TRAFFIC IMPACT ANALYSIS

FOR

CHEVERLY - URBAN ATLANTIC

Prepared for:
Urban Atlantic Development, LLC

Prepared by:

LENHART TRAFFIC CONSULTING, INC.

TRAFFIC ENGINEERING & TRANSPORTATION PLANNING

November 22, 2024

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Appendices

List of Exhibits

Section 1 Introduction

1.1 Project Description

This Traffic Impact Analysis was prepared for the proposed Cheverly Urban Atlantic development in Cheverly, MD. The property was previous site for the Prince George's County Hospital which is no longer in operation. An aerial view and the study intersections analyzed in this report are shown on **Exhibit 1a** while **Exhibit 1b** details the boundaries of the various parcels that make up the property.

The development is proposed to be broken into two phases. Phase 1 consists of the vast majority of the development including 822 multifamily units, 48 condos, 75 townhouses, a 71 room hotel, 39,725 square feet of retail space, and 70,000 square feet of medical office. Phase 2 consists of an additional 310 multifamily units and 90 townhouse units.

Access to the site will remain via the existing roadway network and two additional access points to the Cheverly community are proposed as extensions of Inwood Street and Lockwood Road.

1.2 Scope of Study

A Scoping agreement was coordinated with M-NCPPC and is included in Appendix A. The trip distribution for the site is shown in Exhibit 1. It should be noted that the original submission of the scoping documents had trip distribution percentages the same for all portions of the development. However, the trip distribution percentages for the retail portion of the development should be more oriented to/from the Cheverly community as opposed to the more regional roadways (MD 295, US 50, etc.) and has been updated as is shown on Exhibit 1a.

Unsignalized Intersections: The procedure for unsignalized intersections is not a true test of adequacy but rather an indicator that further operational studies need to be conducted. For two-way stop-controlled intersections a three-step process is employed: (1) Vehicle delay is computed in all movements using the *Highway Capacity Manual* (Transportation Research Board) procedure. If no movement exceeds 50 seconds, the intersection is deemed to operate adequately, and the analysis is complete. (2) If delay exceeds 50 seconds and the minor street volumes on each approach are 100 or fewer, the intersection is deemed to operate adequately, and the analysis is complete. (3). If the delay exceeds 50 seconds and at least one approach volume exceeds 100, the critical lane volume is computed. If the critical lane volume is 1,150 or less, the intersection is deemed to operate

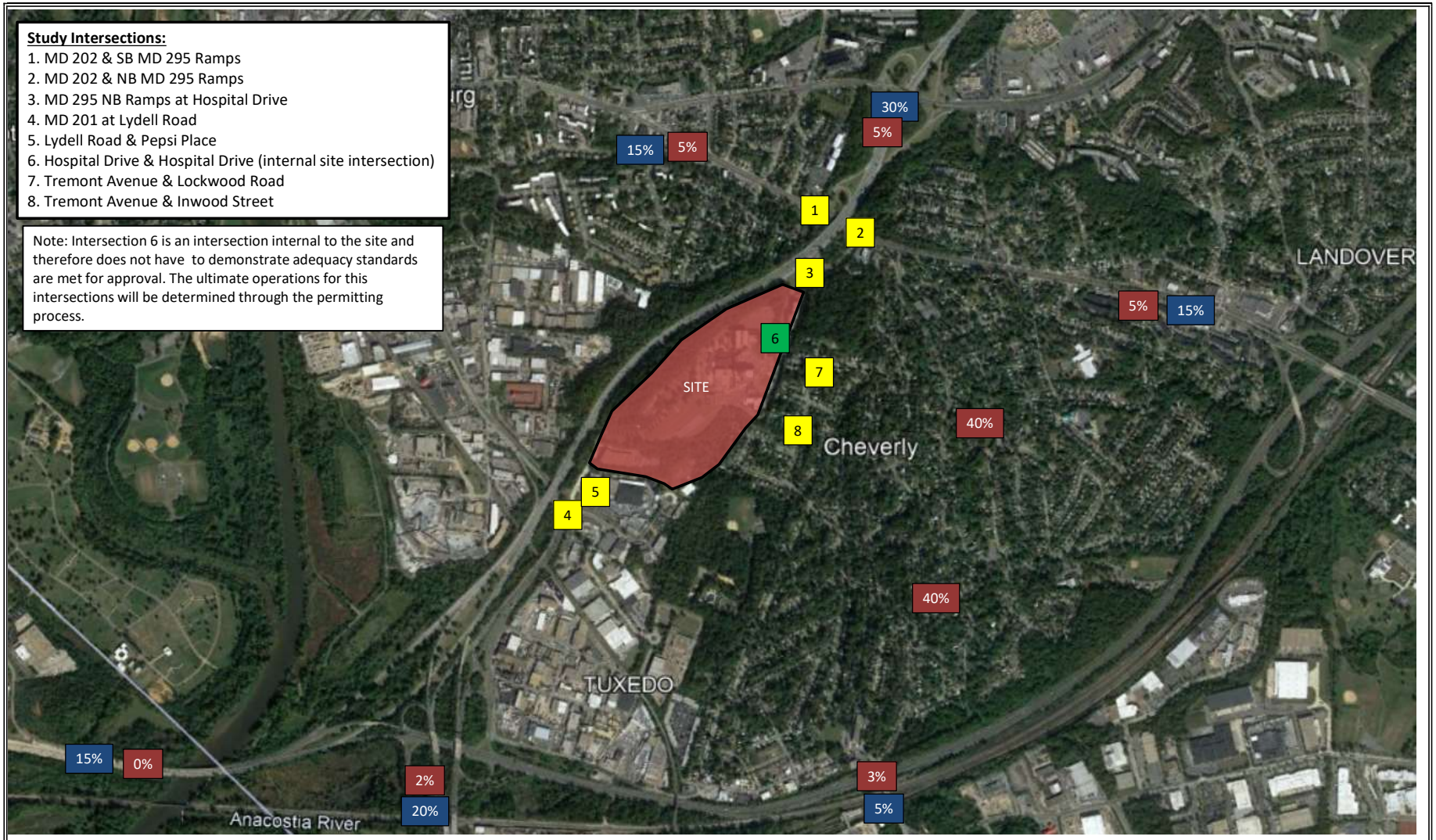
adequately, and the analysis is complete. The three-step process is to be treated as pass-fail and a level of service will not be reported. In situations where an unsignalized intersection does not pass the three-step process, it is typical to include a condition of approval to require a signal warrant study, and if warranted and required by the operating agency, the signal would be bonded and permitted prior to the release of building permits.

For all-way stop-controlled intersections a two-part process is employed: (a) vehicle delay is computed in all movements using the *Highway Capacity Manual* (Transportation Research Board) procedure; (b) if delay exceeds 50 seconds, the critical lane volume is computed; and the same findings are applied as discussed above.

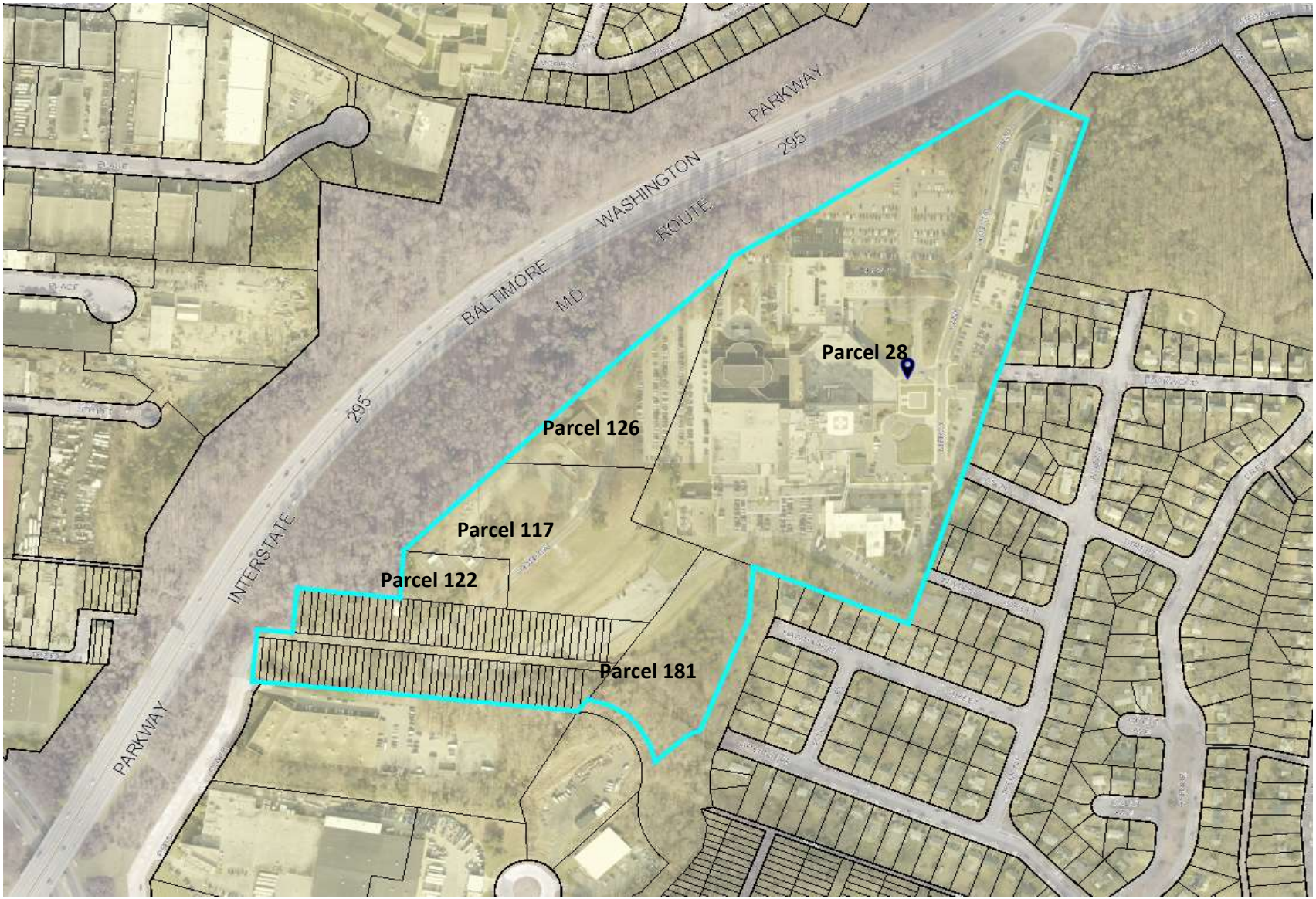
Signalized Intersections: The subject property is zoned CGO and is located within Transportation Service Area 1, as defined in Plan 2035. As such, the subject property is evaluated according to the following standards which would require a level of service "E" or better for signalized intersections. M-NCPPC Guidelines require that signalized intersections operate with CLV less than 1,600 in Transportation Service Area 1 where the site is located.

Level-of-Service standards are summarized in Table 24-4502 of the Subdivision Ordinance as shown in the table below.

Table 24-4502: Summary of Public Facility Adequacy Standards	
Area of Applicability	**Level of Service**
RTO and LTO base and Planned Development (PD) zones	"Edge" areas of RTO and LTO base and PD Zones: LOS "Transit Edge" (Critical Lane Volume of 1601-1800) "Core" areas of RTO and LTO base and PD Zones: LOS "Transit Core" (Critical Lane Volume of 1801-2000)
	In instances where CLV exceeds 1800 in the RTO and LTO base and PD zone "edge" or where CLV exceeds 2000 in the RTO and LTO base and PD zone "core," refer to Section 24-4505(b)(4)
Transportation Service Area 1 (Plan Prince George's 2035 Approved General Plan (Plan 2035, Map 14), excluding RTO and LTO base and PD zones; and NAC and TAC base and PD zones (regardless of location)	LOS "E" (Critical Lane Volume of 1451-1600)
Transportation Service Area 2 (Plan 2035, Map 14), excluding RTO, LTO, NAC, and TAC base and PD zones	LOS "D" (Critical Lane Volume of 1301-1450)
Transportation Service Area 3 (Plan 2035, Map 14)	LOS "C" (Critical Lane Volume of 1151-1300)



Traffic Impact Analysis LENHART TRAFFIC CONSULTING, INC. 645 BALTIMORE ANNAPOLIS BLVD, SUITE 214 SEVERNA PARK, MD 21146 www.lenharttraffic.com	Site Location Map & Study Intersections % - Residential / OfficeTrip Distribution % - Retail Trip Distribution	**Exhibit 1a**



Traffic Impact Analysis LENHART TRAFFIC CONSULTING, INC. 645 BALTIMORE ANNAPOLIS BLVD, SUITE 214 SEVERNA PARK, MD 21146 www.lenharttraffic.com	Map of Existing Property and Parcels	**Exhibit** **1b**

Section 2 Existing Conditions

2.1 Description of Road Network

The key roads in the study area are:

- MD 202
- MD 201
- MD 295 (Baltimore Washington Parkway)

2.2 Lane Configurations

The Existing Lane Use & Traffic Control Devices are shown on **Exhibit 2**.

As is discussed in Section 4.5, the northbound approach to MD 202 at Intersection 2 is signed as a two lane approach but the striped lane is less than 20 feet wide and does not have accompanying pavement markings to delineate two lanes. In order to provide a conservative analysis, the approach has been analyzed as a one lane approach as shown.

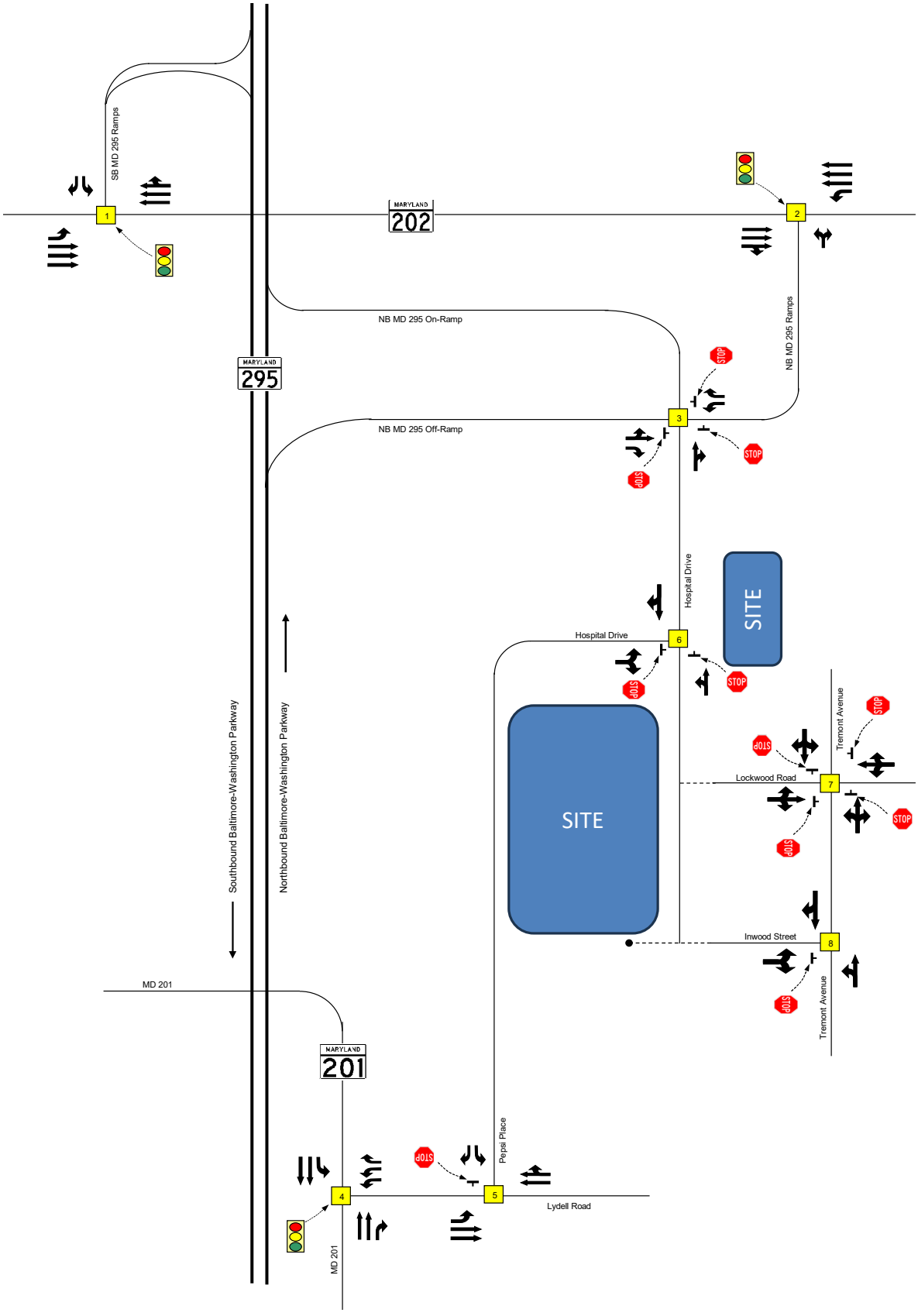
It should be noted that under existing conditions, the intersection of Hospital Drive and the internal roadway (Intersection 6) operates with the southbound through movement as a free movement while the other approaches are stop controlled. It is proposed that this be changed due to the increase in traffic at this intersection anticipated as part of this development.

In addition, the intersections along Lydell Road at MD 201 and Pepsi Place (Intersections 4 and 5) are closely aligned. A queuing analysis has been conducted for these two intersections to analyze whether additional traffic control measures should be considered at either of these intersections.

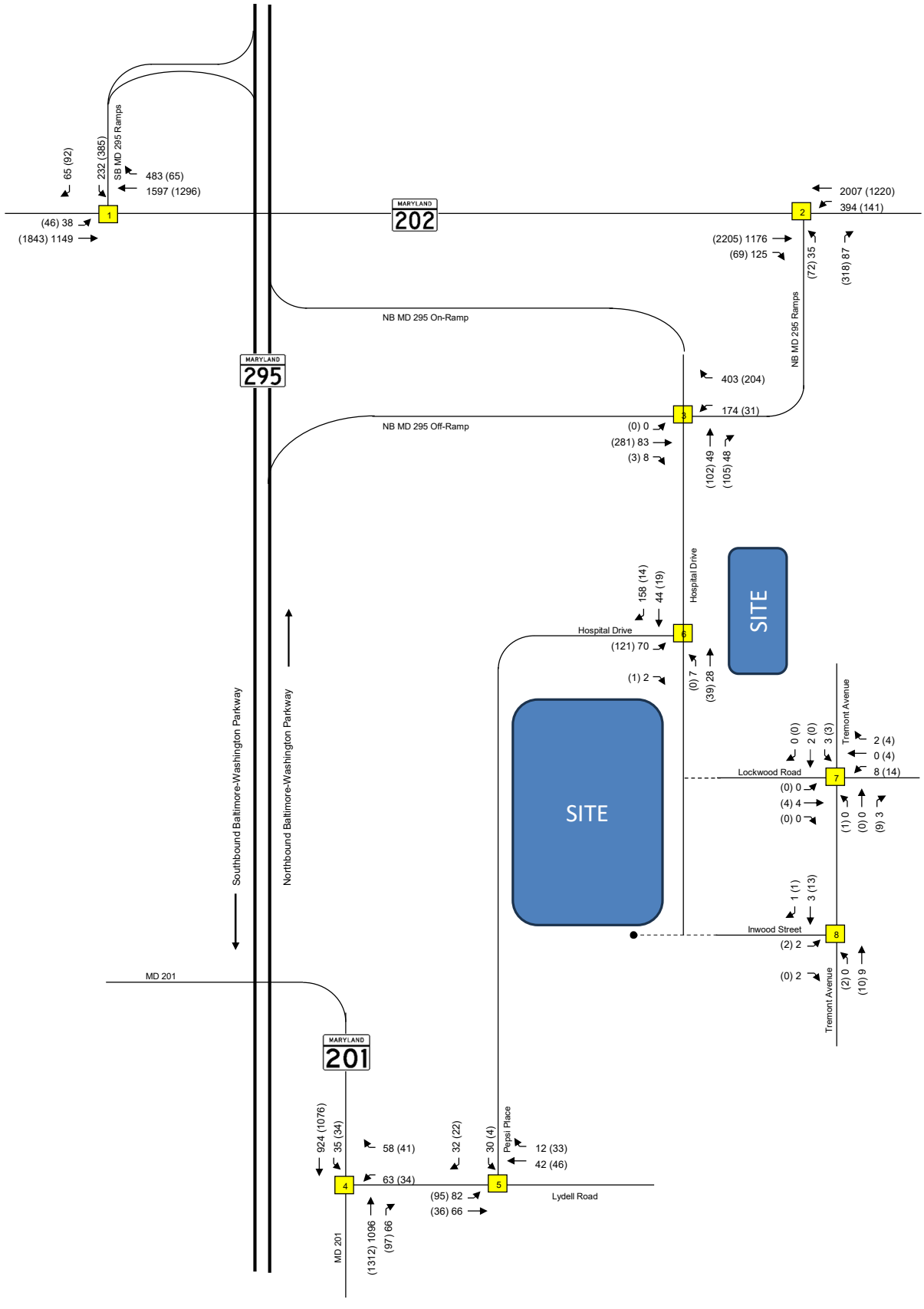
2.3 Existing Traffic Counts

Peak hour turning movement counts were conducted and the results are detailed on **Exhibit 3**.

The existing intersections were evaluated using the HCM and/or CLV methodologies, as required under M-NCPPC guidelines. The results are shown on Exhibit 9. HCM and CLV worksheets are included in Appendix B.



Traffic Impact Analysis	Existing Lane Use & Traffic Control Devices	**Exhibit 2**
Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning		



Traffic Impact Analysis Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning	Existing Peak Hour Volumes Key: xx = AM Peak Vol's (xx) = PM Peak Vol's	**Exhibit 3**

Section 3 Background Conditions

3.1 Annual Growth

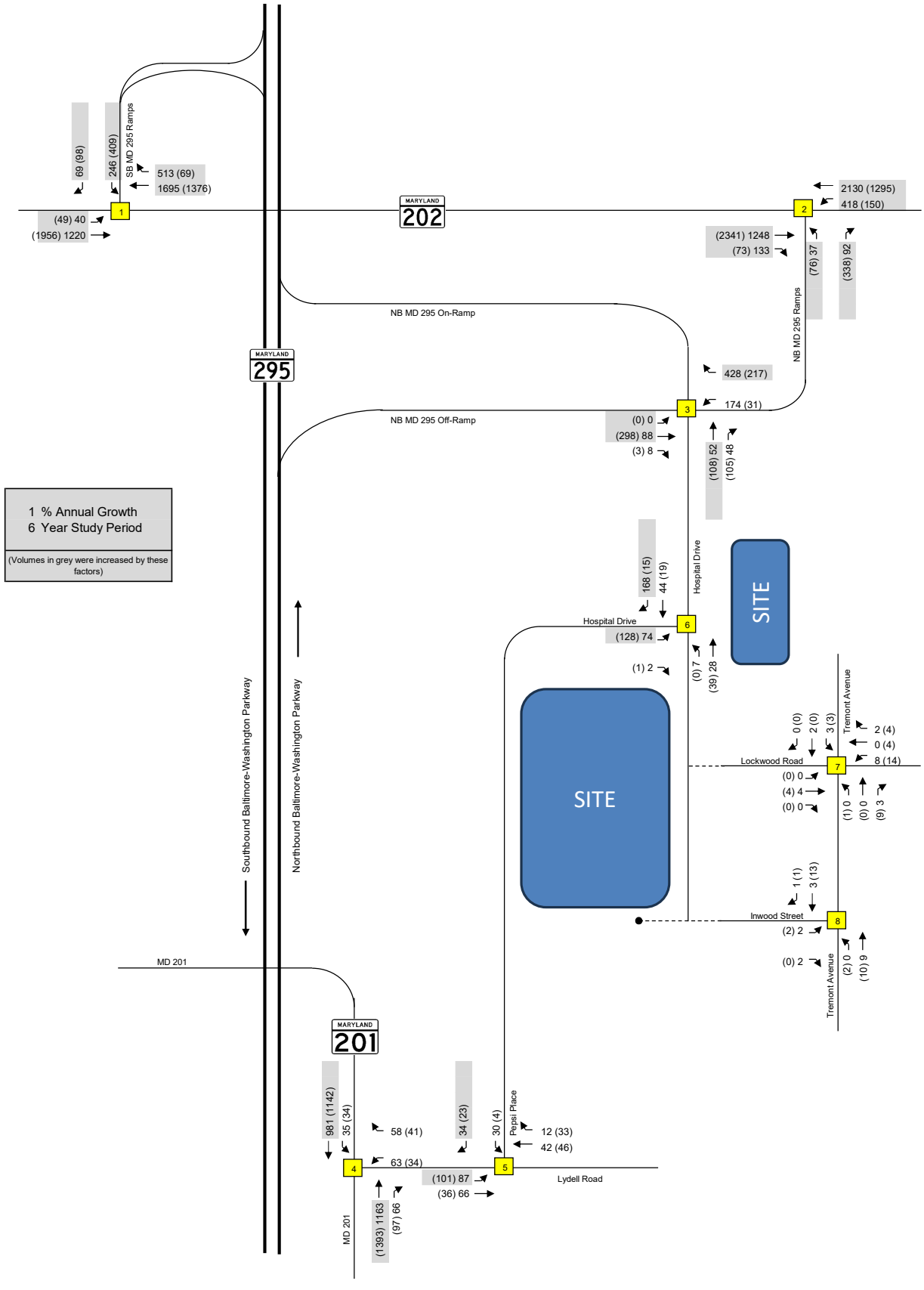
Per the approved scoping agreement, a 1% growth rate has been applied for six years to the movements detailed on **Exhibit 4a**. Exhibit 4a represents the Base Peak Hour Volumes for the study intersections.

3.2 Background Developments

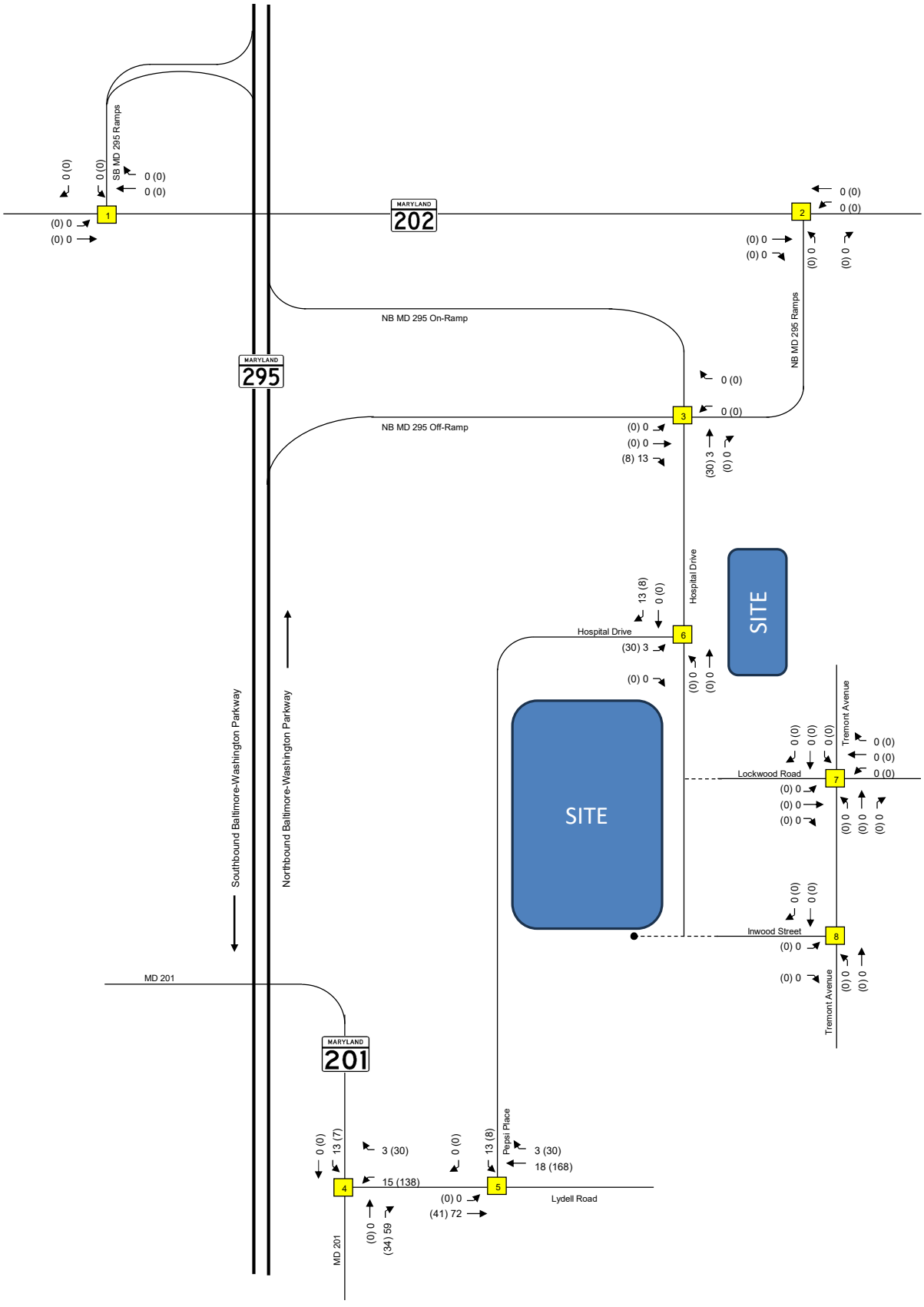
Background developments were included as directed in the scoping process. The trip generation and trip assignment for the background developments are found in Appendix C. The combined trips associated with the background developments at the study intersections are detailed on **Exhibit 4b.**

3.3 Background Traffic Volumes

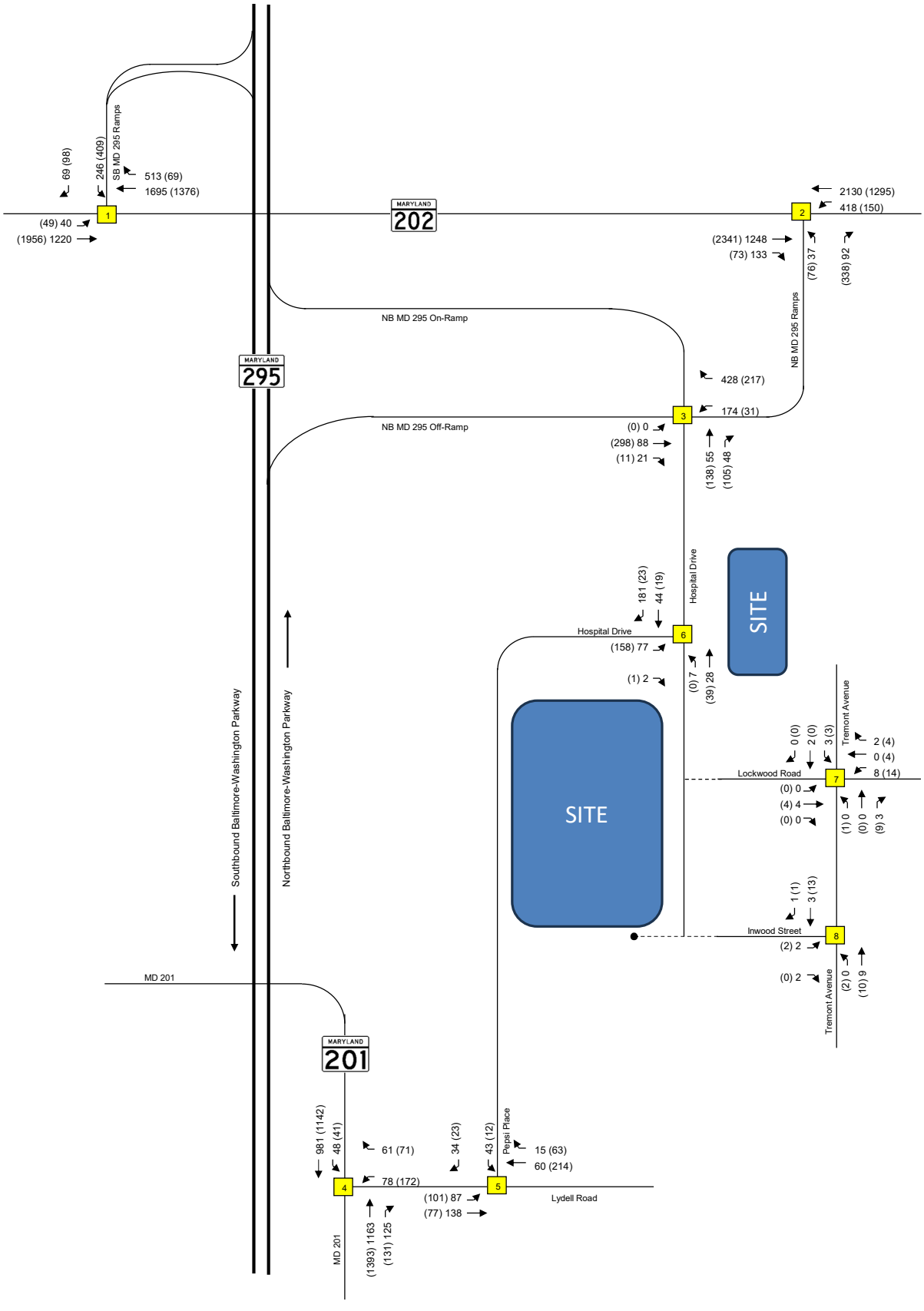
The background peak hour volumes shown on **Exhibit 5** include the summation of the base peak hour volumes and the background developments (Exhibits 4a and 4b). Results of the CLV and HCM analyses for the background traffic volumes are shown on Exhibit 9.



Traffic Impact Analysis Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning	Base Peak Hour Volumes Key: xx = AM Peak Vol's (xx) = PM Peak Vol's	**Exhibit 4a**



Traffic Impact Analysis	Combined Trips from Background Developments	**Exhibit 4b**
Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning	Key: xx = AM Peak Vol's (xx) = PM Peak Vol's	



Traffic Impact Analysis Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning	Background Peak Hour Volumes Key: xx = AM Peak Vol's (xx) = PM Peak Vol's	**Exhibit 5**

Section 4 Total Conditions

4.1 Site Trip Generation

The development is proposed to be broken into two phases. Phase 1 consists of the vast majority of the development including 822 multifamily units, 48 condos, 75 townhouses, a 71 room hotel, 39,725 square feet of retail space, and 70,000 square feet of medical office. Phase 2 consists of an additional 310 multifamily units and 90 townhouse units.

Access to the site will remain via the existing roadway network and two additional access points to the Cheverly community are proposed as extensions of Inwood Street and Lockwood Road.

Exhibit 6a shows the trip generation for the site for the entirety of the site and b roken down by Phase. The trip generation rates were obtained from M-NCPPC's Transportation Review Guidelines and the ITE Trip Generation Manual, 11th Edition. As noted on Exhibit 6a and approved during the scoping process, internal trips and pass-by trips have been applied to the trip generation. The internal capture worksheets are provided in Appendix D.

4.2 Site Trip Distribution & Trip Assignment

Exhibits 7a, 7b, and 7c detail the trip assignment for the primary and pass-by trip assignment for Phase 1 of the development. **Exhibit 9** details the trip assignment for Phase 2 of the development which only consists of primary trips associated with the residential development in this phase. It should be noted that as shown on Exhibit 7c, the retail trip distribution assumes a greater number of trips to/from the Cheverly community compared to the rest of the development.

4.3 Total Peak Hour Volumes

The Total Peak Hour Volumes for Phases 1 and 2 are shown on **Exhibits 8 and 10**, respectively.

4.4 Projected Level of Service

The results of the HCM & CLV analysis for the total traffic volumes are shown on **Exhibit 11**. As shown, all of the intersections are projected to operate within the

adequacy standards of Prince George's County except for the intersections of MD 202 & MD 295 Ramps (Intersection 2) and MD 295 Ramps and Hospital Drive (Intersection 3). The improvements detailed in Section 4.5 below detail the proposed improvements to these intersections that will result in the intersections meeting adequacy requirements. Section 4.5 also details some additional improvements that are not necessary to meet adequacy requirements but will improve traffic operations in the vicinity of the development.

The relevant HCM and CLV worksheets are included in Appendix B.

