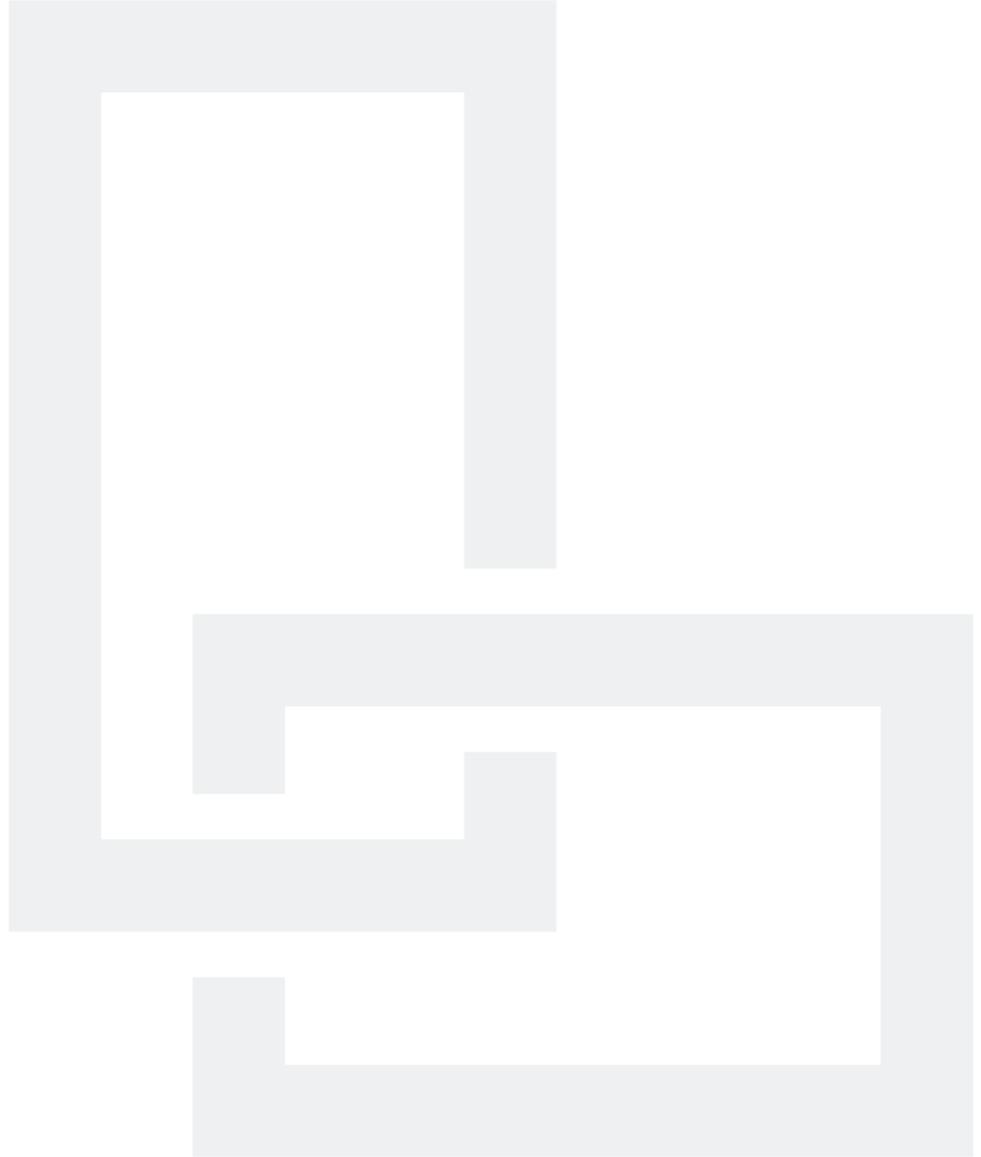


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Millard Fillmore Suburban MOB Employee Access
Traffic Impact Study

JANUARY 13, 2026
PROJECT NUMBER: 2260215

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General List of Abbreviations

AADT: Annual Average Daily Traffic
AASHTO: American Association of State Highway Transportation Officials
ADA: American with Disabilities Act
ADT: Average Daily Traffic
CMF: Crash Modification Factor
DHV: Design Hourly Volume
EB / WB / NB / SB: Eastbound, Westbound, Northbound, Southbound
FC: Functional Classification
FHWA: Federal Highway Administration
GIS: Geographic Information System
HCM: Highway Capacity Manual
HDM: Highway Design Manual
HSM: Highway Safety Manual
ISD: Intersection Sight Distance
ITE: Institute of Transportation Engineers
LOS: Level of Service
MPH: Miles per Hour
MUTCD: Manual on Uniform Traffic Control Devices (Including the NYS Supplement to the MUTCD)
NCHRP: National Cooperative Highway Research Program
NHTSA: National Highway Traffic Safety Administration
NYS DOT: New York State Department of Transportation
PHF: Peak Hour Factor
PSI: Potential for Safety Improvement
RRFB: Rectangular Rapid Flashing Beacon
SEQRA: State Environmental Quality Review Act
SF: Square Foot/Feet
SPF: Safety Performance Function
SSD: Stopping Sight Distance
TRB: Transportation Research Board
TWLT: Two-Way Left-Turn Lane
V/C: Volume-to-Capacity Ratio
VPD: Vehicles per Day

Chapter 1 Executive Summary

1.1. Project Description

This report assesses traffic impacts from the proposed project at 1542 Maple Road, Town of Amherst, NY. Until the end of 2025, Millard Fillmore Suburban Hospital employees (approximately 160 to 175 employees) utilized parking at the adjacent St. Gregory the Great Roman Catholic Church. Employees previously accessed the lot from St. Gregory Court via Bassett Road or Maple Road. The agreement has ended and employees are to be now required to park on-site. With this condition, the existing MacArthur Drive access on Bassett Road will be converted from chained access into an actuated gate limited to employees-only. This modification is consistent with input received from the Planning Department.

