

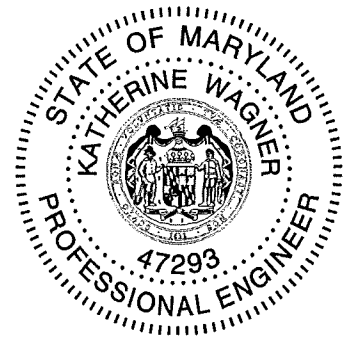
Traffic Impact Study

Long Reach Village Center

Howard County, Maryland

October 3, 2025

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 47293, Expiration Date: October 11, 2027



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Executive Summary

This report presents a Traffic Impact Study (TIS) prepared in support of the proposed development of the Long Reach Village Center, the "Project", located at 8775 Cloudleap Court in Howard County, Maryland. The Project is bounded by Cloudleap Court and Tamar Drive to the north, Foreland Garth to the east, Longwood Apartments to the south, and Timber Apartments and Route 175 to the west. This report is prepared to address the APFO test for road adequacy.

For purposes of selecting the appropriate components for this assessment, it is noted that the site is located outside the Downtown Columbia Area.

The purpose of this study is to evaluate the impact of the Project on the surrounding transportation network based on a technical comparison of existing, background, and total future conditions. The scope and methodology included in this study are consistent with the Howard County guidelines for preparing traffic impact studies outside the Downtown Columbia Area.

A scoping letter was submitted to the County Staff requesting approval of the proposed study intersections and methodology. Comments and recommendations provided by the County Staff have been addressed and reflected in the study. The scoping letter is included in the attachments. Note that the required Multimodal Transportation Studies Checklist is also provided in the Technical Attachments of this document.

Proposed Project

The existing site consists of approximately 71,896 sf of retail, 15,000 sf of office use and 404 parking spaces. The Project proposes to redevelop the site to include approximately 294 multifamily, 84 townhomes and 253,481 sf commercial space. The construction is expected to occur in five (5) phases.

Note the development program analyzed in this report aligns with the version submitted to Staff during scoping. While the proposed densities have since been refined and differ in the latest plan, this study is based on the scoped development program as a conservation approach, as the scoped program results in a higher number of peak hour trips than the updated plans.

Based on the conceptual layout, primary access to the development is proposed via Foreland Garth and a new right-in/right-out only driveway from Tamar Drive. Primary access to the townhomes garage parking is proposed on Cloudleap Court.

As part of the project, the installation of a new traffic signal is proposed at the Tamar Drive and Foreland Garth/Airybrink Lane intersection. A traffic signal warrant analysis was completed to determine whether total future roadway volumes with the project meet signalization thresholds at the Tamar Drive and Foreland Garth/Airybrink Lane intersection. Based on the analysis, future roadway volumes with the project meet signalization thresholds.

Regional connections to the site are provided via Tamar Drive and other roads including Snowden Parkway, Rouse Parkway (MD 175) and Phelps Luck Drive.

Traffic Analysis

To determine the vehicular impact of the Project on the surrounding roadway network, this study includes both a Critical Lane Volume (CLV) and a queuing assessment for the proposed driveway and roadways exiting the site. These analyses were prepared for Existing, Background, and Total Future conditions.

The Howard County guidelines recommend the intersection level of service (LOS) standard for County-controlled intersections as LOS D and the standard for State-controlled intersections as LOS E.

All the intersections in the study area are County-controlled intersections, and the results of these analyses indicate that all existing intersections currently and will continue to operate within Howard County's Level of Service (LOS) thresholds, with LOS "D" or better, with the additional traffic generated by the Project. Therefore, no traffic-related mitigation is required for the Project.

The 95th percentile queue for the driveway and roadways exiting the site is expected to be adequately accommodated within the available storage or within the site without impacting any public roads.

Summary and Conclusions

With the completion of the Project, all study intersections are expected to continue to operate within the County's LOS thresholds without the need for offsite improvements. Therefore, no off-site road improvements are required as mitigation beyond the proposed access improvements (new right-in/right-out and new traffic signal at the Foreland Garth intersection).

Introduction

This report presents a Traffic Impact Study to review the transportation impacts of the proposed Project located in Howard County, Maryland.

Purpose of Study

The purpose of this report is to:

1. Review the transportation elements of the proposed development plan and identify whether the development meets the applicable standards set forth by Howard County.
2. Provide information to Howard County and other agencies on how the development of the site will influence the local transportation network.
3. Identify the net impact of the proposed development within the study area road network based on the procedures identified in the Howard County Guidelines for Traffic Impact Studies.

Contents of Study

This report is organized into eight (8) sections as follows:

- Section 1: Scope of Study
Describes the parameters within which the study will be operating.
- Section 2: Multimodal Overview
Provides an overview of the area transportation network, transit, pedestrian and bicycle infrastructure surrounding the Project.
- Section 3: Travel Demand Assumptions
Outlines the anticipated travel demand of the proposed development and summarizes the estimated trip generation of the proposed development at full buildout.
- Section 4: Existing Conditions
Summarizes the assumptions for the existing conditions capacity analyses for the study area network.
- Section 5: Background Conditions
Summarizes the assumptions for the background (without development) capacity analyses for the study area network.
- Section 6: Future Conditions
Summarizes the assumptions for the total future (with development) capacity analyses for the study area network.
- Section 7: Vehicle Capacity Analysis Results
Outlines the results of the capacity analyses performed.
- Section 8: Summary and Conclusions
A summary of the overall findings and conclusions of this report.

Section 1: Study Overview

This section includes a review of the study area and an overview of the analysis performed.

Study Area Overview

Overview of Regional Access

As shown in Figure 1 the site has ample access to regional roadways that connect the site to destinations in Howard County and the greater Baltimore/Washington metropolitan area. The site is directly accessible from Tamar Drive, a Major Collector, which connects to MD-175 and Snowden River Parkway which provides regional access.

Study Area

The study area included in this assessment was developed based on the Howard County guidelines for preparing traffic studies outside the downtown area.

Since the project is located in a planned service area for public water and sewer, per Howard County guidelines the study area is up to one and a half miles in all directions from each project entrance on a County or State road, but not beyond the intersection of a major collector or higher classified road with a major collector or higher classified road. The first intersection in all directions that meet this definition shall be evaluated.

To confirm the scope of work for the Project, a scoping letter was submitted to Staff for review. Staff provided additional comments and recommendations which have been addressed and are reflected in the study. The scoping letter is included in the Technical Attachments.

The following intersections were analyzed in this study based on scoping coordination with Staff:

1. Phelps Luck Drive [Major Collector] and Tamar Drive [Major Collector]
2. Cloudleap Court [Local] and Tamar Drive [Major Collector]
3. Site Access and Tamar Drive [Major Collector]
4. Foreland Garth [Local] and Tamar Drive [Major Collector]
5. Old Dobbin Lane [Local] and Tamar Drive [Major Collector]
6. Snowden Parkway [Minor Arterial] and Tamar Drive [Major Collector]

A map of the study intersections is provided in Figure 2.

Planned Transportation Projects

The project will include the following transportation-related studies and plans:

- Tamar Drive Complete Streets Project
- PlanHoward
- WalkHoward
- BikeHoward

Background Developments

As confirmed with Staff during scoping, no background developments were identified in the vicinity of the site for inclusion in this study. Consistent with Howard County and industry standards, only approved projects expected to be completed prior to the buildout of the proposed development with an origin/destination within the study area were reviewed.

Study Scope and Methodology

The scope and methodology used in this study are consistent with Howard County's guidelines for preparing traffic impact studies for developments located outside of the Downtown Columbia cordon.

Based on the project location, the CLV methodology was used in this analysis and the intersection LOS standard for County-controlled intersections is LOS D while the standard for State-controlled intersections is LOS E. All the intersections in the study area are County controlled intersections with an LOS standard of "D" or better.

For the purpose of this study, a horizon year of 2030 was assumed for future conditions which would include buildout plus additional growth in through traffic. This background growth would account for any nearby small developments, changes in use, and growth in traffic driving through the area.

Capacity Analysis Scenarios

Vehicular capacity analyses were prepared for this study to identify the impact of the proposed development within the study area road network. As such, Existing, Background Future (no-build), and Total Future (build) scenarios were included as follows:

- 2025 Existing Conditions
 - Based on traffic count data
- 2030 Background Conditions
 - Existing Conditions with background traffic growth, but without the proposed redevelopment.
- 2030 Total Future Conditions
 - Background Conditions with the proposed development.



Figure 1: Site Location

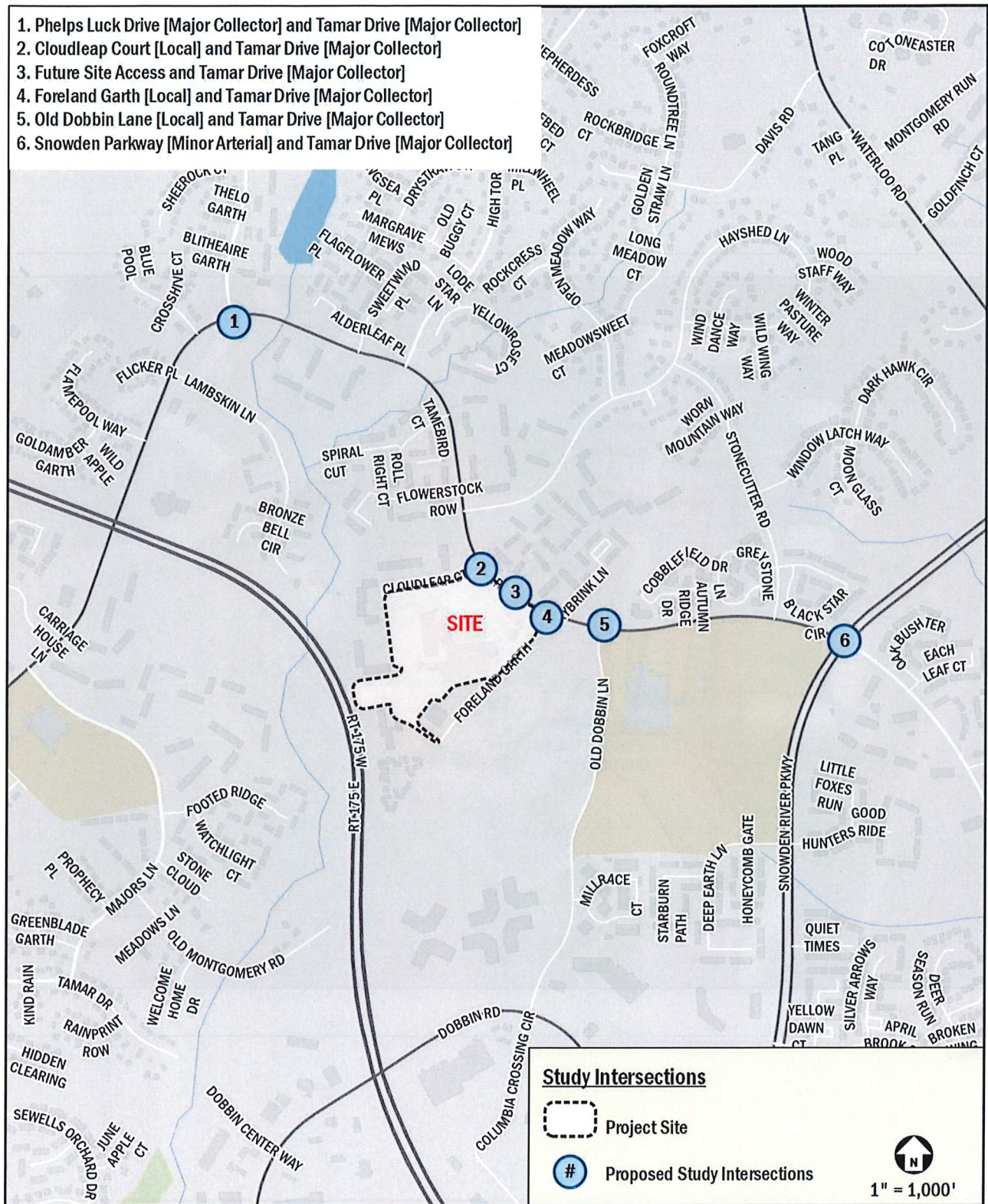


Figure 2: Study Intersections



Figure 3: Conceptual Site Plan

Section 2: Multimodal Overview

This section provides an overview of the area transportation network, transit, pedestrian and bicycle infrastructure surrounding the Project.

Overview of Local Access

The site is accessed via local vehicular network that includes Tamar Drive (Major Collector), Foreland Garth and Cloudleap Court which connects to other local and regional roadways. These routes provide ample connectivity within the Washington, DC Metropolitan area and its inner suburbs, as well as regional destinations in Maryland and Virginia.

Transit Service

The site is located in the immediate vicinity of two (2) RTA bus routes (402 and 408) which provides connections to the mall in Columbia. The RTA route 402 runs from 7:46 AM to 5:46 PM on weekdays, 8:46 AM to 5:46 PM on Saturdays, and 9:46 AM to 5:46 PM on Sundays, with frequencies of up to 60 minutes in each direction. The 408 route service runs from 6:16 AM to 11:16 PM on weekdays, 8:16 AM to 10:16 PM on Saturdays, and 9:16 AM to 8:16 PM on Sundays, with frequencies of up to 60 minutes in each direction. The existing bus stops near the site are shown in Figure 4.

Pedestrian and Bicycle Infrastructure

Regarding pedestrian and bicycle infrastructure, a multimodal sidepath, the Elkhorn Branch Trail, is present to the west of the site. This loop trail is approximately 1.9 miles long running through Elkhorn Branch wetlands in the heart of Columbia. The development proposes to integrate access to this trail.

Sidewalks exist around the site frontage along Foreland Garth, Tamar Drive and Cloudleap Court. Per WalkHoward, sidewalks

facilities improvements were identified south along Foreland Garth and around the site building with sidewalk improvements identified along Cloudleap Court, Tamar Drive and north along Foreland Garth.

The WalkHoward pedestrian facilities improvements are shown below in Figure 4.

Separated bike lanes exit along southbound Old Dobbin Lane. BikeHoward, the Howard County Bicycle Master Plan, guides transportation and recreational biking improvements both on-street and off-street. The proposed BikeHoward network is divided into short-term (10 years), mid-term (10 to 20 years), and long-term (20 to 30 years) improvements. Per BikeHoward Recommendations, short-term bike lanes are recommended along Tamar Drive and mid-term Sharrows are recommended along Cloudleap Court.

The recommended bicycle facilities improvements are shown in Figure 5.

Additional improvements are planned in the vicinity of the proposed development as part of the Tamar Drive Complete Streets project. The Tamar Drive Complete Streets project includes a road diet with dedicated bicycle lanes and high-visibility crosswalks in the vicinity of the proposed development and along the site frontage. The planned improvements are detailed in the Tamar Drive Complete Street Project section of this report and shown in Figure 8.

The project also includes a network of pedestrian and bicycle facilities designed to further enhance connectivity in the area.



Figure 4: WalkHoward Pedestrian Facilities Improvements



Figure 5: BikeHoward Bicycle Facilities Improvements

Section 3: Travel Demand Assumptions

This section outlines the anticipated transportation demand of the Project based on the proposed development plan for the Project.

Consistent with the Howard County Guidelines for Traffic Impact Studies, trip generation calculations were based on the methodology outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation*, 11th Edition.

The existing site consists of approximately 71,896 sf of retail and 15,000 sf of office use. Trip generation rates for "Shopping Plaza (40-150k) with Supermarket" (Land Use Code 821) for retail and "General Office Building" (Land Use Code 710) for existing office use.

Trip generation rates for "Multifamily Housing (Mid-Rise)" (Land Use Code 221) were used for the proposed multifamily units, "Single-Family Housing" (Land Use Code 215) for the proposed townhomes, "Health and Fitness Center" (Land Use Code 492) for the proposed multi-sport complex, "Strip Retail Plaza (<40k)" (Land Use Code 822) for proposed retail uses under 40k sf, and "Shopping Plaza (40-150k)" (Land Use Code 821) for retail over 40k sf.

Internal Capture and Reductions

No pass-by or modal splits were applied to either the existing or proposed trip generation to provide a conservative estimate.

The mixed-use nature of the project is anticipated to generate internal trips among various uses. These trips were calculated in accordance with ITE methodology and reviewed and approved by Staff as part of scoping. A detailed summary is provided in the Technical Attachments.

A summary of the proposed net trip generation is presented in Table 1. Full trip generation calculations are included in the Technical Attachments.

Based on these calculations, the proposed Project would result in the following net changes in trip generation for the site:

- 514 net new external vehicle trips during the weekday morning peak hour (263 inbound and 251 outbound).
- 880 net new external vehicle trips during the weekday afternoon peak hour (451 inbound, 429 outbound).
- 802 net new external vehicle trips during the Saturday peak hour (412 inbound and 390 outbound).

Since the driveways counts provide access to other developments, including the existing site, the traffic analysis and forecasts for future roadway volumes with the project are based on the net external trips.

Note the development program analyzed in this report aligns with the version submitted to Staff during scoping. While the proposed densities have since been refined and differ in the latest plan, this study is based on the scoped development program as a conservation approach, as the scoped program results in a higher number of peak hour trips than the updated plans.

The trip generation for the latest plan is shown in Table 2 and the trip generation comparison between the analyzed/scoped and the latest plan is shown in Table 3.

As shown in Table 3, the scoped development program results in a higher number of peak hour trips than the updated plans.

Table 1: Trip Generation

Land Use	Land Use Code	Quantity (x)	AM Peak Hour (veh/hr)			PM Peak Hour (veh/hr)			Saturday Peak Hour (veh/hr)			
			In	Out	Total	In	Out	Total	In	Out	Total	
Existing Land Use												
Shopping Plaza (40-150k) with Supermarket	821	71,896 sf	157	97	254	322	348	670	342	329	671	
General Office Building	710	15,000 sf	29	4	33	6	28	34	4	4	8	
Total Existing			186	101	287	328	376	704	346	333	679	
Proposed Land Use												
Phase -1												
Multifamily (Mid-Rise)	221	157 du	13	44	57	38	24	62	32	31	63	
Shopping Plaza (40-150k) with Supermarket	821	54,341 du	119	73	192	257	279	536	274	264	538	
Phase-1 Total			132	117	249	295	303	598	306	295	601	
Phase -2												
Multifamily (Mid-Rise)	221	137 du	11	38	49	33	21	54	28	27	55	
Shopping Plaza (40-150k) with Supermarket	821	56,879 sf	125	76	201	266	289	555	284	273	557	
Phase-2 Total			136	114	250	299	310	609	312	300	612	
Phase -3												
Recreational Community Center	495	103,687 sf	131	67	198	128	144	272	60	51	111	
Phase-3 Total			131	67	198	128	144	272	60	51	111	
Phase -4												
Strip Retail Plaza (<40k)	822	38,574 sf	42	28	70	102	101	203	129	124	253	
Phase-4 Total			42	28	70	102	101	203	129	124	253	
Phase -5												
Single Family Attached Housing	215	84 du	10	28	38	27	19	46	28	30	58	
Phase-5 Total			10	28	38	27	19	46	28	30	58	
Total Proposed			451	354	805	851	877	1,728	835	800	1,635	
Net New Trip Generation			265	253	518	523	501	1,024	489	467	956	
Internal Capture												
Total Proposed Retail			253,481 sf	417	244	661	753	813	1,566	747	712	1,459
<i>Internal Capture</i>				-1	-1	-2	-27	-45	-72	-37	-40	-77
Total Proposed External Retail Trips				416	243	659	726	768	1,494	710	672	1,382
Total Proposed Residential			378 du	34	110	144	98	64	162	88	88	176
<i>Internal Capture</i>				-1	-1	-2	-45	-27	-72	-40	-37	-77
Total Proposed External Residential Trips				33	109	142	53	37	90	48	51	99
Net New External Trip Generation												
Net New External Trip Generation				263	251	514	451	429	880	412	390	802

Table 2: Trip Generation for the latest plan

Land Use	Land Use Code	Quantity (x)	AM Peak Hour (veh/hr)			PM Peak Hour (veh/hr)			Saturday Peak Hour (veh/hr)		
			In	Out	Total	In	Out	Total	In	Out	Total
Existing Land Use											
Shopping Plaza (40-150k) with Supermarket	821	71,896 sf	157	97	254	322	348	670	342	329	671
General Office Building	710	15,000 sf	29	4	33	6	28	34	4	4	8
Total Existing			186	101	287	328	376	704	346	333	679
Proposed Land Use											
Phase -1											
Senior Adult Housing - Multifamily	252	200 du	13	26	39	28	22	50	33	28	61
Shopping Plaza (40-150k)	821	73,810 du	79	49	128	188	195	383	246	227	473
Phase-1 Total			92	75	167	216	217	433	279	255	534
Phase -2											
Multifamily (Mid-Rise)	221	255 du	23	78	101	61	39	100	53	50	103
Strip Retail Plaza (<40k)	822	19,650 sf	27	18	45	63	63	126	66	63	129
Phase-2 Total			50	96	146	124	102	226	119	113	232
Phase -3											
Recreational Community Center	495	136,260 sf	172	88	260	155	175	330	79	67	146
Phase-3 Total			172	88	260	155	175	330	79	67	146
Phase -4											
Strip Retail Plaza (<40k)	822	28,610 sf	35	23	58	82	82	164	96	92	188
Phase-4 Total			35	23	58	82	82	164	96	92	188
Phase -5											
Single Family Attached Housing	215	50 du	5	15	20	15	11	26	18	20	38
Phase-5 Total			5	15	20	15	11	26	18	20	38
Total Proposed			354	297	651	592	587	1,179	591	547	1,138
Net New Trip Generation			168	196	364	264	211	475	245	214	459

Table 3: Trip Generation Comparison

Development Program	AM Peak Hour (veh/hr)			PM Peak Hour (veh/hr)			Saturday Peak Hour (veh/hr)		
	In	Out	Total	In	Out	Total	In	Out	Total
Analyzed/Scoped Program - Total Proposed (Table 1)	451	354	805	851	877	1,728	835	800	1,635
Latest Program Total - Proposed (Table 2)	354	297	651	592	587	1,179	591	547	1,138
Net Trips (Latest – Analyzed/Scoped)	-97	-57	-154	-259	-290	-549	-244	-253	-497

Section 4: Existing Conditions

This section provides a summary of the assumptions for the existing conditions capacity analyses for the study area network.

Existing Geometry and Operations Assumptions

Existing roadway geometry, lane configurations, and traffic controls were based on field observations taken during the data collection effort.

Existing lane configurations and traffic controls are shown in Figure 6.

2025 Existing Traffic Volumes

Existing weekday turning movement traffic count data was collected on Thursday, May 15, 2025 at all study intersections except for the Old Dobbin Lane intersection for which count data was collected on Tuesday, September 9, 2025. All counts were collected while public schools, including the nearby high school, and local government were in session, from 6:30 to 9:30 AM and 4:00 to 7:00 PM.

Existing Saturday counts were collected from 10:00 AM to 2:00 PM on Saturday, May 17, 2025 at all study intersections except for the Old Dobbin Lane intersection for which Saturday counts were collected on September 13, 2025

The existing peak hour traffic volumes for all intersections are shown in Figure 7.

Turning movement count data is included in the Technical Attachments.

Comments were received from County Staff requesting the inclusion of the Old Dobbin Lane and Tamar Drive intersection after data collection was completed in May. Since data could not be collected during the Summer, counts were collected later in early September at this intersection when schools were back in session.

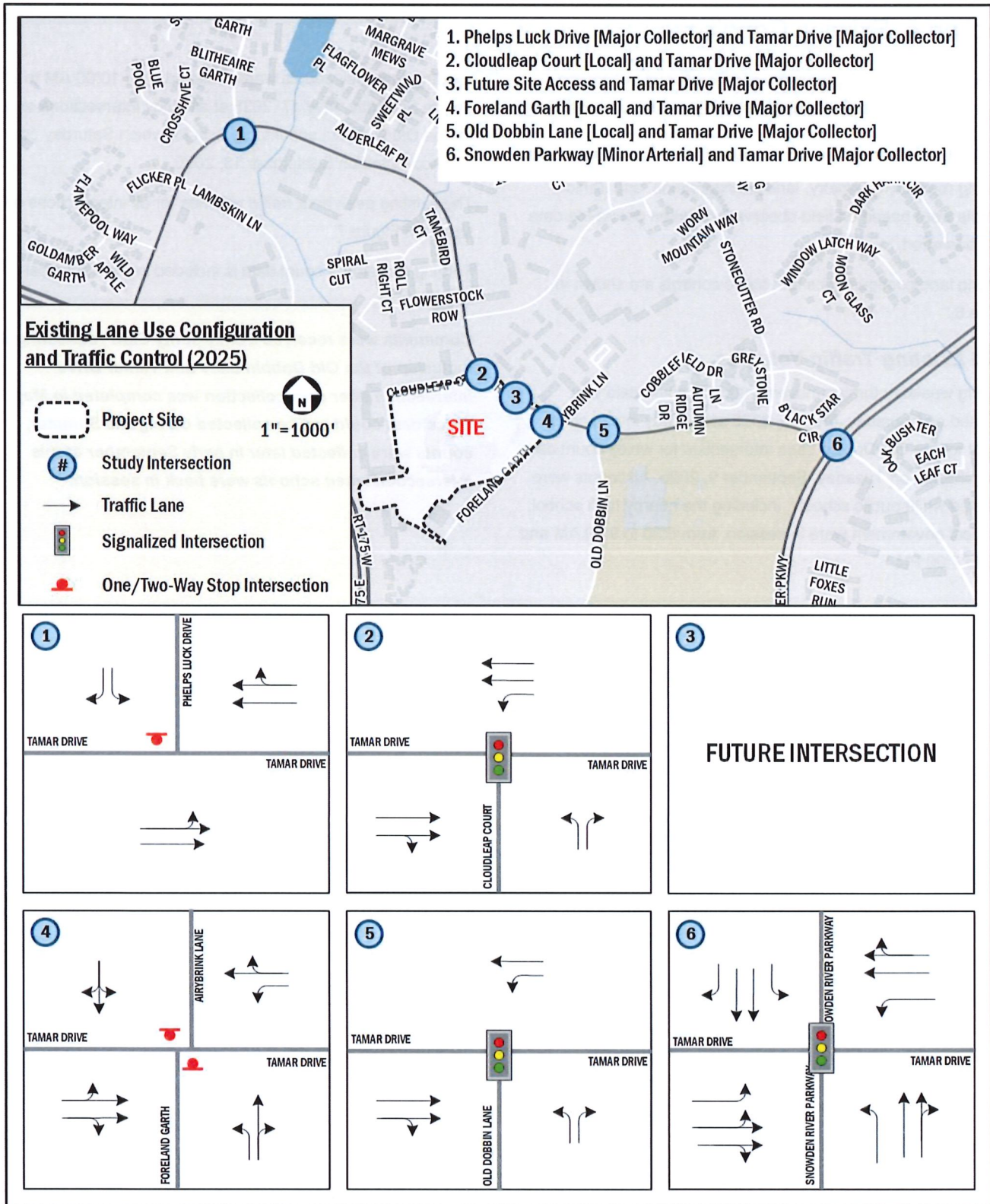


Figure 6: Existing Lane Configuration and Traffic Controls

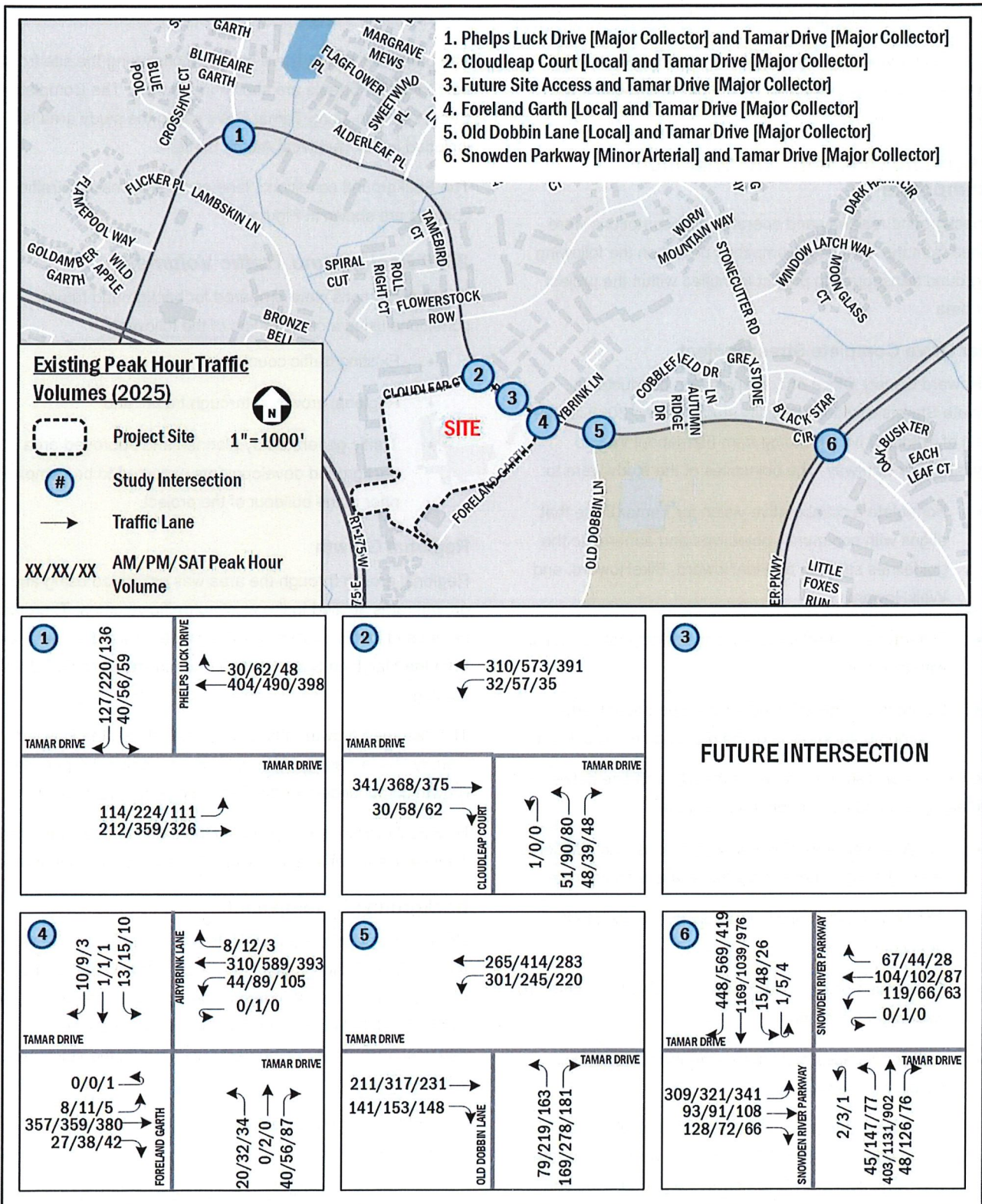


Figure 7: Existing Peak Hour Traffic Volumes (2025)

Section 5: Background Conditions

This section provides a summary of the assumptions for the background (without development) capacity analyses for the study area network.

Background Geometry and Operations Assumptions

The background roadway and operational assumptions were modified from the existing assumptions based on the following background transportation project identified within the project study area:

Tamar Drive Complete Street Project

The Howard County Office of Transportation conducted a Complete Streets corridor feasibility study in June 2020 for the section of Tamar Drive extending from Flamepool Way to Snowden River Parkway. The objectives of the study were to:

- Formulate a collaborative vision for Tamar Drive that aligns with community objectives and adheres to the guidelines set forth by PlanHoward, BikeHoward, and WalkHoward.
- Determine cost-effective enhancements that are in line with this vision.
- Evaluate and quantify the safety, operational, and environmental impacts of the proposed modifications.

Improvements on Tamar Drive along the site frontage between Cloudleap Court and Old Dobbin Lane include:

- Single travel lanes along both directions with additional left and/or right turn storage lane where appropriate
- Addition of a 6' dedicated bicycle lanes along both directions
- Conversion of an 11' turn lane/ median into a center 10' two-way left turn lane
- Additional pedestrian improvements including high visibility crosswalks

The proposed development aims to meet the study's objectives by enhancing pedestrian, bicycle, and transit facilities near the site and improving connectivity to nearby neighborhoods and community destinations.

The proposed Tamar Drive modifications along the site frontage per Complete Streets are shown in Figure 8. The Complete Streets Design along Tamar Drive within the study area is included in the Technical Attachments.

The Background condition's lane configurations and traffic controls are shown in Figure 9.

2030 Background Traffic Volumes

Traffic projections were prepared for background future conditions using a combination of the following:

- Existing traffic count data;
- Regional growth in through traffic; and
- Traffic generated by planned and approved area background developments expected to be completed prior to the buildout of the project.

Regional Growth

Regional growth through the area was estimated using annual growth rates applied to the existing traffic volumes. The growth rates used in this analysis were estimated based on data taken from the Maryland State Highway Administration's GIS data catalog.

The assumed growth rates are consistent with the Howard County Guidelines requirements of a projected 2% per year growth compounded for the first three years of a project.

Historical growth rates applied in the traffic forecast are shown in Table 4. Regional traffic growth volumes are shown in Figure 10.

Background Developments

No pipeline development projects were identified in the vicinity of the site for inclusion in this study. Consistent with Howard County and industry standards, only approved projects expected to be completed prior to the buildout of the proposed development with an origin/destination within the study area were reviewed.

The 2030 background peak hour traffic volumes shown in Figure 11 are comprised of:

- The existing traffic volumes shown in Figure 7; and
- The regional growth in through traffic shown in Figure 10.

Table 4: Historical Growth Rates

Route	Location	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Annual % Change (2015 - 2024)	Growth Rate Applied for Future Conditions (2025-2030)
Tamar Drive	0.1 mi N of MD 175	12,404	12,645	12,990	12,871	12,872	10,753	12,304	12,385	11,900	11,861	-0.3%	2.0%
Snowden River Parkway	0.2 mi N of MD 175	30,603	31,184	31,935	32,540	32,541	27,172	31,093	31,284	31,755	25,490	-1.7%	2.0%

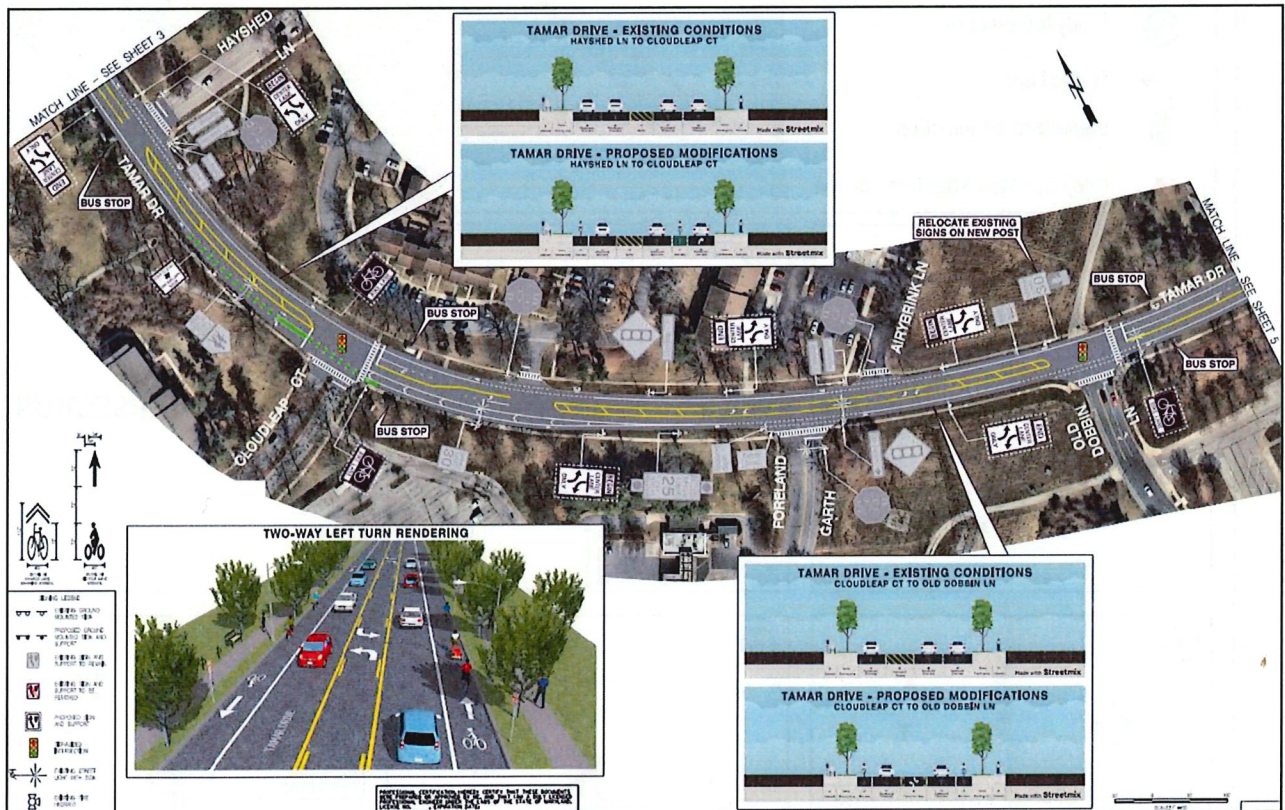


Figure 8: Tamar drive Complete Streets Design along Site Frontage

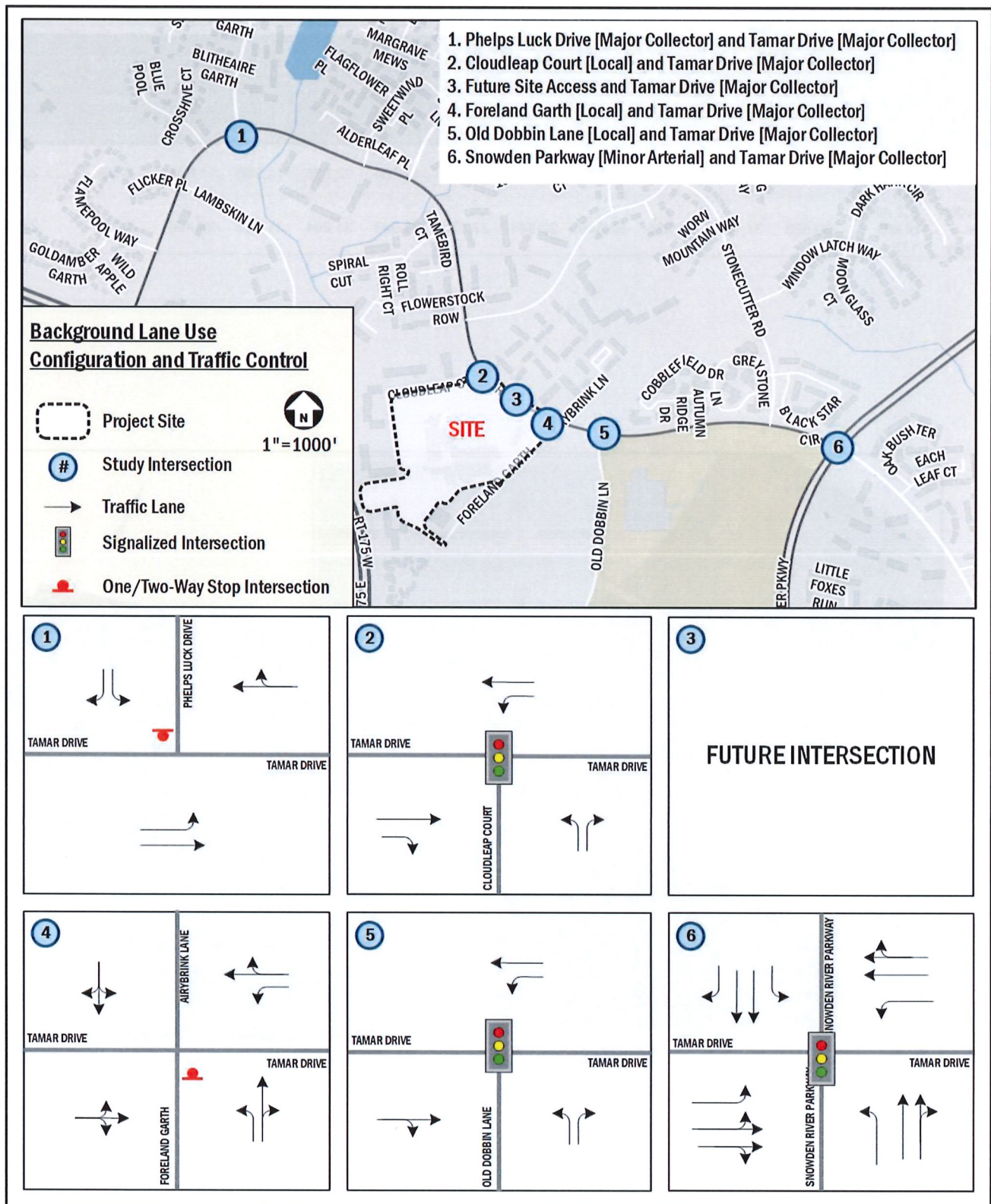


Figure 9: Background Lane Configuration and Traffic Controls

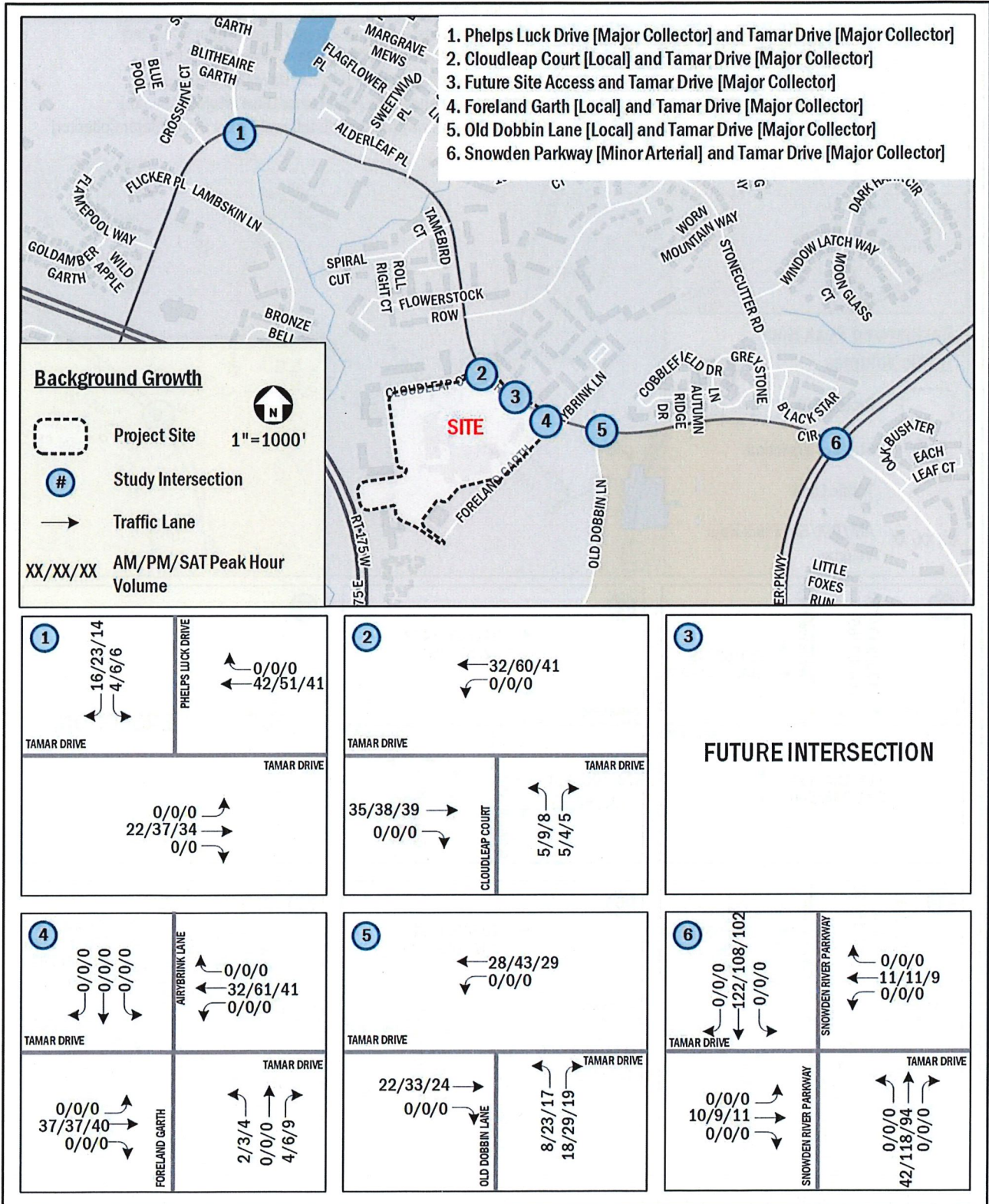


Figure 10: Background Growth

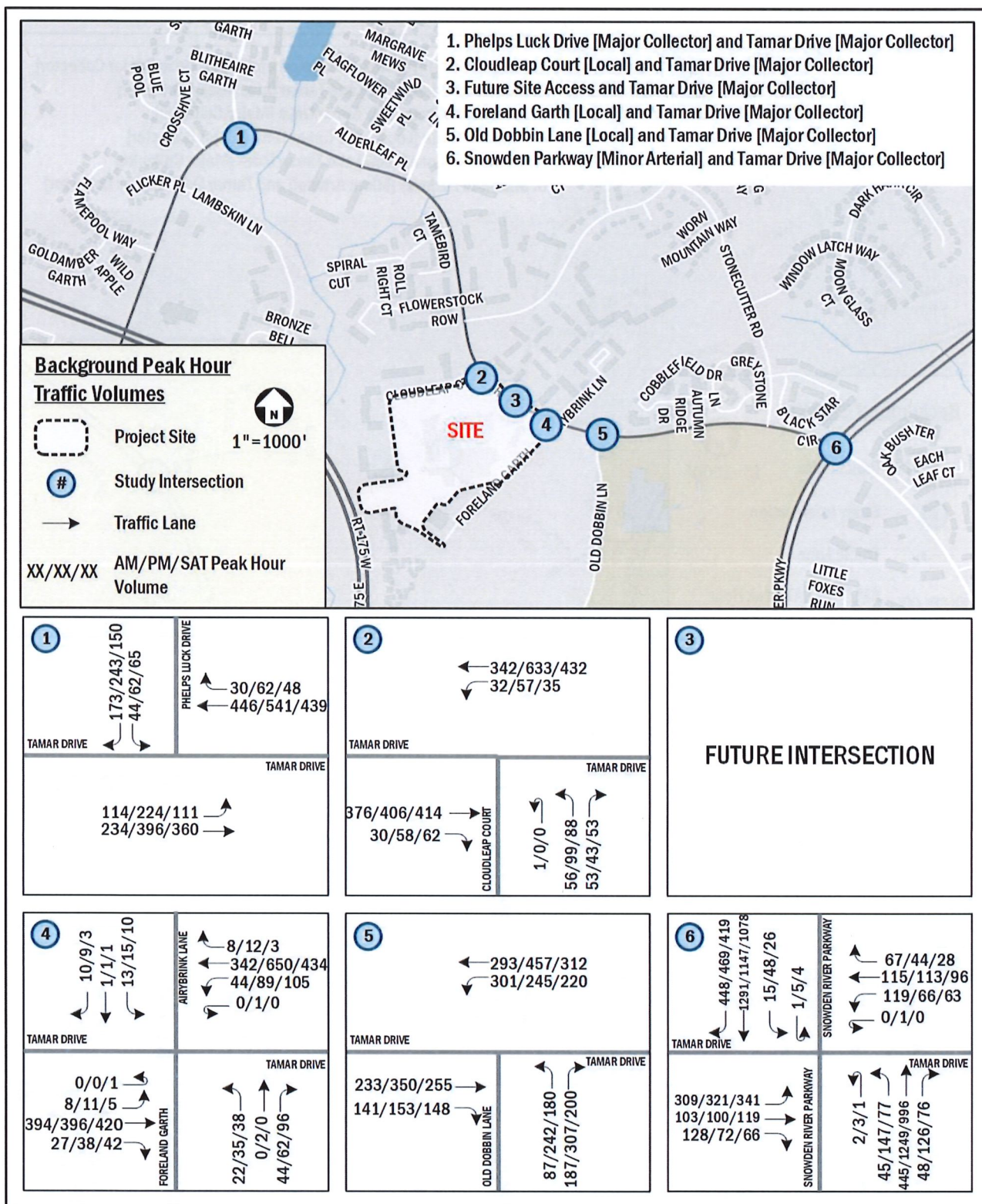


Figure 11: Background Peak Hour Volumes

Section 6: Future Conditions

This section provides a summary of the total future (with development) assumptions for the capacity analyses for the study area network.

Future Geometry and Operations Assumptions

Future assumptions for the off-site road network and operations were modified from the background assumptions. As part of the project, the following modifications are planned at the study intersections:

- New midblock site access along Tamar Drive between Cloudleap Court and Foreland Garth
 - This will be a limited access driveway with Right-in/Right-out only
- Signalization of Foreland Garth and Tamar Drive
 - A signal warrant analysis was prepared for the proposed signal to evaluate whether future
 - While Foreland Garth is located approximately 100 west of Airybrink Lane, the side streets were analyzed with north-south split phasing as a conservative measure
 - Replacement of the center two-way left turn lane with dedicated left turn lanes from Tamar Drive at the new signalized intersection

The Project will have access to the surrounding roadway network via a new right-in/right-out connection at Tamar Drive, two (2) connections on Foreland Garth, and one (1) connection on Cloudleap Court.

The Total Future condition's lane configurations and traffic controls are shown in Figure 12.

2030 Total Future Traffic Volumes

The 2030 total future traffic volumes represent future conditions with the buildout of the proposed development and all growth assumptions included for 2030 background conditions.

Site trip distributions were assigned to the roadway network using distribution factors based on the current directional distribution of volumes in the study area. The inbound and outbound site trip distributions are shown in Figure 13 and Figure 14.

The 2030 total future peak hour volumes are shown in Figure 16 and consist of:

- The 2030 background peak hour traffic volumes shown in Figure 11; and
- The addition of net site-generated external trips for the proposed Project shown in Figure 15.

