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# TRAFFIC IMPACT STUDY

For

**New York Country Club Redevelopment  
Village of New Hempstead  
Rockland County, New York**

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## **EXECUTIVE SUMMARY**

Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology, D.P.C. has prepared this study to assess the traffic impacts associated with the redevelopment of the New York Country Club in the Village of New Hempstead, in the Town of Ramapo, Rockland County, New York. Upon completion, the redevelopment will replace the existing New York Country Club with 344 single-family unit residential community.

The development site is located along the eastbound side of Brick Church Road and the southbound side of Hempstead Road. The site is bordered by Hempstead Road to the east, Union Road and residential and institutional land uses to the west, Viola Road and residential land uses to the south, and Brick Church Road to the north.

Access to the New York Country Club is currently provided via one full-movement, stop-controlled driveway that intersects Brick Church Road. Access to the proposed residential community will be provided via a new street to be located at the existing driveway location along Brick Church Road and two full-movement, stop-controlled street intersections along Hempstead Road.

Langan estimated the number of new trips the proposed residential redevelopment would generate based on data compiled for Land Use Code 210 (Single-Family Detached Housing) by the Institute of Transportation Engineers (ITE) as contained in the publication Trip Generation, 11<sup>th</sup> Edition. We estimated that the development will generate approximately 223 total trips (56 enter, 167 exit) during the weekday morning peak hour and 309 total trips (195 enter, 114 exit) during the weekday evening peak hour.

We determined the directional distribution of the site-generated trips for the residential community based on existing travel patterns in the study area, the location of area highways and major intersections, demographic data, and a Journey to Work Model.

We conducted capacity analyses at the following intersections:

- New Hempstead Road (CR 80) and Hempstead Road / Summit Park Road (CR 51)
- Viola Road (CR 74) and Union Road
- West Eckerson Road (CR 74) and Hempstead Road
- Brick Church Road and Union Road
- Brick Church Road and Hempstead Road
- Brick Church Road and Site Driveway
- Hempstead Road and North Site Driveway
- Hempstead Road and South Site Driveway

Based on the analyses herein Langan recommends the following:

- Optimize the signal timing at the New Hempstead Road and Hempstead Road / Summit Park Road intersection.
- Optimize the signal timing at the West Eckerson Road and Hempstead Road / Hempstead Lane intersection.
- Construct a traffic signal at the Brick Church Road and Hempstead Road intersection.

Based on our analyses, we determined the adjacent roadway network has sufficient capacity to accommodate the site-generated trips associated with the proposed residential redevelopment with the recommended intersection improvements identified above. Moreover, the site's access points are expected to operate at acceptable levels of service during peak traffic hours.

## **INTRODUCTION**

Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology, D.P.C. has prepared this study to assess the traffic impacts associated with the redevelopment of the New York Country Club in the Village of New Hempstead, in the Town of Ramapo, Rockland County, New York.

### **Project Description**

The redevelopment will replace the existing New York Country Club with a 344 single-family unit residential community. Figure 1 in Appendix A shows the site location.

The site is located along the eastbound side of Brick Church Road and the southbound side of Hempstead Road. The site is bordered by Hempstead Road to the east, Union Road and residential and institutional land uses to the west, Viola Road and residential land uses to the south, and Brick Church Road to the north.

Access to the New York Country Club is currently provided via one full-movement, stop-controlled driveway that intersects Brick Church Road. Access to the proposed residential community will be provided by a new street at the existing driveway along Brick Church Road and two full-movement, stop-controlled street intersections along Hempstead Road.

### **Study Area**

We conducted capacity analyses at the following intersections:

- New Hempstead Road (CR 80) and Hempstead Road / Summit Park Road (CR 51)
- Viola Road (CR 74) and Union Road
- West Eckerson Road (CR 74) and Hempstead Road
- Brick Church Road and Union Road
- Brick Church Road and Hempstead Road
- Brick Church Road and Site Driveway
- Hempstead Road and North Site Driveway
- Hempstead Road and South Site Driveway

An inventory of the physical road conditions is presented in the section "Description of Existing Conditions."

## **Scope of Study**

Langan undertook the following steps to prepare this study in accordance with standard traffic study methodologies:

1. Conducted a field examination of the site and surrounding road network to inventory physical and regulatory conditions including the number of lanes, lane assignments, channelization, traffic-control devices, lateral clearances and other factors that limit traffic capacity.
2. Obtained turning movement counts at the study intersections. Turning movement counts were collected on a typical weekday, during typical peak periods. Additionally, ATR counts were conducted along Brick Church Road. We then identified existing weekday morning and evening peak hour traffic volumes based on the traffic count data to establish 2023 Existing traffic volumes.
3. Established 2028 Base traffic volumes by applying a growth factor of 0.7 percent per year to the existing traffic volumes.
4. Obtained information on current developments in the study area and added projected traffic generated from the adjacent developments to the 2028 Base traffic volumes to establish the 2028 No-Build traffic volumes.
5. Prepared trip generation estimates for the proposed development based on research data developed by the Institute of Transportation Engineers (ITE).
6. Developed trip distribution for facility based on existing travel patterns in the study area, the location of area highways and major intersections, demographic data, and a Journey to Work Model.
7. Assigned site-generated trips to the site access roads and surrounding road network based on the likely travel routes motorists will use to travel to and from the site.
8. Established future 2028 Build traffic volumes by adding site-generated trips to the 2028 No-Build traffic volumes.
9. Performed intersection capacity analyses for the weekday morning and evening peak hours using Synchro Software.

## **DESCRIPTION OF EXISTING CONDITIONS**

This section describes the roads, intersections, and traffic volumes in the area of the proposed redevelopment in the Village of New Hempstead, Town of Ramapo, Rockland County, New York.

### **Roads**

#### New Hempstead Road (County Route 80)

New Hempstead Road is a minor arterial road under Rockland County jurisdiction. The roadway has a general east-west orientation and provides one travel lane in each direction near the site. The posted speed limit in the immediate study area is 30 mph.

#### Summit Park Road (County Route 51)

Summit Park Road is a minor arterial road under Rockland County jurisdiction. The roadway has a general north-south orientation and provides one travel lane in each direction near the site. The posted speed limit in the immediate study area is 30 mph.

#### West Eckerson Road/Viola Road (County Route 74)

West Eckerson Road is a minor arterial road under Rockland County jurisdiction. The roadway has a general east-west orientation and provides one travel lane in each direction near the site. The posted speed limit in the immediate study area is 30 mph.

#### Hempstead Road

Hempstead Road is a minor arterial road under municipal jurisdiction. The roadway has a general north-south orientation and provides one travel lane in each direction near the site. The posted speed limit in the immediate study area is 30 mph.

#### Brick Church Road

Brick Church Road is a major collector road under municipal jurisdiction. The roadway has a general east-west orientation and provides one travel lane in each direction near the site. The posted speed limit in the immediate study area is 30 mph.

#### Union Road

Union Road is a major collector road under municipal jurisdiction. The roadway has a general north-south orientation and provides one travel lane in each direction near the site. The posted speed limit in the immediate study area is 30 mph.



## **Intersections**

### New Hempstead Road and Hempstead Road / Summit Park Road

Hempstead Road and Summit Park Road intersect New Hempstead Road (CR 80) to form a four-way intersection under signal control. The eastbound and westbound New Hempstead Road approaches each provide one shared left-turn/thru/right-turn lane. The northbound Hempstead Road approach provides one shared left-turn/thru/right-turn lane. The southbound Summit Park Road approach provides one shared left-turn/thru/right-turn lane. The signal operates under two phases with a 78-second cycle length.

### Viola Road and Union Road

Union Road intersects Viola Road to form a four-way intersection under signal control. The eastbound and westbound Viola Road approaches each provide one left-turn lane and one shared thru/right-turn lane. The northbound and southbound Union Road approaches each provide one left-turn lane and one shared thru/right-turn lane. The signal operates under five phases with a 100-second cycle length.

### West Eckerson Road and Hempstead Road / Hempstead Lane

Hempstead Road and Hempstead Lane intersect West Eckerson Road to form a four-way intersection under signal control. The eastbound and westbound West Eckerson Road approaches each provide one left-turn lane and one shared thru/right-turn lane. The northbound Hempstead Lane approach provides one shared left-turn/thru/right-turn lane. The southbound Hempstead Road approach provides one shared left-turn/thru/right-turn lane. The signal operates under four phases with a 105-second cycle length.

### Brick Church Road and Union Road

Union Road intersects Brick Church Road to form a four-way intersection under all-way stop-control. The eastbound and westbound Brick Church Road approaches each provide one shared left-turn/thru/right-turn lane. The northbound and southbound Union Road approaches each provide one shared left-turn/thru/right-turn lane.

### Brick Church Road and Hempstead Road

Brick Church Road intersects Hempstead Road to form a T-shaped intersection under stop-control. The eastbound Brick Church Road approach provides one shared left-turn/right-turn lane and is stop-controlled. The northbound Union Road approach provides one shared left-turn/thru lane. The southbound Union Road approach provides one shared thru/right-turn lane.

### Brick Church Road and Site Driveway

The site driveway intersects Brick Church Road to form a T-shaped intersection under stop control. The eastbound Brick Church Road approach provides one shared thru/right-turn lane. The westbound Brick Church Road approach provides one shared left-turn/thru lane. The northbound site driveway approach provides one shared left-turn/right-turn lane and is stop-controlled.

### **Traffic Volumes**

To examine traffic conditions near the development, turning movement traffic counts were conducted during the weekday morning and evening peak periods on a typical weekday. Specifically, turning movement counts were conducted on Wednesday, May 24 2023, from 7:00 AM to 9:00 AM and from 2:00 PM to 6:00 PM, at the following intersections:

- New Hempstead Road (CR 80) and Hempstead Road / Summit Park Road (CR 51)
- Viola Road (CR 74) and Union Road
- West Eckerson Road (CR 74) and Hempstead Road
- Brick Church Road and Union Road
- Brick Church Road and Hempstead Road
- Brick Church Road and Site Driveway

In addition, we arranged for ATR (Automatic Traffic Recorders) to be conducted along Brick Church Road near the site driveway from Tuesday, May 23, 2023, to Monday, June 5, 2023.

The traffic counts identify distinct times during the weekday morning and evening hours when traffic experienced its highest levels. We conservatively used the highest individual intersection peak hour volumes from all the traffic counts to establish weekday morning and evening existing peak hour traffic volumes.

Figure 2 illustrates the 2023 Existing weekday morning and evening peak hour traffic volumes. Summaries of the traffic count data are contained in Appendix B.

## **ESTIMATE OF FUTURE CONDITIONS**

This section of the report covers background traffic growth, site-generated trips, trip comparison, trip distribution, and future traffic volumes. We anticipate the residential community will be constructed by the end of 2028. Accordingly, we projected traffic volumes to include existing traffic and new traffic created by background growth to derive the 2028 No-Build traffic volumes. We then added the site-generated trips to the 2028 No-Build traffic volumes to derive the 2028 Build traffic volumes. All volume worksheets are located in Appendix A.

### **Background Traffic Growth**

The existing counted traffic volumes were increased by a compounded 0.7% annual growth rate established by the New York Metropolitan Transportation Council (NYMTC) for Rockland County for short term growth projections, to derive the 2028 Base traffic volumes. Figure 3 illustrates the 2028 Base traffic volumes.

### **No-Build Traffic Volumes**

In addition to general background growth, there is a planned development that will influence traffic on the surrounding roadway network. In preparing the future traffic projections, we have included the traffic associated with the Minisceongo Golf Course redevelopment on the study intersections. This proposed redevelopment includes 637 residential units and 20,000 sf of retail space, and a 48-room hotel.

Traffic volumes associated with this redevelopment was derived from a review of its traffic study. The traffic from this redevelopment is shown on Figure 4. The adjacent development traffic volumes were added to the 2028 Base traffic volumes to develop the 2028 No-Build traffic volumes, shown on Figure 5.

There are additional planned developments within the immediate study area that will influence traffic on the surrounding roadway network. These projects will generate a minimal number of trips individually. Therefore, the trips from these projects are considered part of the 0.7% annual growth rate calculated for the 2028 Base traffic volumes.

### **Site-Generated Trips**

We prepared trip generation estimates for the proposed developments using data compiled for Land Use Code 210 (Single-Family Detached Housing) by the Institute of Transportation Engineers (ITE) as contained in the publication Trip Generation, 11<sup>th</sup> edition. Table 1 summarizes the trip generation estimates for the project during the weekday morning and evening peak hours.

**Table 1 - Trip Generation Estimates**

Land Use	Weekday AM Peak Hour			Weekday PM Peak Hour		
	In	Out	Total	In	Out	Total
Single-Family Detached Housing (LUC 210) (344 Units)	56	167	223	195	114	309

**Trip Generation Comparison**

The property is currently occupied by the New York Country Club. We prepared the following table to compare trip generation associated with the proposed residential redevelopment to the peak hour trips generated by the existing New York Country Club.

**Table 2 – Trip Generation Comparison (Existing Use vs. Proposed Use)**

Land Use	Weekday AM Peak Hour			Weekday PM Peak Hour		
	In	Out	Total	In	Out	Total
Existing 18-Hole Golf Course	25	7	32	28	24	52
Proposed 344 Residential Units	56	167	223	195	114	309
<b>Difference</b>	<b>+ 31</b>	<b>+ 160</b>	<b>+ 191</b>	<b>+ 167</b>	<b>+ 90</b>	<b>+ 257</b>

When compared to existing Country Club, the proposed residential redevelopment will generate 191 more trips during the weekday morning peak hour and 257 more trips during the weekday evening peak hour. It is noted that for analysis purposes we did not take a credit for the traffic associated with the existing Country Club.

It is noted that the proposed concept plan includes 325 units. Our analyses conservatively estimate trip generation for up to 344 units.

**Trip Distribution**

The directional distribution of site-generated trips were determined based on existing travel patterns in the study area, the location of area highways and major intersections, demographic data, and a Journey to Work Model. These findings created arrival and departure distributions for the developments in the study area. Table 3 outlines the resulting trip distribution within the study area for new site trips based on the traffic assignment.

**Table 3 – Arrival and Departure Distributions**

<b>Direction (To/From)</b>	<b>Arrival Distributions</b>	<b>Departure Distributions</b>
New Hempstead Road (East)	50%	47%
West Eckerson Road (East)	15%	10%
Grandview Avenue (West)	7%	7%
Brick Church Road (West)	3%	3%
Viola Avenue (West)	11%	11%
Summit Park Road (North)	5%	13%
McNamara Road (North)	3%	3%
Union Road (South)	11%	11%
<b>Total</b>	<b>100%</b>	<b>100%</b>

Figure 6 shows the arrival and departure distributions for the proposed redevelopment. The site-generated traffic was then applied to the adjacent roadway system as per the above distributions. Figure 7 shows the new site-generated trips assigned to the roadway.

### **Build Traffic Volumes**

The 2028 Build traffic volumes were derived by adding the total site-generated trips to the 2028 No-Build traffic volumes. Figure 8 illustrates the 2028 Build weekday morning and evening peak hour traffic volumes.

## **ANALYSIS OF TRAFFIC OPERATIONS**

This section describes the capacity analysis we conducted to assess traffic operations for the No-Build and Build conditions. Capacity analysis provides an indication of the adequacy of road facilities to serve traffic demand.

### **Level of Service Criteria**

Level of Service (LOS) is the term used to denote different operating conditions that occur on a given road segment under various traffic volume demands. LOS is a qualitative measure that considers a number of factors including road geometry, speed, travel delay and freedom to maneuver. LOS designations range from A to F and provide an index of operational qualities of a road segment or an intersection. LOS A represents the best operating conditions; LOS F represents the worst.

LOS designations are reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of all traffic entering the intersection. For unsignalized intersections, the analysis considers the operation of all movements that conflict with other movements, such as main-line left turns and traffic exiting a side street. The evaluation criteria used to analyze the study area intersections are based on the Highway Capacity Manual, 7<sup>th</sup> edition, (HCM), published by the Transportation Research Board and the Synchro and HCS Software.

The HCM defines LOS for signalized intersections as follows:

<b><u>LOS</u></b>	<b><u>Control Delay per Vehicle</u></b>
A	$\leq 10$ sec
B	$> 10$ and $\leq 20$ sec
C	$> 20$ and $\leq 35$ sec
D	$> 35$ and $\leq 55$ sec
E	$> 55$ and $\leq 80$ sec
F	$> 80$ sec

The HCM defines LOS for unsignalized intersections as follows:

<b><u>LOS</u></b>	<b><u>Delay Range (sec/veh)</u></b>
A	$\leq 10$ sec
B	$> 10$ and $\leq 15$ sec
C	$> 15$ and $\leq 25$ sec
D	$> 25$ and $\leq 35$ sec
E	$> 35$ and $\leq 50$ sec
F	$> 50$ sec

## Capacity Analysis

We conducted capacity analyses for the study intersections and found that the proposed development will not significantly impact area traffic operations. Table 4 summarizes the 2028 No-Build and Build levels of service at each study intersection during the weekday morning and evening peak hours. Note that all capacity analyses worksheets are contained in Appendix D.

**Table 4 – Intersection Capacity Analysis Summary**

Location	Movement		2028 No-Build Condition		2028 Build Condition		2028 Build With Mitigation	
			AM	PM	AM	PM	AM	PM
<b>Signalized Intersections</b>								
New Hempstead Road and Hempstead Road / Summit Park Road	EB	L,T,R	C (28.6)	C (23.1)	C (29.0)	C (23.5)	D (38.4)	C (31.9)
	WB	L,T,R	D (36.4)	C (33.5)	E (62.7)	F (117.3)	C (33.1)	C (34.9)
	NB	L,T,R	C (20.3)	B (19.1)	C (24.7)	C (21.0)	C (29.3)	C (34.3)
	SB	L,T,R	B (18.4)	B (17.7)	B (19.0)	B (18.3)	C (28.2)	C (34.4)
	<b>Overall</b>		<b>C (27.3)</b>	<b>C (24.7)</b>	<b>D (36.3)</b>	<b>E (55.8)</b>	<b>C (32.7)</b>	<b>C (33.9)</b>
Viola Road and Union Road	EB	L	C (24.5)	C (20.4)	C (24.6)	C (20.8)	-	-
		T,R	E (60.7)	D (39.9)	E (61.8)	D (41.5)	-	-
	WB	L	C (34.2)	C (23.9)	C (34.9)	C (26.3)	-	-
		T,R	D (48.5)	B (17.9)	D (51.1)	B (19.2)	-	-
	NB	L	D (46.7)	D (44.1)	D (49.6)	D (45.7)	-	-
		T,R	F (83.6)	D (51.2)	F (86.5)	D (53.3)	-	-
	SB	L	C (26.4)	C (26.1)	C (26.7)	C (26.4)	-	-
		T,R	E (56.1)	E (69.6)	E (59.7)	E (73.7)	-	-
	<b>Overall</b>		<b>E (55.7)</b>	<b>D (38.8)</b>	<b>E (57.9)</b>	<b>D (40.8)</b>	-	-
	West Eckerson Road and Hempstead Road	EB	L	B (12.7)	B (11.6)	B (13.0)	B (15.6)	B (17.0)
T,R			C (27.1)	B (13.8)	C (27.1)	B (13.7)	C (30.6)	B (14.9)
WB		L	A (9.6)	A (9.8)	A (9.6)	A (9.8)	B (12.0)	B (12.3)
		T,R	C (29.8)	C (30.5)	C (30.3)	C (32.3)	C (34.8)	D (37.9)
NB		L,T,R	E (59.9)	D (45.5)	E (59.9)	D (45.5)	E (59.9)	D (45.5)
SB		L,T,R	F (81.0)	E (79.6)	F (112.6)	F (100.2)	D (54.7)	D (51.2)
<b>Overall</b>		<b>D (38.6)</b>	<b>C (31.8)</b>	<b>D (44.9)</b>	<b>D (36.5)</b>	<b>D (38.2)</b>	<b>C (31.8)</b>	
Brick Church Road and Hempstead Road	EB	L,R	-	-	-	-	D (49.5)	D (51.2)
	NB	L,T	-	-	-	-	D (41.0)	B (18.5)
	SB	T,R	-	-	-	-	B (18.0)	C (31.2)
	<b>Overall</b>		-	-	-	-	<b>D (36.6)</b>	<b>C (34.9)</b>
<b>Unsignalized Intersections</b>								
Brick Church Road and Union Road	EB	L,T,R	C (23.8)	C (20.0)	C (24.9)	C (22.9)	-	-
	WB	L,T,R	F (57.2)	C (17.7)	F (79.3)	C (20.6)	-	-
	NB	L,T,R	E (36.0)	C (22.1)	E (38.9)	D (26.8)	-	-
	SB	L,T,R	D (30.1)	C (23.1)	D (32.0)	D (28.8)	-	-
Brick Church Road and Hempstead Road	EB	L,R	F (147.4)	E (44.4)	F (261.1)	F (121.5)	-	-
	NB	L	A (8.9)	A (8.4)	A (9.0)	A (8.8)	-	-
Brick Church Road and Site Driveway	WB	L	A (8.3)	A (8.2)	A (8.2)	A (8.3)	-	-
	NB	L,R	C (16.7)	B (11.5)	C (18.7)	B (14.9)	-	-
Hempstead Road and North Site Driveway	EB	L,R	-	-	A (7.9)	A (8.3)	-	-
	NB	L	-	-	C (15.9)	B (14.7)	-	-
Hempstead Road and South Site Driveway	EB	L,R	-	-	A (7.9)	A (8.2)	-	-
	NB	L	-	-	C (15.7)	B (14.2)	-	-

\*Level of Service (Average vehicle delay [seconds per vehicle])

#### West Eckerson Road and Hempstead Road / Hempstead Lane

This signalized intersection is expected to operate at an overall LOS C during both the weekday morning and evening peak hours under the No-Build condition. Under the Build condition, the intersection is expected to operate at an overall LOS D during the weekday morning peak hour and at an overall LOS E during the weekday evening peak hour.