1.2. Scope of Study

LaBella Associates (LaBella) conducted this study based on a scope of work determined by Christopher Schregel, the Town's Traffic Safety Coordinator, and applicable engineering guidelines.

- The study area consists of Bassett Road and the intersection of Hopkins Road/Bassett Road/Red Oak Drive.
- The study periods consist of the weekday morning (6:00 to 9:00 AM) and weekday evening (4:00 to 7:00 PM) peak periods.
- Intersection capacity and operational analysis—Level of Service (LOS), delay, queuing—during the Existing and Estimated Time of Completion (ETC) Build Conditions.
- Evaluation of potential traffic impacts along Bassett Road.

1.3. Conclusions and Recommendations

This report identified and evaluated the potential traffic impacts that can be expected from the proposed project. The primary conclusion of this comprehensive study is that the existing transportation network can adequately accommodate the projected traffic volumes and the resulting minor impacts to study area intersections.

Chapter 2 Introduction

2.1. Project Purpose and Methodology

This report assesses traffic impacts from the proposed project at 1542 Maple Road, Town of Amherst, NY. The analysis evaluates intersection operations and effects on the adjacent street network, with mitigation measures identified where capacity concerns arise. The impact assessment methodology establishes existing baseline conditions, incorporates background traffic growth, and quantifies operational changes attributable to the project. Supporting documentation is appended.

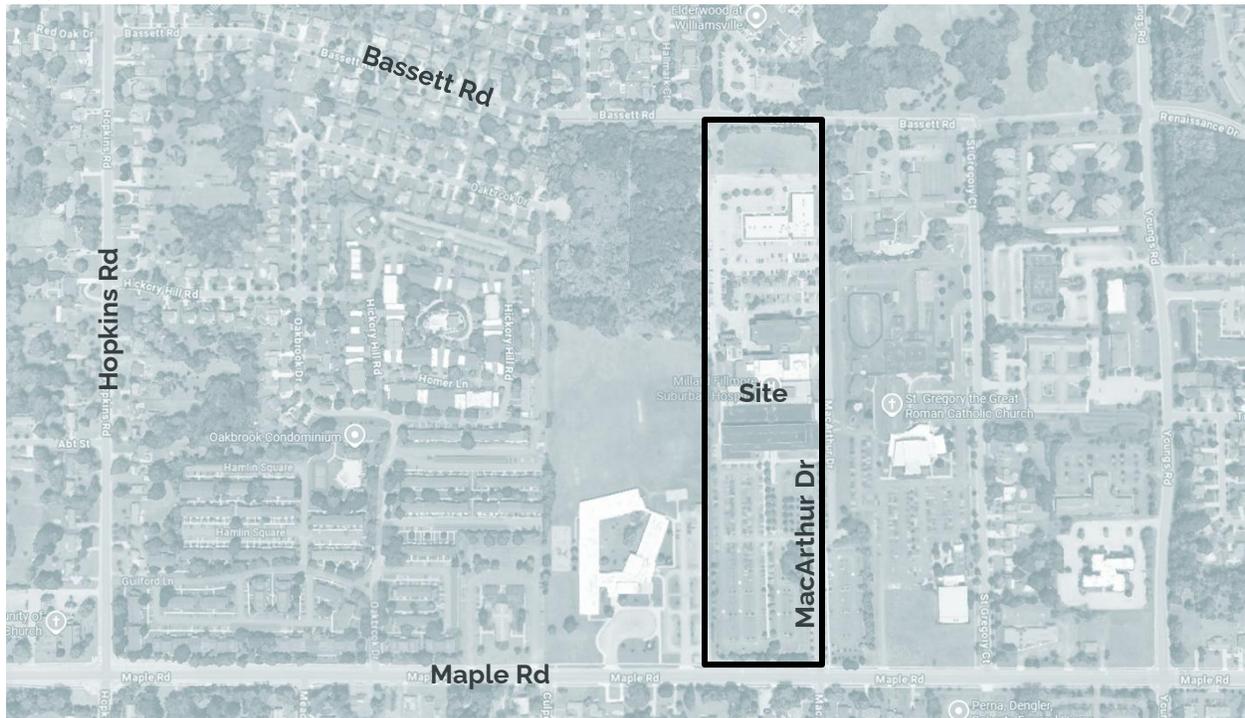
This Traffic Impact Report provides the Town of Amherst Planning Department and reviewing departments with detailed analysis supporting SEQRA's "hard look" requirement for potential traffic impacts. The study follows protocols established by the New York State Department of Transportation (NYSDOT), Erie County Department of Public Works (ECDPW), the Institute of Transportation Engineers (ITE), and applicable local standards.

2.2. Project Location and Study Area

The project site at 1542 Maple Road is bounded by: Bassett Road to the north; St. Gregory the Great Roman Catholic Church and Elderwood Village to the east, Maple Road to the south, and open land with residential development to the west. Surrounding land uses are predominantly residential, healthcare, and institutional.

LaBella coordinated with Christopher Schregel to define an appropriate study area based on project characteristics and anticipated traffic impacts. The project location is shown below and includes the Hopkins Road/Bassett Road/Red Oak Drive intersection.

Project Location



Chapter 3 Existing Conditions

3.1. Study Roadways

The study area roadway network is characterized by three roadways that provide local and collector-level access within the community. Annual Average Daily Traffic (AADT) volumes represent the most recent data provided by NYSDOT or extrapolated by LaBella from turning movement counts conducted at study intersections in 2025. All AADT values are expressed in vehicles per day (vpd).