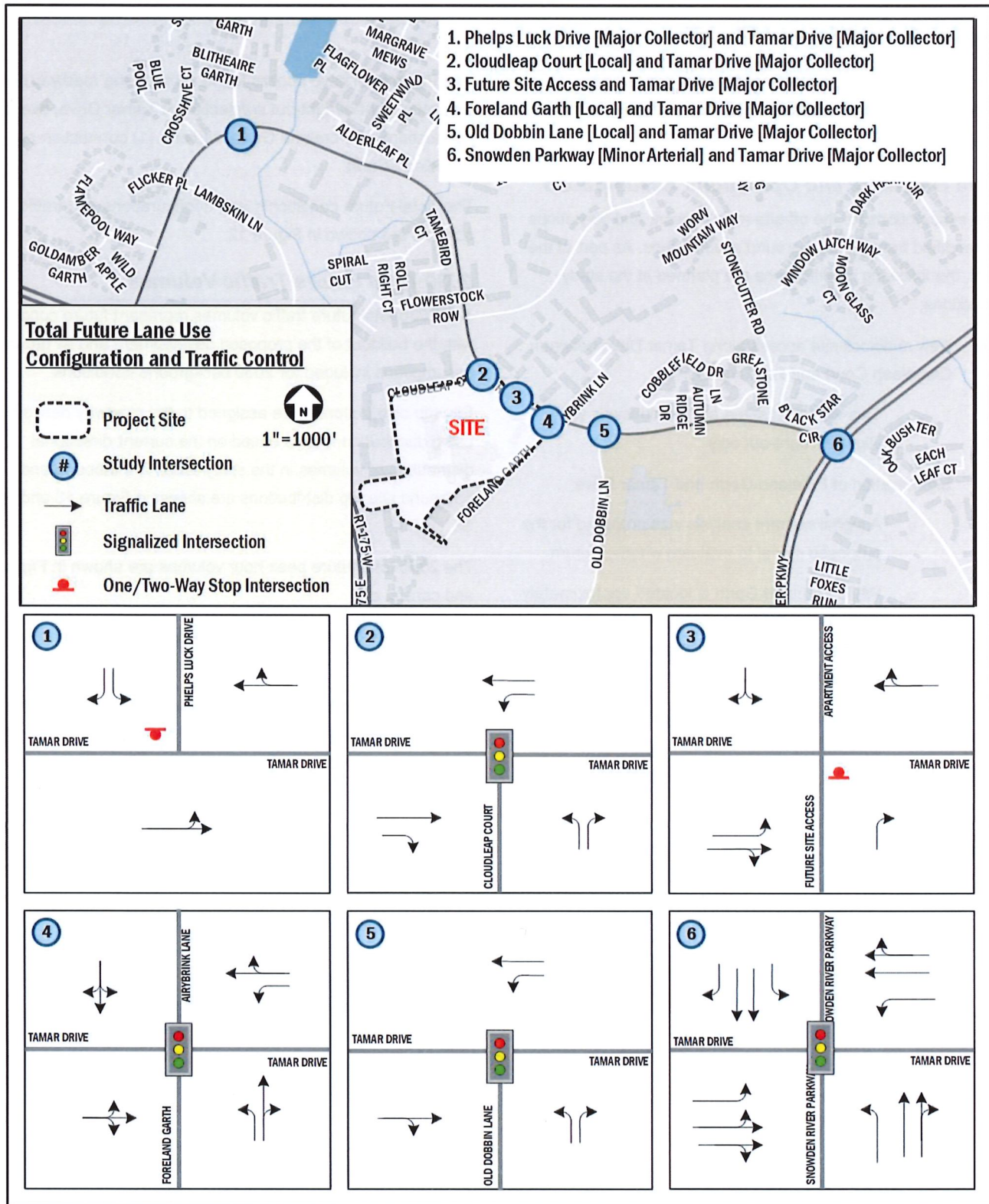


Figure 12: Total Future Lane Configuration and Traffic Controls

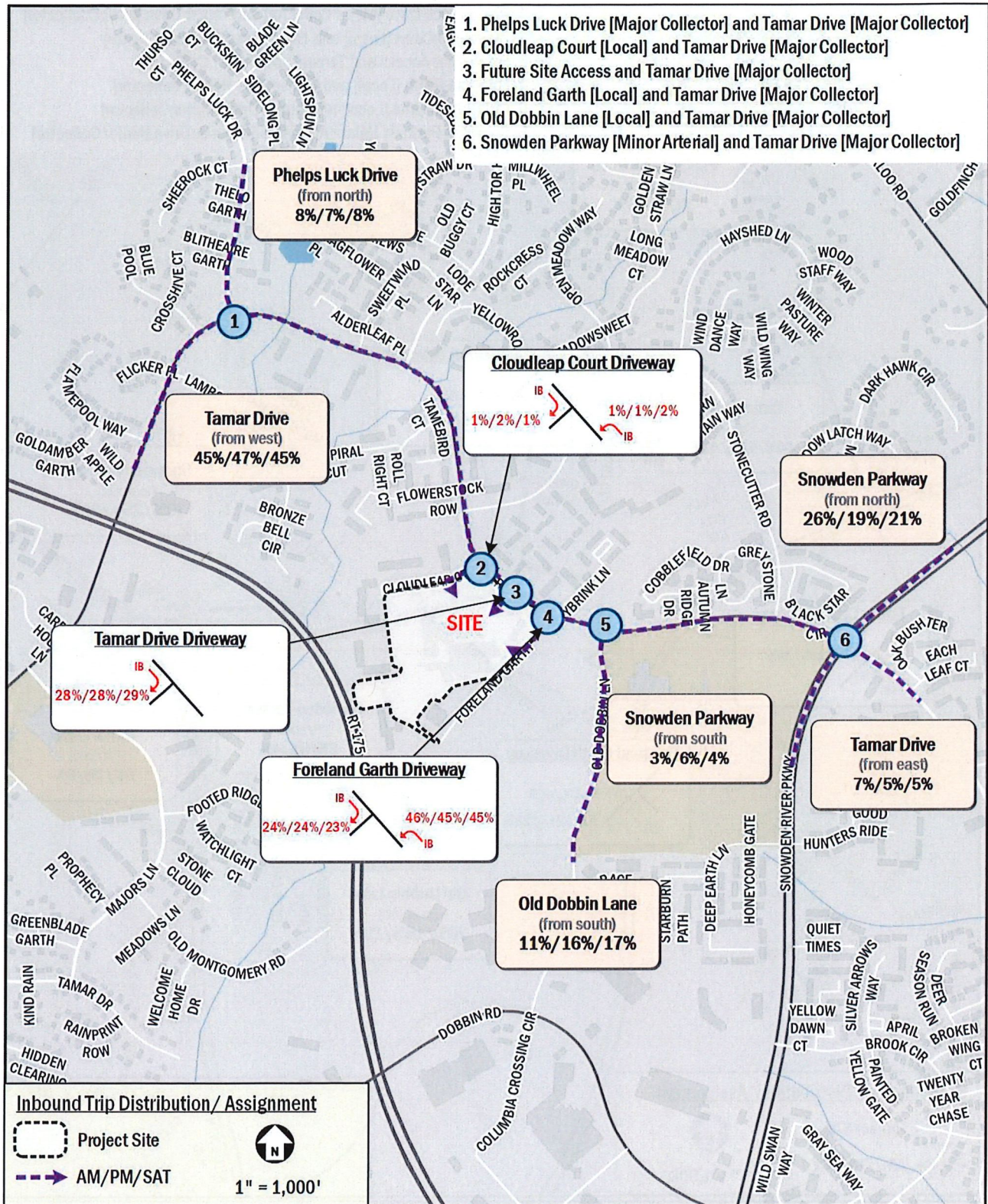


Figure 13: Inbound Site Trip Distribution/Assignment

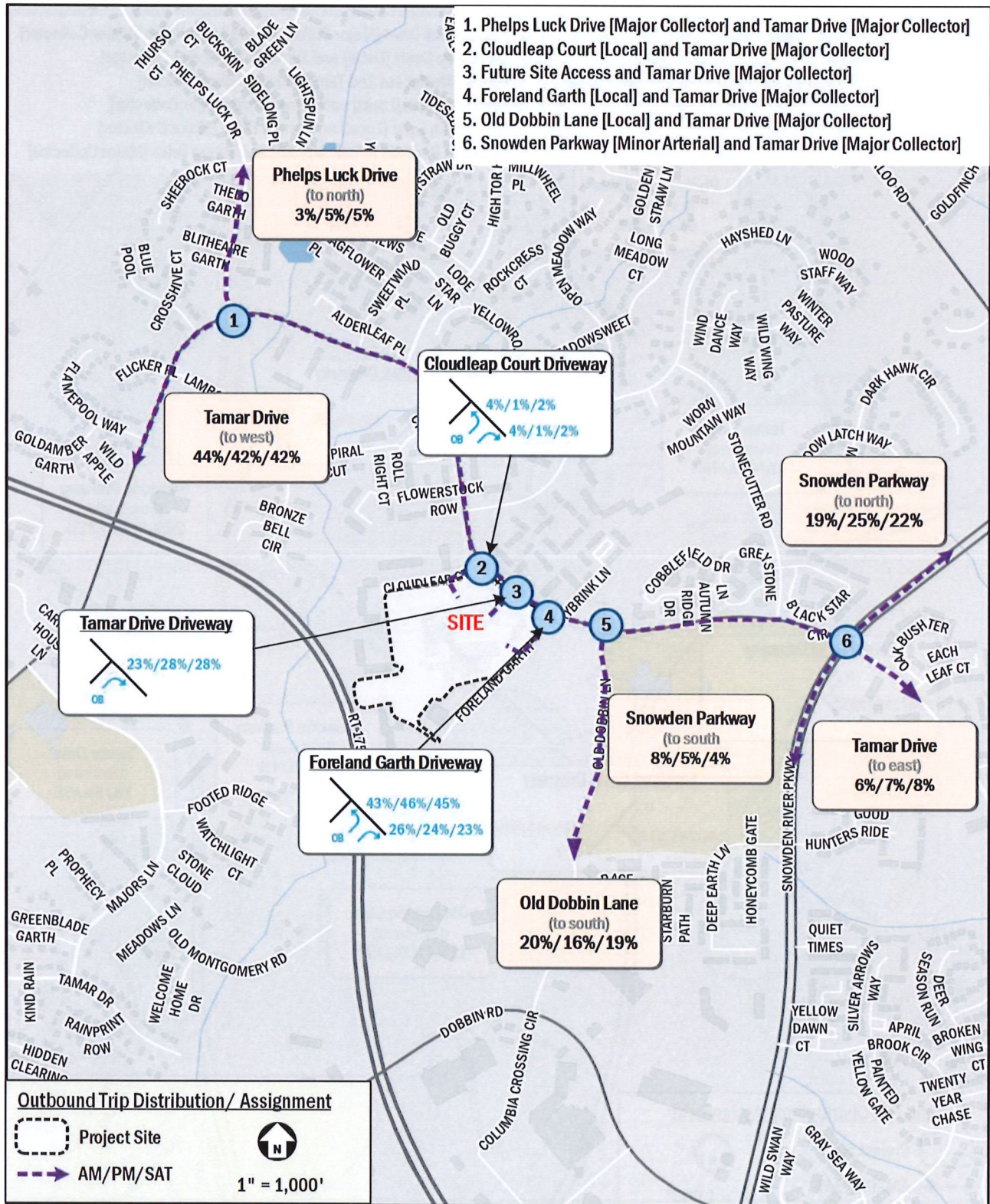


Figure 14: Outbound Site Trip Distribution/Assignment

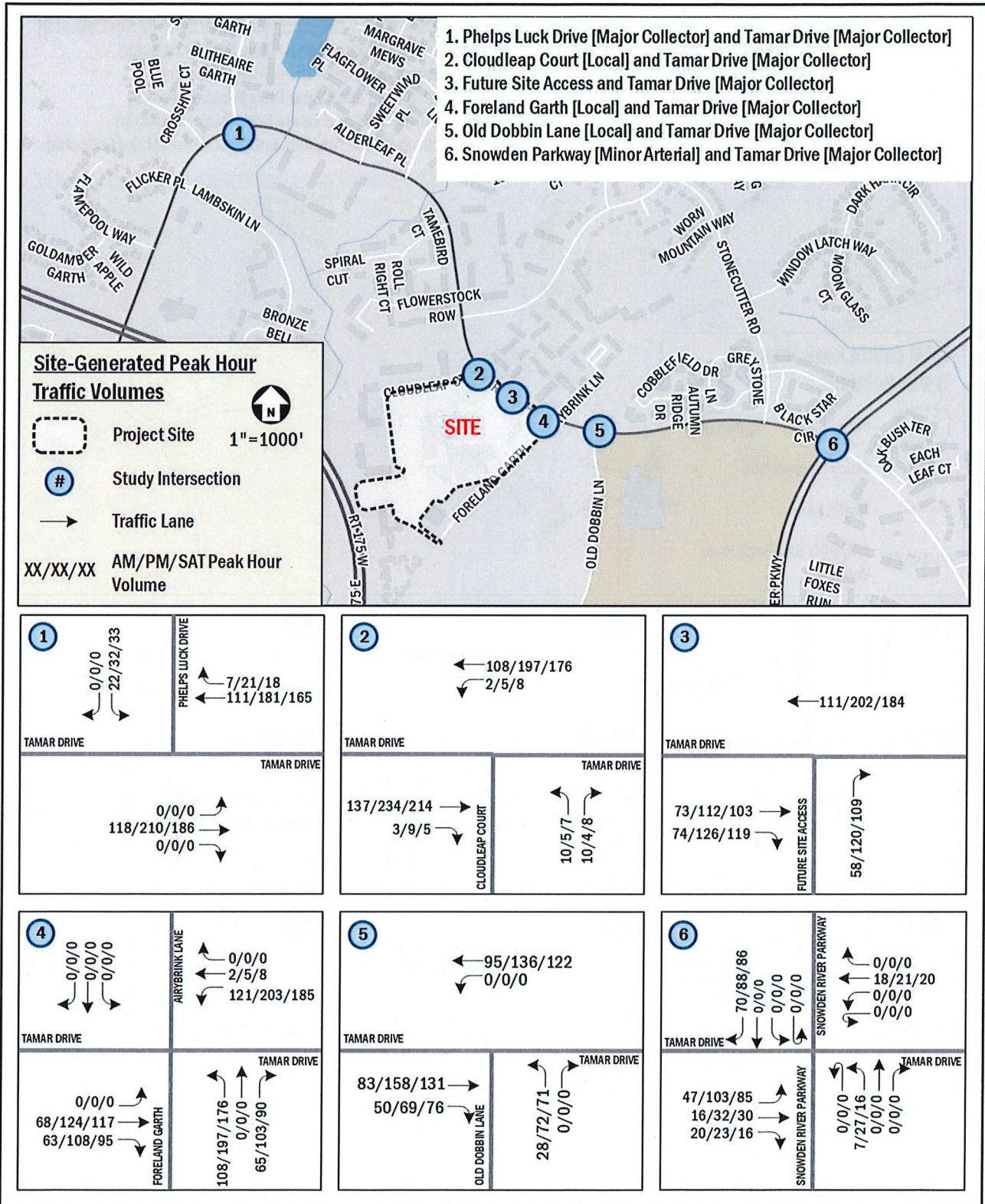


Figure 15: Site-Generated Net Peak Hour Volumes

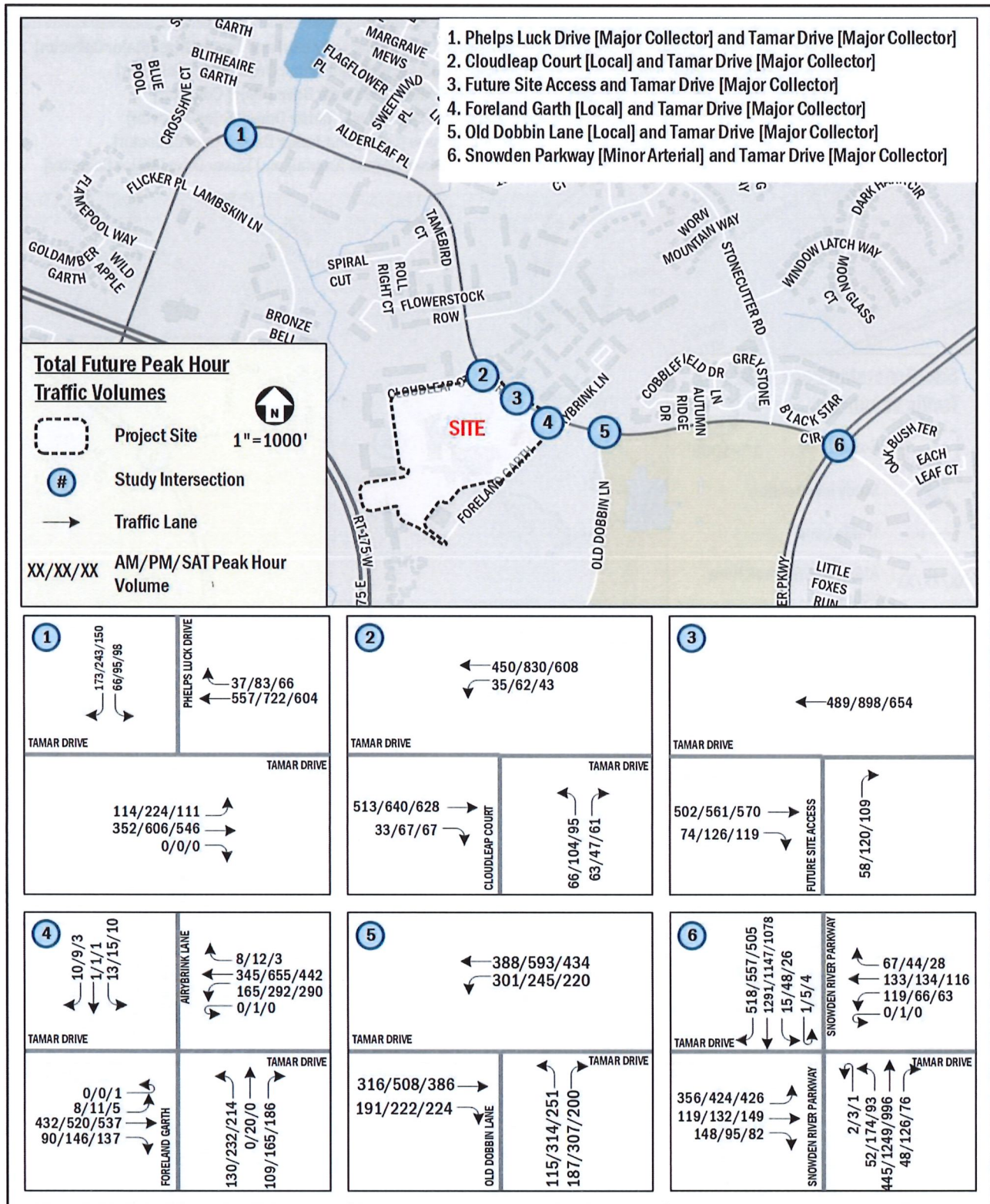


Figure 16: Total Future Peak Hour Volumes

Traffic Signal Warrant Analysis

A traffic signal warrant study was conducted at the Tamar Drive and Foreland Garth intersection to determine if a new traffic signal is warranted.

The intersection was evaluated based on the total future conditions with the project and in accordance with MDSHA's (Maryland State Highway Administration) MUTCD (Manual on Uniform Traffic Control Devices) standards and guidelines for Warrant 1, Eight Hour Vehicle Volume, Warrant 2, Four Hour Vehicle Volume and Warrant 3, Peak Hour.

Warrant 1: Eight Hour Vehicular Volume

- The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:

A. The vehicles per hour given in both of the 100 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection;
or

B. The vehicles per hour given in both of the 100 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

In applying each condition the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.

Warrant 2: Four Hour Vehicular Volume

- The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 17 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.

Warrant 3: Peak Hour Volume

- The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 18 for the existing combination of approach lanes.

The total future hourly volumes satisfy the conditions for Warrants 1, 2 and 3, warranting a traffic signal at this intersection under Total Future conditions with the project.

The signal warrant worksheets are included in the Technical Attachments.

The future conditions were analyzed assuming a traffic signal at the Foreland Garth and Tamar Drive intersection.

Table 5: Warrant 1, Eight Hour Vehicular Volume (Total Future Total Volumes)

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% ^a	80% ^b	70% ^c	56% ^d	100% ^a	80% ^b	70% ^c	56% ^d
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% ^a	80% ^b	70% ^c	56% ^d	100% ^a	80% ^b	70% ^c	56% ^d
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

	MAJOR ST BOTH APPROACHES	HIGHEST HOUR MINOR ST HIGHEST APPROACH	WARRANT 1, Condition A			WARRANT 1, Condition B		
			Major Street	Minor Street	Both Met	Major Street	Minor Street	Both Met
THRESHOLD VALUES			500	150		750	75	
06:00 AM	80	115	N	N	N	N	Y	N
07:00 AM	905	220	Y	Y	Y	Y	Y	Y
08:00 AM	1,007	256	Y	Y	Y	Y	Y	Y
09:00 AM	907	273	Y	Y	Y	Y	Y	Y
10:00 AM	877	308	Y	Y	Y	Y	Y	Y
11:00 AM	942	375	Y	Y	Y	Y	Y	Y
12:00 PM	1,153	458	Y	Y	Y	Y	Y	Y
01:00 PM	1,029	407	Y	Y	Y	Y	Y	Y
02:00 PM	1,177	390	Y	Y	Y	Y	Y	Y
03:00 PM	1,303	443	Y	Y	Y	Y	Y	Y
04:00 PM	1,511	438	Y	Y	Y	Y	Y	Y
05:00 PM	1,738	509	Y	Y	Y	Y	Y	Y
06:00 PM	1,532	476	Y	Y	Y	Y	Y	Y
07:00 PM	338	393	N	Y	N	N	Y	N
	14,499	5,061	12			12		
			8 HOURS NEEDED SATISFIED			8 HOURS NEEDED SATISFIED		

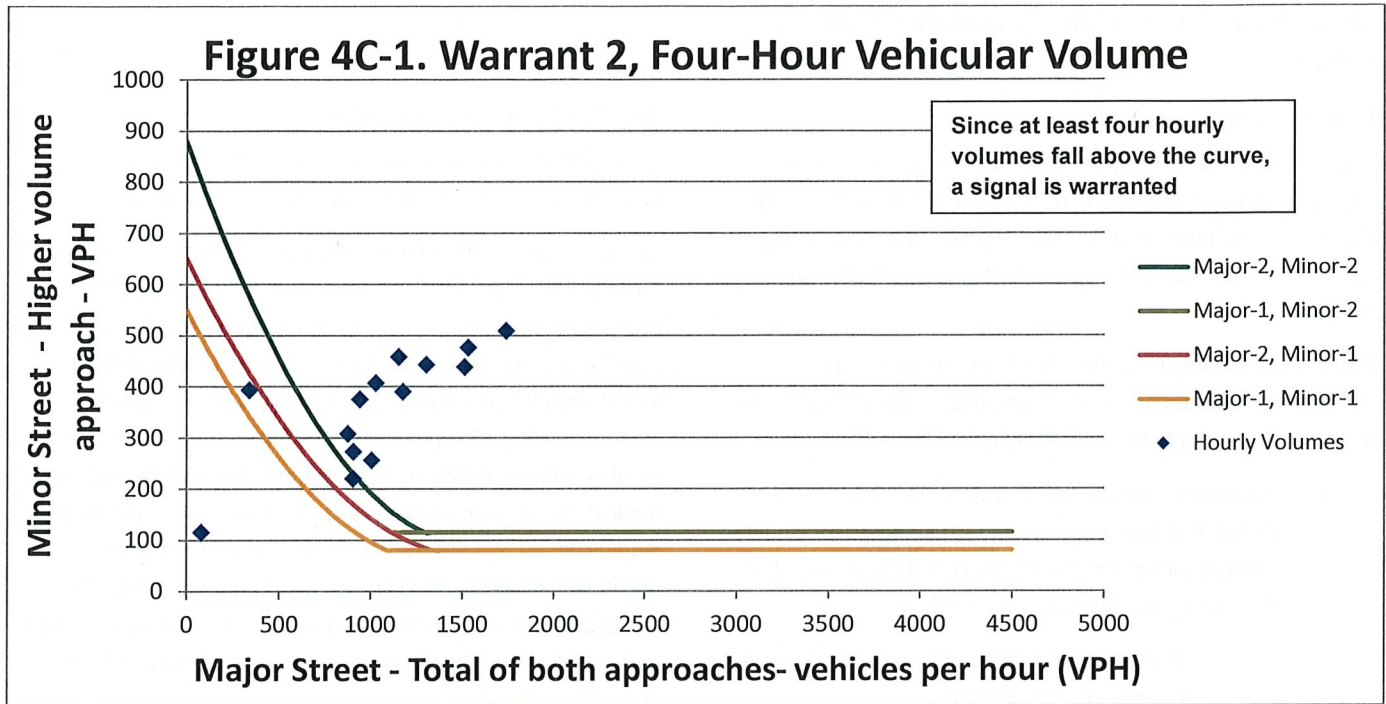


Figure 17: Warrant 2, Four-Hour Vehicular Volume (Total Future Traffic Volumes)

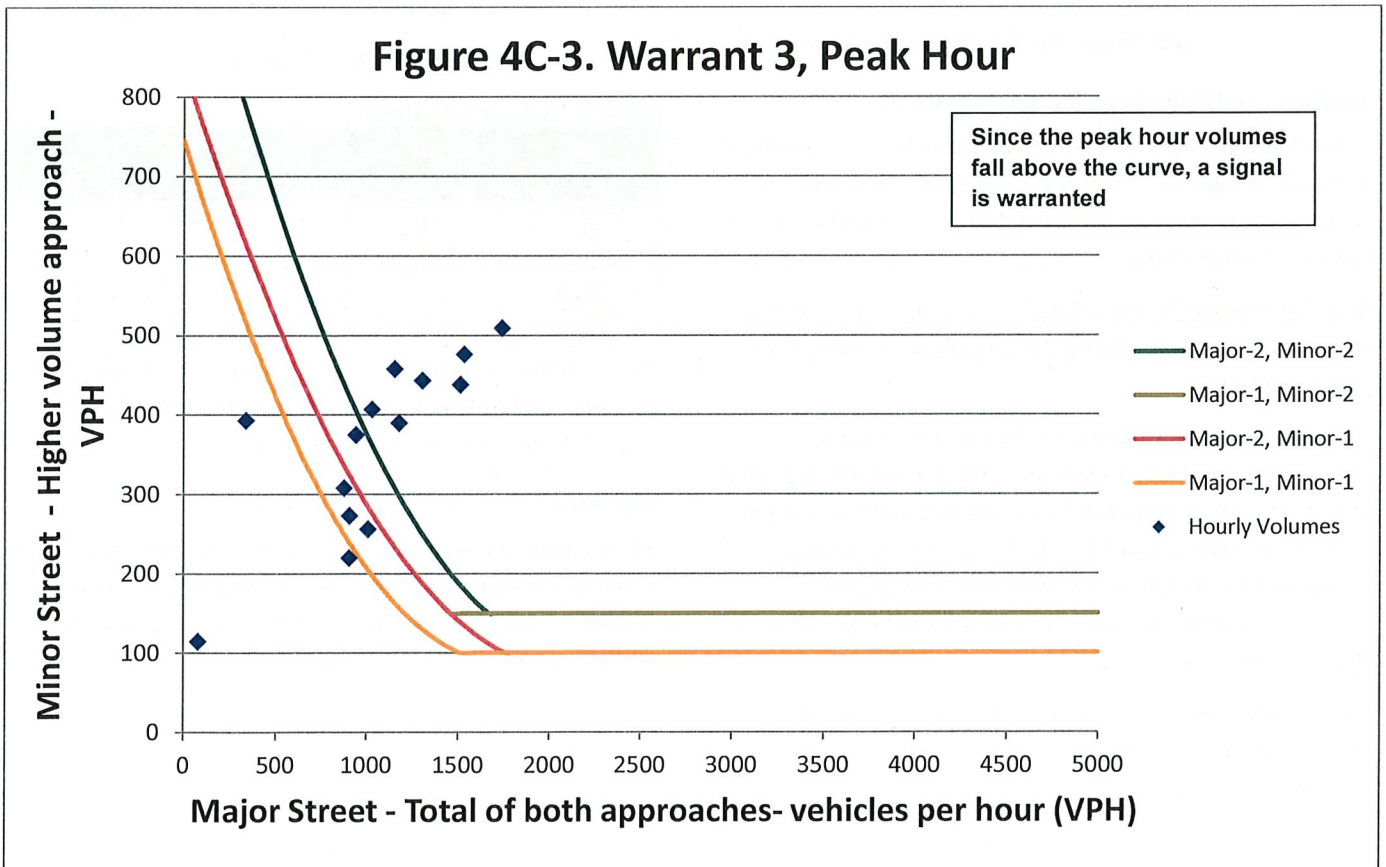


Figure 18: Warrant 3, Peak Hour (Total Future Traffic Volumes)

Section 7: Vehicular Capacity Analysis Results

Intersection Capacity Analysis

Intersection capacity analyses were performed for existing, background future and total future conditions for AM, PM and Saturday peak hours using Howard County analysis procedures, as outlined in the Howard County Guidelines for Traffic Impact Studies.

The Howard County Guidelines for Traffic Impact Studies outlines the following applicable standards for the Project based on its location outside the Downtown Columbia Area:

- For projects outside the Downtown Columbia Area, intersection level of service (LOS) standard for County-controlled intersections is LOS D and the standard for State-controlled intersections is LOS E.
 - All study intersections are along Tamar Drive and are County controlled.
 - Note that all study intersections maintained LOS "D" or better for all study periods both with and without the proposed redevelopment.

Intersection Critical Lane Volumes (CLV)

Critical Lane Volumes (CLV) were analyzed at each of the study intersections based on the existing, background and total future traffic forecasts using the corresponding lane use and traffic control scenarios for each.

Note that u-turn traffic was added to the left turn traffic, and the combined volume was assessed as the left-turn volume when calculating CLVs.

The results of these analyses indicate that all study intersections and site driveways currently and are expected to continue to operate with CLVs well within the allowable congestion standard of LOS "D" for County controlled intersections. Therefore, all study intersections meet Howard County's threshold for adequacy with the proposed development.

The CLV analyses are summarized in Table 7 and detailed evaluation worksheets are included in the Technical Attachments.

Site Driveway Queuing Analysis

A queuing analysis was performed at the three (3) study intersections where site traffic exits onto Tamar Drive.

Queue length for the site driveway was calculated using the guidelines from the Howard County Design Manual. The Manual outlines the procedures for calculating queue lengths at both signalized and unsignalized intersections. For intersections with signal cycle lengths under 120 seconds, queue length is estimated using a simplified formula based on volume. For cycle lengths exceeding 120 seconds, a more detailed methodology is applied, incorporating critical lane analysis, recommended cycle lengths based on Level of Service (LOS), and Poisson distribution modeling. Additionally, guidance is provided for unsignalized intersections, including use of critical gap analysis and conditions under which signalized intersection methods should be applied.

The queues were calculated using the formula for cycle lengths under 120 seconds and the queues are shown in Table 6:

$$Queue\ Length = 1.25 \times Volumes$$

Table 6: Queuing Analysis

Driveway	Storage Length (ft)	Queues (ft)		
		AM Peak	PM Peak	SAT Peak
Cloudleap Court	500	163	189	195
Tamar Drive Access	250	73	150	136
Foreland Garth	1300	299	499	500

Per the above calculation, the queue lengths for the approaches site-generated outbound trips on Tamar Drive are within the storage length available or within the site.

Adequacy

Since all study intersections pass the applicable capacity tests, no off-site intersection or roadway improvements are required to mitigate the impact of site trips expected to be added as a result of the Project.

Table 7: Critical Lane Volume (CLV) Analyses Results

AM Peak Hour		Existing		Background		Total Future	
Intersection		CLV	LOS	CLV	LOS	CLV	LOS
1. Phelps Luck Drive and Tamar Drive		510	A	763	A	881	A
2. Cloudleap Court and Tamar Drive		288	A	465	A	615	A
3. Future Site Access and Tamar Drive		342	A	429	A	634	A
4. Airybrink Lane/Forelan Garth and Tamar Drive		317	A	522	A	860	A
5. Old Dobbin Lane and Tamar Drive		664	A	694	A	767	A
6. Snowden River Parkway and Tamar Drive		1030	B	1103	B	1144	B
PM Peak Hour		Existing		Background		Total Future	
Intersection		CLV	LOS	CLV	LOS	CLV	LOS
1. Phelps Luck Drive and Tamar Drive		748	A	1070	B	1272	C
2. Cloudleap Court and Tamar Drive		405	A	732	A	934	A
3. Future Site Access and Tamar Drive		630	A	696	A	1018	B
4. Airybrink Lane/Forelan Garth and Tamar Drive		415	A	752	A	1206	C
5. Old Dobbin Lane and Tamar Drive		782	A	829	A	961	A
6. Snowden River Parkway and Tamar Drive		1051	B	1127	B	1213	C
Saturday Peak Hour		Existing		Background		Total Future	
Intersection		CLV	LOS	CLV	LOS	CLV	LOS
1. Phelps Luck Drive and Tamar Drive		492	A	748	A	931	A
2. Cloudleap Court and Tamar Drive		355	A	537	A	766	A
3. Future Site Access and Tamar Drive		426	A	470	A	798	A
4. Airybrink Lane/Forelan Garth and Tamar Drive		441	A	673	A	1188	C
5. Old Dobbin Lane and Tamar Drive		609	A	642	A	807	A
6. Snowden River Parkway and Tamar Drive		925	A	992	A	1082	B

Section 8: Summary and Conclusions

This report presents a Traffic Impact Study (TIS) prepared in support of the proposed development of the Long Reach Village Center, the "Project", located at 8775 Cloudleap Court in Howard County, Maryland. The Project is bounded by Cloudleap Court and Tamar Drive to the north, Foreland Garth to the east, Longwood Apartments to the south, and Timber Apartments and Route 175 to the west. This report is prepared to address the APFO test for road adequacy.

For purposes of selecting the appropriate components for this assessment, it is noted that the site is located outside the Downtown Columbia Area.

The purpose of this study is to evaluate the impact of the Project on the surrounding transportation network based on a technical comparison of existing, background, and total future conditions. The scope and methodology included in this study are consistent with the Howard County guidelines for preparing traffic impact studies outside the Downtown Columbia Area.

A scoping letter was submitted to the County Staff requesting approval on the proposed study intersections and methodology. Comments and recommendations provided by the County Staff have been addressed and reflected in the study. The scoping letter is included in the attachments. Note that the required Multimodal Transportation Studies Checklist is provided in the technical attachments of this document.

Proposed Project

The existing site consists of approximately 71,896 sf of retail, 15,000 sf of office space and 404 parking spaces. The Project proposes to redevelop the site to include approximately 294 multifamily, 84 townhomes and 253,481 sf commercial space. The construction is expected to occur in five (5) phases.

Note the development program analyzed in this report aligns with the version submitted to Staff during scoping. While the proposed densities have since been refined and differ in the latest plan, this study is based on the scoped development program as a conservation approach, as the scoped program results in a higher number of peak hour trips than the updated plans.

Based on the conceptual layout, primary access to the development is proposed via Foreland Garth and a new right-

in/right-out only driveway from Tamar Drive. Primary access to the townhomes garage parking is proposed on Cloudleap Court.

As part of the project, the installation of a new traffic signal is proposed at the Tamar Drive and Foreland Garth/Airybrink Lane intersection. A traffic signal warrant analysis was completed to determine whether total future roadway volumes with the project meet signalization thresholds at the Tamar Drive and Foreland Garth/Airybrink Lane intersection. Based on the analysis, future roadway volumes with the project meet signalization thresholds.

Regional connections to the site are provided via Tamar Drive and other roads including Snowden Parkway, Rouse Parkway (MD 175) and Phelps Luck Drive.

Traffic Analysis

To determine the vehicular impact of the Project on the surrounding roadway network, this study includes both a CLV and a driveway queuing assessment. These analyses were prepared for Existing, Background, and Total Future conditions.

The Howard County guidelines recommend the intersection LOS standard for County-controlled intersections as LOS D and the standard for State-controlled intersections as LOS E.

All the intersections in the study area are County-controlled intersections, and the results of these analyses indicate that all existing intersections currently and will continue to operate within Howard County's LOS thresholds, with LOS "D" or better, with the additional traffic generated by the Project. Therefore, no traffic-related mitigation is required for the Project.

The 95th percentile queue for the driveway and roadways exiting the site is expected to be adequately accommodated within the available storage or within the site without impacting any public roads.

Summary and Conclusions

With the completion of the Project and proposed improvements, all study intersections are expected to continue to operate within the County's LOS thresholds without the need for offsite improvements. Therefore, no off-site road improvements are required for this application.

Transportation Technical Attachments

Long Reach Village Center

Howard County, Maryland

October 3, 2025

GOROVE SLADE
Transportation Planners and Engineers

CONTENTS

(Note: Click on heading to navigate directly to each section of the Technical Attachments)

- A. Scoping Letter
- B. Trip Generation Calculations
- C. Existing Turning Movement Counts
- D. Tamar Drive Complete Streets
- E. Signal Warrant Analysis
- F. CLV Worksheet
- G. Multimodal Transportation Studies Checklist

A. Scoping Letter

TECHNICAL MEMORANDUM

To: James Witmer
Krishnakanth Jagarapu
Howard County
Howard County

From: Anila Moorthy, EIT
Maribel Wong
Katie Wagner, PE, PTOE

Date: May 14, 2025

Subject: Long Reach Village Center Development Scoping Letter

Introduction

This memorandum outlines a proposed scope for the Traffic Impact Study to assess the redevelopment of Long Reach Village Center in Howard County, Maryland. As shown in Figure 1, the site is generally bounded by Cloudleap Court and Tamar Drive to the north, Foreland Garth to the east, Longwood Apartments to the south, and Timbers Apartments and Route 175 to the west.

The existing site consists of approximately 71,896 sf of retail, 15,000 sf of office space and 404 parking spaces. The Project proposes to redevelop the site to include approximately 294 multifamily, 84 townhomes and 253,481 sf commercial space. The construction is expected to occur in five (5) phases.

Based on the conceptual layout, primary access is proposed via Foreland Garth and a new midblock access on Tamar Drive. Secondary access for residential uses only/residential parking is proposed from Cloudleap Court.

The proposed concept sketch is shown in Figure 4. A more detailed plan will be included in the Traffic Impact Assessment (TIA) report.

The following summarizes the proposed scope:

- Site access will be access via Cloudleap Court, Foreland Garth and a has midblock crossing along Tamar Drive.
- Five (5) study intersections are proposed to be included for the analysis. The study intersections are:
 - Phelps Luck Drive [Major Collector] and Tamar Drive [Major Collector]
 - Cloudleap Court [Local] and Tamar Drive [Major Collector]
 - Site Access and Tamar Drive [Major Collector]
 - Foreland Garth [Local] and Tamar Drive [Major Collector]
 - Snowden Parkway [Minor Arterial] and Tamar Drive [Major Collector]
- Four (4) transportation-related studies will be considered as background in the study: Tamar Drive Complete Streets Study, PlanHoward, WalkHoward and BikeHoward.
- We propose to analyze weekday AM and PM and Saturday peak period conditions.
 - Existing weekday turning movement traffic count data will be collected on **Thursday May 15, 2025** when public schools are in session, from 6:30 to 9:30 AM and 4:00 to 7:00 PM and on a Saturday from 10:00 AM to 2:00 PM.

- Capacity Analysis will be performed for three scenarios: Existing (2025), Background (Future without Development 2030), and Total Future (Future with Development 2030). The computed results will be verified against the Howard County Guidelines for Traffic Impact Studies.
- A traffic signal warrant will be included in the TIS to determine if a signal would be warranted at Foreland Garth. The following four (4) signal warrants will be analyzed:
 - Warrant 1, Eight-Hour Vehicular Volume
 - Warrant 2, Four-Hour Vehicular Volume
 - Warrant 3, Peak Hour
 - Warrant 4, Pedestrian Volume

Travel Demand Assumptions

Consistent with the Howard County Guidelines for Traffic Impact Studies, trip generation calculations were based on the methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation, 11th Edition.

The development features approximately 294 multifamily, 84 townhomes and 253,481 sf of commercial space. Trip generation rates for "Multifamily Housing (Mid-Rise)" (Land Use Code 221) was used for multifamily units, "Single-Family Housing" (Land Use Code 215) for townhomes, "Health and Fitness Center" (Land Use Code 492) for the multi-sport complex, "Strip Retail Plaza (<40k)" (Land Use Code 822) for retail uses under 40k sf and "Shopping Plaza (40-150k)" (Land Use Code 821) for retail over 40k sf. For the existing land uses, trip generation rates for "Shopping Plaza (40-150k) with Supermarket" (Land Use Code 821) for retail and "General Office Building" (Land Use Code 710) for existing office use.

Internal Capture and Reductions

No pass-by or modal splits were applied to either the existing or proposed trip generation to provide a conservative estimate.

The mixed-use nature of the project is anticipated to generate internal trips among various uses. These trips were calculated in accordance with ITE methodology. Detailed summary is provided in the Appendix.

The total site-generated vehicular trip results with credits and reductions are summarized in Table 1. Full trip generation calculations are included in the Technical Attachments.

Table 1: Trip Generation Summary

Land Use	Land Use Code	Quantity (x)	AM Peak Hour (veh/hr)			PM Peak Hour (veh/hr)		
			In	Out	Total	In	Out	Total
Existing Land Use								
Shopping Plaza (40-150k) w Supermarket	821	71,896 sf	157	97	254	322	348	670
General Office Building	710	15,000 sf	29	4	33	6	28	34
Total Existing			186	101	287	328	376	704
Proposed Land Use								
Baseline Phase 1 (w/o Internal Capture)								
Multifamily (Mid-Rise)	221	157 du	13	44	57	38	24	62
Shopping Plaza (40-150k) w Supermarket	821	54,341 du	119	73	192	257	279	536
Baseline Phase 1 Total			132	117	249	295	303	598
Baseline Phase 2 (w/o Internal Capture)								
Multifamily (Mid-Rise)	221	137 du	11	38	49	33	21	54
Shopping Plaza (40-150k) w Supermarket	821	56,879 sf	125	76	201	266	289	555
Baseline Phase 2 Total			136	114	250	299	310	609
Baseline Phase 3 (w/o Internal Capture)								
Recreational Community Center	495	103,687 sf	131	67	198	128	144	272
Baseline Phase 3 Total			131	67	198	128	144	272
Baseline Phase 4 (w/o Internal Capture)								
Strip Retail Plaza (<40k)	822	38,574 sf	42	28	70	102	101	203
Baseline Phase 4 Total			42	28	70	102	101	203
Baseline Phase 5 (w/o Internal Capture)								
Single Family Attached Housing	215	84 du	10	28	38	27	19	46
Baseline Phase 5 Total			10	28	38	27	19	46

Land Use	Land Use Code	Quantity (x)	AM Peak Hour (veh/hr)			PM Peak Hour (veh/hr)		
			In	Out	Total	In	Out	Total
Total Baseline Proposed			451	354	805	851	877	1,728
Net New Trip Generation			265	253	518	523	501	1,024
Adjusted Trip Generation with Internal Capture								
Total Proposed Retail		253,481 sf	417	244	661	753	813	1,566
		<i>Total Retail Internal Capture*</i>	<i>1</i>	<i>1</i>	<i>2</i>	<i>27</i>	<i>45</i>	<i>72</i>
Total Proposed Residential		378 du	34	110	144	98	64	162
		<i>Total Residential Internal Capture</i>	<i>1</i>	<i>1</i>	<i>2</i>	<i>45</i>	<i>27</i>	<i>72</i>
Net New Trip Generation			263	251	514	451	429	879

Study Overview

Overview of Regional Access

As shown in Figure 1, the site has ample access to regional roadways that connect the site to destinations in Howard County and the greater Baltimore/Washington metropolitan area. The site is directly accessible from Tamar Drive, a Major Collector, which connects to MD-175 and Snowden River Parkway which provides regional access.

Study Area

The Project is located outside the Downtown Columbia area but within planned service area for public water and sewer. According to the Howard County guidelines, the study area should extend up to one and a half miles in all directions from each project entrance on a County or State Road. However, this distance should not exceed beyond the intersection of a major collector road or a higher classified road with another major collector road or higher classified road. The following intersections were identified for inclusion in the study:

1. Phelps Luck Drive [Major Collector] and Tamar Drive [Major Collector]
2. Cloudleap Court [Local] and Tamar Drive [Major Collector]
3. Site Access and Tamar Drive [Major Collector]
4. Foreland Garth [Local] and Tamar Drive [Major Collector]
5. Snowden Parkway [Minor Arterial] and Tamar Drive [Major Collector]

A map of the study intersections is provided in Figure 4.

Relevant Area Studies and Background Projects

The Project will include the following transportation-related studies and plans:

- Tamar Drive Complete Streets Study
- PlanHoward
- WalkHoward
- BikeHoward

No pipeline development projects were identified in the vicinity of the site for inclusion in this study. Consistent with Howard County and industry standards, only approved projects expected to be completed prior to the buildout of the proposed development with an origin/destination within the study area were reviewed.

We request that Howard County Staff identify any specific pipeline developments that should be added to background conditions in this study.

Study Scope and Methodology

The scope and methodology to be used in this study will be consistent with Howard County's guidelines for preparing traffic impact studies. For the purposes of this study, the horizon year of 2030 is assumed for future conditions.

Capacity Analysis Scenario

Vehicular capacity analyses will be prepared for this study to identify the impact of the proposed development within the study area road network. As such, existing, background future (no-build), and total future (build) scenarios will be included for weekday AM, PM and Saturday Peak hours as follows:

- 2025 Existing Conditions
 - Based on traffic count data.
 - Existing weekday turning movement traffic count data to be collected on **Thursday May 15 2025** when public schools are in session from 6:30 to 9:30 AM and 4:00 to 7:00 PM and on a Saturday from 10:00 AM to 2:00 PM.
- 2030 Background Conditions
 - Existing Conditions plus a background traffic growth of 2% per year compounded and background development traffic, but without the proposed redevelopment.
- 2030 Total Future Conditions
 - Background Future Conditions adjusted to account for the proposed development.

Adequacy

The Howard County guidelines recommend the intersection level of service (LOS) standard for County-controlled intersections as LOS D and the standard for State-controlled intersections as LOS E. All the intersections in the study area are County-controlled intersections, and all intersections should continue to operate within Howard County's Level of Service (LOS) thresholds, with LOS "D" or better, with the additional traffic generated by the Project.

According to County guidelines, a mitigation plan must be developed for the intersection(s) that will increase the capacity on road facilities in the study area so that the level of service after construction of the project would be equal to the level of service if the project had not been constructed but not more than the minimum level of service.