4.3 Proposed Intersection Improvements

The discussion below details the proposed improvements for the study intersections and the associated rationale. As detailed, some of these improvements are required for the purpose of satisfying adequacy standards while others are to improve traffic operations in the vicinity of the development. A diagram showing the Proposed Lane Use & Traffic Control Devices is shown on **Exhibit 12**.

<u>Intersection 2 – MD 202 & NB MD 295 Ramps (Signalized)</u>

- *It should be noted that the northbound approach to MD 202 via the MD 295 ramp is signed via mast arm signing as a two lane approach (L and R turn lanes) but there are no accompanying pavement markings to delineate two lanes on the approach. Comments provided by MDOT SHA have requested modifications to widen the approach and to adequately delineate two lanes. More specifically, the District 3 Traffic SHA comment requested a minimum of 50 feet of white pavement markings to delineate the separation of the right and left turn lanes.*
    - A critical detail pertaining to any improvements along this approach is right of way dividing line between MDOT SHA ROW and National Park Service (NPS) ROW. The plat detailing this jurisdictional divide is provided in Appendix A of the report.
    - As shown, SHA controls ROW at approximately 100' from the existing median nose on the approach to MD 202.
- *Given the above, any improvements along the approach to MD 202 must be coordinated with NPS and MDOT SHA and no improvements should be required for which ROW is not obtainable from NPS. NPS is a relatively conservative agency when it comes to construction in their ROW.*
- As detailed on Exhibit 11 and in the CLV worksheets, the improvement to modify the northbound approach to a two lane approach results in the intersection meeting the CLV adequacy requirement with CLV less than 1,600 under total phase 2 conditions.

Intersection 2 Proposed Improvements

- As detailed above, it is recommended that the northbound approach be modified to provide two lanes (L and R turn lanes) to match the existing signing on the mast arm for the approach. The limits of this improvement is dependent on the ability to acquire ROW from MDOT SHA and/or NPS.
- The predominant movement in the PM peak hour along the ramp approach are right turns and the westbound left turning traffic operates with exclusive/permissive phasing.
    - It is proposed that a right turn overlap be considered at this intersection to reduce delay for these northbound right turning vehicles. This movement is allowed during the red phase as there is no turn restriction, but this right turn overlap will increase the number of vehicles able to make the turn during the westbound exclusive left turn phase and therefore reduce delays for this movement. This is not an adequacy issue but will improve operations, subject to SHA approval.
- With this modification, it is suggested that U-turns for westbound MD 202 be restricted to avoid conflicts with U-turning vehicles and northbound right turning vehicles, subject to SHA review and approval.
    - The turning movement count sheet for this intersection (Appendix A) indicates a maximum of 2 U-turns per 15-minute period.
    - The U-turn movement provides access to one driveway along eastbound MD 202 just east of the intersection, but these businesses can be accessed via Cheverly Avenue → Belleview Avenue → Medical Terrace by utilizing the intersection to the east on MD 202.
- Synchro files were obtained from MDOT SHA for the MD 202 corridor and the Phase 2 volumes (Exhibit 10) have been utilized to do a comparison of the existing phasing and the proposed phasing and improvements for Intersection 2.
    - It should be noted that the MDOT SHA Synchro files included the northbound approach to MD 202 as a two lane approach, however, the analysis assumes for existing conditions that there is one lane on the approach.
    - **Synchro/SimTraffic analyses were conducted for the following conditions and the results are provided in Appendix E:**
        - Existing Volumes – No Improvements
            - AM overall LOS – B – 14.8 sec
            - PM overall LOS – C – 28.0 sec
            - AM NB Queuing - 156 feet
            - PM NB Queuing > 1000 feet
        - Total Phase 2 Volumes – No Improvements:

- AM overall LOS – D – 53.6 sec
- PM overall LOS – F – 98.7 sec
- AM NB Queuing > 1000 feet
- PM NB Queuing > 1000 feet

▪ Total Phase 2 Volumes – Above Improvements to signal phasing and providing pavement markings delineating the right and left turn lanes for a distance of 50' in advance of intersection (up to limit of SHA ROW)

- AM overall LOS – C – 27.1 sec
- PM overall LOS – D – 36.5 sec
- AM NB Queuing > 1000 feet
- PM NB Queuing > 1000 feet

▪ Total Phase 2 Volumes – Above Improvements to signal phasing and providing additional lane 400' in advance of intersection (into NPS ROW)

- AM overall LOS – C – 27.1 sec.
- PM overall LOS – D – 36.5 sec
- AM NB Queuing - 307 feet
- PM NB Queuing - 414 feet

o As shown in the Synchro/SimTraffic outputs which are summarized above, there are queuing issues for the northbound approach to MD 202 under existing conditions that will degrade with additional traffic through the intersection under background and total conditions. The improvement to provide a separate turn lane ~400' in advance of the intersections results in significant improvements to queuing along the approach and is recommended to be constructed subject to the ability to obtain approvals from NPS for the construction within the NPS ROW constraints detailed above.

<u>Intersection 3 – NB MD 295 Ramps & Hospital Drive (Unsignalized)</u>

- As shown on Exhibit 9, Intersection 3 is not projected to satisfy the three-step adequacy test for unsignalized intersections with its existing lane configuration under Phase 2 traffic conditions.
- It is proposed that the northbound approach out of the proposed redevelopment be converted to a two lane approach consisting of a thru lane and a right turn lane.
  - o With this improvement, the intersection will satisfy the three-step test for adequacy for unsignalized intersections as shown on Exhibit 11.
- *It is recommended that this improvement be required only before the issuance of building permits associated with Phase 2 of the development given that the intersection will meet adequacy requirements with Phase 1 of*

the development. Given that this requires the approval of NPS, it is suggested that the condition of approval for this improvement be, "subject to the approval of the NPS for this proposed work within their right of way.

Intersection 4 and 5 – Lydell Road at MD 201 and Pepsi Place

- As discussed in Section 2.2, these two intersections are closely spaced and therefore a queuing analysis was conducted to ensure that there are no queuing issues for these intersections. The queuing worksheets referenced below are contained in Appendix B.
    - For Intersection 4 – the westbound 95th percentile queues are projected to be a maximum of ~100 feet which extends past the existing median and into the intersection with Pepsi Place.
    - For Intersection 5 – the eastbound 95th percentile queues are projected to be a maximum of ~75 feet which could result in queues backing into MD 201 at times.
- This is not an adequacy issue, however, given these queuing concerns, it is recommended that the following options be considered, subject to DPIE approval:
    - Install "Do Not Block Intersection" (R10-7) signs and accompanying pavement markings per Figure 3B-18 of the MD MUTCD for the westbound Lydell Road approach to Intersection 5. This will reduce the instances of westbound vehicles at the signalized intersection queuing back into the intersection with Pepsi Place and blocking vehicles from eastbound Lydell Road from turning left onto Pepsi Place

Intersection 6 – Hospital Drive & Internal Roadway (Unsignalized)

- As discussed in Section 2.2, this intersection was analyzed with the southbound approach as a stop controlled movement (currently a free movement under existing conditions). With this modification, the intersection is projected to operate with delay significantly lower than 50 seconds for each movement and therefore passes the three-step adequacy test for unsignalized intersections.
    - Note that the existing intersection control is not able to be analyzed via HCM methodology.
    - It is recommended that the southbound approach be converted to a stop controlled movement in order to improve safety within the site.

Trip Generation Rates

	Trip Distribution (In/Out)
Hospital (ksf, ITE-610)	
Morning Trips = 0.89 x ksf	68/32
Evening Trips = 0.97 x ksf	32/68
Apartments (garden and mid-rise, Prince George's County Rates)	
Morning Trips = 0.52 x Units	20/80
Evening Trips = 0.60 x Units	65/35
Townhouse (Prince George's County Rates)	
Morning Trips = 0.70 x Units	20/80
Evening Trips = 0.80 x Units	65/35
Hotel Rooms (ITE-310)	
Morning Trips = 0.50 x Rooms - 7.45	56/44
Evening Trips = 0.74 x Rooms - 27.89	51/49
Retail Plaza (<40k) (ksf, ITE-822)	
Morning Trips = 2.36 x ksf	60/40
Evening Trips = 6.59 x ksf	50/50
Office (Medical/Professional, Prince George's County Rates)	
Morning Trips = 2.85 x ksf	81/19
Evening Trips = 3.8 x ksf	32/68

Existing Trip Generation

The existing hospital is no longer in operation and therefore this trip generation is provided for informational purposes only.

			AM Peak			PM Peak		
			In	Out	Total	In	Out	Total
Existing Hospital	Hospital (ksf, ITE-610)	882,461 square feet	534	251	785	274	582	856
	Existing Hospital Trips (no longer in operation):		**534**	**251**	**785**	**274**	**582**	**856**

Total Site Trip Generation

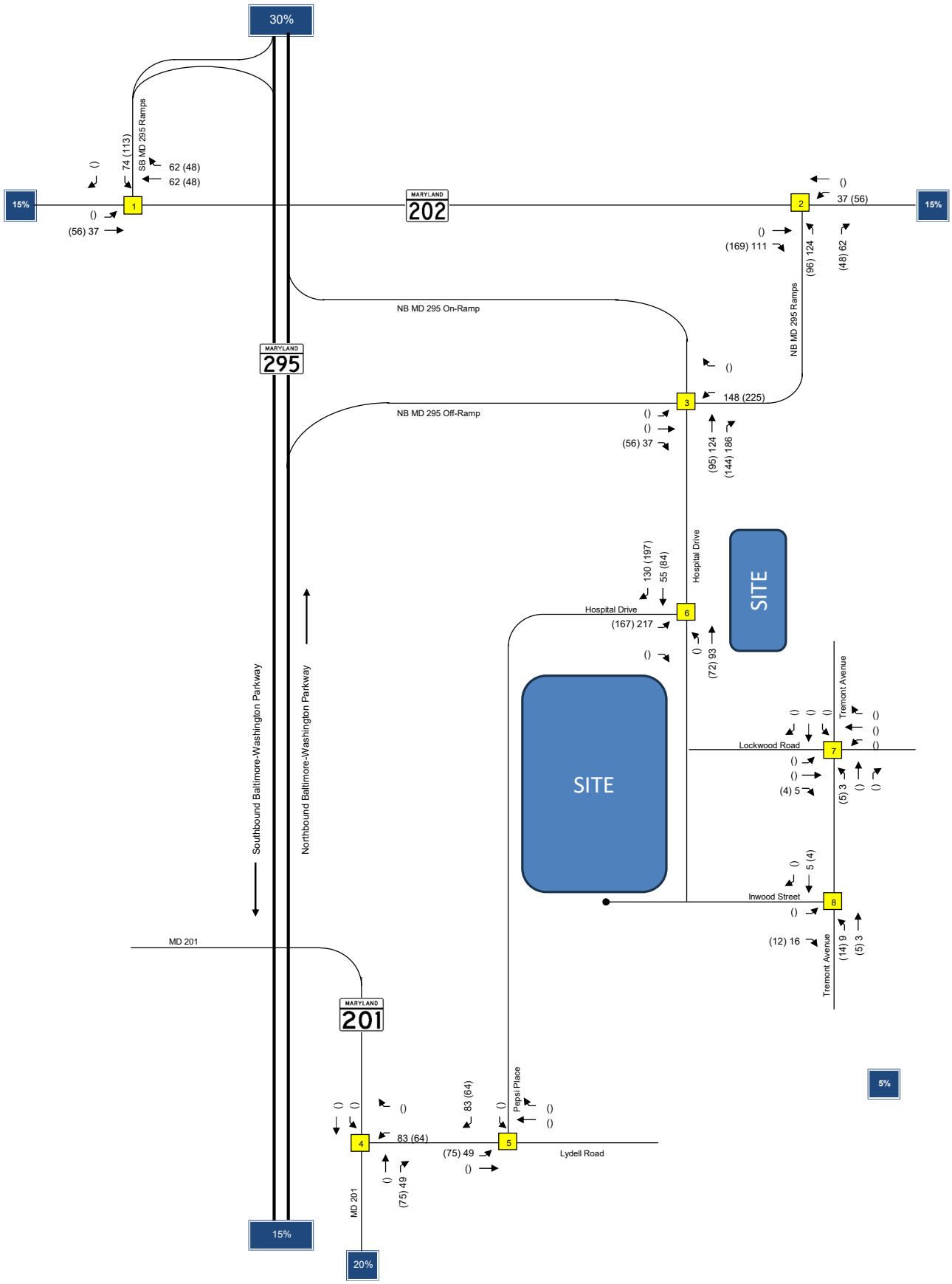
				AM Peak			PM Peak		
Proposed Use				In	Out	Total	In	Out	Total
Residential	Multifamily	Apartments (garden and mid-rise, Prince George's County Rates)	1,132 units	118	471	589	441	238	679
	Condos	Apartments (garden and mid-rise, Prince George's County Rates)	48 units	5	20	25	19	10	29
	Townhouses	Townhouse (Prince George's County Rates)	165 units	23	93	116	86	46	132
		Total Residential Trips:		**146**	**584**	**730**	**546**	**294**	**840**
		Internal Residential Trips:		3	11	14	38	27	65
Hotel		Hotel Rooms (ITE-310)	71 rooms	**16**	**12**	**28**	**13**	**12**	**25**
		Internal Hotel Trips:		0	7	7	4	2	6
Retail		Retail Plaza (<40k) (ksf, ITE-822)	39,725 sq.ft.	**56**	**38**	**94**	**131**	**131**	**262**
		Internal Retail Trips:		19	9	28	25	39	64
		External Retail Trips:		37	29	66	106	92	198
		Pass-by Trips (40% AM / PM):		-14	-12	-26	-42	-37	-79
Office		Office (Medical/Professional, Prince George's County Rates)	70,000 sq.ft.	161	39	200	84	182	266
		Internal Office Trips:		16	11	27	15	14	29
		Total New Primary Trips for Proposed Uses:		**327**	**623**	**950**	**650**	**500**	**1150**
		Total Internal Trips:		**38**	**38**	**76**	**82**	**82**	**164**
		Total Pass-by Trips:		**14**	**12**	**26**	**42**	**37**	**79**

				AM Peak			PM Peak		
Phase 1				In	Out	Total	In	Out	Total
Residential	Multifamily	Apartments (garden and mid-rise, Prince George's County Rates)	822 units	85	342	427	320	173	493
	Condos	Apartments (garden and mid-rise, Prince George's County Rates)	48 units	5	20	25	19	10	29
	Townhouses	Townhouse (Prince George's County Rates)	75 units	11	42	53	39	21	60
		Total Residential Trips:		**101**	**404**	**505**	**378**	**204**	**582**
		Internal Residential Trips:		3	11	14	38	27	65
Hotel		Hotel Rooms (ITE-310)	71 rooms	**16**	**12**	**28**	**13**	**12**	**25**
		Internal Hotel Trips:		0	7	7	4	2	6
Retail		Retail Plaza (<40k) (ksf, ITE-822)	39,725 sq.ft.	**56**	**38**	**94**	**131**	**131**	**262**
		Internal Retail Trips:		19	9	28	25	39	64
		External Retail Trips:		37	29	66	106	92	198
		Pass-by Trips (40% AM / PM):		-14	-12	-26	-42	-37	-79
Office		Office (Medical/Professional, Prince George's County Rates)	70,000 sq.ft.	161	39	200	84	182	266
		Internal Office Trips:		16	11	27	15	14	29
		Total New Primary Trips for Phase 1:		**282**	**443**	**725**	**482**	**410**	**892**
		Total Internal Trips:		**38**	**38**	**76**	**82**	**82**	**164**
		Total Pass-by Trips:		**14**	**12**	**26**	**42**	**37**	**79**

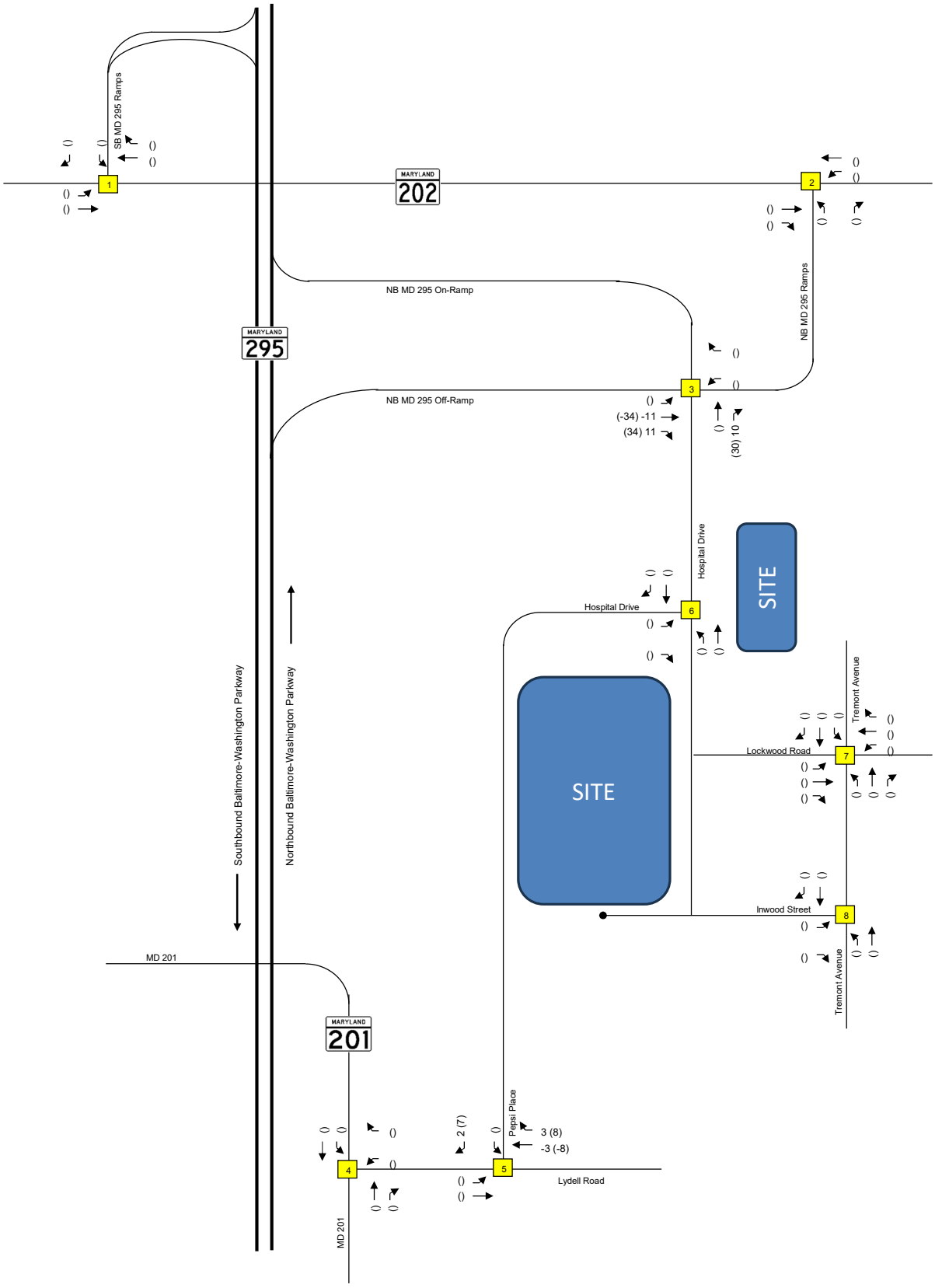
				AM Peak			PM Peak		
Phase 2				In	Out	Total	In	Out	Total
Residential	Multifamily	Apartments (garden and mid-rise, Prince George's County Rates)	310 units	32	129	161	121	65	186
	Townhouses	Townhouse (Prince George's County Rates)	90 units	13	50	63	47	25	72
		Phase 2 Trips:		**45**	**180**	**225**	**168**	**90**	**258**

Notes:

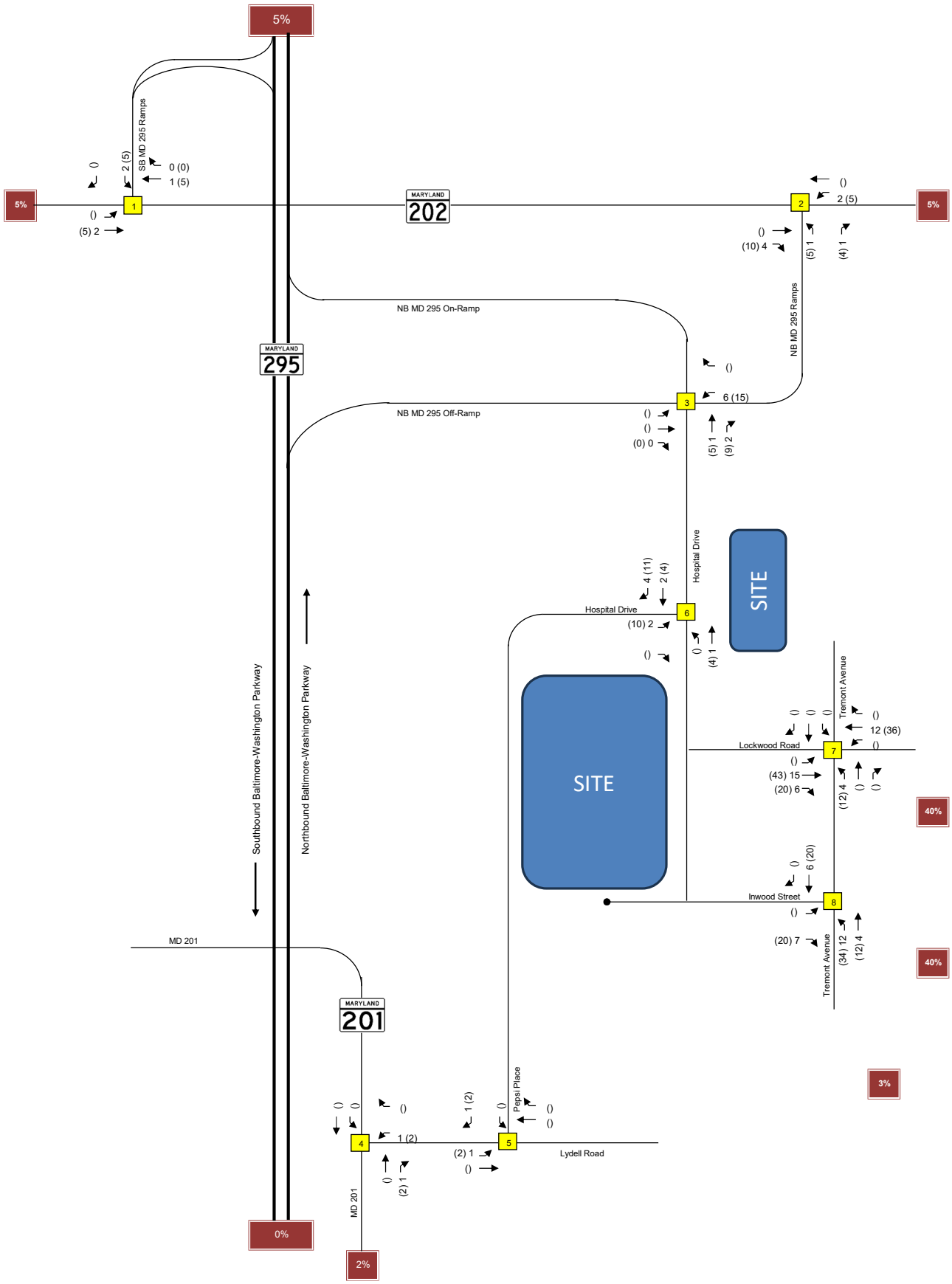
1. Trip Generation rates obtained from Prince George's County Guidelines and the ITE Trip Generation Manual, 11th Edition.
2. See accompanying ITE Trip Generation Manual Internal Capture Worksheets for calculations used to determine internal capture trips for the site.
3. Pass-by rates obtained from Prince George's County Guidelines.



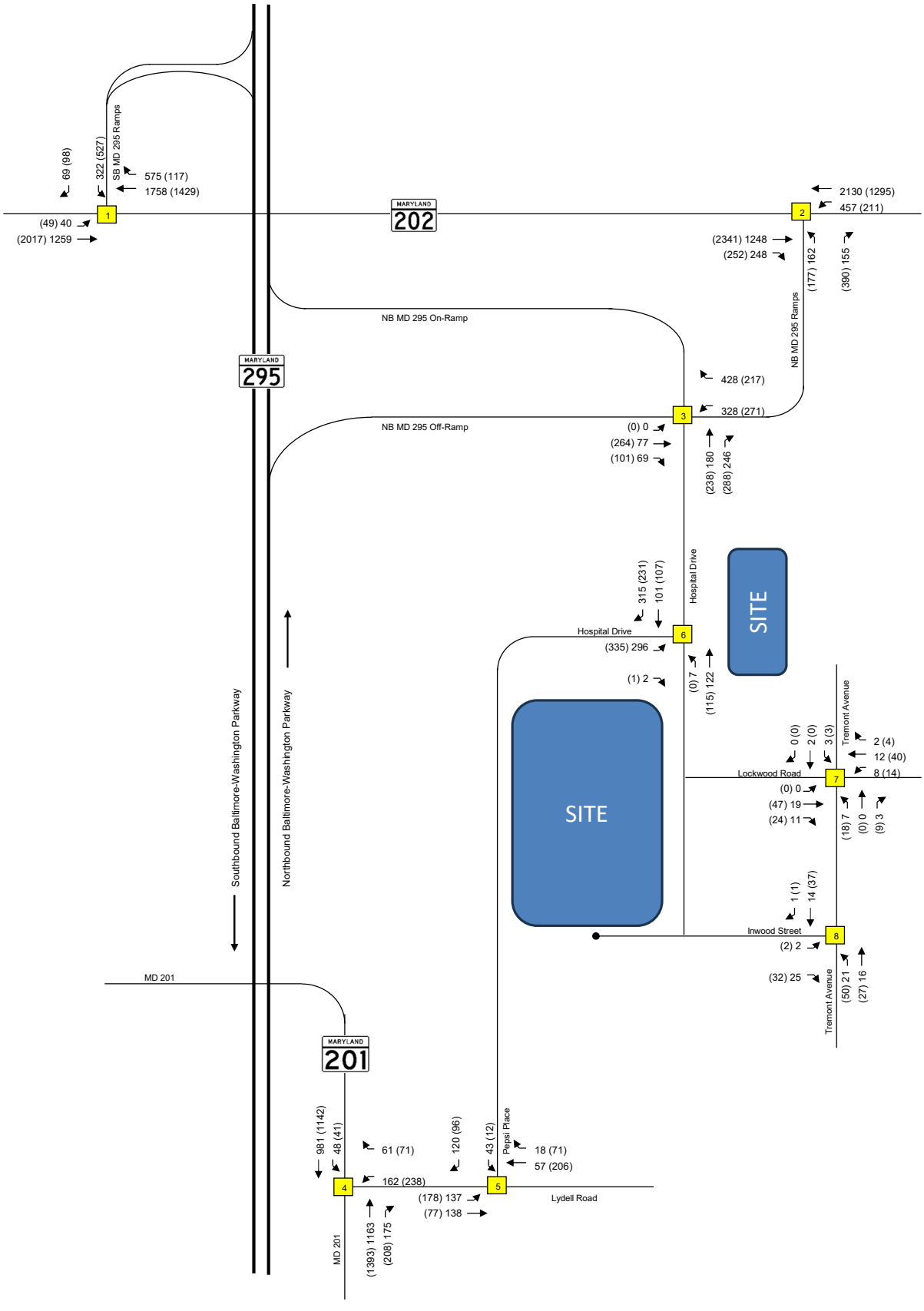
Traffic Impact Analysis Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning	Phase 1 Site Trip Assignment - Primary Trips (Excluding Retail) Key: xx = AM Peak Vol's (xx) = PM Peak Vol's	**Exhibit 7a**



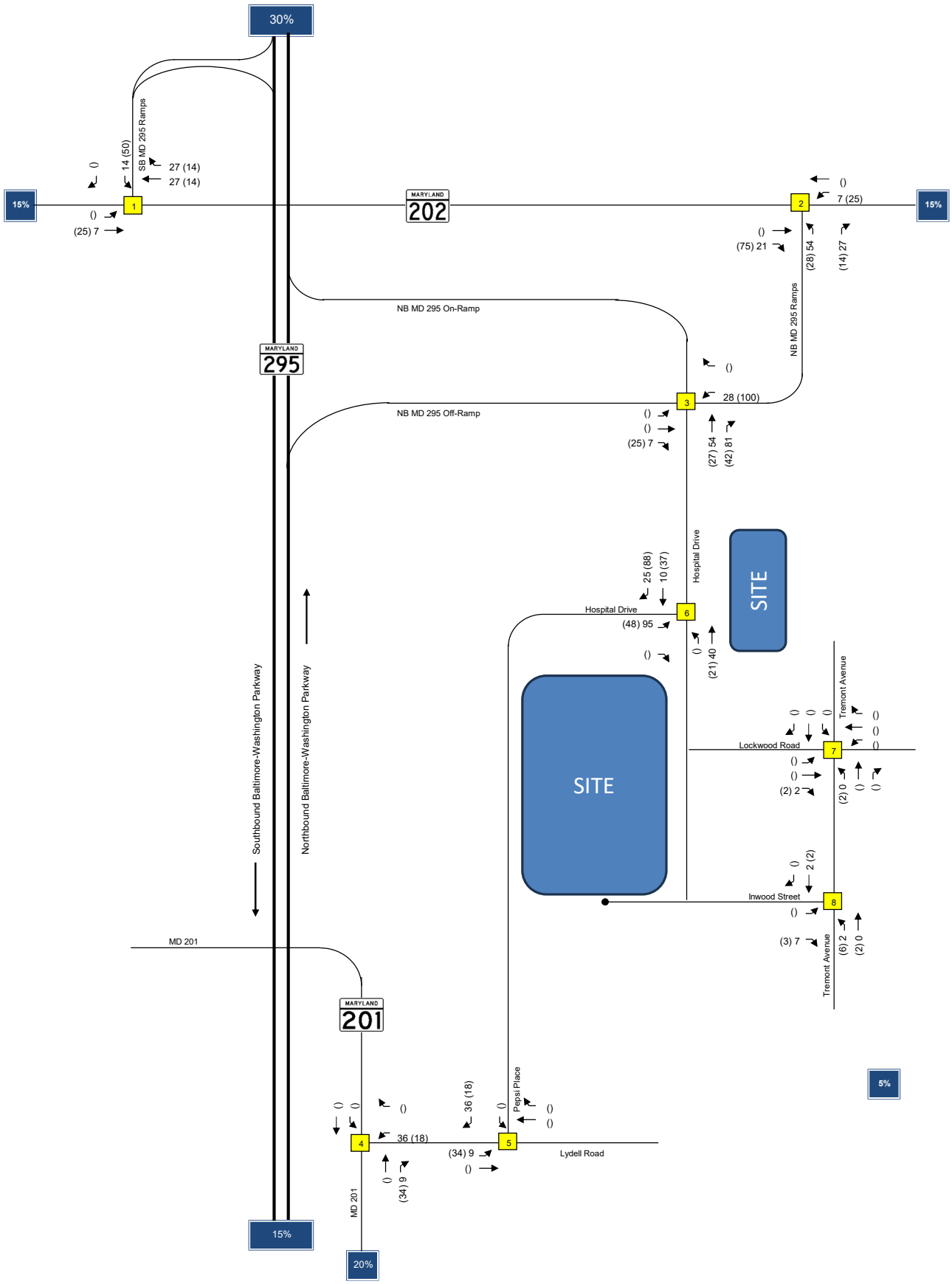
Traffic Impact Analysis Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning	Phase 1 Site Trip Assignment - Pass-by Trips Key: xx = AM Peak Vol's (xx) = PM Peak Vol's	**Exhibit 7b**



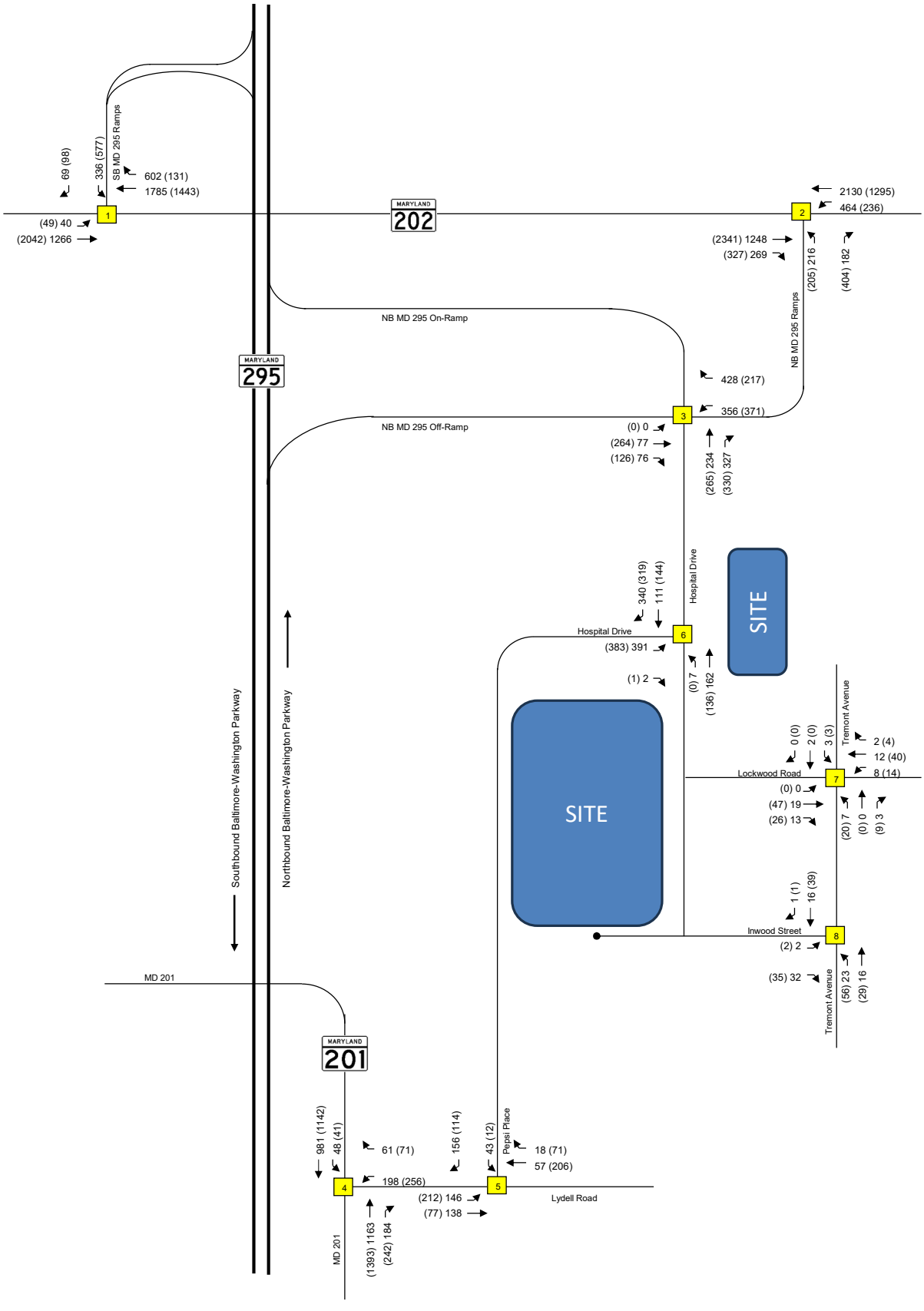
Traffic Impact Analysis Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning	Phase 1 Site Trip Assignment - Retail Trips Key: xx = AM Peak Vol's (xx) = PM Peak Vol's	**Exhibit 7c**



Traffic Impact Analysis Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning	Phase 1 Total Peak Hour Volumes Key: xx = AM Peak Vol's (xx) = PM Peak Vol's	**Exhibit 8**



Traffic Impact Analysis Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning	Phase 2 Site Trip Assignment Key: xx = AM Peak Vol's (xx) = PM Peak Vol's	**Exhibit 9**

