Traffic Impact Study
Proposed Residential Development
Naperville, Illinois

Prepared For:

Bridge Capital Partners

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1. Introduction

This report summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed residential development to be located in Naperville, Illinois.

This site, which is currently occupied by the former Lizzie's Garden nursery, is located on the north side of 111th Street, approximately 1,600 feet west of IL Route 59. As proposed, the site will be developed with 10 multifamily residential buildings containing a total of 212 units. The development will provide a total of 480 parking spaces consisting of 76 garage spaces, 76 driveway parking spaces, and 328 surface parking spaces. Access to the development will be provided via a full movement access drive and a right-in/right-out access drive off 111th Street.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed development will have on traffic conditions in the area, and determine if any roadway or access improvements are necessary to accommodate traffic generated by the proposed development. **Figure 1** shows the location of the site in relation to the area roadway system. **Figure 2** shows an aerial view of the site. The sections of this report present the following:

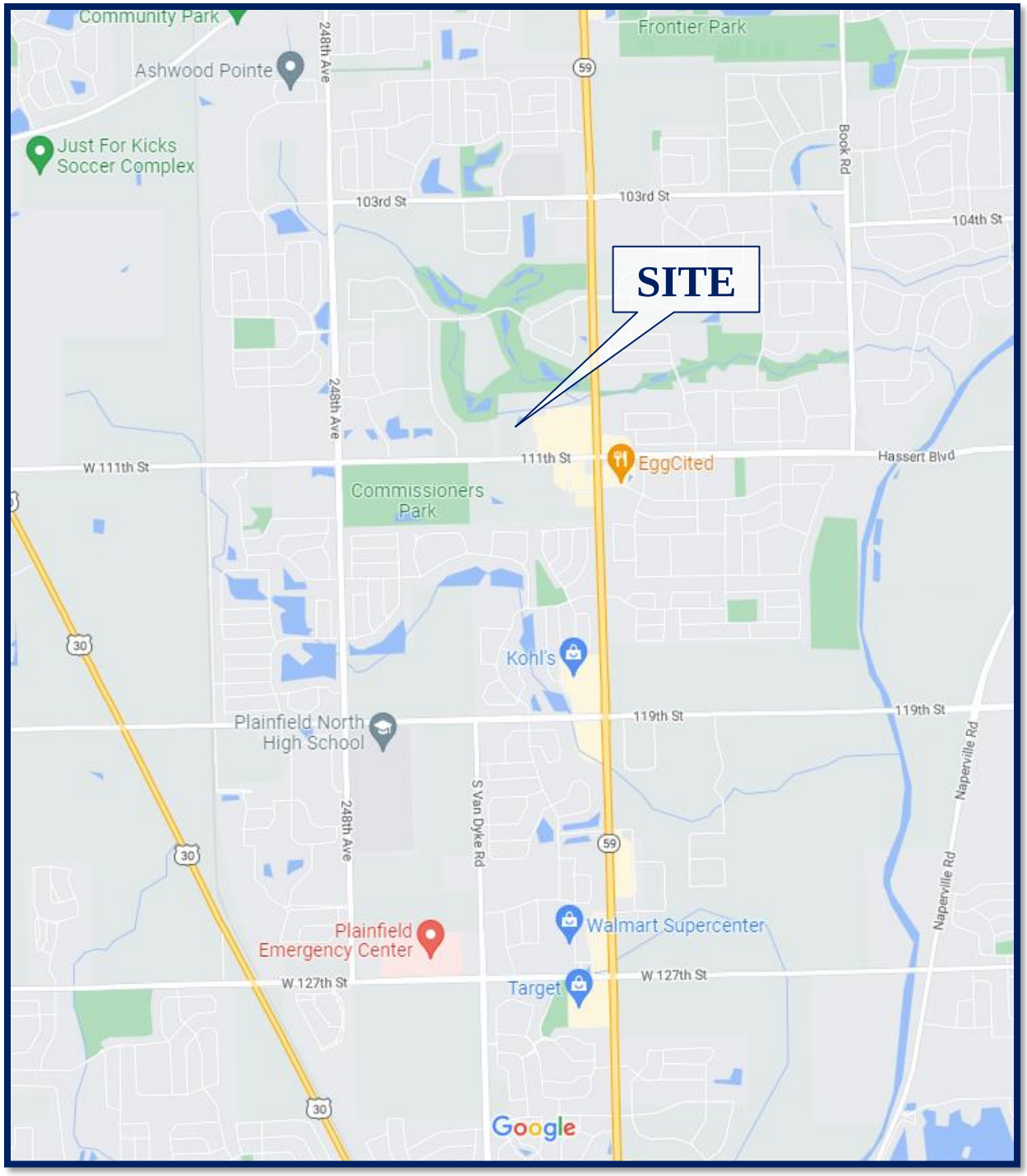
- Existing roadway conditions
- A description of the proposed development
- Directional distribution of the development traffic
- Vehicle trip generation for the development
- Future traffic conditions including access to the development
- Traffic analyses for the weekday morning and weekday evening peak hours
- Recommendations with respect to adequacy of the site access and adjacent roadway system
- Evaluation of the adequacy of the parking supply

Traffic capacity analyses were conducted for the weekday morning and weekday evening peak hours for the following conditions:

1. Base Conditions - Analyzes the capacity of the existing roadway system using existing peak hour traffic volumes in the surrounding area adjusted to reflect normal conditions.

2. No-Build Conditions - Analyzes the capacity of the existing roadway system using base peak hour traffic volumes increased by a regional growth factor (growth not attributable to any particular development) and the traffic estimated to be generated by other area developments.

3. Future Conditions – Analyzes the projected traffic volumes which includes the base traffic volumes increased by an ambient area growth factor (growth not attributable to any particular development) and the traffic estimated to be generated by the proposed subject development.



Site Location **Figure 1**

Aerial View of Site **Figure 2**

2. Existing Conditions

Existing transportation conditions in the vicinity of the site were documented in order to obtain a database for projecting future conditions. The following provides a description of the geographical location of the site, physical characteristics of the area roadway system including lane usage and traffic control devices and existing peak hour traffic volumes.