Traffic Signal Warrant

A Signal warrant analyses will be conducted based on projected future conditions and in accordance with MDSHA's (Maryland State Highway Administration) MUTCD (Manual on Uniform Traffic Control Devices) standards and guidelines for the following four (4) signal warrants at the Foreland Garth and Tamar Drive intersection:

- Warrant 1, Eight-Hour Vehicular Volume
- Warrant 2, Four-Hour Vehicular Volume
- Warrant 3, Peak Hour
- Warrant 4, Pedestrian Volume



Figure 1: Site Location

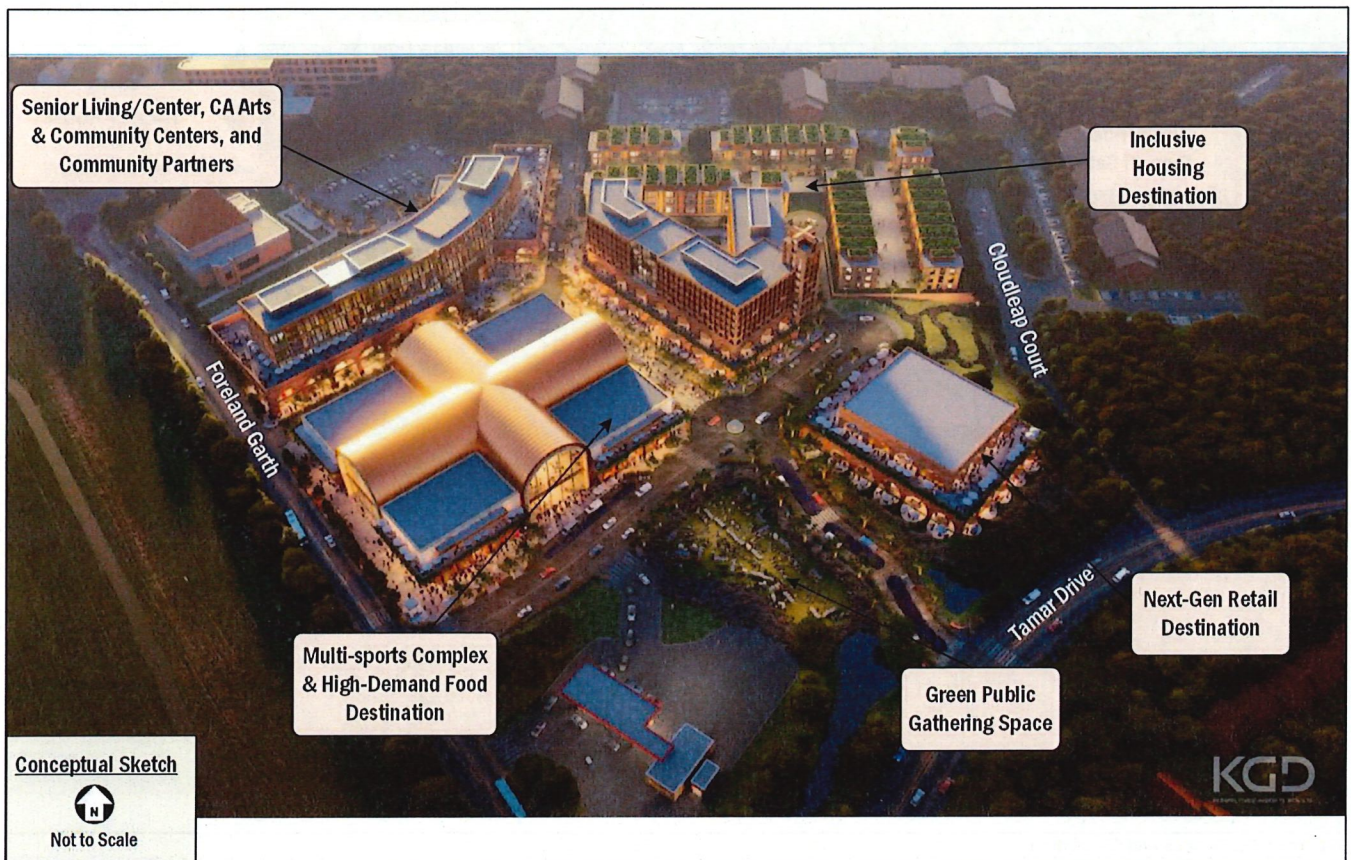


Figure 2: Conceptual Sketch

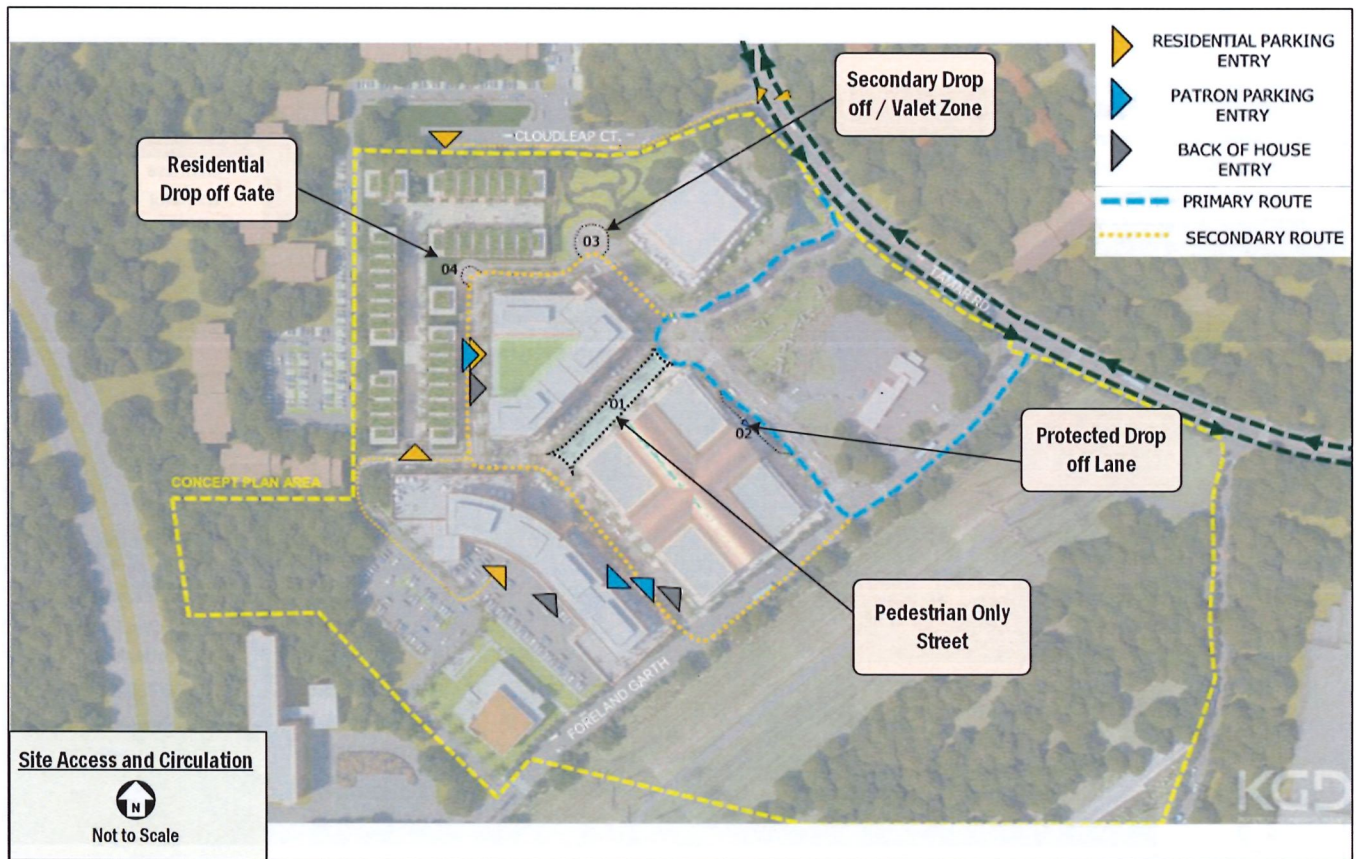


Figure 3: Site Access and Circulation

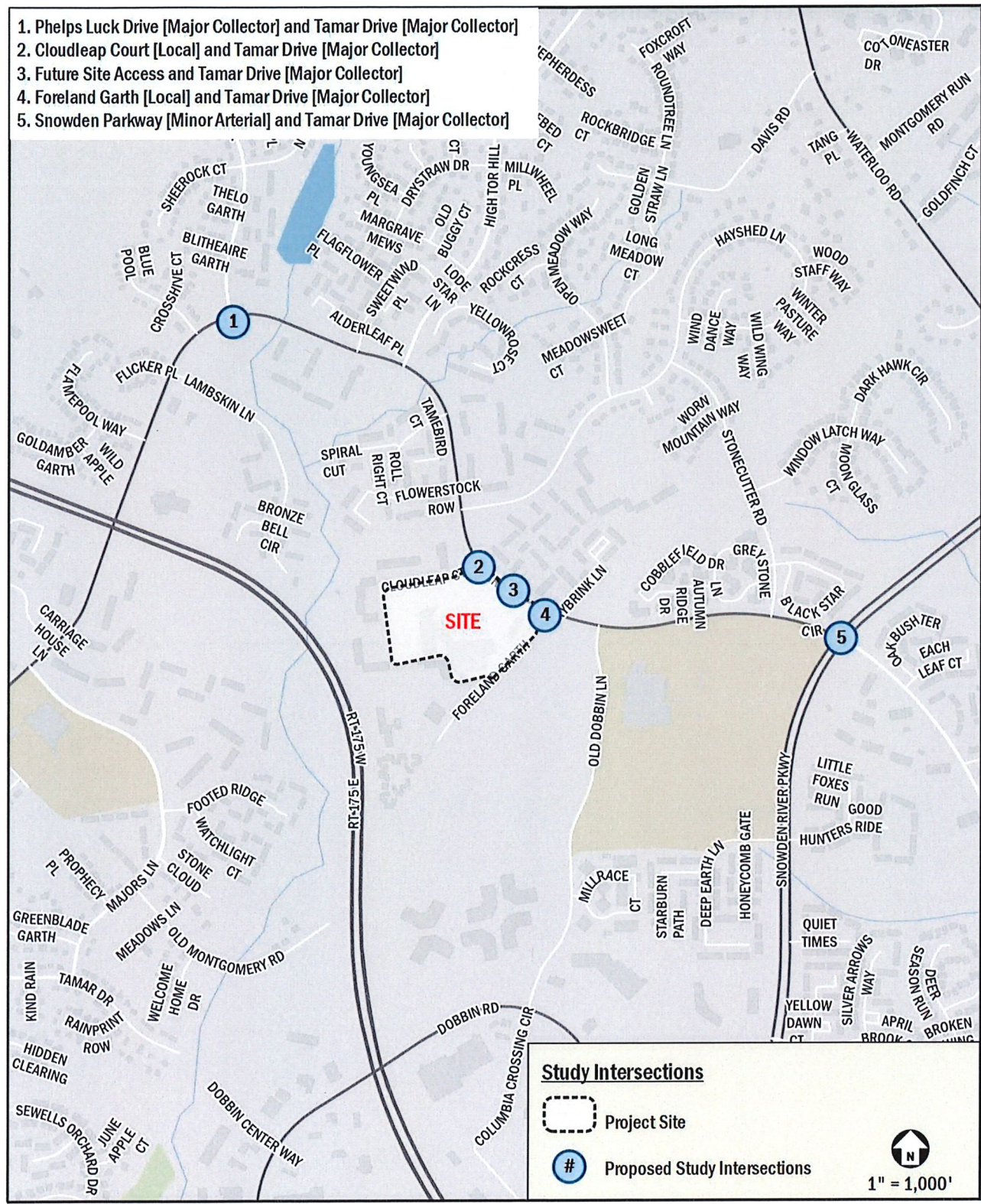


Figure 4: Study Intersections

B. Trip Generation Calculations

Existing Land Use Trip Generation

71,896 sf retail and 15,000 sf office

Note: Setting used for trip generation is General Urban/Suburban

Base trip generation using ITE's Trip Generation 11th Edition

Land Use	Land Use Code	Quantity (x)	AM Peak Hour			PM Peak Hour			Weekday ADT	Saturday Peak Hour		
			In	Out	Total	In	Out	Total	Total	In	Out	Total
Shopping Plaza (40-150k) with Supermarket	821	71,896 sf	157 veh/hr	97 veh/hr	254 veh/hr	322 veh/hr	348 veh/hr	670 veh/hr	6946 veh	342 veh/hr	329 veh/hr	671 veh/hr
		Calculation Details:	62%	38%	=3.53(x/1000)	48%	52%	$2.67(x/1000)+118.8$	=76.96(x/1000)+1412.79	51%	49%	$2.6(x/1000)+125.07$
General Office Building	710	15,000 sf	29 veh/hr	4 veh/hr	33 veh/hr	6 veh/hr	28 veh/hr	34 veh/hr	223 veh	4 veh/hr	4 veh/hr	8 veh/hr
		Calculation Details:	88%	12%	=0.86x	17%	83%	$0.83(x/1000)+$	$2(17)=0.87(x/1000)+3.04$	54%	46%	=0.53(x/1000)

Proposed Land Use Trip Generation

Note: Setting used for trip generation is General Urban/Suburban
 Base trip generation using ITEs' Trip Generation 11th Edition

Land Use	Land Use Code	Quantity (x)	AM Peak Hour			PM Peak Hour			Weekday ADT	Saturday Peak Hour		
			In	Out	Total	In	Out	Total		In	Out	Total
Phase 1: 157 du with 54,341 sf retail												
Multifamily (Mid-Rise)	221	157 du	13 veh/hr	44 veh/hr	57 veh/hr	38 veh/hr	24 veh/hr	62 veh/hr	702 veh	32 veh/hr	31 veh/hr	63 veh/hr
		Calculation Details:	23%	77%	=0.44x/1000+11.61	61%	39%	=0.39x+0.34	=4.77x/1000+46.46	51%	49%	ln(T)=2Ln(X)+0.91
Shopping Plaza (40-150k) with Supermarket	821	54,341 sf	119 veh/hr	73 veh/hr	192 veh/hr	257 veh/hr	279 veh/hr	536 veh/hr	5595 veh	274 veh/hr	264 veh/hr	538 veh/hr
		Calculation Details:	62%	38%	=3.53x/10000	48%	52%	7.67x/1000+118.8	=76.96x/1000+1412.79	51%	49%	7.6x/1000+125.07
Phase 1 Total			132 veh/hr	117 veh/hr	249 veh/hr	295 veh/hr	303 veh/hr	598 veh/hr	6297 veh	306 veh/hr	295 veh/hr	601 veh/hr
Phase 2: 137 du with 56,879 sf retail												
Multifamily (Mid-Rise)	221	137 du	11 veh/hr	38 veh/hr	49 veh/hr	33 veh/hr	21 veh/hr	54 veh/hr	607 veh	28 veh/hr	27 veh/hr	55 veh/hr
		Calculation Details:	23%	77%	=0.44x/1000+11.61	61%	39%	=0.39x+0.34	=4.77x/1000+46.46	51%	49%	ln(T)=2Ln(X)+0.91
Shopping Plaza (40-150k) with Supermarket	821	56,879 sf	125 veh/hr	76 veh/hr	201 veh/hr	266 veh/hr	289 veh/hr	555 veh/hr	5790 veh	284 veh/hr	273 veh/hr	557 veh/hr
		Calculation Details:	62%	38%	=3.53x/10000	48%	52%	7.67x/1000+118.8	=76.96x/1000+1412.79	51%	49%	7.6x/1000+125.07
Phase 2 Total			136 veh/hr	114 veh/hr	250 veh/hr	299 veh/hr	310 veh/hr	609 veh/hr	6397 veh	312 veh/hr	300 veh/hr	612 veh/hr
Phase 3: 103,687 sf of multi-sport complex												
Recreational Community Center	495	103,687 sf	131 veh/hr	67 veh/hr	198 veh/hr	128 veh/hr	144 veh/hr	272 veh/hr	2889 veh	60 veh/hr	51 veh/hr	111 veh/hr
		Calculation Details:	66%	34%	=1.91x/10000	47%	53%	7=0.71Ln(X)/10000+2	=n(T)=0.98Ln(X)/10000+3.4	54%	46%	=1.07x/10000
Phase 3 Total			131 veh/hr	67 veh/hr	198 veh/hr	128 veh/hr	144 veh/hr	272 veh/hr	2889 veh	60 veh/hr	51 veh/hr	111 veh/hr
Phase 4: 38,574 sf retail												
Strip Retail Plaza (<40k)	822	38,574 sf	42 veh/hr	28 veh/hr	70 veh/hr	102 veh/hr	101 veh/hr	203 veh/hr	1858 veh	129 veh/hr	124 veh/hr	253 veh/hr
		Calculation Details:	60%	40%	=0.66x	50%	50%	7=0.71Ln(X)/10000+2	=42.2x/10000+229.68	53%	49%	=6.57x/10000
Phase 4 Total			42 veh/hr	28 veh/hr	70 veh/hr	102 veh/hr	101 veh/hr	203 veh/hr	1858 veh	129 veh/hr	124 veh/hr	253 veh/hr
Phase 5: 84 du townhomes												
Single Family Attached Housing	215	84 du	10 veh/hr	28 veh/hr	38 veh/hr	27 veh/hr	19 veh/hr	46 veh/hr	590 veh	28 veh/hr	30 veh/hr	58 veh/hr
		Calculation Details:	25%	75%	=0.52x/1000-5.7	59%	41%	=0.6x/1000-3.33	=7.62x/1000-50.48	48%	52%	n(T)=0.82Ln(X)+0.43
Phase 5 Total			10 veh/hr	28 veh/hr	38 veh/hr	27 veh/hr	19 veh/hr	46 veh/hr	590 veh	28 veh/hr	30 veh/hr	58 veh/hr
Total Proposed			451 veh/hr	354 veh/hr	805 veh/hr	851 veh/hr	877 veh/hr	1728 veh/hr	18031 veh	835 veh/hr	800 veh/hr	1635 veh/hr

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Long Reach Village Center	Organization:	
Project Location:		Performed By:	
Scenario Description:		Date:	
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 ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	821,822,495	253,481		661	417	244
Restaurant				0		
Cinema/Entertainment				0		
Residential	215,221		378	144	34	110
Hotel				0		
All Other Land Uses ²				0		
				805	451	354

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail	1.70	5%	2%	1.70	5%	2%
Restaurant						
Cinema/Entertainment						
Residential	1.70	5%	2%	1.70	5%	2%
Hotel						
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		0	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	2	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,369	767	602
Internal Capture Percentage	0%	0%	0%
External Vehicle-Trips ⁵	745	418	327
External Transit-Trips ⁶	68	38	30
External Non-Motorized Trips ⁶	27	15	12

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	0%	0%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	1%
Hotel	N/A	N/A

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

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

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

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

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Long Reach Village Center
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	0	0	1.00	0	0
Retail	1.70	417	709	1.70	244	415
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.70	34	58	1.70	110	187
Hotel	1.00	0	0	1.00	0	0

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		0	0	0	0	0
Retail	120		54	0	58	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	4	2	37	0		0
Hotel	0	0	0	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		227	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	57		0	3	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	121	0	0		0
Hotel	0	28	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	0	0	0	0	0	0
Retail	2	707	709	387	35	14
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	57	58	31	3	1
Hotel	0	0	0	0	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	0	0	0	0	0	0
Retail	1	414	415	226	21	8
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	185	187	101	9	4
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A
²Person-Trips
³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator
*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Long Reach Village Center	Organization:	
Project Location:		Performed By:	
Scenario Description:		Date:	
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 ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	821,822,495	253,481		1,566	753	813
Restaurant				0		
Cinema/Entertainment				0		
Residential	215,221		378	162	98	64
Hotel				0		
All Other Land Uses ²				0		
				1,728	851	877

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail	1.70	5%	2%	1.70	5%	2%
Restaurant						
Cinema/Entertainment						
Residential	1.70	5%	2%	1.70	5%	2%
Hotel						
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					0	
Restaurant						
Cinema/Entertainment						
Residential		0				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	77	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	46	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	2,938	1,447	1,491
Internal Capture Percentage	8%	9%	8%
External Vehicle-Trips ⁵	1,473	724	749
External Transit-Trips ⁶	135	67	68
External Non-Motorized Trips ⁶	54	27	27

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	4%	6%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	46%	42%
Hotel	N/A	N/A

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

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

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Table 5-P, 6-P (C and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

⁶Person-Trips

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

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Long Reach Village Center
Analysis Period:	PM Street Peak Hour

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	0	0	1.00	0	0
Retail	1.70	753	1280	1.70	813	1382
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.70	98	167	1.70	64	109
Hotel	1.00	0	0	1.00	0	0

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	28		401	55	359	69
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	4	46	23	0		3
Hotel	0	0	0	0	0	

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		102	0	0	7	0
Retail	0		0	0	77	0
Restaurant	0	640		0	27	0
Cinema/Entertainment	0	51	0		7	0
Residential	0	128	0	0		0
Hotel	0	26	0	0	0	

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	46	1234	1280	675	62	25
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	77	90	167	49	5	2
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	77	1305	1382	714	65	26
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	46	63	109	35	3	1
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

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

²Person-Trips

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

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

C. Existing Turning Movement Counts

Grove/Slade Associates - Multimodal Turning Movement Count Report

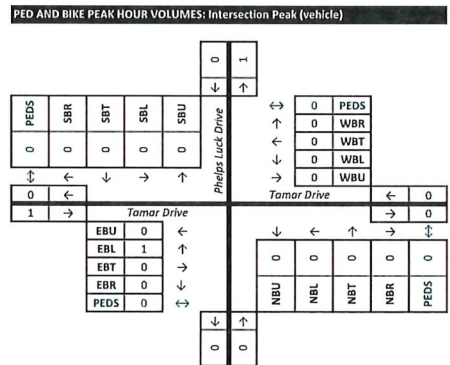
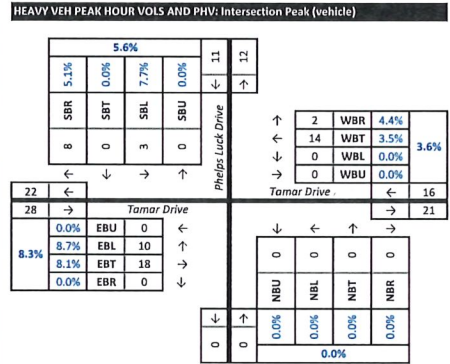
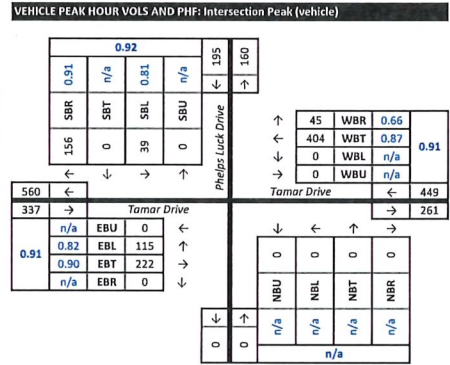
Project Name : Long Reach Village Center
 Project # : 3422-002
 Location : Howard County, MD
 Data Source : Grove/Slade Associates, Inc.

Analysis Period: STUDY_PERIOD
 Date of Counts: Thursday, May 15, 2025
 Weather: Partly Cloudy

06:30 AM to 09:30 AM

Volumes Displayed as: 1. Intersection Peak (vehicle)
 Intersection Peak Hour (all vehicles): 07:45 AM to 08:45 AM
 System Peak Hour (all vehicles): 07:30 AM to 08:30 AM
 User-Defined Peak Hour: 07:30 AM to 08:30 AM

Intersection:		1. Phelps Luck Drive/ & Tamar Drive																	
ALL VEHICLES	Direction: Roadway: Movement:	Southbound				Westbound				Northbound				Eastbound					
		Phelps Luck Drive				Tamar Drive				Tamar Drive				Tamar Drive					
		U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right		
06:30 AM to 06:45 AM		0	2	0	22	1	0	0	42	2	0	0	0	0	0	7	21	0	0
06:45 AM to 07:00 AM		0	3	0	21	1	0	0	62	1	0	0	0	0	0	7	36	0	0
07:00 AM to 07:15 AM		0	6	0	23	1	0	0	66	4	0	0	0	0	0	9	36	0	0
07:15 AM to 07:30 AM		0	4	0	36	1	0	0	97	5	0	0	0	0	0	20	44	0	0
07:30 AM to 07:45 AM		0	8	0	41	0	0	0	93	2	0	0	0	0	0	29	42	0	0
07:45 AM to 08:00 AM		0	10	0	33	0	0	0	116	8	0	0	0	0	0	22	62	0	0
08:00 AM to 08:15 AM		0	10	0	43	0	0	0	88	6	0	0	0	0	0	28	50	0	0
08:15 AM to 08:30 AM		0	12	0	40	0	0	0	107	14	0	0	0	0	0	35	58	0	0
08:30 AM to 08:45 AM		0	7	0	40	0	0	0	93	17	0	0	0	0	0	30	52	0	0
08:45 AM to 09:00 AM		0	6	0	40	0	0	0	95	9	0	0	0	0	0	27	47	0	0
09:00 AM to 09:15 AM		0	14	0	37	0	0	0	86	6	0	0	0	0	0	20	49	0	0
09:15 AM to 09:30 AM		0	5	0	30	0	0	0	62	2	0	0	0	0	0	20	49	0	0
09:30 AM to 09:45 AM		0	5	0	30	0	0	0	62	2	0	0	0	0	0	20	49	0	0
09:45 AM to 10:00 AM		0	5	0	30	0	0	0	62	2	0	0	0	0	0	20	49	0	0
10:00 AM to 10:15 AM		0	5	0	30	0	0	0	62	2	0	0	0	0	0	20	49	0	0
10:15 AM to 10:30 AM		0	5	0	30	0	0	0	62	2	0	0	0	0	0	20	49	0	0
10:30 AM to 10:45 AM		0	5	0	30	0	0	0	62	2	0	0	0	0	0	20	49	0	0
10:45 AM to 11:00 AM		0	5	0	30	0	0	0	62	2	0	0	0	0	0	20	49	0	0
11:00 AM to 11:15 AM		0	5	0	30	0	0	0	62	2	0	0	0	0	0	20	49	0	0
11:15 AM to 11:30 AM		0	5	0	30	0	0	0	62	2	0	0	0	0	0	20	49	0	0
INT. PEAK HR (ALL VEH)		195				449				0				337					
07:45 AM to 08:45 AM		0	39	0	156	0	0	0	404	45	0	0	0	0	0	115	222	0	0
Peak Hour Overall		U	L	Thru	Right	SB			U	L	Thru	Right	WB		U	L	Thru	Right	EB
Factor (PHF)		n/a	0.81	n/a	0.91	0.92			n/a	n/a	0.87	0.66	0.91		n/a	n/a	n/a	n/a	n/a



DATA COLLECTION NOTES:

Gorove/Slade Associates - Multimodal Turning Movement Count Report

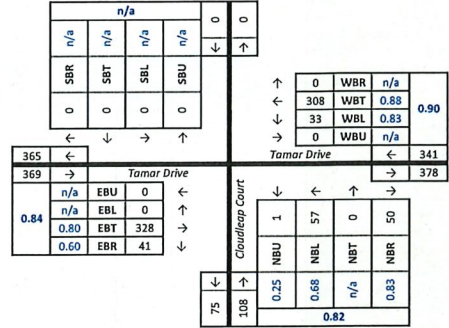
Project Name : Long Reach Village Center
 Project # : 3422-002
 Location : Howard County, MD
 Data Source : Gorove/Slade Associates, Inc.

Analysis Period: STUDY_PERIOD
 Date of Counts: Thursday, May 15, 2025
 Weather: Partly Cloudy
 06:30 AM to 09:30 AM

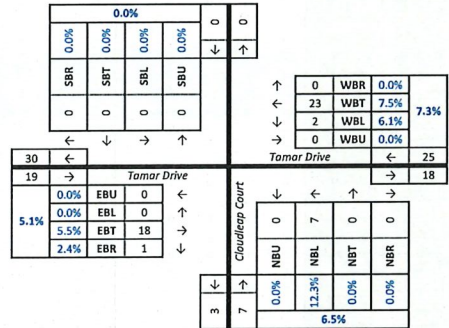
Volumes Displayed as: 1. Intersection Peak (vehicle)
 Intersection Peak Hour (all vehicles): 07:45 AM to 08:45 AM
 System Peak Hour (all vehicles): 07:30 AM to 08:30 AM
 User-Defined Peak Hour: 07:30 AM to 08:30 AM

Intersection: 1. /Cloudleap Court & Tamar Drive		Southbound					Westbound					Northbound					Eastbound														
ALL VEHICLES	Direction: Roadway: Movement:	U		Left		Thru		Right		Peds		U		Left		Thru		Right		Peds		U		Left		Thru		Right		Peds	
		06:30 AM to 06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	18	0	0	0	8	0	8	0	0	0	0	0	42	3	0	0
06:45 AM to 07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	7	38	0	0	0	4	0	14	2	0	0	0	64	4	0	0			
07:00 AM to 07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	4	52	0	0	0	3	0	12	1	0	0	44	2	0	0				
07:15 AM to 07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	6	66	0	0	0	6	0	5	0	0	0	72	4	0	0				
07:30 AM to 07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	9	76	0	2	0	11	0	13	12	0	0	87	6	0	0				
07:45 AM to 08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	7	88	0	0	0	11	0	14	4	0	0	103	7	0	0				
08:00 AM to 08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	10	68	0	0	0	8	0	10	2	0	0	78	7	0	0				
08:15 AM to 08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	6	78	0	0	1	21	0	11	1	0	0	73	10	0	0				
08:30 AM to 08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	10	74	0	0	0	17	0	15	0	0	0	74	17	0	0				
08:45 AM to 09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	9	66	0	0	0	9	0	10	2	0	0	74	14	0	0				
09:00 AM to 09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	9	66	0	0	0	12	0	6	0	0	0	75	11	0	0				
09:15 AM to 09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	9	44	0	0	0	7	0	7	0	0	0	71	3	0	0				
09:30 AM to 09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	9	44	0	0	0	7	0	7	0	0	0	71	3	0	0				
09:45 AM to 10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	9	44	0	0	0	7	0	7	0	0	0	71	3	0	0				
10:00 AM to 10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	9	44	0	0	0	7	0	7	0	0	0	71	3	0	0				
10:15 AM to 10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	9	44	0	0	0	7	0	7	0	0	0	71	3	0	0				
10:30 AM to 10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	9	44	0	0	0	7	0	7	0	0	0	71	3	0	0				
10:45 AM to 11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	9	44	0	0	0	7	0	7	0	0	0	71	3	0	0				
11:00 AM to 11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	9	44	0	0	0	7	0	7	0	0	0	71	3	0	0				
11:15 AM to 11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	9	44	0	0	0	7	0	7	0	0	0	71	3	0	0				
INT. PEAK HR (ALL VEH)	0	0	0	0	0	0	0	0	0	0	0	0	33	308	0	0	1	57	0	50	7	0	0	328	41	0	0				
07:45 AM to 08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	33	308	0	0	1	57	0	50	7	0	0	328	41	0	0				
Peak Hour Overall	U	Left	Thru	Right	SB	U	Left	Thru	Right	WB	U	Left	Thru	Right	NB	U	Left	Thru	Right	EB											
Factor (PHF)	0.89	n/a	n/a	n/a	n/a	n/a	0.83	0.88	n/a	0.90	0.25	0.68	n/a	0.83	0.82	n/a	n/a	0.80	0.60	0.84											

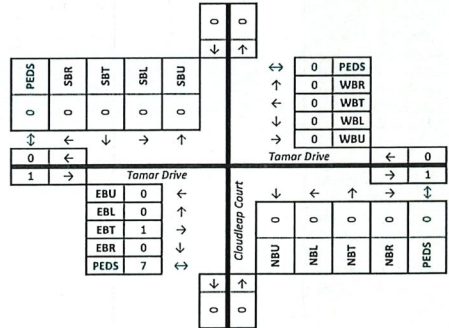
VEHICLE PEAK HOUR VOLS AND PHF: Intersection Peak (vehicle)



HEAVY VEH PEAK HOUR VOLS AND PHV: Intersection Peak (vehicle)



PED AND BIKE PEAK HOUR VOLUMES: Intersection Peak (vehicle)



DATA COLLECTION NOTES:

Gorove/Slade Associates - Multimodal Turning Movement Count Report

Project Name : Long Reach Village Center
 Project # : 3422-002
 Location : Howard County, MD
 Data Source : Gorove/Slade Associates, Inc.

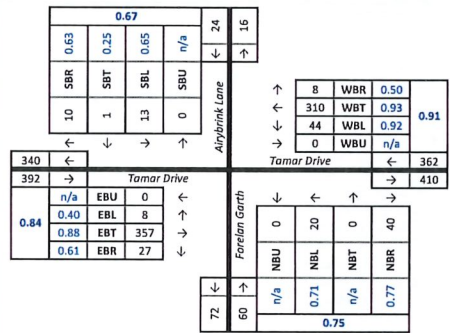
Analysis Period: STUDY_PERIOD
 Date of Counts: Thursday, May 15, 2025
 Weather: Partly Cloudy

06:30 AM to 09:30 AM

Volumes Displayed as: 1. Intersection Peak (vehicle)
 Intersection Peak Hour (all vehicles): 07:30 AM to 08:30 AM
 System Peak Hour (all vehicles): 07:30 AM to 08:30 AM
 User-Defined Peak Hour: 07:30 AM to 08:30 AM

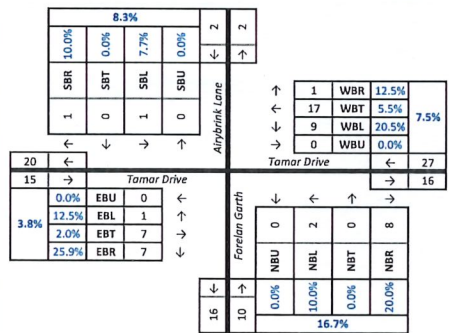
ALL VEHICLES	Intersection: Direction: Roadway: Movement:	1. Airybrink Lane/Forelan Garth & Tamar Drive																											
		Southbound				Westbound				Northbound				Eastbound															
		Airybrink Lane				Tamar Drive				Forelan Garth				Tamar Drive															
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R													
06:30 AM to 06:45 AM		0	4	0	1	3	0	2	20	2	0	0	1	0	4	0	0	0	50	2	0								
06:45 AM to 07:00 AM		0	3	0	1	1	0	6	41	1	0	0	2	1	6	1	0	1	71	6	0								
07:00 AM to 07:15 AM		0	3	0	5	1	1	6	53	5	0	0	3	0	4	1	0	1	57	1	1								
07:15 AM to 07:30 AM		0	6	1	1	0	0	10	68	2	0	0	1	0	12	1	0	1	71	2	1								
07:30 AM to 07:45 AM		0	3	1	4	8	0	12	76	3	2	0	3	0	10	18	0	1	94	5	1								
07:45 AM to 08:00 AM		0	5	0	4	3	0	12	83	4	1	0	7	0	13	4	0	5	101	11	0								
08:00 AM to 08:15 AM		0	3	0	1	2	0	12	76	0	0	0	4	0	7	2	0	2	81	5	0								
08:15 AM to 08:30 AM		0	2	0	1	0	0	8	75	1	1	0	6	0	10	0	0	0	81	6	0								
08:30 AM to 08:45 AM		0	4	1	2	4	0	17	75	1	1	0	6	1	13	1	0	0	82	5	0								
08:45 AM to 09:00 AM		0	4	0	0	1	0	12	81	0	0	0	2	0	15	1	1	3	78	6	0								
09:00 AM to 09:15 AM		0	4	0	2	0	0	6	61	4	0	0	3	1	8	0	0	1	74	6	0								
09:15 AM to 09:30 AM		0	9	1	1	1	0	9	49	3	0	0	2	2	10	1	0	0	75	3	2								
09:30 AM to 09:45 AM		0	0	1	1	1	0	17	68	2	1	0	2	1	10	1	0	1	58	4	1								
09:45 AM to 10:00 AM		0	0	0	2	1	0	23	55	3	0	0	3	0	13	1	0	1	65	10	0								
10:00 AM to 10:15 AM		0	1	0	0	2	0	10	58	3	0	0	4	0	13	2	0	0	48	8	1								
10:15 AM to 10:30 AM		0	2	0	4	0	1	8	62	0	0	0	6	0	9	0	0	0	58	5	0								
10:30 AM to 10:45 AM		0	2	1	1	2	1	11	72	1	0	0	6	1	8	1	0	0	55	7	3								
10:45 AM to 11:00 AM		0	4	0	0	2	0	9	66	2	1	0	2	0	11	1	0	2	37	3	1								
11:00 AM to 11:15 AM																													
11:15 AM to 11:30 AM																													
INT. PEAK HR (ALL VEH)		24				13				362				4				60				24				392			
07:30 AM to 08:30 AM		U	L	T	R	SB	U	L	T	R	WB	U	L	T	R	NB	U	L	T	R	EB								
Peak Hour Overall		n/a	0.65	0.25	0.63	0.67	n/a	0.92	0.93	0.50	0.91	n/a	0.71	n/a	0.77	0.75	n/a	0.40	0.88	0.61	0.84								
Factor (PHF)		0.86																											

VEHICLE PEAK HOUR VOLS AND PHF: Intersection Peak (vehicle)



HEAVY VEHICLES (FHV 4+)	Direction: Roadway: Movement:	1. Airybrink Lane/Forelan Garth & Tamar Drive																			
		Southbound				Westbound				Northbound				Eastbound							
		Airybrink Lane				Tamar Drive				Forelan Garth				Tamar Drive							
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R					
06:30 AM to 06:45 AM		0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	3	0	0
06:45 AM to 07:00 AM		0	0	0	0	0	1	4	0	0	0	0	0	0	1	0	0	0	2	0	0
07:00 AM to 07:15 AM		0	0	0	2	0	0	7	2	0	0	0	0	0	0	0	0	0	2	0	0
07:15 AM to 07:30 AM		0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	4	0	0
07:30 AM to 07:45 AM		0	0	0	0	0	3	1	1	0	0	0	0	1	0	0	0	1	1	1	1
07:45 AM to 08:00 AM		0	1	0	1	0	0	3	3	0	0	0	1	0	4	0	0	1	1	4	4
08:00 AM to 08:15 AM		0	0	0	0	0	2	6	0	0	0	0	0	2	0	0	0	3	2	2	0
08:15 AM to 08:30 AM		0	0	0	0	0	1	7	0	0	0	1	0	1	0	0	0	2	0	0	0
08:30 AM to 08:45 AM		0	0	0	0	0	0	5	0	0	1	0	1	0	1	0	0	2	1	1	1
08:45 AM to 09:00 AM		0	1	0	0	0	0	3	0	0	0	0	0	4	0	0	1	2	1	1	1
09:00 AM to 09:15 AM		0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	3	0	0	0
09:15 AM to 09:30 AM		0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	3	0	0	0
09:30 AM to 09:45 AM		0	0	0	0	0	2	3	0	0	1	0	2	0	2	1	0	0	2	1	1
09:45 AM to 10:00 AM		0	0	0	0	0	2	0	0	0	0	1	0	0	0	1	0	0	0	1	1
10:00 AM to 10:15 AM		0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0
10:15 AM to 10:30 AM		0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	0	0
10:30 AM to 10:45 AM		0	0	0	0	0	0	3	0	0	1	0	0	0	0	0	0	1	0	0	0
10:45 AM to 11:00 AM		0	0	0	0	0	0	2	0	0	0	0	1	0	1	0	0	1	1	1	1
11:00 AM to 11:15 AM																					
11:15 AM to 11:30 AM																					
INT. PEAK HR (ALL VEH)		2				27				10				15							
07:30 AM to 08:30 AM		U	L	T	R	SB	U	L	T	R	WB	U	L	T	R	NB	U	L	T	R	EB
Heavy Vehicle % (PHV)		0.0%	7.7%	0.0%	10.0%	8.3%	0.0%	20.5%	5.5%	12.5%	7.5%	0.0%	10.0%	0.0%	20.0%	16.7%	0.0%	12.5%	2.0%	25.9%	3.8%
INT. PEAK HR (HV ONLY)		2				27				11				16							
07:45 AM to 08:45 AM		U	L	T	R	SB	U	L	T	R	WB	U	L	T	R	NB	U	L	T	R	EB
Heavy Vehicle % (PHV)		0.0%	7.1%	0.0%	12.5%	8.7%	0.0%	12.2%	6.8%	0.0%	7.4%	0.0%	13.0%	0.0%	18.6%	16.4%	0.0%	14.3%	2.3%	25.9%	4.2%

HEAVY VEH PEAK HOUR VOLS AND PHV: Intersection Peak (vehicle)



BICYCLES	Direction: Roadway: Movement:	1. Airybrink Lane/Forelan Garth & Tamar Drive																			
		Southbound				Westbound				Northbound				Eastbound							
		Airybrink Lane				Tamar Drive				Forelan Garth				Tamar Drive							
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R					
06:30 AM to 06:45 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM to 07:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
07:00 AM to 07:15 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM to 07:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
07:30 AM to 07:45 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
07:45 AM to 08:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM to 08:15 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM to 08:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM to 08:45 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
08:45 AM to 09:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00 AM to 09:15 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM to 09:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM to 09:45 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM to 10:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
10:00 AM to 10:15 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM to 10:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM to 10:45 AM		0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
10:45 AM to 11:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM to 11:15 AM																					
11:15 AM to 11:30 AM																					
INT. PEAK HR (ALL VEH)		0				0				0				1							
07:30 AM to 08:30 AM		U	L	T	R	SB	U	L	T	R	WB	U	L	T	R	NB	U	L	T	R	EB
INT. PEAK HR (BIKES)		0				0				0				3							
06:45 AM to 07:45 AM		U	L	T	R	SB	U	L	T	R	WB	U	L	T	R	NB	U	L	T	R	EB
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0

Grove/Slade Associates - Multimodal Turning Movement Count Report

Project Name : Long Reach Village Center
 Project # : 3422-002
 Location : Howard County, MD
 Data Source : Grove/Slade Associates, Inc.

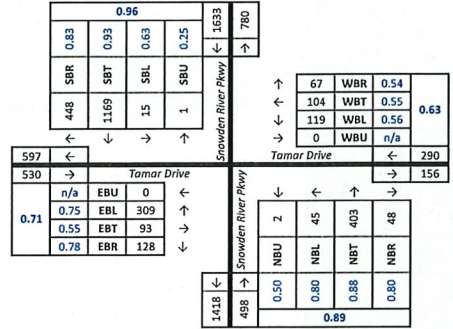
Analysis Period: STUDY_PERIOD
 Date of Counts: Thursday, May 15, 2025
 Weather: Partly Cloudy
 06:30 AM to 09:30 AM

Volumes Displayed as: 1. Intersection Peak (vehicle)

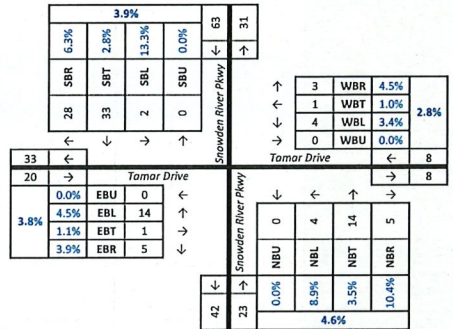
Intersection Peak Hour (all vehicles): 07:30 AM to 08:30 AM
 System Peak Hour (all vehicles): 07:30 AM to 08:30 AM
 User-Defined Peak Hour: 07:30 AM to 08:30 AM

ALL VEHICLES	1. Snowden River Pkwy & Tamar Drive																			
	Southbound				Westbound				Northbound				Eastbound							
	Snowden River Pkwy				Tamar Drive				Snowden River Pkwy				Tamar Drive							
Direction: Roadway: Movement:	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right				
06:30 AM to 06:45 AM	0	1	152	31	0	0	10	7	13	0	0	4	49	6	0	0	43	4	11	0
06:45 AM to 07:00 AM	0	0	164	48	2	0	9	7	12	1	0	6	65	2	2	0	46	7	23	0
07:00 AM to 07:15 AM	0	4	235	83	0	0	8	14	11	0	0	11	79	4	0	0	41	4	12	0
07:15 AM to 07:30 AM	0	6	227	119	0	0	16	15	12	0	0	11	75	5	2	0	86	10	20	0
07:30 AM to 07:45 AM	0	3	284	135	0	0	53	47	15	0	1	14	86	10	6	0	70	20	37	0
07:45 AM to 08:00 AM	0	1	267	117	0	0	26	30	7	0	0	10	115	11	1	0	103	42	41	0
08:00 AM to 08:15 AM	1	5	304	114	0	0	23	17	14	0	0	10	89	12	1	0	64	14	25	0
08:15 AM to 08:30 AM	0	6	314	82	0	0	17	10	31	0	1	11	113	15	0	0	72	17	25	0
08:30 AM to 08:45 AM	0	8	261	93	0	0	21	25	20	0	0	14	131	8	0	0	48	14	27	0
08:45 AM to 09:00 AM	1	5	303	102	0	0	18	14	17	0	1	15	106	11	1	0	71	15	23	0
09:00 AM to 09:15 AM	0	5	264	96	0	0	12	14	11	0	0	14	99	9	0	0	67	13	20	0
09:15 AM to 09:30 AM	1	9	225	81	0	0	14	23	16	0	0	14	104	13	1	0	62	23	18	0
09:30 AM to 09:45 AM																				
09:45 AM to 10:00 AM																				
10:00 AM to 10:15 AM																				
10:15 AM to 10:30 AM																				
10:30 AM to 10:45 AM																				
10:45 AM to 11:00 AM																				
11:00 AM to 11:15 AM																				
11:15 AM to 11:30 AM																				
INT. PEAK HR (ALL VEH)	1633				290				498				530							
07:30 AM to 08:30 AM	1	15	1169	448	0	0	119	104	67	0	2	45	403	48	8	0	309	93	128	0
Peak Hour Overall	U	L	Thru	Right	SB	U	L	Thru	Right	WB	U	L	Thru	Right	NB	U	L	Thru	Right	EB
Factor (PHF)	0.25	0.63	0.93	0.83	0.96	n/a	0.56	0.55	0.54	0.63	0.50	0.80	0.88	0.80	0.89	n/a	0.75	0.55	0.78	0.71

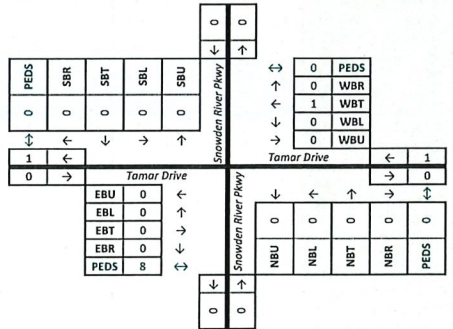
VEHICLE PEAK HOUR VOLS AND PHF: Intersection Peak (vehicle)



HEAVY VEH PEAK HOUR VOLS AND PHF: Intersection Peak (vehicle)



PED AND BIKE PEAK HOUR VOLUMES: Intersection Peak (vehicle)



DATA COLLECTION NOTES:

Gorove/Slade Associates - Multimodal Turning Movement Count Report

Project Name : Long Reach Village Center
 Project # : 3422-002
 Location : Howard County, MD
 Data Source : Gorove/Slade Associates, Inc.

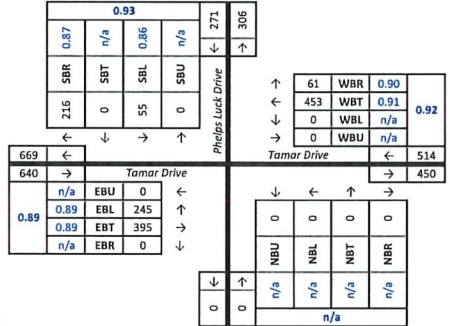
Analysis Period: STUDY_PERIOD
 Date of Counts : Thursday, May 15, 2025
 Weather : Partly Cloudy

04:00 PM to 07:00 PM

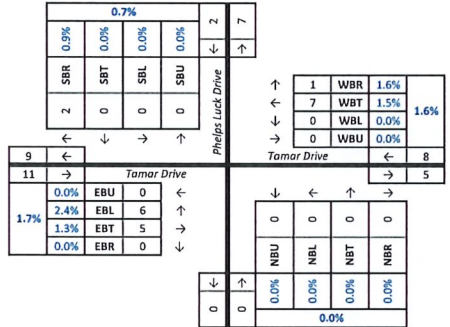
Volumes Displayed as: 1. Intersection Peak (vehicle)
 Intersection Peak Hour (all vehicles): 04:45 PM to 05:45 PM
 System Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 User-Defined Peak Hour: 05:00 PM to 06:00 PM

Intersection:		1. Phelps Luck Drive/ & Tamar Drive																			
ALL VEHICLES	Direction: Roadway: Movement:	Southbound				Westbound				Northbound				Eastbound							
		Phelps Luck Drive				Tamar Drive				Tamar Drive				Tamar Drive							
		U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right				
04:00 PM	to 04:15 PM	0	14	0	41	0	0	0	99	15	0	0	0	0	0	0	59	101	0	0	
04:15 PM	to 04:30 PM	0	10	0	26	0	0	0	101	17	0	0	0	0	0	0	45	101	0	0	
04:30 PM	to 04:45 PM	0	15	0	56	1	0	0	115	17	0	0	0	0	0	0	64	95	0	0	
04:45 PM	to 05:00 PM	0	12	0	52	1	0	0	110	15	0	0	0	0	0	0	69	110	0	0	
05:00 PM	to 05:15 PM	0	16	0	47	1	0	0	102	17	0	0	0	0	0	0	53	79	0	0	
05:15 PM	to 05:30 PM	0	16	0	55	0	0	0	117	13	0	0	0	0	0	0	68	95	0	0	
05:30 PM	to 05:45 PM	0	11	0	62	1	0	0	124	16	0	0	0	0	0	0	55	111	0	0	
05:45 PM	to 06:00 PM	0	13	0	56	0	0	0	147	16	0	0	0	0	0	0	48	74	0	0	
06:00 PM	to 06:15 PM	0	8	0	58	0	0	0	124	17	0	0	0	0	0	0	38	83	0	0	
06:15 PM	to 06:30 PM	0	19	0	43	2	0	0	83	22	0	0	0	0	0	0	34	81	0	0	
06:30 PM	to 06:45 PM	0	18	0	35	0	0	0	98	19	0	0	0	0	0	0	35	94	0	0	
06:45 PM	to 07:00 PM	0	8	0	39	0	0	0	91	15	0	0	0	0	0	0	40	76	0	0	
07:00 PM	to 07:15 PM																				
07:15 PM	to 07:30 PM																				
07:30 PM	to 07:45 PM																				
07:45 PM	to 08:00 PM																				
08:00 PM	to 08:15 PM																				
08:15 PM	to 08:30 PM																				
08:30 PM	to 08:45 PM																				
08:45 PM	to 09:00 PM																				
INT. PEAK HR (ALL VEH)		271				514				0				640							
04:45 PM to 05:45 PM		U	55	0	216	3	U	0	453	61	0	U	0	0	0	0	U	245	395	0	0
Peak Hour Overall		U	Left	Thru	Right	SB	U	Left	Thru	Right	WB	U	Left	Thru	Right	NB	U	Left	Thru	Right	EB
Factor (PHF)		n/a	0.86	n/a	0.87	0.93	n/a	n/a	0.91	0.90	0.92	n/a	n/a	n/a	n/a	n/a	n/a	0.89	0.89	n/a	0.89
HEAVY VEHICLES (FHWA 4+)	Direction: Roadway: Movement:	Southbound				Westbound				Northbound				Eastbound							
		Phelps Luck Drive				Tamar Drive				Tamar Drive				Tamar Drive							
		U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right				
04:00 PM	to 04:15 PM	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	2	5	0	
04:15 PM	to 04:30 PM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	3	1	0	
04:30 PM	to 04:45 PM	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	
04:45 PM	to 05:00 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	2	2	0	
05:00 PM	to 05:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	1	0	
05:15 PM	to 05:30 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	
05:30 PM	to 05:45 PM	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	
05:45 PM	to 06:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	
06:00 PM	to 06:15 PM	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	2	7	0	
06:15 PM	to 06:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	
06:30 PM	to 06:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	
06:45 PM	to 07:00 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:00 PM	to 07:15 PM																				
07:15 PM	to 07:30 PM																				
07:30 PM	to 07:45 PM																				
07:45 PM	to 08:00 PM																				
08:00 PM	to 08:15 PM																				
08:15 PM	to 08:30 PM																				
08:30 PM	to 08:45 PM																				
08:45 PM	to 09:00 PM																				
INT. PEAK HR (ALL VEH)		2				8				0				11							
04:45 PM to 05:45 PM		U	0	0	0	2	U	0	0	7	1	U	0	0	0	0	U	6	5	0	
Heavy Vehicle % (PHV)		0.0%	0.0%	0.0%	0.9%	0.7%	0.0%	0.0%	1.5%	1.6%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	1.3%	0.0%	1.7%
INT. PEAK HR (HV ONLY)		6				12				0				17							
04:00 PM to 05:00 PM		U	0	0	0	6	U	0	0	10	2	U	0	0	0	0	U	9	8	0	
Heavy Vehicle % (PHV)		0.0%	0.0%	0.0%	3.4%	2.7%	0.0%	0.0%	2.4%	3.1%	2.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.8%	2.0%	0.0%	2.6%
BICYCLES	Direction: Roadway: Movement:	Southbound				Westbound				Northbound				Eastbound							
		Phelps Luck Drive				Tamar Drive				Tamar Drive				Tamar Drive							
		U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right				
04:00 PM	to 04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15 PM	to 04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:30 PM	to 04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:45 PM	to 05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
05:00 PM	to 05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
05:15 PM	to 05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
05:30 PM	to 05:45 PM	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	
05:45 PM	to 06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
06:00 PM	to 06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06:15 PM	to 06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06:30 PM	to 06:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
06:45 PM	to 07:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:00 PM	to 07:15 PM																				
07:15 PM	to 07:30 PM																				
07:30 PM	to 07:45 PM																				
07:45 PM	to 08:00 PM																				
08:00 PM	to 08:15 PM																				
08:15 PM	to 08:30 PM																				
08:30 PM	to 08:45 PM																				
08:45 PM	to 09:00 PM																				
INT. PEAK HR (ALL VEH)		1				3				0				1							
04:45 PM to 05:45 PM		U	0	0	0	1	U	0	0	3	0	U	0	0	0	0	U	0	0	1	0
INT. PEAK HR (BIKES)		1				3				0				2							
05:00 PM to 06:00 PM		U	0	0	0	1	U	0	0	3	0	U	0	0	0	0	U	0	2	0	0

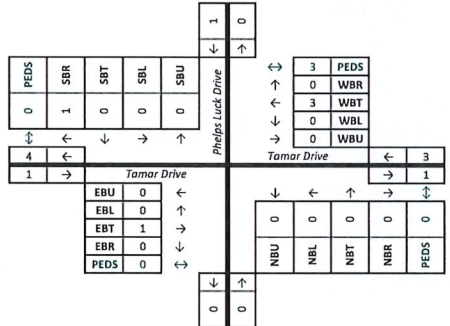
VEHICLE PEAK HOUR VOLS AND PHF: Intersection Peak (vehicle)



HEAVY VEH PEAK HOUR VOLS AND PHF: Intersection Peak (vehicle)



PED AND BIKE PEAK HOUR VOLUMES: Intersection Peak (vehicle)



DATA COLLECTION NOTES :

Gorove/State Associates - Multimodal Turning Movement Count Report

Project Name: Long Reach Village Center
 Project #: 34223-002
 Location: Howard County, MD
 Data Source: Gorove/State Associates, Inc.