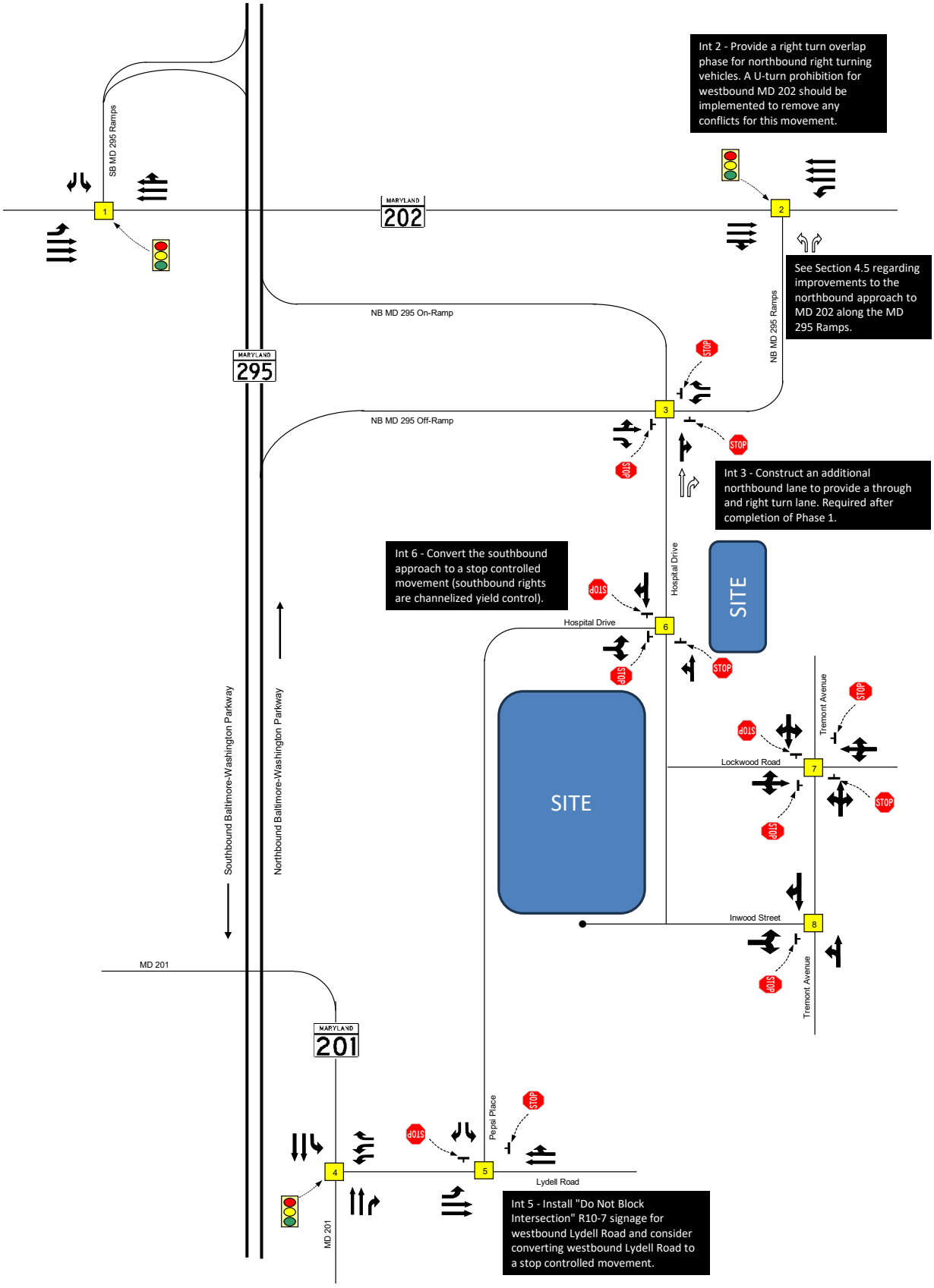


Traffic Impact Analysis Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning	Phase 2 Total Peak Hour Volumes Key: xx = AM Peak Vol's (xx) = PM Peak Vol's	**Exhibit 10**

Level-of-Service Results

Morning Peak Hour		Existing LOS	Background Los	Total LOS Phase 1	Total LOS Phase 2	Total LOS w/ Imps.	Meets Standard?
1). MD 202 & SB MD 295 Ramps	(Signalized)	B / 1040	B / 1103	C / 1225	C / 1259		Y
2). MD 202 & NB MD 295 Ramps	(Signalized)	A / 997	B / 1058	D / 1328	D / 1423	C / 1241	Y
3). NB MD 295 Ramps & Hospital Drive	(Unsignalized)						Y
Step 1 - HCM Delay Test							
Eastbound Approach		7.9 sec.	8.0 sec.	9.6 sec.	10.5 sec.	10.0 sec.	Y
Westbound Approach		8.8 sec.	8.9 sec.	14.9 sec.	19.0 sec.	17.1 sec.	Y
Northbound Approach		7.9 sec.	8.0 sec.	15.5 sec.	29.7 sec.	11.9 sec.	Y
4). MD 201 & Lydell Road	(Signalized)	A / 543	A / 583	A / 632	A / 655		Y
5). Lydell Road & Pepsi Place	(Unsignalized)						Y
Step 1 - HCM Delay Test							
Eastbound Approach		7.5 sec.	7.5 sec.	7.6 sec.	7.7 sec.		Y
Southbound Approach		10.0 sec.	11.1 sec.	11.2 sec.	11.4 sec.		Y
6). Hospital Drive & Hospital Drive	(Unsignalized)						Y
Step 1 - HCM Delay Test							
Eastbound Approach		7.7 sec.	7.8 sec.	11.3 sec.	14.8 sec.		Y
Northbound Approach		7.4 sec.	7.4 sec.	9.1 sec.	10.2 sec.		Y
Southbound Approach		7.4 sec.	7.4 sec.	8.9 sec.	9.5 sec.		Y
7). Tremont Avenue & Lockwood Road	(Unsignalized)						Y
Step 1 - HCM Delay Test							
Eastbound Approach		7.0 sec.	7.0 sec.	6.9 sec.	6.9 sec.		Y
Westbound Approach		7.1 sec.	7.1 sec.	7.1 sec.	7.1 sec.		Y
Northbound Approach		6.4 sec.	6.4 sec.	7.1 sec.	7.1 sec.		Y
Southbound Approach		7.1 sec.	7.1 sec.	7.2 sec.	7.2 sec.		Y
8). Tremont Avenue & Inwood Street	(Unsignalized)						Y
Step 1 - HCM Delay Test							
Eastbound Approach		8.5 sec.	8.5 sec.	8.5 sec.	8.5 sec.		Y
Northbound Approach		0.0 sec.	0.0 sec.	4.2 sec.	4.4 sec.		Y

Evening Peak Hour	Existing LOS	Background Los	Total LOS Phase 1	Total LOS Phase 2	Total LOS w/ Imps.	Meets Standard?
1). MD 202 & SB MD 295 Ramps	B / 1067	B / 1133	C / 1273	D / 1333		Y
2). MD 202 & NB MD 295 Ramps	D / 1372	E / 1457	F / 1737	F / 1832	D / 1428	Y
3). NB MD 295 Ramps & Hospital Drive						Y
Step 1 - HCM Delay Test						
Eastbound Approach	10.3 sec.	10.9 sec.	15.2 sec.	17.2 sec.	15.5 sec.	Y
Westbound Approach	8.3 sec.	8.5 sec.	16.2 sec.	26.7 sec.	22.8 sec.	Y
Northbound Approach	9.1 sec.	9.8 sec.	31.6 sec.	71.9 sec.	15.6 sec.	Y
Step 2 - Minor Street Volume				> 100 veh.	> 100 veh.	N
Step 3 - CLV Test				C / 1230	A / 900	Y
4). MD 201 & Lydell Road	A / 611	A / 723	A / 764	A / 787		Y
5). Lydell Road & Pepsi Place						Y
Step 1 - HCM Delay Test						
Eastbound Approach	7.6 sec.	8.1 sec.	8.4 sec.	8.5 sec.		Y
Southbound Approach	9.0 sec.	11.1 sec.	11.0 sec.	11.3 sec.		Y
6). Hospital Drive & Hospital Drive						Y
Step 1 - HCM Delay Test						
Eastbound Approach	8.1 sec.	8.4 sec.	12.1 sec.	14.4 sec.		Y
Northbound Approach	7.5 sec.	7.6 sec.	9.1 sec.	9.8 sec.		Y
Southbound Approach	7.4 sec.	7.5 sec.	9.0 sec.	9.8 sec.		Y
7). Tremont Avenue & Lockwood Road						Y
Step 1 - HCM Delay Test						
Eastbound Approach	7.0 sec.	7.0 sec.	7.2 sec.	7.2 sec.		Y
Westbound Approach	7.1 sec.	7.1 sec.	7.4 sec.	7.4 sec.		Y
Northbound Approach	6.5 sec.	6.4 sec.	7.3 sec.	7.3 sec.		Y
Southbound Approach	7.2 sec.	7.1 sec.	7.5 sec.	7.5 sec.		Y
8). Tremont Avenue & Inwood Street						Y
Step 1 - HCM Delay Test						
Eastbound Approach	8.7 sec.	8.7 sec.	8.7 sec.	8.7 sec.		Y
Northbound Approach	1.1 sec.	1.1 sec.	4.9 sec.	4.9 sec.		Y



Traffic Impact Analysis	Proposed Lane Use & Traffic Control Devices	**Exhibit 12**
Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning		

Section 5 Conclusions / Recommendations

5.1 Results of Analysis

This Traffic Impact Analysis was prepared for the proposed Cheverly Urban Atlantic development in Cheverly, MD. The property was previous site for the Prince George's County Hospital which is no longer in operation. An aerial view and the study intersections analyzed in this report are shown on Exhibit 1a while Exhibit 1b details the boundaries of the various parcels that make up the property.

The development is proposed to be broken into two phases. Phase 1 consists of the vast majority of the development including 648 multifamily units, 48 condos, 174 senior housing units, 75 townhouses, a 71 room hotel, 39,725 square feet of retail space, and 70,000 square feet of medical office. Phase 2 consists of an additional 310 multifamily units and 90 townhouse units.

Access to the site will remain via the existing roadway network and two additional access points to the Cheverly community are proposed as extensions of Inwood Street and Lockwood Road.

Based on the analyses contained in this report:

- All of the signalized intersections are projected to operate with a CLV within the allowable threshold of 1,600 for signalized intersections under total conditions and are therefore considered adequate with the exception of MD 202 & the NB MD 295 Ramps (Intersection 2 (see below for proposed improvements)).
- All of the unsignalized intersections with the exception of the MD 295 Ramps at Hospital Drive (Intersection 3) are projected operate within the adequacy standards for unsignalized intersections.
    - For Intersection 3, it is proposed that before construction of Phase 2 of the development, the northbound approach be modified to convert the approach to two lanes (one thru lane and one right turn lane). As shown, this improvement will result in the intersection meeting adequacy standards for unsignalized intersections.
- Section 4.5 details additional improvements that are recommended in order to improve traffic operations in the vicinity of the site. These improvements include:
    - MD 202 & MD 295 Ramps (Intersection 2) –
        - *Geometric Improvements - Please refer to the discussion in Section 4.5 regarding the ROW concerns for the approach to*

MD 202 at this intersection. It is recommended that a separate right turn lane be provided for 400 feet in advance of the intersection subject to the ability to secure approval and ROW from NPS. If NPS refuses the approval of work within their ROW, then it is recommended that the ramp improvements be limited to SHA right of way including the striping to include a minimum 50' left and right turn lane at MD 202 as referenced by SHA's District 3 Traffic section.

- Signal Phasing changes - Right turn overlap for northbound right turning vehicles. In order to avoid potential incidents with this overlap, it is recommended that a U-turn prohibition for westbound vehicles along MD 202 be implemented. This is not required for adequacy and is subject to SHA review and approval.

- MD 201 & Lydell Road / Lydell Road & Pepsi Place (Intersections 4 and 5) – In order to reduce the potential for queued vehicles to back into MD 201, it is recommended that a "Do Not Block Intersection" R10-7 signs and accompanying pavement marking per Figure 3B-18 of the MD MUTCD be installed for the westbound Lydell Road approach to Intersection 5. This is not required for adequacy and is subject to DPIE review and approval.
- Hospital Drive and Internal Roadway (Intersection 6) – It is recommended that the southbound approach be converted to a stop controlled movement to improve safety at the intersection. Currently this through movement is a free movement (channelized right as a yield controlled movement).
    - This intersection is internal to the site and therefore a determination of adequacy is not required for this Preliminary Plan submission. The ultimate operations for this intersection will be determined through the permitting process with DPIE.

In light of the results of this study and the recommendations noted above, this project will satisfy the APFO requirements of Prince George's County.

Appendix A

Supplemental Information
Turning Movement Counts

BW Parkway

Linear Plaza

Lockwood Rd

Community Square

Jason St

Promenade Park

Green

Trail System

Inwood St

Overlook Green

Sledding Hill

Dog Park

Pepsi Pl

TORTI GALLAS + PARTNERS

URBAN ATLANTIC
HOME TEAM 5

0' 100' 200' 400'

Concept Plan
CHEVERLY HOSPITAL REDEVELOPMENT

Table 1: List of attachments for TIS scoping agreement
The Maryland-National Capital Park and Planning Commission
Prince George's County Planning Department
Transportation Planning Section, Countywide Planning Division

This form must be completed prior to commencing a Traffic Impact Study (TIS). The completed and signed Scoping Agreement should be submitted to the Transportation Planning Section (TPS) by the traffic consultant for concurrence and signature. TPS will return a signed copy, with any comments, to the traffic consultant for inclusion in the TIS. Failure to conduct the study in accordance with the guidelines and the signed Scoping Agreement may be grounds for rejection of the study, thereby necessitating an addendum or a new study prior to the start of the staff review.

Project Name:	Cheverly - Urban Atlantic
Transportation Service Area: Please note if in Local Center or Regional Transit District (Map of TSAs in Appendix)	TSA-1
Zoning Classification per the ordinance this application is submitted under:	CGO
Proposed Zoning Classification (if rezoning was requested as part of application)	n/a
Type of Application (see Table 4):	PPS
Project Location:	Hospital Dr Hyattsville, MD 20785
Traffic Consultant Name: Contact Number(s): Email Address(es):	Mike Lenhart (P): 410.216.3333 (F): 443.782.2288

Describe the Proposal Under Study: Residential—Number & Type of Units: Commercial—Amount & Type of Space: Other Uses and Quantity:	Various Mixed Uses: Residential: 958 apartments, 48 condos, 174 Senior Living Units, 165 THs 71 Room Hotel, 39,275 square feet of retail space, 70,000 square feet of Medical Office		
Are pass-by trip rates in accordance with the Guidelines? (select one)	Yes (circled)	No	If No, please provide explanation on separate sheet.
Are there diverted trips? (select one)	Yes	No (circled)	If Yes, please provide explanation on separate sheet.

(Internal Trips)

Will a TOD credit be used? (Section 4 of the Guidelines) (select one)	Yes	No	Note that all development in TSAs and Regional Transit Districts Centers will be evaluated for TOD.
Will a transit facilities credit be used? (Section 5 of the Guidelines) (select one)	Yes	No	Need/nexus must be justified in study, and it must be supported by operating agency.
Will a bike/ped facilities credit be used? (Section 6 of the Guidelines) (select one)	Yes	No	Need/nexus must be justified in study, and it must be supported by operating agency.
Are additional trip reductions (internal trips, transit trips, etc.) proposed? (select one)	Yes	No	If Yes, please provide explanation on separate sheet.

Attach a map (or maps) showing the Study Area network with included intersections and links, estimated site trip distribution, and growth factors for through traffic.

SHA/DPW&T capital program improvements assumed:			
Other improvements assumed:	N/A		
Regional growth assumed:	1% - applied to through movements and movements to /from ramps		
Is mitigation (Section 8 of the Guidelines) to be proffered? (select one)	Yes	No	Note the locational criteria in Section 8, and please note the clarifications regarding mitigation included in Section 3, Subsection E.
Is a cooperative funding arrangement (such as a SCRP, PFFIP, or some other pro rata) to be used? (select one)	Yes	No	If Yes, please provide explanation on separate sheet, and note limitations in Section 3, Subsection E.
Will summer counts be used? (select one)	Yes	No	The use of summer counts must have

		specific concurrence of TPS staff.
Have there been discussions with the permitting agency (DPW&T and/or SHA) regarding access to this site and the analysis requirements? (select one)	Yes (No)	Section 1, Subsection E strongly advises that these discussions occur early in the development review process. Note that driveway access onto arterial facilities must be justified and approved by the Planning Board as a part of the subdivision process.
Has a listing of background development been developed? (select one)	(Yes) No	If Yes, please provide the list so that TPS staff may either concur with it or provide changes.
Has a list of attachments been completed and attached (Table 2)?	(Yes) No See Table 2 below:	

SIGNED: Traffic Consultant — Date: 9/6/2023

APPROVED: TPS Coordinator (or Supervisor) — Date: 9/15/2023

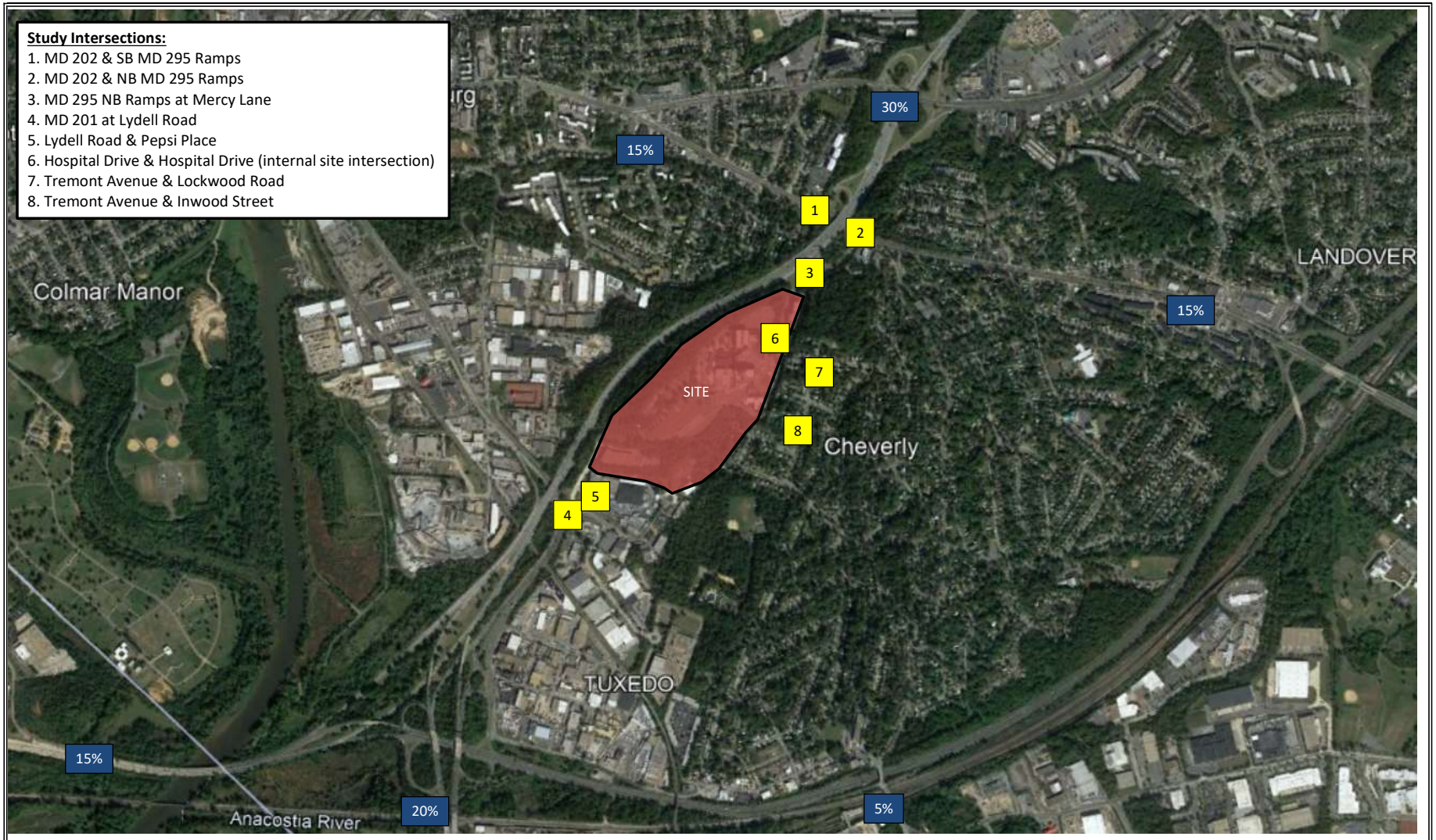
This form is not required for sites that do not require a TIS.

Scoping Meeting Attendees:
1. Crystal Hancock
2. Benjamin Ryan
3. Jim Yang
4. Ben Patrick
5. Rene Lord-Attivor
6. Jahid Russell
7. Mike Lenhart
8. Dylan McAndrew
9. Robert Engel

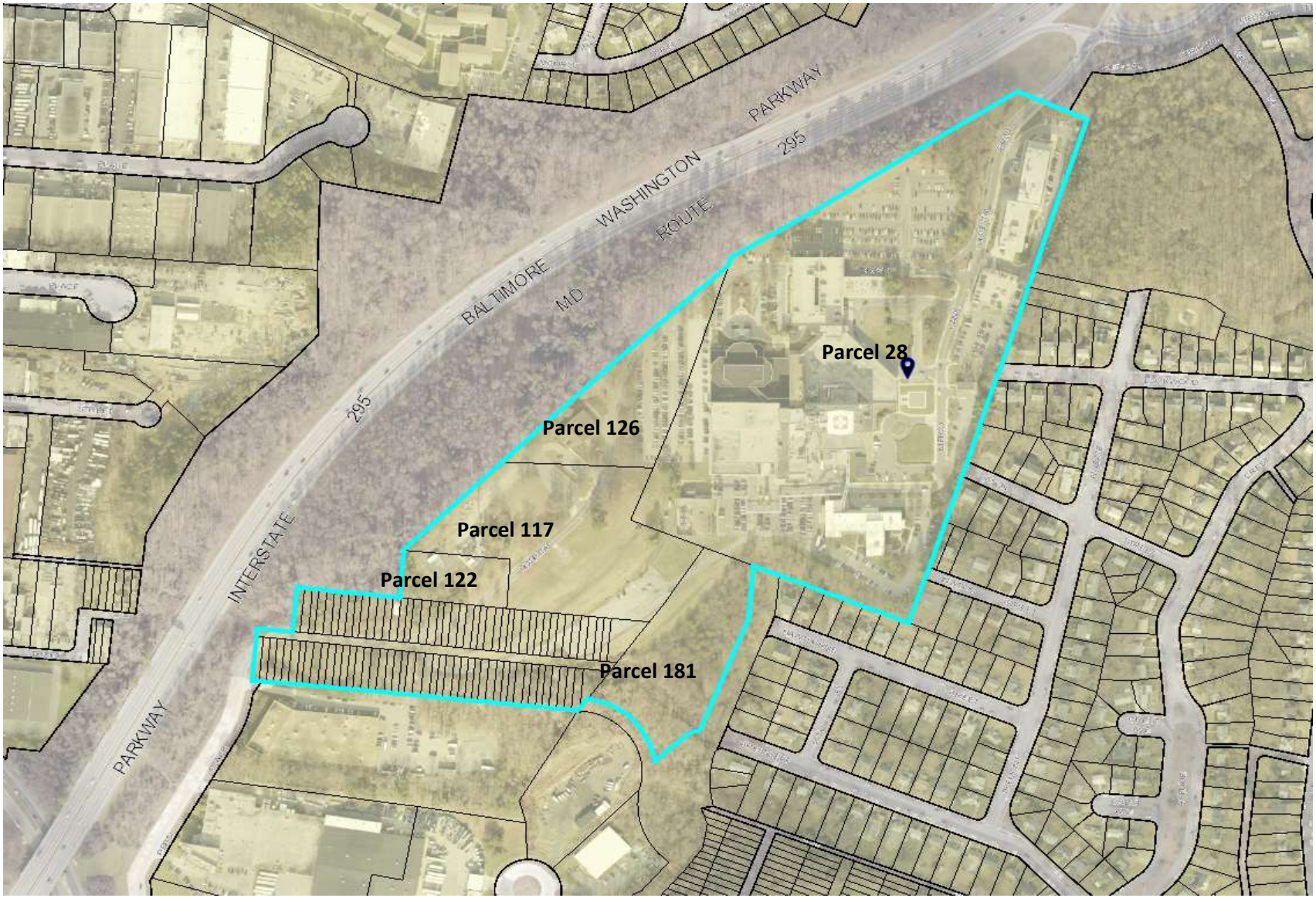
Table 2: List of attachments for TIS scoping agreement

No.	Attachment Description	Yes	No	N/A
1.	List of meeting attendees at Scoping Meeting:	X		
2.	Aerial (map of project site):	X		
3.	List and map of Critical Intersections:	X		
4.	Map of Site Access:	X		
5.	Diagram and memo of Trip Distribution:	X		
6.	List and map of Trip Credits and Locations:			X
7.	List and map of Background Developments in Study Area:	X		

The aerial map, list of intersections, map of site access and diagram of trip distribution is shown on Ex 1. The background developments are listed on a separate exhibit.



Traffic Impact Analysis LENHART TRAFFIC CONSULTING, INC. 645 BALTIMORE ANNAPOLIS BLVD, SUITE 214 SEVERNA PARK, MD 21146 www.lenharttraffic.com	Site Location Map & Study Intersections	**Exhibit 1a**



Traffic Impact Analysis LENHART TRAFFIC CONSULTING, INC. 645 BALTIMORE ANNAPOLIS BLVD, SUITE 214 SEVERNA PARK, MD 21146 www.lenharttraffic.com	Map of Existing Property and Parcels	**Exhibit** **1b**

Trip Generation Rates

	Trip Distribution (In/Out)
Hospital (ksf, ITE-610)	
Morning Trips = 0.89 x ksf	68/32
Evening Trips = 0.97 x ksf	32/68
Multifamily (garden and mid-rise, Prince George's County Rates)	
Morning Trips = 0.52 x Units	20/80
Evening Trips = 0.60 x Units	65/35
Senior Adult Housing - Multifamily (Prince George's County Rates)	
Morning Trips = 0.13 x Units	38/62
Evening Trips = 0.16 x Units	63/37
Townhouse (Prince George's County Rates)	
Morning Trips = 0.70 x Units	20/80
Evening Trips = 0.80 x Units	65/35
Hotel Rooms (ITE-310)	
Morning Trips = 0.50 x Rooms - 7.45	56/44
Evening Trips = 0.74 x Rooms - 27.89	51/49
Strip Retail Plaza (<40k) (ksf, ITE-822)	
Morning Trips = 2.36 x ksf	60/40
Evening Trips = 6.59 x ksf	50/50
Office (Medical/Professional, Prince George's County Rates)	
Morning Trips = 2.85 x ksf	81/19
Evening Trips = 3.8 x ksf	32/68

Existing Trip Generation

The existing hospital is no longer in operation and therefore this trip generation is provided for informational purposes only.

			AM Peak			PM Peak		
			In	Out	Total	In	Out	Total
Existing Hospital	Hospital (ksf, ITE-610)	882,461 square feet	534	251	785	274	582	856
		Existing Hospital Trips (no longer in operation):	**534**	**251**	**785**	**274**	**582**	**856**

Site Trip Generation

Proposed Use				AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Residential	Multifamily	Apartments (garden and mid-rise, Prince George's County Rates)	958 units	100	398	498	374	201	575
	Condos	Apartments (garden and mid-rise, Prince George's County Rates)	48 units	5	20	25	19	10	29
	Active Adult	Senior Adult Housing - Multifamily (Prince George's County Rates)	174 units	9	14	23	18	10	28
	Townhouses	Townhouse (Prince George's County Rates)	165 units	23	93	116	86	46	132
			Total Residential Trips:	**137**	**525**	**662**	**497**	**267**	**764**
			Internal Residential Trips:	3	10	13	38	26	64
Hotel		Hotel Rooms (ITE-310)	71 rooms	**16**	**12**	**28**	**13**	**12**	**25**
			Internal Hotel Trips:	0	7	7	4	2	6
Retail		Strip Retail Plaza (<40k) (ksf, ITE-822)	39,725 sq.ft.	**56**	**38**	**94**	**131**	**131**	**262**
			Internal Retail Trips:	18	9	27	25	39	64
			External Retail Trips:	38	29	67	106	92	198
			Pass-by Trips (40% AM / PM):	-15	-12	-27	-42	-37	-79
Office		Office (Medical/Professional, Prince George's County Rates)	70,000 sq.ft.	161	39	200	84	182	266
			Internal Office Trips:	16	11	27	14	14	28
			Total New Primary Trips for Proposed Uses:	**318**	**565**	**883**	**602**	**474**	**1076**
			Total Internal Trips:	**37**	**37**	**74**	**81**	**81**	**162**
			Total Pass-by Trips:	**15**	**12**	**27**	**42**	**37**	**79**

Notes:

1. Trip Generation rates obtained from Prince George's County Guidelines and the ITE Trip Generation Manual, 11th Edition.
2. See accompanying ITE Trip Generation Manual Internal Capture Worksheets for calculations used to determine internal capture trips for the site.
3. Pass-by rates obtained from Prince George's County Guidelines.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Cheverly - Urban Atlantic	**Organization:**	Lenhart Traffic Consulting
Project Location:	Landover, MD	**Performed By:**	DCM
Scenario Description:	Proposed Conditions	**Date:**	7/26/2023
Analysis Year:		**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				200	161	39
Retail			--	94	56	38
Restaurant			--	0		
Cinema/Entertainment				0		
Residential				662	137	525
Hotel				28	16	12
All Other Land Uses[2]				0		
Total				984	370	614

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.00	0%	0%			
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant				1.00	0%	0%
Cinema/Entertainment						
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		11	0	0	0	0
Retail	6		0	0	3	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	5	5	0	0		0
Hotel	5	2	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	984	370	614
Internal Capture Percentage	8%	10%	6%
External Vehicle-Trips[3]	910	333	577
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	10%	28%
Retail	32%	24%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	2%
Hotel	0%	58%

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Cheverly - Urban Atlantic
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	161	161	1.00	39	39
Retail	1.00	56	56	1.00	38	38
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	137	137	1.00	525	525
Hotel	1.00	16	16	1.00	12	12

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		11	25	0	0	0
Retail	11		5	0	5	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	11	5	105	0		0
Hotel	9	2	1	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		18	0	0	0	0
Retail	6		0	0	3	0
Restaurant	23	4		0	7	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	10	0	0		0
Hotel	5	2	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	16	145	161	145	0	0
Retail	18	38	56	38	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	134	137	134	0	0
Hotel	0	16	16	16	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	11	28	39	28	0	0
Retail	9	29	38	29	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	10	515	525	515	0	0
Hotel	7	5	12	5	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Cheverly - Urban Atlantic	**Organization:**	Lenhart Traffic Consulting
Project Location:	Landover, MD	**Performed By:**	DCM
Scenario Description:	Proposed Conditions	**Date:**	7/26/2023
Analysis Year:		**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				266	84	182
Retail				262	131	131
Restaurant				0		
Cinema/Entertainment				0		
Residential				764	497	267
Hotel				25	13	12
All Other Land Uses[2]				0		
Total				1317	725	592

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.00	0%	0%			
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant				1.00	0%	0%
Cinema/Entertainment						
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		10	0	0	4	0
Retail	3		0	0	34	2
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	11	13	0	0		2
Hotel	0	2	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,317	725	592
Internal Capture Percentage	12%	11%	14%
External Vehicle-Trips[3]	1,155	644	511
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	17%	8%
Retail	19%	30%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	8%	10%
Hotel	31%	17%

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Cheverly - Urban Atlantic
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	84	84	1.00	182	182
Retail	1.00	131	131	1.00	131	131
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	497	497	1.00	267	267
Hotel	1.00	13	13	1.00	12	12

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		36	7	0	4	0
Retail	3		38	5	34	7
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	11	112	56	0		8
Hotel	0	2	8	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		10	0	0	20	0
Retail	26		0	0	229	2
Restaurant	25	66		0	80	9
Cinema/Entertainment	5	5	0		20	0
Residential	48	13	0	0		2
Hotel	0	3	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	14	70	84	70	0	0
Retail	25	106	131	106	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	38	459	497	459	0	0
Hotel	4	9	13	9	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	14	168	182	168	0	0
Retail	39	92	131	92	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	26	241	267	241	0	0
Hotel	2	10	12	10	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

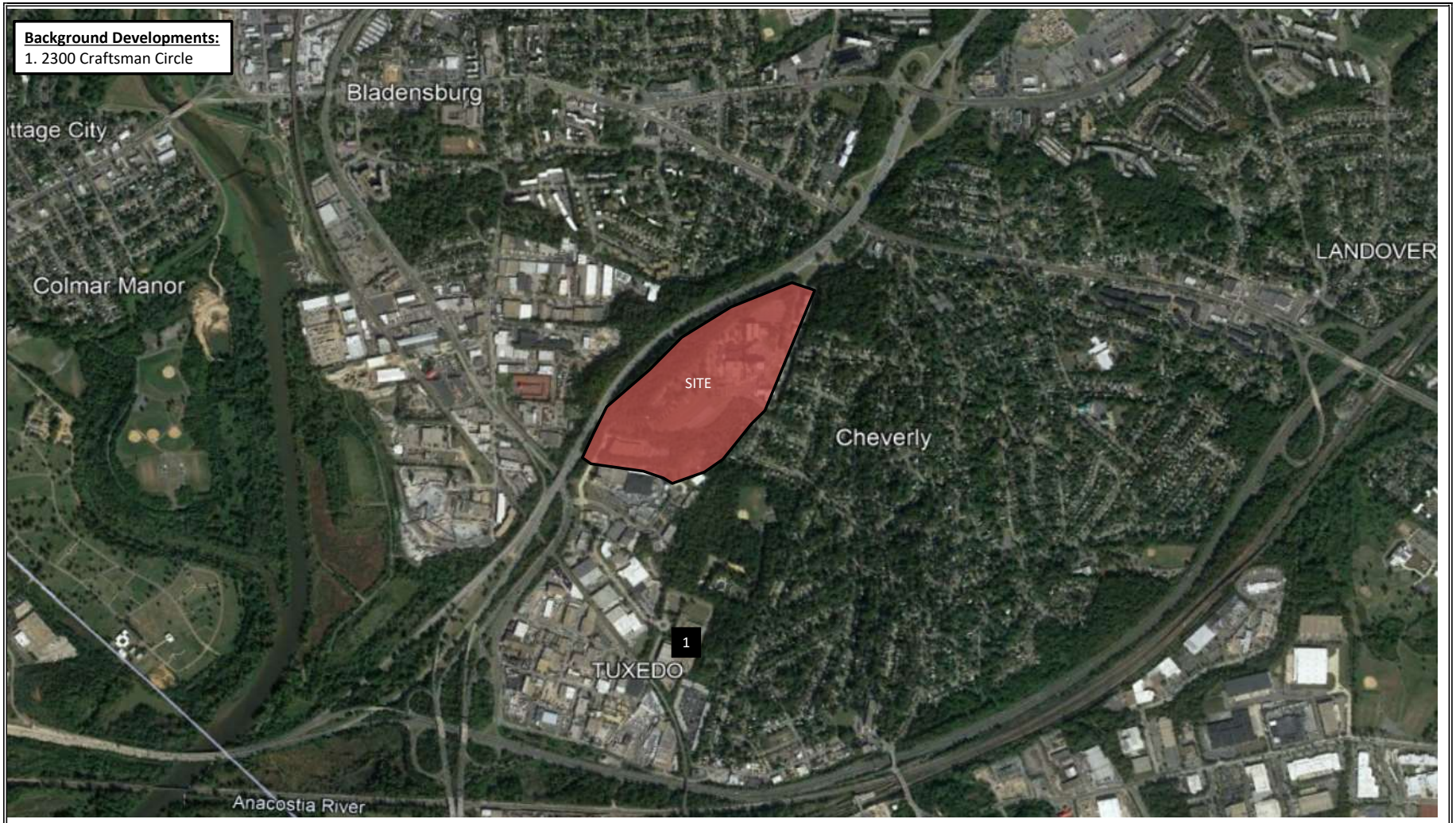
[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Table 7.1a Adjusted Internal Trip Capture Rates for Trip Origins within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
From OFFICE	To Office	0.0%	0.0%
	To Retail	28.0%	20.0%
	To Restaurant	63.0%	4.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	1.0%	2.0%
	To Hotel	0.0%	0.0%
From RETAIL	To Office	29.0%	2.0%
	To Retail	0.0%	0.0%
	To Restaurant	13.0%	29.0%
	To Cinema/Entertainment	0.0%	4.0%
	To Residential	14.0%	26.0%
	To Hotel	0.0%	5.0%
From RESTAURANT	To Office	31.0%	3.0%
	To Retail	14.0%	41.0%
	To Restaurant	0.0%	0.0%
	To Cinema/Entertainment	0.0%	8.0%
	To Residential	4.0%	18.0%
	To Hotel	3.0%	7.0%
From CINEMA/ENTERTAINMENT	To Office	0.0%	2.0%
	To Retail	0.0%	21.0%
	To Restaurant	0.0%	31.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	8.0%
	To Hotel	0.0%	2.0%
From RESIDENTIAL	To Office	2.0%	4.0%
	To Retail	1.0%	42.0%
	To Restaurant	20.0%	21.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	0.0%
	To Hotel	0.0%	3.0%
From HOTEL	To Office	75.0%	0.0%
	To Retail	14.0%	16.0%
	To Restaurant	9.0%	68.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	2.0%
	To Hotel	0.0%	0.0%

Table 7.2a Adjusted Internal Trip Capture Rates for Trip Destinations within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
To OFFICE	From Office	0.0%	0.0%
	From Retail	4.0%	31.0%
	From Restaurant	14.0%	30.0%
	From Cinema/Entertainment	0.0%	6.0%
	From Residential	3.0%	57.0%
	From Hotel	3.0%	0.0%
To RETAIL	From Office	32.0%	8.0%
	From Retail	0.0%	0.0%
	From Restaurant	8.0%	50.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	17.0%	10.0%
	From Hotel	4.0%	2.0%
To RESTAURANT	From Office	23.0%	2.0%
	From Retail	50.0%	29.0%
	From Restaurant	0.0%	0.0%
	From Cinema/Entertainment	0.0%	3.0%
	From Residential	20.0%	14.0%
	From Hotel	6.0%	5.0%
To CINEMA/ENTERTAINMENT	From Office	0.0%	1.0%
	From Retail	0.0%	26.0%
	From Restaurant	0.0%	32.0%
	From Cinema/Entertainment	0.0%	0.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To RESIDENTIAL	From Office	0.0%	4.0%
	From Retail	2.0%	46.0%
	From Restaurant	5.0%	16.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To HOTEL	From Office	0.0%	0.0%
	From Retail	0.0%	17.0%
	From Restaurant	4.0%	71.0%
	From Cinema/Entertainment	0.0%	1.0%
	From Residential	0.0%	12.0%
	From Hotel	0.0%	0.0%



Traffic Impact Analysis LENHART TRAFFIC CONSULTING, INC. 645 BALTIMORE ANNAPOLIS BLVD, SUITE 214 SEVERNA PARK, MD 21146 www.lenharttraffic.com	Background Development Location Map	**Exhibit C-1**

Trip Generation Rates

High-Cube Fulfillment Center Warehouse (ksf, ITE-155)	Trip Distribution (In/Out)
Morning Trips = 0.59 x ksf	80/20
Evening Trips = 1.37 x ksf	20/80

Trip Generation Totals

			AM Peak			PM Peak		
			In	Out	Total	In	Out	Total
1	High-Cube Fulfillment Center Warehouse (ksf, ITE-155)	180,000 sq. ft.	85	21	106	49	198	247

Note: Trip Generation Rates obtained from the Traffic Impact Study for the background development.