Functional classification (FC), assigned by NYSDOT and FHWA, categorizes roadways based on their primary movement and access functions. Roadway characteristics including posted speed, number of lanes, lane width, shoulder width, bicycle facilities, and sidewalk presence are based on field observations conducted in November 2025 and agency records.

Bicycle facility types are classified by infrastructure provision and geometric adequacy per American Association of State Highway Officials (AASHTO) and Manual on Uniform Traffic Control Devices (MUTCD) standards. Shared Lane designations indicate no dedicated facility (cyclists operate in mixed traffic or on shoulders <4 feet wide). Paved Shoulder designations reflect ≥4-foot shoulders suitable for cycling. Bike Lane designations indicate MUTCD-compliant striped facilities providing dedicated bicycle right-of-way.

Hopkins Road (CR 87) operates as a Principal Arterial (FC 16) under County jurisdiction with a posted speed of 35 mph. The roadway features a two-lane cross-section with 12-foot lane widths and 5- to 7-foot paved shoulders. Bicycle accommodation is provided via paved shoulders suitable for cycling. Sidewalk infrastructure is present but discontinuous (partial coverage). NYSDOT reports an AADT of 14,059 vpd based on 2023 data.

Bassett Road operates as a Minor Collector (FC 19) under Local jurisdiction with a posted speed of 30 mph. The roadway features a two-lane cross-section with 16-foot lane widths and no paved shoulders. Bicycle accommodation is limited to shared lane operation (mixed traffic). Sidewalk infrastructure is present but discontinuous (partial coverage). LaBella extrapolated an AADT of 370 vpd from 2025 turning movement counts.

Red Oak Drive operates as a Minor Collector (FC 19) under Local jurisdiction with a posted speed of 30 mph. The roadway features a two-lane cross-section with 14-foot lane widths and no paved shoulders. Bicycle accommodation is limited to shared lane operation (mixed traffic). Sidewalk infrastructure is continuous. LaBella extrapolated an AADT of 370 vpd from 2025 turning movement counts.

3.2. Study Intersections

Study intersections were selected based on proximity to site access points, anticipated traffic distribution patterns, and agency scoping requirements. The following provides a summary of existing intersection configurations, traffic control, and multimodal features. Intersection characteristics are based on field inventory conducted in November 2025.

Hopkins Road / Bassett Road / Red Oak Drive

- Intersection Type: Four-leg unsignalized
- Traffic Control: Stop-controlled (Bassett Road and Red Oak Drive approaches)

- Geometry: One-lane approaches all legs
- Turn Lanes: No
- Sidewalks: Partial
- Marked Crosswalks: No
- Pedestrian Signals: No
- Transit Stops: None within 500'
- Lighting: Yes (overhead luminaire SE quadrant)
- Special Features: Curb ramps on N and W legs

3.3. Traffic Volumes

The analysis evaluated the weekday AM (6:00 to 9:00 AM) and PM (4:00 to 7:00 PM) peaks, when the combination of site-generated and existing traffic is projected to produce peak demand conditions given corridor function and surrounding land use context.

LaBella conducted manual turning movement counts on Tuesday, November 18, 2025, to establish peak hour traffic volumes. Data collection occurred on a typical weekday during while schools were in session under normal weather conditions. Peak hour traffic periods were identified as 7:00 to 8:00 AM and 6:00 to 7:00 PM.

Traffic volumes were reviewed for accuracy, seasonality, and relative balance within the study area. Seasonal patterns affect traffic volumes, with lower counts typically observed in winter months and higher volumes during summer. NYSDOT Seasonal Adjustment Factors convert Average Daily Traffic (ADT) from short-count data to Annual Average Daily Traffic (AADT), representing average daily traffic across the entire year. NYSDOT and the Federal Highway Administration (FHWA) *Traffic Monitoring Guide* categorize seasonal adjustment factors into three groups based on the degree to which road segments are affected by seasonal variation:

- **Factor Group 30 (Commuter-Dominated):** Urbanized traffic patterns with minimal seasonal effect and coefficient of variation less than 10%
- **Factor Group 40 (Non-Commuter Dominated):** Suburban traffic patterns with moderate seasonal effect and coefficient of variation between 10% and 25%
- **Factor Group 60 (Recreational):** Recreational traffic patterns with extreme seasonal effect and coefficient of variation exceeding 25%

LaBella reviewed the latest NYSDOT Seasonal Adjustment Factors. The study roadways are Factor Group 30, classified as Commuter-Dominated. The work week seasonal adjustment factor for November is 1.013, indicating traffic counts collected during this month are near average yearly traffic levels. As such, no seasonal adjustment was required.

Figure 1 illustrates the Existing Condition during the study's peak hours. Volume variations between intersections reflect temporal fluctuations, activity at driveways located between study intersections, and traffic disruptions from NYSDOT roadwork.

3.4. Planned Roadway Improvements

LaBella reviewed planned roadway improvements within the study area. No projects were identified.

Chapter 4 Ambient Traffic Conditions

Ambient traffic volumes represent traffic conditions during the proposed build year without development of the project. The project is anticipated to be completed and occupied within two years. Standard traffic impact study methodology requires that approved and under-construction projects within the study area be incorporated into the traffic analysis. Contemplated but unapproved projects are excluded from the traffic impact study.

LaBella consulted with Town of Amherst personnel to identify additional development projects that could contribute to increased traffic within the study area. No approved projects in the immediate vicinity were identified.

Historical NYSDOT traffic volume data in the site vicinity indicates fluctuation between 2015 and 2024. Based on available AADT data, traffic volumes decreased from 37,197 (2015) to 28,979 (2020), then increased to 36,081 (2024). Calculating the compound annual growth rate from 2015 to 2024 yields approximately -0.33% per year. However, excluding the anomalous 2020 pandemic period, growth from 2015 to 2019 and recovery from 2021 to 2024 suggest stabilization near pre-pandemic levels with minimal net growth.