Site Location

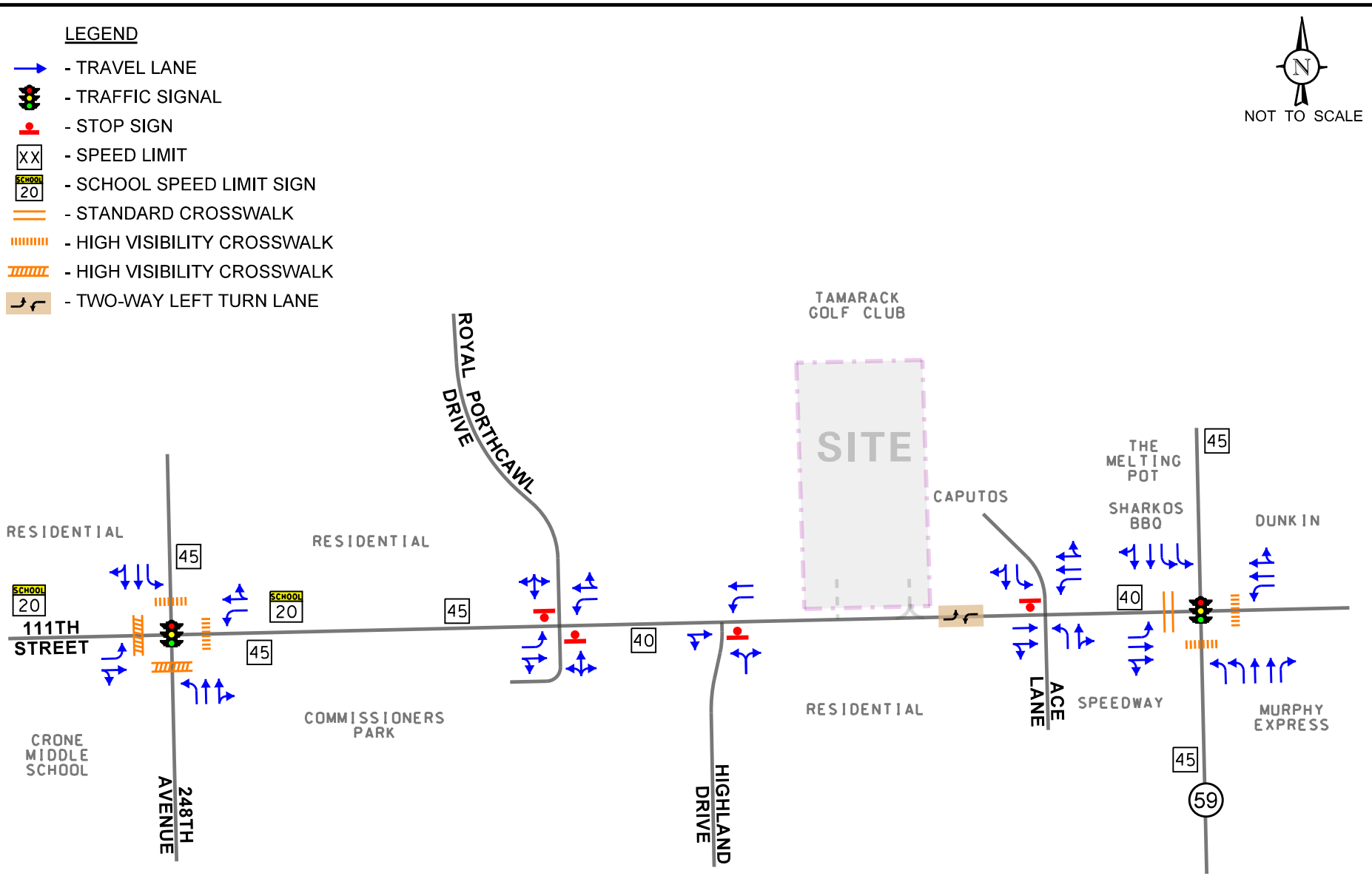
This site, which is currently vacant, is located on the north side of 111th Street, approximately 1,600 feet west of IL Route 59. Land uses in the vicinity of the site are primarily residential to the north, west and south, and commercial to the east and include Angelo Caputo's Fresh Market and TJ Maxx to the east, Commissioners Park to the southwest, and Tamarack Golf Club to the north.

Existing Roadway System Characteristics

The characteristics of the existing roadways near the development are described below. **Figure 3** illustrates the existing roadway characteristics.

111th Street is an east-west major arterial roadway that in the vicinity of the site provides a single travel lane in each direction west of Ace Lane and two travel lanes in each direction east of Ace Lane. At its signalized intersection with IL Route 59 and its unsignalized intersection with Ace Lane, 111th Street provide an exclusive left-turn lane, a through lane, and a shared through/right-turn lane on the eastbound and westbound approaches. At its signalized intersection with 248th Avenue and its unsignalized intersections with Royal Porthcawl Drive and Highland Drive, 111th Street provides an exclusive left-turn lane (where appropriate) and a shared through/right-turn lane on the eastbound and westbound approaches. East of IL Route 59, 111th Street is under the jurisdiction of the Will County Division of Transportation (WCDOT), carries an annual average daily traffic (AADT) volume of 18,900 vehicles (IDOT 2019) and has a posted speed limit of 45 miles per hour. West of IL Route 59, portions of 111th Street are under the jurisdiction of the City of Naperville as well as Wheatland Township, the roadway carries an AADT volume of 15,100 vehicles (IDOT 2019), and has a posted speed limit of 45 miles per hour except for the segment of 111th Street between IL Route 59 and Royal Porthcawl Drive which has a posted speed limit of 40 miles per hour.

IL Route 59 is a north-south principal arterial roadway that in the vicinity of the site provides two travel lanes in each direction separated by a raised landscaped median. At its signalized intersection with 111th Street, IL Route 59 provides dual left-turn lanes, a through lane and a shared through/right-turn lane on the southbound approach, and dual left-turn lane, two through lanes, and an exclusive right-turn lane on the northbound approach. IL Route 59 is under the jurisdiction of the Illinois Department of Transportation (IDOT), carries an AADT volume of 34,500 vehicles north of 111th Street and an AADT volume of 30,100 vehicles south of 111th Street (IDOT 2021), and has a posted speed limit of 45 miles per hour.



Residential Development
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Existing Roadway Characteristics

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Figure: 3

248th Avenue is a north-south roadway that provides two travel lanes in each direction separated by a raised landscaped median north of 111th Street. At its signalized intersection with 111th Street, 248th Avenue provides an exclusive left-turn lane, a through lane, and a shared through/right-turn lane on the northbound and southbound approaches. 248th Avenue is under the jurisdiction of the City of Naperville, carries an AADT volume of 10,200 vehicles (IDOT 2019), and has a posted speed limit of 45 miles per hour.

Royal Porthcawl Drive is a north-south local roadway that in the vicinity of the site provides a single travel lane in each direction. At its unsignalized intersection with 111th Street, Royal Porthcawl Drive provides a shared left/through/right-turn lane that is under stop sign control. The south leg of the intersection is the easterly access drive serving Commissioners Park which provides a left-turn/through/right-turn lane that is under stop sign control. Royal Porthcawl Drive is generally under the jurisdiction of Wheatland Township and the intersection of Royal Porthcawl Drive with 111th Street is under the jurisdiction of the City of Naperville.