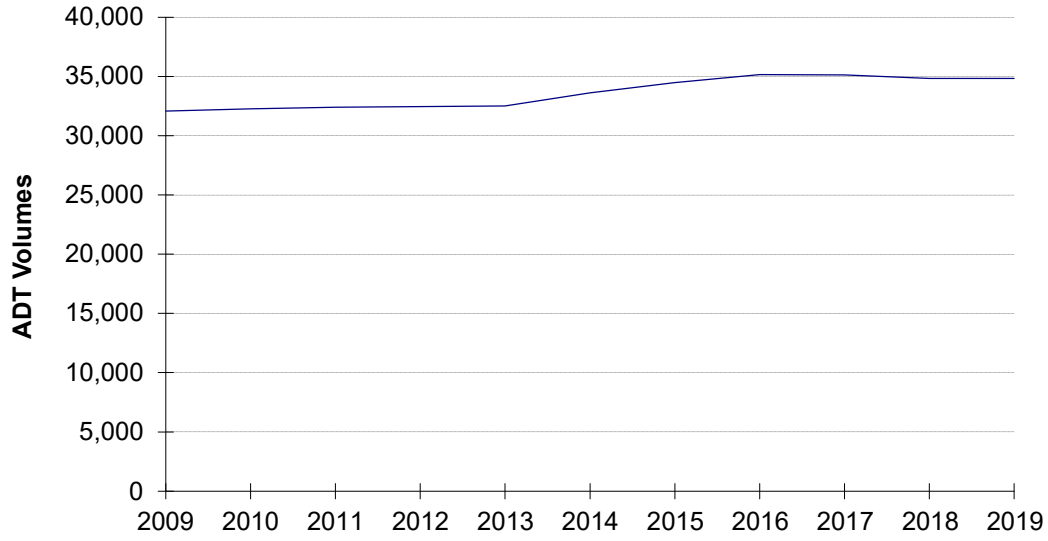
TRAFFIC GROWTH PROJECTION

LOCATION: MD 201 at Lydell Road

REPORT DATE: 11-Aug-20

AVERAGE GROWTH:	0.83%
MATHEMATICAL GROWTH:	0.82%

Year	ADT Volume	Vol. increase	% increase	Average %
2009	32,080			
2010	32,271	191	0.60%	0.60%
2011	32,402	131	0.41%	0.50%
2012	32,450	48	0.15%	0.38%
2013	32,521	71	0.22%	0.34%
2014	33,620	1,099	3.38%	0.95%
2015	34,491	871	2.59%	1.22%
2016	35,152	661	1.92%	1.32%
2017	35,140	-12	-0.03%	1.15%
2018	34,821	-319	-0.91%	0.92%
2019	34,822	1	0.00%	0.83%



TRAFFIC GROWTH
MD 201 at Lydell Road

The Maryland-National Capital Park and Planning Commission
Prince George's County Planning Department

14741 Governor Oden Bowie Drive
Upper Marlboro, MD 20772

Transportation Pre-Submittal Checklist for Development Applications

The Checklist is for the purpose of determining whether a traffic study or counts will be needed in support of an application, and to ensure that basic access issues are considered early in the process.This Checklist is required ONLY for the following:

- Subdivisions (4- applications, or 5- applications being done pursuant to 24-111(c))
- Rezoning requests for a comprehensive design or a mixed-use zone (A- applications)
- Comprehensive Design Plans (CDP- applications) • Conceptual Site Plans (CSP- applications)
- Detailed Site Plans ONLY within the Central US 1 Corridor Sector Plan area
- Special Exceptions involving the following uses:
  - Amusement Park
  - Asphalt Mixing Plant
  - Concrete Batching Plant
  - Concrete Mixing Plant
  - Sand & Gravel Wet Processing Plant
  - Surface Mining

In lieu of a signed Checklist, a signed Scoping Agreement or the actual traffic counts or traffic study may be provided to the Development Review Division.

Project Name Cheverly - Urban Atlantic Applicant's Name _____

Application Type PPS Case Number (if available) _____

Contact/Agent Mike Lenhart Phone No. 410-216-3333

E-mail Address mlenhart@lenharttraffic.com

Please provide a concept plan on letter-sized paper. The concept plan must show a general layout of the proposed uses, proposed points of access, and sufficient detail of nearby public streets, properties, and/or environmental features to allow the property to be located and assessed by staff.

Please describe the current development proposal in terms of size and access:

Residential:

	Single family residences (number)	165	Townhouse residences (number)
1006	Apartment or Condominium residences (number)		
174	Number of residences that will be age-restricted (limited to elderly persons or families)		

Non-Residential:

70000	Square feet office	(describe)	Medical Offices
39,275	Square feet retail	(describe)	first floor retail
	Square feet industrial	(describe)	

Other Uses:

This includes places of worship, day care facilities, private schools, hotels, and other types of proposals. Please describe the size of the proposal using square footage, number of units or students, or any other appropriate measure.

71 Room Hotel

Access to the Site:

Describe how the site will be accessed. Indicate the number of access points, where they are proposed, if existing streets or aprons will be used, and if any streets or aprons will be modified. This should match your concept plan.

via Pepsi Place and Hospital Drive (existing accesses), Lockwood Road and Inwood Street proposed extensions to provide additional access

14741 Governor Oden Bowie Drive
Upper Marlboro, MD 20772

DO NOT COMPLETE – For Staff Use Only

Estimated Trip Generation	AM: 986		PM: 1330	Other:
Data Need	**Yes**	**No**	**Requirement for this Application**	
Traffic Study	X		If YES, have a traffic consultant scope the study using the Scoping Agreement and standards provided in "Transportation Review Guidelines, Part 1." The traffic study must be submitted during the pre-application review process.	
Traffic Count		X	If YES, counts in lieu of a full study are required at the intersection(s) identified on the comment line below. Counts must be taken in accordance with the procedures in "Transportation Review Guidelines, Part 1." Any required counts must be submitted during the pre-application review process.	
Other Transportation Study		x	If YES, please see comment line below.	
Transportation Adequacy Finding Not Required by Application or De Minimus		X	None, unless other information is requested by comments above.	
The site is proposed to have driveways accessing an arterial or higher-classification facility		X	If YES, it is recommended that the plan be revised to minimize access to the high-classification facility, as noted below. If that is not possible, a variation from Section 24-121(a)(3) must be reviewed and granted by the Planning Board during the subdivision process.	
Insufficient information to make determination		X	If YES, please see comment line below and resubmit with sufficient information.	

TPS Comments:

A TIS is required. Please submit documents for scoping.

CSHancock 9/18/23

Transportation Staffperson Signature Date

Transportation Staffperson's Name (printed)

Transportation Staffperson's Phone and E-mail

This is an initial assessment of the data required to complete review of the application. However, if the development proposal changes or if new information is determined during a detailed review of the application after its formal acceptance, the transportation staff shall reserve the right to request additional information in accordance with the findings required for the application.

NOTE

Please submit this Checklist (both pages with the required concept plan) and any Scoping Agreements to the Transportation Planning Section. If submitted as a PDF by email, please send to tom.masog@ppd.mncppc.org, glen.burton@ppd.mncppc.org, and bryan.barnettwoods@ppd.mncppc.org. Hardcopies may be mailed or brought to our office.

The rear side of this page should be completed by the Transportation Planning Section and returned to the applicant within five (5) working days.

Weekday Morning Peak Hour (6:30 am - 9:30 am)

	N/A Northbound					BW Parkway SB Ramps Southbound					MD 202 Eastbound					MD 202 Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
6:30-6:45					4	0	16		9	0	0	13	213		1	0		297	125	0	673
6:45-7:00					1	0	41		11	0	1	4	224		0	0		336	126	0	743
7:00-7:15					2	0	32		16	0	2	4	225		0	0		370	107	0	756
7:15-7:30					1	0	40		17	0	0	7	272		0	0		394	121	0	851
7:30-7:45					2	0	50		19	1	0	9	282		0	1		405	99	0	865
7:45-8:00					1	0	73		17	0	0	14	315		0	1		382	120	0	922
8:00-8:15					3	0	69		12	0	1	7	280		0	0		416	143	0	928
8:15-8:30					2	0	76		16	0	1	7	339		0	0		291	46	0	776
8:30-8:45					3	0	72		19	0	0	3	295		0	0		338	27	0	754
8:45-9:00					4	0	62		20	0	3	7	268		0	1		369	37	0	767
9:00-9:15					3	0	58		23	0	2	8	232		0	0		296	27	0	646
9:15-9:30					1	0	55		8	0	2	5	263		0	0		278	29	0	640
Hourly Totals																					
6:30-7:30	0	0	0	0	8	0	129	0	53	0	3	28	934	0	1	0	0	1397	479	0	3032
6:45-7:45	0	0	0	0	6	0	163	0	63	1	3	24	1003	0	0	1	0	1505	453	0	3222
7:00-8:00	0	0	0	0	6	0	195	0	69	1	2	34	1094	0	0	2	0	1551	447	0	3401
7:15-8:15	0	0	0	0	7	0	232	0	65	1	1	37	1149	0	0	2	0	1597	483	0	3574
7:30-8:30	0	0	0	0	8	0	268	0	64	1	2	37	1216	0	0	2	0	1494	408	0	3500
7:45-8:45	0	0	0	0	9	0	290	0	64	0	2	31	1229	0	0	1	0	1427	336	0	3389
8:00-9:00	0	0	0	0	12	0	279	0	67	0	5	24	1182	0	0	1	0	1414	253	0	3237
8:15-9:15	0	0	0	0	12	0	268	0	78	0	6	25	1134	0	0	1	0	1294	137	0	2955
8:30-9:30	0	0	0	0	11	0	247	0	70	0	7	23	1058	0	0	1	0	1281	120	0	2818

AM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
7:15-8:15	**0**	**0**	**0**	**0**	**7**	**0**	**232**	**0**	**65**	**0**	**1**	**37**	**1149**	**0**	**0**	**2**	**0**	**1597**	**483**	**0**	**3574**

Weekday Evening Peak Hour (4 pm - 7 pm)

	N/A Northbound					BW Parkway SB Ramps Southbound					MD 202 Eastbound					MD 202 Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
4:00-4:15					1	0	96		24	0	0	8	426		0	0		346	20	0	920
4:15-4:30					7	0	92		22	0	1	10	516		0	0		290	17	0	948
4:30-4:45					3	0	99		21	1	1	10	495		0	0		321	14	0	961
4:45-5:00					2	0	98		25	0	3	13	406		0	1		339	14	0	899
5:00-5:15					4	0	103		18	0	1	11	471		0	0		298	15	0	917
5:15-5:30					3	0	74		16	0	3	10	461		0	1		319	11	0	895
5:30-5:45					1	0	82		14	0	3	11	483		0	0		343	10	0	946
5:45-6:00					3	0	77		13	0	1	11	447		0	0		350	18	0	917
6:00-6:15					2	0	78		19	0	2	13	425		0	0		304	16	0	857
6:15-6:30					3	0	65		22	0	2	20	359		0	0		317	11	0	796
6:30-6:45					4	0	62		10	0	0	13	268		0	0		278	24	0	655
6:45-7:00					1	0	67		19	0	2	11	309		0	0		255	17	0	680
Hourly Totals																					
4:00-5:00	0	0	0	0	13	0	385	0	92	1	5	41	1843	0	0	1	0	1296	65	0	3742
4:15-5:15	0	0	0	0	16	0	392	0	86	1	6	44	1888	0	0	1	0	1248	60	0	3742
4:30-5:30	0	0	0	0	12	0	374	0	80	1	8	44	1833	0	0	2	0	1277	54	0	3685
4:45-5:45	0	0	0	0	10	0	357	0	73	0	10	45	1821	0	0	2	0	1299	50	0	3667
5:00-6:00	0	0	0	0	11	0	336	0	61	0	8	43	1862	0	0	1	0	1310	54	0	3686
5:15-6:15	0	0	0	0	9	0	311	0	62	0	9	45	1816	0	0	1	0	1316	55	0	3624
5:30-6:30	0	0	0	0	9	0	302	0	68	0	8	55	1714	0	0	0	0	1314	55	0	3525
5:45-6:45	0	0	0	0	12	0	282	0	64	0	5	57	1499	0	0	0	0	1249	69	0	3237
6:00-7:00	0	0	0	0	10	0	272	0	70	0	6	57	1361	0	0	0	0	1154	68	0	2998

PM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
4:00-5:00	**0**	**0**	**0**	**0**	**13**	**0**	**385**	**0**	**92**	**1**	**5**	**41**	**1843**	**0**	**0**	**1**	**0**	**1296**	**65**	**1**	**3742**

Peak Hour
Turning Movement Count

LENHART TRAFFIC CONSULTING, INC.
645 BALTIMORE ANNAPOLIS BLVD, SUITE 214
SEVERNA PARK, MD 21146
www.lenharttraffic.com

Intersection: MD 202 & BW Parkway SB Ramps
Weather: Clear
Count by: CountCAM - DSS
Count Day/Date: Thursday, June 1, 2023
County: Prince George's

Weekday Morning Peak Hour (6:30 am - 9:30 am)

	BW Parkway NB Ramps Northbound					N/A Southbound					MD 202 Eastbound					MD 202 Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
6:30-6:45	0	2		7	0					0	0		215	27	0	0	63	408		0	722
6:45-7:00	0	3		16	0					0	0		234	28	0	0	56	453		0	790
7:00-7:15	0	10		10	1					0	0		216	22	0	0	59	455		0	772
7:15-7:30	0	9		14	1					0	0		255	28	0	0	85	508		0	899
7:30-7:45	0	9		20	2					0	0		304	23	0	0	96	489		0	941
7:45-8:00	0	7		27	0					0	0		307	34	0	0	110	478		0	963
8:00-8:15	0	10		26	3					0	0		310	40	0	1	102	532		0	1021
8:15-8:30	0	10		20	1					0	0		363	45	0	0	94	320		0	852
8:30-8:45	0	11		27	3					0	0		330	30	0	0	83	348		0	829
8:45-9:00	0	6		25	3					0	0		288	41	0	0	84	395		0	839
9:00-9:15	0	9		24	2					0	0		243	33	0	0	52	308		0	669
9:15-9:30	0	6		20	2					0	0		283	33	0	0	45	294		0	681
Hourly Totals																					
6:30-7:30	0	24	0	47	2	0	0	0	0	0	0	0	920	105	0	0	263	1824	0	0	3185
6:45-7:45	0	31	0	60	4	0	0	0	0	0	0	0	1009	101	0	0	296	1905	0	0	3406
7:00-8:00	0	35	0	71	4	0	0	0	0	0	0	0	1082	107	0	0	350	1930	0	0	3579
7:15-8:15	0	35	0	87	6	0	0	0	0	0	0	0	1176	125	0	1	393	2007	0	0	3830
7:30-8:30	0	36	0	93	6	0	0	0	0	0	0	0	1284	142	0	1	402	1819	0	0	3783
7:45-8:45	0	38	0	100	7	0	0	0	0	0	0	0	1310	149	0	1	389	1678	0	0	3672
8:00-9:00	0	37	0	98	10	0	0	0	0	0	0	0	1291	156	0	1	363	1595	0	0	3551
8:15-9:15	0	36	0	96	9	0	0	0	0	0	0	0	1224	149	0	0	313	1371	0	0	3198
8:30-9:30	0	32	0	96	10	0	0	0	0	0	0	0	1144	137	0	0	264	1345	0	0	3028

AM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
7:15-8:15	**0**	**35**	**0**	**87**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1176**	**125**	**0**	**1**	**393**	**2007**	**0**	**0**	**3830**

Weekday Evening Peak Hour (4 pm - 7 pm)

	BW Parkway NB Ramps Northbound					N/A Southbound					MD 202 Eastbound					MD 202 Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
4:00-4:15	0	21		79	0					0	0		503	13	0	2	31	338		0	987
4:15-4:30	0	18		76	6					0	0		601	10	0	0	22	284		0	1011
4:30-4:45	0	19		93	1					1	0		565	18	0	0	40	314		0	1049
4:45-5:00	0	22		64	0					0	0		483	26	0	2	43	328		0	968
5:00-5:15	0	13		85	1					0	0		556	15	0	0	34	294		0	997
5:15-5:30	0	23		79	1					0	0		502	16	0	1	27	303		0	951
5:30-5:45	0	18		77	0					0	0		550	20	0	1	45	320		0	1031
5:45-6:00	0	16		79	2					0	0		479	20	0	0	47	356		0	997
6:00-6:15	0	23		70	0					0	0		481	14	0	1	38	293		0	920
6:15-6:30	0	19		65	1					0	0		406	22	0	1	37	301		0	851
6:30-6:45	0	12		57	3					0	0		335	13	0	0	35	279		0	731
6:45-7:00	0	12		41	1					0	0		366	10	0	0	22	261		0	712
Hourly Totals																					
4:00-5:00	0	80	0	312	7	0	0	0	0	1	0	0	2152	67	0	4	136	1264	0	0	4023
4:15-5:15	0	72	0	318	8	0	0	0	0	1	0	0	2205	69	0	2	139	1220	0	0	4034
4:30-5:30	0	77	0	321	3	0	0	0	0	1	0	0	2106	75	0	3	144	1239	0	0	3969
4:45-5:45	0	76	0	305	2	0	0	0	0	0	0	0	2091	77	0	4	149	1245	0	0	3949
5:00-6:00	0	70	0	320	4	0	0	0	0	0	0	0	2087	71	0	2	153	1273	0	0	3980
5:15-6:15	0	80	0	305	3	0	0	0	0	0	0	0	2012	70	0	3	157	1272	0	0	3902
5:30-6:30	0	76	0	291	3	0	0	0	0	0	0	0	1916	76	0	3	167	1270	0	0	3802
5:45-6:45	0	70	0	271	6	0	0	0	0	0	0	0	1701	69	0	2	157	1229	0	0	3505
6:00-7:00	0	66	0	233	5	0	0	0	0	0	0	0	1588	59	0	2	132	1134	0	0	3219

PM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
4:15-5:15	**0**	**72**	**0**	**318**	**8**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2205**	**69**	**0**	**2**	**139**	**1220**	**0**	**1**	**4034**

Peak Hour
Turning Movement Count

LENHART TRAFFIC CONSULTING, INC.
645 BALTIMORE ANNAPOLIS BLVD, SUITE 214
SEVERNA PARK, MD 21146
www.lenharttraffic.com

Intersection: MD 202 & N/A
Weather: Clear
Count by: CountCAM - DSS
Count Day/Date: Thursday, June 1, 2023
County: Prince George's

Weekday Morning Peak Hour (6:30 am - 9:30 am)

	Hospital Dr Northbound					N/A Southbound					BW Parkway NB Ramps Eastbound					BW Parkway NB Ramps Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
6:30-6:45	0	0	11	5	0	0	0	0	0	0	0	0	7	0	0	0	23	0	71	0	117
6:45-7:00	0	0	10	8	0	0	0	0	0	0	0	0	11	1	0	0	23	0	64	0	117
7:00-7:15	0	0	10	7	0	0	0	0	0	0	0	0	13	1	0	0	20	0	72	0	123
7:15-7:30	0	0	10	9	0	0	0	0	0	0	0	0	15	0	0	0	21	0	94	0	149
7:30-7:45	0	0	12	12	0	0	0	0	0	0	0	0	15	1	0	0	41	0	98	0	179
7:45-8:00	0	0	8	16	0	0	0	0	0	0	0	0	22	5	0	0	51	0	105	0	207
8:00-8:15	0	0	9	14	0	0	0	0	0	0	0	0	21	0	0	0	48	0	95	0	187
8:15-8:30	0	0	20	6	0	0	0	0	0	0	0	0	25	2	0	0	34	0	105	0	192
8:30-8:45	0	0	5	14	0	0	0	0	0	0	0	0	23	2	0	0	33	0	87	0	164
8:45-9:00	0	0	17	12	0	0	0	0	0	0	0	0	20	4	0	1	29	0	107	0	190
9:00-9:15	0	0	17	11	0	0	0	0	0	0	0	0	19	4	0	0	19	0	69	0	139
9:15-9:30	0	0	15	10	0	0	0	0	0	0	0	0	17	2	0	0	12	0	65	0	121
Hourly Totals																					
6:30-7:30	0	0	41	29	0	0	0	0	0	0	0	0	46	2	0	0	87	0	301	0	506
6:45-7:45	0	0	42	36	0	0	0	0	0	0	0	0	54	3	0	0	105	0	328	0	568
7:00-8:00	0	0	40	44	0	0	0	0	0	0	0	0	65	7	0	0	133	0	369	0	658
7:15-8:15	0	0	39	51	0	0	0	0	0	0	0	0	73	6	0	0	161	0	392	0	722
7:30-8:30	0	0	49	48	0	0	0	0	0	0	0	0	83	8	0	0	174	0	403	0	765
7:45-8:45	0	0	42	50	0	0	0	0	0	0	0	0	91	9	0	0	166	0	392	0	750
8:00-9:00	0	0	51	46	0	0	0	0	0	0	0	0	89	8	0	1	144	0	394	0	733
8:15-9:15	0	0	59	43	0	0	0	0	0	0	0	0	87	12	0	1	115	0	368	0	685
8:30-9:30	0	0	54	47	0	0	0	0	0	0	0	0	79	12	0	1	93	0	328	0	614

AM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
7:30-8:30	**0**	**0**	**49**	**48**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**83**	**8**	**0**	**0**	**174**	**0**	**403**	**0**	**765**

Weekday Evening Peak Hour (4 pm - 7 pm)

	Hospital Dr Northbound					N/A Southbound					BW Parkway NB Ramps Eastbound					BW Parkway NB Ramps Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
4:00-4:15	0	0	17	26	0	0	0	0	0	0	0	0	73	3	0	0	9	0	42	0	170
4:15-4:30	0	0	30	23	0	0	0	0	0	0	0	0	76	1	0	1	5	0	36	0	172
4:30-4:45	0	0	30	31	0	0	0	0	0	0	0	0	76	1	0	0	10	0	56	0	204
4:45-5:00	0	0	16	18	0	0	0	0	0	0	0	0	62	1	0	1	7	0	63	0	168
5:00-5:15	0	0	26	33	0	0	0	0	0	0	0	0	67	0	0	0	7	0	49	0	182
5:15-5:30	0	0	12	14	0	0	0	0	0	0	0	0	89	0	0	1	4	0	46	0	166
5:30-5:45	0	0	10	17	0	0	0	0	0	0	0	0	80	2	0	0	11	0	57	0	177
5:45-6:00	0	0	12	12	0	0	0	0	0	0	0	0	85	1	0	0	3	0	64	0	177
6:00-6:15	0	0	11	18	0	0	0	0	0	0	0	0	69	1	0	1	9	0	53	0	162
6:15-6:30	0	0	20	13	0	0	0	0	0	0	0	0	72	0	0	0	10	0	52	0	167
6:30-6:45	0	0	10	12	0	0	0	0	0	0	0	1	57	1	0	0	3	0	48	0	132
6:45-7:00	0	0	14	6	0	0	0	0	0	0	0	1	44	0	0	0	6	0	30	0	101
Hourly Totals																					
4:00-5:00	0	0	93	98	0	0	0	0	0	0	0	0	287	6	0	2	31	0	197	0	714
4:15-5:15	0	0	102	105	0	0	0	0	0	0	0	0	281	3	0	2	29	0	204	0	726
4:30-5:30	0	0	84	96	0	0	0	0	0	0	0	0	294	2	0	2	28	0	214	0	720
4:45-5:45	0	0	64	82	0	0	0	0	0	0	0	0	298	3	0	2	29	0	215	0	693
5:00-6:00	0	0	60	76	0	0	0	0	0	0	0	0	321	3	0	1	25	0	216	0	702
5:15-6:15	0	0	45	61	0	0	0	0	0	0	0	0	323	4	0	2	27	0	220	0	682
5:30-6:30	0	0	53	60	0	0	0	0	0	0	0	0	306	4	0	1	33	0	226	0	683
5:45-6:45	0	0	53	55	0	0	0	0	0	0	0	1	283	3	0	1	25	0	217	0	638
6:00-7:00	0	0	55	49	0	0	0	0	0	0	0	2	242	2	0	1	28	0	183	0	562

PM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
4:15-5:15	**0**	**0**	**102**	**105**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**281**	**3**	**0**	**2**	**29**	**0**	**204**	**0**	**726**

Peak Hour
Turning Movement Count

LENHART TRAFFIC CONSULTING, INC.
645 BALTIMORE ANNAPOLIS BLVD, SUITE 214
SEVERNA PARK, MD 21146
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Intersection: BW Parkway NB Ramps & N/A
Weather: Clear
Count by: CountCAM - DSS
Count Day/Date: Thursday, June 1, 2023
County: Prince George's

Weekday Morning Peak Hour (6:30 am - 9:30 am)

	MD 201 Northbound					MD 201 Southbound					N/A Eastbound					Lydell Rd Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
6:30-6:45	0		188	22	0	0	9	207		0					0	0	12		8	1	446
6:45-7:00	0		218	19	0	0	9	197		0					0	0	10		7	2	460
7:00-7:15	0		277	21	0	0	14	215		0					0	1	4		11	1	543
7:15-7:30	0		246	15	0	0	11	219		0					0	0	17		11	1	519
7:30-7:45	0		306	17	0	1	6	227		0					0	0	10		15	0	582
7:45-8:00	0		276	16	0	0	6	234		0					0	0	17		10	0	559
8:00-8:15	0		268	18	0	0	11	244		0					0	0	19		22	2	582
8:15-8:30	1		266	17	0	0	9	187		0					0	0	10		8	0	498
8:30-8:45	0		249	29	0	0	12	198		0					0	0	7		6	0	501
8:45-9:00	0		252	22	0	0	7	179		0					0	0	16		7	0	483
9:00-9:15	1		258	26	0	0	8	213		0					0	0	10		14	0	530
9:15-9:30	0		236	37	0	0	11	186		0					0	0	10		7	0	487
Hourly Totals																					
6:30-7:30	0	0	929	77	0	0	43	838	0	0	0	0	0	0	0	1	43	0	37	5	1973
6:45-7:45	0	0	1047	72	0	1	40	858	0	0	0	0	0	0	0	1	41	0	44	4	2108
7:00-8:00	0	0	1105	69	0	1	37	895	0	0	0	0	0	0	0	1	48	0	47	2	2205
7:15-8:15	0	0	1096	66	0	1	34	924	0	0	0	0	0	0	0	0	63	0	58	3	2245
7:30-8:30	1	0	1116	68	0	1	32	892	0	0	0	0	0	0	0	0	56	0	55	2	2223
7:45-8:45	1	0	1059	80	0	0	38	863	0	0	0	0	0	0	0	0	53	0	46	2	2142
8:00-9:00	1	0	1035	86	0	0	39	808	0	0	0	0	0	0	0	0	52	0	43	2	2066
8:15-9:15	2	0	1025	94	0	0	36	777	0	0	0	0	0	0	0	0	43	0	35	0	2012
8:30-9:30	1	0	995	114	0	0	38	776	0	0	0	0	0	0	0	0	43	0	34	0	2001

AM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
7:15-8:15	**0**	**0**	**1096**	**66**	**0**	**1**	**34**	**924**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**63**	**0**	**58**	**0**	**2245**

Weekday Evening Peak Hour (4 pm - 7 pm)

	MD 201 Northbound					MD 201 Southbound					N/A Eastbound					Lydell Rd Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
4:00-4:15	0		370	33	0	0	12	231		0					0	0	9		14	2	669
4:15-4:30	0		355	22	0	0	6	297		0					0	0	11		13	0	704
4:30-4:45	0		299	18	0	0	5	263		0					0	0	9		6	1	600
4:45-5:00	1		288	24	0	0	11	285		0					0	0	5		8	0	622
5:00-5:15	0		313	28	0	1	11	213		0					0	0	9		13	0	588
5:15-5:30	0		348	17	0	0	7	276		0					0	0	4		6	0	658
5:30-5:45	0		309	11	0	1	3	243		0					0	0	4		12	0	583
5:45-6:00	0		302	18	0	0	5	236		0					0	0	8		8	0	577
6:00-6:15	0		293	16	0	0	8	176		0					0	0	5		9	0	507
6:15-6:30	0		244	19	0	0	7	137		0					0	0	7		7	0	421
6:30-6:45	0		257	14	0	0	4	140		0					0	0	7		6	0	428
6:45-7:00	0		237	22	0	0	0	157		0					0	0	4		1	0	421
Hourly Totals																					
4:00-5:00	1	0	1312	97	0	0	34	1076	0	0	0	0	0	0	0	0	34	0	41	3	2598
4:15-5:15	1	0	1255	92	0	1	33	1058	0	0	0	0	0	0	0	0	34	0	40	1	2515
4:30-5:30	1	0	1248	87	0	1	34	1037	0	0	0	0	0	0	0	0	27	0	33	1	2469
4:45-5:45	1	0	1258	80	0	2	32	1017	0	0	0	0	0	0	0	0	22	0	39	0	2451
5:00-6:00	0	0	1272	74	0	2	26	968	0	0	0	0	0	0	0	0	25	0	39	0	2406
5:15-6:15	0	0	1252	62	0	1	23	931	0	0	0	0	0	0	0	0	21	0	35	0	2325
5:30-6:30	0	0	1148	64	0	1	23	792	0	0	0	0	0	0	0	0	24	0	36	0	2088
5:45-6:45	0	0	1096	67	0	0	24	689	0	0	0	0	0	0	0	0	27	0	30	0	1933
6:00-7:00	0	0	1031	71	0	0	19	610	0	0	0	0	0	0	0	0	23	0	23	0	1777

PM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
4:00-5:00	**1**	**0**	**1312**	**97**	**0**	**0**	**34**	**1076**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**34**	**0**	**41**	**0**	**2598**

Peak Hour
Turning Movement Count

LENHART TRAFFIC CONSULTING, INC.
645 BALTIMORE ANNAPOLIS BLVD, SUITE 214
SEVERNA PARK, MD 21146
www.lenharttraffic.com

Intersection: Lydell Rd & MD 201
Weather: Clear
Count by: CountCAM - DSS
Count Day/Date: Thursday, June 1, 2023
County: Prince George's

Weekday Morning Peak Hour (6:30 am - 9:30 am)

	N/A Northbound					Pepsi Pl Southbound					Lydell Rd Eastbound					Lydell Rd Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
6:30-6:45					0	0	9		7	0	2	14	16		1	0		11	2	0	61
6:45-7:00					0	0	11		7	0	0	8	19		2	0		9	3	0	57
7:00-7:15					0	0	8		9	0	0	12	24		0	0		8	0	0	61
7:15-7:30					1	0	3		7	1	0	11	16		0	0		19	1	0	57
7:30-7:45					0	0	6		13	0	1	12	10		0	0		11	5	0	58
7:45-8:00					0	0	3		16	0	0	10	12		0	0		9	1	0	51
8:00-8:15					0	0	5		22	0	0	19	10		0	0		20	1	0	77
8:15-8:30					1	0	4		11	0	1	12	13		0	0		5	5	0	51
8:30-8:45					0	0	11		7	0	2	24	16		0	0		7	1	0	68
8:45-9:00					0	0	6		8	0	1	17	10		0	0		11	4	0	57
9:00-9:15					0	0	9		12	0	0	15	17		0	0		11	4	0	68
9:15-9:30					0	1	3		5	0	2	21	23		0	0		13	3	0	71
Hourly Totals																					
6:30-7:30	0	0	0	0	1	0	31	0	30	1	2	45	75	0	3	0	0	47	6	0	241
6:45-7:45	0	0	0	0	1	0	28	0	36	1	1	43	69	0	2	0	0	47	9	0	237
7:00-8:00	0	0	0	0	1	0	20	0	45	1	1	45	62	0	0	0	0	47	7	0	229
7:15-8:15	0	0	0	0	1	0	17	0	58	1	1	52	48	0	0	0	0	59	8	0	245
7:30-8:30	0	0	0	0	1	0	18	0	62	0	2	53	45	0	0	0	0	45	12	0	238
7:45-8:45	0	0	0	0	1	0	23	0	56	0	3	65	51	0	0	0	0	41	8	0	248
8:00-9:00	0	0	0	0	1	0	26	0	48	0	4	72	49	0	0	0	0	43	11	0	254
8:15-9:15	0	0	0	0	1	0	30	0	38	0	4	68	56	0	0	0	0	34	14	0	245
8:30-9:30	0	0	0	0	0	1	29	0	32	0	5	77	66	0	0	0	0	42	12	0	264

AM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
8:30-9:30	**0**	**0**	**0**	**0**	**0**	**1**	**29**	**0**	**32**	**0**	**5**	**77**	**66**	**0**	**0**	**0**	**0**	**42**	**12**	**0**	**264**

Weekday Evening Peak Hour (4 pm - 7 pm)

