
53	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	
22&27	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK	
24&25	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK	
55&56	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK	
23&26	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK	
21&28	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK	
54&57	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK	
29&32	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK	
30&31	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DARK	
PHASE	2 & 6		ALL RED		3			ALL RED		4			ALL RED		1 & 5		ALL RED		

NOTES: O = ULTIMATE TRAFFIC SIGNAL. OPENS DOUBLE LEFTS ON MAINLINE
 EBRT = OVERLAP "D"
 WBRT = OVERLAP "A"
 Ø2 PED IS ON LS 9 + Ø2 PED IS ON LS 14 = (OVLP "B")
 Ø6 PED IS ON LS 11 + Ø6 PED IS ON LS 15 = (OVLP "C")

SUBMITTED: <u>VP 09/04/2018</u>	CHECKED: <u>KHamud 9/15/18</u>	APPROVED: <u>KHamud 9/15/18</u>
IN SERVICE BY: <u>766/767/774</u>	DATE: <u>10/25/2018</u>	TIME: <u>10:05 AM</u>

SEQUENCE OF OPERATION SHEET

MD 97
RUNS IN A
NORTH-SOUTH
DIRECTION

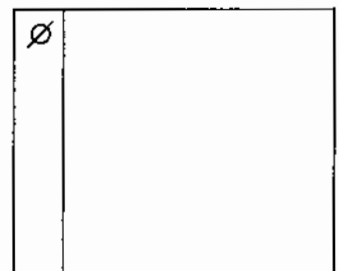
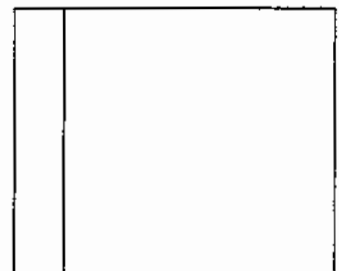
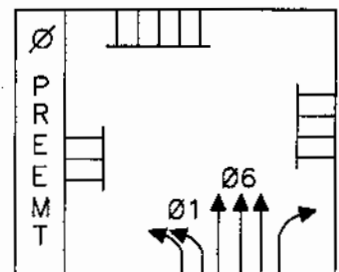
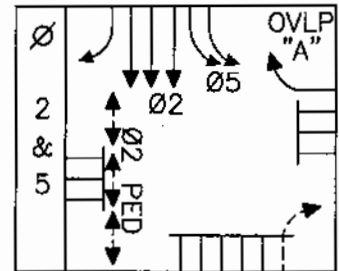
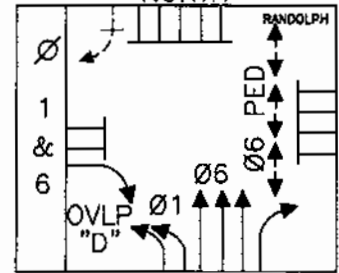
TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 210 - 0
2 OF 3

INTERSECTION: GEORGIA AVENUE (MD 97) & RANDOLPH ROAD

PHASING
NORTH

SIGNAL NO.	SIGNAL HEAD INDICATIONS				
	5,6,11,12 15,19,58,59	1,2,3,4 7,8,9,10	48,49,50 51,52,53	13,14,16 17,18,20	21-32 54-57
TOTAL:	8	8	6	6	16
LEGEND	(R)	(←R)	(→R)	(R)	
OPTICALLY LIMITED	(Y)	(←Y)	(→Y)	(Y)	12" 16"
R RED	(G)	(←G)	(→G)	(G)	
Y YELLOW					
G GREEN					
← ARROW					
F FLASHING					



SIGNAL NO.	SEQUENCE OF OPERATION																FLASH		
	INTERVAL																		
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34		
1&2	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
3&4	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
5&6	G	G	G	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R
58	G	G	G	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R
7&8	←R	←R	←R	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
9&10	←R	←R	←R	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
11&12	R	R	R	G	G	G	G	Y	R	R	R	R	R	R	R	R	R	R	R
59	R	R	R	G	G	G	G	Y	R	R	R	R	R	R	R	R	R	R	R
13&14	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	R	R	R	R	R
15	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	R	R	R	R	R
16	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	R	R	R	R	R
17&18	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R
19	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R
20	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R
48&49	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←Y	←R	←Y	←R	←R	←R
50	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←Y	←R	←Y	←R	←R	←R
51&52	←R	←R	←R	←G	←Y	←R	←R	←R	←R	←G	←Y	←R	←R	←R	←Y	←R	←R	←R	←R
53	←R	←R	←R	←G	←Y	←R	←R	←R	←R	←G	←Y	←R	←R	←R	←Y	←R	←R	←R	←R
22&27	W	W	W	DW	DW	DW	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
24&25	W	W	W	DW	DW	DW	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
55&56	W	W	W	DW	DW	DW	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
23&26	DW	DW	DW	W	W	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
21&28	DW	DW	DW	W	W	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
54&57	DW	DW	DW	W	W	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
29&32	DW	DW	DW	DW	DW	DW	DW	DW	DW	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW
30&31	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	FDW	DW	DW	DW	DW	DW	DW	DW
PHASE	1 & 6	ALL RED	2 & 5	ALL RED	2&6			3			4			1&5					

NOTES: O = ULTIMATE TRAFFIC SIGNAL. OPENS DOUBLE LEFTS ON MAINLINE
 EBRT = OVERLAP "D"
 WBRT = OVERLAP "A"
 Ø2 PED IS ON LS 9 + Ø2 PED IS ON LS 14 = (OVLP "B")
 Ø6 PED IS ON LS 11 + Ø6 PED IS ON LS 15 = (OVLP "C")

SUBMITTED: <u>VP 09/04/2018</u>	CHECKED: _____	APPROVED: _____
IN SERVICE BY: _____	DATE: <u>D-15</u>	TIME: _____

SEQUENCE OF OPERATION SHEET

NO. 210 - 0
3 OF 3

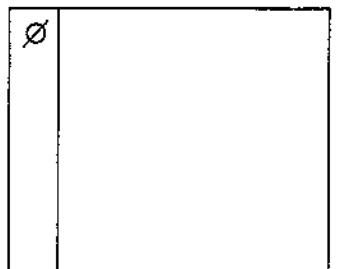
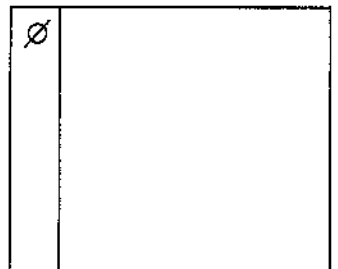
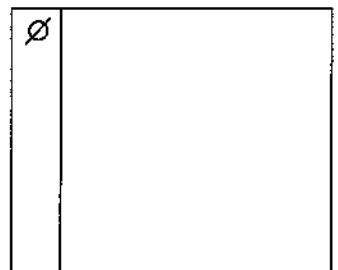
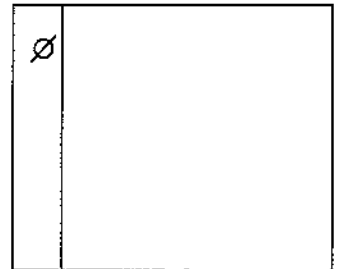
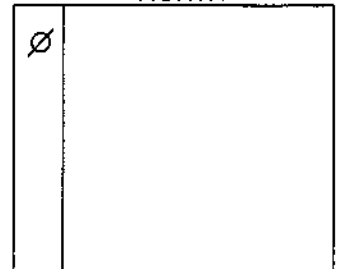
MD 97
RUNS IN A
NORTH-SOUTH
DIRECTION

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

INTERSECTION: GEORGIA AVENUE (MD 97) & RANDOLPH ROAD

PHASING
NORTH

SIGNAL NO.	SIGNAL HEAD INDICATIONS				
	5,6,11,12 15,19,58,59	1,2,3,4 7,8,9,10	48,49,50 51,52,53	13,14,16 17,18,20	21-32 54-57
TOTAL:	8	8	6	6	16
LEGEND	(R) (Y) (G)	(←R) (←Y) (←G)	(→R) (→Y) (→G)	(R) (Y) (G) (←G)	 12" 16"
OPTICALLY LIMITED R RED Y YELLOW G GREEN ARROW F FLASHING	12"	12"	12"	12"	



SIGNAL NO.	SEQUENCE OF OPERATION								FLASH
	INTERVAL								
	35	36	37	38	39	40	41	42	
1&2	←G	←Y	←R	←R	←R	←G	←Y	←R	←R
3&4	←G	←Y	←R	←R	←R	←G	←Y	←R	←R
5&6	G	G	R	R	R	G	G	G	R
58	G	G	R	R	R	G	G	G	R
7&8	←R	←R	←G	←Y	←R	←R	←R	←R	←R
9&10	←R	←R	←G	←Y	←R	←R	←R	←R	←R
11&12	R	R	G	Y	R	R	R	R	R
59	R	R	G	Y	R	R	R	R	R
13&14	R	R	R	R	R	R	R	R	R
15	R	R	R	R	R	R	R	R	R
16	R	R	R	R	R	R	R	R	R
17&18	R	R	R	R	R	R	R	R	R
19	R	R	R	R	R	R	R	R	R
20	R	R	R	R	R	R	R	R	R
48&49	→G	→Y	→R	→R	→R	→G	→Y	→R	→R
50	→G	→Y	→R	→R	→R	→G	→Y	→R	→R
51&52	→R	→R	→G	→Y	→R	→R	→R	→R	→R
53	→R	→R	→G	→Y	→R	→R	→R	→R	→R
22&27	FDW	DW	DW	DW	DW	DW	DW	DW	DARK
24&25	FDW	DW	DW	DW	DW	DW	DW	DW	DARK
55&56	FDW	DW	DW	DW	DW	DW	DW	DW	DARK
23&26	DW	DW	FDW	DW	DW	DW	DW	DW	DARK
21&28	DW	DW	FDW	DW	DW	DW	DW	DW	DARK
54&57	DW	DW	FDW	DW	DW	DW	DW	DW	DARK
29&32	DW	DW	DW	DW	DW	DW	DW	DW	DARK
30&31	DW	DW	DW	DW	DW	DW	DW	DW	DARK
PHASE	1&6 CLEAR TO PREEMPT	2&5 CLEAR TO PREEMPT		PMT		CLEAR PMT			

NOTES: 0 = ULTIMATE TRAFFIC SIGNAL. OPENS DOUBLE LEFTS ON MAINLINE
 EBRT = OVERLAP "D"
 WBRT = OVERLAP "A"
 Ø2 PED IS ON LS 9 + Ø2 PED IS ON LS 14 = (OVLP "B")
 Ø6 PED IS ON LS 11 + Ø6 PED IS ON LS 15 = (OVLP "C")

SUBMITTED: <u>VP 09/04/2018</u>	CHECKED: _____	APPROVED: _____
IN SERVICE BY: _____	DATE: _____	TIME: _____

SIG#0210 Hub-IE

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PHASE IN USE/PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IN USE	X	X	X	X	X	X										
EXCLUSIVE PED																

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MIN GRN	8	10	10	10	8	10	0	0	5	5	5	5	5	5	5	5
BK MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DLY GRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WALK	0	7	7	7	0	7	0	0	0	0	0	0	0	0	0	0
WALK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WLK MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CLR	0	16	33	30	0	16	0	0	0	0	0	0	0	0	0	0
PD CLR2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VEH EXT	4.0	0.0	3.0	3.5	4.0	0.0	0.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
VH EXT2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX1	16	60	40	40	16	60	0	0	35	35	35	35	35	35	35	35
MAX2	20	60	30	25	20	60	0	0	40	40	40	40	40	40	40	40
MAX3	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0
DYM MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM STP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YELLOW	3.5	4.0	4.0	4.0	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED CLR	3.5	5.0	8.0	8.0	3.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED MAX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED RVT	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX INT	99	99	99	99	99	99	99	99	0	0	0	0	0	0	0	0
TIME B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CARS WT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDUC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTREDUC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LOCK DET																
VE RCALL																
PD RCALL		X				X										
MX RCALL		X				X										
SF RCALL																
NO REST																
AI CALC																

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SIG#0210 Hub-IEPage 2
October 20, 2022**COORDINATOR OPTIONS**

MANUAL PATTERN	AUTO	ECPI COORD	X
SYSTEM SOURCE	SYS	SYSTEM FORMAT	STD
SPLITS IN	SECONDS	OFFSET IN	SECONDS
TRANSITION	SMOOTH	MAX SELECT	MAX2
DWELL/ADD TIME	255	FORCE OFF	FIXED
DLY COORD WK-LZ		CAL USE PED TM	X
OFFSET REF	LAG	PED RESERVE	
PED RECALL	X	FO ADD INI GRN	
LOCAL ZERO OVRD		MULTISYNC	
RE-SYNC COUNT	1		

COORDINATOR PATTERN 1

USE SPLIT PATTERN	1	TIMING PLAN	1
CYCLE	180	SEQUENCE	1
OFFSET VAL	77	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	111	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 2

USE SPLIT PATTERN	2	ACTUATED COORD	
CYCLE	150	ACT WALK REST	
OFFSET VAL	147	PHASE RESERVICE	

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COORDINATOR PATTERN 2

MAX SELECT	NONE	FORCE OFF	NONE
STD (COS)	121	VEH PERM 1	0
DWELL/ADD TIME	0	VEH PERM 2	0
TIMING PLAN	1	VEH PERM 2 - DISP	0
SEQUENCE	1	XART PTRN.	0
ACTION PLAN	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 3

USE SPLIT PATTERN	3	TIMING PLAN	1
CYCLE	180	SEQUENCE	1
OFFSET VAL	69	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	131	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 4

USE SPLIT PATTERN	4	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	147	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	141	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

Split 1

PHASE	1	2	3	4	5	6	7	8
SPLIT	21	58	52	49	31	48	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

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Split 1

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	1	2	3	4	5	6	7	8
SPLIT	22	35	52	41	22	35	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	1	2	3	4	5	6	7	8
SPLIT	39	40	52	49	22	57	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	1	2	3	4	5	6	7	8
SPLIT	22	35	52	41	22	35	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PREEMPT PLAN 1

VEH/PED (OVERLAP)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
TRKCLR V
TRKCLR O

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PREEMPT PLAN 1

VEH/PED (OVERLAP)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
ENA TRL																
DWEL VEH	X	X
DWEL PED																
DWEL OLP	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CYC VEH	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CYC PED																
CYC OLP	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
EXIT PH		X				X										
EXIT CAL	X		X	X	X											
SP FUNC																

OPTIONS

ENABLE	S1
DET LOCK	X
OVERIDE FL	X
TERM OLP	X
PED DARK	
X TMG PLN	0
PMT OVRIDE	X
DELAY	0
DURATION	45
PC>YEL	
TC RESERV	

OPTIONS

X FLCOLR	GRN	TERM PH	
RE-SERV	0	DWELL FL	OFF
INTERLOCK		EXIT OPT	OFF
INHIBIT	0	FLT TYPE	HARD
CLR>GRN		PMT ACTIVE OUT	ON

FREE DUR PMT

Ring	1	2	3	4
FREE DUR PMT				

Times

ENTRANCE TM - WALK	0	TRACK CLEAR - MIN GR	0	DWL/CYC-EXIT - MIN DL	45
ENTRANCE TM - PED CL	28	TRACK CLEAR - EXT GR	0	DWL/CYC-EXIT - PMT EXT	0.0
ENTRANCE TM - MN GR	0	TRACK CLEAR - MX GR	0	DWL/CYC-EXIT - MX TM	90
ENTRANCE TM - YEL	4.0	TRACK CLEAR - YEL	4.0	DWL/CYC-EXIT - YEL	4.0
ENTRANCE TM - RED	2.0	TRACK CLEAR - RED	2.0	DWL/CYC-EXIT - RED	2.0

ACTION PLAN 1

PATTERN	1	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 2

PATTERN	2	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

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ACTION PLAN 4

PATTERN	4	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 30

PATTERN	3	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MAX 2																
MAX 3	X															
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

Day Plan 1

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	1	2	30	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 1

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	1	2	30	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	1	2	30	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NextEdit

SIG#0210 Hub-IE

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October 20, 2022

Day Plan 3

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
START TIME - HH	0	6	9	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	1	2	30	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	1	2	30	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	10	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NextEdit

SIG#0210 Hub-IE

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Day Plan 7

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	9	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NextEdit

RANDOLPH RD
RUNS IN A
EAST-WEST
DIRECTION

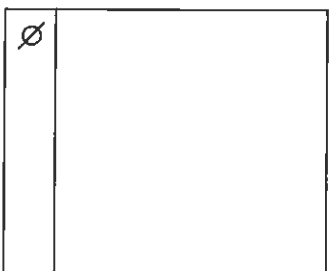
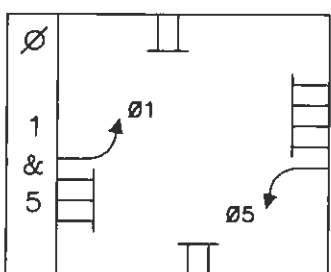
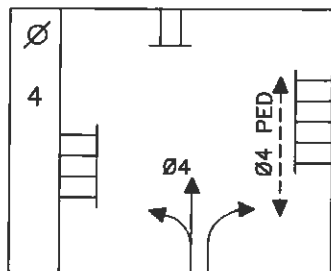
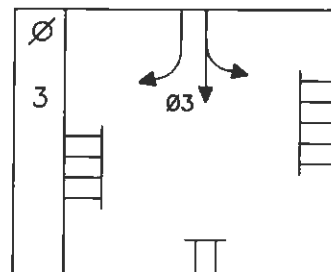
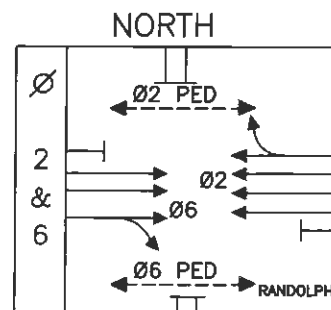
SEQUENCE OF OPERATION SHEET

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 218-1
SHT. 1 OF 3
PHASING

INTERSECTION: RANDOLPH ROAD AND GLENMONT CIRCLE

SIGNAL NO.	SIGNAL HEAD INDICATIONS			
	1,2,6,7	3,4,5,8,9 10,13,16	11,12,14,15	17-22
TOTAL:	4	8	4	6
LEGEND	 12"	 12"	 12"	 16"



SIGNAL NO.	SEQUENCE OF OPERATION															FLASH			
	INTERVAL																		
1	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←G	←Y	←R				←R
2	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←G	←Y	←R				←R
3	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R				Y
4	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R				Y
5	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R				Y
6	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←G	←Y	←R				←R
7	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←G	←Y	←R				←R
8	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R				Y
9	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R				Y
10	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R				Y
11	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R				R
12	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R				R
13	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R				R
14	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R				R
15	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R				R
16	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R				R
17	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW				DARK
18	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW				DARK
19	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW				DARK
20	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW				DARK
21	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW				DARK
22	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW				DARK
PHASE	2 & 6	ALL RED	3	ALL RED	4				ALL RED	1 & 5	ALL RED								

NOTES: = ADD PREEMPTION PHASE 4

Changed ped signals to 16" COP 8/26/20

SUBMITTED: KMH. 1-29-20	CHECKED: <i>KHamud 2/20/20</i>	APPROVED: <i>KHamud 2/20/20</i>
IN SERVICE BY: <i>789/761</i>	DATE: <i>2/26/20</i>	TIME: <i>12:00 noon</i>

RANDOLPH RD
RUNS IN A
EAST-WEST
DIRECTION

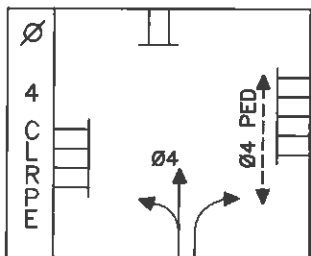
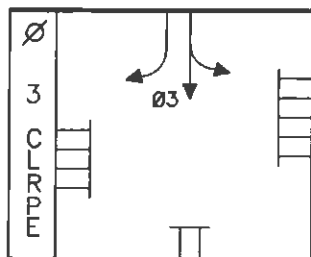
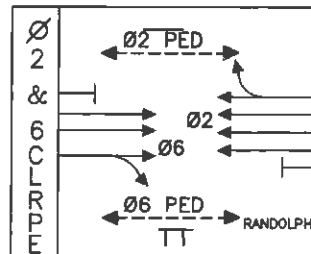
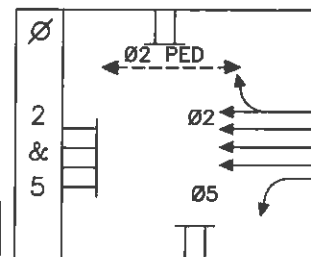
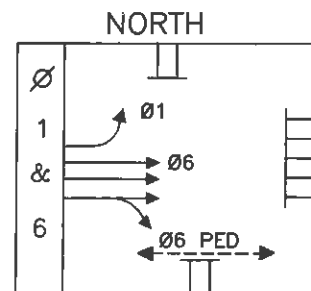
SEQUENCE OF OPERATION SHEET

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 218-1
SHT. 2 OF 3
PHASING

INTERSECTION: RANDOLPH ROAD AND GLENMONT CIRCLE

SIGNAL NO.	SIGNAL HEAD INDICATIONS			
	1,2,6,7	3,4,5,8,9 10,13,16	11,12,14,15	17-22
TOTAL:	4	8	4	6
LEGEND			 	 88
OPTICALLY LIMITED			 	
R RED				
Y YELLOW				
G GREEN				
← ARROW				
F FLASHING				



SIGNAL NO.	SEQUENCE OF OPERATION														FLASH		
	INTERVAL																
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
1	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R					←R
2	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R					←R
3	G	G	G	R	R	R	Y	R	R	R	R	R					Y
4	G	G	G	R	R	R	Y	R	R	R	R	R					Y
5	G	G	G	R	R	R	Y	R	R	R	R	R					Y
6	←R	←R	←R	←G	←Y	←R	←R	←R	←R	←R	←R	←R					←R
7	←R	←R	←R	←G	←Y	←R	←R	←R	←R	←R	←R	←R					←R
8	R	R	R	G	G	G	Y	R	R	R	R	R					Y
9	R	R	R	G	G	G	Y	R	R	R	R	R					Y
10	R	R	R	G	G	G	Y	R	R	R	R	R					Y
11	R	R	R	R	R	R	R	R	R	R	Y	R					R
12	R	R	R	R	R	R	R	R	R	R	Y	R					R
13	R	R	R	R	R	R	R	R	R	R	Y	R					R
14	R	R	R	R	R	R	R	R	Y	R	R	R					R
15	R	R	R	R	R	R	R	R	Y	R	R	R					R
16	R	R	R	R	R	R	R	R	Y	R	R	R					R
17	DW	DW	DW	W	W	W	FDW	DW	DW	DW	DW	DW					DARK
18	W	W	W	DW	DW	DW	FDW	DW	DW	DW	DW	DW					DARK
19	W	W	W	DW	DW	DW	FDW	DW	DW	DW	DW	DW					DARK
20	DW	DW	DW	W	W	W	FDW	DW	DW	DW	DW	DW					DARK
21	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	FDW	DW					DARK
22	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	FDW	DW					DARK
PHASE	1 & 6	ALL RED	2 & 5	ALL RED	CLR TO PE 2 & 6	CLR PE 3	CLR PE 4										

NOTES: I= ADD PREEMPTION PHASE 4

SUBMITTED: KMH. 1-29-20 CHECKED: KHermida/2/20/20 APPROVED: KHermida/2/20/20
 IN SERVICE BY: _____ DATE: _____ TIME: _____

RANDOLPH RD
RUNS IN A
EAST-WEST
DIRECTION

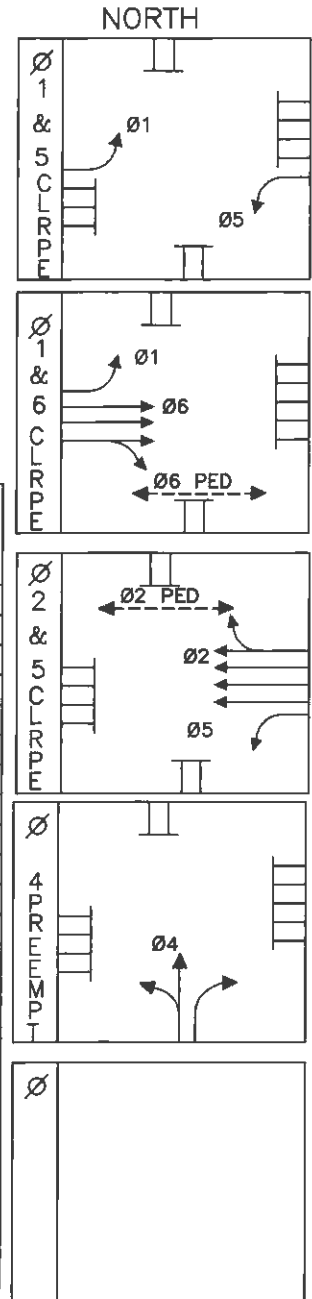
SEQUENCE OF OPERATION SHEET

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 218-1
SHT. 3 OF 3
PHASING

INTERSECTION: RANDOLPH ROAD AND GLENMONT CIRCLE

SIGNAL NO.	SIGNAL HEAD INDICATIONS			
	1,2,6,7	3,4,5,8,9 10,13,16	11,12,14,15	17-22
TOTAL:	4	8	4	6
LEGEND	 12"	 12"	 12"	 12" 16"



SIGNAL NO.	SEQUENCE OF OPERATION													FLASH		
	INTERVAL															
	28	29	30	31	32	33	34	35	36	37	38	39				
1	←Y	←R	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R				←R
2	←Y	←R	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R				←R
3	R	R	Y	R	R	R	G	R	R	R	R	R				Y
4	R	R	Y	R	R	R	G	R	R	R	R	R				Y
5	R	R	Y	R	R	R	G	R	R	R	R	R				Y
6	←Y	←R	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R				←R
7	←Y	←R	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R				←R
8	R	R	R	Y	Y	G	R	R	R	R	R	R				Y
9	R	R	R	Y	Y	G	R	R	R	R	R	R				Y
10	R	R	R	Y	Y	G	R	R	R	R	R	R				Y
11	R	R	R	R	R	R	R	G	G	G	Y	R				R
12	R	R	R	R	R	R	R	R	G	G	Y	R				R
13	R	R	R	R	R	R	R	R	G	G	Y	R				R
14	R	R	R	R	R	R	R	R	R	R	R	R				R
15	R	R	R	R	R	R	R	R	R	R	R	R				R
16	R	R	R	R	R	R	R	R	R	R	R	R				R
17	DW	DW	DW	DW	FDW	DW	DW	DW	DW	DW	DW	DW				DARK
18	DW	DW	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW				DARK
19	DW	DW	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW				DARK
20	DW	DW	DW	DW	FDW	DW	DW	DW	DW	DW	DW	DW				DARK
21	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW				DARK
22	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW				DARK
PHASE	CLR PE & 5	CLR PE 1&6	CLR PE 2&5	PREEMPT 4									ALL RED			

NOTES: = ADD PREEMPTION PHASE 4

SUBMITTED: <u>KMH. 1-29-20</u>	CHECKED: <u>KHamud</u>	APPROVED: <u>KHamud 2/20/20</u>
IN SERVICE BY: _____	DATE: _____	TIME: _____

SIG#0218 Hub-IE

Page 1
October 20, 2022

PHASE IN USE/PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IN USE	X	X	X	X	X	X										
EXCLUSIVE PED																

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MIN GRN	5	7	5	5	5	7	0	0	0	0	0	0	0	0	0	0
BK MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DLY GRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WALK	0	7	0	7	0	7	0	0	0	0	0	0	0	0	0	0
WALK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WLK MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CLR	0	12	0	29	0	12	0	0	0	0	0	0	0	0	0	0
PD CLR2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VEH EXT	3.0	0.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VH EXT2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX1	10	60	20	20	10	60	0	0	0	0	0	0	0	0	0	0
MAX2	30	60	20	25	30	60	0	0	0	0	0	0	0	0	0	0
MAX3	30	60	20	25	30	60	0	0	0	0	0	0	0	0	0	0
DYM MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM STP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YELLOW	3.5	4.0	3.5	3.5	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED CLR	2.5	2.0	3.5	3.5	2.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED MAX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED RVT	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX INT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CARS WT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDUC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTREDUC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LOCK DET			X	X	X											
VE RCALL																
PD RCALL		X				X										
MX RCALL		X				X										
SF RCALL																
NO REST																
AI CALC																

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SIG#0218 Hub-IEPage 2
October 20, 2022**COORDINATOR OPTIONS**

MANUAL PATTERN	AUTO	ECPI COORD	X
SYSTEM SOURCE	SYS	SYSTEM FORMAT	STD
SPLITS IN	SECONDS	OFFSET IN	SECONDS
TRANSITION	SMOOTH	MAX SELECT	MAX2
DWELL/ADD TIME	255	FORCE OFF	FIXED
DLY COORD WK-LZ		CAL USE PED TM	X
OFFSET REF	LAG	PED RESERVE	
PED RECALL	X	FO ADD INI GRN	
LOCAL ZERO OVRD		MULTISYNC	
RE-SYNC COUNT	1		

COORDINATOR PATTERN 1

USE SPLIT PATTERN	1	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	4	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	111	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 2

USE SPLIT PATTERN	2	ACTUATED COORD	
CYCLE	135	ACT WALK REST	
OFFSET VAL	115	PHASE RESERVICE	

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COORDINATOR PATTERN 2

MAX SELECT	NONE	FORCE OFF	NONE
STD (COS)	121	VEH PERM 1	0
DWELL/ADD TIME	0	VEH PERM 2	0
TIMING PLAN	1	VEH PERM 2 - DISP	0
SEQUENCE	1	XART PTRN.	0
ACTION PLAN	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 3

USE SPLIT PATTERN	3	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	134	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	131	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 4

USE SPLIT PATTERN	4	TIMING PLAN	1
CYCLE	135	SEQUENCE	1
OFFSET VAL	115	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	141	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

Split 1

PHASE	1	2	3	4	5	6	7	8
SPLIT	20	67	20	43	20	67	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

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Split 1

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	1	2	3	4	5	6	7	8
SPLIT	20	47	25	43	20	47	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	1	2	3	4	5	6	7	8
SPLIT	20	63	24	43	20	63	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	1	2	3	4	5	6	7	8
SPLIT	20	47	25	43	20	47	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PREEMPT PLAN 1

VEH/PED (OVERLAP)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
TRKCLR V
TRKCLR O

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PREEMPT PLAN 1

VEH/PED (OVERLAP)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
ENA TRL																
DWEL VEH	.	.	.	X
DWEL PED																
DWEL OLP	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CYC VEH	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CYC PED																
CYC OLP	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
EXIT PH	X				X											
EXIT CAL	X	X	X		X	X										
SP FUNC																

OPTIONS

ENABLE	S1
DET LOCK	X
OVERIDE FL	X
TERM OLP	
PED DARK	
X TMG PLN	0
PMT OVRIDE	X
DELAY	15
DURATION	25
PC>YEL	
TC RESERV	

OPTIONS

X FLCOLR	GRN	TERM PH	
RE-SERV	0	DWELL FL	OFF
INTERLOCK		EXIT OPT	OFF
INHIBIT	0	FLT TYPE	HARD
CLR>GRN		PMT ACTIVE OUT	ON

FREE DUR PMT

Ring	1	2	3	4
FREE DUR PMT				

Times

ENTRANCE TM - WALK	0	TRACK CLEAR - MIN GR	0	DWL/CYC-EXIT - MIN DL	6
ENTRANCE TM - PED CL	18	TRACK CLEAR - EXT GR	0	DWL/CYC-EXIT - PMT EXT	0.0
ENTRANCE TM - MN GR	0	TRACK CLEAR - MX GR	0	DWL/CYC-EXIT - MX TM	0
ENTRANCE TM - YEL	0.0	TRACK CLEAR - YEL	0.0	DWL/CYC-EXIT - YEL	4.0
ENTRANCE TM - RED	0.0	TRACK CLEAR - RED	0.0	DWL/CYC-EXIT - RED	1.0

ACTION PLAN 1

PATTERN	1	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 2

PATTERN	2	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

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ACTION PLAN 3

PATTERN	3	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 4

PATTERN	4	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

Day Plan 1

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	2	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	15	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 1

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	2	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	15	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	2	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Day Plan 3

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
START TIME - HH	0	6	9	15	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	2	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	15	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	2	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	15	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	9	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NextEdit

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Day Plan 7

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
ACTION PLAN	4	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	9	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NextEdit

RANDOLPH RD
RUNS IN A
EAST-WEST
DIRECTION

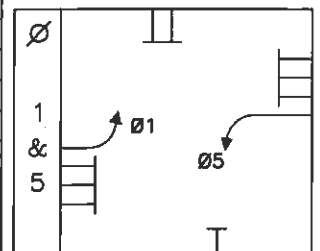
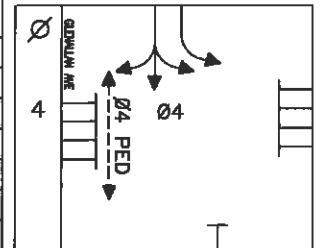
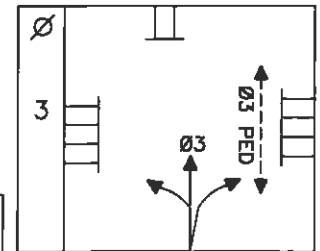
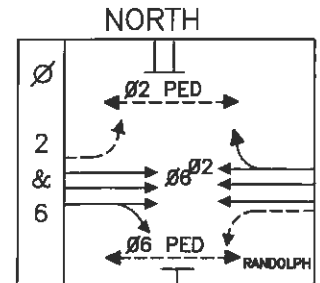
SEQUENCE OF OPERATION SHEET

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 219-E
SHT. 1 OF 2
PHASING

INTERSECTION: RANDOLPH ROAD AND GLENALLAN AVENUE

SIGNAL NO.	SIGNAL HEAD INDICATIONS			
	3,6,9,12	7,8,10,11	1,2,4,5	13-20
TOTAL:	4	4	4	8
LEGEND	(R) (Y) (G)	(R) (Y) (G) (G)	(R) (Y) (Y) (G) (G)	 12" 16"
○ OPTICALLY LIMITED R RED Y YELLOW G GREEN ← ARROW F FLASHING	12"	12"	12"	



SIGNAL NO.	SEQUENCE OF OPERATION																FLASH			
	INTERVAL																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			
1	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	G	R	Y	R	Y	
2	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	G	R	Y	R	Y	
3	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	G	R	Y	R	Y	
4	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	G	R	Y	R	Y	
5	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	G	R	Y	R	Y	
6	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	G	R	Y	R	Y	
7	R	R	R	R	G	G	G	G	Y	R	R	R	R	R	R	R	R	R	R	
8	R	R	R	R	G	G	G	G	Y	R	R	R	R	R	R	R	R	R	R	
9	R	R	R	R	G	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	
10	R	R	R	R	R	R	R	R	R	G	G	G	G	Y	R	R	R	R	R	
11	R	R	R	R	R	R	R	R	R	G	G	G	G	Y	R	R	R	R	R	
12	R	R	R	R	R	R	R	R	R	G	G	G	Y	R	R	R	R	R	R	
13	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
14	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
15	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
16	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
17	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	
18	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
19	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
20	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	
PHASE	2 & 6	ALL RED	3				ALL RED	4				ALL RED	1 & 5	ALL RED						

NOTES: E-SIGNAL REBUILD. ADD MAINLINE EP LEFT TURN Ø'S 1 & 5. NEW TS2 CAB, APS/CPS, VIDEO DETECTION
CHANGE Ø3 TO NB AND Ø4 TO SB

SUBMITTED: VP 03/08/2021	CHECKED: <i>[Signature]</i> 6/17/21	APPROVED: <i>[Signature]</i> 6/17/21
IN SERVICE BY: <i>[Signature]</i>	DATE: 6/17/21	TIME: 12:50


RANDOLPH RD
RUNS IN A
EAST-WEST
DIRECTION

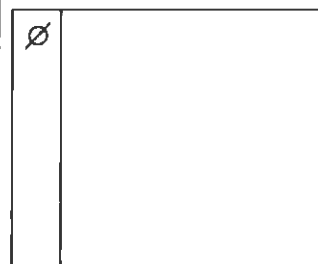
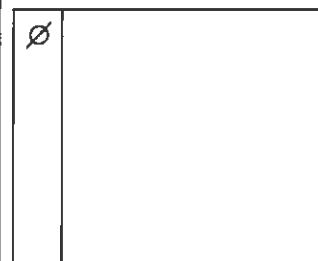
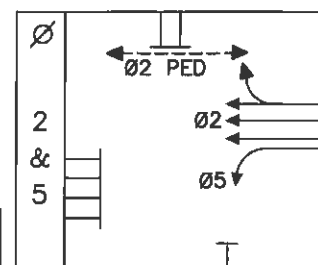
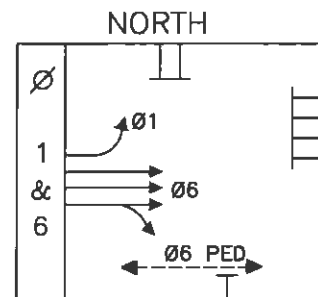
SEQUENCE OF OPERATION SHEET

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 219-E
SHT. 2 OF 2
PHASING

INTERSECTION: RANDOLPH ROAD AND GLENALLAN AVENUE

SIGNAL NO.	SIGNAL HEAD INDICATIONS			
	3,6,9,12	7,8,10,11	1,2,4,5	13-20
TOTAL:	4	4	4	8
LEGEND	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	 12" 16"
○ OPTICALLY LIMITED R RED Y YELLOW G GREEN ← ARROW F FLASHING	12"	12"	12"	



SIGNAL NO.	SEQUENCE OF OPERATION																			FLASH	
	INTERVAL																				
	18	19	20	21	22	23															
1	G	G	G	R	R	R															Y
2	G	G	G	R	R	R															Y
3	G	G	G	R	R	R															Y
4	R	R	R	G	G	G															Y
5	R	R	R	G	G	G															Y
6	R	R	R	G	G	G															Y
7	R	R	R	R	R	R															R
8	R	R	R	R	R	R															R
9	R	R	R	R	R	R															R
10	R	R	R	R	R	R															R
11	R	R	R	R	R	R															R
12	R	R	R	R	R	R															R
13	DW	DW	DW	W	W	W															DARK
14	W	W	W	DW	DW	DW															DARK
15	W	W	W	DW	DW	DW															DARK
16	DW	DW	DW	W	W	W															DARK
17	DW	DW	DW	DW	DW	DW															DARK
18	DW	DW	DW	DW	DW	DW															DARK
19	DW	DW	DW	DW	DW	DW															DARK
20	DW	DW	DW	DW	DW	DW															DARK
PHASE	1 & 6	ALL RED	2 & 5	ALL RED																	

NOTES: E-SIGNAL REBUILD. ADD MAINLINE EP LEFT TURN Ø'S 1 & 5. NEW TS2 CAB, APS/CPS, VIDEO DETECTION
CHANGE Ø3 TO NB AND Ø4 TO SB

SUBMITTED: VP 03/08/2021 CHECKED: _____ APPROVED: _____
IN SERVICE BY: _____ DATE: _____ TIME: _____

SIG#0219 Hub-IE

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PHASE IN USE/PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IN USE	X	X	X	X	X	X										
EXCLUSIVE PED																

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MIN GRN	5	30	5	6	5	30	0	0	0	0	0	0	0	0	0	0
BK MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DLY GRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WALK	0	7	7	7	0	7	0	0	0	0	0	0	0	0	0	0
WALK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WLK MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CLR	0	14	26	26	0	14	0	0	0	0	0	0	0	0	0	0
PD CLR2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VEH EXT	3.0	5.0	3.0	3.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VH EXT2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX1	20	40	20	20	15	40	0	0	0	0	0	0	0	0	0	0
MAX2	25	60	25	40	20	60	0	0	0	0	0	0	0	0	0	0
MAX3	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM MAX	0	60	30	40	0	60	0	0	0	0	0	0	0	0	0	0
DYM STP	0.0	20.0	5.0	10.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YELLOW	3.5	4.5	3.5	4.0	3.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED CLR	2.0	2.0	3.5	3.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED MAX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED RVT	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX INT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CARS WT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDUC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTREDUC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LOCK DET																
VE RCALL	X				X											
PD RCALL	X				X											
MX RCALL																
SF RCALL																
NO REST																
AI CALC																

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SIG#0219 Hub-IE

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COORDINATOR OPTIONS

MANUAL PATTERN	AUTO	ECPI COORD	X
SYSTEM SOURCE	SYS	SYSTEM FORMAT	STD
SPLITS IN	SECONDS	OFFSET IN	SECONDS
TRANSITION	SMOOTH	MAX SELECT	MAX2
DWELL/ADD TIME	255	FORCE OFF	FIXED
DLY COORD WK-LZ		CAL USE PED TM	X
OFFSET REF	LAG	PED RESERVE	
PED RECALL	X	FO ADD INI GRN	
LOCAL ZERO OVRD		MULTISYNC	
RE-SYNC COUNT	1		

COORDINATOR PATTERN 1

USE SPLIT PATTERN	1	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	0	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	111	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 2

USE SPLIT PATTERN	2	ACTUATED COORD	
CYCLE	135	ACT WALK REST	
OFFSET VAL	0	PHASE RESERVICE	

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COORDINATOR PATTERN 2

MAX SELECT	NONE	FORCE OFF	NONE
STD (COS)	121	VEH PERM 1	0
DWELL/ADD TIME	0	VEH PERM 2	0
TIMING PLAN	1	VEH PERM 2 - DISP	0
SEQUENCE	1	XART PTRN.	0
ACTION PLAN	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 3

USE SPLIT PATTERN	3	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	0	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	131	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 4

USE SPLIT PATTERN	4	TIMING PLAN	1
CYCLE	135	SEQUENCE	1
OFFSET VAL	0	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	141	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

Split 1

PHASE	1	2	3	4	5	6	7	8
SPLIT	18	52	40	40	18	52	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

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October 20, 2022**Split 1**

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	1	2	3	4	5	6	7	8
SPLIT	18	37	40	40	18	37	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	1	2	3	4	5	6	7	8
SPLIT	18	52	40	40	18	52	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	1	2	3	4	5	6	7	8
SPLIT	18	37	40	40	18	37	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

ACTION PLAN 1

PATTERN	1	FLASH		SYS OVERRIDE		RED REST	
TIMING PLAN	1	VEH DET DIAG PLN	0	SEQUENCE	1	PED DET DIAG PLN	0
VEH DET PLAN	0	DIMMING ENABLE		DET LOG	0	PRIORITY RETURN	

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ACTION PLAN 1

PED PR RETURN		QUEUE DELAY		PMT COND DELAY	
---------------	--	-------------	--	----------------	--

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 2

PATTERN	2	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 3

PATTERN	3	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

SIG#0219 Hub-IE

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ACTION PLAN 4

PATTERN	4	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 99

PATTERN	FREE	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 100

PATTERN	FLSH	DIMMING ENABLE		PED DET DIAG PLN	0
TIMING PLAN	1	SYS OVERRIDE		PRIORITY RETURN	
VEH DET PLAN	0	SEQUENCE	1	PED PR RETURN	
FLASH	X	DET LOG	0	QUEUE DELAY	
VEH DET DIAG PLN	0	RED REST		PMT COND DELAY	

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75

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LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 76-90
LP 91-100

Day Plan 1

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	1	2	3	4	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 1

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	1	2	3	4	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	1	2	3	4	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	1	2	3	4	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Day Plan 4

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	1	2	3	4	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	2	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	9	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	2	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	9	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

RANDOLPH RD
RUNS IN A
EAST-WEST
DIRECTION

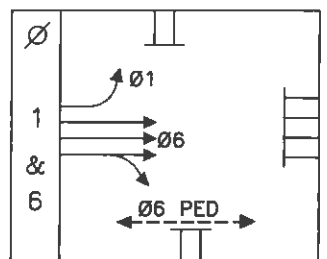
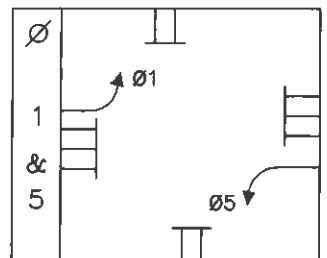
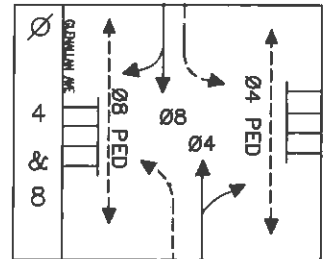
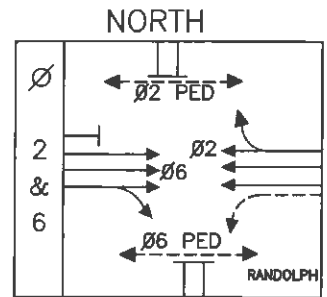
SEQUENCE OF OPERATION SHEET

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 220-G
SHT. 1 OF 2
PHASING

INTERSECTION: RANDOLPH ROAD AND MIDDLEVALE ROAD GARDEN GATE ROAD

SIGNAL NO.	SIGNAL HEAD INDICATIONS			
	3,4,7-11	5,6	1,2	12-19
TOTAL:	7	2	2	8
LEGEND	(R)	(R)	(←R)	
OPTICALLY LIMITED	(Y)	(←Y) (Y)	(←Y)	
R RED	(G)	(←G) (G)	(←G)	12" 16"
Y YELLOW				
G GREEN				
← ARROW				
F FLASHING				



SIGNAL NO.	SEQUENCE OF OPERATION														EAST	
	INTERVAL															
1	←R	←R	←R	←R	←R	←R	←R	←R	←R	←G	←Y	←R	←G	←Y	←R	←R
2	←R	←R	←R	←R	←R	←R	←R	←R	←R	←G	←Y	←R	←G	←Y	←R	←R
3	G	G	Y	R	R	R	R	R	R	R	R	R	G	G	G	Y
4	G	G	Y	R	R	R	R	R	R	R	R	R	G	G	G	Y
5	G	G	Y	R	R	R	R	R	R	←R	←R	R	R	R	R	Y
6	G	G	Y	R	R	R	R	R	R	←R	←R	R	R	R	R	Y
7	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	Y
8	R	R	R	R	G	G	G	Y	R	R	R	R	R	R	R	R
9	R	R	R	R	G	G	G	Y	R	R	R	R	R	R	R	R
10	R	R	R	R	G	G	G	Y	R	R	R	R	R	R	R	R
11	R	R	R	R	G	G	G	Y	R	R	R	R	R	R	R	R
12	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
13	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	W	W	W
14	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	W	W	W
15	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
16	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
17	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
18	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
19	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
PHASE	2 & 6	ALL RED	4 & 8	ALL RED	1 & 5	ALL RED	1 & 6	ALL RED								

NOTES: G: ADD EBLT EXCLUSIVE

SUBMITTED: VP 07/13/2022 CHECKED: KHAMUD 8/2/2022 APPROVED: KHAMUD 8/2/2022
 IN SERVICE BY: 766/781 DATE: 8/23/22 TIME: 1030

RANDOLPH RD
RUNS IN A
EAST-WEST
DIRECTION

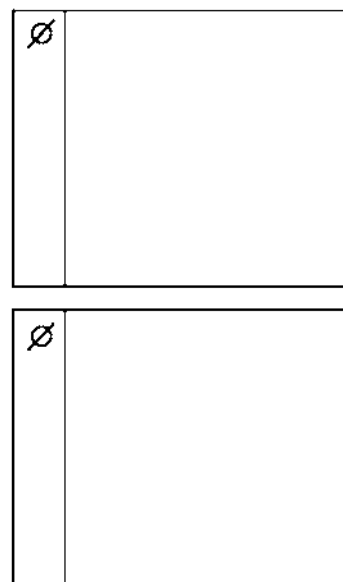
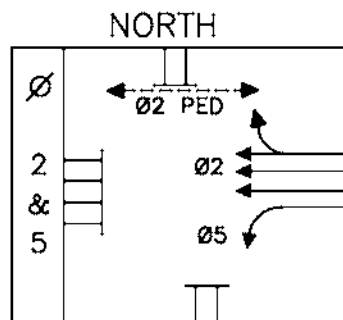
SEQUENCE OF OPERATION SHEET

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 220-G
SHT. 2 OF 2
PHASING

INTERSECTION: RANDOLPH ROAD AND MIDDLEVALE ROAD GARDEN GATE ROAD

SIGNAL NO.	SIGNAL HEAD INDICATIONS				
	3,4,7-11	5,6	1,2		12-19
TOTAL:	7	2	2		8
LEGEND	 	 	 		
OPTICALLY LIMITED R RED Y YELLOW G GREEN ARROW F FLASHING	12"	12"	12"		



SIGNAL NO.	SEQUENCE OF OPERATION												FLASHING	
	INTERVAL													
	16	17	18											
1	←R	←R	←R											←R
2	←R	←R	←R											←R
3	R	R	R											Y
4	R	R	R											Y
5	←G	←G	←G	G										Y
6	←G	←G	←G	G										Y
7	G	G	G											Y
8	R	R	R											R
9	R	R	R											R
10	R	R	R											R
11	R	R	R											R
12	W	W	W											DARK
13	DW	DW	DW											DARK
14	DW	DW	DW											DARK
15	W	W	W											DARK
16	DW	DW	DW											DARK
17	DW	DW	DW											DARK
18	DW	DW	DW											DARK
19	DW	DW	DW											DARK
PHASE	2 & 5	ALL RED												

NOTES: G: ADD EBLT EXCLUSIVE

SUBMITTED: <u>VP 07/13/2022</u>	CHECKED: _____	APPROVED: _____
IN SERVICE BY: _____	DATE: _____	D-56 TIME: _____

SIG#0220 Hub-IE

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PHASE IN USE/PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IN USE	X	X		X	X	X		X								
EXCLUSIVE PED																

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MIN GRN	5	7	0	5	5	7	0	5	0	0	0	0	0	0	0	0
BK MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DLY GRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WALK	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
WALK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WLK MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CLR	0	10	0	29	0	10	0	29	0	0	0	0	0	0	0	0
PD CLR2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VEH EXT	4.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VH EXT2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX1	10	60	0	30	10	60	0	30	0	0	0	0	0	0	0	0
MAX2	30	60	0	40	30	60	0	50	0	0	0	0	0	0	0	0
MAX3	30	60	0	40	30	60	0	40	0	0	0	0	0	0	0	0
DYM MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM STP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YELLOW	3.5	4.5	0.0	3.5	3.5	4.5	0.0	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
RED CLR	2.0	2.0	0.0	4.0	2.0	2.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED MAX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED RVT	5.0	2.0	5.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX INT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CARS WT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDUC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTREDUC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LOCK DET				X				X								
VE RCALL																
PD RCALL		X				X										
MX RCALL		X				X										
SF RCALL																
NO REST																
AI CALC																

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SIG#0220 Hub-IEPage 2
October 20, 2022**COORDINATOR OPTIONS**

MANUAL PATTERN	AUTO	ECPI COORD	X
SYSTEM SOURCE	SYS	SYSTEM FORMAT	STD
SPLITS IN	SECONDS	OFFSET IN	SECONDS
TRANSITION	SMOOTH	MAX SELECT	MAX2
DWELL/ADD TIME	255	FORCE OFF	FIXED
DLY COORD WK-LZ		CAL USE PED TM	X
OFFSET REF	LAG	PED RESERVE	
PED RECALL	X	FO ADD INI GRN	
LOCAL ZERO OVRD		MULTISYNC	
RE-SYNC COUNT	1		

COORDINATOR PATTERN 1

USE SPLIT PATTERN	1	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	120	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	111	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 2

USE SPLIT PATTERN	2	ACTUATED COORD	
CYCLE	135	ACT WALK REST	
OFFSET VAL	69	PHASE RESERVICE	

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SIG#0220 Hub-IEPage 3
October 20, 2022**COORDINATOR PATTERN 2**

MAX SELECT	NONE	FORCE OFF	NONE
STD (COS)	121	VEH PERM 1	0
DWELL/ADD TIME	0	VEH PERM 2	0
TIMING PLAN	1	VEH PERM 2 - DISP	0
SEQUENCE	1	XART PTRN.	0
ACTION PLAN	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 3

USE SPLIT PATTERN	3	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	10	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	131	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 4

USE SPLIT PATTERN	4	TIMING PLAN	1
CYCLE	135	SEQUENCE	1
OFFSET VAL	69	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	141	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 5

USE SPLIT PATTERN	5	PHASE RESERVICE	
CYCLE	100	MAX SELECT	NONE
OFFSET VAL	69	STD (COS)	151
ACTUATED COORD		DWELL/ADD TIME	0
ACT WALK REST		TIMING PLAN	1

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COORDINATOR PATTERN 5

SEQUENCE	1	VEH PERM 2	0
ACTION PLAN	0	VEH PERM 2 - DISP	0
FORCE OFF	NONE	XART PTRN.	0
VEH PERM 1	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

Split 1

PHASE	1	2	3	4	5	6	7	8
SPLIT	27	73	0	50	27	73	0	50
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 1

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	1	2	3	4	5	6	7	8
SPLIT	20	72	0	43	30	62	0	43
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	9	10	11	12	13	14	15	16	PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0	COORD								

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October 20, 2022**Split 2**

PHASE	9	10	11	12	13	14	15	16
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	1	2	3	4	5	6	7	8
SPLIT	22	85	0	43	22	85	0	43
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	1	2	3	4	5	6	7	8
SPLIT	40	52	0	43	30	62	0	43
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 5

PHASE	1	2	3	4	5	6	7	8
SPLIT	20	37	0	43	20	37	0	43
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 5

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

ACTION PLAN 1

PATTERN	1	DIMMING ENABLE		PED DET DIAG PLN	0
TIMING PLAN	1	SYS OVERRIDE		PRIORITY RETURN	
VEH DET PLAN	0	SEQUENCE	1	PED PR RETURN	
FLASH		DET LOG	0	QUEUE DELAY	
VEH DET DIAG PLN	0	RED REST		PMT COND DELAY	

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 2

PATTERN	2	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

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LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 3

PATTERN	3	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 4

PATTERN	4	VEH DET DIAG PLN	0	DET LOG	0	PED PR RETURN	
TIMING PLAN	1	DIMMING ENABLE		RED REST		QUEUE DELAY	
VEH DET PLAN	0	SYS OVERRIDE		PED DET DIAG PLN	0	PMT COND DELAY	
FLASH		SEQUENCE	1	PRIORITY RETURN			

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 5

PATTERN	5	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

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LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 100

PATTERN	FLSH	DIMMING ENABLE		PED DET DIAG PLN	0
TIMING PLAN	1	SYS OVERRIDE		PRIORITY RETURN	
VEH DET PLAN	0	SEQUENCE	1	PED PR RETURN	
FLASH	X	DET LOG	0	QUEUE DELAY	
VEH DET DIAG PLN	0	RED REST		PMT COND DELAY	

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

Day Plan 1

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Day Plan 1

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Day Plan 5

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	9	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	9	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MD 97
RUNS IN A
NORTH-SOUTH
DIRECTION

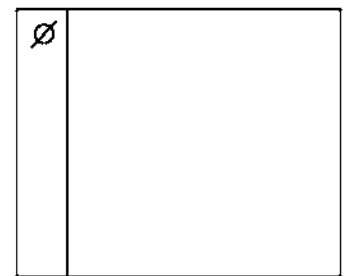
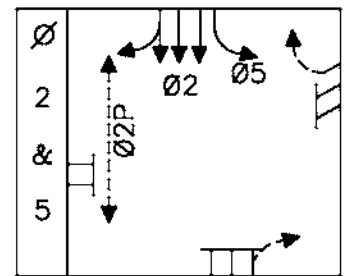
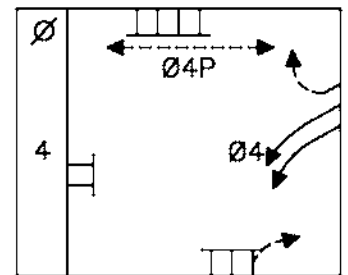
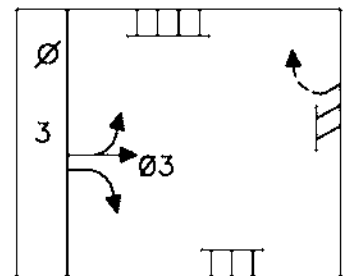
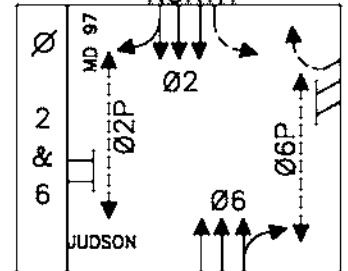
SEQUENCE OF OPERATION SHEET

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 211-G
SHEET 1 OF 1
PHASING
NORTH

INTERSECTION: GEORGIA AVE. (MD 97) & LAYHILL RD. (MD 182)

SIGNAL NO.	SIGNAL HEAD INDICATIONS				
		1-3,6,9,11	7,8,10,12	4,5	13-18
TOTAL:		6	4	2	6
LEGEND			 	 	
OPTICALLY LIMITED					
R RED					
Y YELLOW					
G GREEN					
ARROW					
F FLASHING					
	12"	12"	12"	12"	12" 16"



SIGNAL NO.	SEQUENCE OF OPERATION															FLASH	
	INTERVAL																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
1	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R		Y
2	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R		Y
3	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R		Y
4	G	G	Y	R	R	R	R	R	R	R	R	R	G	G	Y	G	Y
5	G	G	Y	R	R	R	R	R	R	R	R	R	G	G	Y	G	Y
6	G	G	Y	R	R	R	R	R	R	R	R	R	G	G	G		Y
7	R	R	R	R	G	G	Y	R	R	R	R	R	R	R	R		R
8	R	R	R	R	G	G	Y	R	R	R	R	R	R	R	R		R
9	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R		R
10	R	R	R	R	R	R	R	G	G	G	G	Y	R	R	R		R
11	R	R	R	R	R	R	R	G	G	G	Y	R	R	R	R		R
12	R	R	R	R	R	R	R	G	G	G	G	Y	R	R	R		R
13	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	W	W		DARK
14	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW		DARK
15	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW		DARK
16	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	W	W		DARK
17	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW		DARK
18	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW		DARK
PHASE	2 & 6		ALL RED		3	ALL RED		4				ALL RED		2 & 5		ALL RED	

NOTES: G - REMOVES S-CAB. INSTALL TS-2

SUBMITTED: VP 01/02/2018 CHECKED: _____ APPROVED: _____
 IN SERVICE BY: _____ DATE: _____ TIME: _____

SIG#0211 Hub-IE

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PHASE IN USE/PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IN USE		X	X	X	X	X										
EXCLUSIVE PED																

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MIN GRN	0	7	5	5	5	7	0	0	0	0	0	0	0	0	0	0
BK MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DLY GRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WALK	0	7	0	7	0	7	0	0	0	0	0	0	0	0	0	0
WALK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WLK MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CLR	0	31	0	24	0	31	0	0	0	0	0	0	0	0	0	0
PD CLR2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VEH EXT	0.0	0.0	3.0	5.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VH EXT2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX1	0	70	15	25	15	70	0	0	0	0	0	0	0	0	0	0
MAX2	0	60	10	70	15	60	0	0	0	0	0	0	0	0	0	0
MAX3	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0
DYM MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM STP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YELLOW	0.0	4.0	3.5	4.0	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED CLR	0.0	2.5	3.0	2.5	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED MAX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED RVT	2.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX INT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CARS WT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDUC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTREDUC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LOCK DET																
VE RCALL																
PD RCALL		X				X										
MX RCALL		X				X										
SF RCALL																
NO REST																
AI CALC																

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COORDINATOR OPTIONS

MANUAL PATTERN	AUTO	ECPI COORD	X
SYSTEM SOURCE	SYS	SYSTEM FORMAT	STD
SPLITS IN	SECONDS	OFFSET IN	SECONDS
TRANSITION	SMOOTH	MAX SELECT	MAX2
DWELL/ADD TIME	255	FORCE OFF	FIXED
DLY COORD WK-LZ		CAL USE PED TM	X
OFFSET REF	LAG	PED RESERVE	
PED RECALL	X	FO ADD INI GRN	
LOCAL ZERO OVRD		MULTISYNC	
RE-SYNC COUNT	1		

COORDINATOR PATTERN 1

USE SPLIT PATTERN	1	TIMING PLAN	1
CYCLE	180	SEQUENCE	1
OFFSET VAL	39	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	1
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	111	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 2

USE SPLIT PATTERN	2	ACTUATED COORD	
CYCLE	150	ACT WALK REST	
OFFSET VAL	126	PHASE RESERVICE	

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COORDINATOR PATTERN 2

MAX SELECT	NONE	FORCE OFF	NONE
STD (COS)	121	VEH PERM 1	1
DWELL/ADD TIME	0	VEH PERM 2	0
TIMING PLAN	1	VEH PERM 2 - DISP	0
SEQUENCE	1	XART PTRN.	0
ACTION PLAN	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 3

USE SPLIT PATTERN	3	TIMING PLAN	1
CYCLE	180	SEQUENCE	1
OFFSET VAL	8	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	1
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	131	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 4

USE SPLIT PATTERN	4	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	126	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	1
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	141	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 5

USE SPLIT PATTERN	5	PHASE RESERVICE	
CYCLE	120	MAX SELECT	NONE
OFFSET VAL	88	STD (COS)	151
ACTUATED COORD		DWELL/ADD TIME	0
ACT WALK REST		TIMING PLAN	1

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COORDINATOR PATTERN 5

SEQUENCE	1	VEH PERM 2	0
ACTION PLAN	0	VEH PERM 2 - DISP	0
FORCE OFF	NONE	XART PTRN.	0
VEH PERM 1	1		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

Split 1

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	107	23	50	32	75	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 1

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	95	17	38	22	73	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	9	10	11	12	13	14	15	16	PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0	COORD								

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October 20, 2022**Split 2**

PHASE	9	10	11	12	13	14	15	16
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	117	25	38	25	92	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	95	17	38	22	73	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 5

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	63	17	40	16	47	0	0
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 5

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

ACTION PLAN 1

PATTERN	1	DIMMING ENABLE		PED DET DIAG PLN	0
TIMING PLAN	1	SYS OVERRIDE		PRIORITY RETURN	
VEH DET PLAN	0	SEQUENCE	1	PED PR RETURN	
FLASH		DET LOG	0	QUEUE DELAY	
VEH DET DIAG PLN	0	RED REST		PMT COND DELAY	

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 2

PATTERN	2	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

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LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 3

PATTERN	3	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 4

PATTERN	4	VEH DET DIAG PLN	0	DET LOG	0	PED PR RETURN	
TIMING PLAN	1	DIMMING ENABLE		RED REST		QUEUE DELAY	
VEH DET PLAN	0	SYS OVERRIDE		PED DET DIAG PLN	0	PMT COND DELAY	
FLASH		SEQUENCE	1	PRIORITY RETURN			

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 5

PATTERN	5	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3				X												
CS INH																
OMIT																
SPC FCT																
AUX FCT																

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LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

Day Plan 1

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 1

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Day Plan 4

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	5	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	10	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	5	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	11	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Day Plan 7

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MD 97
RUNS IN A
North - South
DIRECTION

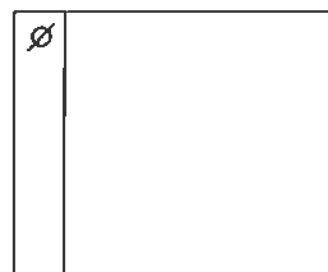
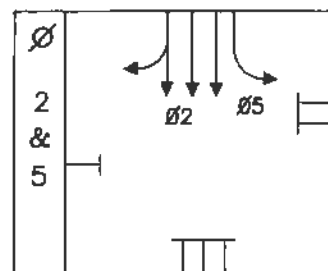
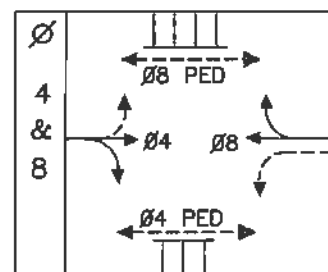
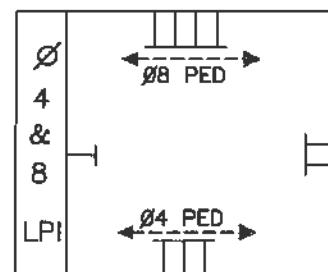
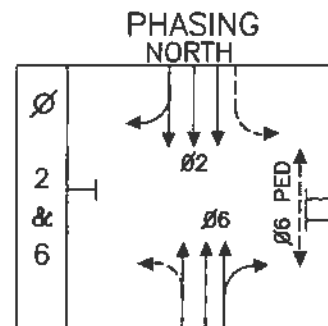
SEQUENCE OF OPERATION SHEET

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 209 - E
SHT. 1 OF 1

INTERSECTION: Georgia Ave. (MD 97) & Shorefield Road

SIGNAL NO.	SIGNAL HEAD INDICATIONS				
	1,2,5-9	4	3		10-15
TOTAL:	7	1	1		6
LEGEND	(R)	(R)	(R)		
OPTICALLY LIMITED	(Y)	(←Y) (Y)	(←Y) (Y)		
R RED	(G)	(←G) (G)	(←G) (G)		12" 16"
Y YELLOW					
G GREEN					
← ARROW					
F FLASHING					



SIGNAL NO.	SEQUENCE OF OPERATION																	FLASH	
	INTERVAL																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	G	G	Y	R	R	R	R	R	R	R	R	R	R						Y
2	G	G	Y	R	R	R	R	R	R	R	R	R	R						Y
3	G	G	Y	R	R	R	R	R	R	R	G	Y	G	G					Y
4	G	G	Y	R	R	R	R	R	R	R	G	Y	G	G					Y
5	G	G	Y	R	R	R	R	R	R	R	G	G	G						R
6	R	R	R	R	R	G	G	G	Y	R	R	R	R						R
7	R	R	R	R	R	G	G	G	Y	R	R	R	R						R
8	R	R	R	R	R	G	G	G	Y	R	R	R	R						R
9	R	R	R	R	R	G	G	G	Y	R	R	R	R						R
P10	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW						DARK
P11	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW						DARK
P12	DW	DW	DW	DW	W	W	DWF	DW	DW	DW	DW	DW	DW						DARK
P13	DW	DW	DW	DW	W	W	DWF	DW	DW	DW	DW	DW	DW						DARK
P14	DW	DW	DW	DW	W	W	DWF	DW	DW	DW	DW	DW	DW						DARK
P15	DW	DW	DW	DW	W	W	DWF	DW	DW	DW	DW	DW	DW						DARK
16																			
17																			
18																			
19																			
20																			
PHASE	2 & 6	ALL RED	4 & 8 LPI	4 & 8	ALL RED	2 & 5	ALL RED												F

NOTES: E - ADDED LPI PHASE 4 AND 8

SUBMITTED: LMB 01/22/2020 CHECKED: VP 1/23/2020 APPROVED: VP 1/23/2020
 IN SERVICE BY: 769 DATE: 1 3 2020 TIME: 10: am

SIG#0209 Hub-IE

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PHASE IN USE/PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IN USE		X		X	X	X		X								
EXCLUSIVE PED																

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MIN GRN	0	7	0	5	5	7	0	5	0	0	0	0	0	0	0	0
BK MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DLY GRN	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0
WALK	0	0	0	7	0	7	0	7	0	0	0	0	0	0	0	0
WALK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WLK MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CLR	0	0	0	19	0	10	0	19	0	0	0	0	0	0	0	0
PD CLR2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VEH EXT	0.0	0.0	0.0	3.0	3.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VH EXT2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX1	0	80	0	20	10	80	0	20	0	0	0	0	0	0	0	0
MAX2	0	70	0	60	40	70	0	100	0	0	0	0	0	0	0	0
MAX3	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0
DYM MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM STP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YELLOW	3.0	4.0	3.0	3.5	3.5	4.0	3.0	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
RED CLR	0.0	1.0	0.0	2.5	1.0	1.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED MAX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED RVT	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX INT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CARS WT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDUC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTREDUC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LOCK DET																
VE RCALL																
PD RCALL		X			X											
MX RCALL		X			X											
SF RCALL																
NO REST																
AI CALC																

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October 20, 2022**COORDINATOR OPTIONS**

MANUAL PATTERN	AUTO	ECPI COORD	X
SYSTEM SOURCE	SYS	SYSTEM FORMAT	STD
SPLITS IN	SECONDS	OFFSET IN	SECONDS
TRANSITION	SMOOTH	MAX SELECT	MAX2
DWELL/ADD TIME	255	FORCE OFF	FIXED
DLY COORD WK-LZ		CAL USE PED TM	X
OFFSET REF	LAG	PED RESERVE	
PED RECALL	X	FO ADD INI GRN	
LOCAL ZERO OVRD		MULTISYNC	
RE-SYNC COUNT	1		

COORDINATOR PATTERN 1

USE SPLIT PATTERN	1	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	99	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	111	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 2

USE SPLIT PATTERN	2	ACTUATED COORD	
CYCLE	150	ACT WALK REST	
OFFSET VAL	126	PHASE RESERVICE	

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COORDINATOR PATTERN 2

MAX SELECT	NONE	FORCE OFF	NONE
STD (COS)	121	VEH PERM 1	0
DWELL/ADD TIME	0	VEH PERM 2	0
TIMING PLAN	1	VEH PERM 2 - DISP	0
SEQUENCE	1	XART PTRN.	0
ACTION PLAN	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 3

USE SPLIT PATTERN	3	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	99	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	131	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 4

USE SPLIT PATTERN	4	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	126	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	141	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 5

USE SPLIT PATTERN	5	PHASE RESERVICE	
CYCLE	120	MAX SELECT	NONE
OFFSET VAL	16	STD (COS)	151
ACTUATED COORD		DWELL/ADD TIME	0
ACT WALK REST		TIMING PLAN	1

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COORDINATOR PATTERN 5

SEQUENCE	1	VEH PERM 2	0
ACTION PLAN	0	VEH PERM 2 - DISP	0
FORCE OFF	NONE	XART PTRN.	0
VEH PERM 1	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

Split 1

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	113	0	37	17	96	0	37
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 1

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	113	0	37	29	84	0	37
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	9	10	11	12	13	14	15	16	PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0	COORD								

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PHASE	9	10	11	12	13	14	15	16
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	110	0	40	17	93	0	40
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	113	0	37	29	84	0	37
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 5

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	85	0	35	16	69	0	35
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 5

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

ACTION PLAN 1

PATTERN	1	DIMMING ENABLE		PED DET DIAG PLN	0
TIMING PLAN	1	SYS OVERRIDE		PRIORITY RETURN	
VEH DET PLAN	0	SEQUENCE	1	PED PR RETURN	
FLASH		DET LOG	0	QUEUE DELAY	
VEH DET DIAG PLN	0	RED REST		PMT COND DELAY	

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 2

PATTERN	2	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

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LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 3

PATTERN	3	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 4

PATTERN	4	VEH DET DIAG PLN	0	DET LOG	0	PED PR RETURN	
TIMING PLAN	1	DIMMING ENABLE		RED REST		QUEUE DELAY	
VEH DET PLAN	0	SYS OVERRIDE		PED DET DIAG PLN	0	PMT COND DELAY	
FLASH		SEQUENCE	1	PRIORITY RETURN			

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 5

PATTERN	5	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

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LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 100

PATTERN	FLSH	DIMMING ENABLE		PED DET DIAG PLN	0
TIMING PLAN	1	SYS OVERRIDE		PRIORITY RETURN	
VEH DET PLAN	0	SEQUENCE	1	PED PR RETURN	
FLASH	X	DET LOG	0	QUEUE DELAY	
VEH DET DIAG PLN	0	RED REST		PMT COND DELAY	

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

Day Plan 1

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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October 20, 2022**Day Plan 1**

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Day Plan 5

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
START TIME - MM	0	30	30	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	10	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	5	100	5	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	11	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MD 182
RUNS IN A
NORTH-SOUTH
DIRECTION

SEQUENCE OF OPERATION SHEET

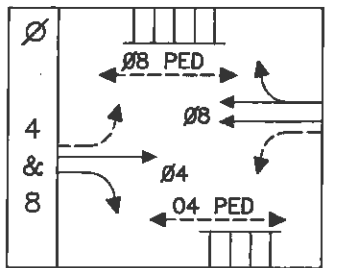
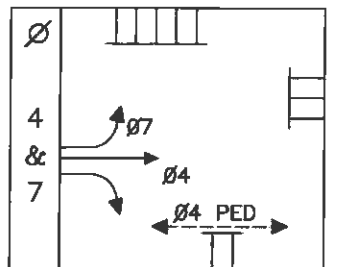
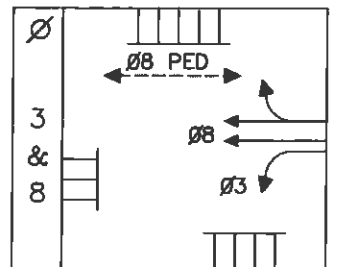
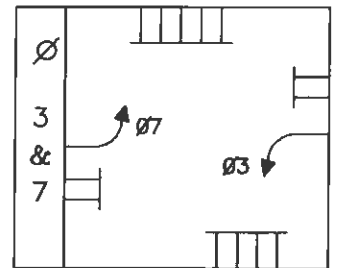
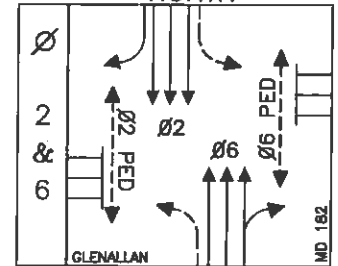
TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 222-G
SHT. 1 OF 2

PHASING
NORTH

INTERSECTION: LAYHILL ROAD (MD 182) & GLENALLAN AVENUE

SIGNAL NO.	SIGNAL HEAD INDICATIONS				
	1,2,4,5, 7,8,10,11	3,6,9,12			18,20
TOTAL:	8	4			2
LEGEND	(R)	(R)			
OPTICALLY LIMITED					
R RED					
Y YELLOW					
G GREEN					
← ARROW					
F FLASHING					
	12"	12"			12" 16"



SIGNAL NO.	SEQUENCE OF OPERATION																		FLASH	
	INTERVAL																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
1	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	
2	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	
3	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	
4	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	
5	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	
6	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	
7	R	R	R	R				R			G	R	R	R	G	G	G	Y	R	R
8	R	R	R	R				R			G	R	R	R	G	G	G	Y	R	R
9	R	R	R	R				R			G	R	R	R	G	G	G	Y	R	R
10	R	R	R	R				R			G	R	R	R	G	G	G	Y	R	R
11	R	R	R	R				R			G	R	R	R	G	G	G	Y	R	R
12	R	R	R	R				R			G	R	R	R	G	G	G	Y	R	R
13	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
14	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
15	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
16	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
17	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	W	W	W	FDW	DW	DW	DW	DW	DARK
18	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	W	W	W	FDW	DW	DW	DW	DW	DARK
19	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	W	W	W	FDW	DW	DW	DW	DW	DARK
20	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	W	W	W	FDW	DW	DW	DW	DW	DARK
PHASE	2 & 6		ALL RED		3 & 7		ALL RED		3 & 8		ALL RED		4 & 7		ALL RED		4 & 8		ALL RED	

NOTES: G = SIGNAL RECONSTRUCTION, INSTALLS LED SIGNALS APS, VIDEO DETECTION & S CABINET

SUBMITTED: SES 10/22/2014 CHECKED: KHamud 10/20/14 APPROVED: KHamud 10/20/14
 IN SERVICE BY: 775/761 DATE: 10/14/15 TIME: 1:00 PM

SEQUENCE OF OPERATION SHEET









MD 182
RUNS IN A
NORTH-SOUTH
DIRECTION

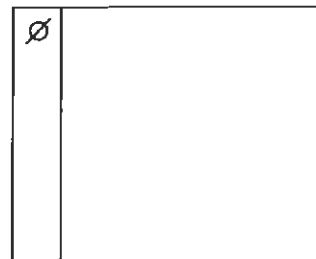
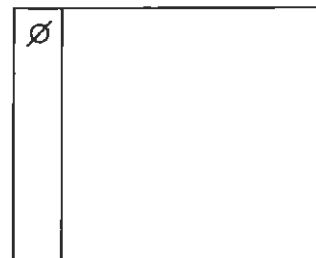
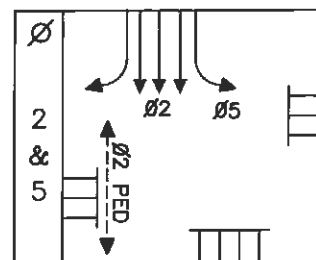
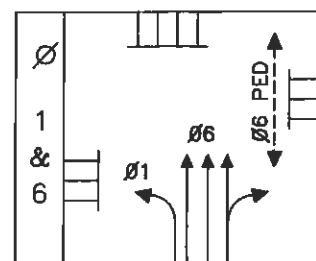
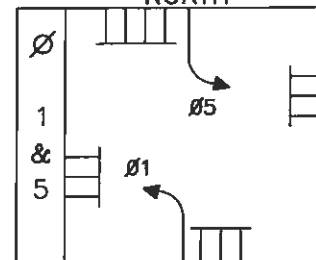
TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 222-G
SHT. 2 OF 2

PHASING
NORTH

INTERSECTION: LAYHILL ROAD (MD 182) & GLENALLAN AVENUE

SIGNAL NO.	SIGNAL HEAD INDICATIONS				
	1,2,4,5,7,8,10,11	3,6,9,12			18,20
TOTAL:	8	4			2
LEGEND	(R)	(R)			
 OPTICALLY LIMITED					
R RED					
Y YELLOW					
G GREEN					
← ARROW					
F FLASHING					
	12"	12"			12" 16"



SIGNAL NO.	SEQUENCE OF OPERATION																			FLASH
	INTERVAL																			
	19	20	21	22	23	24	25	26	27											
1	←S R	←Y R	R	←S G	←Y G	G	R	R	R											Y
2	←S R	←Y R	R	←S G	←Y G	G	R	R	R											Y
3	R	R	R	G	G	G	R	R	R											Y
4	←S R	←Y R	R	R	R	R	←S G	←Y G	G											Y
5	←S R	←Y R	R	R	R	R	←S G	←Y G	G											Y
6	R	R	R	R	R	R	G	G	G											Y
7	R	R	R	R	R	R	R	R	R											R
8	R	R	R	R	R	R	R	R	R											R
9	R	R	R	R	R	R	R	R	R											R
10	R	R	R	R	R	R	R	R	R											R
11	R	R	R	R	R	R	R	R	R											R
12	R	R	R	R	R	R	R	R	R											R
13	DW	DW	DW	W	W	W	DW	DW	DW											DARK
14	DW	DW	DW	W	W	W	DW	DW	DW											DARK
15	DW	DW	DW	DW	DW	DW	W	W	W											DARK
16	DW	DW	DW	DW	DW	DW	W	W	W											DARK
17	DW	DW	DW	DW	DW	DW	DW	DW	DW											DARK
18	DW	DW	DW	DW	DW	DW	DW	DW	DW											DARK
19	DW	DW	DW	DW	DW	DW	DW	DW	DW											DARK
20	DW	DW	DW	DW	DW	DW	DW	DW	DW											DARK
PHASE	1 & 5	ALL RED	1 & 6	ALL RED	2 & 5	ALL RED														

NOTES: G = SIGNAL RECONSTRUCTION, INSTALLS LED SIGNALS, APS, VIDEO DETECTION & S CABINET

SUBMITTED: <u>SES 10/22/2014</u>	CHECKED: <u>[Signature] 10/20/14</u>	APPROVED: <u>[Signature] 10/20/14</u>
IN SERVICE BY: <u>775/1761</u>	DATE: <u>10/14/15</u>	TIME: <u>1:00 pm</u>

SIG#0222 Hub-IE

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October 20, 2022

PHASE IN USE/PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IN USE	X	X	X	X	X	X	X	X								
EXCLUSIVE PED																

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MIN GRN	3	10	3	7	3	10	3	7	0	0	0	0	0	0	0	0
BK MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DLY GRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WALK	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
WALK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WLK MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CLR	0	18	0	29	0	18	0	29	0	0	0	0	0	0	0	0
PD CLR2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VEH EXT	3.0	0.0	3.0	5.0	3.0	0.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VH EXT2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX1	15	40	15	26	15	40	15	26	0	0	0	0	0	0	0	0
MAX2	30	99	50	30	30	99	50	30	0	0	0	0	0	0	0	0
MAX3	0	0	0	60	0	0	0	60	0	0	0	0	0	0	0	0
DYM MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM STP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YELLOW	4.0	4.0	3.5	3.5	4.0	4.0	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
RED CLR	2.0	2.0	3.0	3.5	2.0	2.0	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED MAX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED RVT	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX INT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CARS WT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDUC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTREDUC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LOCK DET																
VE RCALL																
PD RCALL		X				X										
MX RCALL		X				X										
SF RCALL																
NO REST																
AI CALC																

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SIG#0222 Hub-IE

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October 20, 2022

COORDINATOR OPTIONS

MANUAL PATTERN	AUTO	ECPI COORD	X
SYSTEM SOURCE	SYS	SYSTEM FORMAT	STD
SPLITS IN	SECONDS	OFFSET IN	SECONDS
TRANSITION	SMOOTH	MAX SELECT	MAX2
DWELL/ADD TIME	255	FORCE OFF	FIXED
DLY COORD WK-LZ		CAL USE PED TM	X
OFFSET REF	LAG	PED RESERVE	
PED RECALL	X	FO ADD INI GRN	
LOCAL ZERO OVRD		MULTISYNC	
RE-SYNC COUNT	1		