Analysis Period: STUDY PERIOD
 Date of Counts: Thursday, May 15, 2025
 Weather: Partly Cloudy

04:00 PM to 07:00 PM

Volumes Displayed as: 1. Intersection Peak (Vehicle)
 Intersection Peak Hour (all vehicles): 05:15 PM to 06:15 PM
 System Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 User-Defined Peak Hour: 05:00 PM to 06:00 PM

ATU	Direction/ Roadway/ Movement	1. /Cloudleap Court & Tamar Drive			Westbound			Eastbound		
		Southbound	Tamar Drive	Cloudleap Court	Westbound	Tamar Drive	Cloudleap Court	Eastbound	Tamar Drive	Cloudleap Court
04:00 PM	U Left	0	15	21	0	0	0	0	0	0
04:15 PM	U Left	0	13	17	0	1	0	0	0	0
04:30 PM	U Left	0	5	135	0	1	0	0	0	0
04:45 PM	U Left	0	0	0	0	0	0	0	0	0
05:00 PM	U Left	0	14	122	0	2	0	0	0	0
05:15 PM	U Left	0	7	138	0	0	0	0	0	0
05:30 PM	U Left	0	13	140	0	1	0	0	0	0
05:45 PM	U Left	0	15	149	0	2	0	0	0	0
06:00 PM	U Left	0	22	156	0	3	0	0	0	0
06:15 PM	U Left	0	7	158	0	2	0	0	0	0
06:30 PM	U Left	0	11	119	0	8	0	0	0	0
06:45 PM	U Left	0	17	112	0	2	0	0	0	0
07:00 PM	U Left	0	12	110	0	0	0	0	0	0
07:15 PM	U Left	0	0	0	0	0	0	0	0	0
07:30 PM	U Left	0	0	0	0	0	0	0	0	0
07:45 PM	U Left	0	0	0	0	0	0	0	0	0
08:00 PM	U Left	0	0	0	0	0	0	0	0	0
08:15 PM	U Left	0	0	0	0	0	0	0	0	0
08:30 PM	U Left	0	0	0	0	0	0	0	0	0
08:45 PM	U Left	0	0	0	0	0	0	0	0	0
09:00 PM	U Left	0	0	0	0	0	0	0	0	0
09:15 PM	U Left	0	0	0	0	0	0	0	0	0
09:30 PM	U Left	0	0	0	0	0	0	0	0	0
09:45 PM	U Left	0	0	0	0	0	0	0	0	0
04:00 PM	U Left	0	0	0	0	0	0	0	0	0
04:15 PM	U Left	0	0	0	0	0	0	0	0	0
04:30 PM	U Left	0	0	0	0	0	0	0	0	0
04:45 PM	U Left	0	0	0	0	0	0	0	0	0
05:00 PM	U Left	0	0	0	0	0	0	0	0	0
05:15 PM	U Left	0	0	0	0	0	0	0	0	0
05:30 PM	U Left	0	0	0	0	0	0	0	0	0
05:45 PM	U Left	0	0	0	0	0	0	0	0	0
06:00 PM	U Left	0	0	0	0	0	0	0	0	0
06:15 PM	U Left	0	0	0	0	0	0	0	0	0
06:30 PM	U Left	0	0	0	0	0	0	0	0	0
06:45 PM	U Left	0	0	0	0	0	0	0	0	0
07:00 PM	U Left	0	0	0	0	0	0	0	0	0
07:15 PM	U Left	0	0	0	0	0	0	0	0	0
07:30 PM	U Left	0	0	0	0	0	0	0	0	0
07:45 PM	U Left	0	0	0	0	0	0	0	0	0
08:00 PM	U Left	0	0	0	0	0	0	0	0	0
08:15 PM	U Left	0	0	0	0	0	0	0	0	0
08:30 PM	U Left	0	0	0	0	0	0	0	0	0
08:45 PM	U Left	0	0	0	0	0	0	0	0	0
09:00 PM	U Left	0	0	0	0	0	0	0	0	0
09:15 PM	U Left	0	0	0	0	0	0	0	0	0
09:30 PM	U Left	0	0	0	0	0	0	0	0	0
09:45 PM	U Left	0	0	0	0	0	0	0	0	0
04:00 PM	U Left	0	0	0	0	0	0	0	0	0
04:15 PM	U Left	0	0	0	0	0	0	0	0	0
04:30 PM	U Left	0	0	0	0	0	0	0	0	0
04:45 PM	U Left	0	0	0	0	0	0	0	0	0
05:00 PM	U Left	0	0	0	0	0	0	0	0	0
05:15 PM	U Left	0	0	0	0	0	0	0	0	0
05:30 PM	U Left	0	0	0	0	0	0	0	0	0
05:45 PM	U Left	0	0	0	0	0	0	0	0	0
06:00 PM	U Left	0	0	0	0	0	0	0	0	0
06:15 PM	U Left	0	0	0	0	0	0	0	0	0
06:30 PM	U Left	0	0	0	0	0	0	0	0	0
06:45 PM	U Left	0	0	0	0	0	0	0	0	0
07:00 PM	U Left	0	0	0	0	0	0	0	0	0
07:15 PM	U Left	0	0	0	0	0	0	0	0	0
07:30 PM	U Left	0	0	0	0	0	0	0	0	0
07:45 PM	U Left	0	0	0	0	0	0	0	0	0
08:00 PM	U Left	0	0	0	0	0	0	0	0	0
08:15 PM	U Left	0	0	0	0	0	0	0	0	0
08:30 PM	U Left	0	0	0	0	0	0	0	0	0
08:45 PM	U Left	0	0	0	0	0	0	0	0	0
09:00 PM	U Left	0	0	0	0	0	0	0	0	0
09:15 PM	U Left	0	0	0	0	0	0	0	0	0
09:30 PM	U Left	0	0	0	0	0	0	0	0	0
09:45 PM	U Left	0	0	0	0	0	0	0	0	0

DATA COLLECTION NOTES:

VEHICLE PEAK HOUR VOLS AND PHS: Intersection Peak (vehicle)

Direction	Volume	PHS
Cloudleap Court	119	0.83
Tamar Drive	426	0.94

HEAVY VEH PEAK HOUR VOLS AND PHS: Intersection Peak (vehicle)

Direction	Volume	PHS
Cloudleap Court	2	0.00%
Tamar Drive	15	0.00%

PEB AND BIKE PEAK HOUR VOLUMES: Intersection Peak (vehicle)

Direction	Volume
Cloudleap Court	4
Tamar Drive	7

Gorove/Slade Associates - Multimodal Turning Movement Count Report

Project Name : Long Reach Village Center
 Project # : 3422-002
 Location : Howard County, MD
 Data Source : Gorove/Slade Associates, Inc.

Analysis Period: STUDY_PERIOD
 Date of Counts: Thursday, May 15, 2025
 Weather: Partly Cloudy

04:00 PM to 07:00 PM

Volumes Displayed as: 1. Intersection Peak (vehicle)
 Intersection Peak Hour (all vehicles): 05:15 PM to 06:15 PM
 System Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 User-Defined Peak Hour: 05:00 PM to 06:00 PM

ALL VEHICLES	Direction: Roadway: Movement:	1. Alybrink Lane/Forelan Garth & Tamar Drive																			
		Southbound		Westbound		Northbound		Eastbound													
		Alybrink Lane		Tamar Drive		Forelan Garth		Tamar Drive													
		U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right				
04:00 PM to 04:15 PM		0	4	1	2	0	0	15	129	6	0	0	5	0	14	3	0	1	82	10	2
04:15 PM to 04:30 PM		0	3	0	1	0	0	14	135	4	0	0	5	0	16	1	0	1	97	5	0
04:30 PM to 04:45 PM		0	3	0	3	1	0	20	141	2	0	0	8	0	8	0	0	5	82	6	2
04:45 PM to 05:00 PM		0	2	0	4	1	0	17	117	5	0	0	11	1	11	0	0	5	92	10	1
05:00 PM to 05:15 PM		0	4	0	4	0	1	28	131	4	0	0	6	0	18	1	0	3	87	8	3
05:15 PM to 05:30 PM		0	2	0	2	0	0	23	133	2	0	0	9	1	10	1	0	2	88	11	1
05:30 PM to 05:45 PM		0	3	0	0	3	0	19	158	2	0	0	9	0	18	5	0	3	89	7	1
05:45 PM to 06:00 PM		0	6	1	3	0	0	19	167	4	0	0	8	1	10	1	0	3	95	12	1
06:00 PM to 06:15 PM		0	5	0	1	1	0	15	152	8	0	0	9	1	20	5	0	2	86	11	3
06:15 PM to 06:30 PM		0	1	0	4	5	0	25	119	5	1	0	9	0	8	3	0	2	89	6	4
06:30 PM to 06:45 PM		0	1	0	3	0	0	20	119	4	0	0	5	0	24	2	0	0	95	11	1
06:45 PM to 07:00 PM		0	3	0	1	1	0	28	118	4	0	0	6	0	17	1	0	2	98	11	0
07:00 PM to 07:15 PM																					
07:15 PM to 07:30 PM																					
07:30 PM to 07:45 PM																					
07:45 PM to 08:00 PM																					
08:00 PM to 08:15 PM																					
08:15 PM to 08:30 PM																					
08:30 PM to 08:45 PM																					
08:45 PM to 09:00 PM																					

INT. PEAK HR (ALL VEH)	23		4		702		0		96		12		409							
05:15 PM to 06:15 PM	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right				
Peak Hour Overall	0	16	1	6	0	76	610	16	0	35	3	58	0	10	358	41	6			
Factor (PHF)	n/a	0.67	0.25	0.50	0.58	n/a	0.83	0.91	0.50	0.92	n/a	0.97	0.75	0.73	0.80	n/a	0.83	0.94	0.85	0.93

HEAVY VEHICLES (FHWA 4+)	Direction: Roadway: Movement:	Southbound				Westbound				Northbound				Eastbound							
		Alybrink Lane		Tamar Drive		Forelan Garth		Tamar Drive		Forelan Garth		Tamar Drive		Forelan Garth		Tamar Drive					
		U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right				
04:00 PM to 04:15 PM		0	1	0	1	0	0	0	5	1	0	0	0	0	0	0	1	3	0	0	
04:15 PM to 04:30 PM		0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2	0	
04:30 PM to 04:45 PM		0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	0	
04:45 PM to 05:00 PM		0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	2	0	
05:00 PM to 05:15 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
05:15 PM to 05:30 PM		0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	
05:30 PM to 05:45 PM		0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	
05:45 PM to 06:00 PM		0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	
06:00 PM to 06:15 PM		0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	9	1	0	0	
06:15 PM to 06:30 PM		0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	
06:30 PM to 06:45 PM		0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	1	0	0	
06:45 PM to 07:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
07:00 PM to 07:15 PM																					
07:15 PM to 07:30 PM																					
07:30 PM to 07:45 PM																					
07:45 PM to 08:00 PM																					
08:00 PM to 08:15 PM																					
08:15 PM to 08:30 PM																					
08:30 PM to 08:45 PM																					
08:45 PM to 09:00 PM																					

INT. PEAK HR (ALL VEH)	0		5		2		13												
05:15 PM to 06:15 PM	U	L	Thru	Right	U	L	Thru	Right											
Heavy Vehicle % (PHV)	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	0.7%	0.0%	0.7%	0.0%	5.7%	0.0%	0.0%	2.1%	0.0%	0.0%	3.4%	2.4%	3.2%

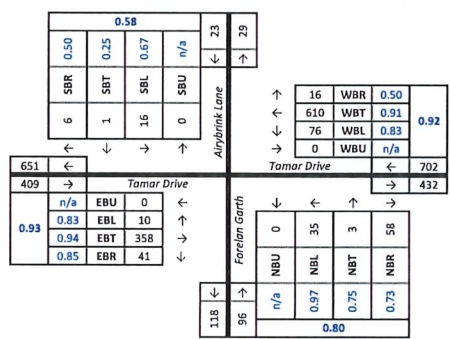
INT. PEAK HR (HV ONLY)	2		18		1		9												
04:00 PM to 05:00 PM	U	L	Thru	Right	U	L	Thru	Right											
Heavy Vehicle % (PHV)	0.0%	8.3%	0.0%	10.0%	8.7%	0.0%	1.5%	3.1%	5.9%	3.0%	0.0%	0.0%	2.0%	1.3%	0.0%	8.3%	2.3%	0.0%	2.3%

BICYCLES	Direction: Roadway: Movement:	Southbound				Westbound				Northbound				Eastbound							
		Alybrink Lane		Tamar Drive		Forelan Garth		Tamar Drive		Forelan Garth		Tamar Drive		Forelan Garth		Tamar Drive					
		U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right				
04:00 PM to 04:15 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15 PM to 04:30 PM		0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	
04:30 PM to 04:45 PM		0	0	0	1	0	0	0	1	0	0	0	0	0	3	0	0	0	0	0	
04:45 PM to 05:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
05:00 PM to 05:15 PM		0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	
05:15 PM to 05:30 PM		0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	
05:30 PM to 05:45 PM		0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	
05:45 PM to 06:00 PM		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
06:00 PM to 06:15 PM		0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	
06:15 PM to 06:30 PM		0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	
06:30 PM to 06:45 PM		0	4	0	0	0	0	1	4	0	0	0	0	0	0	0	0	1	0	0	
06:45 PM to 07:00 PM		0	7	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	
07:00 PM to 07:15 PM																					
07:15 PM to 07:30 PM																					
07:30 PM to 07:45 PM																					
07:45 PM to 08:00 PM																					
08:00 PM to 08:15 PM																					
08:15 PM to 08:30 PM																					
08:30 PM to 08:45 PM																					
08:45 PM to 09:00 PM																					

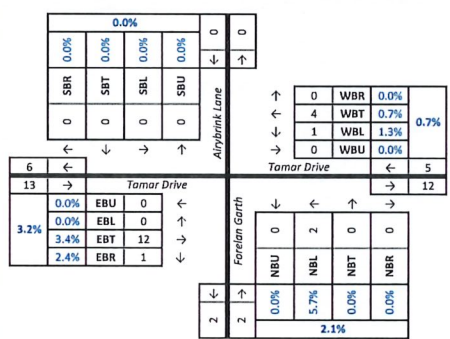
INT. PEAK HR (ALL VEH)	0		5		0		2													
05:15 PM to 06:15 PM	U	L	Thru	Right	U	L	Thru	Right												
INT. PEAK HR (BIKES)	0	0	0	0	0	1	3	1	0	0	0	0	0	0	0	0	2	0	0	0
06:00 PM to 07:00 PM	0	11	0	0	0	0	3	11	0	0	0	0	0	0	0	0	3	0	0	0

DATA COLLECTION NOTES:

VEHICLE PEAK HOUR VOLS AND PHF: Intersection Peak (vehicle)



HEAVY VEH PEAK HOUR VOLS AND PHV: Intersection Peak (vehicle)



Gorove/Slade Associates - Multimodal Turning Movement Count Report

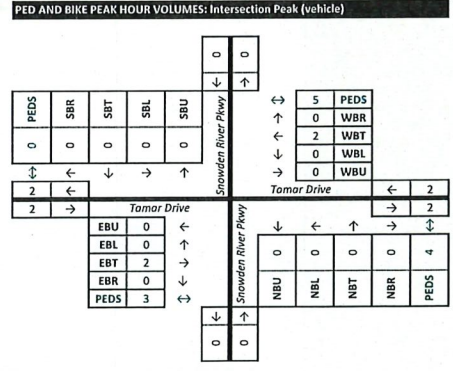
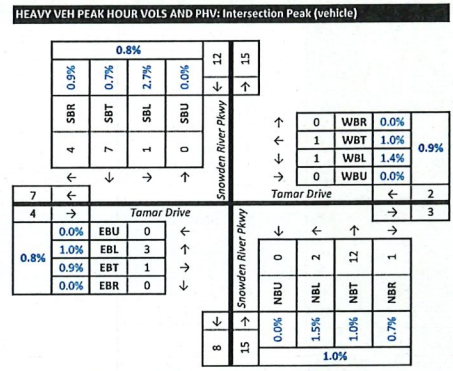
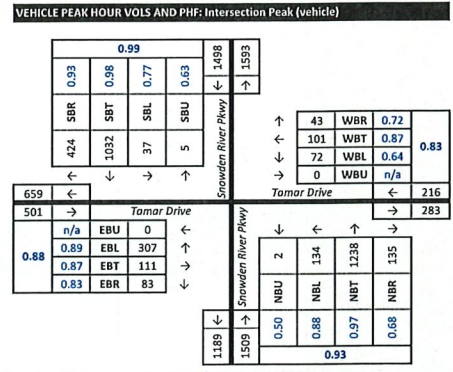
Project Name : Long Reach Village Center
 Project # : 3422-002
 Location : Howard County, MD
 Data Source : Gorove/Slade Associates, Inc.

Analysis Period: STUDY_PERIOD
 Date of Counts : Thursday, May 15, 2025
 Weather: Partly Cloudy

04:00 PM to 07:00 PM

Volumes Displayed as: 1. Intersection Peak (vehicle)
 Intersection Peak Hour (all vehicles): 04:30 PM to 05:30 PM
 System Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 User-Defined Peak Hour: 05:00 PM to 06:00 PM

ALL VEHICLES	Direction: Roadway: Movement:	1. Snowden River Pkwy & Tamar Drive																			
		Southbound					Westbound					Northbound					Eastbound				
		Snowden River Pkwy					Tamar Drive					Snowden River Pkwy					Tamar Drive				
	U	Left	Thru	Right	Peds	U	Left	Thru	Right	Peds	U	Left	Thru	Right	Peds	U	Left	Thru	Right	Peds	
04:00 PM to 04:15 PM	0	14	202	108	2	0	16	29	15	1	0	31	293	24	1	0	107	19	18	0	
04:15 PM to 04:30 PM	1	3	239	116	0	0	20	34	10	0	0	21	299	28	1	0	85	26	23	0	
04:30 PM to 04:45 PM	1	9	257	110	1	0	12	21	13	1	0	35	313	18	1	0	72	30	23	0	
04:45 PM to 05:00 PM	1	7	262	95	0	0	28	27	10	1	0	27	290	37	0	0	86	32	25	0	
05:00 PM to 05:15 PM	2	9	262	105	3	0	21	29	5	1	1	38	317	50	0	0	75	21	13	0	
05:15 PM to 05:30 PM	1	12	251	114	1	0	11	24	15	1	1	34	318	30	2	0	74	28	22	0	
05:30 PM to 05:45 PM	0	11	248	108	0	0	19	27	13	0	0	39	232	26	1	0	100	22	14	0	
05:45 PM to 06:00 PM	2	16	278	142	0	1	15	22	11	0	1	36	264	20	2	0	72	20	23	0	
06:00 PM to 06:15 PM	3	15	206	117	0	0	20	35	12	1	0	34	229	29	2	0	93	23	18	0	
06:15 PM to 06:30 PM	1	4	269	121	1	0	18	21	5	1	0	34	210	13	2	0	65	14	12	0	
06:30 PM to 06:45 PM	0	12	211	110	1	0	11	22	10	0	0	38	228	10	0	0	75	27	24	0	
06:45 PM to 07:00 PM	1	10	190	103	0	0	17	22	3	0	0	34	224	28	1	0	86	20	19	0	
07:00 PM to 07:15 PM																					
07:15 PM to 07:30 PM																					
07:30 PM to 07:45 PM																					
07:45 PM to 08:00 PM																					
08:00 PM to 08:15 PM																					
08:15 PM to 08:30 PM																					
08:30 PM to 08:45 PM																					
08:45 PM to 09:00 PM																					
INT. PEAK HR (ALL VEH)	1498					216					1509					501					
04:30 PM to 05:30 PM	5	37	1032	424	5	0	72	101	43	4	2	134	1238	135	3	0	307	111	83	0	
Peak Hour Overall	U	Left	Thru	Right	SB	U	Left	Thru	Right	WB	U	Left	Thru	Right	NB	U	Left	Thru	Right	EB	
Factor (PHF)	0.63	0.77	0.98	0.93	0.99	n/a	0.64	0.87	0.72	0.83	0.50	0.88	0.97	0.68	0.93	n/a	0.89	0.87	0.83	0.88	



DATA COLLECTION NOTES:

Gorove/Slade Associates - Multimodal Turning Movement Count Report

Project Name : Long Reach Village Center
 Project # : 3422-002
 Location : Howard County, MD
 Data Source : Gorove/Slade Associates, Inc.

Analysis Period: STUDY_PERIOD
 Date of Counts: Thursday, May 15, 2025
 Weather: Partly Cloudy

10:00 AM to 02:00 PM

Volumes Displayed as: 2. System Peak (vehicle)
 Intersection Peak Hour (all vehicles): 12:15 PM to 01:15 PM
 System Peak Hour (all vehicles): 12:45 PM to 01:45 PM
 User-Defined Peak Hour: 11:00 AM to 12:00 PM

Intersection:		1. /Cloudleap Court & Tamar Drive																			
ALL VEHICLES	Direction: Roadway: Movement:	Southbound					Westbound					Northbound					Eastbound				
							Tamar Drive					Cloudleap Court					Tamar Drive				
		U	Left	Thru	Right	Peds	U	Left	Thru	Right	Peds	U	Left	Thru	Right	Peds	U	Left	Thru	Right	Peds
10:00 AM	to 10:15 AM	0	0	0	0	0	0	9	77	0	7	0	15	0	10	0	0	0	71	13	0
10:15 AM	to 10:30 AM	0	0	0	0	0	13	84	0	1	0	19	0	11	0	0	0	84	22	1	
10:30 AM	to 10:45 AM	0	0	0	0	0	7	87	0	3	0	14	0	12	1	0	0	77	28	0	
10:45 AM	to 11:00 AM	0	0	0	0	0	12	72	0	4	0	17	0	16	1	0	0	77	19	1	
11:00 AM	to 11:15 AM	0	0	0	0	0	9	67	0	3	0	12	0	11	2	0	0	81	17	0	
11:15 AM	to 11:30 AM	0	0	0	0	0	4	87	0	3	0	5	0	13	2	0	0	94	19	0	
11:30 AM	to 11:45 AM	0	0	0	0	0	9	103	0	4	0	20	0	20	0	0	0	84	27	0	
11:45 AM	to 12:00 PM	0	0	0	0	0	8	86	0	1	0	17	0	7	3	0	0	89	23	0	
12:00 PM	to 12:15 PM	0	0	0	0	0	1	6	88	0	6	0	21	0	12	1	0	0	77	19	2
12:15 PM	to 12:30 PM	0	0	0	0	0	14	83	0	4	0	17	0	13	2	0	0	87	21	0	
12:30 PM	to 12:45 PM	0	0	0	0	0	11	97	0	0	0	23	0	19	0	0	0	95	22	0	
12:45 PM	to 01:00 PM	0	0	0	0	0	11	109	0	0	0	17	0	19	0	0	0	96	18	0	
01:00 PM	to 01:15 PM	0	0	0	0	0	11	89	0	2	0	21	0	14	4	0	0	92	9	0	
01:15 PM	to 01:30 PM	0	0	0	0	0	6	92	0	3	0	19	0	5	2	0	0	97	14	0	
01:30 PM	to 01:45 PM	0	0	0	0	0	7	101	0	2	0	23	0	10	0	0	0	90	21	0	
01:45 PM	to 02:00 PM	0	0	0	0	0	9	102	0	2	0	23	0	17	0	0	0	71	20	4	
02:00 PM	to 02:15 PM																				
02:15 PM	to 02:30 PM																				
02:30 PM	to 02:45 PM																				
02:45 PM	to 03:00 PM																				
SYSTEM PEAK HR (VEH.)		0					426					128					437				
12:45 PM to 01:45 PM		0					35 391 0					80 0 48					0 0 375 62 0				
Peak Hour Overall		U Left Thru Right SB					U Left Thru Right WB					U Left Thru Right NB					U Left Thru Right EB				
Factor (PHF)		n/a n/a n/a n/a n/a					n/a 0.80 0.90 n/a 0.89					n/a 0.87 n/a 0.63 0.89					n/a n/a 0.97 0.74 0.96				
HEAVY VEHICLES (FHWA 4+)																					
Direction: Roadway: Movement:		Southbound					Westbound					Northbound					Eastbound				
							Tamar Drive					Cloudleap Court					Tamar Drive				
		U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right				
10:00 AM	to 10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0				
10:15 AM	to 10:30 AM	0	0	0	0	0	1	1	0	0	1	0	0	0	0	1	0				
10:30 AM	to 10:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2	0				
10:45 AM	to 11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
11:00 AM	to 11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
11:15 AM	to 11:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0				
11:30 AM	to 11:45 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4	0				
11:45 AM	to 12:00 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	1				
12:00 PM	to 12:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0				
12:15 PM	to 12:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0				
12:30 PM	to 12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0				
12:45 PM	to 01:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0				
01:00 PM	to 01:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0				
01:15 PM	to 01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0				
01:30 PM	to 01:45 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	2	0	0				
01:45 PM	to 02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0				
02:00 PM	to 02:15 PM																				
02:15 PM	to 02:30 PM																				
02:30 PM	to 02:45 PM																				
02:45 PM	to 03:00 PM																				
SYSTEM PEAK HR (VEH.)		0					5					1					5				
12:45 PM to 01:45 PM		0					0 1 4 0					0 0 0 1					0 0 5 0				
Heavy Vehicle % (PHV)		0.0%					0.0%					0.0%					0.0%				
INT. PEAK HR (HV ONLY)		0					9					0					10				
11:30 AM to 12:30 PM		0					0 0 9 0					0 0 0 0					0 0 9 1				
Heavy Vehicle % (PHV)		0.0%					0.0%					0.0%					0.0%				
BICYCLES																					
Direction: Roadway: Movement:		Southbound					Westbound					Northbound					Eastbound				
							Tamar Drive					Cloudleap Court					Tamar Drive				
		U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right				
10:00 AM	to 10:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0				
10:15 AM	to 10:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1				
10:30 AM	to 10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
10:45 AM	to 11:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1				
11:00 AM	to 11:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0				
11:15 AM	to 11:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0				
11:30 AM	to 11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
11:45 AM	to 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0				
12:00 PM	to 12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0				
12:15 PM	to 12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0				
12:30 PM	to 12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
12:45 PM	to 01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0				
01:00 PM	to 01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0				
01:15 PM	to 01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
01:30 PM	to 01:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0				
01:45 PM	to 02:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0				
02:00 PM	to 02:15 PM																				
02:15 PM	to 02:30 PM																				
02:30 PM	to 02:45 PM																				
02:45 PM	to 03:00 PM																				
SYSTEM PEAK HR (VEH.)		0					1					0					3				
12:45 PM to 01:45 PM		0					0 0 1 1 0					0 0 0 0 0					0 0 2 1				
INT. PEAK HR (BIKES)		0					3					3					3				
10:00 AM to 11:00 AM		0					0 1 2 0					0 3 0 0					0 0 1 2				

VEHICLE PEAK HOUR VOLS AND PHF: System Peak (vehicle)

n/a		0	0
n/a	n/a	n/a	n/a
SBR	SBT	SBL	SBU
0	0	0	0
Tamar Drive			
0	WBR	n/a	0.89
391	WBT	0.90	
35	WBL	0.80	
0	WBU	n/a	
Cloudleap Court			
NBU	NBL	NBT	NBR
0	80	0	48
0.87	n/a	0.63	0.89
Tamar Drive			
426	EBU	0	
0.96	n/a	EBL	0
0.97	EBT	375	
0.74	EBR	62	

HEAVY VEH PEAK HOUR VOLS AND PHV: System Peak (vehicle)

0.0%		0	0
0.0%	0.0%	0.0%	0.0%
SBR	SBT	SBL	SBU
0	0	0	0
Tamar Drive			
0	WBR	0.0%	1.2%
4	WBT	1.0%	
1	WBL	2.9%	
0	WBU	0.0%	
Cloudleap Court			
NBU	NBL	NBT	NBR
0	0	0	1
0.0%	0.0%	0.0%	2.1%
Tamar Drive			
5	EBU	0	
1.1%	0.0%	EBL	0
1.3%	EBT	5	
0.0%	EBR	0	

PED AND BIKE PEAK HOUR VOLUMES: System Peak (vehicle)

0		0	0	
PEDS	SBR	SBT	SBL	SBU
0	0	0	0	0
Tamar Drive				
0	WBR	0	0	0
1	WBT	0	0	0
0	WBL	0	0	0
0	WBU	0	0	0
Cloudleap Court				
NBU	NBL	NBT	NBR	PEDS
0	0	0	0	7
Tamar Drive				
0	EBU	0	0	0
0	EBL	0	0	0
2	EBT	2	0	0
1	EBR	1	0	0
6	PEDS	6	0	0

DATA COLLECTION NOTES:

Gorove/Slade Associates - Multimodal Turning Movement Count Report

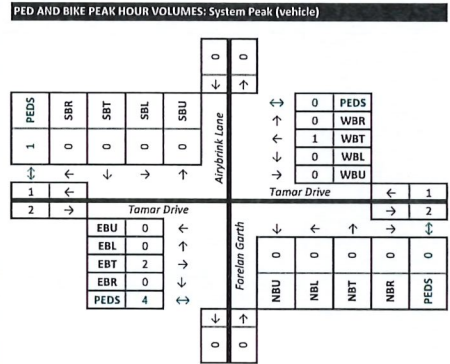
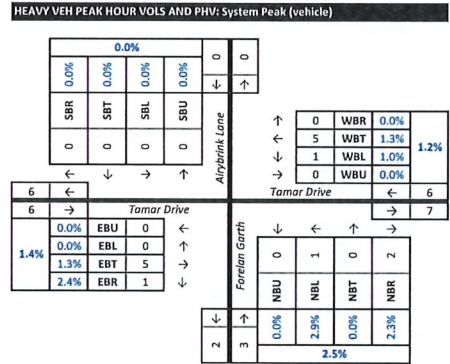
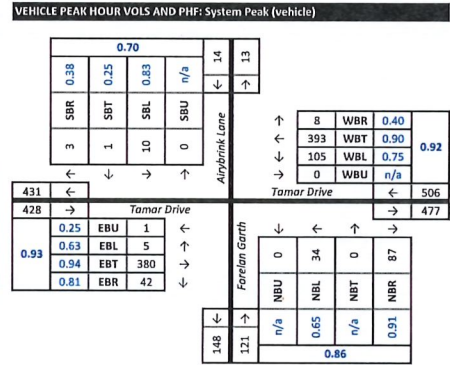
Project Name : Long Reach Village Center
 Project # : 3422-002
 Location : Howard County, MD
 Data Source : Gorove/Slade Associates, Inc.

Analysis Period: STUDY_PERIOD
 Date of Counts: Thursday, May 15, 2025
 Weather: Partly Cloudy

10:00 AM to 02:00 PM

Volumes Displayed as: 2. System Peak (vehicle)
 Intersection Peak Hour (all vehicles): 12:45 PM to 01:45 PM
 System Peak Hour (all vehicles): 12:45 PM to 01:45 PM
 User-Defined Peak Hour: 11:00 AM to 12:00 PM

Intersection:		1. Alyrbrink Lane/Forelan Garth & Tamar Drive																			
ALL VEHICLES	Direction:	Southbound				Westbound				Northbound				Eastbound							
	Roadway:	Alyrbrink Lane				Tamar Drive				Forelan Garth				Tamar Drive							
	Movement:	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R				
10:00 AM to 10:15 AM		0	2	0	0	1	30	83	1	0	8	0	5	0	1	74	12				
10:15 AM to 10:30 AM		0	1	0	1	0	24	96	1	0	2	1	15	0	0	81	12				
10:30 AM to 10:45 AM		0	5	0	2	0	28	88	2	0	5	0	10	0	1	74	15				
10:45 AM to 11:00 AM		0	6	0	0	0	30	82	1	0	4	0	18	0	0	74	10				
11:00 AM to 11:15 AM		0	2	0	0	0	36	76	1	0	1	0	17	0	0	83	15				
11:15 AM to 11:30 AM		0	1	0	2	0	29	78	3	0	6	0	7	4	0	96	10				
11:30 AM to 11:45 AM		0	7	2	2	0	34	97	2	0	11	0	16	4	0	2	94				
11:45 AM to 12:00 PM		0	3	0	3	0	21	83	4	0	7	2	23	1	0	0	79				
12:00 PM to 12:15 PM		0	2	0	0	0	34	93	2	0	6	0	11	1	0	0	85				
12:15 PM to 12:30 PM		0	3	0	1	0	25	89	3	0	7	2	27	2	0	2	77				
12:30 PM to 12:45 PM		0	5	0	3	0	18	96	6	0	10	0	14	0	0	0	91				
12:45 PM to 01:00 PM		0	3	0	2	0	24	102	0	0	13	0	19	0	0	1	101				
01:00 PM to 01:15 PM		0	2	1	1	0	35	92	3	0	7	0	22	1	1	1	94				
01:15 PM to 01:30 PM		0	2	0	0	0	22	90	0	0	11	0	24	3	0	2	98				
01:30 PM to 01:45 PM		0	3	0	0	0	24	109	5	0	3	0	22	0	0	1	87				
01:45 PM to 02:00 PM		0	0	2	4	0	17	89	4	0	16	1	33	0	0	1	77				
02:00 PM to 02:15 PM																					
02:15 PM to 02:30 PM																					
02:30 PM to 02:45 PM																					
02:45 PM to 03:00 PM																					
SYSTEM PEAK HR (VEH.)		14				506				121				428							
12:45 PM to 01:45 PM		0	10	1	3	0	105	393	8	0	34	0	87	1	5	380	42				
Peak Hour Overall		U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R				
Factor (PHF)		n/a	0.83	0.25	0.38	0.70	n/a	0.75	0.90	0.40	0.92	n/a	0.65	n/a	0.91	0.86	0.25	0.63	0.94	0.81	0.93



DATA COLLECTION NOTES:

Gorove/Side Associates - Multimodal Turning Movement Count Report

Project Name: Long Reach Village Center
 Project #: 34222002
 Location: Howard County, MD
 Data Source: Gorove/Side Associates, Inc.

Analysis Period: STUDY PERIOD
 Date of Counts: Thursday, May 15, 2025
 Weather: Partly Cloudy

10:00 AM to 02:00 PM

Volumes Displayed as 2-System Peak (vehicle)
 Intersection Peak Hour (all vehicles): 12:45 PM to 01:45 PM
 System Peak Hour (all vehicles): 12:45 PM to 01:45 PM
 User-Defined Peak Hour: 11:00 AM to 12:00 PM

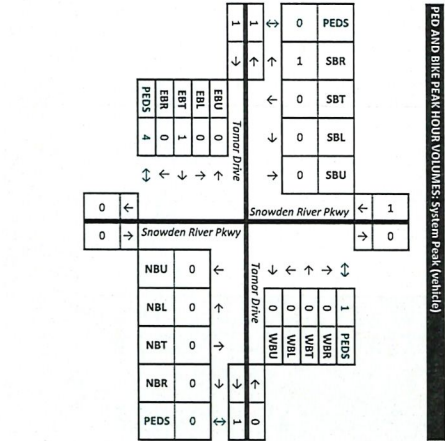
All Vehicles	Direction	Southbound			Westbound			Northbound			Eastbound											
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right									
10:00 AM to 10:05 AM	U	12	220	83	0	13	23	12	0	1	148	11	2	0	52	11	14	0				
10:05 AM to 10:30 AM	U	1	203	95	1	0	19	21	11	0	0	137	10	0	0	80	16	21	0			
10:30 AM to 10:45 AM	U	0	0	0	0	0	14	29	14	1	14	165	8	0	0	66	12	13	0			
10:45 AM to 11:00 AM	U	0	4	218	106	0	1	16	14	5	0	22	196	10	0	64	20	13	0			
11:00 AM to 11:15 AM	U	1	7	210	84	0	1	16	11	13	0	16	151	9	0	68	19	19	0			
11:15 AM to 11:30 AM	U	1	6	266	112	0	0	14	13	9	1	0	15	168	11	2	1	71	23	26	0	
11:30 AM to 11:45 AM	U	4	9	221	95	0	0	12	19	10	0	17	179	16	0	0	95	20	23	0		
11:45 AM to 12:00 PM	U	2	6	275	100	2	0	17	20	10	4	2	21	192	20	2	0	69	18	23	0	
12:00 PM to 12:15 PM	U	1	7	212	108	0	1	14	8	0	1	24	164	19	0	1	85	17	16	0		
12:15 PM to 12:30 PM	U	1	5	254	103	0	0	19	17	6	2	0	18	211	20	0	0	71	21	29	0	
12:30 PM to 12:45 PM	U	1	12	238	95	0	0	18	16	6	0	0	27	212	17	1	0	81	22	18	0	
12:45 PM to 01:00 PM	U	0	4	259	104	0	0	12	19	9	0	0	1	25	255	14	0	87	20	18	0	
01:00 PM to 01:15 PM	U	1	8	239	108	1	0	12	15	9	0	0	19	202	21	3	0	91	29	16	0	
01:15 PM to 01:30 PM	U	1	11	226	114	0	0	24	21	8	0	0	9	231	19	1	0	81	29	16	0	
01:30 PM to 01:45 PM	U	2	3	252	93	0	0	15	32	2	0	0	24	214	22	0	0	82	30	16	0	
01:45 PM to 02:00 PM	U	2	3	226	86	1	0	14	18	3	0	2	15	208	14	1	0	86	24	24	0	
02:00 PM to 02:15 PM	U																					
02:15 PM to 02:30 PM	U																					
02:30 PM to 02:45 PM	U																					
02:45 PM to 03:00 PM	U																					

VEHICLE PEAK HOUR VOLS AND PHS: SYSTEM PEAK (VEHICLE)	
12:45 PM to 01:45 PM	0.97
11:00 AM to 12:00 PM	1.275
01:45 PM to 02:00 PM	0.92
02:00 PM to 02:15 PM	0.94
02:15 PM to 02:30 PM	0.59
02:30 PM to 02:45 PM	0.50
02:45 PM to 03:00 PM	0.49
03:00 PM to 03:15 PM	0.26
03:15 PM to 03:30 PM	0.26
03:30 PM to 03:45 PM	0.26
03:45 PM to 04:00 PM	0.26
04:00 PM to 04:15 PM	0.26
04:15 PM to 04:30 PM	0.26
04:30 PM to 04:45 PM	0.26
04:45 PM to 05:00 PM	0.26
05:00 PM to 05:15 PM	0.26
05:15 PM to 05:30 PM	0.26
05:30 PM to 05:45 PM	0.26
05:45 PM to 06:00 PM	0.26
06:00 PM to 06:15 PM	0.26
06:15 PM to 06:30 PM	0.26
06:30 PM to 06:45 PM	0.26
06:45 PM to 07:00 PM	0.26
07:00 PM to 07:15 PM	0.26
07:15 PM to 07:30 PM	0.26
07:30 PM to 07:45 PM	0.26
07:45 PM to 08:00 PM	0.26
08:00 PM to 08:15 PM	0.26
08:15 PM to 08:30 PM	0.26
08:30 PM to 08:45 PM	0.26
08:45 PM to 09:00 PM	0.26
09:00 PM to 09:15 PM	0.26
09:15 PM to 09:30 PM	0.26
09:30 PM to 09:45 PM	0.26
09:45 PM to 10:00 PM	0.26
10:00 PM to 10:15 PM	0.26
10:15 PM to 10:30 PM	0.26
10:30 PM to 10:45 PM	0.26
10:45 PM to 11:00 PM	0.26
11:00 PM to 11:15 PM	0.26
11:15 PM to 11:30 PM	0.26
11:30 PM to 11:45 PM	0.26
11:45 PM to 12:00 PM	0.26
12:00 PM to 12:15 PM	0.26
12:15 PM to 12:30 PM	0.26
12:30 PM to 12:45 PM	0.26
12:45 PM to 01:00 PM	0.26
01:00 PM to 01:15 PM	0.26
01:15 PM to 01:30 PM	0.26
01:30 PM to 01:45 PM	0.26
01:45 PM to 02:00 PM	0.26
02:00 PM to 02:15 PM	0.26
02:15 PM to 02:30 PM	0.26
02:30 PM to 02:45 PM	0.26
02:45 PM to 03:00 PM	0.26

Heavy Vehicle	Direction	Southbound			Westbound			Northbound			Eastbound										
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right								
12:45 PM to 01:45 PM	U	4	26	976	419	1	0	63	87	28	0	1	77	902	76	4	0	341	108	66	0
Peak Hour Factor (PHF)	Overall	0.50	0.59	0.94	0.92	0.97	n/a	0.66	0.68	0.78	0.84	0.25	0.77	0.88	0.86	0.89	n/a	0.94	0.90	0.92	0.95

HEAVY VEH PEAK HOUR VOLS AND PHS: SYSTEM PEAK (VEHICLE)	
12:45 PM to 01:45 PM	0.4%
11:00 AM to 12:00 PM	0.7%
12:00 PM to 12:15 PM	0.3%
12:15 PM to 12:30 PM	0.0%
12:30 PM to 12:45 PM	0.0%
12:45 PM to 01:00 PM	0.0%
01:00 PM to 01:15 PM	0.0%
01:15 PM to 01:30 PM	0.0%
01:30 PM to 01:45 PM	0.0%
01:45 PM to 02:00 PM	0.0%
02:00 PM to 02:15 PM	0.0%
02:15 PM to 02:30 PM	0.0%
02:30 PM to 02:45 PM	0.0%
02:45 PM to 03:00 PM	0.0%
03:00 PM to 03:15 PM	0.0%
03:15 PM to 03:30 PM	0.0%
03:30 PM to 03:45 PM	0.0%
03:45 PM to 04:00 PM	0.0%
04:00 PM to 04:15 PM	0.0%
04:15 PM to 04:30 PM	0.0%
04:30 PM to 04:45 PM	0.0%
04:45 PM to 05:00 PM	0.0%
05:00 PM to 05:15 PM	0.0%
05:15 PM to 05:30 PM	0.0%
05:30 PM to 05:45 PM	0.0%
05:45 PM to 06:00 PM	0.0%
06:00 PM to 06:15 PM	0.0%
06:15 PM to 06:30 PM	0.0%
06:30 PM to 06:45 PM	0.0%
06:45 PM to 07:00 PM	0.0%
07:00 PM to 07:15 PM	0.0%
07:15 PM to 07:30 PM	0.0%
07:30 PM to 07:45 PM	0.0%
07:45 PM to 08:00 PM	0.0%
08:00 PM to 08:15 PM	0.0%
08:15 PM to 08:30 PM	0.0%
08:30 PM to 08:45 PM	0.0%
08:45 PM to 09:00 PM	0.0%
09:00 PM to 09:15 PM	0.0%
09:15 PM to 09:30 PM	0.0%
09:30 PM to 09:45 PM	0.0%
09:45 PM to 10:00 PM	0.0%
10:00 PM to 10:15 PM	0.0%
10:15 PM to 10:30 PM	0.0%
10:30 PM to 10:45 PM	0.0%
10:45 PM to 11:00 PM	0.0%
11:00 PM to 11:15 PM	0.0%
11:15 PM to 11:30 PM	0.0%
11:30 PM to 11:45 PM	0.0%
11:45 PM to 12:00 PM	0.0%
12:00 PM to 12:15 PM	0.0%
12:15 PM to 12:30 PM	0.0%
12:30 PM to 12:45 PM	0.0%
12:45 PM to 01:00 PM	0.0%
01:00 PM to 01:15 PM	0.0%
01:15 PM to 01:30 PM	0.0%
01:30 PM to 01:45 PM	0.0%
01:45 PM to 02:00 PM	0.0%
02:00 PM to 02:15 PM	0.0%
02:15 PM to 02:30 PM	0.0%
02:30 PM to 02:45 PM	0.0%
02:45 PM to 03:00 PM	0.0%

System Peak Hour (Veh)	Direction	Southbound			Westbound			Northbound			Eastbound										
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right								
12:45 PM to 01:45 PM	U	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Factor (PHF)	Overall	0.0%	0.0%	0.3%	0.7%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



DATA COLLECTION NOTES:

Grove/Slade Associates - Multimodal Turning Movement Count Report

Project Name : Long Reach Village Center
 Project # : 3422-002
 Location : Howard County, MD
 Data Source : Grove/Slade Associates, Inc.

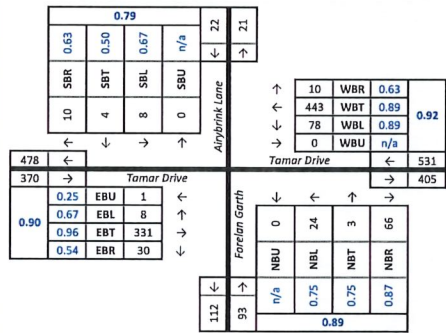
Analysis Period: STUDY_PERIOD
 Date of Counts: Thursday, May 15, 2025
 Weather: Partly Cloudy

11:00 AM to 04:00 PM

Volumes Displayed as: 1. Intersection Peak (vehicle)
 Intersection Peak Hour (all vehicles): 02:30 PM to 03:30 PM
 System Peak Hour (all vehicles): 02:30 PM to 03:30 PM
 User-Defined Peak Hour: 12:00 PM to 01:00 PM

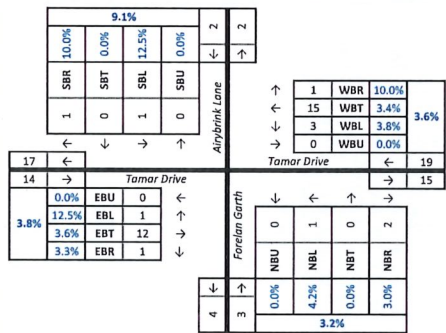
ALL VEHICLES	Direction: Roadway: Movement:	1. Alybrink Lane/Forelan Garth & Tamar Drive																				
		Southbound		Westbound		Northbound		Eastbound														
		Alybrink Lane		Tamar Drive		Forelan Garth		Tamar Drive														
		U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right					
11:00 AM to 11:15 AM		0	1	0	2	2	0	8	59	2	0	0	1	1	9	2	0	1	61	5	0	
11:15 AM to 11:30 AM		0	2	1	3	1	0	15	67	2	0	0	5	0	10	2	0	2	69	3	2	
11:30 AM to 11:45 AM		0	2	0	1	1	0	13	66	0	0	0	5	0	12	2	0	2	60	5	2	
11:45 AM to 12:00 PM		0	1	0	0	0	0	15	50	1	0	0	5	0	9	1	0	2	58	8	2	
12:00 PM to 12:15 PM		0	1	2	4	2	0	21	77	1	1	0	6	0	12	4	0	1	63	9	2	
12:15 PM to 12:30 PM		0	4	0	1	1	0	15	83	2	0	0	3	2	20	0	0	2	69	6	0	
12:30 PM to 12:45 PM		0	2	1	2	0	0	19	80	0	0	0	6	1	8	1	0	1	78	11	0	
12:45 PM to 01:00 PM		1	4	0	1	2	0	20	77	4	0	0	12	0	13	0	0	3	69	8	1	
01:00 PM to 01:15 PM		0	3	0	3	1	0	9	76	5	0	0	5	1	16	1	0	3	75	7	0	
01:15 PM to 01:30 PM		0	0	1	1	1	0	22	66	4	0	0	5	0	23	0	0	0	91	10	1	
01:30 PM to 01:45 PM		0	2	0	2	0	0	6	81	0	0	0	3	2	14	4	0	3	45	7	1	
01:45 PM to 02:00 PM		0	1	0	4	0	0	10	80	2	0	0	4	0	17	1	0	0	52	11	0	
02:00 PM to 02:15 PM		0	1	0	2	1	0	12	81	4	0	0	8	0	17	0	0	1	56	7	1	
02:15 PM to 02:30 PM		0	4	0	4	2	0	15	73	4	0	0	4	0	11	4	0	2	85	10	0	
02:30 PM to 02:45 PM		0	1	1	4	13	0	22	109	2	1	0	6	0	13	26	0	2	85	3	4	
02:45 PM to 03:00 PM		0	3	0	4	1	0	18	113	4	0	0	8	1	17	7	0	3	86	14	0	
03:00 PM to 03:15 PM		0	3	1	2	0	0	18	124	2	0	0	4	1	19	3	0	0	77	8	3	
03:15 PM to 03:30 PM		0	1	2	0	1	0	20	97	2	0	0	6	1	17	2	1	3	83	5	2	
03:30 PM to 03:45 PM		0	3	0	3	0	1	11	108	3	0	0	2	1	18	0	0	1	84	8	2	
03:45 PM to 04:00 PM		0	4	0	0	0	0	18	108	7	3	0	7	0	16	0	0	0	91	4	1	
INT. PEAK HR (ALL VEH)		22				531				93				370								
02:30 PM to 03:30 PM		U	8	4	10	15	U	78	443	10	1	U	24	3	66	38	U	1	8	331	30	9
Peak Hour Overall		U	Left	Thru	Right	SB	U	Left	Thru	Right	WB	U	Left	Thru	Right	NB	U	Left	Thru	Right	EB	
Factor (PHF)		0.94	n/a	0.67	0.50	0.63	0.79	n/a	0.83	0.89	0.63	0.92	n/a	0.75	0.75	0.87	0.89	0.25	0.67	0.96	0.54	0.90

VEHICLE PEAK HOUR VOLS AND PHF: Intersection Peak (vehicle)



HEAVY VEHICLES (FHWA 4+)	Direction: Roadway: Movement:	Southbound				Westbound				Northbound				Eastbound							
		Alybrink Lane				Tamar Drive				Forelan Garth				Tamar Drive							
		U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right				
11:00 AM to 11:15 AM		0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	
11:15 AM to 11:30 AM		0	0	0	0	0	1	5	0	0	0	0	0	0	1	0	0	0	1	1	
11:30 AM to 11:45 AM		0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	3	0	
11:45 AM to 12:00 PM		0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1	
12:00 PM to 12:15 PM		0	0	0	1	0	0	1	3	0	0	0	1	0	0	0	0	0	3	0	
12:15 PM to 12:30 PM		0	0	0	0	0	0	1	3	0	0	0	0	1	0	0	0	2	0	0	
12:30 PM to 12:45 PM		0	0	0	0	0	0	2	2	0	0	0	0	1	0	0	0	4	1	1	
12:45 PM to 01:00 PM		0	1	0	0	0	0	2	2	1	0	0	0	2	0	0	0	3	1	1	
01:00 PM to 01:15 PM		0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0	3	0	0	
01:15 PM to 01:30 PM		0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	5	0	0	
01:30 PM to 01:45 PM		0	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	2	1	1	
01:45 PM to 02:00 PM		0	0	0	0	0	0	2	0	0	0	0	0	3	0	0	0	2	3	3	
02:00 PM to 02:15 PM		0	0	0	0	0	0	5	1	0	0	0	0	0	2	0	0	2	0	0	
02:15 PM to 02:30 PM		0	0	0	1	0	0	3	0	0	0	0	1	0	0	0	0	9	0	0	
02:30 PM to 02:45 PM		0	0	0	0	0	0	1	2	0	0	0	1	0	0	0	0	2	2	0	
02:45 PM to 03:00 PM		0	1	0	0	0	0	1	6	0	0	0	0	0	2	0	0	1	6	1	
03:00 PM to 03:15 PM		0	0	0	1	0	0	1	4	1	0	0	0	0	0	0	0	1	1	0	
03:15 PM to 03:30 PM		0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	0	0	
03:30 PM to 03:45 PM		0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	8	0	0	
03:45 PM to 04:00 PM		0	0	0	0	0	0	1	4	0	0	0	2	0	1	0	0	0	3	2	
INT. PEAK HR (ALL VEH)		2				19				3				14							
02:30 PM to 03:30 PM		U	1	0	1	U	3	15	1	U	1	0	2	U	1	12	1	U	1	12	1
Heavy Vehicle % (PHV)		0.0%	12.5%	0.0%	10.0%	9.1%	0.0%	3.8%	3.4%	10.0%	3.6%	0.0%	4.2%	0.0%	3.0%	3.2%	0.0%	12.5%	3.6%	3.3%	3.8%
INT. PEAK HR (HV ONLY)		2				24				2				20							
02:45 PM to 03:45 PM		U	1	0	1	U	2	21	1	U	0	0	2	U	1	18	1	U	1	18	1
Heavy Vehicle % (PHV)		0.0%	10.0%	0.0%	11.1%	9.1%	0.0%	3.0%	4.8%	9.1%	4.6%	0.0%	0.0%	0.0%	2.8%	2.1%	0.0%	14.3%	5.5%	2.9%	5.4%

HEAVY VEH PEAK HOUR VOLS AND PHV: Intersection Peak (vehicle)



BICYCLES	Direction: Roadway: Movement:	Southbound				Westbound				Northbound				Eastbound							
		Alybrink Lane				Tamar Drive				Forelan Garth				Tamar Drive							
		U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right				
11:00 AM to 11:15 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM to 11:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
11:30 AM to 11:45 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM to 12:00 PM		0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM to 12:15 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
12:15 PM to 12:30 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM to 12:45 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM to 01:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
01:00 PM to 01:15 PM		0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM to 01:30 PM		0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM to 01:45 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
01:45 PM to 02:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM to 02:15 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM to 02:30 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM to 02:45 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM to 03:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM to 03:15 PM		0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
03:15 PM to 03:30 PM		0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
03:30 PM to 03:45 PM		0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM to 04:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
INT. PEAK HR (ALL VEH)		0				1				2				0							
02:30 PM to 03:30 PM		U	0	0	0	U	0	1	0	U	1	0	1	U	0	0	0	U	0	0	0
INT. PEAK HR (BIKES)		0				2				2				2							
03:00 PM to 04:00 PM		U	0	0	0	U	0	2	0	U	1	0	1	U	0	1	1	U	0	1	1

PED AND BIKE PEAK HOUR VOLUMES: Intersection Peak (vehicle)

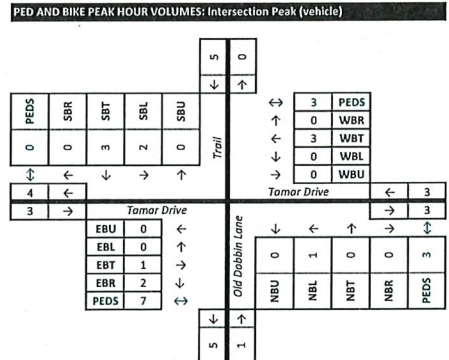
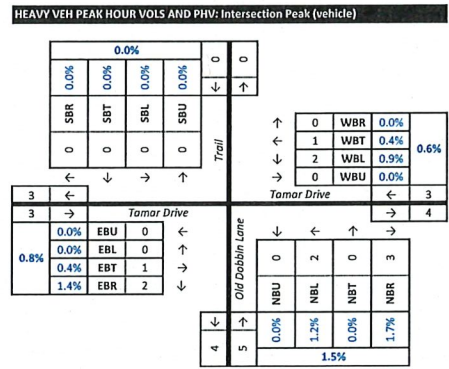
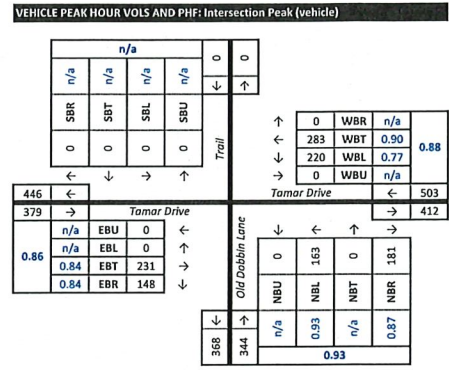
Gorove/Slade Associates - Multimodal Turning Movement Count Report

Project Name : Long Reach Village Center
 Project # : 3422-002
 Location : Howard County, MD
 Data Source : Gorove/Slade Associates, Inc.