The westbound approach is expected to operate at LOS F during the weekday evening peak hour under Build condition. Minor retiming of the signal to extend the westbound green time will correct the failing levels of service.

#### Viola Road and Union Road

This signalized intersection is expected to operate at an overall LOS E during the weekday morning peak hour and at an overall LOS D during the weekday evening peak hour under the No-Build condition. Under the Build condition, the intersection is expected to continue to operate at an overall LOS E during the weekday morning peak hour and at an overall LOS D during the weekday evening peak hour.

#### West Eckerson Road and Hempstead Road / Hempstead Lane

This signalized intersection is expected to operate at an overall LOS D during the weekday morning peak hour and at an overall LOS C during the weekday evening peak hour under the No-Build condition. Under the Build condition, the intersection is expected to operate at an overall LOS D during both the weekday morning and evening peak hours.

The southbound approach is expected to operate at LOS F during the weekday morning peak hour under both the No-Build and Build conditions, and at LOS F during the weekday evening peak hour under the Build condition. Minor retiming of the signal to optimize the allocation of green time will correct the failing levels of service.

#### Brick Church Road and Union Road

Under the No-Build condition, all movements at this unsignalized intersection are expected to operate at LOS E or better during the weekday morning peak hour with the exception of the westbound approach, which is expected to operate at LOS F. All movements at this intersection are expected to operate at LOS C during the evening peak hour. Under the Build condition, all movements at this unsignalized intersection are expected to continue to operate at LOS E or better during the weekday morning peak hour with the exception of the westbound approach, which is expected to continue to operate at LOS F. All movements at this intersection are expected to operate at LOS D or better during the evening peak hour.



Based on a review of the existing traffic counts conducted at the study intersection and the ATR data collected along Brick Church Road, it was observed that due to the proximity of public and private schools, the intersection experiences a spike in traffic volumes during the weekday morning peak hour from 7:45 AM to 8:15 AM. These 15-minute intervals are unique to the study area as all other 15-minute intervals during the weekday morning commuter hours experience significantly lower volumes. Table 5 illustrates the traffic volumes during the weekday morning commuter peak period.

**Table 5 – Brick Church and Union Road Traffic Volumes**

<b>15-Minute Period</b>	<b>Intersection Traffic Volume</b>
7:00 AM	150
7:15 AM	166
7:30 AM	263
7:45 AM	307
8:00 AM	328
8:15 AM	298
8:30 AM	264
8:45 AM	277

As the table above shows, the intersection traffic volumes are significantly higher during the 8:00 AM 15-minute interval than any other time during the weekday morning commuter peak hours. The intersection is expected to operate with better LOS and delays than the analysis shows and will generally continue to operate with the lower level of service during the peak school arrival period.

Brick Church Road and Hempstead Road

All movements at this unsignalized intersection are expected to operate at LOS E or better during both the weekday morning and evening peak hours under the No-Build condition, with the exception of the eastbound approach, which is expected to operate at LOS F during the weekday morning peak hour. Under the Build condition, the eastbound approach is expected to operate at LOS F during both the weekday morning and evening peak hours.

Langan recommends that a traffic signal be constructed. Under the mitigation condition, the eastbound approach improves to acceptable levels of service during the weekday morning and evening peak hours.

Brick Church Road and Site Driveway

All movements at this unsignalized intersection are expected to operate at LOS C or better during the weekday morning peak hour, and at LOS B or better during the weekday evening peak hour under the No-Build condition. Under the Build condition, all movements are expected to continue

to operate at LOS C or better during the weekday morning peak hour, and at LOS B or better during the weekday evening peak hour.

#### Hempstead Road and North Site Driveway

##### *Geometry*

The north site driveway is proposed to intersect Hempstead Road southbound to form a T-shaped intersection under stop-control. The eastbound site driveway approach will provide one shared left-turn/right-turn lane and will be stop-controlled. The northbound Hempstead Road approach will provide one shared left-turn/thru lane. The southbound Hempstead Road approach will provide one shared thru/right-turn lane.

##### *Analysis*

All turning movements at this unsignalized intersection are expected to operate at LOS C or better during both the weekday morning and evening peak hours under the Build condition.

#### Hempstead Road and South Site Driveway

##### *Geometry*

The south site driveway is proposed to intersect Hempstead Road southbound to form a T-shaped intersection under stop-control. The eastbound site driveway approach will provide one shared left-turn/right-turn lane and will be stop-controlled. The northbound Hempstead Road approach will provide one shared left-turn/thru lane. The southbound Hempstead Road approach will provide one shared thru/right-turn lane.

##### *Analysis*

All turning movements at this unsignalized intersection are expected to operate at LOS C or better during both the weekday morning and evening peak hours under the Build condition.

## **CONCLUSIONS**

Based on the analyses herein Langan recommends the following:

- Optimize the signal timing at the New Hempstead Road and Hempstead Road / Summit Park Road intersection.
- Optimize the signal timing at the West Eckerson Road and Hempstead Road / Hempstead Lane intersection.
- Construct a traffic signal at the Brick Church Road and Hempstead Road intersection.

Based on our analyses, we determined the adjacent roadway network has sufficient capacity to accommodate the site-generated trips associated with the proposed residential redevelopment with the recommended intersection improvements identified above. The intersection of Brick Church Road and Union Road is influenced by the existing school during the peak half hour morning drop off period. This condition is unique to the functioning of the school and its traffic impacts. The site's access points are expected to operate at acceptable levels of service during peak traffic hours.

\\langan.com\data\WPW\data5\190091501\Project Data\_Discipline\Traffic\Reports\2023-12 TIS\2023-12 TIS Brick Church.docx

**APPENDIX A**  
**FIGURES**



AERIAL IMAGE FROM GOOGLE EARTH

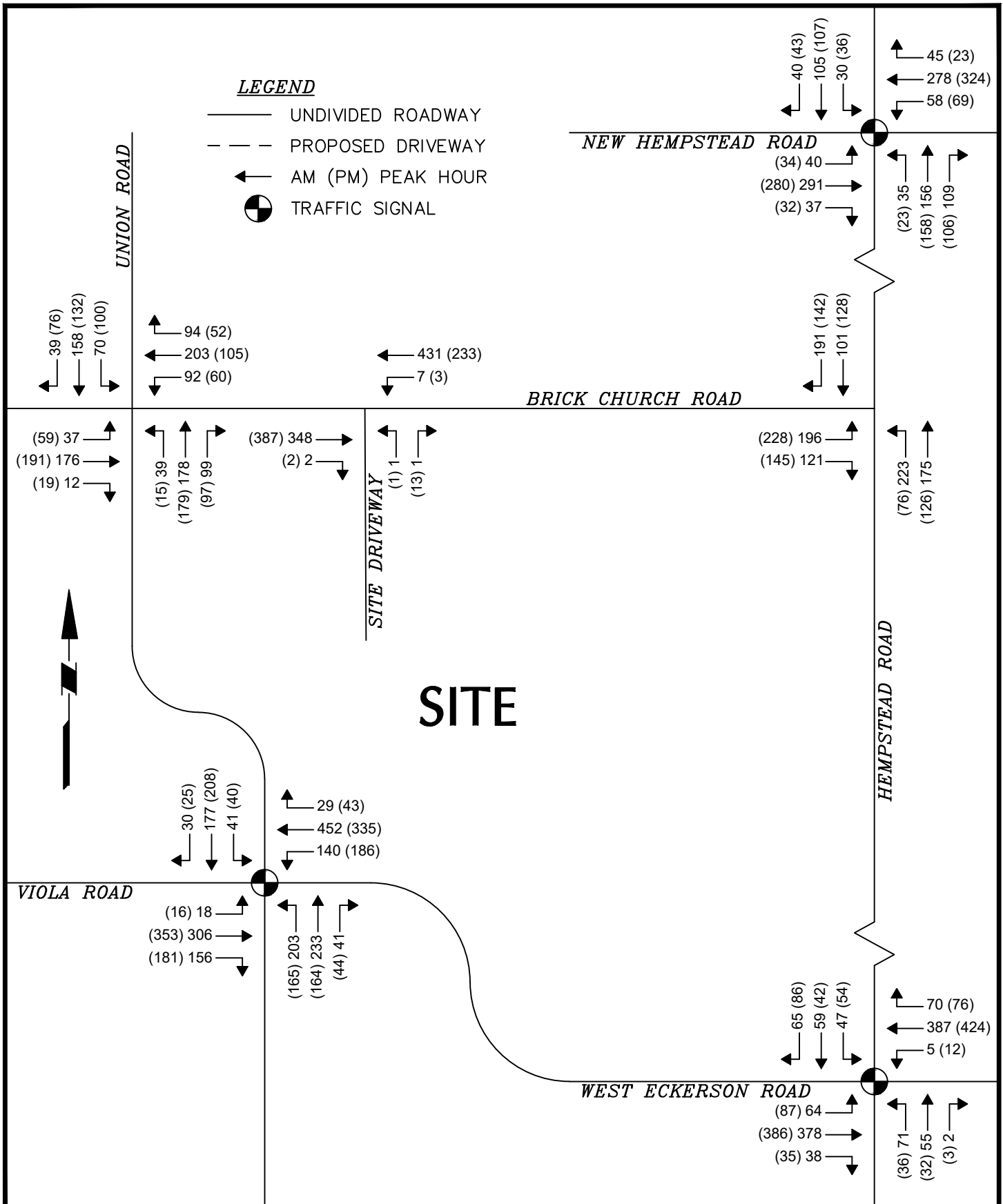
**LANGAN**  
 Langan Engineering, Environmental, Surveying,  
 Landscape Architecture and Geology, D.P.C.  
 One North Broadway, Suite 910  
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Project **NEW YORK  
 COUNTRY CLUB  
 BRICK CHURCH RD**  
 VILLAGE OF NEW HEMPSTEAD  
 ROCKLAND COUNTY NEW YORK

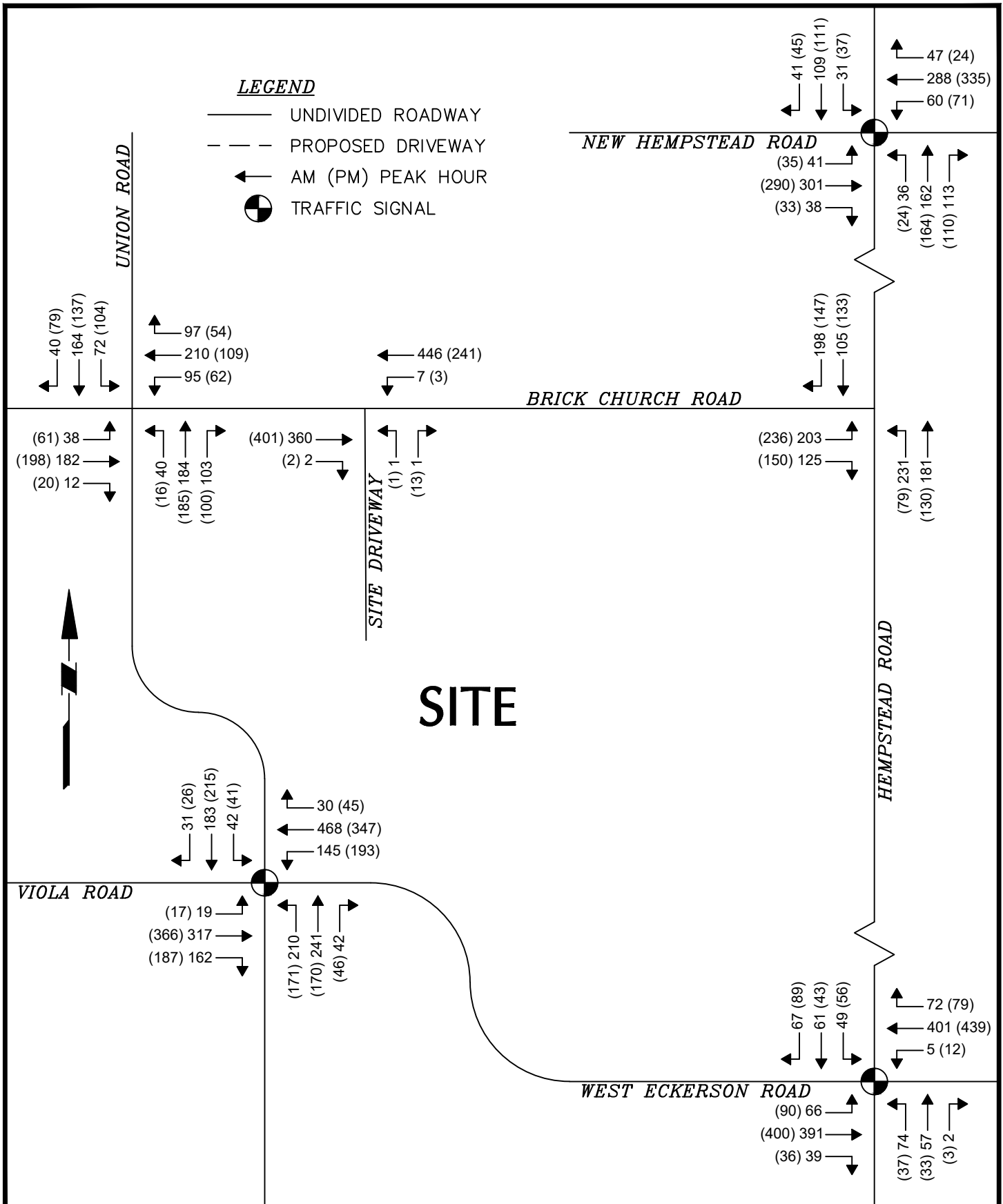
Drawing Title  
**SITE  
 LOCATION  
 MAP**

Project No.  
 190091501  
 Date  
 11/16/2023  
 Drawn By  
 JEG  
 Checked By  
 KAP

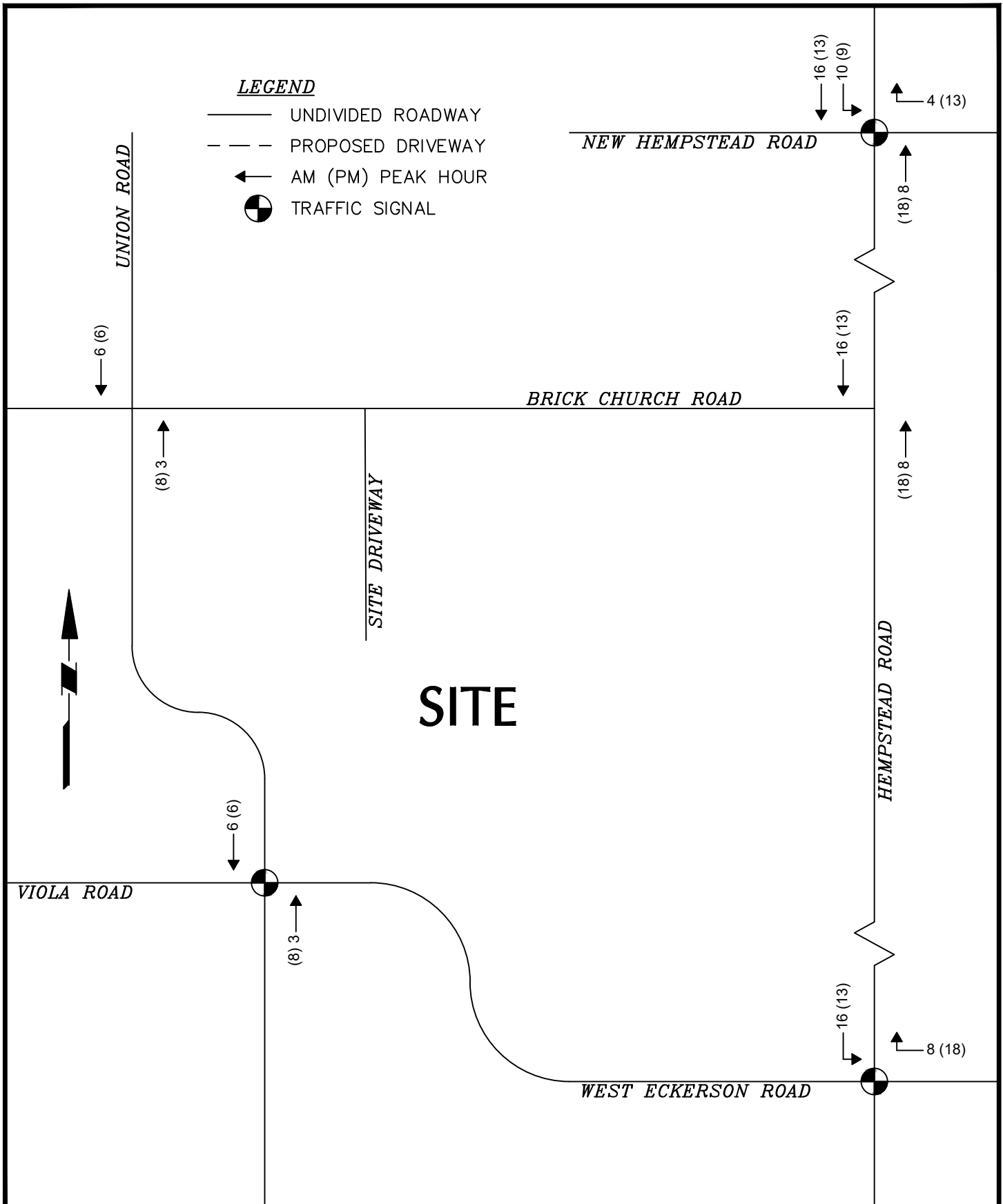
Drawing No.  
**FIGURE  
 1**  
 Sheet 1 of 8



<p>Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. One North Broadway, Suite 910 White Plains, NY 10601 T: 914.323.7400 F: 914.323.7401 www.langan.com</p>	Project	Drawing Title	Project No.	Drawing No.
	<b>NEW YORK COUNTRY CLUB BRICK CHURCH RD</b>	<b>2023 EXISTING TRAFFIC VOLUMES</b>	190091501	<b>FIGURE 2</b>
	VILLAGE OF NEW HEMPSTEAD ROCKLAND COUNTY NEW YORK		Date 11/16/2023	Sheet 2 of 8
			Drawn By JEG	
			Checked By KAP	



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	<b>NEW YORK COUNTRY CLUB BRICK CHURCH RD</b>	<b>2028 BASE TRAFFIC VOLUMES</b>	190091501	<b>FIGURE 3</b>
	VILLAGE OF NEW HEMPSTEAD ROCKLAND COUNTY NEW YORK		Date 11/16/2023	3
			Drawn By JEG	Sheet 3 of 8
			Checked By KAP	



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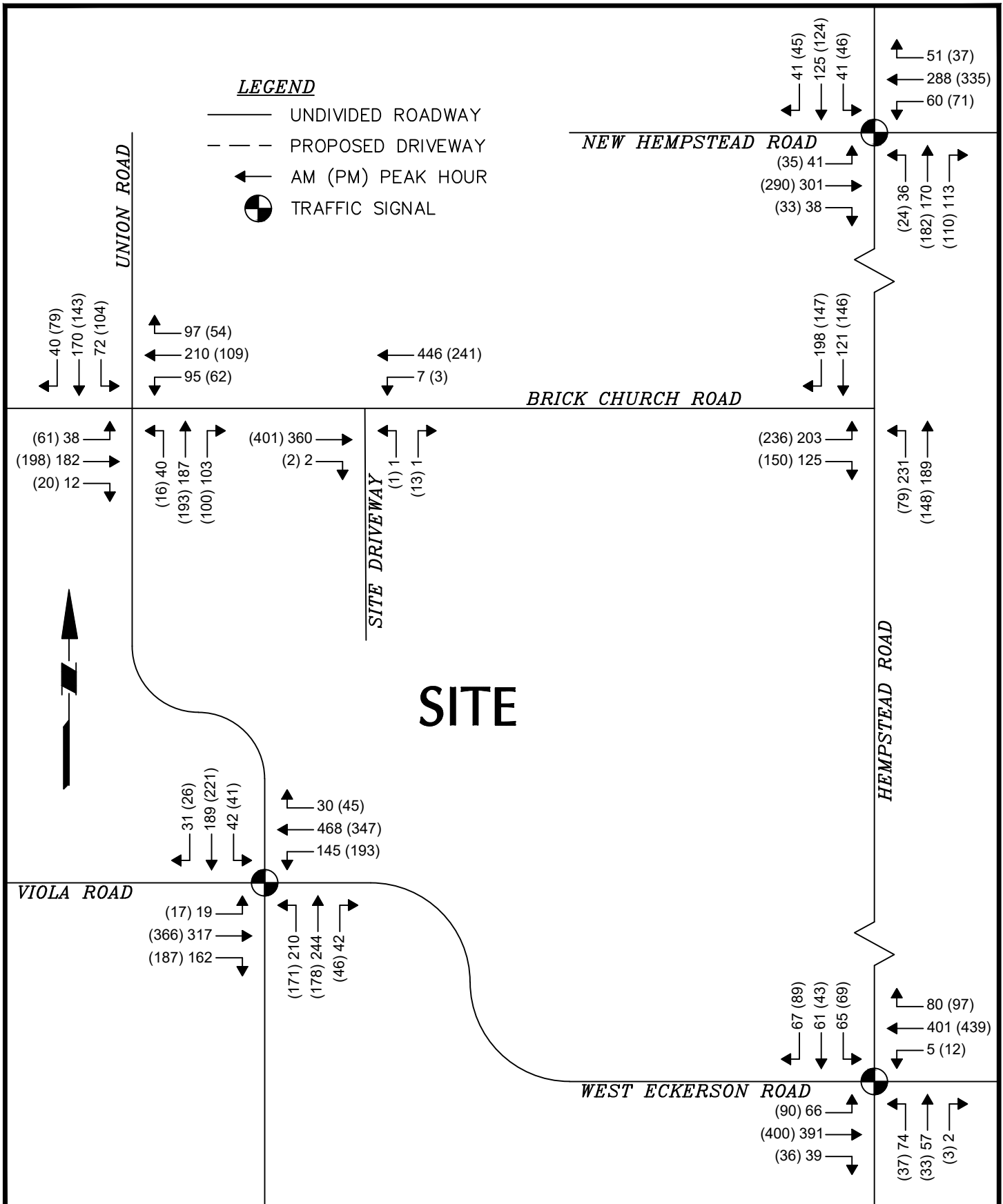
Project **NEW YORK COUNTRY CLUB BRICK CHURCH RD**  
 VILLAGE OF NEW HEMPSTEAD  
 ROCKLAND COUNTY NEW YORK