To account for normal traffic growth in the Ambient condition, including potential unforeseen developments in the study area, a conservative growth rate of 1.0% per year was applied to existing traffic volumes for a two-year duration.

Chapter 5 Proposed Build Conditions

5.1. Project Description

Millard Fillmore Suburban Hospital employees (approximately 160 to 175) currently utilize parking at the adjacent St. Gregory the Great Roman Catholic Church. Employees access the lot from St. Gregory Court via Bassett Road or Maple Road. The agreement is ending and employees will now be required to park on-site. With this condition, the existing MacArthur Drive access on Bassett Road will be converted from chained access into an actuated gate for employees-only.

The Applicant is not planning to add staff as part of this project; therefore, this study assumes no additional traffic generation.

Employees are anticipated to continue using Bassett Road as it connects to St. Gregory Court east of the project site. **Figure 2** illustrates the Build Condition factoring any traffic increases from ambient growth.

Chapter 6 Intersection Operations

6.1. Level of Service Definition and Framework

Level of service (LOS) is a performance measure that quantifies how well a transportation facility operates from a traveler's perspective. The Highway Capacity Manual (HCM) defines LOS as a quantitative stratification of performance measures representing quality of service. Six levels of service are defined for analysis purposes, assigned letter designations A through F. LOS A represents conditions with minimal to no delay, while LOS F represents conditions with long delays.

The volume-to-capacity (V/C) ratio compares traffic demand (volume) to available roadway capacity during peak periods. V/C ratios provide a straightforward measure of capacity utilization and are stratified into six LOS categories.

Table 1 presents LOS criteria for signalized and unsignalized intersections with associated average delay per vehicle in seconds, as well as the associated V/C ratio categories.

Table 1 – Level of Service Criteria

LOS	Signalized Control	Unsignalized Control	V/C Ratio
A	≤10	≤10	<0.60
B	10–20	10–15	0.60–0.70
C	20–35	15–25	0.70–0.80
D	35–55	25–35	0.80–0.90
E	55–80	35–50	0.90–1.00
F	>80	>50	>1.00

The distinction between signalized and unsignalized delay thresholds reflects differences in operational design and driver expectations. Signalized intersections are engineered for higher volumes with predictable, cyclical control, while unsignalized intersections introduce greater variability—minor street movements may routinely operate at LOS E or F during peak periods with moderate to high mainline volumes. These baseline conditions are important in determining the significance of project-generated impacts, as delay tolerance and predictability differ between the two intersection types.

6.2. Evaluation Techniques

Intersection capacity analysis follows Transportation Research Board (TRB) *Highway Capacity Manual (HCM) (7th Edition)* procedures, implemented through *Synchro 12* software to determine LOS at study area intersections. Where warranted, *SimTraffic* microsimulation supplements the analysis by tracking individual vehicles second-by-second to quantify delay distributions. Because *SimTraffic* applies stochastic car-following parameters that vary by random seed, results are averaged across five or more simulation runs to ensure statistical stability.

6.3. General Traffic Impact Significance Thresholds

In accordance with SEQRA methodologies and common transportation engineering practice (NYSDOT, ITE), permitting agencies apply guidelines to determine whether a project may result in significant

changes in vehicular operations—including noticeable LOS degradation, increased delays, or increased V/C ratios—potentially requiring mitigation to offset project-related impacts.

LOS C, or better, is desirable under most conditions. However, the following thresholds represent generally acceptable operation during peak periods, provided v/c ratios remain below 1.0:

- **Urban centers, corridors, and city limits:** LOS D or better (NYSDOT urban guideline; LOS E acceptable at unsignalized intersections)
- **Rural and rural/urban transition areas:** LOS C or better (NYSDOT rural guideline)
- **Signalized intersections:** LOS D is acceptable in urban conditions
- **Unsignalized intersections:** LOS E is acceptable during peak periods

6.4. Capacity Analysis Results

The analysis evaluated Existing and Build operating conditions during peak study periods. **Table 2 and Table 3** presents capacity results for Existing and No-Build conditions, during the AM and PM peak hours, respectively. Interpretive discussions about the results are summarized thereafter.

Table 2 – Level of Service Results: AM Peak Hour

Intersection	Lane Group	2025 Existing	2027 Build
Hopkins Rd / Bassett Rd / Red Oak Dr (U)			
Red Oak Drive – EB	LTR	C / 21.6	C / 22.2
Bassett Road – WB	LTR	D / 29.6	D / 31.6
Hopkins Road – NB	LTR	A / 9.1	A / 9.1
Hopkins Road – SB	LTR	A / 8.4	A / 8.4

Table 3 – Level of Service Results: PM Peak Hour

Intersection	Lane Group	2025 Existing	2027 Build
Hopkins Rd / Bassett Rd / Red Oak Dr (U)			
Red Oak Drive – EB	LTR	C / 15.2	C / 15.5
Bassett Road – WB	LTR	C / 23.6	C / 24.6
Hopkins Road – NB	LTR	A / 8.2	A / 8.2
Hopkins Road – SB	LTR	A / 8.9	A / 8.9

Note: L, T, R = Left-turn, Through, and/or Right-turn movements
X / X.X = LOS / Average delay in seconds per vehicle

The study intersection results in acceptable operations, with all movements operating at LOS D or better during both peak hours under Existing (2025) conditions. Overall, the intersection will continue to remain within acceptable engineering standards during Build conditions.