Highland Drive is a north-south local roadway that in the vicinity of the site provides a single travel lane in each direction. At its unsignalized intersection with 111th Street, Highland Drive provides a shared left/right-turn lane that is under stop sign control. Highland Drive is under the jurisdiction of Wheatland Township

Ace Lane is a north-south local roadway that extends from 111th Street south where it curves east to IL Route 59. At its unsignalized intersection with 111th Street, Ace Lane provides an exclusive left-turn lane and a shared through/right-turn lane that is under stop sign control. The north leg of this intersection is the access drive serving Caputo's Fresh Market which provides an exclusive left-turn lane and a shared through/right-turn lane that is under stop sign control. Ace Lane is under the jurisdiction of the City of Naperville

Existing Traffic Volumes

In order to determine current traffic conditions in the vicinity of the site, KLOA, Inc. conducted peak period traffic, pedestrian, and bicycle counts during the weekday morning (7:00 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 6:00 P.M.) peak periods at the following intersections:

- IL Route 59 with 111th Street/Hassert Boulevard
- 111th Street with 248th Avenue
- 111th Street with Highland Drive
- 111th Street with Royal Porthcawl Drive
- 111th Street with the Angelo Caputo's Fresh Market Access Drive

The counts were conducted in April 2022 and the results of the traffic counts showed that the weekday morning peak hour of traffic generally occurs from 7:30 A.M. to 8:30 A.M. and the weekday evening peak hour of traffic generally occurs from 4:15 P.M. to 5:15 P.M.

Due to the COVID-19 pandemic, it is anticipated that the Year 2022 traffic volumes may not be representative of typical conditions. Therefore, the Year 2022 traffic volumes were compared to historic two-way traffic volumes along the study area roadway segments from 2019 that were obtained from the IDOT Traffic Count Database System (TCDS) website, which were increased by a regional growth factor (as discussed later). The results of the comparison indicated the following:

- The Year 2022 northbound traffic volumes along IL Route 59 were approximately 30 percent lower during the weekday morning peak hour and were consistent during the weekday evening peak hour.

- The Year 2022 southbound traffic volumes along IL Route 59 were consistent during the weekday morning peak hour and were approximately 20 percent less during the weekday evening peak hour.

- The Year 2022 eastbound traffic volumes on Hassert Boulevard were approximately 40 percent lower during the weekday morning peak hour and were consistent during the weekday evening peak hour.

- The Year 2022 westbound traffic volumes on Hassert Boulevard were consistent during the weekday morning peak hour and were approximately 25 percent lower during the weekday evening peak hour.

- The Year 2022 northbound traffic volumes along 248th Avenue were approximately 30 percent lower during the weekday morning peak hour and were consistent during the weekday evening peak hour.

- The Year 2022 southbound traffic volumes along 248th Avenue were approximately 75 percent less during the weekday morning peak hour and 50 percent less during the weekday evening peak hour.

- The Year 2022 eastbound traffic volumes on 111th Street west of 248th Avenue were approximately 90 percent less during the weekday morning and weekday evening peak hours.

- The Year 2022 westbound traffic volumes on 111th Street west of 248th Avenue were approximately 25 percent less during the weekday morning and weekday evening peak hours.

As such, the traffic volumes within the study area were adjusted as follows:

- The northbound traffic volumes along IL Route 59 were increased by 30 percent during the weekday morning peak hour.

- The southbound through traffic volumes along IL Route 59 were increased by 20 percent less during the weekday evening peak hour.

- All traffic movements contributing to the eastbound traffic on Hassert Boulevard were increased by 40 percent during the weekday morning peak hour.

- All traffic movements contributing to the westbound traffic on Hassert Boulevard were increased by 25 percent during the weekday evening peak hour.

- The northbound traffic volumes along 248th Avenue at 111th Street were increased by 30 percent during the weekday morning peak hour.

- The eastbound right-turn and southbound through movements at the intersection of 248th Avenue with 111th Street were increased by 75 percent during the weekday morning peak hour and 50 percent during the weekday evening peak hour.

- The eastbound through traffic volumes on 111th Street west of 248th Avenue were increased by 90 percent during the weekday morning and weekday evening peak hours and the eastbound right-turn movement was increased by approximately 100-110 vehicles to account for vehicles that may have utilized this intersection to travel between US Route 30 and 119th Street.

- The westbound through traffic volumes on 111th Street at 248th Avenue were increased by 25 percent during the weekday morning and weekday evening peak hours.

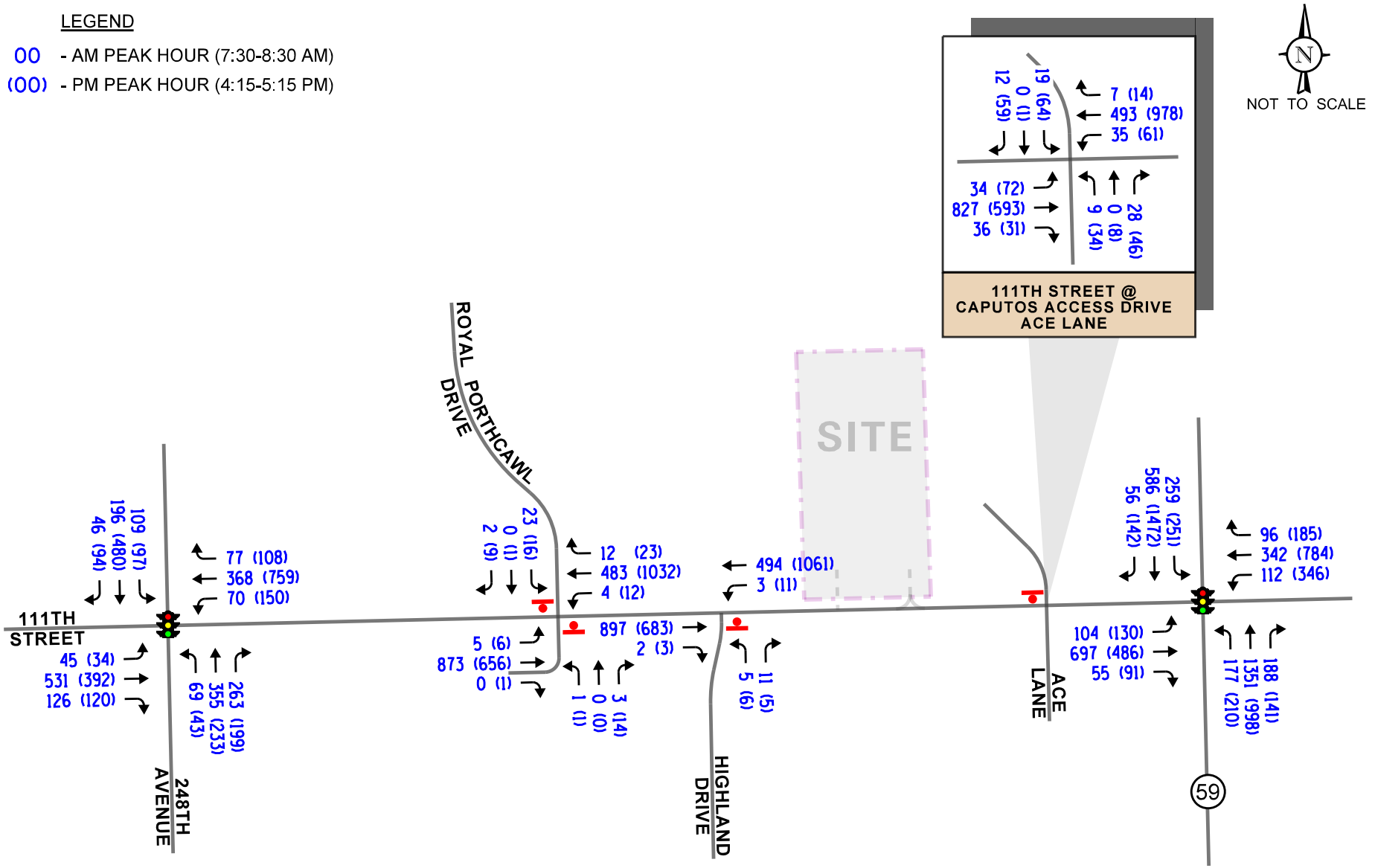
Additionally, the through volumes along 111th Street were balanced in the eastbound and westbound directions to the intersection of IL Route 59 with 111th Street and 248th Avenue with 111th Street.