Drawing Title **ADJACENT DEVELOPMENT TRAFFIC VOLUMES**

Project No. 190091501  
 Date 11/16/2023  
 Drawn By JEG  
 Checked By KAP

Drawing No. **FIGURE 4**  
 Sheet 4 of 8





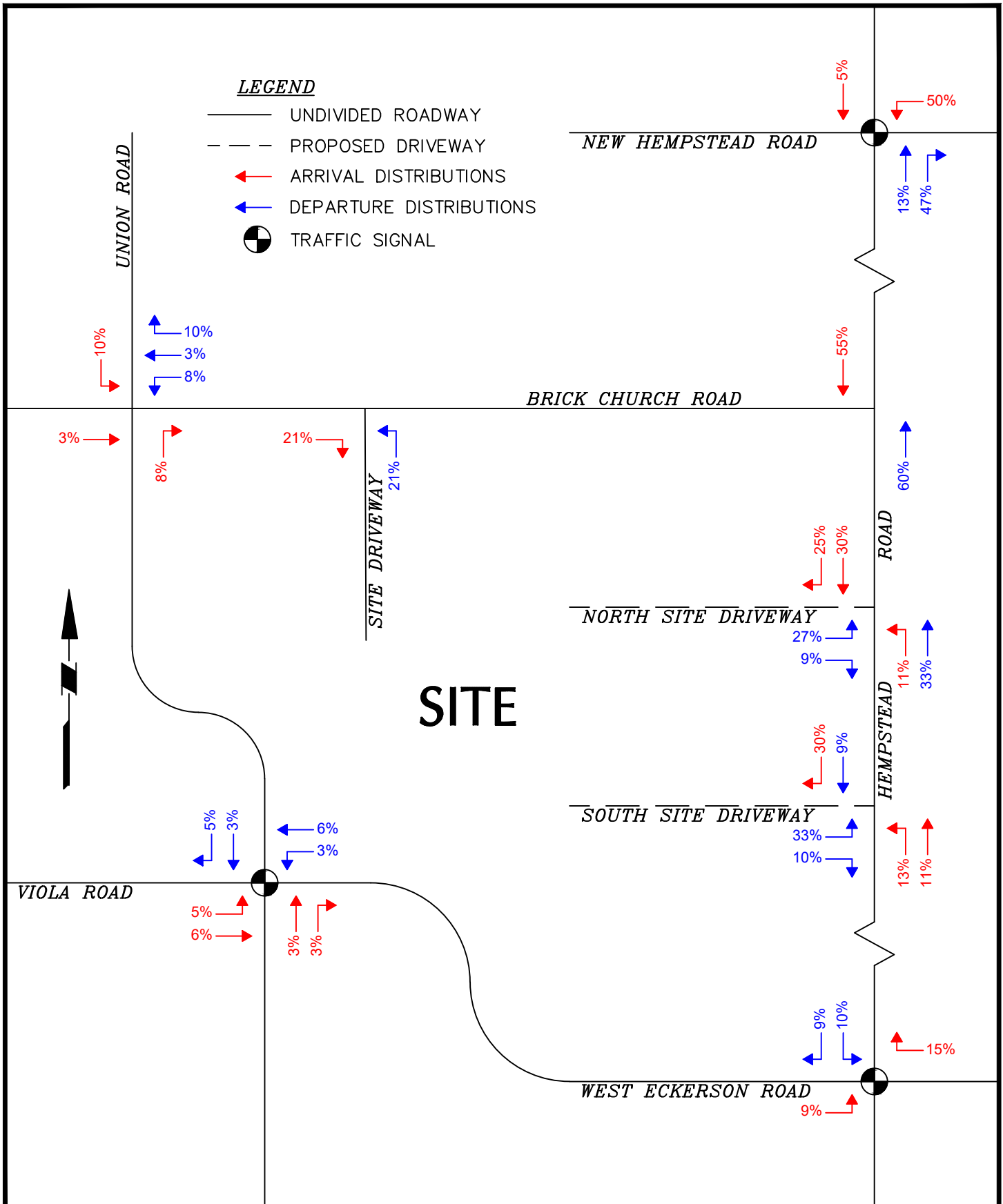
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Project **NEW YORK COUNTRY CLUB BRICK CHURCH RD**  
 VILLAGE OF NEW HEMPSTEAD  
 ROCKLAND COUNTY NEW YORK

Drawing Title **2028 NO-BUILD TRAFFIC VOLUMES**

Project No. 190091501  
 Date 11/16/2023  
 Drawn By JEG  
 Checked By KAP

Drawing No. **FIGURE 5**  
 Sheet 5 of 8



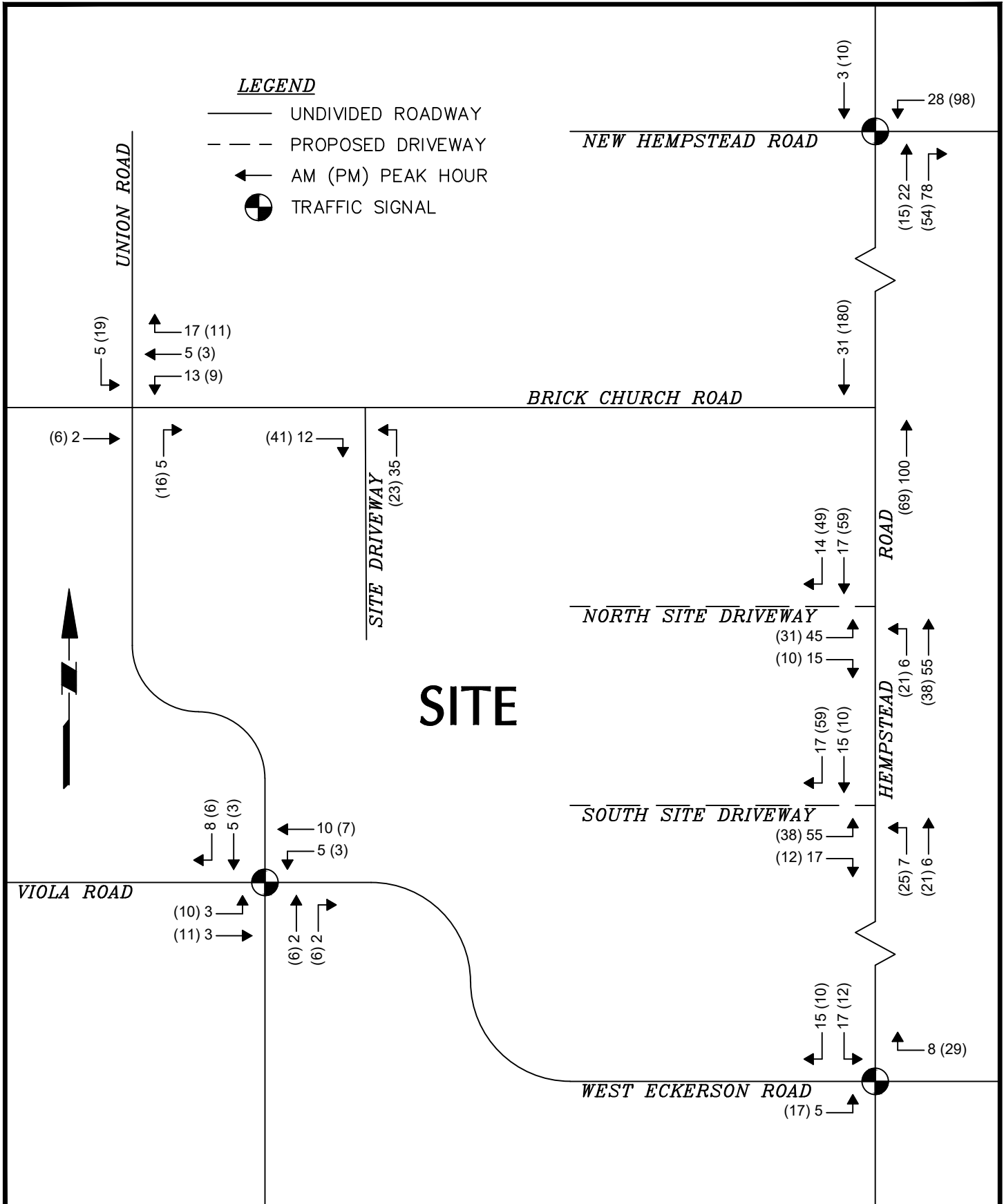
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Project **NEW YORK COUNTRY CLUB**  
**BRICK CHURCH RD**  
 VILLAGE OF NEW HEMPSTEAD  
 ROCKLAND COUNTY NEW YORK

Drawing Title  
**ARRIVAL & DEPARTURE DISTRIBUTIONS**

Project No. 190091501  
 Date 11/16/2023  
 Drawn By JEG  
 Checked By KAP

Drawing No. **FIGURE 6**  
 Sheet 6 of 8



**LEGEND**

- UNDIVIDED ROADWAY
- - - PROPOSED DRIVEWAY
- ← AM (PM) PEAK HOUR
- TRAFFIC SIGNAL

**SITE**

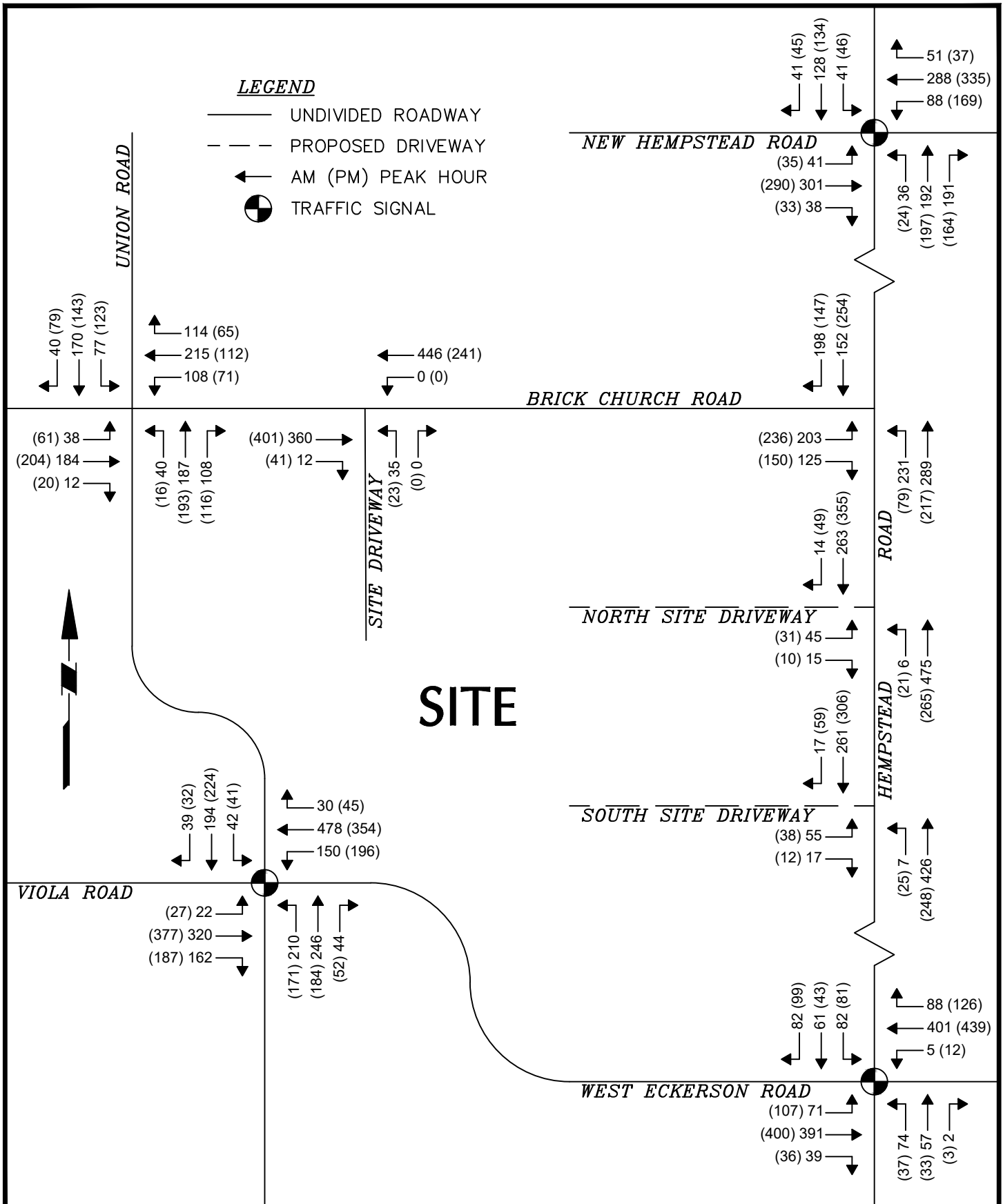
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Project **NEW YORK COUNTRY CLUB BRICK CHURCH RD**  
 VILLAGE OF NEW HEMPSTEAD  
 ROCKLAND COUNTY NEW YORK

Drawing Title **TOTAL SITE-GENERATED TRIPS**

Project No. 190091501  
 Date 11/16/2023  
 Drawn By JEG  
 Checked By KAP

Drawing No. **FIGURE 7**  
 Sheet 7 of 8



<p><b>LANGAN</b> Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. One North Broadway, Suite 910 White Plains, NY 10601 T: 914.323.7400 F: 914.323.7401 www.langan.com</p>	Project	Drawing Title	Project No.	Drawing No.
	<b>NEW YORK COUNTRY CLUB BRICK CHURCH RD</b>	<b>ADJACENT DEVELOPMENT TRAFFIC VOLUMES</b>	190091501	<b>FIGURE 8</b>
	VILLAGE OF NEW HEMPSTEAD ROCKLAND COUNTY NEW YORK		Date 11/16/2023	8
			Drawn By JEG	Sheet 8 of 8
			Checked By KAP	

**APPENDIX B**  
**TRAFFIC COUNTS**



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184 Baker Rd

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
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File Name : 1-NewHempsteadHempstead  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 1

New Hempstead Road & Hempstead Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

Groups Printed- Lights - Trucks - Buses

Start Time	NEW HEMPSTEAD ROAD Eastbound				NEW HEMPSTEAD ROAD Westbound				HEMPSTEAD ROAD Northbound				SUMMIT PARK ROAD Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	7	72	2	81	10	61	4	75	1	10	5	16	5	16	10	31	203
07:15 AM	13	66	2	81	11	67	8	86	3	12	4	19	6	19	9	34	220
07:30 AM	6	72	10	88	21	93	12	126	3	15	15	33	4	20	9	33	280
07:45 AM	9	60	8	77	19	70	12	101	15	42	32	89	5	31	11	47	314
Total	35	270	22	327	61	291	36	388	22	79	56	157	20	86	39	145	1017
08:00 AM	9	66	12	87	18	69	12	99	9	29	24	62	5	28	6	39	287
08:15 AM	6	64	8	78	17	59	9	85	11	39	26	76	6	30	10	46	285
08:30 AM	12	84	5	101	11	64	8	83	7	32	30	69	9	18	9	36	289
08:45 AM	13	77	12	102	12	86	16	114	8	56	29	93	10	29	15	54	363
Total	40	291	37	368	58	278	45	381	35	156	109	300	30	105	40	175	1224
*** BREAK ***																	
02:00 PM	11	80	3	94	13	75	11	99	9	16	26	51	7	16	10	33	277
02:15 PM	8	63	5	76	12	68	7	87	6	25	18	49	5	20	8	33	245
02:30 PM	5	67	4	76	14	80	5	99	5	32	29	66	12	25	7	44	285
02:45 PM	12	71	13	96	19	79	2	100	6	47	35	88	8	35	14	57	341
Total	36	281	25	342	58	302	25	385	26	120	108	254	32	96	39	167	1148
03:00 PM	11	79	9	99	22	84	10	116	6	37	16	59	6	21	10	37	311
03:15 PM	6	63	6	75	14	81	6	101	6	42	26	74	10	26	12	48	298
03:30 PM	7	44	3	54	18	77	4	99	5	27	21	53	5	21	6	32	238
03:45 PM	7	64	2	73	16	72	3	91	8	31	24	63	10	29	13	52	279
Total	31	250	20	301	70	314	23	407	25	137	87	249	31	97	41	169	1126
04:00 PM	12	53	12	77	19	82	2	103	5	32	27	64	14	29	14	57	301
04:15 PM	11	54	12	77	19	64	8	91	7	38	24	69	13	20	13	46	283
04:30 PM	5	66	7	78	13	77	7	97	8	24	13	45	11	25	11	47	267
04:45 PM	13	57	11	81	18	83	8	109	8	26	19	53	10	30	7	47	290
Total	41	230	42	313	69	306	25	400	28	120	83	231	48	104	45	197	1141
05:00 PM	13	77	7	97	13	77	12	102	12	28	17	57	19	34	16	69	325
05:15 PM	8	72	13	93	15	103	4	122	3	22	25	50	5	29	12	46	311
05:30 PM	15	68	9	92	22	92	7	121	4	10	16	30	5	22	10	37	280



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Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 2

New Hempstead Road & Hempstead Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

Groups Printed- Lights - Trucks - Buses

Start Time	NEW HEMPSTEAD ROAD Eastbound				NEW HEMPSTEAD ROAD Westbound				HEMPSTEAD ROAD Northbound				SUMMIT PARK ROAD Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
05:45 PM	9	62	4	75	17	94	8	119	7	29	21	57	5	21	13	39	290
Total	45	279	33	357	67	366	31	464	26	89	79	194	34	106	51	191	1206
06:00 PM	10	68	5	83	15	91	5	111	6	27	23	56	8	26	8	42	292
06:15 PM	8	62	8	78	16	88	2	106	3	28	21	52	7	26	9	42	278
06:30 PM	13	89	9	111	20	86	4	110	4	32	15	51	1	31	7	39	311
06:45 PM	17	69	3	89	9	84	5	98	4	19	19	42	2	27	9	38	267
Total	48	288	25	361	60	349	16	425	17	106	78	201	18	110	33	161	1148
Grand Total	276	1889	204	2369	443	2206	201	2850	179	807	600	1586	213	704	288	1205	8010
Apprch %	11.7	79.7	8.6		15.5	77.4	7.1		11.3	50.9	37.8		17.7	58.4	23.9		
Total %	3.4	23.6	2.5	29.6	5.5	27.5	2.5	35.6	2.2	10.1	7.5	19.8	2.7	8.8	3.6	15	
Lights	239	1745	174	2158	413	2055	184	2652	156	745	569	1470	194	646	261	1101	7381
% Lights	86.6	92.4	85.3	91.1	93.2	93.2	91.5	93.1	87.2	92.3	94.8	92.7	91.1	91.8	90.6	91.4	92.1
Trucks	9	85	2	96	5	72	5	82	7	8	5	20	6	9	4	19	217
% Trucks	3.3	4.5	1	4.1	1.1	3.3	2.5	2.9	3.9	1	0.8	1.3	2.8	1.3	1.4	1.6	2.7
Buses	28	59	28	115	25	79	12	116	16	54	26	96	13	49	23	85	412
% Buses	10.1	3.1	13.7	4.9	5.6	3.6	6	4.1	8.9	6.7	4.3	6.1	6.1	7	8	7.1	5.1



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File Name : 1-NewHempsteadHempstead  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 3

New Hempstead Road & Hempstead Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

Start Time	NEW HEMPSTEAD ROAD Eastbound				NEW HEMPSTEAD ROAD Westbound				HEMPSTEAD ROAD Northbound				SUMMIT PARK ROAD Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	9	66	12	87	18	69	12	99	9	29	24	62	5	28	6	39	287
08:15 AM	6	64	8	78	17	59	9	85	11	39	26	76	6	30	10	46	285
08:30 AM	12	84	5	101	11	64	8	83	7	32	30	69	9	18	9	36	289
08:45 AM	13	77	12	102	12	86	16	114	8	56	29	93	10	29	15	54	363
Total Volume	40	291	37	368	58	278	45	381	35	156	109	300	30	105	40	175	1224
% App. Total	10.9	79.1	10.1		15.2	73	11.8		11.7	52	36.3		17.1	60	22.9		
PHF	.769	.866	.771	.902	.806	.808	.703	.836	.795	.696	.908	.806	.750	.875	.667	.810	.843
Lights	33	267	28	328	51	241	42	334	31	148	106	285	26	93	33	152	1099
% Lights	82.5	91.8	75.7	89.1	87.9	86.7	93.3	87.7	88.6	94.9	97.2	95.0	86.7	88.6	82.5	86.9	89.8
Trucks	1	13	0	14	0	12	0	12	0	3	0	3	2	0	1	3	32
% Trucks	2.5	4.5	0	3.8	0	4.3	0	3.1	0	1.9	0	1.0	6.7	0	2.5	1.7	2.6
Buses	6	11	9	26	7	25	3	35	4	5	3	12	2	12	6	20	93
% Buses	15.0	3.8	24.3	7.1	12.1	9.0	6.7	9.2	11.4	3.2	2.8	4.0	6.7	11.4	15.0	11.4	7.6
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:30 PM																	
02:30 PM	5	67	4	76	14	80	5	99	5	32	29	66	12	25	7	44	285
02:45 PM	12	71	13	96	19	79	2	100	6	47	35	88	8	35	14	57	341
03:00 PM	11	79	9	99	22	84	10	116	6	37	16	59	6	21	10	37	311
03:15 PM	6	63	6	75	14	81	6	101	6	42	26	74	10	26	12	48	298
Total Volume	34	280	32	346	69	324	23	416	23	158	106	287	36	107	43	186	1235
% App. Total	9.8	80.9	9.2		16.6	77.9	5.5		8	55.1	36.9		19.4	57.5	23.1		
PHF	.708	.886	.615	.874	.784	.964	.575	.897	.958	.840	.757	.815	.750	.764	.768	.816	.905
Lights	31	263	29	323	63	301	23	387	21	139	101	261	31	97	42	170	1141
% Lights	91.2	93.9	90.6	93.4	91.3	92.9	100	93.0	91.3	88.0	95.3	90.9	86.1	90.7	97.7	91.4	92.4
Trucks	1	9	0	10	0	14	0	14	1	3	1	5	2	2	0	4	33
% Trucks	2.9	3.2	0	2.9	0	4.3	0	3.4	4.3	1.9	0.9	1.7	5.6	1.9	0	2.2	2.7
Buses	2	8	3	13	6	9	0	15	1	16	4	21	3	8	1	12	61
% Buses	5.9	2.9	9.4	3.8	8.7	2.8	0	3.6	4.3	10.1	3.8	7.3	8.3	7.5	2.3	6.5	4.9