	N/A Northbound					Pepsi Pl Southbound					Lydell Rd Eastbound					Lydell Rd Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
4:00-4:15					0	0	1		1	0	1	29	14		2	0		21	9	0	76
4:15-4:30					0	0	2		11	0	2	25	3		0	0		11	12	0	66
4:30-4:45					0	0	0		7	0	1	14	7		1	0		6	5	0	40
4:45-5:00					0	0	1		3	0	2	21	12		0	0		8	7	0	54
5:00-5:15					0	0	1		7	0	1	28	13		0	0		14	9	1	73
5:15-5:30					0	0	1		4	0	0	15	9		0	0		7	5	0	41
5:30-5:45					0	1	1		5	0	0	14	0		0	0		10	6	0	37
5:45-6:00					1	0	0		8	0	1	18	4		0	0		9	2	0	42
6:00-6:15					0	0	2		6	0	0	23	2		0	0		9	4	0	46
6:15-6:30					0	0	1		3	0	0	17	9		0	0		13	6	0	49
6:30-6:45					0	0	1		2	0	0	15	4		0	0		10	4	0	36
6:45-7:00					0	0	0		2	0	1	15	6		0	0		2	0	0	26
Hourly Totals																					
4:00-5:00	0	0	0	0	0	0	4	0	22	0	6	89	36	0	3	0	0	46	33	0	239
4:15-5:15	0	0	0	0	0	0	4	0	28	0	6	88	35	0	1	0	0	39	33	1	235
4:30-5:30	0	0	0	0	0	0	3	0	21	0	4	78	41	0	1	0	0	35	26	1	210
4:45-5:45	0	0	0	0	0	1	4	0	19	0	3	78	34	0	0	0	0	39	27	1	206
5:00-6:00	0	0	0	0	1	1	3	0	24	0	2	75	26	0	0	0	0	40	22	1	195
5:15-6:15	0	0	0	0	1	1	4	0	23	0	1	70	15	0	0	0	0	35	17	0	167
5:30-6:30	0	0	0	0	1	1	4	0	22	0	1	72	15	0	0	0	0	41	18	0	175
5:45-6:45	0	0	0	0	1	0	4	0	19	0	1	73	19	0	0	0	0	41	16	0	174
6:00-7:00	0	0	0	0	0	0	4	0	13	0	1	70	21	0	0	0	0	34	14	0	157

PM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
4:00-5:00	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**22**	**0**	**6**	**89**	**36**	**0**	**3**	**0**	**0**	**46**	**33**	**0**	**239**

Peak Hour
Turning Movement Count

LENHART TRAFFIC CONSULTING, INC.
645 BALTIMORE ANNAPOLIS BLVD, SUITE 214
SEVERNA PARK, MD 21146
www.lenharttraffic.com

Intersection: Lydell Rd & Pepsi Pl
Weather: Clear
Count by: CountCAM - DSS
Count Day/Date: Thursday, June 1, 2023
County: Prince George's

Weekday Morning Peak Hour (6:30 am - 9:30 am)

	Hospital Dr Northbound					Hospital Dr Southbound					Hospital Dr Eastbound					N/A Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
6:30-6:45	0	1	3		0	0		4	15	1	0	7		0	0					1	30
6:45-7:00	0	0	3		0	0		4	14	0	0	14		0	0					0	35
7:00-7:15	0	0	5		0	0		4	16	0	0	14		1	0					0	40
7:15-7:30	0	0	2		0	0		3	18	0	0	10		0	0					0	33
7:30-7:45	0	0	4		0	0		7	18	0	0	8		0	1					2	37
7:45-8:00	0	1	3		0	1		11	41	0	0	13		0	0					2	70
8:00-8:15	0	0	5		0	0		17	20	0	0	11		2	0					8	55
8:15-8:30	0	1	6		0	0		11	41	0	0	16		1	0					3	76
8:30-8:45	0	1	8		0	0		15	51	0	0	18		0	0					2	93
8:45-9:00	0	1	5		0	0		8	43	0	0	20		0	0					5	77
9:00-9:15	0	4	9		0	0		10	23	0	0	16		1	0					1	63
9:15-9:30	0	0	5		0	0		6	11	0	0	17		1	0					2	40
Hourly Totals																					
6:30-7:30	0	1	13	0	0	0	0	15	63	1	0	45	0	1	0	0	0	0	0	1	140
6:45-7:45	0	0	14	0	0	0	0	18	66	0	0	46	0	1	1	0	0	0	0	2	148
7:00-8:00	0	1	14	0	0	1	0	25	93	0	0	45	0	1	1	0	0	0	0	4	185
7:15-8:15	0	1	14	0	0	1	0	38	97	0	0	42	0	2	1	0	0	0	0	12	208
7:30-8:30	0	2	18	0	0	1	0	46	120	0	0	48	0	3	1	0	0	0	0	15	254
7:45-8:45	0	3	22	0	0	1	0	54	153	0	0	58	0	3	0	0	0	0	0	15	309
8:00-9:00	0	3	24	0	0	0	0	51	155	0	0	65	0	3	0	0	0	0	0	18	319
8:15-9:15	0	7	28	0	0	0	0	44	158	0	0	70	0	2	0	0	0	0	0	11	320
8:30-9:30	0	6	27	0	0	0	0	39	128	0	0	71	0	2	0	0	0	0	0	10	283

AM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
8:15-9:15	**0**	**7**	**28**	**0**	**0**	**0**	**0**	**44**	**158**	**0**	**0**	**70**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**320**

Weekday Evening Peak Hour (4 pm - 7 pm)

	Hospital Dr Northbound					Hospital Dr Southbound					Hospital Dr Eastbound					N/A Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
4:00-4:15	0	2	5		0	0		5	5	0	0	43		1	0					4	61
4:15-4:30	0	0	5		0	1		1	6	0	0	26		0	0					3	39
4:30-4:45	0	0	14		0	0		5	4	0	0	18		0	0					6	41
4:45-5:00	0	0	6		0	0		4	2	0	0	21		0	0					7	33
5:00-5:15	0	0	14		0	0		7	4	0	0	40		0	0					2	65
5:15-5:30	0	0	5		0	0		3	4	0	0	42		1	1					7	55
5:30-5:45	0	0	4		0	0		1	3	0	0	25		0	0					1	33
5:45-6:00	0	0	4		0	0		3	3	0	0	22		1	0					1	33
6:00-6:15	0	0	6		0	0		4	3	0	0	23		3	0					0	39
6:15-6:30	0	1	4		0	0		2	1	0	0	22		1	0					2	31
6:30-6:45	0	0	3		0	0		3	2	0	0	12		0	0					0	20
6:45-7:00	0	0	4		0	0		3	3	0	0	25		1	0					0	36
Hourly Totals																					
4:00-5:00	0	2	30	0	0	1	0	15	17	0	0	108	0	1	0	0	0	0	0	20	194
4:15-5:15	0	0	39	0	0	1	0	17	16	0	0	105	0	0	0	0	0	0	0	18	196
4:30-5:30	0	0	39	0	0	0	0	19	14	0	0	121	0	1	1	0	0	0	0	22	217
4:45-5:45	0	0	29	0	0	0	0	15	13	0	0	128	0	1	1	0	0	0	0	17	204
5:00-6:00	0	0	27	0	0	0	0	14	14	0	0	129	0	2	1	0	0	0	0	11	198
5:15-6:15	0	0	19	0	0	0	0	11	13	0	0	112	0	5	1	0	0	0	0	9	170
5:30-6:30	0	1	18	0	0	0	0	10	10	0	0	92	0	5	0	0	0	0	0	4	140
5:45-6:45	0	1	17	0	0	0	0	12	9	0	0	79	0	5	0	0	0	0	0	3	126
6:00-7:00	0	1	17	0	0	0	0	12	9	0	0	82	0	5	0	0	0	0	0	2	128

PM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
4:30-5:30	**0**	**0**	**39**	**0**	**0**	**0**	**0**	**19**	**14**	**0**	**0**	**121**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**217**

Peak Hour
Turning Movement Count

LENHART TRAFFIC CONSULTING, INC.
645 BALTIMORE ANNAPOLIS BLVD, SUITE 214
SEVERNA PARK, MD 21146
www.lenharttraffic.com

Intersection: Hospital Dr & Hospital Dr
Weather: Clear
Count by: CountCAM - DSS
Count Day/Date: Wednesday, September 13, 2023
County: Prince George's

Weekday Morning Peak Hour (6:30 am - 9:30 am)

	Tremont Ave Northbound					Tremont Ave Southbound					Lockwood Rd Eastbound					Lockwood Rd Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
6:30-6:45	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2	0	1	0	0	0	2
6:45-7:00	0	0	0	0	1	0	0	0	0	2	0	0	0	0	1	2	0	0	0	2	2
7:00-7:15	0	0	0	1	4	0	1	0	0	0	0	0	1	0	1	2	1	0	1	4	7
7:15-7:30	0	0	0	0	4	0	0	1	0	1	0	0	1	0	0	1	2	0	0	3	5
7:30-7:45	0	0	0	1	2	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	4
7:45-8:00	0	0	0	1	5	0	2	0	0	1	0	0	1	0	2	2	0	0	0	0	6
8:00-8:15	0	0	1	0	1	0	1	1	0	1	0	0	0	0	2	0	2	0	0	0	5
8:15-8:30	0	0	0	1	1	0	0	0	0	0	0	0	2	0	1	1	0	0	0	0	4
8:30-8:45	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	5
8:45-9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	4
9:00-9:15	0	2	0	2	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	1	7
9:15-9:30	0	0	0	1	1	0	0	1	0	0	0	1	0	0	1	1	0	1	0	2	5
Hourly Totals																					
6:30-7:30	0	0	0	2	9	0	1	1	0	4	0	0	2	0	4	5	4	0	1	9	42
6:45-7:45	0	0	0	2	11	0	1	2	0	4	0	0	3	0	2	5	3	0	2	9	44
7:00-8:00	0	0	0	3	15	0	3	2	0	3	0	0	4	0	3	5	3	0	2	7	50
7:15-8:15	0	0	1	2	12	0	3	3	0	4	0	0	3	0	4	3	4	0	1	3	43
7:30-8:30	0	0	1	3	9	0	3	2	0	3	0	0	4	0	5	3	2	0	1	0	36
7:45-8:45	1	0	1	3	7	0	3	1	0	2	0	0	3	0	5	5	3	0	0	1	35
8:00-9:00	1	0	1	2	2	0	1	1	0	1	0	0	2	0	3	7	3	0	0	2	26
8:15-9:15	1	2	0	4	1	0	0	0	0	0	0	0	2	2	1	7	2	0	0	3	25
8:30-9:30	1	2	0	4	1	0	0	1	0	0	0	1	0	2	1	7	2	1	0	5	28

AM Peak Hour	Northbound					Southbound					Eastbound					Westbound					
	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
7:00-8:00	**0**	**0**	**0**	**3**	**15**	**0**	**3**	**2**	**0**	**3**	**0**	**0**	**4**	**0**	**3**	**5**	**3**	**0**	**2**	**3**	**50**

Weekday Evening Peak Hour (4 pm - 7 pm)

	Tremont Ave Northbound					Tremont Ave Southbound					Lockwood Rd Eastbound					Lockwood Rd Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
4:00-4:15	0	0	0	1	2	0	0	0	1	1	0	0	0	1	0	0	2	1	1	1	7
4:15-4:30	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	6
4:30-4:45	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	6
4:45-5:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	3	1	1	0	0	0	3
5:00-5:15	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	2	2	1	0	0	8
5:15-5:30	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	2	2	1	2	2	9
5:30-5:45	0	0	0	2	1	0	1	0	0	1	0	0	0	0	2	2	0	0	1	3	6
5:45-6:00	0	1	0	3	0	0	0	0	0	0	0	0	2	0	1	3	2	0	1	1	12
6:00-6:15	0	0	0	3	0	0	2	0	0	1	0	0	1	0	2	2	1	3	0	2	12
6:15-6:30	0	0	0	1	1	0	0	1	0	1	0	0	1	1	0	1	0	1	1	2	7
6:30-6:45	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	1	0	0	0	2
6:45-7:00	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Hourly Totals																					
4:00-5:00	0	2	0	4	4	0	0	1	1	1	0	0	0	1	3	3	5	3	2	1	31
4:15-5:15	0	2	0	3	2	0	0	1	0	0	0	0	1	2	3	5	5	3	1	0	28
4:30-5:30	0	1	0	3	2	0	0	1	0	0	0	0	2	2	3	5	6	3	3	2	33
4:45-5:45	0	0	0	4	3	0	1	0	0	1	0	0	2	2	5	7	5	2	3	5	40
5:00-6:00	0	1	0	6	2	0	1	0	0	1	0	0	4	2	3	9	6	2	4	6	47
5:15-6:15	0	1	0	9	2	0	3	0	0	2	0	0	4	0	5	9	5	4	4	8	56
5:30-6:30	0	1	0	9	2	0	3	1	0	3	0	0	4	1	5	8	3	4	3	8	55
5:45-6:45	0	1	0	7	1	0	2	2	0	4	0	0	4	1	3	6	4	4	2	5	46
6:00-7:00	0	0	0	4	1	0	2	2	0	6	0	0	2	1	2	3	2	4	1	4	34

PM Peak Hour	Northbound					Southbound					Eastbound					Westbound					
	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
5:15-6:15	**0**	**1**	**0**	**9**	**2**	**0**	**3**	**0**	**0**	**2**	**0**	**0**	**4**	**0**	**5**	**9**	**5**	**4**	**4**	**2**	**56**

Peak Hour
Turning Movement Count

LENHART TRAFFIC CONSULTING, INC.
645 BALTIMORE ANNAPOLIS BLVD, SUITE 214
SEVERNA PARK, MD 21146
www.lenharttraffic.com

Intersection: Lockwood Rd & Tremont Ave
Weather: Clear
Count by: CountCAM - DSS
Count Day/Date: Wednesday, September 13, 2023
County: Prince George's

Weekday Morning Peak Hour (6:30 am - 9:30 am)

	Tremont Ave Northbound					Tremont Ave Southbound					Inwood Street Eastbound					N/A Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
6:30-6:45	0	0	4		0	0		2	0	1	0	0		0	0					0	6
6:45-7:00	0	0	0		0	0		0	0	0	0	0		0	1					1	0
7:00-7:15	0	0	1		0	0		1	0	0	0	0		0	0					2	2
7:15-7:30	0	0	3		0	0		2	0	0	0	0		0	5					4	5
7:30-7:45	0	0	1		0	0		1	1	0	0	1		1	0					3	5
7:45-8:00	0	0	1		0	0		0	0	0	0	1		1	0					0	3
8:00-8:15	0	0	4		0	0		0	0	0	0	0		0	3					1	4
8:15-8:30	0	0	4		0	0		0	1	0	0	0		1	1					1	6
8:30-8:45	0	0	1		0	0		1	1	0	0	1		0	1					0	4
8:45-9:00	0	0	1		1	0		1	0	0	0	1		0	5					1	3
9:00-9:15	0	0	4		0	0		1	0	0	0	0		0	0					0	5
9:15-9:30	0	0	0		0	0		1	0	0	0	0		0	0					0	1
Hourly Totals																					
6:30-7:30	0	0	8	0	0	0	0	5	0	1	0	0	0	0	6	0	0	0	0	7	27
6:45-7:45	0	0	5	0	0	0	0	4	1	0	0	1	0	1	6	0	0	0	0	10	28
7:00-8:00	0	0	6	0	0	0	0	4	1	0	0	2	0	2	5	0	0	0	0	9	29
7:15-8:15	0	0	9	0	0	0	0	3	1	0	0	2	0	2	8	0	0	0	0	8	33
7:30-8:30	0	0	10	0	0	0	0	1	2	0	0	2	0	3	4	0	0	0	0	5	27
7:45-8:45	0	0	10	0	0	0	0	1	2	0	0	2	0	2	5	0	0	0	0	2	24
8:00-9:00	0	0	10	0	1	0	0	2	2	0	0	2	0	1	10	0	0	0	0	3	31
8:15-9:15	0	0	10	0	1	0	0	3	2	0	0	2	0	1	7	0	0	0	0	2	28
8:30-9:30	0	0	6	0	1	0	0	4	1	0	0	2	0	0	6	0	0	0	0	1	21

AM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
7:15-8:15	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**3**	**1**	**8**	**0**	**2**	**0**	**2**	**8**	**0**	**0**	**0**	**0**	**8**	**33**

Weekday Evening Peak Hour (4 pm - 7 pm)

	Tremont Ave Northbound					Tremont Ave Southbound					Inwood Street Eastbound					N/A Westbound					
Time:	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	U-Turn	Left	Thru	Right	Peds	Total
4:00-4:15	0	0	2		0	0		5	0	0	0	2		0	1					2	9
4:15-4:30	0	0	2		0	1		1	1	0	0	0		1	0					1	6
4:30-4:45	0	0	3		0	0		1	1	0	0	0		0	0					0	5
4:45-5:00	0	1	0		0	0		1	2	2	0	0		0	0					0	4
5:00-5:15	0	0	3		0	0		3	1	0	0	0		0	5					0	7
5:15-5:30	0	1	1		0	0		4	0	0	0	0		0	0					0	6
5:30-5:45	0	1	2		0	0		3	0	0	0	1		0	0					0	7
5:45-6:00	0	0	4		0	0		3	0	0	0	1		0	0					0	8
6:00-6:15	0	1	4		0	0		2	0	0	0	1		0	1					0	8
6:15-6:30	0	0	1		0	0		4	0	1	0	0		0	1					1	5
6:30-6:45	0	0	2		0	0		5	1	0	0	0		0	0					0	8
6:45-7:00	0	0	1		0	0		2	1	0	0	1		0	0					3	5
Hourly Totals																					
4:00-5:00	0	1	7	0	0	1	0	8	4	2	0	2	0	1	1	0	0	0	0	3	30
4:15-5:15	0	1	8	0	0	1	0	6	5	2	0	0	0	1	5	0	0	0	0	1	30
4:30-5:30	0	2	7	0	0	0	0	9	4	2	0	0	0	0	5	0	0	0	0	0	29
4:45-5:45	0	3	6	0	0	0	0	11	3	2	0	1	0	0	5	0	0	0	0	0	31
5:00-6:00	0	2	10	0	0	0	0	13	1	0	0	2	0	0	5	0	0	0	0	0	33
5:15-6:15	0	3	11	0	0	0	0	12	0	0	0	3	0	0	1	0	0	0	0	0	30
5:30-6:30	0	2	11	0	0	0	0	12	0	1	0	3	0	0	2	0	0	0	0	1	32
5:45-6:45	0	1	11	0	0	0	0	14	1	1	0	2	0	0	2	0	0	0	0	1	33
6:00-7:00	0	1	8	0	0	0	0	13	2	1	0	2	0	0	2	0	0	0	0	4	33

PM	Northbound					Southbound					Eastbound					Westbound					
Peak Hour	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**U-Turn**	**Left**	**Thru**	**Right**	**Peds**	**Total**
5:00-6:00	**0**	**2**	**10**	**0**	**0**	**0**	**0**	**13**	**1**	**0**	**0**	**2**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**33**

Peak Hour
Turning Movement Count

LENHART TRAFFIC CONSULTING, INC.
645 BALTIMORE ANNAPOLIS BLVD, SUITE 214
SEVERNA PARK, MD 21146
www.lenharttraffic.com

Intersection: Inwood Street & Tremont Ave
Weather: Clear
Count by: CountCAM - DSS
Count Day/Date: Wednesday, September 13, 2023
County: Prince George's

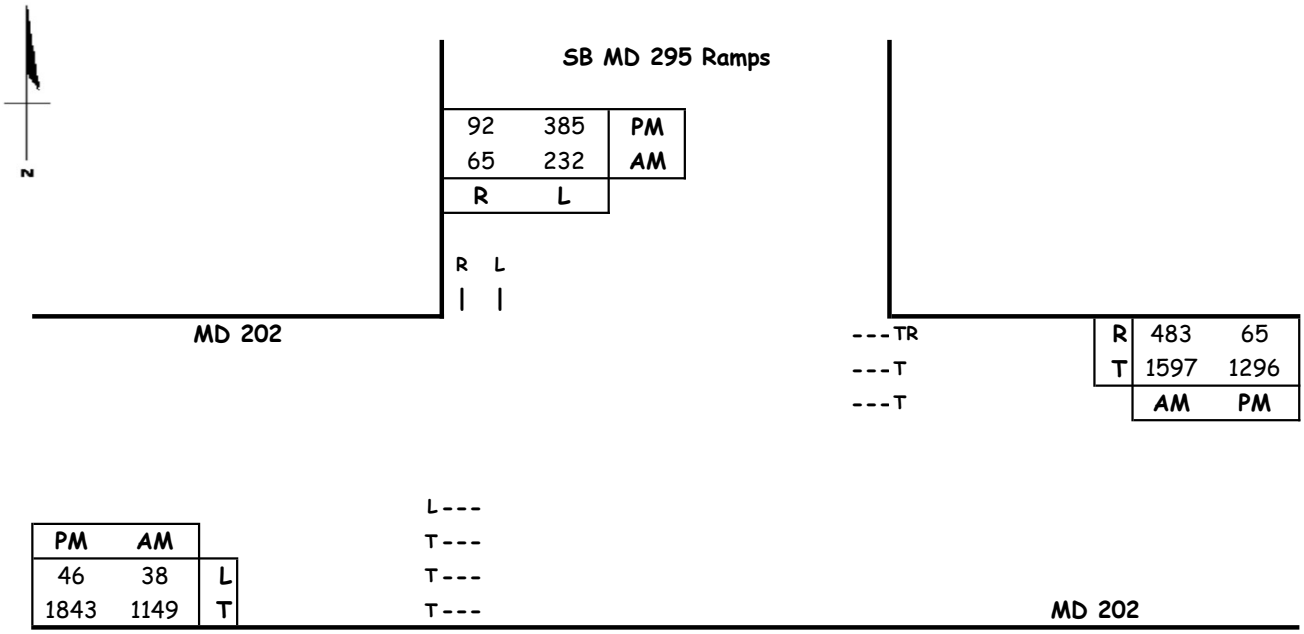
Appendix B

Level of Service (CLV & HCM) Worksheets
Queuing Worksheets

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Prince Georges County

Intersection of: MD 202 **Analyst:** Lenhart Traffic Consulting
and: SB MD 295 Ramps
Conditions: Existing Traffic

Lane Use + Traffic Volumes



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
SB	232	1.00	232				232
EB	1149	0.37	425				808
WB	2080	0.37	770	38	1.00	38	
					CLV TOTAL=		1040
					Level of Service (LOS)=		B

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
SB	385	1.00	385				385
EB	1843	0.37	682				682
WB	1361	0.37	504	46	1.00	46	
					CLV TOTAL=		1067
					Level of Service (LOS)=		B

Critical Lane Volume Analysis

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645 BALTIMORE ANNAPOLIS BLVD, SUITE 214
SEVERNA PARK, MD 21146
www.lenharttraffic.com

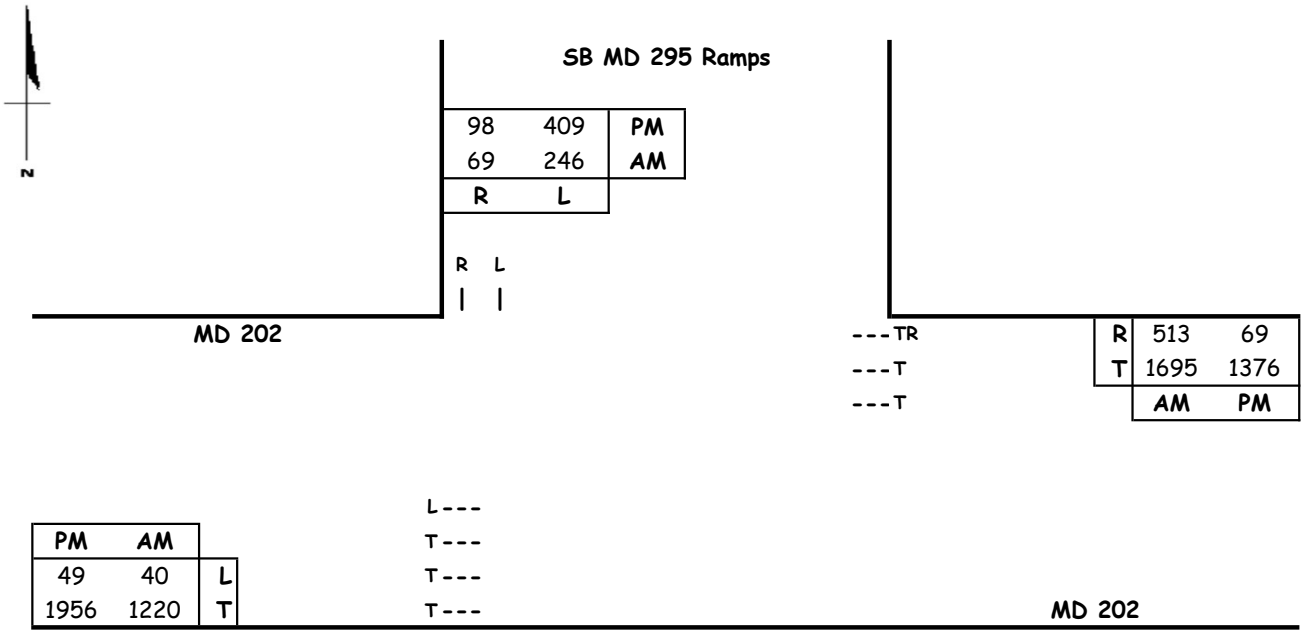
MD 202 &
SB MD 295 Ramps
(Existing Traffic)

Intersection
1

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Prince Georges County

Intersection of: MD 202 **Analyst:** Lenhart Traffic Consulting
and: SB MD 295 Ramps
Conditions: Background Traffic

Lane Use + Traffic Volumes



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
SB	246	1.00	246				246
EB	1220	0.37	451				857
WB	2208	0.37	817	40	1.00	40	

CLV TOTAL= **1103**
Level of Service (LOS)= **B**

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
SB	409	1.00	409				409
EB	1956	0.37	724				724
WB	1445	0.37	535	49	1.00	49	

CLV TOTAL= **1133**
Level of Service (LOS)= **B**

Critical Lane Volume Analysis

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www.lenharttraffic.com

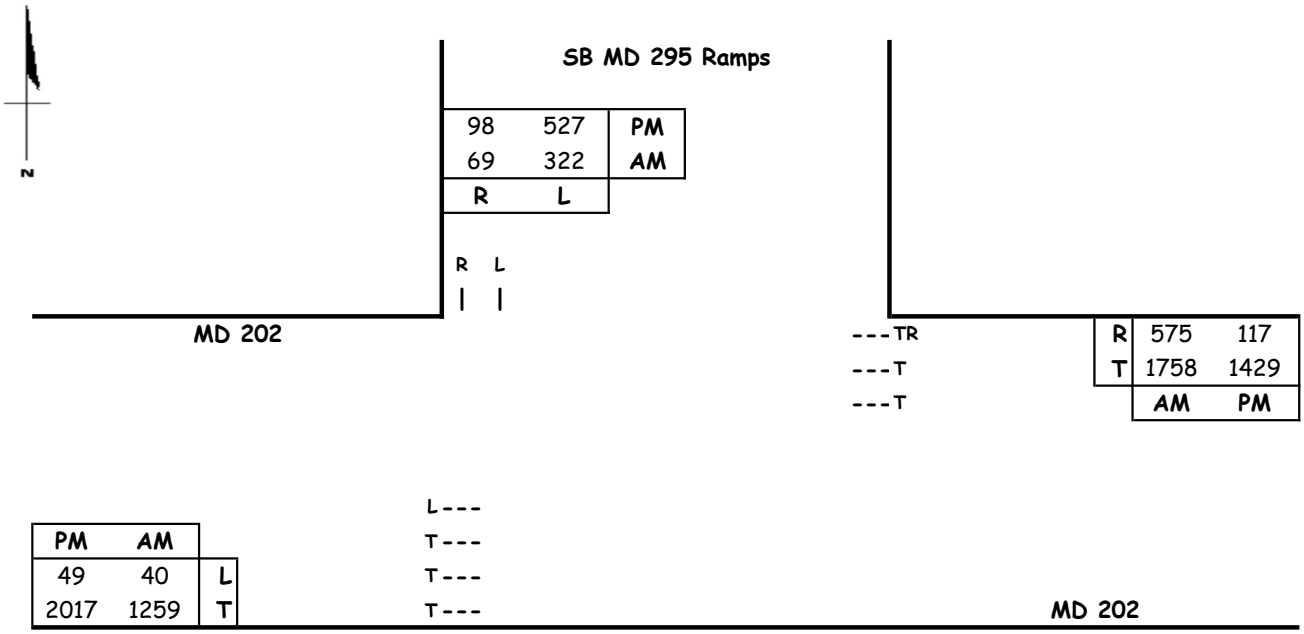
MD 202 &
SB MD 295 Ramps
(Background Traffic)

Intersection
1

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Prince Georges County

Intersection of: MD 202 **Analyst:** Lenhart Traffic Consulting
and: SB MD 295 Ramps
Conditions: Total Traffic - Phase 1

Lane Use + Traffic Volumes



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
SB	322	1.00	322				322
EB	1259	0.37	466				903
WB	2333	0.37	863	40	1.00	40	
					CLV TOTAL=		1225
					Level of Service (LOS)=		C

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
SB	527	1.00	527				527
EB	2017	0.37	746				746
WB	1546	0.37	572	49	1.00	49	
					CLV TOTAL=		1273
					Level of Service (LOS)=		C

Critical Lane Volume Analysis

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645 BALTIMORE ANNAPOLIS BLVD, SUITE 214
SEVERNA PARK, MD 21146
www.lenharttraffic.com

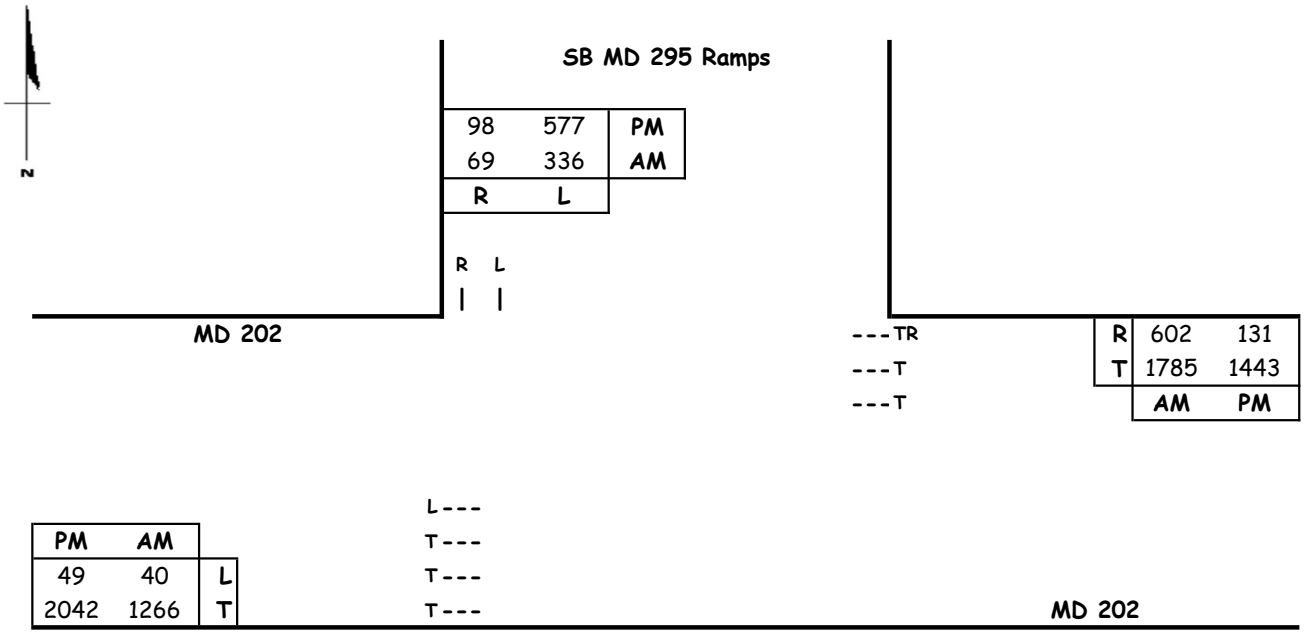
MD 202 &
SB MD 295 Ramps
(Total Traffic - Phase 1)

Intersection
1

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Prince Georges County

Intersection of: MD 202 **Analyst:** Lenhart Traffic Consulting
and: SB MD 295 Ramps
Conditions: Total Traffic - Phase 2

Lane Use + Traffic Volumes



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
SB	336	1.00	336				336
EB	1266	0.37	468				923
WB	2387	0.37	883	40	1.00	40	

CLV TOTAL= **1259**
Level of Service (LOS)= **C**

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
SB	577	1.00	577				577
EB	2042	0.37	756				756
WB	1574	0.37	582	49	1.00	49	

CLV TOTAL= **1333**
Level of Service (LOS)= **D**

Critical Lane Volume Analysis

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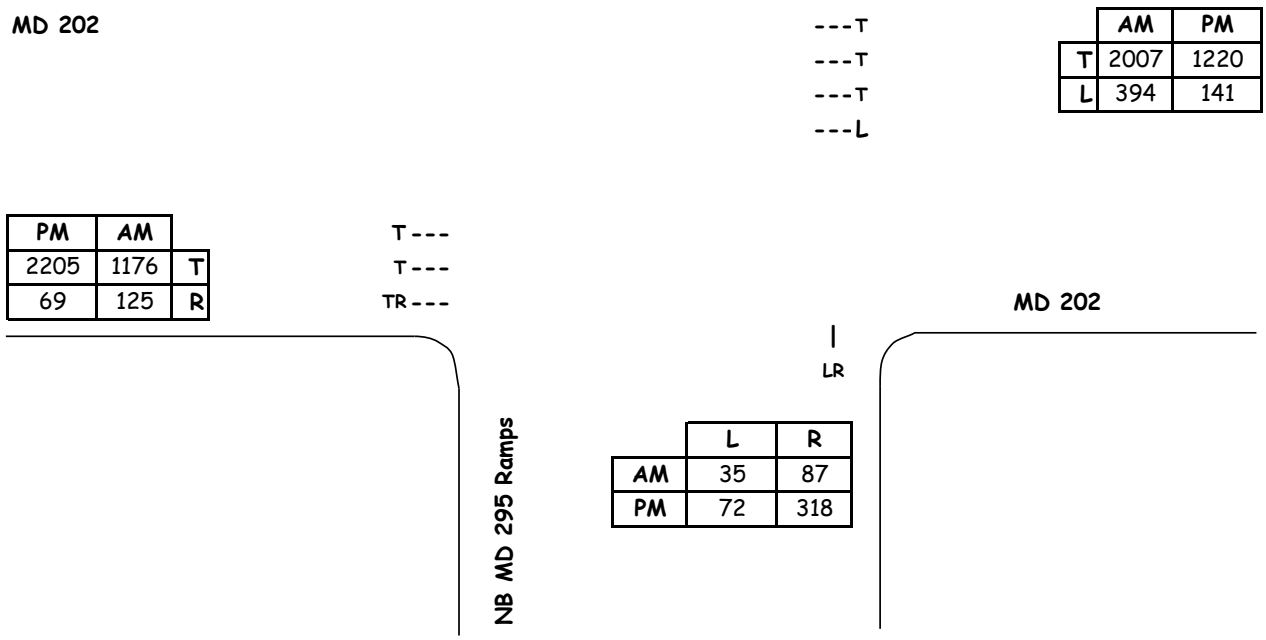
MD 202 &
SB MD 295 Ramps
(Total Traffic - Phase 2)

Intersection
1

Critical Lane Volume (CLV) Methodology for Prince Georges County

Main Line: MD 202
Minor Street: NB MD 295 Ramps
Study Period: Existing Traffic

Analyst: Lenhart Traffic Consulting



Critical Lane Volume Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	122	1.00	122				122
EB	1301	0.37	481	394	1.00	394	875
WB	2007	0.37	743				
						CLV TOTAL=	**997**
						Level of Service (LOS)=	**A**

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	390	1.00	390				390
EB	2274	0.37	841	141	1.00	141	982
WB	1220	0.37	451				
						CLV TOTAL=	**1372**
						Level of Service (LOS)=	**D**