COORDINATOR PATTERN 1

USE SPLIT PATTERN	1	TIMING PLAN	1
CYCLE	120	SEQUENCE	1
OFFSET VAL	67	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	111	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 2

USE SPLIT PATTERN	2	ACTUATED COORD	
CYCLE	120	ACT WALK REST	
OFFSET VAL	22	PHASE RESERVICE	

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SIG#0222 Hub-IE

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October 20, 2022

COORDINATOR PATTERN 2

MAX SELECT	NONE	FORCE OFF	NONE
STD (COS)	121	VEH PERM 1	0
DWELL/ADD TIME	0	VEH PERM 2	0
TIMING PLAN	1	VEH PERM 2 - DISP	0
SEQUENCE	1	XART PTRN.	0
ACTION PLAN	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 3

USE SPLIT PATTERN	3	TIMING PLAN	1
CYCLE	120	SEQUENCE	1
OFFSET VAL	24	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	131	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 4

USE SPLIT PATTERN	4	TIMING PLAN	1
CYCLE	120	SEQUENCE	1
OFFSET VAL	74	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	141	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

Split 1

PHASE	1	2	3	4	5	6	7	8
SPLIT	16	44	17	43	16	44	17	43
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

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October 20, 2022**Split 1**

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	1	2	3	4	5	6	7	8
SPLIT	16	44	17	43	16	44	17	43
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	1	2	3	4	5	6	7	8
SPLIT	16	35	17	52	16	35	26	43
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	1	2	3	4	5	6	7	8
SPLIT	18	39	20	43	18	39	20	43
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

ACTION PLAN 1

PATTERN	1	FLASH		SYS OVERRIDE		RED REST	
TIMING PLAN	1	VEH DET DIAG PLN	0	SEQUENCE	1	PED DET DIAG PLN	0
VEH DET PLAN	0	DIMMING ENABLE		DET LOG	0	PRIORITY RETURN	

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ACTION PLAN 1

PED PR RETURN		QUEUE DELAY		PMT COND DELAY	
---------------	--	-------------	--	----------------	--

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 2

PATTERN	2	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 3

PATTERN	3	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

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October 20, 2022

ACTION PLAN 4

PATTERN	4	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

Day Plan 1

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	2	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	15	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 1

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	2	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Day Plan 2

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
START TIME - HH	0	6	9	15	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	2	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	15	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	2	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	15	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	1	2	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	6	9	15	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Day Plan 6

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
ACTION PLAN	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
ACTION PLAN	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

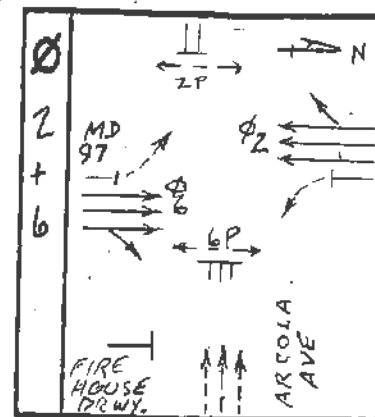
SEQUENCE OF OPERATION SHEET

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

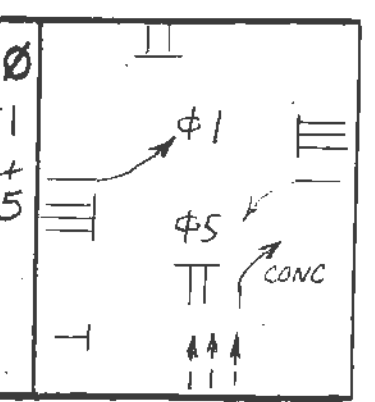
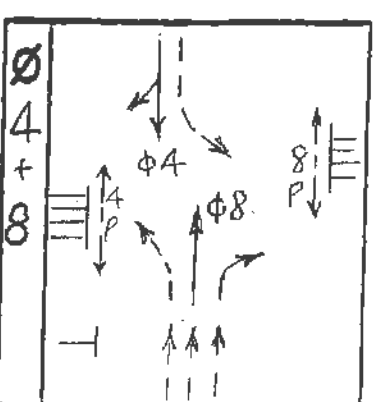
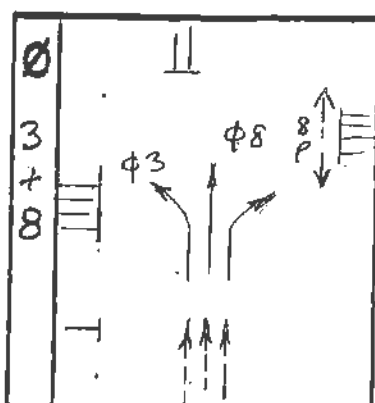
NO. 208-I

INTERSECTION: Arcola Ave., Georgia Ave. (MD 97) & Wheaton Vol. F.N. PHASING

SIGNAL NO.	SIGNAL HEAD INDICATIONS					
	3,4,9-13,16	5, 6, 14 15	16, 17	1, 2, 7, 8	18	19-26
TOTAL:	8	4	2	4	1	8
LEGEND	(R)	(R)	(R)	←(R)	(R)	
OPTICALLY LIMITED	(Y)	(Y)	←(Y) (Y)	←(Y)	(Y) (Y)	16" PEDESTRIAN COUNTDOWN SIGNAL HEAD "LED" TYPE
R - RED	(G)	(Y)	←(G) (G)	←(G)	(G) (G)	APS Push Buttons
Y - YELLOW	12"	12"/8"	12"	12"	12"	
G - GREEN						
ARROW						
F - FLASHING						



SIGNAL NO.	SEQUENCE OF OPERATION																LIST
	INTERVAL																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1	←R	←R	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
2	←R	←R	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
3	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
4	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
5	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR
6	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR
7	←R	←R	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
8	←R	←R	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
9	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
10	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
11	R	R	R	R	R	R	R	G	G	G	Y	R	R	R	R	R	R
12	R	R	R	R	R	R	R	G	G	G	Y	R	R	R	R	R	R
13	R	R	R	R	R	R	R	G	G	G	Y	R	R	R	R	R	R
14	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	-
15	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	BFY	-
16	R	R	R	R	←GG	←GG	G	G	G	G	Y	R	R	R	R	R	R
17	R	R	R	R	←GG	←GG	G	G	G	G	Y	R	R	R	R	R	R
18	R	R	R	R	G	G	G	G	G	G	Y	R	RG	RY	R	R	R
19	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
20	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
21	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
22	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
23	DW	DW	DW	DW	W	W	W	W	W	DWF	DW	DW	DW	DW	DW	DW	DW
24	DW	DW	DW	DW	DW	DW	DW	W	W	DWF	DW	DW	DW	DW	DW	DW	DW
25	DW	DW	DW	DW	DW	DW	DW	W	W	DWF	DW	DW	DW	DW	DW	DW	DW
26	DW	DW	DW	DW	W	W	W	W	W	DWF	DW	DW	DW	DW	DW	DW	DW
PHASE	2+6	ALL RED	3+8	ALL RED	4+8	ALL RED	1+5	ALL RED	F								



NOTES:

SUBMITTED: CR 5/2/19 CHECKED: KHammad 5/2/19 APPROVED: KHammad 5/2/19
 IN SERVICE BY: 789+782 DATE: 5/18/19 TIME: 1305

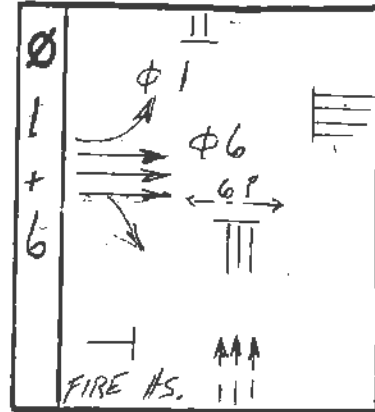
SEQUENCE OF OPERATION SHEET

TRAFFIC OPERATIONS SECTION
 DIVISION OF TRAFFIC ENGINEERING
 MONTGOMERY COUNTY, MARYLAND

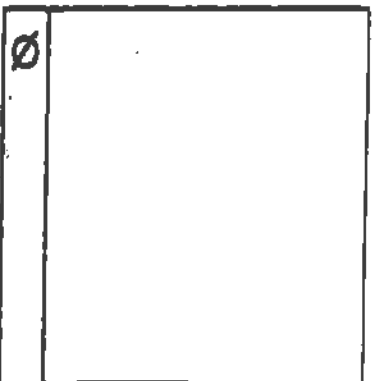
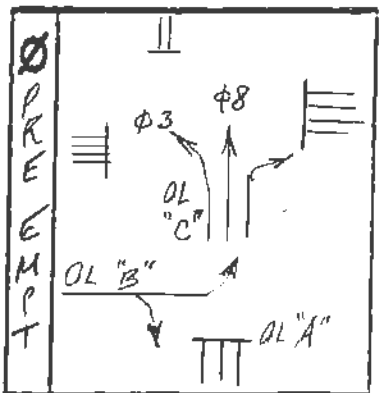
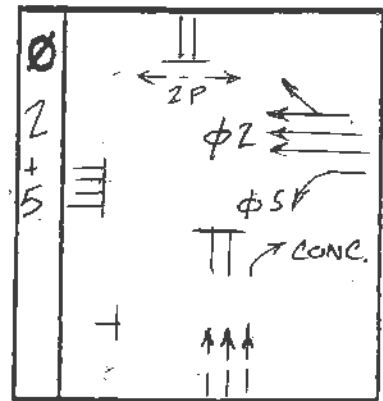
NO. 208-I

INTERSECTION: Arcola Ave., Georgia Ave. (MD 97) & Wheaton Vol. F.H. PHASING

SIGNAL NO.	SIGNAL HEAD INDICATIONS					
	3,4,9-13,16	5,6,14,15	16,17	1,2,7,8	18	19-26
TOTAL:	8	4	2	4	1	8
LEGEND	(R)	(R)	(R)	(R)	(R)	
OPTICALLY LIMITED	(Y)	(Y)	(Y) (Y)	(Y)	(Y) (Y)	16" PEDESTRIAN COUNTDOWN SIGNAL HEAD "LED" TYPE
R. RED	(G)	(Y)	(G) (G)	(G)	(G) (G)	APS
Y. YELLOW						Push Buttons
G. GREEN						
ARROW						
F. FLASHING						
	12"	12"/8"	12"	12"	12"	



SIGNAL NO.	SEQUENCE OF OPERATION																FLASH
	INTERVAL																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1	←G→	←R→	←R→	←R→	←R→	←R→	←R→	←R→	←R→	←R→			←R→	←R→	←R→		
2	←G→	←R→	←R→	←R→	←R→	←R→	←R→	←R→	←R→	←R→			←R→	←R→	←R→		
3	G	G	G	R	R	R	R	R	R	R			G	Y	R		
4	G	G	G	R	R	R	R	R	R	R			G	Y	R		
5	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR			FR	R	R		
6	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR			FR	R	R		
7	←R→	←R→	←R→	←G→	←Y→	←R→	←R→	←R→	←R→	←R→			←R→	←R→	←R→		
8	←R→	←R→	←R→	←G→	←Y→	←R→	←R→	←R→	←R→	←R→			←R→	←R→	←R→		
9	R	R	R	G	G	G	R	R	R	R			G	Y	R		
10	R	R	R	G	G	G	R	R	R	R			G	Y	R		
11	R	R	R	R	R	R	R	R	R	R			R	R	R		
12	R	R	R	R	R	R	R	R	R	R			R	R	R		
13	R	R	R	R	R	R	R	R	R	R			R	R	R		
14	RFY	RFY	RFY	RFY	RFY	RFY	R	R	R	R			RFY	RY	R		
15	RFY	RFY	RFY	RFY	RFY	RFY	R	R	R	R			RFY	RY	R		
16	R	R	R	R	R	R	←GG→	←YY→	R	R			R	R	R		
17	R	R	R	R	R	R	←GG→	←YY→	R	R			R	R	R		
18	R	R	R	RG	RY	R	G	Y	R	R			R	R	R		
19	DW	DW	DW	W	W	W	DW	DW	DW	DW			DW	DW	DW		
20	W	W	W	DW	DW	DW	DW	DW	DW	DW			DW	DW	DW		
21	W	W	W	DW	DW	DW	DW	DW	DW	DW			DW	DW	DW		
22	DW	DW	DW	W	W	W	DW	DW	DW	DW			DW	DW	DW		
23	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW			DW	DW	DW		
24	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW			DW	DW	DW		
25	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW			DW	DW	DW		
26	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW			DW	DW	DW		
PHASE	1+6	ALL RED	2+5	ALL RED			PRE-EMPT	ALL RED					2+6				



NOTES: ³¹
 LED NLT SIGN is ON during clear to pre-empt and throughout pre-empt.
 * Indicates Sign #31 is ON.

CLEAR TO P. E. FROM φ 2+φ 6
 * SIGN 31 ON

SUBMITTED: _____ CHECKED: _____ APPROVED: _____
 IN SERVICE BY: _____ DATE: _____ TIME: _____

SEQUENCE OF OPERATION SHEET

TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

NO. 208-I

INTERSECTION: Arcola Ave., Georgia Ave. (MD 97) & Wheaton Vol. F.H. PHASING

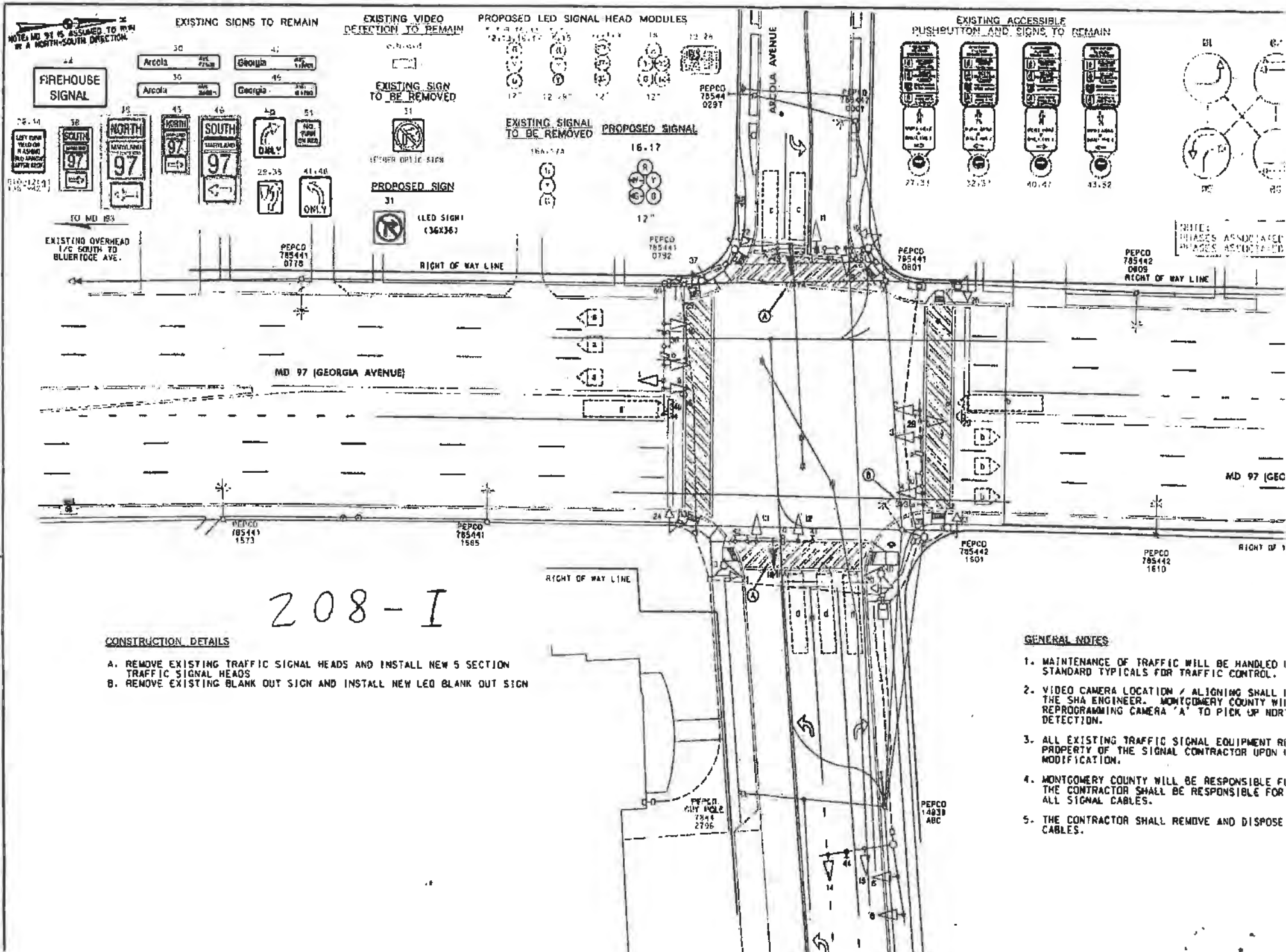
SIGNAL NO.	SIGNAL HEAD INDICATIONS					
	3,4,9,13,16	5,6,14,15	16,17	1,2,7,8	18	19-26
TOTAL:	8	4	2	4	1	8
LEGEND	(R) (Y) (G)	(R) (Y) (Y)	(R) (Y) (Y) (G) (G)	(R) (Y) (G)	(R) (Y) (Y) (G) (G)	 16" PEDESTRIAN COUNTERDOWN SIGNAL HEAD "LED" TYPE APS Push Buttons
	12"	12 1/8"	12"	12"	12"	

SIGNAL NO.	SEQUENCE OF OPERATION																FLASH
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R							
2	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R							
3	R	R	R	R	R	R	R	R	R	R							
4	R	R	R	R	R	R	R	R	R	R							
5	FR	FR	R	R	FR	FR	R	R	R	R							
6	FR	FR	R	R	FR	FR	R	R	R	R							
7	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R							
8	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R							
9	R	R	R	R	R	R	R	R	R	R							
10	R	R	R	R	R	R	R	R	R	R							
11	R	R	R	R	G	G	Y	R	R	R							
12	R	R	R	R	G	G	Y	R	R	R							
13	R	R	R	R	G	G	Y	R	R	R							
14	RFY	RFY	RY	R	RFY	RFY	RY	R	RY	R							
15	RFY	RFY	RY	R	RFY	RFY	RY	R	RY	R							
16	←G	←G	←Y	R	G	G	Y	R	R	R							
17	←G	←G	←Y	R	G	G	Y	R	R	R							
18	G	G	Y	R	G	G	Y	R	R	R							
19	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW							
20	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW							
21	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW							
22	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW							
23	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW							
24	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW							
25	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW							
26	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW							
PHASE	3+8 CLEAR TO P.E.				4+8 CLEAR TO P.E.				1+5 CLEAR								

NOTES: * SIGN #31 ON * SIGN #31 ON * SIGN #31 ON

LED NLT SIGN is ON during clear to pre-empt and throughout pre-empt.
* Indicates Sign #31 is ON.

SUBMITTED: _____ CHECKED: _____ APPROVED: _____
IN SERVICE BY: 789/782 DATE: 5/9/15 TIME: 1:30P



CONSTRUCTION DETAILS

- A. REMOVE EXISTING TRAFFIC SIGNAL HEADS AND INSTALL NEW 5 SECTION TRAFFIC SIGNAL HEADS
- B. REMOVE EXISTING BLANK OUT SIGN AND INSTALL NEW LED BLANK OUT SIGN

208-I

GENERAL NOTES

1. MAINTENANCE OF TRAFFIC WILL BE HANDLED I STANDARD TYPICALS FOR TRAFFIC CONTROL.
2. VIDEO CAMERA LOCATION / ALIGNING SHALL I THE SHA ENGINEER. MONTGOMERY COUNTY WILL REPROGRAMMING CAMERA 'A' TO PICK UP NOR DETECTION.
3. ALL EXISTING TRAFFIC SIGNAL EQUIPMENT RE PROPERTY OF THE SIGNAL CONTRACTOR UPON I MODIFICATION.
4. MONTGOMERY COUNTY WILL BE RESPONSIBLE FI THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SIGNAL CABLES.
5. THE CONTRACTOR SHALL REMOVE AND DISPOSE CABLES.

D-110

D-110

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SIG#0208 Hub-ID

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PHASE IN USE/PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IN USE	X	X	X	X	X	X	X	X	X							
EXCLUSIVE PED																

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MIN GRN	5	7	5	6	5	7	0	6	6	0	0	0	0	0	0	0
BK MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DLY GRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WALK	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
WALK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WLK MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CLR	0	11	0	18	0	11	0	18	0	0	0	0	0	0	0	0
PD CLR2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VEH EXT	3.0	0.0	3.0	5.0	3.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VH EXT2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX1	20	60	15	25	25	60	0	35	0	0	0	0	0	0	0	0
MAX2	30	60	30	40	80	60	0	40	0	0	0	0	0	0	0	0
MAX3	50	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0
DYM MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM STP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YELLOW	3.5	4.0	3.5	4.0	3.5	4.0	0.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
RED CLR	1.5	2.0	1.5	2.5	1.5	2.0	0.0	2.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED MAX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED RVT	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX INT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CARS WT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDUC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTREDUC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LOCK DET																
VE RCALL																
PD RCALL		X				X										
MX RCALL		X				X										
SF RCALL																
NO REST																
AI CALC																

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SIG#0208 Hub-IDPage 2
October 20, 2022**COORDINATOR OPTIONS**

MANUAL PATTERN	AUTO	ECPI COORD	X
SYSTEM SOURCE	SYS	SYSTEM FORMAT	STD
SPLITS IN	SECONDS	OFFSET IN	SECONDS
TRANSITION	SMOOTH	MAX SELECT	MAX2
DWELL/ADD TIME	255	FORCE OFF	FIXED
DLY COORD WK-LZ		CAL USE PED TM	X
OFFSET REF	LAG	PED RESERVE	
PED RECALL	X	FO ADD INI GRN	
LOCAL ZERO OVRD		MULTISYNC	
RE-SYNC COUNT	1		

COORDINATOR PATTERN 1

USE SPLIT PATTERN	1	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	121	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	111	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 2

USE SPLIT PATTERN	2	ACTUATED COORD	
CYCLE	135	ACT WALK REST	
OFFSET VAL	124	PHASE RESERVICE	

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COORDINATOR PATTERN 2

MAX SELECT	NONE	FORCE OFF	NONE
STD (COS)	121	VEH PERM 1	0
DWELL/ADD TIME	0	VEH PERM 2	0
TIMING PLAN	1	VEH PERM 2 - DISP	0
SEQUENCE	1	XART PTRN.	0
ACTION PLAN	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 3

USE SPLIT PATTERN	3	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	89	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	131	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 4

USE SPLIT PATTERN	4	TIMING PLAN	1
CYCLE	135	SEQUENCE	1
OFFSET VAL	126	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	141	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

Split 1

PHASE	1	2	3	4	5	6	7	8
SPLIT	25	76	17	32	40	61	0	49
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

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Split 1

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	1	2	3	4	5	6	7	8
SPLIT	30	58	15	32	30	58	0	47
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	1	2	3	4	5	6	7	8
SPLIT	30	71	17	32	30	71	0	49
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	1	2	3	4	5	6	7	8
SPLIT	30	58	15	32	30	58	0	47
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 4

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PREEMPT PLAN 1

VEH/PED (OVERLAP)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
TRKCLR V	X
TRKCLR O	F2

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PREEMPT PLAN 1

VEH/PED (OVERLAP)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
ENA TRL																
DWEL VEH	.	.	X	.	.	.	X	X
DWEL PED																
DWEL OLP	.	F1	X	.	.	.	.	.	.	.	.	.	.	.	.	.
CYC VEH
CYC PED																
CYC OLP
EXIT PH		X				X										
EXIT CAL				X				X								
SP FUNC																

OPTIONS

ENABLE	S1
DET LOCK	X
OVERIDE FL	X
TERM OLP	
PED DARK	
X TMG PLN	0
PMT OVRIDE	X
DELAY	5
DURATION	60
PC>YEL	
TC RESERV	

OPTIONS

X FLCOLR	GRN	TERM PH	
RE-SERV	0	DWELL FL	OFF
INTERLOCK		EXIT OPT	OFF
INHIBIT	0	FLT TYPE	HARD
CLR>GRN		PMT ACTIVE OUT	ON

FREE DUR PMT

Ring	1	2	3	4
FREE DUR PMT				

Times

ENTRANCE TM - WALK	0	TRACK CLEAR - MIN GR	10	DWL/CYC-EXIT - MIN DL	30
ENTRANCE TM - PED CL	25	TRACK CLEAR - EXT GR	0	DWL/CYC-EXIT - PMT EXT	0.0
ENTRANCE TM - MN GR	0	TRACK CLEAR - MX GR	10	DWL/CYC-EXIT - MX TM	70
ENTRANCE TM - YEL	4.0	TRACK CLEAR - YEL	4.0	DWL/CYC-EXIT - YEL	7.0
ENTRANCE TM - RED	2.0	TRACK CLEAR - RED	3.0	DWL/CYC-EXIT - RED	6.0

ACTION PLAN 1

PATTERN	1	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 2

PATTERN	2	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

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ACTION PLAN 3

PATTERN	3	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 4

PATTERN	4	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

Day Plan 1

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	4	1	2	3	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 1

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	4	1	2	3	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	4	1	2	3	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Day Plan 3

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
START TIME - HH	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	4	1	2	3	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	4	1	2	3	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	4	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	5	9	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Day Plan 7

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ACTION PLAN	4	4	4	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	9	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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PHASE IN USE/PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IN USE	X	X		X	X	X		X								
EXCLUSIVE PED																

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MIN GRN	5	30	5	5	5	30	0	5	0	0	0	0	0	0	0	0
BK MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS MGRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DLY GRN	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0
WALK	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
WALK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WLK MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CLR	0	11	0	29	0	11	0	29	0	0	0	0	0	0	0	0
PD CLR2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PED CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VEH EXT	3.0	5.0	0.0	3.0	3.0	5.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VH EXT2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX1	20	40	0	20	20	40	0	20	0	0	0	0	0	0	0	0
MAX2	20	60	0	40	20	60	0	40	0	0	0	0	0	0	0	0
MAX3	0	80	0	0	0	80	0	0	0	0	0	0	0	0	0	0
DYM MAX	0	80	0	0	0	80	0	0	0	0	0	0	0	0	0	0
DYM STP	0.0	20.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YELLOW	3.5	4.5	0.0	3.5	3.5	4.5	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED CLR	2.0	2.0	0.0	4.0	2.0	2.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED MAX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RED RVT	5.0	2.0	5.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX INT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TIME B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CARS WT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDUC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTREDUC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PLAN 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LOCK DET				X				X								
VE RCALL		X			X											
PD RCALL		X			X											
MX RCALL																
SF RCALL																
NO REST																
AI CALC																

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COORDINATOR OPTIONS

MANUAL PATTERN	AUTO	ECPI COORD	X
SYSTEM SOURCE	SYS	SYSTEM FORMAT	STD
SPLITS IN	SECONDS	OFFSET IN	SECONDS
TRANSITION	SMOOTH	MAX SELECT	MAX2
DWELL/ADD TIME	255	FORCE OFF	FIXED
DLY COORD WK-LZ		CAL USE PED TM	X
OFFSET REF	LAG	PED RESERVE	
PED RECALL	X	FO ADD INI GRN	
LOCAL ZERO OVRD		MULTISYNC	
RE-SYNC COUNT	1		

COORDINATOR PATTERN 1

USE SPLIT PATTERN	1	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	125	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	111	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 2

USE SPLIT PATTERN	2	ACTUATED COORD	
CYCLE	135	ACT WALK REST	
OFFSET VAL	106	PHASE RESERVICE	

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COORDINATOR PATTERN 2

MAX SELECT	NONE	FORCE OFF	NONE
STD (COS)	121	VEH PERM 1	0
DWELL/ADD TIME	0	VEH PERM 2	0
TIMING PLAN	1	VEH PERM 2 - DISP	0
SEQUENCE	1	XART PTRN.	0
ACTION PLAN	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 3

USE SPLIT PATTERN	3	TIMING PLAN	1
CYCLE	150	SEQUENCE	1
OFFSET VAL	25	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVICE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	131	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

COORDINATOR PATTERN 99

USE SPLIT PATTERN	0	TIMING PLAN	0
CYCLE	0	SEQUENCE	0
OFFSET VAL	0	ACTION PLAN	0
ACTUATED COORD		FORCE OFF	NONE
ACT WALK REST		VEH PERM 1	0
PHASE RESERVE		VEH PERM 2	0
MAX SELECT	NONE	VEH PERM 2 - DISP	0
STD (COS)	544	XART PTRN.	0
DWELL/ADD TIME	0		

RING CONFIG

RING	1	2	3	4	RING	1	2	3	4	RING	1	2	3	4
SPLT EXT	0	0	0	0	SPLIT DEMAND PTRN.	0	0			RING DISP		0	0	0

SPLIT PREF PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREF 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREF 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE MODES

Phase	1	2	3	4	5	6	7	8
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

PHASE MODES

Phase	9	10	11	12	13	14	15	16
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

SF OUT

PHASE	1	2	3	4	5	6	7	8
SF OUT								

Split 1

PHASE	1	2	3	4	5	6	7	8
SPLIT	22	84	0	44	22	84	0	44
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

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Split 1

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	1	2	3	4	5	6	7	8
SPLIT	21	70	0	44	21	70	0	44
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 2

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	1	2	3	4	5	6	7	8
SPLIT	22	84	0	44	22	84	0	44
COORD		X				X		
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Split 3

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

~~Split 99~~

PHASE	1	2	3	4	5	6	7	8
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

~~Split 99~~

PHASE	9	10	11	12	13	14	15	16
SPLIT	0	0	0	0	0	0	0	0
COORD								
PHASE MODE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

ACTION PLAN 1

PATTERN	1	FLASH		SYS OVERRIDE		RED REST	
TIMING PLAN	1	VEH DET DIAG PLN	0	SEQUENCE	1	PED DET DIAG PLN	0
VEH DET PLAN	0	DIMMING ENABLE		DET LOG	0	PRIORITY RETURN	

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ACTION PLAN 1

PED PR RETURN		QUEUE DELAY		PMT COND DELAY	
---------------	--	-------------	--	----------------	--

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 2

PATTERN	2	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																

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PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

ACTION PLAN 3

PATTERN	3	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

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ACTION PLAN 99

PATTERN	FREE	SYS OVERRIDE		PED PR RETURN	
TIMING PLAN	1	SEQUENCE	1	QUEUE DELAY	
VEH DET PLAN	0	DET LOG	0	PMT COND DELAY	
FLASH		RED REST			
VEH DET DIAG PLN	0	PED DET DIAG PLN	0		
DIMMING ENABLE		PRIORITY RETURN			

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

Day Plan 1

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	1	2	3	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 1

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	1	2	3	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Day Plan 2

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 2

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	1	2	3	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 3

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	1	2	3	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 4

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	1	2	3	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	6	9	15	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 5

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Day Plan 6

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	9	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 6

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ACTION PLAN	99	100	99	99	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	5	9	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Day Plan 7

EVENT	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
ACTION PLAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - HH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
START TIME - MM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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ACTION PLAN 100

PATTERN	FLSH	DIMMING ENABLE		PED DET DIAG PLN	0
TIMING PLAN	1	SYS OVERRIDE		PRIORITY RETURN	
VEH DET PLAN	0	SEQUENCE	1	PED PR RETURN	
FLASH	X	DET LOG	0	QUEUE DELAY	
VEH DET DIAG PLN	0	RED REST		PMT COND DELAY	

PHASE TABLE

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RCL																
WALK 2																
VEX 2																
VEH RCL																
MAX RCL																
MAX 2																
MAX 3																
CS INH																
OMIT																
SPC FCT																
AUX FCT																

LP TABLE

LP Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

APPENDIX E
EXISTING CONDITIONS CAPACITY ANALYSES



Queues

Existing Conditions

6: Garden Gate Road/Middlevale Lane & Randolph Road

























AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	73	1203	88	2261	38	21	186	112
v/c Ratio	0.50	0.40	0.28	0.81	0.15	0.06	0.67	0.28
Control Delay	93.6	9.8	11.1	30.2	46.5	29.1	65.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.6	9.8	11.1	30.2	46.5	29.1	65.5	12.5
Queue Length 50th (ft)	0	88	28	661	29	8	163	11
Queue Length 95th (ft)	132	100	49	790	63	32	250	62
Internal Link Dist (ft)		805		1479		200		276
Turn Bay Length (ft)	300		235					
Base Capacity (vph)	253	3029	460	2793	339	478	365	500
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.40	0.19	0.81	0.11	0.04	0.51	0.22
Intersection Summary								

HCM 6th Signalized Intersection Summary
6: Garden Gate Road/Middlevale Lane & Randolph Road

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	68	1103	16	82	1996	107	35	10	9	173	13	91
Future Volume (veh/h)	68	1103	16	82	1996	107	35	10	9	173	13	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	0.98		0.90	0.95		0.93	0.93		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	1186	17	88	2146	115	38	11	10	186	14	98
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	3125	45	375	2885	153	256	202	184	337	44	308
Arrive On Green	0.10	1.00	1.00	0.03	0.59	0.59	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	5178	74	1781	4932	262	1211	867	788	1294	189	1321
Grp Volume(v), veh/h	73	780	423	88	1475	786	38	0	21	186	0	112
Grp Sat Flow(s),veh/h/ln	1781	1702	1848	1781	1702	1790	1211	0	1655	1294	0	1509
Q Serve(g_s), s	6.0	0.0	0.0	3.0	47.6	48.7	4.0	0.0	1.5	19.6	0.0	9.2
Cycle Q Clear(g_c), s	6.0	0.0	0.0	3.0	47.6	48.7	13.2	0.0	1.5	21.0	0.0	9.2
Prop In Lane	1.00		0.04	1.00		0.15	1.00		0.48	1.00		0.88
Lane Grp Cap(c), veh/h	93	2055	1115	375	1992	1047	256	0	385	337	0	352
V/C Ratio(X)	0.79	0.38	0.38	0.23	0.74	0.75	0.15	0.00	0.05	0.55	0.00	0.32
Avail Cap(c_a), veh/h	255	2055	1115	570	1992	1047	317	0	469	402	0	428
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	66.4	0.0	0.0	11.5	22.8	23.0	53.2	0.0	44.7	52.9	0.0	47.7
Incr Delay (d2), s/veh	17.8	0.5	0.9	0.3	2.5	5.0	0.3	0.0	0.1	1.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.1	0.3	1.2	18.9	21.0	1.3	0.0	0.6	6.5	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.2	0.5	0.9	11.8	25.3	28.0	53.4	0.0	44.8	54.3	0.0	48.2
LnGrp LOS	F	A	A	B	C	C	D	A	D	D	A	D
Approach Vol, veh/h		1276			2349			59				298
Approach Delay, s/veh		5.4			25.7			50.3				52.0
Approach LOS		A			C			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.3	94.3		42.4	10.5	97.0		42.4				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	21.5	66.5		42.5	21.5	66.5		42.5				
Max Q Clear Time (g_c+1), s	8.0	0.0		15.2	5.0	0.0		23.0				
Green Ext Time (p_c), s	0.2	0.0		0.2	0.2	0.0		1.0				
Intersection Summary												
HCM 6th Ctrl Delay				21.5								
HCM 6th LOS				C								

HCM 6th TWSC

8: Georgia Avenue & Glenmont Circle

Existing Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑ ↑
Traffic Vol, veh/h	0	36	1081	20	0	2522
Future Vol, veh/h	0	36	1081	20	0	2522
Conflicting Peds, #/hr	0	0	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	40	1215	22	0	2834

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	629	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	364	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	361	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	361
HCM Lane V/C Ratio	-	-	0.112
HCM Control Delay (s)	-	-	16.2
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.4

Queues

Existing Conditions

9: Georgia Avenue & Commercial Driveway/Shorefield Road

AM Peak Hour























Lane Group	EBT	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	22	98	59	1035	60	2609
v/c Ratio	0.12	0.56	0.24	0.30	0.14	0.64
Control Delay	48.2	72.1	14.4	17.0	4.6	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	72.1	14.4	17.0	4.6	7.8
Queue Length 50th (ft)	16	92	0	190	10	312
Queue Length 95th (ft)	43	148	42	330	25	461
Internal Link Dist (ft)	68	646		2085		1312
Turn Bay Length (ft)					290	
Base Capacity (vph)	296	283	363	3501	468	4058
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.35	0.16	0.30	0.13	0.64
Intersection Summary						

HCM 6th Signalized Intersection Summary

9: Georgia Avenue & Commercial Driveway/Shorefield Road

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	3	4	93	0	56	1	961	21	57	2478	1
Future Volume (veh/h)	14	3	4	93	0	56	1	961	21	57	2478	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.98		0.97	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	3	4	98	0	59	1	1012	22	60	2608	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	19	16	213	0	193	24	3694	80	506	4226	2
Arrive On Green	0.13	0.13	0.13	0.13	0.00	0.13	1.00	1.00	1.00	0.03	0.80	0.80
Sat Flow, veh/h	404	154	124	1316	0	1539	0	4985	108	1781	5272	2
Grp Volume(v), veh/h	22	0	0	98	0	59	379	315	342	60	1684	925
Grp Sat Flow(s),veh/h/ln	682	0	0	1316	0	1539	1863	1549	1682	1781	1702	1870
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	0.0	1.1	29.1	29.1
Cycle Q Clear(g_c), s	11.9	0.0	0.0	10.9	0.0	5.2	0.0	0.0	0.0	1.1	29.1	29.1
Prop In Lane	0.68		0.18	1.00		1.00	0.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	126	0	0	213	0	193	1405	1148	1246	506	2729	1499
V/C Ratio(X)	0.18	0.00	0.00	0.46	0.00	0.31	0.27	0.27	0.27	0.12	0.62	0.62
Avail Cap(c_a), veh/h	241	0	0	325	0	318	1405	1148	1246	600	2729	1499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.3	0.0	0.0	62.2	0.0	59.7	0.0	0.0	0.0	3.6	5.8	5.8
Incr Delay (d2), s/veh	0.7	0.0	0.0	3.3	0.0	1.9	0.4	0.6	0.5	0.1	1.1	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	3.8	0.0	2.2	0.2	0.2	0.2	0.4	9.4	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.9	0.0	0.0	65.5	0.0	61.6	0.4	0.6	0.5	3.7	6.9	7.8
LnGrp LOS	E	A	A	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		22			157			1035			2669	
Approach Delay, s/veh		62.9			64.0			0.5			7.1	
Approach LOS		E			E			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		125.2		24.8	9.1	116.1		24.8				
Change Period (Y+Rc), s		5.0		6.0	4.5	5.0		6.0				
Max Green Setting (Gmax), s		108.0		31.0	12.5	91.0		31.0				
Max Q Clear Time (g_c+1), s		0.0		13.9	3.1	0.0		12.9				
Green Ext Time (p_c), s		0.0		0.0	0.1	0.0		0.9				
Intersection Summary												
HCM 6th Ctrl Delay				8.0								
HCM 6th LOS				A								

Queues
11: Georgia Avenue & Arcola Avenue

Existing Conditions
AM Peak Hour


























Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	151	156	183	370	32	721	402	2372
v/c Ratio	0.23	0.64	0.61	0.41	0.56	0.26	0.28	0.72	0.75
Control Delay	60.6	70.9	56.2	50.2	7.5	18.4	22.7	14.9	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	70.9	56.2	50.2	7.5	18.4	22.7	14.9	17.4
Queue Length 50th (ft)	31	135	126	152	0	9	141	69	632
Queue Length 95th (ft)	66	204	185	216	82	26	212	100	780
Internal Link Dist (ft)		260		916			1249		2085
Turn Bay Length (ft)			180			155		235	
Base Capacity (vph)	202	312	258	527	707	285	2566	675	3174
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.48	0.60	0.35	0.52	0.11	0.28	0.60	0.75

Intersection Summary

HCM 6th Signalized Intersection Summary
11: Georgia Avenue & Arcola Avenue

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	111	30	145	170	344	30	633	37	374	2187	19
Future Volume (veh/h)	33	111	30	145	170	344	30	633	37	374	2187	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	119	32	156	183	370	32	681	40	402	2352	20
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	202	54	269	478	404	164	2385	139	598	3149	27
Arrive On Green	0.14	0.14	0.14	0.08	0.26	0.26	0.02	0.48	0.48	0.29	1.00	1.00
Sat Flow, veh/h	853	1418	381	1781	1870	1581	1781	4933	288	1781	5222	44
Grp Volume(v), veh/h	35	0	151	156	183	370	32	469	252	402	1532	840
Grp Sat Flow(s),veh/h/ln	853	0	1800	1781	1870	1581	1781	1702	1817	1781	1702	1862
Q Serve(g_s), s	5.5	0.0	11.8	11.0	12.1	34.1	1.3	12.4	12.5	18.4	0.0	0.0
Cycle Q Clear(g_c), s	5.5	0.0	11.8	11.0	12.1	34.1	1.3	12.4	12.5	18.4	0.0	0.0
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.16	1.00		0.02
Lane Grp Cap(c), veh/h	169	0	256	269	478	404	164	1646	879	598	2053	1123
V/C Ratio(X)	0.21	0.00	0.59	0.58	0.38	0.92	0.20	0.28	0.29	0.67	0.75	0.75
Avail Cap(c_a), veh/h	193	0	306	269	530	448	358	1646	879	756	2053	1123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72
Uniform Delay (d), s/veh	57.5	0.0	60.2	48.7	46.1	54.2	18.5	23.2	23.2	11.9	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	4.6	3.1	1.1	24.0	0.6	0.4	0.8	1.2	1.8	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	5.7	5.2	5.8	16.3	0.6	5.1	5.6	5.1	0.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	0.0	64.8	51.8	47.1	78.2	19.1	23.6	24.1	13.0	1.8	3.3
LnGrp LOS	E	A	E	D	D	E	B	C	C	B	A	A
Approach Vol, veh/h		186			709			753			2774	
Approach Delay, s/veh		63.6			64.4			23.6			3.9	
Approach LOS		E			E			C			A	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	96.5	17.0	27.9	26.6	78.5		44.9				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.5	5.0	6.0		6.5				
Max Green Setting (Gmax), s	20.0	70.0	12.0	25.5	35.0	55.0		42.5				
Max Q Clear Time (g_c+1), s	3.3	0.0	13.0	13.8	20.4	0.0		36.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	1.2	0.0		2.3				
Intersection Summary												
HCM 6th Ctrl Delay				19.5								
HCM 6th LOS				B								

HCM 6th TWSC

12: Glenallan Avenue & Erskine Avenue

Existing Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	TT			T	T	
Traffic Vol, veh/h	1	0	0	222	115	1
Future Vol, veh/h	1	0	0	222	115	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	0	288	149	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	438	150	150	0	-	0
Stage 1	150	-	-	-	-	-
Stage 2	288	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	576	896	1431	-	-	-
Stage 1	878	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	576	896	1431	-	-	-
Mov Cap-2 Maneuver	576	-	-	-	-	-
Stage 1	878	-	-	-	-	-
Stage 2	761	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1431	-	576	-	-
HCM Lane V/C Ratio	-	-	0.002	-	-
HCM Control Delay (s)	0	-	11.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Queues
13: Heurich Road & Randolph Road

Existing Conditions
AM Peak Hour





























Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	18	1233	29	2176	27	31
v/c Ratio	0.12	0.34	0.09	0.59	0.11	0.13
Control Delay	18.1	16.8	6.2	6.8	29.0	35.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	16.8	6.2	6.8	29.0	35.6
Queue Length 50th (ft)	4	107	4	110	11	16
Queue Length 95th (ft)	m26	299	m9	202	38	45
Internal Link Dist (ft)		1077		805	410	241
Turn Bay Length (ft)	300		300			
Base Capacity (vph)	263	3646	436	3674	374	366
Starvation Cap Reductn	0	0	0	79	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.34	0.07	0.61	0.07	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary 13: Heurich Road & Randolph Road

Existing Conditions
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  			  			  				  	
Traffic Volume (veh/h)	17	1093	41	27	1930	72	11	2	12	16	4	9	
Future Volume (veh/h)	17	1093	41	27	1930	72	11	2	12	16	4	9	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.96		0.96	0.96		0.96	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	18	1188	45	29	2098	78	12	2	13	17	4	10	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	207	3555	135	408	3588	133	116	28	102	143	38	68	
Arrive On Green	0.04	1.00	1.00	0.05	1.00	1.00	0.14	0.14	0.14	0.14	0.14	0.14	
Sat Flow, veh/h	1781	5049	191	1781	5053	187	574	198	716	740	265	479	
Grp Volume(v), veh/h	18	801	432	29	1411	765	27	0	0	31	0	0	
Grp Sat Flow(s),veh/h/ln	1781	1702	1836	1781	1702	1837	1487	0	0	1485	0	0	
Q Serve(g_s), s	0.4	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	
Cycle Q Clear(g_c), s	0.4	0.0	0.0	0.7	0.0	0.0	2.1	0.0	0.0	2.4	0.0	0.0	
Prop In Lane	1.00		0.10	1.00		0.10	0.44		0.48	0.55		0.32	
Lane Grp Cap(c), veh/h	207	2397	1293	408	2417	1304	247	0	0	249	0	0	
V/C Ratio(X)	0.09	0.33	0.33	0.07	0.58	0.59	0.11	0.00	0.00	0.12	0.00	0.00	
Avail Cap(c_a), veh/h	371	2397	1293	562	2417	1304	394	0	0	395	0	0	
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.90	0.90	0.90	0.50	0.50	0.50	1.00	0.00	0.00	1.00	0.00	0.00	
Uniform Delay (d), s/veh	5.8	0.0	0.0	5.5	0.0	0.0	56.1	0.0	0.0	56.2	0.0	0.0	
Incr Delay (d2), s/veh	0.2	0.3	0.6	0.0	0.5	1.0	0.2	0.0	0.0	0.2	0.0	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.2	0.2	0.2	0.4	0.9	0.0	0.0	1.1	0.0	0.0	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	5.9	0.3	0.6	5.6	0.5	1.0	56.2	0.0	0.0	56.4	0.0	0.0	
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A	
Approach Vol, veh/h		1251			2205			27				31	
Approach Delay, s/veh		0.5			0.7			56.2				56.4	
Approach LOS		A			A			E				E	
Timer - Assigned Phs	1	2		4	5	6		8					
Phs Duration (G+Y+Rc), s	8.1	113.0		28.9	9.0	112.1		28.9					
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5					
Max Green Setting (Gmax), s	16.5	77.5		36.5	16.5	77.5		36.5					
Max Q Clear Time (g_c+1), s	2.4	2.0		4.4	2.7	2.0		4.1					
Green Ext Time (p_c), s	0.0	61.6		0.1	0.0	25.1		0.1					
Intersection Summary													
HCM 6th Ctrl Delay				1.6									
HCM 6th LOS				A									

Queues
6: Garden Gate Road/Middlevale Lane & Randolph Road

Existing Conditions
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	1769	36	1436	25	20	114	34
v/c Ratio	0.25	0.49	0.17	0.41	0.14	0.09	0.62	0.14
Control Delay	68.2	10.4	7.6	11.1	54.5	28.8	74.3	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.2	10.4	7.6	11.1	54.5	28.8	74.3	21.2
Queue Length 50th (ft)	27	100	6	201	22	6	109	5
Queue Length 95th (ft)	m58	301	24	349	46	28	155	35
Internal Link Dist (ft)		805		1479		200		276
Turn Bay Length (ft)	300		235					
Base Capacity (vph)	194	3580	320	3533	327	409	331	408
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.49	0.11	0.41	0.08	0.05	0.34	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
6: Garden Gate Road/Middlevale Lane & Randolph Road

Existing Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	1686	30	35	1245	147	24	7	13	111	6	27
Future Volume (veh/h)	25	1686	30	35	1245	147	24	7	13	111	6	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	1738	31	36	1284	152	25	7	13	114	6	28
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	39	3752	67	290	3378	400	183	69	128	196	34	157
Arrive On Green	0.04	1.00	1.00	0.03	0.73	0.73	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	5165	92	1781	4625	548	1369	584	1085	1386	286	1336
Grp Volume(v), veh/h	26	1145	624	36	945	491	25	0	20	114	0	34
Grp Sat Flow(s),veh/h/ln	1781	1702	1853	1781	1702	1769	1369	0	1669	1386	0	1622
Q Serve(g_s), s	2.2	0.0	0.0	0.8	15.5	15.5	2.5	0.0	1.6	12.0	0.0	2.8
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.8	15.5	15.5	5.3	0.0	1.6	13.6	0.0	2.8
Prop In Lane	1.00		0.05	1.00		0.31	1.00		0.65	1.00		0.82
Lane Grp Cap(c), veh/h	39	2473	1346	290	2486	1292	183	0	196	196	0	191
V/C Ratio(X)	0.66	0.46	0.46	0.12	0.38	0.38	0.14	0.00	0.10	0.58	0.00	0.18
Avail Cap(c_a), veh/h	196	2473	1346	440	2486	1292	351	0	400	366	0	389
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	71.1	0.0	0.0	4.7	7.6	7.6	62.1	0.0	59.1	65.2	0.0	59.6
Incr Delay (d2), s/veh	21.5	0.6	1.0	0.2	0.4	0.9	0.3	0.0	0.2	2.7	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.2	0.4	0.3	5.3	5.7	0.9	0.0	0.7	4.4	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.7	0.6	1.0	4.9	8.0	8.4	62.4	0.0	59.3	67.9	0.0	60.1
LnGrp LOS	F	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1795			1472			45				148
Approach Delay, s/veh		2.1			8.1			61.0				66.1
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	116.0		25.1	9.4	115.5		25.1				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	16.5	78.0		36.0	16.5	78.0		36.0				
Max Q Clear Time (g_c+1), s	4.2	0.0		7.3	2.8	0.0		15.6				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				8.1								
HCM 6th LOS				A								

HCM 6th TWSC

8: Georgia Avenue & Glenmont Circle

Existing Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑ ↑
Traffic Vol, veh/h	0	23	1905	39	0	1484
Future Vol, veh/h	0	23	1905	39	0	1484
Conflicting Peds, #/hr	0	0	0	35	35	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	2323	48	0	1810

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	1221	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	147	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	142	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36.5	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	142
HCM Lane V/C Ratio	-	-	0.198
HCM Control Delay (s)	-	-	36.5
HCM Lane LOS	-	-	E
HCM 95th %tile Q(veh)	-	-	0.7

Queues

Existing Conditions

9: Georgia Avenue & Commercial Driveway/Shorefield Road

PM Peak Hour



Lane Group	EBT	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	66	166	132	1905	138	1425
v/c Ratio	0.31	0.74	0.36	0.57	0.65	0.37
Control Delay	52.7	78.2	10.1	17.6	30.2	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.7	78.2	10.1	17.6	30.2	7.1
Queue Length 50th (ft)	54	156	0	231	33	156
Queue Length 95th (ft)	96	228	57	475	118	221
Internal Link Dist (ft)	68	646		2085		1312
Turn Bay Length (ft)					290	
Base Capacity (vph)	281	293	440	3326	240	3823
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.57	0.30	0.57	0.57	0.37

Intersection Summary

HCM 6th Signalized Intersection Summary
9: Georgia Avenue & Commercial Driveway/Shorefield Road

Existing Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	25	7	156	3	127	0	1776	53	132	1341	27
Future Volume (veh/h)	32	25	7	156	3	127	0	1776	53	132	1341	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	26	7	162	3	132	0	1850	55	138	1397	28
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	46	9	247	4	318	0	3305	98	272	3701	74
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.00	1.00	1.00	0.04	0.72	0.72
Sat Flow, veh/h	146	219	43	958	18	1526	0	5262	151	1781	5151	103
Grp Volume(v), veh/h	66	0	0	165	0	132	0	1236	669	138	923	502
Grp Sat Flow(s),veh/h/ln	408	0	0	975	0	1526	0	1702	1841	1781	1702	1850
Q Serve(g_s), s	4.2	0.0	0.0	0.0	0.0	11.2	0.0	0.0	0.0	3.8	15.7	15.7
Cycle Q Clear(g_c), s	29.2	0.0	0.0	25.1	0.0	11.2	0.0	0.0	0.0	3.8	15.7	15.7
Prop In Lane	0.50		0.11	0.98		1.00	0.00		0.08	1.00		0.06
Lane Grp Cap(c), veh/h	121	0	0	251	0	318	0	2209	1194	272	2445	1329
V/C Ratio(X)	0.55	0.00	0.00	0.66	0.00	0.42	0.00	0.56	0.56	0.51	0.38	0.38
Avail Cap(c_a), veh/h	148	0	0	276	0	346	0	2209	1194	350	2445	1329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.71	0.71	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	0.0	0.0	56.9	0.0	51.5	0.0	0.0	0.0	7.3	8.2	8.2
Incr Delay (d2), s/veh	3.8	0.0	0.0	7.5	0.0	1.8	0.0	0.7	1.4	1.5	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	6.6	0.0	4.5	0.0	0.2	0.4	1.5	5.8	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	0.0	0.0	64.4	0.0	53.3	0.0	0.7	1.4	8.7	8.6	9.0
LnGrp LOS	E	A	A	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h		66			297			1905			1563	
Approach Delay, s/veh		65.1			59.5			1.0			8.7	
Approach LOS		E			E			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		112.8		37.2	10.4	102.3		37.2				
Change Period (Y+Rc), s		5.0		6.0	4.5	5.0		6.0				
Max Green Setting (Gmax), s		105.0		34.0	12.5	88.0		34.0				
Max Q Clear Time (g_c+1), s		0.0		31.2	5.8	0.0		27.1				
Green Ext Time (p_c), s		0.0		0.0	0.2	0.0		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				9.8								
HCM 6th LOS				A								

Queues
11: Georgia Avenue & Arcola Avenue

Existing Conditions
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	133	100	128	422	57	1699	255	1319
v/c Ratio	0.37	0.61	0.40	0.31	0.73	0.21	0.64	0.80	0.42
Control Delay	67.0	71.6	50.0	49.2	21.5	11.7	28.8	63.5	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	71.6	50.0	49.2	21.5	11.7	28.8	63.5	12.7
Queue Length 50th (ft)	50	121	79	104	103	16	438	179	186
Queue Length 95th (ft)	93	186	127	158	225	36	573	289	215
Internal Link Dist (ft)		260		916			1249		2085
Turn Bay Length (ft)			180			155		235	
Base Capacity (vph)	210	314	257	527	654	482	2638	372	3152
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.42	0.39	0.24	0.65	0.12	0.64	0.69	0.42

Intersection Summary

HCM 6th Signalized Intersection Summary
11: Georgia Avenue & Arcola Avenue

Existing Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	106	18	93	119	392	53	1513	67	237	1209	18
Future Volume (veh/h)	50	106	18	93	119	392	53	1513	67	237	1209	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	114	19	100	128	422	57	1627	72	255	1300	19
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	297	49	307	525	440	316	2583	114	285	2968	43
Arrive On Green	0.19	0.19	0.19	0.06	0.28	0.28	0.03	0.52	0.52	0.17	1.00	1.00
Sat Flow, veh/h	851	1558	260	1781	1870	1566	1781	5011	222	1781	5185	76
Grp Volume(v), veh/h	54	0	133	100	128	422	57	1105	594	255	854	465
Grp Sat Flow(s),veh/h/ln	851	0	1818	1781	1870	1566	1781	1702	1829	1781	1702	1856
Q Serve(g_s), s	8.2	0.0	9.6	6.6	7.9	39.8	2.3	34.9	35.0	10.4	0.0	0.0
Cycle Q Clear(g_c), s	8.2	0.0	9.6	6.6	7.9	39.8	2.3	34.9	35.0	10.4	0.0	0.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		0.12	1.00		0.04
Lane Grp Cap(c), veh/h	210	0	346	307	525	440	316	1754	943	285	1949	1063
V/C Ratio(X)	0.26	0.00	0.38	0.33	0.24	0.96	0.18	0.63	0.63	0.90	0.44	0.44
Avail Cap(c_a), veh/h	210	0	346	348	530	444	559	1754	943	426	1949	1063
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	52.5	0.0	53.0	43.9	41.7	53.1	16.0	26.1	26.1	24.0	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	1.5	0.6	0.5	32.9	0.3	1.7	3.2	14.4	0.7	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	4.6	3.0	3.8	19.7	1.0	14.4	15.9	5.5	0.2	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	0.0	54.5	44.5	42.2	86.0	16.3	27.8	29.3	38.4	0.7	1.2
LnGrp LOS	D	A	D	D	D	F	B	C	C	D	A	A
Approach Vol, veh/h		187			650			1756			1574	
Approach Delay, s/veh		54.3			71.0			27.9			6.9	
Approach LOS		D			E			C			A	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	91.9	13.5	35.1	18.1	83.3		48.6				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.5	5.0	6.0		6.5				
Max Green Setting (Gmax), s	25.0	65.0	12.0	25.5	25.0	65.0		42.5				
Max Q Clear Time (g_c+1), s	4.3	0.0	8.6	11.6	12.4	0.0		41.8				
Green Ext Time (p_c), s	0.1	0.0	0.1	1.1	0.6	0.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				27.9								
HCM 6th LOS				C								

HCM 6th TWSC

12: Glenallan Avenue & Erskine Avenue

Existing Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	TT			T	T	
Traffic Vol, veh/h	2	0	0	100	120	1
Future Vol, veh/h	2	0	0	100	120	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	0	0	130	156	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	287	157	157	0	-	0
Stage 1	157	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	703	889	1423	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	703	889	1423	-	-	-
Mov Cap-2 Maneuver	703	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	896	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1423	-	703	-	-
HCM Lane V/C Ratio	-	-	0.004	-	-
HCM Control Delay (s)	0	-	10.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Queues

Existing Conditions

13: Heurich Road & Randolph Road

PM Peak Hour

























Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	38	1854	26	1329	54	35
v/c Ratio	0.11	0.46	0.12	0.33	0.36	0.24
Control Delay	1.1	1.8	2.6	2.1	37.2	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.1	1.8	2.6	2.1	37.2	35.5
Queue Length 50th (ft)	0	99	1	31	24	15
Queue Length 95th (ft)	m3	113	4	42	58	44
Internal Link Dist (ft)		1077		805	410	241
Turn Bay Length (ft)	300		300			
Base Capacity (vph)	440	4024	328	3971	375	377
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.46	0.08	0.33	0.14	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
13: Heurich Road & Randolph Road

Existing Conditions
PM Peak Hour

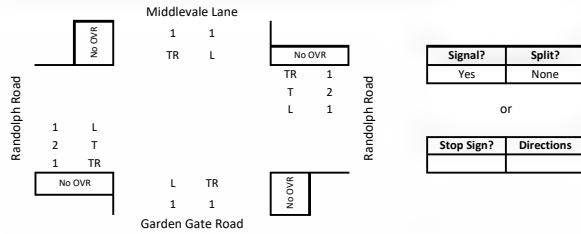
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	37	1767	31	25	1268	21	21	3	28	14	2	18
Future Volume (veh/h)	37	1767	31	25	1268	21	21	3	28	14	2	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	1822	32	26	1307	22	22	3	29	14	2	19
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	407	3936	69	275	3916	66	75	20	71	75	21	74
Arrive On Green	0.05	1.00	1.00	0.04	1.00	1.00	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1781	5167	91	1781	5171	87	473	234	819	478	240	853
Grp Volume(v), veh/h	38	1200	654	26	860	469	54	0	0	35	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1854	1781	1702	1854	1526	0	0	1571	0	0
Q Serve(g_s), s	0.7	0.0	0.0	0.5	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	0.0	0.0	0.5	0.0	0.0	4.8	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.05	0.41		0.54	0.40		0.54
Lane Grp Cap(c), veh/h	407	2593	1412	275	2578	1404	165	0	0	169	0	0
V/C Ratio(X)	0.09	0.46	0.46	0.09	0.33	0.33	0.33	0.00	0.00	0.21	0.00	0.00
Avail Cap(c_a), veh/h	556	2593	1412	432	2578	1404	398	0	0	401	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.92	0.92	0.92	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.5	0.0	0.0	3.6	0.0	0.0	64.7	0.0	0.0	64.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.9	0.1	0.3	0.6	1.1	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.4	0.2	0.1	0.2	2.0	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.6	0.5	0.9	3.8	0.3	0.6	65.9	0.0	0.0	64.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		1892			1355			54				35
Approach Delay, s/veh		0.7			0.5			65.9				64.6
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	120.1		20.4	8.8	120.8		20.4				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	16.5	77.5		36.5	16.5	77.5		36.5				
Max Q Clear Time (g_c+1), s	2.7	2.0		4.9	2.5	2.0		6.8				
Green Ext Time (p_c), s	0.0	30.7		0.1	0.0	48.8		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				2.3								
HCM 6th LOS				A								



6
Critical Lane Volume
and
Level of Service Calculations

Intersection: **06: Randolph Road / Middlevale Lane / Garden Gate Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Existing Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1119	0	0.37	414	82	1.00	82	496	
	L	68	0	1.00	68				150	
WB	TR	2103	0	0.37	778	68	1.00	68	846	*
	L	82	0	1.00	82				150	
NB	TR	19	0	1.00	19	173	1.00	173	192	*
	L	35	0	1.00	35				208	*
SB	TR	104	0	1.00	104	35	1.00	35	139	*
	L	173	0	1.00	173				208	*
Note:									CLV	1262
Congestion Equiv.									v/c	0.789
										1600

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1716	0	0.37	635	35	1.00	35	670	*
	L	25	0	1.00	25				60	
WB	TR	1392	0	0.37	515	25	1.00	25	540	*
	L	35	0	1.00	35				60	
NB	TR	20	0	1.00	20	111	1.00	111	131	*
	L	24	0	1.00	24				135	*
SB	TR	33	0	1.00	33	24	1.00	24	57	*
	L	111	0	1.00	111				135	*
Note:									CLV	940
Congestion Equiv.									v/c	0.588
										1600

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap		
		AM	PM	LUF	AM	PM	LUF	AM	PM	
Eastbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Westbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Northbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Southbound	No	n/a	n/a		n/a	n/a		n/a	0	0

Montgomery County LATR

	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1	1	1.00	
2	0.53	0.53	
3	0.37	0.37	
4		0.30	
5		0.25	

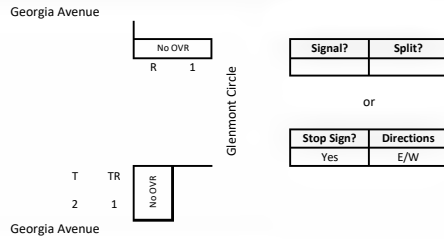
E-21

8
Critical Lane Volume and Level of Service Calculations

Intersection: **08. Georgia Avenue / Glenmont Circle**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Existing Conditions**
Computed by: **W+A**



Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB			0		0	0		0	0	
WB	R	36	0	1.00	36	0		0	36	*
NB	TR	1101	0	0.37	407	0		0	407	*
SB			0		0	0		0	0	
Note:									CLV	443
Congestion Equiv.									v/c	0.246
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB			0		0	0		0	0	
WB	R	23	0	1.00	23	0		0	23	*
NB	TR	1944	0	0.37	719	0		0	719	*
SB			0		0	0		0	0	
Note:									CLV	742
Congestion Equiv.									v/c	0.412
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

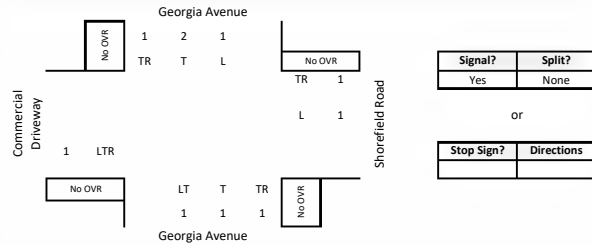
Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25



9
Critical Lane Volume
and
Level of Service Calculations

Intersection: **09. Georgia Avenue / Shorefield Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Existing Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LTR	21	0	1.00	21	93	1.00	93	114	*
WB	TR	56	0	1.00	56	14	1.00	14	70	
WB	L	93	0	1.00	93				107	
NB	LTR	983	0	0.37	364	57	1.00	57	421	*
SB	TR	2479	0	0.37	917				57	
SB	L	57	0	1.00	57	1	1.00	1	918	*
Note:									CLV	1032
Congestion Equiv.									v/c	0.645
1600										

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LTR	64	0	1.00	64	156	1.00	156	220	*
WB	TR	130	0	1.00	130	32	1.00	32	162	
WB	L	156	0	1.00	156				188	
NB	LTR	1829	0	0.37	677	132	1.00	132	809	*
SB	TR	1368	0	0.37	506				132	
SB	L	132	0	1.00	132	0	1.00	0	506	*
Note:									CLV	1029
Congestion Equiv.									v/c	0.643
1600										

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap		
		AM	PM	LUF	AM	PM	LUF	AM	PM	LUF
Eastbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Westbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Northbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Southbound	No	n/a	n/a		n/a	n/a		n/a	0	0

Montgomery County LATR

Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25

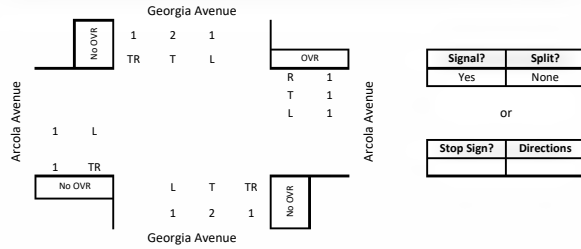
E-23



11
Critical Lane Volume
and
Level of Service Calculations

Intersection: 11. Georgia Avenue / Arcola Avenue
Jurisdiction: Montgomery County, MD
Scenario/Design Year: Existing Conditions
Computed by: W+A

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	141	0	1.00	141	145	1.00	145	286	*
	L	33	0	1.00	33	0	1.00	0	178	
WB	T	170	0	1.00	170	33	1.00	33	203	
	R	344	344	1.00	0	0	1.00	0	33	
NB	TR	670	0	0.37	248	374	1.00	374	622	
	L	30	0	1.00	30	0	1.00	0	404	
SB	TR	2206	0	0.37	816	30	1.00	30	846	*
	L	374	0	1.00	374	0	1.00	0	404	
Note:									CLV	1132
Congestion Equiv.									v/c	0.708
										1600

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	124	0	1.00	124	93	1.00	93	217	
	L	50	0	1.00	50	0	1.00	0	143	
WB	T	119	0	1.00	119	50	1.00	50	169	
	R	392	0	1.00	392	0	1.00	0	442	*
NB	TR	1580	0	0.37	585	237	1.00	237	822	*
	L	53	0	1.00	53	0	1.00	0	290	
SB	TR	1227	0	0.37	454	53	1.00	53	507	
	L	237	0	1.00	237	0	1.00	0	290	
Note:									CLV	1264
Congestion Equiv.									v/c	0.790
										1600

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	Yes	344	392	1.00	374	237	1.00	344	237
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

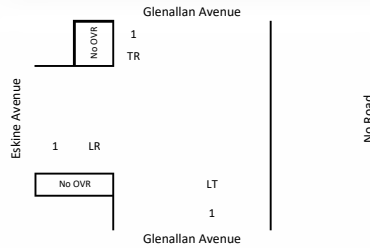
Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25



12
Critical Lane Volume
and
Level of Service Calculations

Intersection: 12. Glenallan Avenue / Eskine Avenue
Jurisdiction: Montgomery County, MD
Scenario/Design Year: Existing Conditions
Computed by: W+A

Intersection Lane Use & Traffic Control

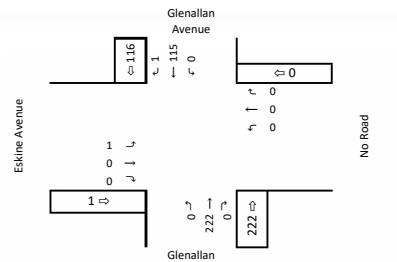


Signal?	Split?

or

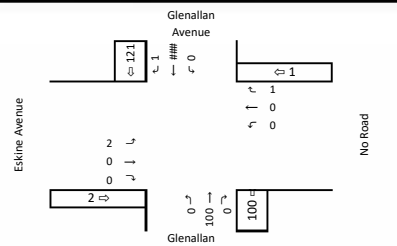
Stop Sign?	Directions
Yes	E/W

AM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LR	1		1.00	1			0	1	*
WB					0			0	0	
NB	LT	222		1.00	222			0	222	*
SB	TR	116		1.00	116	0	1.00	0	116	
Note:									CLV	223
Congestion Equiv.									v/c	0.139
										1600

PM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LR	2		1.00	2			0	2	*
WB					0			0	0	
NB	LT	100		1.00	100			0	100	
SB	TR	121		1.00	121	0	1.00	0	121	*
Note:									CLV	123
Congestion Equiv.									v/c	0.077
										1600

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

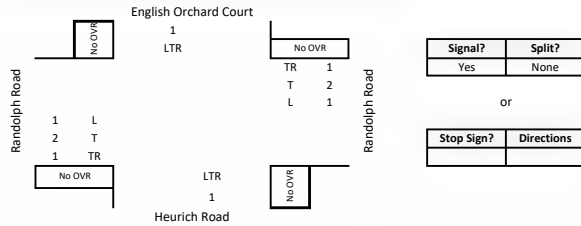
	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1		1	1.00
2		0.53	0.53
3		0.37	0.37
4			0.30
5			0.25



13
Critical Lane Volume
and
Level of Service Calculations

Intersection: **13: Randolph Road / Heurich Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Existing Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1134		0.37	420	27	1.00	27	447	
	L	17		1.00	17				44	
WB	TR	2002		0.37	741	17	1.00	17	758	*
	L	27		1.00	27				44	
NB	LTR	25		1.00	25	0	1.00	16	41	*
SB	LTR	29		1.00	29	11	1.00	11	40	
Note:									CLV	799
Congestion Equiv.									v/c	0.499
										1600

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1798		0.37	665	25	1.00	25	690	*
	L	37		1.00	37				62	
WB	TR	1289		0.37	477	37	1.00	37	514	*
	L	25		1.00	25				62	
NB	LTR	52		1.00	52	14	1.00	14	66	*
SB	LTR	34		1.00	34	21	1.00	21	55	
Note:									CLV	756
Congestion Equiv.									v/c	0.473
										1600

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap		
		AM	PM	LUF	AM	PM	LUF	AM	PM	
Eastbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Westbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Northbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Southbound	No	n/a	n/a		n/a	n/a		n/a	0	0

Montgomery County LATR

	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1		1	1.00
2		0.53	0.53
3		0.37	0.37
4			0.30
5			0.25

APPENDIX F
RED POLICY AREA
CAPACITY ANALYSIS

Table F-1
Glenmont Forest
Levels of Service Summary ¹

Approach/ Lane Group	Policy Standard (s)	Existing Conditions		Background Conditions		Total Future Conditions (with Randolph Road Access)		Total Future Conditions (without Randolph Road Access)	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
		Delay (s)	Delay (s)	Delay (s)	Delay (s)	Delay (s)	Delay (s)	Delay (s)	Delay (s)
1. Randolph Road/Livingston Street (Signalized)² - Red Zone Overall	120	5.7	5.5	5.7	5.6	5.7	5.6	5.7	5.6
2. Randolph Road/Georgia Avenue (Signalized)^{2,3} - Red Zone Overall	120	65.7	48.3	70.6	56.7	92.3	66.4	92.3	66.4
3. Randolph Road/Glenmont Circle (Signalized)² - Red Zone Overall	120	8.5	21.3	8.5	21.3	21.1	25.1	21.1	25.1
4. Randolph Road/Residential Driveway (Unsignalized)^{2,3} - Red Zone Overall	120	0.1	0.2	0.1	0.2	0.3	0.3	n/a	n/a
5. Randolph Road/Glenallen Avenue (Signalized)² - Red Zone Overall	120	21.6	10.0	25.2	12.8	26.7	13.3	27.5	13.8
6. Randolph Road/Middlevale Lane/Garden Gate Road (Signalized) - Orange Zone Overall	80	21.5	8.1	21.8	8.0	21.6	8.0	21.6	8.0
7. Georgia Avenue/Layhill Road (Signalized)² - Red Zone Overall	120	8.9	2.4	9.5	2.1	10.1	2.1	10.1	2.1
8. Georgia Avenue/Glenmont Circle (Unsignalized) - Orange Zone Overall	80	0.2	0.2	0.2	0.3	1.5	3.2	1.5	3.2
9. Georgia Avenue/Shorefield Road (Signalized) - Orange Zone Overall	80	8.0	9.8	8.3	9.8	9.1	9.7	9.1	9.7
10. Layhill Road/Glenallen Avenue (Signalized)² - Red Zone Overall	120	36.4	32.6	36.1	32.7	36.2	32.6	36.2	32.6
11. Georgia Avenue/Arcola Avenue (Signalized) - Orange Zone Overall	80	19.5	27.9	19.6	28.7	20.1	30.8	20.1	30.8
12. Glenallen Avenue/Eskine Avenue (Unsignalized)² - Orange Zone Overall	80	0.0	0.1	0.0	0.1	0.9	0.5	2.5	1.4
13. Randolph Road/Heurich Road (Signalized) - Orange Zone Overall	80	1.6	2.3	1.5	2.3	1.5	2.2	1.5	2.2

Note(s):

1. Capacity analysis based on Highway Capacity Manual 6th Edition methodology where available, using Synchro 11.
2. Intersection is in Red policy area and does not require motor vehicle adequacy analysis.
3. HCM 6th Edition report not available, HCM 2000 used.

EXISTING

Queues
1: Livingston Street & Randolph Road

Existing Conditions
AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	13	999	123	1566	58	62
v/c Ratio	0.06	0.24	0.29	0.38	0.27	0.32
Control Delay	5.6	3.9	7.1	4.6	19.0	37.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	3.9	7.1	4.6	19.0	37.8
Queue Length 50th (ft)	2	54	19	98	8	32
Queue Length 95th (ft)	11	127	77	224	42	65
Internal Link Dist (ft)		1892		1561	753	616
Turn Bay Length (ft)	70		75			
Base Capacity (vph)	217	4137	417	4137	415	404
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.24	0.29	0.38	0.14	0.15
Intersection Summary						













HCM 6th Signalized Intersection Summary
1: Livingston Street & Randolph Road

Existing Conditions
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	892	7	111	1404	5	7	3	42	17	21	18
Future Volume (veh/h)	12	892	7	111	1404	5	7	3	42	17	21	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	991	8	123	1560	6	8	3	47	19	23	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	298	4219	34	490	4240	16	43	17	112	68	70	47
Arrive On Green	0.81	0.81	0.81	0.81	0.81	0.81	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	328	5225	42	564	5250	20	106	192	1271	324	792	531
Grp Volume(v), veh/h	13	646	353	123	1011	555	58	0	0	62	0	0
Grp Sat Flow(s),veh/h/ln	328	1702	1863	564	1702	1866	1569	0	0	1647	0	0
Q Serve(g_s), s	1.4	5.4	5.4	8.0	9.8	9.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.1	5.4	5.4	13.4	9.8	9.8	4.1	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.01	0.14		0.81	0.31		0.32
Lane Grp Cap(c), veh/h	298	2749	1504	490	2749	1507	173	0	0	185	0	0
V/C Ratio(X)	0.04	0.23	0.23	0.25	0.37	0.37	0.34	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	298	2749	1504	490	2749	1507	414	0	0	432	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.7	2.7	2.7	4.3	3.2	3.2	51.8	0.0	0.0	51.7	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.2	0.4	1.2	0.4	0.7	2.4	0.0	0.0	2.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.3	1.5	0.9	2.4	2.7	1.8	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.0	2.9	3.1	5.6	3.5	3.9	54.2	0.0	0.0	54.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1012			1689			58				62
Approach Delay, s/veh		3.0			3.8			54.2				54.0
Approach LOS		A			A			D				D
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		102.9		17.1		102.9		17.1				
Change Period (Y+Rc), s		6.0		6.5		6.0		6.5				
Max Green Setting (Gmax), s		78.0		29.5		78.0		29.5				
Max Q Clear Time (g_c+I1), s		0.0		6.1		0.0		6.0				
Green Ext Time (p_c), s		0.0		0.3		0.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				5.7								
HCM 6th LOS				A								

Queues
2: MD 97 Georgia Ave. & Randolph Rd. Ramps

Existing Conditions
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	107	111	218	537	272	135	157	810	184	57	1627	115
v/c Ratio	0.57	0.58	0.46	0.85	0.85	0.29	0.60	0.38	0.25	0.31	0.81	0.18
Control Delay	85.7	86.1	19.9	82.6	92.9	3.9	90.5	39.5	3.6	72.7	72.7	42.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.7	86.1	19.9	82.6	92.9	3.9	90.5	39.5	3.6	72.7	72.7	42.8
Queue Length 50th (ft)	130	135	65	339	343	0	93	237	0	35	724	78
Queue Length 95th (ft)	183	189	133	404	462	22	137	348	39	m54	#950	m134
Internal Link Dist (ft)		604			602			403			821	
Turn Bay Length (ft)			200			200	200		175	250		275
Base Capacity (vph)	345	352	492	715	362	621	276	2115	735	457	1999	644
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.32	0.44	0.75	0.75	0.22	0.57	0.38	0.25	0.12	0.81	0.18

Intersection Summary

























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
2: MD 97 Georgia Ave. & Randolph Rd. Ramps

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	38	211	733	51	131	152	786	178	55	1578	112
Future Volume (vph)	174	38	211	733	51	131	152	786	178	55	1578	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	12.0	12.0	12.0	12.0	12.0	12.0	7.0	9.0	9.0	7.0	9.0	9.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1714	1583	3221	1629	1583	3433	5085	1470	3433	5085	1553
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1714	1583	3221	1629	1583	3433	5085	1470	3433	5085	1553
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	179	39	218	756	53	135	157	810	184	57	1627	115
RTOR Reduction (vph)	0	0	113	0	0	101	0	0	107	0	0	34
Lane Group Flow (vph)	107	111	105	537	272	34	157	810	77	57	1627	81
Confl. Peds. (#/hr)	2					2	3		26	26		3
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	4 1	3	3	3 5	1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	20.1	20.1	45.8	35.4	35.4	45.0	13.7	74.9	74.9	9.6	70.8	70.8
Effective Green, g (s)	20.1	20.1	45.8	35.4	35.4	45.0	13.7	74.9	74.9	9.6	70.8	70.8
Actuated g/C Ratio	0.11	0.11	0.25	0.20	0.20	0.25	0.08	0.42	0.42	0.05	0.39	0.39
Clearance Time (s)	12.0	12.0		12.0	12.0		7.0	9.0	9.0	7.0	9.0	9.0
Vehicle Extension (s)	3.5	3.5		3.0	3.0		4.0	0.2	0.2	4.0	0.2	0.2
Lane Grp Cap (vph)	187	191	402	633	320	395	261	2115	611	183	2000	610
v/s Ratio Prot	0.06	c0.06	0.07	0.17	c0.17	0.02	c0.05	c0.16		0.02	c0.32	
v/s Ratio Perm									0.05			0.05
v/c Ratio	0.57	0.58	0.26	0.85	0.85	0.09	0.60	0.38	0.13	0.31	0.81	0.13
Uniform Delay, d1	75.9	76.0	53.6	69.7	69.7	51.7	80.5	36.5	32.4	82.0	48.7	35.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.84	1.45	1.94
Incremental Delay, d2	4.5	4.7	0.4	10.3	18.6	0.1	4.5	0.5	0.4	1.1	3.2	0.4
Delay (s)	80.4	80.7	54.0	80.0	88.3	51.8	85.0	37.0	32.8	70.3	73.7	68.2
Level of Service	F	F	D	E	F	D	F	D	C	E	E	E
Approach Delay (s)		67.3			78.4			42.9			73.3	
Approach LOS		E			E			D			E	
Intersection Summary												
HCM 2000 Control Delay			65.7									HCM 2000 Level of Service E
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			180.0						40.0			
Intersection Capacity Utilization			86.7%									ICU Level of Service E
Analysis Period (min)			15									
c Critical Lane Group												

Queues
3: Glenmont Circle/Shopping Center & Randolph RoadExisting Conditions
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	19	847	33	20	2071	67	18	50	47
v/c Ratio	0.23	0.25	0.03	0.24	0.49	0.29	0.06	0.44	0.22
Control Delay	74.4	16.6	0.1	81.7	11.9	57.3	0.4	78.9	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	16.6	0.1	81.7	11.9	57.3	0.4	78.9	2.5
Queue Length 50th (ft)	18	123	0	21	101	64	0	48	0
Queue Length 95th (ft)	47	240	0	m23	204	97	0	92	0
Internal Link Dist (ft)		622			388	289		392	
Turn Bay Length (ft)	110			270			30		
Base Capacity (vph)	165	3344	1039	165	4207	428	458	154	243
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.25	0.03	0.12	0.49	0.16	0.04	0.32	0.19

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary 3: Glenmont Circle/Shopping Center & Randolph Road

Existing Conditions
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	822	32	19	1979	30	56	9	17	42	7	46
Future Volume (veh/h)	18	822	32	19	1979	30	56	9	17	42	7	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.96	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	847	0	20	2040	31	58	9	18	43	7	47
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	3426		34	4415	67	142	22	140	70	11	66
Arrive On Green	0.02	0.67	0.00	0.04	1.00	1.00	0.09	0.09	0.09	0.05	0.05	0.05
Sat Flow, veh/h	1781	5106	1585	1781	6575	100	1552	241	1523	1542	251	1459
Grp Volume(v), veh/h	19	847	0	20	1497	574	67	0	18	50	0	47
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1609	1849	1793	0	1523	1793	0	1459
Q Serve(g_s), s	1.6	9.8	0.0	1.7	0.0	0.0	5.3	0.0	1.6	4.1	0.0	4.8
Cycle Q Clear(g_c), s	1.6	9.8	0.0	1.7	0.0	0.0	5.3	0.0	1.6	4.1	0.0	4.8
Prop In Lane	1.00		1.00	1.00		0.05	0.87		1.00	0.86		1.00
Lane Grp Cap(c), veh/h	32	3426		34	3241	1242	165	0	140	81	0	66
V/C Ratio(X)	0.59	0.25		0.60	0.46	0.46	0.41	0.00	0.13	0.62	0.00	0.71
Avail Cap(c_a), veh/h	166	3426		166	3241	1242	430	0	365	155	0	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	73.1	9.7	0.0	71.6	0.0	0.0	64.3	0.0	62.6	70.3	0.0	70.7
Incr Delay (d2), s/veh	15.6	0.2	0.0	15.7	0.5	1.2	1.6	0.0	0.4	7.5	0.0	13.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.6	0.0	0.9	0.1	0.4	2.5	0.0	0.7	2.1	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.7	9.9	0.0	87.3	0.5	1.2	65.9	0.0	63.0	77.8	0.0	84.1
LnGrp LOS	F	A		F	A	A	E	A	E	E	A	F
Approach Vol, veh/h		866			2091			85				97
Approach Delay, s/veh		11.6			1.5			65.3				80.8
Approach LOS		B			A			E				F
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	106.7		13.8	8.8	106.6		20.8				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	14.0	61.0		13.0	14.0	61.0		36.0				
Max Q Clear Time (g_c+1), s	3.6	0.0		6.8	3.7	0.0		7.3				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				8.5								
HCM 6th LOS				A								
Notes												
User approved changes to right turn type.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC

4: Residential Driveway & Randolph Road

Existing Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↑
Traffic Vol, veh/h	928	2	0	2064	0	32
Future Vol, veh/h	928	2	0	2064	0	32
Conflicting Peds, #/hr	0	0	8	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	998	2	0	2219	0	34

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	-	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	442	-	-	-
HCM Lane V/C Ratio	0.078	-	-	-
HCM Control Delay (s)	13.8	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Queues
5: Glenallan Avenue & Randolph RoadExisting Conditions
AM Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	34	910	2	2209	167	228	219
v/c Ratio	0.26	0.34	0.01	0.93	0.60	0.80	0.75
Control Delay	40.5	14.4	5.0	23.5	67.0	80.1	68.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.5	14.4	5.0	23.5	67.0	80.1	68.9
Queue Length 50th (ft)	8	83	0	138	160	228	196
Queue Length 95th (ft)	45	107	m1	#1107	217	314	281
Internal Link Dist (ft)		391		1077	286		473
Turn Bay Length (ft)	250		290				
Base Capacity (vph)	194	2657	382	2368	402	369	373
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.34	0.01	0.93	0.42	0.62	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.









m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary 5: Glenallan Avenue & Randolph Road

Existing Conditions
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	839	35	2	1923	198	55	106	0	288	55	86
Future Volume (veh/h)	33	839	35	2	1923	198	55	106	0	288	55	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	874	36	2	2003	206	57	110	0	224	164	90
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	2803	115	390	2624	267	81	157	205	313	197	108
Arrive On Green	0.00	1.00	1.00	0.00	0.74	0.74	0.13	0.13	0.00	0.18	0.18	0.18
Sat Flow, veh/h	1781	5022	206	1781	4701	479	628	1211	1585	1781	1120	615
Grp Volume(v), veh/h	34	592	318	2	1445	764	167	0	0	224	0	254
Grp Sat Flow(s),veh/h/ln	1781	1702	1824	1781	1702	1775	1839	0	1585	1781	0	1735
Q Serve(g_s), s	0.1	0.0	0.0	0.1	37.7	38.9	13.0	0.0	0.0	17.8	0.0	21.2
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.1	37.7	38.9	13.0	0.0	0.0	17.8	0.0	21.2
Prop In Lane	1.00		0.11	1.00		0.27	0.34		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	102	1900	1018	390	1900	991	238	0	205	313	0	305
V/C Ratio(X)	0.33	0.31	0.31	0.01	0.76	0.77	0.70	0.00	0.00	0.72	0.00	0.83
Avail Cap(c_a), veh/h	249	1900	1018	537	1900	991	405	0	349	392	0	382
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.5	0.0	0.0	14.6	13.4	13.5	62.5	0.0	0.0	58.3	0.0	59.7
Incr Delay (d2), s/veh	1.9	0.4	0.8	0.0	2.3	4.6	3.7	0.0	0.0	4.6	0.0	12.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.1	0.2	0.0	12.0	13.6	6.4	0.0	0.0	8.5	0.0	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	0.4	0.8	14.6	15.7	18.1	66.3	0.0	0.0	62.9	0.0	71.8
LnGrp LOS	D	A	A	B	B	B	E	A	A	E	A	E
Approach Vol, veh/h		944			2211			167				478
Approach Delay, s/veh		2.2			16.5			66.3				67.6
Approach LOS		A			B			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	90.2		26.4	0.0	90.2		33.4				
Change Period (Y+Rc), s	5.5	6.5		7.0	5.5	6.5		7.0				
Max Green Setting (Gmax), s	12.5	45.5		33.0	12.5	45.5		33.0				
Max Q Clear Time (g_c+I1), s	0.0	0.0		15.0	0.0	0.0		23.2				
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	0.0		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				21.6								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												
User approved changes to right turn type.												