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File Name : 2-ViolaUnion  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 1

Viola Road & Union Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

Groups Printed- Lights - Trucks - Buses

Start Time	VIOLA ROAD Eastbound				VIOLA ROAD Westbound				UNION ROAD Northbound				UNION ROAD Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	3	50	27	80	11	66	8	85	23	30	7	60	8	27	3	38	263
07:15 AM	2	44	42	88	21	106	14	141	37	31	11	79	6	28	4	38	346
07:30 AM	1	79	39	119	30	112	17	159	61	45	4	110	1	30	7	38	426
07:45 AM	4	69	49	122	45	132	8	185	61	80	5	146	5	36	8	49	502
Total	10	242	157	409	107	416	47	570	182	186	27	395	20	121	22	163	1537
08:00 AM	6	91	25	122	41	131	7	179	58	56	9	123	9	32	7	48	472
08:15 AM	6	64	34	104	24	95	8	127	50	47	17	114	10	60	6	76	421
08:30 AM	2	82	48	132	30	94	6	130	34	50	10	94	17	49	9	75	431
08:45 AM	9	72	54	135	43	79	12	134	55	59	17	131	7	57	7	71	471
Total	23	309	161	493	138	399	33	570	197	212	53	462	43	198	29	270	1795
*** BREAK ***																	
02:00 PM	5	44	47	96	36	82	6	124	52	46	18	116	12	40	3	55	391
02:15 PM	6	40	41	87	36	75	8	119	48	48	11	107	4	53	4	61	374
02:30 PM	2	77	57	136	41	80	5	126	44	44	10	98	2	45	9	56	416
02:45 PM	3	69	42	114	40	78	10	128	38	47	17	102	4	39	2	45	389
Total	16	230	187	433	153	315	29	497	182	185	56	423	22	177	18	217	1570
03:00 PM	4	91	45	140	53	95	7	155	33	37	6	76	9	35	5	49	420
03:15 PM	5	64	42	111	42	94	8	144	38	20	13	71	10	27	2	39	365
03:30 PM	7	80	42	129	41	89	7	137	51	54	14	119	9	36	8	53	438
03:45 PM	4	63	46	113	46	99	8	153	37	45	9	91	7	41	3	51	408
Total	20	298	175	493	182	377	30	589	159	156	42	357	35	139	18	192	1631
04:00 PM	6	59	41	106	37	74	4	115	55	43	7	105	6	43	3	52	378
04:15 PM	3	86	39	128	50	73	9	132	48	37	11	96	11	47	5	63	419
04:30 PM	4	70	46	120	38	72	3	113	38	43	16	97	6	43	3	52	382
04:45 PM	6	86	53	145	45	67	11	123	27	38	11	76	16	43	4	63	407
Total	19	301	179	499	170	286	27	483	168	161	45	374	39	176	15	230	1586
05:00 PM	4	95	45	144	52	80	5	137	42	33	8	83	11	56	7	74	438
05:15 PM	4	90	47	141	35	88	14	137	42	47	12	101	9	57	5	71	450
05:30 PM	5	84	42	131	57	79	10	146	44	38	13	95	11	59	4	74	446



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Viola Road & Union Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

File Name : 2-ViolaUnion  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 2

Groups Printed- Lights - Trucks - Buses

Start Time	VIOLA ROAD Eastbound				VIOLA ROAD Westbound				UNION ROAD Northbound				UNION ROAD Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
05:45 PM	3	84	47	134	42	88	14	144	37	46	11	94	9	36	9	54	426
Total	16	353	181	550	186	335	43	564	165	164	44	373	40	208	25	273	1760
06:00 PM	2	64	47	113	38	98	8	144	44	47	10	101	9	43	4	56	414
06:15 PM	3	89	34	126	47	90	7	144	41	49	11	101	6	56	5	67	438
06:30 PM	3	78	48	129	42	121	6	169	40	37	9	86	5	53	7	65	449
06:45 PM	6	74	43	123	49	103	5	157	48	49	10	107	8	37	8	53	440
Total	14	305	172	491	176	412	26	614	173	182	40	395	28	189	24	241	1741
Grand Total	118	2038	1212	3368	1112	2540	235	3887	1226	1246	307	2779	227	1208	151	1586	11620
Aprch %	3.5	60.5	36		28.6	65.3	6		44.1	44.8	11		14.3	76.2	9.5		
Total %	1	17.5	10.4	29	9.6	21.9	2	33.5	10.6	10.7	2.6	23.9	2	10.4	1.3	13.6	
Lights	99	1840	1054	2993	1022	2329	214	3565	1063	1092	278	2433	193	1028	126	1347	10338
% Lights	83.9	90.3	87	88.9	91.9	91.7	91.1	91.7	86.7	87.6	90.6	87.5	85	85.1	83.4	84.9	89
Trucks	2	61	28	91	18	65	7	90	30	18	5	53	4	25	1	30	264
% Trucks	1.7	3	2.3	2.7	1.6	2.6	3	2.3	2.4	1.4	1.6	1.9	1.8	2.1	0.7	1.9	2.3
Buses	17	137	130	284	72	146	14	232	133	136	24	293	30	155	24	209	1018
% Buses	14.4	6.7	10.7	8.4	6.5	5.7	6	6	10.8	10.9	7.8	10.5	13.2	12.8	15.9	13.2	8.8



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File Name : 2-ViolaUnion  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 3

Viola Road & Union Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

Start Time	VIOLA ROAD Eastbound				VIOLA ROAD Westbound				UNION ROAD Northbound				UNION ROAD Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	4	69	49	122	45	132	8	185	61	80	5	146	5	36	8	49	502
08:00 AM	6	91	25	122	41	131	7	179	58	56	9	123	9	32	7	48	472
08:15 AM	6	64	34	104	24	95	8	127	50	47	17	114	10	60	6	76	421
08:30 AM	2	82	48	132	30	94	6	130	34	50	10	94	17	49	9	75	431
Total Volume	18	306	156	480	140	452	29	621	203	233	41	477	41	177	30	248	1826
% App. Total	3.8	63.8	32.5		22.5	72.8	4.7		42.6	48.8	8.6		16.5	71.4	12.1		
PHF	.750	.841	.796	.909	.778	.856	.906	.839	.832	.728	.603	.817	.603	.738	.833	.816	.909
Lights	10	289	121	420	129	421	27	577	174	208	36	418	34	148	25	207	1622
% Lights	55.6	94.4	77.6	87.5	92.1	93.1	93.1	92.9	85.7	89.3	87.8	87.6	82.9	83.6	83.3	83.5	88.8
Trucks	0	6	3	9	7	8	0	15	6	6	1	13	0	3	0	3	40
% Trucks	0	2.0	1.9	1.9	5.0	1.8	0	2.4	3.0	2.6	2.4	2.7	0	1.7	0	1.2	2.2
Buses	8	11	32	51	4	23	2	29	23	19	4	46	7	26	5	38	164
% Buses	44.4	3.6	20.5	10.6	2.9	5.1	6.9	4.7	11.3	8.2	9.8	9.6	17.1	14.7	16.7	15.3	9.0
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	4	95	45	144	52	80	5	137	42	33	8	83	11	56	7	74	438
05:15 PM	4	90	47	141	35	88	14	137	42	47	12	101	9	57	5	71	450
05:30 PM	5	84	42	131	57	79	10	146	44	38	13	95	11	59	4	74	446
05:45 PM	3	84	47	134	42	88	14	144	37	46	11	94	9	36	9	54	426
Total Volume	16	353	181	550	186	335	43	564	165	164	44	373	40	208	25	273	1760
% App. Total	2.9	64.2	32.9		33	59.4	7.6		44.2	44	11.8		14.7	76.2	9.2		
PHF	.800	.929	.963	.955	.816	.952	.768	.966	.938	.872	.846	.923	.909	.881	.694	.922	.978
Lights	15	328	171	514	171	314	41	526	149	155	42	346	37	169	22	228	1614
% Lights	93.8	92.9	94.5	93.5	91.9	93.7	95.3	93.3	90.3	94.5	95.5	92.8	92.5	81.3	88.0	83.5	91.7
Trucks	1	10	1	12	1	8	1	10	1	0	1	2	0	5	1	6	30
% Trucks	6.3	2.8	0.6	2.2	0.5	2.4	2.3	1.8	0.6	0	2.3	0.5	0	2.4	4.0	2.2	1.7
Buses	0	15	9	24	14	13	1	28	15	9	1	25	3	34	2	39	116
% Buses	0	4.2	5.0	4.4	7.5	3.9	2.3	5.0	9.1	5.5	2.3	6.7	7.5	16.3	8.0	14.3	6.6



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West Eckerson Road & Hempstead Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

File Name : 3-WestEckersonHempstead  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	WEST ECKERSON ROAD Eastbound				WEST ECKERSON ROAD Westbound				HEMPSTEAD ROAD Northbound				HEMPSTEAD ROAD Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	8	66	4	78	0	71	12	83	4	4	4	12	4	1	5	10	183
07:15 AM	11	74	5	90	3	107	13	123	5	6	0	11	8	4	8	20	244
07:30 AM	18	75	8	101	1	121	9	131	18	13	1	32	3	2	13	18	282
07:45 AM	17	71	7	95	2	113	20	135	29	15	0	44	10	7	22	39	313
Total	54	286	24	364	6	412	54	472	56	38	5	99	25	14	48	87	1022
08:00 AM	18	114	8	140	1	96	16	113	20	21	1	42	12	14	11	37	332
08:15 AM	18	85	8	111	2	90	18	110	9	11	1	21	15	19	20	54	296
08:30 AM	11	108	15	134	0	88	16	104	13	8	0	21	10	19	12	41	300
08:45 AM	26	91	11	128	1	81	14	96	10	8	0	18	10	15	16	41	283
Total	73	398	42	513	4	355	64	423	52	48	2	102	47	67	59	173	1211
*** BREAK ***																	
02:00 PM	17	97	9	123	0	86	26	112	13	7	2	22	10	6	14	30	287
02:15 PM	20	106	8	134	3	97	20	120	9	2	1	12	21	9	15	45	311
02:30 PM	20	84	12	116	2	104	6	112	17	8	3	28	12	18	22	52	308
02:45 PM	23	93	4	120	2	84	18	104	4	6	0	10	7	19	21	47	281
Total	80	380	33	493	7	371	70	448	43	23	6	72	50	52	72	174	1187
03:00 PM	16	113	9	138	1	113	9	123	9	12	0	21	9	8	25	42	324
03:15 PM	15	88	11	114	1	107	14	122	15	5	1	21	8	8	30	46	303
03:30 PM	23	111	11	145	4	113	12	129	7	3	2	12	13	6	18	37	323
03:45 PM	17	80	9	106	1	97	11	109	12	10	2	24	15	11	16	42	281
Total	71	392	40	503	7	430	46	483	43	30	5	78	45	33	89	167	1231
04:00 PM	13	80	8	101	2	87	19	108	13	1	2	16	11	10	18	39	264
04:15 PM	11	89	7	107	1	92	12	105	10	4	1	15	13	11	26	50	277
04:30 PM	23	99	8	130	3	90	9	102	6	6	1	13	19	11	21	51	296
04:45 PM	29	93	11	133	4	109	16	129	10	6	1	17	8	19	21	48	327
Total	76	361	34	471	10	378	56	444	39	17	5	61	51	51	86	188	1164
05:00 PM	21	93	6	120	5	92	17	114	10	13	6	29	15	13	22	50	313
05:15 PM	14	101	5	120	2	101	16	119	15	6	1	22	16	11	15	42	303
05:30 PM	23	94	12	129	2	100	19	121	11	10	2	23	10	9	30	49	322



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File Name : 3-WestEckersonHempstead  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 2

West Eckerson Road & Hempstead Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

Groups Printed- Lights - Trucks - Buses

Start Time	WEST ECKERSON ROAD Eastbound				WEST ECKERSON ROAD Westbound				HEMPSTEAD ROAD Northbound				HEMPSTEAD ROAD Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
05:45 PM	21	106	6	133	4	113	13	130	7	10	0	17	13	16	19	48	328
Total	79	394	29	502	13	406	65	484	43	39	9	91	54	49	86	189	1266
06:00 PM	25	87	6	118	3	96	26	125	9	7	2	18	11	7	25	43	304
06:15 PM	21	93	8	122	3	102	16	121	5	8	0	13	17	10	22	49	305
06:30 PM	20	100	15	135	2	113	21	136	15	7	1	23	13	9	20	42	336
06:45 PM	25	80	5	110	1	104	17	122	11	7	1	19	8	15	24	47	298
Total	91	360	34	485	9	415	80	504	40	29	4	73	49	41	91	181	1243
Grand Total	524	2571	236	3331	56	2767	435	3258	316	224	36	576	321	307	531	1159	8324
Aprch %	15.7	77.2	7.1		1.7	84.9	13.4		54.9	38.9	6.2		27.7	26.5	45.8		
Total %	6.3	30.9	2.8	40	0.7	33.2	5.2	39.1	3.8	2.7	0.4	6.9	3.9	3.7	6.4	13.9	
Lights	484	2376	216	3076	56	2565	415	3036	280	198	34	512	299	277	498	1074	7698
% Lights	92.4	92.4	91.5	92.3	100	92.7	95.4	93.2	88.6	88.4	94.4	88.9	93.1	90.2	93.8	92.7	92.5
Trucks	9	65	1	75	0	78	9	87	2	5	1	8	10	4	6	20	190
% Trucks	1.7	2.5	0.4	2.3	0	2.8	2.1	2.7	0.6	2.2	2.8	1.4	3.1	1.3	1.1	1.7	2.3
Buses	31	130	19	180	0	124	11	135	34	21	1	56	12	26	27	65	436
% Buses	5.9	5.1	8.1	5.4	0	4.5	2.5	4.1	10.8	9.4	2.8	9.7	3.7	8.5	5.1	5.6	5.2



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File Name : 3-WestEckersonHempstead  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 3

West Eckerson Road & Hempstead Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

Start Time	WEST ECKERSON ROAD Eastbound				WEST ECKERSON ROAD Westbound				HEMPSTEAD ROAD Northbound				HEMPSTEAD ROAD Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	17	71	7	95	2	113	20	135	29	15	0	44	10	7	22	39	313
08:00 AM	18	114	8	140	1	96	16	113	20	21	1	42	12	14	11	37	332
08:15 AM	18	85	8	111	2	90	18	110	9	11	1	21	15	19	20	54	296
08:30 AM	11	108	15	134	0	88	16	104	13	8	0	21	10	19	12	41	300
Total Volume	64	378	38	480	5	387	70	462	71	55	2	128	47	59	65	171	1241
% App. Total	13.3	78.8	7.9		1.1	83.8	15.2		55.5	43	1.6		27.5	34.5	38		
PHF	.889	.829	.633	.857	.625	.856	.875	.856	.612	.655	.500	.727	.783	.776	.739	.792	.934
Lights	61	354	34	449	5	359	61	425	66	51	2	119	45	57	62	164	1157
% Lights	95.3	93.7	89.5	93.5	100	92.8	87.1	92.0	93.0	92.7	100	93.0	95.7	96.6	95.4	95.9	93.2
Trucks	0	6	0	6	0	13	3	16	0	1	0	1	0	0	0	0	23
% Trucks	0	1.6	0	1.3	0	3.4	4.3	3.5	0	1.8	0	0.8	0	0	0	0	1.9
Buses	3	18	4	25	0	15	6	21	5	3	0	8	2	2	3	7	61
% Buses	4.7	4.8	10.5	5.2	0	3.9	8.6	4.5	7.0	5.5	0	6.3	4.3	3.4	4.6	4.1	4.9
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:45 PM																	
05:45 PM	21	106	6	133	4	113	13	130	7	10	0	17	13	16	19	48	328
06:00 PM	25	87	6	118	3	96	26	125	9	7	2	18	11	7	25	43	304
06:15 PM	21	93	8	122	3	102	16	121	5	8	0	13	17	10	22	49	305
06:30 PM	20	100	15	135	2	113	21	136	15	7	1	23	13	9	20	42	336
Total Volume	87	386	35	508	12	424	76	512	36	32	3	71	54	42	86	182	1273
% App. Total	17.1	76	6.9		2.3	82.8	14.8		50.7	45.1	4.2		29.7	23.1	47.3		
PHF	.870	.910	.583	.941	.750	.938	.731	.941	.600	.800	.375	.772	.794	.656	.860	.929	.947
Lights	82	365	32	479	12	414	75	501	36	32	3	71	49	42	80	171	1222
% Lights	94.3	94.6	91.4	94.3	100	97.6	98.7	97.9	100	100	100	100	90.7	100	93.0	94.0	96.0
Trucks	1	9	1	11	0	5	0	5	0	0	0	0	2	0	2	4	20
% Trucks	1.1	2.3	2.9	2.2	0	1.2	0	1.0	0	0	0	0	3.7	0	2.3	2.2	1.6
Buses	4	12	2	18	0	5	1	6	0	0	0	0	3	0	4	7	31
% Buses	4.6	3.1	5.7	3.5	0	1.2	1.3	1.2	0	0	0	0	5.6	0	4.7	3.8	2.4



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Brick Church Road & Union Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

File Name : 4-BrickChurchUnion  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	BRICK CHURCH ROAD Eastbound				BRICK CHURCH ROAD Westbound				UNION ROAD Northbound				UNION ROAD Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	15	9	2	26	13	11	7	31	2	36	6	44	7	33	9	49	150
07:15 AM	10	13	1	24	17	11	12	40	3	40	4	47	9	35	11	55	166
07:30 AM	21	20	3	44	39	27	14	80	2	53	26	81	11	37	10	58	263
07:45 AM	5	37	3	45	24	73	28	125	16	52	25	93	10	26	8	44	307
Total	51	79	9	139	93	122	61	276	23	181	61	265	37	131	38	206	886
08:00 AM	10	48	3	61	25	55	21	101	14	43	24	81	22	48	15	85	328
08:15 AM	6	47	4	57	32	39	25	96	4	47	19	70	19	45	11	75	298
08:30 AM	16	44	2	62	11	36	20	67	5	36	31	72	19	39	5	63	264
08:45 AM	16	58	4	78	18	41	16	75	4	47	18	69	11	35	9	55	277
Total	48	197	13	258	86	171	82	339	27	173	92	292	71	167	40	278	1167
*** BREAK ***																	
02:00 PM	14	53	2	69	10	28	16	54	4	59	39	102	13	31	23	67	292
02:15 PM	15	36	7	58	21	23	11	55	2	54	16	72	18	42	17	77	262
02:30 PM	17	53	4	74	13	22	12	47	6	32	22	60	40	33	21	94	275
02:45 PM	13	49	6	68	16	32	13	61	3	34	20	57	29	26	15	70	256
Total	59	191	19	269	60	105	52	217	15	179	97	291	100	132	76	308	1085
03:00 PM	16	32	3	51	20	33	9	62	6	52	24	82	25	30	10	65	260
03:15 PM	12	35	4	51	17	36	9	62	2	27	15	44	22	30	4	56	213
03:30 PM	8	50	0	58	18	26	10	54	7	39	19	65	7	29	14	50	227
03:45 PM	12	41	2	55	11	41	10	62	3	35	16	54	19	36	10	65	236
Total	48	158	9	215	66	136	38	240	18	153	74	245	73	125	38	236	936
04:00 PM	11	50	2	63	20	42	11	73	2	33	20	55	17	36	13	66	257
04:15 PM	21	60	7	88	10	30	8	48	9	33	17	59	14	42	13	69	264
04:30 PM	12	30	2	44	12	22	11	45	4	40	16	60	18	40	7	65	214
04:45 PM	20	34	2	56	14	31	13	58	7	31	21	59	20	38	15	73	246
Total	64	174	13	251	56	125	43	224	22	137	74	233	69	156	48	273	981
05:00 PM	13	37	3	53	23	38	11	72	2	29	17	48	26	52	10	88	261
05:15 PM	15	57	5	77	8	24	19	51	1	44	12	57	25	41	14	80	265
05:30 PM	12	30	1	43	19	28	16	63	1	40	11	52	26	50	17	93	251



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Brick Church Road & Union Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

File Name : 4-BrickChurchUnion  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 2