Critical Lane Volume Analysis

LENHART TRAFFIC CONSULTING, INC.
645 BALTIMORE ANNAPOLIS BLVD, SUITE 214
SEVERNA PARK, MD 21146
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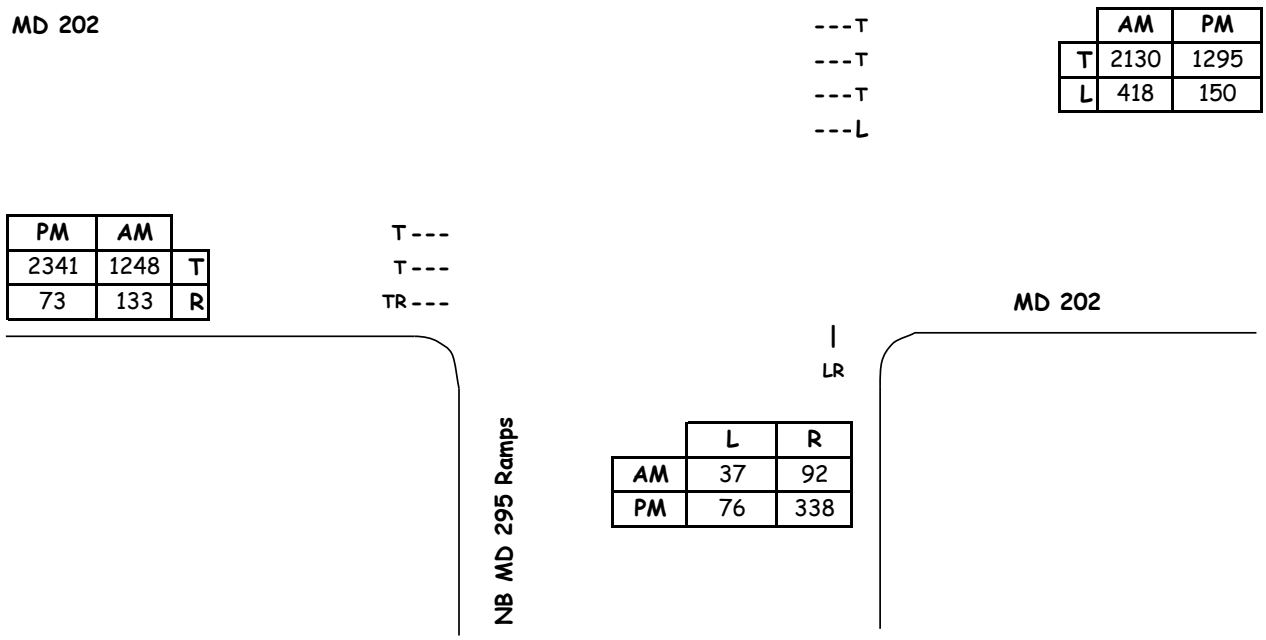
MD 202 &
NB MD 295 Ramps
(Existing Traffic)

Intersection
2

Critical Lane Volume (CLV) Methodology for Prince Georges County

Main Line: MD 202
Minor Street: NB MD 295 Ramps
Study Period: Background Traffic

Analyst: Lenhart Traffic Consulting



Critical Lane Volume Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	129	1.00	129				129
EB	1381	0.37	511	418	1.00	418	929
WB	2130	0.37	788				
						CLV TOTAL=	1058
						Level of Service (LOS)=	B

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	414	1.00	414				414
EB	2414	0.37	893	150	1.00	150	1043
WB	1295	0.37	479				
						CLV TOTAL=	1457
						Level of Service (LOS)=	E

Critical Lane Volume Analysis

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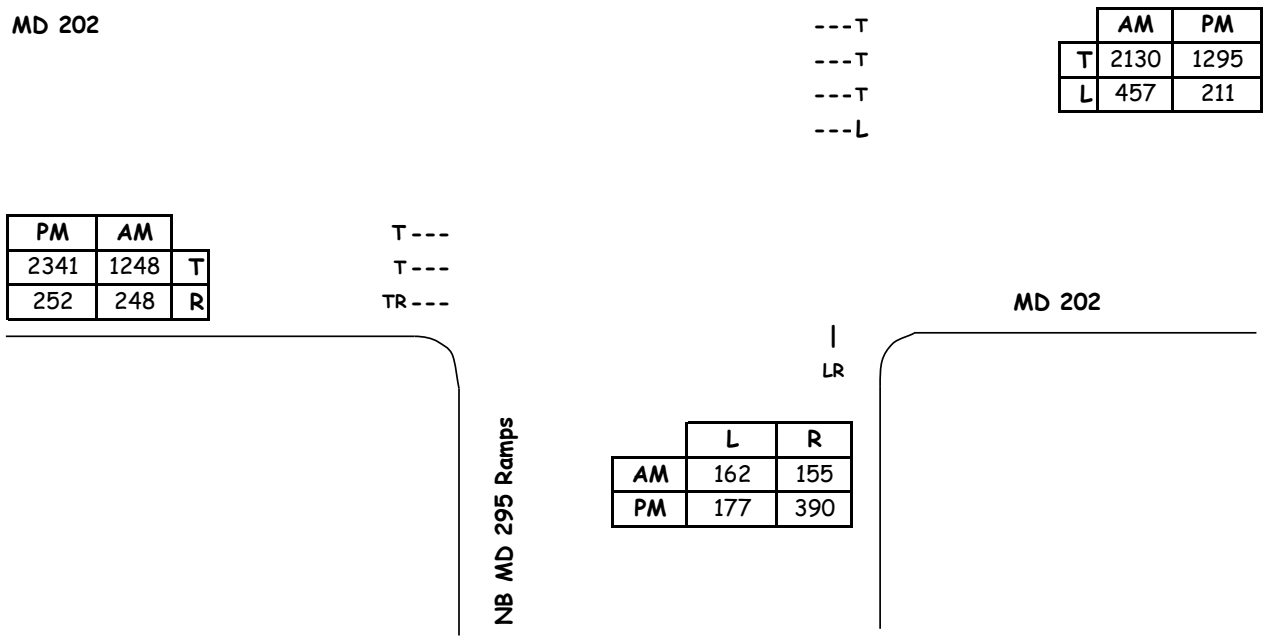
MD 202 &
NB MD 295 Ramps
(Background Traffic)

Intersection
2

Critical Lane Volume (CLV) Methodology for Prince Georges County

Main Line: MD 202
Minor Street: NB MD 295 Ramps
Study Period: Total Traffic - Phase 1

Analyst: Lenhart Traffic Consulting



Critical Lane Volume Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	317	1.00	317				317
EB	1496	0.37	554	457	1.00	457	1011
WB	2130	0.37	788				
						CLV TOTAL=	**1328**
						Level of Service (LOS)=	**D**

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	567	1.00	567				567
EB	2593	0.37	959	211	1.00	211	1170
WB	1295	0.37	479				
						CLV TOTAL=	**1737**
						Level of Service (LOS)=	**F**

Critical Lane Volume Analysis

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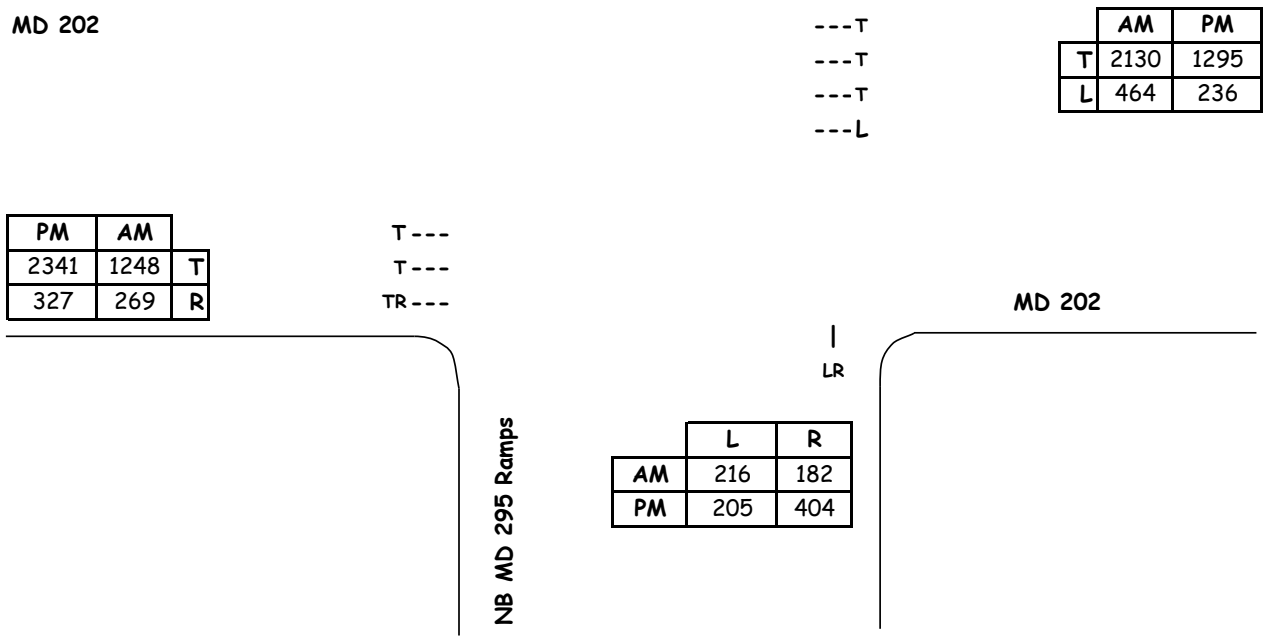
MD 202 &
NB MD 295 Ramps
(Total Traffic - Phase 1)

Intersection
2

Critical Lane Volume (CLV) Methodology for Prince Georges County

Main Line: MD 202
Minor Street: NB MD 295 Ramps
Study Period: Total Traffic - Phase 2

Analyst: Lenhart Traffic Consulting



Critical Lane Volume Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	398	1.00	398				398
EB	1517	0.37	561	464	1.00	464	1025
WB	2130	0.37	788				
						CLV TOTAL=	**1423**
						Level of Service (LOS)=	**D**

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	609	1.00	609				609
EB	2668	0.37	987	236	1.00	236	1223
WB	1295	0.37	479				
						CLV TOTAL=	**1832**
						Level of Service (LOS)=	**F**

Critical Lane Volume Analysis

LENHART TRAFFIC CONSULTING, INC.
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SEVERNA PARK, MD 21146
www.lenharttraffic.com

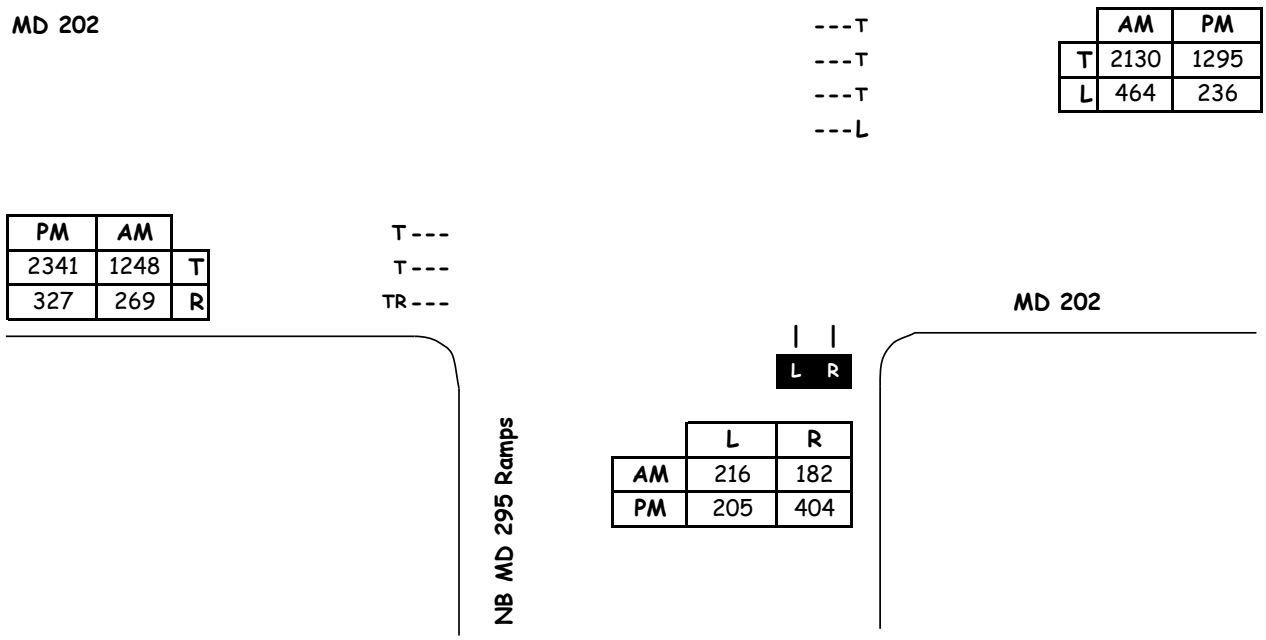
MD 202 &
NB MD 295 Ramps
(Total Traffic - Phase 2)

Intersection
2

Critical Lane Volume (CLV) Methodology for Prince Georges County

Main Line: MD 202
Minor Street: NB MD 295 Ramps
Study Period: Total Traffic - Phase 2 w/ Imps.

Analyst: Lenhart Traffic Consulting



Critical Lane Volume Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	216	1.00	216				216
EB	1517	0.37	561	464	1.00	464	1025
WB	2130	0.37	788				
						CLV TOTAL=	**1241**
						Level of Service (LOS)=	**C**

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	205	1.00	205				205
EB	2668	0.37	987	236	1.00	236	1223
WB	1295	0.37	479				
						CLV TOTAL=	**1428**
						Level of Service (LOS)=	**D**

Critical Lane Volume Analysis

LENHART TRAFFIC CONSULTING, INC.
645 BALTIMORE ANNAPOLIS BLVD, SUITE 214
SEVERNA PARK, MD 21146
www.lenharttraffic.com

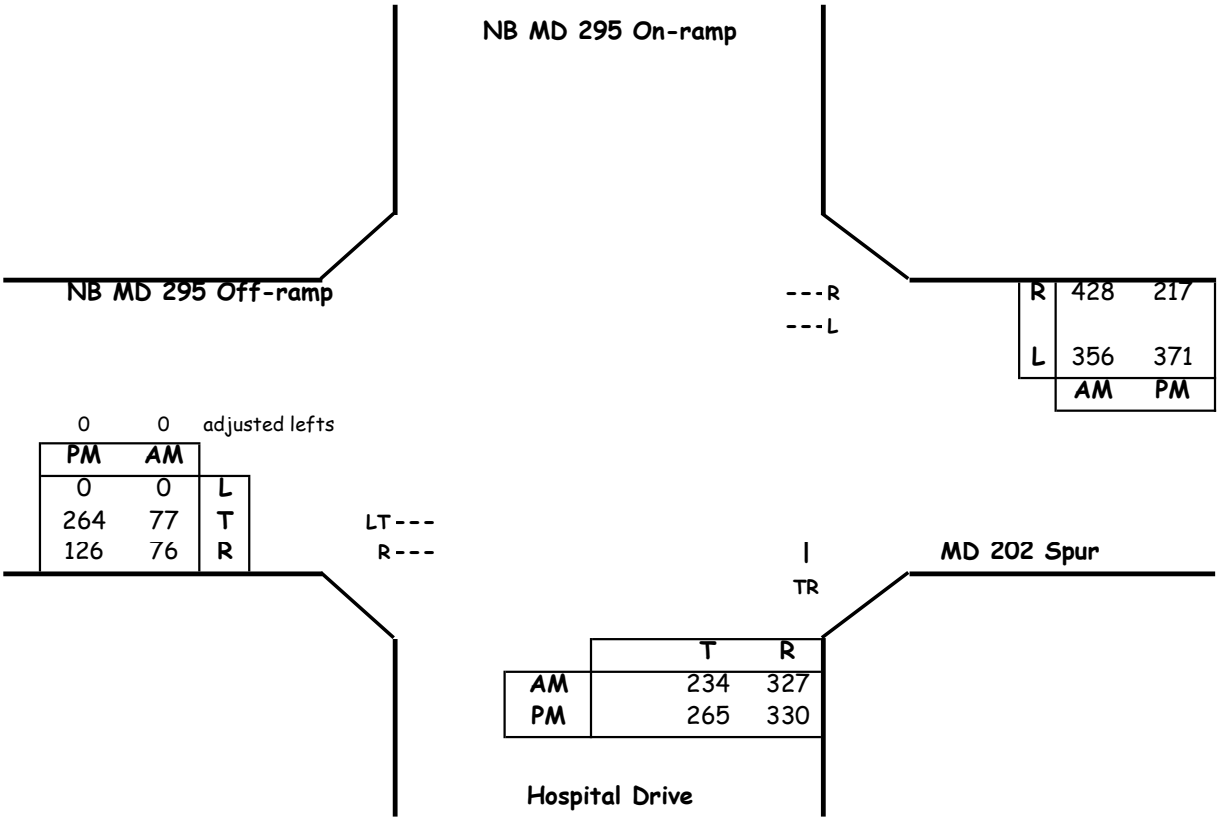
MD 202 &
NB MD 295 Ramps
(Total Traffic - Phase 2 w/ Imps.)

Intersection
2

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Prince Georges County

Main Line: NB MD 295 Ramps **Analyst:** Lenhart Traffic
Minor Street: Hospital Drive / MD 202 Spur
Study Period: Total Traffic - Phase 2

Lane Use + Traffic Volumes



Critical Lane Volume Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	561	1.00	561	0	0	0	561
SB	0	0.00	0	0	0	0	
EB	77	1	77	356	1	356	433
WB	428	1	428	0	1	0	
						CLV TOTAL=	994
						Level of Service (LOS)=	A

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	595	1.00	595	0	0	0	595
SB	0	0.00	0	0	0	0	
EB	264	1	264	371	1	371	635
WB	217	1	217	0	1	0	
						CLV TOTAL=	1230
						Level of Service (LOS)=	C

Critical Lane Volume Analysis

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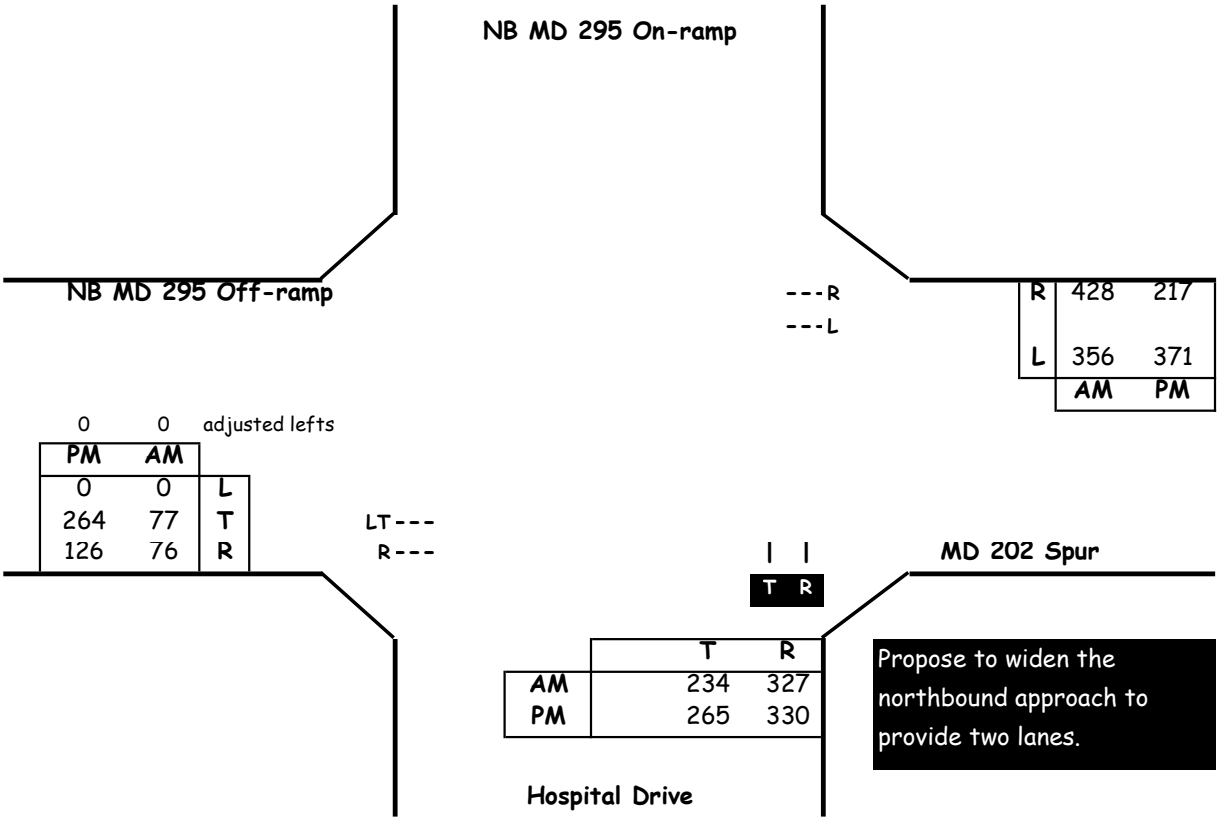
NB MD 295 Ramps & Hospital Drive / MD 202 Spur
(Total Traffic - Phase 2)

Intersection 3

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Prince Georges County

Main Line: NB MD 295 Ramps **Analyst:** Lenhart Traffic
Minor Street: Hospital Drive / MD 202 Spur
Study Period: Total Traffic w/ Improvements

Lane Use + Traffic Volumes



Critical Lane Volume Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	234	1.00	234	0	0	0	234
SB	0	0.00	0	0	0	0	
EB	77	1	77	356	1	356	433
WB	428	1	428	0	1	0	

CLV TOTAL= **667**
Level of Service (LOS)= **A**

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	265	1.00	265	0	0	0	265
SB	0	0.00	0	0	0	0	
EB	264	1	264	371	1	371	635
WB	217	1	217	0	1	0	

CLV TOTAL= **900**
Level of Service (LOS)= **A**

Critical Lane Volume Analysis

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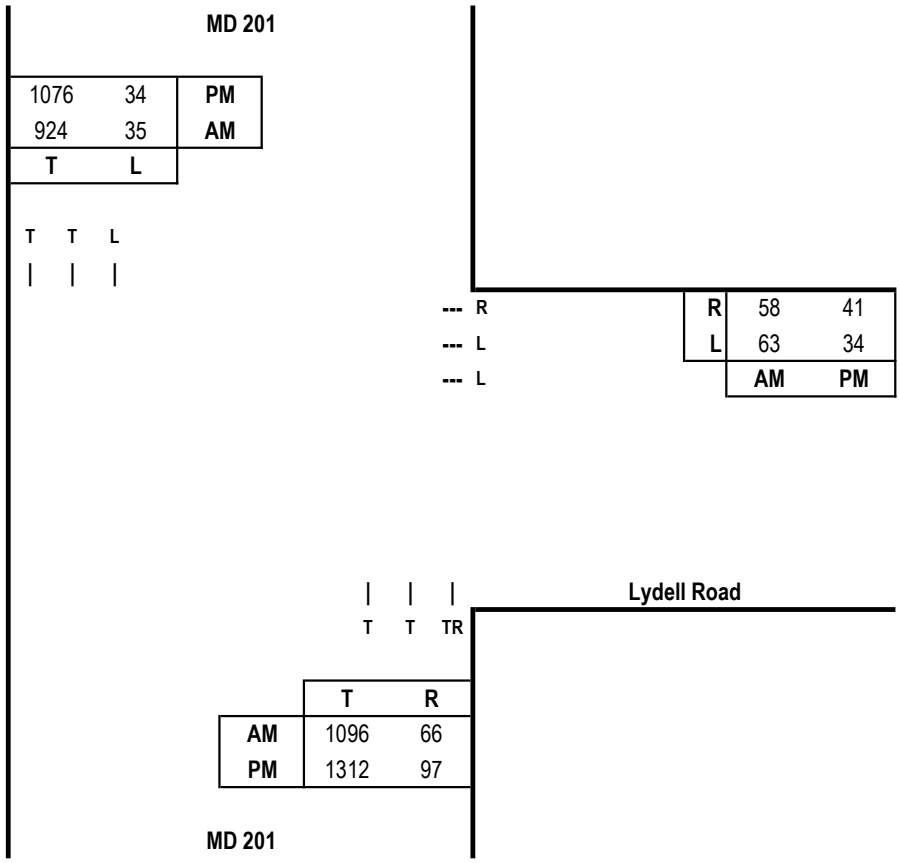
NB MD 295 Ramps & Hospital Drive / MD 202 Spur
(Total Traffic w/ Improvements)

Intersection 3-i

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Prince Georges County

Intersection of: MD 201 **Analyst:** Lenhart Traffic Consulting
and: Lydell Road
Conditions: Existing Traffic

Lane Use + Traffic Volumes



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
WB	63	0.55	35				35
NB	1162	0.37	430	35	1.00	35	508
SB	924	0.55	508				

CLV TOTAL= **543**
Level of Service (LOS)= **A**

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
WB	34	0.55	19				19
NB	1409	0.37	521	34	1.00	34	592
SB	1076	0.55	592				

CLV TOTAL= **611**
Level of Service (LOS)= **A**

Critical Lane Volume Analysis

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N

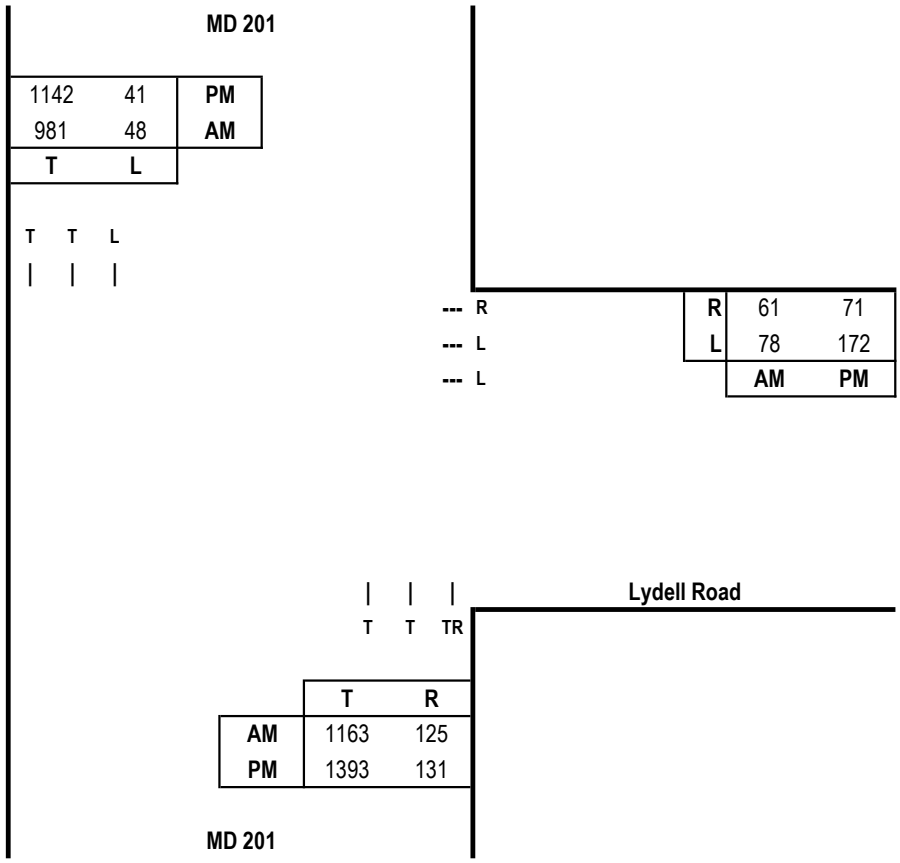
MD 201 &
Lydell Road
(Existing Traffic)

Intersection
4

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Prince Georges County

Intersection of: MD 201 **Analyst:** Lenhart Traffic Consulting
and: Lydell Road
Conditions: Background Traffic

Lane Use + Traffic Volumes



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
WB	78	0.55	43				43
NB	1288	0.37	477	48	1.00	48	540
SB	981	0.55	540				
						CLV TOTAL=	**583**
						Level of Service (LOS)=	**A**

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
WB	172	0.55	95				95
NB	1524	0.37	564	41	1.00	41	628
SB	1142	0.55	628				
						CLV TOTAL=	**723**
						Level of Service (LOS)=	**A**

Critical Lane Volume Analysis

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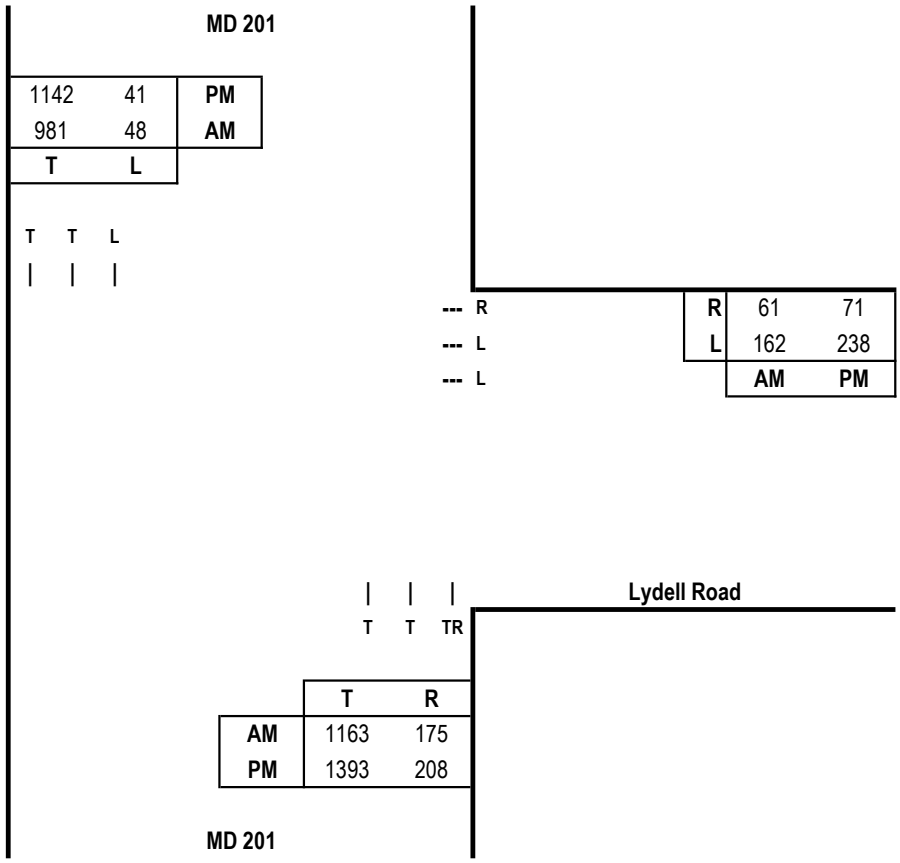
MD 201 &
Lydell Road
(Background Traffic)

Intersection
4

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Prince Georges County

Intersection of: MD 201 **Analyst:** Lenhart Traffic Consulting
and: Lydell Road
Conditions: Total Traffic - Phase 1

Lane Use + Traffic Volumes



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
WB	162	0.55	89				89
NB	1338	0.37	495	48	1.00	48	543
SB	981	0.55	540				
						CLV TOTAL=	**632**
						Level of Service (LOS)=	**A**

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
WB	238	0.55	131				131
NB	1601	0.37	592	41	1.00	41	633
SB	1142	0.55	628				
						CLV TOTAL=	**764**
						Level of Service (LOS)=	**A**

Critical Lane Volume Analysis

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N

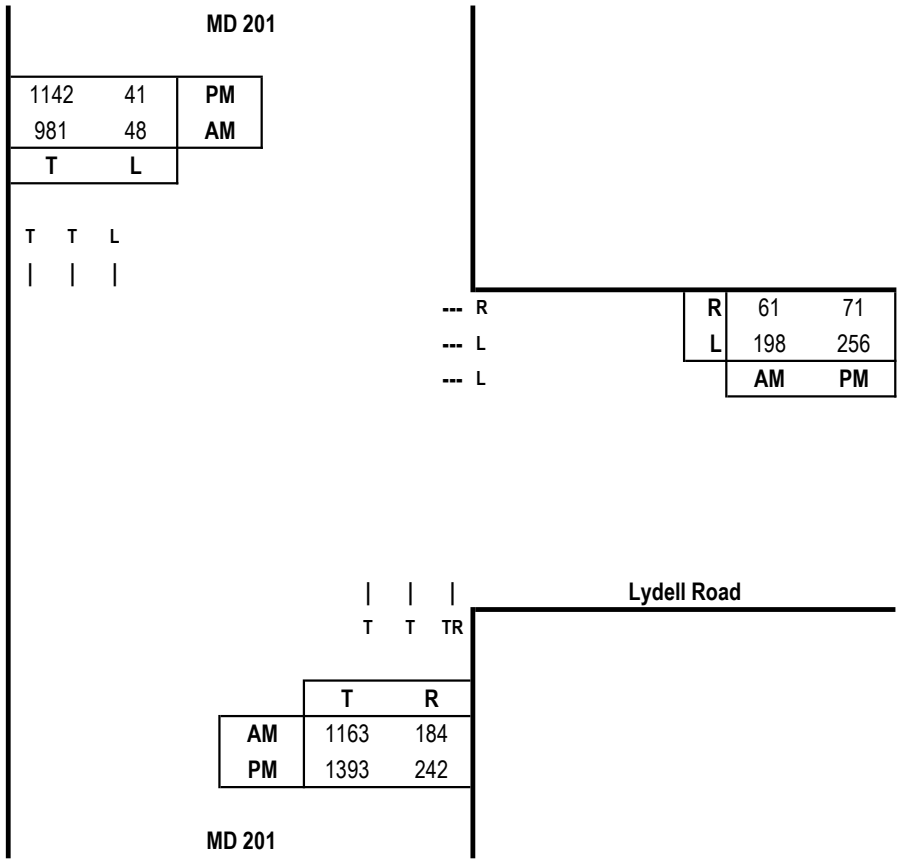
MD 201 &
Lydell Road
(Total Traffic - Phase 1)

Intersection
4

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Prince Georges County

Intersection of: MD 201 **Analyst:** Lenhart Traffic Consulting
and: Lydell Road
Conditions: Total Traffic - Phase 2

Lane Use + Traffic Volumes



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
WB	198	0.55	109				109
NB	1347	0.37	498	48	1.00	48	546
SB	981	0.55	540				
						CLV TOTAL=	655
						Level of Service (LOS)=	A

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
WB	256	0.55	141				141
NB	1635	0.37	605	41	1.00	41	646
SB	1142	0.55	628				
						CLV TOTAL=	787
						Level of Service (LOS)=	A

Critical Lane Volume Analysis

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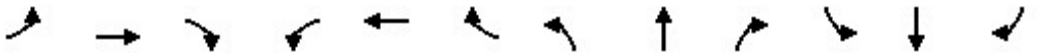
N

MD 201 &
Lydell Road
(Total Traffic - Phase 2)

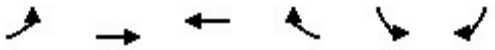
Intersection
4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	83	8	174	0	403	0	49	48	0	0	0
Future Volume (vph)	0	83	8	174	0	403	0	49	48	0	0	0
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
Hourly flow rate (vph)	0	90	9	189	0	438	0	53	52	0	0	0

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total (vph)	90	9	189	438	105
Volume Left (vph)	0	0	189	0	0
Volume Right (vph)	0	9	0	438	52
Hadj (s)	0.03	-0.57	0.23	-0.57	-0.26
Departure Headway (s)	4.4	3.2	4.5	3.2	4.3
Degree Utilization, x	0.11	0.01	0.23	0.39	0.12
Capacity (veh/h)	793	1121	780	1114	788
Control Delay (s)	7.9	6.2	8.8	8.2	7.9
Approach Delay (s)	7.8		8.4		7.9
Approach LOS	A		A		A

Intersection Summary				
Delay	8.3			
Level of Service	A			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	82	66	42	12	30	32
Future Volume (Veh/h)	82	66	42	12	30	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	89	72	46	13	33	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		189				
pX, platoon unblocked						
vC, conflicting volume	59				302	30
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	59				302	30
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				95	97
cM capacity (veh/h)	1543				627	1038

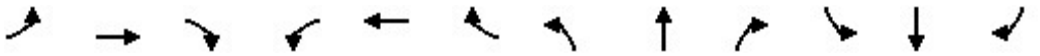
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	89	72	31	28	68
Volume Left	89	0	0	0	33
Volume Right	0	0	0	13	35
cSH	1543	1700	1700	1700	787
Volume to Capacity	0.06	0.04	0.02	0.02	0.09
Queue Length 95th (ft)	5	0	0	0	7
Control Delay (s)	7.5	0.0	0.0	0.0	10.0
Lane LOS	A				B
Approach Delay (s)	4.1		0.0		10.0
Approach LOS					B