Queues
7: Georgia Avenue & Layhill RoadExisting Conditions
AM Peak Hour



























								
Lane Group	EBT	EBR	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	16	15	875	30	693	381	54	961
v/c Ratio	0.22	0.10	0.83	0.06	0.27	0.47	0.14	0.33
Control Delay	90.3	1.3	65.8	0.2	33.8	35.4	18.0	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.3	1.3	65.8	0.2	33.8	35.4	18.0	21.1
Queue Length 50th (ft)	19	0	508	0	101	136	28	221
Queue Length 95th (ft)	48	0	#630	0	290	427	52	254
Internal Link Dist (ft)	216				821			521
Turn Bay Length (ft)				840		25	140	
Base Capacity (vph)	166	228	1059	541	2587	819	513	2874
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.07	0.83	0.06	0.27	0.47	0.11	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
7: Georgia Avenue & Layhill Road

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				  				  			  	
Traffic Volume (veh/h)	9	7	15	866	0	30	0	686	377	53	951	0
Future Volume (veh/h)	9	7	15	866	0	30	0	686	377	53	951	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	9	7	15	875	0	0	0	693	0	54	961	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	22	17	32	0	0	0	0	4337	0	646	4626	0
Arrive On Green	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.28	0.00	0.03	0.91	0.00
Sat Flow, veh/h	1023	796	1448		0		0	5274	1585	1781	5274	0
Grp Volume(v), veh/h	16	0	15		0.0		0	693	0	54	961	0
Grp Sat Flow(s),veh/h/ln	1819	0	1448				0	1702	1585	1781	1702	0
Q Serve(g_s), s	1.6	0.0	1.8				0.0	18.4	0.0	0.6	3.9	0.0
Cycle Q Clear(g_c), s	1.6	0.0	1.8				0.0	18.4	0.0	0.6	3.9	0.0
Prop In Lane	0.56		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	40	0	32				0	4337	0	646	4626	0
V/C Ratio(X)	0.40	0.00	0.47				0.00	0.16		0.08	0.21	0.00
Avail Cap(c_a), veh/h	167	0	133				0	4337	0	862	4626	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.93	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	86.9	0.0	87.0				0.0	16.4	0.0	2.4	1.0	0.0
Incr Delay (d2), s/veh	6.4	0.0	10.6				0.0	0.1	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.8				0.0	8.5	0.0	0.2	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.3	0.0	97.6				0.0	16.4	0.0	2.5	1.1	0.0
LnGrp LOS	F	A	F				A	B		A	A	A
Approach Vol, veh/h		31						693			1015	
Approach Delay, s/veh		95.4						16.4			1.2	
Approach LOS		F						B			A	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		169.6		10.4	10.2	159.4						
Change Period (Y+Rc), s		6.5		6.5	5.5	6.5						
Max Green Setting (Gmax), s		100.5		16.5	26.5	68.5						
Max Q Clear Time (g_c+11), s		5.9		3.8	2.6	20.4						
Green Ext Time (p_c), s		1.6		0.0	0.1	1.1						
Intersection Summary												
HCM 6th Ctrl Delay			8.9									
HCM 6th LOS			A									
Notes												
User approved changes to right turn type.												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

Queues

Existing Conditions

10: Glenallan Avenue & Layhill Road

AM Peak Hour






























Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	32	441	112	922	285	21	399	140	274	51
v/c Ratio	0.18	0.33	0.30	0.79	0.41	0.04	0.31	0.32	0.33	0.07
Control Delay	22.2	34.6	23.7	42.8	5.3	18.7	28.5	20.5	25.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.2	34.6	23.7	42.8	5.3	18.7	28.5	20.5	25.9	0.2
Queue Length 50th (ft)	14	93	50	339	0	9	120	63	134	0
Queue Length 95th (ft)	33	124	87	428	61	24	165	106	245	0
Internal Link Dist (ft)		1003		925			1154		446	
Turn Bay Length (ft)	290		170		300	140		140		
Base Capacity (vph)	229	1518	380	1160	702	537	1275	446	836	761
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.29	0.29	0.79	0.41	0.04	0.31	0.31	0.33	0.07

Intersection Summary

HCM 6th Signalized Intersection Summary
10: Glenallan Avenue & Layhill Road

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 		 		
Traffic Volume (veh/h)	29	378	28	103	848	262	19	318	49	129	252	47
Future Volume (veh/h)	29	378	28	103	848	262	19	318	49	129	252	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	411	30	112	922	285	21	346	53	140	274	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	1222	88	343	1047	461	467	1273	193	499	861	719
Arrive On Green	0.02	0.25	0.25	0.06	0.29	0.29	0.01	0.41	0.41	0.06	0.46	0.46
Sat Flow, veh/h	1781	4857	350	1781	3554	1564	1781	3085	468	1781	1870	1560
Grp Volume(v), veh/h	32	287	154	112	922	285	21	198	201	140	274	51
Grp Sat Flow(s),veh/h/ln	1781	1702	1803	1781	1777	1564	1781	1777	1776	1781	1870	1560
Q Serve(g_s), s	1.6	8.3	8.4	5.5	29.7	18.9	0.8	8.8	9.0	5.2	11.1	2.2
Cycle Q Clear(g_c), s	1.6	8.3	8.4	5.5	29.7	18.9	0.8	8.8	9.0	5.2	11.1	2.2
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	117	856	454	343	1047	461	467	733	733	499	861	719
V/C Ratio(X)	0.27	0.33	0.34	0.33	0.88	0.62	0.04	0.27	0.27	0.28	0.32	0.07
Avail Cap(c_a), veh/h	238	1021	541	387	1066	469	593	733	733	539	861	719
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	36.7	36.8	30.0	40.3	36.5	20.2	23.3	23.3	17.7	20.5	18.1
Incr Delay (d2), s/veh	1.1	0.4	0.9	0.5	9.2	3.6	0.0	0.9	0.9	0.3	1.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.5	3.8	2.4	14.2	7.6	0.3	3.9	4.0	2.2	5.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.3	37.1	37.6	30.5	49.6	40.1	20.2	24.2	24.3	18.0	21.4	18.2
LnGrp LOS	D	D	D	C	D	D	C	C	C	B	C	B
Approach Vol, veh/h		473			1319			420			465	
Approach Delay, s/veh		37.2			45.9			24.0			20.0	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	61.3	14.0	37.2	13.3	55.5	8.9	42.4				
Change Period (Y+Rc), s	6.0	6.0	6.5	7.0	6.0	6.0	6.5	7.0				
Max Green Setting (Gmax), s	10.0	38.0	10.5	36.0	10.0	38.0	10.5	36.0				
Max Q Clear Time (g_c+1), s	2.8	13.1	7.5	10.4	7.2	11.0	3.6	31.7				
Green Ext Time (p_c), s	0.0	0.3	0.1	5.3	0.1	0.4	0.0	3.5				
Intersection Summary												
HCM 6th Ctrl Delay			36.4									
HCM 6th LOS			D									

Queues

Existing Conditions

1: Livingston Street & Randolph Road

PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	30	1516	81	931	55	24
v/c Ratio	0.07	0.38	0.37	0.23	0.24	0.11
Control Delay	6.1	5.7	13.1	4.8	20.3	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	5.7	13.1	4.8	20.3	30.9
Queue Length 50th (ft)	3	83	12	43	13	12
Queue Length 95th (ft)	19	214	72	117	46	33
Internal Link Dist (ft)		1892		1561	753	616
Turn Bay Length (ft)	70		75			
Base Capacity (vph)	435	4039	221	4034	403	418
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.38	0.37	0.23	0.14	0.06

Intersection Summary













HCM 6th Signalized Intersection Summary
1: Livingston Street & Randolph Road

Existing Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	1479	7	79	901	12	14	3	37	4	12	8
Future Volume (veh/h)	29	1479	7	79	901	12	14	3	37	4	12	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.97		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	1509	7	81	919	12	14	3	38	4	12	8
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	506	4136	19	302	4094	53	63	26	115	49	108	61
Arrive On Green	0.79	0.79	0.79	0.79	0.79	0.79	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	601	5246	24	345	5192	68	234	244	1070	127	1004	565
Grp Volume(v), veh/h	30	979	537	81	602	329	55	0	0	24	0	0
Grp Sat Flow(s),veh/h/ln	601	1702	1866	345	1702	1856	1548	0	0	1696	0	0
Q Serve(g_s), s	1.6	10.3	10.3	11.0	5.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.1	10.3	10.3	21.2	5.5	5.5	3.7	0.0	0.0	1.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.04	0.25		0.69	0.17		0.33
Lane Grp Cap(c), veh/h	506	2684	1471	302	2684	1463	204	0	0	217	0	0
V/C Ratio(X)	0.06	0.36	0.36	0.27	0.22	0.22	0.27	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	506	2684	1471	302	2684	1463	411	0	0	444	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.2	3.8	3.8	6.9	3.3	3.3	49.5	0.0	0.0	48.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.4	0.7	2.2	0.2	0.4	1.5	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.7	3.1	0.9	1.4	1.6	1.6	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.4	4.2	4.5	9.1	3.5	3.6	51.0	0.0	0.0	48.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1546			1012			55				24
Approach Delay, s/veh		4.3			4.0			51.0				48.9
Approach LOS		A			A			D				D
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		100.6		19.4		100.6		19.4				
Change Period (Y+Rc), s		6.0		6.5		6.0		6.5				
Max Green Setting (Gmax), s		78.0		29.5		78.0		29.5				
Max Q Clear Time (g_c+I1), s		0.0		5.7		0.0		3.5				
Green Ext Time (p_c), s		0.0		0.3		0.0		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				5.5								
HCM 6th LOS				A								

Queues
2: MD 97 Georgia Ave. & Randolph Rd. Ramps

Existing Conditions
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	161	166	149	276	143	128	164	1467	360	93	1025	155
v/c Ratio	0.67	0.67	0.30	0.63	0.64	0.32	0.58	0.66	0.49	0.44	0.49	0.23
Control Delay	85.4	85.8	15.5	79.3	85.7	4.1	87.4	44.1	23.3	100.3	32.5	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.4	85.8	15.5	79.3	85.7	4.1	87.4	44.1	23.3	100.3	32.5	16.1
Queue Length 50th (ft)	193	200	36	173	179	0	97	495	156	57	183	21
Queue Length 95th (ft)	265	272	90	217	257	19	138	682	320	m87	395	m76
Internal Link Dist (ft)		604			602			403			821	
Turn Bay Length (ft)			200			200	200		175	250		275
Base Capacity (vph)	345	351	633	715	366	549	610	2213	735	286	2108	687
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	40	0	10	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.47	0.24	0.39	0.39	0.25	0.27	0.67	0.49	0.33	0.49	0.23

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: MD 97 Georgia Ave. & Randolph Rd. Ramps

Existing Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	48	145	347	59	124	159	1423	349	90	994	150
Future Volume (vph)	270	48	145	347	59	124	159	1423	349	90	994	150
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	12.0	12.0	12.0	12.0	12.0	12.0	7.0	9.0	9.0	7.0	9.0	9.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1709	1583	3221	1648	1583	3433	5085	1470	3433	5085	1553
Flt Permitted	0.95	0.97	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1709	1583	3221	1648	1583	3433	5085	1470	3433	5085	1553
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	278	49	149	358	61	128	164	1467	360	93	1025	155
RTOR Reduction (vph)	0	0	77	0	0	103	0	0	96	0	0	44
Lane Group Flow (vph)	161	166	72	276	143	25	164	1467	264	93	1025	111
Confl. Peds. (#/hr)	2					2	3		26	26		3
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	4 1	3	3	3 5	1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	25.9	25.9	52.8	24.6	24.6	35.8	14.9	78.3	78.3	11.2	74.6	74.6
Effective Green, g (s)	25.9	25.9	52.8	24.6	24.6	35.8	14.9	78.3	78.3	11.2	74.6	74.6
Actuated g/C Ratio	0.14	0.14	0.29	0.14	0.14	0.20	0.08	0.43	0.43	0.06	0.41	0.41
Clearance Time (s)	12.0	12.0		12.0	12.0		7.0	9.0	9.0	7.0	9.0	9.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0
Lane Grp Cap (vph)	241	245	464	440	225	314	284	2211	639	213	2107	643
v/s Ratio Prot	0.10	c0.10	0.05	0.09	c0.09	0.02	c0.05	c0.29		0.03	0.20	
v/s Ratio Perm									0.18			0.07
v/c Ratio	0.67	0.68	0.16	0.63	0.64	0.08	0.58	0.66	0.41	0.44	0.49	0.17
Uniform Delay, d1	73.0	73.1	47.1	73.4	73.5	58.7	79.5	40.4	35.0	81.4	38.7	33.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.17	0.77	0.75
Incremental Delay, d2	9.0	9.3	0.3	3.9	7.9	0.2	3.4	1.6	2.0	1.8	0.7	0.5
Delay (s)	81.9	82.4	47.4	77.3	81.4	58.9	82.9	42.0	37.0	96.8	30.5	25.5
Level of Service	F	F	D	E	F	E	F	D	D	F	C	C
Approach Delay (s)		71.3			74.1			44.4			34.7	
Approach LOS		E			E			D			C	
Intersection Summary												
HCM 2000 Control Delay			48.3									D
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			180.0						40.0			
Intersection Capacity Utilization			73.7%									D
Analysis Period (min)			15									
c Critical Lane Group												

Queues
3: Glenmont Circle/Shopping Center & Randolph Road

Existing Conditions
PM Peak Hour




























Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	35	1554	66	29	1119	82	12	106	103
v/c Ratio	0.35	0.60	0.08	0.31	0.36	0.23	0.03	0.65	0.41
Control Delay	77.2	30.5	0.2	84.9	27.4	48.8	0.2	83.9	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.2	30.5	0.2	84.9	27.4	48.8	0.2	83.9	12.6
Queue Length 50th (ft)	34	443	0	29	108	64	0	102	0
Queue Length 95th (ft)	72	536	0	m61	271	114	0	166	47
Internal Link Dist (ft)		622			388	289		392	
Turn Bay Length (ft)	110			270			30		
Base Capacity (vph)	165	2608	828	165	3121	431	468	203	282
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.60	0.08	0.18	0.36	0.19	0.03	0.52	0.37

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
3: Glenmont Circle/Shopping Center & Randolph Road

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	34	1507	64	28	1011	75	60	19	12	77	26	100
Future Volume (veh/h)	34	1507	64	28	1011	75	60	19	12	77	26	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.92	1.00		0.85
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	1554	0	29	1042	77	62	20	12	79	27	103
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	2790		42	3345	245	227	73	244	121	41	122
Arrive On Green	0.03	0.55	0.00	0.05	1.00	1.00	0.17	0.17	0.17	0.09	0.09	0.09
Sat Flow, veh/h	1781	5106	1585	1781	6146	451	1363	440	1460	1344	459	1352
Grp Volume(v), veh/h	35	1554	0	29	816	303	82	0	12	106	0	103
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1609	1771	1802	0	1460	1803	0	1352
Q Serve(g_s), s	2.9	29.8	0.0	2.4	0.0	0.0	6.0	0.0	1.0	8.5	0.0	11.3
Cycle Q Clear(g_c), s	2.9	29.8	0.0	2.4	0.0	0.0	6.0	0.0	1.0	8.5	0.0	11.3
Prop In Lane	1.00		1.00	1.00		0.25	0.76		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	46	2790		42	2626	964	301	0	244	162	0	122
V/C Ratio(X)	0.77	0.56		0.70	0.31	0.31	0.27	0.00	0.05	0.65	0.00	0.85
Avail Cap(c_a), veh/h	166	2790		166	2626	964	433	0	350	204	0	153
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.6	22.2	0.0	71.0	0.0	0.0	54.5	0.0	52.5	66.0	0.0	67.2
Incr Delay (d2), s/veh	23.1	0.8	0.0	18.8	0.3	0.9	0.5	0.0	0.1	5.0	0.0	28.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	11.8	0.0	1.3	0.1	0.2	2.8	0.0	0.4	4.2	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.8	23.0	0.0	89.8	0.3	0.9	55.0	0.0	52.6	71.0	0.0	95.4
LnGrp LOS	F	C		F	A	A	E	A	D	E	A	F
Approach Vol, veh/h		1589			1148			94			209	
Approach Delay, s/veh		24.6			2.7			54.7			83.0	
Approach LOS		C			A			D			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	87.6		20.5	9.5	88.0		32.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	14.0	57.0		17.0	14.0	57.0		36.0				
Max Q Clear Time (g_c+I1), s	4.9	0.0		13.3	4.4	0.0		8.0				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			21.3									
HCM 6th LOS			C									
Notes												
User approved changes to right turn type.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC

4: Residential Driveway & Randolph Road

Existing Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↑
Traffic Vol, veh/h	1595	14	0	1155	0	23
Future Vol, veh/h	1595	14	0	1155	0	23
Conflicting Peds, #/hr	0	1	1	0	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1715	15	0	1242	0	25

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	-	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	255	-	-	-
HCM Lane V/C Ratio	0.097	-	-	-
HCM Control Delay (s)	20.6	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Queues
5: Glenallan Avenue & Randolph RoadExisting Conditions
PM Peak Hour

























Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	78	1566	5	1299	59	5	177	170
v/c Ratio	0.30	0.49	0.03	0.48	0.35	0.02	0.72	0.67
Control Delay	12.3	7.1	19.2	20.2	66.0	0.2	76.4	65.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.3	7.1	19.2	20.2	66.0	0.2	76.4	65.6
Queue Length 50th (ft)	7	59	2	167	57	0	177	150
Queue Length 95th (ft)	m29	354	m6	228	89	0	245	218
Internal Link Dist (ft)		391		1077	286			473
Turn Bay Length (ft)	250		290			25		
Base Capacity (vph)	299	3168	272	2696	399	433	369	371
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.49	0.02	0.48	0.15	0.01	0.48	0.46

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.









HCM 6th Signalized Intersection Summary
5: Glenallan Avenue & Randolph Road

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	1504	30	5	1060	213	31	26	5	251	25	64
Future Volume (veh/h)	76	1504	30	5	1060	213	31	26	5	251	25	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	1535	31	5	1082	217	32	27	5	174	141	65
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	335	3473	70	270	2872	575	50	42	79	246	167	77
Arrive On Green	0.00	1.00	1.00	0.00	1.00	1.00	0.05	0.05	0.05	0.14	0.14	0.14
Sat Flow, veh/h	1781	5148	104	1781	4257	853	988	833	1566	1781	1204	555
Grp Volume(v), veh/h	78	1015	551	5	865	434	59	0	5	174	0	206
Grp Sat Flow(s),veh/h/ln	1781	1702	1848	1781	1702	1706	1821	0	1566	1781	0	1759
Q Serve(g_s), s	0.1	0.0	0.0	0.1	0.0	0.0	4.8	0.0	0.5	14.0	0.0	17.1
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.1	0.0	0.0	4.8	0.0	0.5	14.0	0.0	17.1
Prop In Lane	1.00		0.06	1.00		0.50	0.54		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	335	2297	1247	270	2297	1151	92	0	79	246	0	243
V/C Ratio(X)	0.23	0.44	0.44	0.02	0.38	0.38	0.64	0.00	0.06	0.71	0.00	0.85
Avail Cap(c_a), veh/h	482	2297	1247	418	2297	1151	401	0	345	392	0	387
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.6	0.0	0.0	7.9	0.0	0.0	69.9	0.0	67.9	61.7	0.0	63.1
Incr Delay (d2), s/veh	0.4	0.6	1.1	0.0	0.4	0.9	7.3	0.0	0.3	3.7	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.2	0.4	0.1	0.1	0.3	2.4	0.0	0.2	6.6	0.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.9	0.6	1.1	8.0	0.4	0.9	77.3	0.0	68.2	65.4	0.0	72.6
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1644			1304			64				380
Approach Delay, s/veh		1.2			0.6			76.5				69.3
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	107.7		14.5	0.0	107.7		27.8				
Change Period (Y+Rc), s	5.5	6.5		7.0	5.5	6.5		7.0				
Max Green Setting (Gmax), s	12.5	45.5		33.0	12.5	45.5		33.0				
Max Q Clear Time (g_c+I1), s	0.0	0.0		6.8	0.0	0.0		19.1				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.0		1.1				
Intersection Summary												
HCM 6th Ctrl Delay			10.0									
HCM 6th LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												
User approved changes to right turn type.												

Queues
7: Georgia Avenue & Layhill Road

Existing Conditions
PM Peak Hour

								
Lane Group	EBT	EBR	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	33	7	548	51	1214	679	114	848
v/c Ratio	0.38	0.04	0.80	0.13	0.42	0.75	0.40	0.26
Control Delay	94.3	0.4	77.6	0.7	29.2	40.8	16.6	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0
Total Delay	94.3	0.4	77.6	0.7	29.2	41.7	16.6	13.9
Queue Length 50th (ft)	39	0	318	0	452	658	50	154
Queue Length 95th (ft)	80	0	388	0	543	823	84	190
Internal Link Dist (ft)	216				821		521	
Turn Bay Length (ft)				840		25	140	
Base Capacity (vph)	187	247	694	383	2900	910	364	3305
Starvation Cap Reductn	0	0	0	0	0	68	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.03	0.79	0.13	0.42	0.81	0.31	0.26
Intersection Summary								

HCM 6th Signalized Intersection Summary
7: Georgia Avenue & Layhill Road

Existing Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	18	7	515	0	48	0	1141	638	107	797	0
Future Volume (veh/h)	13	18	7	515	0	48	0	1141	638	107	797	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.84	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	14	19	7	548	0	0	0	1214	0	114	848	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	20	27	34	0	0	0	0	4310	0	477	4607	0
Arrive On Green	0.03	0.03	0.03	0.00	0.00	0.00	0.00	1.00	0.00	0.03	0.90	0.00
Sat Flow, veh/h	777	1055	1328		0		0	5274	1585	1781	5274	0
Grp Volume(v), veh/h	33	0	7		0.0		0	1214	0	114	848	0
Grp Sat Flow(s),veh/h/ln	1832	0	1328				0	1702	1585	1781	1702	0
Q Serve(g_s), s	3.2	0.0	0.9				0.0	0.0	0.0	1.4	3.5	0.0
Cycle Q Clear(g_c), s	3.2	0.0	0.9				0.0	0.0	0.0	1.4	3.5	0.0
Prop In Lane	0.42		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	47	0	34				0	4310	0	477	4607	0
V/C Ratio(X)	0.71	0.00	0.21				0.00	0.28		0.24	0.18	0.00
Avail Cap(c_a), veh/h	188	0	137				0	4310	0	620	4607	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.73	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	87.0	0.0	85.9				0.0	0.0	0.0	1.3	1.0	0.0
Incr Delay (d2), s/veh	17.8	0.0	3.0				0.0	0.1	0.0	0.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.4				0.0	0.0	0.0	0.4	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.8	0.0	88.9				0.0	0.1	0.0	1.6	1.1	0.0
LnGrp LOS	F	A	F				A	A		A	A	A
Approach Vol, veh/h		40						1214			962	
Approach Delay, s/veh		102.0						0.1			1.2	
Approach LOS		F						A			A	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		168.9		11.1	10.5	158.4						
Change Period (Y+Rc), s		6.5		6.5	5.5	6.5						
Max Green Setting (Gmax), s		110.5		18.5	19.5	85.5						
Max Q Clear Time (g_c+1), s		5.5		5.2	3.4	2.0						
Green Ext Time (p_c), s		1.4		0.1	0.2	2.1						

Intersection Summary

HCM 6th Ctrl Delay	2.4
HCM 6th LOS	A

Notes

User approved changes to right turn type.
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Queues

Existing Conditions

10: Glenallan Avenue & Layhill Road

PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	74	782	81	484	124	29	306	185	227	58
v/c Ratio	0.25	0.61	0.34	0.53	0.23	0.06	0.24	0.33	0.26	0.07
Control Delay	24.3	40.4	26.3	39.9	1.1	18.5	26.4	19.1	25.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	40.4	26.3	39.9	1.1	18.5	26.4	19.1	25.3	0.2
Queue Length 50th (ft)	36	193	40	169	0	11	77	77	118	0
Queue Length 95th (ft)	60	217	65	206	1	31	134	142	210	0
Internal Link Dist (ft)		1003		925			1154		446	
Turn Bay Length (ft)	290		170		300	140		140		
Base Capacity (vph)	423	1890	258	1072	608	574	1301	567	864	821
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.41	0.31	0.45	0.20	0.05	0.24	0.33	0.26	0.07

Intersection Summary

HCM 6th Signalized Intersection Summary
10: Glenallan Avenue & Layhill Road

Existing Conditions
PM Peak Hour

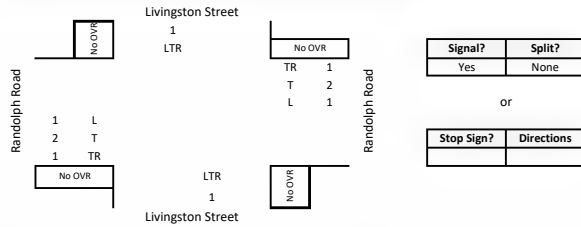
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	701	50	78	465	119	28	222	72	178	218	56
Future Volume (veh/h)	71	701	50	78	465	119	28	222	72	178	218	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.98	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	730	52	81	484	124	29	231	75	185	227	58
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	255	1239	88	234	928	405	515	1079	341	566	872	731
Arrive On Green	0.04	0.25	0.25	0.05	0.26	0.26	0.02	0.41	0.41	0.08	0.47	0.47
Sat Flow, veh/h	1781	4863	344	1781	3554	1552	1781	2649	836	1781	1870	1569
Grp Volume(v), veh/h	74	510	272	81	484	124	29	153	153	185	227	58
Grp Sat Flow(s),veh/h/ln	1781	1702	1803	1781	1777	1552	1781	1777	1708	1781	1870	1569
Q Serve(g_s), s	3.6	15.8	15.9	4.0	14.0	7.7	1.1	6.7	7.0	7.0	8.9	2.5
Cycle Q Clear(g_c), s	3.6	15.8	15.9	4.0	14.0	7.7	1.1	6.7	7.0	7.0	8.9	2.5
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	255	868	460	234	928	405	515	724	696	566	872	731
V/C Ratio(X)	0.29	0.59	0.59	0.35	0.52	0.31	0.06	0.21	0.22	0.33	0.26	0.08
Avail Cap(c_a), veh/h	466	1277	676	300	1066	466	635	724	696	581	872	731
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	39.2	39.2	31.5	37.9	35.6	20.3	23.1	23.1	17.2	19.5	17.8
Incr Delay (d2), s/veh	0.4	0.9	1.7	0.9	1.0	0.9	0.0	0.7	0.7	0.3	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	6.7	7.3	1.8	6.2	3.0	0.5	3.0	3.0	2.9	4.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	40.1	41.0	32.4	38.9	36.5	20.3	23.7	23.9	17.5	20.2	18.0
LnGrp LOS	C	D	D	C	D	D	C	C	C	B	C	B
Approach Vol, veh/h		856			689			335			470	
Approach Delay, s/veh		39.7			37.7			23.5			18.9	
Approach LOS		D			D			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	61.9	12.5	37.6	15.0	54.9	11.8	38.3				
Change Period (Y+Rc), s	6.0	6.0	6.5	7.0	6.0	6.0	6.5	7.0				
Max Green Setting (Gmax), s	10.0	29.0	10.5	45.0	10.0	29.0	19.5	36.0				
Max Q Clear Time (g_c+I1), s	3.1	10.9	6.0	17.9	9.0	9.0	5.6	16.0				
Green Ext Time (p_c), s	0.0	0.2	0.1	10.2	0.1	0.3	0.1	6.5				
Intersection Summary												
HCM 6th Ctrl Delay			32.6									
HCM 6th LOS			C									



1
Critical Lane Volume
and
Level of Service Calculations

Intersection: **01. Randolph Road / Livingston Street**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Existing Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	899		0.37	333	111	1.00	111	444	
	L	12		1.00	12				123	*
WB	TR	1409		0.37	521	12	1.00	12	533	*
	L	111		1.00	111				123	
NB	LTR	52		1.00	52	17	1.00	17	69	*
SB	LTR	56		1.00	56	7	1.00	7	63	
					0				7	
Note:									CLV v/c	602 / 0.334
Congestion Equiv.									1800	

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1486		0.37	550	79	1.00	79	629	*
	L	29		1.00	29				108	
WB	TR	913		0.37	338	29	1.00	29	367	
	L	79		1.00	79				108	
NB	LTR	54		1.00	54	4	1.00	4	58	*
SB	LTR	24		1.00	24	14	1.00	14	38	
					0				14	
Note:									CLV v/c	687 / 0.382
Congestion Equiv.									1800	

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

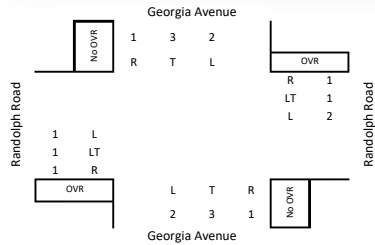
	Lane Use Factors	
	Number of Lanes	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25



2
Critical Lane Volume
and
Level of Service Calculations

Intersection: **02. Georgia Avenue / Randolph Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Existing Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control

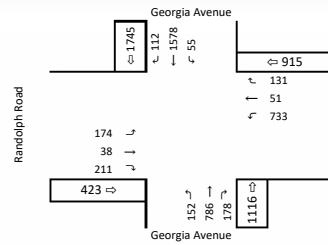


Signal?	Split?
Yes	E/W

or

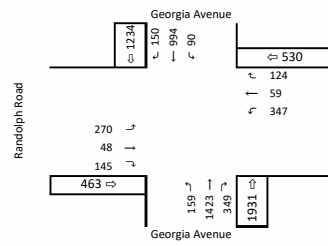
Stop Sign?	Directions

AM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	212		0.37	78			0	78	*
	R	211	81	1.00	130			0	130	*
WB	LT	784		0.37	290			0	290	*
	R	131	29	1.00	102			0	320	*
NB	T	786		0.37	291	55	0.53	29	302	*
	R	178	0	1.00	178			29	207	*
SB	T	1578		0.37	584	152	0.53	81	665	*
	R	112	0	1.00	112			81	193	*
Note:									CLV	1085
Congestion Equiv.									v/c	0.603
										1800

PM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	318		0.37	118			0	118	*
	R	145	84	1.00	61			0	61	*
WB	LT	406		0.37	150			0	150	*
	R	124	48	1.00	76			0	76	*
NB	T	1423		0.37	527	90	0.53	48	575	*
	R	349	0	1.00	349			48	397	*
SB	T	994		0.37	368	159	0.53	84	452	*
	R	150	0	1.00	150			84	234	*
Note:									CLV	843
Congestion Equiv.									v/c	0.468
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	Yes	211	145	1.00	152	159	0.53	81	84
Westbound	Yes	131	124	1.00	55	90	0.53	29	48
Northbound	No	n/a	n/a		n/a	n/a		0	0
Southbound	No	n/a	n/a		n/a	n/a		0	0

Montgomery County LATR

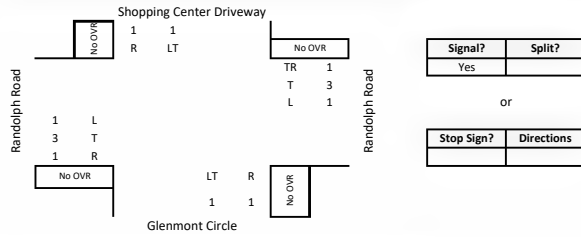
	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1	1	1.00	
2		0.53	
3		0.37	
4		0.30	
5		0.25	



3
Critical Lane Volume
and
Level of Service Calculations

Intersection: **03: Randolph Road / Glenmont Circle**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Existing Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	837		0.30	251	18	1.00	18	269	*
	R	32		1.00	32				50	
WB	TR	2009		0.30	603	15	1.00	15	618	*
	L	18		1.00	18				33	
NB	LT	65		1.00	65	42	1.00	42	107	*
	R	17		1.00	17				59	
SB	LT	49		1.00	49	56	1.00	56	105	
	R	46		1.00	46				102	
Note:									CLV	725
Congestion Equiv.									v/c	0.403
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	1539		0.30	462	28	1.00	28	490	*
	R	64		1.00	64				92	
WB	TR	1086		0.30	326	32	1.00	32	358	*
	L	28		1.00	28				60	
NB	LT	79		1.00	79	77	1.00	77	156	*
	R	12		1.00	12				89	
SB	LT	103		1.00	103	60	1.00	60	163	*
	R	100		1.00	100				160	
Note:									CLV	653
Congestion Equiv.									v/c	0.363
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

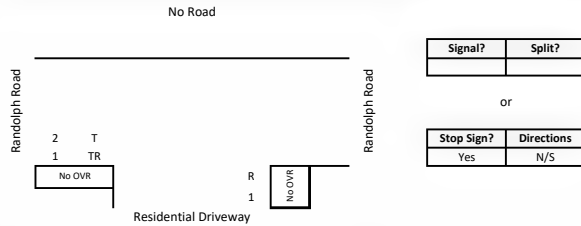
Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25



4
Critical Lane Volume
and
Level of Service Calculations

Intersection: **04: Randolph Road / Residential Driveway**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Existing Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	930		0.37	344	0		0	344	*
WB					0	0		0	0	
NB	R	32		1.00	32	0		0	32	*
SB					0	0		0	0	
Note:									CLV v/c	376 / 0.209
Congestion Equiv.									1800	

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1609		0.37	595	0		0	595	*
WB					0	0		0	0	
NB	R	23		1.00	23	0		0	23	*
SB					0	0		0	0	
Note:									CLV v/c	618 / 0.343
Congestion Equiv.									1800	

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

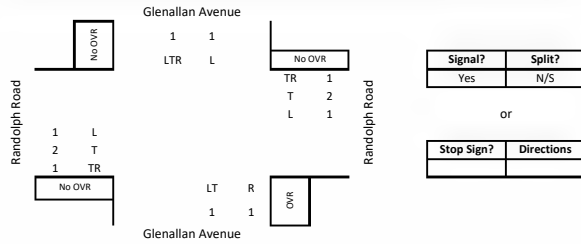
	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1		1	1.00
2		0.53	0.53
3		0.37	0.37
4			0.30
5			0.25



5
Critical Lane Volume and Level of Service Calculations

Intersection: **05: Randolph Road / Glenallan Avenue**
 Jurisdiction: **Montgomery County, MD**
 Scenario/Design Year: **Existing Conditions**
 Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	874		0.37	323	2	1.00	2	325	
	L	33	0	1.00	33				35	*
WB	TR	2121		0.37	785	33	1.00	33	818	*
	L	2	0	1.00	2				35	*
NB	LT	161		1.00	161	288	0.53	153	314	*
	R	0	0	1.00	0				153	*
SB	LTR	429		0.53	227				282	*
	L	288	0	1.00	288	55	1.00	55	343	*
Note:									CLV	1475
Congestion Equiv.									v/c	0.819
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1534		0.37	568	5	1.00	5	573	*
	L	76	0	1.00	76				81	*
WB	TR	1273		0.37	471	76	1.00	76	547	*
	L	5	0	1.00	5				81	*
NB	LT	57		1.00	57	251	0.53	133	190	*
	R	5	5	1.00	0				133	*
SB	LTR	340		0.53	180				211	*
	L	251	0	1.00	251	31	1.00	31	282	*
Note:									CLV	1045
Congestion Equiv.									v/c	0.581
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	Yes	0	5	1.00	2	5	1.00	0	5
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

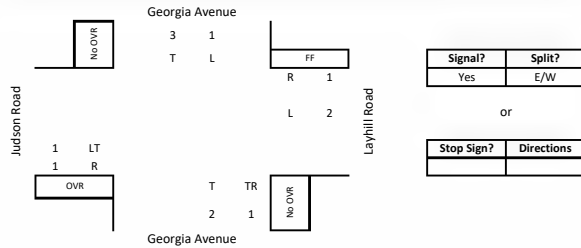
	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1		1	1.00
2		0.53	0.53
3		0.37	0.37
4			0.30
5			0.25



7
Critical Lane Volume
and
Level of Service Calculations

Intersection: **07. Georgia Avenue / Layhill Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Existing Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	16	0	1.00	16	866	0.53	459	475	*
R	R	15	0	1.00	15	0	1.00	9	474	*
WB	L	866	0	0.53	459	0	1.00	9	468	*
NB	TR	1063	0	0.37	393	0	1.00	53	446	*
SB	T	951	0	0.37	352	0	1.00	0	352	*
L	L	53	0	1.00	53	0	1.00	0	53	*
Note:									CLV	1389
Congestion Equiv.									v/c	0.772
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	31	0	1.00	31	48	0.53	273	304	*
R	R	7	0	1.00	7	515	1.00	13	280	*
WB	L	515	0	0.53	273	48	1.00	107	286	*
R	R	48	0	1.00	48	0	1.00	107	61	*
NB	TR	1779	0	0.37	658	0	1.00	107	765	*
SB	T	797	0	0.37	295	1	1.00	1	296	*
L	L	107	0	1.00	107	0	1.00	0	108	*
Note:									CLV	1355
Congestion Equiv.									v/c	0.753
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap		
		AM	PM	LUF	AM	PM	LUF	AM	PM	LUF
Eastbound	Yes	15	7	1.00	0	1	0.00	0	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0

Montgomery County LATR

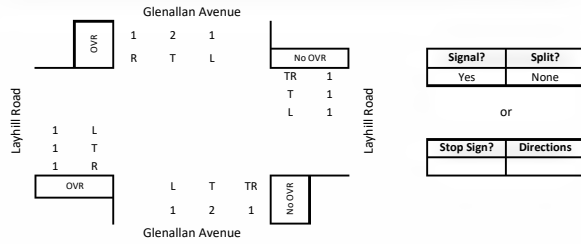
	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1	1	1.00	
2	0.53	0.53	
3	0.37	0.37	
4		0.30	
5		0.25	



10
Critical Lane Volume
and
Level of Service Calculations

Intersection: **10. Layhill Road / Glenallan Avenue**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Existing Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	T	378		1.00	378				481	
	R	28	19	1.00	9	103	1.00	103	112	
WB	TR	1110		0.53	588	29	1.00	29	617	*
	L	103	0	1.00	103				132	
NB	TR	367		0.37	136	129	1.00	129	265	*
	L	19	0	1.00	19				148	
SB	T	252		0.53	134				153	
	L	129	29	1.00	100	19	1.00	19	119	
Note:									CLV v/c	0.490
Congestion Equiv.									1800	

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	T	701		1.00	701				779	*
	R	50	0	1.00	50	78	1.00	78	128	
WB	TR	584		0.53	310	71	1.00	71	381	
	L	78	0	1.00	78				149	
NB	TR	294		0.37	109	178	1.00	178	287	*
	L	28	0	1.00	28				206	
SB	T	218		0.53	116				144	
	L	178	0	1.00	178	28	1.00	28	206	
Note:									CLV v/c	0.592
Congestion Equiv.									1800	

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap		
		AM	PM	LUF	AM	PM	LUF	AM	PM	LUF
Eastbound	Yes	28	50	1.00	19	28	1.00	19	28	
Westbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Northbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Southbound	Yes	47	56	1.00	29	71	1.00	29	56	

Montgomery County LATR

Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25

F-35

BACKGROUND

Queues

Background Conditions

1: Livingston Street & Randolph Road

AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	13	1079	123	1729	58	62
v/c Ratio	0.07	0.26	0.32	0.42	0.27	0.32
Control Delay	6.0	4.0	7.9	4.9	19.0	37.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.0	4.0	7.9	4.9	19.0	37.8
Queue Length 50th (ft)	2	59	20	114	8	32
Queue Length 95th (ft)	12	139	82	257	42	65
Internal Link Dist (ft)		1892		1561	753	616
Turn Bay Length (ft)	70		75			
Base Capacity (vph)	178	4137	382	4137	415	404
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.26	0.32	0.42	0.14	0.15

Intersection Summary













HCM 6th Signalized Intersection Summary
1: Livingston Street & Randolph Road

Background Conditions
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	964	7	111	1551	5	7	3	42	17	21	18
Future Volume (veh/h)	12	964	7	111	1551	5	7	3	42	17	21	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	1071	8	123	1723	6	8	3	47	19	23	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	4222	32	456	4242	15	43	17	112	68	70	47
Arrive On Green	0.81	0.81	0.81	0.81	0.81	0.81	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	280	5228	39	523	5252	18	106	192	1271	324	792	531
Grp Volume(v), veh/h	13	697	382	123	1117	612	58	0	0	62	0	0
Grp Sat Flow(s),veh/h/ln	280	1702	1863	523	1702	1867	1569	0	0	1647	0	0
Q Serve(g_s), s	1.7	5.9	5.9	8.9	11.3	11.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.9	5.9	5.9	14.9	11.3	11.3	4.1	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.01	0.14		0.81	0.31		0.32
Lane Grp Cap(c), veh/h	260	2749	1505	456	2749	1507	173	0	0	185	0	0
V/C Ratio(X)	0.05	0.25	0.25	0.27	0.41	0.41	0.34	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	260	2749	1505	456	2749	1507	414	0	0	432	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.2	2.8	2.8	4.6	3.3	3.3	51.8	0.0	0.0	51.7	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.2	0.4	1.5	0.4	0.8	2.4	0.0	0.0	2.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.4	1.6	0.9	2.7	3.1	1.8	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	3.0	3.2	6.0	3.8	4.1	54.2	0.0	0.0	54.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1092			1852			58				62
Approach Delay, s/veh		3.1			4.0			54.2				54.0
Approach LOS		A			A			D				D
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		102.9		17.1		102.9		17.1				
Change Period (Y+Rc), s		6.0		6.5		6.0		6.5				
Max Green Setting (Gmax), s		78.0		29.5		78.0		29.5				
Max Q Clear Time (g_c+I1), s		0.0		6.1		0.0		6.0				
Green Ext Time (p_c), s		0.0		0.3		0.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				5.7								
HCM 6th LOS				A								

Queues
2: MD 97 Georgia Ave. & Randolph Rd. Ramps

Background Conditions
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	144	144	221	542	274	141	157	960	186	59	1837	232
v/c Ratio	0.68	0.66	0.44	0.85	0.85	0.30	0.60	0.47	0.26	0.32	0.96	0.35
Control Delay	89.3	88.2	19.5	82.4	92.4	4.4	90.5	43.2	3.8	71.3	80.4	41.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.3	88.2	19.5	82.4	92.4	4.4	90.5	43.2	3.8	71.3	80.4	41.5
Queue Length 50th (ft)	175	175	66	340	343	0	93	306	0	36	821	162
Queue Length 95th (ft)	238	238	136	409	465	25	137	422	40	m55	#1138	m255
Internal Link Dist (ft)		604			602			403			821	
Turn Bay Length (ft)			200			200	200		175	250		275
Base Capacity (vph)	345	351	508	715	362	621	276	2026	713	457	1912	654
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.41	0.44	0.76	0.76	0.23	0.57	0.47	0.26	0.13	0.96	0.35

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis 2: MD 97 Georgia Ave. & Randolph Rd. Ramps

Background Conditions AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	39	214	740	51	137	152	931	180	57	1782	225
Future Volume (vph)	241	39	214	740	51	137	152	931	180	57	1782	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	12.0	12.0	12.0	12.0	12.0	12.0	7.0	9.0	9.0	7.0	9.0	9.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1708	1583	3221	1629	1583	3433	5085	1470	3433	5085	1553
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1708	1583	3221	1629	1583	3433	5085	1470	3433	5085	1553
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	248	40	221	763	53	141	157	960	186	59	1837	232
RTOR Reduction (vph)	0	0	111	0	0	106	0	0	112	0	0	70
Lane Group Flow (vph)	144	144	110	542	274	35	157	960	74	59	1837	162
Confl. Peds. (#/hr)	2					2	3		26	26		3
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	4 1	3	3	3 5	1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	22.9	22.9	48.6	35.7	35.7	45.3	13.7	71.8	71.8	9.6	67.7	67.7
Effective Green, g (s)	22.9	22.9	48.6	35.7	35.7	45.3	13.7	71.8	71.8	9.6	67.7	67.7
Actuated g/C Ratio	0.13	0.13	0.27	0.20	0.20	0.25	0.08	0.40	0.40	0.05	0.38	0.38
Clearance Time (s)	12.0	12.0		12.0	12.0		7.0	9.0	9.0	7.0	9.0	9.0
Vehicle Extension (s)	3.5	3.5		3.0	3.0		4.0	0.2	0.2	4.0	0.2	0.2
Lane Grp Cap (vph)	213	217	427	638	323	398	261	2028	586	183	1912	584
v/s Ratio Prot	c0.09	0.08	0.07	c0.17	0.17	0.02	c0.05	c0.19		0.02	c0.36	
v/s Ratio Perm									0.05			0.10
v/c Ratio	0.68	0.66	0.26	0.85	0.85	0.09	0.60	0.47	0.13	0.32	0.96	0.28
Uniform Delay, d1	75.0	74.9	51.5	69.6	69.5	51.6	80.5	40.1	34.2	82.1	54.9	39.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.83	1.35	1.77
Incremental Delay, d2	8.5	7.7	0.4	10.3	18.3	0.1	4.5	0.8	0.4	1.1	11.2	0.9
Delay (s)	83.5	82.6	51.9	79.8	87.8	51.7	85.0	40.9	34.7	69.0	85.1	70.0
Level of Service	F	F	D	E	F	D	F	D	C	E	F	E
Approach Delay (s)		69.5			78.0			45.3			83.0	
Approach LOS		E			E			D			F	
Intersection Summary												
HCM 2000 Control Delay			70.6									E
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			180.0						40.0			
Intersection Capacity Utilization			91.0%									E
Analysis Period (min)			15									
c Critical Lane Group												

Queues
3: Glenmont Circle/Shopping Center & Randolph RoadBackground Conditions
AM Peak Hour


























Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	19	853	33	20	2083	67	18	50	47
v/c Ratio	0.23	0.26	0.03	0.24	0.50	0.29	0.06	0.44	0.22
Control Delay	74.4	16.6	0.1	80.4	12.6	57.3	0.4	78.9	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	16.6	0.1	80.4	12.6	57.3	0.4	78.9	2.5
Queue Length 50th (ft)	18	124	0	21	127	64	0	48	0
Queue Length 95th (ft)	47	242	0	m23	m196	97	0	92	0
Internal Link Dist (ft)		622			388	289		392	
Turn Bay Length (ft)	110			270			30		
Base Capacity (vph)	165	3344	1039	165	4207	428	458	154	243
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.26	0.03	0.12	0.50	0.16	0.04	0.32	0.19

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
3: Glenmont Circle/Shopping Center & Randolph Road

Background Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	18	827	32	19	1990	30	56	9	17	42	7	46
Future Volume (veh/h)	18	827	32	19	1990	30	56	9	17	42	7	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.96	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	853	0	20	2052	31	58	9	18	43	7	47
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	3426		34	4416	67	142	22	140	70	11	66
Arrive On Green	0.02	0.67	0.00	0.04	1.00	1.00	0.09	0.09	0.09	0.05	0.05	0.05
Sat Flow, veh/h	1781	5106	1585	1781	6575	99	1552	241	1523	1542	251	1459
Grp Volume(v), veh/h	19	853	0	20	1506	577	67	0	18	50	0	47
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1609	1849	1793	0	1523	1793	0	1459
Q Serve(g_s), s	1.6	9.9	0.0	1.7	0.0	0.0	5.3	0.0	1.6	4.1	0.0	4.8
Cycle Q Clear(g_c), s	1.6	9.9	0.0	1.7	0.0	0.0	5.3	0.0	1.6	4.1	0.0	4.8
Prop In Lane	1.00		1.00	1.00		0.05	0.87		1.00	0.86		1.00
Lane Grp Cap(c), veh/h	32	3426		34	3241	1242	165	0	140	81	0	66
V/C Ratio(X)	0.59	0.25		0.60	0.46	0.46	0.41	0.00	0.13	0.62	0.00	0.71
Avail Cap(c_a), veh/h	166	3426		166	3241	1242	430	0	365	155	0	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	73.1	9.7	0.0	71.6	0.0	0.0	64.3	0.0	62.6	70.3	0.0	70.7
Incr Delay (d2), s/veh	15.6	0.2	0.0	15.7	0.5	1.3	1.6	0.0	0.4	7.5	0.0	13.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.6	0.0	0.9	0.1	0.4	2.5	0.0	0.7	2.1	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.7	9.9	0.0	87.3	0.5	1.3	65.9	0.0	63.0	77.8	0.0	84.1
LnGrp LOS	F	A		F	A	A	E	A	E	E	A	F
Approach Vol, veh/h		872			2103			85				97
Approach Delay, s/veh		11.6			1.5			65.3				80.8
Approach LOS		B			A			E				F
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	106.7		13.8	8.8	106.6		20.8				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	14.0	61.0		13.0	14.0	61.0		36.0				
Max Q Clear Time (g_c+I1), s	3.6	0.0		6.8	3.7	0.0		7.3				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			8.5									
HCM 6th LOS			A									
Notes												
User approved changes to right turn type.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC

4: Residential Driveway & Randolph Road

Background Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↑
Traffic Vol, veh/h	933	2	0	2075	0	32
Future Vol, veh/h	933	2	0	2075	0	32
Conflicting Peds, #/hr	0	0	8	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1003	2	0	2231	0	34

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	-	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	440	-	-	-
HCM Lane V/C Ratio	0.078	-	-	-
HCM Control Delay (s)	13.9	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Queues
5: Glenallan Avenue & Randolph RoadBackground Conditions
AM Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	34	915	2	2271	167	261	253
v/c Ratio	0.26	0.35	0.01	0.99	0.60	0.85	0.81
Control Delay	40.6	15.1	5.0	33.6	67.0	82.7	73.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	15.1	5.0	33.6	67.0	82.7	73.9
Queue Length 50th (ft)	8	84	0	259	160	261	234
Queue Length 95th (ft)	45	107	m1	#1154	217	361	333
Internal Link Dist (ft)		391		1077	286		473
Turn Bay Length (ft)	250		290				
Base Capacity (vph)	193	2585	371	2287	402	369	371
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.35	0.01	0.99	0.42	0.71	0.68

Intersection Summary




























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary 5: Glenallan Avenue & Randolph Road

Background Conditions AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  				 		 	
Traffic Volume (veh/h)	33	844	35	2	1934	246	55	106	0	352	55	86
Future Volume (veh/h)	33	844	35	2	1934	246	55	106	0	352	55	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	879	36	2	2015	256	57	110	0	257	211	90
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	2709	111	377	2473	310	81	157	205	347	240	102
Arrive On Green	0.00	1.00	1.00	0.00	0.72	0.72	0.13	0.13	0.00	0.19	0.19	0.19
Sat Flow, veh/h	1781	5023	205	1781	4586	574	628	1211	1585	1781	1231	525
Grp Volume(v), veh/h	34	595	320	2	1488	783	167	0	0	257	0	301
Grp Sat Flow(s),veh/h/ln	1781	1702	1824	1781	1702	1756	1839	0	1585	1781	0	1756
Q Serve(g_s), s	0.1	0.0	0.0	0.1	44.3	46.4	13.0	0.0	0.0	20.4	0.0	25.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.1	44.3	46.4	13.0	0.0	0.0	20.4	0.0	25.0
Prop In Lane	1.00		0.11	1.00		0.33	0.34		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	87	1836	984	377	1836	947	238	0	205	347	0	342
V/C Ratio(X)	0.39	0.32	0.33	0.01	0.81	0.83	0.70	0.00	0.00	0.74	0.00	0.88
Avail Cap(c_a), veh/h	234	1836	984	524	1836	947	405	0	349	392	0	386
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	0.0	15.9	16.0	16.3	62.5	0.0	0.0	56.8	0.0	58.7
Incr Delay (d2), s/veh	2.8	0.5	0.9	0.0	3.1	6.4	3.7	0.0	0.0	6.5	0.0	18.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	0.2	0.0	14.9	16.9	6.4	0.0	0.0	9.8	0.0	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.2	0.5	0.9	15.9	19.1	22.7	66.3	0.0	0.0	63.3	0.0	77.5
LnGrp LOS	E	A	A	B	B	C	E	A	A	E	A	E
Approach Vol, veh/h		949			2273			167			558	
Approach Delay, s/veh		2.6			20.3			66.3			71.0	
Approach LOS		A			C			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	87.4		26.4	0.0	87.4		36.2				
Change Period (Y+Rc), s	5.5	6.5		7.0	5.5	6.5		7.0				
Max Green Setting (Gmax), s	12.5	45.5		33.0	12.5	45.5		33.0				
Max Q Clear Time (g_c+I1), s	0.0	0.0		15.0	0.0	0.0		27.0				
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	0.0		1.1				

Intersection Summary









HCM 6th Ctrl Delay	25.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Queues
7: Georgia Avenue & Layhill Road

Background Conditions
AM Peak Hour

								
Lane Group	EBT	EBR	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	16	15	931	30	878	416	54	1225
v/c Ratio	0.22	0.10	0.85	0.05	0.35	0.52	0.17	0.44
Control Delay	90.3	1.3	65.5	0.2	39.7	40.1	19.0	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.3	1.3	65.5	0.2	39.7	40.1	19.0	23.8
Queue Length 50th (ft)	19	0	553	0	195	215	28	302
Queue Length 95th (ft)	48	0	#701	0	351	453	52	339
Internal Link Dist (ft)	216				821		521	
Turn Bay Length (ft)				840		25	140	
Base Capacity (vph)	166	228	1101	559	2524	799	449	2812
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.07	0.85	0.05	0.35	0.52	0.12	0.44

Intersection Summary




























95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

7: Georgia Avenue & Layhill Road

Background Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				  				  			  	
Traffic Volume (veh/h)	9	7	15	922	0	30	0	869	412	53	1213	0
Future Volume (veh/h)	9	7	15	922	0	30	0	869	412	53	1213	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	9	7	15	931	0	0	0	878	0	54	1225	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	22	17	32	0	0	0	0	4337	0	540	4626	0
Arrive On Green	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.28	0.00	0.03	0.91	0.00
Sat Flow, veh/h	1023	796	1448		0		0	5274	1585	1781	5274	0
Grp Volume(v), veh/h	16	0	15		0.0		0	878	0	54	1225	0
Grp Sat Flow(s),veh/h/ln	1819	0	1448				0	1702	1585	1781	1702	0
Q Serve(g_s), s	1.6	0.0	1.8				0.0	23.6	0.0	0.6	5.3	0.0
Cycle Q Clear(g_c), s	1.6	0.0	1.8				0.0	23.6	0.0	0.6	5.3	0.0
Prop In Lane	0.56		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	40	0	32				0	4337	0	540	4626	0
V/C Ratio(X)	0.40	0.00	0.47				0.00	0.20		0.10	0.26	0.00
Avail Cap(c_a), veh/h	167	0	133				0	4337	0	756	4626	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.87	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	86.9	0.0	87.0				0.0	18.3	0.0	3.2	1.0	0.0
Incr Delay (d2), s/veh	6.4	0.0	10.6				0.0	0.1	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.8				0.0	10.9	0.0	0.3	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.3	0.0	97.6				0.0	18.3	0.0	3.3	1.2	0.0
LnGrp LOS	F	A	F				A	B		A	A	A
Approach Vol, veh/h		31						878			1279	
Approach Delay, s/veh		95.4						18.3			1.3	
Approach LOS		F						B			A	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		169.6		10.4	10.2	159.4						
Change Period (Y+Rc), s		6.5		6.5	5.5	6.5						
Max Green Setting (Gmax), s		100.5		16.5	26.5	68.5						
Max Q Clear Time (g_c+I1), s		7.3		3.8	2.6	25.6						
Green Ext Time (p_c), s		2.1		0.0	0.1	1.5						
Intersection Summary												
HCM 6th Ctrl Delay			9.5									
HCM 6th LOS			A									
Notes												
User approved changes to right turn type.												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

Queues

10: Glenallan Avenue & Layhill Road

Background Conditions

AM Peak Hour



























Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	67	448	112	924	290	21	446	146	343	104
v/c Ratio	0.35	0.31	0.29	0.84	0.43	0.05	0.37	0.36	0.43	0.14
Control Delay	25.2	33.3	22.8	47.2	5.6	19.2	30.6	22.0	28.5	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	33.3	22.8	47.2	5.6	19.2	30.6	22.0	28.5	1.7
Queue Length 50th (ft)	29	94	50	348	0	9	137	66	175	0
Queue Length 95th (ft)	58	126	87	#451	64	24	185	110	311	14
Internal Link Dist (ft)		1003		925			1154		446	
Turn Bay Length (ft)	290		170		300	140		140		
Base Capacity (vph)	218	1533	394	1095	682	461	1217	408	807	739
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.29	0.28	0.84	0.43	0.05	0.37	0.36	0.43	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
10: Glenallan Avenue & Layhill Road

Background Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	385	28	103	850	267	19	362	49	134	316	96
Future Volume (veh/h)	62	385	28	103	850	267	19	362	49	134	316	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	418	30	112	924	290	21	393	53	146	343	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	1324	94	361	1048	461	378	1223	164	457	825	687
Arrive On Green	0.04	0.27	0.27	0.06	0.29	0.29	0.01	0.39	0.39	0.06	0.44	0.44
Sat Flow, veh/h	1781	4864	345	1781	3554	1564	1781	3142	420	1781	1870	1559
Grp Volume(v), veh/h	67	291	157	112	924	290	21	221	225	146	343	104
Grp Sat Flow(s),veh/h/ln	1781	1702	1805	1781	1777	1564	1781	1777	1785	1781	1870	1559
Q Serve(g_s), s	3.2	8.2	8.3	5.4	29.7	19.3	0.9	10.4	10.6	5.7	15.1	4.8
Cycle Q Clear(g_c), s	3.2	8.2	8.3	5.4	29.7	19.3	0.9	10.4	10.6	5.7	15.1	4.8
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	152	926	491	361	1048	461	378	692	695	457	825	687
V/C Ratio(X)	0.44	0.31	0.32	0.31	0.88	0.63	0.06	0.32	0.32	0.32	0.42	0.15
Avail Cap(c_a), veh/h	237	1021	541	406	1066	469	504	692	695	491	825	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	34.8	34.8	28.7	40.3	36.6	22.1	25.6	25.6	19.1	23.0	20.1
Incr Delay (d2), s/veh	1.8	0.4	0.7	0.5	9.4	3.8	0.1	1.2	1.2	0.4	1.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.4	3.8	2.4	14.2	7.8	0.4	4.6	4.7	2.4	7.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	35.1	35.5	29.2	49.7	40.5	22.1	26.8	26.8	19.5	24.5	20.6
LnGrp LOS	C	D	D	C	D	D	C	C	C	B	C	C
Approach Vol, veh/h		515			1326			467			593	
Approach Delay, s/veh		35.2			45.9			26.6			22.6	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	58.9	13.9	39.7	13.7	52.7	11.2	42.4				
Change Period (Y+Rc), s	6.0	6.0	6.5	7.0	6.0	6.0	6.5	7.0				
Max Green Setting (Gmax), s	10.0	38.0	10.5	36.0	10.0	38.0	10.5	36.0				
Max Q Clear Time (g_c+I1), s	2.9	17.1	7.4	10.3	7.7	12.6	5.2	31.7				
Green Ext Time (p_c), s	0.0	0.3	0.1	5.4	0.1	0.5	0.0	3.4				
Intersection Summary												
HCM 6th Ctrl Delay			36.1									
HCM 6th LOS			D									

Queues
1: Livingston Street & Randolph Road

Background Conditions
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	30	1610	81	1113	55	24
v/c Ratio	0.08	0.40	0.41	0.28	0.24	0.11
Control Delay	6.4	5.8	15.5	5.0	20.3	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	5.8	15.5	5.0	20.3	30.9
Queue Length 50th (ft)	3	91	13	55	13	12
Queue Length 95th (ft)	20	232	83	144	46	33
Internal Link Dist (ft)		1892		1561	753	616
Turn Bay Length (ft)	70		75			
Base Capacity (vph)	354	4040	198	4035	403	418
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.40	0.41	0.28	0.14	0.06













Intersection Summary

HCM 6th Signalized Intersection Summary
1: Livingston Street & Randolph Road

Background Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	1571	7	79	1079	12	14	3	37	4	12	8
Future Volume (veh/h)	29	1571	7	79	1079	12	14	3	37	4	12	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.97		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	1603	7	81	1101	12	14	3	38	4	12	8
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	430	4137	18	279	4104	45	63	26	115	49	108	61
Arrive On Green	0.79	0.79	0.79	0.79	0.79	0.79	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	506	5247	23	315	5206	57	234	244	1070	127	1004	565
Grp Volume(v), veh/h	30	1040	570	81	720	393	55	0	0	24	0	0
Grp Sat Flow(s),veh/h/ln	506	1702	1866	315	1702	1858	1548	0	0	1696	0	0
Q Serve(g_s), s	2.0	11.2	11.2	12.7	6.8	6.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.8	11.2	11.2	23.8	6.8	6.8	3.7	0.0	0.0	1.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.03	0.25		0.69	0.17		0.33
Lane Grp Cap(c), veh/h	430	2684	1471	279	2684	1465	204	0	0	217	0	0
V/C Ratio(X)	0.07	0.39	0.39	0.29	0.27	0.27	0.27	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	430	2684	1471	279	2684	1465	411	0	0	444	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.6	3.9	3.9	7.5	3.4	3.4	49.5	0.0	0.0	48.5	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.4	0.8	2.6	0.2	0.4	1.5	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.9	3.4	0.9	1.8	2.0	1.6	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.9	4.3	4.6	10.1	3.7	3.9	51.0	0.0	0.0	48.9	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1640			1194			55				24
Approach Delay, s/veh		4.4			4.2			51.0				48.9
Approach LOS		A			A			D				D
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		100.6		19.4		100.6		19.4				
Change Period (Y+Rc), s		6.0		6.5		6.0		6.5				
Max Green Setting (Gmax), s		78.0		29.5		78.0		29.5				
Max Q Clear Time (g_c+I1), s		0.0		5.7		0.0		3.5				
Green Ext Time (p_c), s		0.0		0.3		0.0		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				5.6								
HCM 6th LOS				A								

Queues
2: MD 97 Georgia Ave. & Randolph Rd. RampsBackground Conditions
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	209	214	149	281	141	132	168	1681	365	103	1368	334
v/c Ratio	0.73	0.74	0.28	0.64	0.63	0.33	0.58	0.82	0.52	0.46	0.70	0.48
Control Delay	84.8	85.3	14.2	79.8	85.1	4.4	87.4	51.9	26.1	96.5	51.8	29.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	84.8	85.3	14.2	79.8	85.1	4.5	87.4	52.0	26.1	96.5	51.8	29.4
Queue Length 50th (ft)	250	256	35	176	176	0	100	639	171	62	427	122
Queue Length 95th (ft)	333	341	87	221	252	21	141	#934	338	m96	#693	m256
Internal Link Dist (ft)		604			602			403			821	
Turn Bay Length (ft)			200			200	200		175	250		275
Base Capacity (vph)	351	356	651	715	366	549	610	2061	697	286	1966	699
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	41	0	26	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.60	0.23	0.39	0.39	0.26	0.28	0.83	0.52	0.36	0.70	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
2: MD 97 Georgia Ave. & Randolph Rd. Ramps

Background Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	48	145	349	60	128	163	1631	354	100	1327	324
Future Volume (vph)	363	48	145	349	60	128	163	1631	354	100	1327	324
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	12.0	12.0	12.0	12.0	12.0	12.0	7.0	9.0	9.0	7.0	9.0	9.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1704	1583	3221	1649	1583	3433	5085	1470	3433	5085	1553
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1704	1583	3221	1649	1583	3433	5085	1470	3433	5085	1553
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	374	49	149	360	62	132	168	1681	365	103	1368	334
RTOR Reduction (vph)	0	0	74	0	0	105	0	0	101	0	0	99
Lane Group Flow (vph)	209	214	75	281	141	27	168	1681	264	103	1368	235
Confl. Peds. (#/hr)	2					2	3		26	26		3
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	4 1	3	3	3 5	1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	30.7	30.7	57.8	24.6	24.6	36.3	15.1	73.0	73.0	11.7	69.6	69.6
Effective Green, g (s)	30.7	30.7	57.8	24.6	24.6	36.3	15.1	73.0	73.0	11.7	69.6	69.6
Actuated g/C Ratio	0.17	0.17	0.32	0.14	0.14	0.20	0.08	0.41	0.41	0.06	0.39	0.39
Clearance Time (s)	12.0	12.0		12.0	12.0		7.0	9.0	9.0	7.0	9.0	9.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0
Lane Grp Cap (vph)	286	290	508	440	225	319	287	2062	596	223	1966	600
v/s Ratio Prot	0.12	c0.13	0.05	c0.09	0.09	0.02	c0.05	c0.33		0.03	0.27	
v/s Ratio Perm									0.18			0.15
v/c Ratio	0.73	0.74	0.15	0.64	0.63	0.08	0.59	0.82	0.44	0.46	0.70	0.39
Uniform Delay, d1	70.7	70.8	43.5	73.5	73.4	58.3	79.4	47.5	38.8	81.1	46.3	39.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.12	1.04	1.18
Incremental Delay, d2	11.1	11.3	0.3	4.2	7.5	0.2	3.6	3.7	2.4	1.8	1.8	1.6
Delay (s)	81.8	82.2	43.8	77.7	80.9	58.6	83.0	51.2	41.1	93.0	50.2	48.7
Level of Service	F	F	D	E	F	E	F	D	D	F	D	D
Approach Delay (s)		72.1			73.9			52.0			52.3	
Approach LOS		E			E			D			D	
Intersection Summary												
HCM 2000 Control Delay			56.7			HCM 2000 Level of Service		E				
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)		40.0				
Intersection Capacity Utilization			80.3%			ICU Level of Service		D				
Analysis Period (min)			15									
c Critical Lane Group												

Queues
3: Glenmont Circle/Shopping Center & Randolph RoadBackground Conditions
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	35	1568	66	29	1126	82	12	106	103
v/c Ratio	0.35	0.60	0.08	0.31	0.36	0.23	0.03	0.65	0.41
Control Delay	77.2	30.6	0.2	82.5	27.8	48.8	0.2	83.9	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.2	30.6	0.2	82.5	27.8	48.8	0.2	83.9	12.6
Queue Length 50th (ft)	34	450	0	29	117	64	0	102	0
Queue Length 95th (ft)	72	542	0	m54	272	114	0	166	47
Internal Link Dist (ft)		622			388	289		392	
Turn Bay Length (ft)	110			270			30		
Base Capacity (vph)	165	2608	828	165	3121	431	468	203	282
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.60	0.08	0.18	0.36	0.19	0.03	0.52	0.37

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
3: Glenmont Circle/Shopping Center & Randolph Road

Background Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	1521	64	28	1018	75	60	19	12	77	26	100
Future Volume (veh/h)	34	1521	64	28	1018	75	60	19	12	77	26	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.92	1.00		0.85
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	1568	0	29	1049	77	62	20	12	79	27	103
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	2790		42	3347	244	227	73	244	121	41	122
Arrive On Green	0.03	0.55	0.00	0.05	1.00	1.00	0.17	0.17	0.17	0.09	0.09	0.09
Sat Flow, veh/h	1781	5106	1585	1781	6149	448	1363	440	1460	1344	459	1352
Grp Volume(v), veh/h	35	1568	0	29	822	304	82	0	12	106	0	103
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1609	1772	1802	0	1460	1803	0	1352
Q Serve(g_s), s	2.9	30.1	0.0	2.4	0.0	0.0	6.0	0.0	1.0	8.5	0.0	11.3
Cycle Q Clear(g_c), s	2.9	30.1	0.0	2.4	0.0	0.0	6.0	0.0	1.0	8.5	0.0	11.3
Prop In Lane	1.00		1.00	1.00		0.25	0.76		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	46	2790		42	2626	964	301	0	244	162	0	122
V/C Ratio(X)	0.77	0.56		0.70	0.31	0.32	0.27	0.00	0.05	0.65	0.00	0.85
Avail Cap(c_a), veh/h	166	2790		166	2626	964	433	0	350	204	0	153
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.6	22.3	0.0	71.0	0.0	0.0	54.5	0.0	52.5	66.0	0.0	67.2
Incr Delay (d2), s/veh	23.1	0.8	0.0	18.8	0.3	0.9	0.5	0.0	0.1	5.0	0.0	28.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	12.0	0.0	1.3	0.1	0.2	2.8	0.0	0.4	4.2	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.8	23.1	0.0	89.8	0.3	0.9	55.0	0.0	52.6	71.0	0.0	95.4
LnGrp LOS	F	C		F	A	A	E	A	D	E	A	F
Approach Vol, veh/h		1603			1155			94			209	
Approach Delay, s/veh		24.7			2.7			54.7			83.0	
Approach LOS		C			A			D			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	87.6		20.5	9.5	88.0		32.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	14.0	57.0		17.0	14.0	57.0		36.0				
Max Q Clear Time (g_c+I1), s	4.9	0.0		13.3	4.4	0.0		8.0				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.0		0.3				

Intersection Summary

HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

User approved changes to right turn type.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC

4: Residential Driveway & Randolph Road

Background Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↑
Traffic Vol, veh/h	1609	14	0	1162	0	23
Future Vol, veh/h	1609	14	0	1162	0	23
Conflicting Peds, #/hr	0	1	1	0	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1730	15	0	1249	0	25

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	-	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	252	-	-	-
HCM Lane V/C Ratio	0.098	-	-	-
HCM Control Delay (s)	20.8	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Queues
5: Glenallan Avenue & Randolph RoadBackground Conditions
PM Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	78	1580	5	1391	59	5	238	231
v/c Ratio	0.34	0.52	0.03	0.55	0.35	0.02	0.82	0.79
Control Delay	19.8	7.6	21.4	22.6	66.0	0.2	80.8	74.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	7.6	21.4	22.6	66.0	0.2	80.8	74.2
Queue Length 50th (ft)	8	61	2	175	57	0	237	218
Queue Length 95th (ft)	m45	358	m6	#263	89	0	328	307
Internal Link Dist (ft)		391		1077	286			473
Turn Bay Length (ft)	250		290			25		
Base Capacity (vph)	267	3031	259	2540	399	433	369	369
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.52	0.02	0.55	0.15	0.01	0.64	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
5: Glenallan Avenue & Randolph Road

Background Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	1518	30	5	1067	296	31	26	5	370	25	64
Future Volume (veh/h)	76	1518	30	5	1067	296	31	26	5	370	25	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	1549	31	5	1089	302	32	27	5	234	227	65
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	294	3249	65	253	2501	693	50	42	79	324	253	73
Arrive On Green	0.00	1.00	1.00	0.00	1.00	1.00	0.05	0.05	0.05	0.18	0.18	0.18
Sat Flow, veh/h	1781	5149	103	1781	3962	1099	988	833	1566	1781	1392	399
Grp Volume(v), veh/h	78	1024	556	5	936	455	59	0	5	234	0	292
Grp Sat Flow(s),veh/h/ln	1781	1702	1848	1781	1702	1657	1821	0	1566	1781	0	1791
Q Serve(g_s), s	0.1	0.0	0.0	0.1	0.0	0.0	4.8	0.0	0.5	18.6	0.0	23.9
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.1	0.0	0.0	4.8	0.0	0.5	18.6	0.0	23.9
Prop In Lane	1.00		0.06	1.00		0.66	0.54		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	294	2148	1166	253	2148	1046	92	0	79	324	0	326
V/C Ratio(X)	0.27	0.48	0.48	0.02	0.44	0.44	0.64	0.00	0.06	0.72	0.00	0.90
Avail Cap(c_a), veh/h	441	2148	1166	401	2148	1046	401	0	345	392	0	394
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.6	0.0	0.0	10.2	0.0	0.0	69.9	0.0	67.9	57.8	0.0	60.0
Incr Delay (d2), s/veh	0.5	0.8	1.4	0.0	0.6	1.2	7.3	0.0	0.3	5.1	0.0	19.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.2	0.5	0.1	0.2	0.4	2.4	0.0	0.2	8.9	0.0	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.0	0.8	1.4	10.3	0.6	1.2	77.3	0.0	68.2	62.9	0.0	79.9
LnGrp LOS	B	A	A	B	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1658			1396			64			526	
Approach Delay, s/veh		1.6			0.8			76.5			72.3	
Approach LOS		A			A			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	101.2		14.5	0.0	101.2		34.3				
Change Period (Y+Rc), s	5.5	6.5		7.0	5.5	6.5		7.0				
Max Green Setting (Gmax), s	12.5	45.5		33.0	12.5	45.5		33.0				
Max Q Clear Time (g_c+I1), s	0.0	0.0		6.8	0.0	0.0		25.9				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.0		1.1				









Intersection Summary

HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

- User approved volume balancing among the lanes for turning movement.
- User approved changes to right turn type.