Groups Printed- Lights - Trucks - Buses

Start Time	BRICK CHURCH ROAD Eastbound				BRICK CHURCH ROAD Westbound				UNION ROAD Northbound				UNION ROAD Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
05:45 PM	20	44	2	66	13	18	21	52	4	34	13	51	18	52	6	76	245
Total	60	168	11	239	63	108	67	238	8	147	53	208	95	195	47	337	1022
06:00 PM	16	32	1	49	10	31	25	66	4	52	14	70	28	40	10	78	263
06:15 PM	16	42	4	62	21	33	17	71	1	41	20	62	20	40	16	76	271
06:30 PM	16	41	3	60	11	25	19	55	3	34	18	55	21	60	10	91	261
06:45 PM	14	47	0	61	19	21	17	57	1	55	16	72	18	34	11	63	253
Total	62	162	8	232	61	110	78	249	9	182	68	259	87	174	47	308	1048
Grand Total	392	1129	82	1603	485	877	421	1783	122	1152	519	1793	532	1080	334	1946	7125
Apprch %	24.5	70.4	5.1		27.2	49.2	23.6		6.8	64.2	28.9		27.3	55.5	17.2		
Total %	5.5	15.8	1.2	22.5	6.8	12.3	5.9	25	1.7	16.2	7.3	25.2	7.5	15.2	4.7	27.3	
Lights	347	1047	74	1468	419	795	382	1596	104	1028	454	1586	486	955	315	1756	6406
% Lights	88.5	92.7	90.2	91.6	86.4	90.6	90.7	89.5	85.2	89.2	87.5	88.5	91.4	88.4	94.3	90.2	89.9
Trucks	17	20	4	41	4	21	6	31	3	23	6	32	5	23	4	32	136
% Trucks	4.3	1.8	4.9	2.6	0.8	2.4	1.4	1.7	2.5	2	1.2	1.8	0.9	2.1	1.2	1.6	1.9
Buses	28	62	4	94	62	61	33	156	15	101	59	175	41	102	15	158	583
% Buses	7.1	5.5	4.9	5.9	12.8	7	7.8	8.7	12.3	8.8	11.4	9.8	7.7	9.4	4.5	8.1	8.2





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184 Baker Rd

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
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File Name : 4-BrickChurchUnion  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 3

Brick Church Road & Union Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

Start Time	BRICK CHURCH ROAD Eastbound				BRICK CHURCH ROAD Westbound				UNION ROAD Northbound				UNION ROAD Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	5	37	3	45	24	73	28	125	16	52	25	93	10	26	8	44	307
08:00 AM	10	48	3	61	25	55	21	101	14	43	24	81	22	48	15	85	328
08:15 AM	6	47	4	57	32	39	25	96	4	47	19	70	19	45	11	75	298
08:30 AM	16	44	2	62	11	36	20	67	5	36	31	72	19	39	5	63	264
Total Volume	37	176	12	225	92	203	94	389	39	178	99	316	70	158	39	267	1197
% App. Total	16.4	78.2	5.3		23.7	52.2	24.2		12.3	56.3	31.3		26.2	59.2	14.6		
PHF	.578	.917	.750	.907	.719	.695	.839	.778	.609	.856	.798	.849	.795	.823	.650	.785	.912
Lights	33	163	11	207	83	176	86	345	35	164	90	289	59	139	35	233	1074
% Lights	89.2	92.6	91.7	92.0	90.2	86.7	91.5	88.7	89.7	92.1	90.9	91.5	84.3	88.0	89.7	87.3	89.7
Trucks	0	2	1	3	1	4	0	5	0	6	0	6	1	3	0	4	18
% Trucks	0	1.1	8.3	1.3	1.1	2.0	0	1.3	0	3.4	0	1.9	1.4	1.9	0	1.5	1.5
Buses	4	11	0	15	8	23	8	39	4	8	9	21	10	16	4	30	105
% Buses	10.8	6.3	0	6.7	8.7	11.3	8.5	10.0	10.3	4.5	9.1	6.6	14.3	10.1	10.3	11.2	8.8
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	14	53	2	69	10	28	16	54	4	59	39	102	13	31	23	67	292
02:15 PM	15	36	7	58	21	23	11	55	2	54	16	72	18	42	17	77	262
02:30 PM	17	53	4	74	13	22	12	47	6	32	22	60	40	33	21	94	275
02:45 PM	13	49	6	68	16	32	13	61	3	34	20	57	29	26	15	70	256
Total Volume	59	191	19	269	60	105	52	217	15	179	97	291	100	132	76	308	1085
% App. Total	21.9	71	7.1		27.6	48.4	24		5.2	61.5	33.3		32.5	42.9	24.7		
PHF	.868	.901	.679	.909	.714	.820	.813	.889	.625	.758	.622	.713	.625	.786	.826	.819	.929
Lights	57	178	15	250	50	99	48	197	12	154	85	251	89	120	73	282	980
% Lights	96.6	93.2	78.9	92.9	83.3	94.3	92.3	90.8	80.0	86.0	87.6	86.3	89.0	90.9	96.1	91.6	90.3
Trucks	1	2	2	5	2	1	0	3	0	3	2	5	1	3	2	6	19
% Trucks	1.7	1.0	10.5	1.9	3.3	1.0	0	1.4	0	1.7	2.1	1.7	1.0	2.3	2.6	1.9	1.8
Buses	1	11	2	14	8	5	4	17	3	22	10	35	10	9	1	20	86
% Buses	1.7	5.8	10.5	5.2	13.3	4.8	7.7	7.8	20.0	12.3	10.3	12.0	10.0	6.8	1.3	6.5	7.9



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File Name : 5-BrickChurchHempstead  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 1

Brick Church Road & Hempstead Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

Groups Printed- Lights - Trucks - Buses

Start Time	BRICK CHURCH ROAD Eastbound			HEMPSTEAD ROAD Northbound			HEMPSTEAD ROAD Southbound			Int. Total
	Left	Right	App. Total	Left	Thru	App. Total	Thru	Right	App. Total	
07:00 AM	11	9	20	14	9	23	19	20	39	82
07:15 AM	15	7	22	21	5	26	16	23	39	87
07:30 AM	32	11	43	45	12	57	24	53	77	177
07:45 AM	44	11	55	74	63	137	23	55	78	270
Total	102	38	140	154	89	243	82	151	233	616
08:00 AM	44	37	81	66	30	96	26	52	78	255
08:15 AM	53	34	87	51	45	96	29	46	75	258
08:30 AM	55	39	94	32	37	69	23	38	61	224
08:45 AM	59	28	87	35	54	89	32	32	64	240
Total	211	138	349	184	166	350	110	168	278	977
*** BREAK ***										
02:00 PM	48	37	85	31	19	50	27	23	50	185
02:15 PM	35	40	75	27	28	55	26	36	62	192
02:30 PM	69	46	115	15	34	49	31	22	53	217
02:45 PM	85	27	112	13	30	43	41	47	88	243
Total	237	150	387	86	111	197	125	128	253	837
03:00 PM	39	32	71	21	34	55	30	37	67	193
03:15 PM	51	22	73	17	35	52	23	36	59	184
03:30 PM	46	20	66	16	31	47	22	36	58	171
03:45 PM	47	27	74	19	32	51	36	43	79	204
Total	183	101	284	73	132	205	111	152	263	752
04:00 PM	59	19	78	22	33	55	31	43	74	207
04:15 PM	62	36	98	15	27	42	37	26	63	203
04:30 PM	38	21	59	19	35	54	33	29	62	175
04:45 PM	29	37	66	17	24	41	41	36	77	184
Total	188	113	301	73	119	192	142	134	276	769
05:00 PM	43	27	70	27	33	60	35	42	77	207
05:15 PM	53	32	85	22	25	47	43	28	71	203
05:30 PM	35	37	72	23	20	43	33	30	63	178



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Brick Church Road & Hempstead Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

File Name : 5-BrickChurchHempstead  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 2

Groups Printed- Lights - Trucks - Buses

Start Time	BRICK CHURCH ROAD Eastbound			HEMPSTEAD ROAD Northbound			HEMPSTEAD ROAD Southbound			Int. Total
	Left	Right	App. Total	Left	Thru	App. Total	Thru	Right	App. Total	
05:45 PM	53	23	76	30	34	64	35	19	54	194
Total	184	119	303	102	112	214	146	119	265	782
06:00 PM	43	31	74	38	35	73	35	34	69	216
06:15 PM	50	24	74	19	33	52	38	36	74	200
06:30 PM	47	33	80	24	37	61	38	28	66	207
06:45 PM	42	28	70	28	27	55	33	26	59	184
Total	182	116	298	109	132	241	144	124	268	807
Grand Total	1287	775	2062	781	861	1642	860	976	1836	5540
Aprch %	62.4	37.6		47.6	52.4		46.8	53.2		
Total %	23.2	14	37.2	14.1	15.5	29.6	15.5	17.6	33.1	
Lights	1171	722	1893	719	806	1525	795	870	1665	5083
% Lights	91	93.2	91.8	92.1	93.6	92.9	92.4	89.1	90.7	91.8
Trucks	17	14	31	17	14	31	10	12	22	84
% Trucks	1.3	1.8	1.5	2.2	1.6	1.9	1.2	1.2	1.2	1.5
Buses	99	39	138	45	41	86	55	94	149	373
% Buses	7.7	5	6.7	5.8	4.8	5.2	6.4	9.6	8.1	6.7



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Brick Church Road & Hempstead Road  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

File Name : 5-BrickChurchHempstead  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 3

Start Time	BRICK CHURCH ROAD Eastbound			HEMPSTEAD ROAD Northbound			HEMPSTEAD ROAD Southbound			Int. Total
	Left	Right	App. Total	Left	Thru	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	44	11	55	74	63	137	23	55	78	270
08:00 AM	44	37	81	66	30	96	26	52	78	255
08:15 AM	53	34	87	51	45	96	29	46	75	258
08:30 AM	55	39	94	32	37	69	23	38	61	224
Total Volume	196	121	317	223	175	398	101	191	292	1007
% App. Total	61.8	38.2		56	44		34.6	65.4		
PHF	.891	.776	.843	.753	.694	.726	.871	.868	.936	.932
Lights	175	114	289	204	163	367	99	162	261	917
% Lights	89.3	94.2	91.2	91.5	93.1	92.2	98.0	84.8	89.4	91.1
Trucks	3	0	3	5	7	12	0	2	2	17
% Trucks	1.5	0	0.9	2.2	4.0	3.0	0	1.0	0.7	1.7
Buses	18	7	25	14	5	19	2	27	29	73
% Buses	9.2	5.8	7.9	6.3	2.9	4.8	2.0	14.1	9.9	7.2
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:15 PM										
02:15 PM	35	40	75	27	28	55	26	36	62	192
02:30 PM	69	46	115	15	34	49	31	22	53	217
02:45 PM	85	27	112	13	30	43	41	47	88	243
03:00 PM	39	32	71	21	34	55	30	37	67	193
Total Volume	228	145	373	76	126	202	128	142	270	845
% App. Total	61.1	38.9		37.6	62.4		47.4	52.6		
PHF	.671	.788	.811	.704	.926	.918	.780	.755	.767	.869
Lights	211	134	345	66	112	178	117	127	244	767
% Lights	92.5	92.4	92.5	86.8	88.9	88.1	91.4	89.4	90.4	90.8
Trucks	3	1	4	0	3	3	1	1	2	9
% Trucks	1.3	0.7	1.1	0	2.4	1.5	0.8	0.7	0.7	1.1
Buses	14	10	24	10	11	21	10	14	24	69
% Buses	6.1	6.9	6.4	13.2	8.7	10.4	7.8	9.9	8.9	8.2



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Brick Church Road & Site Driveway  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

File Name : 6-BrickChurchSite  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 1

Groups Printed- Lights - Trucks - Buses

Start Time	BRICK CHURCH ROAD Eastbound			BRICK CHURCH ROAD Westbound			SITE DRIVEWAY Northbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	19	0	19	3	33	36	0	0	0	55
07:15 AM	22	1	23	3	40	43	0	0	0	66
07:30 AM	47	2	49	1	97	98	0	1	1	148
07:45 AM	58	2	60	2	131	133	0	0	0	193
Total	146	5	151	9	301	310	0	1	1	462
08:00 AM	96	0	96	2	124	126	0	1	1	223
08:15 AM	100	0	100	1	105	106	0	0	0	206
08:30 AM	94	0	94	2	71	73	1	0	1	168
08:45 AM	88	1	89	1	77	78	1	0	1	168
Total	378	1	379	6	377	383	2	1	3	765
*** BREAK ***										
02:00 PM	94	0	94	0	59	59	0	4	4	157
02:15 PM	74	1	75	1	63	64	1	1	2	141
02:30 PM	114	0	114	1	47	48	0	4	4	166
02:45 PM	105	1	106	1	64	65	0	4	4	175
Total	387	2	389	3	233	236	1	13	14	639
03:00 PM	76	0	76	2	60	62	1	0	1	139
03:15 PM	74	2	76	0	59	59	0	3	3	138
03:30 PM	72	0	72	3	54	57	0	2	2	131
03:45 PM	71	1	72	0	64	64	2	3	5	141
Total	293	3	296	5	237	242	3	8	11	549
04:00 PM	86	0	86	1	68	69	1	2	3	158
04:15 PM	91	0	91	0	49	49	0	1	1	141
04:30 PM	62	3	65	0	49	49	0	1	1	115
04:45 PM	69	1	70	0	60	60	0	1	1	131
Total	308	4	312	1	226	227	1	5	6	545
05:00 PM	78	0	78	2	76	78	0	3	3	159
05:15 PM	93	1	94	2	53	55	0	0	0	149
05:30 PM	65	1	66	1	58	59	0	4	4	129



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Brick Church Road & Site Driveway  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

File Name : 6-BrickChurchSite  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 2

Groups Printed- Lights - Trucks - Buses

Start Time	BRICK CHURCH ROAD Eastbound			BRICK CHURCH ROAD Westbound			SITE DRIVEWAY Northbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
05:45 PM	75	1	76	0	55	55	0	4	4	135
Total	311	3	314	5	242	247	0	11	11	572
06:00 PM	77	0	77	0	67	67	0	12	12	156
06:15 PM	81	1	82	4	64	68	1	3	4	154
06:30 PM	78	0	78	0	51	51	1	2	3	132
06:45 PM	81	0	81	1	57	58	0	3	3	142
Total	317	1	318	5	239	244	2	20	22	584
Grand Total	2140	19	2159	34	1855	1889	9	59	68	4116
Aprch %	99.1	0.9		1.8	98.2		13.2	86.8		
Total %	52	0.5	52.5	0.8	45.1	45.9	0.2	1.4	1.7	
Lights	1961	17	1978	33	1660	1693	7	58	65	3736
% Lights	91.6	89.5	91.6	97.1	89.5	89.6	77.8	98.3	95.6	90.8
Trucks	30	2	32	1	29	30	2	1	3	65
% Trucks	1.4	10.5	1.5	2.9	1.6	1.6	22.2	1.7	4.4	1.6
Buses	149	0	149	0	166	166	0	0	0	315
% Buses	7	0	6.9	0	8.9	8.8	0	0	0	7.7



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Brick Church Road & Site Driveway  
Turning Movement Count  
Weekday AM & PM Peak Hours  
Wednesday, May 24, 2023

File Name : 6-BrickChurchSite  
Site Code : 00000000  
Start Date : 5/24/2023  
Page No : 3

Start Time	BRICK CHURCH ROAD Eastbound			BRICK CHURCH ROAD Westbound			SITE DRIVEWAY Northbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	58	2	60	2	131	133	0	0	0	193
08:00 AM	96	0	96	2	124	126	0	1	1	223
08:15 AM	100	0	100	1	105	106	0	0	0	206
08:30 AM	94	0	94	2	71	73	1	0	1	168
Total Volume	348	2	350	7	431	438	1	1	2	790
% App. Total	99.4	0.6		1.6	98.4		50	50		
PHF	.870	.250	.875	.875	.823	.823	.250	.250	.500	.886
Lights	320	2	322	6	380	386	0	1	1	709
% Lights	92.0	100	92.0	85.7	88.2	88.1	0	100	50.0	89.7
Trucks	4	0	4	1	4	5	1	0	1	10
% Trucks	1.1	0	1.1	14.3	0.9	1.1	100	0	50.0	1.3
Buses	24	0	24	0	47	47	0	0	0	71
% Buses	6.9	0	6.9	0	10.9	10.7	0	0	0	9.0
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	94	0	94	0	59	59	0	4	4	157
02:15 PM	74	1	75	1	63	64	1	1	2	141
02:30 PM	114	0	114	1	47	48	0	4	4	166
02:45 PM	105	1	106	1	64	65	0	4	4	175
Total Volume	387	2	389	3	233	236	1	13	14	639
% App. Total	99.5	0.5		1.3	98.7		7.1	92.9		
PHF	.849	.500	.853	.750	.910	.908	.250	.813	.875	.913
Lights	353	1	354	3	209	212	0	13	13	579
% Lights	91.2	50.0	91.0	100	89.7	89.8	0	100	92.9	90.6
Trucks	5	1	6	0	2	2	1	0	1	9
% Trucks	1.3	50.0	1.5	0	0.9	0.8	100	0	7.1	1.4
Buses	29	0	29	0	22	22	0	0	0	51
% Buses	7.5	0	7.5	0	9.4	9.3	0	0	0	8.0

## Tri-State Traffic Data

### 184 Baker Rd Coatesville, PA 19320

Location: Spring Valley  
 Road Name: Brick Church Rd  
 Segment: 289' E/O Josell Ct  
 Date: 5/23/2023

GPS: 41.142596, -74.050911

Start Time	22-May-23		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	*	*	*	*	17	21	28	23	11	5	19	16	10	4	30	15
01:00	*	*	*	*	7	3	8	3	2	2	6	3	4	1	19	15
02:00	*	*	*	*	5	5	2	7	4	0	4	4	1	2	8	4
03:00	*	*	*	*	1	3	1	5	0	1	1	3	4	1	4	5
04:00	*	*	*	*	0	5	1	3	1	1	1	3	3	3	3	7
05:00	*	*	*	*	9	21	9	17	5	13	8	17	4	15	8	11
06:00	*	*	*	*	35	75	33	70	9	43	26	63	12	27	16	34
07:00	*	*	*	*	158	341	136	371	59	201	118	304	21	49	28	49
08:00	*	*	*	*	388	363	299	309	147	170	278	281	20	41	57	75
09:00	*	*	*	*	288	218	248	183	45	93	194	165	29	47	91	104
10:00	*	*	*	*	174	152	231	148	54	57	153	119	36	42	100	142
11:00	*	*	*	*	154	170	241	161	51	66	149	132	32	33	115	104
12:00 PM	*	*	*	*	157	166	352	230	71	62	193	153	51	46	125	120
01:00	*	*	*	*	207	170	280	210	79	95	189	158	35	41	163	154
02:00	*	*	*	*	396	236	477	220	211	108	361	188	34	48	141	147
03:00	*	*	270	242	304	237	227	162	83	50	221	173	55	40	141	121
04:00	*	*	265	229	312	237	200	157	88	48	216	168	46	28	143	151
05:00	*	*	311	203	320	243	169	142	91	38	223	156	59	36	142	121
06:00	*	*	255	221	325	233	185	116	69	34	208	151	53	20	127	105
07:00	*	*	134	128	209	131	115	87	59	25	129	93	41	28	154	98
08:00	*	*	162	91	167	86	93	40	60	35	120	63	21	25	99	65
09:00	*	*	102	69	114	68	43	23	24	22	71	46	36	29	67	66
10:00	*	*	106	56	84	58	17	10	19	16	56	35	62	50	91	57
11:00	*	*	53	36	34	36	11	10	14	8	28	22	47	42	83	48
Total	0	0	1658	1275	3865	3278	3406	2707	1256	1193	2972	2516	716	698	1955	1818
Day	0	0	2933		7143		6113		2449		5488		1414		3773	
AM Peak	-	-	-	-	08:00	08:00	08:00	07:00	08:00	07:00	08:00	07:00	10:00	07:00	11:00	10:00
Vol.	-	-	-	-	388	363	299	371	147	201	278	304	36	49	115	142
PM Peak	-	-	17:00	15:00	14:00	17:00	14:00	12:00	14:00	14:00	14:00	14:00	22:00	22:00	13:00	13:00
Vol.	-	-	311	242	396	243	477	230	211	108	361	188	62	50	163	154



## Tri-State Traffic Data

### 184 Baker Rd Coatesville, PA 19320

Location: Spring Valley  
 Road Name: Brick Church Rd  
 Segment: 289' E/O Josell Ct  
 Date: 5/23/2023

GPS: 41.142596, -74.050911

Start Time	29-May-23		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	29	22	15	12	14	20	17	16	29	24	21	19	14	6	48	28
01:00	6	7	10	7	6	5	4	8	13	12	8	8	3	3	15	13
02:00	1	3	4	4	2	5	6	4	3	6	3	4	4	4	9	12
03:00	2	2	4	1	3	2	3	4	5	3	3	2	0	0	5	2
04:00	2	1	4	3	1	3	2	5	1	5	2	3	5	3	1	10
05:00	7	20	8	20	10	22	16	17	8	22	10	20	2	13	8	14
06:00	15	42	30	67	38	56	36	67	30	74	30	61	13	25	17	35
07:00	64	138	144	318	149	327	147	<b>382</b>	152	327	131	298	29	42	39	72
08:00	178	<b>220</b>	<b>397</b>	<b>366</b>	<b>412</b>	<b>342</b>	<b>409</b>	366	<b>385</b>	<b>356</b>	<b>356</b>	<b>330</b>	63	47	56	126
09:00	<b>212</b>	210	291	220	344	215	360	220	352	197	312	212	58	48	120	<b>132</b>
10:00	108	134	169	134	243	159	286	150	277	145	217	144	<b>70</b>	49	119	132
11:00	121	107	177	100	235	182	290	162	333	205	231	151	53	<b>51</b>	<b>142</b>	124
12:00 PM	126	110	178	136	219	160	315	167	416	211	251	157	49	48	133	155
01:00	137	92	194	151	236	210	322	165	346	212	247	166	37	33	<b>192</b>	152
02:00	146	159	<b>390</b>	240	<b>498</b>	<b>292</b>	<b>339</b>	202	<b>521</b>	<b>227</b>	<b>379</b>	224	36	51	164	<b>172</b>
03:00	219	<b>212</b>	318	253	297	238	287	<b>235</b>	246	190	273	<b>226</b>	49	45	181	124
04:00	<b>230</b>	142	354	<b>256</b>	252	201	246	211	186	151	254	192	54	43	157	119
05:00	225	130	313	190	278	202	262	182	184	136	252	168	63	53	176	126
06:00	165	108	232	145	263	168	252	160	135	89	209	134	64	32	119	76
07:00	141	96	199	120	145	138	207	127	94	64	157	109	38	31	118	99
08:00	113	94	113	95	126	95	124	83	45	26	104	79	35	19	85	72
09:00	83	57	90	61	114	57	102	81	29	14	84	54	38	47	80	44
10:00	63	51	82	40	86	52	78	71	25	21	67	47	<b>80</b>	<b>69</b>	69	43
11:00	53	18	36	26	43	41	67	52	19	13	44	30	79	35	36	35
Total	2446	2175	3752	2965	4014	3192	4177	3137	3834	2730	3645	2838	936	797	2089	1917
Day	4621		6717		7206		7314		6564		6483		1733		4006	
AM Peak	09:00	08:00	08:00	08:00	08:00	08:00	08:00	07:00	08:00	08:00	08:00	08:00	10:00	11:00	11:00	09:00
Vol.	212	220	397	366	412	342	409	382	385	356	356	330	70	51	142	132
PM Peak	16:00	15:00	14:00	16:00	14:00	14:00	14:00	15:00	14:00	14:00	14:00	15:00	22:00	22:00	13:00	14:00
Vol.	230	212	390	256	498	292	339	235	521	227	379	226	80	69	192	172