Analysis Period: STUDY_PERIOD 10:00 AM to 02:00 PM
 Date of Counts : Saturday, September 6, 2025
 Weather: Partly Cloudy

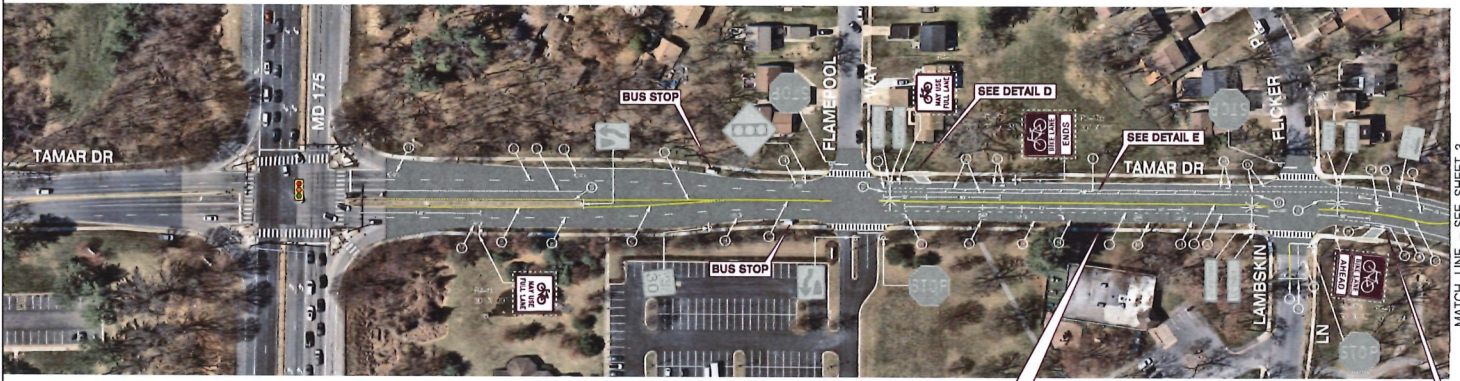
Volumes Displayed as: 1. Intersection Peak (vehicle)
 Intersection Peak Hour (all vehicles): 01:00 PM to 02:00 PM
 System Peak Hour (all vehicles): 01:00 PM to 02:00 PM
 User-Defined Peak Hour: 11:00 AM to 12:00 PM

Intersection:		1. Trail/Old Dobbin Lane & Tamar Drive																			
ALL VEHICLES	Direction: Roadway: Movement:	Southbound					Westbound					Northbound					Eastbound				
		Trail					Tamar Drive					Old Dobbin Lane					Tamar Drive				
		U	Left	Thru	Right	Peds	U	Left	Thru	Right	Peds	U	Left	Thru	Right	Peds	U	Left	Thru	Right	Peds
10:00 AM	to 10:15 AM	0	0	0	0	4	0	34	75	0	0	0	24	0	25	2	0	0	42	24	0
10:15 AM	to 10:30 AM	0	0	0	0	4	0	51	50	0	0	0	24	0	33	2	0	0	41	42	0
10:30 AM	to 10:45 AM	0	0	0	0	1	0	40	72	0	0	0	50	0	37	2	0	0	52	33	0
10:45 AM	to 11:00 AM	0	0	0	0	0	0	50	74	0	0	0	36	0	37	0	0	0	67	30	0
11:00 AM	to 11:15 AM	0	0	0	0	4	0	52	62	0	8	0	36	0	35	2	0	0	51	38	0
11:15 AM	to 11:30 AM	0	0	0	0	0	0	42	68	0	0	0	43	0	38	2	0	0	75	35	0
11:30 AM	to 11:45 AM	0	0	0	0	6	0	49	49	0	4	0	35	0	44	0	0	0	54	31	0
11:45 AM	to 12:00 PM	0	0	0	0	3	0	54	55	0	0	0	31	0	31	0	0	0	47	32	0
12:00 PM	to 12:15 PM	0	0	0	0	0	0	59	73	0	0	0	44	0	56	0	0	0	70	39	0
12:15 PM	to 12:30 PM	0	0	0	0	0	0	60	50	0	1	0	26	0	51	0	0	0	49	37	0
12:30 PM	to 12:45 PM	0	0	0	0	2	0	28	54	0	2	0	44	0	41	0	0	0	43	46	0
12:45 PM	to 01:00 PM	0	0	0	0	3	0	67	66	0	2	0	50	0	59	0	0	0	53	29	0
01:00 PM	to 01:15 PM	0	0	0	0	1	0	71	72	0	0	0	44	0	40	4	0	0	69	38	0
01:15 PM	to 01:30 PM	0	0	0	0	0	0	39	74	0	2	0	38	0	48	1	0	0	50	34	0
01:30 PM	to 01:45 PM	0	0	0	0	1	0	57	58	0	1	0	41	0	41	2	0	0	46	32	0
01:45 PM	to 02:00 PM	0	0	0	0	1	0	53	79	0	0	0	40	0	52	0	0	0	66	44	0
02:00 PM	to 02:15 PM																				
02:15 PM	to 02:30 PM																				
02:30 PM	to 02:45 PM																				
02:45 PM	to 03:00 PM																				
INT. PEAK HR (ALL VEH)		0					503					344					379				
01:00 PM to 02:00 PM		0	0	0	0	3	0	220	283	0	3	0	163	0	181	7	0	0	231	148	0
Peak Hour Overall		n/a					n/a					n/a					n/a				
Factor (PHF)		0.92					0.88					0.93					0.84				



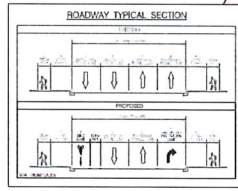
DATA COLLECTION NOTES:

D. Tamar Drive Complete Streets



MATCH LINE - SEE SHEET 3

SEE DETAIL D



SYMBOL LEGEND

	EXISTING GROUND MOUNTED SIGN AND SUPPORT
	PROPOSED GROUND MOUNTED SIGN AND SUPPORT
	EXISTING SIGN AND SUPPORT TO REMAIN
	EXISTING SIGN AND SUPPORT TO BE REPLACED
	PROPOSED SIGN AND SUPPORT
	SIGNALIZED INTERSECTION
	EXISTING STREET LIGHT POLE SIGN
	EXISTING FIRE HYDRANT

NUMBER OF MARKING DESIGNS	LINE	DATE
1. 12 IN WIDE YELLOW REFLECTIVE PAINT	1P	1P
2. 12 IN YELLOW THERMOPLASTIC PAINT	1P	1P
3. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
4. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
5. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
6. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
7. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
8. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
9. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
10. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
11. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
12. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
13. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
14. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
15. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
16. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
17. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
18. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
19. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
20. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
21. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
22. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
23. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
24. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
25. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
26. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
27. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
28. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
29. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P
30. 12 IN YELLOW SLUSH REFLECTIVE THERMOPLASTIC PAINT	1P	1P

CONSTRUCTION DETAILS

- 1. DIMENSIONS ARE MEASURED FROM FACE OF CURB.
- 2. ALL DIMENSIONS AND SIGNS ARE TO BE MARKED THROUGHOUT THE TRAIL LANE.
- 3. TYPICAL SIGNPOST AND SIGN LIFE NUMBER SHALL BE 10 FEET FOR 12" SIGN AND 15 FEET FOR 18" SIGN. SIGNPOSTS SHALL BE 10 FEET FOR 12" SIGN AND 15 FEET FOR 18" SIGN.

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS HAVE BEEN PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND.

DATE: 04/04/2025

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS _____
 CHIEF, BUREAU OF ENGINEERING _____

CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION _____
 CHIEF, BUREAU OF HIGHWAYS _____



DESIGN	BY	ML	DATE
DESIGN	ML		
DATE			

CAPITAL PROJECT NO. _____

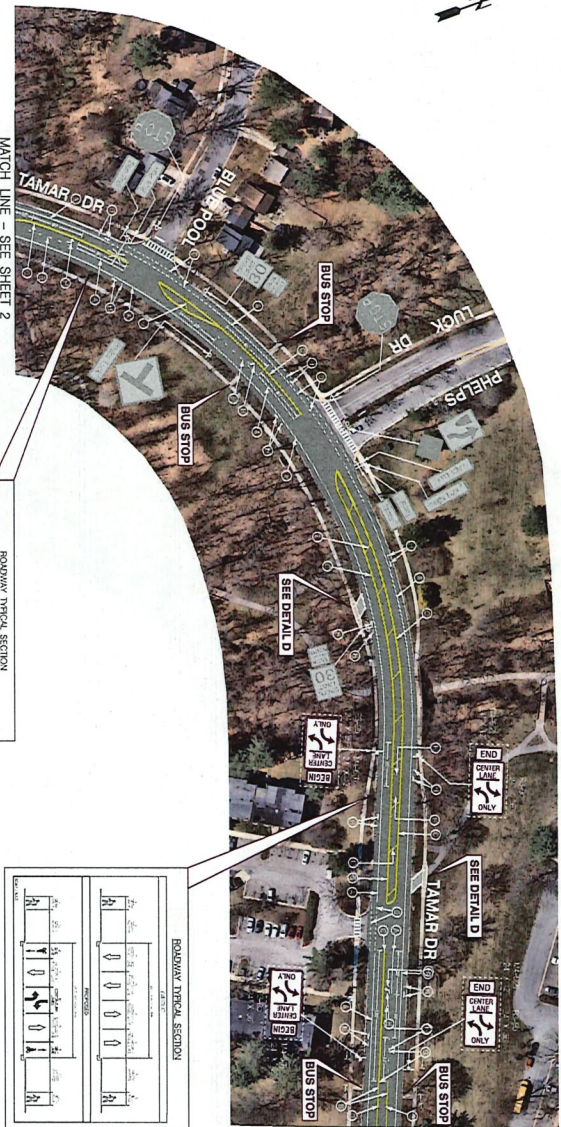
COMPLETE STREETS
 TAMAR DRIVE FROM MD 175
 TO SNOWDEN RIVER PARKWAY

ELECTION DISTRICT 2

HOWARD COUNTY, MARYLAND

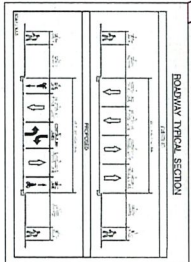
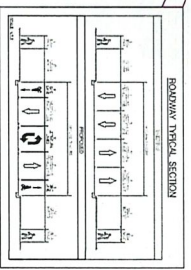
SCALE: 1" = 50'

SHEET: 2 OF 4



MATCH LINE - SEE SHEET 2

MATCH LINE - SEE SHEET 4



GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
3. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AND UTILITIES AT ALL TIMES.
4. ALL MATERIALS AND METHODS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AND EROSION CONTROL MEASURES THROUGHOUT THE PROJECT.
6. ALL WORK SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
8. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AND UTILITIES AT ALL TIMES.
9. ALL MATERIALS AND METHODS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
10. THE CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AND EROSION CONTROL MEASURES THROUGHOUT THE PROJECT.

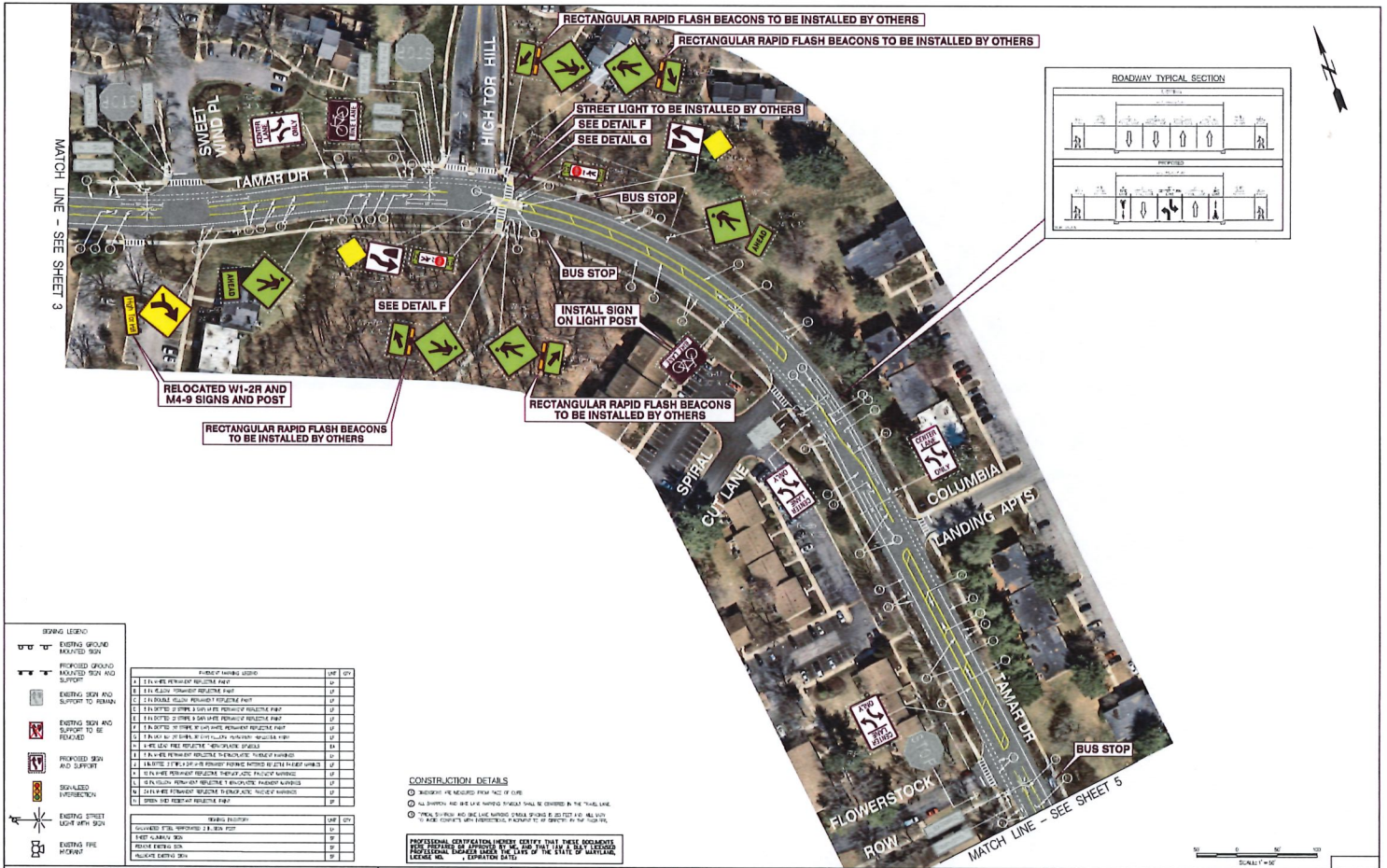
DEPARTMENT OF PUBLIC WORKS
HAMMOND COUNTY, MISSOURI
 DATE: [] / [] / []
 DRAWN BY: []



REV.	DATE	BY	NO.	DESCRIPTION
1	08/14/2024	JMT	1	ISSUED FOR PERMIT
2	08/14/2024	JMT	2	REVISED PER PERMIT COMMENTS
3	08/14/2024	JMT	3	REVISED PER PERMIT COMMENTS
4	08/14/2024	JMT	4	REVISED PER PERMIT COMMENTS

CAPITAL PROJECT NO.
 []

CONCRETE STREETS 175 TO SNOWDEN RIVER PARKWAY
HAMMOND COUNTY, MISSOURI
 SCALE: 1" = 1'



- EXISTING LEGEND**
- EXISTING GROUND MOUNTED SIGN
 - PROPOSED GROUND MOUNTED SIGN AND SUPPORT
 - EXISTING SIGN AND SUPPORT TO REMAIN
 - EXISTING SIGN AND SUPPORT TO BE REMOVED
 - PROPOSED SIGN AND SUPPORT
 - SEALED INTERSECTION
 - EXISTING STREET LIGHT AND SIGN
 - EXISTING FIRE HYDRANT

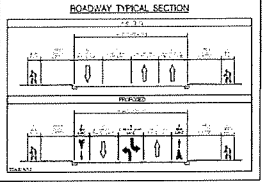
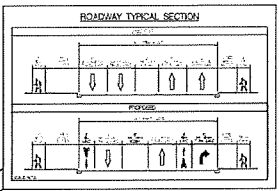
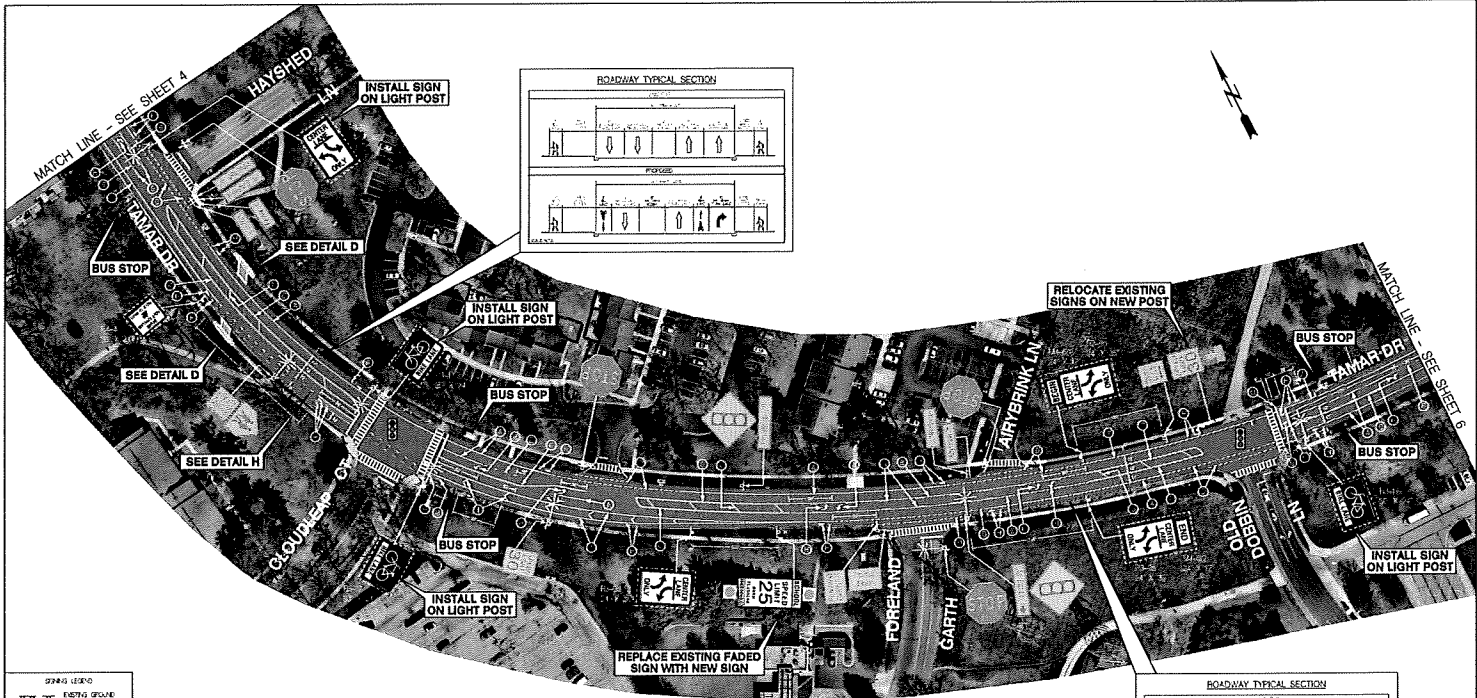
SYMBOL	DESCRIPTION	DATE	BY
[Symbol]	RELOCATED W1-2R AND M4-9 SIGNS AND POST	06/04/2025	JAC
[Symbol]	RECTANGULAR RAPID FLASH BEACONS TO BE INSTALLED BY OTHERS	06/04/2025	JAC
[Symbol]	STREET LIGHT TO BE INSTALLED BY OTHERS SEE DETAIL F SEE DETAIL G	06/04/2025	JAC
[Symbol]	BUS STOP	06/04/2025	JAC
[Symbol]	INSTALL SIGN ON LIGHT POST	06/04/2025	JAC
[Symbol]	RECTANGULAR RAPID FLASH BEACONS TO BE INSTALLED BY OTHERS	06/04/2025	JAC

CONSTRUCTION DETAILS

- BEACONS TO BE INSTALLED BY OTHERS
- ALL SIGNPOSTS AND BEACON LIGHTS SHALL BE CENTERED IN THE TRAIL LINE.
- BEACONS TO BE INSTALLED BY OTHERS SHALL BE CENTERED IN THE TRAIL LINE.
- BEACONS TO BE INSTALLED BY OTHERS SHALL BE CENTERED IN THE TRAIL LINE.

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS PREPARED BY ME OR UNDER MY SUPERVISION COMPLY WITH ALL REQUIREMENTS OF THE STATE OF MARYLAND.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND				DESIGNED BY: JAC DRAWN BY: JAC DATE: 06/04/2025	CAPITAL PROJECT NO. _____ MAP NO. _____ BLOCK NO. _____	COMPLETE STREETS TAMAR DRIVE FROM MD 175 TO SNOWDEN RIVER PARKWAY ELECTION DISTRICT 2 HOWARD COUNTY, MARYLAND	SCALE: 1" = 50' SHEET: 4 OF 4
DIRECTOR OF PUBLIC WORKS: _____ CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION: _____	CHIEF, BUREAU OF ENGINEERING: _____ CHIEF, BUREAU OF HIGHWAYS: _____						



- SYMBOL LEGEND**
- EXISTING GROUND
 - PROPOSED GROUND
 - PROPOSED SHOULDER
 - PROPOSED SIGN AND SUPPORT TO REMAIN
 - EXISTING SIGN AND SUPPORT TO BE REMOVED
 - PROPOSED SIGN AND SUPPORT
 - SEALED INTERSECTION
 - EXISTING STREET LIGHT POLE SIGN
 - EXISTING FIRE HYDRANT

SYMBOL	DESCRIPTION	UNIT	QTY
[Symbol]	INSTALL SIGN ON LIGHT POST	EA	10
[Symbol]	RELOCATE EXISTING SIGN ON NEW POST	EA	5
[Symbol]	REPLACE EXISTING FADED SIGN WITH NEW SIGN	EA	1
[Symbol]	BUS STOP	EA	10
[Symbol]	SEE DETAIL D	EA	10
[Symbol]	SEE DETAIL H	EA	10

CONSTRUCTION DETAILS

- 1. SIGNAGE SHALL BE INSTALLED IN ACCORDANCE WITH THE MDTV.
- 2. ALL SIGNAGE SHALL BE INSTALLED IN ACCORDANCE WITH THE MDTV.
- 3. SIGNAGE SHALL BE INSTALLED IN ACCORDANCE WITH THE MDTV.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS _____
 CHIEF, BUREAU OF ENGINEERING

CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION _____
 CHIEF, BUREAU OF HIGHWAYS



REV.	DATE	BY	NO.	DESCRIPTION
0	06/04/2005			

CAPITAL PROJECT NO. _____

COMPLETE STREETS
 TAMAR DRIVE FROM MD 175
 TO SNOWDEN RIVER PARKWAY

ELECTION DISTRICT 2 HOWARD COUNTY, MARYLAND

SCALE: 1" = 50'

SHEET _____ OF _____

E. Signal Warrant Analysis

Tamar Drive and Foreland Garth TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: Tamar Drive and Foreland Garth

COUNT DATE: 1/0/1900

INTERSECTION CONDITION: Total Future

MAJOR STREET: Tamar Drive
MINOR STREET: Foreland Garth

OF APPROACH LANES: 1
OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST BOTH APPROACHES*	HIGHEST HOUR MINOR ST HIGHEST APPROACH	WARRANT 1, Condition A			WARRANT 1, Condition B			WARRANT 1, Combination Warrant						Four Hour Warrant WARRANT 2	Peak Hour Warrant WARRANT 3
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	CONDITION A			CONDITION B				
									MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			500	150		750	75		400	120		600	60			
06:00 AM	80	115														
07:00 AM	905	220	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
08:00 AM	1,007	256	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
09:00 AM	907	273	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
10:00 AM	877	308	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
11:00 AM	942	375	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
12:00 PM	1,153	458	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
01:00 PM	1,029	407	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
02:00 PM	1,177	390	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
03:00 PM	1,303	443	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
04:00 PM	1,511	438	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
05:00 PM	1,738	509	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
06:00 PM	1,532	476	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
07:00 PM	338	393		Y			Y			Y			Y			
	14,499	5,061														
			12			12			12			12			13	11
			8 HOURS NEEDED SATISFIED			8 HOURS NEEDED SATISFIED			8 HOURS OF BOTH COND. A AND COND. B NEEDED SATISFIED						4 HRS NEEDED SATISFIED	1 HR NEEDED SATISFIED

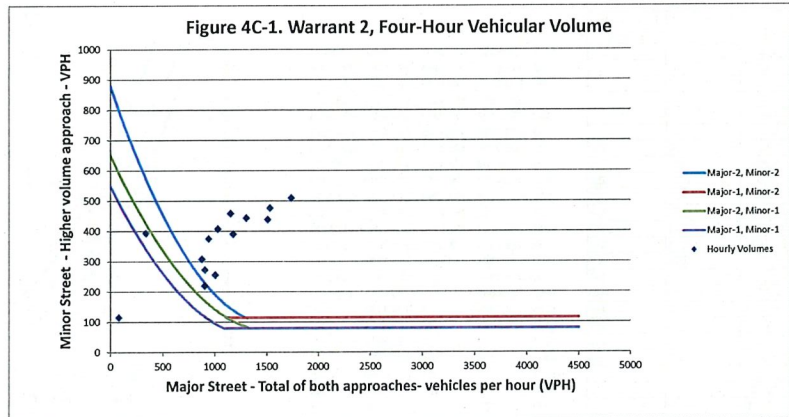
WARRANT 1 – Eight-Hour Vehicular Volume Warrant
 Condition A : Minimum Vehicular Volume
 Condition B : Interruption of Continuous Traffic
 Combination : Combination of Condition A and Condition B
 WARRANT 2 – Four-Hour Vehicular Volume Warrant
 WARRANT 3 – Peak Hour Warrant

P:\3422-002 Long Reach Village Center\Analysis\Signal Warrant Tool.xlsm\Signal Warrant

10/3/2025 11:40

Four-Hour Vehicular Volume Four-Hour Vehicular Volume

Time	Input		X	Y			
	Major Street Volume	Minor Street Volume					
12:00 - 1:00			0	879.2322	651.5062	651.5062	550.227
1:00 - 2:00			100	781.3473	579.0711	579.0711	482.7256
2:00 - 3:00			200	689.9685	511.4404	511.4404	420.1495
3:00 - 4:00			300	605.0959	448.6144	448.6144	362.4989
4:00 - 5:00			400	526.7294	390.5929	390.5929	309.7737
5:00 - 6:00			500	454.8692	337.376	337.376	261.9739
6:00 - 7:00	80	115	600	389.515	288.9636	288.9636	219.0994
7:00 - 8:00	905	220	700	330.6671	245.3558	245.3558	181.1504
8:00 - 9:00	1007	256	800	278.3253	206.5525	206.5525	148.1267
9:00 - 10:00	907	273	900	232.4897	172.5538	172.5538	120.0285
10:00 - 11:00	877	308	1000	193.1602	143.3597	143.3597	96.8556
11:00 - 12:00	942	375	1092	162.7233	120.7445	120.7445	80
12:00 - 1:00	1153	458	1118	155.1197	115	115	80
1:00 - 2:00	1029	407	1200	134.0198	115	99.3851	80
2:00 - 3:00	1177	390	1295	115	115	85.22956	80
3:00 - 4:00	1303	443	1340	115	115	80	80
4:00 - 5:00	1511	438	1400	115	115	80	80
5:00 - 6:00	1738	509	1500	115	115	80	80
6:00 - 7:00	1532	476	1600	115	115	80	80
7:00 - 8:00	338	393	1700	115	115	80	80
8:00 - 9:00			1800	115	115	80	80
9:00 - 10:00			1900	115	115	80	80
10:00 - 11:00			4500	115	115	80	80

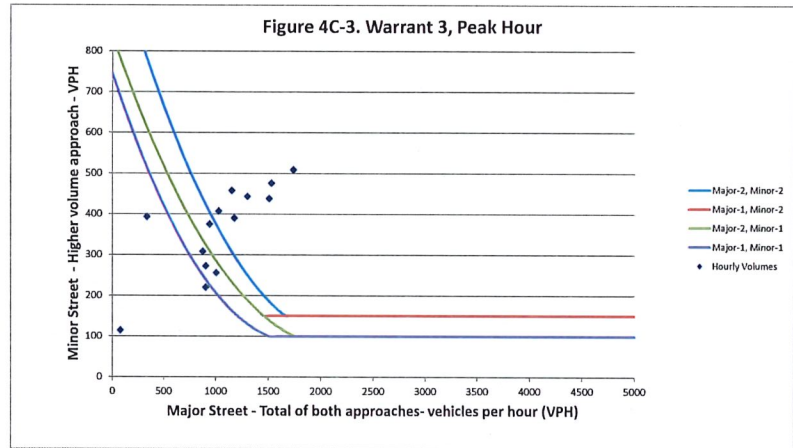


Standard: The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.

Peak Hour

Time	Input	
	Major Street Volume	Minor Street Volume
12:00 - 1:00		
1:00 - 2:00		
2:00 - 3:00		
3:00 - 4:00		
4:00 - 5:00		
5:00 - 6:00		
6:00 - 7:00	80	115
7:00 - 8:00	905	220
8:00 - 9:00	1007	256
9:00 - 10:00	907	273
10:00 - 11:00	877	308
11:00 - 12:00	942	375
12:00 - 1:00	1153	458
1:00 - 2:00	1029	407
2:00 - 3:00	1177	390
3:00 - 4:00	1303	443
4:00 - 5:00	1511	438
5:00 - 6:00	1738	509
6:00 - 7:00	1532	476
7:00 - 8:00	338	393
8:00 - 9:00		
9:00 - 10:00		
10:00 - 11:00		
11:00 - 12:00		

X	Y
0	1060.541
100	973.6036
200	890.7867
300	812.0898
400	737.5128
500	667.0559
600	600.7189
700	538.502
800	480.4051
900	426.4281
1000	376.5712
1100	330.8342
1200	289.2173
1300	251.7203
1400	218.3433
1461	200.0065
1516	184.7876
1600	163.9494
1672	150
1700	150
1759	150
1800	150
1900	150
2000	150
5000	150



Standard: The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

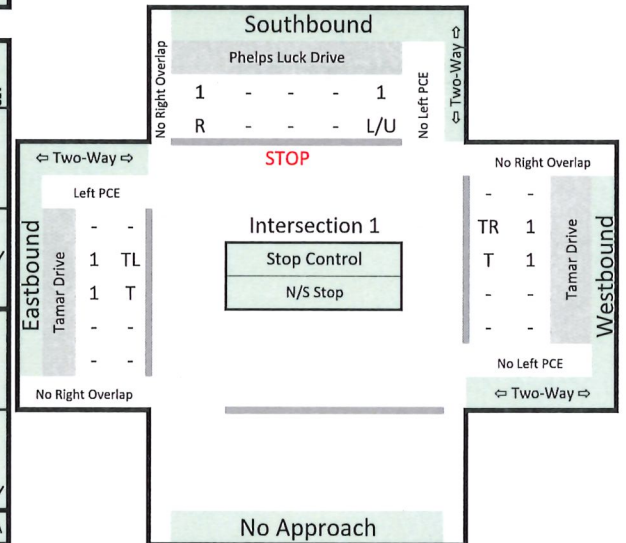
F. CLV Worksheet

Project: Long Reach Village
 Intersection: 1. Phelps Luck Drive and Tamar Drive
 Scenario: Existing Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV		Phelps Luck Drive									
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Group	Max CLV	Summary
Eastbound	T+TL	440		0.55	242	0	0.00	0	242	«	«
Westbound	T+TR	434		0.55	239	114	1.00	114	353	«	✓
Northbound	R*	30	0	1.00	30				144	«	«
Southbound	L	40		1.00	40	40	1.00	40	40	«	«
Southbound	R	157	0	1.00	157		0.00	0	157	«	✓
Total Intersection: 957 veh/hr										CLV	510 A

PM Peak Hour CLV		Phelps Luck Drive									
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Group	Max CLV	Summary
Eastbound	T+TL	807		0.55	444	0	0.00	0	444	«	«
Westbound	T+TR	552		0.55	304	224	1.00	224	528	«	✓
Northbound	R*	62	0	1.00	62				286	«	«
Southbound	L	56		1.00	56	56	1.00	56	56	«	«
Southbound	R	220	0	1.00	220		0.00	0	220	«	✓
Total Intersection: 1,411 veh/hr										CLV	748 A

SAT Peak Hour CLV		Phelps Luck Drive									
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Group	Max CLV	Summary
Eastbound	T+TL	548		0.55	301	0	0.00	0	301	«	«
Westbound	T+TR	446		0.55	245	111	1.00	111	356	«	✓
Northbound	R*	48	0	1.00	48				159	«	«
Southbound	L	59		1.00	59	59	1.00	59	59	«	«
Southbound	R	136	0	1.00	136		0.00	0	136	«	✓
Total Intersection: 1,078 veh/hr										CLV	492 A



Right Turn Overlap Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	-	-	-	30	62	48	-	-	-	157	220	136
RT LUF	-	n/a	-	n/a	n/a	n/a	0.00	-	-	n/a	n/a	n/a
Adjusted Rights	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0	n/a	n/a	n/a
Adjacent Lefts	-	-	-	40	56	59	-	-	-	114	224	111
Adj. LT LUF	-	0.00	-	1.00	1.00	1.00	0.00	-	-	1.00	1.00	1.00
Adjusted Adj. Lefts	0	0	0	40	56	59	0	0	0	114	224	111
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

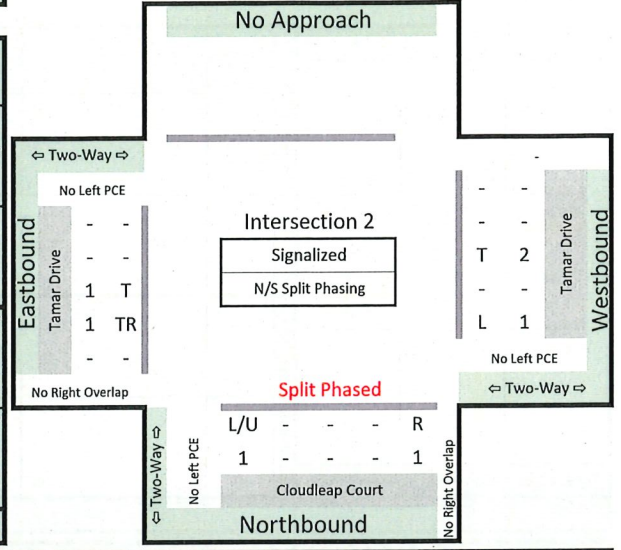
Passenger Car Equivalent (PCE) Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Left Turns	114	224	111	-	-	-	-	-	-	40	56	59
Not Split & TL or LTR	Yes: PCE			No: No PCE			No: No PCE			No: No PCE		
Opposing T+R	2.0	2.0	2.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
PCE Factor	2.0	2.0	2.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
PCE Adjusted Lefts	228	448	222	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Howard County Standards					
Lane Use Factors	LOS	CLV Range		PCE	Opposing Through+Right
#	Th & R	L	A	0 to 1,000	1.10 0 to 199
1	1.00	1.00	B	1,001 to 1,150	2.00 200 to 599
2	0.55	0.60	C	1,151 to 1,300	3.00 600 to 799
3	0.40	0.00	D	1,301 to 1,450	4.00 800 to 999
4	0.30	0.00	E	1,451 to 1,600	5.00 1,000 to 9,999
5	0.00	0.00	F	1,601 to 9,999	

Project: Long Reach Village
 Intersection: Cloudleap Court and Tamar Drive
 Scenario: Existing Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
											Group Max CLV	
	Eastbound	T+TR	371		0.55	204	32	1.00	32	236	« ✓	
	Eastbound	R*	30		1.00	30				62		
	Westbound	L	32		1.00	32		0.00	0	32	«	
	Westbound	T+T	310		0.55	171				171	«	
	Westbound					0				0		
	Northbound	L	52		1.00	52		SPLIT	0	52	« ✓	
	Northbound	R	48		1.00	48				48		
	Southbound					0				0		« ✓
	Southbound					0		52	SPLIT	0	0	
	Southbound					0				0		« ✓
	Southbound					0				0		« ✓
	Total Intersection: 813 veh/hr											CLV

Notes: * Defacto right-turn lane test, if applicable



PM Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
											Group Max CLV	
	Eastbound	T+TR	426		0.55	234	57	1.00	57	291	«	
	Eastbound	R*	58		1.00	58				115		
	Westbound	L	57		1.00	57		0.00	0	57	« ✓	
	Westbound	T+T	573		0.55	315				315	« ✓	
	Westbound					0				0		
	Northbound	L	90		1.00	90		SPLIT	0	90	« ✓	
	Northbound	R	39		1.00	39				39		
	Southbound					0				0		« ✓
	Southbound					0		90	SPLIT	0	0	
	Southbound					0				0		« ✓
	Southbound					0				0		« ✓
	Total Intersection: 1,185 veh/hr											CLV

Notes: * Defacto right-turn lane test, if applicable

	Right Turn Overlap Adjustments											
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	30	58	62				48	39	48			
RT LUF	n/a	n/a	n/a	0.00			n/a	n/a	n/a	n/a	n/a	n/a
Adjusted Rights	n/a	n/a	n/a	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a
Adjacent Lefts	52	90	80				32	57	35			
Adj. LT LUF	n/a	1.00		0.00			1.00			0.00		
Adjusted Adj. Lefts	52	90	80	0	0	0	32	57	35	0	0	0
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

	Passenger Car Equivalent (PCE) Adjustments											
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Left Turns				32	57	35	52	90	80			
No Split & TL or LTR	No: No PCE			No: No PCE			No: No PCE			No: No PCE		
Opposing T+R	n/a	310	573	n/a	371	426	n/a			n/a	48	48
PCE Factor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
PCE Adjusted Lefts	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

SAT Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
											Group Max CLV	
	Eastbound	T+TR	437		0.55	240	35	1.00	35	275	« ✓	
	Eastbound	R*	62		1.00	62				97		
	Westbound	L	35		1.00	35		0.00	0	35	«	
	Westbound	T+T	391		0.55	215				215	«	
	Westbound					0				0		
	Northbound	L	80		1.00	80		SPLIT	0	80	« ✓	
	Northbound	R	48		1.00	48				48		
	Southbound					0				0		« ✓
	Southbound					0		80	SPLIT	0	0	
	Southbound					0				0		« ✓
	Southbound					0				0		« ✓
	Total Intersection: 991 veh/hr											CLV

Notes: * Defacto right-turn lane test, if applicable

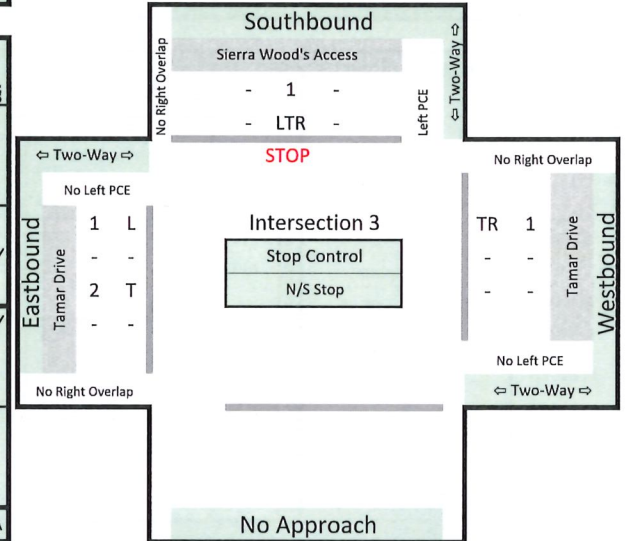
Howard County Standards					
Lane Use Factors	LOS	CLV Range		PCE	Opposing Through+Right
#	Th & R	L			
1	1.00	1.00	A	0 to 1,000	1.10 0 to 199
2	0.55	0.60	B	1,001 to 1,150	2.00 200 to 599
3	0.40	0.00	C	1,151 to 1,300	3.00 600 to 799
4	0.30	0.00	D	1,301 to 1,450	4.00 800 to 999
5	0.00	0.00	E	1,451 to 1,600	5.00 1,000 to 9,999
			F	1,601 to 9,999	

Project: Long Reach Village
 Intersection: Future Site Access and Tamar Drive
 Scenario: Existing Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
									Group	Max CLV
Eastbound	L	-	-	1.00	0	-	0.00	0	0	0
Eastbound	T+T	389	-	0.55	214	-	0.00	0	214	«
Westbound	TR	342	-	1.00	342	-	1.00	0	342	« ✓
Westbound	R*	-	0	1.00	0	-	0.00	0	0	« ✓
Northbound					0	-	1.00	0	0	« ✓
Northbound					0	-	0.00	0	0	«
Southbound	LTR	-	-	1.00	0	-	0.00	0	0	«
Southbound	R*	-	0	1.00	0	-	0.00	0	0	«
Total Intersection: 731 veh/hr									CLV	342 A

PM Peak Hour CLV										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
									Group	Max CLV
Eastbound	L	-	-	1.00	0	-	0.00	0	0	0
Eastbound	T+T	407	-	0.55	224	-	0.00	0	224	«
Westbound	TR	630	-	1.00	630	-	1.00	0	630	« ✓
Westbound	R*	-	0	1.00	0	-	0.00	0	0	« ✓
Northbound					0	-	1.00	0	0	« ✓
Northbound					0	-	0.00	0	0	«
Southbound	LTR	-	-	1.00	0	-	0.00	0	0	«
Southbound	R*	-	0	1.00	0	-	0.00	0	0	«
Total Intersection: 1,037 veh/hr									CLV	630 A

SAT Peak Hour CLV										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
									Group	Max CLV
Eastbound	L	-	-	1.00	0	-	0.00	0	0	0
Eastbound	T+T	423	-	0.55	233	-	0.00	0	233	«
Westbound	TR	426	-	1.00	426	-	1.00	0	426	« ✓
Westbound	R*	-	0	1.00	0	-	0.00	0	0	« ✓
Northbound					0	-	1.00	0	0	« ✓
Northbound					0	-	0.00	0	0	«
Southbound	LTR	-	-	1.00	0	-	0.00	0	0	«
Southbound	R*	-	0	1.00	0	-	0.00	0	0	«
Total Intersection: 849 veh/hr									CLV	426 A



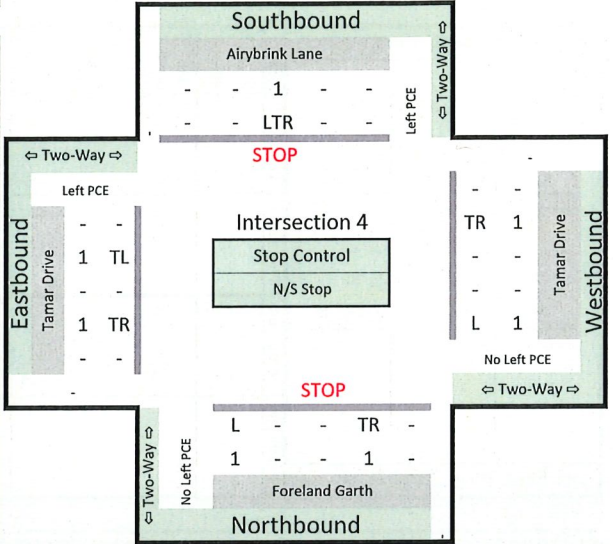
Right Turn Overlap Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	-	-	-	-	-	-	-	-	-	-	-	-
RT LUF	-	n/a	-	-	n/a	-	-	n/a	-	-	n/a	-
Adjusted Rights	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Adjacent Lefts	-	-	-	-	-	-	-	-	-	-	-	-
Adj. LT LUF	-	0.00	-	-	1.00	-	-	0.00	-	-	1.00	-
Adjusted Adj. Lefts	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

Passenger Car Equivalent (PCE) Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Left Turns	-	-	-	-	-	-	-	-	-	-	-	-
Not Split & TL or LTR	No: No PCE			No: No PCE			No: No PCE			Yes: PCE		
Opposing T+R	342	630	426	389	407	423	-	-	-	-	-	-
PCE Factor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
PCE Adjusted Lefts	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Howard County Standards					
Lane Use Factors	LOS	CLV Range		PCE	Opposing Through+Right
#	Th & R	L	A	0 to 1,000	1.10 0 to 199
1	1.00	1.00	B	1,001 to 1,150	2.00 200 to 599
2	0.55	0.60	C	1,151 to 1,300	3.00 600 to 799
3	0.40	0.00	D	1,301 to 1,450	4.00 800 to 999
4	0.30	0.00	E	1,451 to 1,600	5.00 1,000 to 9,999
5	0.00	0.00	F	1,601 to 9,999	

Project: Long Reach Village
 Intersection: 4. Airybrink Lane/Foreland Garth and Tamar Drive
 Scenario: Existing Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
		Eastbound	TL+TR	400		0.55	220	44	1.00	44	264	«
		Westbound	L	44		1.00	44	8	1.00	8	52	«
		Westbound	TR	318		0.55	175	8	1.00	8	183	«
		Westbound	R*	8	0	1.00	8				16	«
		Northbound	L	20		1.00	20	13	1.00	13	33	«
		Northbound	TR	40		1.00	40				53	«
		Northbound	R*	40		1.00	40				53	«
		Southbound	LTR	25		1.00	25	20	1.00	20	45	«
		Southbound	R*	10	0	1.00	10				30	«
		Total Intersection: 838 veh/hr										
		Notes: * Defacto right-turn lane test, if applicable										
		CLV 317 A										



PM Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
		Eastbound	TL+TR	430		0.55	237	90	1.00	90	327	«
		Westbound	L	90		1.00	90	11	1.00	11	101	«
		Westbound	TR	601		0.55	331	11	1.00	11	342	«
		Westbound	R*	12		1.00	12				23	«
		Northbound	L	32		1.00	32	15	1.00	15	47	«
		Northbound	TR	58		1.00	58				73	«
		Northbound	R*	56		1.00	56				71	«
		Southbound	LTR	27		1.00	27	32	1.00	32	59	«
		Southbound	R*	9		1.00	9				41	«
		Total Intersection: 1,214 veh/hr										
		Notes: * Defacto right-turn lane test, if applicable										
		CLV 415 A										

	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	27	38	42	8	12	3	40	56	87	10	9	3
RT LUF	0	0	0	0	0	0	0	0	0	0	0	0
Adjusted Rights	0	0	0	0	0	0	0	0	0	0	0	0
Adjacent Lefts	20	32	34	13	15	10	44	90	105	8	11	6
Adj. LT LUF	20	32	34	13	15	10	44	90	105	8	11	6
Adjusted Adj. Lefts	20	32	34	13	15	10	44	90	105	8	11	6
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

SAT Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
		Eastbound	TL+TR	434		0.55	239	105	1.00	105	344	«
		Westbound	L	105		1.00	105	6	1.00	6	111	«
		Westbound	TR	396		0.55	218	6	1.00	6	224	«
		Westbound	R*	3	0	1.00	3				9	«
		Northbound	L	34		1.00	34	10	1.00	10	44	«
		Northbound	TR	87		1.00	87				97	«
		Northbound	R*	87	0	1.00	87				97	«
		Southbound	LTR	15		1.00	15	34	1.00	34	49	«
		Southbound	R*	3	0	1.00	3				37	«
		Total Intersection: 1,064 veh/hr										
		Notes: * Defacto right-turn lane test, if applicable										
		CLV 441 A										

	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Left Turns	8	11	6	44	90	105	20	32	34	13	15	10
Not Split & TL or LTR	Yes: PCE			No: No PCE			No: No PCE			Yes: PCE		
Opposing T+R	318	601	396	384	397	422	11	10	4	40	58	87
PCE Factor	2.0	3.0	2.0	n/a	n/a	n/a	n/a	n/a	n/a	1.1	1.1	1.1
PCE Adjusted Lefts	16	33	12	n/a	n/a	n/a	n/a	n/a	n/a	14	17	11