Queues
7: Georgia Avenue & Layhill RoadBackground Conditions
PM Peak Hour




























								
Lane Group	EBT	EBR	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	33	7	638	51	1474	743	114	1307
v/c Ratio	0.38	0.04	0.79	0.12	0.54	0.87	0.53	0.42
Control Delay	94.3	0.4	73.3	0.6	33.0	46.9	22.9	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0
Total Delay	94.3	0.4	73.3	0.6	33.0	50.6	22.9	18.0
Queue Length 50th (ft)	39	0	372	0	550	711	53	284
Queue Length 95th (ft)	80	0	#477	0	656	#1008	84	318
Internal Link Dist (ft)	216				821			521
Turn Bay Length (ft)				840		25	140	
Base Capacity (vph)	187	247	803	428	2724	857	296	3137
Starvation Cap Reductn	0	0	0	0	0	60	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.03	0.79	0.12	0.54	0.93	0.39	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
7: Georgia Avenue & Layhill Road

Background Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				  				  			  	
Traffic Volume (veh/h)	13	18	7	600	0	48	0	1386	698	107	1229	0
Future Volume (veh/h)	13	18	7	600	0	48	0	1386	698	107	1229	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.84	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	14	19	7	638	0	0	0	1474	0	114	1307	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	20	27	34	0	0	0	0	4310	0	392	4607	0
Arrive On Green	0.03	0.03	0.03	0.00	0.00	0.00	0.00	1.00	0.00	0.03	0.90	0.00
Sat Flow, veh/h	777	1055	1328		0		0	5274	1585	1781	5274	0
Grp Volume(v), veh/h	33	0	7		0.0		0	1474	0	114	1307	0
Grp Sat Flow(s),veh/h/ln	1832	0	1328				0	1702	1585	1781	1702	0
Q Serve(g_s), s	3.2	0.0	0.9				0.0	0.0	0.0	1.4	6.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	0.9				0.0	0.0	0.0	1.4	6.0	0.0
Prop In Lane	0.42		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	47	0	34				0	4310	0	392	4607	0
V/C Ratio(X)	0.71	0.00	0.21				0.00	0.34		0.29	0.28	0.00
Avail Cap(c_a), veh/h	188	0	137				0	4310	0	535	4607	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.54	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	87.0	0.0	85.9				0.0	0.0	0.0	1.3	1.2	0.0
Incr Delay (d2), s/veh	17.8	0.0	3.0				0.0	0.1	0.0	0.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.4				0.0	0.0	0.0	0.4	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.8	0.0	88.9				0.0	0.1	0.0	1.7	1.3	0.0
LnGrp LOS	F	A	F				A	A		A	A	A
Approach Vol, veh/h		40						1474			1421	
Approach Delay, s/veh		102.0						0.1			1.3	
Approach LOS		F						A			A	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		168.9		11.1	10.5	158.4						
Change Period (Y+Rc), s		6.5		6.5	5.5	6.5						
Max Green Setting (Gmax), s		110.5		18.5	19.5	85.5						
Max Q Clear Time (g_c+1), s		8.0		5.2	3.4	2.0						
Green Ext Time (p_c), s		2.3		0.1	0.2	2.7						
Intersection Summary												
HCM 6th Ctrl Delay			2.1									
HCM 6th LOS			A									
Notes												
User approved changes to right turn type.												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

Queues

10: Glenallan Avenue & Layhill Road

Background Conditions

PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	131	784	81	490	132	29	393	197	351	145
v/c Ratio	0.42	0.56	0.32	0.59	0.26	0.07	0.32	0.40	0.42	0.18
Control Delay	26.8	38.3	25.3	43.2	1.8	19.0	29.7	20.8	28.7	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	38.3	25.3	43.2	1.8	19.0	29.7	20.8	28.7	1.4
Queue Length 50th (ft)	66	193	40	177	0	11	110	82	198	0
Queue Length 95th (ft)	94	213	63	214	7	32	179	154	338	10
Internal Link Dist (ft)		1003		925			1154		446	
Turn Bay Length (ft)	290		170		300	140		140		
Base Capacity (vph)	413	1890	276	1061	604	484	1232	494	826	794
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.41	0.29	0.46	0.22	0.06	0.32	0.40	0.42	0.18

Intersection Summary

HCM 6th Signalized Intersection Summary
10: Glenallan Avenue & Layhill Road

Background Conditions
PM Peak Hour

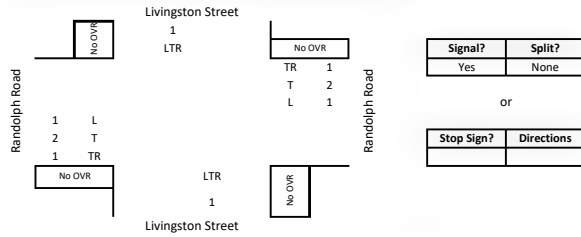
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	703	50	78	470	127	28	305	72	189	337	139
Future Volume (veh/h)	126	703	50	78	470	127	28	305	72	189	337	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	131	732	52	81	490	132	29	318	75	197	351	145
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	1241	88	235	831	362	395	1147	266	523	869	729
Arrive On Green	0.07	0.26	0.26	0.05	0.23	0.23	0.02	0.40	0.40	0.08	0.46	0.46
Sat Flow, veh/h	1781	4864	344	1781	3554	1548	1781	2855	663	1781	1870	1569
Grp Volume(v), veh/h	131	511	273	81	490	132	29	196	197	197	351	145
Grp Sat Flow(s),veh/h/ln	1781	1702	1803	1781	1777	1548	1781	1777	1742	1781	1870	1569
Q Serve(g_s), s	6.6	15.8	15.9	4.1	14.7	8.6	1.2	8.9	9.2	7.5	14.8	6.5
Cycle Q Clear(g_c), s	6.6	15.8	15.9	4.1	14.7	8.6	1.2	8.9	9.2	7.5	14.8	6.5
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	278	869	460	235	831	362	395	714	700	523	869	729
V/C Ratio(X)	0.47	0.59	0.59	0.34	0.59	0.36	0.07	0.27	0.28	0.38	0.40	0.20
Avail Cap(c_a), veh/h	438	1277	676	300	1066	464	515	714	700	530	869	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	39.2	39.2	33.0	40.9	38.5	20.9	24.1	24.2	17.7	21.2	18.9
Incr Delay (d2), s/veh	0.6	0.7	1.3	0.9	1.4	1.3	0.1	1.0	1.0	0.4	1.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	6.7	7.2	1.8	6.6	3.4	0.5	3.9	4.0	3.1	6.8	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.8	39.8	40.5	33.8	42.3	39.8	21.0	25.1	25.2	18.1	22.6	19.6
LnGrp LOS	C	D	D	C	D	D	C	C	C	B	C	B
Approach Vol, veh/h		915			703			422			693	
Approach Delay, s/veh		39.0			40.9			24.9			20.7	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	61.8	12.6	37.6	15.5	54.2	15.2	35.1				
Change Period (Y+Rc), s	6.0	6.0	6.5	7.0	6.0	6.0	6.5	7.0				
Max Green Setting (Gmax), s	10.0	29.0	10.5	45.0	10.0	29.0	19.5	36.0				
Max Q Clear Time (g_c+1), s	3.2	16.8	6.1	17.9	9.5	11.2	8.6	16.7				
Green Ext Time (p_c), s	0.0	0.3	0.1	10.3	0.0	0.4	0.2	6.5				
Intersection Summary												
HCM 6th Ctrl Delay			32.7									
HCM 6th LOS			C									



1
Critical Lane Volume and Level of Service Calculations

Intersection: **01. Randolph Road / Livingston Street**
 Jurisdiction: **Montgomery County, MD**
 Scenario/Design Year: **Background Conditions**
 Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	971		0.37	359	111	1.00	111	470	
	L	12		1.00	12				123	
WB	TR	1516		0.37	561	12	1.00	12	573	*
	L	111		1.00	111				123	
NB	LTR	52		1.00	52	17	1.00	17	69	*
SB	LTR	56		1.00	56	7	1.00	7	63	
					0				7	
Note: Congestion Equiv. 1800									CLV	642
									v/c	0.357

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1578		0.37	584	79	1.00	79	663	*
	L	29		1.00	29				108	
WB	TR	1091		0.37	404	29	1.00	29	433	
	L	79		1.00	79				108	
NB	LTR	54		1.00	54	4	1.00	4	58	*
SB	LTR	24		1.00	24	14	1.00	14	38	
					0				14	
Note: Congestion Equiv. 1800									CLV	721
									v/c	0.401

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1	1	1.00	
2	0.53	0.53	
3	0.37	0.37	
4		0.30	
5		0.25	

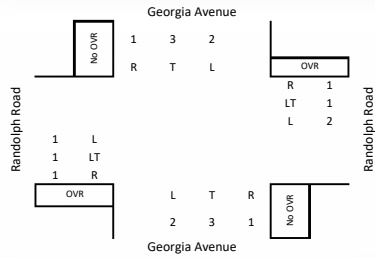
F-63

2
Critical Lane Volume
and
Level of Service Calculations

Intersection: **02. Georgia Avenue / Randolph Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Background Conditions**
Computed by: **W+A**



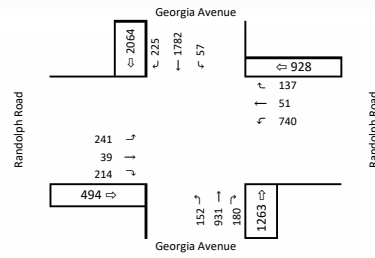
Intersection Lane Use & Traffic Control



Signal?	Split?
Yes	E/W

Stop Sign?	Directions

AM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	280		0.37	104			0	104	*
	R	214	81	1.00	133			0	133	*
WB	LT	791		0.37	293			0	293	*
	R	137	30	1.00	107			0	107	*
NB	T	931		0.37	344			30	374	*
	R	180	0	1.00	180	57	0.53	30	210	*
SB	T	1782		0.37	659			81	740	*
	R	225	0	1.00	225	152	0.53	81	306	*
Note:									CLV	1166
Congestion Equiv.									v/c	0.648
										1800

PM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	411		0.37	152			0	152	*
	R	145	86	1.00	59			0	59	*
WB	LT	409		0.37	151			0	151	*
	R	128	53	1.00	75			0	75	*
NB	T	1631		0.37	603			53	656	*
	R	354	0	1.00	354	100	0.53	53	407	*
SB	T	1327		0.37	491			86	577	*
	R	324	0	1.00	324	163	0.53	86	410	*
Note:									CLV	959
Congestion Equiv.									v/c	0.533
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	Yes	214	145	1.00	152	163	0.53	81	86
Westbound	Yes	137	128	1.00	57	100	0.53	30	53
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

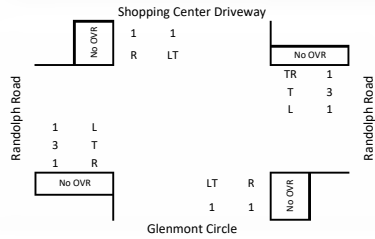
Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25



3
Critical Lane Volume and Level of Service Calculations

Intersection: **03: Randolph Road / Glenmont Circle**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Background Conditions**
Computed by: **W+A**

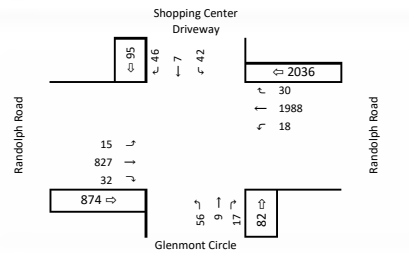
Intersection Lane Use & Traffic Control



Signal?	Split?
Yes	

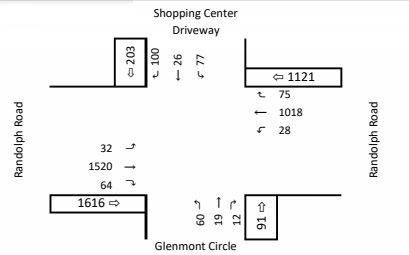
Stop Sign?	Directions

AM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	842		0.30	253	18	1.00	18	271	
	R	32		1.00	32				50	
WB	TR	2018		0.30	605	15	1.00	15	620	*
	L	18		1.00	18				33	
NB	LT	65		1.00	65	42	1.00	42	107	*
	R	17		1.00	17				59	
SB	LT	49		1.00	49	56	1.00	56	105	
	R	46		1.00	46				102	
Note:									CLV	727
Congestion Equiv.									v/c	0.404
										1800

PM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	1552		0.30	466	28	1.00	28	494	*
	R	64		1.00	64				92	
WB	TR	1093		0.30	328	32	1.00	32	360	
	L	28		1.00	28				60	
NB	LT	79		1.00	79	77	1.00	77	156	
	R	12		1.00	12				89	
SB	LT	103		1.00	103	60	1.00	60	163	*
	R	100		1.00	100				160	
Note:									CLV	657
Congestion Equiv.									v/c	0.365
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

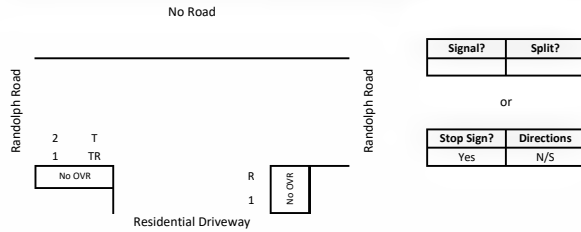
	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1		1	1.00
2		0.53	0.53
3		0.37	0.37
4			0.30
5			0.25



4
Critical Lane Volume
and
Level of Service Calculations

Intersection: **04: Randolph Road / Residential Driveway**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Background Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	935		0.37	346	0		0	346	*
WB					0	0		0	0	
NB	R	32		1.00	32	0		0	32	*
SB					0	0		0	0	
Note:									CLV	378
Congestion Equiv.									v/c	0.210
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1623		0.37	601	0		0	601	*
WB					0	0		0	0	
NB	R	23		1.00	23	0		0	23	*
SB					0	0		0	0	
Note:									CLV	624
Congestion Equiv.									v/c	0.347
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

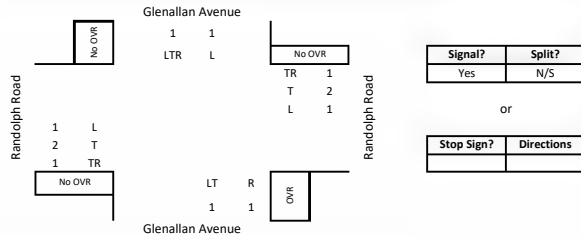
Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25



5
Critical Lane Volume and Level of Service Calculations

Intersection: **05: Randolph Road / Glenallan Avenue**
 Jurisdiction: **Montgomery County, MD**
 Scenario/Design Year: **Background Conditions**
 Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	879	0	0.37	325	2	1.00	2	327	
	L	33	0	1.00	33				35	
WB	TR	2180	0	0.37	807	33	1.00	33	840	*
	L	2	0	1.00	2				35	
NB	LT	161	0	1.00	161	352	0.53	187	348	*
	R	0	0	1.00	0				187	
SB	LTR	493	0	0.53	261	55	1.00	55	316	*
	L	352	0	1.00	352				407	*
Note:									CLV	1595
Congestion Equiv.									v/c	0.886
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1548	0	0.37	573	5	1.00	5	578	
	L	76	0	1.00	76				81	
WB	TR	1363	0	0.37	504	76	1.00	76	580	*
	L	5	0	1.00	5				81	
NB	LT	57	0	1.00	57	370	0.53	196	253	*
	R	5	5	1.00	0				196	
SB	LTR	459	0	0.53	243	31	1.00	31	274	*
	L	370	0	1.00	370				401	*
Note:									CLV	1234
Congestion Equiv.									v/c	0.686
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	Yes	0	5	1.00	2	5	1.00	0	5
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

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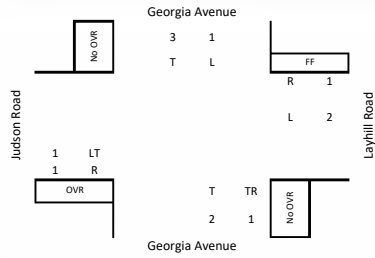
	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1	1	1.00	
2	0.53	0.53	
3	0.37	0.37	
4		0.30	
5		0.25	



7
Critical Lane Volume
and
Level of Service Calculations

Intersection: **07. Georgia Avenue / Layhill Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Background Conditions**
Computed by: **W+A**

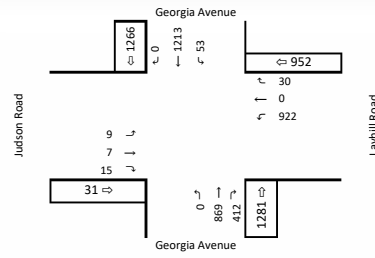
Intersection Lane Use & Traffic Control



Signal?	Split?
Yes	E/W

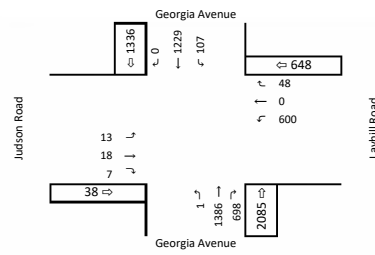
Stop Sign?	Directions

AM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	16		1.00	16	922	0.53	489	505	*
EB	TR	15	0	1.00	15	0	1.00	0	504	*
WB	L	922		0.53	489	9	1.00	9	498	*
NB	TR	1281	0	0.37	474	53	1.00	53	527	*
SB	T	1213		0.37	449	0	1.00	0	449	*
SB	L	53	0	1.00	53	0	1.00	0	53	*
Note:									CLV	1530
Congestion Equiv.									v/c	0.850
										1800

PM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	31		1.00	31	600	0.53	318	349	*
EB	TR	7	0	1.00	7	0	1.00	0	325	*
WB	L	600		0.53	318	13	1.00	13	331	*
WB	R	48	0	1.00	48	0	1.00	0	61	*
NB	TR	2084	0	0.37	771	107	1.00	107	878	*
SB	T	1229		0.37	455	1	1.00	1	456	*
SB	L	107	0	1.00	107	0	1.00	0	108	*
Note:									CLV	1558
Congestion Equiv.									v/c	0.866
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap		
		AM	PM	LUF	AM	PM	LUF	AM	PM	LUF
Eastbound	Yes	15	7	1.00	0	1	0.00	0	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0

Montgomery County LATR

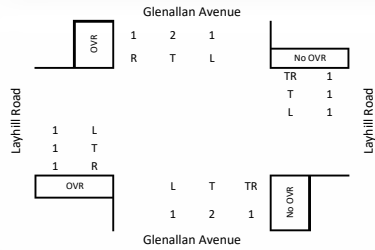
	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1	1	1.00	1.00
2	0.53	0.53	0.53
3	0.37	0.37	0.37
4		0.30	0.30
5		0.25	0.25

10
Critical Lane Volume
and
Level of Service Calculations

Intersection: **10. Layhill Road / Glenallan Avenue**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Background Conditions**
Computed by: **W+A**



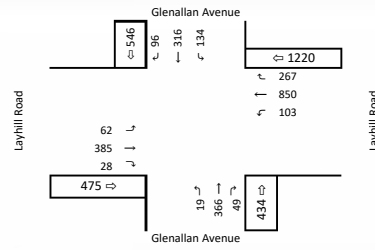
Intersection Lane Use & Traffic Control



Signal?	Split?
Yes	None

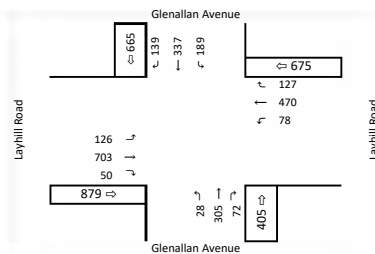
Stop Sign?	Directions

AM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	T	385		1.00	385				488	
	R	28	19	1.00	9	103	1.00	103	112	
WB	TR	1117		0.53	592				654	*
	L	103	0	1.00	103	62	1.00	62	165	
NB	TR	415		0.37	154				288	*
	L	19	0	1.00	19	134	1.00	134	153	
SB	T	316		0.53	167				186	
	L	134	62	1.00	72	19	1.00	19	91	
Note:									CLV	942
Congestion Equiv.									v/c	0.523
										1800

PM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	T	703		1.00	703				781	*
	R	50	0	1.00	50	78	1.00	78	128	
WB	TR	597		0.53	316				442	
	L	78	0	1.00	78	126	1.00	126	204	
NB	TR	377		0.37	139				328	*
	L	28	0	1.00	28	189	1.00	189	217	
SB	T	337		0.53	179				207	
	L	189	0	1.00	189	28	1.00	28	217	
Note:									CLV	1109
Congestion Equiv.									v/c	0.616
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	Yes	28	50	1.00	19	28	1.00	19	28
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	Yes	96	139	1.00	62	126	1.00	62	126







Montgomery County LATR

	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1		1	1.00
2		0.53	0.53
3		0.37	0.37
4			0.30
5			0.25

TOTAL FUTURE

Queues
1: Livingston Street & Randolph Road

Total Future Conditions
AM Peak Hour

						
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	13	1126	123	1845	58	62
v/c Ratio	0.08	0.27	0.34	0.45	0.27	0.32
Control Delay	6.4	4.0	8.4	5.1	19.0	37.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	4.0	8.4	5.1	19.0	37.8
Queue Length 50th (ft)	2	63	20	126	8	32
Queue Length 95th (ft)	12	146	86	284	42	65
Internal Link Dist (ft)		1892		1561	753	616
Turn Bay Length (ft)	70		75			
Base Capacity (vph)	155	4137	362	4142	415	404
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.27	0.34	0.45	0.14	0.15
Intersection Summary						













HCM 6th Signalized Intersection Summary
1: Livingston Street & Randolph Road

Total Future Conditions
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1006	7	111	1655	5	7	3	42	17	21	18
Future Volume (veh/h)	12	1006	7	111	1655	5	7	3	42	17	21	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	1118	8	123	1839	6	8	3	47	19	23	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	4224	30	438	4243	14	43	17	112	68	70	47
Arrive On Green	0.81	0.81	0.81	0.81	0.81	0.81	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	251	5230	37	500	5254	17	106	192	1271	324	792	531
Grp Volume(v), veh/h	13	728	398	123	1191	654	58	0	0	62	0	0
Grp Sat Flow(s),veh/h/ln	251	1702	1863	500	1702	1867	1569	0	0	1647	0	0
Q Serve(g_s), s	1.9	6.3	6.3	9.6	12.4	12.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.4	6.3	6.3	15.9	12.4	12.4	4.1	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.01	0.14		0.81	0.31		0.32
Lane Grp Cap(c), veh/h	236	2749	1505	438	2749	1508	173	0	0	185	0	0
V/C Ratio(X)	0.06	0.26	0.26	0.28	0.43	0.43	0.34	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	236	2749	1505	438	2749	1508	414	0	0	432	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.5	2.8	2.8	4.8	3.4	3.4	51.8	0.0	0.0	51.7	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.2	0.4	1.6	0.5	0.9	2.4	0.0	0.0	2.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.5	1.7	1.0	3.0	3.4	1.8	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.0	3.1	3.3	6.4	3.9	4.3	54.2	0.0	0.0	54.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1139			1968			58				62
Approach Delay, s/veh		3.2			4.2			54.2				54.0
Approach LOS		A			A			D				D
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		102.9		17.1		102.9		17.1				
Change Period (Y+Rc), s		6.0		6.5		6.0		6.5				
Max Green Setting (Gmax), s		78.0		29.5		78.0		29.5				
Max Q Clear Time (g_c+I1), s		0.0		6.1		0.0		6.0				
Green Ext Time (p_c), s		0.0		0.3		0.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				5.7								
HCM 6th LOS				A								

Queues
2: MD 97 Georgia Ave. & Randolph Rd. Ramps

Total Future Conditions
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	156	158	221	720	362	141	216	1048	186	85	1837	232
v/c Ratio	0.70	0.69	0.42	1.01	1.00	0.27	0.70	0.57	0.28	0.41	1.09	0.39
Control Delay	89.5	88.7	18.3	103.3	115.8	4.0	90.9	49.1	4.0	73.4	116.3	44.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.5	88.7	18.3	103.3	115.8	4.0	90.9	49.1	4.0	73.4	116.3	44.2
Queue Length 50th (ft)	190	192	63	~478	~478	0	128	360	0	52	~892	163
Queue Length 95th (ft)	257	258	136	#627	#728	25	#200	474	40	m75	#1138	m255
Internal Link Dist (ft)		604			602			403			821	
Turn Bay Length (ft)			200			200	200		175	250		275
Base Capacity (vph)	345	353	528	715	361	621	312	1840	667	457	1685	590
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.45	0.42	1.01	1.00	0.23	0.69	0.57	0.28	0.19	1.09	0.39

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis 2: MD 97 Georgia Ave. & Randolph Rd. Ramps

Total Future Conditions
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	64	214	998	51	137	210	1017	180	82	1782	225
Future Volume (vph)	241	64	214	998	51	137	210	1017	180	82	1782	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	12.0	12.0	12.0	12.0	12.0	12.0	7.0	9.0	9.0	7.0	9.0	9.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1720	1583	3221	1626	1583	3433	5085	1470	3433	5085	1553
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1720	1583	3221	1626	1583	3433	5085	1470	3433	5085	1553
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	248	66	221	1029	53	141	216	1048	186	85	1837	232
RTOR Reduction (vph)	0	0	108	0	0	101	0	0	119	0	0	76
Lane Group Flow (vph)	156	158	113	720	362	40	216	1048	67	85	1837	156
Confl. Peds. (#/hr)	2					2	3		26	26		3
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	4 1	3	3	3 5	1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	24.0	24.0	52.3	40.0	40.0	50.8	16.3	65.2	65.2	10.8	59.7	59.7
Effective Green, g (s)	24.0	24.0	52.3	40.0	40.0	50.8	16.3	65.2	65.2	10.8	59.7	59.7
Actuated g/C Ratio	0.13	0.13	0.29	0.22	0.22	0.28	0.09	0.36	0.36	0.06	0.33	0.33
Clearance Time (s)	12.0	12.0		12.0	12.0		7.0	9.0	9.0	7.0	9.0	9.0
Vehicle Extension (s)	3.5	3.5		3.0	3.0		4.0	0.2	0.2	4.0	0.2	0.2
Lane Grp Cap (vph)	224	229	459	715	361	446	310	1841	532	205	1686	515
v/s Ratio Prot	c0.09	0.09	0.07	c0.22	0.22	0.03	c0.06	c0.21		0.02	c0.36	
v/s Ratio Perm									0.05			0.10
v/c Ratio	0.70	0.69	0.25	1.01	1.00	0.09	0.70	0.57	0.13	0.41	1.09	0.30
Uniform Delay, d1	74.5	74.4	48.8	70.0	70.0	47.6	79.5	46.1	38.4	81.6	60.1	44.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.30	1.72
Incremental Delay, d2	9.4	8.7	0.3	35.4	48.1	0.1	7.2	1.3	0.5	1.5	48.8	1.2
Delay (s)	83.9	83.1	49.1	105.4	118.1	47.7	86.6	47.4	38.9	70.4	126.8	78.3
Level of Service	F	F	D	F	F	D	F	D	D	E	F	E
Approach Delay (s)		69.3			102.5			52.1			119.3	
Approach LOS		E			F			D			F	
Intersection Summary												
HCM 2000 Control Delay			92.3									F
HCM 2000 Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			180.0						40.0			
Intersection Capacity Utilization			95.4%									F
Analysis Period (min)			15									
c Critical Lane Group												

Queues
3: Glenmont Circle/Shopping Center & Randolph RoadTotal Future Conditions
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	19	878	76	20	2083	421	47	50	47
v/c Ratio	0.23	0.34	0.09	0.24	0.64	0.92	0.10	0.44	0.22
Control Delay	74.4	24.3	0.7	86.2	16.1	80.8	0.4	78.9	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	24.3	0.7	86.2	16.1	80.8	0.4	78.9	2.5
Queue Length 50th (ft)	18	205	0	21	155	401	0	48	0
Queue Length 95th (ft)	47	249	4	m23	m192	#637	0	92	0
Internal Link Dist (ft)		622			388	289		392	
Turn Bay Length (ft)	110			270			30		
Base Capacity (vph)	165	2574	828	165	3240	456	482	154	243
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.34	0.09	0.12	0.64	0.92	0.10	0.32	0.19

Intersection Summary


























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
3: Glenmont Circle/Shopping Center & Randolph Road

Total Future Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	18	852	74	19	1990	30	400	9	46	42	7	46
Future Volume (veh/h)	18	852	74	19	1990	30	400	9	46	42	7	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	878	0	20	2052	31	412	9	47	43	7	47
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	2669		34	3441	52	419	9	375	70	11	66
Arrive On Green	0.02	0.52	0.00	0.04	1.00	1.00	0.24	0.24	0.24	0.05	0.05	0.05
Sat Flow, veh/h	1781	5106	1585	1781	6575	99	1745	38	1561	1542	251	1459
Grp Volume(v), veh/h	19	878	0	20	1506	577	421	0	47	50	0	47
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1609	1849	1783	0	1561	1793	0	1459
Q Serve(g_s), s	1.6	14.9	0.0	1.7	0.0	0.0	35.2	0.0	3.5	4.1	0.0	4.8
Cycle Q Clear(g_c), s	1.6	14.9	0.0	1.7	0.0	0.0	35.2	0.0	3.5	4.1	0.0	4.8
Prop In Lane	1.00		1.00	1.00		0.05	0.98		1.00	0.86		1.00
Lane Grp Cap(c), veh/h	32	2669		34	2525	968	428	0	375	81	0	66
V/C Ratio(X)	0.59	0.33		0.60	0.60	0.60	0.98	0.00	0.13	0.62	0.00	0.71
Avail Cap(c_a), veh/h	166	2669		166	2525	968	428	0	375	155	0	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	73.1	20.6	0.0	71.6	0.0	0.0	56.7	0.0	44.7	70.3	0.0	70.7
Incr Delay (d2), s/veh	15.6	0.3	0.0	15.7	1.0	2.7	39.1	0.0	0.1	7.5	0.0	13.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.9	0.0	0.9	0.2	0.7	20.5	0.0	1.4	2.1	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.7	21.0	0.0	87.3	1.0	2.7	95.8	0.0	44.8	77.8	0.0	84.1
LnGrp LOS	F	C		F	A	A	F	A	D	E	A	F
Approach Vol, veh/h		897			2103			468				97
Approach Delay, s/veh		22.4			2.3			90.7				80.8
Approach LOS		C			A			F				F
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	84.5		13.8	8.8	84.4		43.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	14.0	61.0		13.0	14.0	61.0		36.0				
Max Q Clear Time (g_c+1), s	3.6	0.0		6.8	3.7	0.0		37.2				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				21.1								
HCM 6th LOS				C								
Notes												
User approved changes to right turn type.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC

4: Residential Driveway & Randolph Road

Total Future Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↑
Traffic Vol, veh/h	962	27	0	2075	0	60
Future Vol, veh/h	962	27	0	2075	0	60
Conflicting Peds, #/hr	0	0	8	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1034	29	0	2231	0	65

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	-	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	421	-	-	-
HCM Lane V/C Ratio	0.153	-	-	-
HCM Control Delay (s)	15.1	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.5	-	-	-

Queues
5: Glenallan Avenue & Randolph RoadTotal Future Conditions
AM Peak Hour

























Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	34	975	20	2271	198	264	260
v/c Ratio	0.26	0.41	0.08	1.02	0.67	0.85	0.83
Control Delay	37.2	17.0	4.8	40.1	69.5	82.8	75.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	17.0	4.8	40.1	69.5	82.8	75.8
Queue Length 50th (ft)	8	101	1	~855	189	264	244
Queue Length 95th (ft)	42	124	m9	#1154	255	366	345
Internal Link Dist (ft)		391		1077	286		473
Turn Bay Length (ft)	250		290				
Base Capacity (vph)	196	2358	333	2235	404	369	372
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.41	0.06	1.02	0.49	0.72	0.70

Intersection Summary









- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary 5: Glenallan Avenue & Randolph Road

Total Future Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	33	901	35	19	1934	246	55	135	0	352	64	86
Future Volume (veh/h)	33	901	35	19	1934	246	55	135	0	352	64	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	939	36	20	2015	256	57	141	0	262	214	90
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	2645	101	351	2408	302	76	187	226	349	242	102
Arrive On Green	0.00	1.00	1.00	0.00	0.70	0.70	0.14	0.14	0.00	0.20	0.20	0.20
Sat Flow, veh/h	1781	5038	193	1781	4585	574	531	1313	1585	1781	1237	520
Grp Volume(v), veh/h	34	634	341	20	1488	783	198	0	0	262	0	304
Grp Sat Flow(s),veh/h/ln	1781	1702	1827	1781	1702	1756	1844	0	1585	1781	0	1757
Q Serve(g_s), s	0.1	0.0	0.0	0.1	47.3	49.5	15.5	0.0	0.0	20.8	0.0	25.2
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.1	47.3	49.5	15.5	0.0	0.0	20.8	0.0	25.2
Prop In Lane	1.00		0.11	1.00		0.33	0.29		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	81	1787	959	351	1787	922	263	0	226	349	0	344
V/C Ratio(X)	0.42	0.35	0.36	0.06	0.83	0.85	0.75	0.00	0.00	0.75	0.00	0.88
Avail Cap(c_a), veh/h	229	1787	959	498	1787	922	406	0	349	392	0	387
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.4	0.0	0.0	17.4	17.9	18.2	61.8	0.0	0.0	56.9	0.0	58.6
Incr Delay (d2), s/veh	3.4	0.6	1.0	0.1	3.6	7.4	4.4	0.0	0.0	7.0	0.0	19.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	0.3	0.4	16.4	18.7	7.6	0.0	0.0	10.1	0.0	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.8	0.6	1.0	17.4	21.5	25.6	66.2	0.0	0.0	63.9	0.0	77.9
LnGrp LOS	E	A	A	B	C	C	E	A	A	E	A	E
Approach Vol, veh/h		1009			2291			198				566
Approach Delay, s/veh		2.8			22.9			66.2				71.4
Approach LOS		A			C			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	85.3		28.4	0.0	85.3		36.4				
Change Period (Y+Rc), s	5.5	6.5		7.0	5.5	6.5		7.0				
Max Green Setting (Gmax), s	12.5	45.5		33.0	12.5	45.5		33.0				
Max Q Clear Time (g_c+1), s	0.0	0.0		17.5	0.0	0.0		27.2				
Green Ext Time (p_c), s	0.0	0.0		0.5	0.0	0.0		1.1				
Intersection Summary												
HCM 6th Ctrl Delay					26.7							
HCM 6th LOS					C							
Notes												
User approved volume balancing among the lanes for turning movement.												
User approved changes to right turn type.												

Queues
7: Georgia Avenue & Layhill RoadTotal Future Conditions
AM Peak Hour



























								
Lane Group	EBT	EBR	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	16	15	931	30	965	416	54	1251
v/c Ratio	0.22	0.10	0.85	0.05	0.38	0.52	0.19	0.44
Control Delay	90.3	1.3	65.5	0.2	49.2	48.3	19.3	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.3	1.3	65.5	0.2	49.2	48.3	19.3	24.0
Queue Length 50th (ft)	19	0	553	0	277	280	28	310
Queue Length 95th (ft)	48	0	#701	0	390	463	52	348
Internal Link Dist (ft)	216				821			521
Turn Bay Length (ft)				840		25	140	
Base Capacity (vph)	166	228	1101	559	2524	799	427	2812
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.07	0.85	0.05	0.38	0.52	0.13	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
7: Georgia Avenue & Layhill Road

Total Future Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				  				  			  	
Traffic Volume (veh/h)	9	7	15	922	0	30	0	955	412	53	1238	0
Future Volume (veh/h)	9	7	15	922	0	30	0	955	412	53	1238	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	9	7	15	931	0	0	0	965	0	54	1251	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	22	17	32	0	0	0	0	4337	0	496	4626	0
Arrive On Green	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.28	0.00	0.03	0.91	0.00
Sat Flow, veh/h	1023	796	1448		0		0	5274	1585	1781	5274	0
Grp Volume(v), veh/h	16	0	15		0.0		0	965	0	54	1251	0
Grp Sat Flow(s),veh/h/ln	1819	0	1448				0	1702	1585	1781	1702	0
Q Serve(g_s), s	1.6	0.0	1.8				0.0	26.1	0.0	0.6	5.5	0.0
Cycle Q Clear(g_c), s	1.6	0.0	1.8				0.0	26.1	0.0	0.6	5.5	0.0
Prop In Lane	0.56		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	40	0	32				0	4337	0	496	4626	0
V/C Ratio(X)	0.40	0.00	0.47				0.00	0.22		0.11	0.27	0.00
Avail Cap(c_a), veh/h	167	0	133				0	4337	0	712	4626	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.81	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	86.9	0.0	87.0				0.0	19.1	0.0	3.6	1.1	0.0
Incr Delay (d2), s/veh	6.4	0.0	10.6				0.0	0.1	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.8				0.0	12.1	0.0	0.3	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.3	0.0	97.6				0.0	19.2	0.0	3.7	1.2	0.0
LnGrp LOS	F	A	F				A	B		A	A	A
Approach Vol, veh/h		31						965			1305	
Approach Delay, s/veh		95.4						19.2			1.3	
Approach LOS		F						B			A	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		169.6		10.4	10.2	159.4						
Change Period (Y+Rc), s		6.5		6.5	5.5	6.5						
Max Green Setting (Gmax), s		100.5		16.5	26.5	68.5						
Max Q Clear Time (g_c+I1), s		7.5		3.8	2.6	28.1						
Green Ext Time (p_c), s		2.2		0.0	0.1	1.6						
Intersection Summary												
HCM 6th Ctrl Delay				10.1								
HCM 6th LOS				B								
Notes												
User approved changes to right turn type.												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

Queues

Total Future Conditions

10: Glenallan Avenue & Layhill Road

AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	67	448	122	924	290	21	483	146	343	104
v/c Ratio	0.35	0.32	0.32	0.84	0.43	0.05	0.40	0.38	0.43	0.14
Control Delay	25.2	33.4	23.2	47.2	5.6	19.2	30.6	22.3	28.5	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	33.4	23.2	47.2	5.6	19.2	30.6	22.3	28.5	1.7
Queue Length 50th (ft)	29	95	55	348	0	9	148	66	175	0
Queue Length 95th (ft)	58	126	95	#451	64	24	198	110	311	14
Internal Link Dist (ft)		1003		925			1154		446	
Turn Bay Length (ft)	290		170		300	140		140		
Base Capacity (vph)	218	1527	393	1095	682	461	1211	391	807	739
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.29	0.31	0.84	0.43	0.05	0.40	0.37	0.43	0.14

























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.







HCM 6th Signalized Intersection Summary
10: Glenallan Avenue & Layhill Road

Total Future Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	385	28	112	850	267	19	366	78	134	316	96
Future Volume (veh/h)	62	385	28	112	850	267	19	366	78	134	316	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	418	30	122	924	290	21	398	85	146	343	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	1304	92	364	1048	461	378	1132	239	439	824	687
Arrive On Green	0.04	0.27	0.27	0.07	0.29	0.29	0.01	0.39	0.39	0.06	0.44	0.44
Sat Flow, veh/h	1781	4864	345	1781	3554	1564	1781	2908	615	1781	1870	1559
Grp Volume(v), veh/h	67	291	157	122	924	290	21	242	241	146	343	104
Grp Sat Flow(s),veh/h/ln	1781	1702	1805	1781	1777	1564	1781	1777	1746	1781	1870	1559
Q Serve(g_s), s	3.2	8.2	8.4	5.9	29.7	19.3	0.9	11.5	11.8	5.7	15.1	4.8
Cycle Q Clear(g_c), s	3.2	8.2	8.4	5.9	29.7	19.3	0.9	11.5	11.8	5.7	15.1	4.8
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.35	1.00		1.00
Lane Grp Cap(c), veh/h	152	912	484	364	1048	461	378	691	679	439	824	687
V/C Ratio(X)	0.44	0.32	0.32	0.34	0.88	0.63	0.06	0.35	0.36	0.33	0.42	0.15
Avail Cap(c_a), veh/h	237	1021	541	402	1066	469	504	691	679	473	824	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	35.2	35.2	28.9	40.3	36.6	22.1	25.9	26.0	19.3	23.0	20.1
Incr Delay (d2), s/veh	1.8	0.4	0.7	0.5	9.4	3.8	0.1	1.4	1.5	0.4	1.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.5	3.8	2.6	14.2	7.8	0.4	5.2	5.2	2.4	7.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	35.5	35.9	29.4	49.7	40.5	22.1	27.3	27.4	19.7	24.5	20.6
LnGrp LOS	D	D	D	C	D	D	C	C	C	B	C	C
Approach Vol, veh/h		515			1336			504			593	
Approach Delay, s/veh		35.6			45.8			27.1			22.7	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	58.9	14.4	39.2	13.7	52.7	11.2	42.4				
Change Period (Y+Rc), s	6.0	6.0	6.5	7.0	6.0	6.0	6.5	7.0				
Max Green Setting (Gmax), s	10.0	38.0	10.5	36.0	10.0	38.0	10.5	36.0				
Max Q Clear Time (g_c+I1), s	2.9	17.1	7.9	10.4	7.7	13.8	5.2	31.7				
Green Ext Time (p_c), s	0.0	0.3	0.1	5.4	0.1	0.5	0.0	3.4				
Intersection Summary												
HCM 6th Ctrl Delay			36.2									
HCM 6th LOS			D									

Queues
1: Livingston Street & Randolph Road

Total Future Conditions
PM Peak Hour

						
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	30	1703	81	1173	55	24
v/c Ratio	0.09	0.42	0.46	0.29	0.24	0.11
Control Delay	6.6	6.1	19.2	5.1	23.6	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	6.1	19.2	5.1	23.6	30.9
Queue Length 50th (ft)	4	102	14	60	17	12
Queue Length 95th (ft)	20	252	99	154	50	33
Internal Link Dist (ft)		1892		1561	753	616
Turn Bay Length (ft)	70		75			
Base Capacity (vph)	330	4036	177	4030	398	418
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.42	0.46	0.29	0.14	0.06
Intersection Summary						













HCM 6th Signalized Intersection Summary
1: Livingston Street & Randolph Road

Total Future Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	1662	7	79	1138	12	14	3	37	4	12	8
Future Volume (veh/h)	29	1662	7	79	1138	12	14	3	37	4	12	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.97		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	1696	7	81	1161	12	14	3	38	4	12	8
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	408	4138	17	258	4107	42	63	26	115	49	108	61
Arrive On Green	0.79	0.79	0.79	0.79	0.79	0.79	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	478	5249	22	288	5209	54	234	244	1070	127	1004	565
Grp Volume(v), veh/h	30	1100	603	81	759	414	55	0	0	24	0	0
Grp Sat Flow(s),veh/h/ln	478	1702	1866	288	1702	1859	1548	0	0	1696	0	0
Q Serve(g_s), s	2.2	12.1	12.1	14.7	7.3	7.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.5	12.1	12.1	26.8	7.3	7.3	3.7	0.0	0.0	1.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.03	0.25		0.69	0.17		0.33
Lane Grp Cap(c), veh/h	408	2684	1471	258	2684	1466	204	0	0	217	0	0
V/C Ratio(X)	0.07	0.41	0.41	0.31	0.28	0.28	0.27	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	408	2684	1471	258	2684	1466	411	0	0	444	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.7	4.0	4.0	8.2	3.5	3.5	49.5	0.0	0.0	48.5	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.5	0.8	3.2	0.3	0.5	1.5	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.2	3.6	1.0	1.9	2.2	1.6	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.1	4.4	4.8	11.3	3.7	3.9	51.0	0.0	0.0	48.9	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1733			1254			55			24	
Approach Delay, s/veh		4.6			4.3			51.0			48.9	
Approach LOS		A			A			D			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		100.6		19.4		100.6		19.4				
Change Period (Y+Rc), s		6.0		6.5		6.0		6.5				
Max Green Setting (Gmax), s		78.0		29.5		78.0		29.5				
Max Q Clear Time (g_c+I1), s		0.0		5.7		0.0		3.5				
Green Ext Time (p_c), s		0.0		0.3		0.0		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				5.6								
HCM 6th LOS				A								

Queues
2: MD 97 Georgia Ave. & Randolph Rd. Ramps

Total Future Conditions
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	236	244	149	352	180	132	192	1719	365	159	1368	334
v/c Ratio	0.77	0.78	0.26	0.68	0.68	0.29	0.62	0.95	0.58	0.60	0.78	0.52
Control Delay	86.4	86.9	13.5	77.0	83.2	3.6	87.3	66.7	30.7	103.7	59.8	33.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.5	0.0	0.0	0.0	0.0
Total Delay	86.4	86.9	13.5	77.0	83.2	3.7	87.3	68.2	30.7	103.7	59.8	33.8
Queue Length 50th (ft)	281	290	33	219	224	0	114	735	191	100	543	127
Queue Length 95th (ft)	382	393	87	264	306	19	157	#1024	351	m141	#768	m289
Internal Link Dist (ft)		604			602			403			821	
Turn Bay Length (ft)			200			200	200		175	250		275
Base Capacity (vph)	351	359	675	715	364	551	610	1810	632	290	1743	638
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	41	0	31	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.68	0.22	0.49	0.49	0.26	0.31	0.97	0.58	0.55	0.78	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
2: MD 97 Georgia Ave. & Randolph Rd. Ramps

Total Future Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	363	103	145	456	60	128	186	1667	354	154	1327	324	
Future Volume (vph)	363	103	145	456	60	128	186	1667	354	154	1327	324	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	12.0	12.0	12.0	12.0	12.0	12.0	7.0	9.0	9.0	7.0	9.0	9.0	
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	0.97	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1681	1721	1583	3221	1641	1583	3433	5085	1470	3433	5085	1553	
Flt Permitted	0.95	0.97	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1681	1721	1583	3221	1641	1583	3433	5085	1470	3433	5085	1553	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Adj. Flow (vph)	374	106	149	470	62	132	192	1719	365	159	1368	334	
RTOR Reduction (vph)	0	0	72	0	0	100	0	0	109	0	0	106	
Lane Group Flow (vph)	236	244	77	352	180	32	192	1719	256	159	1368	228	
Confl. Peds. (#/hr)	2					2	3		26	26		3	
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4	4	4 1	3	3	3 5	1	6		5	2		
Permitted Phases									6			2	
Actuated Green, G (s)	32.8	32.8	61.1	29.1	29.1	43.0	16.3	64.2	64.2	13.9	61.8	61.8	
Effective Green, g (s)	32.8	32.8	61.1	29.1	29.1	43.0	16.3	64.2	64.2	13.9	61.8	61.8	
Actuated g/C Ratio	0.18	0.18	0.34	0.16	0.16	0.24	0.09	0.36	0.36	0.08	0.34	0.34	
Clearance Time (s)	12.0	12.0		12.0	12.0		7.0	9.0	9.0	7.0	9.0	9.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	
Lane Grp Cap (vph)	306	313	537	520	265	378	310	1813	524	265	1745	533	
v/s Ratio Prot	0.14	c0.14	0.05	0.11	c0.11	0.02	c0.06	c0.34		0.05	0.27		
v/s Ratio Perm									0.17			0.15	
v/c Ratio	0.77	0.78	0.14	0.68	0.68	0.08	0.62	0.95	0.49	0.60	0.78	0.43	
Uniform Delay, d1	70.0	70.2	41.3	71.0	71.1	53.2	78.9	56.3	45.1	80.4	53.1	45.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.19	1.06	1.18	
Incremental Delay, d2	13.2	13.4	0.3	4.5	8.7	0.2	4.2	12.0	3.2	3.6	3.1	2.1	
Delay (s)	83.2	83.6	41.5	75.6	79.8	53.4	83.0	68.3	48.3	99.2	59.2	55.7	
Level of Service	F	F	D	E	E	D	F	E	D	F	E	E	
Approach Delay (s)		73.5			72.3			66.3			62.0		
Approach LOS		E			E			E			E		
Intersection Summary													
HCM 2000 Control Delay			66.4									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.83										
Actuated Cycle Length (s)			180.0									Sum of lost time (s)	40.0
Intersection Capacity Utilization			82.4%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													

Queues
3: Glenmont Circle/Shopping Center & Randolph RoadTotal Future Conditions
PM Peak Hour


























Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	35	1624	160	29	1126	229	25	106	103
v/c Ratio	0.35	0.64	0.20	0.31	0.37	0.60	0.06	0.65	0.42
Control Delay	77.2	31.9	8.2	81.9	28.4	59.3	0.3	83.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.2	31.9	8.2	81.9	28.4	59.3	0.3	83.9	12.7
Queue Length 50th (ft)	34	473	20	29	120	197	0	102	0
Queue Length 95th (ft)	72	570	71	m52	271	288	0	166	46
Internal Link Dist (ft)		622			388	289		392	
Turn Bay Length (ft)	110			270			30		
Base Capacity (vph)	165	2546	811	165	3044	427	443	203	279
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.64	0.20	0.18	0.37	0.54	0.06	0.52	0.37

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
3: Glenmont Circle/Shopping Center & Randolph Road

Total Future Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	34	1575	155	28	1018	75	203	19	24	77	26	100
Future Volume (veh/h)	34	1575	155	28	1018	75	203	19	24	77	26	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.93	1.00		0.85
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	1624	0	29	1049	77	209	20	25	79	27	103
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	2626		42	3148	229	325	31	295	121	41	122
Arrive On Green	0.03	0.51	0.00	0.05	1.00	1.00	0.20	0.20	0.20	0.09	0.09	0.09
Sat Flow, veh/h	1781	5106	1585	1781	6149	448	1633	156	1480	1344	459	1352
Grp Volume(v), veh/h	35	1624	0	29	822	304	229	0	25	106	0	103
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1609	1771	1789	0	1480	1803	0	1352
Q Serve(g_s), s	2.9	34.0	0.0	2.4	0.0	0.0	17.6	0.0	2.1	8.5	0.0	11.3
Cycle Q Clear(g_c), s	2.9	34.0	0.0	2.4	0.0	0.0	17.6	0.0	2.1	8.5	0.0	11.3
Prop In Lane	1.00		1.00	1.00		0.25	0.91		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	46	2626		42	2471	907	356	0	295	162	0	122
V/C Ratio(X)	0.77	0.62		0.70	0.33	0.34	0.64	0.00	0.08	0.65	0.00	0.85
Avail Cap(c_a), veh/h	166	2626		166	2471	907	429	0	355	204	0	153
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.6	26.0	0.0	71.0	0.0	0.0	55.2	0.0	48.9	66.0	0.0	67.2
Incr Delay (d2), s/veh	23.1	1.1	0.0	18.8	0.4	1.0	2.4	0.0	0.1	5.0	0.0	28.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	13.7	0.0	1.3	0.1	0.3	8.2	0.0	0.8	4.2	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.8	27.1	0.0	89.8	0.4	1.0	57.6	0.0	49.1	71.0	0.0	95.4
LnGrp LOS	F	C		F	A	A	E	A	D	E	A	F
Approach Vol, veh/h		1659			1155			254			209	
Approach Delay, s/veh		28.5			2.8			56.7			83.0	
Approach LOS		C			A			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	82.8		20.5	9.5	83.1		36.9				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	14.0	57.0		17.0	14.0	57.0		36.0				
Max Q Clear Time (g_c+1), s	4.9	0.0		13.3	4.4	0.0		19.6				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.0		0.7				
Intersection Summary												
HCM 6th Ctrl Delay				25.1								
HCM 6th LOS				C								
Notes												
User approved changes to right turn type.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC

4: Residential Driveway & Randolph Road

Total Future Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↑
Traffic Vol, veh/h	1621	68	0	1162	0	35
Future Vol, veh/h	1621	68	0	1162	0	35
Conflicting Peds, #/hr	0	1	1	0	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1743	73	0	1249	0	38

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	-	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	22.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	238	-	-	-
HCM Lane V/C Ratio	0.158	-	-	-
HCM Control Delay (s)	22.9	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.6	-	-	-

Queues
5: Glenallan Avenue & Randolph RoadTotal Future Conditions
PM Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	78	1604	43	1391	71	5	246	241
v/c Ratio	0.36	0.61	0.25	0.58	0.40	0.02	0.83	0.80
Control Delay	21.2	10.1	25.7	24.3	67.1	0.2	81.4	75.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	10.1	25.7	24.3	67.1	0.2	81.4	75.7
Queue Length 50th (ft)	8	68	14	175	68	0	246	229
Queue Length 95th (ft)	m44	#674	49	#270	104	0	340	322
Internal Link Dist (ft)		391		1077	286			473
Turn Bay Length (ft)	250		290			25		
Base Capacity (vph)	261	2626	234	2415	400	433	369	370
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.61	0.18	0.58	0.18	0.01	0.67	0.65

Intersection Summary

























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
5: Glenallan Avenue & Randolph Road

Total Future Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	1542	30	42	1067	296	31	38	5	370	43	64
Future Volume (veh/h)	76	1542	30	42	1067	296	31	38	5	370	43	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	1573	31	43	1089	302	32	39	5	244	232	65
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	3201	63	246	2462	683	47	58	90	329	258	72
Arrive On Green	0.00	1.00	1.00	0.00	1.00	1.00	0.06	0.06	0.06	0.18	0.18	0.18
Sat Flow, veh/h	1781	5151	101	1781	3962	1099	824	1005	1569	1781	1400	392
Grp Volume(v), veh/h	78	1040	564	43	936	455	71	0	5	244	0	297
Grp Sat Flow(s),veh/h/ln	1781	1702	1848	1781	1702	1657	1829	0	1569	1781	0	1792
Q Serve(g_s), s	0.1	0.0	0.0	0.1	0.0	0.0	5.7	0.0	0.5	19.4	0.0	24.3
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.1	0.0	0.0	5.7	0.0	0.5	19.4	0.0	24.3
Prop In Lane	1.00		0.05	1.00		0.66	0.45		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	290	2115	1148	246	2115	1030	105	0	90	329	0	331
V/C Ratio(X)	0.27	0.49	0.49	0.18	0.44	0.44	0.68	0.00	0.06	0.74	0.00	0.90
Avail Cap(c_a), veh/h	437	2115	1148	393	2115	1030	402	0	345	392	0	394
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	0.0	12.2	0.0	0.0	69.3	0.0	66.8	57.8	0.0	59.8
Incr Delay (d2), s/veh	0.5	0.8	1.5	0.3	0.6	1.3	7.3	0.0	0.3	6.1	0.0	20.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.2	0.5	0.6	0.2	0.4	2.9	0.0	0.2	9.4	0.0	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	0.8	1.5	12.5	0.6	1.3	76.6	0.0	67.1	63.9	0.0	80.2
LnGrp LOS	B	A	A	B	A	A	E	A	E	E	A	F
Approach Vol, veh/h		1682			1434			76				541
Approach Delay, s/veh		1.6			1.2			76.0				72.9
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	99.7		15.6	0.0	99.7		34.7				
Change Period (Y+Rc), s	5.5	6.5		7.0	5.5	6.5		7.0				
Max Green Setting (Gmax), s	12.5	45.5		33.0	12.5	45.5		33.0				
Max Q Clear Time (g_c+I1), s	0.0	0.0		7.7	0.0	0.0		26.3				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.0		1.1				









Intersection Summary

HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Notes

- User approved volume balancing among the lanes for turning movement.
- User approved changes to right turn type.

Queues
7: Georgia Avenue & Layhill RoadTotal Future Conditions
PM Peak Hour

								
Lane Group	EBT	EBR	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	33	7	638	51	1513	743	114	1365
v/c Ratio	0.38	0.04	0.79	0.12	0.56	0.87	0.55	0.44
Control Delay	94.3	0.4	73.3	0.6	31.8	44.5	23.8	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	6.8	0.0	0.0
Total Delay	94.3	0.4	73.3	0.6	31.8	51.2	23.8	18.3
Queue Length 50th (ft)	39	0	372	0	597	749	53	302
Queue Length 95th (ft)	80	0	#477	0	m692	m893	84	336
Internal Link Dist (ft)	216				821			521
Turn Bay Length (ft)				840		25	140	
Base Capacity (vph)	187	247	803	428	2720	854	289	3137
Starvation Cap Reductn	0	0	0	0	0	81	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.03	0.79	0.12	0.56	0.96	0.39	0.44

Intersection Summary






















95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.











HCM 6th Signalized Intersection Summary
7: Georgia Avenue & Layhill Road

Total Future Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	18	7	600	0	48	0	1422	698	107	1283	0
Future Volume (veh/h)	13	18	7	600	0	48	0	1422	698	107	1283	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.84	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	14	19	7	638	0	0	0	1513	0	114	1365	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	20	27	34	0	0	0	0	4310	0	381	4607	0
Arrive On Green	0.03	0.03	0.03	0.00	0.00	0.00	0.00	1.00	0.00	0.03	0.90	0.00
Sat Flow, veh/h	777	1055	1328		0		0	5274	1585	1781	5274	0
Grp Volume(v), veh/h	33	0	7		0.0		0	1513	0	114	1365	0
Grp Sat Flow(s),veh/h/ln	1832	0	1328				0	1702	1585	1781	1702	0
Q Serve(g_s), s	3.2	0.0	0.9				0.0	0.0	0.0	1.4	6.4	0.0
Cycle Q Clear(g_c), s	3.2	0.0	0.9				0.0	0.0	0.0	1.4	6.4	0.0
Prop In Lane	0.42		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	47	0	34				0	4310	0	381	4607	0
V/C Ratio(X)	0.71	0.00	0.21				0.00	0.35		0.30	0.30	0.00
Avail Cap(c_a), veh/h	188	0	137				0	4310	0	524	4607	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.34	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	87.0	0.0	85.9				0.0	0.0	0.0	1.3	1.2	0.0
Incr Delay (d2), s/veh	17.8	0.0	3.0				0.0	0.1	0.0	0.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.4				0.0	0.0	0.0	0.4	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.8	0.0	88.9				0.0	0.1	0.0	1.8	1.3	0.0
LnGrp LOS	F	A	F				A	A		A	A	A
Approach Vol, veh/h		40						1513			1479	
Approach Delay, s/veh		102.0						0.1			1.4	
Approach LOS		F						A			A	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		168.9		11.1	10.5	158.4						
Change Period (Y+Rc), s		6.5		6.5	5.5	6.5						
Max Green Setting (Gmax), s		110.5		18.5	19.5	85.5						
Max Q Clear Time (g_c+1), s		8.4		5.2	3.4	2.0						
Green Ext Time (p_c), s		2.5		0.1	0.2	2.8						
Intersection Summary												
HCM 6th Ctrl Delay			2.1									
HCM 6th LOS			A									
Notes												
User approved changes to right turn type.												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

























Queues
10: Glenallan Avenue & Layhill Road

Total Future Conditions
PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	131	784	100	490	132	29	406	197	351	145
v/c Ratio	0.41	0.60	0.40	0.57	0.25	0.07	0.34	0.41	0.43	0.19
Control Delay	26.3	40.0	26.8	42.1	1.7	19.2	30.0	21.3	29.3	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	40.0	26.8	42.1	1.7	19.2	30.0	21.3	29.3	1.4
Queue Length 50th (ft)	65	193	49	175	0	11	114	84	201	0
Queue Length 95th (ft)	94	213	75	214	7	32	183	154	338	10
Internal Link Dist (ft)		1003		925			1154		446	
Turn Bay Length (ft)	290		170		300	140		140		
Base Capacity (vph)	424	1890	268	1061	604	476	1200	482	811	783
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.41	0.37	0.46	0.22	0.06	0.34	0.41	0.43	0.19
Intersection Summary										

HCM 6th Signalized Intersection Summary
10: Glenallan Avenue & Layhill Road

Total Future Conditions
PM Peak Hour

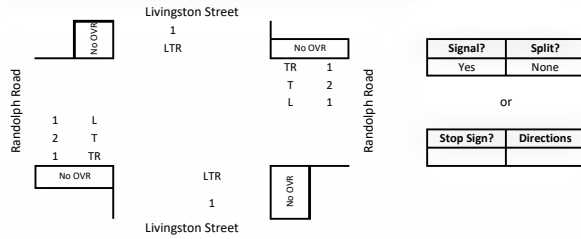
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	703	50	96	470	127	28	305	84	189	337	139
Future Volume (veh/h)	126	703	50	96	470	127	28	305	84	189	337	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	131	732	52	100	490	132	29	318	88	197	351	145
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	285	1241	88	249	860	375	387	1083	295	508	855	717
Arrive On Green	0.07	0.26	0.26	0.06	0.24	0.24	0.02	0.39	0.39	0.08	0.46	0.46
Sat Flow, veh/h	1781	4864	344	1781	3554	1549	1781	2753	749	1781	1870	1568
Grp Volume(v), veh/h	131	511	273	100	490	132	29	203	203	197	351	145
Grp Sat Flow(s),veh/h/ln	1781	1702	1803	1781	1777	1549	1781	1777	1725	1781	1870	1568
Q Serve(g_s), s	6.5	15.8	15.9	5.0	14.5	8.5	1.2	9.4	9.7	7.6	15.1	6.6
Cycle Q Clear(g_c), s	6.5	15.8	15.9	5.0	14.5	8.5	1.2	9.4	9.7	7.6	15.1	6.6
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	285	869	460	249	860	375	387	699	678	508	855	717
V/C Ratio(X)	0.46	0.59	0.59	0.40	0.57	0.35	0.07	0.29	0.30	0.39	0.41	0.20
Avail Cap(c_a), veh/h	446	1277	676	300	1066	465	506	699	678	513	855	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	39.2	39.2	32.1	40.0	37.7	21.5	24.9	25.0	18.3	21.8	19.5
Incr Delay (d2), s/veh	0.6	0.7	1.3	1.0	1.3	1.2	0.1	1.1	1.1	0.5	1.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	6.7	7.2	2.2	6.5	3.4	0.5	4.2	4.2	3.2	6.9	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	39.8	40.5	33.1	41.3	38.9	21.6	26.0	26.2	18.7	23.2	20.1
LnGrp LOS	C	D	D	C	D	D	C	C	C	B	C	C
Approach Vol, veh/h		915			722			435			693	
Approach Delay, s/veh		38.9			39.7			25.8			21.3	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	60.8	13.6	37.6	15.6	53.2	15.1	36.0				
Change Period (Y+Rc), s	6.0	6.0	6.5	7.0	6.0	6.0	6.5	7.0				
Max Green Setting (Gmax), s	10.0	29.0	10.5	45.0	10.0	29.0	19.5	36.0				
Max Q Clear Time (g_c+1), s	3.2	17.1	7.0	17.9	9.6	11.7	8.5	16.5				
Green Ext Time (p_c), s	0.0	0.3	0.1	10.3	0.0	0.4	0.2	6.5				
Intersection Summary												
HCM 6th Ctrl Delay			32.6									
HCM 6th LOS			C									



1
Critical Lane Volume and Level of Service Calculations

Intersection: **01. Randolph Road / Livingston Street**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Total Future Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1013		0.37	375	111	1.00	111	486	
	L	12		1.00	12				123	*
WB	TR	1660		0.37	614	12	1.00	12	626	*
	L	111		1.00	111				123	
NB	LTR	52		1.00	52	17	1.00	17	69	*
					0				17	
SB	LTR	56		1.00	56	7	1.00	7	63	
					0				7	
Note:									CLV	695
Congestion Equiv.									v/c	0.386
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1669		0.37	618	79	1.00	79	697	*
	L	29		1.00	29				108	
WB	TR	1150		0.37	426	29	1.00	29	455	*
	L	79		1.00	79				108	
NB	LTR	54		1.00	54	4	1.00	4	58	*
					0				4	
SB	LTR	24		1.00	24	14	1.00	14	38	
					0				14	
Note:									CLV	755
Congestion Equiv.									v/c	0.419
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

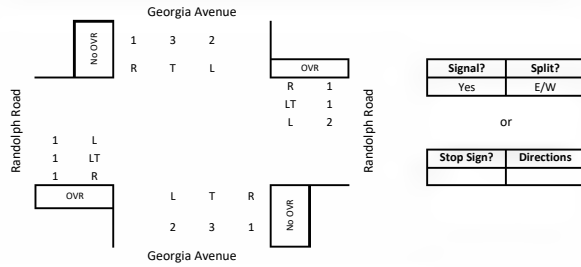
Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25



2
Critical Lane Volume
and
Level of Service Calculations

Intersection: **02. Georgia Avenue / Randolph Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Total Future Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	305		0.37	113			0	113	*
	R	214	111	1.00	103			0	103	*
WB	LT	1049		0.37	388			0	388	*
	R	137	43	1.00	94			0	94	*
NB	T	1017		0.37	376	82	0.53	43	419	*
	R	180	0	1.00	180			223	223	*
SB	T	1782		0.37	659			111	770	*
	R	225	0	1.00	225	210	0.53	111	336	*
Note:									CLV	1271
Congestion Equiv.									v/c	0.706
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	466		0.37	172			0	172	*
	R	145	99	1.00	46			0	46	*
WB	LT	516		0.37	191			0	191	*
	R	128	82	1.00	46			0	46	*
NB	T	1667		0.37	617	154	0.53	82	699	*
	R	354	0	1.00	354			436	436	*
SB	T	1327		0.37	491			99	590	*
	R	324	0	1.00	324	186	0.53	99	423	*
Note:									CLV	1062
Congestion Equiv.									v/c	0.590
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	Yes	214	145	1.00	210	186	0.53	111	99
Westbound	Yes	137	128	1.00	82	154	0.53	43	82
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

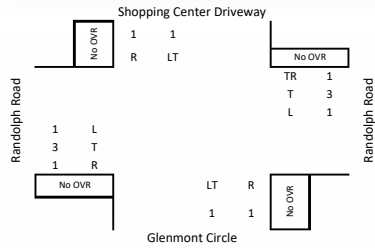
Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25



3
Critical Lane Volume
and
Level of Service Calculations

Intersection: **03: Randolph Road / Glenmont Circle**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Total Future Conditions**
Computed by: **W+A**

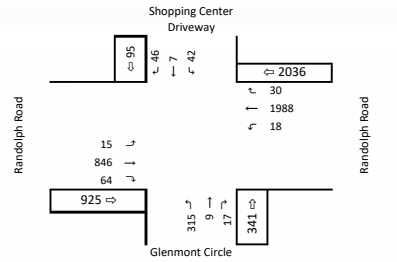
Intersection Lane Use & Traffic Control



Signal?	Split?
Yes	

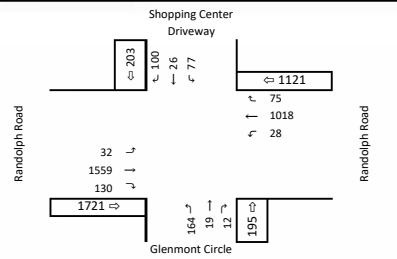
Stop Sign?	Directions

AM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	861		0.30	258				276	
	R	64		1.00	64	18	1.00	18	82	
WB	TR	2018		0.30	605	15	1.00	15	620	*
	L	18		1.00	18				33	
NB	LT	324		1.00	324	42	1.00	42	366	*
	R	17		1.00	17				59	
SB	LT	49		1.00	49				364	
	R	46		1.00	46	315	1.00	315	361	
Note:									CLV	986
Congestion Equiv.									v/c	0.548
										1800

PM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	1591		0.30	477				505	*
	R	130		1.00	130	28	1.00	28	158	
WB	TR	1093		0.30	328	32	1.00	32	360	*
	L	28		1.00	28				60	
NB	LT	183		1.00	183	77	1.00	77	260	*
	R	12		1.00	12				89	
SB	LT	103		1.00	103				267	*
	R	100		1.00	100	164	1.00	164	264	
Note:									CLV	772
Congestion Equiv.									v/c	0.429
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

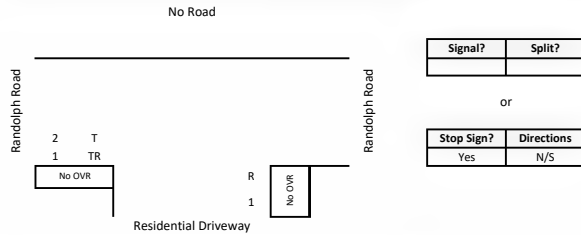
Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25



4
Critical Lane Volume and Level of Service Calculations

Intersection: **04: Randolph Road / Residential Driveway**
 Jurisdiction: **Montgomery County, MD**
 Scenario/Design Year: **Total Future Conditions**
 Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	989		0.37	366	0		0	366	*
WB					0	0		0	0	
NB	R	60		1.00	60	0		0	60	*
SB					0	0		0	0	
Note:									CLV	426
Congestion Equiv.									v/c	0.237
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1689		0.37	625	0		0	625	*
WB					0	0		0	0	
NB	R	35		1.00	35	0		0	35	*
SB					0	0		0	0	
Note:									CLV	660
Congestion Equiv.									v/c	0.367
										1800

Right Turn Overlap

Approach	East Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25

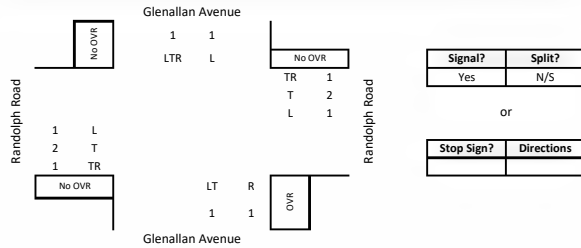
F-100



5
Critical Lane Volume and Level of Service Calculations

Intersection: **05: Randolph Road / Glenallan Avenue**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Total Future Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	936		0.37	346	19	1.00	19	365	
	L	33	0	1.00	33				52	*
WB	TR	2180		0.37	807	33	1.00	33	840	*
	L	19	0	1.00	19				187	*
NB	LT	190		1.00	190				377	*
	R	0	0	1.00	0	352	0.53	187	187	*
SB	LTR	502		0.53	266				321	*
	L	352	0	1.00	352	55	1.00	55	407	*
Note:									CLV	1624
Congestion Equiv.									v/c	0.902
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1572		0.37	582	42	1.00	42	624	*
	L	76	0	1.00	76				118	*
WB	TR	1363		0.37	504	76	1.00	76	580	*
	L	42	0	1.00	42				118	*
NB	LT	69		1.00	69				265	*
	R	5	5	1.00	0	370	0.53	196	196	*
SB	LTR	477		0.53	253				284	*
	L	370	0	1.00	370	31	1.00	31	401	*
Note:									CLV	1290
Congestion Equiv.									v/c	0.717
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap		
		AM	PM	LUF	AM	PM	LUF	AM	PM	
Eastbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Westbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Northbound	Yes	0	5		1.00	19	42	1.00	0	5
Southbound	No	n/a	n/a		n/a	n/a		n/a	0	0

Montgomery County LATR

Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25

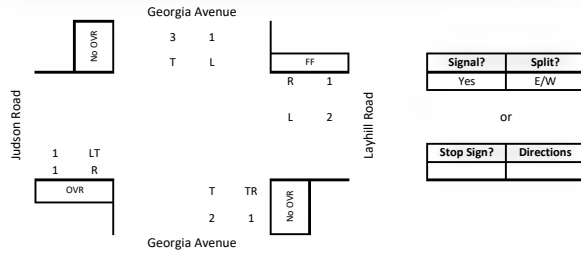
F-101



7
Critical Lane Volume
and
Level of Service Calculations

Intersection: **07. Georgia Avenue / Layhill Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Total Future Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	16		1.00	16	922	0.53	489	505	*
	R	15	0	1.00	15				504	
WB	L	922		0.53	489	9	1.00	9	498	*
	R				0				9	
NB	TR	1367		0.37	506	53	1.00	53	559	*
	L				0				53	
SB	T	1238		0.37	458	0	1.00	0	458	
	L	53		1.00	53				53	
Note:									CLV	1562
Congestion Equiv.									v/c	0.868
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LT	31		1.00	31	48	0.53	318	349	*
	R	7	0	1.00	7	600			325	
WB	L	600		0.53	318	13	1.00	13	331	*
	R	48		1.00	48				61	
NB	TR	2120		0.37	784	107	1.00	107	891	*
	L				0				107	
SB	T	1283		0.37	475	1	1.00	1	476	
	L	107		1.00	107				108	
Note:									CLV	1571
Congestion Equiv.									v/c	0.873
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap		
		AM	PM	LUF	AM	PM	LUF	AM	PM	LUF
Eastbound	Yes	15	7	1.00	0	1	0.00	0	0	
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0	
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0	
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0	

Montgomery County LATR

	Lane Use Factors	
	Number of Lanes	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25

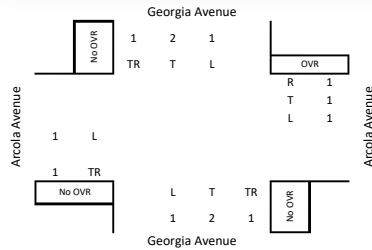
F-102



11
Critical Lane Volume
and
Level of Service Calculations

Intersection: **11. Georgia Avenue / Arcola Avenue**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Total Future Conditions**
Computed by: **W+A**

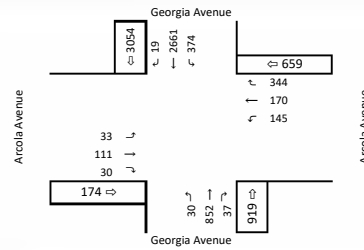
Intersection Lane Use & Traffic Control



Signal?	Split?
Yes	None

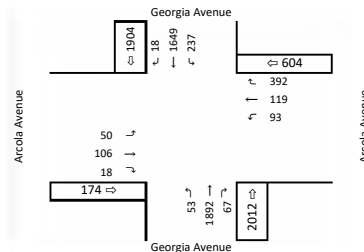
Stop Sign?	Directions

AM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	141		1.00	141	145	1.00	145	286	*
	L	33	0	1.00	33				178	
WB	T	170		1.00	170	33	1.00	33	203	
	R	344	344	1.00	0				33	
NB	TR	889		0.37	329	374	1.00	374	703	
	L	30	0	1.00	30				404	
SB	TR	2680		0.37	992	30	1.00	30	1022	*
	L	374	0	1.00	374				404	
Note:									CLV	1308
Congestion Equiv.									v/c	0.818
										1600

PM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	124		1.00	124	93	1.00	93	217	
	L	50	0	1.00	50				143	
WB	T	119		1.00	119	50	1.00	50	169	*
	R	392	0	1.00	392				442	
NB	TR	1959		0.37	725	237	1.00	237	962	*
	L	53	0	1.00	53				290	
SB	TR	1667		0.37	617	53	1.00	53	670	
	L	237	0	1.00	237				290	
Note:									CLV	1404
Congestion Equiv.									v/c	0.878
										1600

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	Yes	344	392	1.00	374	237	1.00	344	237
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1	1	1.00	
2	0.53	0.53	
3	0.37	0.37	
4		0.30	
5		0.25	

Queues

Total Future Conditions (ADJ)

3: Glenmont Circle/Shopping Center & Randolph Road

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	19	878	76	20	2083	421	47	50	47
v/c Ratio	0.23	0.34	0.09	0.24	0.64	0.92	0.10	0.44	0.22
Control Delay	74.4	24.3	0.7	86.5	16.1	80.8	0.4	78.9	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	24.3	0.7	86.5	16.1	80.8	0.4	78.9	2.5
Queue Length 50th (ft)	18	205	0	21	148	401	0	48	0
Queue Length 95th (ft)	47	249	4	m20	m186	#637	0	92	0
Internal Link Dist (ft)		622			388	289		392	
Turn Bay Length (ft)	110			270			30		
Base Capacity (vph)	165	2574	828	165	3240	456	482	154	243
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.34	0.09	0.12	0.64	0.92	0.10	0.32	0.19

Intersection Summary


























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
3: Glenmont Circle/Shopping Center & Randolph Road

Total Future Conditions (ADJ)
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	18	852	74	19	1990	30	400	9	46	42	7	46
Future Volume (veh/h)	18	852	74	19	1990	30	400	9	46	42	7	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	878	0	20	2052	31	412	9	47	43	7	47
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	2669		34	3441	52	419	9	375	70	11	66
Arrive On Green	0.02	0.52	0.00	0.04	1.00	1.00	0.24	0.24	0.24	0.05	0.05	0.05
Sat Flow, veh/h	1781	5106	1585	1781	6575	99	1745	38	1561	1542	251	1459
Grp Volume(v), veh/h	19	878	0	20	1506	577	421	0	47	50	0	47
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1609	1849	1783	0	1561	1793	0	1459
Q Serve(g_s), s	1.6	14.9	0.0	1.7	0.0	0.0	35.2	0.0	3.5	4.1	0.0	4.8
Cycle Q Clear(g_c), s	1.6	14.9	0.0	1.7	0.0	0.0	35.2	0.0	3.5	4.1	0.0	4.8
Prop In Lane	1.00		1.00	1.00		0.05	0.98		1.00	0.86		1.00
Lane Grp Cap(c), veh/h	32	2669		34	2525	968	428	0	375	81	0	66
V/C Ratio(X)	0.59	0.33		0.60	0.60	0.60	0.98	0.00	0.13	0.62	0.00	0.71
Avail Cap(c_a), veh/h	166	2669		166	2525	968	428	0	375	155	0	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	73.1	20.6	0.0	71.6	0.0	0.0	56.7	0.0	44.7	70.3	0.0	70.7
Incr Delay (d2), s/veh	15.6	0.3	0.0	15.7	1.0	2.7	39.1	0.0	0.1	7.5	0.0	13.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.9	0.0	0.9	0.2	0.7	20.5	0.0	1.4	2.1	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.7	21.0	0.0	87.3	1.0	2.7	95.8	0.0	44.8	77.8	0.0	84.1
LnGrp LOS	F	C		F	A	A	F	A	D	E	A	F
Approach Vol, veh/h		897			2103			468				97
Approach Delay, s/veh		22.4			2.3			90.7				80.8
Approach LOS		C			A			F				F
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	84.5		13.8	8.8	84.4		43.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	14.0	61.0		13.0	14.0	61.0		36.0				
Max Q Clear Time (g_c+1), s	3.6	0.0		6.8	3.7	0.0		37.2				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Notes

User approved changes to right turn type.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Queues

Total Future Conditions (ADJ)

5: Glenallan Avenue & Randolph Road

AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	34	941	20	2271	198	63	264	260
v/c Ratio	0.26	0.40	0.07	1.02	0.67	0.18	0.85	0.83
Control Delay	41.6	15.1	4.7	40.1	69.5	1.2	82.8	75.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	15.1	4.7	40.1	69.5	1.2	82.8	75.8
Queue Length 50th (ft)	8	79	1	~855	189	0	264	244
Queue Length 95th (ft)	46	93	m9	#1154	255	0	366	345
Internal Link Dist (ft)		391		1077	286			473
Turn Bay Length (ft)	250		290			25		
Base Capacity (vph)	196	2344	342	2235	404	429	369	372
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.40	0.06	1.02	0.49	0.15	0.72	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

























Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary

5: Glenallan Avenue & Randolph Road

Total Future Conditions (ADJ)
AM Peak Hour

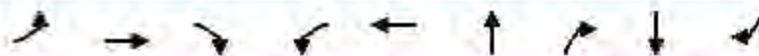
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	33	841	62	19	1934	246	55	135	60	352	64	86
Future Volume (veh/h)	33	841	62	19	1934	246	55	135	60	352	64	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	876	65	20	2015	256	57	141	62	262	214	90
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	2534	187	360	2403	301	76	188	222	349	242	102
Arrive On Green	0.00	1.00	1.00	0.00	0.70	0.70	0.14	0.14	0.14	0.20	0.20	0.20
Sat Flow, veh/h	1781	4837	358	1781	4585	574	531	1313	1545	1781	1237	520
Grp Volume(v), veh/h	34	616	325	20	1488	783	198	0	62	262	0	304
Grp Sat Flow(s),veh/h/ln	1781	1702	1790	1781	1702	1756	1844	0	1545	1781	0	1757
Q Serve(g_s), s	0.1	0.0	0.0	0.1	47.5	49.8	15.5	0.0	5.4	20.8	0.0	25.2
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.1	47.5	49.8	15.5	0.0	5.4	20.8	0.0	25.2
Prop In Lane	1.00		0.20	1.00		0.33	0.29		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	81	1784	938	360	1784	920	264	0	222	349	0	344
V/C Ratio(X)	0.42	0.35	0.35	0.06	0.83	0.85	0.75	0.00	0.28	0.75	0.00	0.88
Avail Cap(c_a), veh/h	228	1784	938	507	1784	920	406	0	340	392	0	387
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.8	0.0	0.0	17.5	18.0	18.4	61.6	0.0	57.3	56.9	0.0	58.6
Incr Delay (d2), s/veh	3.4	0.5	1.0	0.0	3.6	7.5	4.2	0.0	0.7	7.0	0.0	19.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	0.3	0.4	16.5	18.8	7.6	0.0	2.2	10.1	0.0	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	0.5	1.0	17.5	21.7	25.9	65.9	0.0	58.0	63.9	0.0	77.9
LnGrp LOS	E	A	A	B	C	C	E	A	E	E	A	E
Approach Vol, veh/h		975			2291			260				566
Approach Delay, s/veh		2.8			23.1			64.0				71.4
Approach LOS		A			C			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	85.1		28.5	0.0	85.1		36.4				
Change Period (Y+Rc), s	5.5	6.5		7.0	5.5	6.5		7.0				
Max Green Setting (Gmax), s	12.5	45.5		33.0	12.5	45.5		33.0				
Max Q Clear Time (g_c+1), s	0.0	0.0		17.5	0.0	0.0		27.2				
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0		1.1				
Intersection Summary												
HCM 6th Ctrl Delay				27.5								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												
User approved changes to right turn type.												