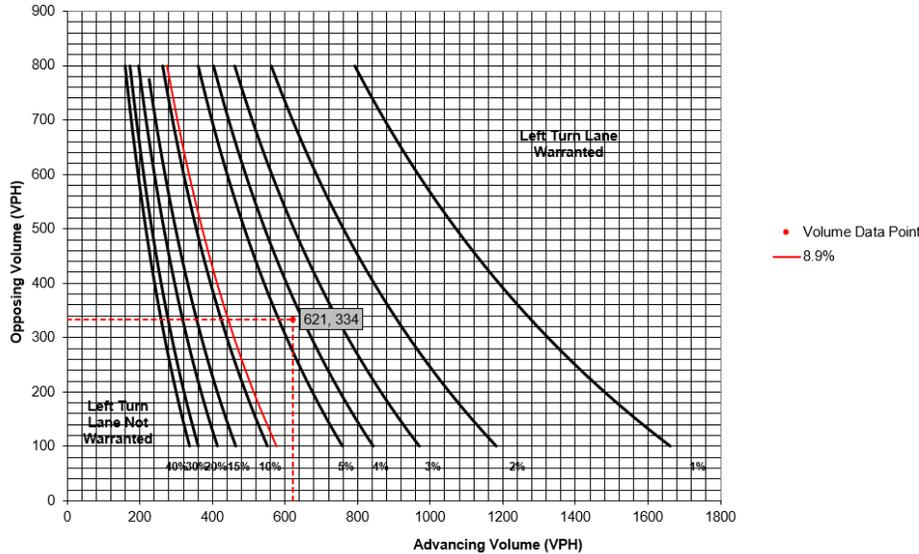
6.5. Left-Turn Lane Warrant Assessment

Left-turn Lane warrants were evaluated using nationally recognized turn lane warrant criteria based on AASHTO design standards and NCHRP research for the Hopkins Road/Bassett Road/Red Oak Drive intersection. The analysis considered peak hour left-turn volumes, opposing traffic volumes, advancing

traffic volumes, heavy vehicle percentages, and the posted speed limit of 35 mph.

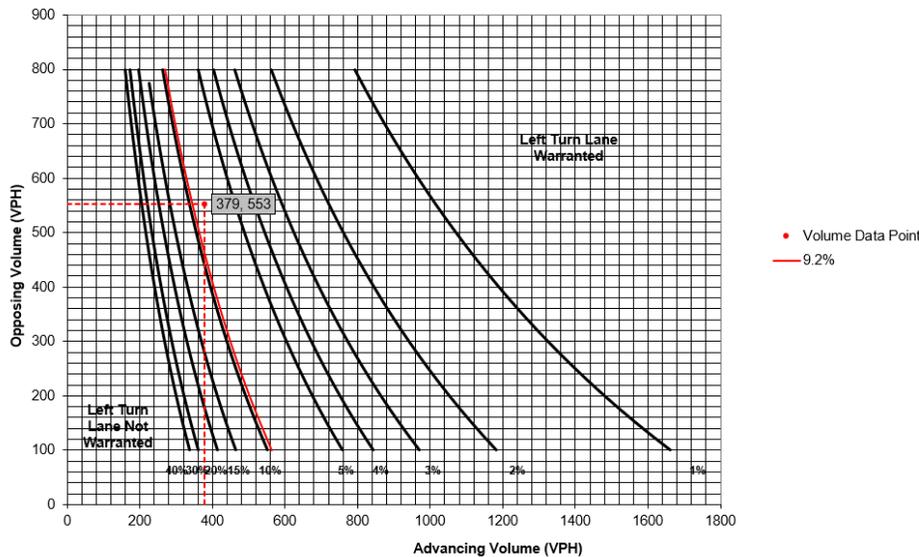
Left-Turn Warrant Results: AM Peak Hour

Figure 1. Warrant for left turn lanes on two-lane roadways
(speeds to 35 mph, unsignalized and signalized intersections)
(L = % Left Turns in Advancing Volume)



Left-Turn Warrant Results: PM Peak Hour

Figure 1. Warrant for left turn lanes on two-lane roadways
(speeds to 35 mph, unsignalized and signalized intersections)
(L = % Left Turns in Advancing Volume)



Under 2025 Existing conditions, the left-turn volumes for the southbound approach satisfy the warrant thresholds during both peak hours. LaBella reviewed the most recent three years of crash data at the intersection using the NYSDOT CLEAR Crash Data View. No crashes were reported from February 28, 2022, and February 28, 2025. As noted, no additional trips are anticipated attributable to the project. Therefore, no modifications are recommended.

Chapter 7 Conclusions and Recommendations

This assessment for the proposed conversion of the existing restricted access along Bassett Road to an actuated gate at 1542 Maple Road concludes that the existing transportation network will experience de minimis impacts as a result of the project. Analysis of the Hopkins Road/Bassett Road/Red Oak Drive intersection under Existing (2025) and Build (2027) conditions demonstrates that all movements will operate within acceptable thresholds during both AM and PM peak hours. Key findings include:

Intersection Operations:

- Under Build conditions, the intersection remains unsignalized and continues to function at acceptable levels of service (LOS).
- All movements operate at LOS D or better during the AM peak hour and LOS C or better during the PM peak hour.

Traffic Growth and Trip Generation:

- A conservative 1% annual growth rate was applied for Build conditions.
- All employees currently using the St. Gregory Church's parking lot are anticipated to continue using Bassett Road via the relocated access. No additional employees will be using this access.

Safety and Design Considerations:

- Left-turn lane warrants are satisfied for the southbound approach on Hopkins Road during both peak periods.
- No crashes were reported during the last three years. As noted, no additional trips are anticipated attributable to the project. Therefore, no modifications are recommended.

Recommendations:

- Maintain proposed access control measures (remote-actuated gate for employee-only entry via Bassett Road).
- No additional roadway improvements are required beyond required driveway improvements.