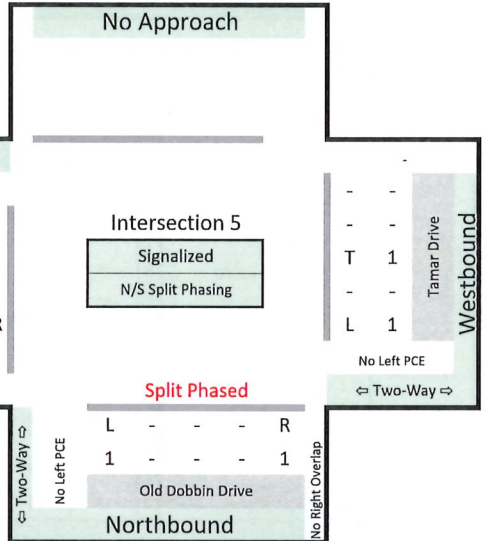
Howard County Standards						
Lane Use Factors		LOS	CLV Range		PCE	Opposing Through+Right
#	Th & R	L	0 to 1,000		1.10	0 to 199
1	1.00	1.00	1,001 to 1,150		2.00	200 to 599
2	0.55	0.60	1,151 to 1,300		3.00	600 to 799
3	0.40	0.00	1,301 to 1,450		4.00	800 to 999
4	0.30	0.00	1,451 to 1,600		5.00	1,000 to 9,999
5	0.00	0.00	1,601 to 9,999			

Project: Long Reach Village
 Intersection: 5. Old Dobbin Lane and Tamar Drive
 Scenario: Existing Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
									Group	Max CLV
Eastbound	T+TR	352		0.55	194	301	1.00	301	495	« ✓
	R*	141		1.00	141				442	
Westbound	L	301		1.00	301		0.00	0	301	«
	T	265		1.00	265			0	265	
Northbound	L	79		1.00	79		SPLIT	0	79	
	R	169		1.00	169			0	169	« ✓
Southbound					0				0	« ✓
					0	79	SPLIT	0	0	
Total Intersection: 1,166 veh/hr									CLV	664 A

PM Peak Hour CLV										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
									Group	Max CLV
Eastbound	T+TR	470		0.55	259	245	1.00	245	504	« ✓
	R*	153		1.00	153				398	
Westbound	L	245		1.00	245		0.00	0	245	«
	T	414		1.00	414			0	414	«
Northbound	L	219		1.00	219		SPLIT	0	219	
	R	278		1.00	278			0	278	« ✓
Southbound					0				0	« ✓
					0	219	SPLIT	0	0	
Total Intersection: 1,626 veh/hr									CLV	782 A

SAT Peak Hour CLV										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
									Group	Max CLV
Eastbound	T+TR	379		0.55	208	220	1.00	220	428	« ✓
	R*	148	0	1.00	148				368	
Westbound	L	220		1.00	220		0.00	0	220	«
	T	283		1.00	283			0	283	«
Northbound	L	163		1.00	163		SPLIT	0	163	
	R	181	0	1.00	181			0	181	« ✓
Southbound					0				0	« ✓
					0	163	SPLIT	0	0	
Total Intersection: 1,226 veh/hr									CLV	609 A



Right Turn Overlap Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	141	153	148	-	-	-	169	278	181	-	-	-
RT LUF	n/a	n/a	n/a	0	0.00	0	n/a	n/a	n/a	n/a	n/a	n/a
Adjusted Rights	n/a	n/a	n/a	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a
Adjacent Lefts	79	219	163	-	-	-	301	245	220	-	-	-
Adj. LT LUF	1.00	1.00	1.00	0	1.00	0	1.00	1.00	1.00	0.00	0.00	0.00
Adjusted Adj. Lefts	79	219	163	0	0	0	301	245	220	0	0	0
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

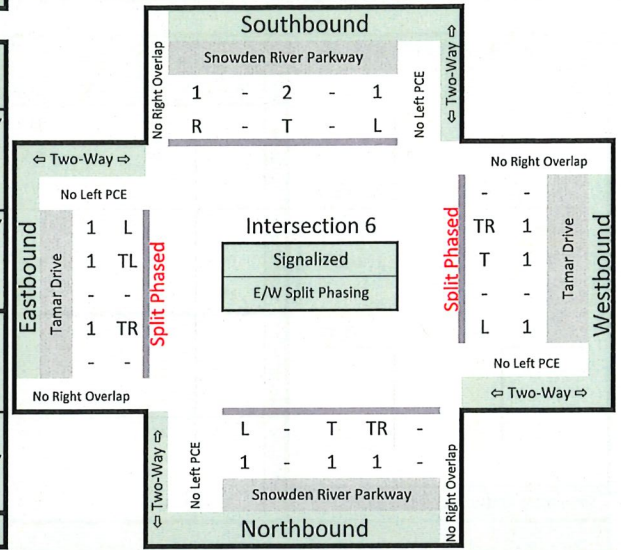
Passenger Car Equivalent (PCE) Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Left Turns	-	-	-	301	245	220	79	219	163	-	-	-
Not Split & TL or LTR	No: No PCE			No: No PCE			No: No PCE			No: No PCE		
Opposing T+R	265	414	283	352	470	379	-	-	-	169	278	181
PCE Factor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
PCE Adjusted Lefts	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Howard County Standards			
Lane Use Factors			PCE Opposing Through+Right
#	Th & R	L	
1	1.00	1.00	2.00 200 to 599
2	0.55	0.60	3.00 600 to 799
3	0.40	0.00	4.00 800 to 999
4	0.30	0.00	5.00 1,000 to 9,999
5	0.00	0.00	

Project: Long Reach Village
 Intersection: 6. Snowden River Parkway and Tamar Drive
 Scenario: Existing Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV		Snowden River Parkway										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	LT LUF Opp. Volume	Summary	Group	Max CLV	
Eastbound	LT	402		0.55	221				221	«	✓	
	LTR	530		0.40	212	119	SPLIT	0	212			
	R*	128		1.00	128				128			
Westbound	L	119		1.00	119				119	«	✓	
	T+TR	171		0.55	94	309	SPLIT	0	94			
	R*	67		1.00	67				67			
Northbound	L	47		1.00	47				63			
	T+TR	451		0.55	248	16	1.00	16	264	«		
	R*	48		1.00	48				64			
Southbound	L	16		1.00	16				63			
	T+T	1,169		0.55	643	47	1.00	47	690	«	✓	
	R	448	0	1.00	448				495			
Total Intersection: 2,951 veh/hr										CLV	1,030	B

Notes: * Defacto right-turn lane test, if applicable



PM Peak Hour CLV		Snowden River Parkway										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	LT LUF Opp. Volume	Summary	Group	Max CLV	
Eastbound	LT	412		0.55	227				227	«	✓	
	LTR	484		0.40	194	67	SPLIT	0	194			
	R*	72	0	1.00	72				72			
Westbound	L	67		1.00	67				67			
	T+TR	146		0.55	80	321	SPLIT	0	80	«	✓	
	R*	44	0	1.00	44				44			
Northbound	L	150		1.00	150				203			
	T+TR	1257		0.55	691	53	1.00	53	744	«	✓	
	R*	126	0	1.00	126				179			
Southbound	L	53		1.00	53				203			
	T+T	1,039		0.55	571	150	1.00	150	721	«		
	R	469	0	1.00	469				619			
Total Intersection: 3,665 veh/hr										CLV	1,051	B

Notes: * Defacto right-turn lane test, if applicable

	Right Turn Overlap Adjustments			
	Eastbound	Westbound	Northbound	Southbound
Right Turns	AM PM SAT	AM PM SAT	AM PM SAT	AM PM SAT
RT LUF	128 72 66	67 44 n/a	48 126 76	448 469 419
Adjusted Rights	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a
Adjacent Lefts	AM PM SAT	AM PM SAT	AM PM SAT	AM PM SAT
Adj. LT LUF	47 150 78	16 53 30	119 67 63	309 321 341
Adjusted Adj. Lefts	47 150 78	16 53 30	119 67 63	185 193 205
Right Turn Overlap	0 0 0	0 0 0	0 0 0	0 0 0

SAT Peak Hour CLV		Snowden River Parkway										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	LT LUF Opp. Volume	Summary	Group	Max CLV	
Eastbound	LT	449		0.55	247				247	«	✓	
	LTR	515		0.40	206	63	SPLIT	0	206			
	R*	66	0	1.00	66				66			
Westbound	L	63		1.00	63				63	«	✓	
	T+TR	115		0.55	63	341	SPLIT	0	63			
	R*	28	0	1.00	28				28			
Northbound	L	78		1.00	78				108			
	T+TR	978		0.55	538	30	1.00	30	568	«		
	R*	76	0	1.00	76				106			
Southbound	L	30		1.00	30				108			
	T+T	976		0.55	537	78	1.00	78	615	«	✓	
	R	419	0	1.00	419				497			
Total Intersection: 3,174 veh/hr										CLV	925	A

Notes: * Defacto right-turn lane test, if applicable

Passenger Car Equivalent (PCE) Adjustments				
	Eastbound	Westbound	Northbound	Southbound
	AM PM SAT	AM PM SAT	AM PM SAT	AM PM SAT
Left Turns	309 321 341	119 67 63	47 150 78	16 53 30
Not Split & TL or LTR	No: No PCE	No: No PCE	No: No PCE	No: No PCE
Opposing T+R	171 146 115	221 163 174	1,617 1,508 1,395	451 1,257 978
PCE Factor	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a
PCE Adjusted Lefts	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a

Howard County Standards				
Lane Use Factors	LOS	CLV Range	PCE	Opposing Through+Right
#	Th & R L	A	0 to 1,000	1.10 0 to 199
1	1.00 1.00	B	1,001 to 1,150	2.00 200 to 599
2	0.55 0.60	C	1,151 to 1,300	3.00 600 to 799
3	0.40 0.00	D	1,301 to 1,450	4.00 800 to 999
4	0.30 0.00	E	1,451 to 1,600	5.00 1,000 to 9,999
5	0.00 0.00	F	1,601 to 9,999	

Project: Long Reach Village
 Intersection: 1, Phelps Luck Drive and Tamar Drive
 Scenario: Background Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV		Phelps Luck Drive									
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary Group	Max CLV	CLV
Eastbound	L	114		1.00	114		0.00	0	114	«	0
	T	234		1.00	234		0	0	234	«	
Westbound	TR	476		1.00	476	114	1.00	114	590	«	✓
	R*	30	0	1.00	30				144		
Northbound					0	44	1.00	44	44	«	44
					0				44		
Southbound	L	44		1.00	44		0.00	0	44		0
	R	173	0	1.00	173				173	«	
Total Intersection: 1,041 veh/hr										CLV	763 A

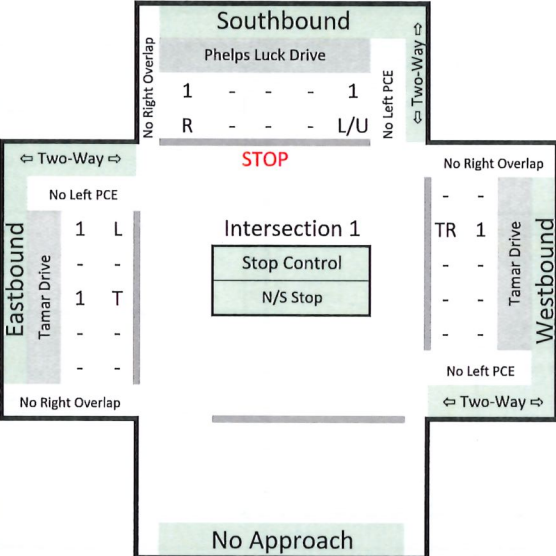
Notes: * Defacto right-turn lane test, if applicable

PM Peak Hour CLV		Phelps Luck Drive									
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary Group	Max CLV	CLV
Eastbound	L	224		1.00	224		0.00	0	224	«	0
	T	396		1.00	396		0	0	396	«	
Westbound	TR	603		1.00	603	224	1.00	224	827	«	✓
	R*	62	0	1.00	62				286		
Northbound					0	62	1.00	62	62	«	62
					0				62		
Southbound	L	62		1.00	62		0.00	0	62		0
	R	243	0	1.00	243				243	«	
Total Intersection: 1,528 veh/hr										CLV	1,070 B

Notes: * Defacto right-turn lane test, if applicable

SAT Peak Hour CLV		Phelps Luck Drive									
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary Group	Max CLV	CLV
Eastbound	L	111		1.00	111		0.00	0	111	«	0
	T	360		1.00	360		0	0	360	«	
Westbound	TR	487		1.00	487	111	1.00	111	598	«	✓
	R*	48	0	1.00	48				159		
Northbound					0	65	1.00	65	65	«	65
					0				65		
Southbound	L	65		1.00	65		0.00	0	65		0
	R	150	0	1.00	150				150	«	
Total Intersection: 1,173 veh/hr										CLV	748 A

Notes: * Defacto right-turn lane test, if applicable



Right Turn Overlap Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	-	-	-	30	62	48	-	-	-	173	243	150
RT LUF	-	n/a	-	n/a	n/a	-	-	-	0.00	n/a	n/a	n/a
Adjusted Rights	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0	n/a	n/a	n/a
Adjacent Lefts	-	-	-	44	62	65	-	-	-	114	224	111
Adj. LT LUF	-	0.00	-	1.00	-	-	-	-	0.00	1.00	-	-
Adjusted Adj. Lefts	0	0	0	44	62	65	0	0	0	114	224	111
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

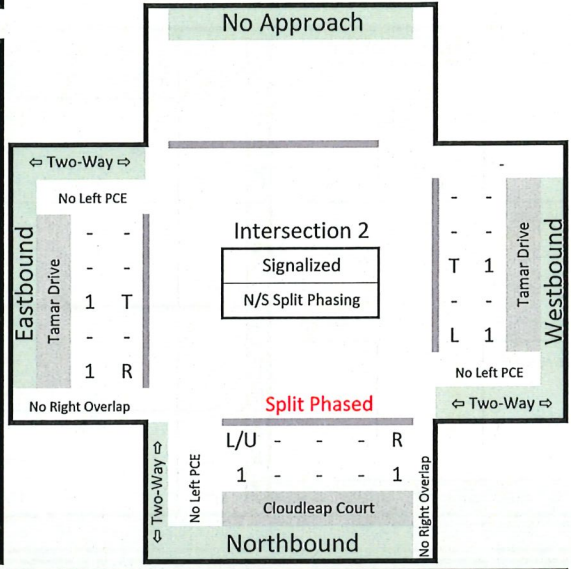
Passenger Car Equivalent (PCE) Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Left Turns	114	224	111	-	-	-	-	-	-	44	62	65
Not Split & TL or LTR	No: No PCE			No: No PCE			No: No PCE			No: No PCE		
Opposing T+R	476	603	487	234	396	360	173	243	150	-	-	-
PCE Factor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
PCE Adjusted Lefts	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Howard County Standards						
#	Lane Use Factors		LOS	CLV Range	PCE Opposing Through+Right	
	Th & R	L				
1	1.00	1.00	A	0 to 1,000	1.10	0 to 199
2	0.55	0.60	B	1,001 to 1,150	2.00	200 to 599
3	0.40	0.60	C	1,151 to 1,300	3.00	600 to 799
4	0.30	0.00	D	1,301 to 1,450	4.00	800 to 999
5	0.30	0.00	E	1,451 to 1,600	5.00	1,000 to 9,999
6	0.00	0.00	F	1,601 to 9,999		

Project: Long Reach Village
 Intersection: Cloudleap Court and Tamar Drive
 Scenario: Background Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary
											Group Max CLV
	Eastbound	T	376		1.00	376	32	1.00	32	408	« ✓
	Eastbound	R	30	0	1.00	30				62	« ✓
	Westbound	L	32		1.00	32		0.00	0	342	« ✓
	Westbound	T	342		1.00	342				0	« ✓
	Northbound	L	57		1.00	57		SPLIT	0	57	« ✓
	Northbound	R	53	0	1.00	53				53	« ✓
Total Intersection: 890 veh/hr										CLV 465 A	

Notes: * Defacto right-turn lane test, if applicable



PM Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary
											Group Max CLV
	Eastbound	T	406		1.00	406	57	1.00	57	463	« ✓
	Eastbound	R	58	0	1.00	58				115	« ✓
	Westbound	L	57		1.00	57		0.00	0	633	« ✓
	Westbound	T	633		1.00	633				0	« ✓
	Northbound	L	99		1.00	99		SPLIT	0	99	« ✓
	Northbound	R	43	0	1.00	43				43	« ✓
Total Intersection: 1,296 veh/hr										CLV 732 A	

Notes: * Defacto right-turn lane test, if applicable

Right Turn Overlap Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	30	58	62	-	-	-	53	43	53	-	-	-
RT LUF	n/a	n/a	n/a	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a
Adjusted Rights	n/a	n/a	n/a	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a
Adjacent Lefts	57	99	88	-	-	-	32	57	35	-	-	-
Adj. LT LUF	57	99	88	0	0	0	1.00	1.00	0.00	-	-	-
Adjusted Adj. Lefts	57	99	88	0	0	0	32	57	35	0	0	0
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

SAT Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary
											Group Max CLV
	Eastbound	T	414		1.00	414	35	1.00	35	449	« ✓
	Eastbound	R	62	0	1.00	62				97	« ✓
	Westbound	L	35		1.00	35		0.00	0	432	« ✓
	Westbound	T	432		1.00	432				0	« ✓
	Northbound	L	88		1.00	88		SPLIT	0	88	« ✓
	Northbound	R	53	0	1.00	53				53	« ✓
Total Intersection: 1,084 veh/hr										CLV 537 A	

Notes: * Defacto right-turn lane test, if applicable

Passenger Car Equivalent (PCE) Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Left Turns	-	-	-	32	57	35	57	99	88	-	-	-
Not Split & TL or LTR	No: No PCE			No: No PCE			No: No PCE			No: No PCE		
Opposing T+R	342	633	432	406	464	476	-	-	-	53	43	53
PCE Factor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
PCE Adjusted Lefts	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Howard County Standards					
#	Lane Use Factors		LOS	CLV Range	PCE Opposing Through+Right
	Th & R	L			
1	1.00	1.00	A	0 to 1,000	1.10 0 to 199
2	0.55	0.60	B	1,001 to 1,150	2.00 200 to 599
3	0.40	0.00	C	1,151 to 1,300	3.00 600 to 799
4	0.30	0.00	D	1,301 to 1,450	4.00 800 to 999
5	0.00	0.00	E	1,451 to 1,600	5.00 1,000 to 9,999
			F	1,601 to 9,999	

Project: Long Reach Village
 Intersection: Future Site Access and Tamar Drive
 Scenario: Background Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
											Group Max CLV	
	Eastbound	L	-	-	-	1.00	0	-	0.00	0	0	
	Eastbound	T	429	-	-	1.00	429	-	0.00	0	429 « ✓	
	Westbound	TR	378	-	-	1.00	378	-	1.00	0	378 «	
	Westbound	R*	-	0	1.00	0	0	-	1.00	0	0 « ✓	
	Northbound						0	0	1.00	0	0 « ✓	
Southbound	LTR	-	-	-	-	1.00	0	-	0.00	0	0 «	
Southbound	R*	-	0	1.00	0	0	0	-	0.00	0	0 «	
Total Intersection: 807 veh/hr											CLV	429 A

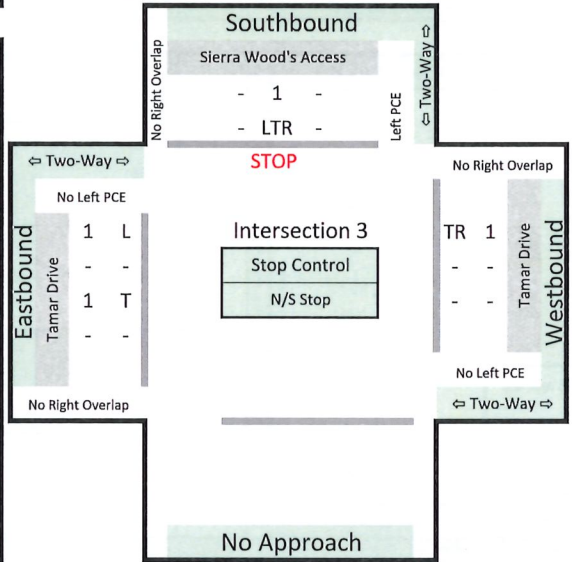
Notes: * Defacto right-turn lane test, if applicable

PM Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
											Group Max CLV	
	Eastbound	L	-	-	-	1.00	0	-	0.00	0	0	
	Eastbound	T	449	-	-	1.00	449	-	0.00	0	449 « ✓	
	Westbound	TR	696	-	-	1.00	696	-	1.00	0	696 « ✓	
	Westbound	R*	-	0	1.00	0	0	-	1.00	0	0 « ✓	
	Northbound						0	0	1.00	0	0 « ✓	
Southbound	LTR	-	-	-	-	1.00	0	-	0.00	0	0 «	
Southbound	R*	-	0	1.00	0	0	0	-	0.00	0	0 «	
Total Intersection: 1,145 veh/hr											CLV	696 A

Notes: * Defacto right-turn lane test, if applicable

SAT Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
											Group Max CLV	
	Eastbound	L	-	-	-	1.00	0	-	0.00	0	0	
	Eastbound	T	467	-	-	1.00	467	-	0.00	0	467 «	
	Westbound	TR	470	-	-	1.00	470	-	1.00	0	470 « ✓	
	Westbound	R*	-	0	1.00	0	0	-	1.00	0	0 « ✓	
	Northbound						0	0	1.00	0	0 « ✓	
Southbound	LTR	-	-	-	-	1.00	0	-	0.00	0	0 «	
Southbound	R*	-	0	1.00	0	0	0	-	0.00	0	0 «	
Total Intersection: 937 veh/hr											CLV	470 A

Notes: * Defacto right-turn lane test, if applicable



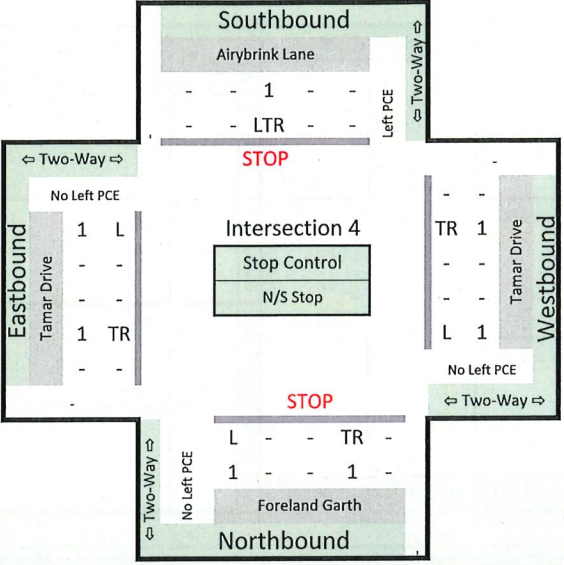
Right Turn Overlap Adjustments		Eastbound			Westbound			Northbound			Southbound		
		AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	RT LUF	-	-	-	-	-	-	-	-	-	-	-	-
Adjusted Rights		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Adjacent Lefts	Adj. LT LUF	-	0.00	-	-	1.00	-	-	0.00	-	-	1.00	-
Adjusted Adj. Lefts		0	0	0	0	0	0	0	0	0	0	0	0
Right Turn Overlap		0	0	0	0	0	0	0	0	0	0	0	0

Passenger Car Equivalent (PCE) Adjustments		Eastbound			Westbound			Northbound			Southbound		
		AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Left Turns		-	-	-	-	-	-	-	-	-	-	-	-
Not Split & TL or LTR		No: No PCE			No: No PCE			No: No PCE			Yes: PCE		
Opposing T+R	PCE Factor	378	696	470	429	449	467	-	-	-	-	-	-
PCE Adjusted Lefts		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0

Howard County Standards		Lane Use Factors	LOS	CLV Range	PCE	Opposing Through+Right
#	Th & R L	A		0 to 1,000	1.10	0 to 199
1	1.00 1.00	B		1,001 to 1,150	2.00	200 to 599
2	0.55 0.60	C		1,151 to 1,300	3.00	600 to 799
3	0.40 0.60	D		1,301 to 1,450	4.00	800 to 999
4	0.30 0.60	E		1,451 to 1,600	5.00	1,000 to 9,999
5	0.00 0.00	F		1,601 to 9,999		

Project: Long Reach Village
 Intersection: 4. Airybrink Lane/Forelan Garth and Tamar Drive
 Scenario: Background Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV		Airybrink Lane									
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary Group	Max CLV	CLV
Eastbound	L	8		1.00	8				52		
	TR	421		1.00	421	44	1.00	44	465	«	✓
	R*	27		1.00	27				71		
Westbound	L	44		1.00	44				52		
	TR	350		1.00	350	8	1.00	8	358	«	
	R*	8	0	1.00	8				16		
Northbound	L	22		1.00	22				35		
	TR	44		1.00	44	13	1.00	13	57	«	✓
	R*	44		1.00	44				57		
Southbound	LTR	25		1.00	25	22	1.00	22	47	«	
	R*	10	0	1.00	10				32		
Total Intersection: 913 veh/hr											
Notes: * Defacto right-turn lane test, if applicable										CLV	522 A



PM Peak Hour CLV		Airybrink Lane									
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary Group	Max CLV	CLV
Eastbound	L	11		1.00	11				101		
	TR	434		1.00	434	90	1.00	90	524	«	
	R*	38		1.00	38				128		
Westbound	L	90		1.00	90				101		
	TR	662		1.00	662	11	1.00	11	673	«	✓
	R*	12		1.00	12				23		
Northbound	L	35		1.00	35				50		
	TR	64		1.00	64	15	1.00	15	79	«	✓
	R*	62		1.00	62				77		
Southbound	LTR	27		1.00	27	35	1.00	35	62	«	
	R*	9		1.00	9				44		
Total Intersection: 1,321 veh/hr											
Notes: * Defacto right-turn lane test, if applicable										CLV	752 A

Right Turn Overlap Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	27	38	42	8	12	3	44	62	96	10	9	3
Adjusted Rights	0	0	0	0	0	0	0	0	0	0	0	0
Adjusted Adj. Lefts	22	35	38	13	15	10	44	90	105	8	11	6
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

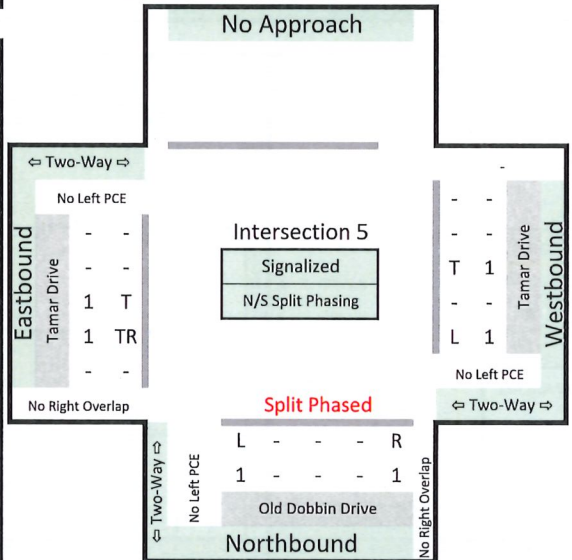
SAT Peak Hour CLV		Airybrink Lane									
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary Group	Max CLV	CLV
Eastbound	L	6		1.00	6				111		
	TR	462		1.00	462	105	1.00	105	567	«	✓
	R*	42	0	1.00	42				147		
Westbound	L	105		1.00	105				111		
	TR	437		1.00	437	6	1.00	6	443	«	
	R*	3	0	1.00	3				9		
Northbound	L	38		1.00	38				48		
	TR	96		1.00	96	10	1.00	10	106	«	✓
	R*	96	0	1.00	96				106		
Southbound	LTR	15		1.00	15	38	1.00	38	53	«	
	R*	3	0	1.00	3				41		
Total Intersection: 1,158 veh/hr											
Notes: * Defacto right-turn lane test, if applicable										CLV	673 A

Passenger Car Equivalent (PCE) Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Left Turns	8	11	6	44	90	105	22	35	38	13	15	10
Not Split & TL or LTR	No: No PCE			No: No PCE			No: No PCE			Yes: PCE		
Opposing T+R	350	662	437	421	434	462	11	10	4	44	64	96
PCE Factor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.1	1.1	1.1
PCE Adjusted Lefts	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	14	17	11

Howard County Standards					
Lane Use Factors	LOS	CLV Range		PCE Opposing Through+Right	
#	Th & R	L	A		
1	1.00	1.00	B	0 to 1,000	1.10 0 to 199
2	0.55	0.60	C	1,001 to 1,150	2.00 200 to 599
3	0.40	0.00	D	1,151 to 1,300	3.00 600 to 799
4	0.30	0.00	E	1,301 to 1,450	4.00 800 to 999
5	0.00	0.00	F	1,451 to 1,600	5.00 1,000 to 9,999
				1,601 to 9,999	

Project: Long Reach Village
 Intersection: 5. Old Dobbin Lane and Tamar Drive
 Scenario: Background Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
											Group Max CLV	
	Eastbound	T+TR	374	0.55	206	0	301	1.00	301	507	« ✓	
	Eastbound	R*	141	1.00	141	0	0	0	0	442	« ✓	
	Westbound	L	301	1.00	301	0	0	0	0	301	«	
	Westbound	T	293	1.00	293	0	0	0	0	293	«	
	Northbound	L	87	1.00	87	0	0	0	0	87	«	
	Northbound	R	187	1.00	187	0	0	0	0	187	« ✓	
	Southbound						0	0	0	0	0	« ✓
	Southbound						0	87	0	0	0	« ✓
	Southbound						0	0	0	0	0	« ✓
	Southbound						0	0	0	0	0	« ✓
	Total Intersection: 1,242 veh/hr											CLV 694 A
	Notes: * Defacto right-turn lane test, if applicable											



PM Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
											Group Max CLV	
	Eastbound	T+TR	503	0.55	277	0	245	1.00	245	522	« ✓	
	Eastbound	R*	153	1.00	153	0	0	0	0	398	« ✓	
	Westbound	L	245	1.00	245	0	0	0	0	245	«	
	Westbound	T	457	1.00	457	0	0	0	0	457	«	
	Northbound	L	242	1.00	242	0	0	0	0	242	«	
	Northbound	R	307	1.00	307	0	0	0	0	307	« ✓	
	Southbound						0	0	0	0	0	« ✓
	Southbound						0	242	0	0	0	« ✓
	Southbound						0	0	0	0	0	« ✓
	Southbound						0	0	0	0	0	« ✓
	Total Intersection: 1,754 veh/hr											CLV 829 A
	Notes: * Defacto right-turn lane test, if applicable											

Right Turn Overlap Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	141	153	148	-	-	-	187	307	200	-	-	-
RT LUF	n/a	n/a	n/a	0	0.00	0	n/a	n/a	n/a	n/a	n/a	n/a
Adjusted Rights	n/a	n/a	n/a	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a
Adjacent Lefts	87	242	180	-	-	-	301	245	220	-	-	-
Adj. LT LUF	87	1.00	1.00	0	1.00	0	301	1.00	1.00	0	0.00	0
Adjusted Adj. Lefts	87	242	180	0	0	0	301	245	220	0	0	0
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

SAT Peak Hour CLV		Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
											Group Max CLV	
	Eastbound	T+TR	403	0.55	222	0	220	1.00	220	442	« ✓	
	Eastbound	R*	148	0	148	0	0	0	0	368	« ✓	
	Westbound	L	220	1.00	220	0	0	0	0	220	«	
	Westbound	T	312	1.00	312	0	0	0	0	312	«	
	Northbound	L	180	1.00	180	0	0	0	0	180	«	
	Northbound	R	200	0	200	0	0	0	0	200	« ✓	
	Southbound						0	0	0	0	0	« ✓
	Southbound						0	180	0	0	0	« ✓
	Southbound						0	0	0	0	0	« ✓
	Southbound						0	0	0	0	0	« ✓
	Total Intersection: 1,315 veh/hr											CLV 642 A
	Notes: * Defacto right-turn lane test, if applicable											

Passenger Car Equivalent (PCE) Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Left Turns	-	-	-	301	245	220	87	242	180	-	-	-
Not Split & TL or LTR	No: No PCE			No: No PCE			No: No PCE			No: No PCE		
Opposing T+R	283	457	312	374	503	403	-	-	-	187	307	200
PCE Factor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
PCE Adjusted Lefts	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

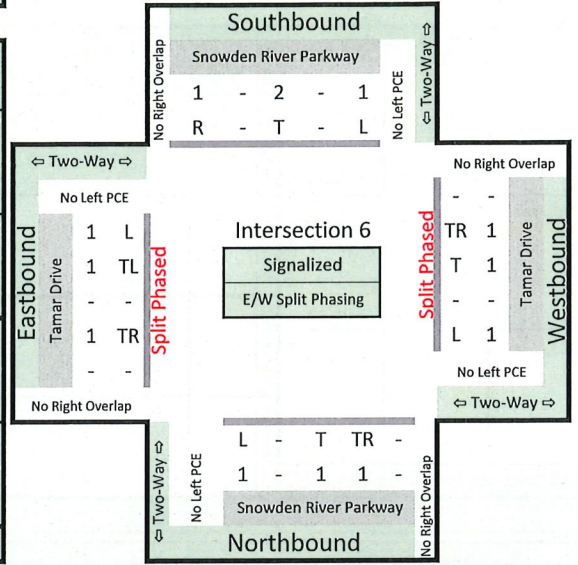
Howard County Standards				
#	Lane Use Factors		PCE Opposing Through+Right	
	Th & R	L		
1	1.00	1.00	1.10	0 to 199
2	0.55	0.60	2.00	200 to 599
3	0.40	0.00	3.00	600 to 799
4	0.30	0.00	4.00	800 to 999
5	0.00	0.00	5.00	1,000 to 9,999

Project: Long Reach Village
 Intersection: 6. Snowden River Parkway and Tamar Drive
 Scenario: Background Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV		Snowden River Parkway		Tamar Drive		Approach		Summary				
		Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Group	Max	CLV
	Eastbound	LT	412	0.55	227	227	119	SPLIT	0	227	«	✓
	Eastbound	LTR	540	0.40	216	216	309	SPLIT	0	216	«	✓
	Eastbound	R*	128	1.00	128	128	16	1.00	16	63	«	✓
	Westbound	L	119	1.00	119	119	47	1.00	47	63	«	✓
	Westbound	T+TR	182	0.55	100	100	150	1.00	53	809	«	✓
	Westbound	R*	67	1.00	67	67	150	1.00	53	809	«	✓
	Northbound	L	47	1.00	47	47	150	1.00	53	809	«	✓
	Northbound	T+TR	493	0.55	271	271	150	1.00	53	809	«	✓
	Northbound	R*	48	1.00	48	48	150	1.00	53	809	«	✓
	Southbound	L	16	1.00	16	16	150	1.00	53	809	«	✓
	Southbound	T+T	1,291	0.55	710	710	150	1.00	53	809	«	✓
	Southbound	R	448	0	1.00	448	448			495		
Total Intersection: 3,136 veh/hr										CLV	1,103	B

PM Peak Hour CLV		Snowden River Parkway		Tamar Drive		Approach		Summary				
		Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Group	Max	CLV
	Eastbound	LT	421	0.55	232	232	67	SPLIT	0	197	«	✓
	Eastbound	LTR	493	0.40	197	197	321	SPLIT	0	86	«	✓
	Eastbound	R*	72	0	1.00	72	150	1.00	53	809	«	✓
	Westbound	L	67	1.00	67	67	150	1.00	53	809	«	✓
	Westbound	T+TR	157	0.55	86	86	150	1.00	53	809	«	✓
	Westbound	R*	44	0	1.00	44	150	1.00	53	809	«	✓
	Northbound	L	150	1.00	150	203	150	1.00	53	809	«	✓
	Northbound	T+TR	1,375	0.55	756	756	150	1.00	53	809	«	✓
	Northbound	R*	126	0	1.00	126	179			179		
	Southbound	L	53	1.00	53	203	203			203		
	Southbound	T+T	1,147	0.55	631	631	781			781		
	Southbound	R	469	0	1.00	469	619			619		
Total Intersection: 3,911 veh/hr										CLV	1,127	B

SAT Peak Hour CLV		Snowden River Parkway		Tamar Drive		Approach		Summary				
		Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Group	Max	CLV
	Eastbound	LT	460	0.55	253	253	63	SPLIT	0	210	«	✓
	Eastbound	LTR	526	0.40	210	210	341	SPLIT	0	68	«	✓
	Eastbound	R*	66	0	1.00	66	108	1.00	30	620	«	✓
	Westbound	L	63	1.00	63	63	108	1.00	30	620	«	✓
	Westbound	T+TR	124	0.55	68	68	108	1.00	30	620	«	✓
	Westbound	R*	28	0	1.00	28	106			106		
	Northbound	L	78	1.00	78	108	108			108		
	Northbound	T+TR	1,072	0.55	590	590	671			671		
	Northbound	R*	76	0	1.00	76	497			497		
	Southbound	L	30	1.00	30	108	108			108		
	Southbound	T+T	1,078	0.55	593	593	671			671		
	Southbound	R	419	0	1.00	419	497			497		
Total Intersection: 3,390 veh/hr										CLV	992	A



Right Turn Overlap Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	128	72	66	67	44	28	48	126	76	448	469	419
RT LUF	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Adjusted Rights	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Adjacent Lefts	47	150	78	16	53	30	119	67	63	309	321	341
Adj. LT LUF	47	150	78	16	53	30	119	67	63	185	193	205
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

Passenger Car Equivalent (PCE) Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Left Turns	309	321	341	119	67	63	47	150	78	16	53	30
Not Split & TL or LTR	No: No PCE			No: No PCE			No: No PCE			No: No PCE		
Opposing T+R	182	157	124	231	172	185	1,739	1,616	1,497	493	1,375	1,072
PCE Factor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
PCE Adjusted Lefts	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

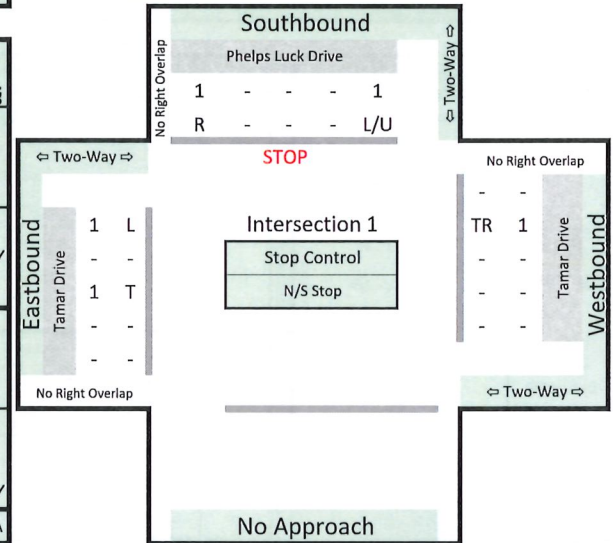
Howard County Standards					
Lane Use Factors		LOS	CLV Range	PCE Opposing Through+Right	
#	Th & R	L			
1	1.00	1.00	A	0 to 1,000	1.10 0 to 199
2	0.55	0.60	B	1,001 to 1,150	2.00 200 to 599
3	0.40	0.00	C	1,151 to 1,300	3.00 600 to 799
4	0.30	0.00	D	1,301 to 1,450	4.00 800 to 999
5	0.00	0.00	E	1,451 to 1,600	5.00 1,000 to 9,999
			F	1,601 to 9,999	

Project: Long Reach Village
 Intersection: 1, Phelps Luck Drive and Tamar Drive
 Scenario: Total Future Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV									
Phelps Luck Drive									
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary
									Group Max CLV
Eastbound	L	114		1.00	114				114
Eastbound	T	352		1.00	352		0.00	0	352 «
Westbound	TR	594		1.00	594	114	1.00	114	708 « ✓
Westbound	R*	37	0	1.00	37				151
Northbound					0				66 «
Northbound					0	66	1.00	66	66
Southbound	L	66		1.00	66				66
Southbound	R	173	0	1.00	173		0.00	0	173 « ✓
Total Intersection: 1,299 veh/hr					CLV 881 A				

PM Peak Hour CLV									
Phelps Luck Drive									
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary
									Group Max CLV
Eastbound	L	224		1.00	224				224
Eastbound	T	606		1.00	606		0.00	0	606 «
Westbound	TR	805		1.00	805	224	1.00	224	1029 « ✓
Westbound	R*	83	0	1.00	83				307
Northbound					0				95 «
Northbound					0	95	1.00	95	95
Southbound	L	95		1.00	95				95
Southbound	R	243	0	1.00	243		0.00	0	243 « ✓
Total Intersection: 1,973 veh/hr					CLV 1,272 C				

SAT Peak Hour CLV									
Phelps Luck Drive									
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary
									Group Max CLV
Eastbound	L	111		1.00	111				111
Eastbound	T	546		1.00	546		0.00	0	546 «
Westbound	TR	670		1.00	670	111	1.00	111	781 « ✓
Westbound	R*	66	0	1.00	66				177
Northbound					0				98 «
Northbound					0	98	1.00	98	98
Southbound	L	98		1.00	98				98
Southbound	R	150	0	1.00	150		0.00	0	150 « ✓
Total Intersection: 1,575 veh/hr					CLV 931 A				



Right Turn Overlap Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns				37	83	66				173	243	150
RT LUF		n/a		n/a	n/a	n/a		0.00		n/a	n/a	n/a
Adjusted Rights	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0	n/a	n/a	n/a
Adjacent Lefts				66	95	98				114	224	111
Adj. LT LUF		0.00		1.00	1.00	1.00		0.00		1.00	1.00	1.00
Adjusted Adj. Lefts	0	0	0	66	95	98	0	0	0	114	224	111
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

Howard County Standards				
Lane Use Factors	LOS	CLV Range		
# Th & R L	A	0 to 1,000		
1 1.00 1.00	B	1,001 to 1,150		
2 0.55 0.60	C	1,151 to 1,300		
3 0.40 0.00	D	1,301 to 1,450		
4 0.30 0.00	E	1,451 to 1,600		
5 0.00 0.00	F	1,601 to 9,999		

Project: Long Reach Village
 Intersection: Cloudleap Court and Tamar Drive
 Scenario: Total Future Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
									Group	Max CLV
Eastbound	T	513		1.00	513	35	1.00	35	548	« ✓
	R	33	0	1.00	33				68	
Westbound	L	35		1.00	35		0.00	0	35	«
	T	450		1.00	450			0	450	«
Northbound	L	67		1.00	67			0	67	« ✓
	R	63	0	1.00	63		SPLIT	0	63	
Southbound					0			0	0	« ✓
					0		SPLIT	0	0	
					0			0	0	
					0			0	0	
Total Intersection: 1,161 veh/hr									CLV	615 A

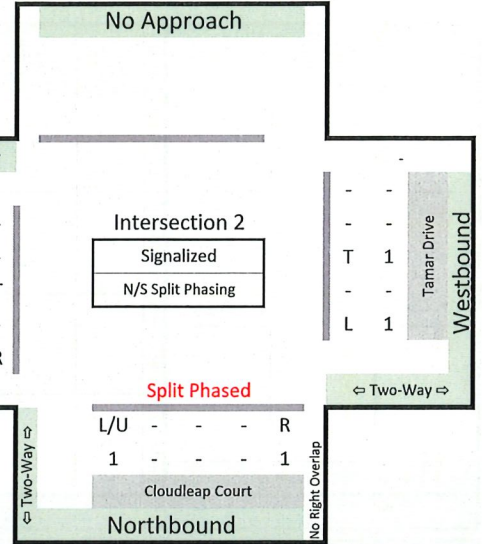
Notes: * Defacto right-turn lane test, if applicable

PM Peak Hour CLV										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
									Group	Max CLV
Eastbound	T	640		1.00	640	62	1.00	62	702	«
	R	67	0	1.00	67				129	
Westbound	L	62		1.00	62		0.00	0	62	« ✓
	T	830		1.00	830			0	830	« ✓
Northbound	L	104		1.00	104			0	104	« ✓
	R	47	0	1.00	47		SPLIT	0	47	
Southbound					0			0	0	« ✓
					0		SPLIT	0	0	
					0			0	0	
					0			0	0	
Total Intersection: 1,750 veh/hr									CLV	934 A

Notes: * Defacto right-turn lane test, if applicable

SAT Peak Hour CLV										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
									Group	Max CLV
Eastbound	T	628		1.00	628	43	1.00	43	671	« ✓
	R	67	0	1.00	67				110	
Westbound	L	43		1.00	43		0.00	0	43	«
	T	608		1.00	608			0	608	«
Northbound	L	95		1.00	95			0	95	« ✓
	R	61	0	1.00	61		SPLIT	0	61	
Southbound					0			0	0	« ✓
					0		SPLIT	0	0	
					0			0	0	
					0			0	0	
Total Intersection: 1,502 veh/hr									CLV	766 A

Notes: * Defacto right-turn lane test, if applicable



	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	33	67	67				63	47	61			
RT LUF		n/a		0.00			n/a	n/a	n/a	n/a	n/a	n/a
Adjusted Rights	n/a	n/a	n/a	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a
Adjacent Lefts	67	104	95				35	62	43			
Adj. LT LUF		1.00		0.00			1.00			0.00		
Adjusted Adj. Lefts	67	104	95	0	0	0	35	62	43	0	0	0
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

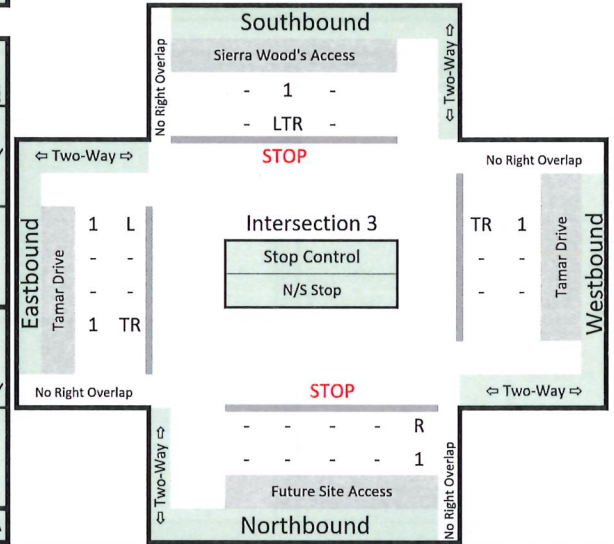
Howard County Standards					
Lane Use Factors	LOS	CLV Range			
#	Th & R	L	A	0 to 1,000	
1	1.00	1.00	B	1,001 to 1,150	
2	0.55	0.60	C	1,151 to 1,300	
3	0.40	0.00	D	1,301 to 1,450	
4	0.30	0.00	E	1,451 to 1,600	
5	0.00	0.00	F	1,601 to 9,999	

Project: Long Reach Village
 Intersection: Future Site Access and Tamar Drive
 Scenario: Total Future Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV												
Sierra Wood's Access												
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary			
									Group	Max	CLV	
Eastbound	L	-		1.00	0		0.00	0	0	«	✓	
	TR	576		1.00	576		0.00	0	576	«	✓	
	R*	74		1.00	74		0	0	74	«	✓	
Westbound	TR	489		1.00	489		1.00	0	489	«	✓	
	R*	-	0	1.00	0		0	0	0	«	✓	
Northbound	R	58		1.00	58		1.00	0	58	«	✓	
	LTR	-		1.00	0		0.00	0	0	«	✓	
Southbound	R*	-	0	1.00	0		0.00	0	0	«	✓	
	L	-		1.00	0		0.00	0	0	«	✓	
Total Intersection: 1,123 veh/hr										CLV	634	A
Notes: * Defacto right-turn lane test, if applicable												

PM Peak Hour CLV												
Sierra Wood's Access												
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary			
									Group	Max	CLV	
Eastbound	L	-		1.00	0		0.00	0	0	«	✓	
	TR	687		1.00	687		0.00	0	687	«	✓	
	R*	126		1.00	126		0	0	126	«	✓	
Westbound	TR	898		1.00	898		1.00	0	898	«	✓	
	R*	-	0	1.00	0		0	0	0	«	✓	
Northbound	R	120		1.00	120		1.00	0	120	«	✓	
	LTR	-		1.00	0		0.00	0	0	«	✓	
Southbound	R*	-	0	1.00	0		0.00	0	0	«	✓	
	L	-		1.00	0		0.00	0	0	«	✓	
Total Intersection: 1,705 veh/hr										CLV	1,018	B
Notes: * Defacto right-turn lane test, if applicable												

SAT Peak Hour CLV												
Sierra Wood's Access												
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary			
									Group	Max	CLV	
Eastbound	L	-		1.00	0		0.00	0	0	«	✓	
	TR	689		1.00	689		0.00	0	689	«	✓	
	R*	119		1.00	119		0	0	119	«	✓	
Westbound	TR	654		1.00	654		1.00	0	654	«	✓	
	R*	-	0	1.00	0		0	0	0	«	✓	
Northbound	R	109		1.00	109		1.00	0	109	«	✓	
	LTR	-		1.00	0		0.00	0	0	«	✓	
Southbound	R*	-	0	1.00	0		0.00	0	0	«	✓	
	L	-		1.00	0		0.00	0	0	«	✓	
Total Intersection: 1,452 veh/hr										CLV	798	A
Notes: * Defacto right-turn lane test, if applicable												

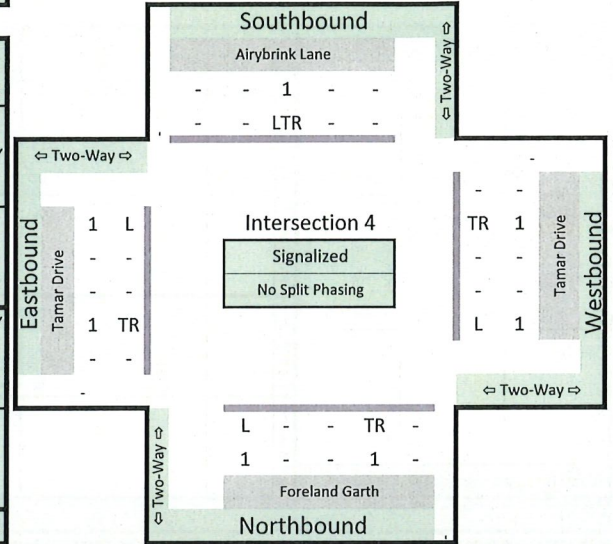


Right Turn Overlap Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	74	126	119	-	-	-	58	120	109	-	-	-
RT LUF	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Adjusted Rights	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Adjacent Lefts	-	-	-	-	-	-	-	-	-	-	-	-
Adj. LT LUF	0	0.00	0	0	1.00	0	0	0.00	0	0	1.00	0
Adjusted Adj. Lefts	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

Howard County Standards												
Lane Use Factors		LOS	CLV Range									
#	Th & R	L	A									
1	1.00	1.00	B	0 to 1,000								
2	0.55	0.60	C	1,001 to 1,150								
3	0.40	0.00	D	1,151 to 1,300								
4	0.30	0.00	E	1,301 to 1,450								
5	0.00	0.00	F	1,451 to 1,600								
				1,601 to 9,999								