Queues

Total Future Conditions (ADJ)

3: Glenmont Circle/Shopping Center & Randolph Road

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	35	1624	160	29	1126	229	25	106	103
v/c Ratio	0.35	0.64	0.20	0.31	0.37	0.60	0.06	0.65	0.42
Control Delay	77.2	31.9	8.2	82.0	28.5	59.3	0.3	83.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.2	31.9	8.2	82.0	28.5	59.3	0.3	83.9	12.7
Queue Length 50th (ft)	34	473	20	29	115	197	0	102	0
Queue Length 95th (ft)	72	570	71	m51	272	288	0	166	46
Internal Link Dist (ft)		622			388	289		392	
Turn Bay Length (ft)	110			270			30		
Base Capacity (vph)	165	2546	811	165	3044	427	443	203	279
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.64	0.20	0.18	0.37	0.54	0.06	0.52	0.37

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
3: Glenmont Circle/Shopping Center & Randolph Road

Total Future Conditions (ADJ)
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	1575	155	28	1018	75	203	19	24	77	26	100
Future Volume (veh/h)	34	1575	155	28	1018	75	203	19	24	77	26	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.93	1.00		0.85
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	1624	0	29	1049	77	209	20	25	79	27	103
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	2626		42	3148	229	325	31	295	121	41	122
Arrive On Green	0.03	0.51	0.00	0.05	1.00	1.00	0.20	0.20	0.20	0.09	0.09	0.09
Sat Flow, veh/h	1781	5106	1585	1781	6149	448	1633	156	1480	1344	459	1352
Grp Volume(v), veh/h	35	1624	0	29	822	304	229	0	25	106	0	103
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1609	1771	1789	0	1480	1803	0	1352
Q Serve(g_s), s	2.9	34.0	0.0	2.4	0.0	0.0	17.6	0.0	2.1	8.5	0.0	11.3
Cycle Q Clear(g_c), s	2.9	34.0	0.0	2.4	0.0	0.0	17.6	0.0	2.1	8.5	0.0	11.3
Prop In Lane	1.00		1.00	1.00		0.25	0.91		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	46	2626		42	2471	907	356	0	295	162	0	122
V/C Ratio(X)	0.77	0.62		0.70	0.33	0.34	0.64	0.00	0.08	0.65	0.00	0.85
Avail Cap(c_a), veh/h	166	2626		166	2471	907	429	0	355	204	0	153
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.6	26.0	0.0	71.0	0.0	0.0	55.2	0.0	48.9	66.0	0.0	67.2
Incr Delay (d2), s/veh	23.1	1.1	0.0	18.8	0.4	1.0	2.4	0.0	0.1	5.0	0.0	28.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	13.7	0.0	1.3	0.1	0.3	8.2	0.0	0.8	4.2	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.8	27.1	0.0	89.8	0.4	1.0	57.6	0.0	49.1	71.0	0.0	95.4
LnGrp LOS	F	C		F	A	A	E	A	D	E	A	F
Approach Vol, veh/h		1659			1155			254			209	
Approach Delay, s/veh		28.5			2.8			56.7			83.0	
Approach LOS		C			A			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	82.8		20.5	9.5	83.1		36.9				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	14.0	57.0		17.0	14.0	57.0		36.0				
Max Q Clear Time (g_c+I1), s	4.9	0.0		13.3	4.4	0.0		19.6				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.0		0.7				
Intersection Summary												
HCM 6th Ctrl Delay				25.1								
HCM 6th LOS				C								
Notes												
User approved changes to right turn type.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

Queues
5: Glenallan Avenue & Randolph RoadTotal Future Conditions (ADJ)
PM Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	78	1638	43	1391	71	41	246	241
v/c Ratio	0.36	0.63	0.26	0.58	0.40	0.16	0.83	0.80
Control Delay	22.6	9.2	26.7	24.3	67.1	1.3	81.4	75.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	9.2	26.7	24.3	67.1	1.3	81.4	75.7
Queue Length 50th (ft)	6	52	14	175	68	0	246	229
Queue Length 95th (ft)	m43	#702	50	#270	104	0	340	322
Internal Link Dist (ft)		391		1077	286			473
Turn Bay Length (ft)	250		290			25		
Base Capacity (vph)	261	2609	229	2415	400	433	369	370
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.63	0.19	0.58	0.18	0.09	0.67	0.65

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary 5: Glenallan Avenue & Randolph Road

Total Future Conditions (ADJ)
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	1507	98	42	1067	296	31	38	40	370	43	64
Future Volume (veh/h)	76	1507	98	42	1067	296	31	38	40	370	43	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	1538	100	43	1089	302	32	39	41	244	232	65
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	289	3025	197	239	2453	680	49	60	94	329	258	72
Arrive On Green	0.00	1.00	1.00	0.00	1.00	1.00	0.06	0.06	0.06	0.18	0.18	0.18
Sat Flow, veh/h	1781	4887	318	1781	3962	1099	824	1005	1569	1781	1400	392
Grp Volume(v), veh/h	78	1071	567	43	936	455	71	0	41	244	0	297
Grp Sat Flow(s),veh/h/ln	1781	1702	1801	1781	1702	1657	1829	0	1569	1781	0	1792
Q Serve(g_s), s	0.1	0.0	0.0	0.1	0.0	0.0	5.7	0.0	3.8	19.4	0.0	24.3
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.1	0.0	0.0	5.7	0.0	3.8	19.4	0.0	24.3
Prop In Lane	1.00		0.18	1.00		0.66	0.45		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	289	2107	1115	239	2107	1026	109	0	94	329	0	331
V/C Ratio(X)	0.27	0.51	0.51	0.18	0.44	0.44	0.65	0.00	0.44	0.74	0.00	0.90
Avail Cap(c_a), veh/h	437	2107	1115	386	2107	1026	402	0	345	392	0	394
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.4	0.0	0.0	12.4	0.0	0.0	69.0	0.0	68.1	57.8	0.0	59.8
Incr Delay (d2), s/veh	0.5	0.9	1.7	0.3	0.6	1.3	6.3	0.0	3.2	6.1	0.0	20.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.3	0.5	0.6	0.2	0.4	2.9	0.0	1.6	9.4	0.0	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.9	0.9	1.7	12.8	0.6	1.3	75.3	0.0	71.2	63.9	0.0	80.2
LnGrp LOS	B	A	A	B	A	A	E	A	E	E	A	F
Approach Vol, veh/h		1716			1434			112				541
Approach Delay, s/veh		1.7			1.2			73.8				72.9
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	99.4		16.0	0.0	99.4		34.7				
Change Period (Y+Rc), s	5.5	6.5		7.0	5.5	6.5		7.0				
Max Green Setting (Gmax), s	12.5	45.5		33.0	12.5	45.5		33.0				
Max Q Clear Time (g_c+I1), s	0.0	0.0		7.7	0.0	0.0		26.3				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	0.0		1.1				

Intersection Summary

HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Notes

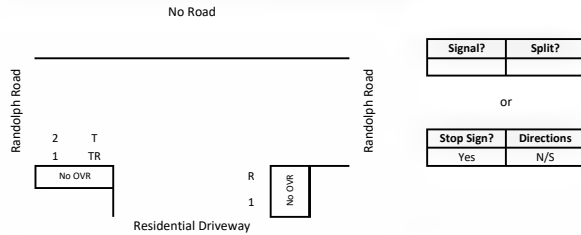
User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.



4
Critical Lane Volume and Level of Service Calculations

Intersection: **04: Randolph Road / Residential Driveway**
 Jurisdiction: **Montgomery County, MD**
 Scenario/Design Year: **Total Future Conditions (ADJ)**
 Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	989		0.37	366	0		0	366	*
WB					0	0		0	0	
NB	R	0		1.00	0	0		0	0	*
SB					0	0		0	0	*
Note: Congestion Equiv. 1800									CLV v/c	366 / 0.203

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1689		0.37	625	0		0	625	*
WB					0	0		0	0	
NB	R	0		1.00	0	0		0	0	*
SB					0	0		0	0	*
Note: Congestion Equiv. 1800									CLV v/c	625 / 0.347

Right Turn Overlap

Approach	East Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

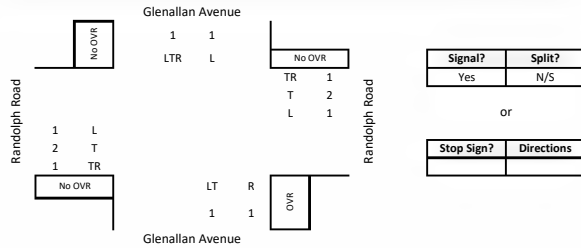
Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25



5
**Critical Lane Volume
and
Level of Service Calculations**

Intersection: **05: Randolph Road / Glenallan Avenue**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Total Future Conditions (ADJ)**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	903		0.37	334	19	1.00	19	353	
	L	33	0	1.00	33				52	
WB	TR	2180		0.37	807	33	1.00	33	840	*
	L	19	0	1.00	19				52	
NB	LT	190		1.00	190	352	0.53	187	377	*
	R	60	19	1.00	41				228	
SB	LTR	502		0.53	266	55	1.00	55	321	*
	L	352	0	1.00	352				407	*
Note:									CLV	1624
Congestion Equiv.									v/c	0.902
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1605		0.37	594	42	1.00	42	636	*
	L	76	0	1.00	76				118	
WB	TR	1363		0.37	504	76	1.00	76	580	*
	L	42	0	1.00	42				118	
NB	LT	69		1.00	69	370	0.53	196	265	*
	R	40	40	1.00	0				196	*
SB	LTR	477		0.53	253	31	1.00	31	284	*
	L	370	0	1.00	370				401	*
Note:									CLV	1302
Congestion Equiv.									v/c	0.723
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	Yes	60	40	1.00	19	42	1.00	19	40
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25

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**APPENDIX G
FORECASTING**

WITH ACCESS TO RANDOLPH ROAD

01. Randolph Road / Livingston Street																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Livingston Street			Randolph Road			Livingston Street			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x					16%						16%		
Glenmont Metrocenter (Residential Use)		x	x					30%						30%		
4010 Randolph Road		x	x					20%						20%		
Kaiser Permanente Aspen Hill		x	x					2%						2%		
Wheaton Gateway		x	x													
Site Trip Distribution																
Site Trip Distribution		x	x					25%						25%		

01. Randolph Road / Livingston Street																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Livingston Street			Randolph Road			Livingston Street			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			18	21	17	5	1,404	111	42	3	7	7	892	12	2,539
	PM			8	12	4	12	901	79	37	3	14	7	1,479	29	2,585
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	0	0	19	0	0	0	0	0	30	0	49
	PM	373	404	0	0	0	0	65	0	0	0	0	0	60	0	125
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	0	0	96	0	0	0	0	0	29	0	125
	PM	230	147	0	0	0	0	44	0	0	0	0	0	69	0	113
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	16	0	0	0	0	0	5	0	21
	PM	14	42	0	0	0	0	3	0	0	0	0	0	8	0	11
4010 Randolph Road	AM	30	61	0	0	0	0	6	0	0	0	0	0	12	0	18
	PM	51	37	0	0	0	0	10	0	0	0	0	0	7	0	17
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	2	0	0	0	0	0	6	0	8
	PM	214	500	0	0	0	0	10	0	0	0	0	0	4	0	14
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	14	43	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheaton Gateway	AM	188	50	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	57	133	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	0	0	107	0	0	0	0	0	72	0	179
	PM	897	1,136	0	0	0	0	178	0	0	0	0	0	92	0	270
Future Background Volumes	AM			18	21	17	5	1,511	111	42	3	7	7	964	12	2,718
	PM			8	12	4	12	1,079	79	37	3	14	7	1,571	29	2,855
Site Trip Assignments	AM	169	574	0	0	0	0	144	0	0	0	0	0	42	0	186
	PM	363	238	0	0	0	0	59	0	0	0	0	0	91	0	150
Total Future Volumes	AM			18	21	17	5	1,655	111	42	3	7	7	1,006	12	2,904
	PM			8	12	4	12	1,138	79	37	3	14	7	1,662	29	3,005

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02. Georgia Avenue / Randolph Road																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Randolph Road			Georgia Avenue			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x	16%	36%						36%				16%	
Glenmont Metrocenter (Residential Use)		x	x	30%	41%						41%				30%	
4010 Randolph Road		x	x	7%			4%				9%					
Kaiser Permanente Aspen Hill		x	x	2%	10%	2%	2%				10%		9%	4%	7%	
Wheaton Gateway		x	x		15%			5%			5%	15%				
Site Trip Distribution																
Site Trip Distribution		x	x			15%		45%			15%	10%			15%	

02. Georgia Avenue / Randolph Road																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Randolph Road			Georgia Avenue			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			112	1,578	55	131	51	733	178	786	152	211	38	174	4,199
	PM			150	994	90	124	59	347	349	1,423	159	145	48	270	4,158
Glenmont Metrocenter (Commercial Use)	AM	189	116	19	42	0	0	0	0	0	68	0	0	0	30	159
	PM	373	404	65	145	0	0	0	0	0	134	0	0	0	60	404
Glenmont Metrocenter (Residential Use)	AM	95	320	96	131	0	0	0	0	39	0	0	0	0	29	295
	PM	230	147	44	60	0	0	0	0	94	0	0	0	0	69	267
4010 Randolph Road (Existing Trip Credit)	AM	82	27	6	0	0	0	1	0	0	0	3	2	1	2	15
	PM	14	42	1	0	0	0	1	0	0	0	1	3	1	3	10
4010 Randolph Road	AM	30	61	2	0	0	0	1	0	0	0	3	5	2	4	17
	PM	51	37	4	0	0	0	2	0	0	0	5	3	1	3	18
Kaiser Permanente Aspen Hill	AM	317	84	2	8	2	6	0	0	0	32	0	0	0	6	56
	PM	214	500	10	50	10	4	0	0	0	21	0	0	0	4	99
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	5	0	0	0	2	1	2	0	0	0	0	10
	PM	14	43	0	2	0	0	0	1	2	6	0	0	0	0	11
Wheaton Gateway	AM	188	50	0	28	0	0	0	9	3	8	0	0	0	0	48
	PM	57	133	0	9	0	0	0	3	7	20	0	0	0	0	39
Subtotal Pipeline Trip Assignments	AM	705	593	113	204	2	6	0	7	2	145	0	3	1	67	550
	PM	897	1,136	174	333	10	4	1	2	5	208	4	0	0	93	834
Future Background Volumes	AM			225	1,782	57	137	51	740	180	931	152	214	39	241	4,749
	PM			324	1,327	100	128	60	349	354	1,631	163	145	48	363	4,992
Site Trip Assignments	AM	169	574	0	0	25	0	0	258	0	86	58	0	25	0	452
	PM	363	238	0	0	54	0	0	107	0	36	23	0	55	0	275
Total Future Volumes	AM			225	1,782	82	137	51	998	180	1,017	210	214	64	241	5,201
	PM			324	1,327	154	128	60	456	354	1,667	186	145	103	363	5,267

03. Randolph Road / Glenmont Circle																					
Component	Period	Inbound	Outbound	Southbound				Westbound				Northbound				Eastbound			Eastbound 2 (Tunnel)		Total
				Shopping Center Driveway				Randolph Road				Glenmont Circle				Randolph Road			Randolph Road (Tunnel)		
				SBR1	SBR2	SBT	SBL	WBR	WBT1	WBT2	WBL	NBR	NBT	NBL1	NBL2	EBR1	EBR2	EBT	E2T2	E2L2	
Pipeline Trip Distribution																					
Glenmont Metrocenter (Commercial Use)		x	x																		
Glenmont Metrocenter (Residential Use)		x	x																		
4010 Randolph Road		x	x					4%										4%			
Kaiser Permanente Aspen Hill		x	x					2%										2%			
Wheaton Gateway		x	x					5%										5%			
Site Trip Distribution																					
Site Trip Distribution		x	x									5%	45%	15%		25%	5%		10%		

03. Randolph Road / Glenmont Circle																					
Component	Period	IN	OUT	Southbound				Westbound				Northbound				Eastbound			Eastbound 2 (Tunnel)		Total
				Shopping Center Driveway				Randolph Road				Glenmont Circle				Randolph Road			Randolph Road (Tunnel)		
				SBR1	SBR2	SBT	SBL	WBR	WBT1	WBT2	WBL	NBR	NBT	NBL1	NBL2	EBR1	EBR2	EBT	E2T2	E2L2	
Existing 2022 Traffic Volumes	AM			42	4	7	42	30	833	1,146	19	17	9	36	20	1	31	239	583	18	3,077
	PM			80	20	26	77	75	403	608	31	12	19	49	11	4	60	421	1,086	34	3,016
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	373	404	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	230	147	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	4
	PM	14	42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3
4010 Randolph Road	AM	30	61	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3
	PM	51	37	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	3
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	0	6	0	0	0	0	0	0	0	0	2	0	0	8
	PM	214	500	0	0	0	0	0	4	0	0	0	0	0	0	0	0	10	0	0	14
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	3
	PM	14	43	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3
Wheaton Gateway	AM	188	50	0	0	0	0	0	9	0	0	0	0	0	0	0	0	3	0	0	12
	PM	57	133	0	0	0	0	0	3	0	0	0	0	0	0	0	0	7	0	0	10
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	0	0	0	11	0	0	0	0	0	0	0	0	5	0	0	16
	PM	897	1,136	0	0	0	0	0	7	0	0	0	0	0	0	0	0	14	0	0	21
Future Background Volumes	AM			42	4	7	42	30	844	1,146	19	17	9	36	20	1	31	244	583	18	3,093
	PM			80	20	26	77	75	410	608	31	12	19	49	11	4	60	435	1,086	34	3,037
Site Trip Assignments	AM	169	574	0	0	0	0	0	0	0	0	29	0	258	86	0	42	8	17	0	423
	PM	363	238	0	0	0	0	0	0	0	0	12	0	107	36	0	91	18	36	0	264
Total Future Volumes	AM			42	4	7	42	30	844	1,146	19	46	9	294	106	1	73	252	600	18	3,533
	PM			80	20	26	77	75	410	608	31	24	19	156	47	4	151	453	1,122	34	3,337

04. Randolph Road / Residential Driveway																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				No Road			Randolph Road			Residential Driveway			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x													
Glenmont Metrocenter (Residential Use)		x	x													
4010 Randolph Road		x	x				4%						4%			
Kaiser Permanente Aspen Hill		x	x				2%						2%			
Wheaton Gateway		x	x				5%						5%			
Site Trip Distribution																
Site Trip Distribution		x	x							5%			15%	5%		

04. Randolph Road / Residential Driveway																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				No Road			Randolph Road			Residential Driveway			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			0	0	0	0	2,064	0	32	0	0	2	928	0	3,026
	PM			0	0	0	0	1,155	0	23	0	0	14	1,595	0	2,787
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	373	404	0	0	0	0	0	0	0	0	0	0	0	0	0
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	230	147	0	0	0	0	0	0	0	0	0	0	0	0	0
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	3	0	0	0	0	0	1	0	4
	PM	14	42	0	0	0	0	1	0	0	0	0	0	2	0	3
4010 Randolph Road	AM	30	61	0	0	0	0	1	0	0	0	0	0	2	0	3
	PM	51	37	0	0	0	0	2	0	0	0	0	0	1	0	3
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	6	0	0	0	0	0	2	0	8
	PM	214	500	0	0	0	0	4	0	0	0	0	0	10	0	14
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	2	0	0	0	0	0	1	0	3
	PM	14	43	0	0	0	0	1	0	0	0	0	0	2	0	3
Wheaton Gateway	AM	188	50	0	0	0	0	9	0	0	0	0	0	3	0	12
	PM	57	133	0	0	0	0	3	0	0	0	0	0	7	0	10
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	0	0	11	0	0	0	0	0	5	0	16
	PM	897	1,136	0	0	0	0	7	0	0	0	0	0	14	0	21
Future Background Volumes	AM			0	0	0	0	2,075	0	32	0	0	2	933	0	3,042
	PM			0	0	0	0	1,162	0	23	0	0	14	1,609	0	2,808
Site Trip Assignments	AM	169	574	0	0	0	0	0	0	28	0	0	25	29	0	82
	PM	363	238	0	0	0	0	0	0	12	0	0	54	12	0	78
Total Future Volumes	AM			0	0	0	0	2,075	0	60	0	0	27	962	0	3,124
	PM			0	0	0	0	1,162	0	35	0	0	68	1,621	0	2,886

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05. Randolph Road / Glenallan Avenue																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Glenallan Avenue			Randolph Road			Glenallan Avenue			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x			19%										
Glenmont Metrocenter (Residential Use)		x	x			13%										
4010 Randolph Road		x	x					4%						4%		
Kaiser Permanente Aspen Hill		x	x					2%						2%		
Wheaton Gateway		x	x					5%						5%		
Site Trip Distribution																
Site Trip Distribution		x	x			5%			10%			5%		10%		

05. Randolph Road / Glenallan Avenue																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Glenallan Avenue			Randolph Road			Glenallan Avenue			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			86	55	288	198	1,923	2	0	106	55	35	839	33	3,620
	PM			64	25	251	213	1,060	5	5	26	31	30	1,504	76	3,290
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	22	36	0	0	0	0	0	0	0	0	58
	PM	373	404	0	0	77	71	0	0	0	0	0	0	0	0	148
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	42	12	0	0	0	0	0	0	0	0	54
	PM	230	147	0	0	19	30	0	0	0	0	0	0	0	0	49
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	3	0	0	0	0	0	1	0	4
	PM	14	42	0	0	0	0	1	0	0	0	0	0	2	0	3
4010 Randolph Road	AM	30	61	0	0	0	0	1	0	0	0	0	0	2	0	3
	PM	51	37	0	0	0	0	2	0	0	0	0	0	1	0	3
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	6	0	0	0	0	0	2	0	8
	PM	214	500	0	0	0	0	4	0	0	0	0	0	10	0	14
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	2	0	0	0	0	0	1	0	3
	PM	14	43	0	0	0	0	1	0	0	0	0	0	2	0	3
Wheaton Gateway	AM	188	50	0	0	0	0	9	0	0	0	0	0	3	0	12
	PM	57	133	0	0	0	0	3	0	0	0	0	0	7	0	10
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	64	48	11	0	0	0	0	0	5	0	128
	PM	897	1,136	0	0	119	83	7	0	0	0	0	0	14	0	223
Future Background Volumes	AM			86	55	352	246	1,934	2	0	106	55	35	844	33	3,748
	PM			64	25	370	296	1,067	5	5	26	31	30	1,518	76	3,513
Site Trip Assignments	AM	169	574	0	9	0	0	0	17	0	29	0	0	57	0	112
	PM	363	238	0	18	0	0	0	37	0	12	0	0	24	0	91
Total Future Volumes	AM			86	64	352	246	1,934	19	0	135	55	35	901	33	3,860
	PM			64	43	370	296	1,067	42	5	38	31	30	1,542	76	3,604

06. Randolph Road / Middlevale Lane / Garden Gate Road																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Middlevale Lane			Randolph Road			Garden Gate Road			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x					19%						19%		
Glenmont Metrocenter (Residential Use)		x	x					13%						13%		
4010 Randolph Road		x	x					4%						4%		
Kaiser Permanente Aspen Hill		x	x					2%						2%		
Wheaton Gateway		x	x					5%						5%		
Site Trip Distribution																
Site Trip Distribution		x	x					10%						10%		

06. Randolph Road / Middlevale Lane / Garden Gate Road																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Middlevale Lane			Randolph Road			Garden Gate Road			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			91	13	173	107	1,996	82	9	10	35	16	1,103	68	3,703
	PM			27	6	111	147	1,245	35	13	7	24	30	1,686	25	3,356
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	0	0	36	0	0	0	0	0	22	0	58
	PM	373	404	0	0	0	0	71	0	0	0	0	0	77	0	148
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	0	0	12	0	0	0	0	0	42	0	54
	PM	230	147	0	0	0	0	30	0	0	0	0	0	19	0	49
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	3	0	0	0	0	0	1	0	4
	PM	14	42	0	0	0	0	1	0	0	0	0	0	2	0	3
4010 Randolph Road	AM	30	61	0	0	0	0	1	0	0	0	0	0	2	0	3
	PM	51	37	0	0	0	0	2	0	0	0	0	0	1	0	3
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	6	0	0	0	0	0	2	0	8
	PM	214	500	0	0	0	0	4	0	0	0	0	0	10	0	14
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	2	0	0	0	0	0	1	0	3
	PM	14	43	0	0	0	0	1	0	0	0	0	0	2	0	3
Wheaton Gateway	AM	188	50	0	0	0	0	9	0	0	0	0	0	3	0	12
	PM	57	133	0	0	0	0	3	0	0	0	0	0	7	0	10
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	0	0	59	0	0	0	0	0	69	0	128
	PM	897	1,136	0	0	0	0	90	0	0	0	0	0	133	0	223
Future Background Volumes	AM			91	13	173	107	2,055	82	9	10	35	16	1,172	68	3,831
	PM			27	6	111	147	1,335	35	13	7	24	30	1,819	25	3,579
Site Trip Assignments	AM	169	574	0	0	0	0	17	0	0	0	0	0	57	0	74
	PM	363	238	0	0	0	0	37	0	0	0	0	0	24	0	61
Total Future Volumes	AM			91	13	173	107	2,072	82	9	10	35	16	1,229	68	3,905
	PM			27	6	111	147	1,372	35	13	7	24	30	1,843	25	3,640

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07. Georgia Avenue / Layhill Road																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Layhill Road			Georgia Avenue			Judson Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x	40%			12%			12%	40%					
Glenmont Metrocenter (Residential Use)		x	x	60%			11%			11%	60%					
4010 Randolph Road		x	x	7%						7%						
Kaiser Permanente Aspen Hill		x	x	14%						14%						
Wheaton Gateway		x	x	10%			5%			5%	10%					
Site Trip Distribution																
Site Trip Distribution		x	x	15%						15%						

07. Georgia Avenue / Layhill Road																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Layhill Road			Georgia Avenue			Judson Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			0	951	53	30	0	866	377	686	0	15	7	9	2,994
	PM			0	797	107	48	0	515	638	1,141	1	7	18	13	3,285
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	46	0	0	0	14	23	76	0	0	0	0	159
	PM	373	404	0	162	0	0	0	48	45	149	0	0	0	0	404
Glenmont Metrocenter (Residential Use)	AM	95	320	0	192	0	0	0	35	10	57	0	0	0	0	294
	PM	230	147	0	88	0	0	0	16	25	138	0	0	0	0	267
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	6	0	0	0	0	0	2	0	0	0	0	8
	PM	14	42	0	1	0	0	0	0	0	3	0	0	0	0	4
4010 Randolph Road	AM	30	61	0	2	0	0	0	0	0	4	0	0	0	0	6
	PM	51	37	0	4	0	0	0	0	0	3	0	0	0	0	7
Kaiser Permanente Aspen Hill	AM	317	84	0	12	0	0	0	0	0	44	0	0	0	0	56
	PM	214	500	0	70	0	0	0	0	0	30	0	0	0	0	100
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	3	0	0	0	2	1	1	0	0	0	0	7
	PM	14	43	0	1	0	0	0	1	2	4	0	0	0	0	8
Wheaton Gateway	AM	188	50	0	19	0	0	0	9	3	5	0	0	0	0	36
	PM	57	133	0	6	0	0	0	3	7	13	0	0	0	0	29
Subtotal Pipeline Trip Assignments	AM	705	593	0	262	0	0	0	56	35	183	0	0	0	0	536
	PM	897	1,136	0	432	0	0	0	85	60	245	0	0	0	0	822
Future Background Volumes	AM			0	1,213	53	30	0	922	412	869	0	15	7	9	3,530
	PM			0	1,229	107	48	0	600	698	1,386	1	7	18	13	4,107
Site Trip Assignments	AM	169	574	0	25	0	0	0	0	0	86	0	0	0	0	111
	PM	363	238	0	54	0	0	0	0	0	36	0	0	0	0	90
Total Future Volumes	AM			0	1,238	53	30	0	922	412	955	0	15	7	9	3,641
	PM			0	1,283	107	48	0	600	698	1,422	1	7	18	13	4,197

08. Georgia Avenue / Glenmont Circle																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Glenmont Circle			Georgia Avenue			No Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x	36%						36%						
Glenmont Metrocenter (Residential Use)		x	x	41%						41%						
4010 Randolph Road		x	x	9%						9%						
Kaiser Permanente Aspen Hill		x	x	10%						10%						
Wheaton Gateway		x	x	20%						20%						
Site Trip Distribution																
Site Trip Distribution		x	x	45%			25%			45%						

08. Georgia Avenue / Glenmont Circle																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Glenmont Circle			Georgia Avenue			No Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			0	2,522	0	36	0	0	20	1,081	0	0	0	0	3,659
	PM			0	1,486	0	23	0	0	39	1,905	0	0	0	0	3,453
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	42	0	0	0	0	0	68	0	0	0	0	110
	PM	373	404	0	145	0	0	0	0	0	134	0	0	0	0	279
Glenmont Metrocenter (Residential Use)	AM	95	320	0	131	0	0	0	0	0	39	0	0	0	0	170
	PM	230	147	0	60	0	0	0	0	0	94	0	0	0	0	154
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	2	0	0	0	0	0	7	0	0	0	0	9
	PM	14	42	0	4	0	0	0	0	0	1	0	0	0	0	5
4010 Randolph Road	AM	30	61	0	5	0	0	0	0	0	3	0	0	0	0	8
	PM	51	37	0	3	0	0	0	0	0	5	0	0	0	0	8
Kaiser Permanente Aspen Hill	AM	317	84	0	8	0	0	0	0	0	32	0	0	0	0	40
	PM	214	500	0	50	0	0	0	0	0	21	0	0	0	0	71
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	6	0	0	0	0	0	2	0	0	0	0	8
	PM	14	43	0	3	0	0	0	0	0	9	0	0	0	0	12
Wheaton Gateway	AM	188	50	0	38	0	0	0	0	0	10	0	0	0	0	48
	PM	57	133	0	11	0	0	0	0	0	27	0	0	0	0	38
Subtotal Pipeline Trip Assignments	AM	705	593	0	216	0	0	0	0	0	143	0	0	0	0	359
	PM	897	1,136	0	333	0	0	0	0	0	216	0	0	0	0	549
Future Background Volumes	AM			0	2,738	0	36	0	0	20	1,224	0	0	0	0	4,018
	PM			0	1,819	0	23	0	0	39	2,121	0	0	0	0	4,002
Site Trip Assignments	AM	169	574	0	258	0	144	0	0	76	0	0	0	0	0	478
	PM	363	238	0	107	0	59	0	0	163	0	0	0	0	0	329
Total Future Volumes	AM			0	2,996	0	180	0	0	96	1,224	0	0	0	0	4,496
	PM			0	1,926	0	82	0	0	202	2,121	0	0	0	0	4,331

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09. Georgia Avenue / Shorefield Road																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Shorefield Road			Georgia Avenue			Commercial Driveway			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x	36%						36%						
Glenmont Metrocenter (Residential Use)		x	x	41%						41%						
4010 Randolph Road		x	x	9%						9%						
Kaiser Permanente Aspen Hill		x	x	10%						10%						
Wheaton Gateway		x	x	20%						20%						
Site Trip Distribution																
Site Trip Distribution		x	x	45%						45%						

09. Georgia Avenue / Shorefield Road																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Shorefield Road			Georgia Avenue			Commercial Driveway			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			1	2,478	57	56	0	93	21	961	1	4	3	14	3,689
	PM			27	1,341	132	127	3	156	53	1,776	0	7	25	32	3,679
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	42	0	0	0	0	0	68	0	0	0	0	110
	PM	373	404	0	145	0	0	0	0	0	134	0	0	0	0	279
Glenmont Metrocenter (Residential Use)	AM	95	320	0	131	0	0	0	0	0	39	0	0	0	0	170
	PM	230	147	0	60	0	0	0	0	0	94	0	0	0	0	154
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	2	0	0	0	0	0	7	0	0	0	0	9
	PM	14	42	0	4	0	0	0	0	0	1	0	0	0	0	5
4010 Randolph Road	AM	30	61	0	5	0	0	0	0	0	3	0	0	0	0	8
	PM	51	37	0	3	0	0	0	0	0	5	0	0	0	0	8
Kaiser Permanente Aspen Hill	AM	317	84	0	8	0	0	0	0	0	32	0	0	0	0	40
	PM	214	500	0	50	0	0	0	0	0	21	0	0	0	0	71
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	6	0	0	0	0	0	2	0	0	0	0	8
	PM	14	43	0	3	0	0	0	0	0	9	0	0	0	0	12
Wheaton Gateway	AM	188	50	0	38	0	0	0	0	0	10	0	0	0	0	48
	PM	57	133	0	11	0	0	0	0	0	27	0	0	0	0	38
Subtotal Pipeline Trip Assignments	AM	705	593	0	216	0	0	0	0	0	143	0	0	0	0	359
	PM	897	1,136	0	333	0	0	0	0	0	216	0	0	0	0	549
Future Background Volumes	AM			1	2,694	57	56	0	93	21	1,104	1	4	3	14	4,048
	PM			27	1,674	132	127	3	156	53	1,992	0	7	25	32	4,228
Site Trip Assignments	AM	169	574	0	258	0	0	0	0	0	76	0	0	0	0	334
	PM	363	238	0	107	0	0	0	0	0	163	0	0	0	0	270
Total Future Volumes	AM			1	2,952	57	56	0	93	21	1,180	1	4	3	14	4,382
	PM			27	1,781	132	127	3	156	53	2,155	0	7	25	32	4,498

G-10

10. Layhill Road / Glenallan Avenue																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Glenallan Avenue			Layhill Road			Glenallan Avenue			Layhill Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x	12%	19%	2%	2%				19%				12%	
Glenmont Metrocenter (Residential Use)		x	x	11%	13%	1%	1%				13%				11%	
4010 Randolph Road		x	x													
Kaiser Permanente Aspen Hill		x	x													
Wheaton Gateway		x	x				5%						5%			
Site Trip Distribution																
Site Trip Distribution		x	x					5%		5%						

10. Layhill Road / Glenallan Avenue																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Glenallan Avenue			Layhill Road			Glenallan Avenue			Layhill Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			47	252	129	262	848	103	49	318	19	28	378	29	2,462
	PM			56	218	178	119	465	78	72	222	28	50	701	71	2,258
Glenmont Metrocenter (Commercial Use)	AM	189	116	14	22	2	4	0	0	0	36	0	0	0	23	101
	PM	373	404	48	77	8	7	0	0	0	71	0	0	0	45	256
Glenmont Metrocenter (Residential Use)	AM	95	320	35	42	3	1	0	0	0	12	0	0	0	10	103
	PM	230	147	16	19	1	2	0	0	0	30	0	0	0	25	93
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	14	42	0	0	0	0	0	0	0	0	0	0	0	0	0
4010 Randolph Road	AM	30	61	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	51	37	0	0	0	0	0	0	0	0	0	0	0	0	0
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	214	500	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	1	0	0	0	0	0	2	0	3
	PM	14	43	0	0	0	0	2	0	0	0	0	0	1	0	3
Wheaton Gateway	AM	188	50	0	0	0	0	3	0	0	0	0	0	9	0	12
	PM	57	133	0	0	0	0	7	0	0	0	0	0	3	0	10
Subtotal Pipeline Trip Assignments	AM	705	593	49	64	5	5	2	0	0	48	0	0	7	33	213
	PM	897	1,136	83	119	11	8	5	0	0	83	0	0	2	55	366
Future Background Volumes	AM			96	316	134	267	850	103	49	366	19	28	385	62	2,675
	PM			139	337	189	127	470	78	72	305	28	50	703	126	2,624
Site Trip Assignments	AM	169	574	0	0	0	0	0	9	29	0	0	0	0	0	38
	PM	363	238	0	0	0	0	0	18	12	0	0	0	0	0	30
Total Future Volumes	AM			96	316	134	267	850	112	78	366	19	28	385	62	2,713
	PM			139	337	189	127	470	96	84	305	28	50	703	126	2,654

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11. Georgia Avenue / Arcola Avenue																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Arcola Avenue			Georgia Avenue			Arcola Avenue			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x	36%						36%						
Glenmont Metrocenter (Residential Use)		x	x	41%						41%						
4010 Randolph Road		x	x	9%						9%						
Kaiser Permanente Aspen Hill		x	x	10%						10%						
Wheaton Gateway		x	x	20%						20%						
Site Trip Distribution																
Site Trip Distribution		x	x	45%						45%						

11. Georgia Avenue / Arcola Avenue																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Arcola Avenue			Georgia Avenue			Arcola Avenue			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			19	2,187	374	344	170	145	37	633	30	30	111	33	4,113
	PM			18	1,209	237	392	119	93	67	1,513	53	18	106	50	3,875
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	42	0	0	0	0	0	68	0	0	0	0	110
	PM	373	404	0	145	0	0	0	0	0	134	0	0	0	0	279
Glenmont Metrocenter (Residential Use)	AM	95	320	0	131	0	0	0	0	0	39	0	0	0	0	170
	PM	230	147	0	60	0	0	0	0	0	94	0	0	0	0	154
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	2	0	0	0	0	0	7	0	0	0	0	9
	PM	14	42	0	4	0	0	0	0	0	1	0	0	0	0	5
4010 Randolph Road	AM	30	61	0	5	0	0	0	0	0	3	0	0	0	0	8
	PM	51	37	0	3	0	0	0	0	0	5	0	0	0	0	8
Kaiser Permanente Aspen Hill	AM	317	84	0	8	0	0	0	0	0	32	0	0	0	0	40
	PM	214	500	0	50	0	0	0	0	0	21	0	0	0	0	71
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	6	0	0	0	0	0	2	0	0	0	0	8
	PM	14	43	0	3	0	0	0	0	0	9	0	0	0	0	12
Wheaton Gateway	AM	188	50	0	38	0	0	0	0	0	10	0	0	0	0	48
	PM	57	133	0	11	0	0	0	0	0	27	0	0	0	0	38
Subtotal Pipeline Trip Assignments	AM	705	593	0	216	0	0	0	0	0	143	0	0	0	0	359
	PM	897	1,136	0	333	0	0	0	0	0	216	0	0	0	0	549
Future Background Volumes	AM			19	2,403	374	344	170	145	37	776	30	30	111	33	4,472
	PM			18	1,542	237	392	119	93	67	1,729	53	18	106	50	4,424
Site Trip Assignments	AM	169	574	0	258	0	0	0	0	0	76	0	0	0	0	334
	PM	363	238	0	107	0	0	0	0	0	163	0	0	0	0	270
Total Future Volumes	AM			19	2,661	374	344	170	145	37	852	30	30	111	33	4,806
	PM			18	1,649	237	392	119	93	67	1,892	53	18	106	50	4,694

G-12

12. Glenallan Avenue / Eskine Avenue																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Glenallan Avenue			No Road			Glenallan Avenue			Eskine Avenue			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x													
Glenmont Metrocenter (Residential Use)		x	x													
4010 Randolph Road		x	x													
Kaiser Permanente Aspen Hill		x	x													
Wheaton Gateway		x	x													
Site Trip Distribution																
Site Trip Distribution		x	x	15%									5%			

12. Glenallan Avenue / Eskine Avenue																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Glenallan Avenue			No Road			Glenallan Avenue			Eskine Avenue			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			1	115	0	0	0	0	0	222	0	0	0	1	339
	PM			1	120	0	1	0	0	0	100	0	0	0	2	224
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	373	404	0	0	0	0	0	0	0	0	0	0	0	0	0
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	230	147	0	0	0	0	0	0	0	0	0	0	0	0	0
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	14	42	0	0	0	0	0	0	0	0	0	0	0	0	0
4010 Randolph Road	AM	30	61	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	51	37	0	0	0	0	0	0	0	0	0	0	0	0	0
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	214	500	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	14	43	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheaton Gateway	AM	188	50	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	57	133	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	897	1,136	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Background Volumes	AM			1	115	0	0	0	0	0	222	0	0	0	1	339
	PM			1	120	0	1	0	0	0	100	0	0	0	2	224
Site Trip Assignments	AM	169	574	26	0	0	0	0	0	0	0	0	0	0	29	55
	PM	363	238	55	0	0	0	0	0	0	0	0	0	0	12	67
Total Future Volumes	AM			27	115	0	0	0	0	0	222	0	0	0	30	394
	PM			56	120	0	1	0	0	0	100	0	0	0	14	291

G-13

13. Randolph Road / Heurich Road																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				English Orchard Court			Randolph Road			Heurich Road			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x					19%						19%		
Glenmont Metrocenter (Residential Use)		x	x					13%						13%		
4010 Randolph Road		x	x					4%						4%		
Kaiser Permanente Aspen Hill		x	x					2%						2%		
Wheaton Gateway		x	x					5%						5%		
Site Trip Distribution																
Site Trip Distribution		x	x					10%						10%		

13. Randolph Road / Heurich Road																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				English Orchard Court			Randolph Road			Heurich Road			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			9	4	16	72	1,930	27	12	2	11	41	1,093	17	3,234
	PM			18	2	14	21	1,268	25	28	3	21	31	1,767	37	3,235
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	0	0	36	0	0	0	0	0	22	0	58
	PM	373	404	0	0	0	0	71	0	0	0	0	0	77	0	148
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	0	0	12	0	0	0	0	0	42	0	54
	PM	230	147	0	0	0	0	30	0	0	0	0	0	19	0	49
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	3	0	0	0	0	0	1	0	4
	PM	14	42	0	0	0	0	1	0	0	0	0	0	2	0	3
4010 Randolph Road	AM	30	61	0	0	0	0	1	0	0	0	0	0	2	0	3
	PM	51	37	0	0	0	0	2	0	0	0	0	0	1	0	3
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	6	0	0	0	0	0	2	0	8
	PM	214	500	0	0	0	0	4	0	0	0	0	0	10	0	14
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	2	0	0	0	0	0	1	0	3
	PM	14	43	0	0	0	0	1	0	0	0	0	0	2	0	3
Wheaton Gateway	AM	188	50	0	0	0	0	9	0	0	0	0	0	3	0	12
	PM	57	133	0	0	0	0	3	0	0	0	0	0	7	0	10
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	0	0	59	0	0	0	0	0	69	0	128
	PM	897	1,136	0	0	0	0	90	0	0	0	0	0	133	0	223
Future Background Volumes	AM			9	4	16	72	1,989	27	12	2	11	41	1,162	17	3,362
	PM			18	2	14	21	1,358	25	28	3	21	31	1,900	37	3,458
Site Trip Assignments	AM	169	574	0	0	0	0	17	0	0	0	0	0	57	0	74
	PM	363	238	0	0	0	0	37	0	0	0	0	0	24	0	61
Total Future Volumes	AM			9	4	16	72	2,006	27	12	2	11	41	1,219	17	3,436
	PM			18	2	14	21	1,395	25	28	3	21	31	1,924	37	3,519

G-14

WITHOUT ACCESS TO RANDOLPH ROAD

01. Randolph Road / Livingston Street																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Livingston Street			Randolph Road			Livingston Street			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x					16%						16%		
Glenmont Metrocenter (Residential Use)		x	x					30%						30%		
4010 Randolph Road		x	x					20%						20%		
Kaiser Permanente Aspen Hill		x	x					2%						2%		
Wheaton Gateway		x	x													
Site Trip Distribution																
Site Trip Distribution		x	x					25%						25%		

01. Randolph Road / Livingston Street																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Livingston Street			Randolph Road			Livingston Street			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			18	21	17	5	1,404	111	42	3	7	7	892	12	2,539
	PM			8	12	4	12	901	79	37	3	14	7	1,479	29	2,585
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	0	0	19	0	0	0	0	0	30	0	49
	PM	373	404	0	0	0	0	65	0	0	0	0	0	60	0	125
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	0	0	96	0	0	0	0	0	29	0	125
	PM	230	147	0	0	0	0	44	0	0	0	0	0	69	0	113
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	16	0	0	0	0	0	5	0	21
	PM	14	42	0	0	0	0	3	0	0	0	0	0	8	0	11
4010 Randolph Road	AM	30	61	0	0	0	0	6	0	0	0	0	0	12	0	18
	PM	51	37	0	0	0	0	10	0	0	0	0	0	7	0	17
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	2	0	0	0	0	0	6	0	8
	PM	214	500	0	0	0	0	10	0	0	0	0	0	4	0	14
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	14	43	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheaton Gateway	AM	188	50	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	57	133	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	0	0	107	0	0	0	0	0	72	0	179
	PM	897	1,136	0	0	0	0	178	0	0	0	0	0	92	0	270
Future Background Volumes	AM			18	21	17	5	1,511	111	42	3	7	7	964	12	2,718
	PM			8	12	4	12	1,079	79	37	3	14	7	1,571	29	2,855
Site Trip Assignments	AM	169	574	0	0	0	0	144	0	0	0	0	0	42	0	186
	PM	363	238	0	0	0	0	59	0	0	0	0	0	91	0	150
Traffic ADJ	AM			0	0	0	0	0	0	0	0	0	0	0	0	0
	PM			0	0	0	0	0	0	0	0	0	0	0	0	0
Total Future Volumes	AM			18	21	17	5	1,655	111	42	3	7	7	1,006	12	2,904
	PM			8	12	4	12	1,138	79	37	3	14	7	1,662	29	3,005

G-16

02. Georgia Avenue / Randolph Road																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Randolph Road			Georgia Avenue			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x	16%	36%						36%				16%	
Glenmont Metrocenter (Residential Use)		x	x	30%	41%						41%				30%	
4010 Randolph Road		x	x	7%			4%				9%					
Kaiser Permanente Aspen Hill		x	x	2%	10%	2%	2%				10%		9%	4%	7%	
Wheaton Gateway		x	x		15%			5%								
Site Trip Distribution																
Site Trip Distribution		x	x			15%		45%			15%	10%			15%	

02. Georgia Avenue / Randolph Road																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Randolph Road			Georgia Avenue			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			112	1,578	55	131	51	733	178	786	152	211	38	174	4,199
	PM			150	994	90	124	59	347	349	1,423	159	145	48	270	4,158
Glenmont Metrocenter (Commercial Use)	AM	189	116	19	42	0	0	0	0	0	68	0	0	0	30	159
	PM	373	404	65	145	0	0	0	0	0	134	0	0	0	60	404
Glenmont Metrocenter (Residential Use)	AM	95	320	96	131	0	0	0	0	0	39	0	0	0	29	295
	PM	230	147	44	60	0	0	0	0	0	94	0	0	0	69	267
4010 Randolph Road (Existing Trip Credit)	AM	82	27	6	0	0	0	1	0	0	0	3	2	1	2	15
	PM	14	42	1	0	0	0	1	0	0	0	1	3	1	3	10
4010 Randolph Road	AM	30	61	2	0	0	0	1	0	0	0	3	5	2	4	17
	PM	51	37	4	0	0	0	2	0	0	0	5	3	1	3	18
Kaiser Permanente Aspen Hill	AM	317	84	2	8	2	6	0	0	0	32	0	0	0	6	56
	PM	214	500	10	50	10	4	0	0	0	21	0	0	0	4	99
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	5	0	0	0	2	1	2	0	0	0	0	10
	PM	14	43	0	2	0	0	0	1	2	6	0	0	0	0	11
Wheaton Gateway	AM	188	50	0	28	0	0	0	9	3	8	0	0	0	0	48
	PM	57	133	0	9	0	0	0	3	7	20	0	0	0	0	39
Subtotal Pipeline Trip Assignments	AM	705	593	113	204	2	6	0	7	2	145	0	3	1	67	550
	PM	897	1,136	174	333	10	4	1	2	5	208	4	0	0	93	834
Future Background Volumes	AM			225	1,782	57	137	51	740	180	931	152	214	39	241	4,749
	PM			324	1,327	100	128	60	349	354	1,631	163	145	48	363	4,992
Site Trip Assignments	AM	169	574	0	0	25	0	0	258	0	86	58	0	25	0	452
	PM	363	238	0	0	54	0	0	107	0	36	23	0	55	0	275
Traffic ADJ	AM			0	0	0	0	0	0	0	0	0	0	0	0	0
	PM			0	0	0	0	0	0	0	0	0	0	0	0	0
Total Future Volumes	AM			225	1,782	82	137	51	998	180	1,017	210	214	64	241	5,201
	PM			324	1,327	154	128	60	456	354	1,667	186	145	103	363	5,267

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03. Randolph Road / Glenmont Circle																					
Component	Period	Inbound	Outbound	Southbound				Westbound				Northbound				Eastbound			Eastbound 2 (Tunnel)		Total
				Shopping Center Driveway				Randolph Road				Glenmont Circle				Randolph Road			Randolph Road (Tunnel)		
				SBR1	SBR2	SBT	SBL	WBR	WBT1	WBT2	WBL	NBR	NBT	NBL1	NBL2	EBR1	EBR2	EBT	E2T2	E2L2	
Pipeline Trip Distribution																					
Glenmont Metrocenter (Commercial Use)		x	x																		
Glenmont Metrocenter (Residential Use)		x	x																		
4010 Randolph Road		x	x					4%										4%			
Kaiser Permanente Aspen Hill		x	x					2%										2%			
Wheaton Gateway		x	x					5%										5%			
Site Trip Distribution																					
Site Trip Distribution		x	x									5%	45%	15%	25%	5%	10%				

03. Randolph Road / Glenmont Circle																					
Component	Period	IN	OUT	Southbound				Westbound				Northbound				Eastbound			Eastbound 2 (Tunnel)		Total
				Shopping Center Driveway				Randolph Road				Glenmont Circle				Randolph Road			Randolph Road (Tunnel)		
				SBR1	SBR2	SBT	SBL	WBR	WBT1	WBT2	WBL	NBR	NBT	NBL1	NBL2	EBR1	EBR2	EBT	E2T2	E2L2	
Existing 2022 Traffic Volumes	AM			42	4	7	42	30	833	1,146	19	17	9	36	20	1	31	239	583	18	3,077
	PM			80	20	26	77	75	403	608	31	12	19	49	11	4	60	421	1,086	34	3,016
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	373	404	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	230	147	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	4
	PM	14	42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3
4010 Randolph Road	AM	30	61	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3
	PM	51	37	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	3
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	0	6	0	0	0	0	0	0	0	0	2	0	0	8
	PM	214	500	0	0	0	0	0	4	0	0	0	0	0	0	0	0	10	0	0	14
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	3
	PM	14	43	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3
Wheaton Gateway	AM	188	50	0	0	0	0	0	9	0	0	0	0	0	0	0	0	3	0	0	12
	PM	57	133	0	0	0	0	0	3	0	0	0	0	0	0	0	0	7	0	0	10
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	0	0	0	11	0	0	0	0	0	0	0	0	5	0	0	16
	PM	897	1,136	0	0	0	0	0	7	0	0	0	0	0	0	0	0	14	0	0	21
Future Background Volumes	AM			42	4	7	42	30	844	1,146	19	17	9	36	20	1	31	244	583	18	3,093
	PM			80	20	26	77	75	410	608	31	12	19	49	11	4	60	435	1,086	34	3,037
Site Trip Assignments	AM	169	574	0	0	0	0	0	0	0	0	29	0	258	86	0	42	8	17	0	423
	PM	363	238	0	0	0	0	0	0	0	0	12	0	107	36	0	91	18	36	0	264
Traffic ADJ	AM			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Future Volumes	AM			42	4	7	42	30	844	1,146	19	46	9	294	106	1	73	252	600	18	3,533
	PM			80	20	26	77	75	410	608	31	24	19	156	47	4	151	453	1,122	34	3,337

04. Randolph Road / Residential Driveway																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				No Road			Randolph Road			Residential Driveway			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x													
Glenmont Metrocenter (Residential Use)		x	x													
4010 Randolph Road		x	x				4%						4%			
Kaiser Permanente Aspen Hill		x	x				2%						2%			
Wheaton Gateway		x	x				5%						5%			
Site Trip Distribution																
Site Trip Distribution		x	x										15%	5%		

04. Randolph Road / Residential Driveway																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				No Road			Randolph Road			Residential Driveway			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			0	0	0	0	2,064	0	32	0	0	2	928	0	3,026
	PM			0	0	0	0	1,155	0	23	0	0	14	1,595	0	2,787
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	373	404	0	0	0	0	0	0	0	0	0	0	0	0	0
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	230	147	0	0	0	0	0	0	0	0	0	0	0	0	0
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	3	0	0	0	0	0	1	0	4
	PM	14	42	0	0	0	0	1	0	0	0	0	0	2	0	3
4010 Randolph Road	AM	30	61	0	0	0	0	1	0	0	0	0	0	2	0	3
	PM	51	37	0	0	0	0	2	0	0	0	0	0	1	0	3
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	6	0	0	0	0	0	2	0	8
	PM	214	500	0	0	0	0	4	0	0	0	0	0	10	0	14
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	2	0	0	0	0	0	1	0	3
	PM	14	43	0	0	0	0	1	0	0	0	0	0	2	0	3
Wheaton Gateway	AM	188	50	0	0	0	0	9	0	0	0	0	0	3	0	12
	PM	57	133	0	0	0	0	3	0	0	0	0	0	7	0	10
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	0	0	11	0	0	0	0	0	5	0	16
	PM	897	1,136	0	0	0	0	7	0	0	0	0	0	14	0	21
Future Background Volumes	AM			0	0	0	0	2,075	0	32	0	0	2	933	0	3,042
	PM			0	0	0	0	1,162	0	23	0	0	14	1,609	0	2,808
Site Trip Assignments	AM	169	574	0	0	0	0	0	0	0	0	0	0	54	0	54
	PM	363	238	0	0	0	0	0	0	0	0	0	0	66	0	66
Traffic ADJ	AM			0	0	0	0	0	0	-32	0	0	-2	2	0	-32
	PM			0	0	0	0	0	0	-23	0	0	-14	14	0	-23
Total Future Volumes	AM			0	0	0	0	2,075	0	0	0	0	0	989	0	3,064
	PM			0	0	0	0	1,162	0	0	0	0	0	1,689	0	2,851

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05. Randolph Road / Glenallan Avenue																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Glenallan Avenue			Randolph Road			Glenallan Avenue			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x			19%	19%									
Glenmont Metrocenter (Residential Use)		x	x			13%	13%									
4010 Randolph Road		x	x				4%						4%			
Kaiser Permanente Aspen Hill		x	x				2%						2%			
Wheaton Gateway		x	x				5%						5%			
Site Trip Distribution																
Site Trip Distribution		x	x		5%		10%			5%	5%		15%	5%		

05. Randolph Road / Glenallan Avenue																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Glenallan Avenue			Randolph Road			Glenallan Avenue			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			86	55	288	198	1,923	2	0	106	55	35	839	33	3,620
	PM			64	25	251	213	1,060	5	5	26	31	30	1,504	76	3,290
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	22	36	0	0	0	0	0	0	0	0	58
	PM	373	404	0	0	77	71	0	0	0	0	0	0	0	0	148
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	42	12	0	0	0	0	0	0	0	0	54
	PM	230	147	0	0	19	30	0	0	0	0	0	0	0	0	49
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	3	0	0	0	0	0	1	0	4
	PM	14	42	0	0	0	0	1	0	0	0	0	0	2	0	3
4010 Randolph Road	AM	30	61	0	0	0	0	1	0	0	0	0	0	2	0	3
	PM	51	37	0	0	0	0	2	0	0	0	0	0	1	0	3
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	6	0	0	0	0	0	2	0	8
	PM	214	500	0	0	0	0	4	0	0	0	0	0	10	0	14
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	2	0	0	0	0	0	1	0	3
	PM	14	43	0	0	0	0	1	0	0	0	0	0	2	0	3
Wheaton Gateway	AM	188	50	0	0	0	0	9	0	0	0	0	0	3	0	12
	PM	57	133	0	0	0	0	3	0	0	0	0	0	7	0	10
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	64	48	11	0	0	0	0	0	5	0	128
	PM	897	1,136	0	0	119	83	7	0	0	0	0	0	14	0	223
Future Background Volumes	AM			86	55	352	246	1,934	2	0	106	55	35	844	33	3,748
	PM			64	25	370	296	1,067	5	5	26	31	30	1,518	76	3,513
Site Trip Assignments	AM	169	574	0	9	0	0	0	17	28	29	0	25	29	0	137
	PM	363	238	0	18	0	0	0	37	12	12	0	54	12	0	145
Traffic ADJ	AM			0	0	0	0	0	0	32	0	0	2	-32	0	2
	PM			0	0	0	0	0	0	23	0	0	14	-23	0	14
Total Future Volumes	AM			86	64	352	246	1,934	19	60	135	55	62	841	33	3,887
	PM			64	43	370	296	1,067	42	40	38	31	98	1,507	76	3,672

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06. Randolph Road / Middlevale Lane / Garden Gate Road																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Middlevale Lane			Randolph Road			Garden Gate Road			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x					19%						19%		
Glenmont Metrocenter (Residential Use)		x	x					13%						13%		
4010 Randolph Road		x	x					4%						4%		
Kaiser Permanente Aspen Hill		x	x					2%						2%		
Wheaton Gateway		x	x					5%						5%		
Site Trip Distribution																
Site Trip Distribution		x	x					10%						10%		

06. Randolph Road / Middlevale Lane / Garden Gate Road																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Middlevale Lane			Randolph Road			Garden Gate Road			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			91	13	173	107	1,996	82	9	10	35	16	1,103	68	3,703
	PM			27	6	111	147	1,245	35	13	7	24	30	1,686	25	3,356
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	0	0	36	0	0	0	0	0	22	0	58
	PM	373	404	0	0	0	0	71	0	0	0	0	0	77	0	148
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	0	0	12	0	0	0	0	0	42	0	54
	PM	230	147	0	0	0	0	30	0	0	0	0	0	19	0	49
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	3	0	0	0	0	0	1	0	4
	PM	14	42	0	0	0	0	1	0	0	0	0	0	2	0	3
4010 Randolph Road	AM	30	61	0	0	0	0	1	0	0	0	0	0	2	0	3
	PM	51	37	0	0	0	0	2	0	0	0	0	0	1	0	3
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	6	0	0	0	0	0	2	0	8
	PM	214	500	0	0	0	0	4	0	0	0	0	0	10	0	14
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	2	0	0	0	0	0	1	0	3
	PM	14	43	0	0	0	0	1	0	0	0	0	0	2	0	3
Wheaton Gateway	AM	188	50	0	0	0	0	9	0	0	0	0	0	3	0	12
	PM	57	133	0	0	0	0	3	0	0	0	0	0	7	0	10
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	0	0	59	0	0	0	0	0	69	0	128
	PM	897	1,136	0	0	0	0	90	0	0	0	0	0	133	0	223
Future Background Volumes	AM			91	13	173	107	2,055	82	9	10	35	16	1,172	68	3,831
	PM			27	6	111	147	1,335	35	13	7	24	30	1,819	25	3,579
Site Trip Assignments	AM	169	574	0	0	0	0	17	0	0	0	0	0	57	0	74
	PM	363	238	0	0	0	0	37	0	0	0	0	0	24	0	61
Traffic ADJ	AM			0	0	0	0	0	0	0	0	0	0	0	0	0
	PM			0	0	0	0	0	0	0	0	0	0	0	0	0
Total Future Volumes	AM			91	13	173	107	2,072	82	9	10	35	16	1,229	68	3,905
	PM			27	6	111	147	1,372	35	13	7	24	30	1,843	25	3,640

G-21

07. Georgia Avenue / Layhill Road																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Layhill Road			Georgia Avenue			Judson Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x	40%			12%			12%	40%					
Glenmont Metrocenter (Residential Use)		x	x	60%			11%			11%	60%					
4010 Randolph Road		x	x	7%						7%						
Kaiser Permanente Aspen Hill		x	x	14%						14%						
Wheaton Gateway		x	x	10%			5%			5%	10%					
Site Trip Distribution																
Site Trip Distribution		x	x	15%						15%						

07. Georgia Avenue / Layhill Road																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Layhill Road			Georgia Avenue			Judson Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			0	951	53	30	0	866	377	686	0	15	7	9	2,994
	PM			0	797	107	48	0	515	638	1,141	1	7	18	13	3,285
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	46	0	0	0	14	23	76	0	0	0	0	159
	PM	373	404	0	162	0	0	0	48	45	149	0	0	0	0	404
Glenmont Metrocenter (Residential Use)	AM	95	320	0	192	0	0	0	35	10	57	0	0	0	0	294
	PM	230	147	0	88	0	0	0	16	25	138	0	0	0	0	267
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	6	0	0	0	0	0	2	0	0	0	0	8
	PM	14	42	0	1	0	0	0	0	0	3	0	0	0	0	4
4010 Randolph Road	AM	30	61	0	2	0	0	0	0	0	4	0	0	0	0	6
	PM	51	37	0	4	0	0	0	0	0	3	0	0	0	0	7
Kaiser Permanente Aspen Hill	AM	317	84	0	12	0	0	0	0	0	44	0	0	0	0	56
	PM	214	500	0	70	0	0	0	0	0	30	0	0	0	0	100
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	3	0	0	0	2	1	1	0	0	0	0	7
	PM	14	43	0	1	0	0	0	1	2	4	0	0	0	0	8
Wheaton Gateway	AM	188	50	0	19	0	0	0	9	3	5	0	0	0	0	36
	PM	57	133	0	6	0	0	0	3	7	13	0	0	0	0	29
Subtotal Pipeline Trip Assignments	AM	705	593	0	262	0	0	0	56	35	183	0	0	0	0	536
	PM	897	1,136	0	432	0	0	0	85	60	245	0	0	0	0	822
Future Background Volumes	AM			0	1,213	53	30	0	922	412	869	0	15	7	9	3,530
	PM			0	1,229	107	48	0	600	698	1,386	1	7	18	13	4,107
Site Trip Assignments	AM	169	574	0	25	0	0	0	0	0	86	0	0	0	0	111
	PM	363	238	0	54	0	0	0	0	0	36	0	0	0	0	90
Traffic ADJ	AM			0	0	0	0	0	0	0	0	0	0	0	0	0
	PM			0	0	0	0	0	0	0	0	0	0	0	0	0
Total Future Volumes	AM			0	1,238	53	30	0	922	412	955	0	15	7	9	3,641
	PM			0	1,283	107	48	0	600	698	1,422	1	7	18	13	4,197

G-22

08. Georgia Avenue / Glenmont Circle																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Glenmont Circle			Georgia Avenue			No Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x	36%						36%						
Glenmont Metrocenter (Residential Use)		x	x	41%						41%						
4010 Randolph Road		x	x	9%						9%						
Kaiser Permanente Aspen Hill		x	x	10%						10%						
Wheaton Gateway		x	x	20%						20%						
Site Trip Distribution																
Site Trip Distribution		x	x	45%			25%			45%						

08. Georgia Avenue / Glenmont Circle																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Glenmont Circle			Georgia Avenue			No Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			0	2,522	0	36	0	0	20	1,081	0	0	0	0	3,659
	PM			0	1,486	0	23	0	0	39	1,905	0	0	0	0	3,453
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	42	0	0	0	0	0	68	0	0	0	0	110
	PM	373	404	0	145	0	0	0	0	0	134	0	0	0	0	279
Glenmont Metrocenter (Residential Use)	AM	95	320	0	131	0	0	0	0	0	39	0	0	0	0	170
	PM	230	147	0	60	0	0	0	0	0	94	0	0	0	0	154
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	2	0	0	0	0	0	7	0	0	0	0	9
	PM	14	42	0	4	0	0	0	0	0	1	0	0	0	0	5
4010 Randolph Road	AM	30	61	0	5	0	0	0	0	0	3	0	0	0	0	8
	PM	51	37	0	3	0	0	0	0	0	5	0	0	0	0	8
Kaiser Permanente Aspen Hill	AM	317	84	0	8	0	0	0	0	0	32	0	0	0	0	40
	PM	214	500	0	50	0	0	0	0	0	21	0	0	0	0	71
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	6	0	0	0	0	0	2	0	0	0	0	8
	PM	14	43	0	3	0	0	0	0	0	9	0	0	0	0	12
Wheaton Gateway	AM	188	50	0	38	0	0	0	0	0	10	0	0	0	0	48
	PM	57	133	0	11	0	0	0	0	0	27	0	0	0	0	38
Subtotal Pipeline Trip Assignments	AM	705	593	0	216	0	0	0	0	0	143	0	0	0	0	359
	PM	897	1,136	0	333	0	0	0	0	0	216	0	0	0	0	549
Future Background Volumes	AM			0	2,738	0	36	0	0	20	1,224	0	0	0	0	4,018
	PM			0	1,819	0	23	0	0	39	2,121	0	0	0	0	4,002
Site Trip Assignments	AM	169	574	0	258	0	144	0	0	76	0	0	0	0	0	478
	PM	363	238	0	107	0	59	0	0	163	0	0	0	0	0	329
Traffic ADJ	AM			0	0	0	0	0	0	0	0	0	0	0	0	0
	PM			0	0	0	0	0	0	0	0	0	0	0	0	0
Total Future Volumes	AM			0	2,996	0	180	0	0	96	1,224	0	0	0	0	4,496
	PM			0	1,926	0	82	0	0	202	2,121	0	0	0	0	4,331

G-23

09. Georgia Avenue / Shorefield Road																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Shorefield Road			Georgia Avenue			Commercial Driveway			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x	36%						36%						
Glenmont Metrocenter (Residential Use)		x	x	41%						41%						
4010 Randolph Road		x	x	9%						9%						
Kaiser Permanente Aspen Hill		x	x	10%						10%						
Wheaton Gateway		x	x	20%						20%						
Site Trip Distribution																
Site Trip Distribution		x	x	45%						45%						

09. Georgia Avenue / Shorefield Road																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Shorefield Road			Georgia Avenue			Commercial Driveway			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			1	2,478	57	56	0	93	21	961	1	4	3	14	3,689
	PM			27	1,341	132	127	3	156	53	1,776	0	7	25	32	3,679
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	42	0	0	0	0	0	68	0	0	0	0	110
	PM	373	404	0	145	0	0	0	0	0	134	0	0	0	0	279
Glenmont Metrocenter (Residential Use)	AM	95	320	0	131	0	0	0	0	0	39	0	0	0	0	170
	PM	230	147	0	60	0	0	0	0	0	94	0	0	0	0	154
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	2	0	0	0	0	0	7	0	0	0	0	9
	PM	14	42	0	4	0	0	0	0	0	1	0	0	0	0	5
4010 Randolph Road	AM	30	61	0	5	0	0	0	0	0	3	0	0	0	0	8
	PM	51	37	0	3	0	0	0	0	0	5	0	0	0	0	8
Kaiser Permanente Aspen Hill	AM	317	84	0	8	0	0	0	0	0	32	0	0	0	0	40
	PM	214	500	0	50	0	0	0	0	0	21	0	0	0	0	71
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	6	0	0	0	0	0	2	0	0	0	0	8
	PM	14	43	0	3	0	0	0	0	0	9	0	0	0	0	12
Wheaton Gateway	AM	188	50	0	38	0	0	0	0	0	10	0	0	0	0	48
	PM	57	133	0	11	0	0	0	0	0	27	0	0	0	0	38
Subtotal Pipeline Trip Assignments	AM	705	593	0	216	0	0	0	0	0	143	0	0	0	0	359
	PM	897	1,136	0	333	0	0	0	0	0	216	0	0	0	0	549
Future Background Volumes	AM			1	2,694	57	56	0	93	21	1,104	1	4	3	14	4,048
	PM			27	1,674	132	127	3	156	53	1,992	0	7	25	32	4,228
Site Trip Assignments	AM	169	574	0	258	0	0	0	0	0	76	0	0	0	0	334
	PM	363	238	0	107	0	0	0	0	0	163	0	0	0	0	270
Traffic ADJ	AM			0	0	0	0	0	0	0	0	0	0	0	0	0
	PM			0	0	0	0	0	0	0	0	0	0	0	0	0
Total Future Volumes	AM			1	2,952	57	56	0	93	21	1,180	1	4	3	14	4,382
	PM			27	1,781	132	127	3	156	53	2,155	0	7	25	32	4,498

G-24

10. Layhill Road / Glenallan Avenue																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Glenallan Avenue			Layhill Road			Glenallan Avenue			Layhill Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x	12%	19%	2%	2%			19%			12%			
Glenmont Metrocenter (Residential Use)		x	x	11%	13%	1%	1%			13%			11%			
4010 Randolph Road		x	x													
Kaiser Permanente Aspen Hill		x	x													
Wheaton Gateway		x	x				5%						5%			
Site Trip Distribution																
Site Trip Distribution		x	x				5%			5%						

10. Layhill Road / Glenallan Avenue																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Glenallan Avenue			Layhill Road			Glenallan Avenue			Layhill Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			47	252	129	262	848	103	49	318	19	28	378	29	2,462
	PM			56	218	178	119	465	78	72	222	28	50	701	71	2,258
Glenmont Metrocenter (Commercial Use)	AM	189	116	14	22	2	4	0	0	0	36	0	0	0	23	101
	PM	373	404	48	77	8	7	0	0	0	71	0	0	0	45	256
Glenmont Metrocenter (Residential Use)	AM	95	320	35	42	3	1	0	0	0	12	0	0	0	10	103
	PM	230	147	16	19	1	2	0	0	0	30	0	0	0	25	93
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	14	42	0	0	0	0	0	0	0	0	0	0	0	0	0
4010 Randolph Road	AM	30	61	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	51	37	0	0	0	0	0	0	0	0	0	0	0	0	0
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	214	500	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	1	0	0	0	0	0	2	0	3
	PM	14	43	0	0	0	0	2	0	0	0	0	0	1	0	3
Wheaton Gateway	AM	188	50	0	0	0	0	3	0	0	0	0	0	9	0	12
	PM	57	133	0	0	0	0	7	0	0	0	0	0	3	0	10
Subtotal Pipeline Trip Assignments	AM	705	593	49	64	5	5	2	0	0	48	0	0	7	33	213
	PM	897	1,136	83	119	11	8	5	0	0	83	0	0	2	55	366
Future Background Volumes	AM			96	316	134	267	850	103	49	366	19	28	385	62	2,675
	PM			139	337	189	127	470	78	72	305	28	50	703	126	2,624
Site Trip Assignments	AM	169	574	0	0	0	0	0	9	29	0	0	0	0	0	38
	PM	363	238	0	0	0	0	0	18	12	0	0	0	0	0	30
Traffic ADJ	AM			0	0	0	0	0	0	0	0	0	0	0	0	0
	PM			0	0	0	0	0	0	0	0	0	0	0	0	0
Total Future Volumes	AM			96	316	134	267	850	112	78	366	19	28	385	62	2,713
	PM			139	337	189	127	470	96	84	305	28	50	703	126	2,654

G-25

11. Georgia Avenue / Arcola Avenue																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Arcola Avenue			Georgia Avenue			Arcola Avenue			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x	36%						36%						
Glenmont Metrocenter (Residential Use)		x	x	41%						41%						
4010 Randolph Road		x	x	9%						9%						
Kaiser Permanente Aspen Hill		x	x	10%						10%						
Wheaton Gateway		x	x	20%						20%						
Site Trip Distribution																
Site Trip Distribution		x	x	45%						45%						

11. Georgia Avenue / Arcola Avenue																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Georgia Avenue			Arcola Avenue			Georgia Avenue			Arcola Avenue			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			19	2,187	374	344	170	145	37	633	30	30	111	33	4,113
	PM			18	1,209	237	392	119	93	67	1,513	53	18	106	50	3,875
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	42	0	0	0	0	0	68	0	0	0	0	110
	PM	373	404	0	145	0	0	0	0	0	134	0	0	0	0	279
Glenmont Metrocenter (Residential Use)	AM	95	320	0	131	0	0	0	0	0	39	0	0	0	0	170
	PM	230	147	0	60	0	0	0	0	0	94	0	0	0	0	154
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	2	0	0	0	0	0	7	0	0	0	0	9
	PM	14	42	0	4	0	0	0	0	0	1	0	0	0	0	5
4010 Randolph Road	AM	30	61	0	5	0	0	0	0	0	3	0	0	0	0	8
	PM	51	37	0	3	0	0	0	0	0	5	0	0	0	0	8
Kaiser Permanente Aspen Hill	AM	317	84	0	8	0	0	0	0	0	32	0	0	0	0	40
	PM	214	500	0	50	0	0	0	0	0	21	0	0	0	0	71
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	6	0	0	0	0	0	2	0	0	0	0	8
	PM	14	43	0	3	0	0	0	0	0	9	0	0	0	0	12
Wheaton Gateway	AM	188	50	0	38	0	0	0	0	0	10	0	0	0	0	48
	PM	57	133	0	11	0	0	0	0	0	27	0	0	0	0	38
Subtotal Pipeline Trip Assignments	AM	705	593	0	216	0	0	0	0	0	143	0	0	0	0	359
	PM	897	1,136	0	333	0	0	0	0	0	216	0	0	0	0	549
Future Background Volumes	AM			19	2,403	374	344	170	145	37	776	30	30	111	33	4,472
	PM			18	1,542	237	392	119	93	67	1,729	53	18	106	50	4,424
Site Trip Assignments	AM	169	574	0	258	0	0	0	0	0	76	0	0	0	0	334
	PM	363	238	0	107	0	0	0	0	0	163	0	0	0	0	270
Traffic ADJ	AM			0	0	0	0	0	0	0	0	0	0	0	0	0
	PM			0	0	0	0	0	0	0	0	0	0	0	0	0
Total Future Volumes	AM			19	2,661	374	344	170	145	37	852	30	30	111	33	4,806
	PM			18	1,649	237	392	119	93	67	1,892	53	18	106	50	4,694

G-26

12. Glenallan Avenue / Eskine Avenue																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				Glenallan Avenue			No Road			Glenallan Avenue			Eskine Avenue			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x													
Glenmont Metrocenter (Residential Use)		x	x													
4010 Randolph Road		x	x													
Kaiser Permanente Aspen Hill		x	x													
Wheaton Gateway		x	x													
Site Trip Distribution																
Site Trip Distribution		x	x	30%									10%			

12. Glenallan Avenue / Eskine Avenue																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Glenallan Avenue			No Road			Glenallan Avenue			Eskine Avenue			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			1	115	0	0	0	0	0	222	0	0	0	1	339
	PM			1	120	0	1	0	0	0	100	0	0	0	2	224
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	373	404	0	0	0	0	0	0	0	0	0	0	0	0	0
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	230	147	0	0	0	0	0	0	0	0	0	0	0	0	0
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	14	42	0	0	0	0	0	0	0	0	0	0	0	0	0
4010 Randolph Road	AM	30	61	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	51	37	0	0	0	0	0	0	0	0	0	0	0	0	0
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	214	500	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	14	43	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheaton Gateway	AM	188	50	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	57	133	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	897	1,136	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Background Volumes	AM			1	115	0	0	0	0	0	222	0	0	0	1	339
	PM			1	120	0	1	0	0	0	100	0	0	0	2	224
Site Trip Assignments	AM	169	574	51	0	0	0	0	0	0	0	0	0	0	57	108
	PM	363	238	109	0	0	0	0	0	0	0	0	0	24	133	
Traffic ADJ	AM			2	0	0	0	0	0	0	0	0	0	0	32	34
	PM			14	0	0	0	0	0	0	0	0	0	23	37	
Total Future Volumes	AM			54	115	0	0	0	0	0	222	0	0	0	90	481
	PM			124	120	0	1	0	0	0	100	0	0	0	49	394

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13. Randolph Road / Heurich Road																
Component	Period	Inbound	Outbound	Southbound			Westbound			Northbound			Eastbound			Total
				English Orchard Court			Randolph Road			Heurich Road			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Trip Distribution																
Glenmont Metrocenter (Commercial Use)		x	x					19%						19%		
Glenmont Metrocenter (Residential Use)		x	x					13%						13%		
4010 Randolph Road		x	x					4%						4%		
Kaiser Permanente Aspen Hill		x	x					2%						2%		
Wheaton Gateway		x	x					5%						5%		
Site Trip Distribution																
Site Trip Distribution		x	x					10%						10%		

13. Randolph Road / Heurich Road																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				English Orchard Court			Randolph Road			Heurich Road			Randolph Road			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing 2022 Traffic Volumes	AM			9	4	16	72	1,930	27	12	2	11	41	1,093	17	3,234
	PM			18	2	14	21	1,268	25	28	3	21	31	1,767	37	3,235
Glenmont Metrocenter (Commercial Use)	AM	189	116	0	0	0	0	36	0	0	0	0	0	22	0	58
	PM	373	404	0	0	0	0	71	0	0	0	0	0	77	0	148
Glenmont Metrocenter (Residential Use)	AM	95	320	0	0	0	0	12	0	0	0	0	0	42	0	54
	PM	230	147	0	0	0	0	30	0	0	0	0	0	19	0	49
4010 Randolph Road (Existing Trip Credit)	AM	82	27	0	0	0	0	3	0	0	0	0	0	1	0	4
	PM	14	42	0	0	0	0	1	0	0	0	0	0	2	0	3
4010 Randolph Road	AM	30	61	0	0	0	0	1	0	0	0	0	0	2	0	3
	PM	51	37	0	0	0	0	2	0	0	0	0	0	1	0	3
Kaiser Permanente Aspen Hill	AM	317	84	0	0	0	0	6	0	0	0	0	0	2	0	8
	PM	214	500	0	0	0	0	4	0	0	0	0	0	10	0	14
Wheaton Gateway (Existing Trip Credit)	AM	32	11	0	0	0	0	2	0	0	0	0	0	1	0	3
	PM	14	43	0	0	0	0	1	0	0	0	0	0	2	0	3
Wheaton Gateway	AM	188	50	0	0	0	0	9	0	0	0	0	0	3	0	12
	PM	57	133	0	0	0	0	3	0	0	0	0	0	7	0	10
Subtotal Pipeline Trip Assignments	AM	705	593	0	0	0	0	59	0	0	0	0	0	69	0	128
	PM	897	1,136	0	0	0	0	90	0	0	0	0	0	133	0	223
Future Background Volumes	AM			9	4	16	72	1,989	27	12	2	11	41	1,162	17	3,362
	PM			18	2	14	21	1,358	25	28	3	21	31	1,900	37	3,458
Site Trip Assignments	AM	169	574	0	0	0	0	17	0	0	0	0	0	57	0	74
	PM	363	238	0	0	0	0	37	0	0	0	0	0	24	0	61
Traffic ADJ	AM			0	0	0	0	0	0	0	0	0	0	0	0	0
	PM			0	0	0	0	0	0	0	0	0	0	0	0	0
Total Future Volumes	AM			9	4	16	72	2,006	27	12	2	11	41	1,219	17	3,436
	PM			18	2	14	21	1,395	25	28	3	21	31	1,924	37	3,519

G-28

APPENDIX H
FUTURE BACKGROUND CONDITIONS CAPACITY ANALYSES

Queues
6: Garden Gate Road/Middlevale Lane & Randolph Road

Background Conditions
AM Peak Hour























Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	73	1277	88	2325	38	21	186	112
v/c Ratio	0.50	0.42	0.31	0.83	0.15	0.06	0.67	0.28
Control Delay	93.4	10.1	11.6	31.1	46.5	29.1	65.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.4	10.1	11.6	31.1	46.5	29.1	65.5	12.5
Queue Length 50th (ft)	0	88	28	696	29	8	163	11
Queue Length 95th (ft)	134	97	49	830	63	32	250	62
Internal Link Dist (ft)		805		1479		200		276
Turn Bay Length (ft)	300		235					
Base Capacity (vph)	253	3030	440	2798	339	478	365	500
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.42	0.20	0.83	0.11	0.04	0.51	0.22
Intersection Summary								

HCM 6th Signalized Intersection Summary

6: Garden Gate Road/Middlevale Lane & Randolph Road

Background Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	1172	16	82	2055	107	35	10	9	173	13	91
Future Volume (veh/h)	68	1172	16	82	2055	107	35	10	9	173	13	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	0.98		0.90	0.95		0.93	0.93		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	1260	17	88	2210	115	38	11	10	186	14	98
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	3129	42	357	2891	149	256	202	184	337	44	308
Arrive On Green	0.10	1.00	1.00	0.03	0.59	0.59	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	5183	70	1781	4941	255	1211	867	788	1294	189	1321
Grp Volume(v), veh/h	73	827	450	88	1515	810	38	0	21	186	0	112
Grp Sat Flow(s),veh/h/ln	1781	1702	1849	1781	1702	1792	1211	0	1655	1294	0	1509
Q Serve(g_s), s	6.0	0.0	0.0	3.0	49.9	51.3	4.0	0.0	1.5	19.6	0.0	9.2
Cycle Q Clear(g_c), s	6.0	0.0	0.0	3.0	49.9	51.3	13.2	0.0	1.5	21.0	0.0	9.2
Prop In Lane	1.00		0.04	1.00		0.14	1.00		0.48	1.00		0.88
Lane Grp Cap(c), veh/h	93	2055	1116	357	1992	1048	256	0	385	337	0	352
V/C Ratio(X)	0.79	0.40	0.40	0.25	0.76	0.77	0.15	0.00	0.05	0.55	0.00	0.32
Avail Cap(c_a), veh/h	255	2055	1116	553	1992	1048	317	0	469	402	0	428
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	66.4	0.0	0.0	11.5	23.3	23.6	53.2	0.0	44.7	52.9	0.0	47.7
Incr Delay (d2), s/veh	17.7	0.6	1.0	0.4	2.8	5.5	0.3	0.0	0.1	1.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.2	0.3	1.2	19.8	22.2	1.3	0.0	0.6	6.5	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.1	0.6	1.0	11.8	26.1	29.1	53.4	0.0	44.8	54.3	0.0	48.2
LnGrp LOS	F	A	A	B	C	C	D	A	D	D	A	D
Approach Vol, veh/h		1350			2413			59				298
Approach Delay, s/veh		5.2			26.6			50.3				52.0
Approach LOS		A			C			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.3	94.3		42.4	10.5	97.0		42.4				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	21.5	66.5		42.5	21.5	66.5		42.5				
Max Q Clear Time (g_c+1), s	8.0	0.0		15.2	5.0	0.0		23.0				
Green Ext Time (p_c), s	0.2	0.0		0.2	0.2	0.0		1.0				
Intersection Summary												
HCM 6th Ctrl Delay				21.8								
HCM 6th LOS				C								

HCM 6th TWSC

8: Georgia Avenue & Glenmont Circle

Background Conditions

AM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑ ↑
Traffic Vol, veh/h	0	36	1224	20	0	2738
Future Vol, veh/h	0	36	1224	20	0	2738
Conflicting Peds, #/hr	0	0	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	40	1375	22	0	3076

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	709	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	323	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	320	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	320
HCM Lane V/C Ratio	-	-	0.126
HCM Control Delay (s)	-	-	17.9
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.4

Queues
9: Georgia Avenue & Commercial Driveway/Shorefield Road





















Background Conditions
AM Peak Hour



Lane Group	EBT	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	22	98	59	1185	60	2837
v/c Ratio	0.12	0.56	0.24	0.34	0.17	0.70
Control Delay	48.2	72.1	14.4	18.4	4.9	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	72.1	14.4	18.4	4.9	8.8
Queue Length 50th (ft)	16	92	0	263	10	374
Queue Length 95th (ft)	43	148	42	394	25	549
Internal Link Dist (ft)	68	646		2085		1312
Turn Bay Length (ft)					290	
Base Capacity (vph)	296	283	363	3502	417	4058
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.35	0.16	0.34	0.14	0.70
Intersection Summary						

HCM 6th Signalized Intersection Summary
9: Georgia Avenue & Commercial Driveway/Shorefield Road