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	70	2	7	28	44	158
Future Volume (vph)	70	2	7	28	44	158
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	2	8	30	48	172

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total (vph)	78	38	48	172
Volume Left (vph)	76	8	0	0
Volume Right (vph)	2	0	0	172
Hadj (s)	0.21	0.08	0.03	-0.57
Departure Headway (s)	4.3	4.2	4.2	3.2
Degree Utilization, x	0.09	0.04	0.06	0.15
Capacity (veh/h)	812	828	845	1121
Control Delay (s)	7.7	7.4	7.4	6.8
Approach Delay (s)	7.7	7.4	6.9	
Approach LOS	A	A	A	

Intersection Summary			
Delay	7.2		
Level of Service	A		
Intersection Capacity Utilization	19.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	4	0	8	0	2	0	0	3	3	2	0
Future Volume (vph)	0	4	0	8	0	2	0	0	3	3	2	0
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
Hourly flow rate (vph)	0	4	0	9	0	2	0	0	3	3	2	0

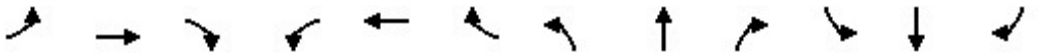
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	4	11	3	5
Volume Left (vph)	0	9	0	3
Volume Right (vph)	0	2	3	0
Hadj (s)	0.03	0.09	-0.57	0.15
Departure Headway (s)	4.0	4.0	3.4	4.1
Degree Utilization, x	0.00	0.01	0.00	0.01
Capacity (veh/h)	900	891	1059	872
Control Delay (s)	7.0	7.1	6.4	7.1
Approach Delay (s)	7.0	7.1	6.4	7.1
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	17.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	2	0	9	3	1
Future Volume (Veh/h)	2	2	0	9	3	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	2	0	10	3	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	14	4	4			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	14	4	4			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1006	1080	1618			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	4	10	4
Volume Left	2	0	0
Volume Right	2	0	1
cSH	1042	1618	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.5	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.5	0.0	0.0
Approach LOS	A		

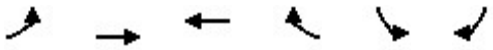
Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	88	21	174	0	428	0	55	48	0	0	0
Future Volume (vph)	0	88	21	174	0	428	0	55	48	0	0	0
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
Hourly flow rate (vph)	0	96	23	189	0	465	0	60	52	0	0	0

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total (vph)	96	23	189	465	112
Volume Left (vph)	0	0	189	0	0
Volume Right (vph)	0	23	0	465	52
Hadj (s)	0.03	-0.57	0.23	-0.57	-0.24
Departure Headway (s)	4.4	3.2	4.5	3.2	4.3
Degree Utilization, x	0.12	0.02	0.24	0.41	0.13
Capacity (veh/h)	788	1121	775	1115	782
Control Delay (s)	8.0	6.3	8.9	8.4	8.0
Approach Delay (s)	7.7		8.6		8.0
Approach LOS	A		A		A

Intersection Summary				
Delay	8.4			
Level of Service	A			
Intersection Capacity Utilization	47.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	87	138	60	15	43	34
Future Volume (Veh/h)	87	138	60	15	43	34
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	95	150	65	16	47	37
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		189				
pX, platoon unblocked						
vC, conflicting volume	81				413	40
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	81				413	40
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				91	96
cM capacity (veh/h)	1515				532	1022

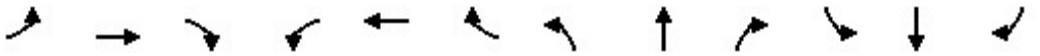
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	95	150	43	38	84
Volume Left	95	0	0	0	47
Volume Right	0	0	0	16	37
cSH	1515	1700	1700	1700	674
Volume to Capacity	0.06	0.09	0.03	0.02	0.12
Queue Length 95th (ft)	5	0	0	0	11
Control Delay (s)	7.5	0.0	0.0	0.0	11.1
Lane LOS	A				B
Approach Delay (s)	2.9		0.0		11.1
Approach LOS					B

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	77	2	7	28	44	181
Future Volume (vph)	77	2	7	28	44	181
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	84	2	8	30	48	197

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total (vph)	86	38	48	197
Volume Left (vph)	84	8	0	0
Volume Right (vph)	2	0	0	197
Hadj (s)	0.22	0.08	0.03	-0.57
Departure Headway (s)	4.3	4.2	4.2	3.2
Degree Utilization, x	0.10	0.04	0.06	0.18
Capacity (veh/h)	811	823	840	1121
Control Delay (s)	7.8	7.4	7.4	6.9
Approach Delay (s)	7.8	7.4	7.0	
Approach LOS	A	A	A	

Intersection Summary			
Delay	7.2		
Level of Service	A		
Intersection Capacity Utilization	21.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	4	0	8	0	2	0	0	3	3	2	0
Future Volume (vph)	0	4	0	8	0	2	0	0	3	3	2	0
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
Hourly flow rate (vph)	0	4	0	9	0	2	0	0	3	3	2	0

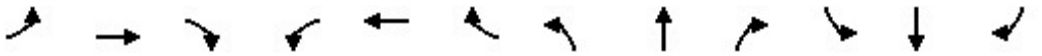
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	4	11	3	5
Volume Left (vph)	0	9	0	3
Volume Right (vph)	0	2	3	0
Hadj (s)	0.03	0.09	-0.57	0.15
Departure Headway (s)	4.0	4.0	3.4	4.1
Degree Utilization, x	0.00	0.01	0.00	0.01
Capacity (veh/h)	900	891	1059	872
Control Delay (s)	7.0	7.1	6.4	7.1
Approach Delay (s)	7.0	7.1	6.4	7.1
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	17.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	2	0	9	3	1
Future Volume (Veh/h)	2	2	0	9	3	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	2	0	10	3	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	14	4	4			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	14	4	4			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1006	1080	1618			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	4	10	4
Volume Left	2	0	0
Volume Right	2	0	1
cSH	1042	1618	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.5	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.5	0.0	0.0
Approach LOS	A		

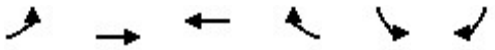
Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	77	69	328	0	428	0	180	246	0	0	0
Future Volume (vph)	0	77	69	328	0	428	0	180	246	0	0	0
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
Hourly flow rate (vph)	0	84	75	357	0	465	0	196	267	0	0	0

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total (vph)	84	75	357	465	463
Volume Left (vph)	0	0	357	0	0
Volume Right (vph)	0	75	0	465	267
Hadj (s)	0.03	-0.57	0.23	-0.57	-0.31
Departure Headway (s)	5.8	3.2	5.5	3.2	4.8
Degree Utilization, x	0.13	0.07	0.55	0.41	0.62
Capacity (veh/h)	564	1121	620	1115	711
Control Delay (s)	9.6	6.4	14.9	8.4	15.5
Approach Delay (s)	8.1		11.2		15.5
Approach LOS	A		B		C

Intersection Summary				
Delay	12.3			
Level of Service	B			
Intersection Capacity Utilization	65.1%	ICU Level of Service	C	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	137	138	57	18	43	120
Future Volume (Veh/h)	137	138	57	18	43	120
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	149	150	62	20	47	130
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		189				
pX, platoon unblocked						
vC, conflicting volume	82				520	41
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	82				520	41
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				89	87
cM capacity (veh/h)	1513				438	1021

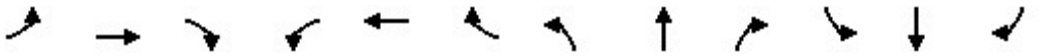
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	149	150	41	41	177
Volume Left	149	0	0	0	47
Volume Right	0	0	0	20	130
cSH	1513	1700	1700	1700	754
Volume to Capacity	0.10	0.09	0.02	0.02	0.23
Queue Length 95th (ft)	8	0	0	0	23
Control Delay (s)	7.6	0.0	0.0	0.0	11.2
Lane LOS	A				B
Approach Delay (s)	3.8		0.0		11.2
Approach LOS					B

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	30.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	296	2	7	122	101	315
Future Volume (vph)	296	2	7	122	101	315
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	322	2	8	133	110	342

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total (vph)	324	141	110	342
Volume Left (vph)	322	8	0	0
Volume Right (vph)	2	0	0	342
Hadj (s)	0.23	0.05	0.03	-0.57
Departure Headway (s)	4.8	4.9	5.0	3.2
Degree Utilization, x	0.43	0.19	0.15	0.30
Capacity (veh/h)	728	682	671	1113
Control Delay (s)	11.3	9.1	8.9	7.6
Approach Delay (s)	11.3	9.1	7.9	
Approach LOS	B	A	A	

Intersection Summary			
Delay	9.3		
Level of Service	A		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	19	11	8	12	2	7	0	3	3	2	0
Future Volume (vph)	0	19	11	8	12	2	7	0	3	3	2	0
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
Hourly flow rate (vph)	0	21	12	9	13	2	8	0	3	3	2	0

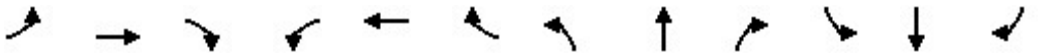
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	33	24	11	5
Volume Left (vph)	0	9	8	3
Volume Right (vph)	12	2	3	0
Hadj (s)	-0.18	0.06	0.02	0.15
Departure Headway (s)	3.8	4.0	4.0	4.2
Degree Utilization, x	0.03	0.03	0.01	0.01
Capacity (veh/h)	942	885	867	844
Control Delay (s)	6.9	7.1	7.1	7.2
Approach Delay (s)	6.9	7.1	7.1	7.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	17.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	25	21	16	14	1
Future Volume (Veh/h)	2	25	21	16	14	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	27	23	17	15	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	78	16	16			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	78	16	16			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	99			
cM capacity (veh/h)	911	1064	1602			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	29	40	16
Volume Left	2	23	0
Volume Right	27	0	1
cSH	1052	1602	1700
Volume to Capacity	0.03	0.01	0.01
Queue Length 95th (ft)	2	1	0
Control Delay (s)	8.5	4.2	0.0
Lane LOS	A	A	
Approach Delay (s)	8.5	4.2	0.0
Approach LOS	A		

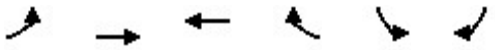
Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	77	76	356	0	428	0	234	327	0	0	0
Future Volume (vph)	0	77	76	356	0	428	0	234	327	0	0	0
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
Hourly flow rate (vph)	0	84	83	387	0	465	0	254	355	0	0	0

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total (vph)	84	83	387	465	609
Volume Left (vph)	0	0	387	0	0
Volume Right (vph)	0	83	0	465	355
Hadj (s)	0.03	-0.57	0.23	-0.57	-0.32
Departure Headway (s)	6.4	3.2	6.0	3.2	5.0
Degree Utilization, x	0.15	0.07	0.64	0.41	0.85
Capacity (veh/h)	527	1121	573	1115	703
Control Delay (s)	10.5	6.5	19.0	8.4	29.7
Approach Delay (s)	8.5		13.3		29.7
Approach LOS	A		B		D

Intersection Summary				
Delay	18.9			
Level of Service	C			
Intersection Capacity Utilization	72.9%	ICU Level of Service		C
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	146	138	57	18	43	156
Future Volume (Veh/h)	146	138	57	18	43	156
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	159	150	62	20	47	170
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		189				
pX, platoon unblocked						
vC, conflicting volume	82				540	41
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	82				540	41
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	89				89	83
cM capacity (veh/h)	1513				422	1021

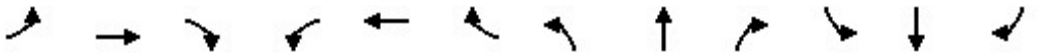
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	159	150	41	41	217
Volume Left	159	0	0	0	47
Volume Right	0	0	0	20	170
cSH	1513	1700	1700	1700	781
Volume to Capacity	0.11	0.09	0.02	0.02	0.28
Queue Length 95th (ft)	9	0	0	0	28
Control Delay (s)	7.7	0.0	0.0	0.0	11.4
Lane LOS	A				B
Approach Delay (s)	3.9		0.0		11.4
Approach LOS					B

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	391	2	7	162	111	340
Future Volume (vph)	391	2	7	162	111	340
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	425	2	8	176	121	370

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total (vph)	427	184	121	370
Volume Left (vph)	425	8	0	0
Volume Right (vph)	2	0	0	370
Hadj (s)	0.23	0.04	0.03	-0.57
Departure Headway (s)	5.0	5.3	5.4	3.2
Degree Utilization, x	0.59	0.27	0.18	0.33
Capacity (veh/h)	696	633	612	1113
Control Delay (s)	14.8	10.2	9.5	7.8
Approach Delay (s)	14.8	10.2	8.2	
Approach LOS	B	B	A	

Intersection Summary			
Delay	11.1		
Level of Service	B		
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	19	13	8	12	2	7	0	3	3	2	0
Future Volume (vph)	0	19	13	8	12	2	7	0	3	3	2	0
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
Hourly flow rate (vph)	0	21	14	9	13	2	8	0	3	3	2	0

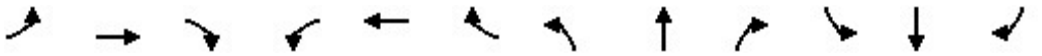
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	35	24	11	5
Volume Left (vph)	0	9	8	3
Volume Right (vph)	14	2	3	0
Hadj (s)	-0.21	0.06	0.02	0.15
Departure Headway (s)	3.8	4.0	4.0	4.2
Degree Utilization, x	0.04	0.03	0.01	0.01
Capacity (veh/h)	947	885	866	843
Control Delay (s)	6.9	7.1	7.1	7.2
Approach Delay (s)	6.9	7.1	7.1	7.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	17.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	32	23	16	16	1
Future Volume (Veh/h)	2	32	23	16	16	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	35	25	17	17	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	84	18	18			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	84	18	18			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	98			
cM capacity (veh/h)	903	1061	1599			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	37	42	18
Volume Left	2	25	0
Volume Right	35	0	1
cSH	1051	1599	1700
Volume to Capacity	0.04	0.02	0.01
Queue Length 95th (ft)	3	1	0
Control Delay (s)	8.5	4.4	0.0
Lane LOS	A	A	
Approach Delay (s)	8.5	4.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	77	76	356	0	428	0	234	327	0	0	0
Future Volume (vph)	0	77	76	356	0	428	0	234	327	0	0	0
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
Hourly flow rate (vph)	0	84	83	387	0	465	0	254	355	0	0	0

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total (vph)	84	83	387	465	254	355
Volume Left (vph)	0	0	387	0	0	0
Volume Right (vph)	0	83	0	465	0	355
Hadj (s)	0.03	-0.57	0.23	-0.57	0.03	-0.67
Departure Headway (s)	6.0	3.2	5.7	3.2	5.9	5.2
Degree Utilization, x	0.14	0.07	0.61	0.41	0.42	0.51
Capacity (veh/h)	553	1121	611	1115	591	670
Control Delay (s)	10.0	6.5	17.1	8.4	11.9	12.4
Approach Delay (s)	8.2		12.4		12.2	
Approach LOS	A		B		B	

Intersection Summary				
Delay	11.9			
Level of Service	B			
Intersection Capacity Utilization	52.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1248	269	464	2130	216	182
Future Volume (vph)	1248	269	464	2130	216	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.5	4.0	4.5	4.5
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4950		1770	5085	1770	1583
Flt Permitted	1.00		0.06	1.00	0.95	1.00
Satd. Flow (perm)	4950		118	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1357	292	504	2315	235	198
RTOR Reduction (vph)	18	0	0	0	0	169
Lane Group Flow (vph)	1631	0	504	2315	235	29
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases			6			4
Actuated Green, G (s)	69.1		117.3	117.3	20.2	20.2
Effective Green, g (s)	71.1		118.3	119.3	22.2	22.2
Actuated g/C Ratio	0.47		0.79	0.80	0.15	0.15
Clearance Time (s)	6.0		5.5	6.0	6.5	6.5
Vehicle Extension (s)	0.2		3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	2346		574	4044	261	234
v/s Ratio Prot	0.33		c0.26	0.46	c0.13	
v/s Ratio Perm			c0.44			0.02
v/c Ratio	0.70		0.88	0.57	0.90	0.13
Uniform Delay, d1	31.0		42.4	5.8	62.8	55.5
Progression Factor	1.34		0.89	0.64	1.00	1.00
Incremental Delay, d2	1.5		12.6	0.5	31.0	0.2
Delay (s)	43.0		50.2	4.2	93.8	55.7
Level of Service	D		D	A	F	E
Approach Delay (s)	43.0			12.4	76.4	
Approach LOS	D			B	E	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1248	269	464	2130	216	182
Future Volume (vph)	1248	269	464	2130	216	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.5	4.0	4.5	4.5
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4950		1770	5085	1770	1583
Flt Permitted	1.00		0.06	1.00	0.95	1.00
Satd. Flow (perm)	4950		117	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1357	292	504	2315	235	198
RTOR Reduction (vph)	18	0	0	0	0	2
Lane Group Flow (vph)	1631	0	504	2315	235	196
Turn Type	NA		pm+pt	NA	Prot	pt+ov
Protected Phases	2		1	6	4	4 1
Permitted Phases			6			
Actuated Green, G (s)	68.8		117.3	117.3	20.2	69.7
Effective Green, g (s)	70.8		118.3	119.3	22.2	71.7
Actuated g/C Ratio	0.47		0.79	0.80	0.15	0.48
Clearance Time (s)	6.0		5.5	6.0	6.5	
Vehicle Extension (s)	0.2		3.0	0.2	3.0	
Lane Grp Cap (vph)	2336		577	4044	261	756
v/s Ratio Prot	0.33		c0.26	0.46	c0.13	0.12
v/s Ratio Perm			c0.43			
v/c Ratio	0.70		0.87	0.57	0.90	0.26
Uniform Delay, d1	31.2		42.3	5.8	62.8	23.3
Progression Factor	1.34		0.89	0.64	1.00	1.00
Incremental Delay, d2	1.6		12.2	0.5	31.0	0.2
Delay (s)	43.3		49.6	4.2	93.8	23.5
Level of Service	D		D	A	F	C
Approach Delay (s)	43.3			12.3	61.6	
Approach LOS	D			B	E	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 4: MD 201 & Lydell Road

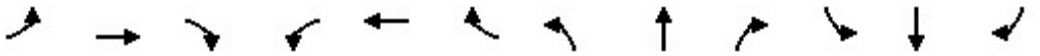
Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	82	86	80	262	247	150	106	184	124
Average Queue (ft)	46	59	31	154	117	38	33	86	41
95th Queue (ft)	82	97	71	236	220	96	73	152	90
Link Distance (ft)	77	77	77	712	712			428	428
Upstream Blk Time (%)	1	10	2						
Queuing Penalty (veh)	1	7	1						
Storage Bay Dist (ft)						125	100		
Storage Blk Time (%)					2	0	0	3	
Queuing Penalty (veh)					4	0	0	1	

Intersection: 5: Lydell Road & Pepsi Place

Movement	EB	EB	WB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (ft)	69	23	10	11	151
Average Queue (ft)	14	1	1	0	51
95th Queue (ft)	48	10	9	5	98
Link Distance (ft)	77	77	677	677	325
Upstream Blk Time (%)	0				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

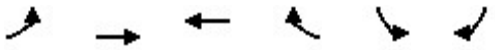
Zone wide Queuing Penalty: 15



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	281	3	31	0	204	0	102	105	0	0	0
Future Volume (vph)	0	281	3	31	0	204	0	102	105	0	0	0
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
Hourly flow rate (vph)	0	305	3	34	0	222	0	111	114	0	0	0

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total (vph)	305	3	34	222	225
Volume Left (vph)	0	0	34	0	0
Volume Right (vph)	0	3	0	222	114
Hadj (s)	0.03	-0.57	0.23	-0.57	-0.27
Departure Headway (s)	4.5	3.2	5.0	3.2	4.4
Degree Utilization, x	0.38	0.00	0.05	0.20	0.28
Capacity (veh/h)	760	1121	667	1121	763
Control Delay (s)	10.3	6.2	8.3	7.0	9.1
Approach Delay (s)	10.3		7.2		9.1
Approach LOS	B		A		A

Intersection Summary				
Delay	8.9			
Level of Service	A			
Intersection Capacity Utilization	49.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	95	36	46	33	4	22
Future Volume (Veh/h)	95	36	46	33	4	22
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	39	50	36	4	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		189				
pX, platoon unblocked						
vC, conflicting volume	86				313	43
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	86				313	43
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				99	98
cM capacity (veh/h)	1508				610	1018

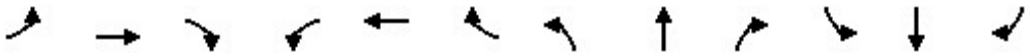
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	103	39	33	53	28
Volume Left	103	0	0	0	4
Volume Right	0	0	0	36	24
cSH	1508	1700	1700	1700	929
Volume to Capacity	0.07	0.02	0.02	0.03	0.03
Queue Length 95th (ft)	5	0	0	0	2
Control Delay (s)	7.6	0.0	0.0	0.0	9.0
Lane LOS	A				A
Approach Delay (s)	5.5		0.0		9.0
Approach LOS					A

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	121	1	0	39	19	14
Future Volume (vph)	121	1	0	39	19	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	132	1	0	42	21	15

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total (vph)	133	42	21	15
Volume Left (vph)	132	0	0	0
Volume Right (vph)	1	0	0	15
Hadj (s)	0.23	0.03	0.03	-0.57
Departure Headway (s)	4.3	4.3	4.3	3.2
Degree Utilization, x	0.16	0.05	0.02	0.01
Capacity (veh/h)	823	810	810	1121
Control Delay (s)	8.1	7.5	7.4	6.2
Approach Delay (s)	8.1	7.5	6.9	
Approach LOS	A	A	A	

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	16.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	4	0	14	4	4	1	0	9	3	0	0
Future Volume (vph)	0	4	0	14	4	4	1	0	9	3	0	0
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
Hourly flow rate (vph)	0	4	0	15	4	4	1	0	10	3	0	0

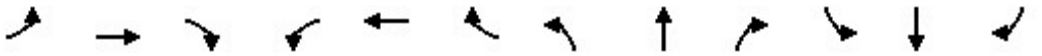
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	4	23	11	3
Volume Left (vph)	0	15	1	3
Volume Right (vph)	0	4	10	0
Hadj (s)	0.03	0.06	-0.49	0.23
Departure Headway (s)	4.0	4.0	3.5	4.2
Degree Utilization, x	0.00	0.03	0.01	0.00
Capacity (veh/h)	893	894	1026	846
Control Delay (s)	7.0	7.1	6.5	7.2
Approach Delay (s)	7.0	7.1	6.5	7.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	6.9			
Level of Service	A			
Intersection Capacity Utilization	17.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	0	2	10	13	1
Future Volume (Veh/h)	2	0	2	10	13	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	2	11	14	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	30	14	15			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	30	14	15			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	984	1065	1603			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	13	15
Volume Left	2	2	0
Volume Right	0	0	1
cSH	984	1603	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.7	1.1	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	1.1	0.0
Approach LOS	A		

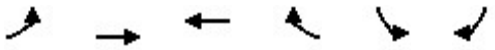
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	298	11	31	0	217	0	138	105	0	0	0
Future Volume (vph)	0	298	11	31	0	217	0	138	105	0	0	0
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
Hourly flow rate (vph)	0	324	12	34	0	236	0	150	114	0	0	0

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total (vph)	324	12	34	236	264
Volume Left (vph)	0	0	34	0	0
Volume Right (vph)	0	12	0	236	114
Hadj (s)	0.03	-0.57	0.23	-0.57	-0.23
Departure Headway (s)	4.6	3.2	5.2	3.2	4.5
Degree Utilization, x	0.42	0.01	0.05	0.21	0.33
Capacity (veh/h)	741	1121	643	1122	747
Control Delay (s)	10.9	6.2	8.5	7.0	9.8
Approach Delay (s)	10.7		7.2		9.8
Approach LOS	B		A		A

Intersection Summary				
Delay	9.4			
Level of Service	A			
Intersection Capacity Utilization	52.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	101	77	214	63	12	23
Future Volume (Veh/h)	101	77	214	63	12	23
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	110	84	233	68	13	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		189				
pX, platoon unblocked						
vC, conflicting volume	301				571	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	301				571	150
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				97	97
cM capacity (veh/h)	1257				412	869

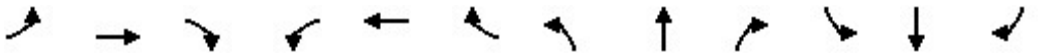
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	110	84	155	146	38
Volume Left	110	0	0	0	13
Volume Right	0	0	0	68	25
cSH	1257	1700	1700	1700	630
Volume to Capacity	0.09	0.05	0.09	0.09	0.06
Queue Length 95th (ft)	7	0	0	0	5
Control Delay (s)	8.1	0.0	0.0	0.0	11.1
Lane LOS	A				B
Approach Delay (s)	4.6		0.0		11.1
Approach LOS					B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	158	1	0	39	19	23
Future Volume (vph)	158	1	0	39	19	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	172	1	0	42	21	25

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total (vph)	173	42	21	25
Volume Left (vph)	172	0	0	0
Volume Right (vph)	1	0	0	25
Hadj (s)	0.23	0.03	0.03	-0.57
Departure Headway (s)	4.3	4.4	4.4	3.2
Degree Utilization, x	0.21	0.05	0.03	0.02
Capacity (veh/h)	823	787	775	1121
Control Delay (s)	8.4	7.6	7.5	6.3
Approach Delay (s)	8.4	7.6	6.8	
Approach LOS	A	A	A	

Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	4	0	8	0	2	0	0	3	3	2	0
Future Volume (vph)	0	4	0	8	0	2	0	0	3	3	2	0
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
Hourly flow rate (vph)	0	4	0	9	0	2	0	0	3	3	2	0

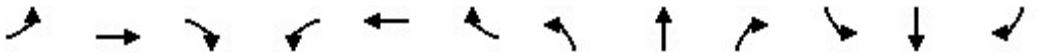
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	4	11	3	5
Volume Left (vph)	0	9	0	3
Volume Right (vph)	0	2	3	0
Hadj (s)	0.03	0.09	-0.57	0.15
Departure Headway (s)	4.0	4.0	3.4	4.1
Degree Utilization, x	0.00	0.01	0.00	0.01
Capacity (veh/h)	900	891	1059	872
Control Delay (s)	7.0	7.1	6.4	7.1
Approach Delay (s)	7.0	7.1	6.4	7.1
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	17.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	0	2	10	13	1
Future Volume (Veh/h)	2	0	2	10	13	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	2	11	14	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	30	14	15			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	30	14	15			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	984	1065	1603			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	13	15
Volume Left	2	2	0
Volume Right	0	0	1
cSH	984	1603	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.7	1.1	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	1.1	0.0
Approach LOS	A		

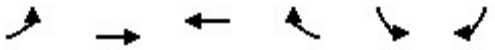
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	264	101	271	0	217	0	238	288	0	0	0
Future Volume (vph)	0	264	101	271	0	217	0	238	288	0	0	0
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
Hourly flow rate (vph)	0	287	110	295	0	236	0	259	313	0	0	0

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total (vph)	287	110	295	236	572
Volume Left (vph)	0	0	295	0	0
Volume Right (vph)	0	110	0	236	313
Hadj (s)	0.03	-0.57	0.23	-0.57	-0.29
Departure Headway (s)	6.2	3.2	6.4	3.2	5.4
Degree Utilization, x	0.50	0.10	0.52	0.21	0.85
Capacity (veh/h)	534	1121	525	1122	645
Control Delay (s)	15.2	6.5	16.2	7.0	31.6
Approach Delay (s)	12.8		12.1		31.6
Approach LOS	B		B		D

Intersection Summary				
Delay	19.7			
Level of Service	C			
Intersection Capacity Utilization	69.1%	ICU Level of Service	C	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	178	77	206	71	12	96
Future Volume (Veh/h)	178	77	206	71	12	96
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	193	84	224	77	13	104
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		189				
pX, platoon unblocked						
vC, conflicting volume	301				732	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	301				732	150
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	85				96	88
cM capacity (veh/h)	1257				301	869

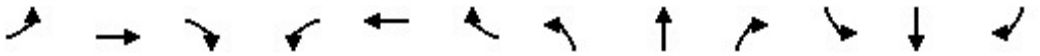
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	193	84	149	152	117
Volume Left	193	0	0	0	13
Volume Right	0	0	0	77	104
cSH	1257	1700	1700	1700	719
Volume to Capacity	0.15	0.05	0.09	0.09	0.16
Queue Length 95th (ft)	14	0	0	0	14
Control Delay (s)	8.4	0.0	0.0	0.0	11.0
Lane LOS	A				B
Approach Delay (s)	5.8		0.0		11.0
Approach LOS					B

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	335	1	0	115	107	231
Future Volume (vph)	335	1	0	115	107	231
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	364	1	0	125	116	251

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total (vph)	365	125	116	251
Volume Left (vph)	364	0	0	0
Volume Right (vph)	1	0	0	251
Hadj (s)	0.23	0.03	0.03	-0.57
Departure Headway (s)	4.8	5.0	5.1	3.2
Degree Utilization, x	0.48	0.18	0.16	0.22
Capacity (veh/h)	732	663	657	1122
Control Delay (s)	12.1	9.1	9.0	7.1
Approach Delay (s)	12.1	9.1	7.7	
Approach LOS	B	A	A	

Intersection Summary			
Delay	9.8		
Level of Service	A		
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	47	24	14	40	4	18	0	9	3	0	0
Future Volume (vph)	0	47	24	14	40	4	18	0	9	3	0	0
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
Hourly flow rate (vph)	0	51	26	15	43	4	20	0	10	3	0	0

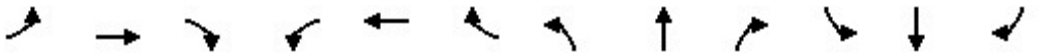
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	77	62	30	3
Volume Left (vph)	0	15	20	3
Volume Right (vph)	26	4	10	0
Hadj (s)	-0.17	0.04	-0.03	0.23
Departure Headway (s)	3.9	4.1	4.2	4.5
Degree Utilization, x	0.08	0.07	0.03	0.00
Capacity (veh/h)	915	867	828	779
Control Delay (s)	7.2	7.4	7.3	7.5
Approach Delay (s)	7.2	7.4	7.3	7.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.3		
Level of Service		A		
Intersection Capacity Utilization		19.8%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	32	50	27	37	1
Future Volume (Veh/h)	2	32	50	27	37	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	35	54	29	40	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	178	40	41			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	178	40	41			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	97			
cM capacity (veh/h)	784	1031	1568			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	37	83	41
Volume Left	2	54	0
Volume Right	35	0	1
cSH	1013	1568	1700
Volume to Capacity	0.04	0.03	0.02
Queue Length 95th (ft)	3	3	0
Control Delay (s)	8.7	4.9	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	4.9	0.0
Approach LOS	A		

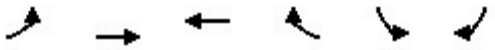
Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	20.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	264	126	371	0	217	0	265	330	0	0	0
Future Volume (vph)	0	264	126	371	0	217	0	265	330	0	0	0
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
Hourly flow rate (vph)	0	287	137	403	0	236	0	288	359	0	0	0

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total (vph)	287	137	403	236	647
Volume Left (vph)	0	0	403	0	0
Volume Right (vph)	0	137	0	236	359
Hadj (s)	0.03	-0.57	0.23	-0.57	-0.30
Departure Headway (s)	6.7	3.2	6.7	3.2	5.8
Degree Utilization, x	0.54	0.12	0.75	0.21	1.04
Capacity (veh/h)	527	1121	531	1122	626
Control Delay (s)	17.2	6.6	26.7	7.0	71.9
Approach Delay (s)	13.8		19.4		71.9
Approach LOS	B		C		F

Intersection Summary				
Delay	37.9			
Level of Service	E			
Intersection Capacity Utilization	78.6%	ICU Level of Service	D	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	212	77	206	71	12	114
Future Volume (Veh/h)	212	77	206	71	12	114
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	230	84	224	77	13	124
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		189				
pX, platoon unblocked						
vC, conflicting volume	301				806	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	301				806	150
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	82				95	86
cM capacity (veh/h)	1257				261	869

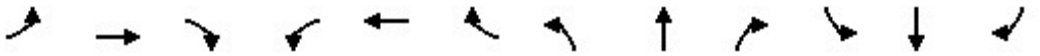
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	230	84	149	152	137
Volume Left	230	0	0	0	13
Volume Right	0	0	0	77	124
cSH	1257	1700	1700	1700	712
Volume to Capacity	0.18	0.05	0.09	0.09	0.19
Queue Length 95th (ft)	17	0	0	0	18
Control Delay (s)	8.5	0.0	0.0	0.0	11.3
Lane LOS	A				B
Approach Delay (s)	6.2		0.0		11.3
Approach LOS					B

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	383	1	0	136	144	319
Future Volume (vph)	383	1	0	136	144	319
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	416	1	0	148	157	347

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total (vph)	417	148	157	347
Volume Left (vph)	416	0	0	0
Volume Right (vph)	1	0	0	347
Hadj (s)	0.23	0.03	0.03	-0.57
Departure Headway (s)	5.0	5.3	5.3	3.2
Degree Utilization, x	0.57	0.22	0.23	0.31
Capacity (veh/h)	695	627	629	1113
Control Delay (s)	14.4	9.8	9.8	7.6
Approach Delay (s)	14.4	9.8	8.3	
Approach LOS	B	A	A	

Intersection Summary			
Delay	10.9		
Level of Service	B		
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	47	26	14	40	4	20	0	9	3	0	0
Future Volume (vph)	0	47	26	14	40	4	20	0	9	3	0	0
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
Hourly flow rate (vph)	0	51	28	15	43	4	22	0	10	3	0	0

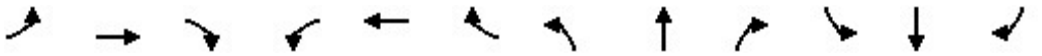
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	79	62	32	3
Volume Left (vph)	0	15	22	3
Volume Right (vph)	28	4	10	0
Hadj (s)	-0.18	0.04	-0.02	0.23
Departure Headway (s)	3.9	4.1	4.2	4.5
Degree Utilization, x	0.08	0.07	0.04	0.00
Capacity (veh/h)	916	865	824	777
Control Delay (s)	7.2	7.4	7.3	7.5
Approach Delay (s)	7.2	7.4	7.3	7.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.3		
Level of Service		A		
Intersection Capacity Utilization		19.8%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	35	56	29	39	1
Future Volume (Veh/h)	2	35	56	29	39	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	38	61	32	42	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	196	42	43			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	196	42	43			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	96			
cM capacity (veh/h)	761	1028	1566			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	40	93	43
Volume Left	2	61	0
Volume Right	38	0	1
cSH	1010	1566	1700
Volume to Capacity	0.04	0.04	0.03
Queue Length 95th (ft)	3	3	0
Control Delay (s)	8.7	4.9	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	4.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	21.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	264	126	371	0	217	0	265	330	0	0	0
Future Volume (vph)	0	264	126	371	0	217	0	265	330	0	0	0
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
Hourly flow rate (vph)	0	287	137	403	0	236	0	288	359	0	0	0

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total (vph)	287	137	403	236	288	359
Volume Left (vph)	0	0	403	0	0	0
Volume Right (vph)	0	137	0	236	0	359
Hadj (s)	0.03	-0.57	0.23	-0.57	0.03	-0.67
Departure Headway (s)	6.3	3.2	6.3	3.2	6.6	5.9
Degree Utilization, x	0.50	0.12	0.70	0.21	0.53	0.59
Capacity (veh/h)	545	1121	556	1122	521	583
Control Delay (s)	15.5	6.6	22.8	7.0	15.6	15.8
Approach Delay (s)	12.7		17.0		15.7	
Approach LOS	B		C		C	