Project: Long Reach Village
 Intersection: 4. Airybrink Lane/Forelan Garth and Tamar Drive
 Scenario: Total Future Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV		Airybrink Lane											
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary Group	Max CLV	CLV		
Eastbound	L	8		1.00	8				173		173		
	TR	552		1.00	552	165	1.00	165	717	«		717	
	R*	90		1.00	90				255	«			
Westbound	L	165		1.00	165				173		173		
	TR	353		1.00	353	8	1.00	8	361	«		361	
	R*	8	0	1.00	8				16	«			
Northbound	L	130		1.00	130				143	«	143		
	TR	109		1.00	109	13	1.00	13	122	«		122	
	R*	109		1.00	109				122	«			
Southbound	LTR	11		1.00	11	130	1.00	130	141	«	141		
	R*	10	0	1.00	10				140	«		140	
					0				130				
Total Intersection: 1,341 veh/hr											CLV		860



PM Peak Hour CLV		Airybrink Lane											
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary Group	Max CLV	CLV		
Eastbound	L	11		1.00	11				304		304		
	TR	666		1.00	666	293	1.00	293	959	«		959	
	R*	146		1.00	146				439	«			
Westbound	L	293		1.00	293				304		304		
	TR	667		1.00	667	11	1.00	11	678	«		678	
	R*	12		1.00	12				23	«			
Northbound	L	232		1.00	232				247	«	247		
	TR	167		1.00	167	15	1.00	15	182	«		182	
	R*	165		1.00	165				180	«			
Southbound	LTR	10		1.00	10	232	1.00	232	242	«	242		
	R*	9		1.00	9				241	«		241	
					0				232				
Total Intersection: 2,061 veh/hr											CLV		1,206

	Eastbound		Westbound		Northbound		Southbound	
	AM	PM	AM	PM	AM	PM	AM	PM
Right Turns	90	146	8	12	109	165	10	9
RT LUF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Adjusted Rights	0	0	0	0	0	0	0	0
Adjacent Lefts	130	232	13	15	165	293	8	11
Adj. LT LUF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adjusted Adj. Lefts	130	232	13	15	165	293	8	11
Right Turn Overlap	0	0	0	0	0	0	0	0

SAT Peak Hour CLV		Airybrink Lane											
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary Group	Max CLV	CLV		
Eastbound	L	6		1.00	6				296		296		
	TR	674		1.00	674	290	1.00	290	964	«		964	
	R*	137	0	1.00	137				427	«			
Westbound	L	290		1.00	290				296		296		
	TR	445		1.00	445	6	1.00	6	451	«		451	
	R*	3	0	1.00	3				9	«			
Northbound	L	214		1.00	214				224	«	224		
	TR	186		1.00	186	10	1.00	10	196	«		196	
	R*	186	0	1.00	186				196	«			
Southbound	LTR	4		1.00	4	214	1.00	214	218	«	218		
	R*	3	0	1.00	3				217	«		217	
					0				214				
Total Intersection: 1,829 veh/hr											CLV		1,188

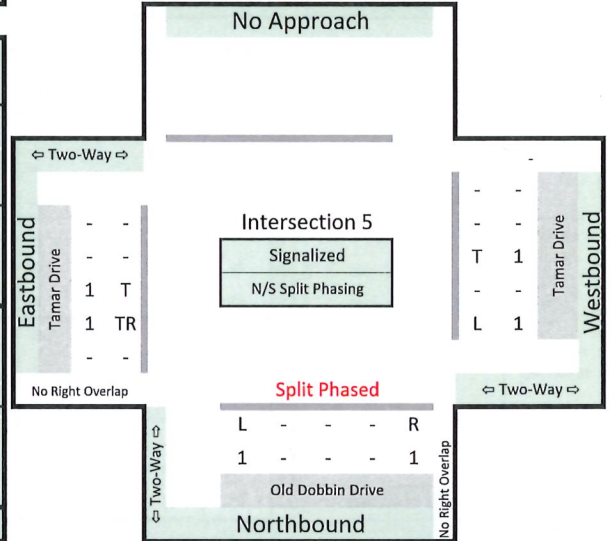
Howard County Standards			
Lane Use Factors	LOS	CLV Range	
#	Th & R	L	A
1	1.00	1.00	0 to 1,000
2	0.55	0.60	B 1,001 to 1,150
3	0.40	0.00	C 1,151 to 1,300
4	0.30	0.00	D 1,301 to 1,450
5	0.00	0.00	E 1,451 to 1,600
			F 1,601 to 9,999

Project: Long Reach Village
 Intersection: 5. Old Dobbin Lane and Tamar Drive
 Scenario: Total Future Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
									Group	Max CLV
Eastbound	T+TR	507		0.55	279	301	1.00	301	580	« ✓
	R*	191		1.00	191				492	
Westbound	L	301		1.00	301				301	«
	T	388		1.00	388		0.00	0	388	«
Northbound	L	115		1.00	115				115	« ✓
	R	187		1.00	187				187	« ✓
Southbound					0				0	« ✓
					0	115	SPLIT	0	0	« ✓
Total Intersection: 1,498 veh/hr						CLV		767		A

PM Peak Hour CLV										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
									Group	Max CLV
Eastbound	T+TR	730		0.55	402	245	1.00	245	647	« ✓
	R*	222		1.00	222				467	
Westbound	L	245		1.00	245				245	«
	T	593		1.00	593		0.00	0	593	«
Northbound	L	314		1.00	314				314	« ✓
	R	307		1.00	307				307	« ✓
Southbound					0				0	« ✓
					0	314	SPLIT	0	0	« ✓
Total Intersection: 2,189 veh/hr						CLV		961		A

SAT Peak Hour CLV										
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary	
									Group	Max CLV
Eastbound	T+TR	610		0.55	336	220	1.00	220	556	« ✓
	R*	224		1.00	224				444	
Westbound	L	220		1.00	220				220	«
	T	434		1.00	434		0.00	0	434	«
Northbound	L	251		1.00	251				251	« ✓
	R	200		1.00	200				200	« ✓
Southbound					0				0	« ✓
					0	251	SPLIT	0	0	« ✓
Total Intersection: 1,715 veh/hr						CLV		807		A



Right Turn Overlap Adjustments												
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	191	222	224	-	-	-	187	307	200	-	-	-
RT LUF	n/a	n/a	n/a	0.00			n/a	n/a	n/a	n/a	n/a	n/a
Adjusted Rights	n/a	n/a	n/a	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a
Adjacent Lefts	115	314	251	-	-	-	301	245	220	-	-	-
Adj. LT LUF	1.00	1.00		1.00			1.00			0.00		
Adjusted Adj. Lefts	115	314	251	0	0	0	301	245	220	0	0	0
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

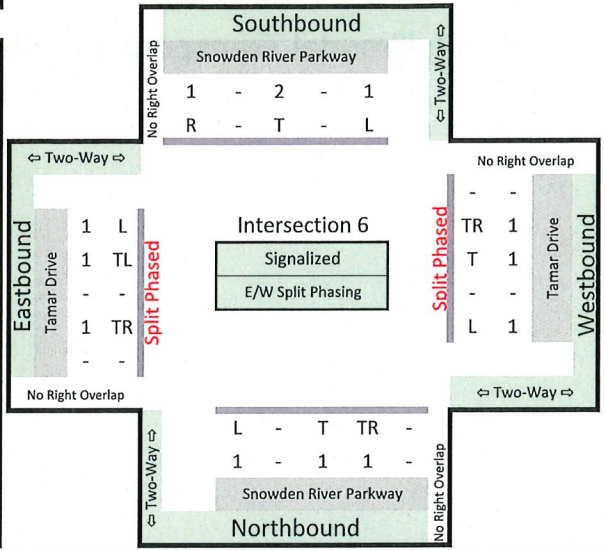
Howard County Standards				
Lane Use Factors				
#	Th & R	L		
1	1.00	1.00		
2	0.55	0.60		
3	0.40	0.00		
4	0.30	0.00		
5	0.00	0.00		

Project: Long Reach Village
 Intersection: 6. Snowden River Parkway and Tamar Drive
 Scenario: Total Future Conditions
 Jurisdiction: Howard County

AM Peak Hour CLV												
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary			
									Group	Max	CLV	
Eastbound	LT	475		0.55	261				261	«	✓	
	LTR	623		0.40	249	119	SPLIT	0	249			
	R*	148		1.00	148				148			
Westbound	L	119		1.00	119				119	«	✓	
	T+TR	200		0.55	110	356	SPLIT	0	110			
	R*	67		1.00	67				67			
Northbound	L	54		1.00	54				70			
	T+TR	493		0.55	271	16	1.00	16	287	«		
	R*	48		1.00	48				64			
Southbound	L	16		1.00	16				70			
	T+T	1,291		0.55	710	54	1.00	54	764	«	✓	
	R	518	0	1.00	518				572			
Total Intersection: 3,314 veh/hr										CLV	1,144	B
Notes: * Defacto right-turn lane test, if applicable												

PM Peak Hour CLV												
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary			
									Group	Max	CLV	
Eastbound	LT	556		0.55	306				306	«	✓	
	LTR	651		0.40	260	67	SPLIT	0	260			
	R*	95	0	1.00	95				95			
Westbound	L	67		1.00	67				67			
	T+TR	178		0.55	98	424	SPLIT	0	98	«	✓	
	R*	44	0	1.00	44				44			
Northbound	L	177		1.00	177				230			
	T+TR	1375		0.55	756	53	1.00	53	809	«	✓	
	R*	126	0	1.00	126				179			
Southbound	L	53		1.00	53				230			
	T+T	1,147		0.55	631	177	1.00	177	808	«		
	R	557	0	1.00	557				734			
Total Intersection: 4,205 veh/hr										CLV	1,213	C
Notes: * Defacto right-turn lane test, if applicable												

SAT Peak Hour CLV												
Approach	Lane Group	Lane Group Volume	Overlap	LUF	Sum	Opp. Lefts	LT LUF	Opp. Volume	Summary			
									Group	Max	CLV	
Eastbound	LT	575		0.55	316				316	«	✓	
	LTR	657		0.40	263	63	SPLIT	0	263			
	R*	82	0	1.00	82				82			
Westbound	L	63		1.00	63				63			
	T+TR	144		0.55	79	426	SPLIT	0	79	«	✓	
	R*	28	0	1.00	28				28			
Northbound	L	94		1.00	94				124			
	T+TR	1072		0.55	590	30	1.00	30	620	«		
	R*	76	0	1.00	76				106			
Southbound	L	30		1.00	30				124			
	T+T	1,078		0.55	593	94	1.00	94	687	«	✓	
	R	505	0	1.00	505				599			
Total Intersection: 3,643 veh/hr										CLV	1,082	B
Notes: * Defacto right-turn lane test, if applicable												



	Right Turn Overlap Adjustments											
	Eastbound			Westbound			Northbound			Southbound		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Right Turns	148	95	82	67	44	28	48	126	76	518	557	505
RT LUF	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Adjusted Rights	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Adjacent Lefts	54	177	94	16	53	30	119	67	63	356	424	426
Adj. LT LUF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adjusted Adj. Lefts	54	177	94	16	53	30	119	67	63	214	254	256
Right Turn Overlap	0	0	0	0	0	0	0	0	0	0	0	0

Howard County Standards					
#	Lane Use Factors		LOS	CLV Range	
	Th & R	L		A	B
1	1.00	1.00	B	1,001 to 1,150	
2	0.55	0.60	C	1,151 to 1,300	
3	0.40	0.00	D	1,301 to 1,450	
4	0.30	0.00	E	1,451 to 1,600	
5	0.00	0.00	F	1,601 to 9,999	

G. Multimodal Transportation Studies Checklist

MULTIMODAL TRANSPORTATION STUDIES

This form and the resources embedded herein are intended to aid applicants in completing the Multimodal Transportation Study.

I. BACKGROUND

The Howard County Design Manual was updated in February 2022 to incorporate the Howard County Complete Streets Policy. A Multimodal Transportation Study (MTS) is to be completed by the applicant as detailed in the [Howard County Design Manual Volume III](#), Chapter 5 page 5-10 which states: "For development projects in proximity of a county school, county park, county library, or other specified location, a multimodal transportation study will be submitted to DPZ along with the first submission of the Sketch, Preliminary Equivalent Sketch, or Site Development Plan."

Note: The applicant may also be required to complete a level of service study for motor vehicle traffic, a safety evaluation, a parking/access study, and/or a noise study at the discretion of the Department of Public Works in consultation with the Office of Transportation. In addition, all qualifying development projects are required to conduct an Adequate Road Facilities Test Evaluation as outlined in Chapter 4. Those requirements are not fulfilled by the completion of this form.

II. STEPS

Y/N

A. Does your project generate more than 5 peak hour trips?
If no, this form is complete. Please sign page 2 to certify that your project is exempt from submitting a MTS.

B. Is your project located within the below distances to any of the destinations listed in Table 1?
Please use this [interactive map](#) to identify if any of the below destinations are within a designated radius of the proposed development, and select yes or no for each destination.
If none, this form is complete. Please sign page 2 to certify that your project is exempt from submitting a MTS.

Destination	Distance
Howard County Public School (Elementary or Middle School)	1 mile
Howard County Public School (High School)	1.5 miles
Howard County Public Library	0.5 miles
Howard County Park	0.5 miles
Transit Oriented Development	0.5 miles
US Route 40 from the Patapsco River to the interchange with Interstate 70	0.5 miles
Main Street in Ellicott City from the Patapsco River to Rogers Avenue	0.5 miles
Main Street in Elkridge from US Route 1 to Washington Boulevard	0.5 miles

-
-
-
-
-
-
-
-

If you selected yes for any of the above destinations, please list them below:

Your proposed project is located within 1 mile of following Elementary and/or Middle Schools:

1. Jeffers Hill Elem
2. Waterloo Elem
3. Phelps Luck Elem

Your proposed project is located within 1.5 miles of following High Schools:

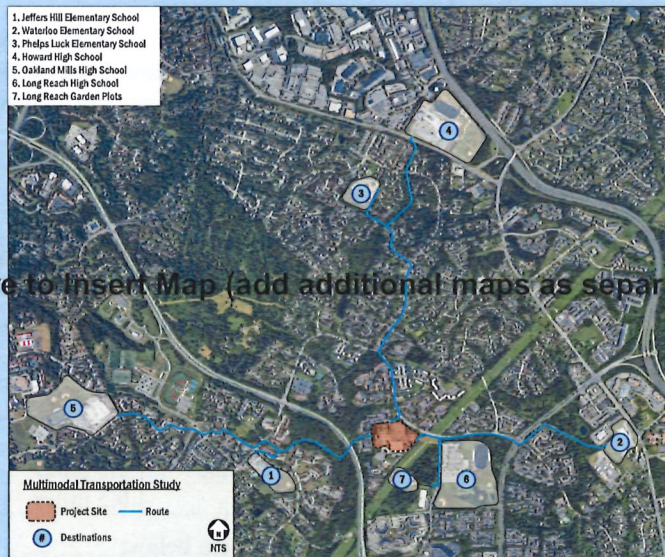
1. Howard High School
2. Oakland Mills High
3. Long Reach High

Your project development is located within 0.5 miles of a park

1. Long Reach Garden Plots

C. For each of the destinations within the specified distance of your development, provide a map showing a pedestrian and bicycle connection between the development and the destination. Note: Developers are just required to show these connections, *not* build them.

- The pedestrian connection identified must be suitable for an elementary school aged child, e.g. sidewalks or a 10' wide shared use path *with* designated street crossings. The map should clearly note whether each segment of the pedestrian facility is existing or proposed.
- The bicycle connection must be Bicycle Level of Traffic Stress 1 (LTS1). LTS guidance is provided on pages 5-11 and 5-12 of [Volume III of the Design Manual](#). The map should clearly note and whether each segment of the bicycle facility is existing or proposed. The bicycle connection may take advantage of existing LTS1 streets or separated bicycle routes (shared use paths), which should be designated as "existing." Connections along any existing LTS2-4 streets or through undeveloped land used should be designated as "proposed." The bicycle connection should have no gaps in LTS1 connectivity between the development and destination. This [interactive map](#) shows the existing LTS for every street in Maryland and existing Separated Bicycle Routes.
- Note that a continuous 10' wide shared use path fulfills both pedestrian and bicycle connectivity requirements.
- An [example of a Multimodal Transportation Study](#) is provided on the Office of Transportation website.
- For questions on Multimodal Transportation Studies, contact the Howard County Office of Transportation, transportation@howardcountymd.gov, 410-313-4312



Click Here to Insert Map (add additional maps as separate pages)

I answered no to question A or B, and as result, am not required to submit a Multimodal Transportation Study.

Katie Wagner _____ 10/3/2025
 Name Signature Date

I answered yes to question A and B and have attached the map(s) showing the pedestrian and bicycle connection(s) between the proposed development and nearby destinations to this form.

 Name Signature Date

Check the Help and Resources instructions accessible from the ProjectDox login screen for the appropriate locations to upload all documentation including this form. Once you have completed your uploads, remember to complete your ProjectDox task.

Save Form

TECHNICAL MEMORANDUM

To: Brian Kim
Columbia Community Concepts, LLC

From: Anila Moorthy, EIT
Maribel Donahue
Katie Wagner, PE, PTOE

Date: October 17, 2025

Subject: Long Reach Village Center Circulation Study

Introduction

This memorandum summarizes the proposed circulation plan for the redevelopment of the Long Reach Village Center (LRVC) in Howard County, Maryland. The Circulation Study provides a preliminary framework for the internal street network, vehicular circulation, pedestrian circulation, and parking strategy to support the LRVC redevelopment. As this represents a preliminary submission, additional in-depth analysis will be conducted and refined as part of subsequent site plan submissions.

The redevelopment program proposes to replace the existing shopping plaza with a mixed-use community including approximately 255 multifamily units, 200 senior multifamily units, 50 townhomes, and 258,330 square feet of commercial space. Construction is expected to be implemented in five (5) phases. At full build-out, the project is anticipated to provide approximately 781 garage parking spaces, 90 surface lot spaces, and 72 on-street parking spaces.

The project site is located at 8775 Cloudleap Court in Howard County, Maryland. The site is bounded by Cloudleap Court and Tamar Drive to the north, Foreland Garth to the east, Longwood Apartments to the south, and Timber Apartments and Route 175 to the west. This location places the LRVC within a well-established suburban setting, framed by residential neighborhoods, community-serving uses, and regional transportation infrastructure.

Surrounding land uses include a mix of multifamily residential, single-family residential, educational, and recreational facilities. Long Reach High School and associated recreational fields are located to the southeast of the site, while adjacent apartment communities such as Longwood and Timber provide higher-density residential uses directly to the south and west. The Elkhorn Branch Trail and open space areas are situated nearby, offering community access to recreational amenities and connections to the broader Columbia pathway system.

The circulation plans outlined in this study, including the design of internal street segments, are guided by the following goals:

- **Establish Connectivity:** Create a cohesive network of pedestrian and bicycle pathways that formally link the LRVC with adjacent properties and the existing CA pathway system. This includes providing new pedestrian connections with crosswalks.
- **Enhance Accessibility and Comfort:** Ensure that multimodal routes within the LRVC are visibly identifiable, physically accessible, and accommodate all users. Pathways will be designed with appropriately scaled lighting and enhanced with landscaping to promote safety, comfort, and a welcoming environment.
- **Facilitate Efficient Access for Daily Users and Visitors:** Design clearly defined and direct routes to parking, loading, and pick-up/drop-off areas to minimize internal congestion and enhance overall circulation.

Ex. 8

Non-Motorized Circulation

Existing Pedestrian and Bicycle Facilities

The project site is served by existing sidewalks along Tamar Drive, Cloudleap Court, and Foreland Garth, which provide pedestrian connections to Long Reach High School as well as surrounding residential neighborhoods. However, gaps in sidewalk infrastructure exist surrounding the existing Village Center, limiting overall pedestrian connectivity. Internal to the site, sidewalks are provided along the building frontages. Due to the existing land uses, building configuration, and extensive pavement coverage, sidewalk connectivity within the site is currently limited. This lack of continuous pedestrian infrastructure constrains safe and efficient circulation, reduces accessibility between key destinations, and weakens overall integration with the broader pedestrian network.

Bicycle facilities in the vicinity include both separated and shared lanes along southbound and northbound Old Dobbin Lane. These lanes, however, terminate abruptly between Dobbin Lane and Tamar Drive, and no dedicated bicycle infrastructure is present within the project site.

The project is located adjacent to the Elkhorn Branch Trail, a 1.9-mile loop trail traversing the Elkhorn Branch wetlands in central Columbia. The trail can be accessed via a trailhead on Tamar Drive, just north of Cloudleap Court. At present, there is no direct connection between the trail and the existing Village Center.

The Tamar Drive Complete Streets Project will include 6' dedicated bicycle lanes along both directions on Tamar Drive. Additional improvements include pedestrian facilities improvements including high visibility crosswalks.

Future Pedestrian and Bicycle Circulation

As part of the proposed circulation plan, new sidewalks, pathways, trail access, and bike lanes will be introduced to enhance the existing non-motorized network. These improvements will provide safe and convenient pedestrian and bicycle access both within the site and to the surrounding community.

Figure 1 illustrates the proposed pedestrian and bicycle facilities and circulation within the project site.

Pathways

The proposed redevelopment will establish a new non-motorized pathway along the single-family residential frontage, providing pedestrian and bicycle connectivity between Cloudleap Court and the remainder of the development. No additional vehicular connections are proposed between Cloudleap Court and the rest of the development. The curb cut along Cloudleap Court will serve only as an access point to an internal parking garage, which will remain disconnected from the broader on-site circulation network.

Furthermore, the redevelopment program includes the integration of multiple community spaces and parks strategically located throughout the site. These features will expand the availability of green space, enhance the public realm, and support both active and passive recreational opportunities for residents and visitors.

Sidewalks

The redevelopment will expand the existing sidewalk network by eliminating dead-end segments and providing continuous pedestrian connections throughout the site. In addition, formal crosswalks will be installed at key street crossings. These improvements will establish direct, well-defined pathways that enhance pedestrian safety and support efficient movement throughout the site.

8.15

Trail Connection

As part of the redevelopment, a direct connection will be established between the development and the Elkhorn Branch Trail. This improvement will enhance multimodal connectivity, provide convenient access to recreational amenities, and promote sustainable transportation options for residents, visitors and the broader community.



Figure 1: Non-motorized Circulation

Vehicular Circulation

Existing Vehicular Circulation

Vehicular access to the site is provided from two (2) existing curb cuts along Cloudleap Court and multiple curb cuts along Foreland Garth. These access points connect directly to the site's internal circulation system, which consists of private drive aisles and local roadways serving the buildings and surface parking lots. The internal street network allows for east–west and north–south circulation within the site and provides connectivity between the various parking lots and building entrances.

No direct vehicular connection is provided between the site and Tamar Drive. Instead, vehicles must access the site via Foreland Garth or Cloudleap Court, which in turn connect to Tamar Drive.

Tamar Drive functions as a major collector roadway, accommodating three to four lanes of two-way traffic. In 2024, Tamar Drive carried an average daily traffic (ADT) volume of approximately 11,900 vehicles per day. This roadway provides important east–west regional connectivity and serves as the primary approach corridor for the surrounding neighborhood system.

Foreland Garth and Cloudleap Court are designated local streets operating at lower volumes and speeds. Both serve as the primary gateways to the site from Tamar Drive and facilitate circulation between the regional roadway system and the site's internal network.

Future Vehicular Circulation

The proposed internal circulation network has been designed to balance functional access needs with the goal of creating a multimodal, pedestrian-oriented development. Vehicular movements within the site are anticipated to operate under four primary circulation plans based on land use: residential, retail and recreational facilities, and loading/service circulation. Each plan is described below.

Residential Circulation

Townhomes (Building A)

Primary access to the proposed townhome garage parking is anticipated to occur via Cloudleap Court. At this time, no internal vehicular connections are envisioned between the townhomes and the broader development. Instead, the townhome frontage street is intended to function as a pedestrian-oriented corridor, designed to encourage non-motorized activity and minimize potential vehicular conflicts. Connectivity between the townhomes and the remainder of the development is therefore expected to occur primarily through pedestrian and bicycle linkages. These may include access via the proposed pedestrian-only street, as well as adjacent sidewalks and shared bikeway facilities that provide seamless integration with the larger development.

Parking for the townhomes is proposed to be accommodated within a below-grade structure. This facility could provide approximately 105 spaces in total, designed to serve both residents and visitors. Locating parking below grade minimizes the visual and physical impact of vehicles on the public realm, thereby supporting a more walkable and pedestrian-friendly environment at street level. This arrangement also supports efficient land use, preserves opportunities for landscaping and open space, and ensures that anticipated parking demand is met in a manner consistent with the project's multimodal vision.

Multifamily and Retail Building (Building C)

Primary vehicular access to the residential component of Building C is expected to occur via Proposed Street A. Vehicles may enter the site from Foreland Garth or from the proposed curb cut on Tamar Drive, with circulation directed to Street B for access to the underground parking garage.

The multifamily building is envisioned as a mixed-use facility, incorporating approximately 255 dwelling units and 19,650 square feet of retail space. Parking is proposed within an underground structure containing approximately 316 spaces. These spaces are anticipated to be shared between residential and retail uses, thereby maximizing efficiency and providing flexibility to meet

peak demand periods. Locating parking below grade further reduces the impact of vehicles on the streetscape and supports the pedestrian-oriented development goals of the site.

Senior, Retail and Commercial Building (Building E)

Primary access to the residential component of Building E is anticipated to occur via Foreland Garth. The building is envisioned as a mixed-use facility, including approximately 200 dwelling units, 41,920 square feet of retail space, and a 31,890 square foot commercial space.

Parking is proposed to be accommodated within both a below-grade structure and an at-grade surface lot, with approximately 210 spaces provided underground and an additional 90 surface spaces. These facilities are intended to serve residents, visitors, retail patrons, and commercial space users. The combination of structured and surface parking has the potential to offer both convenience and operational flexibility while maintaining compatibility with adjacent uses.

Pick-Up, Drop-Off, and Deliveries

To further support the development and minimize circulation conflicts, designated on-street pick-up and drop-off areas are proposed along two key frontages: between the townhomes and the multifamily-retail building, and between the senior building and the multifamily building. These areas are envisioned to accommodate a variety of short-term activities, including passenger pick-up and drop-off, small-scale package deliveries, and food delivery services. By consolidating these functions within specific, well-defined locations, the development has the potential to manage delivery and passenger activity in an efficient manner.

The residential circulation plan is shown in Figure 2.

Retail/Commercial Circulation

Standalone Commercial Building (Building B)

Building B is proposed as a standalone commercial building without a dedicated parking garage. Patrons are expected to utilize parking spaces located elsewhere within the community and access the building by walking, biking, or being dropped off at designated pick-up and drop-off (PUDO) locations. Short-term loading and passenger activity is anticipated to occur at the turn circle immediately adjacent to the building, providing convenient and efficient access while minimizing potential circulation conflicts.

Multifamily and Retail Building (Building C)

The retail component of Building C is expected to be primarily accessed via Proposed Street A, with additional connectivity from Foreland Garth and Proposed Street B, east of the sports complex. PUDO activity associated with retail uses is anticipated to occur along the frontage of Proposed Street A. This arrangement is intended to balance access for retail customers while maintaining overall circulation efficiency for the mixed-use building.

Senior, Retail and Commercial Building (Building E)

Retail access for Building E is proposed to occur primarily via Foreland Garth. The majority of retail patrons are expected to utilize the surface parking lot located adjacent to the building, with additional spaces available within the underground parking garage to accommodate overflow demand. PUDO activity is anticipated along the site frontage on Proposed Street A, providing direct and convenient access to retail functions while maintaining integration with the senior residential and commercial use components of the building.

The retail/commercial circulation plan is shown in Figure 3.

Commercial and Sport's Complex Circulation

Multi Sports Complex and Retail (Building D)

Primary access to Building D is anticipated to occur via Foreland Garth, with a secondary access point from the Tamar Drive entrance. Parking is proposed to be provided within a below-grade structure that could accommodate approximately 150 spaces to serve both retail and recreational uses.

PUDO activity is expected to potentially occur along the building frontage on Proposed Street B. Vehicles entering the site from Foreland Garth may be required to utilize the proposed roundabout in order to turn and reach the designated PUDO spaces. This circulation arrangement is intended to provide an efficient means of managing short-term passenger and delivery activity while minimizing conflicts along the frontage and supporting safe and convenient access for all site users.

Senior, Retail and Commercial Building (Building E)

For the commercial use circulation, primary access to Building E is anticipated via Foreland Garth. Commercial use patrons are expected to primarily utilize the surface lot, with additional capacity available within the below-grade garage for overflow. PUDO activity is anticipated within the surface lot, providing convenient access while minimizing potential conflicts with on-street traffic circulation.

The Sports Complex and Commercial circulation plan is shown in Figure 4.

Loading Circulation

Loading truck access to the site is anticipated to occur exclusively via Foreland Garth. Trucks are expected to be accommodated within designated loading areas, thereby minimizing the potential for conflicts with general traffic or circulation on adjacent streets. Loading operations are anticipated to occur primarily during non-peak hours, which would further reduce potential impacts on access, circulation, and adjacent roadway conditions.

The loading circulation plan is shown in Figure 5.

Additional Street Parking

Additional on-street parking is proposed to be provided throughout the site. These spaces are anticipated to serve short-term parking needs, offering convenient access for visitors, service providers, and patrons of the mixed-use components of the development. By distributing spaces across multiple frontages, the development has the potential to accommodate diverse user needs while supporting circulation efficiency and preserving flexibility in site operations.

Conclusion

The proposed circulation framework for the LRVC redevelopment is designed to establish a safe, functional, and balanced transportation system that supports multiple modes of travel. Non-motorized circulation improvements including new sidewalks, pathways, crosswalks, and a direct connection to the Elkhorn Branch Trail are anticipated to enhance connectivity within the site and integrate it with the surrounding community network. Residential, retail, and community-serving uses will be supported by structured and surface parking facilities, strategically located pick-up/drop-off zones, and distributed on-street parking, providing flexibility to meet a range of user needs.

Service and loading operations are anticipated to be limited to Foreland Garth and contained within designated loading areas, reducing conflicts with general traffic and pedestrian activity. Together, these strategies have the potential to create a cohesive circulation system that improves multimodal connectivity, minimizes traffic impacts on surrounding roadways, and enhances the overall accessibility, safety, and aesthetic quality of the development.

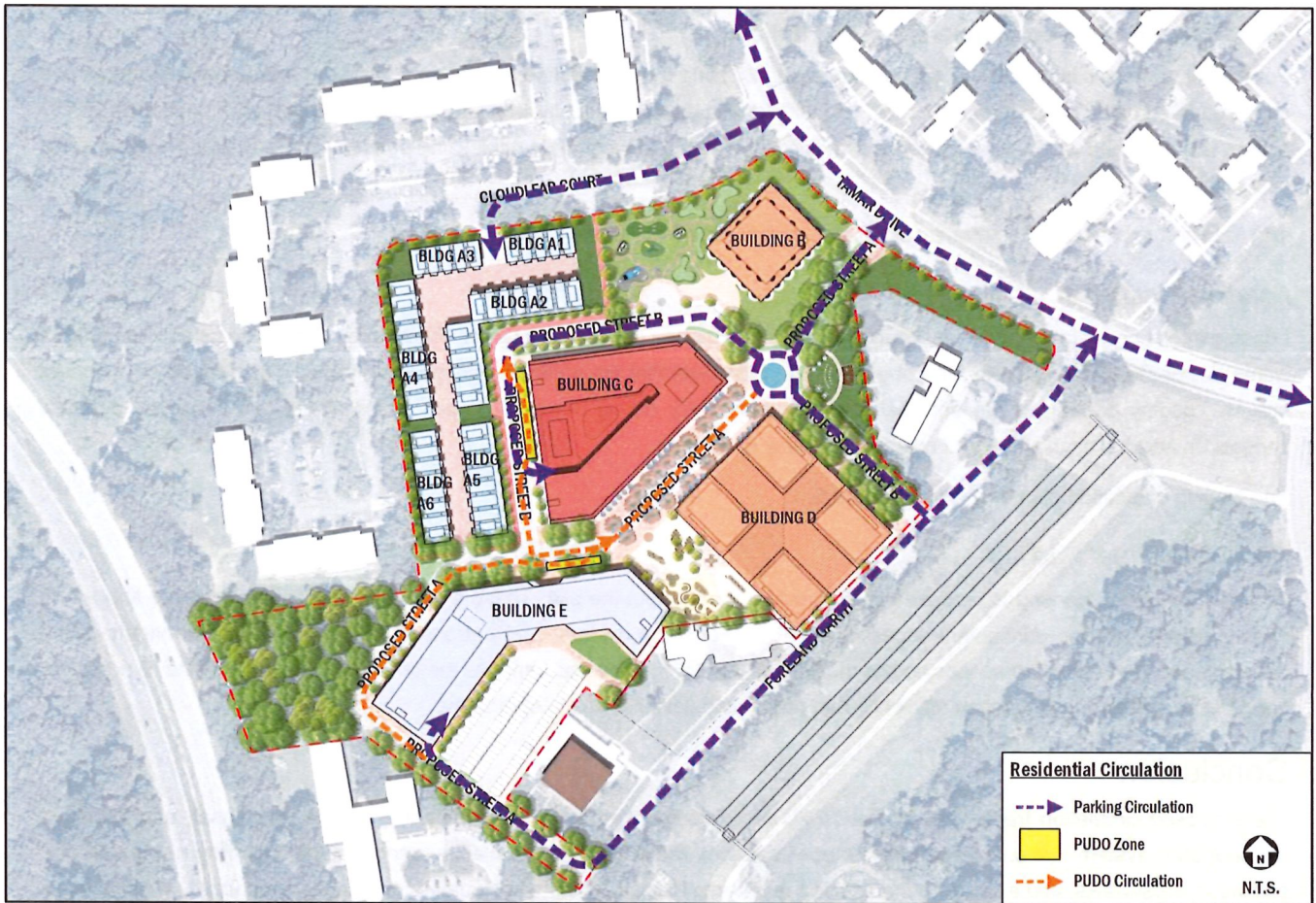


Figure 2: Residential Circulation



Figure 3: Retail/Commercial Circulation



Figure 4: Sports Complex and Commercial Use Circulation

TECHNICAL MEMORANDUM

To: Brian Kim
From: Anila Moorthy, EIT
Maribel Donahue
Katie Wagner, PE, PTOE
Date: October 17, 2025
Subject: Long Reach Village Center Parking Needs Study

Columbia Community Concepts, LLC

Introduction

This memorandum presents the findings of a Parking Needs Study for the proposed development located at Long Reach Village Center in Howard County, Maryland. This parking needs study was conducted in support of the proposed parking quantity.

As shown in Figure 1, the site located at 8775 Cloudleap Court is bounded by Cloudleap Court and Tamar Drive to the north, Foreland Garth to the east, Longwood Apartments to the south, and Timber Apartments and Route 175 to the west.

The Project proposes redeveloping the existing office and retail uses to include approximately 200 senior multi-family units, 255 multifamily units, 50 townhomes and 258,330 sf commercial space. For the full build-out scenario, the project proposes 781 garage parking spaces, 90 surface lot spaces, and 72 on-street parking spaces.

The objective of this study is to identify the parking needs of the project as required by Howard County Zoning Regulations based on a review of the nature of the proposed land use, community context, surrounding multimodal network, and parking ratio standards. The parking needs are also compared to the proposed parking supply to determine whether the project provides sufficient parking. The following summarizes the findings of this study:

- The project site is surrounded by a robust existing and planned multimodal network with high-quality pedestrian and bicycle infrastructure and convenient direct access to transit that reduce demand for site parking.
- Parking demand was estimated using ITE Parking Generation, ULI Shared Parking, and Howard County Parking ratios.
- Contextual adjustments were informed by adjacent multimodal facilities, the Tamar Drive Complete Streets improvements, and ridesharing trends.
- Due to shared parking efficiencies and enhanced multi-modal connectivity, a right sized supply is anticipated to meet peak concurrent demand while minimizing excess capacity. Based on the project's mixed-use program and multimodal access, the parking needs will be satisfied with 943 on-site spaces.

Project Overview

The project site encompasses approximately 16.1 acres and is bounded by Cloudleap Court and Tamar Drive to the north, Foreland Garth to the east, Longwood Apartments to the south, and Timber Apartments and Route 175 to the west. This setting places the LRVC within a well-established suburban context framed by residential neighborhoods, community-serving uses, and regional transportation infrastructure.

Surrounding land uses include a mix of multifamily and single-family residential, educational, and recreational facilities. Long Reach High School and associated athletic fields lie to the northeast, while adjacent communities such as Longwood and Timber

Ex. 9

provide higher-density residential uses directly to the south and west. Nearby open spaces including the Elkhorn Branch Trail, offer community access to recreation and connect to the broader Columbia pathway system.

The site is currently developed with six buildings containing 71,886 square feet of retail and 15,000 square feet of office, served by 404 paved parking spaces. The proposed redevelopment would replace these uses with approximately 200 senior multi-family units, 255 multifamily units, 50 townhomes, and 258,330 square feet of commercial space.

The site is well connected to surrounding neighborhoods and commercial areas via 5-foot sidewalks on both sides of Tamar Drive, providing direct and convenient links to Downtown Columbia and nearby residential areas. As shown in Figure 3, the project also benefits from access to the Elkhorn Branch Trail, which extends from Old Annapolis Road to Lake Elkhorn.

Bicycle access is available on a growing network of facilities, including existing separated bike lanes on southbound Old Dobbin Lane and shared bike lanes on northbound Old Dobbin Lane. The Tamar Drive Complete Streets study proposes a road diet with 6-foot dedicated bicycle lanes in both directions, further enhancing bicycle safety and connectivity.

As shown in Figure 2, the project also has direct access to the "Maroon Bike Wayfinding Route" which extends from Quarterstaff Road & Freetow Road intersection west of the site to the Main Street & Levering Avenue intersection east of the site. This wayfinding bike route is part of the larger county-wide bicycle wayfinding network that aims to promote active transportation with improved access and wayfinding.

Transit service is immediately adjacent to the site. RTA Routes 402 and 408 provide connections to the Mall in Columbia, Dobbin Center, Snowden Square, Waterloo Park, and the Homewood Center, with additional regional connectivity via MTA Route 345.

Given the site's high-pedestrian context and strong multimodal access including direct connections to nearby schools, existing conditions support a lower on-site parking supply than would typically be expected for a conventional suburban site.





Figure 1: Site Location

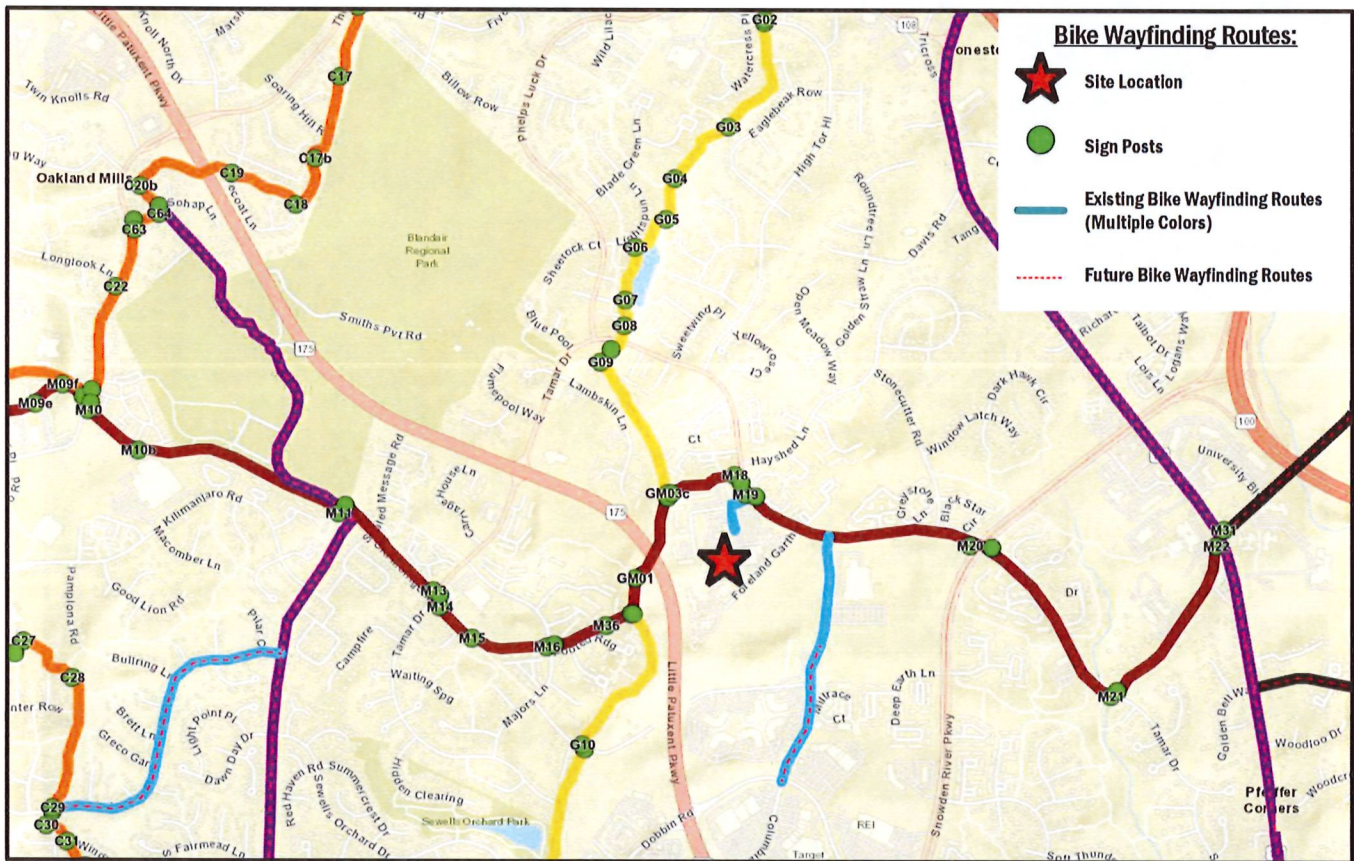


Figure 2: Bike Wayfinding Routes

Parking Demand Calculations

Given the unique mix of uses included at the proposed project, no similar or comparable existing sites were found in the region that could be used to estimate parking demand for the proposed project. Parking needs were instead calculated using the Institute of Transportation Engineers *Parking Generation Manual* and the Urban Land Institute *Shared Parking* manual as discussed below.

ITE Parking Generation Manual

Parking demand for the project was calculated using the methodology from the 6th Edition of the Institute of Transportation Engineers' (ITE) *Parking Generation Manual*.

The average parking demand rate for "Single-Family Attached Housing" (Land Use 215), "Multifamily Housing – 1BR (Mid-Rise)" (Land Use Code 218), "Multifamily Housing – 2 + BR (Mid-Rise)" (Land Use Code 221), "Senior Adult Housing – Multifamily" (Land Use Code 252), "Recreational Community Center" (Land Use Code 495), and "Strip Retail Plaza(<40k)" (Land Use Code 822) located in a general urban/suburban setting were calculated based on the fitted curve equation published by ITE, which estimates an average parking demand of 970 parking spaces, as shown in Table 1. This parking rate is based on a national context and is an average from studies conducted throughout the USA.

Given the new proposed direct access to the Elkhorn Branch Trail, bus stops along Tamar Drive and Foreland Garth, and the planned Tamar Drive Complete Streets improvements, the Project applies a 10% non-auto mode shift reduction to base parking demand. An additional 5% captive-market reduction is applied to reflect visitors who park once and visit multiple on-site destinations within the mixed-use environment. With these adjustments, the average peak parking demand is estimated at approximately 830 spaces.

Table 1: ITE Parking Generation

Land Use	Land Use Code	Quantity	ITE Parking Rates
Single-Family Attached	215	50 du	71 (1.42 spaces per du)
Multifamily Housing - 1BR (Mid-Rise)	218	179 du	122 (0.68 spaces per du)
Multifamily Housing – 2+BR (Mid-Rise)	221	76 du	81 (1.06 spaces per du)
Senior Adult Housing - Multifamily	252	200 du	122 (0.61 spaces per du)
Recreational Community Center	495	60500 sf	309 (5.11 spaces per 1,000 sf)
Retail	821,822	90,180 sf	265 (2.94 spaces per 1,000 sf)
Total			970
w/ Mode Split Reductions (10%)			873
w/ Non Captive Reductions (5%)			830

Urban Land Institute (ULI) Based Parking Ratio

Parking demand was also calculated using the 3rd edition of ULI *Shared Parking*, an industry-standard publication that provides base parking ratios for various land uses in suburban contexts with limited transit access. ULI's parking ratios are commonly used to inform parking supply for mixed-use developments.

The following methodology was used to determine the shared parking demand:

Step 1: Determine individual Weekday and Weekend Peak Parking Ratios for each land use

The base parking ratios for weekdays and weekends were calculated according to the ULI Shared Parking manual. Gross Leasable Area (GLA) was estimated at 80% of total floor area. The ULI weekday base parking ratios and demands are shown in Table 2. The ULI weekend base parking ratios and demands are shown in

Table 3.

Table 2: ULI Weekday Base Parking Ratios and Demands

Land Use	Quantity*	Weekday Parking Demand Rate		Parking Demand		
		Visitors	Employees	Visitors	Employees	Total
Retail	15,720 sf	2.9 spaces per ksf	0.7 spaces per ksf	46	12	58
Residential - Studio (20%)	51 du	0.1 spaces per du	0.85 spaces per du	5	43	48
Residential - 1 bedroom (50%)	128 du	0.1 spaces per du	0.9 spaces per du	13	115	128
Residential - 2 bedroom (25%)	64 du	0.1 spaces per du	1.65 spaces per du	6	106	112
Residential - 3+ bedroom (5%)	12 du	0.1 spaces per du	2.5 spaces per du	1	30	31
Residential Total	255 du			25	294	319
Age restricted Adult housing Apartments	200 du	0.55 spaces per du	0.3 spaces per du	110	60	170
Art Center	25,512 sf	5.5 spaces per ksf	0.5 spaces per ksf	141	13	154
Retail	41,920 sf	2.9 spaces per ksf	0.7 spaces per ksf	122	30	152
Athletic Center	109,008 sf	1.5 spaces per ksf	0.15 spaces per ksf	164	17	181
Retail	22,888 sf	2.9 spaces per ksf	0.7 spaces per ksf	67	17	84
Single-Family Attached	50 du	0.1 spaces per du	2.5 spaces per du	5	125	130

Table 3: ULI Weekend Base Parking Ratios and Demands

Land Use	Quantity*	Weekend Parking Demand Rate		Parking Demand		
		Visitors	Employees	Visitors	Employees	Total
Retail	15,720 sf	3.2 spaces per ksf	0.8 spaces per ksf	51	13	64
Residential - Studio (20%)	51 du	0.15 spaces per du	0.85 spaces per du	7	41	48
Residential - 1 bedroom (50%)	128 du	0.15 spaces per du	0.9 spaces per du	19	115	134
Residential - 2 bedroom (25%)	64 du	0.15 spaces per du	1.65 spaces per du	17	185	202
Residential - 3+ bedroom (5%)	12 du	0.15 spaces per du	2.5 spaces per du	5	78	83
Residential Total	255 du			48	419	467
Age restricted Adult housing Apartments	200 du	0.42 spaces per du	0.3 spaces per du	84	60	144
Art Center	25,512 sf	5.5 spaces per ksf	0.5 spaces per ksf	141	13	154
Retail	41,920 sf	3.2 spaces per ksf	0.8 spaces per ksf	108	27	135
Athletic Center	109,008 sf	1.8 spaces per ksf	0.2 spaces per ksf	197	22	219
Retail	22,888 sf	3.2 spaces per ksf	0.8 spaces per ksf	74	19	93
Single-Family Attached	50 du	0.15 spaces per du	2.5 spaces per du	8	125	133

*Gross Leasable Area was assumed to be 80% of the total floor area

Step 2: Adjust Weekday and Weekend Parking Demand based on Time of Day factors for each land use

Weekday and Weekend Time of Day adjustment factors as shown in the ULI Shared Parking manual were used to estimate the parking demand from 6 AM to 12 AM for each land use. Weekday and Weekend Time of Day adjustment factors for the applicable land uses are shown in Table 4 and Table 5. Time of Day adjusted Weekday and Weekend Parking Demand is shown in Table 6 and Table 7. The highest hourly parking demand was calculated to be 1177 parking spaces.