Background Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	3	4	93	0	56	1	1104	21	57	2694	1
Future Volume (veh/h)	14	3	4	93	0	56	1	1104	21	57	2694	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.98		0.97	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	3	4	98	0	59	1	1162	22	60	2836	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	19	16	213	0	193	24	3705	70	453	4226	1
Arrive On Green	0.13	0.13	0.13	0.13	0.00	0.13	1.00	1.00	1.00	0.03	0.80	0.80
Sat Flow, veh/h	404	154	124	1316	0	1539	0	5000	95	1781	5272	2
Grp Volume(v), veh/h	22	0	0	98	0	59	433	360	392	60	1831	1006
Grp Sat Flow(s),veh/h/ln	682	0	0	1316	0	1539	1862	1549	1684	1781	1702	1870
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	0.0	1.1	34.6	34.7
Cycle Q Clear(g_c), s	11.9	0.0	0.0	10.9	0.0	5.2	0.0	0.0	0.0	1.1	34.6	34.7
Prop In Lane	0.68		0.18	1.00		1.00	0.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	126	0	0	213	0	193	1404	1148	1248	453	2729	1499
V/C Ratio(X)	0.18	0.00	0.00	0.46	0.00	0.31	0.31	0.31	0.31	0.13	0.67	0.67
Avail Cap(c_a), veh/h	241	0	0	325	0	318	1404	1148	1248	547	2729	1499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.3	0.0	0.0	62.2	0.0	59.7	0.0	0.0	0.0	3.6	6.4	6.4
Incr Delay (d2), s/veh	0.7	0.0	0.0	3.3	0.0	1.9	0.5	0.7	0.6	0.1	1.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	3.8	0.0	2.2	0.2	0.2	0.2	0.4	11.2	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.9	0.0	0.0	65.5	0.0	61.6	0.5	0.7	0.6	3.7	7.7	8.8
LnGrp LOS	E	A	A	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		22			157			1185			2897	
Approach Delay, s/veh		62.9			64.0			0.6			8.0	
Approach LOS		E			E			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		125.2		24.8	9.1	116.1		24.8				
Change Period (Y+Rc), s		5.0		6.0	4.5	5.0		6.0				
Max Green Setting (Gmax), s		108.0		31.0	12.5	91.0		31.0				
Max Q Clear Time (g_c+I1), s		0.0		13.9	3.1	0.0		12.9				
Green Ext Time (p_c), s		0.0		0.0	0.1	0.0		0.9				
Intersection Summary												
HCM 6th Ctrl Delay				8.3								
HCM 6th LOS				A								

Queues
11: Georgia Avenue & Arcola Avenue

Background Conditions
AM Peak Hour


























Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	151	156	183	370	32	874	402	2604
v/c Ratio	0.23	0.64	0.61	0.41	0.56	0.25	0.35	0.78	0.82
Control Delay	60.6	70.9	56.2	50.2	7.5	20.4	25.3	22.5	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	70.9	56.2	50.2	7.5	20.4	25.3	22.5	19.2
Queue Length 50th (ft)	31	135	126	152	0	9	180	68	755
Queue Length 95th (ft)	66	204	185	216	82	28	281	192	927
Internal Link Dist (ft)		260		916			1249		2085
Turn Bay Length (ft)			180			155		235	
Base Capacity (vph)	202	312	258	527	707	286	2504	624	3174
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.48	0.60	0.35	0.52	0.11	0.35	0.64	0.82

Intersection Summary

HCM 6th Signalized Intersection Summary
11: Georgia Avenue & Arcola Avenue

Background Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	111	30	145	170	344	30	776	37	374	2403	19
Future Volume (veh/h)	33	111	30	145	170	344	30	776	37	374	2403	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	119	32	156	183	370	32	834	40	402	2584	20
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	202	54	269	478	404	149	2413	115	545	3152	24
Arrive On Green	0.14	0.14	0.14	0.08	0.26	0.26	0.02	0.48	0.48	0.29	1.00	1.00
Sat Flow, veh/h	853	1418	381	1781	1870	1581	1781	4991	239	1781	5227	40
Grp Volume(v), veh/h	35	0	151	156	183	370	32	568	306	402	1682	922
Grp Sat Flow(s),veh/h/ln	853	0	1800	1781	1870	1581	1781	1702	1826	1781	1702	1863
Q Serve(g_s), s	5.5	0.0	11.8	11.0	12.1	34.1	1.3	15.5	15.6	18.4	0.0	0.0
Cycle Q Clear(g_c), s	5.5	0.0	11.8	11.0	12.1	34.1	1.3	15.5	15.6	18.4	0.0	0.0
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.13	1.00		0.02
Lane Grp Cap(c), veh/h	169	0	256	269	478	404	149	1646	883	545	2053	1124
V/C Ratio(X)	0.21	0.00	0.59	0.58	0.38	0.92	0.21	0.35	0.35	0.74	0.82	0.82
Avail Cap(c_a), veh/h	193	0	306	269	530	448	343	1646	883	704	2053	1124
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.65	0.65	0.65
Uniform Delay (d), s/veh	57.5	0.0	60.2	48.7	46.1	54.2	18.5	24.0	24.0	12.6	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	4.6	3.1	1.1	24.0	0.7	0.6	1.1	1.9	2.5	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	5.7	5.2	5.8	16.3	0.6	6.4	7.0	5.1	0.7	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	0.0	64.8	51.8	47.1	78.2	19.2	24.6	25.1	14.5	2.5	4.5
LnGrp LOS	E	A	E	D	D	E	B	C	C	B	A	A
Approach Vol, veh/h		186			709			906			3006	
Approach Delay, s/veh		63.6			64.4			24.6			4.7	
Approach LOS		E			E			C			A	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	96.5	17.0	27.9	26.6	78.5		44.9				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.5	5.0	6.0		6.5				
Max Green Setting (Gmax), s	20.0	70.0	12.0	25.5	35.0	55.0		42.5				
Max Q Clear Time (g_c+1), s	3.3	0.0	13.0	13.8	20.4	0.0		36.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	1.2	0.0		2.3				
Intersection Summary												
HCM 6th Ctrl Delay			19.6									
HCM 6th LOS			B									

HCM 6th TWSC

12: Glenallan Avenue & Erskine Avenue

Background Conditions

AM Peak Hour

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations	Y			↑	↑	
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Traffic Vol, veh/h	1	0	0	222	115	1
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Future Vol, veh/h	1	0	0	222	115	1
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Stop	Stop	Free	Free	Free	Free
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RT Channelized	-	None	-	None	-	None
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Storage Length	0	-	-	-	-	-
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Veh in Median Storage, #	0	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	77	77	77	77	77	77
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Heavy Vehicles, %	2	2	2	2	2	2
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Mvmt Flow	1	0	0	288	149	1
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Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	438	150	150	0	-	0
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Stage 1	150	-	-	-	-	-
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Stage 2	288	-	-	-	-	-
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Critical Hdwy	6.42	6.22	4.12	-	-	-
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Critical Hdwy Stg 1	5.42	-	-	-	-	-
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Critical Hdwy Stg 2	5.42	-	-	-	-	-
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Follow-up Hdwy	3.518	3.318	2.218	-	-	-
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Pot Cap-1 Maneuver	576	896	1431	-	-	-
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Stage 1	878	-	-	-	-	-
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Stage 2	761	-	-	-	-	-
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Platoon blocked, %				-	-	-
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Mov Cap-1 Maneuver	576	896	1431	-	-	-
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Mov Cap-2 Maneuver	576	-	-	-	-	-
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Stage 1	878	-	-	-	-	-
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Stage 2	761	-	-	-	-	-
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Approach	EB	NB	SB
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HCM Control Delay, s	11.3	0	0
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HCM LOS	B		
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Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	1431	-	576	-	-
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HCM Lane V/C Ratio	-	-	0.002	-	-
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HCM Control Delay (s)	0	-	11.3	-	-
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HCM Lane LOS	A	-	B	-	-
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HCM 95th %tile Q(veh)	0	-	0	-	-
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Queues

Background Conditions

13: Heurich Road & Randolph Road

AM Peak Hour



























Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	18	1308	29	2240	27	31
v/c Ratio	0.13	0.36	0.09	0.61	0.11	0.13
Control Delay	17.4	16.0	6.6	7.1	29.0	35.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	16.0	6.6	7.2	29.0	35.6
Queue Length 50th (ft)	4	108	3	113	11	16
Queue Length 95th (ft)	m24	300	m8	208	38	45
Internal Link Dist (ft)		1077		805	410	241
Turn Bay Length (ft)	300		300			
Base Capacity (vph)	257	3646	414	3674	374	366
Starvation Cap Reductn	0	0	0	76	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.36	0.07	0.62	0.07	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
13: Heurich Road & Randolph Road

Background Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (veh/h)	17	1162	41	27	1989	72	11	2	12	16	4	9
Future Volume (veh/h)	17	1162	41	27	1989	72	11	2	12	16	4	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.96		0.96	0.96		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	1263	45	29	2162	78	12	2	13	17	4	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	3564	127	386	3592	129	116	28	102	143	38	68
Arrive On Green	0.04	1.00	1.00	0.05	1.00	1.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	5062	180	1781	5060	182	574	198	716	740	265	479
Grp Volume(v), veh/h	18	849	459	29	1452	788	27	0	0	31	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1838	1781	1702	1838	1487	0	0	1485	0	0
Q Serve(g_s), s	0.4	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	0.0	0.7	0.0	0.0	2.1	0.0	0.0	2.4	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.10	0.44		0.48	0.55		0.32
Lane Grp Cap(c), veh/h	199	2397	1294	386	2417	1305	247	0	0	249	0	0
V/C Ratio(X)	0.09	0.35	0.35	0.08	0.60	0.60	0.11	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	364	2397	1294	540	2417	1305	394	0	0	395	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	0.46	0.46	0.46	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	5.5	0.0	0.0	56.1	0.0	0.0	56.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.4	0.7	0.0	0.5	1.0	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.2	0.2	0.2	0.3	0.9	0.0	0.0	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.9	0.4	0.7	5.6	0.5	1.0	56.2	0.0	0.0	56.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		1326			2269			27			31	
Approach Delay, s/veh		0.5			0.7			56.2			56.4	
Approach LOS		A			A			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	113.0		28.9	9.0	112.1		28.9				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	16.5	77.5		36.5	16.5	77.5		36.5				
Max Q Clear Time (g_c+I1), s	2.4	2.0		4.4	2.7	2.0		4.1				
Green Ext Time (p_c), s	0.0	63.2		0.1	0.0	27.7		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				1.5								
HCM 6th LOS				A								

Queues

Background Conditions

6: Garden Gate Road/Middlevale Lane & Randolph Road

PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	1906	36	1528	25	20	114	34
v/c Ratio	0.25	0.53	0.20	0.43	0.14	0.09	0.62	0.14
Control Delay	70.6	10.0	8.2	11.4	54.5	28.8	74.3	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.6	10.0	8.2	11.4	54.5	28.8	74.3	21.2
Queue Length 50th (ft)	27	101	6	220	22	6	109	5
Queue Length 95th (ft)	m54	305	24	380	46	28	155	35
Internal Link Dist (ft)		805		1479		200		276
Turn Bay Length (ft)	300		235					
Base Capacity (vph)	194	3583	299	3537	327	409	331	408
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.53	0.12	0.43	0.08	0.05	0.34	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
6: Garden Gate Road/Middlevale Lane & Randolph Road

Background Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	1819	30	35	1335	147	24	7	13	111	6	27
Future Volume (veh/h)	25	1819	30	35	1335	147	24	7	13	111	6	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	1875	31	36	1376	152	25	7	13	114	6	28
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	39	3758	62	266	3406	376	183	69	128	196	34	157
Arrive On Green	0.04	1.00	1.00	0.03	0.73	0.73	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	5173	85	1781	4664	515	1369	584	1085	1386	286	1336
Grp Volume(v), veh/h	26	1233	673	36	1004	524	25	0	20	114	0	34
Grp Sat Flow(s),veh/h/ln	1781	1702	1854	1781	1702	1775	1369	0	1669	1386	0	1622
Q Serve(g_s), s	2.2	0.0	0.0	0.8	16.9	16.9	2.5	0.0	1.6	12.0	0.0	2.8
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.8	16.9	16.9	5.3	0.0	1.6	13.6	0.0	2.8
Prop In Lane	1.00		0.05	1.00		0.29	1.00		0.65	1.00		0.82
Lane Grp Cap(c), veh/h	39	2473	1347	266	2486	1296	183	0	196	196	0	191
V/C Ratio(X)	0.66	0.50	0.50	0.14	0.40	0.40	0.14	0.00	0.10	0.58	0.00	0.18
Avail Cap(c_a), veh/h	196	2473	1347	415	2486	1296	351	0	400	366	0	389
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	71.1	0.0	0.0	4.7	7.7	7.7	62.1	0.0	59.1	65.2	0.0	59.6
Incr Delay (d2), s/veh	20.9	0.6	1.1	0.2	0.5	0.9	0.3	0.0	0.2	2.7	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.2	0.4	0.3	5.8	6.2	0.9	0.0	0.7	4.4	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.0	0.6	1.1	4.9	8.2	8.7	62.4	0.0	59.3	67.9	0.0	60.1
LnGrp LOS	F	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1932			1564			45				148
Approach Delay, s/veh		2.0			8.3			61.0				66.1
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	116.0		25.1	9.4	115.5		25.1				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	16.5	78.0		36.0	16.5	78.0		36.0				
Max Q Clear Time (g_c+I1), s	4.2	0.0		7.3	2.8	0.0		15.6				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				8.0								
HCM 6th LOS				A								

HCM 6th TWSC

8: Georgia Avenue & Glenmont Circle

Background Conditions

PM Peak Hour

Intersection

Int Delay, s/veh 0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑ ↑
Traffic Vol, veh/h	0	23	2121	39	0	1819
Future Vol, veh/h	0	23	2121	39	0	1819
Conflicting Peds, #/hr	0	0	0	35	35	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	2587	48	0	2218

Major/Minor

	Minor1	Major1	Major2		
Conflicting Flow All	-	1353	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	120	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	116	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach

	WB	NB	SB
HCM Control Delay, s	45.7	0	0
HCM LOS	E		

Minor Lane/Major Mvmt

	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	116
HCM Lane V/C Ratio	-	-	0.242
HCM Control Delay (s)	-	-	45.7
HCM Lane LOS	-	-	E
HCM 95th %tile Q(veh)	-	-	0.9

Queues

9: Georgia Avenue & Commercial Driveway/Shorefield Road

Background Conditions

PM Peak Hour























Lane Group	EBT	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	66	166	132	2130	138	1772
v/c Ratio	0.31	0.74	0.36	0.65	0.70	0.46
Control Delay	52.7	78.2	10.1	21.3	46.5	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.7	78.2	10.1	21.3	46.5	7.9
Queue Length 50th (ft)	54	156	0	335	66	214
Queue Length 95th (ft)	96	228	57	558	#158	300
Internal Link Dist (ft)	68	646		2085		1312
Turn Bay Length (ft)					290	
Base Capacity (vph)	281	293	440	3277	216	3828
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.57	0.30	0.65	0.64	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
9: Georgia Avenue & Commercial Driveway/Shorefield Road

Background Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	25	7	156	3	127	0	1992	53	132	1674	27
Future Volume (veh/h)	32	25	7	156	3	127	0	1992	53	132	1674	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	26	7	162	3	132	0	2075	55	138	1744	28
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	46	9	247	4	318	0	3317	88	241	3718	60
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.00	1.00	1.00	0.04	0.72	0.72
Sat Flow, veh/h	146	219	43	958	18	1526	0	5281	135	1781	5175	83
Grp Volume(v), veh/h	66	0	0	165	0	132	0	1380	750	138	1147	625
Grp Sat Flow(s),veh/h/ln	408	0	0	975	0	1526	0	1702	1844	1781	1702	1854
Q Serve(g_s), s	4.2	0.0	0.0	0.0	0.0	11.2	0.0	0.0	0.0	3.8	21.5	21.5
Cycle Q Clear(g_c), s	29.2	0.0	0.0	25.1	0.0	11.2	0.0	0.0	0.0	3.8	21.5	21.5
Prop In Lane	0.50		0.11	0.98		1.00	0.00		0.07	1.00		0.04
Lane Grp Cap(c), veh/h	121	0	0	251	0	318	0	2209	1196	241	2445	1332
V/C Ratio(X)	0.55	0.00	0.00	0.66	0.00	0.42	0.00	0.62	0.63	0.57	0.47	0.47
Avail Cap(c_a), veh/h	148	0	0	276	0	346	0	2209	1196	319	2445	1332
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.62	0.62	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	0.0	0.0	56.9	0.0	51.5	0.0	0.0	0.0	7.3	9.0	9.0
Incr Delay (d2), s/veh	3.8	0.0	0.0	7.5	0.0	1.8	0.0	0.8	1.6	2.1	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	6.6	0.0	4.5	0.0	0.3	0.5	1.6	7.9	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	0.0	0.0	64.4	0.0	53.3	0.0	0.8	1.6	9.4	9.6	10.2
LnGrp LOS	E	A	A	E	A	D	A	A	A	A	A	B
Approach Vol, veh/h		66			297			2130			1910	
Approach Delay, s/veh		65.1			59.5			1.1			9.8	
Approach LOS		E			E			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		112.8		37.2	10.4	102.3		37.2				
Change Period (Y+Rc), s		5.0		6.0	4.5	5.0		6.0				
Max Green Setting (Gmax), s		105.0		34.0	12.5	88.0		34.0				
Max Q Clear Time (g_c+I1), s		0.0		31.2	5.8	0.0		27.1				
Green Ext Time (p_c), s		0.0		0.0	0.2	0.0		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				9.8								
HCM 6th LOS				A								

Queues
11: Georgia Avenue & Arcola Avenue

Background Conditions
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	133	100	128	422	57	1931	255	1677
v/c Ratio	0.37	0.61	0.40	0.31	0.73	0.28	0.73	0.88	0.53
Control Delay	67.0	71.6	50.0	49.2	21.8	13.9	31.6	79.8	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	71.6	50.0	49.2	21.8	13.9	31.6	79.8	14.0
Queue Length 50th (ft)	50	121	79	104	105	16	535	205	248
Queue Length 95th (ft)	93	186	127	158	227	36	696	313	274
Internal Link Dist (ft)		260		916			1249		2085
Turn Bay Length (ft)			180			155		235	
Base Capacity (vph)	210	314	257	527	653	408	2638	347	3143
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.42	0.39	0.24	0.65	0.14	0.73	0.73	0.53

Intersection Summary

HCM 6th Signalized Intersection Summary
11: Georgia Avenue & Arcola Avenue

Background Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	106	18	93	119	392	53	1729	67	237	1542	18
Future Volume (veh/h)	50	106	18	93	119	392	53	1729	67	237	1542	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	114	19	100	128	422	57	1859	72	255	1658	19
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	297	49	307	525	440	250	2528	98	277	2979	34
Arrive On Green	0.19	0.19	0.19	0.06	0.28	0.28	0.03	0.50	0.50	0.20	1.00	1.00
Sat Flow, veh/h	851	1558	260	1781	1870	1566	1781	5043	195	1781	5204	60
Grp Volume(v), veh/h	54	0	133	100	128	422	57	1254	677	255	1085	592
Grp Sat Flow(s),veh/h/ln	851	0	1818	1781	1870	1566	1781	1702	1834	1781	1702	1859
Q Serve(g_s), s	8.2	0.0	9.6	6.6	7.9	39.8	2.3	43.6	43.8	12.6	0.0	0.0
Cycle Q Clear(g_c), s	8.2	0.0	9.6	6.6	7.9	39.8	2.3	43.6	43.8	12.6	0.0	0.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		0.11	1.00		0.03
Lane Grp Cap(c), veh/h	210	0	346	307	525	440	250	1706	919	277	1949	1064
V/C Ratio(X)	0.26	0.00	0.38	0.33	0.24	0.96	0.23	0.73	0.74	0.92	0.56	0.56
Avail Cap(c_a), veh/h	210	0	346	348	530	444	493	1706	919	393	1949	1064
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	52.5	0.0	53.0	43.9	41.7	53.1	17.0	29.5	29.6	31.7	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	1.5	0.6	0.5	32.9	0.5	2.9	5.2	19.4	1.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	4.6	3.0	3.8	19.7	1.0	18.2	20.3	9.8	0.3	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	0.0	54.5	44.5	42.2	86.0	17.5	32.4	34.8	51.1	1.0	1.9
LnGrp LOS	D	A	D	D	D	F	B	C	C	D	A	A
Approach Vol, veh/h		187			650			1988			1932	
Approach Delay, s/veh		54.3			71.0			32.8			7.9	
Approach LOS		D			E			C			A	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	91.9	13.5	35.1	20.2	81.2		48.6				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.5	5.0	6.0		6.5				
Max Green Setting (Gmax), s	25.0	65.0	12.0	25.5	25.0	65.0		42.5				
Max Q Clear Time (g_c+1), s	4.3	0.0	8.6	11.6	14.6	0.0		41.8				
Green Ext Time (p_c), s	0.1	0.0	0.1	1.1	0.6	0.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				28.7								
HCM 6th LOS				C								

HCM 6th TWSC

12: Glenallan Avenue & Erskine Avenue

Background Conditions

PM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	TT			TT	TT	
Traffic Vol, veh/h	2	0	0	100	120	1
Future Vol, veh/h	2	0	0	100	120	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	0	0	130	156	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	287	157	157	0	-	0
Stage 1	157	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	703	889	1423	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	703	889	1423	-	-	-
Mov Cap-2 Maneuver	703	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	896	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1423	-	703	-	-
HCM Lane V/C Ratio	-	-	0.004	-	-
HCM Control Delay (s)	0	-	10.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Queues
13: Heurich Road & Randolph Road

Background Conditions
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	38	1991	26	1422	54	35
v/c Ratio	0.12	0.49	0.14	0.36	0.36	0.24
Control Delay	1.2	2.1	3.0	2.1	37.2	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.2	2.1	3.0	2.1	37.2	35.5
Queue Length 50th (ft)	0	140	1	32	24	15
Queue Length 95th (ft)	m3	159	4	43	58	44
Internal Link Dist (ft)		1077		805	410	241
Turn Bay Length (ft)	300		300			
Base Capacity (vph)	414	4029	306	3971	375	377
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.49	0.08	0.36	0.14	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
13: Heurich Road & Randolph Road

Background Conditions
PM Peak Hour

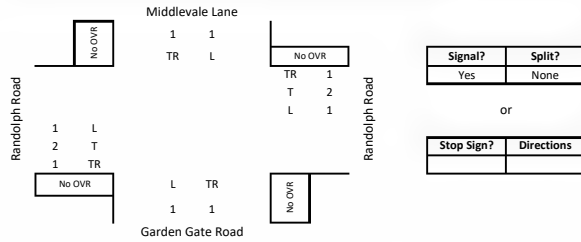
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1900	31	25	1358	21	21	3	28	14	2	18
Future Volume (veh/h)	37	1900	31	25	1358	21	21	3	28	14	2	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	1959	32	26	1400	22	22	3	29	14	2	19
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	3942	64	252	3921	62	75	20	71	75	21	74
Arrive On Green	0.05	1.00	1.00	0.04	1.00	1.00	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1781	5174	84	1781	5178	81	473	234	819	478	240	853
Grp Volume(v), veh/h	38	1288	703	26	920	502	54	0	0	35	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1855	1781	1702	1855	1526	0	0	1571	0	0
Q Serve(g_s), s	0.7	0.0	0.0	0.5	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	0.0	0.0	0.5	0.0	0.0	4.8	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.04	0.41		0.54	0.40		0.54
Lane Grp Cap(c), veh/h	381	2593	1413	252	2578	1405	165	0	0	169	0	0
V/C Ratio(X)	0.10	0.50	0.50	0.10	0.36	0.36	0.33	0.00	0.00	0.21	0.00	0.00
Avail Cap(c_a), veh/h	529	2593	1413	408	2578	1405	398	0	0	401	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.81	0.81	0.81	0.91	0.91	0.91	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.5	0.0	0.0	3.6	0.0	0.0	64.7	0.0	0.0	64.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.6	1.0	0.2	0.4	0.6	1.1	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.4	0.2	0.1	0.3	2.0	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.6	0.6	1.0	3.8	0.4	0.6	65.9	0.0	0.0	64.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		2029			1448			54				35
Approach Delay, s/veh		0.8			0.5			65.9				64.6
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	120.1		20.4	8.8	120.8		20.4				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	16.5	77.5		36.5	16.5	77.5		36.5				
Max Q Clear Time (g_c+1), s	2.7	2.0		4.9	2.5	2.0		6.8				
Green Ext Time (p_c), s	0.0	34.4		0.1	0.0	53.6		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				2.3								
HCM 6th LOS				A								

6
**Critical Lane Volume
and
Level of Service Calculations**

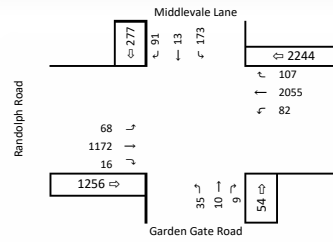
Intersection: **06: Randolph Road / Middlevale Lane / Garden Gate Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Background Conditions**
Computed by: **W+A**



Intersection Lane Use & Traffic Control

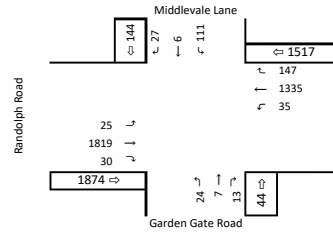


AM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1188	0	0.37	440	82	1.00	82	522	
	L	68	0	1.00	68				150	
WB	TR	2162	0	0.37	800	68	1.00	68	868	*
	L	82	0	1.00	82				150	
NB	TR	19	0	1.00	19	173	1.00	173	192	*
	L	35	0	1.00	35				208	*
SB	TR	104	0	1.00	104	35	1.00	35	139	*
	L	173	0	1.00	173				208	*
Note:									CLV	1284
Congestion Equiv.									v/c	0.803
										1600

PM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1849	0	0.37	684	35	1.00	35	719	*
	L	25	0	1.00	25				60	
WB	TR	1482	0	0.37	548	25	1.00	25	573	
	L	35	0	1.00	35				60	
NB	TR	20	0	1.00	20	111	1.00	111	131	*
	L	24	0	1.00	24				135	*
SB	TR	33	0	1.00	33	24	1.00	24	57	*
	L	111	0	1.00	111				135	*
Note:									CLV	989
Congestion Equiv.									v/c	0.618
										1600

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25

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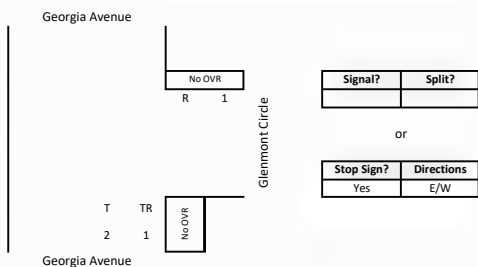
8
Critical Lane Volume
and
Level of Service Calculations

Intersection: 08. Georgia Avenue / Glenmont Circle

Jurisdiction: Montgomery County, MD
Scenario/Design Year: Background Conditions
Computed by: W+A



Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB			0		0	0		0	0	
WB	R	36	0	1.00	36	0		0	36	*
NB	TR	1244	0	0.37	460	0		0	460	*
SB			0		0	0		0	0	
Note:									CLV	496
Congestion Equiv.									v/c	0.276
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB			0		0	0		0	0	
WB	R	23	0	1.00	23	0		0	23	*
NB	TR	2160	0	0.37	799	0		0	799	*
SB			0		0	0		0	0	
Note:									CLV	822
Congestion Equiv.									v/c	0.457
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap		
		AM	PM	LUF	AM	PM	LUF	AM	PM	LUF
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0

Montgomery County LATR

	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1		1	1.00
2		0.53	0.53
3		0.37	0.37
4			0.30
5			0.25

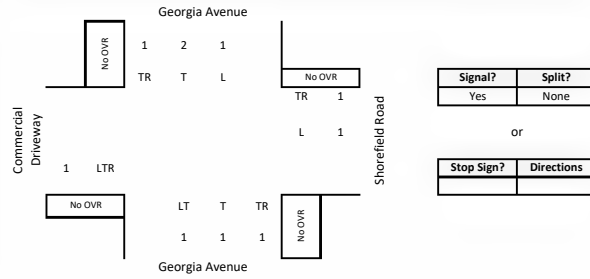
H-22

9
Critical Lane Volume and Level of Service Calculations

Intersection: **09. Georgia Avenue / Shorefield Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Background Conditions**
Computed by: **W+A**



Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LTR	21	0	1.00	21	93	1.00	93	114	*
					0				93	
WB	TR	56	0	1.00	56	14	1.00	14	70	
	L	93	0	1.00	93				107	
NB	LTR	1126	0	0.37	417	57	1.00	57	474	*
					0				57	
SB	TR	2695	0	0.37	997	1	1.00	1	998	*
	L	57	0	1.00	57				58	
Note:									CLV	1112
Congestion Equiv.									v/c	0.695
										1600

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LTR	64	0	1.00	64	156	1.00	156	220	*
					0				156	
WB	TR	130	0	1.00	130	32	1.00	32	162	
	L	156	0	1.00	156				188	
NB	LTR	2045	0	0.37	757	132	1.00	132	889	*
					0				132	
SB	TR	1701	0	0.37	629	0	1.00	0	629	*
	L	132	0	1.00	132				132	
Note:									CLV	1109
Congestion Equiv.									v/c	0.693
										1600

Right Turn Overlap

Approach	Ect. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25

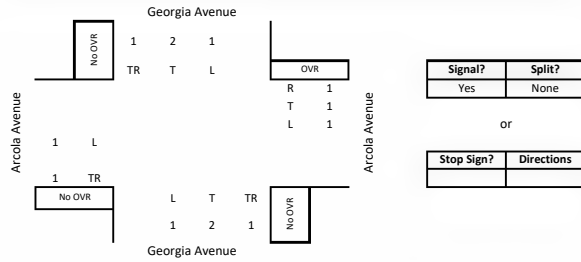
H-23

11
Critical Lane Volume
and
Level of Service Calculations

Intersection: **11. Georgia Avenue / Arcola Avenue**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Background Conditions**
Computed by: **W+A**



Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	141	0	1.00	141	145	1.00	145	286	*
	L	33	0	1.00	33	0	1.00	0	178	
WB	T	170	0	1.00	170	0	1.00	0	203	
	R	344	344	1.00	0	33	1.00	33	33	
NB	TR	813	0	0.37	301	374	1.00	374	675	
	L	30	0	1.00	30	0	1.00	0	404	
SB	TR	2422	0	0.37	896	0	1.00	0	926	*
	L	374	0	1.00	374	0	1.00	0	404	
Note:									CLV	1212
Congestion Equiv.									v/c	0.758
										1600

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	124	0	1.00	124	93	1.00	93	217	
	L	50	0	1.00	50	0	1.00	0	143	
WB	T	119	0	1.00	119	50	1.00	50	169	
	R	392	0	1.00	392	0	1.00	0	442	*
NB	TR	1796	0	0.37	665	237	1.00	237	902	*
	L	53	0	1.00	53	0	1.00	0	290	
SB	TR	1560	0	0.37	577	0	1.00	0	630	
	L	237	0	1.00	237	53	1.00	53	290	
Note:									CLV	1344
Congestion Equiv.									v/c	0.840
										1600

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	Yes	344	392	1.00	374	237	1.00	344	237
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25

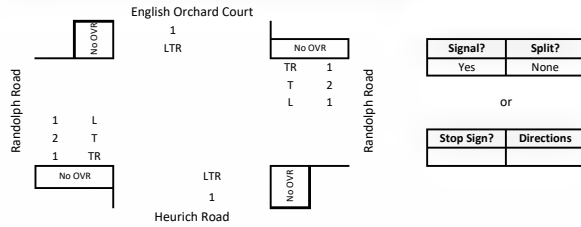
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13
Critical Lane Volume
and
Level of Service Calculations

Intersection: **13: Randolph Road / Heurich Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Background Conditions**
Computed by: **W+A**



Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1203		0.37	445	27	1.00	27	472	
	L	17		1.00	17				44	
WB	TR	2061		0.37	763	17	1.00	17	780	*
	L	27		1.00	27				44	
NB	LTR	25		1.00	25	0	1.00	16	41	*
SB	LTR	29		1.00	29	11	1.00	11	40	
									11	
Note:									CLV	821
Congestion Equiv.									v/c	0.513
									1600	

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1931		0.37	714	25	1.00	25	739	*
	L	37		1.00	37				62	
WB	TR	1379		0.37	510	37	1.00	37	547	*
	L	25		1.00	25				62	
NB	LTR	52		1.00	52	0	1.00	14	66	*
SB	LTR	34		1.00	34	21	1.00	21	55	
									21	
Note:									CLV	805
Congestion Equiv.									v/c	0.503
									1600	

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25

APPENDIX I
TOTAL FUTURE CONDITIONS CAPACITY ANALYSES



Queues
6: Garden Gate Road/Middlevale Lane & Randolph Road






















Total Future Conditions
AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	73	1339	88	2343	38	21	186	112
v/c Ratio	0.50	0.44	0.32	0.84	0.15	0.06	0.67	0.28
Control Delay	94.7	10.8	12.0	31.4	46.5	29.1	65.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.7	10.8	12.0	31.4	46.5	29.1	65.5	12.5
Queue Length 50th (ft)	0	85	28	706	29	8	163	11
Queue Length 95th (ft)	132	79	49	841	63	32	250	62
Internal Link Dist (ft)		805		1479		200		276
Turn Bay Length (ft)	300		235					
Base Capacity (vph)	253	3030	425	2799	339	478	365	500
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.44	0.21	0.84	0.11	0.04	0.51	0.22
Intersection Summary								

HCM 6th Signalized Intersection Summary
6: Garden Gate Road/Middlevale Lane & Randolph Road

Total Future Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	1229	16	82	2072	107	35	10	9	173	13	91
Future Volume (veh/h)	68	1229	16	82	2072	107	35	10	9	173	13	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	0.98		0.90	0.95		0.93	0.93		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	1322	17	88	2228	115	38	11	10	186	14	98
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	3131	40	343	2893	148	256	202	184	337	44	308
Arrive On Green	0.10	1.00	1.00	0.03	0.59	0.59	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	5187	67	1781	4944	253	1211	867	788	1294	189	1321
Grp Volume(v), veh/h	73	867	472	88	1527	816	38	0	21	186	0	112
Grp Sat Flow(s),veh/h/ln	1781	1702	1850	1781	1702	1793	1211	0	1655	1294	0	1509
Q Serve(g_s), s	6.0	0.0	0.0	3.0	50.6	52.0	4.0	0.0	1.5	19.6	0.0	9.2
Cycle Q Clear(g_c), s	6.0	0.0	0.0	3.0	50.6	52.0	13.2	0.0	1.5	21.0	0.0	9.2
Prop In Lane	1.00		0.04	1.00		0.14	1.00		0.48	1.00		0.88
Lane Grp Cap(c), veh/h	93	2055	1117	343	1992	1049	256	0	385	337	0	352
V/C Ratio(X)	0.79	0.42	0.42	0.26	0.77	0.78	0.15	0.00	0.05	0.55	0.00	0.32
Avail Cap(c_a), veh/h	255	2055	1117	539	1992	1049	317	0	469	402	0	428
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	66.4	0.0	0.0	11.5	23.4	23.7	53.2	0.0	44.7	52.9	0.0	47.7
Incr Delay (d2), s/veh	17.5	0.6	1.1	0.4	2.9	5.7	0.3	0.0	0.1	1.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.2	0.3	1.2	20.1	22.6	1.3	0.0	0.6	6.5	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.9	0.6	1.1	11.9	26.3	29.4	53.4	0.0	44.8	54.3	0.0	48.2
LnGrp LOS	F	A	A	B	C	C	D	A	D	D	A	D
Approach Vol, veh/h		1412			2431			59				298
Approach Delay, s/veh		5.1			26.8			50.3				52.0
Approach LOS		A			C			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.3	94.3		42.4	10.5	97.0		42.4				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	21.5	66.5		42.5	21.5	66.5		42.5				
Max Q Clear Time (g_c+1), s	8.0	0.0		15.2	5.0	0.0		23.0				
Green Ext Time (p_c), s	0.2	0.0		0.2	0.2	0.0		1.0				
Intersection Summary												
HCM 6th Ctrl Delay				21.6								
HCM 6th LOS				C								

HCM 6th TWSC

8: Georgia Avenue & Glenmont Circle

Total Future Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑ ↑
Traffic Vol, veh/h	0	180	1224	96	0	2996
Future Vol, veh/h	0	180	1224	96	0	2996
Conflicting Peds, #/hr	0	0	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	202	1375	108	0	3366

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	752	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	303	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	300	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	38.6	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	300
HCM Lane V/C Ratio	-	-	0.674
HCM Control Delay (s)	-	-	38.6
HCM Lane LOS	-	-	E
HCM 95th %tile Q(veh)	-	-	4.5

Queues
9: Georgia Avenue & Commercial Driveway/Shorefield Road





















Total Future Conditions
AM Peak Hour



Lane Group	EBT	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	22	98	59	1265	60	3108
v/c Ratio	0.12	0.56	0.24	0.36	0.18	0.77
Control Delay	50.1	72.1	14.4	20.3	5.0	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	72.1	14.4	20.3	5.0	10.4
Queue Length 50th (ft)	17	92	0	349	10	467
Queue Length 95th (ft)	43	148	42	432	25	682
Internal Link Dist (ft)	68	646		2085		1312
Turn Bay Length (ft)					290	
Base Capacity (vph)	295	283	363	3498	392	4058
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.35	0.16	0.36	0.15	0.77
Intersection Summary						

HCM 6th Signalized Intersection Summary
9: Georgia Avenue & Commercial Driveway/Shorefield Road

Total Future Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	3	4	93	0	56	1	1180	21	57	2952	1
Future Volume (veh/h)	14	3	4	93	0	56	1	1180	21	57	2952	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.98		0.97	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	3	4	98	0	59	1	1242	22	60	3107	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	19	16	213	0	193	24	3709	66	427	4226	1
Arrive On Green	0.13	0.13	0.13	0.13	0.00	0.13	1.00	1.00	1.00	0.03	0.80	0.80
Sat Flow, veh/h	404	154	124	1316	0	1539	0	5006	89	1781	5272	2
Grp Volume(v), veh/h	22	0	0	98	0	59	462	385	419	60	2006	1102
Grp Sat Flow(s),veh/h/ln	682	0	0	1316	0	1539	1860	1549	1685	1781	1702	1870
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	0.0	1.1	42.7	42.7
Cycle Q Clear(g_c), s	11.9	0.0	0.0	10.9	0.0	5.2	0.0	0.0	0.0	1.1	42.7	42.7
Prop In Lane	0.68		0.18	1.00		1.00	0.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	126	0	0	213	0	193	1402	1148	1249	427	2729	1499
V/C Ratio(X)	0.18	0.00	0.00	0.46	0.00	0.31	0.33	0.34	0.34	0.14	0.74	0.74
Avail Cap(c_a), veh/h	241	0	0	325	0	318	1402	1148	1249	521	2729	1499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.3	0.0	0.0	62.2	0.0	59.7	0.0	0.0	0.0	3.6	7.2	7.2
Incr Delay (d2), s/veh	0.7	0.0	0.0	3.3	0.0	1.9	0.6	0.7	0.7	0.1	1.8	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	3.8	0.0	2.2	0.2	0.2	0.2	0.4	13.8	15.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.9	0.0	0.0	65.5	0.0	61.6	0.6	0.7	0.7	3.8	9.0	10.4
LnGrp LOS	E	A	A	E	A	E	A	A	A	A	A	B
Approach Vol, veh/h		22			157			1265			3168	
Approach Delay, s/veh		62.9			64.0			0.6			9.4	
Approach LOS		E			E			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		125.2		24.8	9.1	116.1		24.8				
Change Period (Y+Rc), s		5.0		6.0	4.5	5.0		6.0				
Max Green Setting (Gmax), s		108.0		31.0	12.5	91.0		31.0				
Max Q Clear Time (g_c+1), s		0.0		13.9	3.1	0.0		12.9				
Green Ext Time (p_c), s		0.0		0.0	0.1	0.0		0.9				
Intersection Summary												
HCM 6th Ctrl Delay				9.1								
HCM 6th LOS				A								

Queues
11: Georgia Avenue & Arcola Avenue

Total Future Conditions
AM Peak Hour

























Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	151	156	183	370	32	956	402	2881
v/c Ratio	0.23	0.64	0.61	0.41	0.56	0.26	0.39	0.81	0.91
Control Delay	60.6	70.9	56.2	50.2	7.5	20.6	26.8	27.7	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	70.9	56.2	50.2	7.5	20.6	26.8	27.7	22.3
Queue Length 50th (ft)	31	135	126	152	0	9	211	98	934
Queue Length 95th (ft)	66	204	185	216	82	27	311	249	#1189
Internal Link Dist (ft)		260		916			1249		2085
Turn Bay Length (ft)			180			155		235	
Base Capacity (vph)	202	312	258	527	707	286	2461	600	3174
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.48	0.60	0.35	0.52	0.11	0.39	0.67	0.91

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
11: Georgia Avenue & Arcola Avenue

Total Future Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	111	30	145	170	344	30	852	37	374	2661	19
Future Volume (veh/h)	33	111	30	145	170	344	30	852	37	374	2661	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	119	32	156	183	370	32	916	40	402	2861	20
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	202	54	269	478	404	135	2425	106	521	3155	22
Arrive On Green	0.14	0.14	0.14	0.08	0.26	0.26	0.02	0.48	0.48	0.29	1.00	1.00
Sat Flow, veh/h	853	1418	381	1781	1870	1581	1781	5015	219	1781	5231	36
Grp Volume(v), veh/h	35	0	151	156	183	370	32	621	335	402	1859	1022
Grp Sat Flow(s),veh/h/ln	853	0	1800	1781	1870	1581	1781	1702	1830	1781	1702	1864
Q Serve(g_s), s	5.5	0.0	11.8	11.0	12.1	34.1	1.3	17.3	17.3	18.4	0.0	0.0
Cycle Q Clear(g_c), s	5.5	0.0	11.8	11.0	12.1	34.1	1.3	17.3	17.3	18.4	0.0	0.0
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.12	1.00		0.02
Lane Grp Cap(c), veh/h	169	0	256	269	478	404	135	1646	885	521	2053	1124
V/C Ratio(X)	0.21	0.00	0.59	0.58	0.38	0.92	0.24	0.38	0.38	0.77	0.91	0.91
Avail Cap(c_a), veh/h	193	0	306	269	530	448	329	1646	885	680	2053	1124
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.55	0.55	0.55
Uniform Delay (d), s/veh	57.5	0.0	60.2	48.7	46.1	54.2	18.5	24.5	24.5	13.2	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	4.6	3.1	1.1	24.0	0.9	0.7	1.2	2.3	4.2	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	5.7	5.2	5.8	16.3	0.6	7.1	7.8	5.2	1.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	0.0	64.8	51.8	47.1	78.2	19.4	25.1	25.7	15.5	4.2	7.4
LnGrp LOS	E	A	E	D	D	E	B	C	C	B	A	A
Approach Vol, veh/h		186			709			988			3283	
Approach Delay, s/veh		63.6			64.4			25.1			6.6	
Approach LOS		E			E			C			A	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	96.5	17.0	27.9	26.6	78.5		44.9				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.5	5.0	6.0		6.5				
Max Green Setting (Gmax), s	20.0	70.0	12.0	25.5	35.0	55.0		42.5				
Max Q Clear Time (g_c+1), s	3.3	0.0	13.0	13.8	20.4	0.0		36.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	1.2	0.0		2.3				
Intersection Summary												
HCM 6th Ctrl Delay			20.1									
HCM 6th LOS			C									

HCM 6th TWSC 12: Glenallan Avenue & Erskine Avenue

Total Future Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	30	0	0	222	115	27
Future Vol, veh/h	30	0	0	222	115	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	0	0	288	149	35

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	455	167	184	0	0
Stage 1	167	-	-	-	-
Stage 2	288	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	563	877	1391	-	-
Stage 1	863	-	-	-	-
Stage 2	761	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	563	877	1391	-	-
Mov Cap-2 Maneuver	563	-	-	-	-
Stage 1	863	-	-	-	-
Stage 2	761	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1391	-	563	-	-
HCM Lane V/C Ratio	-	-	0.069	-	-
HCM Control Delay (s)	0	-	11.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Queues
13: Heurich Road & Randolph Road

Total Future Conditions
AM Peak Hour

























Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	18	1370	29	2258	27	31
v/c Ratio	0.13	0.38	0.10	0.61	0.11	0.13
Control Delay	21.1	21.6	6.7	7.2	29.0	35.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	21.6	6.7	7.2	29.0	35.6
Queue Length 50th (ft)	0	264	3	113	11	16
Queue Length 95th (ft)	m24	344	m8	209	38	45
Internal Link Dist (ft)		1077		805	410	241
Turn Bay Length (ft)	300		300			
Base Capacity (vph)	254	3646	397	3674	374	366
Starvation Cap Reductn	0	0	0	76	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.38	0.07	0.63	0.07	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
13: Heurich Road & Randolph Road

Total Future Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	17	1219	41	27	2006	72	11	2	12	16	4	9
Future Volume (veh/h)	17	1219	41	27	2006	72	11	2	12	16	4	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.96		0.96	0.96		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	1325	45	29	2180	78	12	2	13	17	4	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	3571	121	369	3593	128	116	28	102	143	38	68
Arrive On Green	0.04	1.00	1.00	0.05	1.00	1.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	5071	172	1781	5061	180	574	198	716	740	265	479
Grp Volume(v), veh/h	18	889	481	29	1464	794	27	0	0	31	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1839	1781	1702	1838	1487	0	0	1485	0	0
Q Serve(g_s), s	0.4	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	0.0	0.7	0.0	0.0	2.1	0.0	0.0	2.4	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.10	0.44		0.48	0.55		0.32
Lane Grp Cap(c), veh/h	197	2397	1295	369	2417	1305	247	0	0	249	0	0
V/C Ratio(X)	0.09	0.37	0.37	0.08	0.61	0.61	0.11	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	362	2397	1295	523	2417	1305	394	0	0	395	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.45	0.45	0.45	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	5.5	0.0	0.0	56.1	0.0	0.0	56.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.4	0.7	0.0	0.5	1.0	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.3	0.2	0.2	0.3	0.9	0.0	0.0	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.9	0.4	0.7	5.6	0.5	1.0	56.2	0.0	0.0	56.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		1388			2287			27			31	
Approach Delay, s/veh		0.6			0.7			56.2			56.4	
Approach LOS		A			A			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	113.0		28.9	9.0	112.1		28.9				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	16.5	77.5		36.5	16.5	77.5		36.5				
Max Q Clear Time (g_c+I1), s	2.4	2.0		4.4	2.7	2.0		4.1				
Green Ext Time (p_c), s	0.0	63.6		0.1	0.0	30.0		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				1.5								
HCM 6th LOS				A								

Queues
6: Garden Gate Road/Middlevale Lane & Randolph Road

Total Future Conditions
PM Peak Hour




























Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	1931	36	1566	25	20	114	34
v/c Ratio	0.25	0.54	0.20	0.44	0.14	0.09	0.62	0.14
Control Delay	68.4	11.1	8.3	11.5	54.5	28.8	74.3	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	11.1	8.3	11.5	54.5	28.8	74.3	21.2
Queue Length 50th (ft)	26	115	6	229	22	6	109	5
Queue Length 95th (ft)	m54	350	24	393	46	28	155	35
Internal Link Dist (ft)		805		1479		200		276
Turn Bay Length (ft)	300		235					
Base Capacity (vph)	194	3583	296	3537	327	409	331	408
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.54	0.12	0.44	0.08	0.05	0.34	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
6: Garden Gate Road/Middlevale Lane & Randolph Road

Total Future Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	25	1843	30	35	1372	147	24	7	13	111	6	27
Future Volume (veh/h)	25	1843	30	35	1372	147	24	7	13	111	6	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	1900	31	36	1414	152	25	7	13	114	6	28
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	39	3759	61	261	3417	367	183	69	128	196	34	157
Arrive On Green	0.04	1.00	1.00	0.03	0.73	0.73	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	5174	84	1781	4678	503	1369	584	1085	1386	286	1336
Grp Volume(v), veh/h	26	1250	681	36	1029	537	25	0	20	114	0	34
Grp Sat Flow(s),veh/h/ln	1781	1702	1855	1781	1702	1777	1369	0	1669	1386	0	1622
Q Serve(g_s), s	2.2	0.0	0.0	0.8	17.5	17.5	2.5	0.0	1.6	12.0	0.0	2.8
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.8	17.5	17.5	5.3	0.0	1.6	13.6	0.0	2.8
Prop In Lane	1.00		0.05	1.00		0.28	1.00		0.65	1.00		0.82
Lane Grp Cap(c), veh/h	39	2473	1347	261	2486	1298	183	0	196	196	0	191
V/C Ratio(X)	0.66	0.51	0.51	0.14	0.41	0.41	0.14	0.00	0.10	0.58	0.00	0.18
Avail Cap(c_a), veh/h	196	2473	1347	411	2486	1298	351	0	400	366	0	389
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	71.1	0.0	0.0	4.7	7.8	7.8	62.1	0.0	59.1	65.2	0.0	59.6
Incr Delay (d2), s/veh	20.9	0.6	1.2	0.2	0.5	1.0	0.3	0.0	0.2	2.7	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.2	0.4	0.3	6.0	6.4	0.9	0.0	0.7	4.4	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.0	0.6	1.2	4.9	8.3	8.8	62.4	0.0	59.3	67.9	0.0	60.1
LnGrp LOS	F	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1957			1602			45				148
Approach Delay, s/veh		2.0			8.4			61.0				66.1
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	116.0		25.1	9.4	115.5		25.1				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	16.5	78.0		36.0	16.5	78.0		36.0				
Max Q Clear Time (g_c+1), s	4.2	0.0		7.3	2.8	0.0		15.6				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				8.0								
HCM 6th LOS				A								

HCM 6th TWSC

8: Georgia Avenue & Glenmont Circle

Total Future Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑ ↑
Traffic Vol, veh/h	0	82	2121	202	0	1926
Future Vol, veh/h	0	82	2121	202	0	1926
Conflicting Peds, #/hr	0	0	0	35	35	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	100	2587	246	0	2349

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	1452	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	103	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	100	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	168.3	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	100
HCM Lane V/C Ratio	-	-	1
HCM Control Delay (s)	-	-	168.3
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	6.1

Queues
9: Georgia Avenue & Commercial Driveway/Shorefield Road

Total Future Conditions
PM Peak Hour























Lane Group	EBT	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	66	166	132	2300	138	1883
v/c Ratio	0.31	0.74	0.36	0.70	0.75	0.49
Control Delay	52.7	78.2	10.1	23.2	59.4	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.7	78.2	10.1	23.2	59.4	8.2
Queue Length 50th (ft)	54	156	0	402	81	236
Queue Length 95th (ft)	96	228	57	598	#184	329
Internal Link Dist (ft)	68	646		2085		1312
Turn Bay Length (ft)					290	
Base Capacity (vph)	281	293	440	3278	203	3827
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.57	0.30	0.70	0.68	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
9: Georgia Avenue & Commercial Driveway/Shorefield Road

Total Future Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	25	7	156	3	127	0	2155	53	132	1781	27
Future Volume (veh/h)	32	25	7	156	3	127	0	2155	53	132	1781	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	26	7	162	3	132	0	2245	55	138	1855	28
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	46	9	247	4	318	0	3325	81	222	3722	56
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.00	1.00	1.00	0.04	0.72	0.72
Sat Flow, veh/h	146	219	43	958	18	1526	0	5293	125	1781	5181	78
Grp Volume(v), veh/h	66	0	0	165	0	132	0	1489	811	138	1218	665
Grp Sat Flow(s),veh/h/ln	408	0	0	975	0	1526	0	1702	1846	1781	1702	1855
Q Serve(g_s), s	4.2	0.0	0.0	0.0	0.0	11.2	0.0	0.0	0.0	3.8	23.6	23.6
Cycle Q Clear(g_c), s	29.2	0.0	0.0	25.1	0.0	11.2	0.0	0.0	0.0	3.8	23.6	23.6
Prop In Lane	0.50		0.11	0.98		1.00	0.00		0.07	1.00		0.04
Lane Grp Cap(c), veh/h	121	0	0	251	0	318	0	2209	1198	222	2445	1333
V/C Ratio(X)	0.55	0.00	0.00	0.66	0.00	0.42	0.00	0.67	0.68	0.62	0.50	0.50
Avail Cap(c_a), veh/h	148	0	0	276	0	346	0	2209	1198	300	2445	1333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.54	0.54	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	0.0	0.0	56.9	0.0	51.5	0.0	0.0	0.0	7.3	9.3	9.3
Incr Delay (d2), s/veh	3.8	0.0	0.0	7.5	0.0	1.8	0.0	0.9	1.7	2.8	0.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	6.6	0.0	4.5	0.0	0.3	0.6	1.6	8.6	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	0.0	0.0	64.4	0.0	53.3	0.0	0.9	1.7	10.1	10.0	10.6
LnGrp LOS	E	A	A	E	A	D	A	A	A	B	A	B
Approach Vol, veh/h		66			297			2300			2021	
Approach Delay, s/veh		65.1			59.5			1.2			10.2	
Approach LOS		E			E			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		112.8		37.2	10.4	102.3		37.2				
Change Period (Y+Rc), s		5.0		6.0	4.5	5.0		6.0				
Max Green Setting (Gmax), s		105.0		34.0	12.5	88.0		34.0				
Max Q Clear Time (g_c+1), s		0.0		31.2	5.8	0.0		27.1				
Green Ext Time (p_c), s		0.0		0.0	0.2	0.0		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				9.7								
HCM 6th LOS				A								

Queues
11: Georgia Avenue & Arcola Avenue

Total Future Conditions
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	133	100	128	422	57	2106	255	1792
v/c Ratio	0.37	0.61	0.40	0.31	0.73	0.31	0.80	0.88	0.57
Control Delay	67.0	71.6	50.0	49.2	22.0	15.0	33.8	79.6	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	71.6	50.0	49.2	22.0	15.0	33.8	79.6	14.3
Queue Length 50th (ft)	50	121	79	104	106	16	619	207	269
Queue Length 95th (ft)	93	186	127	158	228	36	#840	314	293
Internal Link Dist (ft)		260		916			1249		2085
Turn Bay Length (ft)			180			155		235	
Base Capacity (vph)	210	314	257	527	652	390	2641	347	3143
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.42	0.39	0.24	0.65	0.15	0.80	0.73	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
11: Georgia Avenue & Arcola Avenue

Total Future Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	106	18	93	119	392	53	1892	67	237	1649	18
Future Volume (veh/h)	50	106	18	93	119	392	53	1892	67	237	1649	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	114	19	100	128	422	57	2034	72	255	1773	19
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	297	49	307	525	440	231	2483	88	276	2981	32
Arrive On Green	0.19	0.19	0.19	0.06	0.28	0.28	0.03	0.49	0.49	0.22	1.00	1.00
Sat Flow, veh/h	851	1558	260	1781	1870	1566	1781	5062	179	1781	5208	56
Grp Volume(v), veh/h	54	0	133	100	128	422	57	1366	740	255	1159	633
Grp Sat Flow(s),veh/h/ln	851	0	1818	1781	1870	1566	1781	1702	1837	1781	1702	1860
Q Serve(g_s), s	8.2	0.0	9.6	6.6	7.9	39.8	2.4	51.2	51.5	14.3	0.0	0.0
Cycle Q Clear(g_c), s	8.2	0.0	9.6	6.6	7.9	39.8	2.4	51.2	51.5	14.3	0.0	0.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		0.10	1.00		0.03
Lane Grp Cap(c), veh/h	210	0	346	307	525	440	231	1669	901	276	1949	1065
V/C Ratio(X)	0.26	0.00	0.38	0.33	0.24	0.96	0.25	0.82	0.82	0.92	0.59	0.59
Avail Cap(c_a), veh/h	210	0	346	348	530	444	474	1669	901	373	1949	1065
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	52.5	0.0	53.0	43.9	41.7	53.1	17.8	32.5	32.6	36.5	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	1.5	0.6	0.5	32.9	0.5	4.6	8.3	21.0	1.2	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	4.6	3.0	3.8	19.7	1.0	21.7	24.5	9.8	0.3	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	0.0	54.5	44.5	42.2	86.0	18.4	37.1	40.9	57.5	1.2	2.1
LnGrp LOS	D	A	D	D	D	F	B	D	D	E	A	A
Approach Vol, veh/h		187			650			2163			2047	
Approach Delay, s/veh		54.3			71.0			37.9			8.5	
Approach LOS		D			E			D			A	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	91.9	13.5	35.1	21.8	79.6		48.6				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.5	5.0	6.0		6.5				
Max Green Setting (Gmax), s	25.0	65.0	12.0	25.5	25.0	65.0		42.5				
Max Q Clear Time (g_c+1), s	4.4	0.0	8.6	11.6	16.3	0.0		41.8				
Green Ext Time (p_c), s	0.1	0.0	0.1	1.1	0.5	0.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			30.8									
HCM 6th LOS			C									

HCM 6th TWSC 12: Glenallan Avenue & Erskine Avenue

Total Future Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	14	0	0	100	120	56
Future Vol, veh/h	14	0	0	100	120	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	0	0	130	156	73







Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	323	193	229	0	0
Stage 1	193	-	-	-	-
Stage 2	130	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	671	849	1339	-	-
Stage 1	840	-	-	-	-
Stage 2	896	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	671	849	1339	-	-
Mov Cap-2 Maneuver	671	-	-	-	-
Stage 1	840	-	-	-	-
Stage 2	896	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1339	-	671	-	-
HCM Lane V/C Ratio	-	-	0.027	-	-
HCM Control Delay (s)	0	-	10.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Queues
13: Heurich Road & Randolph Road

Total Future Conditions
PM Peak Hour

						
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	38	2016	26	1460	54	35
v/c Ratio	0.13	0.50	0.14	0.37	0.36	0.24
Control Delay	1.2	2.3	3.2	2.1	37.2	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.2	2.3	3.2	2.1	37.2	35.5
Queue Length 50th (ft)	1	122	1	33	24	15
Queue Length 95th (ft)	m2	152	m4	43	58	44
Internal Link Dist (ft)		1077		805	410	241
Turn Bay Length (ft)	300		300			
Base Capacity (vph)	405	4029	302	3971	375	377
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.50	0.09	0.37	0.14	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
13: Heurich Road & Randolph Road

Total Future Conditions
PM Peak Hour

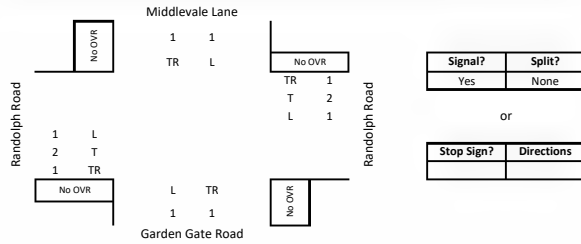
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1924	31	25	1395	21	21	3	28	14	2	18
Future Volume (veh/h)	37	1924	31	25	1395	21	21	3	28	14	2	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	1984	32	26	1438	22	22	3	29	14	2	19
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	3943	64	248	3923	60	75	20	71	75	21	74
Arrive On Green	0.05	1.00	1.00	0.04	1.00	1.00	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1781	5176	83	1781	5181	79	473	234	819	478	240	853
Grp Volume(v), veh/h	38	1304	712	26	945	515	54	0	0	35	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1855	1781	1702	1856	1526	0	0	1571	0	0
Q Serve(g_s), s	0.7	0.0	0.0	0.5	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	0.0	0.0	0.5	0.0	0.0	4.8	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.04	0.41		0.54	0.40		0.54
Lane Grp Cap(c), veh/h	370	2593	1413	248	2578	1405	165	0	0	169	0	0
V/C Ratio(X)	0.10	0.50	0.50	0.10	0.37	0.37	0.33	0.00	0.00	0.21	0.00	0.00
Avail Cap(c_a), veh/h	519	2593	1413	404	2578	1405	398	0	0	401	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.73	0.90	0.90	0.90	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.5	0.0	0.0	3.6	0.0	0.0	64.7	0.0	0.0	64.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.9	0.2	0.4	0.7	1.1	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.4	0.2	0.1	0.3	2.0	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.6	0.5	0.9	3.8	0.4	0.7	65.9	0.0	0.0	64.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		2054			1486			54				35
Approach Delay, s/veh		0.7			0.5			65.9				64.6
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	120.1		20.4	8.8	120.8		20.4				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	16.5	77.5		36.5	16.5	77.5		36.5				
Max Q Clear Time (g_c+1), s	2.7	2.0		4.9	2.5	2.0		6.8				
Green Ext Time (p_c), s	0.0	35.9		0.1	0.0	54.5		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				2.2								
HCM 6th LOS				A								



6
Critical Lane Volume and Level of Service Calculations

Intersection: **06: Randolph Road / Middlevale Lane / Garden Gate Road**
 Jurisdiction: **Montgomery County, MD**
 Scenario/Design Year: **Total Future Conditions**
 Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1245		0.37	461	82	1.00	82	543	
	L	68	0	1.00	68				150	
WB	TR	2179		0.37	806	68	1.00	68	874	*
	L	82	0	1.00	82				150	
NB	TR	19		1.00	19	173	1.00	173	192	*
	L	35	0	1.00	35				208	*
SB	TR	104		1.00	104	35	1.00	35	139	*
	L	173	0	1.00	173				208	*
Note:								CLV	1290	
Congestion Equiv.								v/c	0.806	
									1600	

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1873		0.37	693	35	1.00	35	728	*
	L	25	0	1.00	25				60	
WB	TR	1519		0.37	562	25	1.00	25	587	*
	L	35	0	1.00	35				60	
NB	TR	20		1.00	20	111	1.00	111	131	*
	L	24	0	1.00	24				135	*
SB	TR	33		1.00	33	24	1.00	24	57	*
	L	111	0	1.00	111				135	*
Note:								CLV	998	
Congestion Equiv.								v/c	0.624	
									1600	

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

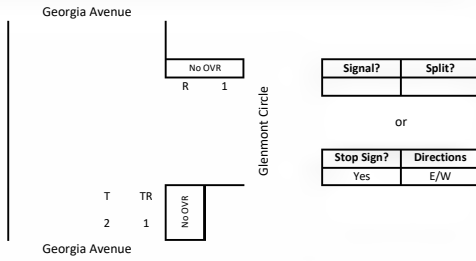
	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1		1	1.00
2		0.53	0.53
3		0.37	0.37
4			0.30
5			0.25

8
Critical Lane Volume
and
Level of Service Calculations

Intersection: **08. Georgia Avenue / Glenmont Circle**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Total Future Conditions**
Computed by: **W+A**



Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB			0		0	0		0	0	
WB	R	180	0	1.00	180	0		0	180	*
NB	TR	1320	0	0.37	488	0		0	488	*
SB			0		0	0		0	0	
Note:									CLV	668
Congestion Equiv.									v/c	0.371
										1800

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB			0		0	0		0	0	
WB	R	82	0	1.00	82	0		0	82	*
NB	TR	2323	0	0.37	860	0		0	860	*
SB			0		0	0		0	0	
Note:									CLV	942
Congestion Equiv.									v/c	0.523
										1800

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap		
		AM	PM	LUF	AM	PM	LUF	AM	PM	
Eastbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Westbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Northbound	No	n/a	n/a		n/a	n/a		n/a	0	0
Southbound	No	n/a	n/a		n/a	n/a		n/a	0	0

Montgomery County LATR

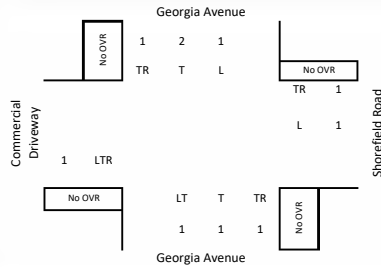
	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1		1	1.00
2		0.53	0.53
3		0.37	0.37
4			0.30
5			0.25



9
Critical Lane Volume and Level of Service Calculations

Intersection: **09. Georgia Avenue / Shorefield Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Total Future Conditions**
Computed by: **W+A**

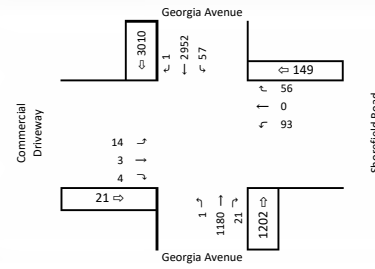
Intersection Lane Use & Traffic Control



Signal?	Split?
Yes	None

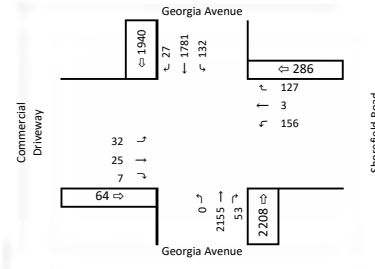
Stop Sign?	Directions

AM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LTR	21	0	1.00	21	93	1.00	93	114	*
	L	0			0				93	
WB	TR	56	0	1.00	56	14	1.00	14	70	
	L	93	0	1.00	93				107	
NB	LTR	1202	0	0.37	445	57	1.00	57	502	
	L	0			0				57	
SB	TR	2953	0	0.37	1093	1	1.00	1	1094	*
	L	57	0	1.00	57				58	
Note: Congestion Equiv. 1600									CLV v/c	1208 / 0.755

PM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LTR	64	0	1.00	64	156	1.00	156	220	*
	L	0			0				156	
WB	TR	130	0	1.00	130	32	1.00	32	162	
	L	156	0	1.00	156				188	
NB	LTR	2208	0	0.37	817	132	1.00	132	949	*
	L	0			0				132	
SB	TR	1808	0	0.37	669	0	1.00	0	669	
	L	132	0	1.00	132				132	
Note: Congestion Equiv. 1600									CLV v/c	1169 / 0.731

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25

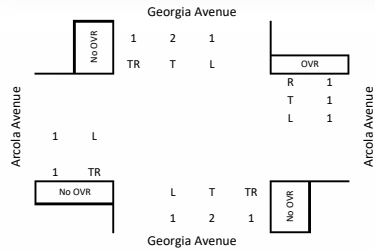
I-23



11
Critical Lane Volume
and
Level of Service Calculations

Intersection: **11. Georgia Avenue / Arcola Avenue**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Total Future Conditions**
Computed by: **W+A**

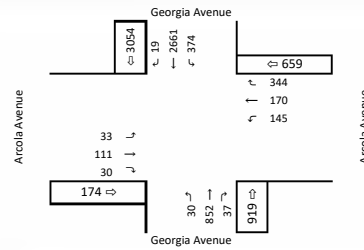
Intersection Lane Use & Traffic Control



Signal?	Split?
Yes	None

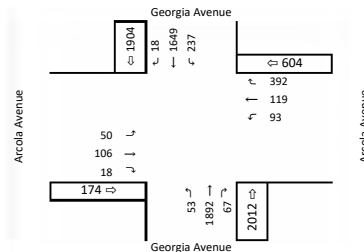
Stop Sign?	Directions

AM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	141		1.00	141	145	1.00	145	286	*
	L	33	0	1.00	33				178	
WB	T	170		1.00	170	33	1.00	33	203	
	R	344	344	1.00	0				33	
NB	TR	889		0.37	329	374	1.00	374	703	
	L	30	0	1.00	30				404	
SB	TR	2680		0.37	992	30	1.00	30	1022	*
	L	374	0	1.00	374				404	
Note:									CLV	1308
Congestion Equiv.									v/c	0.818
										1600

PM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	124		1.00	124	93	1.00	93	217	
	L	50	0	1.00	50				143	
WB	T	119		1.00	119	50	1.00	50	169	*
	R	392	0	1.00	392				442	
NB	TR	1959		0.37	725	237	1.00	237	962	*
	L	53	0	1.00	53				290	
SB	TR	1667		0.37	617	53	1.00	53	670	
	L	237	0	1.00	237				290	
Note:									CLV	1404
Congestion Equiv.									v/c	0.878
										1600

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	Yes	344	392	1.00	374	237	1.00	344	237
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

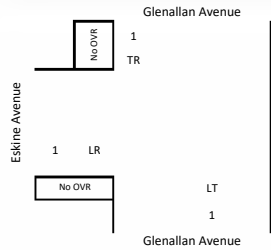
	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1	1	1.00	1.00
2	0.53	0.53	
3	0.37	0.37	
4		0.30	
5		0.25	



12
Critical Lane Volume
and
Level of Service Calculations

Intersection: **12. Glenallan Avenue / Eskine Avenue**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Total Future Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control

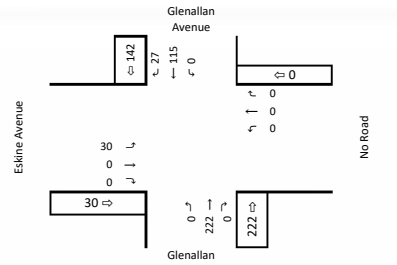


Signal?	Split?

or

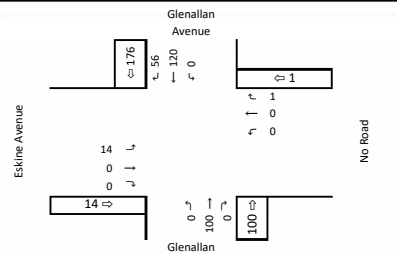
Stop Sign?	Directions
Yes	E/W

AM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LR	30		1.00	30			0	30	*
WB					0			0	0	
NB	LT	222		1.00	222			0	222	*
SB	TR	142		1.00	142	0	1.00	0	142	
Note:									CLV	252
Congestion Equiv.									v/c	0.158
										1600

PM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LR	14		1.00	14			0	14	*
WB					0			0	0	
NB	LT	100		1.00	100			0	100	
SB	TR	176		1.00	176	0	1.00	0	176	*
Note:									CLV	190
Congestion Equiv.									v/c	0.119
										1600

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1	1	1.00	
2	0.53	0.53	
3	0.37	0.37	
4		0.30	
5		0.25	

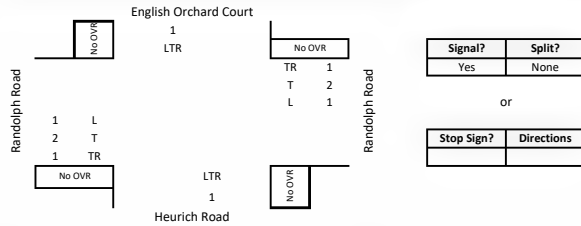
I-25



13
Critical Lane Volume
and
Level of Service Calculations

Intersection: **13: Randolph Road / Heurich Road**
Jurisdiction: **Montgomery County, MD**
Scenario/Design Year: **Total Future Conditions**
Computed by: **W+A**

Intersection Lane Use & Traffic Control



AM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1260		0.37	466	27	1.00	27	493	
	L	17		1.00	17				44	
WB	TR	2078		0.37	769	17	1.00	17	786	*
	L	27		1.00	27				44	
NB	LTR	25		1.00	25	16	1.00	16	41	*
SB	LTR	29		1.00	0	11	1.00	11	40	
					29	11	1.00	11	11	
Note:									CLV v/c	827 / 0.517
Congestion Equiv.									1600	

PM Peak Hour Critical Lane Volume Analysis

Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	TR	1955		0.37	723	25	1.00	25	748	*
	L	37		1.00	37				62	
WB	TR	1416		0.37	524	37	1.00	37	561	
	L	25		1.00	25				62	
NB	LTR	52		1.00	52	14	1.00	14	66	*
SB	LTR	34		1.00	0	21	1.00	21	55	
					34	21	1.00	21	21	
Note:									CLV v/c	814 / 0.509
Congestion Equiv.									1600	

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

Number of Lanes	Lane Use Factors	
	Left Turn LUF	Through LUF
1	1	1.00
2	0.53	0.53
3	0.37	0.37
4		0.30
5		0.25

92-1

Queues
6: Garden Gate Road/Middlevale Lane & Randolph Road






















Total Future Conditions (ADJ)
AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	73	1339	88	2343	38	21	186	112
v/c Ratio	0.50	0.44	0.32	0.84	0.15	0.06	0.67	0.28
Control Delay	95.0	10.5	12.0	31.4	46.5	29.1	65.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.0	10.5	12.0	31.4	46.5	29.1	65.5	12.5
Queue Length 50th (ft)	0	62	28	706	29	8	163	11
Queue Length 95th (ft)	132	80	49	841	63	32	250	62
Internal Link Dist (ft)		805		1479		200		276
Turn Bay Length (ft)	300		235					
Base Capacity (vph)	253	3030	425	2799	339	478	365	500
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.44	0.21	0.84	0.11	0.04	0.51	0.22
Intersection Summary								

HCM 6th Signalized Intersection Summary
6: Garden Gate Road/Middlevale Lane & Randolph Road

Total Future Conditions (ADJ)
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	1229	16	82	2072	107	35	10	9	173	13	91
Future Volume (veh/h)	68	1229	16	82	2072	107	35	10	9	173	13	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	0.98		0.90	0.95		0.93	0.93		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	1322	17	88	2228	115	38	11	10	186	14	98
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	3131	40	343	2893	148	256	202	184	337	44	308
Arrive On Green	0.10	1.00	1.00	0.03	0.59	0.59	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	5187	67	1781	4944	253	1211	867	788	1294	189	1321
Grp Volume(v), veh/h	73	867	472	88	1527	816	38	0	21	186	0	112
Grp Sat Flow(s),veh/h/ln	1781	1702	1850	1781	1702	1793	1211	0	1655	1294	0	1509
Q Serve(g_s), s	6.0	0.0	0.0	3.0	50.6	52.0	4.0	0.0	1.5	19.6	0.0	9.2
Cycle Q Clear(g_c), s	6.0	0.0	0.0	3.0	50.6	52.0	13.2	0.0	1.5	21.0	0.0	9.2
Prop In Lane	1.00		0.04	1.00		0.14	1.00		0.48	1.00		0.88
Lane Grp Cap(c), veh/h	93	2055	1117	343	1992	1049	256	0	385	337	0	352
V/C Ratio(X)	0.79	0.42	0.42	0.26	0.77	0.78	0.15	0.00	0.05	0.55	0.00	0.32
Avail Cap(c_a), veh/h	255	2055	1117	539	1992	1049	317	0	469	402	0	428
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	66.4	0.0	0.0	11.5	23.4	23.7	53.2	0.0	44.7	52.9	0.0	47.7
Incr Delay (d2), s/veh	17.5	0.6	1.1	0.4	2.9	5.7	0.3	0.0	0.1	1.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.2	0.3	1.2	20.1	22.6	1.3	0.0	0.6	6.5	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.9	0.6	1.1	11.9	26.3	29.4	53.4	0.0	44.8	54.3	0.0	48.2
LnGrp LOS	F	A	A	B	C	C	D	A	D	D	A	D
Approach Vol, veh/h		1412			2431			59				298
Approach Delay, s/veh		5.1			26.8			50.3				52.0
Approach LOS		A			C			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.3	94.3		42.4	10.5	97.0		42.4				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	21.5	66.5		42.5	21.5	66.5		42.5				
Max Q Clear Time (g_c+1), s	8.0	0.0		15.2	5.0	0.0		23.0				
Green Ext Time (p_c), s	0.2	0.0		0.2	0.2	0.0		1.0				
Intersection Summary												
HCM 6th Ctrl Delay				21.6								
HCM 6th LOS				C								

HCM 6th TWSC

12: Glenallan Avenue & Erskine Avenue

Total Future Conditions (ADJ)

AM Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	90	0	0	222	115	54
Future Vol, veh/h	90	0	0	222	115	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	0	0	288	149	70

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	472	184	219	0	0
Stage 1	184	-	-	-	-
Stage 2	288	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	551	858	1350	-	-
Stage 1	848	-	-	-	-
Stage 2	761	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	551	858	1350	-	-
Mov Cap-2 Maneuver	551	-	-	-	-
Stage 1	848	-	-	-	-
Stage 2	761	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1350	-	551	-	-
HCM Lane V/C Ratio	-	-	0.212	-	-
HCM Control Delay (s)	0	-	13.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

Queues

Total Future Conditions (ADJ)

13: Heurich Road & Randolph Road

AM Peak Hour
























Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	18	1370	29	2258	27	31
v/c Ratio	0.13	0.38	0.10	0.61	0.11	0.13
Control Delay	20.6	21.2	6.7	7.2	29.0	35.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	21.2	6.7	7.2	29.0	35.6
Queue Length 50th (ft)	0	282	3	113	11	16
Queue Length 95th (ft)	m23	335	m8	209	38	45
Internal Link Dist (ft)		1077		805	410	241
Turn Bay Length (ft)	300		300			
Base Capacity (vph)	254	3646	397	3674	374	366
Starvation Cap Reductn	0	0	0	76	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.38	0.07	0.63	0.07	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
13: Heurich Road & Randolph Road

Total Future Conditions (ADJ)
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	1219	41	27	2006	72	11	2	12	16	4	9
Future Volume (veh/h)	17	1219	41	27	2006	72	11	2	12	16	4	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.96		0.96	0.96		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	1325	45	29	2180	78	12	2	13	17	4	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	3571	121	369	3593	128	116	28	102	143	38	68
Arrive On Green	0.04	1.00	1.00	0.05	1.00	1.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	5071	172	1781	5061	180	574	198	716	740	265	479
Grp Volume(v), veh/h	18	889	481	29	1464	794	27	0	0	31	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1839	1781	1702	1838	1487	0	0	1485	0	0
Q Serve(g_s), s	0.4	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	0.0	0.7	0.0	0.0	2.1	0.0	0.0	2.4	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.10	0.44		0.48	0.55		0.32
Lane Grp Cap(c), veh/h	197	2397	1295	369	2417	1305	247	0	0	249	0	0
V/C Ratio(X)	0.09	0.37	0.37	0.08	0.61	0.61	0.11	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	362	2397	1295	523	2417	1305	394	0	0	395	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.45	0.45	0.45	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	5.5	0.0	0.0	56.1	0.0	0.0	56.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.4	0.7	0.0	0.5	1.0	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.3	0.2	0.2	0.3	0.9	0.0	0.0	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.9	0.4	0.7	5.6	0.5	1.0	56.2	0.0	0.0	56.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		1388			2287			27				31
Approach Delay, s/veh		0.6			0.7			56.2				56.4
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	113.0		28.9	9.0	112.1		28.9				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	16.5	77.5		36.5	16.5	77.5		36.5				
Max Q Clear Time (g_c+1), s	2.4	2.0		4.4	2.7	2.0		4.1				
Green Ext Time (p_c), s	0.0	63.6		0.1	0.0	30.0		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				1.5								
HCM 6th LOS				A								

Queues
6: Garden Gate Road/Middlevale Lane & Randolph Road

Total Future Conditions (ADJ)
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	1931	36	1566	25	20	114	34
v/c Ratio	0.25	0.54	0.20	0.44	0.14	0.09	0.62	0.14
Control Delay	68.5	10.9	8.3	11.5	54.5	28.8	74.3	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.5	10.9	8.3	11.5	54.5	28.8	74.3	21.2
Queue Length 50th (ft)	26	116	6	229	22	6	109	5
Queue Length 95th (ft)	m54	341	24	393	46	28	155	35
Internal Link Dist (ft)		805		1479		200		276
Turn Bay Length (ft)	300		235					
Base Capacity (vph)	194	3583	296	3537	327	409	331	408
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.54	0.12	0.44	0.08	0.05	0.34	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
6: Garden Gate Road/Middlevale Lane & Randolph Road

Total Future Conditions (ADJ)
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	1843	30	35	1372	147	24	7	13	111	6	27
Future Volume (veh/h)	25	1843	30	35	1372	147	24	7	13	111	6	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	1900	31	36	1414	152	25	7	13	114	6	28
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	39	3759	61	261	3417	367	183	69	128	196	34	157
Arrive On Green	0.04	1.00	1.00	0.03	0.73	0.73	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	5174	84	1781	4678	503	1369	584	1085	1386	286	1336
Grp Volume(v), veh/h	26	1250	681	36	1029	537	25	0	20	114	0	34
Grp Sat Flow(s),veh/h/ln	1781	1702	1855	1781	1702	1777	1369	0	1669	1386	0	1622
Q Serve(g_s), s	2.2	0.0	0.0	0.8	17.5	17.5	2.5	0.0	1.6	12.0	0.0	2.8
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.8	17.5	17.5	5.3	0.0	1.6	13.6	0.0	2.8
Prop In Lane	1.00		0.05	1.00		0.28	1.00		0.65	1.00		0.82
Lane Grp Cap(c), veh/h	39	2473	1347	261	2486	1298	183	0	196	196	0	191
V/C Ratio(X)	0.66	0.51	0.51	0.14	0.41	0.41	0.14	0.00	0.10	0.58	0.00	0.18
Avail Cap(c_a), veh/h	196	2473	1347	411	2486	1298	351	0	400	366	0	389
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	71.1	0.0	0.0	4.7	7.8	7.8	62.1	0.0	59.1	65.2	0.0	59.6
Incr Delay (d2), s/veh	20.9	0.6	1.2	0.2	0.5	1.0	0.3	0.0	0.2	2.7	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.2	0.4	0.3	6.0	6.4	0.9	0.0	0.7	4.4	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.0	0.6	1.2	4.9	8.3	8.8	62.4	0.0	59.3	67.9	0.0	60.1
LnGrp LOS	F	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1957			1602			45				148
Approach Delay, s/veh		2.0			8.4			61.0				66.1
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	116.0		25.1	9.4	115.5		25.1				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	16.5	78.0		36.0	16.5	78.0		36.0				
Max Q Clear Time (g_c+I1), s	4.2	0.0		7.3	2.8	0.0		15.6				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				8.0								
HCM 6th LOS				A								

HCM 6th TWSC

12: Glenallan Avenue & Erskine Avenue

Total Future Conditions (ADJ)

PM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	49	0	0	100	120	124
Future Vol, veh/h	49	0	0	100	120	124
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	0	0	130	156	161

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	367	237	317	0	-	0
Stage 1	237	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	633	802	1243	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	633	802	1243	-	-	-
Mov Cap-2 Maneuver	633	-	-	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	896	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1243	-	633	-	-
HCM Lane V/C Ratio	-	-	0.101	-	-
HCM Control Delay (s)	0	-	11.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Queues

Total Future Conditions (ADJ)

13: Heurich Road & Randolph Road

PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	38	2016	26	1460	54	35
v/c Ratio	0.13	0.50	0.14	0.37	0.36	0.24
Control Delay	1.3	2.4	3.2	2.1	37.2	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.3	2.4	3.2	2.1	37.2	35.5
Queue Length 50th (ft)	0	128	1	33	24	15
Queue Length 95th (ft)	m2	165	m4	43	58	44
Internal Link Dist (ft)		1077		805	410	241
Turn Bay Length (ft)	300		300			
Base Capacity (vph)	405	4029	302	3971	375	377
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.50	0.09	0.37	0.14	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
13: Heurich Road & Randolph Road

Total Future Conditions (ADJ)
PM Peak Hour

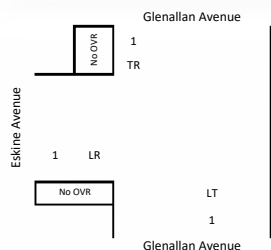
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1924	31	25	1395	21	21	3	28	14	2	18
Future Volume (veh/h)	37	1924	31	25	1395	21	21	3	28	14	2	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	1984	32	26	1438	22	22	3	29	14	2	19
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	3943	64	248	3923	60	75	20	71	75	21	74
Arrive On Green	0.05	1.00	1.00	0.04	1.00	1.00	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1781	5176	83	1781	5181	79	473	234	819	478	240	853
Grp Volume(v), veh/h	38	1304	712	26	945	515	54	0	0	35	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1855	1781	1702	1856	1526	0	0	1571	0	0
Q Serve(g_s), s	0.7	0.0	0.0	0.5	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	0.0	0.0	0.5	0.0	0.0	4.8	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.04	0.41		0.54	0.40		0.54
Lane Grp Cap(c), veh/h	370	2593	1413	248	2578	1405	165	0	0	169	0	0
V/C Ratio(X)	0.10	0.50	0.50	0.10	0.37	0.37	0.33	0.00	0.00	0.21	0.00	0.00
Avail Cap(c_a), veh/h	519	2593	1413	404	2578	1405	398	0	0	401	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.72	0.90	0.90	0.90	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.5	0.0	0.0	3.6	0.0	0.0	64.7	0.0	0.0	64.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.9	0.2	0.4	0.7	1.1	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.4	0.2	0.1	0.3	2.0	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.6	0.5	0.9	3.8	0.4	0.7	65.9	0.0	0.0	64.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		2054			1486			54				35
Approach Delay, s/veh		0.7			0.5			65.9				64.6
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	120.1		20.4	8.8	120.8		20.4				
Change Period (Y+Rc), s	5.5	6.5		7.5	5.5	6.5		7.5				
Max Green Setting (Gmax), s	16.5	77.5		36.5	16.5	77.5		36.5				
Max Q Clear Time (g_c+1), s	2.7	2.0		4.9	2.5	2.0		6.8				
Green Ext Time (p_c), s	0.0	35.9		0.1	0.0	54.5		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				2.2								
HCM 6th LOS				A								



12
Critical Lane Volume
and
Level of Service Calculations

Intersection: 12. Glenallan Avenue / Eskine Avenue
Jurisdiction: Montgomery County, MD
Scenario/Design Year: Total Future Conditions (ADJ)
Computed by: W+A

Intersection Lane Use & Traffic Control

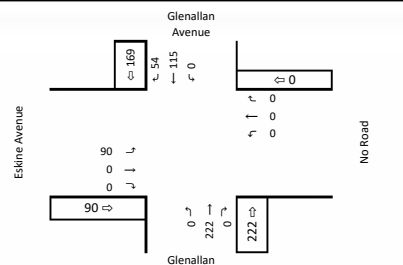


Signal?	Split?

or

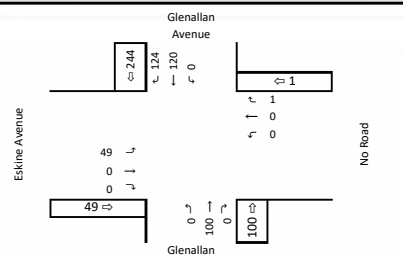
Stop Sign?	Directions
Yes	E/W

AM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LR	90		1.00	90			0	90	*
WB					0			0	0	
NB	LT	222		1.00	222			0	222	*
SB	TR	169		1.00	169	0	1.00	0	169	
Note:									CLV	312
Congestion Equiv.									v/c	0.195
										1600

PM Peak Hour Critical Lane Volume Analysis



Direction	Lane Group	Lane Group Volume	Right Turn Overlap	Lane Use Factor (LUF)	Volume	Opposing Lefts	Lane Use Factor (LUF)	Opposing Volume	Critical Lane Volume (CLV)	Included in CLV
EB	LR	49		1.00	49			0	49	*
WB					0			0	0	
NB	LT	100		1.00	100			0	100	
SB	TR	244		1.00	244	0	1.00	0	244	*
Note:									CLV	293
Congestion Equiv.									v/c	0.183
										1600

Right Turn Overlap

Approach	Excl. Right	Right Vol.			Adjacent Overlap Vol.			Overlap	
		AM	PM	LUF	AM	PM	LUF	AM	PM
Eastbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Westbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Northbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Southbound	No	n/a	n/a	n/a	n/a	n/a	n/a	0	0

Montgomery County LATR

	Lane Use Factors		
	Number of Lanes	Left Turn LUF	Through LUF
1		1	1.00
2		0.53	0.53
3		0.37	0.37
4			0.30
5			0.25

I-37



FLOATING ZONE PLAN AMENDMENT (FZPA)

GLENMONT FOREST

10/06/2023

REVISED 4/30/2024

Exhibit 45
H-149



GLENMONT FOREST LAND USE REPORT

FLOATING ZONE PLAN NO. LMA-149 2300 GLENMONT CIRCLE, SILVER SPRING, MD 10/06/2023

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 - a. *substantially conform with the recommendations of the applicable master plan, general plan, and other applicable County plans;*27
 - b. *further the public interest;*27
 - c. *Satisfy the intent, purposes, & standards of the proposed zone & requirements of this Chapter;*27
 - d. *Be compatible with existing & approved adjacent development;*27
 - e. *Generate traffic that does not exceed the critical lane volume or volume/capacity ratio standard as applicable under the Planning Board's LATR Guidelines, or, if traffic exceeds the applicable standard, that the applicant demonstrate an ability to mitigate such adverse impacts; and*28

f. When applying a non-Residential Floating zone to a property previously under a Residential Detached zone, not adversely affect the character of the surrounding neighborhood.28

VII. Phasing.....28

VIII. Conclusion28

I. Overview

Glenmont Forest Investors, LP c/o Grady Management, Inc., (the "Applicant") is submitting this Local Map Amendment (Floating Zone) ("LMA") application to rezone the property located at 2300 Glenmont Circle in Silver Spring, Maryland (the "Property"). Specifically, the Applicant requests approval of a LMA for the application of a Floating Zone to rezone the Property from the R-30 multi-family, low-density residential zone to the Commercial Residential Floating Zone ("CRF") – more specifically, the CRF-1.75, C-0.25, R-1.5, H-75' zone.