## Tri-State Traffic Data

### 184 Baker Rd Coatesville, PA 19320

Location: Spring Valley  
 Road Name: Brick Church Rd  
 Segment: 289' E/O Josell Ct  
 Date: 5/23/2023

GPS: 41.142596, -74.050911

Start Time	05-Jun-23		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	13	13	*	*	*	*	*	*	*	*	13	13	*	*	*	*
01:00	6	7	*	*	*	*	*	*	*	*	6	7	*	*	*	*
02:00	3	3	*	*	*	*	*	*	*	*	3	3	*	*	*	*
03:00	0	4	*	*	*	*	*	*	*	*	0	4	*	*	*	*
04:00	1	4	*	*	*	*	*	*	*	*	1	4	*	*	*	*
05:00	10	24	*	*	*	*	*	*	*	*	10	24	*	*	*	*
06:00	37	71	*	*	*	*	*	*	*	*	37	71	*	*	*	*
07:00	140	374	*	*	*	*	*	*	*	*	140	374	*	*	*	*
08:00	401	354	*	*	*	*	*	*	*	*	401	354	*	*	*	*
09:00	437	188	*	*	*	*	*	*	*	*	437	188	*	*	*	*
10:00	305	153	*	*	*	*	*	*	*	*	305	153	*	*	*	*
11:00	275	126	*	*	*	*	*	*	*	*	275	126	*	*	*	*
12:00 PM	277	149	*	*	*	*	*	*	*	*	277	149	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total Day	1905	1470	0	0	0	0	0	0	0	0	1905	1470	0	0	0	0
AM Peak	09:00	07:00	-	-	-	-	-	-	-	-	09:00	07:00	-	-	-	-
Vol.	437	374	-	-	-	-	-	-	-	-	437	374	-	-	-	-
PM Peak	12:00	12:00	-	-	-	-	-	-	-	-	12:00	12:00	-	-	-	-
Vol.	277	149	-	-	-	-	-	-	-	-	277	149	-	-	-	-

Comb. Total	7996	9650	14349	13427	9013	15346	3147	7779
ADT	ADT 5,082	AADT 5,082						

**APPENDIX C**  
**CAPACITY ANALYSES**

Lanes, Volumes, Timings

2026 No-Build Condition

1: Hempstead Rd/Summit Park Rd (CR 51) & New Hempstead Rd (CR 80) Weekday AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	41	301	38	60	288	51	36	170	113	41	125	41
Future Volume (vph)	41	301	38	60	288	51	36	170	113	41	125	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.987			0.983			0.952			0.973	
Fl <sub>t</sub> Protected		0.995			0.993			0.994			0.990	
Satd. Flow (prot)	0	1686	0	0	1655	0	0	1713	0	0	1640	0
Fl <sub>t</sub> Permitted		0.902			0.846			0.933			0.866	
Satd. Flow (perm)	0	1528	0	0	1410	0	0	1608	0	0	1435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			11			42			19	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		534			703			1634			769	
Travel Time (s)		12.1			16.0			37.1			17.5	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	18%	8%	24%	12%	13%	7%	11%	5%	3%	10%	10%	18%
Adj. Flow (vph)	49	358	45	71	343	61	43	202	135	49	149	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	452	0	0	475	0	0	380	0	0	247	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	
Total Split (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	31.0	31.0		31.0	31.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		8.0			8.0			8.0			8.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		31.0			31.0			31.0			31.0	
Actuated g/C Ratio		0.40			0.40			0.40			0.40	
v/c Ratio		0.74			0.84			0.57			0.43	
Control Delay (s/veh)		28.6			36.4			20.3			18.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		28.6			36.4			20.3			18.4	
LOS		C			D			C			B	
Approach Delay (s/veh)		28.6			36.4			20.3			18.4	

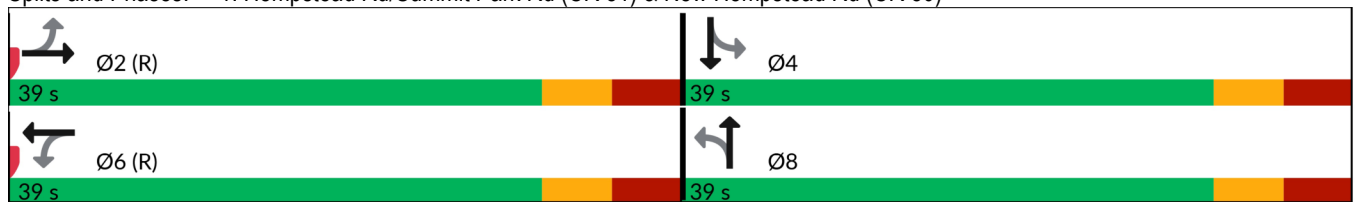


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			D			C			B	
Stops (vph)		309			327			219			134	
Fuel Used(gal)		9			7			10			3	
CO Emissions (g/hr)		660			486			707			193	
NOx Emissions (g/hr)		128			95			138			38	
VOC Emissions (g/hr)		153			113			164			45	
Dilemma Vehicles (#)		0			0			0			0	
Queue Length 50th (ft)		179			199			124			78	
Queue Length 95th (ft)		262			#327			188			126	
Internal Link Dist (ft)		454			623			1554			689	
Turn Bay Length (ft)												
Base Capacity (vph)		612			567			664			581	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.74			0.84			0.57			0.43	

Intersection Summary

Area Type: Other  
 Cycle Length: 78  
 Actuated Cycle Length: 78  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay (s/veh): 27.3 Intersection LOS: C  
 Intersection Capacity Utilization 71.1% ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Hempstead Rd/Summit Park Rd (CR 51) & New Hempstead Rd (CR 80)



Lanes, Volumes, Timings

2026 No-Build Condition

1: Hempstead Rd/Summit Park Rd (CR 51) & New Hempstead Rd (CR 80) Weekday PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	35	290	33	71	335	37	24	182	110	46	124	45
Future Volume (vph)	35	290	33	71	335	37	24	182	110	46	124	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.988			0.989			0.953			0.972	
Fl <sub>t</sub> Protected		0.995			0.992			0.996			0.989	
Satd. Flow (prot)	0	1753	0	0	1747	0	0	1658	0	0	1701	0
Fl <sub>t</sub> Permitted		0.920			0.853			0.962			0.860	
Satd. Flow (perm)	0	1621	0	0	1502	0	0	1602	0	0	1479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			7			41			20	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		534			703			1634			769	
Travel Time (s)		12.1			16.0			37.1			17.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	9%	6%	9%	9%	7%	0%	9%	11%	5%	11%	8%	2%
Adj. Flow (vph)	38	319	36	78	368	41	26	200	121	51	136	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	393	0	0	487	0	0	347	0	0	236	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	
Total Split (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	31.0	31.0		31.0	31.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		8.0			8.0			8.0			8.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		31.0			31.0			31.0			31.0	
Actuated g/C Ratio		0.40			0.40			0.40			0.40	
v/c Ratio		0.61			0.81			0.52			0.39	
Control Delay (s/veh)		23.1			33.5			19.1			17.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		23.1			33.5			19.1			17.7	
LOS		C			C			B			B	
Approach Delay (s/veh)		23.1			33.5			19.1			17.7	

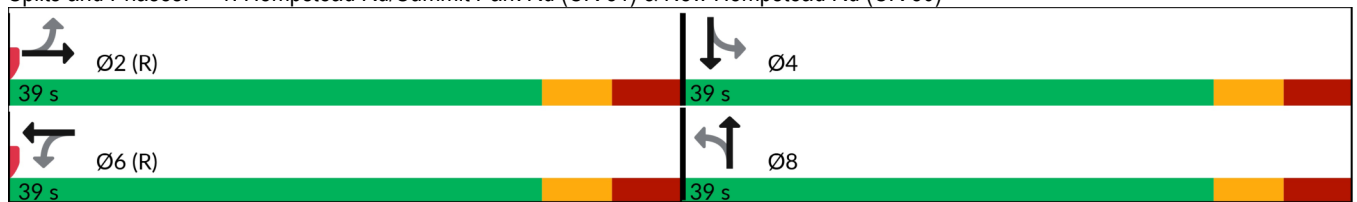


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			C			B			B	
Stops (vph)		272			362			209			138	
Fuel Used(gal)		8			7			10			3	
CO Emissions (g/hr)		587			521			692			198	
NOx Emissions (g/hr)		114			101			135			38	
VOC Emissions (g/hr)		136			121			160			46	
Dilemma Vehicles (#)		0			0			0			0	
Queue Length 50th (ft)		144			202			109			72	
Queue Length 95th (ft)		236			#370			188			130	
Internal Link Dist (ft)		454			623			1554			689	
Turn Bay Length (ft)												
Base Capacity (vph)		649			601			661			599	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.61			0.81			0.52			0.39	

Intersection Summary

Area Type: Other  
 Cycle Length: 78  
 Actuated Cycle Length: 78  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay (s/veh): 24.7 Intersection LOS: C  
 Intersection Capacity Utilization 76.5% ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Hempstead Rd/Summit Park Rd (CR 51) & New Hempstead Rd (CR 80)



Lanes, Volumes, Timings

2026 Build Condition

1: Hempstead Rd/Summit Park Rd (CR 51) & New Hempstead Rd (CR 80) Weekday AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	41	301	38	88	288	51	36	192	191	41	128	41
Future Volume (vph)	41	301	38	88	288	51	36	192	191	41	128	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.987			0.984			0.939			0.974	
Fl <sub>t</sub> Protected		0.995			0.990			0.996			0.990	
Satd. Flow (prot)	0	1686	0	0	1664	0	0	1714	0	0	1651	0
Fl <sub>t</sub> Permitted		0.895			0.763			0.948			0.827	
Satd. Flow (perm)	0	1516	0	0	1282	0	0	1631	0	0	1379	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			10			64			19	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		534			703			1634			769	
Travel Time (s)		12.1			16.0			37.1			17.5	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	18%	8%	24%	8%	13%	7%	11%	4%	2%	10%	9%	18%
Adj. Flow (vph)	49	358	45	105	343	61	43	229	227	49	152	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	452	0	0	509	0	0	499	0	0	250	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	
Total Split (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	31.0	31.0		31.0	31.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		8.0			8.0			8.0			8.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		31.0			31.0			31.0			31.0	
Actuated g/C Ratio		0.40			0.40			0.40			0.40	
v/c Ratio		0.74			0.99			0.73			0.45	
Control Delay (s/veh)		29.0			62.7			24.7			19.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		29.0			62.7			24.7			19.0	
LOS		C			E			C			B	
Approach Delay (s/veh)		29.0			62.7			24.7			19.0	



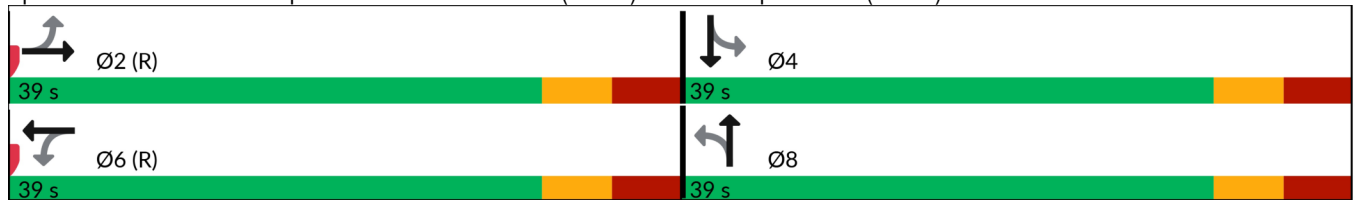


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			E			C				B
Stops (vph)		308			346			310				139
Fuel Used(gal)		9			10			14				3
CO Emissions (g/hr)		662			679			964				198
NOx Emissions (g/hr)		129			132			188				39
VOC Emissions (g/hr)		153			157			223				46
Dilemma Vehicles (#)		0			0			0				0
Queue Length 50th (ft)		180			235			175				79
Queue Length 95th (ft)		263			#392			258				130
Internal Link Dist (ft)		454			623			1554				689
Turn Bay Length (ft)												
Base Capacity (vph)		607			515			686				559
Starvation Cap Reductn		0			0			0				0
Spillback Cap Reductn		0			0			0				0
Storage Cap Reductn		0			0			0				0
Reduced v/c Ratio		0.74			0.99			0.73				0.45

Intersection Summary

Area Type: Other  
 Cycle Length: 78  
 Actuated Cycle Length: 78  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.99  
 Intersection Signal Delay (s/veh): 36.3 Intersection LOS: D  
 Intersection Capacity Utilization 79.4% ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Hempstead Rd/Summit Park Rd (CR 51) & New Hempstead Rd (CR 80)



Lanes, Volumes, Timings

2026 Build Condition

1: Hempstead Rd/Summit Park Rd (CR 51) & New Hempstead Rd (CR 80) Weekday PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	35	290	33	169	335	37	24	197	164	46	134	45
Future Volume (vph)	35	290	33	169	335	37	24	197	164	46	134	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.988			0.991			0.942			0.973	
Fl <sub>t</sub> Protected		0.995			0.985			0.997			0.990	
Satd. Flow (prot)	0	1753	0	0	1757	0	0	1668	0	0	1704	0
Fl <sub>t</sub> Permitted		0.904			0.720			0.967			0.847	
Satd. Flow (perm)	0	1592	0	0	1284	0	0	1618	0	0	1458	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			6			57			19	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		534			703			1634			769	
Travel Time (s)		12.1			16.0			37.1			17.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	9%	6%	9%	4%	7%	0%	9%	10%	3%	11%	8%	2%
Adj. Flow (vph)	38	319	36	186	368	41	26	216	180	51	147	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	393	0	0	595	0	0	422	0	0	247	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	
Total Split (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	31.0	31.0		31.0	31.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		8.0			8.0			8.0			8.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		31.0			31.0			31.0			31.0	
Actuated g/C Ratio		0.40			0.40			0.40			0.40	
v/c Ratio		0.62			1.16			0.62			0.42	
Control Delay (s/veh)		23.5			117.3			21.0			18.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		23.5			117.3			21.0			18.3	
LOS		C			F			C			B	
Approach Delay (s/veh)		23.5			117.3			21.0			18.3	

Lanes, Volumes, Timings

2026 Build Condition

1: Hempstead Rd/Summit Park Rd (CR 51) & New Hempstead Rd (CR 80) Weekday PM Peak Hour

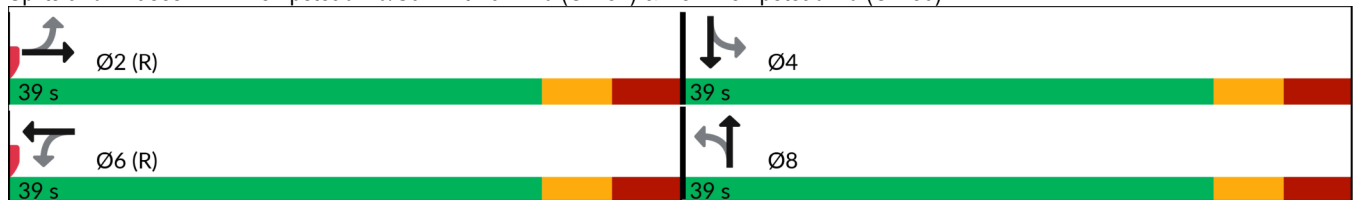


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			F			C				B
Stops (vph)		275			432			264				146
Fuel Used(gal)		8			18			12				3
CO Emissions (g/hr)		590			1277			856				209
NOx Emissions (g/hr)		115			248			166				41
VOC Emissions (g/hr)		137			296			198				48
Dilemma Vehicles (#)		0			0			0				0
Queue Length 50th (ft)		145			~348			137				77
Queue Length 95th (ft)		238			#544			233				138
Internal Link Dist (ft)		454			623			1554				689
Turn Bay Length (ft)												
Base Capacity (vph)		637			513			677				590
Starvation Cap Reductn		0			0			0				0
Spillback Cap Reductn		0			0			0				0
Storage Cap Reductn		0			0			0				0
Reduced v/c Ratio		0.62			1.16			0.62				0.42

Intersection Summary

Area Type: Other  
 Cycle Length: 78  
 Actuated Cycle Length: 78  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.16  
 Intersection Signal Delay (s/veh): 55.8 Intersection LOS: E  
 Intersection Capacity Utilization 100.9% ICU Level of Service G  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Hempstead Rd/Summit Park Rd (CR 51) & New Hempstead Rd (CR 80)



Lanes, Volumes, Timings  
2: Union Road & Viola Road (CR 74)

2026 No-Build Condition  
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	317	162	145	468	30	210	244	42	42	189	31
Future Volume (vph)	19	317	162	145	468	30	210	244	42	42	189	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.949			0.991			0.978			0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1253	1618	0	1671	1760	0	1583	1672	0	1543	1602	0
Flt Permitted	0.174			0.353			0.398			0.236		
Satd. Flow (perm)	230	1618	0	621	1760	0	663	1672	0	383	1602	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			4			8			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		351			651			430			215	
Travel Time (s)		8.0			14.8			9.8			4.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	44%	6%	22%	8%	7%	7%	14%	11%	12%	17%	16%	17%
Adj. Flow (vph)	21	348	178	159	514	33	231	268	46	46	208	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	526	0	159	547	0	231	314	0	46	242	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			35			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	16.0	39.0		18.0	41.0		18.0	25.0		18.0	25.0	
Total Split (s)	16.0	39.0		18.0	41.0		18.0	25.0		18.0	25.0	
Total Split (%)	16.0%	39.0%		18.0%	41.0%		18.0%	25.0%		18.0%	25.0%	
Maximum Green (s)	10.0	33.0		12.0	35.0		12.0	19.0		12.0	19.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	33.0	33.0		35.0	35.0		31.0	19.0		31.0	19.0	
Actuated g/C Ratio	0.33	0.33		0.35	0.35		0.31	0.19		0.31	0.19	
v/c Ratio	0.12	0.95		0.46	0.89		0.73	0.97		0.18	0.78	
Control Delay (s/veh)	24.5	60.7		34.2	48.5		46.7	83.6		26.4	56.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lanes, Volumes, Timings  
 2: Union Road & Viola Road (CR 74)

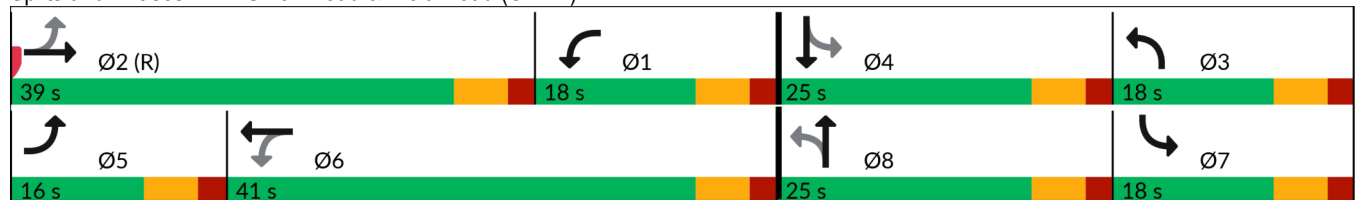
2026 No-Build Condition  
 Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (s/veh)	24.5	60.7		34.2	48.5		46.7	83.6		26.4	56.1	
LOS	C	E		C	D		D	F		C	E	
Approach Delay (s/veh)		59.3			45.3			67.9			51.4	
Approach LOS		E			D			E			D	
Stops (vph)	15	396		102	432		194	240		29	191	
Fuel Used(gal)	0	12		5	19		4	7		2	11	
CO Emissions (g/hr)	23	831		344	1315		264	500		129	785	
NOx Emissions (g/hr)	4	162		67	256		51	97		25	153	
VOC Emissions (g/hr)	5	193		80	305		61	116		30	182	
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	
Queue Length 50th (ft)	9	312		72	322		107	196		19	144	
Queue Length 95th (ft)	26	#526		123	#522		#195	#369		43	#265	
Internal Link Dist (ft)		271			571			350			135	
Turn Bay Length (ft)												
Base Capacity (vph)	178	552		343	618		315	324		257	310	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.95		0.46	0.89		0.73	0.97		0.18	0.78	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 35.5 (36%), Referenced to phase 2:EBTL, Start of Green  
 Natural Cycle: 100  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay (s/veh): 55.7      Intersection LOS: E  
 Intersection Capacity Utilization 85.0%      ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Union Road & Viola Road (CR 74)



Lanes, Volumes, Timings  
2: Union Road & Viola Road (CR 74)