Intersection Summary				
Delay	15.4			
Level of Service	C			
Intersection Capacity Utilization	58.4%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2341	327	236	1295	205	404
Future Volume (vph)	2341	327	236	1295	205	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.5	4.0	4.5	4.5
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4992		1770	5085	1770	1583
Flt Permitted	1.00		0.04	1.00	0.95	1.00
Satd. Flow (perm)	4992		80	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2545	355	257	1408	223	439
RTOR Reduction (vph)	9	0	0	0	0	339
Lane Group Flow (vph)	2891	0	257	1408	223	100
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases			6			4
Actuated Green, G (s)	88.2		115.1	115.1	22.4	22.4
Effective Green, g (s)	90.2		116.1	117.1	24.4	24.4
Actuated g/C Ratio	0.60		0.77	0.78	0.16	0.16
Clearance Time (s)	6.0		5.5	6.0	6.5	6.5
Vehicle Extension (s)	0.2		3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	3001		314	3969	287	257
v/s Ratio Prot	c0.58		c0.12	0.28	c0.13	
v/s Ratio Perm			0.51			0.06
v/c Ratio	0.96		0.82	0.35	0.78	0.39
Uniform Delay, d1	28.3		52.5	5.0	60.2	56.1
Progression Factor	1.06		0.91	0.75	1.00	1.00
Incremental Delay, d2	9.4		14.7	0.2	12.4	1.0
Delay (s)	39.4		62.6	4.0	72.6	57.1
Level of Service	D		E	A	E	E
Approach Delay (s)	39.4			13.0	62.3	
Approach LOS	D			B	E	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2341	327	236	1295	205	404
Future Volume (vph)	2341	327	236	1295	205	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.5	4.0	4.5	4.5
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4992		1770	5085	1770	1583
Flt Permitted	1.00		0.04	1.00	0.95	1.00
Satd. Flow (perm)	4992		83	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2545	355	257	1408	223	439
RTOR Reduction (vph)	9	0	0	0	0	0
Lane Group Flow (vph)	2891	0	257	1408	223	439
Turn Type	NA		pm+pt	NA	Prot	pt+ov
Protected Phases	2		1	6	4	4 1
Permitted Phases			6			
Actuated Green, G (s)	84.3		112.0	112.0	25.5	54.2
Effective Green, g (s)	86.3		113.0	114.0	27.5	56.2
Actuated g/C Ratio	0.58		0.75	0.76	0.18	0.37
Clearance Time (s)	6.0		5.5	6.0	6.5	
Vehicle Extension (s)	0.2		3.0	0.2	3.0	
Lane Grp Cap (vph)	2872		323	3864	324	593
v/s Ratio Prot	c0.58		0.12	0.28	0.13	c0.28
v/s Ratio Perm			0.48			
v/c Ratio	1.01		0.80	0.36	0.69	0.74
Uniform Delay, d1	31.9		51.5	6.0	57.2	40.6
Progression Factor	1.06		0.88	0.77	1.00	1.00
Incremental Delay, d2	17.8		12.3	0.3	6.0	4.9
Delay (s)	51.7		57.7	4.8	63.2	45.5
Level of Service	D		E	A	E	D
Approach Delay (s)	51.7			13.0	51.5	
Approach LOS	D			B	D	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 4: MD 201 & Lydell Road

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	89	95	78	327	291	150	114	208	179
Average Queue (ft)	66	58	35	200	160	69	31	112	64
95th Queue (ft)	100	98	74	309	275	154	71	186	141
Link Distance (ft)	77	77	77	712	712			428	428
Upstream Blk Time (%)	9	7	2						
Queuing Penalty (veh)	10	7	3						
Storage Bay Dist (ft)						125	100		
Storage Blk Time (%)					6	0		6	
Queuing Penalty (veh)					14	1		2	

Intersection: 5: Lydell Road & Pepsi Place

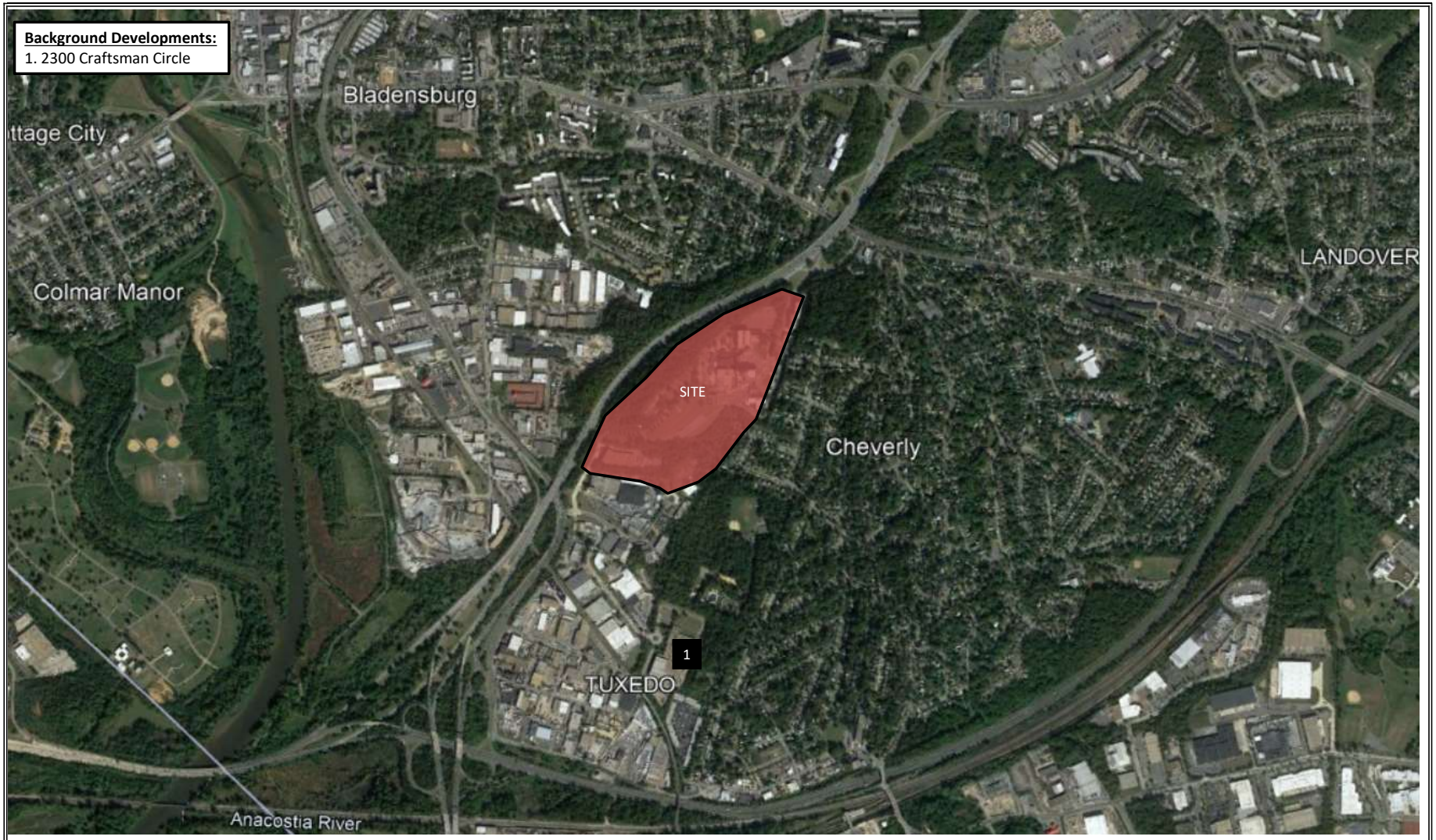
Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	85	80	57	93
Average Queue (ft)	39	13	4	40
95th Queue (ft)	75	51	34	72
Link Distance (ft)	77	677	677	325
Upstream Blk Time (%)	1			
Queuing Penalty (veh)	1			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 38

Appendix C

Background Developments



Traffic Impact Analysis LENHART TRAFFIC CONSULTING, INC. 645 BALTIMORE ANNAPOLIS BLVD, SUITE 214 SEVERNA PARK, MD 21146 www.lenharttraffic.com	Background Development Location Map	**Exhibit C-1**

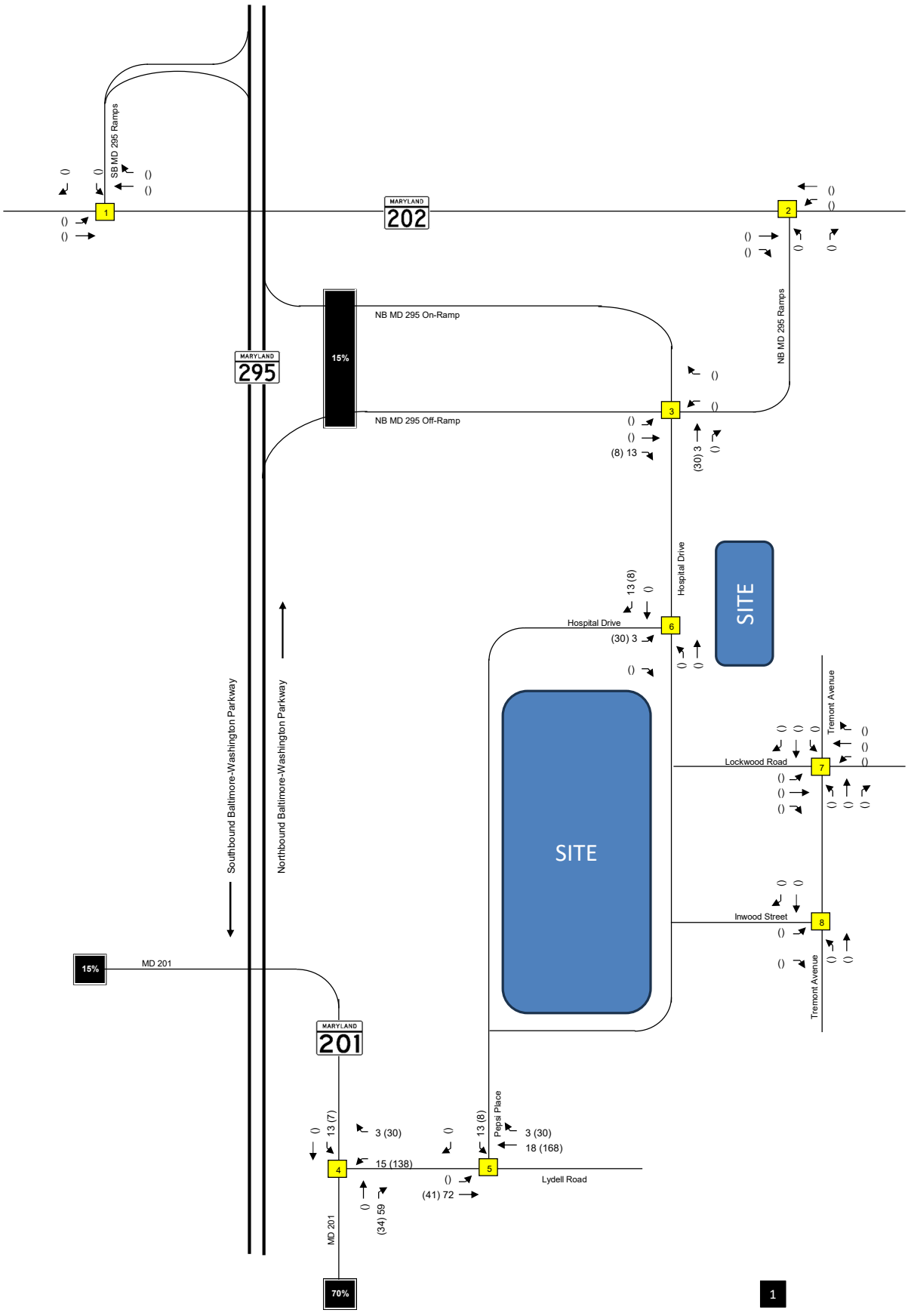
Trip Generation Rates

High-Cube Fulfillment Center Warehouse (ksf, ITE-155)	Trip Distribution (In/Out)
Morning Trips = 0.59 x ksf	80/20
Evening Trips = 1.37 x ksf	20/80

Trip Generation Totals

			AM Peak			PM Peak		
			In	Out	Total	In	Out	Total
1	High-Cube Fulfillment Center Warehouse (ksf, ITE-155)	180,000 sq. ft.	85	21	106	49	198	247

Note: Trip Generation Rates obtained from the Traffic Impact Study for the background development.



Traffic Impact Analysis Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning	Background Development 1 Trip Assignment Key: xx = AM Peak Vol's (xx) = PM Peak Vol's	**Exhibit C-3**

Appendix D

Internal Trip Calculations

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Cheverly - Urban Atlantic	**Organization:**	Lenhart Traffic Consulting
Project Location:	Landover, MD	**Performed By:**	DCM
Scenario Description:	Proposed Conditions	**Date:**	7/26/2023
Analysis Year:		**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				200	161	39
Retail			--	94	56	38
Restaurant			--	0		
Cinema/Entertainment				0		
Residential				730	146	584
Hotel				28	16	12
All Other Land Uses[2]				0		
Total				1052	379	673

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.00	0%	0%			
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant				1.00	0%	0%
Cinema/Entertainment						
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		11	0	0	0	0
Retail	6		0	0	3	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	5	6	0	0		0
Hotel	5	2	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,052	379	673
Internal Capture Percentage	7%	10%	6%
External Vehicle-Trips[3]	976	341	635
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	10%	28%
Retail	34%	24%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	2%
Hotel	0%	58%

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Cheverly - Urban Atlantic
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	161	161	1.00	39	39
Retail	1.00	56	56	1.00	38	38
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	146	146	1.00	584	584
Hotel	1.00	16	16	1.00	12	12

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		11	25	0	0	0
Retail	11		5	0	5	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	12	6	117	0		0
Hotel	9	2	1	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		18	0	0	0	0
Retail	6		0	0	3	0
Restaurant	23	4		0	7	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	10	0	0		0
Hotel	5	2	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	16	145	161	145	0	0
Retail	19	37	56	37	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	143	146	143	0	0
Hotel	0	16	16	16	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	11	28	39	28	0	0
Retail	9	29	38	29	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	11	573	584	573	0	0
Hotel	7	5	12	5	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Cheverly - Urban Atlantic	**Organization:**	Lenhart Traffic Consulting
Project Location:	Landover, MD	**Performed By:**	DCM
Scenario Description:	Proposed Conditions	**Date:**	7/26/2023
Analysis Year:		**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				266	84	182
Retail				262	131	131
Restaurant				0		
Cinema/Entertainment				0		
Residential				840	546	294
Hotel				25	13	12
All Other Land Uses[2]				0		
Total				1393	774	619

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.00	0%	0%			
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant				1.00	0%	0%
Cinema/Entertainment						
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		10	0	0	4	0
Retail	3		0	0	34	2
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	12	13	0	0		2
Hotel	0	2	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,393	774	619
Internal Capture Percentage	12%	11%	13%
External Vehicle-Trips[3]	1,229	692	537
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	18%	8%
Retail	19%	30%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	7%	9%
Hotel	31%	17%

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Cheverly - Urban Atlantic
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	84	84	1.00	182	182
Retail	1.00	131	131	1.00	131	131
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	546	546	1.00	294	294
Hotel	1.00	13	13	1.00	12	12

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		36	7	0	4	0
Retail	3		38	5	34	7
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	12	123	62	0		9
Hotel	0	2	8	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		10	0	0	22	0
Retail	26		0	0	251	2
Restaurant	25	66		0	87	9
Cinema/Entertainment	5	5	0		22	0
Residential	48	13	0	0		2
Hotel	0	3	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	15	69	84	69	0	0
Retail	25	106	131	106	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	38	508	546	508	0	0
Hotel	4	9	13	9	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	14	168	182	168	0	0
Retail	39	92	131	92	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	27	267	294	267	0	0
Hotel	2	10	12	10	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Table 7.1a Adjusted Internal Trip Capture Rates for Trip Origins within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
From OFFICE	To Office	0.0%	0.0%
	To Retail	28.0%	20.0%
	To Restaurant	63.0%	4.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	1.0%	2.0%
	To Hotel	0.0%	0.0%
From RETAIL	To Office	29.0%	2.0%
	To Retail	0.0%	0.0%
	To Restaurant	13.0%	29.0%
	To Cinema/Entertainment	0.0%	4.0%
	To Residential	14.0%	26.0%
	To Hotel	0.0%	5.0%
From RESTAURANT	To Office	31.0%	3.0%
	To Retail	14.0%	41.0%
	To Restaurant	0.0%	0.0%
	To Cinema/Entertainment	0.0%	8.0%
	To Residential	4.0%	18.0%
	To Hotel	3.0%	7.0%
From CINEMA/ENTERTAINMENT	To Office	0.0%	2.0%
	To Retail	0.0%	21.0%
	To Restaurant	0.0%	31.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	8.0%
	To Hotel	0.0%	2.0%
From RESIDENTIAL	To Office	2.0%	4.0%
	To Retail	1.0%	42.0%
	To Restaurant	20.0%	21.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	0.0%
	To Hotel	0.0%	3.0%
From HOTEL	To Office	75.0%	0.0%
	To Retail	14.0%	16.0%
	To Restaurant	9.0%	68.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	2.0%
	To Hotel	0.0%	0.0%

Table 7.2a Adjusted Internal Trip Capture Rates for Trip Destinations within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
To OFFICE	From Office	0.0%	0.0%
	From Retail	4.0%	31.0%
	From Restaurant	14.0%	30.0%
	From Cinema/Entertainment	0.0%	6.0%
	From Residential	3.0%	57.0%
	From Hotel	3.0%	0.0%
To RETAIL	From Office	32.0%	8.0%
	From Retail	0.0%	0.0%
	From Restaurant	8.0%	50.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	17.0%	10.0%
	From Hotel	4.0%	2.0%
To RESTAURANT	From Office	23.0%	2.0%
	From Retail	50.0%	29.0%
	From Restaurant	0.0%	0.0%
	From Cinema/Entertainment	0.0%	3.0%
	From Residential	20.0%	14.0%
	From Hotel	6.0%	5.0%
To CINEMA/ENTERTAINMENT	From Office	0.0%	1.0%
	From Retail	0.0%	26.0%
	From Restaurant	0.0%	32.0%
	From Cinema/Entertainment	0.0%	0.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To RESIDENTIAL	From Office	0.0%	4.0%
	From Retail	2.0%	46.0%
	From Restaurant	5.0%	16.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To HOTEL	From Office	0.0%	0.0%
	From Retail	0.0%	17.0%
	From Restaurant	4.0%	71.0%
	From Cinema/Entertainment	0.0%	1.0%
	From Residential	0.0%	12.0%
	From Hotel	0.0%	0.0%

Appendix E

MD 202 & NB MD 295 Ramp (Intersection 2) Analysis

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1176	125	394	2007	35	87
Future Volume (vph)	1176	125	394	2007	35	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.5	4.0	4.5	
Lane Util. Factor	0.91		1.00	0.91	1.00	
Frt	0.99		1.00	1.00	0.90	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	5012		1770	5085	1659	
Flt Permitted	1.00		0.13	1.00	0.99	
Satd. Flow (perm)	5012		238	5085	1659	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1278	136	428	2182	38	95
RTOR Reduction (vph)	5	0	0	0	65	0
Lane Group Flow (vph)	1409	0	428	2182	68	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases			6			
Actuated Green, G (s)	85.6		126.1	126.1	11.4	
Effective Green, g (s)	87.6		127.1	128.1	13.4	
Actuated g/C Ratio	0.58		0.85	0.85	0.09	
Clearance Time (s)	6.0		5.5	6.0	6.5	
Vehicle Extension (s)	0.2		3.0	0.2	3.0	
Lane Grp Cap (vph)	2927		569	4342	148	
v/s Ratio Prot	0.28		c0.18	0.43	c0.04	
v/s Ratio Perm			c0.46			
v/c Ratio	0.48		0.75	0.50	0.46	
Uniform Delay, d1	18.1		28.9	2.8	64.9	
Progression Factor	1.43		0.80	0.42	1.00	
Incremental Delay, d2	0.5		4.7	0.3	2.3	
Delay (s)	26.4		27.7	1.5	67.1	
Level of Service	C		C	A	E	
Approach Delay (s)	26.4			5.8	67.1	
Approach LOS	C			A	E	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1248	269	464	2130	216	182
Future Volume (vph)	1248	269	464	2130	216	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.5	4.0	4.5	
Lane Util. Factor	0.91		1.00	0.91	1.00	
Frt	0.97		1.00	1.00	0.94	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	4950		1770	5085	1702	
Flt Permitted	1.00		0.06	1.00	0.97	
Satd. Flow (perm)	4950		117	5085	1702	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1357	292	504	2315	235	198
RTOR Reduction (vph)	18	0	0	0	20	0
Lane Group Flow (vph)	1631	0	504	2315	413	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases			6			
Actuated Green, G (s)	68.7		117.0	117.0	20.5	
Effective Green, g (s)	70.7		118.0	119.0	22.5	
Actuated g/C Ratio	0.47		0.79	0.79	0.15	
Clearance Time (s)	6.0		5.5	6.0	6.5	
Vehicle Extension (s)	0.2		3.0	0.2	3.0	
Lane Grp Cap (vph)	2333		574	4034	255	
v/s Ratio Prot	0.33		c0.26	0.46	c0.24	
v/s Ratio Perm			c0.43			
v/c Ratio	0.70		0.88	0.57	1.62	
Uniform Delay, d1	31.3		42.5	5.9	63.8	
Progression Factor	1.34		0.89	0.65	1.00	
Incremental Delay, d2	1.6		12.6	0.5	295.5	
Delay (s)	43.4		50.3	4.3	359.3	
Level of Service	D		D	A	F	
Approach Delay (s)	43.4			12.6	359.3	
Approach LOS	D			B	F	

Intersection Summary			
HCM 2000 Control Delay	53.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1248	269	464	2130	216	182
Future Volume (vph)	1248	269	464	2130	216	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.5	4.0	4.5	4.5
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4950		1770	5085	1770	1583
Flt Permitted	1.00		0.06	1.00	0.95	1.00
Satd. Flow (perm)	4950		117	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1357	292	504	2315	235	198
RTOR Reduction (vph)	18	0	0	0	0	2
Lane Group Flow (vph)	1631	0	504	2315	235	196
Turn Type	NA		pm+pt	NA	Prot	pt+ov
Protected Phases	2		1	6	4	4 1
Permitted Phases			6			
Actuated Green, G (s)	68.8		117.3	117.3	20.2	69.7
Effective Green, g (s)	70.8		118.3	119.3	22.2	71.7
Actuated g/C Ratio	0.47		0.79	0.80	0.15	0.48
Clearance Time (s)	6.0		5.5	6.0	6.5	
Vehicle Extension (s)	0.2		3.0	0.2	3.0	
Lane Grp Cap (vph)	2336		577	4044	261	756
v/s Ratio Prot	0.33		c0.26	0.46	c0.13	0.12
v/s Ratio Perm			c0.43			
v/c Ratio	0.70		0.87	0.57	0.90	0.26
Uniform Delay, d1	31.2		42.3	5.8	62.8	23.3
Progression Factor	1.34		0.89	0.64	1.00	1.00
Incremental Delay, d2	1.6		12.2	0.5	31.0	0.2
Delay (s)	43.3		49.6	4.2	93.8	23.5
Level of Service	D		D	A	F	C
Approach Delay (s)	43.3			12.3	61.6	
Approach LOS	D			B	E	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1248	269	464	2130	216	182
Future Volume (vph)	1248	269	464	2130	216	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.5	4.0	4.5	4.5
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4950		1770	5085	1770	1583
Flt Permitted	1.00		0.06	1.00	0.95	1.00
Satd. Flow (perm)	4950		117	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1357	292	504	2315	235	198
RTOR Reduction (vph)	18	0	0	0	0	2
Lane Group Flow (vph)	1631	0	504	2315	235	196
Turn Type	NA		pm+pt	NA	Prot	pt+ov
Protected Phases	2		1	6	4	4 1
Permitted Phases			6			
Actuated Green, G (s)	68.8		117.3	117.3	20.2	69.7
Effective Green, g (s)	70.8		118.3	119.3	22.2	71.7
Actuated g/C Ratio	0.47		0.79	0.80	0.15	0.48
Clearance Time (s)	6.0		5.5	6.0	6.5	
Vehicle Extension (s)	0.2		3.0	0.2	3.0	
Lane Grp Cap (vph)	2336		577	4044	261	756
v/s Ratio Prot	0.33		c0.26	0.46	c0.13	0.12
v/s Ratio Perm			c0.43			
v/c Ratio	0.70		0.87	0.57	0.90	0.26
Uniform Delay, d1	31.2		42.3	5.8	62.8	23.3
Progression Factor	1.34		0.89	0.64	1.00	1.00
Incremental Delay, d2	1.6		12.2	0.5	31.0	0.2
Delay (s)	43.3		49.6	4.2	93.8	23.5
Level of Service	D		D	A	F	C
Approach Delay (s)	43.3			12.3	61.6	
Approach LOS	D			B	E	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 2: MD 295 NB Ramps & MD 202

Movement	EB	EB	EB	WB	WB	WB	WB	NB
Directions Served	T	T	TR	L	T	T	T	LR
Maximum Queue (ft)	245	227	285	262	274	216	109	193
Average Queue (ft)	81	93	123	150	44	47	27	79
95th Queue (ft)	184	196	243	249	152	136	79	156
Link Distance (ft)	451	451	451		444	444	444	1474
Upstream Blk Time (%)					0			
Queuing Penalty (veh)					0			
Storage Bay Dist (ft)				200				
Storage Blk Time (%)				5	0			
Queuing Penalty (veh)				32	0			

Intersection: 2: MD 295 NB Ramps & MD 202

Movement	EB	EB	EB	WB	WB	WB	WB	NB
Directions Served	T	T	TR	L	T	T	T	LR
Maximum Queue (ft)	423	395	435	275	441	426	248	1517
Average Queue (ft)	249	237	283	198	138	125	61	1434
95th Queue (ft)	408	369	422	288	338	303	153	1713
Link Distance (ft)	451	451	451		444	444	444	1474
Upstream Blk Time (%)	0		0		0	0	0	83
Queuing Penalty (veh)	0		0		3	1	0	0
Storage Bay Dist (ft)				200				
Storage Blk Time (%)				16	0			
Queuing Penalty (veh)				113	1			

Intersection: 2: MD 295 NB Ramps & MD 202

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	T	TR	L	T	T	T	L	R
Maximum Queue (ft)	430	398	443	270	365	277	141	1452	100
Average Queue (ft)	279	258	303	180	104	94	54	1063	70
95th Queue (ft)	414	376	418	277	259	205	117	1623	144
Link Distance (ft)	444	444	444		439	439	439	1421	
Upstream Blk Time (%)	0	0	0		0	0		21	
Queuing Penalty (veh)	1	0	0		1	0		0	
Storage Bay Dist (ft)				200					75
Storage Blk Time (%)				11	0			82	0
Queuing Penalty (veh)				76	1			149	1

Intersection: 2: MD 295 NB Ramps & MD 202

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	T	TR	L	T	T	T	L	R
Maximum Queue (ft)	437	402	444	275	391	312	128	347	274
Average Queue (ft)	271	255	292	198	137	97	52	192	117
95th Queue (ft)	436	386	422	291	327	209	112	307	212
Link Distance (ft)	444	444	444		439	439	439	1041	
Upstream Blk Time (%)	0	0	1		0	0			
Queuing Penalty (veh)	1	0	4		0	0			
Storage Bay Dist (ft)				200					350
Storage Blk Time (%)				16	0			0	
Queuing Penalty (veh)				110	2			1	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2205	69	141	1220	72	318
Future Volume (vph)	2205	69	141	1220	72	318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.5	4.0	4.5	
Lane Util. Factor	0.91		1.00	0.91	1.00	
Frt	1.00		1.00	1.00	0.89	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	5062		1770	5085	1642	
Flt Permitted	1.00		0.04	1.00	0.99	
Satd. Flow (perm)	5062		75	5085	1642	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2397	75	153	1326	78	346
RTOR Reduction (vph)	1	0	0	0	106	0
Lane Group Flow (vph)	2471	0	153	1326	318	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases			6			
Actuated Green, G (s)	93.9		112.0	112.0	25.5	
Effective Green, g (s)	95.9		113.0	114.0	27.5	
Actuated g/C Ratio	0.64		0.75	0.76	0.18	
Clearance Time (s)	6.0		5.5	6.0	6.5	
Vehicle Extension (s)	0.2		3.0	0.2	3.0	
Lane Grp Cap (vph)	3236		210	3864	301	
v/s Ratio Prot	c0.49		c0.07	0.26	c0.19	
v/s Ratio Perm			0.48			
v/c Ratio	0.76		0.73	0.34	1.06	
Uniform Delay, d1	19.1		45.3	5.8	61.2	
Progression Factor	1.04		1.02	0.75	1.00	
Incremental Delay, d2	1.6		11.4	0.2	67.4	
Delay (s)	21.5		57.4	4.6	128.6	
Level of Service	C		E	A	F	
Approach Delay (s)	21.5			10.1	128.6	
Approach LOS	C			B	F	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2341	327	236	1295	205	404
Future Volume (vph)	2341	327	236	1295	205	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.5	4.0	4.5	
Lane Util. Factor	0.91		1.00	0.91	1.00	
Frt	0.98		1.00	1.00	0.91	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	4992		1770	5085	1668	
Flt Permitted	1.00		0.04	1.00	0.98	
Satd. Flow (perm)	4992		82	5085	1668	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2545	355	257	1408	223	439
RTOR Reduction (vph)	9	0	0	0	47	0
Lane Group Flow (vph)	2891	0	257	1408	615	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases			6			
Actuated Green, G (s)	85.0		112.0	112.0	25.5	
Effective Green, g (s)	87.0		113.0	114.0	27.5	
Actuated g/C Ratio	0.58		0.75	0.76	0.18	
Clearance Time (s)	6.0		5.5	6.0	6.5	
Vehicle Extension (s)	0.2		3.0	0.2	3.0	
Lane Grp Cap (vph)	2895		314	3864	305	
v/s Ratio Prot	c0.58		c0.12	0.28	c0.37	
v/s Ratio Perm			0.49			
v/c Ratio	1.00		0.82	0.36	2.02	
Uniform Delay, d1	31.4		52.1	6.0	61.2	
Progression Factor	1.06		0.88	0.77	1.00	
Incremental Delay, d2	15.8		14.7	0.3	468.3	
Delay (s)	49.2		60.8	4.8	529.5	
Level of Service	D		E	A	F	
Approach Delay (s)	49.2			13.5	529.5	
Approach LOS	D			B	F	

Intersection Summary			
HCM 2000 Control Delay	98.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	112.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2341	327	236	1295	205	404
Future Volume (vph)	2341	327	236	1295	205	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.5	4.0	4.5	4.5
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4992		1770	5085	1770	1583
Flt Permitted	1.00		0.04	1.00	0.95	1.00
Satd. Flow (perm)	4992		80	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2545	355	257	1408	223	439
RTOR Reduction (vph)	12	0	0	0	0	2
Lane Group Flow (vph)	2888	0	257	1408	223	437
Turn Type	NA		pm+pt	NA	Prot	pt+ov
Protected Phases	2		1	6	4	4 1
Permitted Phases			6			
Actuated Green, G (s)	87.7		112.0	112.0	25.5	50.8
Effective Green, g (s)	89.7		113.0	114.0	27.5	52.8
Actuated g/C Ratio	0.60		0.75	0.76	0.18	0.35
Clearance Time (s)	6.0		5.5	6.0	6.5	
Vehicle Extension (s)	0.2		3.0	0.2	3.0	
Lane Grp Cap (vph)	2985		283	3864	324	557
v/s Ratio Prot	c0.58		0.12	0.28	0.13	c0.28
v/s Ratio Perm			0.56			
v/c Ratio	0.97		0.91	0.36	0.69	0.78
Uniform Delay, d1	28.8		54.6	6.0	57.2	43.5
Progression Factor	1.15		0.91	1.07	1.00	1.00
Incremental Delay, d2	10.0		29.6	0.3	6.0	7.1
Delay (s)	43.0		79.3	6.6	63.2	50.7
Level of Service	D		E	A	E	D
Approach Delay (s)	43.0			17.8	54.9	
Approach LOS	D			B	D	

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2341	327	236	1295	205	404
Future Volume (vph)	2341	327	236	1295	205	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.5	4.0	4.5	4.5
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4992		1770	5085	1770	1583
Flt Permitted	1.00		0.04	1.00	0.95	1.00
Satd. Flow (perm)	4992		80	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2545	355	257	1408	223	439
RTOR Reduction (vph)	12	0	0	0	0	2
Lane Group Flow (vph)	2888	0	257	1408	223	437
Turn Type	NA		pm+pt	NA	Prot	pt+ov
Protected Phases	2		1	6	4	4 1
Permitted Phases			6			
Actuated Green, G (s)	87.7		112.0	112.0	25.5	50.8
Effective Green, g (s)	89.7		113.0	114.0	27.5	52.8
Actuated g/C Ratio	0.60		0.75	0.76	0.18	0.35
Clearance Time (s)	6.0		5.5	6.0	6.5	
Vehicle Extension (s)	0.2		3.0	0.2	3.0	
Lane Grp Cap (vph)	2985		283	3864	324	557
v/s Ratio Prot	c0.58		0.12	0.28	0.13	c0.28
v/s Ratio Perm			0.56			
v/c Ratio	0.97		0.91	0.36	0.69	0.78
Uniform Delay, d1	28.8		54.6	6.0	57.2	43.5
Progression Factor	1.15		0.91	1.07	1.00	1.00
Incremental Delay, d2	10.0		29.6	0.3	6.0	7.1
Delay (s)	43.0		79.3	6.6	63.2	50.7
Level of Service	D		E	A	E	D
Approach Delay (s)	43.0			17.8	54.9	
Approach LOS	D			B	D	

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 2: MD 295 NB Ramps & MD 202

Movement	EB	EB	EB	WB	WB	WB	WB	NB
Directions Served	T	T	TR	L	T	T	T	LR
Maximum Queue (ft)	379	386	400	186	135	149	111	1269
Average Queue (ft)	188	195	197	88	76	83	46	967
95th Queue (ft)	328	345	352	153	129	145	99	1769
Link Distance (ft)	451	451	451		444	444	444	1474
Upstream Blk Time (%)	0	0	0					30
Queuing Penalty (veh)	0	0	0					0
Storage Bay Dist (ft)				200				
Storage Blk Time (%)				1				
Queuing Penalty (veh)				2				

Intersection: 2: MD 295 NB Ramps & MD 202

Movement	EB	EB	EB	WB	WB	WB	WB	NB
Directions Served	T	T	TR	L	T	T	T	LR
Maximum Queue (ft)	467	470	468	261	304	260	141	1515
Average Queue (ft)	407	401	411	162	98	98	54	1488
95th Queue (ft)	534	516	516	242	209	183	117	1564
Link Distance (ft)	451	451	451		444	444	444	1474
Upstream Blk Time (%)	3	2	4		0	0		96
Queuing Penalty (veh)	20	15	24		0	0		0
Storage Bay Dist (ft)				200				
Storage Blk Time (%)				8	0			
Queuing Penalty (veh)				33	0			

Intersection: 2: MD 295 NB Ramps & MD 202

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	T	TR	L	T	T	T	L	R
Maximum Queue (ft)	464	467	458	270	355	295	213	1467	100
Average Queue (ft)	425	408	401	149	104	101	57	1314	92
95th Queue (ft)	500	491	487	250	259	213	139	1723	130
Link Distance (ft)	444	444	444		439	439	439	1421	
Upstream Blk Time (%)	7	5	5		0	0		63	
Queuing Penalty (veh)	44	29	33		0	0		0	
Storage Bay Dist (ft)				200					75
Storage Blk Time (%)				9	0			72	22
Queuing Penalty (veh)				37	0			291	44

Intersection: 2: MD 295 NB Ramps & MD 202

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	T	TR	L	T	T	T	L	R
Maximum Queue (ft)	463	469	460	265	341	227	166	538	400
Average Queue (ft)	427	415	411	155	93	92	61	210	280
95th Queue (ft)	496	496	495	251	223	166	132	409	414
Link Distance (ft)	444	444	444		439	439	439	1041	
Upstream Blk Time (%)	7	5	7						
Queuing Penalty (veh)	47	32	44						
Storage Bay Dist (ft)				200					350
Storage Blk Time (%)				8	0			2	5
Queuing Penalty (veh)				34	0			7	9