As elaborated further in the following sections, the proposed rezoning to the CRF zone will accommodate the desired redevelopment of this underutilized, aging garden apartment complex with a more modern, mixed-use, predominately residential development containing up to 2,275 residential dwelling units and up to 5,000 square feet of neighborhood serving commercial use (the "Project"). The Project layout has been designed to ensure compatibility with the surrounding neighborhood. Additionally, the proposed use will satisfy all applicable standards of the Montgomery County Zoning Ordinance (the "Zoning Ordinance") and substantially conform to the goals and recommendations of the *2013 Approved and Adopted Glenmont Sector Plan* (the "Sector Plan"). Expanding on this point in greater detail below, the Sector Plan recommends the re-zoning of the Property to facilitate redevelopment.

Subsequent to approval of the LMA, the Applicant will seek Preliminary Plan of Subdivision, Sketch Plan, and Site Plan approval from the Montgomery County Planning Board (the "Planning Board").

II. Property Description

A. Site Location and Existing Conditions

The Property is located in the southeast quadrant of the intersection of Randolph Road and Georgia Avenue (MD-97) in Silver Spring, Maryland. The Property is comprised of two parcels including: (1) Part of Parcel A in the "Americana Glenmont" Subdivision as recorded among the Land Records of Montgomery County, Maryland (the "Land Records") at Plat No. 6337 ("Parcel A"); and (2) Part of Parcel B in the "Americana Glenmont Apartments" Subdivision as recorded among the Land Records at Plat No. 8065 ("Parcel B") (collectively referred to as the "Property").¹ As shown on the Floating Zone Plan (the "FZP"), the Property has a combined (net) Lot area of approximately 1,389,461 square feet (or 31.9 acres) and a (gross) Tract area, including prior right-of-way dedications, of approximately 1,518,942 square feet (or 34.87 acres).

The Property is currently developed with a multi-building garden-style apartment complex. Specifically, the Property contains nineteen (19) two-to-three story buildings, with a total of

¹ The two intervening parcels located directly at the intersection of Georgia Avenue and Randolph Road, and an additional intervening parcel located along Georgia Avenue just to the southwest of the Property, are not owned by the Applicant and not included in this Application.

approximately 482 dwelling units known as the Americana Glenmont Forest Apartments. The existing buildings were constructed circa 1962 and as a result, are dated and showing their age. Significant maintenance will be needed in the coming years to keep the buildings operational, as the existing buildings are well-past their viable age.

Access to this Property is currently provided through two separate access points along Randolph Road and one access off of Georgia Avenue at the southern portion of the Property. As thoroughly explained below, these access points will be retained by the proposed Project and will be connected to an internal grid of predominately private streets to provide adequate vehicular and pedestrian circulation within the Property and to the surrounding neighborhoods. Additional vehicular connections will be provided to the Montgomery County Police Department Property to the North and to the single-family neighborhood to the east, via an extension of Erskine Road.

The Property is located within a larger neighborhood bounded by Glenallan Avenue to the north and east, Wheaton Regional Park and the abutting residential townhouse community operated by Housing Opportunities Commission of Montgomery County (HOC) to the south, Georgia Avenue to the west (the “Surrounding Neighborhood”). The Surrounding Neighborhood is depicted in Attachment A, and is characterized as a true mixed-use neighborhood, including both residential and commercial uses. The Glenmont Metro Station also falls within the Surrounding Neighborhood boundaries.

B. Zoning and Permitted Uses

This LMA requests approval for the application of a Floating Zone to the Property, to rezone the Property from the R-30 multi-family, low-density residential zone to the Commercial Residential Floating Zone ("CRF") - CRF-1.75, C-0.25, R-1.5, H-75’.

Sections 5.3.3.A.3 and 3.1.6 of the Zoning Ordinance permit Multi-Unit and Townhouse Living, Retail/Service Establishments (up to 5,000 square feet) and Restaurant Use by right in the CRF Zone. Specifically, the Applicant has proposed a binding element that the use of the property will be limited to Multi-Unit Living, Townhouse Living, Retail/Service Establishments (up to 5,000 sf) and Restaurant use.

C. Surrounding Zoning and Land Uses

The zoning and land uses of surrounding properties are described as follows:

- North: Immediately adjacent to the Property to the north/northwest are two parcels owned by Montgomery County, Maryland and the State Highway Administration (“SHA”). The Montgomery County Parcel is currently operated as the 4th District Montgomery County Police Station (1.8 acres), which, in speaking with the Department of General Services, the Applicant

understands the County is not interested in disposing of at this time. The SHA Parcel (0.9 acres) is currently improved with a commuter surface parking lot. Both properties are zoned R-30. Confronting the Property to the north, across Randolph Road, are multiple properties with fragmented ownership that make up the Glenmont Shopping Center (30.9 acres), zoned Commercial/Residential, CR-3.0, C-2.5, R-2.5, H-120'.

- East: Abutting the Property to the east are single-family detached houses located in the R-90 Zone.
- South: Abutting the Property to the south is a townhouse community, owned by the Housing Opportunities Commission of Montgomery County (HOC), zoned RT-15.0. And, to the southeast is the Wheaton Regional Park (zoned R-90).
- West: Immediately abutting the Property to the west is a small parcel owned by the Roman Catholic Archbishop of Washington DC, operated as The Catholic Charities Center (1.0 acre), zoned R-30. Confronting the Property to the west, across Georgia Avenue, is the Glenmont Fire Station (4.9 acres) (No. 18), zoned R-60.

III. Proposed Development

The Applicant is proposing to redevelop the Property with a mixed-use, predominately residential development. The Project will include up to 5,000 square feet of neighborhood-serving commercial use and up to 2,275 multi-family living units, with associated parking, open space, public benefits and residential amenities. The majority of the residential units are anticipated to be rental housing. At preliminary plan and subsequent site plan, for sale housing will be evaluated as an option. Fee simple townhouse units may be an option, in addition to condominium multifamily units.

Although Chapter 25A of the Montgomery County Code only requires 12.5% Moderately Priced Dwelling Units ("MPDUs") be provided on-site, the Applicant is proposing to provide 15% MPDUs, in excess of the Code requirement. Given the age of the existing buildings, the unit finishes and amenities are dated compared to current market standards. And there are no regulated affordable housing units provided on-site. As such, the proposed redevelopment provides an important opportunity to provide an updated, modern residential development with up to 342 units (or 15% of up to 2,275 units) that will be preserved as affordable for 99 years under the County's MPDU program.

A. Design Iteration

The Applicant has made several changes to the site design and layout, in response to pre-filing comments received from the Maryland-National Capital Park and Planning Commission Staff (“Planning Staff”), including:

- Providing the location for a future hiker-biker connection, by others, at the southeastern portion of the property, as a connection to Wheaton Regional Park-subject to M-NCPPC review and approval.
- Stream restoration has been studied by the Parks Department in coordination with the adjoining stream through Forest Conservation Plan No. F20230090, which establishes a comprehensive Forest Conservation Plan for all of Wheaton Regional Park. The Montgomery County Parks Department is currently undertaking future trail improvements and restoration of the stream which is located off-site.
- Great measures were made to save approximately 1.8 acres of high-priority forest, due to the presence of a stream and specimen trees, by designing the layout of the buildings to avoid this environmentally sensitive area.
- The streetscape at the multi-family housing includes a street tree network, blending in nature with the rigidity of the structures.
- Streetscapes, also to include ins and outs along buildings edges, proposing a more relatable pedestrian scale, therefore creating safe, accessible, and healthy travel for all users.
- Street sections to include a separated bikeway at Erskine Road to increase circulation at the R-90 single-family detached community, as well as traffic-calming devices.
- As shown on earlier concepts, retail, at the building ground level, has been included as an important use to provide goods/services to future residents, as well as the greater community.

B. Project Layout

The multi-family buildings have been strategically arranged to create a sense of community and encourage pedestrian activity. The Project is broken down into smaller blocks by a series of internal private streets to promote connectivity within the site and to the surrounding areas. The Project is organized around an internal spine road that runs east-west. Erskine Drive is proposed to be extended into the site, to connect with Randolph Road, as a public street. Additionally, several north-south private roads connect the internal spine road to Randolph Road, with the western-most private road, also providing for a future connection to Georgian Woods Place (to the south). The buildings have been pulled up to the street to define and enhance the pedestrian environment both along the external site frontages and along the internal streets. The commercial component of the Project is currently anticipated to be located on the ground floor on future Parcel C, with clear visibility from Randolph Road, to define and activate the main entrance to the Property and complement the retail uses on the north side of Randolph Road. The final building layout and internal programming will be determined at the time of Site Plan.

Additionally, the multi-family buildings have been strategically arranged and oriented to ensure compatibility with the surrounding community. The multi-family buildings will effectively provide a buffer along Georgia Avenue and Randolph Road, with strategic view corridors, to the internal open space, located at the rear of the Property, and the single-family neighborhood to the east. Consistent with the recommendations of the Sector Plan, as discussed below, the buildings will step down in height as they approach the single-family neighborhoods, to a maximum height of 45 feet, for distance of 100 feet from the eastern property boundary. This provides a transition to the adjacent single-family zone per the Master Plan. The intent is to restrict the building height to 45' for a depth of 100' from the eastern property line (as recommended in the Sector Plan), in lieu of a second zone as noted in the Master Plan.

C. Architecture Design

The site layout and building architecture have been designed to be compatible with and complementary to the surrounding residential neighborhoods. The buildings have a range of height between five- and six-stories on the northern and western portions of the Property, transitioning to a maximum height of four-stories (45') along the eastern Property boundary, closest to the single-family residential neighborhood. To enhance and define the pedestrian experience, buildings bases have been strategically positioned along the street edges, effectively delineating and fostering a more engaging environment for pedestrians, as previously noted. The building architecture will be finalized at time of Site Plan and will create a strong building base, with ample transparency and articulation, to activate the pedestrian environment. Above the building's base, the design will incorporate a diverse range of materials and design techniques to effectively reduce the apparent bulk of the structure. The above-grade structured parking will be visually concealed and either wrapped by residential uses or softened by appropriate architectural treatments.

D. Open Space

An important component of the Project is the open space that will be provided in the approximate center of the Property. In accordance with the requirements of Sections 5.3.5.D.2.a and 4.5.4.B.1 of the Zoning Ordinance, the Project is required to provide a minimum of 10% (or 142,172 square feet) of public open space on-site. The Project will meet and/or exceed this requirement, with final public open space to be determined with the subsequent Site Plan application. As required by Section 6.3.6.B of the Zoning Ordinance, this public open space will abut a pedestrian route, be a minimum of 15 feet wide, include seating and shade, and be in a contiguous space. The proposed public open space strategy includes two primary components: (1) enhanced internal and external streetscapes, and (2) an approximately 1.0-acre Neighborhood Green at the rear of the property. The enhancements to the streetscape will feature abundant landscaping and a range of seating options, fostering pedestrian engagement and promoting casual social interactions across the site. The approximately 1.0-acre Neighborhood Green will provide diverse opportunities for the public to gather and socialize and connect with nature. The Neighborhood Green is framed by buildings on the east and west to help define the open space and

provide a sense of enclosure. The Neighborhood Green has been strategically located to abut the stream valley/forest at the rear of the Property, which provides a visual connection to Wheaton Regional Park. The Applicant anticipates that this central open space will accommodate both active and passive recreational opportunities, through various seating opportunities and a walking trail, with the final programming and design to be determined during the Site Plan approval process. Additionally, there are approximately 5 acres of on-site forest and/or open space on site within the forest save and forest plant areas of the plan.

E. Parking and Circulation

To ensure the Project will not have any adverse impacts on the surrounding neighborhood, the Project will provide adequate parking on-site to accommodate all users of the Property. Parking will be provided through on-street parking and in above-grade structured parking that will be visually concealed, and either wrapped by the multi-family buildings or architecturally treated. Because of the requested zoning, and due to the location of the Property within proximity of the Glenmont Metro Station, the Property is in a designated "Reduced Parking Area." Accordingly, Sections 5.3.5.D.1 and 6.2.4.B proscribe a minimum and maximum number of parking spaces. The parking in the Project will exceed the minimum requirements but be below the maximum number of spaces allowed, with the final parking counts to be determined at the time of Site Plan approval.

Loading for the Project will comply with the Montgomery County Department of Permitting Services ("DPS") Loading Space Guidelines and the requirements of the Zoning Ordinance. Residential loading is anticipated to be provided within each building, with the loading concealed from view of the surrounding streets. The Project's loading will be finalized during the Site Plan approval process.

As previously described, vehicular access to the Property is currently provided through three separate access points – two on Randolph Road and one off of Georgia Avenue. The existing access points will be retained by the proposed Project and will be connected to the internal street grid to provide adequate vehicular and pedestrian circulation within the Property and to the surrounding neighborhoods. The north-south private streets proposed will provide additional vehicular connections to the Police Department Property (to the north) and potentially to Georgia Woods Place (to the south), in the future. Additionally, the Project provides for an extension of Erskine Avenue to Randolph Road, which will offer additional connectivity to the single-family neighborhood to the east. The continuation of Erskine Avenue through the Property, to Randolph Road, will be a public road. However, all other internal streets will be private. The Erskine Avenue (extended) and Georgia Avenue access points will be limited to right-in and right-out. The western access on Randolph Road, at the signalized intersection, will provide full movements at the existing traffic signal.

Per the Sector Plan, the redevelopment of existing multifamily properties in the core presents opportunities to increase connectivity within the core and to the surrounding

neighborhoods with efficient and safe multi-modal access to transit, retail, and recreation. This results in the creation of a grid of private internal streets in separate parcels. The design of the roads must follow or improve on the corresponding Montgomery County Complete Streets Neighborhood Street for a similar public road, unless approved by MCDOT and the Planning Board at the subdivision review stage.

F. Private Roads Justification

The Project is proposing a series of private streets for the overall development. The Sector Plan recommendation of the extension of Erskine Avenue will be a public street, but the remaining roads - all of which are internal to the development, are proposed as private.

The Project calls for private streets chiefly to implement compliance with the Complete Streets Guide, where roadways are designed and operated to provide safe, accessible, and healthy travel for all users of our roadway system, including pedestrians, bicyclists, transit riders, and motorists. Proposing a public street for the Project is not feasible, due to the lack of connectivity with another existing public street. Also, the existing condition includes Glenmont Circle, which is a private ring road that encloses the existing aging apartment complex and contains parking. As is, the designation and configuration of the road is a core element of circulation, improving the pedestrian experience. The proposed development replaces the ring road with an internal network of private roads, to include parking, as a continuation of the grid as well as increasing pedestrian connectivity with the surrounding neighborhoods. Stormwater management is not prohibited within public roads but allowed within private roads encouraging the implementation of creating a progressive application of Environmental Site Design (“ESD”) stormwater management. Private roads also provide flexibility with street trees and minimum tree canopy coverage requirements. Lots containing proposed buildings adjacent to private roads can be modified to allow for various architecture types to limit encroachments.

The phasing on the project is dependent on the construction order of the private roads within multiple phases to facilitate the construction of each proposed building.

In accordance with Section 4.3.E.4.b of the Subdivision Regulations, the following lists design elements and justification of the proposed private roads that do not meet public road standards for a secondary street for Private Streets “A,” “B” and “C”. The *Montgomery County Complete Streets* manual, “Neighborhood Streets” best describes the proposed street type of all three private streets. Neighborhood Streets serve predominantly residential areas with low volumes of motor vehicle traffic, focusing on slow speeds, pedestrian safety, healthy street trees and well-defined routes to nearby parks, transit, and schools.

Private Street “A” will provide access to the site from Randolph Road. Private Street “B” will provide access to the site, connecting MD-97 to Erskine Ave, as well as access to the site from Randolph Road and Private Street “C” will provide access to the site from the Montgomery County Police Dept and MD SHA Park & Ride. The Project’s private roads and drive aisles will be

maintained by a future homeowners' association, funded by association dues, and held in an appropriate reserve fund for maintenance and replacement.

In order to be considered for approval as a private street under Section 4.3.E.4.d. of the Subdivision Regulations, a proposed road must not:

- *Be needed to maintain area circulation.*

As described above, proposed Private Streets "A," "B" and "C" are internal to the proposed development. They do not serve area circulation and are only needed for circulation within the Project.

- *Provide continuous corridors to serve the general public and quasi-public needs such as communication, utility, and future potential transportation or other systemic needs that serve the public on a long-term basis.*

Proposed Private Streets "A," "B" and "C" are not part of a continuous corridor and are not part of the network modeled for the area capacity.

- *Is not needed to be part of the network modeled for area capacity.*

Proposed Private Streets "A," "B" and "C" are not necessary to serve the general public needs for communication, utility, or future potential transportation.

Private Streets "A" & "B" – Neighborhood Street

Right of way width of 72'

Travel Lanes 10'

Parking Lane 8'

Street Buffer 8'

Sidewalk 8'

Maintenance buffer 2'

Private Streets "A," "B" & "C" at choker island - Neighborhood Street

Right of way width of 72'

Travel Lanes 10'

Street Buffer 16'

Sidewalk 8'

Maintenance buffer 2'

Private Street "C" - Neighborhood Street

Right of way width of 62'

Travel Lanes 10'

Parking Lane 8'

Street Buffer 6'

Sidewalk 6'
Maintenance buffer 1'

A. Civil Engineering

The Project complies with the following requirements and goals of the CRF Zone.

i. Natural Resource Inventory/Forest Stand Delineation

The Property is subject to the requirements of Chapter 22A of the Montgomery County Code (the "Forest Conservation Law"). A Natural Resources Inventory/ Forest Stand Delineation ("NRI/FSD") (No. 420230670) was approved for the Property on May 1, 2023, which denotes certain forested areas, significant trees, and associated stream valley buffer on the Property. The Property contains no protected soils, endangered species, or other natural features that would impact development. The Property is not located within a Special Protection Area. Per the Sector Plan approved and adopted 2013, there are no historic resources 100 feet to the north or west of the Property.²

The Applicant has carefully designed the Project to protect the existing environmental features to the extent practicable. The Applicant has submitted a Preliminary Forest Conservation Plan ("PFCP") concurrently with this LMA. The Project meets forest conservation requirements through the placement of approximately five (5) acres of Category I Forest Conservation Easement on-site. The existing forest is to be preserved in coordination with the stream valley area and priority features. The majority of the standalone trees on site will be removed, with appropriate mitigation in coordination with the removal of the existing buildings and site redevelopment. The Project requests a variance from section 22A-12(b)(3) of the Montgomery County Code. The referenced section addresses the requirement to not disturb "any tree with a diameter, measured at 4.5 feet above the ground, of (i) 30 inches or more; or (ii) 75% or more of the diameter measured at 4.5 feet above ground of the current State champion tree of that species." There are specimen trees inventoried on, or within 100' of the site boundary for the Project, as shown on the approved NRI/FSD. Details regarding the location, species, size and condition of the specimen trees included in the tree variance request will be provided on a forthcoming Preliminary Forest Conservation Plan (PFCP).

ii. Stormwater Management Concept Plan

The Project will comply with the requirements of Chapter 19 of the Montgomery County Code. Because the Project will result in more than 5,000 square feet of disturbance, the Applicant will submit a Stormwater Management Concept Plan prior to submitting the Preliminary Plan and Site Plan applications. The site does not contain any modern stormwater management facilities.

² The Stubbs Barn, a master plan individual site is located southeast of the site within the Wheaton Regional Park and the heritage area "Quakers and the Underground Railroad" is located east of the site within Wheaton Regional Park extending beyond the park northward.

The Stormwater Concept must be approved by DPS prior to applying for a Sediment Control and/or Stormwater Management Permit. In accordance with 2010 MDE Stormwater Management Regulations, the Project will implement Environmental Site Design ("ESD") practices to the maximum extent practicable.

In order to manage the required stormwater volume, the Petitioner proposes to utilize a mix of stormwater management practices which will include ESD features such as micro-bioretenion facilities, bioswales, and non-rooftop disconnects. The stormwater strategy will be further refined when the Conceptual Stormwater Management Plan is submitted to MCDPS for approval.

It is expected that the proposed layout of the Project will fully accommodate stormwater management facilities that meet/exceed applicable County and State requirements.

iii. Sediment and Erosion Control

A Sediment and Erosion Control Plan will be prepared and submitted to DPS for approval after Stormwater Management Concept approval and prior to commencement of construction on the Property.

B. Adequate Public Facilities

The public facilities are adequate to support and service the proposed development. As discussed above, a Preliminary Plan will be filed subsequent to the LMA approval. As such, the Montgomery County Planning Board ("Planning Board") will be responsible for determining whether Adequate Public Facilities ("APF") exist to support the proposed development of the Property at the time of Preliminary Plan.

i. Traffic

The Property falls within the Orange Policy Area in the current FY 2020-2024 Growth and Infrastructure Policy (and confronts a Red Policy Area). An analysis of peak hour person trips generated by the proposed development was performed in accordance with the 2022 update to the Maryland-National Capital Park and Planning Commission's (M-NCPPC) Local Area Transportation Review (LATR) Guidelines.

As discussed above, the Property is currently improved with 482 multi-family dwelling units. The Project is expected to generate 1,523 AM peak hour and 1,367 PM peak hour total person trips, and 900 AM peak hour and 808 PM peak hour total auto-driver (vehicle) trips, based on the LATR Guidelines methodology for calculating person and vehicle trips. The existing uses generate 266 AM peak hour and 350 PM peak hour person trips, and 157 AM peak hour and 207 PM peak hour vehicle trips. Therefore, the proposed re-development will generate 1,257 AM peak hour and 1,017 PM peak hour new person trips and 743 AM peak hour and 601 PM peak hour new vehicle trips.

A Traffic Impact Analysis prepared by Wells and Associates has been submitted in connection with this Application. Utilizing the updated LATR system adequacy tests and a Vision Zero statement, based on the number of peak hour person trips the site will generate, as outlined in Montgomery County's Growth and Infrastructure Policy and the LATR 2023 Guidelines. Wells and Associates has concluded that the AM and PM peak hour average vehicle delays for the study intersections within the Orange policy area are operating below the congestion standard of 80 seconds per vehicle. The study intersections within the Red Policy Area are not subject to the Motor Vehicle Test. However, for information purposes only an analysis was conducted at each of these intersections. Lastly, under future conditions, without and with the proposed Glenmont Forest redevelopment, the study intersections within the Kensington/Wheaton policy area will continue to operate below congestion standard threshold during both the AM and PM peak hours.

ii. Schools

The Property is served by Glenallan Elementary School, Odessa Shannon Middle School and John F. Kennedy High School. The current FY 2024 Subdivision Staging Policy Schools Test indicates that all three school levels are operating with adequate capacity.³ As such, there is adequate school capacity to accommodate the Project and no Utilization Premium Payments are currently required.

iii. Other Services

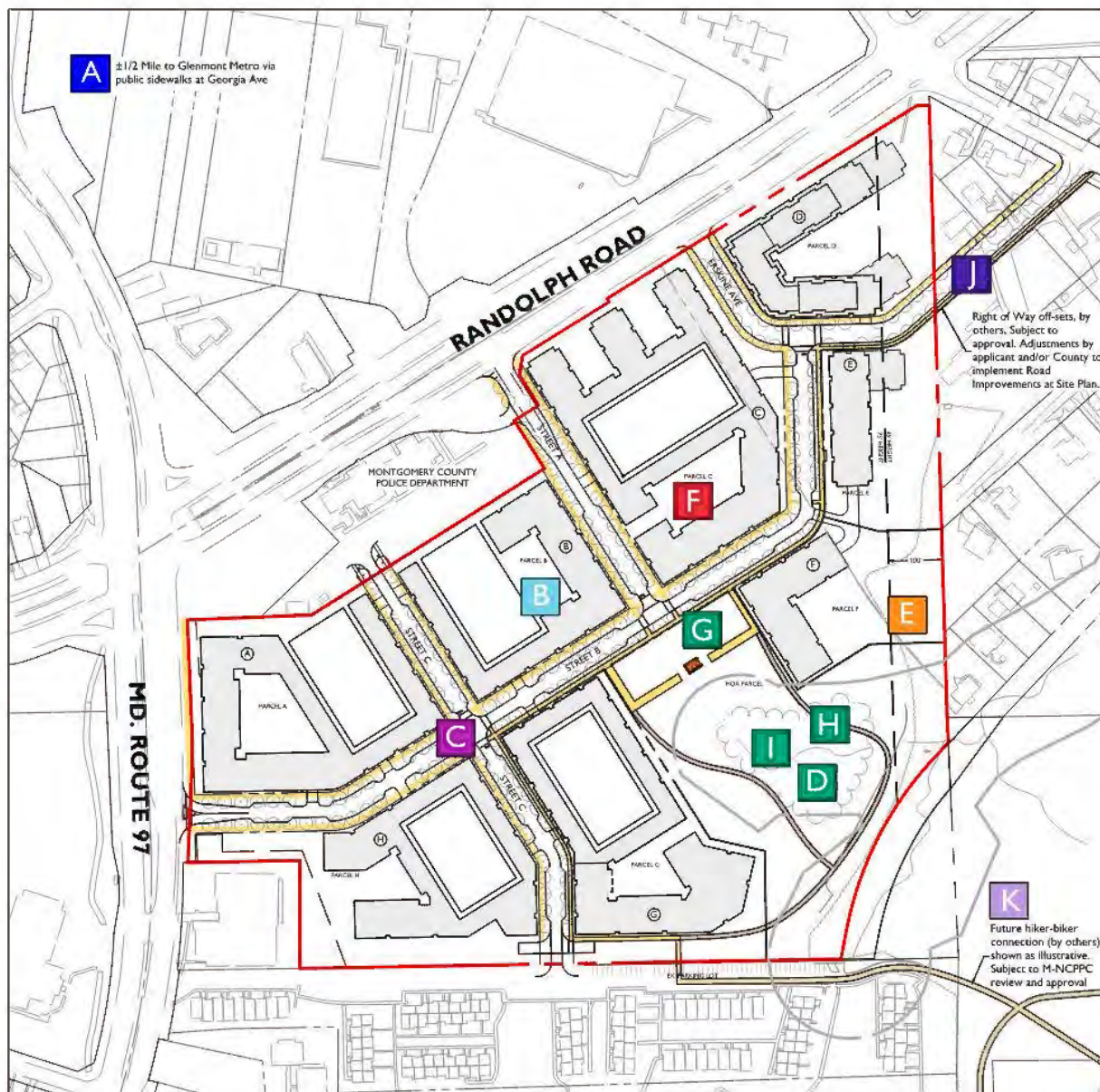
The Property will be served by existing water and sewer mains. The Property is located within water and sewer categories W-1 & S-1. Water and sewer needs are expected to be met by the Washington Suburban Sanitary Commission ("WSSC") through connections to the existing water and sewer lines located in the abutting right-of-ways. WSSC will evaluate the water and sewer capacity through a Hydraulic Planning Analysis.

Electric, gas and telecommunications services are also available to serve the Property. Other public facilities and services – including police stations, firehouses, and health care facilities – are currently available in the vicinity of the Property and will continue to be sufficient following construction of the Project.

³ The projected enrollment for John F. Kennedy High School reflects the impact of CIP P651908, which will reassign students between the Downcounty Consortium, Walter Johnson High School and Woodward High school in 2026.

IV. Sector Plan and Design Guidelines Conformance

See following pages for Sector Plan Key Compliance



Sector Plan Compliance Exhibit. Not to scale ▲

A. Sector Plan

The Property is located within the *2013 Approved and Adopted Glenmont Sector Plan*. The Sector Plan includes several overarching goals and recommendations which are pertinent to the Project. Specifically, the Project promotes the following goals and guiding principles:



Encourage redevelopment that makes best use of public investment in Metro and that creates a distinct community identity by focusing new residential and

commercial growth in a compact building pattern within walking distance of the Metro Station.

As described above, the Property is currently improved with aging, garden style apartment buildings and associated surface parking. The Property is currently underutilized, given its location within walking distance of the Metro Station. As such, the Applicant proposes to redevelop the aging garden apartments on the Property with significantly more residential housing with modern amenities (e.g., 2,275 units proposed, as compared to the 482 units existing today). As described herein, the buildings have been arranged to provide a more compact building pattern around the proposed street grid.



Maintain and support a wide choice of housing types and neighborhoods for people of all incomes, ages, and physical capabilities at appropriate densities by:

(1) providing appropriate transitions between new development and existing communities by placing taller buildings away from residential developments and transitioning down to appropriate heights to reduce impacts on surrounding residential communities; and

As discussed in this Report, the building massing and layout has been strategically designed to promote compatibility with the surrounding residential community located to the south/east. The taller building heights (e.g., five- to six-stories) within the Project are located on the northern and western portions of the Property and step-down to four-stories closer to the single-family neighborhood.

(2) encouraging compact building footprints to allow room for a variety of active and passive open spaces.

The buildings within the Project have been arranged around an internal grid of streets to promote connectivity within the Property and to the surrounding residential neighborhoods. The proposed building layout provides for the creation of a central open space at the rear of the Property that will provide opportunities for both active and passive recreation, socialization, and connection with nature.



Improve connectivity by creating a walkable street grid with short blocks in the core area with a convenient and attractive environment for pedestrian and bicycle circulation.

The Project provides a series of internal private streets that have been designed in a grid pattern to connect with the existing vehicular access points on Georgia Avenue and Randolph Road and provide additional connections to the north and the south. The Project also proposes to provide an extension of Erskine Avenue (as a public road), to complete the connection between Glenallan Avenue and Randolph Road. These connections will establish the walkable street grid envisioned by the Sector Plan.



Conserve and enhance natural resources to provide a healthy and green environment.

As discussed above, the Project proposes to conserve approximately 1.8 acres of existing forest on-site. The Project also will protect the existing stream valley through an associated buffer. The individual trees to be removed due to redevelopment will be replaced with the appropriate mitigation as noted on the Preliminary Forest Conservation Plan, submitted concurrently with this LMA. The Project will also provide stormwater management on-site, where none currently exists.



The Property is located within the “Glenmont Forest Block” sub-area of the Sector Plan. The Sector Plan recognizes that due to its size and proximity to transit and commercial services, the Property may be suitable for future rezoning to the CR or equivalent zone to encourage redevelopment with four- to six-story multi-family buildings. Specifically, the Sector Plan recommends rezoning the Property to the CR 1.75, C 0.25, R 1.5, H 75, and CRN 1.5, C 0.25, R 1.5, H 45, or similar zones. The proposed LMA and associate binding elements are entirely consistent with this recommendation. The Sector Plan notes that a transition zone of CRN would provide an appropriate buffer to the adjacent single-family neighborhood. Specifically, this transition zone is recommended to allow for a maximum height of 45 feet for a distance of 100 feet from the eastern property boundary. However, instead of split-zoning the Property with two zones that have two separate development processes,⁴ this Project seeks to accomplish the same compatible transition through the use of binding elements. Specifically, the Applicant has proposed a binding element that limits the building heights to 45 feet for a distance of 100 feet from the eastern property line.

The Sector Plan recommends a compact building footprint and structured parking “to emulate the existing open space character”, should the Property be rezoned and redeveloped in the future. As discussed above, the Project achieves this through the proposed building layout and design. The buildings have been laid out to promote a compact development organized around an internal grid of streets. Additionally, the proposed layout allows for the preservation of forest at the rear of the Property and creation of an approximately one-acre Neighborhood Green that is visually connected with Wheaton Regional Park (farther beyond). As described in this Report, this central open space will provide both active and passive recreational opportunities for residents and the surrounding neighborhood.

Additionally, the Sector Plan recommends the following objectives be achieved with any future rezoning of the Property:

⁴ The CRF Zone provides for the Optional Method of Development, whereas the CRNF Zone only allows Standard Method of Development.



Provide, as a priority, the CR zone public benefits of Public Open Space to retain the open and green character of the site, and Affordable Housing to obtain more than the 12.5 percent required minimum MPDUs.

The Project proposes to achieve public benefit points through Public Open Space and Affordable Housing, among other categories. Specifically, the Project is anticipated to provide more than the required 10% of public open space and to provide a minimum of 15% MPDUs. The public benefit categories will be set forth at time of Sketch Plan and finalized at Site Plan.



Encourage the achievement of greater than minimum required Public Use Space through compact footprint.

The compact building layout proposed by this Project facilitates the creation of an approximately one-acre Neighborhood Green at the rear of the Property that is visible from Randolph Road and visually connected to the adjacent Wheaton Regional Park to allow this space to feel even more open.



Protect and restore areas of environmental buffer and investigate options for stream restoration with redevelopment.

As demonstrated on the approved NRI/FSD, there is only a small, mainly piped drainage way located on the Property, with the main stream located on the adjacent properties. There is no floodplain on site. Forest Conservation Plan No. F20230090 was approved by the Planning Board on May 4, 2023, which establishes a comprehensive Forest Conservation Plan for all of Wheaton Regional Park. In accordance with this approval, the Montgomery County Parks Department (the “Parks Department”) is currently undertaking future trail improvements and restoration of the stream which is located off-site. Stream restoration has been studied by the Parks Department in coordination with the adjoining stream.



Preserve as much existing tree canopy as possible.

The Project seeks to preserve as much of the existing tree canopy as possible, while accomplishing the other Sector Plan and County goals of significantly increasing housing within walking distance of Metro. The Project will replace tree canopy coverage for significant trees per mitigation as noted on the Preliminary Forest Conservation Plan. The approximate 1.8 acres of existing forest area, with the associated stream buffer on-site is to be saved. The unforested stream buffer is to be planted with new forest. The final canopy calculation will be established at the time of Preliminary and Final Forest Conservation Plan, with existing forest, new forest, and individual trees to be planted. The goal is to save or replace as much tree canopy as possible.



Connect new internal streets with Erskine and/or Wallace Avenues.

As illustrated on the Floating Zone Plan and discussed herein, the Applicant is proposing to provide an extension of Erskine Avenue to Randolph Road. Due to making the best effort to save the existing forest stand and potential grading constraints, it was determined to be infeasible to provide a vehicular connection to Wallace Avenue. However, this additional connection is not necessary to achieve the connectivity envisioned by the Sector Plan. The proposed road network achieves an optimal balance between providing additional connectivity, while avoiding cut-through traffic within the surrounding neighborhoods (as recommended by the Sector Plan).⁵



Construct a hiker/biker path between Randolph Road and the existing Wheaton Regional Park's hard surface trail network.

The Project is unable to provide this connection, as there is an intervening parcel (with significant environmental features) and right-of-way between the Property and Wheaton Regional Park that is not owned or controlled by the Applicant. An alternate path connection is suggested per the recently approved Wheaton Regional Park Forest Conservation Plan. This alternative path connection will be pursued at Site Plan, in coordination with the Parks Department and intervening property owner to the south. Nothing in this LMA precludes this connection in the future, if it is determined to be feasible.

B. Design Guidelines

The Project will substantially conform to the *May 2014 Approved Glenmont Sector Plan Design Guidelines*. The Project promotes the following area-wide guidelines:

- *Provide an internal street pattern that promotes interconnectivity and minimizes walking distances.*

The Project is organized around a series of internal private (and one public) streets that divide the Property into a series of shorter, walkable blocks that promote connectivity within the Property and to the surrounding community. The Project provides an extension of Erskine Avenue to the existing eastern-most access point on Randolph Road to facilitate the connection to the surrounding street network.

- *Provide direct and safe routes for pedestrian movement with defined sidewalk zones.*

⁵ The Sector Plan seeks to “balance[e] the community’s desire for creating a place for local residents with the needs of through traffic.”

The streetscape design will be finalized at time of Site Plan but will incorporate ample sidewalk widths and landscape to promote a pleasing pedestrian streetscape. Additionally, the proposed building layout will help define and activate the pedestrian environment.

- *Orient buildings to define the street and the sidewalk.*

The buildings have been pulled-up to the streets to define and activate the pedestrian environment. The building design will be finalized at time of Site Plan, but particular attention will be given to the location of building entrances and incorporation of transparency, articulation and other design elements to strengthen the pedestrian environment.

- *For large developments, vary building massing along the sidewalk for visual interest.*

The buildings will be designed with a variety of building materials and/or vertical and horizontal plane changes to break down the perceived building mass. The building design will be finalized at time of Site Plan.

- *Reduce visual impact of parking structures.*

Parking will be provided on-site in above-grade structured parking and on-street parking. The structured parking will be wrapped by the residential buildings and/or visually concealed through architectural treatments.

- *Provide centrally located open spaces.*

The Project will provide more than the code-required open space on-site. One of the key components of the Project's open space is the approximately one-acre Neighborhood Green located at the center of the Property, which is strategically located to provide a visual connection abutting Wheaton Regional Park.

- *Strive to maintain the existing open space character*

The Project provides diverse open space opportunities on-site. The Project will preserve approximately 1.8 acres of existing forest on-site. Collectively, these strategies will maintain the open space character envisioned by the Design Guidelines.

Additionally, the Project will promote the following area-specific Design Guidelines:

- *Neighborhood Open Space*

The Design Guidelines recommend that redevelopment provide neighborhood open space on the Property. The Project achieves this recommendation through the provision of an approximately one-acre Neighborhood Green, located in approximately the same location as identified in the Design Guidelines (*see* page 19). The Neighborhood Green will have a visual connection to Randolph Road and will be framed by two of the multi-family buildings on the east and west to provide passive monitoring of this space. Additionally, the central location of the Neighborhood Green provides a visual connection to Wheaton Regional Park.

- *Transition Heights*

The Design Guidelines recommend a CRN transition zone to provide an appropriate buffer to the surrounding single-family residential neighborhoods. Specifically, this transition zone is recommended to allow for a maximum height of 45 feet for a distance of 100 feet from the eastern property boundary. The Project achieves this through a binding element that implements this recommendation and ensures compatibility.

- *Circulation Network*

In conformance with the Design Guidelines, the Project will provide an extension of Erskine Avenue through the Property to Randolph Road. It was determined that the connection to Wallace Avenue is not feasible, due to potential grading constraints, as well as the Applicant's desire to save as much existing forest as possible. Additionally, the Project provides an internal street network that has been arranged to facilitate the creation of shorter blocks that facilitate pedestrian connectivity to the surrounding streets and neighborhood.

- *Habitat Preservation and Restoration*

The Project proposes to provide opportunities for habitat preservation and restoration by retaining approximately 1.8 acres of early-mid successional forest, specimen trees and a stream, located at the southeast corner of the interior of the site. Habitat will be created by reforesting the approximate 3 acres of unforested buffer.

V. Zoning Ordinance Conformance

Section 5.1.2 – Intent

Section 5.1.2 of the Zoning Ordinance states that Commercial/Residential Floating zones are intended to provide an alternative to development under the restrictions of the Euclidean zones mapped by Sectional Map Amendment. The Project embodies the following specific intentions of the Floating Zones:

A. *Implement comprehensive planning objectives by:*

1. *furthering the goals of the general plan, applicable master plan, and functional master plans;*
2. *ensuring that the proposed uses are in balance with and supported by the existing and planned infrastructure in the general plan, applicable master plan, functional master plan staging, and applicable public facilities requirements ; and*
3. *allowing design flexibility to integrate development into circulation networks, land use patterns, and natural features within and connected to the property;*

As discussed in detail in Section V of this Report, the Project furthers the goals and recommendations of the Sector Plan and Design Guidelines. The Project is also supported by existing infrastructure and will provide compatible in-fill development in furtherance of smart growth principles. The Project provides a significant amount of additional housing on the Property, which is located within walking distances of various forms of public transportation, including the Glenmont Metro Station. The Project responds to its surroundings and has been designed to respond to its transit-oriented nature, while simultaneously promoting the open space character envisioned by the Sector Plan and providing a compatible transition to the adjacent single-family residential neighborhood.

B. Encourage the appropriate use of land by:

1. *providing flexible applicability to respond to changing economic, demographic and planning trends that occur between comprehensive District or Sectional Map Amendments;*
2. *allowing various uses, building types, and densities as determined by a property's size and base zone to serve a diverse and evolving population; and*
3. *ensuring that development satisfies basic sustainability requirements.*

The Sector Plan acknowledged that given the Property's proximity to transit and commercial services, rezoning would be appropriate in the future to facilitate redevelopment. The proposed Floating Zone accomplishes this. The Floating Zone will allow the Applicant to redevelop these aging, underutilized garden apartments with a significant amount of additional housing with modern amenities to aid in meeting the County's housing targets. The Project promotes sustainability and smart growth principles through infill redevelopment of the Property, which is already served by existing infrastructure and public transportation. As discussed in this Report, the Project has been designed to provide a compatible transition to the surrounding residential neighborhood.

- C. *Ensure protection of established neighborhoods by:*
1. *establishing compatible relationships between new development and existing neighborhoods through limits on applicability, density and uses;*
 2. *providing development standards and general compatibility standards to protect the character of adjacent neighborhoods; and*
 3. *allowing design flexibility to provide mitigation of any negative impacts found to be caused by the new use.*

The Project has been strategically laid out to respond to the Property's transit-oriented location, while simultaneously providing a compatible transition to the surrounding residential neighborhoods. The Project will also provide substantial open space on-site for use by the broader neighborhood. This open space, in addition to the stormwater management and forest preservation, will promote the Sector Plan's environmental recommendations.

Section 5.1.3. – Applicability

- A. *Floating zone must not be approved for property that is in an Agricultural or Rural Residential Zone;*

The Property is zoned R-30 multi-family, low-density residential and is not in an Agricultural or Rural Residential Zone.

- B. *If a Floating zone is recommended in a master plan, there are no prerequisites for an application;*

The Sector Plan recommends rezoning the Property to the CR Zone in the future. The Sector Plan was approved prior to the Zoning Ordinance re-write in 2014, which created the Floating Zones. Because the Sector Plan recommends rezoning the Property to the CR or "similar zone," no pre-requisites are required.

Section 5.3.2. - Purpose of the CRF Zone

The CRF Zone is an appropriate zoning classification for the Property. The intent of the CRF Zone is to allow mixed-use development at a range of densities and heights flexible enough to respond to various settings. It also allows flexibility in uses which can be located on a site. It seeks to provide mixed use development which is compatible with adjacent development. As described previously in this Report, the proposed Project facilities redevelopment of the Property with additional, modern residential housing on this prominent site, which is located within walking distance of the Glenmont Metro Station. Furthermore, the proposed binding elements:

- i. *The maximum building height is limited to 45 feet, for a distance of 100 feet from the eastern property boundary.*
- ii. *The use of the property will be limited to Multi-Unit Living, Townhouse Living, Retail/Service Establishments (up to 5,000 sf) and Restaurant use.*

Section 5.3.5. - Development Standards

As the following table illustrates, the proposed Project will satisfy the development standards for optional method of development in the CRF Zone:

CRF Zone Optional Method Development Standards			
Current Zoning	R-30 multi-family, low-density residential zone		
Requested Zoning	CRF-1.75 C-0.25 R-1.5 H-75'		
Development Method	Optional Method		
Gross Tract Area:	<u>ac</u>	<u>sf</u>	
Gross Tract Area	34.87 ac	1,518,942 sf	
Prior Dedication	<u>2.23 ac</u>	<u>97,220 sf</u>	
Proposed Public Road Dedication (Erskine Ave extended)	<u>0.74 ac</u>	<u>32,261 sf</u>	
Net Tract Area	<u>31.90 ac</u>	<u>1,389,461 sf</u>	
Article 59-3, Uses and Use Standards, Division 3.1 Use Table			
3.1.6 Use Table		permitted / required	proposed
Multi-Unit ²	3.3.1.E	Permitted Use	up to 2,275 du
Townhouse ²	3.3.1.D	Permitted Use	up to 250 du
Retail/Service Establishment (up to 5,000 square feet) ²	3.5.11.B	Permitted Use	up to 5000 sf
Commercial Program			
	existing	mapped	proposed
Commercial SF	0 sf	C-0.25 = 379,736 sf	up to 5,000 sf
Article 59-4 Development Standards for Euclidean Zones, Division 4.5 Commercial / Residential Zones			
4.5. - Commercial / Residential Zones		permitted / required	proposed
4.5.3. Standard Method Development			

4.5.3.C.4 Height (max.)		CRF-1.75 C-0.25 R-1.5 H-75'	CRF-1.75 C-0.25 R-1.5 H-75'
Principal Building			
Building A		75'	75'
Building B		75'	75'
Building C up to 5,000 sf of commercial and restaurant use		75'	75'
Building D Parcel D may be Townhouses, Multi-family or both		45 / 75' ¹	45 / 75' ¹
Building E Parcel E may be Townhouses, Multi-family or both		45 / 75' ¹	45 / 75' ¹
Building F Parcel F may be Townhouses, Multi-family or both		45 / 75' ¹	45 / 75' ¹
Building G		75'	75'
Building H		75'	75'
Mapped	maximum	75'	75' ³
Inclusion of 15% MPDU ³	maximum	75'	

1 Per Binding Element #1, Building height restricted to 45' for a depth of 100' from the eastern property line, as recommended in the Glenmont Sector Plan.

2 Per Binding Element #2, The use of the property will be limited to Multi-Unit Living, Townhouse Living, Retail/Service Establishments (up to 5,000 sf) and Restaurant use.

3 Remaining site building height remaining may be increased to allow for inclusion of greater than 15% MPDUs.

CRF Zoning Ordinance Conformance			
<u>Ordinance Reference</u>		<u>Permitted/Required</u>	<u>Provided</u>
5.3.5.A	Density of Development a. Max Overall FAR b. Commercial Density c. Residential Density	Established by Floating Zone Plan	CRF-1.75 (C-0.25, R-1.5, H-75') a. 1.75 FAR (up to 2,658,149 sf) b. 0.25 Commercial FAR (up to 379,736 sf) c. 1.5 Residential FAR (up to 2,278,413 sf)
5.3.5.B.1	Building Height	Established by Floating Zone Plan	Commercial: 75'¹ Multi-Family Building: 75'¹
4.1.8.B	Height Compatibility	<i>45 degree angular plane required, measured from a height equal to the height allowed for a detached house in the abutting R-90 Zone at the required site and rear yard setback line (per Section 4.1.8.B)</i>	Complies

5.3.5.B	Building Setbacks (min.) from the boundary	Established by Floating Zone Plan (All others established by site plan)	Principal Building Setbacks: From Public Street: Apartment Building = 0' Townhouse = 5' From Adjoining Lot: Side: Apartment Building = 45' ² Townhouse = 45' ² Rear: Apartment Building = 30' ³ Townhouse = 30' ³
4.1.8.A	Setback Compatibility	Side Yard Setback (from residentially improved, R-90 Zoned property): 30' Rear Yard Setback (from residentially improved, RT-1.5 Zoned property): 20'	Complies Side: Apartment Building = 45' ² Townhouse = 45' ² Rear: Apartment Building = 30' ³ Townhouse = 30' ³
5.3.5.C	Lot Size (min.)	Established by site plan	n/a
5.3.5.D	Open Space Provided Under 4.5.4.B.1. (net area between > 6.01 acres)	10% of site area	10% (or 142,172 sf min)

1 Building height restricted to 45' for a depth of 100' from the eastern property line, as recommended in the Glenmont Sector Plan.

2 The minimum side setback is equal to 1.5 times the minimum side setback required for a detached house on the abutting property.

3 The minimum rear setback is equal to 1.5 times the minimum side setback required for a detached house on the abutting property.

Section 6.3.9. - Recreation Facilities

The Project is Optional Method", Zoned CR with Multi-Family, 5 stories or more Building Type, requiring "Recreation Facilities", per Section 6.3.9. Applicability and aims to retain the open and green character of the site by utilizing various public benefits. Public benefit categories will be set forth at time of Sketch Plan and finalized at Site Plan.

VI. Findings for Approval

Pursuant to §59.7.2.1.A. a zoning map change to apply a Floating Zone to an individual property requires approval of a Local Map Amendment. Under §59.7.2.1.E., the District Council must find that the floating zone plan will:

- a. substantially conform with the recommendations of the applicable master plan, general plan, and other applicable County plans;

As discussed in Section V above, the Project substantially conforms to the recommendations of the Sector Plan.

- b. further the public interest;

As described more fully in this Report, the Project will further the public interest by transforming the aging, underutilized garden apartments on the Property into a modern residential community with significantly more housing, including 15% MPDUs, in support of the County's housing targets. The Property's location is an ideal setting to provide this additional housing given its proximity to various commercial services in the Glenmont Shopping Center across Randolph Road and within walking distance of the Metro Station. The Project has been carefully designed to ensure compatibility with the surrounding neighborhood, preserve the existing environmental features on-site, and implement the County's land use objectives.

- c. Satisfy the intent, purposes, & standards of the proposed zone & requirements of this Chapter;

As described in Section VI of this Report, the Project will satisfy the intent, purpose and specific standards of the CRF Floating Zone and the Zoning Ordinance. For all the reasons discussed in this Report, the requested Floating Zone is appropriate at this location.

- d. Be compatible with existing & approved adjacent development;

The Project will transform this aging garden apartment complex with associated surface parking into a series of smaller blocks organized around an internal street grid that will not only provide additional housing but also promote connectivity within the site and to the surrounding community. The binding elements will limit the height on the eastern portion of the Property to 45 feet, for a distance of 100 feet, to provide a compatible transition to the abutting single-family homes.

- e. Generate traffic that does not exceed the critical lane volume or volume/capacity ratio standard as applicable under the Planning Board's LATR Guidelines, or, if traffic exceeds the applicable standard, that the applicant demonstrate an ability to mitigate such adverse impacts; and

As discussed in this Report, the Petitioner's traffic consultant, Wells + Associates, has prepared a Traffic Impact analysis that confirms there will be adequate capacity on the surrounding street networks to accommodate the Project.

- f. When applying a non-Residential Floating zone to a property previously under a Residential Detached zone, not adversely affect the character of the surrounding neighborhood.*

The proposed Project will not adversely affect the character of the surrounding neighborhood. In fact, the Project will provide a more compatible use by redeveloping the aging garden apartment complex into a walkable residential community with increased pedestrian connectivity, ample open space and public benefits. Furthermore, as discuss in detail above, the Project's architecture and building layout will be carefully designed to promote compatibility with the surrounding residential neighborhood.

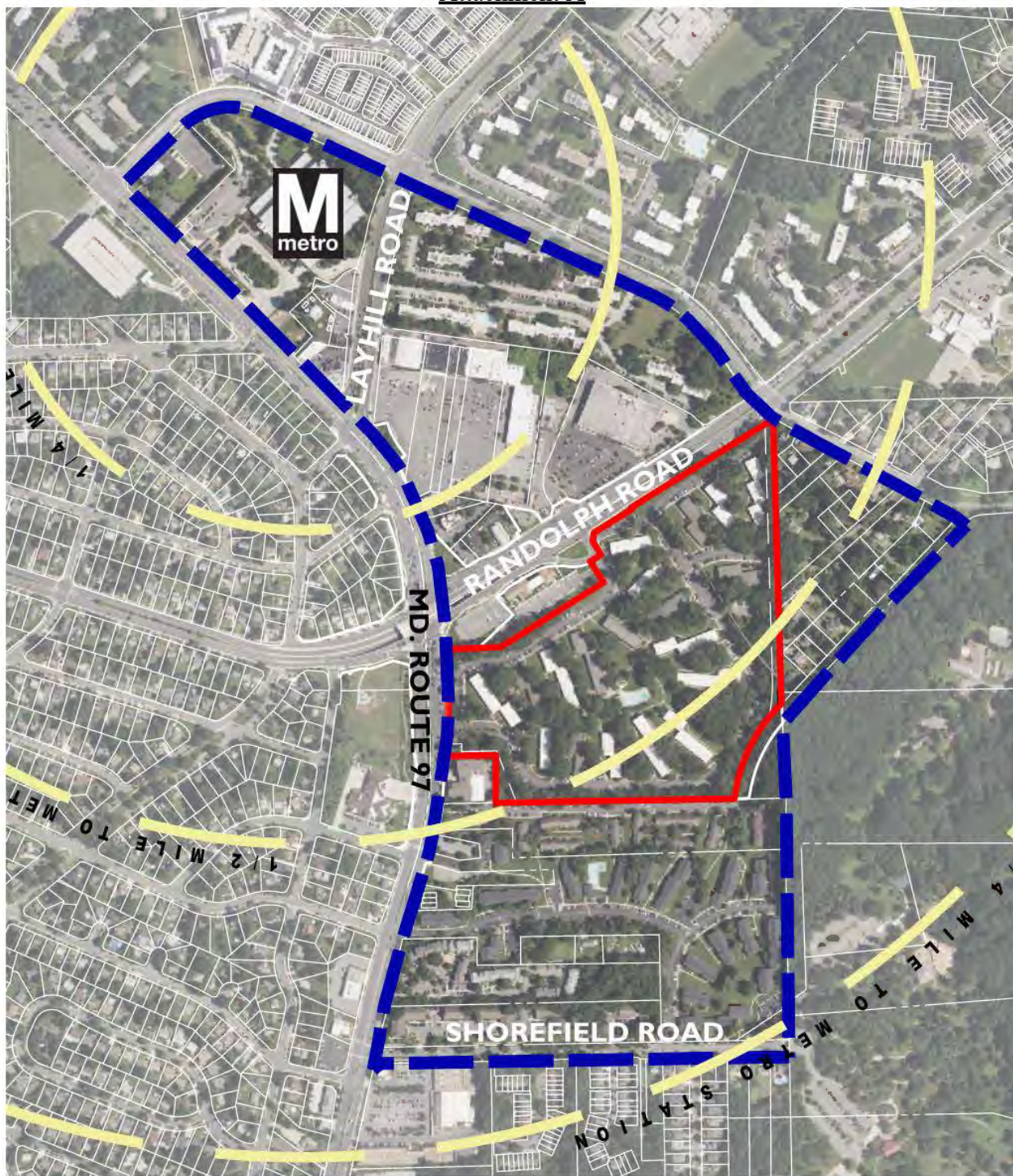
VII. Phasing

The proposed development is anticipated to be constructed in multiple phases. The particular order of the phase may change to meet market demands. Rental units are anticipated at this time. Some for-sale housing, multifamily and/or town house units may be introduced as an option at site plan. A key to phasing the Project is to work with the existing tenants to not displace them while building the new housing. Tenants will be given priority, right of first refusal for the new units. Continued access and care will be taken to build the new housing while existing units are maintained until the final housing is built. The relocation strategy is a key component of the phasing game plan.

VIII. Conclusion

The proposed development conforms to the Intent and Purpose of the CRF Zone and complies with all Development Standards within the Zoning Ordinance. The Project substantially conforms to the Sector Plan's recommendations and promotes many important land use objectives of the County. The Local Map Amendment will facilitate the redevelopment of this underutilized, aging garden apartment complex with additional, modern housing units (including 15% MPDUs) within walking distance of transit. As such, the Project will advance the County's housing targets and policies of smart growth. For these reasons, we respectfully request approval of this Local Map Amendment.

Attachment A



LEGEND



Site



Glenmont Neighborhood

Attachment A



Image courtesy of the Glenmont Sector Plan: *Figure 3: Major Properties/Specific Areas*



THE MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION

2425 Reedie Drive
Floor 14
Wheaton, MD 20902

MontgomeryPlanningBoard.org

June 3, 2024**Ms. Kathleen Byrne**

Director/Hearing Examiner

Montgomery County Office of Zoning and Administrative Hearings

Stella B. Werner Council Office Building

100 Maryland Avenue, Room 200

Rockville, Maryland 20850

Subject: Local Map Amendment No. H-149
Glenmont Forest**Dear Ms. Byrne:**

On May 30, 2024, the Montgomery County Planning Board of the Maryland-National Capital Park and Planning Commission reviewed Local Map Amendment No. H-149, a request to rezone 32.64 acres from the R-30 Zone to the CRF-1.75, C-0.25, R-1.5, H-75 Zone allowing the replacement of an aging apartment complex with up to 2,275 dwelling units and up to 5,000 square feet of non-residential use, located at 2300 Glenmont Circle, Silver Spring. The Planning Board received a presentation from Planning staff, and the Applicant gave a brief presentation and answered questions from the Planning Board.

The Planning Board received written testimony from one community member after the posting of the Staff Report. In the written testimony, the community member requested a certain pedestrian connection between the Glenmont Forest property and Wheaton Regional Park (Attachment 1). A discussion about the pedestrian connection to Wheaton Regional Park is included with the Staff Report and was addressed in the staff presentation. During the hearing, the Planning Board heard public testimony from a community member expressing concerns about the extension of Erskine Avenue through the Property and associated traffic and environmental impacts.

Planning Board members discussed affordability, the potential unit mix, parking, and the Local Map Amendment process before endorsing the Local Map Amendment application and approving the associated Forest Conservation Plan (No. F20240450).

The Local Map Amendment meets the findings set forth in Section 59-7.2.1.E.2 of the Zoning Ordinance, is consistent with the goals and recommendations of the 2013 *Glenmont Sector Plan* and *Thrive Montgomery 2050*; and the Applicant has met the burden of proof by demonstrating that the proposed redevelopment of the aging apartment complex will further the public interest and be compatible with adjacent development.

Exhibit 46
H-149

Ms. Kathleen Byrne
June 3, 2024
Page 2

On a motion by Commissioner Hedrick, seconded by Commissioner Linden, with Chair Harris and Commissioners Hedrick, Linden, and Pedeoem voting in favor, and Commissioner Bartley abstaining, the Board recommends (4-0-1) that Local Map Amendment No. H-149, Glenmont Forest, be approved with the binding elements enumerated in the Staff Report.

We hope the Planning Board's recommendations and the Staff Report will be helpful to your proceedings. For questions, please contact Ms. Emily Tettelbaum, Planner III, by phone at 301-495-4569 or via email at emily.tettelbaum@montgomeryplanning.org.

Sincerely,



Artie L. Harris
Chair

Attachments:

1. Staff Report for Local Map Amendment H-149 with Attachments
2. Correspondence received following Staff Report Posting

ATTACHMENT 1

Montgomery Planning

GLENMONT FOREST LOCAL MAP AMENDMENT H-149 FOREST CONSERVATION PLAN F20240450



Request to rezone the Property from R-30 to CRF-1.75, C-0.25, R-1.5, H-75', allowing the replacement of an aging apartment complex with up to 2,275 dwelling units and up to 5,000 square feet of neighborhood serving commercial use.

Nos. H-149, F20240450

Completed:5-20-2024

MCPB
Item No.
5-30-2024

Montgomery County
Planning Board
2425 Reddie Drive, Floor 14
Wheaton, MD 20902

Montgomeryplanning.org

Glenmont Forest, Local Map Amendment No. H-149, Forest Conservation Plan No. F20240450

Planning Staff

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LOCATION/ADDRESS

2300 Glenmont Circle, Silver Spring

MASTER PLAN

2013 *Glenmont Sector Plan*

ZONE

R-30

PROPERTY SIZE

34.87-acre tract

APPLICANT

Glenmont Forest Investors, LP c/o Grady
Management, Inc

ACCEPTANCE DATE

February 7, 2024

REVIEW BASIS

Chapters 22A and 59

Summary:

- Staff recommends: (1) approval of Local Map Amendment No. H-149 and Floating Zone Plan, with binding elements and transmittal of comments to the Hearing Examiner for a June 14, 2024 public hearing; and (2) approval with conditions of the Preliminary Forest Conservation Plan (FCP) No. F20240450.
- The *Glenmont Sector Plan* recognized that the Property could be suitable for future rezoning to a Commercial/Residential Zone due to its size and convenient location near the Glenmont Metro Station.
- The rezoning, if approved, would allow up to 1,793 additional units on the Property.
- The existing apartment complex, built in 1962, has no government regulated affordable units. The proposed Project will exceed the 12.5% MPDU requirement by providing a minimum of 15% MPDUs.
- Subsequent Sketch, Preliminary, and Site Plan will be required.
- The FCP includes reforestation of the stream valley buffer.

 **Montgomery Planning**

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SECTION 1: BINDING ELEMENTS AND CONDITIONS

LOCAL MAP AMENDMENT NO. H-149

Staff recommends approval of Local Map Amendment H-149 and the associated Floating Zone Plan with the following binding elements:

1. The maximum building height is limited to 45 feet, for a distance of 100 feet from the eastern Property boundary.
2. The use of the Property will be limited to multi-unit living, townhouse living, and up to 5,000 square feet of non-residential use.
3. The development must provide a minimum of 15 percent (15%) Moderately Priced Dwelling Units (MPDUs) or Montgomery County Department of Housing and Community Affairs (MCDHCA)-approved equivalent consistent with the requirements of Chapter 25A.

At the time of Sketch Plan, Preliminary Plan and/or Site Plan approval, the Applicant must address the following:

1. Update the LATR Transportation Study to include new vehicle counts and develop a list of LATR off-site mitigations and associated costs.
2. Coordinate with M-NCPPC and Montgomery County Department of Transportation (MCDOT) staff to determine:
 - a) if a right-in-right-out access proposed to the east of the Randolph Road/Glenmont Circle intersection is operationally feasible;
 - b) the appropriate road classification and right-of-way width for internal roadways;
 - c) if Street B will be a public or private road; and
 - d) the appropriate phasing of transportation infrastructure.
3. Ensure that public open space is usable, minimally encumbered by conservation areas or stormwater management facilities, and sufficient for the number of dwelling units proposed.
4. Strive to provide at least:
 - a) 273 two-bedroom units and 49 three-bedroom units; and
 - b) Ten (10) percent market-rate affordable units (for households earning 80% Area Median Income) under rental agreements, as approved by MCDHCA.

PRELIMINARY FOREST CONSERVATION PLAN NO. F20240450

Staff recommends approval of Preliminary Forest Conservation Plan (FCP) F20240450 with the following conditions:

1. The Applicant must submit an amended Forest Conservation Plan with each future development plan application.
2. The first amendment to FCP No. F20240450 must include a phasing plan showing the sequence of demolition and development and the fulfillment of forest conservation planting requirements, including the mitigation for the potential removal of Protected Trees.
3. Before any demolition, clearing, grading or construction, each phase of development must include:
 - a. A variance for impacts to Protected Trees with impacts avoided and minimized as much as possible through the site design process.
 - b. Mitigation plantings for the impacts to Protected Trees, as shown on the phasing plan. All mitigation trees will be a minimum size of 3 caliper inches and located outside of utility and stormwater management easements and rights-of-way.
 - c. The Applicant must submit a five-year Maintenance and Management Agreement (MMA) approved by the M-NCPPC Office of General Counsel. The MMA is required for all forest planting areas and landscape plantings credited toward meeting the requirements of the FCP.
4. Before any demolition, clearing, grading, or development occurring, the Applicant must record a Category I Conservation Easement over all areas of forest retention. The Category I Conservation Easement approved by the M-NCPPC Office of the General Counsel must be recorded in the Montgomery County Land Records by deed and the Book and Page for the easement must be referenced on the record plat.
5. Before any demolition, clearing, grading or construction on the Property, the Applicant must provide financial surety to the M-NCPPC Planning Department for 3.33 acres of forest planting and 0.54 acres of landscape planting.
6. The Applicant must schedule the required site inspections by M-NCPPC staff per Section 22A.00.01.10 of the Forest Conservation Regulations.

SECTION 2: SITE DESCRIPTION

VICINITY/NEIGHBORHOOD

The Property is located in the southeast quadrant of the intersection of Randolph Road and Georgia Avenue (MD 97) in Silver Spring, a node of commercial and higher density residential uses along the two busy corridors. The Property is surrounded with a diversity of uses and building types as described below.

North: To the north, the Property is bordered by Randolph Road, the Montgomery County 4th District Police Station, and a surface parking lot owned by the Maryland Department of Transportation State Highway Administration (MDOT SHA). Further north, across Randolph Road, is the Glenmont Shopping Center which includes a grocery store, restaurants, and other retail businesses in the CR-3.0, C-2.5, R-2.5, H-120 Zone. The Glenmont Metro Station is located approximately 1/2-mile northwest of the Property.

West: Georgia Avenue borders the Property to the west, and a church in the R-30 Zone directly abuts the Property's southwest corner. County Fire Station 18 is located west of the Property across Georgia Avenue. Beyond the fire station is a single-family detached neighborhood in the R-90 Zone.

South: Two-story townhouses in the RT-15 Zone, owned by the Housing Opportunities Commission of Montgomery County (HOC), are located directly south of the Property. Three-story multi-unit buildings in the R-20 Zone are south of the HOC townhouse community.

East: A single family neighborhood in the R-90 Zone is located directly east of the Property. A paper street, located adjacent to the southeast corner of the Property, and a small, privately-owned parcel of land separate the Property from Wheaton Regional Park.

The surrounding neighborhood is typically identified and characterized in an application for a Floating Zone. The boundaries are defined by those properties that will experience the direct impacts of the proposed zone and use. This area is then characterized to determine whether the development will be compatible with the neighborhood's character.

Staff agrees with the Applicant's proposed neighborhood boundary, with one change. Staff recommends extending the proposed boundary to include the two Montgomery Parks parcels closest to the Property which are part of Wheaton Regional Park, as shown in Figure 1, because of their proximity and the stream that traverses the Subject Property and the Park properties.

The Staff-defined Neighborhood (Neighborhood) is bordered by Glenallan Avenue to the north, Wheaton Regional Park to the east, Shorefield Road to the south, and Georgia Avenue to the west (Figure 1). The Neighborhood is mixed-use in character with a variety of housing, commercial, and institutional uses. The Glenmont Shopping Center and Glenmont Metro Station are within the Neighborhood boundaries.

The Neighborhood zoning pattern is varied, much like the uses (Figure 2). The Glenmont Shopping Center has the most intense zone (CR-3.0 C-2.5 R-2.5 H-120) allowing a total density of up to 3.0 FAR and building heights up to 120 feet. Properties close to the Glenmont Metro Station are also zoned CR with building maximum densities of 2.0 FAR and maximum building heights up to 120 feet. The Neighborhood also has Multi-Unit Residential Zones (R-20, R-30), a Townhouse House Zone (RT-15), and Residential Detached Zones (R-60 and R-90).



Figure 1: Vicinity/Staff-Defined Neighborhood



Figure 2: Zoning in the Staff-Defined Neighborhood

PROPERTY DESCRIPTION

The 32.64-acre Property is comprised of two parcels including: (1) Part of Parcel A in the “Americana Glenmont” Subdivision as recorded among the Land Records of Montgomery County, Maryland (the “Land Records”) at Plat No. 6337 (“Parcel A”); and (2) Part of Parcel B in the “Americana Glenmont Apartments” Subdivision as recorded among the Land Records at Plat No. 8065 (“Parcel B”) (Property).



Figure 3: Aerial view of the Property (outlined in red dashed line)

The Property is currently developed with a multi-building garden-style apartment complex known as the Americana Glenmont Forest Apartments. The complex consists of nineteen (19) two-to-three story buildings, constructed in 1962, with a total of 482 dwelling units. None of the existing units are regulated affordable housing. The Applicant notes that the buildings are dated and showing their age, and that significant maintenance will be needed in the coming years to keep the buildings operational.

Access to this Property is currently provided through two access points along Randolph Road and one along Georgia Avenue. The westernmost Randolph Road access, adjacent to the police station, is signalized while the other Randolph Road access is right-in, right-out only. Another right-in, right-out access is located on Georgia Avenue at the southern portion of the Property. A road with surface parking, known as Glenmont Circle, surrounds the complex and a system of sidewalks provides pedestrian access to the buildings and to the recreational facilities in the middle of the Property.

The Property slopes down from high points near Randolph Road and Georgia Avenue towards a stream in the southeastern corner. Significant and specimen trees are scattered throughout the Property and two forest stands, 1.79 acres in total, are located in the Property's southeast corner. Existing easements encumber portions of the Property and include an approximately 35-foot-wide WSSC easement along the eastern lot line and an 18-foot wide water main easement that runs north/south near the center of the Property.



Figure 4: Glenmont Forest Apartments Existing Conditions



Figure 5: Glenmont Forest Apartments Existing Conditions

SECTION 3: PROJECT DESCRIPTION

The Applicant proposes to rezone 32.64 acres of land from the R-30 (Residential Multi-Unit Low Density) Zone to the CRF (Commercial/Residential Floating)-1.75, C-0.25, R-1.5, H-75' Zone to allow redevelopment of the existing Glenmont Forest apartment complex with up to 2,275 new dwelling units. The majority of the proposed units will be within a series of multi-unit buildings, but the Applicant requests flexibility to provide up to 250 of the units as townhouses in the southern and eastern portions of the Property. The Applicant has committed to provide 15% of the units as MPDUs and to work with Planning and DHCA Staff at the time of Preliminary and Site Plan to provide at least the same number of two- and three-bedroom units (273 and 49, respectively) that currently exist on the Property. At this time, the Applicant anticipates rental units, but some for-sale units may be provided as well. Up to 5,000 square feet of retail or restaurant use is currently anticipated to be located on the ground floor on future Parcel C, with clear visibility from Randolph Road.

The Project is organized around a grid of streets that create small blocks, with buildings positioned close to the roads. Proposed buildings front on an east-west spine road (Street B, transitioning into Erskine Avenue) that connects Georgia Avenue and Randolph Road. The Applicant proposes to extend Erskine Avenue as a public road through the Property. The rest of the proposed roads are intended to be private and will be further evaluated at Preliminary Plan.

At Staff's request, the Applicant reached out to the Montgomery County Department of General Services (DGS) to discuss the inclusion of the District Four police station and adjacent MDOT SHA parcel with the rezoning application to allow for a more comprehensive redevelopment of this prominent corner of the intersection, but DGS chose not to participate in the Application (Attachment C).

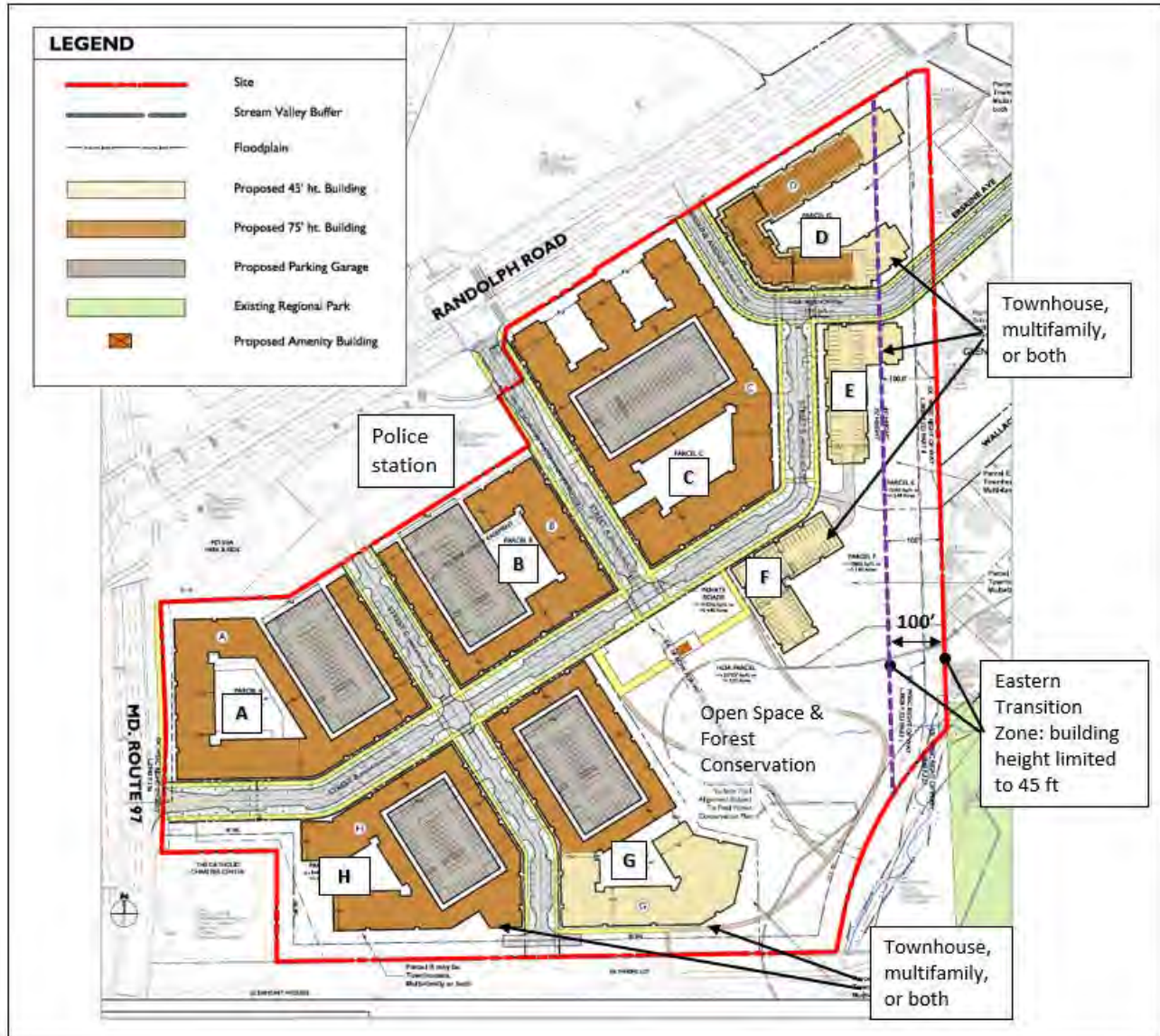


Figure 6: Floating Zone Plan

BUILDINGS/ARCHITECTURE

The Project will include up to eight (8) multi-unit buildings with structured parking, with the tallest buildings (up to 75 feet) proposed closer to Georgia Avenue and Randolph Road. The proposed buildings step down in height approaching the adjacent single-family neighborhood to the east. To provide an appropriate transition to this neighborhood, the Applicant has proposed a binding element limiting building height to 45 feet within a distance of 100 feet from the eastern Property boundary (Eastern Transition Zone- see Figure 7). As previously discussed, and as shown on the Floating Zone Plan (FZP), the Applicant requests flexibility to provide townhouses on Parcels D, E, F, G, and H. The layout of the buildings on the FZP is conceptual and will be refined during subsequent regulatory reviews.



Figure 7: Eastern Transition Zone

All proposed buildings are a maximum of 75 feet in height, or 45 feet in height within the Eastern Transition Zone, but the FZP has inconsistencies in the height of individual buildings between the drawing and the development standards table. However, per Section 59-5.3.5.B.2., only maximum building height in the floating zone, and in this case the 45-foot maximum height in the Eastern Transition Zone, are established with the FZP. Individual building heights will be determined at subsequent Sketch and Site Plan approvals, and all buildings will satisfy the setback and height compatibility requirements under Section 59-4.1.8.