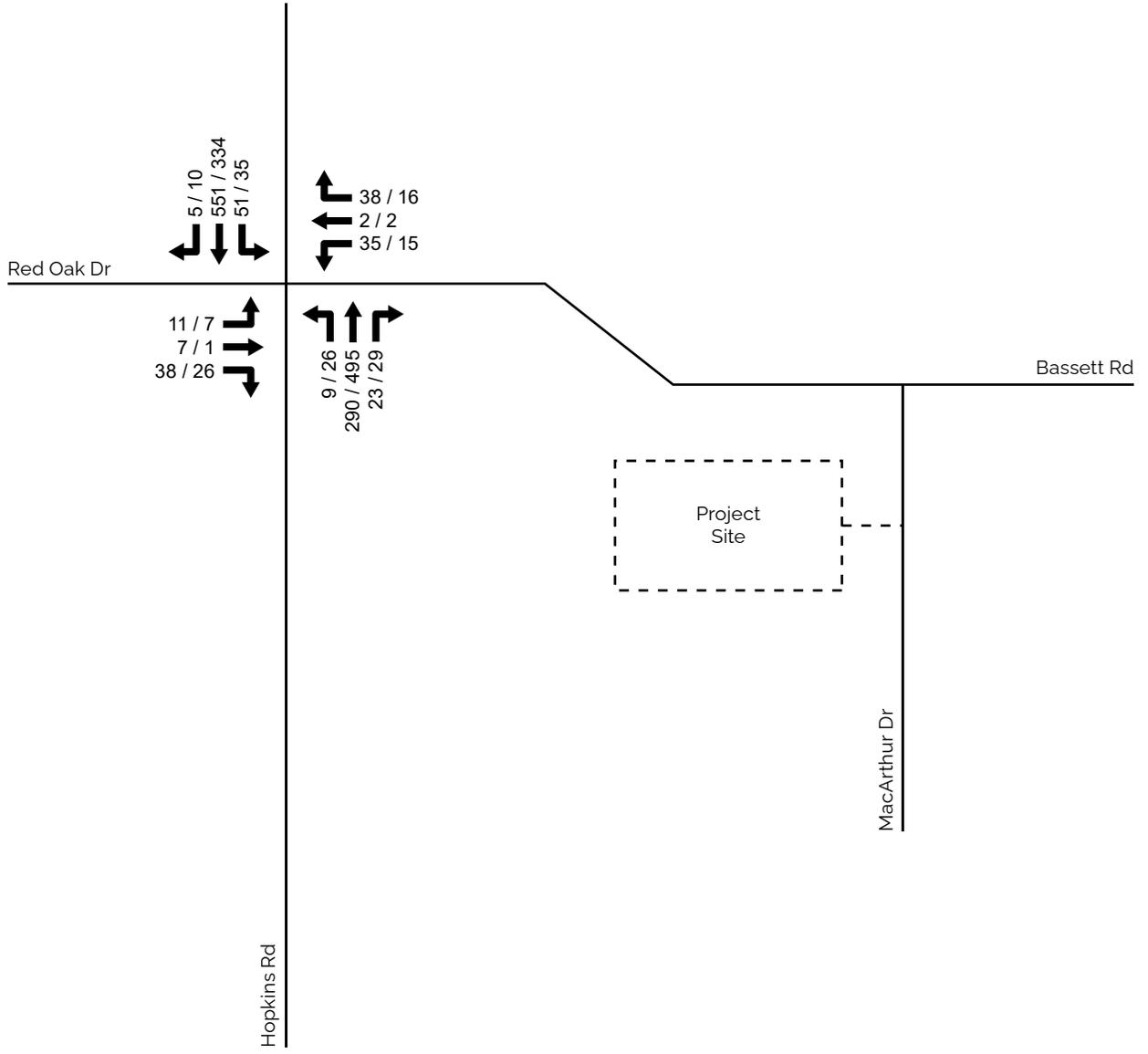
Overall, the project is expected to have minor impacts on the surrounding transportation system.

Chapter 8 References

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- Traffic Monitoring Guide. Publication FHWA-PL-17-003. Federal Highway Administration, U.S. Department of Transportation, Washington, D.C., 2022.
- Trip Generation Manual, 12th ed. Institute of Transportation Engineers, Washington, D.C., 2025.

APPENDIX A

FIGURES



General Figures Key
 AM / PM
 Enter (Exit)