Figure 4 illustrates the Year 2022 base traffic volumes. Copies of the traffic count summary sheets are included in the Appendix.

Crash Analysis

KLOA, Inc. obtained crash data[1] from IDOT for the most recent available five years (2016 to 2020) for the intersections of 111th Street with IL Route 59, 248th Avenue, Royal Porthcawl Drive and Highland Drive. The crash data for the intersections of 111th Street with IL Route 59 and 248th Avenue is summarized in **Tables 1** and **2**, respectively. A review of the crash data indicated that no crashes were reported at the intersections of 111th Street with Royal Porthcawl Drive and Highland Drive and no fatalities were reported at the study area intersections between 2016 and 2020.

[1] IDOT DISCLAIMER: The motor vehicle crash data referenced herein was provided by the Illinois Department of Transportation. Any conclusions drawn from analysis of the aforementioned data are the sole responsibility of the data recipient(s). Additionally, for coding years 2015 to present, the Bureau of Data Collection uses the exact latitude/longitude supplied by the investigating law enforcement agency to locate crashes. Therefore, location data may vary in previous years since data prior to 2015 was physically located by bureau personnel.



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Year 2022 Base Traffic Volumes

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Figure: 4

Table 1
111th STREET WITH IL ROUTE 59 – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Pedestrian	Object	Rear End	Sideswipe	Turning	Other	Total
2016	1	0	0	10	0	8	0	19
2017	1	0	0	8	2	3	0	14
2018	2	0	0	4	0	3	0	9
2019	2	0	0	5	1	5	0	13
2020	2	0	0	4	0	0	0	6
Total	**8**	**0**	**0**	**31**	**3**	**19**	**0**	**61**
Average	**1.6**	**0**	**0**	**6.2**	**< 1**	**3.8**	**0**	**12.2**

Table 2
111th STREET WITH 248th AVENUE – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Pedestrian	Object	Rear End	Sideswipe	Turning	Other	Total
2016	0	0	0	3	0	0	0	3
2017	0	0	0	3	1	3	0	7
2018	1	0	0	4	0	1	0	6
2019	1	0	0	1	1	0	1	4
2020	2	0	0	4	0	1	0	7
Total	**4**	**0**	**0**	**15**	**2**	**5**	**1**	**27**
Average	**< 1**	**0**	**0**	**3**	**< 1**	**1**	**< 1**	**5.4**

3. Traffic Characteristics of the Proposed Development

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed development, including the directional distribution and volumes of traffic that it will generate.

Proposed Site and Development Plan

As proposed, the site will be developed with 10 multifamily residential buildings containing a total of 212 units. The development will provide a total of 480 parking spaces consisting of 76 garage spaces, 76 driveway parking spaces, and 328 surface parking spaces. A copy of the site plan is included in the Appendix.

Primary access to the site will be provided via a proposed full movement access drive off 111th Street located in the approximate location of the existing westerly access drive serving the site, 575 feet east of Highland Drive. This access drive will provide one inbound lane and two outbound lanes. Outbound movements should be under stop sign control. It should be noted that an existing eastbound left-turn lane providing 160 feet of storage and 155 feet of taper is currently provided on 111th Street at this location. Additional access will be provided via a proposed right-in/right-out access drive off 111th Street, located approximately 930 feet east of Highland Drive (1,450 feet west of IL Route 59). This access drive will provide one inbound lane and one outbound lane that will be physically restricted to right-turn movements only via a triangular median. Outbound movements should be under stop sign control.

Directional Distribution

The directions from which residents of the proposed development will approach and depart the site were estimated based on existing travel patterns, as determined from the traffic counts. **Figure 5** illustrates the directional distribution of the development-generated traffic.

Estimated Site Traffic Generation

The number of peak hour vehicle trips estimated to be generated by the proposed development was based on vehicle trip generation rates contained in *Trip Generation Manual*, 11th Edition, published by the Institute of Transportation Engineers (ITE). Land-Use Code 220 (Multi-Family Housing) was utilized. **Table 3** shows the estimated vehicle trip generation for the weekday morning and weekday evening peak hours and on a daily basis.

Table 3
ESTIMATED SITE-GENERATED TRAFFIC VOLUMES

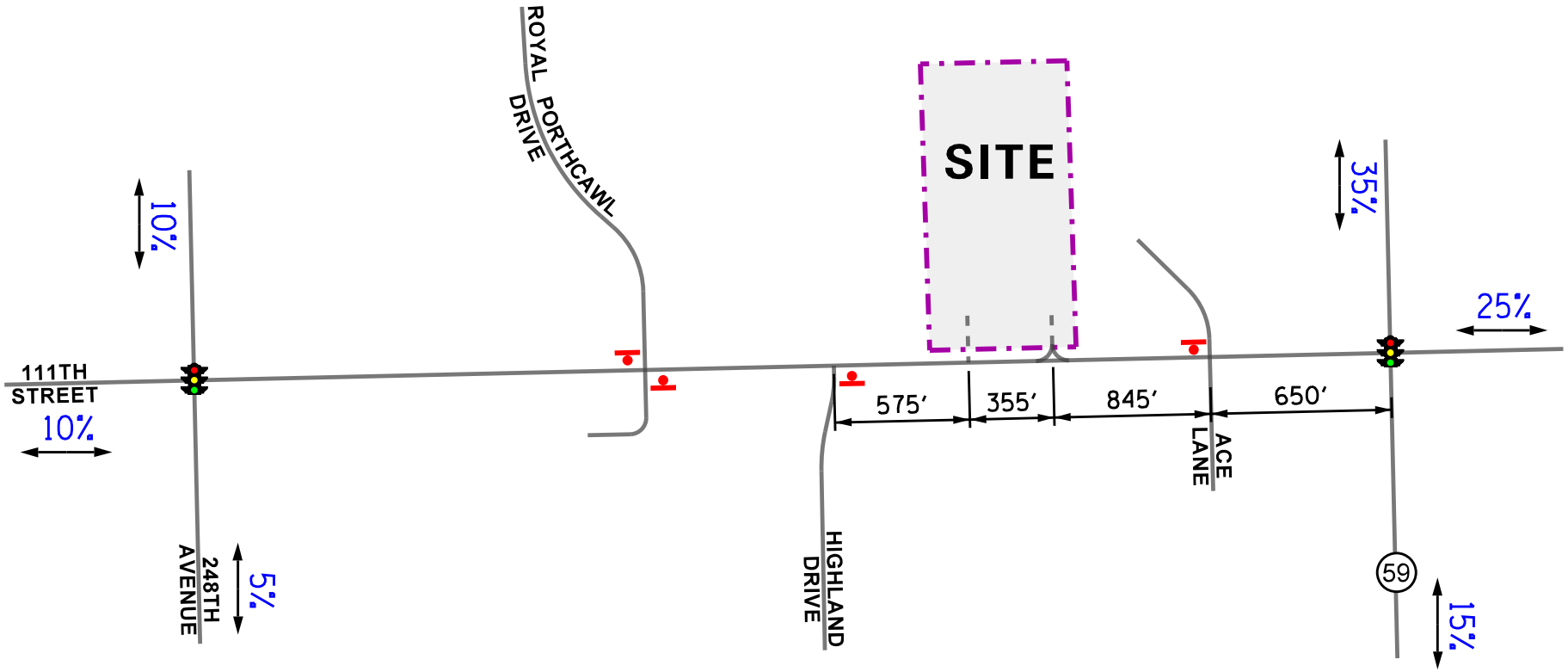
ITE Land-Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Weekday Daily Traffic		
		In	Out	Total	In	Out	Total	In	Out	Total
220	Multifamily Housing (212 units)	21	68	89	70	42	112	717	717	1434