Architecture will be determined at Site Plan, and the Applicant anticipates the following:

The building architecture.... Will create a strong building base, with ample transparency and articulation, to activate the pedestrian environment. Above the building's base, the design will incorporate a diverse range of materials and design techniques to effectively reduce the apparent bulk of the structure. The above-grade structured parking will be visually concealed and either wrapped by residential uses or softened by appropriate architectural treatments.
(Land Use Report, page 7).

OPEN SPACE

Approximately 11 percent of the Property is shown as public open space. The primary open space, a one-acre neighborhood green, is located at the intersection of Street A and Street B in the middle of the Property. The proposed neighborhood green connects with a walking trail through the adjacent forest conservation area and stream valley buffer. Another public open space area is proposed on lot C, adjacent to Erskine Avenue.

The design of the public open space will be determined at Site Plan, and Staff will work closely with the Applicant to ensure that the open space is highly usable, primarily outside of forest conservation areas, and contains minimal stormwater management facilities. Staff expects that additional pocket parks with seating and landscaping will be provided on the Property to serve residents of the future development.



Figure 8: Open Space Exhibit

TRANSPORTATION

Vehicle access will be provided on three frontages. One right-in-right-out access will be provided on Georgia Avenue (MD 97), replacing the existing access at this location. Another access will be provided by extending Erskine Avenue into the subject Property, this will allow a connection to the existing full access intersection at Glenallen Avenue. Two access points are proposed on Randolph Road. The first is a signalized access that replaces the existing Glenmont Circle access. The second is located to the east of the signalized intersection and replaces an existing right-in-right-out residential driveway access. However, MCDOT has raised some operational and safety concerns related to this access and therefore this will be further evaluated at the time of Preliminary Plan.

Street C, a proposed north/south private road, will not provide access to the existing street network but will be developed to provide possible future connections to the adjacent property to the north and the adjacent property to the south.

Within the Subject Property, Street B will provide east/west circulation through the site, connecting to Georgia Avenue on the west and Erskine Avenue on the east. Street A and Street C provide north/south circulation.

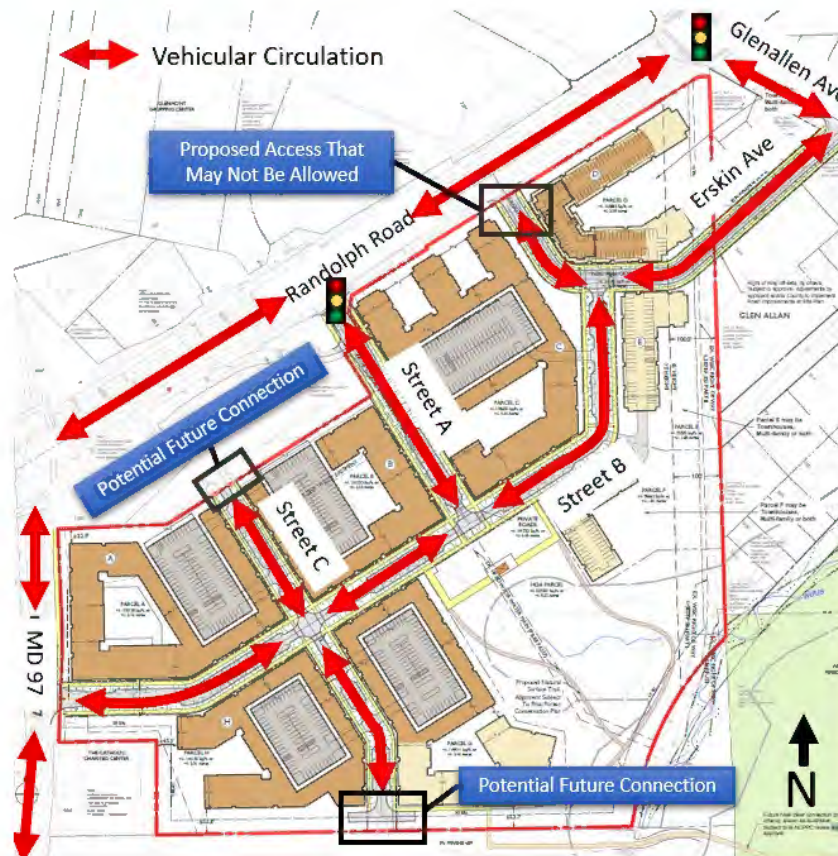


Figure 9: Vehicular Circulation

Pedestrian and bicycle access will be provided along Georgia Avenue, Randolph Road, and Erskine Avenue through improved sidewalks and bicycle facilities. The 2018 *Bicycle Master Plan* identifies a sidepath along the subject Property frontage on Georgia Avenue. The 2021 *Complete Streets Design Guide* also identifies frontage design parameters based on roadway classification. Frontage improvements on existing roadways and cross-sections for new roadways will be determined at the time of Preliminary Plan.

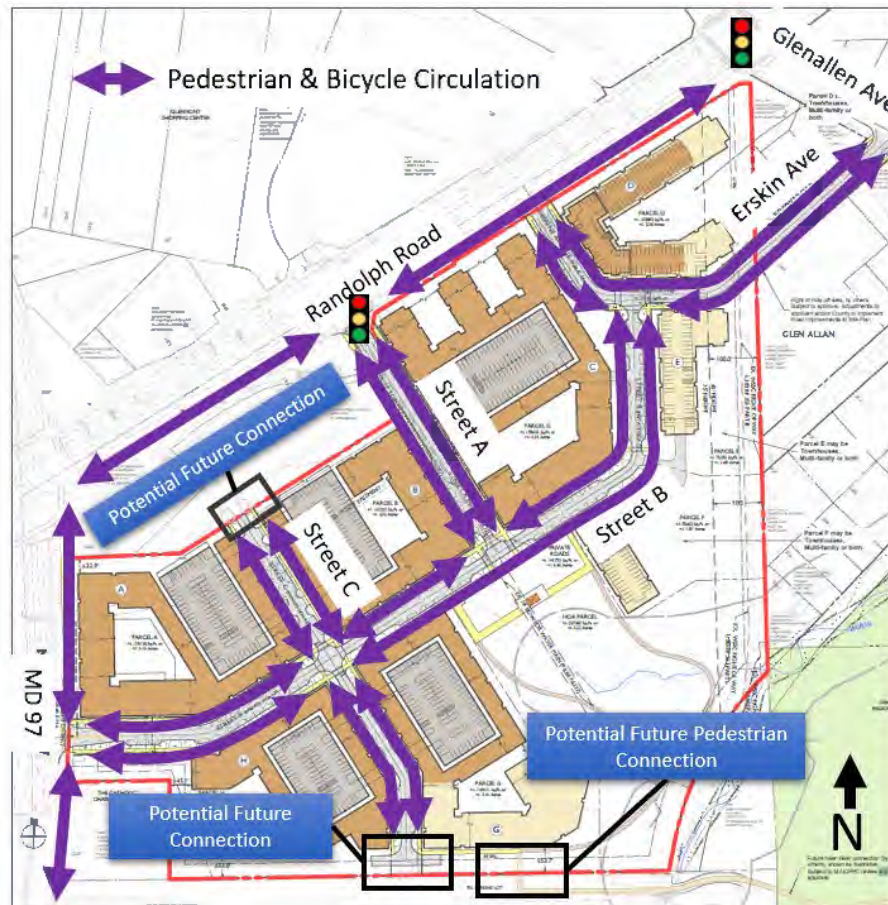


Figure 10: Nonmotorized Circulation

Transit access is provided along Georgia Avenue (MD 97) and Randolph Road. WMATA routes Y2, Y7, and Y8 operate on Georgia Avenue (MD 97) and the corridor also has a planned future Bus Rapid Transit (BRT) route. Ride On Route 10 and WMATA route C8 operate on Randolph Road. The Subject Property is also located within a half-mile of the Glenmont Metrorail Station located just a few blocks to the north (see Figure 1).

ENVIRONMENT

A Preliminary Forest Conservation Plan (FCP) was submitted concurrently with the Local Map Amendment application. The FCP shows 1.32 acres of forest retention and all forest conservation

requirements met onsite with 3.33 acres of forest planting. All existing and planted areas of forest will be protected by Category I Conservation Easements. Forest conservation requirements and stream valley buffer restoration must be met proportionately throughout the development phases.

For stormwater management, the Applicant proposes to utilize a mix of practices which will include Environmental Site Design features such as micro-bioretenion facilities, bioswales, and non-rooftop disconnects. The stormwater management strategy will be further refined during subsequent regulatory review.

PHASING

Proposed redevelopment of the Property will be implemented in multiple phases, as shown in Figure 11, although the phasing plan will likely evolve, and the order of phases may change to meet market demands. As construction proceeds, existing units will be maintained, and current tenants will be given priority to occupy the new units. The relocation strategy of existing residents that desire to remain is a key component of the Applicant's phasing plan.

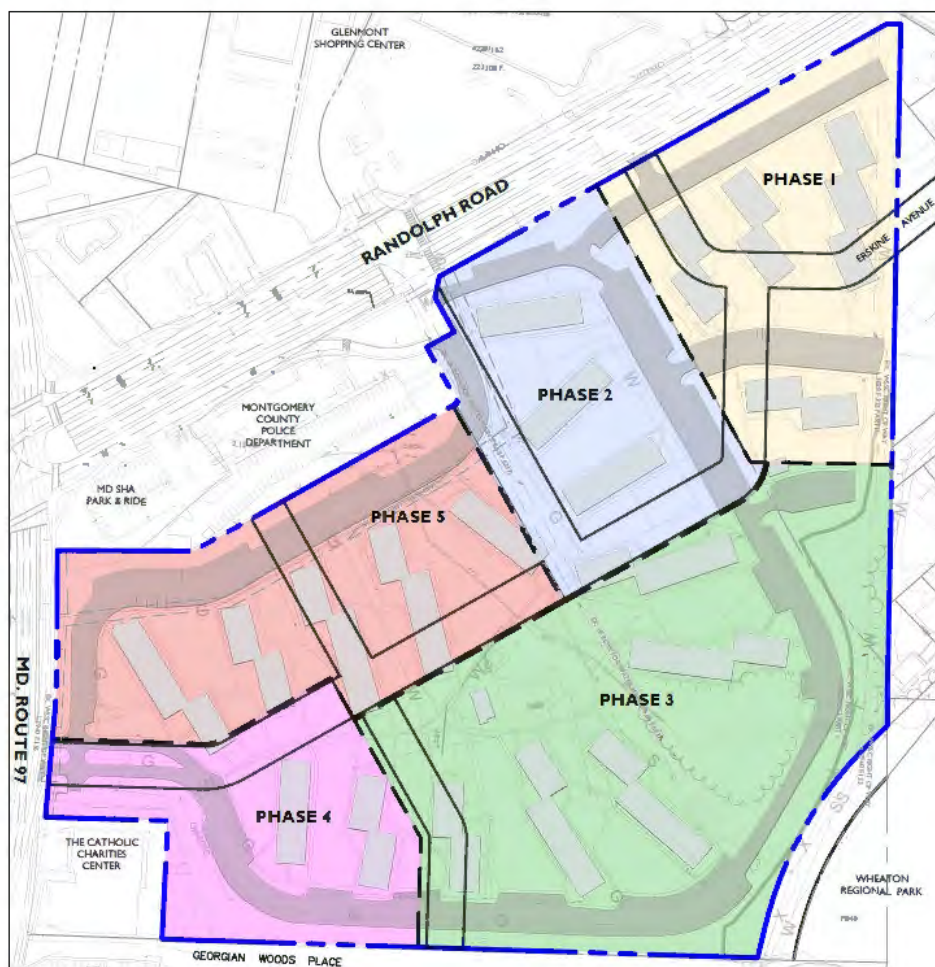


Figure 11: Phasing Exhibit

SECTION 4: COMMUNITY OUTREACH

The Applicant has complied with all submittal and signage requirements. A pre-submittal public meeting is not required for a Local Map Amendment application, but the Applicant met with the Glenmont Exchange community group on April 11, 2024.

Staff received two email inquiries about the Project, one from a resident asking for information, and another from a Montgomery County Public Schools (MCPS) demographer asking about Project phasing (Attachment E).

SECTION 5: LOCAL MAP AMENDMENT FINDINGS AND ANALYSIS

Per Section 59-7.2.1.E.2 of the Zoning Ordinance, for a Local Map Amendment application, the District Council must find that the floating zone plan will:

- a) *substantially conform with the recommendations of the applicable master plan, general plan, and other applicable County plans;***

The Application substantially conforms with the 2013 *Glenmont Sector Plan* (Sector Plan) and *Thrive Montgomery 2050*, the County's General Plan (General Plan), as described below.

Sector Plan

The Application proposes the first major development project since the approval of the Sector Plan. The proposed Local Map Amendment directly supports the high-level vision of the Sector Plan, which states:

Glenmont is envisioned as a predominantly residential neighborhood with new transit-oriented, mixed-use development concentrated in and around the Glenmont Shopping Center and Metro station. The Glenmont of the future will be a walkable, diverse, and sustainable community with services and amenities primarily for the local residents and workers. (Sector Plan, p. 5)

Specifically, page 29 of the Sector Plan offers detailed guidance for the future of the Glenmont Forest Block, which aligns with the proposed Local Map Amendment:

Because of the property's location within easy walking distance of the Metro, its proximity to the Glenmont Shopping Center, its single ownership, and its size, it may be suitable for future rezoning through a Local Map Amendment to CR Zone or an equivalent zone to encourage a multifamily redevelopment of four- to six-story buildings. (Sector Plan, p. 29)

The Sector Plan notes that a 100-foot-wide transition zone of CRN-1.5, C-0.25, R-1.5, H-45 (or similar) would be appropriate as a buffer between redevelopment and the adjacent single-family detached houses. However, instead of split-zoning the Property, this Project seeks to accomplish the same compatible transition through the use of a binding element. Specifically, the Applicant has proposed a binding element that limits building height to 45 feet for a distance of 100 feet from the eastern property line.

Additionally, the Sector Plan advises that if the Property is rezoned, redevelopment should use a compact building footprint and structured parking to emulate the existing open space character (p. 29). The proposed rezoning and consequent redevelopment would provide the

transitional buffer, compact building footprints, and structured parking, allowing for forest preservation at the rear of the Property.

The Sector Plan lays out specific objectives that should be achieved if the Property is rezoned (p.30):

- *Provide, as a priority, the CR Zone public benefits of Public Open Space to retain the open and green character of the site, and Affordable Housing to obtain more than the 12.5 percent required minimum MPDUs.*
- *Encourage the achievement of greater than minimum required Public Use Space through compact footprint.*

The Project's public benefits will be determined at the time of Sketch Plan. The Public Open Space Exhibit included with the FZP shows approximately 11 percent of Public Open Space, including an approximately one-acre neighborhood green, slightly more than the 10 percent requirement. The Public Open Space is conceptual at this time and will be evaluated in detail as the Project evolves during subsequent regulatory reviews. The Project must strike a balance between open space/green character and an urban fabric appropriate for a new housing development within close proximity to a Metro station.

The Applicant has proposed a binding element to provide 15 percent MPDUs and public benefit points will be granted accordingly at the time of Site Plan.

- *Protect and restore areas of environmental buffer and investigate options for stream restoration with redevelopment.*

The stream buffer area will be protected and reforested within a Category I Forest Conservation Easement. A portion of the onsite stream will be restored by the Parks Department in conjunction with the stream restoration on the adjacent Wheaton Regional Park property (as approved by Forest Conservation Plan No. F2023009A).

- *Preserve as much existing tree canopy as possible.*

The FZP allows for forest preservation at the rear of the Property. However, the Applicant is requesting removal of most of the onsite trees (located outside the forest) through a variance request. Staff is not recommending approval of the variance request at this time since the Floating Zone Plan associated with the Application is conceptual in nature. Approval to remove variance trees will be determined at a subsequent regulatory application. Staff recognizes that removal of many of the variance trees will be necessary due to building demolition impacts, but Staff will work closely with the Applicant to save trees where possible.

- *Connect new internal streets with Erskine and/or Wallace Avenues.*

The FZP shows the extension of Erskine Avenue as a public road through the Property and connecting with Randolph Road.

- *Construct a hiker/biker path between Randolph Road and the existing Wheaton Regional Park's hard surface trail network.*

Montgomery Parks studied new connections to Wheaton Regional Park during the recent *Wheaton Regional Park Master Plan* (WRP Plan) which was approved by the Planning Board in June 2022. The WRP Plan recommends a connection in this area coming from Georgian Woods Place, a private road within the townhouse development located directly south of the Property. The environmental constraints and intervening private property that separate Wheaton Regional Park and the Subject Property make a direct connection infeasible.

The FZP shows a future connection between the Subject Property and Georgian Woods Place, and then to Wheaton Regional Park along the recommended alignment. As noted in the Applicant Statement (page 19), the Applicant will pursue this connection at Site Plan, in coordination with Montgomery Parks and the property owner (HOC) to the south.

General Plan

Thrive Montgomery 2050 is the county's General Plan, a long-range guide for the development and growth of the community. One of the major elements of the General Plan is the Housing for All chapter, which contains recommendations intended to diversify the housing stock across incomes, building types, and geography (p. 23).

The Application is strongly aligned with policies in the Housing for All chapter and in particular the recommendation to provide more housing of all typologies (p. 121). The Application proposes a significant increase in the number of units within walking distance of a Metro Station and close to services and amenities. The Project will also provide regulated affordable units where none currently exist. Page 136 of the General Plan states:

The construction of a wider variety of sizes and types of housing and a focus on affordability and attainability will help diversify the mix of incomes in neighborhoods across the county, improving access to services, amenities, and infrastructure for low- and moderate-income residents, who are disproportionately people of color.

Specific policies from the General Plan addressed by the Application include:

- Increase the number of income-restricted affordable housing units, especially for low-income households with particular attention to high-income areas to ensure that

people who work in retail, service and other low-wage-earning employment sectors have the option not to commute. (p. 132)

- Facilitate the development of a variety of housing types in every part of the county but especially in areas near transit, employment, and educational opportunities. (p. 132)

b) further the public interest;

The Project will further the public interest by providing significantly more housing on the Property, yielding up to 1,793 additional units, at a convenient, transit accessible location. In addition, the Project will provide government regulated units (15 percent MPDUs) where none currently exist. The Property is across the street from the Glenmont Shopping Center offering many amenities, including a grocery store, to residents and within walking distance (approximately ½ mile) of the Glenmont Metro Station.

c) satisfy the intent and standards of the proposed zone and, to the extent the Hearing Examiner finds it necessary to ensure compatibility, meet other applicable requirements of this Chapter;

Applicability

Under Section 50-5.1.3.B, if a Floating Zone is recommended in a master plan, as is the case for the Subject Property, then there are no prerequisites or locational criteria required for a Local Map Amendment application. The Sector Plan recommends the Property for CRF-1.75, C-0.25, R-1.5, H-75, and CRNF-1.5, C-0.25, R-1.5, H-45, or similar, zones.

Intent of Floating Zones

Per Section 59-5.1.2. of the Zoning Ordinance, the intent of the Floating zones is to:

A. Implement comprehensive planning objectives by:

- 1. furthering the goals of the general plan, applicable master plan, and functional master plans;**
- 2. ensuring that the proposed uses are in balance with and supported by the existing and planned infrastructure in the general plan, applicable master plan, functional master plan staging, and applicable public facilities requirements; and**
- 3. allowing design flexibility to integrate development into circulation networks, land use patterns, and natural features within and connected to the Property; and**

The Project furthers the goals of the Sector Plan as described in a previous finding. The proposed development capitalizes on the Project's convenient and transit accessible location to significantly increase the amount of housing available in an area with the infrastructure to support it. A proposed street grid will better integrate the

new development into the existing circulation infrastructure. Compact development with structured parking allows for enhancement and restoration of the Property's natural features.

B. Encourage the appropriate use of land by:

- 1. providing flexible applicability to respond to changing economic, demographic, and planning trends that occur between comprehensive District or Sectional Map Amendments;**
- 2. allowing various uses, building types, and densities as determined by a Property's size and base zone to serve a diverse and evolving population; and**
- 3. ensuring that development satisfies basic sustainability requirements, including open space standards and environmental protection and mitigation; and**

The Sector Plan acknowledged that a floating Commercial/Residential Zone would be appropriate, given the Property's proximity to transit and commercial services, to allow redevelopment of the aging garden apartment complex. Further, the need for additional, transit-accessible housing has become acute since the approval of the Sector Plan and the proposed floating zone will help to alleviate the acute housing need.

The Project satisfies basic sustainability principles through infill redevelopment that is already well-served by existing infrastructure and public transportation, preservation of existing forest, afforestation, and establishment of stormwater management where none currently exist.

C. Ensure protection of established neighborhoods by:

- 1. establishing compatible relationships between new development and existing neighborhoods through limits on applicability, density, and uses;**
- 2. providing development standards and general compatibility standards to protect the character of adjacent neighborhoods; and**
- 3. allowing design flexibility to provide mitigation of any negative impacts found to be caused by the new use.**

The proposed development will provide a compatible relationship with existing adjacent residential development to the south and east. The Project provides generous setbacks to the south and east, and proposed buildings will step down in height approaching the detached residential neighborhood to the east. Buildings will

be restricted to 45 feet in height within a distance of 100 feet from the eastern Property line.

Development Standards

The design of the development will be finalized and reviewed by the Montgomery County Planning Board at the time of subsequent Sketch, Preliminary, and Site Plan review. The Project will meet the Development Standards for the CRF-1.75, C-0.25, R-1.5, H-75 Zone as demonstrated in the table below.

Table 1: Development Standards and Parking Requirements for the CRF 1.75, C 0.25, R 1.5, H-75 Zone

	Required/Permitted	Proposed
Tract Area	N/A	34.87 ac (1,518,942 sf)
Previous ROW Dedications	N/A	2.23 ac (97,220 sf)
Proposed ROW Dedications	N/A	0.74 ac (32,261 sf)
Site Area	N/A	31.90 ac (1,389,461 sf)
Density (max)		
Total	1.75 FAR (2,658,149 sf)	1.5 FAR (2,283,413 sf)
Commercial	0.25 FAR (379,736 sf)	5,000 sf
Residential	1.5 FAR (2,278,413 sf)	1.5 FAR (2,278,413 sf)
Setbacks from Property Boundary (min)		
<i>From Public Streets</i>	Established by Floating Zone Plan	Apartment Building- 0 ft Townhouse- 5ft
<i>From Abutting Lots</i>		
Rear/East (R-90)	37.5 ft ¹	45 ft
Rear/South (RT-15)	30 ft ²	30 ft
Open Space (min)	10% of site area (3.2 acres/138,946 sf)	±11% of site area (3.5 acres/152,840 sf)
Building Height (max.)	75 feet, and height compatibility requirements	75 feet, and height compatibility requirements of 59-4.1.8.B ^{3, 4, 5}
Public Benefits	100 points required	Determined at Sketch/Site Plan
¹ Under Section 59-4.1.8.A, the rear setback requirement is 1.5 x 25 (rear setback for detached house in R-90). ² Under Section 59-4.1.8.A, the rear setback requirement is 1.5 x 20 (RT-15 Zone setback). To be conservative, the Applicant is considering both east and south setbacks as "rear." ³ Per binding element, all buildings within 100 feet of the eastern lot line will be limited to 45 feet. ⁴ Per Section 4.5.2.C.7, the height limit of the zone and master plan do not apply to the extent required to provide more than 12.5% MPDUs. ⁵ Height of individual buildings will be determined during Sketch/Site Plan review.		

Table 2: Vehicle Parking¹

	Min ² /Max Spaces	Proposed Spaces
Studio (93)	47/93	2,275
1- bedroom (1191)	596/1,489	
2-bedroom (804)	402/1,206	
3-bedroom (187)	94/374	
2,275 units	1,138/3,162	

¹ Parking counts and types to be determined at the time of Site Plan.

² Parking adjustments for NADMS and unbundling under Section 50-6.2.3.I.

d) be compatible with existing and approved adjacent development;

The proposed development will provide a compatible relationship with existing adjacent development. Proposed buildings will meet or exceed the height and setback compatibility requirements of Section 59-4.1.8 adjacent to the existing residential developments located south and east of the Property. Buildings will be setback at least 45 feet from the existing detached residential neighborhood to the east, and buildings will step down in height approaching the eastern Property line. Further, buildings within a distance of 100 feet from the eastern Property line will be restricted to a maximum height of 45 feet. Buildings will be setback at least 30 feet from the existing townhouse development to the south and will satisfy the height compatibility requirements of Section 4.1.8.B along the southern Property line.

e) generate traffic that does not exceed the critical lane volume or volume/ capacity ratio standard as applicable under the Planning Board's LATR Guidelines, or, if traffic exceeds the applicable standard, that the applicant demonstrates an ability to mitigate such adverse impacts; and

A Transportation Impact Study was submitted with the LMA Application that analyzed the Floating Zone Plan's access concept and proposed residential density in accordance with the 2020-2024 *Growth and Infrastructure Policy*. As illustrated in the Applicant's transportation impact study, motor vehicle traffic estimated to be generated by the proposed development will not have detrimental impacts to the capacity of the study intersections, as measured by average seconds of delay per vehicle. Each of the studied intersections will remain within acceptable levels of congestion as determined under the Planning Board's LATR Guidelines. An updated transportation impact study will be required at the time of Preliminary Plan.

LOCAL AREA TRANSPORTATION REVIEW (LATR)

Per section 59-7.2.1.E.e. of the County Code, for a Floating zone application, the District Council must find that the floating zone plan will generate traffic that does not exceed the critical lane volume or volume/capacity ratio standard as applicable under the Planning Board's LATR Guidelines.

The 2020-2024 *Growth and Infrastructure Policy* requires evaluation of all transportation modes, including: auto-driver, transit, walking and biking. Mode-specific adequacy tests are required for any project estimated to generate 50 or more net new peak hour person trips. As a proposed development with 2,275 units the Project is estimated to generate 1,523 total peak hour person trips in the morning and 1,367 total peak hour person trips in the evening. After accounting for peak hour person trips currently associated with the existing 482 units on the Site, (265 morning peak hour person trips and 351 evening peak hour person trips), the Project is estimated to generate 1,258 net new morning peak hour person trips and 1,016 net new evening peak hour person trips. As a result of the estimated transportation impact, the Project must submit a Transportation Impact Study to determine multimodal adequacy.

Table 3--: Glenmont Forest Estimated Person Trip Generation

Land Use	Morning Peak Hour	Evening Peak Hour
Existing (credit)		
Multifamily Housing (Low-Rise) 482 units	265	351
Proposed		
Multifamily Housing (Mid-Rise) 2,275 units	1,523	1,367
Net New Person Trips		
	+1,258	+1,016

Source: Transportation Impact Study by Wells and Associates dated March 26, 2024, amended by staff

As the Site is located within an Orange Policy area (Kensington/Wheaton), a motor vehicle adequacy test is required. The intersection congestion standard for the policy area is 80 seconds of delay per vehicle.

The Property is immediately adjacent to a Red Policy Area (Glenmont). Per the LATR Guidelines, Red Policy areas do not have a vehicular congestion standard. However, the Applicant was asked to analyze seven intersections within the Glenmont Policy Area as well, but for informational purposes only. Mitigation for these intersections would not be required, in accordance with the 2023 LATR Guidelines.

As demonstrated in Attachment D, none of the studied intersections are anticipated to exceed the congestion standard. This includes conditions where a second access on Randolph Road is not provided. MCDOT raised some safety and operational concerns with this potential access and therefore a condition without this access was also assessed.

All study intersections will operate within the policy area's congestion standards. Additional traffic analysis will be completed at the time of Preliminary Plan.

In addition to the auto-driver assessment, other modal tests were also completed as set forth in the LATR Guidelines.

- Transit system adequacy was evaluated by inventorying four bus stops located within 1,500 feet of the Property. Where shelters and associated amenities are not provided, the Applicant must install the standard amenities in coordination with MCDOT.

Several bus stops within the study area do not have bus shelters. At the time of Preliminary Plan/Site Plan, the applicant will coordinate with Planning Staff and MCDOT to determine the improvements or fair contribution toward mitigation.

- Pedestrian system adequacy was evaluated within 1,000 feet of the Property. Mitigation will be required to achieve a Pedestrian Level of Comfort (PLOC) greater than 2 (Somewhat Comfortable), and/or deficiencies identified for streetlights within the scoped boundary. The Pedestrian system adequacy also requires mitigation for ADA deficiencies identified within 500 feet of the Property.

Several segments in the study area do not meet PLOC standards. While streetlights are in generally in good operational condition, further analysis will be needed to determine if all streetlights meet current MCDOT standards. ADA analysis demonstrated that there are several locations where there is ADA noncompliance. Mitigation will be needed to address these issues and will be determined in coordination with Planning Staff, MCDOT, and MDOT SHA at the time of Preliminary/Site Plan.

- Bicycle system adequacy was evaluated by analyzing bikeways within 1,000 feet of the Property. Mitigation will be required to achieve a Level of Traffic Stress 2 (LTS-2) or lower, consistent with the Bicycle Master Plan.

Several deficiencies were noted in the study area, particularly along Georgia Avenue (MD 97) Randolph Road, and Glenallan Avenue north of Randolph Road. At the time of Preliminary Plan/Site Plan, the applicant will work with Planning Staff, MCDOT, and MDOT SHA to determine mitigations to address these conditions.

A preliminary analysis indicates that public transportation facilities will be adequate for the proposed development and additional mitigations to address bicycle, pedestrian, and transit will be determined at the time of Preliminary/Site Plan.

In terms of access and circulation, vehicular access will be provided via access points on Georgia Avenue (MD 97), Randolph Road, and Erskine Avenue. A network of internal roadways will provide circulation within the site and provide opportunities for future connections to adjacent properties to the north and south. The site access concept is sufficient with the understanding that further coordination and analysis will occur at the time of Preliminary Plan.

- f) *when applying a non-Residential Floating zone to a property previously under a Residential Detached zone, not adversely affect the character of the surrounding neighborhood.***

Not applicable, the Property is currently zoned R-30 which is classified as a Residential Multi Unit Zone.

SECTION 6: PRELIMINARY FOREST CONSERVATION PLAN FINDINGS & ANALYSIS

ENVIRONMENTAL GUIDELINES

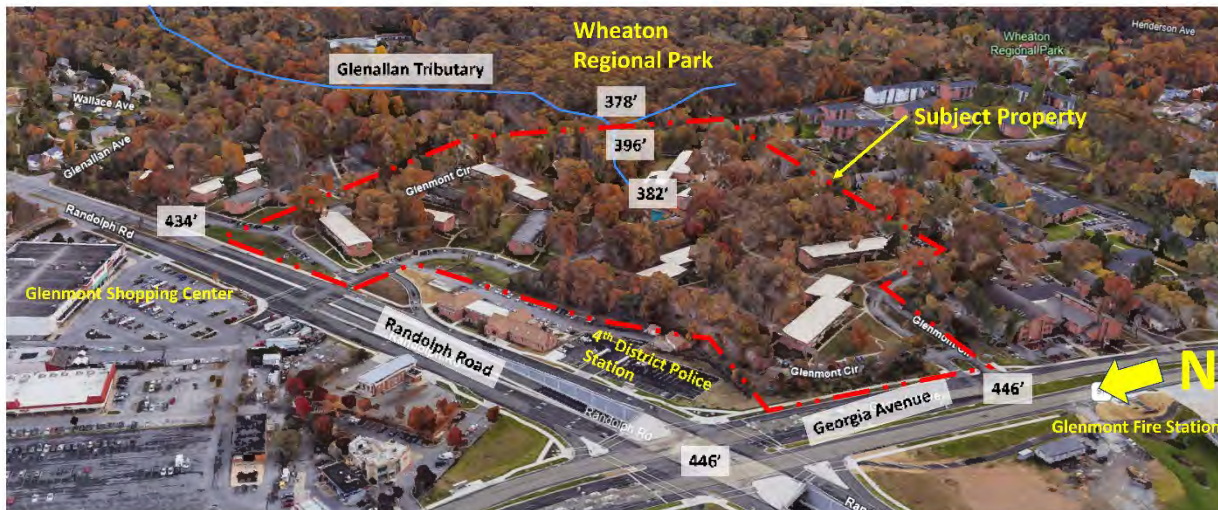


Figure 12: Environmental Setting

A Natural Resources Inventory/Forest Stand Delineation (NRI/FSD) was approved on May 1, 2023 (NRI/FSD No. 420230670). The Property is currently developed with garden apartments and associated drive aisles and parking areas. The drive aisles and parking areas are located at the edges of the Property, with the garden apartments located in the interior. There are over 200 large and specimen trees evenly distributed over the Property, directly adjacent to the garden apartments (Figure 12).

The Property folds inwards diagonally from both the Georgia Avenue and Randolph Road frontages to the southeast corner of the Property. There is an elevation change of nearly 70 feet. The Property slopes down to the Glenallan Tributary of the Northwest Branch (a Use IV watershed), which flows under the existing drive aisle and into Wheaton Regional Park. There are 3.28 acres of stream valley buffer on-site and 0.02 acres of floodplain associated with the Glenallan Tributary.

The stream valley buffer is partially forested with 1.12 acres of forest. An additional 0.67 acres of forest serve as a buffer for the adjacent single-family residences, for a total of 1.79 acres of forest on the Property.

The Property was initially developed before the adoption of the Environmental Guidelines and the existing development includes buildings, parking, and drive aisles within the stream valley buffer. Redevelopment of the Property presents the opportunity to remove the existing development from



Figure 13: Existing Trees

the stream valley buffer and plant additional forest on the Property to protect the stream. The submitted Forest Conservation Plan is in conformance with the Montgomery County Planning Department's Environmental Guidelines, as it shows the restoration and reforestation of the entire stream valley buffer.

PRELIMINARY FOREST CONSERVATION PLAN

Per Section 22A-11(a)(1), FCP No. F20240450 was submitted for review and approval concurrently with Local Map Amendment H-149 (Attachment B). The FCP includes a conceptual layout that will be developed in multiple phases over many years. The FCP shows 1.32 acres of forest retention, with an additional 0.46 acres of forest that is located within existing utility easements and rights-of-way that are not being disturbed by this development. (Forest within existing utility easements and rights-of-way is neither counted as protected or cleared by the Applicant if left undisturbed.) 0.01 acres of forest will be cleared for a stormwater management outfall. The FCP includes 3.33 acres of forest planting, which includes the entire stream valley buffer (except within existing utility easements and rights-of-ways). All existing and planted areas of forest will be protected by Category I Conservation Easements. Natural surface paths may be allowed within the Category I Conservation Easements, but locations and alignments will be determined through future amendments.

The FCP also includes 0.54 acres of landscape planting. The landscape planting areas are either adjacent to forest planting areas, but do not meet the depth requirements for forest, or serve as buffers between developments. The landscape planting areas will contribute to meeting the Property's afforestation requirement as the proposed FCP meets the requirements of Section 22A-12(d)(2). Per Section 22A-12(d)(2), "Afforestation must be accomplished by the planting of forest cover, unless if the applicant demonstrates to the satisfaction of the Planning Board or Planning Director, as the case may be, that afforestation using forest cover is inappropriate for a site because of its location in an urban setting, redevelopment context, high-density residential, commercial, industrial, planned unit development, or institutional area (as defined in Section 22A-3), or similar reason, in which case afforestation requirements may be satisfied by tree cover." The proposed development satisfies this requirement by being located in an urban setting, with high-density residential development proposed, and by being a redevelopment project.

The FCP shows the Applicant meeting all forest conservation requirements on-site, with the stream valley buffer fully reforested (Figure 14). However, the proposed development will be phased, with demolition and construction occurring with each phase. The first development applications must include a phasing plan, showing the sequence of building removal and forest planting. Forest conservation requirements and stream valley buffer restoration must be met proportionately throughout the development phases.

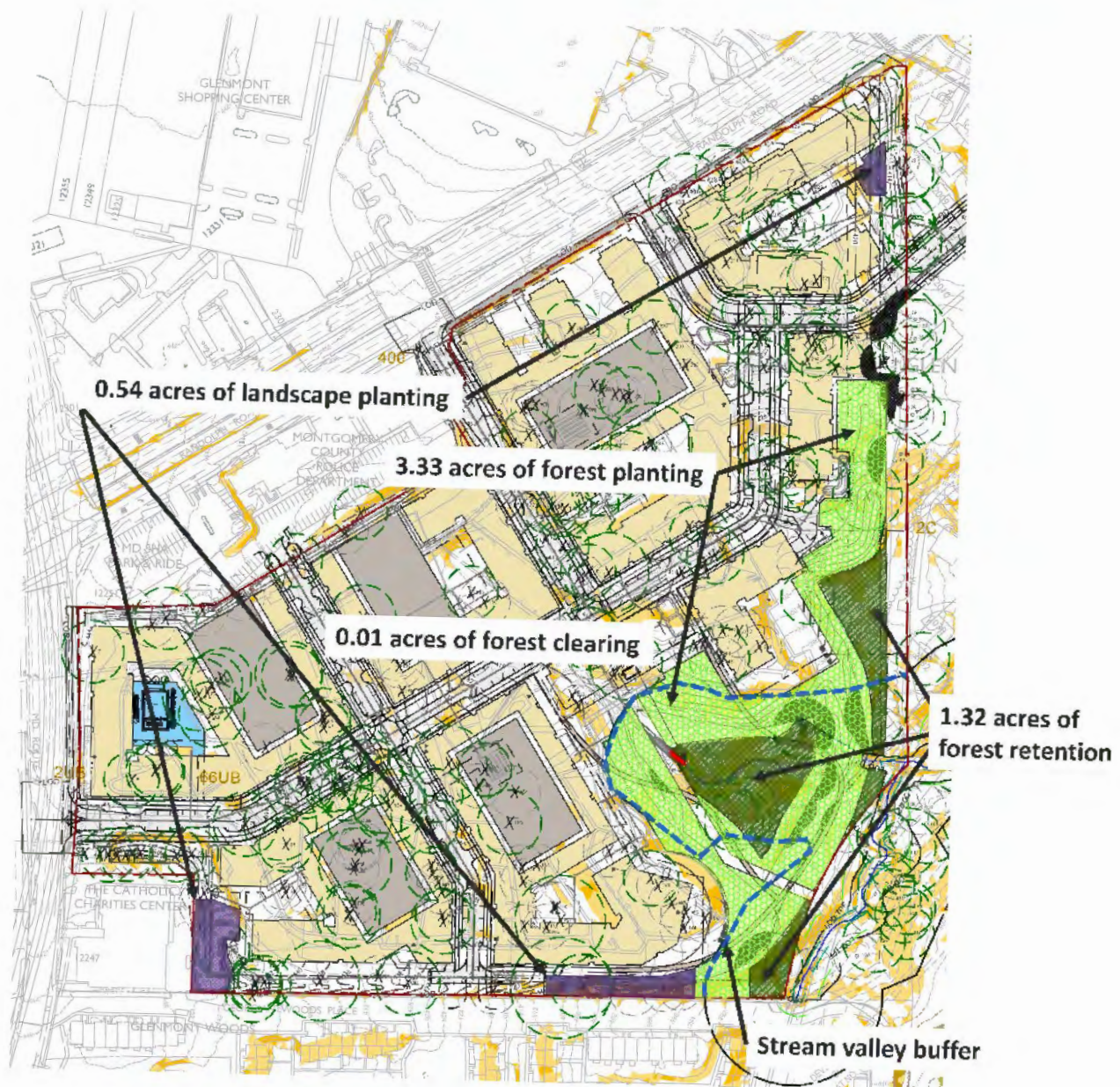


Figure 14: Preliminary FCP

VARIANCE REQUEST

Section 22A-12(b)(3) of the Forest Conservation Law identifies certain individual trees as high priority for retention and protection (“Protected Trees”). Any impact to these Protected Trees, including removal or any disturbance within a Protected Tree’s critical root zone (“CRZ”), requires a variance under Section 22A-21 (“Variance”). Otherwise, such resources as defined under Section 22A-12(b)(3) must be left in an undisturbed condition.

The Property contains approximately 120 Protected Trees with a diameter-at-breast-height (DBH) greater than 30 inches. Many of these trees are located adjacent to existing buildings, which will be

demolished through the redevelopment process. The proposed redevelopment of the Property will require the removal of most of the Protected Trees onsite due to the impacts of demolition, grading, and construction. While a variance request is required with each FCP application showing impacts to Protected Trees, in this case, Staff is not recommending approval of a variance request at this time because of the specific nature of the project and Property. The protection of trees requires detailed information about types and locations of construction disturbance. The phased demolition and construction of the proposed development means that there is no way to evaluate whether individual trees can be saved, impacted, or removed or when these activities will occur. The topography of the Property will require significant grading, but impacts may be minimized through detailed site design, which occurs through the Site Plan process.

The Site Plan process also provides the opportunity to find suitable locations for variance mitigation trees, which must be provided at a rate of 1 caliper inch replaced for every 4 inches of trunk diameter removed, in addition to other forest planting and landscape credit plantings. Additionally, these trees will be a minimum size of 3 caliper inches and located outside of utility and stormwater management easements and rights-of-way. The removal of Protected Trees and the planting of mitigation trees must be met proportionately throughout the development phases.

As currently shown, the Applicant will be proposing to remove 105 Protected Trees, with a total of 3,467 inches DBH proposed for removal and 867 caliper inches using a minimum 3 caliper inches tree required as mitigation. Through the detailed review process, impacts will be avoided or minimized as much as possible so that existing trees can be retained.

SECTION 7: CONCLUSION

Staff recommends approval of the Local Map Amendment H-149 with binding elements and Preliminary Forest Conservation Plan F20240450 with conditions. The Applications satisfy the applicable findings and requirements of the Zoning Ordinance and the Forest Conservation Law.

ATTACHMENTS

- Attachment A: Floating Zone Plan
- Attachment B: Preliminary Forest Conservation Plan
- Attachment C: Letter from the Department of General Services
- Attachment D: Existing and Future Traffic Impact Table
- Attachment E: Community correspondence
- Attachment F: SHA Letter

ATTACHMENT A



OFFICE OF ZONING AND ADMINISTRATIVE HEARINGS CERTIFICATION
 THIS IS A TRUE COPY OF THE FLOATING ZONE PLAN (EXHIBIT NUMBER _____)
 APPROVED BY THE DISTRICT COUNCIL ON _____ BY RESOLUTION NUMBER _____
 IN APPLICATION NUMBER _____

HEARING EXAMINER _____ DATE _____

HEARING EXAMINER NAME (PRINTED) _____

Preliminary Not For Construction

LEGEND	
	Site
	Stream Valley Buffer
	Floodplain
	Proposed 45' ht. Building
	Proposed 75' ht. Building
	Proposed Parking Garage
	Existing Regional Park
	Proposed Amenity Building

- GENERAL NOTES**
- All existing zoning information shown is per Glenmont Sector Plan that was last updated on December 2013.
 - The site is currently zoned R-30, multi-family, low-density residential.
 - The site is proposed zone CR-F (CR-F2, R-1.5, H-20).
 - The site is comprised of parcels N766 (26.31 acres) and N610 (6.67 acres), currently in use as the Americans Glenmont Forest Apartments (Approximately 482 existing dwelling units).
 - Boundary lines, calculated areas and adjoint information shown hereon were taken from deeds and plats of record. A boundary survey has not been completed by Rodgers Consulting, Inc.
 - Building footprints and square footages of buildings, open space, landscaping and recreation space to be decided at time of Site Plan.
 - Building height may be increased above 75' to allow for inclusion of MPDUs above 12.5%.
 - The ZFAP includes more than 12.5% MPDUs. Bonus density may be achieved for future development per Sec. 45.2 C.1.
 - Zero foot of setback due to variable width public RW along Randolph Rd and Georgia Avenue.
 - The minimum side setback is equal to 1.5 times the minimum side setback required for a detached house on the abutting property.
 - The minimum rear setback is equal to 1.5 times the minimum rear setback required for a detached house on the abutting property.

- BINDING ELEMENTS**
- The maximum building height is limited to 45 feet, for a distance of 100 feet from the eastern property boundary.
 - The use of the property will be limited to Multi-Unit Living, Townhouse Living, Retail/Service Establishments (up to 5,000 sf) and Restaurant use.
 - The development must provide a minimum of 15 percent (15%) Moderately Priced Dwelling Units (MPDUs) or Montgomery County Department of Housing and Community Affairs (MCHCA)-approved equivalent consistent with the requirements of Chapter 25A.

CR-F Zone Optimal Method Development Standards

Category	Standard	Value
Green Space Area:	Green Space Area	148,911 sq ft
	Green Space Area	148,911 sq ft

Article 59-2, Uses and Use Standards, Division 2.1 Use Table

Use	Permitted	Restricted	Prohibited
Multi-Family	Yes	No	No
Commercial Program	Yes	No	No

Article 59-4 Development Standards for Euclidean Zones, Division 4.5 Commercial/ Residential Zones

Standard	Value
Maximum Building Height	45 feet
Maximum Floor Area Ratio (FAR)	1.5
Minimum Lot Area	10,000 sq ft

CR-F Zoning Ordinance Compliance

Ordinance Reference	Restricted/Required	Provided
59-2.1.A Use Table	Multi-Family, Commercial Program	Compliant
59-4.5.3.C Height	Maximum Building Height	45 feet
59-4.5.3.D FAR	Maximum Floor Area Ratio	1.5
59-4.5.3.E Lot Area	Minimum Lot Area	10,000 sq ft

Grady Management, Inc.

RODGERS CONSULTING

1987 Central Avenue, Suite 200, Columbia, Maryland 21046
 Tel: 301-346-4700 (Fax): 301-346-4256, www.rodgers.com

DESIGN TEAM
 Owner: Developer
 Glenmont Forest Investors L.P.
 c/o Grady Management, Inc.
 8630 Fenwick Street, Suite 625
 Silver Spring, Maryland 20910
 301-492-1976
 Attn: Brian Albert

Lead: Larch Early Brewer
 7500 Wisconsin Avenue, Suite 700
 Bethesda, Maryland 20814
 301-652-0747
 Attn: Steven A. Robbins

Lead Planning / Landscape Architect / Civil Engineering
 Rodgers Consulting, Inc.
 1987 Century Boulevard, Suite 200
 Columbia, Maryland 21046
 301-948-4700
 Attn: Randall Bantore

Topographer
 Wells & Associates
 7200 Wisconsin Avenue, Suite 500
 Bethesda, Maryland 20814
 301-971-3415
 Attn: Nancy Ransal



PROFESSIONAL CERTIFICATION
 I, the undersigned, do hereby certify that this document was prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland (License No. 15356, Expiration Date: 12/31/24).

**GLENMONT FOREST
 CR FLOATING ZONE**

Montgomery County, Maryland, Election District No. 13

PROJECT NUMBER: 11038
 DATE: APRIL 2024
 SCALE: 1" = 100'
 DRAWING TITLE: Floating Zone Plan

DRAWING NUMBER: 304414 - 042024

Courtney Cason

From: Ossont, Greg <Greg.Ossont@montgomerycountymd.gov>
Sent: Monday, March 18, 2024 10:32 AM
To: Gary Unterberg
Cc: Robins, Steven A.; Elizabeth Rogers; Randall Rentfro
Subject: RE: Glenmont Forest/Police Station

Thanks, Gary.

While the County appreciates the planning staff's suggestion to consider Grady's application and what opportunities it might present for the County, the County has no plans to pursue a zoning change at this time. Later this year, DGS will commence a major HVAC renovation of the 4D station. Concurrently, DGS is developing a Program of Requirements for a new 4th District station. A future site has not been identified, to date. Based on where we are in those two efforts, DGS estimates MCPD occupying the current 4D station for at least the next 7-10 years. Upon successful relocation of the station, the County will consider the disposition of the property at that time and may elect to pursue a rezoning. For now, however, a rezoning or redevelopment of the property is not an active consideration.

I hope this information is helpful.

Greg

Greg Ossont
Deputy Director
Department of General Services

From: Gary Unterberg <GUnterberg@RODGERS.com>
Sent: Wednesday, March 13, 2024 5:49 PM
To: Ossont, Greg <Greg.Ossont@montgomerycountymd.gov>
Cc: Robins, Steven A. <sarobins@lercheary.com>; Elizabeth Rogers <ecrogers@lercheary.com>; Randall Rentfro <RRentfro@RODGERS.com>
Subject: Glenmont Forest/Police Station

[EXTERNAL EMAIL]

Greg, per our conversation today, I am confirming that the County will not be rezoning the Police property next to the Glenmont Forest apartment complex at this time. The zoning application for Glenmont Forest will move forward independent of the County land/police station.

Please respond to this email confirming our conversation.

Thanks
Gary

Gary F. Unterberg, RLA, LEED AP BD+C

Senior Vice President



19847 Century Blvd, Ste. 200, Germantown, MD 20874

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ATTACHMENT D

Existing and Future Traffic Impact

Intersection	Policy Area Type	Policy Standard	Existing AM Peak Hour Delay (s)	Existing PM Peak Hour Delay (s)	Background AM Peak Hour Delay (s)	Background PM Peak Hour Delay (s)	Total Future Conditions with Two Randolph Road Accesses AM Peak Hour Delay (s)	Total Future Conditions with Two Randolph Road Accesses PM Peak Hour Delay (s)	Total Future Conditions without Two Randolph Road Accesses AM Peak Hour Delay (s)	Total Future Conditions without Two Randolph Road Accesses PM Peak Hour Delay (s)
1. Randolph Road/Livingston Street (Signalized)	Red	N/A	5.7	5.5	5.7	5.6	5.7	5.6	5.7	5.6
2. Randolph Road/Georgia Avenue (Signalized)	Red	N/A	65.7	48.3	70.6	56.7	92.3	66.4	92.3	66.4
3. Randolph Road/Glenmont Circle (Signalized)	Red	N/A	8.5	21.3	8.5	21.3	21.1	25.1	21.1	25.1
4. Randolph Road/Residential Driveway (Unsignalized)	Red	N/A	0.1	0.2	0.1	0.2	0.3	0.3	N/A	N/A
5. Randolph Road/Glenallan Avenue (Signalized)	Red	N/A	21.6	10.0	25.2	12.8	26.7	13.3	27.5	13.8

Intersection	Policy Area Type	Policy Standard	Existing AM Peak Hour Delay (s)	Existing PM Peak Hour Delay (s)	Background AM Peak Hour Delay (s)	Background PM Peak Hour Delay (s)	Total Future Conditions with Two Randolph Road Accesses AM Peak Hour Delay (s)	Total Future Conditions with Two Randolph Road Accesses PM Peak Hour Delay (s)	Total Future Conditions without Two Randolph Road Accesses AM Peak Hour Delay (s)	Total Future Conditions without Two Randolph Road Accesses PM Peak Hour Delay (s)
6. Randolph Road/Middlevale Lane/Garden Gate Road (Signalized)	Orange	80	21.5	8.1	21.8	8.0	21.6	8.0	21.6	8.0
7. Georgia Avenue/Layhill Road (Signalized)	Red	N/A	8.9	2.4	9.5	2.1	10.1	2.1	10.1	2.1
8. Georgia Avenue/Glenmont Circle (Unsignalized)	Orange	80	0.2	0.2	0.2	0.3	1.5	3.2	1.5	3.2
9. Georgia Avenue/Shorefield Road (Signalized)	Orange	80	8.0	9.8	8.3	9.8	9.1	9.7	9.1	9.7
10. Layhill Road/Glenallan Avenue (Signalized)	Red	N/A	36.4	32.6	36.1	32.7	36.2	32.6	36.2	32.6

Intersection	Policy Area Type	Policy Standard	Existing AM Peak Hour Delay (s)	Existing PM Peak Hour Delay (s)	Background AM Peak Hour Delay (s)	Background PM Peak Hour Delay (s)	Total Future Conditions with Two Randolph Road Accesses AM Peak Hour Delay (s)	Total Future Conditions with Two Randolph Road Accesses PM Peak Hour Delay (s)	Total Future Conditions without Two Randolph Road Accesses AM Peak Hour Delay (s)	Total Future Conditions without Two Randolph Road Accesses PM Peak Hour Delay (s)
11. Georgia Avenue/Arcola Avenue (Signalized)	Orange	80	19.5	27.9	19.6	28.7	20.1	30.8	20.1	30.8
12. Glenallan Avenue/Erskine Avenue (Unsignalized)	Orange	80	0.0	0.1	0.0	0.1	0.9	0.5	2.5	1.4
13. Randolph Road/Heurich Road (Signalized)	Orange	80	1.6	2.3	1.5	2.3	1.5	2.2	1.5	2.2

ATTACHMENT E

From: [O'Hara, Robin](#)
To: [Tettelbaum, Emily](#); [Baek, Hye-Soo](#)
Subject: RE: [EXTERNAL] RE: 10-VAR-F20240450.doc Glenmont Forest redevelopment/rezoning
Date: Tuesday, February 27, 2024 4:38:59 PM
Attachments: [image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)
[image010.png](#)

[EXTERNAL EMAIL] Exercise caution when opening attachments, clicking links, or responding.

Hi Emily,

Thank you. This is helpful.

Robin

Robin R. A. O'Hara
Senior Planner - Demographer
Division of Capital Planning and Real Estate
Montgomery County Public Schools
Tel: 240-740-7767 (new telephone number)

From: Tettelbaum, Emily <Emily.Tettelbaum@montgomeryplanning.org>
Sent: Tuesday, February 27, 2024 4:27 PM
To: O'Hara, Robin <Robin_O'Hara@mcpsmd.org>; Baek, Hye-Soo <hye-soo.baek@montgomeryplanning.org>
Subject: RE: [EXTERNAL] RE: 10-VAR-F20240450.doc Glenmont Forest redevelopment/rezoning

Hi Robin,

Thanks for reaching out. We are in the early stages of the regulatory review process with the rezoning application, and we have not worked out any details about the phasing strategy. I have included a paragraph below about phasing from the [applicant's statement of justification](#) (italics added for emphasis):

VII. Phasing

The proposed development is anticipated to be constructed in multiple phases. The particular order of the phase may change to meet market demands. Rental units are anticipated at this time. Some for-sale housing, multifamily and/or town house units may be introduced as an option at site plan. *Existing tenants will be given priority to occupy the new units. Continued access and care will be taken to build the new housing*

while existing units are maintained until the final housing is built. The relocation strategy of existing residents that desire to remain is a key component of the phasing plan.

My assumption is that demolition will occur in phases with the construction of the new buildings. I hope this information is helpful and feel free to contact me with additional questions. I can also put you in touch with a member of the applicant team if that would be helpful.

Best Regards,
Emily

**Emily Tettelbaum**

Planner III, Midcounty Planning Division
Montgomery County Planning Department
2425 Reedie Drive, Floor 14, Wheaton, MD 20902
emily.tettelbaum@montgomeryplanning.org
o: 301-495-4569



From: O'Hara, Robin <Robin_O'Hara@mcpsmd.org>
Sent: Tuesday, February 27, 2024 1:09 PM
To: Baek, Hye-Soo <hye-soo.baek@montgomeryplanning.org>
Cc: Tettelbaum, Emily <Emily.Tettelbaum@montgomeryplanning.org>
Subject: RE: [EXTERNAL] RE: 10-VAR-F20240450.doc Glenmont Forest redevelopment/rezoning

[EXTERNAL EMAIL] Exercise caution when opening attachments, clicking links, or responding.

Hye-Soo,
Thank you for connecting me to Emily.

Emily,
In order to understand potential impact, it would be helpful to understand the project approach for the development. As mentioned in the thread below, depending on if this will be a slow implementation, or a raze all structures and start over approach, the impacts will be different. Do you more about the plans and timeline?

Robin

Robin R. A. O'Hara
Senior Planner - Demographer
Division of Capital Planning and Real Estate
Montgomery County Public Schools
Tel: 240-740-7767 (new telephone number)

From: Baek, Hye-Soo <hye-soo.baek@montgomeryplanning.org>
Sent: Tuesday, February 27, 2024 1:02 PM
To: O'Hara, Robin <Robin_O'Hara@mcpsmd.org>
Cc: Tettelbaum, Emily <Emily.Tettelbaum@montgomeryplanning.org>
Subject: Re: [EXTERNAL] RE: 10-VAR-F20240450.doc Glenmont Forest redevelopment/rezoning

Hi Robin,

I've discussed with the lead planner for the rezoning request, Emily Tettelbaum, and she said MCPS is welcome to submit comments related to this project. I've cc'd Emily to this email, so feel free to reach out to her.

Best,
Hye-Soo

From: O'Hara, Robin <Robin_O'Hara@mcpsmd.org>
Sent: Tuesday, February 13, 2024 12:17 PM
To: Baek, Hye-Soo <hye-soo.baek@montgomeryplanning.org>
Subject: RE: [EXTERNAL] RE: 10-VAR-F20240450.doc Glenmont Forest redevelopment/rezoning

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Hye-Soo,

I know this is not imminent, but I am trying to understand the potential impact especially if MCPS is supposed to provide comments during this time. I suspect it will take several years to get through the process and then several more to construct whatever is approved. Usually there is a time period where tenants are slowly moved to consolidate or not replaced as they leave so they can empty a building and start on construction, but if this is a scorched earth approach it could be a much higher initial impact.

Thanks for looking into it.

Robin

Robin R. A. O'Hara

Senior Planner - Demographer

Division of Capital Planning and Real Estate

Montgomery County Public Schools

Tel: 240-740-7767 (new telephone number)

From: Baek, Hye-Soo <hye-soo.baek@montgomeryplanning.org>
Sent: Tuesday, February 13, 2024 12:09 PM
To: O'Hara, Robin <Robin_O'Hara@mcpsmd.org>
Subject: [EXTERNAL] RE: 10-VAR-F20240450.doc Glenmont Forest redevelopment/rezoning

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Robin,

I asked our Midcounty staff reviewer, and she said that we only have a rezoning request in for review at this point. Any phasing or other development issues will have to be resolved through future development plans, but according to her, even if they go through Preliminary, Site, and Sketch Plan all concurrently, they will still not be under construction in a year. Overall, I think it's too early for our staff to even know any more about the expected timeline from this potential application. If I do hear more about it (they would need a school adequacy analysis if applying for preliminary plan, at which point I will be notified), I'll let you know.

Best,

Hye-Soo

From: O'Hara, Robin <Robin_O'Hara@mcpsmd.org>
Sent: Monday, February 12, 2024 4:25 PM
To: Baek, Hye-Soo <hye-soo.baek@montgomeryplanning.org>
Subject: 10-VAR-F20240450.doc Glenmont Forest redevelopment/rezoning

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Hye-Soo,

Do you have any idea about the timing of this project? While it isn't an issue at the moment for MCPS, if the development includes wholesale removal of the existing garden apartments followed by building units over time, that would have a large impact. I assume nothing would happen in the next year, but any info you have would be helpful.

Thanks,

Robin

Robin R. A. O'Hara

Senior Planner - Demographer

Division of Capital Planning and Real Estate

Montgomery County Public Schools

Tel: 240-740-7767 (new telephone number)

From: [Linda Bidlack](#)
To: [Tettelbaum, Emily](#)
Cc: [Adrianvala, Zubin](#); [Charles Mallory](#); [Amy Gottlieb](#); robert.d.stern@gmail.com; kerry.landon@ymail.com; zhou.heidi@gmail.com; [Matthew Kasper](#)
Subject: Re: How will the timing of the Glenmont Corridor study coincide with the Glenmont Forest re-zoning and redevelopment project?
Date: Friday, March 15, 2024 8:34:51 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

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Thank you, Emily and Zubin, for responding so quickly! It's VERY helpful to know we have a direct line to each of you and this additional distinction between the regulatory process and the study process, at least in the County's point of view.

We will be in touch, I'm sure. :)

Gratefully,

Linda

Linda K. Bidlack, MA, PCC
Resilient Leadership Coaching & Consulting
ChoicePoints Learning, LLC
240-446-8884

To schedule a 30 min session click [here](#)

To schedule a 60 min session click [here](#)

To schedule a 90 min session click [here](#)

To schedule a 2-hour assessment debrief session click [here](#)

linda@lindakbidlack.com

www.lindakbidlack.com

www.choicepointslearning.com

<http://www.linkedin.com/in/lindabidlack>

Leadership Circle Profile, Hogan Leads, IDI, FEBI, DISC/PIAV, ESCI, EQi/360

On Thu, Mar 14, 2024 at 3:45 PM Tettelbaum, Emily
<Emily.Tettelbaum@montgomeryplanning.org> wrote:

Hi Linda,

Feel free to contact me with questions, comments, etc. Here is the tentative public hearing schedule for the rezoning application:

- Planning Board: May 30
- Hearing Examiner: June 14
- County Council: TBD

Best Regards,

Emily



Emily Tettelbaum

Planner III, Midcounty Planning Division

Montgomery County Planning Department

2425 Reedie Drive, Floor 14, Wheaton, MD 20902

emily.tettelbaum@montgomeryplanning.org

o: 301-495-4569



From: Adrianvala, Zubin <Zubin.Adrianvala@montgomeryplanning.org>

Sent: Thursday, March 14, 2024 11:55 AM

To: Linda Bidlack <linda@lindakbidlack.com>

Cc: Charles Mallory <mallorychas@gmail.com>; Amy Gottlieb <amy_gottlieb@hotmail.com>;
robert.d.stern@gmail.com; kerry.landon@ymail.com; zhou.heidi@gmail.com; Matthew Kasper
<matthew.kasper77@gmail.com>; Tettelbaum, Emily
<Emily.Tettelbaum@montgomeryplanning.org>

Subject: Re: How will the timing of the Glenmont Corridor study coincide with the Glenmont Forest re-zoning and redevelopment project?

Hi, Linda.

Thanks to you and neighbors for your interest in the study.

The study's engagement will certainly provide opportunities for conversations about the project.

However, the regulatory process is distinct from the study's process.

I am copying my colleague Emily Tettelbaum on this email.

She is the lead reviewer for the Glenmont Forest project & will lead public engagement about the same – also you can find documents related to the application [here](#). Hope this helps.

Looking forward to more conversations about study over the coming months.

Thanks again,

Zubin

Zubin Adrianvala, PhD

Planner III | Midcounty Planning Division

Montgomery County Planning Department

2425 Reedie Drive, 14th Floor, Wheaton, MD 20902

Zubin.Adrianvala@montgomeryplanning.org

o: (301)495-4703

[Glenmont Corridors Opportunity Study - Montgomery Planning](#)

From: Linda Bidlack <linda@lindakbidlack.com>

Sent: Wednesday, March 13, 2024 4:58 PM

To: Adrianvala, Zubin <Zubin.Adrianvala@montgomeryplanning.org>

Cc: Charles Mallory <mallorychas@gmail.com>; Amy Gottlieb <amy_gottlieb@hotmail.com>; robert.d.stern@gmail.com <robert.d.stern@gmail.com>; kerry.landon@ymail.com <kerry.landon@ymail.com>; zhou.heidi@gmail.com <zhou.heidi@gmail.com>; Matthew Kasper <matthew.kasper77@gmail.com>

Subject: How will the timing of the Glenmont Corridor study coincide with the Glenmont Forest re-zoning and redevelopment project?

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We are some concerned neighbors and curious to know how the study will be used in determining the execution of the redevelopment of the Glenmont Forest apartments.

Since Glenmont Forest has an application already well underway, can that project be paused until all the input is received as part of the study that's being undertaken?

How can we neighbors be sure to be involved each step of the way in the planning for Glenmont Forest's new apartment complex, as it will impact the nature of our immediate neighborhood quite a bit?

We appreciate the intent of the study and the need to shape smart development. Thanks for your help!

Very best,

Linda

Linda K. Bidlack, MA, PCC

Resilient Leadership Coaching & Consulting

ChoicePoints Learning, LLC

240-446-8884

To schedule a 30 min session click [here](#)

To schedule a 60 min session click [here](#)

To schedule a 90 min session click [here](#)

To schedule a 2-hour assessment debrief session click [here](#)

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Leadership Circle Profile, Hogan Leads, IDI, FEBI, DISC/PIAV, ESCI, EQi/360

May 8, 2024

Ms. Nancy Randall
Wells + Associates, Inc.
7200 Wisconsin Avenue, Suite 500
Bethesda, MD 20814

Dear Ms. Randall:

Thank you for the opportunity to review the Traffic Impact Study (TIS) prepared by Wells + Associates, Inc., revised March 26, 2024 (received on March 28, 2024), for the (proposed Glenmont Forest redevelopment – SHA Tracking #24APMO003XX) in Montgomery County, Maryland. The State Highway Administration (SHA) review is complete, and we are pleased to respond.

The State Highway Administration (SHA) has reviewed the plans and is pleased to respond.

- Proposed access to the 2,275 mid-rise apartment dwelling units and ancillary retail space is via two (2) site access to Randolph Road (MD 183), one (1) site access to Georgia Avenue (MD 97), and one (1) site access to Erskine Avenue.
- The following intersections were analyzed under existing, background and future conditions:
 - MD 183 intersection with Livingston Street
 - MD 183 intersection with MD 97
 - MD 183 intersection with Glenmont Circle
 - MD 183 intersection with Site Access
 - MD 183 intersection with Glenallan Avenue
 - MD 183 intersection with Middlevale Lane / Garden Gate Road
 - MD 97 intersection with Layhill Road
 - MD 97 intersection with Glenmont Circle
 - MD 96 intersection with Shorefield Road
 - Layhill Road intersection with Glenallan Avenue
 - MD 97 intersection with Arcola Avenue
 - Glenallan Avenue intersection with Eskine Avenue
 - MD 183 intersection with Heurich Road
- The report concludes that the study intersections will continue to operate below congestion standard thresholds.

Page #650

Ms. Nancy Randall
SHA Tracking No.: 24APMO003XX
Page 2

May 8, 2024

We do note that there will be impacts to queuing and delays on the network. However, we understand that an additional/updated TIS will be provided at the time of Preliminary Plan to provide updated vehicle counts and will likely follow the 2024-2028 GIP and LATR. Additional analysis will be provided as part of this TIS. We look forward to scoping and reviewing this future study.

If you have any questions, or require additional information, please contact Mr. Kwesi Woodroffe at 301-513-7347, by using our toll- free number in Maryland only at 1-800-876-4742 (x7347) or via email at kwoodroffe@mdot.maryland.gov or shaamdpermits@mdot.maryland.gov.

Sincerely,



5/8/2024

for Derek Gunn, P.E.
District Engineer, SHA District 3

DG/ym

cc: Mr. Alvin Powell, SHA – D3 Traffic
Mr. Kwesi Woodroffe, SHA – Access Management Regional Engineer, District 3
Ms. Obianuju Ani, SHA – TDSD
Ms. Qianyu Hu, SHA – D3 Traffic
Ms. Rebecca Torma, Montgomery County MCDOT – Manager
Mr. Richard Brockmyer, Montgomery County Planning Department – Transportation Planner III
Mr. Robert Owolabi, SHA – D3 Traffic Ms. Rola Daher, SHA – TFAD
Mr. Scott Holcomb, SHA – TFAD
Ms. Urooj Zafar, SHA – Assistant District Engineer. District 3
Ms. Yeshitla Argaw, SHA – TDSD
Ms. Zahyrah Ramirez, SHA – EST

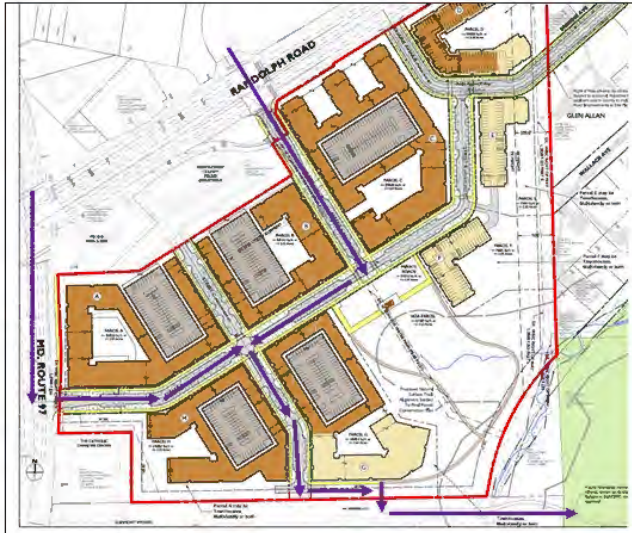
ATTACHMENT 2

From: [Tettelbaum, Emily](#)
To: [John Bogasky](#); [MCP-Chair](#)
Subject: RE: Hiker/Biker Connection to Wheaton Regional from Glenmont Forest
Date: Thursday, May 23, 2024 11:56:39 AM
Attachments: [image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)
[image006.png](#)
[image008.png](#)
[image001.png](#)

Mr. Bogasky,

You have a very good point about a pedestrian connection from the shopping center through the Glenmont Forest property to the Park, and we are hoping to establish that connection. A lot more work and coordination will be necessary moving forward, but the pedestrian connection through the Glenmont Forest property (from the north) will hopefully look something like the purple arrows in the graphic below.

Best Regards,
 Emily



Emily Tettelbaum

Planner III, Midcounty Planning Division
 Montgomery County Planning Department
 2425 Reedie Drive, Floor 14, Wheaton, MD 20902
emily.tettelbaum@montgomeryplanning.org
 o: 301-495-4569



From: John Bogasky <johnbogasky@hotmail.com>
Sent: Wednesday, May 22, 2024 10:08 AM
To: Tettelbaum, Emily <Emily.Tettelbaum@montgomeryplanning.org>; MCP-Chair <mcp-chair@mncppc-mc.org>
Subject: RE: Hiker/Biker Connection to Wheaton Regional from Glenmont Forest

[EXTERNAL EMAIL] Exercise caution when opening attachments, clicking links, or responding.

Emily,

Thank you very much. I was not aware of this detail, and the developer did not bring it up when their team attended our Glenmont Exchange meeting.

My comments also addressed the need for pedestrian access via an accessible hard surface through Glenmont Forest from a redeveloped Glenmont Shopping Center. The Wheaton Regional Park Plan does not address this. I don't expect many would choose to walk south on Georgia Ave and then down Georgia Pl. They would be more likely to drive to the Shorefield playground area. The Glenmont Sector Plan calls for significantly increased residential density in the Glenmont area. Pedestrian access to the park and the investment needed to create it should match the anticipated large number of residents that will use such access in the future.

I lack the engineering expertise to prescribe the best route. I am asking the Planning Board to consider the broader need and link plans for Glenmont Forest redevelopment with direct, accessible, welcoming pedestrian access to Wheaton Regional Park from both Glenmont Forest and a redeveloped Glenmont Shopping Center.

Regards,

John Bogasky
 President

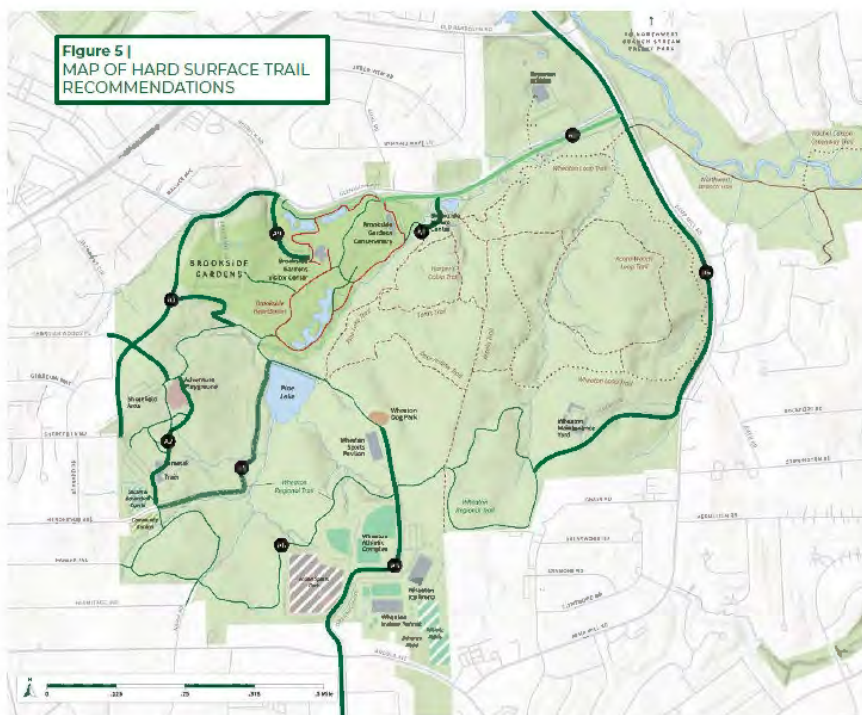
Glenmont Exchange
301-980-3215 Mobile
glenmontexchange.com
[Like us on Facebook](#)

From: Tettelbaum, Emily <Emily.Tettelbaum@montgomeryplanning.org>
Sent: Wednesday, May 22, 2024 9:42 AM
To: John Bogasky <johnbogasky@hotmail.com>; MCP-Chair <mcp-chair@mncppc-mc.org>
Subject: RE: Hiker/Biker Connection to Wheaton Regional from Glenmont Forest

Good Morning Mr. Bogasky,

Thank you for reaching out to the Planning Board about the Glenmont Forest project. Please note that the 2022 [Wheaton Regional Park Master Plan](#) recommends a new hard surface/paved trail connector into the park from Georgian Woods Place, as shown on the Floating Zone Plan. I contacted a Parks Department employee who worked on the Wheaton Regional Park Master Plan to find out more details about this recommended trail connection, and this was his response:

We settled on this route primarily due to environmental constraints/steep slopes in the area occupied by the paper street/ROW and the Percontee-owned site. Constructing an ADA-compliant trail would be very challenging and very expensive if it were to cross that area. We determined that we could more effectively provide an ADA trail from Georgian Woods Place.



EXISTING CONDITIONS

- | | |
|-------------------------------|-------------------|
| HARD SURFACE TRAILS | PARK AREAS |
| — Hiker/Biker | Montgomery Parks |
| — HeartSmart Trail | Garden Area |
| NATURAL SURFACE TRAILS | Water Area |
| — Shared by All | Athletic Fields |
| ••• Hiker/Equestrian | Dog Park |
| ••• Hiker Only | Playground |
| ••••• Biker Only | Buildings |

PROPOSED RENOVATIONS

- | | |
|------------------------------------|--|
| NEW TRAIL CONSTRUCTION | PROPOSED PARK AREAS |
| — New HS Paved Path - Hiker/Biker | Proposed Community Garden |
| — New HS Gravel Path - Hiker/Biker | Proposed Active Sports Park |
| — Pave Existing HS - Hiker/Biker | Proposed Ball Courts & Athletic Fields |
| | NEW ROAD CONSTRUCTION |
| | — New Entrance Road |

23 MONTGOMERY COUNTY PARKS | WHEATON REGIONAL PARK MASTER PLAN

Feel free to contact me if you have any further questions or concerns.

Best Regards,
Emily



Emily Tettelbaum
Planner III, Midcounty Planning Division
Montgomery County Planning Department
2425 Reedie Drive, Floor 14, Wheaton, MD 20902
emily.tettelbaum@montgomeryplanning.org
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From: John Bogasky <johnbogasky@hotmail.com>
Sent: Tuesday, May 21, 2024 10:54 AM
To: MCP-Chair <mcp-chair@mncppc-mc.org>
Cc: Tettelbaum, Emily <Emily.Tettelbaum@montgomeryplanning.org>
Subject: Hiker/Biker Connection to Wheaton Regional from Glenmont Forest

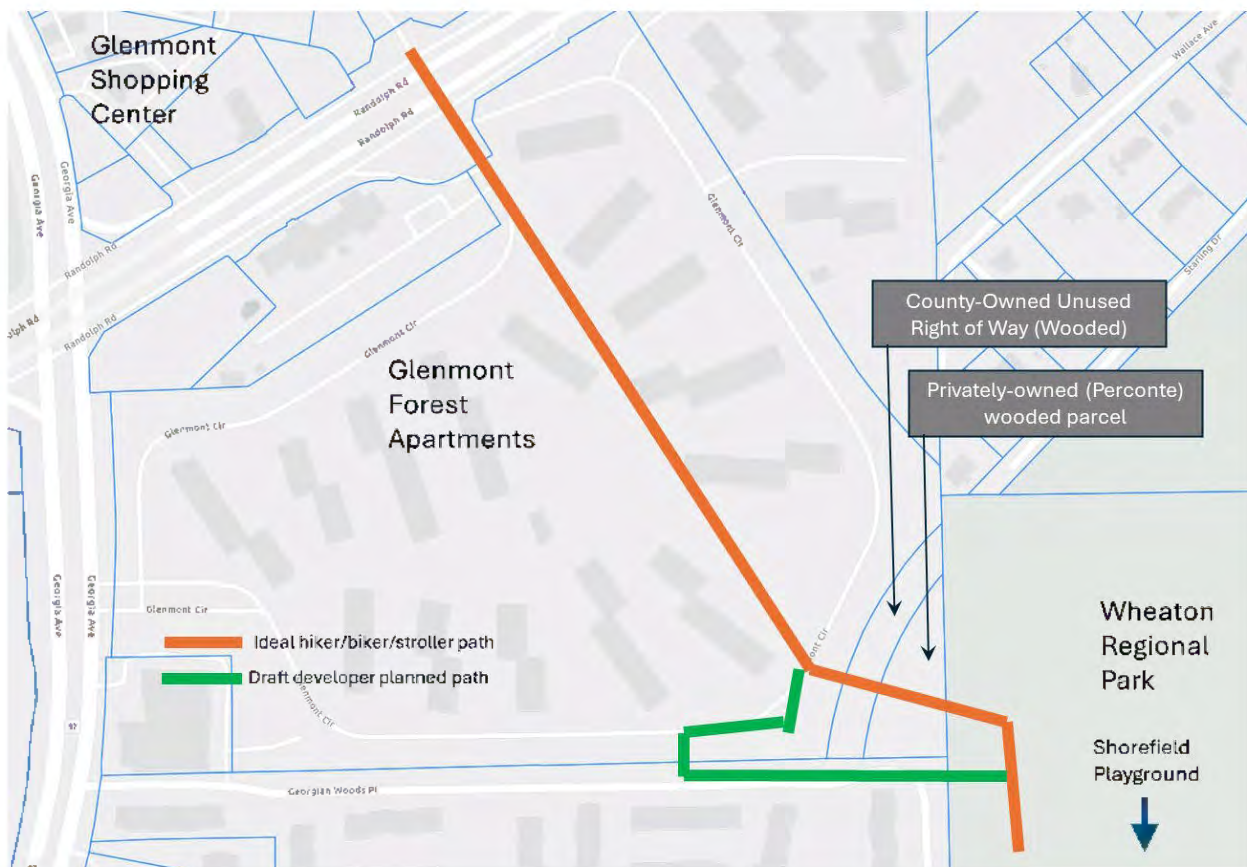
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Planning Board members;

I am submitting these comments regarding the Glenmont Forest redevelopment plans to be discussed at the May 30th Planning Board meeting. In general, I support the redevelopment of this site, which was anticipated in the Glenmont Sector Plan.

The 2013 Glenmont Sector Plan recommended creating a pedestrian connection to Wheaton Regional Park when the Glenmont Forest site was redeveloped. As you can see in the diagram below, the Glenmont Forest Apartment site is adjacent to Wheaton Regional Park, specifically to the Shorefield Picnic section of the park.

The developer supports this goal, but off-site obstacles are outside their control. Specifically, two small parcels are between Glenmont Forest and Wheaton Regional. These parcels are wooded and blend in with the parkland, so they don't appear in satellite images of the area. You can see the parcels in the diagram below. If we are to fulfill the Glenmont Sector Plan recommendation for a proper pedestrian connection from Glenmont to Wheaton Regional Park, the developer needs help from County Government, especially Montgomery Parks.



The developer's current site drafts (admittedly early drafts) satisfy the Sector Plan recommendation by circumventing these two parcels, instead routing the trail onto HOC property just to the south of their site.

The developer's draft Forest Conservation Plan proposes a natural surface path. However, this path needs to be accessible and easily used by strollers and bikes, which requires a hard-surface trail.

If we have the proper path that provides the welcoming, direct park access that Glenmont residents need, the County needs to provide the developer with access through these two small parcels.

- County-Owned Right of Way

Presumably, the County could easily provide access through the unused right-of-way. The complicating factor is that most of this parcel is a small stream

valley scheduled for restoration. Any trail would need to bridge this stream in a manner similar to how streams were bridged in places to create the Matthew Henson Trail. I recognize that these environmental concerns should be handled with care, but it seems the County could solve this challenge if there is will. Eventually, it makes sense to transfer this land to Montgomery Parks.

- Perconte Property

The private property owner would need to grant the right of way for the path through their property, or the County would need to acquire the property through purchase or a land swap. Given the site's location, unserved by any road and seemingly part of the park, it's hard for my layman's eye to see how that site would ever be developed. The right answer is for this wooded site to eventually be incorporated into Wheaton Regional Park.

I was a key advocate for this trail during the Community Meetings for the Glenmont Sector Plan. I still hope to see it happen.

Once fully redeveloped, the Glenmont Forest site will likely house upwards of 5,000 residents, and a redeveloped Glenmont Shopping Center Site could house an additional 5,000. **In a County that today spends big money on bike lanes and pedestrian safety, it would be truly tragic if residents of a redeveloped Glenmont still needed to get in the cars to visit the Shorefield playground and other Wheaton Regional Park attractions.**

Unfortunately, my schedule will prevent me from testifying in person at the May 30th hearing. I hope that the Planning Board can help spur County Government to actively support an accessible, stroller-friendly, pedestrian access path into Wheaton Regional Park from Glenmont.

Regards,

John Bogasky
President
Glenmont Exchange
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Treasurer
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John Bogasky
2308 Eagle Rock Place
Silver Spring, MD 20906