2026 No-Build Condition  
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	366	187	193	347	45	171	178	46	41	221	26
Future Volume (vph)	17	366	187	193	347	45	171	178	46	41	221	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.949			0.983			0.969			0.984	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	1690	0	1671	1764	0	1641	1753	0	1671	1593	0
Fl <sub>t</sub> Permitted	0.230			0.337			0.347			0.404		
Satd. Flow (perm)	412	1690	0	593	1764	0	599	1753	0	711	1593	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			7			11			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		351			651			430			215	
Travel Time (s)		8.0			14.8			9.8			4.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	6%	7%	6%	8%	6%	5%	10%	5%	5%	8%	18%	12%
Adj. Flow (vph)	17	373	191	197	354	46	174	182	47	42	226	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	564	0	197	400	0	174	229	0	42	253	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			35			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	15.0	47.0		16.0	48.0		17.0	25.0		17.0	25.0	
Total Split (s)	15.0	47.0		16.0	48.0		17.0	25.0		17.0	25.0	
Total Split (%)	14.3%	44.8%		15.2%	45.7%		16.2%	23.8%		16.2%	23.8%	
Maximum Green (s)	9.0	41.0		10.0	42.0		11.0	19.0		11.0	19.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Act Effect Green (s)	41.0	41.0		42.0	42.0		30.0	19.0		30.0	19.0	
Actuated g/C Ratio	0.39	0.39		0.40	0.40		0.29	0.18		0.29	0.18	
v/c Ratio	0.06	0.83		0.58	0.56		0.62	0.70		0.14	0.87	
Control Delay (s/veh)	20.4	39.9		23.9	17.9		44.1	51.2		26.1	69.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.4	39.9		23.9	17.9		44.1	51.2		26.1	69.6	
LOS	C	D		C	B		D	D		C	E	
Approach Delay (s/veh)		39.3			19.9			48.1			63.4	

Lanes, Volumes, Timings  
 2: Union Road & Viola Road (CR 74)

2026 No-Build Condition  
 Weekday PM Peak Hour

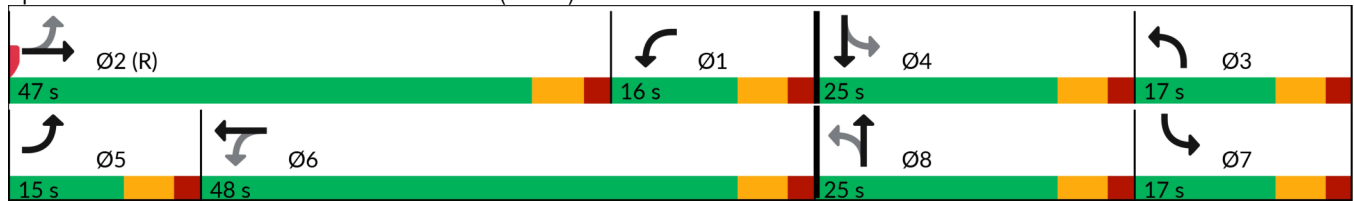


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	D			B			D			E		
Stops (vph)	12	456		79	158		158	196		30	216	
Fuel Used(gal)	0	11		6	11		3	4		2	13	
CO Emissions (g/hr)	19	795		408	794		209	291		127	933	
NOx Emissions (g/hr)	4	155		79	155		41	57		25	181	
VOC Emissions (g/hr)	4	184		95	184		48	68		29	216	
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	
Queue Length 50th (ft)	7	322		49	100		85	139		19	164	
Queue Length 95th (ft)	21	#515		m97	m187		142	#239		44	#306	
Internal Link Dist (ft)		271			571			350			135	
Turn Bay Length (ft)												
Base Capacity (vph)	271	677		339	709		280	326		303	292	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.83		0.58	0.56		0.62	0.70		0.14	0.87	

Intersection Summary

Area Type: Other  
 Cycle Length: 105  
 Actuated Cycle Length: 105  
 Offset: 22.5 (21%), Referenced to phase 2:EBTL, Start of Green  
 Natural Cycle: 105  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.87  
 Intersection Signal Delay (s/veh): 38.8 Intersection LOS: D  
 Intersection Capacity Utilization 90.2% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Union Road & Viola Road (CR 74)



Lanes, Volumes, Timings  
2: Union Road & Viola Road (CR 74)

2026 Build Condition  
Weekday AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	320	162	150	478	30	210	246	44	42	194	39
Future Volume (vph)	22	320	162	150	478	30	210	246	44	42	194	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.950			0.991			0.977			0.975	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1327	1621	0	1687	1760	0	1583	1672	0	1543	1604	0
Fl <sub>t</sub> Permitted	0.174			0.346			0.366			0.228		
Satd. Flow (perm)	243	1621	0	614	1760	0	610	1672	0	370	1604	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			3			8			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		351			651			430			215	
Travel Time (s)		8.0			14.8			9.8			4.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	36%	6%	22%	7%	7%	7%	14%	11%	11%	17%	16%	13%
Adj. Flow (vph)	24	352	178	165	525	33	231	270	48	46	213	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	530	0	165	558	0	231	318	0	46	256	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			35			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	16.0	39.0		18.0	41.0		18.0	25.0		18.0	25.0	
Total Split (s)	16.0	39.0		18.0	41.0		18.0	25.0		18.0	25.0	
Total Split (%)	16.0%	39.0%		18.0%	41.0%		18.0%	25.0%		18.0%	25.0%	
Maximum Green (s)	10.0	33.0		12.0	35.0		12.0	19.0		12.0	19.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	33.0	33.0		35.0	35.0		31.0	19.0		31.0	19.0	
Actuated g/C Ratio	0.33	0.33		0.35	0.35		0.31	0.19		0.31	0.19	
v/c Ratio	0.13	0.96		0.48	0.90		0.76	0.98		0.18	0.82	
Control Delay (s/veh)	24.6	61.8		34.9	51.1		49.6	86.5		26.7	59.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	



Lanes, Volumes, Timings  
2: Union Road & Viola Road (CR 74)

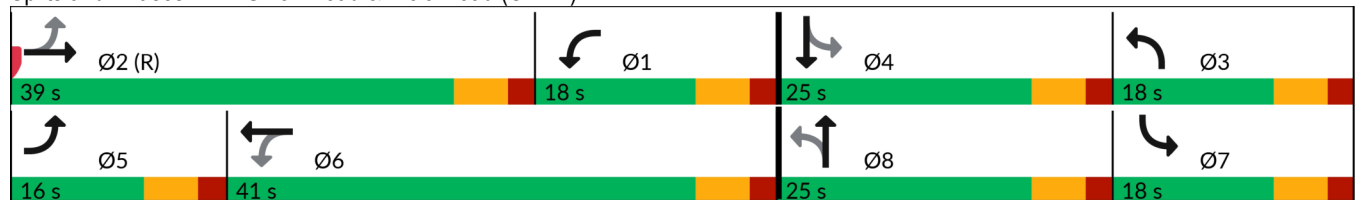
2026 Build Condition  
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (s/veh)	24.6	61.8		34.9	51.1		49.6	86.5		26.7	59.7	
LOS	C	E		C	D		D	F		C	E	
Approach Delay (s/veh)		60.2			47.4			71.0			54.7	
Approach LOS		E			D			E			D	
Stops (vph)	16	397		106	439		196	242		29	200	
Fuel Used(gal)	0	12		5	19		4	7		2	12	
CO Emissions (g/hr)	26	843		358	1360		273	517		129	842	
NOx Emissions (g/hr)	5	164		70	265		53	101		25	164	
VOC Emissions (g/hr)	6	195		83	315		63	120		30	195	
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	
Queue Length 50th (ft)	10	315		75	333		107	199		19	153	
Queue Length 95th (ft)	29	#531		128	#539		#203	#376		43	#286	
Internal Link Dist (ft)		271			571			350			135	
Turn Bay Length (ft)												
Base Capacity (vph)	188	553		343	617		305	324		255	312	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.96		0.48	0.90		0.76	0.98		0.18	0.82	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 35.5 (36%), Referenced to phase 2:EBTL, Start of Green  
 Natural Cycle: 100  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.98  
 Intersection Signal Delay (s/veh): 57.9      Intersection LOS: E  
 Intersection Capacity Utilization 85.0%      ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Union Road & Viola Road (CR 74)



Lanes, Volumes, Timings  
2: Union Road & Viola Road (CR 74)

2026 Build Condition  
Weekday PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	377	187	196	354	45	171	184	52	41	224	32
Future Volume (vph)	27	377	187	196	354	45	171	184	52	41	224	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.950			0.983			0.967				0.981
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1692	0	1671	1764	0	1641	1753	0	1671	1595	0
Fl <sub>t</sub> Permitted	0.222			0.320			0.325			0.375		
Satd. Flow (perm)	406	1692	0	563	1764	0	561	1753	0	660	1595	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			7			12				6
Link Speed (mph)		30			30			30				30
Link Distance (ft)		351			651			430				215
Travel Time (s)		8.0			14.8			9.8				4.9
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	7%	6%	8%	6%	5%	10%	5%	4%	8%	18%	9%
Adj. Flow (vph)	28	385	191	200	361	46	174	188	53	42	229	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	576	0	200	407	0	174	241	0	42	262	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			35			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	15.0	47.0		16.0	48.0		17.0	25.0		17.0	25.0	
Total Split (s)	15.0	47.0		16.0	48.0		17.0	25.0		17.0	25.0	
Total Split (%)	14.3%	44.8%		15.2%	45.7%		16.2%	23.8%		16.2%	23.8%	
Maximum Green (s)	9.0	41.0		10.0	42.0		11.0	19.0		11.0	19.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Act Effect Green (s)	41.0	41.0		42.0	42.0		30.0	19.0		30.0	19.0	
Actuated g/C Ratio	0.39	0.39		0.40	0.40		0.29	0.18		0.29	0.18	
v/c Ratio	0.10	0.85		0.61	0.57		0.64	0.74		0.14	0.89	
Control Delay (s/veh)	20.8	41.5		26.3	19.2		45.7	53.3		26.4	73.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.8	41.5		26.3	19.2		45.7	53.3		26.4	73.7	
LOS	C	D		C	B		D	D		C	E	
Approach Delay (s/veh)		40.6			21.5			50.1			67.2	

Lanes, Volumes, Timings  
 2: Union Road & Viola Road (CR 74)

2026 Build Condition  
 Weekday PM Peak Hour

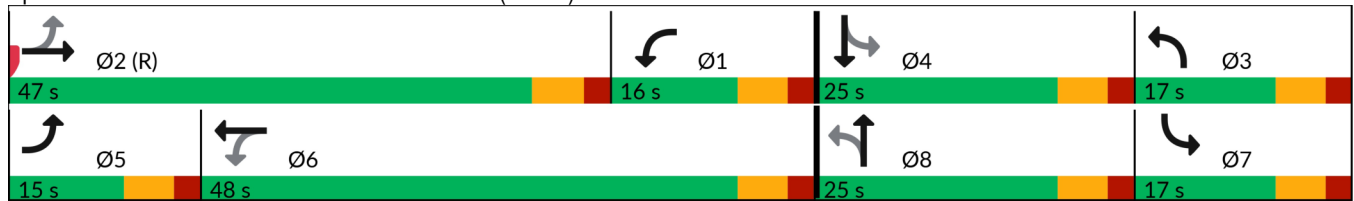


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	D			C			D			E		
Stops (vph)	16	466		86	175		162	203		30	221	
Fuel Used(gal)	0	12		6	12		3	4		2	14	
CO Emissions (g/hr)	29	824		423	821		214	313		127	980	
NOx Emissions (g/hr)	6	160		82	160		42	61		25	191	
VOC Emissions (g/hr)	7	191		98	190		50	72		29	227	
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	
Queue Length 50th (ft)	12	333		56	113		85	147		19	170	
Queue Length 95th (ft)	30	#532		m98	m198		142	#258		44	#320	
Internal Link Dist (ft)		271			571			350			135	
Turn Bay Length (ft)												
Base Capacity (vph)	272	677		330	709		273	327		294	293	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.10	0.85		0.61	0.57		0.64	0.74		0.14	0.89	

Intersection Summary

Area Type: Other  
 Cycle Length: 105  
 Actuated Cycle Length: 105  
 Offset: 22.5 (21%), Referenced to phase 2:EBTL, Start of Green  
 Natural Cycle: 105  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.89  
 Intersection Signal Delay (s/veh): 40.8 Intersection LOS: D  
 Intersection Capacity Utilization 90.3% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Union Road & Viola Road (CR 74)



Lanes, Volumes, Timings

2026 No-Build Condition

3: Hempstead Lane/Hempstead Road & West Eckerson Road (CR 74)

Weekday AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	391	39	5	401	80	74	57	2	65	61	67
Future Volume (vph)	66	391	39	5	401	80	74	57	2	65	61	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.975			0.998			0.953	
Flt Protected	0.950			0.950				0.973			0.983	
Satd. Flow (prot)	1719	1760	0	1805	1721	0	0	1726	0	0	1717	0
Flt Permitted	0.271			0.324				0.973			0.983	
Satd. Flow (perm)	490	1760	0	616	1721	0	0	1726	0	0	1717	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			12			1			21	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		884			559			447			453	
Travel Time (s)		20.1			12.7			10.2			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	6%	11%	0%	7%	11%	7%	7%	0%	3%	3%	5%
Adj. Flow (vph)	71	420	42	5	431	86	80	61	2	70	66	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	462	0	5	517	0	0	143	0	0	208	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			10			10	
Crosswalk Width(ft)		30			25			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	2			6								
Minimum Split (s)	15.0	50.0		15.0	50.0		20.0	20.0		20.0	20.0	
Total Split (s)	15.0	50.0		15.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	14.3%	47.6%		14.3%	47.6%		19.0%	19.0%		19.0%	19.0%	
Maximum Green (s)	11.0	45.0		11.0	45.0		13.0	13.0		13.0	13.0	
Yellow Time (s)	2.0	4.0		2.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	1.0		2.0	1.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			7.0			7.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Act Effect Green (s)	57.0	45.0		57.0	45.0			13.0			13.0	
Actuated g/C Ratio	0.54	0.43		0.54	0.43			0.12			0.12	
v/c Ratio	0.18	0.61		0.01	0.69			0.67			0.90	
Control Delay (s/veh)	12.7	27.1		9.6	29.8			59.9			81.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	

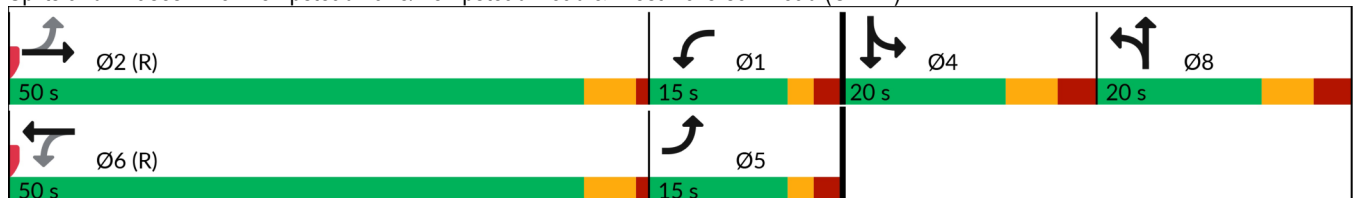


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (s/veh)	12.7	27.1		9.6	29.8			59.9			81.0	
LOS	B	C		A	C			E			F	
Approach Delay (s/veh)		25.2			29.6			59.9			81.0	
Approach LOS		C			C			E			F	
Stops (vph)	29	323		3	377			121			150	
Fuel Used(gal)	2	14		0	7			3			12	
CO Emissions (g/hr)	130	986		3	496			193			836	
NOx Emissions (g/hr)	25	192		1	97			37			163	
VOC Emissions (g/hr)	30	228		1	115			45			194	
Dilemma Vehicles (#)	0	0		0	0			0			0	
Queue Length 50th (ft)	20	232		1	270			92			126	
Queue Length 95th (ft)	39	339		6	396			#175			#265	
Internal Link Dist (ft)		804			479			367			373	
Turn Bay Length (ft)	80											
Base Capacity (vph)	394	757		458	744			214			230	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.18	0.61		0.01	0.69			0.67			0.90	

Intersection Summary

Area Type: Other  
 Cycle Length: 105  
 Actuated Cycle Length: 105  
 Offset: 39.5 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 105  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay (s/veh): 38.6      Intersection LOS: D  
 Intersection Capacity Utilization 70.3%      ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Hempstead Lane/Hempstead Road & West Eckerson Road (CR 74)



Lanes, Volumes, Timings

2026 No-Build Condition

3: Hempstead Lane/Hempstead Road & West Eckerson Road (CR 74)

Weekday PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	400	36	12	439	97	37	33	3	69	43	89
Future Volume (vph)	90	400	36	12	439	97	37	33	3	69	43	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.973			0.995			0.940	
Flt Protected	0.950			0.950				0.975			0.983	
Satd. Flow (prot)	1703	1782	0	1805	1816	0	0	1843	0	0	1664	0
Flt Permitted	0.228			0.326				0.975			0.983	
Satd. Flow (perm)	409	1782	0	619	1816	0	0	1843	0	0	1664	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			13			2			31	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		884			559			447			453	
Travel Time (s)		20.1			12.7			10.2			10.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	6%	5%	9%	0%	2%	1%	0%	0%	0%	7%	0%	7%
Adj. Flow (vph)	95	421	38	13	462	102	39	35	3	73	45	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	459	0	13	564	0	0	77	0	0	212	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			10			10	
Crosswalk Width(ft)		30			25			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	2			6								
Minimum Split (s)	15.0	50.0		15.0	50.0		20.0	20.0		20.0	20.0	
Total Split (s)	15.0	50.0		15.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	14.3%	47.6%		14.3%	47.6%		19.0%	19.0%		19.0%	19.0%	
Maximum Green (s)	11.0	45.0		11.0	45.0		13.0	13.0		13.0	13.0	
Yellow Time (s)	2.0	4.0		2.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	1.0		2.0	1.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			7.0			7.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Act Effect Green (s)	57.0	45.0		57.0	45.0			13.0			13.0	
Actuated g/C Ratio	0.54	0.43		0.54	0.43			0.12			0.12	
v/c Ratio	0.27	0.60		0.03	0.72			0.34			0.91	
Control Delay (s/veh)	11.6	13.8		9.8	30.5			45.5			79.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	

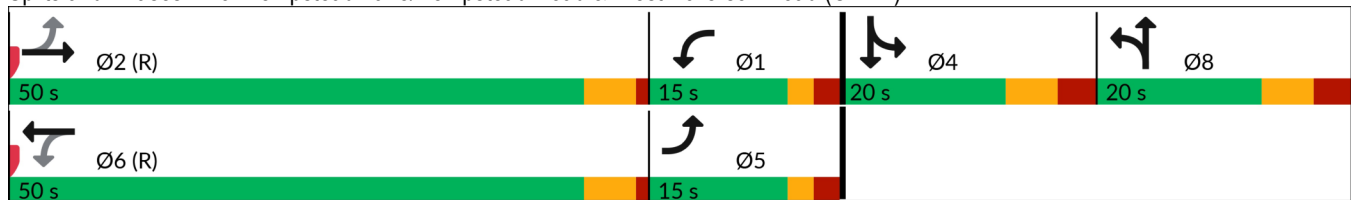


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (s/veh)	11.6	13.8		9.8	30.5			45.5			79.6	
LOS	B	B		A	C			D			E	
Approach Delay (s/veh)		13.4			30.0			45.5			79.6	
Approach LOS		B			C			D			E	
Stops (vph)	23	219		6	426			64			149	
Fuel Used(gal)	2	13		0	8			1			12	
CO Emissions (g/hr)	169	875		8	560			90			864	
NOx Emissions (g/hr)	33	170		1	109			17			168	
VOC Emissions (g/hr)	39	203		2	130			21			200	
Dilemma Vehicles (#)	0	0		0	0			0			0	
Queue Length 50th (ft)	16	114		4	299			47			122	
Queue Length 95th (ft)	m22	m163		12	432			93			#264	
Internal Link Dist (ft)		804			479			367			373	
Turn Bay Length (ft)	80											
Base Capacity (vph)	357	766		460	785			229			233	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.27	0.60		0.03	0.72			0.34			0.91	

Intersection Summary

Area Type: Other  
 Cycle Length: 105  
 Actuated Cycle Length: 105  
 Offset: 90 (86%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 105  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay (s/veh): 31.8      Intersection LOS: C  
 Intersection Capacity Utilization 71.2%      ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Hempstead Lane/Hempstead Road & West Eckerson Road (CR 74)



Lanes, Volumes, Timings

2026 Build Condition

3: Hempstead Lane/Hempstead Road & West Eckerson Road (CR 74)

Weekday AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	391	39	5	401	88	74	57	2	82	61	82
Future Volume (vph)	71	391	39	5	401	88	74	57	2	82	61	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.973			0.998			0.951	
Flt Protected	0.950			0.950				0.973			0.982	
Satd. Flow (prot)	1736	1760	0	1805	1719	0	0	1726	0	0	1723	0
Flt Permitted	0.263			0.324				0.973			0.982	
Satd. Flow (perm)	480	1760	0	616	1719	0	0	1726	0	0	1723	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			13			1			22	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		884			559			447			453	
Travel Time (s)		20.1			12.7			10.2			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	4%	6%	11%	0%	7%	10%	7%	7%	0%	2%	3%	4%
Adj. Flow (vph)	76	420	42	5	431	95	80	61	2	88	66	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	462	0	5	526	0	0	143	0	0	242	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			10			10	
Crosswalk Width(ft)		30			25			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	2			6								
Minimum Split (s)	15.0	50.0		15.0	50.0		20.0	20.0		20.0	20.0	
Total Split (s)	15.0	50.0		15.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	14.3%	47.6%		14.3%	47.6%		19.0%	19.0%		19.0%	19.0%	
Maximum Green (s)	11.0	45.0		11.0	45.0		13.0	13.0		13.0	13.0	
Yellow Time (s)	2.0	4.0		2.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	1.0		2.0	1.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			7.0			7.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Act Effect Green (s)	57.0	45.0		57.0	45.0			13.0			13.0	
Actuated g/C Ratio	0.54	0.43		0.54	0.43			0.12			0.12	
v/c Ratio	0.19	0.61		0.01	0.71			0.67			1.04	
Control Delay (s/veh)	13.0	27.1		9.6	30.3			59.9			112.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	