LEGEND

00% - PERCENT DISTRIBUTION

00′ - DISTANCE IN FEET

NOT TO SCALE



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Estimated Directional Distribution

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Figure: 5

4. Projected Traffic Conditions

The total projected traffic volumes include the base traffic volumes, increase in background traffic due to growth, and the traffic estimated to be generated by the proposed subject development.

Development Traffic Assignment

The estimated weekday morning and evening peak hour traffic volumes that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution (Figure 5). The total new traffic assignment for the residential development is illustrated in **Figure 6**.

Background (No-Build) Traffic Conditions

The base traffic volumes (Figure 4) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any particular planned development). Based on 2050 Average Daily Traffic (ADT) projections provided by the Chicago Metropolitan Agency for Planning (CMAP) in a letter dated April 18, 2022, the base traffic volumes were increased by an annually compounded growth rate for six years (one-year buildout plus five years) totaling approximately four percent to represent Year 2028 no-build conditions. A copy of the CMAP 2050 projections letter is included in the Appendix. Furthermore, the Year 2028 no-build conditions take into consideration the traffic generated by the following two developments:

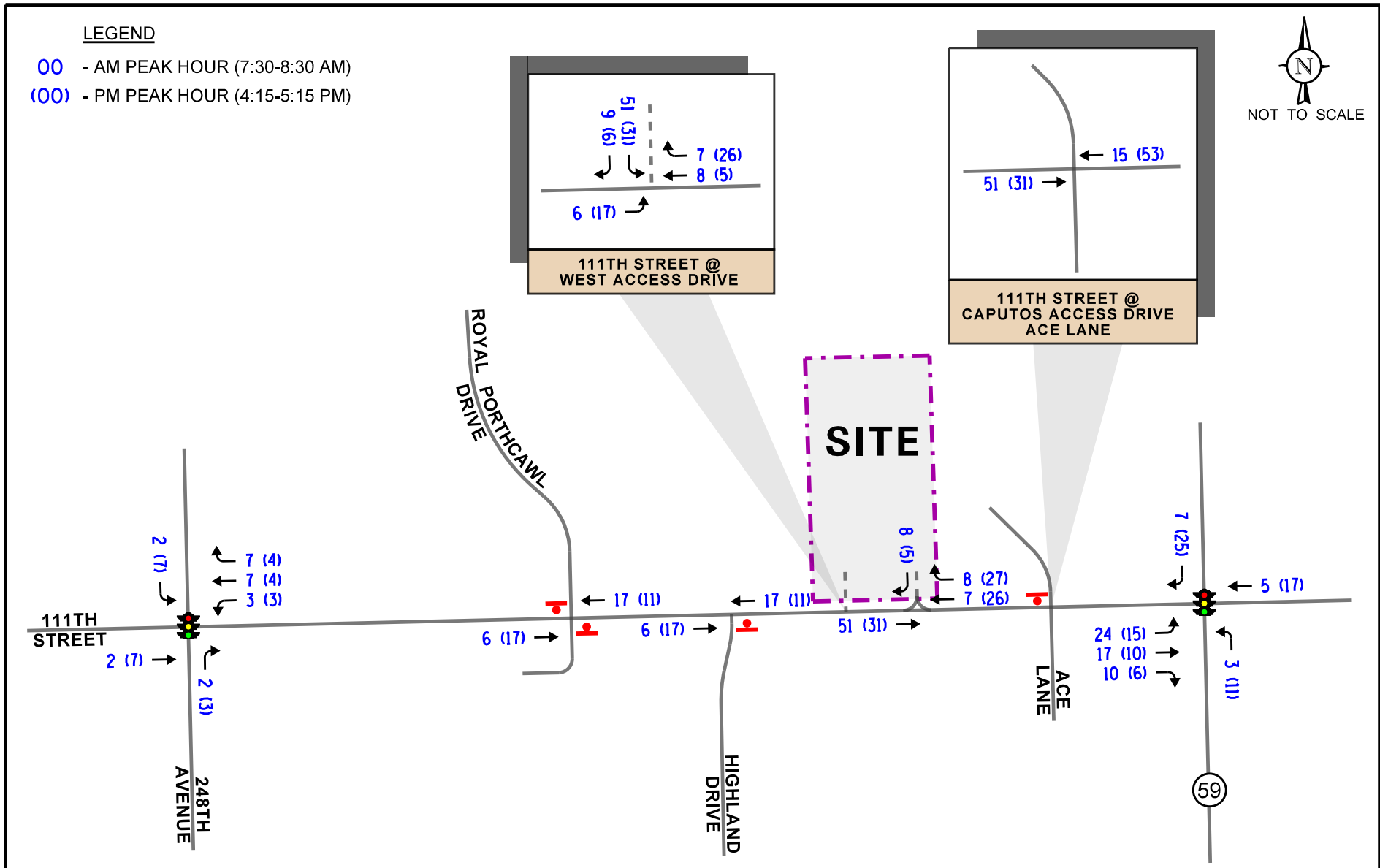
- The Wagner Farm residential development located in the northeast quadrant of the intersection of IL Route 59 with 103rd Street which has some of the proposed residential homes currently under construction.

- The proposed Lincoln Prairie active adult community located in the southeast quadrant of the intersection of Wolfs Crossing Road with Eola Road.

Figure 7 illustrates the Year 2028 no-build traffic volumes.