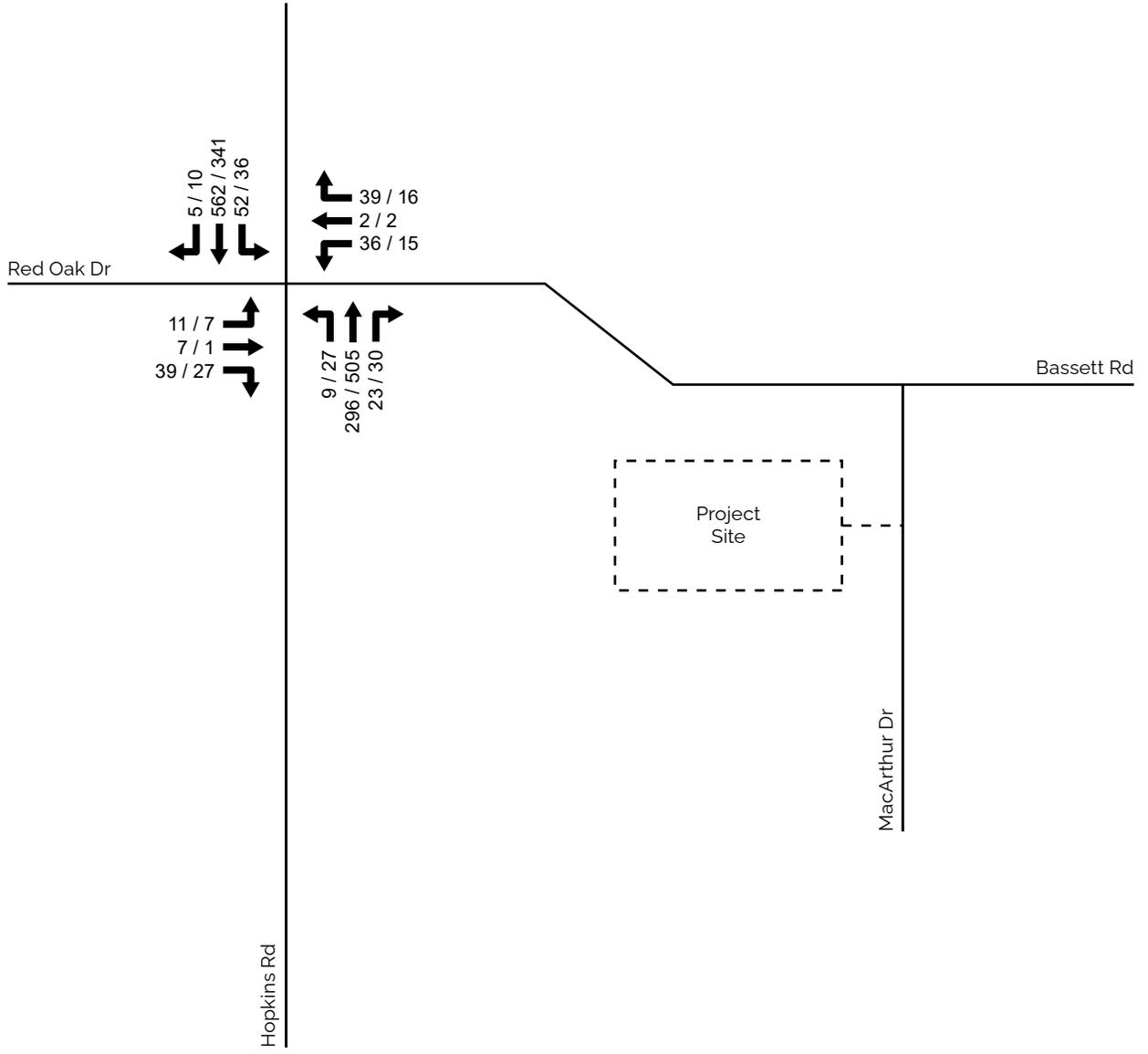
**Peak Hour Volumes
 2025 Existing Conditions**

**Millard Fillmore
 Suburban Hospital
 Medical Office Building
 Employee Access**

Figure 1

December 2025

Town of Amherst
 Erie County, New York



General Figures Key
 AM / PM
 Enter (Exit)



**Peak Hour Volumes
 2027 Build Conditions**

**Millard Fillmore
 Suburban Hospital
 Medical Office Building
 Employee Access**

Figure 2

December 2025

Town of Amherst
 Erie County, New York

APPENDIX B

COLLECTED TRAFFIC DATA

APPENDIX C

MISCELLANEOUS CALCULATIONS

Millard Fillmore Suburban Hospital
 MOB Employee Access
 1542 Maple Road
 Amherst
 NY
 14221
 7:00 - 8:00 AM
 Proposed Action

Intersection / Approaches	Movement	PHF	Existing										Build	
			Raw TMC Data	ADT	Heavy Vehicle Volumes	Heavy Vehicle %	Peds Crossings	Seasonal Factor	Balance Adj.	Existing Balanced Volumes	Growth (% yrs)	Build		
			2025	0.09				1.000				1.0%	2027	
1 - Hopkins Road / Bassett Road / Red Oak Drive														
EB - Red Oak Drive	L		11		1	9%			11			11	11	11
	T		7	622	0	0%	0		7			7	7	7
	R		38		3	8%			38			38	39	39
WB - Bassett Road	L		35		0	0%			35			35	36	36
	T		2	833	0	0%	0		2			2	2	2
	R		38		7	18%			38			38	39	39
NB - Hopkins Road	L		9		1	11%			9			9	9	9
	T		290	3578	17	6%	0		290			290	296	296
	R		23		2	9%			23			23	23	23
SB - Hopkins Road	L		51		7	14%			51			51	52	52
	T		551	6744	18	3%	0		551			551	562	562
	R		5		1	20%			5			5	5	5

Millard Fillmore Suburban Hospital
 MOB Employee Access
 1542 Maple Road
 Amherst
 NY
 14221
 6:00 - 7:00 PM
 Proposed Action

Intersection / Approaches	Movement	PHF	Existing										Build	
			Raw TMC Data	ADT	Heavy Vehicle Volumes	Heavy Vehicle %	Peds Crossings	Seasonal Factor	Balance Adj.	Existing Balanced Volumes	Growth (% yrs)	Build		
			2025	0.09				1.000				1.0%	2027	
1 - Hopkins Road / Bassett Road / Red Oak Drive														
EB - Red Oak Drive	L		6		0	0%			6		6	6	6	
	T		1	367	0	0%	0	0	1	0	1	1	1	
	R		26		0	0%			26		26	27	27	
WB - Bassett Road	L		15		0	0%			15		15	15	15	
	T		2	367	0	0%	0	0	2	0	2	2	2	
	R		16		0	0%			16		16	16	16	
NB - Hopkins Road	L		26		0	0%			26		26	27	27	
	T		495	6111	3	1%	0	0	495	0	495	505	505	
	R		29		0	0%			29		29	30	30	
SB - Hopkins Road	L		35		0	0%			35		35	36	36	
	T		334	4211	1	0%	0	0	334	0	334	341	341	
	R		10		0	0%			10		10	10	10	