Table 4: Weekday Time of Day Adjustment Factors

Land Use		6am	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm	12am
Retail	Visitors	1%	5%	15%	35%	60%	75%	100%	100%	95%	85%	85%	85%	90%	80%	65%	45%	15%	5%	0%
	Employees	10%	15%	25%	45%	75%	95%	100%	100%	100%	100%	100%	100%	100%	100%	90%	60%	40%	20%	0%
Apartments	Residential Guests	0%	10%	20%	20%	20%	20%	20%	20%	20%	20%	20%	40%	60%	100%	100%	100%	100%	80%	50%
	Residential Suburban	95%	80%	67%	55%	50%	45%	40%	40%	40%	40%	45%	50%	60%	70%	80%	85%	95%	97%	100%
Single-Family Attached	Residential Guests	0%	10%	20%	20%	20%	20%	20%	20%	20%	20%	20%	40%	60%	100%	100%	100%	100%	80%	50%
	Residential Suburban	95%	80%	67%	55%	50%	45%	40%	40%	40%	40%	45%	50%	60%	70%	80%	85%	95%	97%	100%
Age Restricted Adult Housing	Visitors and Employees	95%	97%	100%	100%	99%	98%	98%	99%	98%	100%	99%	94%	96%	98%	97%	97%	97%	98%	98%
	Residents	95%	97%	100%	100%	99%	98%	98%	99%	98%	100%	99%	94%	96%	98%	97%	97%	97%	98%	98%
Art Center	Visitors	0%	0%	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%	30%	30%	10%	0%	0%	0%
	Employees	5%	30%	33%	33%	100%	100%	100%	100%	100%	100%	90%	70%	40%	25%	20%	20%	5%	0%	0%
Athletic Center	Visitors	0%	0%	0%	0%	25%	65%	85%	90%	95%	95%	90%	95%	100%	95%	90%	65%	10%	0%	0%
	Employees	5%	5%	5%	25%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	75%	10%	5%	5%

Table 5: Weekend Time of Day Adjustment Factors

Land Use		6am	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm	12am
Retail	Visitors	1%	5%	30%	50%	70%	90%	95%	100%	100%	95%	90%	80%	75%	70%	65%	50%	30%	10%	0%
	Employees	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	85%	80%	75%	65%	45%	15%	0%
Apartments	Residential Guests	0%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	40%	60%	100%	100%	100%	100%	80%	50%
	Residential Suburban	100%	95%	88%	80%	75%	70%	68%	65%	65%	68%	71%	74%	77%	80%	83%	86%	89%	92%	100%
Single-Family Attached	Residential Guests	0%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	40%	60%	100%	100%	100%	100%	80%	50%
	Residential Suburban	100%	95%	88%	80%	75%	70%	68%	65%	65%	68%	71%	74%	77%	80%	83%	86%	89%	92%	100%
Age Restricted Adult Housing	Visitors and Employees	94%	98%	97%	95%	93%	94%	97%	99%	100%	10%	99%	98%	98%	98%	97%	95%	94%	98%	98%
	Residents	94%	98%	97%	95%	93%	94%	97%	99%	100%	100%	99%	98%	98%	98%	97%	95%	94%	98%	98%
Art Center	Visitors	0%	0%	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%	30%	30%	10%	0%	0%	0%
	Employees	5%	30%	33%	33%	100%	100%	100%	100%	100%	100%	90%	70%	40%	25%	20%	20%	5%	0%	0%
Athletic Center	Visitors	0%	0%	0%	0%	25%	65%	85%	90%	95%	95%	90%	95%	100%	95%	90%	65%	10%	0%	0%
	Employees	5%	5%	5%	25%	75%	100%	100%	100%	100%	100%	90%	100%	100%	100%	100%	75%	10%	5%	5%

Table 6: Time of Day Adjusted Weekday Parking Demand

Land Use		6am	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm	12am
Retail	Visitors	1	3	7	17	28	35	46	46	44	40	40	40	42	37	30	21	7	3	0
	Employees	2	2	3	6	9	12	12	12	12	12	12	12	12	12	11	8	5	3	0
Residential Apartments	Residential Guests	0	3	5	5	5	5	5	5	5	5	5	10	15	25	25	25	25	20	13
	Residential Suburban	280	236	197	162	147	133	118	118	118	118	133	147	177	206	236	250	280	286	294
Age Restricted Adult Housing	Visitors and Employees	105	107	110	110	109	108	108	109	108	110	109	104	106	108	107	107	107	108	108
	Residents	57	59	60	60	60	59	59	60	59	60	60	57	58	59	59	59	59	59	59
Art Center	Visitors	0	0	71	141	141	141	141	141	141	141	141	141	71	43	43	15	0	0	0
	Employees	1	4	5	5	13	13	13	13	13	13	12	10	6	4	3	3	1	0	0
Retail	Visitors	1	5	15	35	59	74	98	98	94	84	84	84	89	79	64	45	15	5	0
	Employees	3	4	6	11	18	23	24	24	24	24	24	24	24	24	22	15	10	5	0
Athletic Center	Visitors	0	0	0	0	41	107	140	148	156	156	148	156	164	156	148	107	17	0	0
	Employees	1	1	1	5	13	17	17	17	17	17	17	17	17	17	17	13	2	1	1
Retail	Visitors	1	4	11	24	41	51	67	67	64	57	57	57	61	54	44	31	11	4	0
	Employees	2	3	5	8	13	17	17	17	17	17	17	17	17	17	16	11	7	4	0
Single-Family Attached	Residential Guests	0	1	1	1	1	1	1	1	1	1	1	2	3	5	5	5	5	4	3
	Residential Suburban	119	100	84	69	63	57	50	50	50	50	57	63	75	88	100	107	119	122	125
Full Build Out Total:		573	532	581	659	761	853	916	926	923	905	917	941	937	934	930	822	670	624	603
With Modal Reductions (10%)		516	479	523	593	685	768	824	833	831	815	825	847	843	841	837	740	603	562	543
With Non-Captive Reductions (5%)		490	455	497	563	651	730	783	791	789	774	784	805	801	799	795	703	573	534	516

Table 7: Time of Day Adjusted Weekend Parking Demand

Land Use		6am	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm	12am
Retail	Visitors	1	3	16	26	36	46	49	51	51	49	46	41	39	36	34	26	16	6	0
	Employees	2	2	6	10	12	13	13	13	13	13	13	13	12	11	10	9	6	2	0
Apartments	Residential Guests	0	10	10	10	10	10	10	10	10	10	10	20	29	48	48	48	48	39	24
	Residential Suburban	419	399	369	336	315	294	285	273	273	285	298	311	323	336	348	361	373	386	419
Age Restricted Adult Housing	Visitors and Employees	79	83	82	80	79	79	82	84	84	9	84	83	83	83	82	80	79	83	83
	Residents	57	59	59	57	56	57	59	60	60	60	60	59	59	59	59	57	57	59	59
Art Center	Visitors	0	0	71	141	141	141	141	141	141	141	141	141	71	43	43	15	0	0	0
	Employees	1	4	5	5	13	13	13	13	13	13	12	10	6	4	3	3	1	0	0
Retail	Visitors	2	6	33	54	76	98	103	108	108	103	98	87	81	76	71	54	33	11	0
	Employees	3	5	11	21	23	26	27	27	27	27	27	26	23	22	21	18	13	5	0
Athletic Center	Visitors	0	0	0	0	50	129	168	178	188	188	178	188	197	188	178	129	20	0	0
	Employees	2	2	2	6	17	22	22	22	22	22	20	22	22	22	22	17	3	2	2
Retail	Visitors	1	4	23	37	52	67	71	74	74	71	67	60	56	52	49	37	23	8	0
	Employees	2	3	8	15	17	19	19	19	19	19	19	19	17	16	15	13	9	3	0
Single-Family Attached	Residential Guests	0	2	2	2	2	2	2	2	2	2	2	4	5	8	8	8	8	7	4
	Residential Suburban	125	119	110	100	94	88	85	82	82	85	89	93	97	100	104	108	112	115	125
Full Build Out Total:		573	532	694	701	807	900	993	1104	1149	1157	1167	1097	1164	1177	1120	1104	1095	983	801
With Modal Reductions (10%)		625	631	726	810	894	994	1034	1041	1050	987	1048	1059	1008	994	986	885	721	653	644
With Non-Captive Reductions (5%)		594	599	690	770	849	944	982	989	998	938	996	1006	958	944	937	841	685	620	612

Step 3: Apply Modal and Non-Captive Reductions

Given the new proposed direct access to the Elkhorn Branch Trail, bus stops along Tamar Drive and Foreland Garth, and the planned Tamar Drive Complete Streets improvements, the Project applies a 10% non-auto mode shift reduction to base parking demand. An additional 5% captive-market reduction is applied to reflect visitors who park once and visit multiple on-site destinations within the mixed-use environment. With the reductions, the highest hourly parking demand was reduced to 1006 parking spaces.

Howard County Parking Requirements

Under Howard County Zoning Ordinance Sec. 133.0.D, minimum parking requirements for the applicable land uses are presented in Table 8.

Table 8: Howard County Minimum Parking Requirement

Land Use	Zone Code	Quantity	Baseline		Visitor		Total	
			Requirement	Spaces	Requirement	Spaces		
Retail	4q	19650 sf	5 spaces per ksf	99	-	-	99	
Apartments	2b	255 du	2 spaces per du	510	0.3 spaces per du	77	587	
Age restricted Adult Housing	2c2	200 du	1 space per du	200	0.3 spaces per du	60	260	
Art Center*	6i	300 seats	1 space per every 3 seats	100	-	-	100	
Retail	4q	41920 sf	5 spaces per ksf	210	-	-	210	
Athletic Center	6a	136260 sf	10 spaces per ksf of assembly area	1363	-	-	1363	
Retail	4q	28610 sf	5 spaces per ksf	144	-	-	144	
Single-Family Attached	2a	50 du	2 spaces per du	100	0.5 spaces per du	25	125	
*Current arts center assumed at 300 seats based on SDP							Total	2888

The minimum parking requirements were adjusted based on time of day reductions as shown in Table 9.

Given the new proposed direct access to the Elkhorn Branch Trail, bus stops along Tamar Drive and Foreland Garth, and the planned Tamar Drive Complete Streets improvements, the Project applies a 10% non-auto mode shift reduction to base parking demand. An additional 5% captive-market reduction is applied to reflect visitors who park once and visit multiple on-site destinations within the mixed-use environment. Minimum parking requirements with reductions are shown in Table 10.

Table 9: Howard County Time of Day Reductions

Land Use Category	Weekday				Weekend		Night
	6AM - 8AM	8AM - 3PM	3PM - 5PM	5PM - 12AM	6AM - 6PM	6PM - 12AM	12AM - 6AM
Residential	80%	60%	60%	100%	100%	100%	100%
Retail	20%	60%	60%	90%	100%	70%	5%
Commercial Recreation	40%	40%	40%	100%	80%	100%	10%

Table 10: Minimum Parking Requirements with Reductions

Land Use	Weekday				Weekend		Night
	5PM - 12AM	6AM - 6PM	6PM - 12AM	5PM - 12AM	6AM - 6PM	6PM - 12AM	5PM - 12AM
Retail	20	60	60	90	99	70	5
Apartments	470	353	353	587	587	587	587
Age restricted Adult Housing	208	156	156	260	260	260	260
Art Center*	40	40	40	100	80	100	10
Retail	42	126	126	189	210	147	11
Athletic Center	546	546	546	1363	1091	1363	137
Retail	29	87	87	130	144	101	8
Single-Family Attached	100	75	75	125	125	125	125
<i>Full-Buildout Total w/ Time of Day Reductions</i>	<i>1455</i>	<i>1443</i>	<i>1443</i>	<i>2844</i>	<i>2596</i>	<i>2753</i>	<i>1143</i>
<i>w/ Modal Reductions (10%)</i>	<i>1310</i>	<i>1299</i>	<i>1299</i>	<i>2560</i>	<i>2337</i>	<i>2478</i>	<i>1029</i>
<i>w/ Non Captive Reductions (5%)</i>	1245	1235	1235	2432	2221	2355	978
					Total		2432

* Current arts center assumed at 300 seats based on SDP

As shown in Table 10, the minimum parking requirement based on Howard County's parking minimums is calculated to be **2432 parking spaces**. The Howard County minimum parking requirement is significantly higher than the ITE and ULI parking demand and would be more suitable for a site without pedestrian, bicycle, and transit access.

Additional Supporting Justification

Surrounding Transportation

The site location is surrounded by a robust network of transit, pedestrian, and bicycle amenities to help support the proposed parking reduction. The site has access to regional vehicular and transit-based transportation options, as shown in Figure 3, that connect the site to destinations throughout Virginia, the District, and Maryland.

Transit Service

The development has great access to local transit services such as Regional Transportation Agency of Central Maryland (RTA) and Maryland Transit Administration (MTA). The site is located adjacent to RTA and MTA Bus Stops along Tamar Drive which connects to other transit services. These transit services provide local, city wide, and regional transit connections and link the site with major cultural, residential, employment, and commercial destinations throughout the region.

There are nine (9) bus stops within a quarter-mile from the site. The two (2) RTA bus routes (402 and 408) provide connections to the mall in Columbia. The RTA route 402 runs from 7:46 AM to 5:46 PM on weekdays, 8:46 AM to 5:46 PM on Saturdays, and 9:46 AM to 5:46 PM on Sundays, with frequencies of up to 60 minutes in each direction. The 408 route service runs from 6:16 AM to 11:16 PM on weekdays, 8:16 AM to 10:16 PM on Saturdays, and 9:16 AM to 8:16 PM on Sundays, with frequencies of up to 60 minutes in each direction.

The MTA bus route (345) is an express service operating between Ellicott City/Columbia and Washington DC. This route provides connections to the red, blue, orange, green and yellow line Metro Stations in DC. The MTA bus route 345 operates between 5 AM to 7:20 PM on the weekdays with a 40-minute headway during AM and PM Peak hours. The existing bus stops near the site are shown in Figure 3.

Bicycle Facilities

The project is located adjacent to the Elkhorn Branch Trail, a loop trail approximately 1.9 miles long running through Elkhorn Branch wetlands in the heart of Columbia. Existing separated bike lanes are located along southbound Old Dobbin Lane.

BikeHoward, the Howard County Bicycle Master Plan, guides transportation and recreational biking improvements both on-street and off-street. The proposed BikeHoward network is divided into short-term (10 years), mid-term (10 to 20 years), and long-term (20 to 30 years) improvements. Per BikeHoward Recommendations, short-term bike lanes are recommended along Tamar Drive and mid-term Sharrows are recommended along Cloudleap Court. The recommended bicycle facilities improvements are shown in Figure 4.

The Tamar Complete Street Study proposes a road diet along Tamar Drive, including 6' dedicated bike lanes in both directions. Further improvements as part of the Tamar Complete Streets are discussed later.

The proposed development will connect the Tamar Drive bike lanes with the Elkhorn Branch Trail via bike lanes on the site.

Pedestrian Facilities

In the vicinity of the site, the area has existing pedestrian facilities along the frontages on Tamar Drive, Cloudleap Court and Tamar Drive.

Per WalkHoward, new sidewalks are recommended south along Foreland Garth and around the site building with sidewalk improvements recommended along Cloudleap Court, Tamar Drive and north along Foreland Garth. The recommended improvements for pedestrian facilities are shown below in Figure 5.

The Tamar Complete Street Study proposes additional pedestrian improvements including high visibility crosswalks as discussed later.

A network of pedestrian and bicycle pathways will connect the Project with nearby properties and Columbia Association pathways. This includes new pedestrian crosswalks and internal streets. The redevelopment aims to make the Project visibly accessible, convenient, and comfortable, with well-lit and landscaped pathways.

A 10-, 20-, 30- minute walkshed and bikeshed graphics from the site are shown in Figure 6 and Figure 7.

The proposed project will substantially enhance the pedestrian environment and provide connections to surrounding residential, public and commercial areas. The development incorporates additional traffic calming measures and newly designed crosswalks to improve safety for non-motorized users. Dedicated pedestrian pathways will be included, effectively discouraging automobile usage within the site.

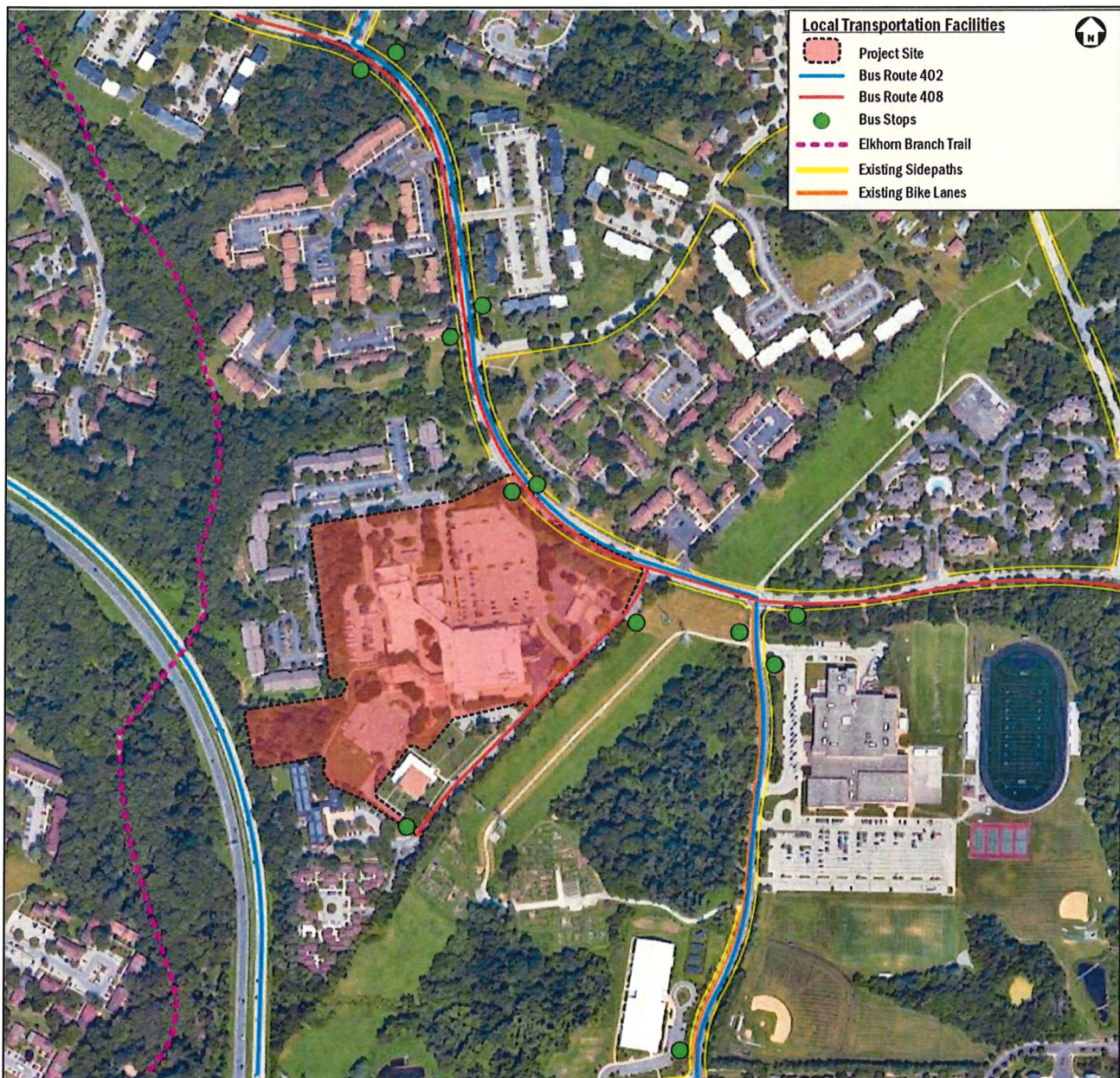


Figure 3: Local Transportation Facilities



Figure 4: BikeHoward Bicycle Facilities Improvement

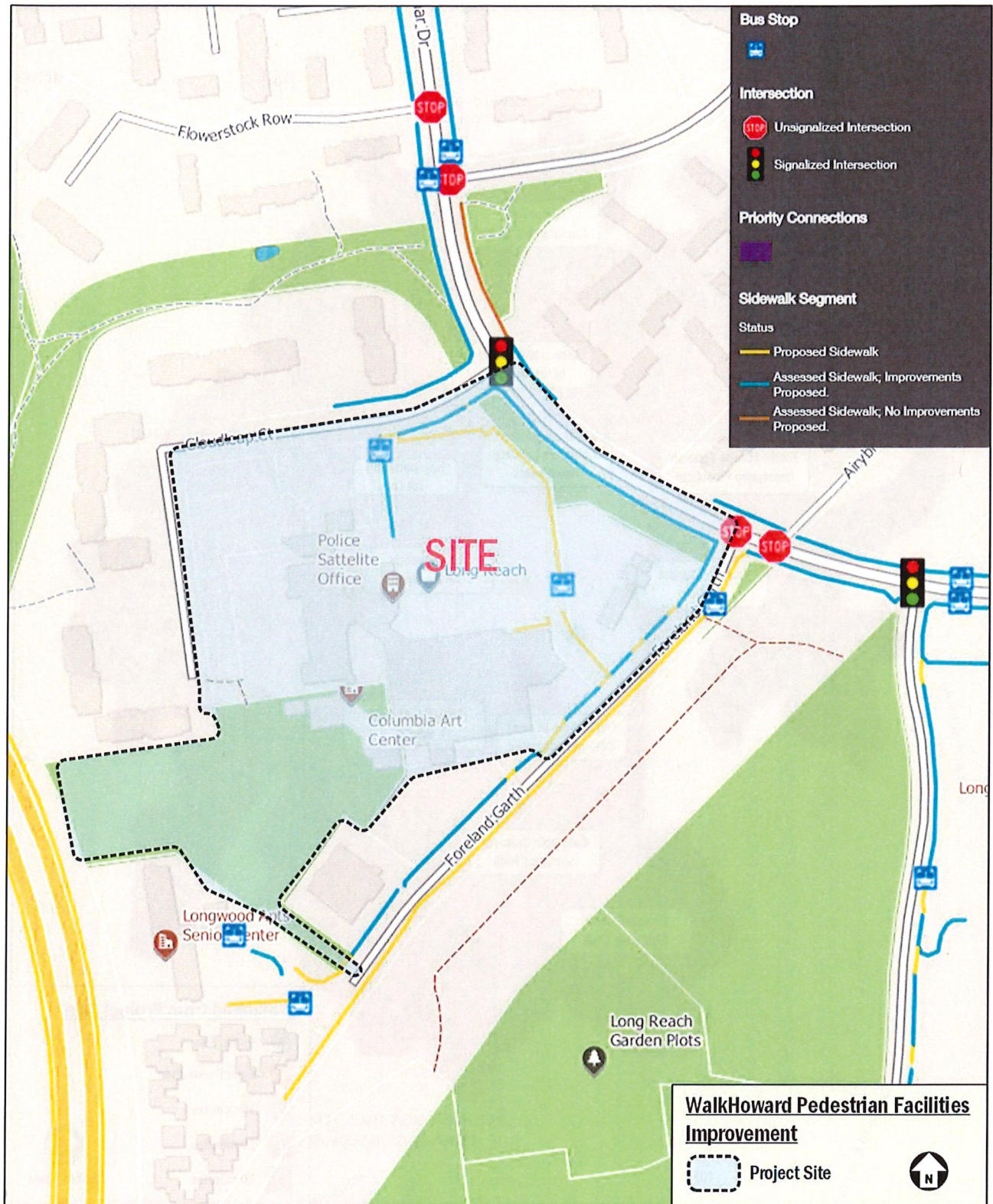


Figure 5: WalkHoward Pedestrian Facilities Improvements

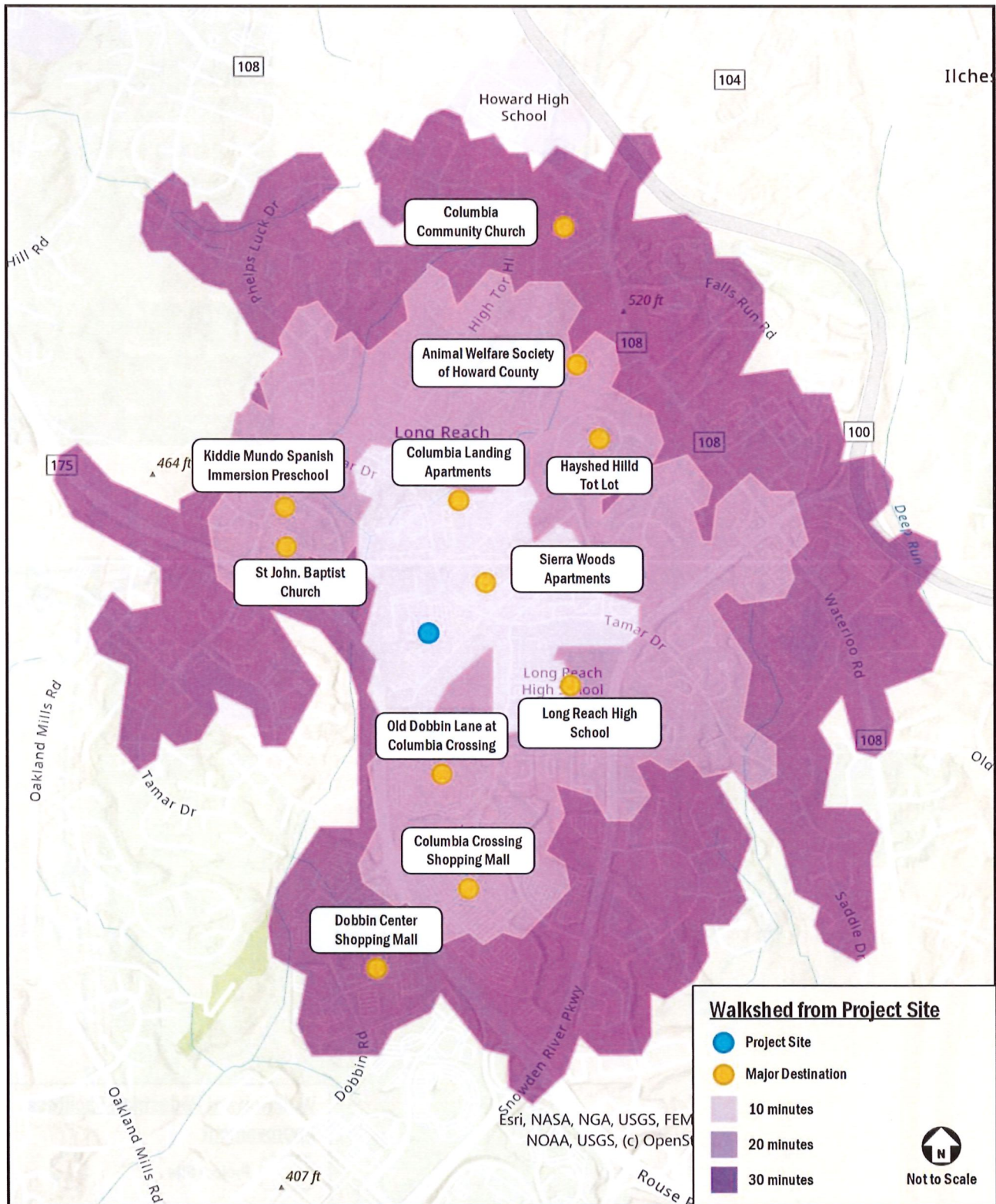


Figure 6: Walkshed from Project Site

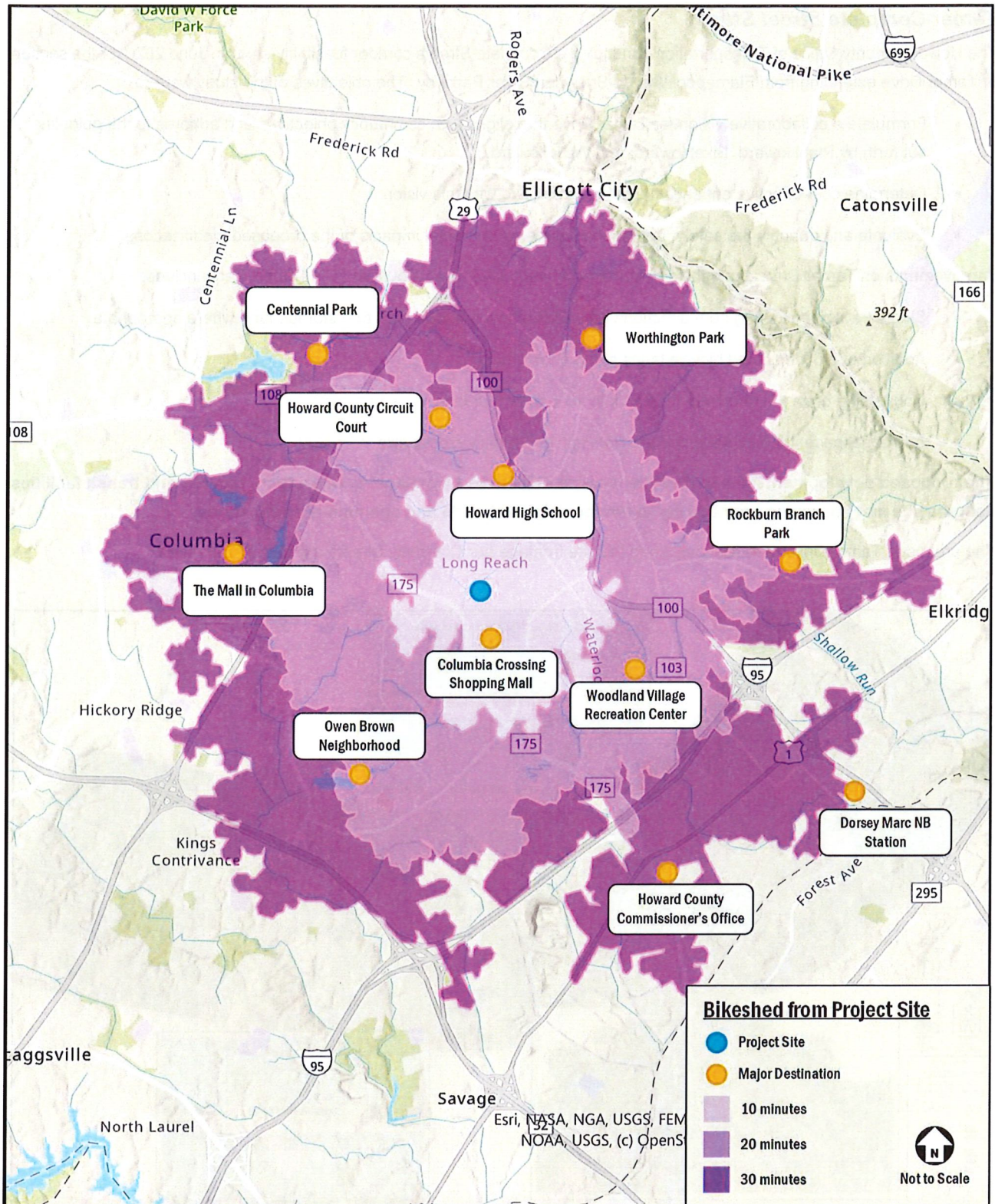


Figure 7: Bikeshed from Project Site

Tamar Complete Street Study

The Howard County Office of Transportation conducted a Complete Streets corridor feasibility study in June 2020 for the section of Tamar Drive extending from Flamepool Way to Snowden River Parkway. The objectives of the study were to:

- Formulate a collaborative vision for Tamar Drive that aligns with community objectives and adheres to the guidelines set forth by PlanHoward, BikeHoward, and WalkHoward.
- Determine cost-effective enhancements that are in line with this vision.
- Evaluate and quantify the safety, operational, and environmental impacts of the proposed modifications.

Improvements on Tamar Drive along the site frontage between Cloudleap Court and Old Dobbin Lane include:

- Single travel lanes along both directions with additional left and/or right turn storage lane where appropriate
- Addition of a 6' dedicated bicycle lanes along both directions
- Conversion of an 11' turn lane/ median into 10' center turn lane
- Additional pedestrian improvements including high visibility crosswalks

The proposed development aims to meet the study's objectives by enhancing pedestrian, bicycle, and transit facilities near the site and improving connectivity to nearby neighborhoods and community destinations.

The proposed Tamar Drive modifications along the site frontage per Complete Streets are shown in Figure 8.

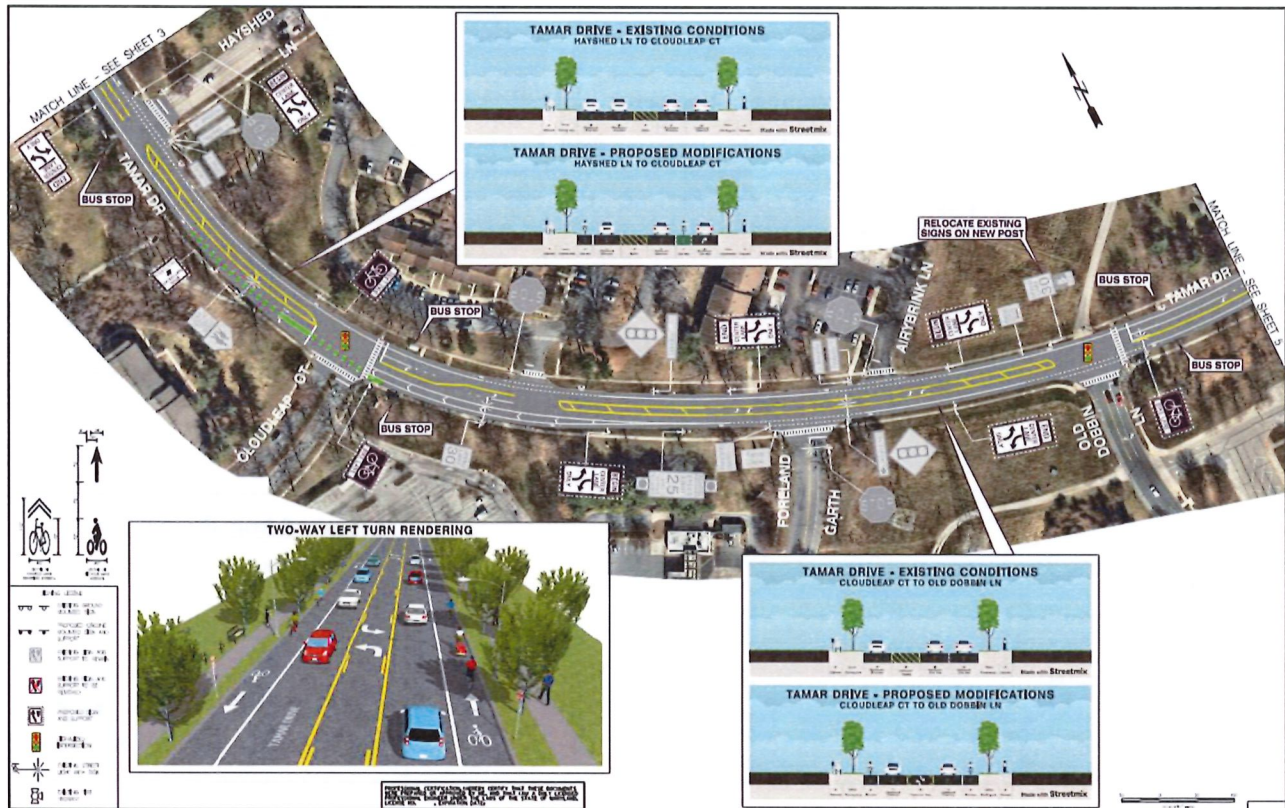


Figure 8: Tamar Drive Complete Street Design along Site Frontage

Ridesharing

Uber, Lyft, and other similar companies are a form of on-demand ridesharing where users of the app can request a ride and a nearby driver will take you where you need to go. Ridesharing is a convenient and accessible way for riders to request a ride at any time of the day for a multitude of reasons such as commuting to work, going to a vaccine or healthcare appointment, to access entertainment, or to visit family and friends.

The 2024 Rider Economic Impact Report conducted by Lyft for the state of Maryland is shown in Figure 9. As can be seen in this report summary, 50 percent of Lyft users do not own or lease a personal vehicle.



Figure 9: Ridesharing: Lyft’s Economic Impact Report 2024, Maryland

Proposed Needs and Parking Supply

The Long Reach Village Center is situated within a robust multimodal context comprising continuous sidewalks, bikeways and trail connections, proximate transit service, and the planned Tamar Drive Complete Streets improvements. Collectively, these elements are expected to reduce auto reliance and, in turn, decrease on-site parking demand relative to conventional suburban conditions.

Parking need was determined using the Institute of Transportation Engineers (ITE) Parking Generation Manual, the Urban Land Institute (ULI) Shared Parking methodology, and applicable Howard County ratios. These baseline estimates were then calibrated for local conditions including existing and planned multimodal facilities, census indicators of vehicle availability, and observed ridesharing activity as well as mixed-use operating characteristics such as time-of-day variation and shared-parking efficiencies across complementary land uses.

A summary of all the parking rates and the proposed parking rates are shown in Table 11.

Table 11: Summary of Parking Rates

Land Use	Quantity	Howard County		ITE		ULI		Recommended	
		Rates	Spaces	Rates	Spaces	Rates	Spaces	Rates	Spaces
Retail	90,180 sf	3.9 spaces per 1,000 sf	350	4.1 spaces per 1,000 sf	370	2.3 spaces per 1,000 sf	210	2.4 spaces per 1,000 sf	216
Apartments	255 du	2.0 spaces per du	501	0.8 spaces per du	199	1.1 spaces per du	283	1.1 spaces per du	281
Senior Housing	200 du	1.1 spaces per du	222	0.6 spaces per du	115	0.7 spaces per du	122	0.6 spaces per du	120
Art Center	31,890 sf	2.7 spaces per 1,000 sf	86	2.0 spaces per 1,000 sf	64	4.0 spaces per 1,000 sf	128	2.0 spaces per 1,000 sf	64
Sports Complex	136,260 sf	8.6 spaces per 1,000 sf	1166	2.0 spaces per 1,000 sf	270	1.3 spaces per 1,000 sf	180	1.3 spaces per 1,000 sf	177
Townhomes	50 du	2.1 spaces per du	107	2.0 spaces per du	98	1.7 spaces per du	83	1.7 spaces per du	85
		Total	2432	Total	1116	Total	1006	Total	943

As outlined above, the project's estimated parking demand ranges from 1006 to 2432 spaces, depending on the methodology used before considering the synergies realized with the mix of land uses accommodated with the redevelopment. To meet this demand, the project proposes a total of 943 parking spaces.

- 943 on-site parking spaces
 - 781 on-site garage parking spaces
 - 90 on-site surface parking spaces
 - 72 on-site street parking spaces

The proposed parking supply is calibrated to the project's mixed-use program, which is expected to generate a high share of internal trips and attract patrons from nearby neighborhoods who are more likely to arrive by non-auto modes. The reduction is further justified by the site's extensive multimodal connectivity including a well-connected sidewalk network, direct transit access, and comfortable bicycle infrastructure. In addition, right-sizing the supply supports active transportation, reduces vehicle trip generation, and helps preserve capacity on the surrounding roadway network.

Village Center Master Plan 2012

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Our Purpose



proved development plans for the owner's properties and establishes public notice, information, and justification requirements for such petition. It also establishes standards to be used by the Zoning Board in evaluating and considering these petitions. This regulation defines a village center as a mixed-use development in the New Town district that is designed to be a "community focal point and gathering place for the surrounding village neighborhoods."

This plan is intended to provide guidance from the Village of Long Reach to the County and developers on the vision and planning concepts that are desired by the Long Reach Community Association as the village area changes over time. It is anticipated that this plan will be referred to as property improvements and development proposals are considered and to help guide decision-making about appropriate uses and design issues in the village area.

The Howard County Council amended its developmental regulations and passed Council Bill 29-2009 which allows each village to develop a Village Center Community Plan.

In addition, CB29-2009 allows the owner of any portion of a village center in the New Town zoning district to petition to amend certain ap-

OVERVIEW

- Our Purpose
- The Vision
- Village History
- Goals
- Boundaries
- The Plan
- Acknowledgements

This report is meant to be used as a guide. For the most part, our master plan covers only our vision. It is premature to put in details of a design plan when there is no redevelopment in the near future. We would want a design that is current with the industry standards and meets the needs of the community at the time when we are actually working with a redevelopment of the village center. We have however, included low and no cost options that could be done now.

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**Long Reach
The Village With A
Heart!**



To view this plan on
the web go to
www.longreach.org

The Vision

The Long Reach Board of Directors feels that in order for village centers to be viable we must look at new interpretations of the role of the village center so that it not only serves our residents but also embraces a more global audience. More than most other village centers, Long Reach is surrounded by many retail choices. Our village center is in a prime location as evidenced by all the surrounding retail development.

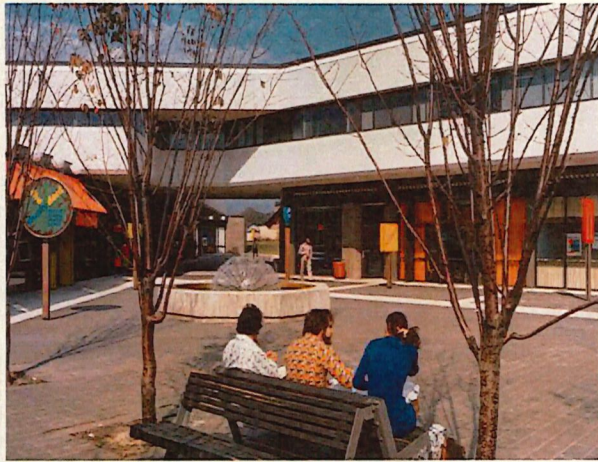
Due to all the nearby retail, we question whether the concept of the Long Reach Village Center is sustainable as a predominately neighborhood retail center. Does the village center need to include other concepts?

We are poised to accommodate businesses that wish to take advantage of this location but do not fit the big box store model. Any redevelopment needs to leverage the surrounding retail to benefit the village center. We support unique destination retailers as well as the usual village center mix of retail stores. For example, due to the surfeit of nearby grocery stores, we encourage a targeted market type of store that would not compete with but compliment a high-end market like Wegmans and traditional markets like Giant and Safeway in place of a conventional grocery store.

Long Reach is not adverse to a mixed-use approach to any redevelopment of the village center noting that the commercial, residential and recreational use must be proportionately divided with the main emphasis on the commercial and recreational components.

We want to see our village center set the standard for what a village center should and can be in the 21st century.

Our History



Long Reach is the largest and one of the oldest of 10 villages that make up the new town of Columbia, Maryland. Our village comprises four neighborhoods: Jeffers Hill, Kendall Ridge, Locust Park and Phelps Luck. From our start in 1971, we have grown to more than 17,000 people living in 6,108 households. Long Reach Community Association is the nonprofit organization that governs and represents our village. Both property owners and residents of Long Reach are members of the Association and elect a five-member Village Board and council representative to the Columbia Board

of Directors. Stonehouse, our community center is located in the Long Reach Village Center. The Columbia assessment contributes about one-third of our funding and our own activities generate the remaining two-thirds.

A town meeting in 1972 yielded a resident opinion poll that established an "arts & crafts center" as the Village's recreational center. In July 1974, Antioch University's Visual Art Center opened. The Columbia Association currently operates its Art Center in the building. In September 1974, Stonehouse, the Village Community Center, opened. Earlier in that year in April, the Long Reach Village Center opened offering the residents a near-by place to shop. The Village Center was renovated in 1998. Stonehouse is the non-profit, multi-purpose Community Center for the Village of Long Reach.

Our Goals for the Master Plan



- *Support commercial success for the village center owners and merchants*
 - Make the village center a destination point for shoppers.
- *Make the village center a vital part of the Long Reach residents lives.*
 - Improve the connectivity of the village center to surrounding shopping areas, and Blandair Park by improving & increasing the public walkways/pathways and bicycle paths/lanes.
 - *Ensure that adequate public transportation sites are included in any future redevelopment plans.*
- Retain and enhance the current assets - Stonehouse, the CA Art Center, Interfaith Center (Celebration Church) site, the 5+/- acres of open space

Village Center Boundaries



The Village Center is loosely bounded by Tamar Drive on the west, Cloudleap Court on the south, Old Dobbin Road and Foreland Garth on the north, with the eastern boundary ending at the Longwood House, Shalom Square, and Lazy Hollow Apartment properties.



To view this plan
on the web go to
www.longreach.org

Recreational Sites (within a 3 mile radius)

- Blandair Park
- Centennial Park
- Rockburn Branch Park
- Lake Elkhorn
- Downtown Lakefront
- Symphony Woods
- Meadowbrook Park
- Sewells Orchard Park
- Jackson Pond
- The 4 CA Outdoor Pools
- The potential for another 5 acre recreational area within the Village Center Boundaries

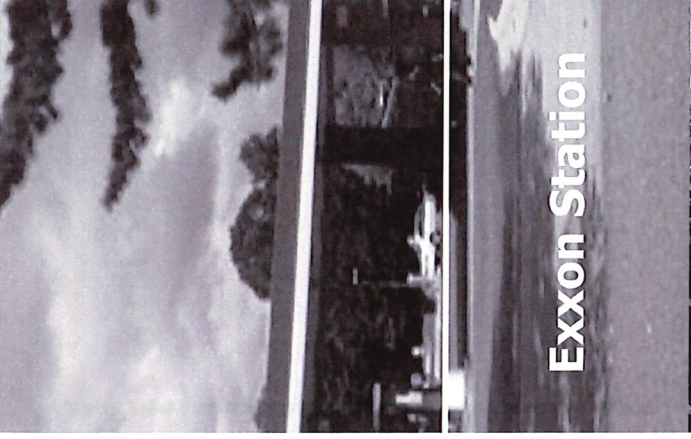
The Parcels



Exxon Station



Liquor Store



Village Center



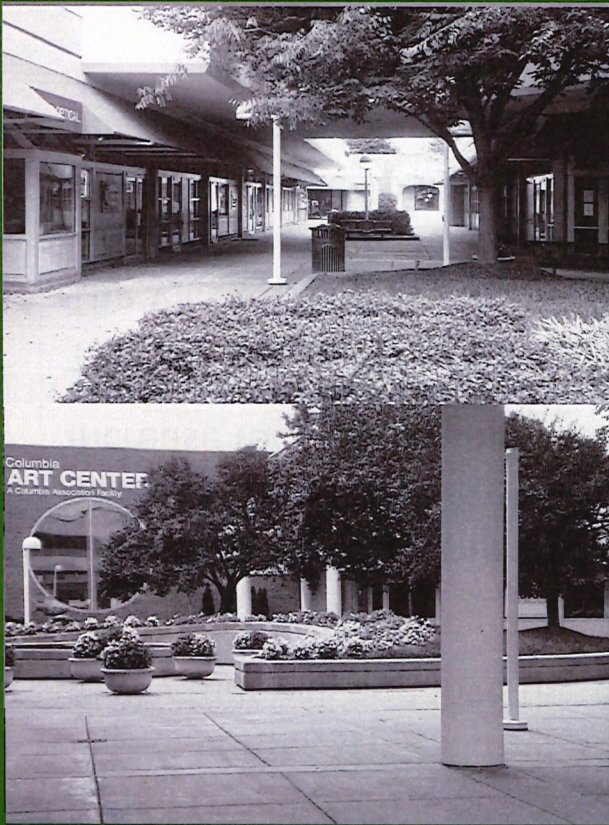
Stonehouse & Art Center



Celebration Church

Surrounding Growth Since 1970

- **Benson Business & Restaurant Park** (1990)
- **Dobbin Center** (*Walmart, Banks, Medical Offices, Gas Stations, Multiple Restaurants, etc.*)
- **Columbia Crossing I & II** (*Target, Banks, Pier One, Book Store, Joann Fabrics, Pet Box Store, Old Navy, Gas Station, Multiple Restaurants, etc.*)
- **Snowden Square** (*B.J.'s, Home Depot, Pet Box Store, Michael's, Hobby Lobby, DSW, Gas Station, Banks, Multiple Restaurants, etc.*)
- **Gateway Overlook** (*Costco, Trader Joe's, Lowes, Liquor Store, Multiple Restaurants, Royal Farms, etc.*)
- **Columbia Palace** (*Giant Food, Multiple Restaurants, Gas Station, Banks, Royal Farms, Office Buildings, etc.*)
- **Oakland Mills Village Center** (*Food Lion, Bank, Restaurants, Various Village Center Merchants*)
- **Intersection of Snowden River Parkway/108** (*Multiple Restaurants, Elder Care Facility, Hotel, Gas Station*)
- **Long Gate Shopping Center** (*Safeway, Various National Chain Stores, Bank, Gas Station, Multiple Restaurants, etc.*)
- **Wegman's**



THE PLAN

LONG REACH VILLAGE CENTER

Plan must incorporate the four (4) components as defined in the Ho. Co. Zoning Regulations that make up a village center.

#1

An outdoor public village green, plaza or square which has both hardscape and softscape elements which should be designed to function primarily as a pedestrian-oriented promenade connecting the various village center buildings and shall include public seating features.

#2

Stores, shops, offices or other commercial uses which provide opportunities to fulfill the day-to-day needs for the village residents, such as food stores, specialty stores, service agencies, financial institutions, personal services, medical services and restaurants.

#3

Space for community uses and/or institutional uses.

#4

If appropriate, to support and enhance other uses in the village center, residential uses

Commercial/Retail/Residential Uses

All new development must recognize that the retail component is the most important part of any redesign of the village center.

While Long Reach is not adverse to a mixed-use approach to any redevelopment of the village center, we feel that a strong emphasis should be placed on the retail portion in a way that will enhance the daily lives of Long Reach's and the surrounding neighborhoods' residents.

If done correctly, the use of a housing component in the village center could help attract a unique variety of vendors to enhance the shopping experience. It would also increase foot traffic and provide a vibrancy to the village center.

The final piece of a redesign must include the community/recreational component. The Village Center is home to Stonehouse and the CA Art Center. The Interfaith Center houses the Celebration Church. The village is fortunate to have an undeveloped 5 +/- acre open space parcel that could be used to enhance any redevelopment plan for the Village Center.



Wayfinding signage on nearby roadways as well as adequate signage in the village center property



Adequate Parking

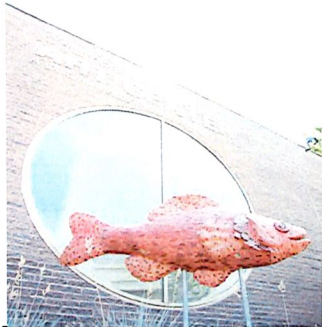
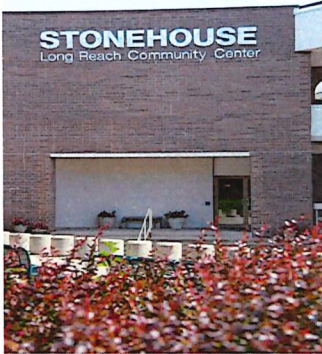
Common Components



Common Components

- Redevelopment should also incorporate green building standards, water conservation, native plantings.

Common Components



Current Community Uses

- . Stonehouse - *the Long Reach Community Center*
- . CA Art Center
- . Interfaith Center (*Celebration Church*)
- . Howard County Police Substation



Outdoor Public Spaces

Any redevelopment plan should include a Plaza component within the design to encourage community engagement and provide an aesthetic element to the design.

Due to the CA Art Center's unique presence within the village center, space should be designated in any redesign for exterior art work displays.

Consideration should be given to developing the 5 +/- acres of open space for recreational use.

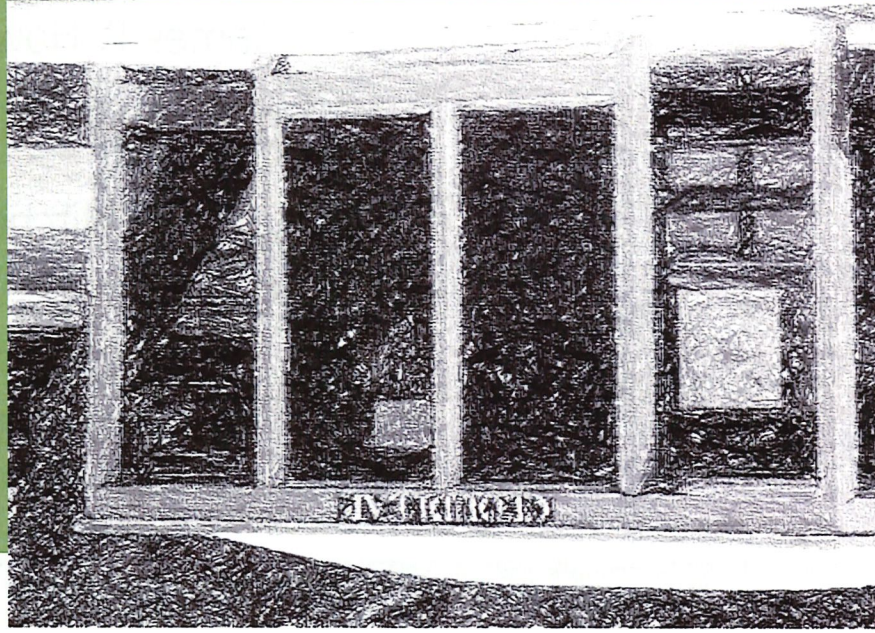
To view this plan on
the web go to
www.longreach.org

Transit

- There are currently 2 Howard Transit bus stops on the property. Ensure that public transportation sites are included in any future redevelopment plans.

- Improve the connectivity of the village center to surrounding shopping areas, and Blandair Park by improving & increasing the public walkways/pathways and bicycle paths/lanes.

- There are bike racks at various locations around the village center and need to be included in any future re-development to encourage the use of alternate means of transportation.



Acknowledgments

The Long Reach Village Board appointed a committee to develop a Village Center Master Plan for the Long Reach Village Center. We would like to thank them for their time and expertise.

Master Plan Committee Members

Paul A. Bernard
Edward T. Coleman
Henry F. Dagenais
James P. Howard II

Long Reach Board of Directors

Karen S. Hitcho, Chair
Josh Friedman, Vice Chair
Nina Basu
Charles Nibbana
William A. Taylor