Total Projected Traffic Volumes

The development-generated traffic (Figure 6) was added to the base traffic volumes increased by a regional growth factor to determine the Year 2028 total projected traffic volumes, as illustrated in **Figure 8**.



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Estimated Site Traffic Assignment

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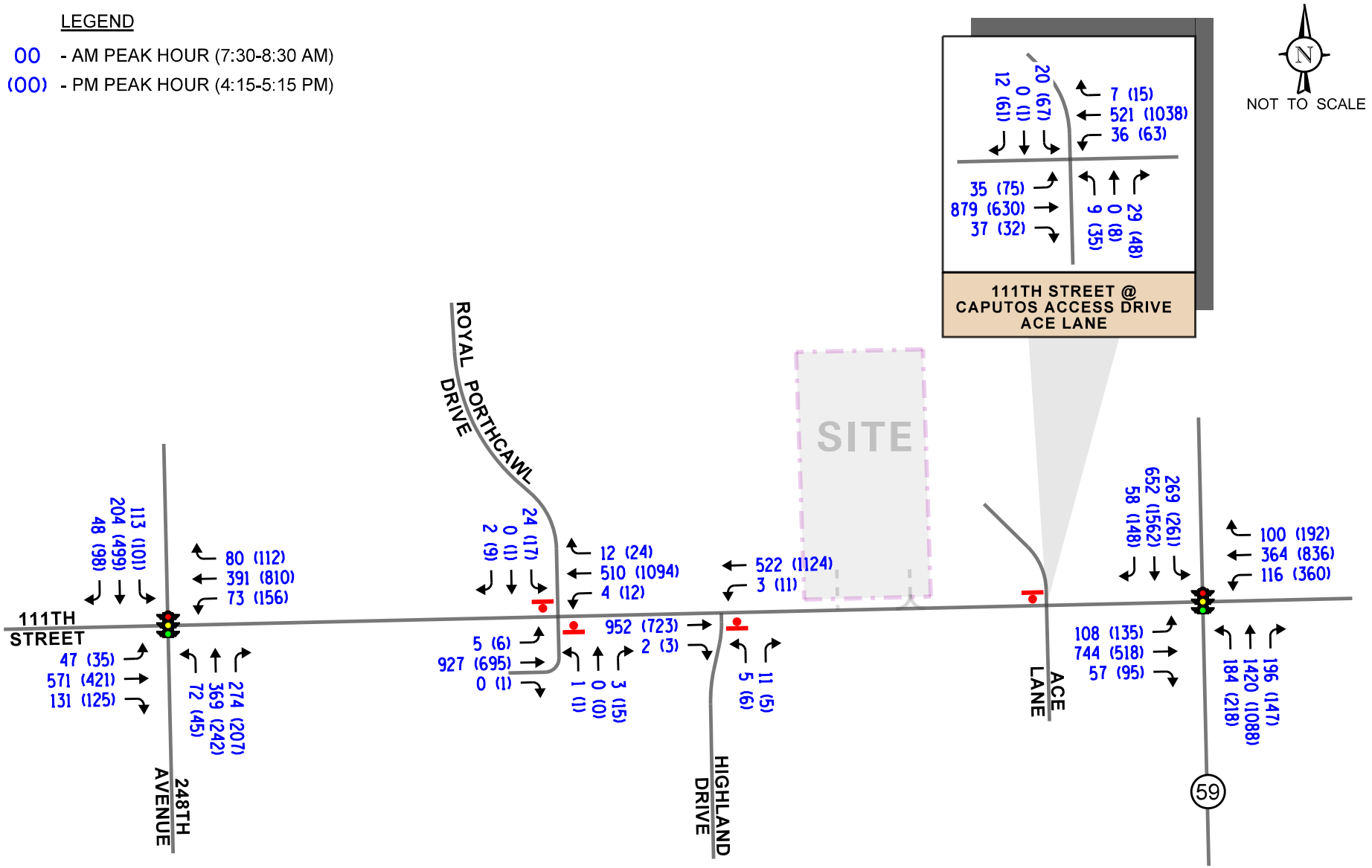

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Year 2028 No-Build Traffic Volumes

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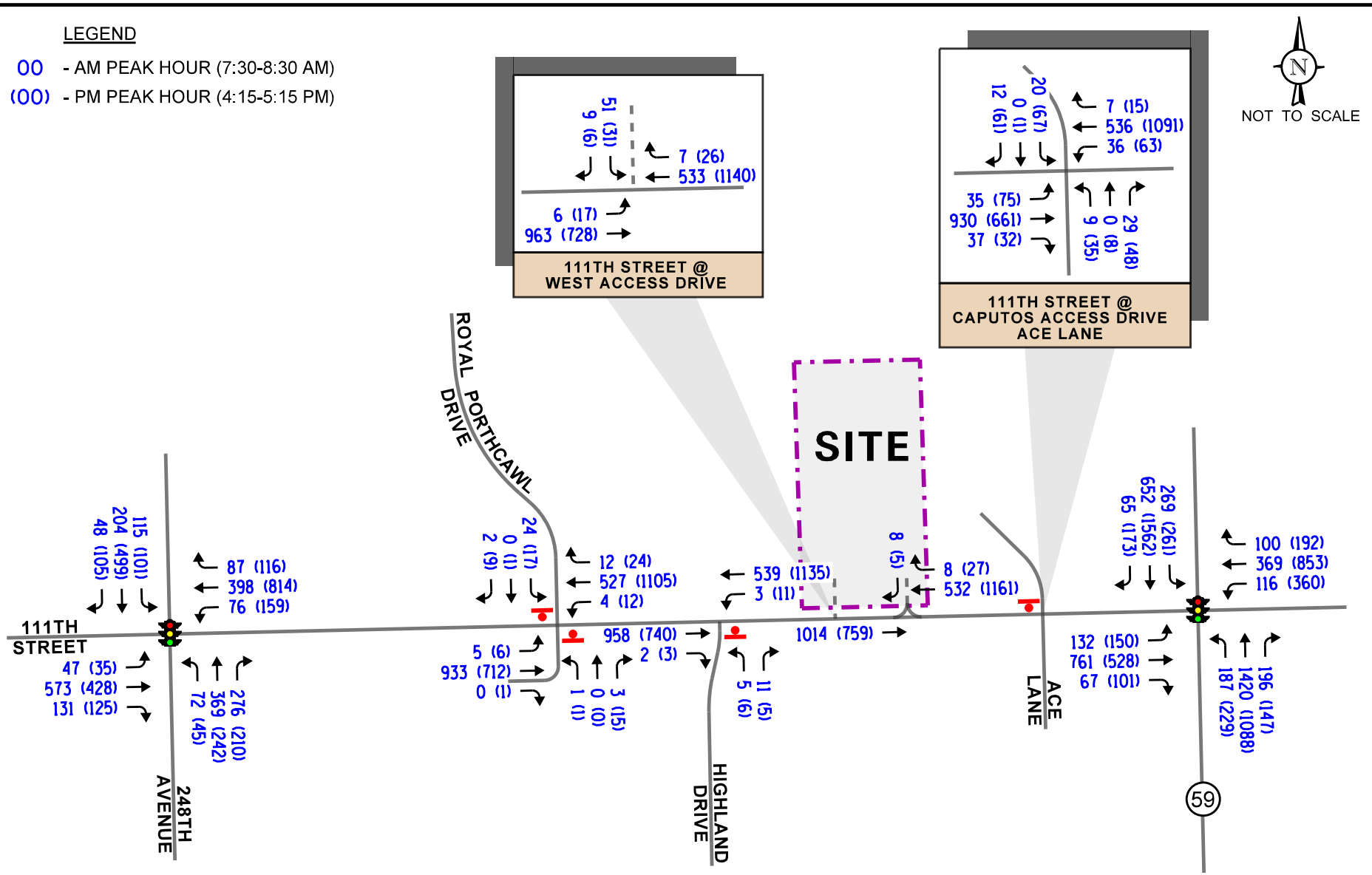
Figure: 7