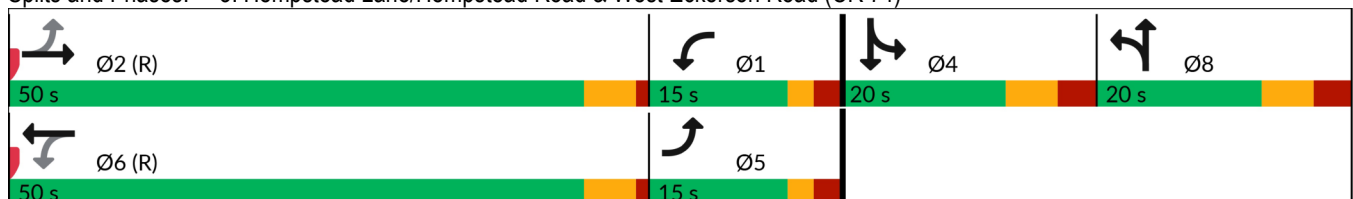


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (s/veh)	13.0	27.1		9.6	30.3			59.9			112.6	
LOS	B	C		A	C			E			F	
Approach Delay (s/veh)		25.1			30.1			59.9			112.6	
Approach LOS		C			C			E			F	
Stops (vph)	30	323		3	386			121			169	
Fuel Used(gal)	2	14		0	7			3			13	
CO Emissions (g/hr)	139	986		3	509			193			889	
NOx Emissions (g/hr)	27	192		1	99			37			173	
VOC Emissions (g/hr)	32	228		1	118			45			206	
Dilemma Vehicles (#)	0	0		0	0			0			0	
Queue Length 50th (ft)	21	232		1	277			92			~163	
Queue Length 95th (ft)	42	339		6	405			#175			#321	
Internal Link Dist (ft)		804			479			367			373	
Turn Bay Length (ft)	80											
Base Capacity (vph)	392	757		458	744			214			232	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.19	0.61		0.01	0.71			0.67			1.04	

Intersection Summary

Area Type: Other  
 Cycle Length: 105  
 Actuated Cycle Length: 105  
 Offset: 39.5 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 105  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.04  
 Intersection Signal Delay (s/veh): 44.9      Intersection LOS: D  
 Intersection Capacity Utilization 72.3%      ICU Level of Service C  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Hempstead Lane/Hempstead Road & West Eckerson Road (CR 74)



Lanes, Volumes, Timings

2026 Build Condition

3: Hempstead Lane/Hempstead Road & West Eckerson Road (CR 74)

Weekday PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	400	36	12	439	126	37	33	3	81	43	99
Future Volume (vph)	107	400	36	12	439	126	37	33	3	81	43	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.966			0.995			0.940	
Flt Protected	0.950			0.950				0.975			0.982	
Satd. Flow (prot)	1719	1782	0	1805	1803	0	0	1843	0	0	1673	0
Flt Permitted	0.199			0.326				0.975			0.982	
Satd. Flow (perm)	360	1782	0	619	1803	0	0	1843	0	0	1673	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			17			2			31	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		884			559			447			453	
Travel Time (s)		20.1			12.7			10.2			10.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	9%	0%	2%	1%	0%	0%	0%	6%	0%	6%
Adj. Flow (vph)	113	421	38	13	462	133	39	35	3	85	45	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	459	0	13	595	0	0	77	0	0	234	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			10			10	
Crosswalk Width(ft)		30			25			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	2			6								
Minimum Split (s)	15.0	50.0		15.0	50.0		20.0	20.0		20.0	20.0	
Total Split (s)	15.0	50.0		15.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	14.3%	47.6%		14.3%	47.6%		19.0%	19.0%		19.0%	19.0%	
Maximum Green (s)	11.0	45.0		11.0	45.0		13.0	13.0		13.0	13.0	
Yellow Time (s)	2.0	4.0		2.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	1.0		2.0	1.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			7.0			7.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Act Effect Green (s)	57.0	45.0		57.0	45.0			13.0			13.0	
Actuated g/C Ratio	0.54	0.43		0.54	0.43			0.12			0.12	
v/c Ratio	0.34	0.60		0.03	0.76			0.34			1.00	
Control Delay (s/veh)	15.6	13.7		9.8	32.3			45.5			100.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	

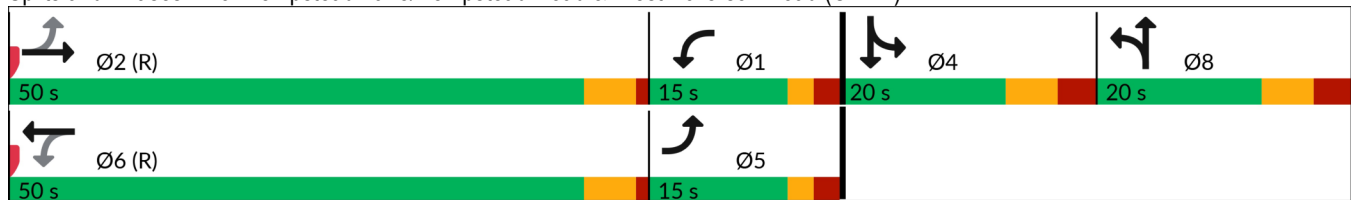


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (s/veh)	15.6	13.7		9.8	32.3			45.5			100.2	
LOS	B	B		A	C			D			F	
Approach Delay (s/veh)		14.1			31.8			45.5			100.2	
Approach LOS		B			C			D			F	
Stops (vph)	29	218		6	462			64			163	
Fuel Used(gal)	3	13		0	9			1			12	
CO Emissions (g/hr)	208	874		8	611			90			836	
NOx Emissions (g/hr)	40	170		1	119			17			163	
VOC Emissions (g/hr)	48	203		2	141			21			194	
Dilemma Vehicles (#)	0	0		0	0			0			0	
Queue Length 50th (ft)	20	112		4	323			47			139	
Queue Length 95th (ft)	m26	m160		12	466			93			#300	
Internal Link Dist (ft)		804			479			367			373	
Turn Bay Length (ft)	80											
Base Capacity (vph)	337	766		460	782			229			234	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.34	0.60		0.03	0.76			0.34			1.00	

Intersection Summary

Area Type: Other  
 Cycle Length: 105  
 Actuated Cycle Length: 105  
 Offset: 90 (86%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 105  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.00  
 Intersection Signal Delay (s/veh): 36.5      Intersection LOS: D  
 Intersection Capacity Utilization 72.8%      ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Hempstead Lane/Hempstead Road & West Eckerson Road (CR 74)



Intersection	
Intersection Delay, s/veh	39.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	38	182	12	95	210	97	40	187	103	72	170	40
Future Vol, veh/h	38	182	12	95	210	97	40	187	103	72	170	40
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	11	7	8	10	13	9	10	8	9	16	12	10
Mvmt Flow	42	200	13	104	231	107	44	205	113	79	187	44
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	23.8	57.2	36	30.1
HCM LOS	C	F	E	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	16%	24%	26%
Vol Thru, %	57%	78%	52%	60%
Vol Right, %	31%	5%	24%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	330	232	402	282
LT Vol	40	38	95	72
Through Vol	187	182	210	170
RT Vol	103	12	97	40
Lane Flow Rate	363	255	442	310
Geometry Grp	1	1	1	1
Degree of Util (X)	0.799	0.602	0.945	0.717
Departure Headway (Hd)	7.933	8.504	7.703	8.334
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	453	423	468	431
Service Time	6.018	6.602	5.78	6.426
HCM Lane V/C Ratio	0.801	0.603	0.944	0.719
HCM Control Delay, s/veh	36	23.8	57.2	30.1
HCM Lane LOS	E	C	F	D
HCM 95th-tile Q	7.3	3.8	11.3	5.6

Intersection	
Intersection Delay, s/veh	21
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	61	198	20	62	109	54	16	193	100	104	143	79
Future Vol, veh/h	61	198	20	62	109	54	16	193	100	104	143	79
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	7	21	17	6	8	20	14	12	11	8	4
Mvmt Flow	66	213	22	67	117	58	17	208	108	112	154	85
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	20	17.7	22.1	23.1
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	22%	28%	32%
Vol Thru, %	62%	71%	48%	44%
Vol Right, %	32%	7%	24%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	309	279	225	326
LT Vol	16	61	62	104
Through Vol	193	198	109	143
RT Vol	100	20	54	79
Lane Flow Rate	332	300	242	351
Geometry Grp	1	1	1	1
Degree of Util (X)	0.647	0.591	0.498	0.673
Departure Headway (Hd)	7.008	7.094	7.413	6.915
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	515	507	486	522
Service Time	5.062	5.149	5.472	4.968
HCM Lane V/C Ratio	0.645	0.592	0.498	0.672
HCM Control Delay, s/veh	22.1	20	17.7	23.1
HCM Lane LOS	C	C	C	C
HCM 95th-tile Q	4.6	3.8	2.7	5

Intersection	
Intersection Delay, s/veh	48.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	38	184	12	108	215	114	40	187	108	77	170	40
Future Vol, veh/h	38	184	12	108	215	114	40	187	108	77	170	40
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	11	7	8	8	13	7	10	8	8	14	12	10
Mvmt Flow	42	202	13	119	236	125	44	205	119	85	187	44
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	24.9	79.3	38.9	32
HCM LOS	C	F	E	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	16%	25%	27%
Vol Thru, %	56%	79%	49%	59%
Vol Right, %	32%	5%	26%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	335	234	437	287
LT Vol	40	38	108	77
Through Vol	187	184	215	170
RT Vol	108	12	114	40
Lane Flow Rate	368	257	480	315
Geometry Grp	1	1	1	1
Degree of Util (X)	0.817	0.613	1.034	0.733
Departure Headway (Hd)	8.273	8.874	7.748	8.67
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	442	409	466	419
Service Time	6.273	6.874	5.831	6.67
HCM Lane V/C Ratio	0.833	0.628	1.03	0.752
HCM Control Delay, s/veh	38.9	24.9	79.3	32
HCM Lane LOS	E	C	F	D
HCM 95th-tile Q	7.6	4	14.4	5.8

Intersection	
Intersection Delay, s/veh	25.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	61	204	20	71	112	65	16	193	116	123	143	79
Future Vol, veh/h	61	204	20	71	112	65	16	193	116	123	143	79
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	6	21	14	5	6	20	14	10	9	8	4
Mvmt Flow	66	219	22	76	120	70	17	208	125	132	154	85
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	22.9	20.6	26.8	28.8
HCM LOS	C	C	D	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	21%	29%	36%
Vol Thru, %	59%	72%	45%	41%
Vol Right, %	36%	7%	26%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	325	285	248	345
LT Vol	16	61	71	123
Through Vol	193	204	112	143
RT Vol	116	20	65	79
Lane Flow Rate	349	306	267	371
Geometry Grp	1	1	1	1
Degree of Util (X)	0.713	0.637	0.57	0.746
Departure Headway (Hd)	7.342	7.485	7.701	7.238
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	489	481	467	497
Service Time	5.428	5.574	5.795	5.322
HCM Lane V/C Ratio	0.714	0.636	0.572	0.746
HCM Control Delay, s/veh	26.8	22.9	20.6	28.8
HCM Lane LOS	D	C	C	D
HCM 95th-tile Q	5.6	4.4	3.5	6.3

HCM 7th TWSC  
5: Hempstead Road & Brick Church Road

2026 No-Build Condition  
Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	47.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	203	125	231	189	121	198
Future Vol, veh/h	203	125	231	189	121	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	11	6	9	6	2	15
Mvmt Flow	218	134	248	203	130	213

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	937	237	343	0	0
Stage 1	237	-	-	-	-
Stage 2	700	-	-	-	-
Critical Hdwy	6.51	6.26	4.19	-	-
Critical Hdwy Stg 1	5.51	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-
Follow-up Hdwy	3.599	3.354	2.281	-	-
Pot Cap-1 Maneuver	283	793	1178	-	-
Stage 1	782	-	-	-	-
Stage 2	476	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	~ 216	793	1178	-	-
Mov Cap-2 Maneuver	~ 216	-	-	-	-
Stage 1	596	-	-	-	-
Stage 2	476	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/veh	47.39	4.88	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	990	-	299	-	-
HCM Lane V/C Ratio	0.211	-	1.181	-	-
HCM Control Delay (s/veh)	8.9	0	147.4	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.8	-	15.4	-	-

Notes  
 ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon



HCM 7th TWSC  
5: Hempstead Road & Brick Church Road

2026 No-Build Condition  
Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	19.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	236	150	79	148	146	147
Future Vol, veh/h	236	150	79	148	146	147
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	7	8	13	10	8	11
Mvmt Flow	271	172	91	170	168	169

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	604	252	337	0	0
Stage 1	252	-	-	-	-
Stage 2	352	-	-	-	-
Critical Hdwy	6.47	6.28	4.23	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-
Follow-up Hdwy	3.563	3.372	2.317	-	-
Pot Cap-1 Maneuver	453	772	1163	-	-
Stage 1	778	-	-	-	-
Stage 2	701	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	414	772	1163	-	-
Mov Cap-2 Maneuver	414	-	-	-	-
Stage 1	711	-	-	-	-
Stage 2	701	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	44.45	2.91	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	626	-	505	-	-
HCM Lane V/C Ratio	0.078	-	0.878	-	-
HCM Control Delay (s/veh)	8.4	0	44.4	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0.3	-	9.6	-	-

HCM 7th TWSC  
5: Hempstead Road & Brick Church Road

2026 Build Condition  
Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	73.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	203	125	231	289	152	198
Future Vol, veh/h	203	125	231	289	152	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	11	6	9	4	1	15
Mvmt Flow	218	134	248	311	163	213

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1077	270	376	0	-	0
Stage 1	270	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Critical Hdwy	6.51	6.26	4.19	-	-	-
Critical Hdwy Stg 1	5.51	-	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-	-
Follow-up Hdwy	3.599	3.354	2.281	-	-	-
Pot Cap-1 Maneuver	233	759	1145	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	424	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 172	759	1145	-	-	-
Mov Cap-2 Maneuver	~ 172	-	-	-	-	-
Stage 1	557	-	-	-	-	-
Stage 2	424	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/261.14		4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	800	-	244	-	-
HCM Lane V/C Ratio	0.217	-	1.448	-	-
HCM Control Delay (s/veh)	9	0	261.1	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.8	-	20.2	-	-

Notes  
 ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

HCM 7th TWSC  
5: Hempstead Road & Brick Church Road

2026 Build Condition  
Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	44					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	236	150	79	217	254	147
Future Vol, veh/h	236	150	79	217	254	147
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	7	8	13	7	4	11
Mvmt Flow	271	172	91	249	292	169

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	807	376	461	0	0
Stage 1	376	-	-	-	-
Stage 2	431	-	-	-	-
Critical Hdwy	6.47	6.28	4.23	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-
Follow-up Hdwy	3.563	3.372	2.317	-	-
Pot Cap-1 Maneuver	344	657	1045	-	-
Stage 1	683	-	-	-	-
Stage 2	645	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	309	657	1045	-	-
Mov Cap-2 Maneuver	309	-	-	-	-
Stage 1	614	-	-	-	-
Stage 2	645	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/veh	21.52	2.34	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	480	-	389	-	-
HCM Lane V/C Ratio	0.087	-	1.14	-	-
HCM Control Delay (s/veh)	8.8	0	121.5	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.3	-	16.7	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	360	2	7	446	1	1
Future Vol, veh/h	360	2	7	446	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	8	0	14	12	100	0
Mvmt Flow	404	2	8	501	1	1
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	407	0	922	406
Stage 1	-	-	-	-	406	-
Stage 2	-	-	-	-	517	-
Critical Hdwy	-	-	4.24	-	7.4	6.2
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	-	-	2.326	-	4.4	3.3
Pot Cap-1 Maneuver	-	-	1090	-	205	650
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	440	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1090	-	203	650
Mov Cap-2 Maneuver	-	-	-	-	203	-
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	436	-
Approach	EB	WB	NB			
HCM Control Delay, s/v	0	0.13	16.73			
HCM LOS				C		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	309	-	-	28	-	
HCM Lane V/C Ratio	0.007	-	-	0.007	-	
HCM Control Delay (s/veh)	16.7	-	-	8.3	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	401	2	3	241	1	13
Future Vol, veh/h	401	2	3	241	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	9	50	0	10	100	0
Mvmt Flow	441	2	3	265	1	14

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	443	0	713
Stage 1	-	-	-	-	442
Stage 2	-	-	-	-	271
Critical Hdwy	-	-	4.1	-	7.4
Critical Hdwy Stg 1	-	-	-	-	6.4
Critical Hdwy Stg 2	-	-	-	-	6.4
Follow-up Hdwy	-	-	2.2	-	4.4
Pot Cap-1 Maneuver	-	-	1128	-	283
Stage 1	-	-	-	-	483
Stage 2	-	-	-	-	593
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1128	-	282
Mov Cap-2 Maneuver	-	-	-	-	282
Stage 1	-	-	-	-	483
Stage 2	-	-	-	-	591

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.1	11.48
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	571	-	-	22	-
HCM Lane V/C Ratio	0.027	-	-	0.003	-
HCM Control Delay (s/veh)	11.5	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	360	12	1	446	35	0
Future Vol, veh/h	360	12	1	446	35	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	8	2	2	12	2	2
Mvmt Flow	404	13	1	501	39	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	418	0	915
Stage 1	-	-	-	-	411
Stage 2	-	-	-	-	503
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1141	-	303
Stage 1	-	-	-	-	669
Stage 2	-	-	-	-	607
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1141	-	303
Mov Cap-2 Maneuver	-	-	-	-	303
Stage 1	-	-	-	-	669
Stage 2	-	-	-	-	606

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.02	18.67
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	303	-	-	4	-
HCM Lane V/C Ratio	0.13	-	-	0.001	-
HCM Control Delay (s/veh)	18.7	-	-	8.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	401	41	1	241	23	0
Future Vol, veh/h	401	41	1	241	23	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	9	2	2	10	2	2
Mvmt Flow	441	45	1	265	25	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	486	0	730
Stage 1	-	-	-	-	463
Stage 2	-	-	-	-	267
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1077	-	389
Stage 1	-	-	-	-	633
Stage 2	-	-	-	-	778
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1077	-	389
Mov Cap-2 Maneuver	-	-	-	-	389
Stage 1	-	-	-	-	633
Stage 2	-	-	-	-	777

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.03	14.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	389	-	-	7	-
HCM Lane V/C Ratio	0.065	-	-	0.001	-
HCM Control Delay (s/veh)	14.9	-	-	8.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM 7th TWSC  
7: Hempstead Road & North Site Driveway

2026 Build Condition  
Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	45	15	6	475	263	14
Future Vol, veh/h	45	15	6	475	263	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	7	3	2
Mvmt Flow	49	16	7	516	286	15

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	823	293	301	0	0
Stage 1	293	-	-	-	-
Stage 2	529	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	343	746	1260	-	-
Stage 1	757	-	-	-	-
Stage 2	591	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	341	746	1260	-	-
Mov Cap-2 Maneuver	341	-	-	-	-
Stage 1	751	-	-	-	-
Stage 2	591	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v15.93		0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	22	-	394	-	-
HCM Lane V/C Ratio	0.005	-	0.165	-	-
HCM Control Delay (s/veh)	7.9	0	15.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-



HCM 7th TWSC  
 7: Hempstead Road & North Site Driveway

2026 Build Condition  
 Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	31	10	21	265	355	49
Future Vol, veh/h	31	10	21	265	355	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	9	6	2
Mvmt Flow	34	11	23	288	386	53

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	746	413	439	0	0
Stage 1	413	-	-	-	-
Stage 2	334	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	381	640	1121	-	-
Stage 1	668	-	-	-	-
Stage 2	726	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	372	640	1121	-	-
Mov Cap-2 Maneuver	372	-	-	-	-
Stage 1	652	-	-	-	-
Stage 2	726	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	14.74	0.61	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	132	-	414	-	-
HCM Lane V/C Ratio	0.02	-	0.108	-	-
HCM Control Delay (s/veh)	8.3	0	14.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

HCM 7th TWSC  
8: Hempstead Road & South Site Driveway

2026 Build Condition  
Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			Y	Y	
Traffic Vol, veh/h	55	17	7	426	261	17
Future Vol, veh/h	55	17	7	426	261	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	8	3	2
Mvmt Flow	60	18	8	463	284	18

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	771	293	302	0	0
Stage 1	293	-	-	-	-
Stage 2	478	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	368	746	1259	-	-
Stage 1	757	-	-	-	-
Stage 2	623	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	365	746	1259	-	-
Mov Cap-2 Maneuver	365	-	-	-	-
Stage 1	751	-	-	-	-
Stage 2	623	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	15.67	0.13	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	29	-	415	-	-
HCM Lane V/C Ratio	0.006	-	0.188	-	-
HCM Control Delay (s/veh)	7.9	0	15.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

HCM 7th TWSC  
 8: Hempstead Road & South Site Driveway

2026 Build Condition  
 Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	38	12	25	248	306	59
Future Vol, veh/h	38	12	25	248	306	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	10	7	2
Mvmt Flow	41	13	27	270	333	64

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	689	365	397	0	0
Stage 1	365	-	-	-	-
Stage 2	324	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	412	680	1162	-	-
Stage 1	703	-	-	-	-
Stage 2	733	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	400	680	1162	-	-
Mov Cap-2 Maneuver	400	-	-	-	-
Stage 1	683	-	-	-	-
Stage 2	733	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	14.23	0.75	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	165	-	444	-	-
HCM Lane V/C Ratio	0.023	-	0.122	-	-
HCM Control Delay (s/veh)	8.2	0	14.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-