APPENDIX D

INTERSECTION OPERATIONS: EXISTING CONDITIONS

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	7	38	35	2	38	9	290	23	51	551	5
Future Vol, veh/h	11	7	38	35	2	38	9	290	23	51	551	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	9	0	8	0	0	18	11	6	9	14	3	20
Mvmt Flow	13	8	45	41	2	45	11	341	27	60	648	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1135	1161	651	1148	1150	355	654	0	0	368	0	0
Stage 1	771	771	-	376	376	-	-	-	-	-	-	-
Stage 2	364	389	-	772	774	-	-	-	-	-	-	-
Critical Hdwy	7.19	6.5	6.28	7.1	6.5	6.38	4.21	-	-	4.24	-	-
Critical Hdwy Stg 1	6.19	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.19	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.581	4	3.372	3.5	4	3.462	2.299	-	-	2.326	-	-
Pot Cap-1 Maneuver	174	197	458	177	200	655	891	-	-	1127	-	-
Stage 1	382	412	-	649	620	-	-	-	-	-	-	-
Stage 2	641	612	-	395	411	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	145	178	458	138	180	655	891	-	-	1127	-	-
Mov Cap-2 Maneuver	145	178	-	138	180	-	-	-	-	-	-	-
Stage 1	350	378	-	640	611	-	-	-	-	-	-	-
Stage 2	586	602	-	320	377	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	21.6		29.59		0.25		0.7	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	50	-	-	282	233	151	-	-
HCM Lane V/C Ratio	0.012	-	-	0.233	0.379	0.053	-	-
HCM Ctrl Dly (s/v)	9.1	0	-	21.6	29.6	8.4	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.9	1.7	0.2	-	-

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	1	26	15	2	16	26	495	29	35	334	10
Future Vol, veh/h	6	1	26	15	2	16	26	495	29	35	334	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	7	1	31	18	2	19	31	589	35	42	398	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1139	1173	404	1150	1161	607	410	0	0	624	0	0
Stage 1	487	487	-	668	668	-	-	-	-	-	-	-
Stage 2	652	686	-	482	493	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	180	194	651	177	197	500	1160	-	-	967	-	-
Stage 1	566	554	-	451	459	-	-	-	-	-	-	-
Stage 2	460	451	-	570	550	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	155	175	651	152	178	500	1160	-	-	967	-	-
Mov Cap-2 Maneuver	155	175	-	152	178	-	-	-	-	-	-	-
Stage 1	534	523	-	432	440	-	-	-	-	-	-	-
Stage 2	422	433	-	511	520	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Ctrl Dly, s/v	15.23		23.64		0.39		0.82			
HCM LOS	C		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	84	-	-	391	232	165	-	-
HCM Lane V/C Ratio	0.027	-	-	0.1	0.169	0.043	-	-
HCM Ctrl Dly (s/v)	8.2	0	-	15.2	23.6	8.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.6	0.1	-	-

APPENDIX E

INTERSECTION OPERATIONS: BUILD CONDITIONS

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	7	39	36	2	39	9	296	23	52	562	5
Future Vol, veh/h	11	7	39	36	2	39	9	296	23	52	562	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	9	0	8	0	0	18	11	6	9	14	3	20
Mvmt Flow	13	8	46	42	2	46	11	348	27	61	661	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1157	1183	664	1171	1172	362	667	0	0	375	0	0
Stage 1	786	786	-	383	383	-	-	-	-	-	-	-
Stage 2	371	396	-	788	789	-	-	-	-	-	-	-
Critical Hdwy	7.19	6.5	6.28	7.1	6.5	6.38	4.21	-	-	4.24	-	-
Critical Hdwy Stg 1	6.19	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.19	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.581	4	3.372	3.5	4	3.462	2.299	-	-	2.326	-	-
Pot Cap-1 Maneuver	168	191	450	171	194	648	881	-	-	1120	-	-
Stage 1	375	406	-	644	616	-	-	-	-	-	-	-
Stage 2	636	607	-	388	405	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	139	172	450	132	174	648	881	-	-	1120	-	-
Mov Cap-2 Maneuver	139	172	-	132	174	-	-	-	-	-	-	-
Stage 1	342	371	-	634	606	-	-	-	-	-	-	-
Stage 2	579	598	-	311	370	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	22.21		31.57		0.25		0.71	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	49	-	-	276	224	151	-	-
HCM Lane V/C Ratio	0.012	-	-	0.243	0.404	0.055	-	-
HCM Ctrl Dly (s/v)	9.1	0	-	22.2	31.6	8.4	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.9	1.8	0.2	-	-

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	1	27	15	2	16	27	505	30	36	341	10
Future Vol, veh/h	6	1	27	15	2	16	27	505	30	36	341	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	7	1	32	18	2	19	32	601	36	43	406	12

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1164	1199	412	1176	1187	619	418	0	0	637	0	0
Stage 1	498	498	-	683	683	-	-	-	-	-	-	-
Stage 2	667	701	-	492	504	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	173	187	644	170	190	492	1152	-	-	956	-	-
Stage 1	558	548	-	442	452	-	-	-	-	-	-	-
Stage 2	452	444	-	562	544	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	148	168	644	144	171	492	1152	-	-	956	-	-
Mov Cap-2 Maneuver	148	168	-	144	171	-	-	-	-	-	-	-
Stage 1	526	516	-	423	433	-	-	-	-	-	-	-
Stage 2	413	425	-	502	513	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	15.46		24.57		0.39		0.83	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	86	-	-	384	223	166	-	-
HCM Lane V/C Ratio	0.028	-	-	0.105	0.176	0.045	-	-
HCM Ctrl Dly (s/v)	8.2	0	-	15.5	24.6	8.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.6	0.1	-	-