Residential Development
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Year 2028 Total Projected Traffic Volumes

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Figure: 8

5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and weekday evening peak hours. The analysis includes conducting capacity analyses to determine how well the roadway system and access drives are projected to operate and whether any roadway improvements or modifications are required.

Traffic Analyses

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning and weekday evening peak hours for the base (Year 2022), Year 2028 no-build, and future projected (Year 2028) traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM), 6th Edition* and analyzed using Synchro/SimTraffic 11 computer software. The analysis for the traffic-signal controlled intersection of 111th Street with IL Route 59 was accomplished utilizing actual cycle lengths phasings, and offsets. The analysis for the traffic-signal controlled intersection of 111th Street with 248th Avenue was accomplished utilizing field measured cycle lengths and optimized signal phasings.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in the Appendix of this report.

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the Year 2022 base, Year 2028 no-build, and Year 2028 total projected conditions are presented in **Tables 4** through **8.** A discussion of the intersections follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 4
CAPACITY ANALYSIS RESULTS – IL ROUTE 59 WITH 111th STREET – SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Year 2022 Base Conditions	Weekday Morning Peak Hour	D 41.2	F 105.1		E 55.8	E 57.9		F 81.9	D 36.0	A 5.8	E 77.3	C 21.7		D – 53.0
		F – 97.3			E – 57.5			D – 37.4			D – 37.7			
	Weekday Evening Peak Hour	E 60.1	F 102.2		F 111.9	F 120.7		F 89.5	D 37.6	A 5.8	E 79.0	E 69.6		E – 78.7
		F – 94.5			F – 118.4			D – 42.3			E – 70.9			
Year 2028 No-Build Conditions	Weekday Morning Peak Hour	D 42.5	F 127.8		E 57.6	E 60.2		F 84.0	D 38.5	A 6.1	E 78.5	C 22.5		E – 58.6
		F – 117.7			E – 59.7			D – 39.7			D – 37.9			
	Weekday Evening Peak Hour	E 62.0	F 117.5		F 124.5	F 147.0		F 91.6	D 39.8	A 6.1	E 76.3	F 89.2		F – 92.4
		F – 107.5			F – 141.2			D – 44.1			F – 87.9			
Year 2028 Total Conditions	Weekday Morning Peak Hour	D 46.6	F 142.2		E 57.6	E 62.6		F 84.8	D 38.5	A 6.1	E 78.5	C 22.6		E – 62.1
		F – 129.1			E – 61.6			D – 39.8			D – 37.8			
	Weekday Evening Peak Hour	E 70.6	F 125.2		F 124.5	F 157.4		F 94.4	D 39.8	A 6.1	E 79.3	F 95.9		F – 97.7
		F – 114.6			F – 148.9			D – 44.9			F – 93.7			

LOS = Level of Service
Delay is measured in seconds.

Table 5
CAPACITY ANALYSIS RESULTS – 111th STREET WITH 248th AVENUE – SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Year 2022 Base Conditions	Weekday Morning Peak Hour	B 10.6	D 51.0		E 59.8	C 23.5		C 25.8	D 41.8		E 66.6	C 31.5		D – 40.4
		D – 48.4			C – 28.4			D – 40.2			D – 42.4			
	Weekday Evening Peak Hour	A 9.5	C 23.5		B 10.0	D 48.4		C 26.6	C 22.5		D 35.2	D 47.6		D – 36.0
		C – 22.6			D – 42.7			C – 22.9			D – 45.8			
Year 2028 No-Build Conditions	Weekday Morning Peak Hour	B 10.9	E 67.6		E 66.4	C 24.7		C 26.1	D 45.8		E 42.1	C 31.7		D – 47.1
		E – 64.1			C – 30.0			D – 43.8			D – 44.2			
	Weekday Evening Peak Hour	A 9.7	C 26.5		B 11.6	E 72.2		C 26.9	C 24.0		D 38.4	D 45.8		D – 44.3
		C – 25.5			E – 63.4			C – 24.2			D – 44.7			
Year 2028 Total Conditions	Weekday Morning Peak Hour	B 11.0	E 68.3		E 71.1	C 25.5		C 26.1	D 45.9		E 75.5	C 31.7		D – 47.8
		E – 64.8			C – 31.7			D – 43.9			D – 45.5			
	Weekday Evening Peak Hour	A 9.7	C 27.1		B 12.0	E 76.1		C 26.9	C 23.9		D 38.7	D 46.5		D – 45.9
		C – 26.1			E – 66.7			C – 24.2			D – 45.4			

LOS = Level of Service
Delay is measured in seconds.

Table 6
CAPACITY ANALYSIS RESULTS
YEAR 2022 BASE CONDITIONS - UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
111th Street with Royal Porthcawl Drive				
• Northbound Approach	E	43.3	C	20.6
• Southbound Approach	E	40.5	D	33.2
• Eastbound Left Turn	A	9.1	B	11.4
• Westbound Left Turn	B	11.8	A	9.3
111th Street with Highland Drive				
• Northbound Approach	C	21.7	C	20.8
• Westbound Left Turn	B	10.8	A	9.4
111th Street with Ace Lane/Caputo's Access Drive				
• Northbound Approach	C	16.2	C	24.8
• Southbound Approach	C	18.2	E	47.2
• Eastbound Left Turn	A	9.0	B	11.5
• Westbound Left Turn	B	10.7	A	9.3

LOS = Level of Service Note: All intersections under two-way stop sign control.
Delay is measured in seconds

Table 7
CAPACITY ANALYSIS RESULTS
YEAR 2028 NO-BUILD CONDITIONS - UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
111th Street with Royal Porthcawl Drive				
• Northbound Approach	F	50.5	C	22.6
• Southbound Approach	E	46.7	E	37.5
• Eastbound Left Turn	A	9.3	B	11.8
• Westbound Left Turn	B	12.3	A	9.5
111th Street with Highland Drive				
• Northbound Approach	C	23.5	C	22.2
• Westbound Left Turn	B	11.1	A	9.5
111th Street with Ace Lane/Caputo's Access Drive				
• Northbound Approach	C	17.0	D	27.9
• Southbound Approach	C	19.5	F	61.5
• Eastbound Left Turn	A	9.1	B	12.0
• Westbound Left Turn	B	11.0	A	9.5

LOS = Level of Service Note: All intersections under two-way stop sign control.
Delay is measured in seconds

Table 8
CAPACITY ANALYSIS RESULTS
YEAR 2028 PROJECTED CONDITIONS - UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
111th Street with Royal Porthcawl Drive				
• Northbound Approach	F	53.0	C	23.5
• Southbound Approach	E	47.7	E	38.4
• Eastbound Left Turn	A	9.4	B	11.9
• Westbound Left Turn	B	12.3	A	9.6
111th Street with Highland Drive				
• Northbound Approach	C	23.7	C	22.7
• Westbound Left Turn	B	11.2	A	9.6
111th Street with Ace Lane/Caputo's Access Drive				
• Northbound Approach	C	17.9	D	30.2
• Southbound Approach	C	20.3	F	71.9
• Eastbound Left Turn	A	9.2	B	12.5
• Westbound Left Turn	B	11.4	A	9.6
111th Street with Proposed Full Access Drive				
• Southbound Left Turn	C	23.6	D	29.1
• Southbound Right Turn	B	11.9	C	21.6
• Eastbound Left Turn	A	8.6	B	11.5
111th Street with Proposed Right-In/Right-Out Access Drive				
• Southbound Approach	B	11.9	C	22.0

LOS = Level of Service Note: All intersections under two-way stop sign control.
Delay is measured in seconds

Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identifies any roadway and traffic control improvements necessary to accommodate the development traffic.

111th Street with IL Route 59

The results of the capacity analysis indicate that overall, this intersection currently operates at level of service (LOS) D during the weekday morning peak hour and at LOS E during the weekday evening peak hour. It should be noted that the eastbound and westbound approaches and northbound and southbound left-turn movements currently operate at LOS E/F during the peak hours. This level of service is primarily due to the long cycle length and the high volume of existing traffic along IL Route 59 which limits the available green time allocated to the eastbound and westbound approaches as well as the northbound and southbound left-turn movements, which operate under a protected phase only. Particularly, during the weekday evening peak hour which has a cycle length of 160 seconds, of which 98 seconds are allocated to the northbound and southbound approaches. Additionally, the southbound approach currently operates at LOS E during the weekday evening peak hour which is primarily due to the high volume of southbound through movements.

Under Year 2028 no-build conditions, this intersection overall is projected to operate at LOS E during the weekday morning peak hour and at LOS F during the weekday evening peak hour. The eastbound and westbound approaches, as well as the northbound and southbound left-turn movements are projected to continue operating at LOS E/F during the peak hours and the southbound approach is projected to operate at LOS F during the weekday evening peak hour.

Under Year 2028 projected conditions, this intersection is projected to continue operating at LOS E during the weekday morning peak hour and at LOS F during the weekday evening peak hour with increases in delay of approximately four and five seconds over no-build conditions, respectively. The eastbound and westbound approaches, as well as the northbound and southbound left-turn movements are projected to continue operating at LOS E/F during the peak hours and the southbound approach is projected to continue operating at LOS F during the weekday evening peak hour.

Overall, the resulting levels of service and delay at this intersection are primarily the result the existing high volumes of traffic, long cycle lengths during the peak hours, and the four percent regional growth factor. The proposed development is only projected to increase the volume of traffic traversing this intersection by approximately one to two percent during the peak hours and is only projected to increase the volume of traffic along the eastbound approach by approximately three to four percent during the peak hours As such, will have a limited impact on the overall operations of the intersection.

It should be noted that IDOT, in conjunction with Will, Kane, DuPage, and Kendall Counties had previously performed a study for the WIKADUKE Trail which consists of Ridge Road/Eola Road between US Route 6 north to IL Route 56. As part of this study, 119th Street between Weber Road and Stewart Road was designated as one of the east-west arterial routes connecting Weber Road to the WIKADUKE Trail.

As part of the study, 119th Street was identified as providing two through lanes in each direction along the corridor. It is anticipated that with the future development and widening of 119 Street, that existing through traffic along 111th Street between Weber Road and US Route 30 will be diverted to 119th Street, improving the flow of traffic along the roadway corridor.

111th Street with 248th Avenue

The results of the capacity analysis indicate that overall, this intersection currently operates at LOS D during the weekday morning and weekday evening peak hours. Furthermore, all of the approaches currently operate at LOS D or better during the peak hours. Under Year 2028 no-build conditions, this intersection is projected to continue operating at LOS D during the peak hours with increases in delay of approximately seven and eight seconds, respectively, over existing conditions.

All of the approaches are projected to continue operating at LOS D or better during the peak hours except for the eastbound and westbound approaches which are projected to operate at LOS E during the weekday morning and weekday evening peak hours respectively. This level of service is the result of the high volume of eastbound through traffic during the morning peak hour and the high volume of westbound through traffic during the weekday evening peak hour increased by the four precent regional growth factor.

Under Year 2028 projected conditions, this intersection is projected to continue operating at LOS D during the weekday morning and weekday evening peak hours with increases in delay of less than one and two seconds, respectively. Furthermore, all of the approaches are projected to continue operating at no-build levels of service with increases in delay of approximately three seconds or less.

Overall, the proposed development is projected to increase the volume of traffic traversing this intersection by less than one percent and as such, will have a limited impact on the operation of this intersection.

111th Street with Royal Porthcawl Drive

The results of the capacity analysis indicate that the northbound and southbound approaches currently operate at LOS E during the weekday morning peak hour and at LOS D or better during the weekday evening peak hour. However, this level of service is expected for a local roadway that has an unsignalized intersection with an arterial roadway such as 111th Street. Under Year 2028 no-build conditions, the northbound approach is projected to operate at LOS F during the weekday morning peak hour and at LOS C during the weekday evening peak hour. The southbound approach is projected to operate at LOS E during the weekday morning and weekday evening peak hours. Under Year 2028 projected conditions, the northbound and southbound approaches are projected to continue operating at no-build levels of service with increases in delay of less than three seconds. The eastbound and westbound left-turn movements are projected to continue operating at LOS B or better during the peak hours. As such, the traffic estimated to be generated by the proposed development will have a limited impact on the operations of this intersection and no roadway or traffic control improvements will be required.

111th Street with Highland Drive

The results of the capacity analysis indicate that the northbound approach currently operates at LOS C during the weekday morning and weekday evening peak hours. Under Year 2028 no-build and total projected conditions, the northbound approach is projected to continue operating at LOS C during the peak hours with increases in delay of approximately two seconds over existing conditions. The westbound left-turn movement is projected to continue operating at LOS B or better during the peak hours. As such, the traffic estimated to be generated by the proposed development will have a limited impact on the operations of this intersection and no roadway or traffic control improvements will be required.

111th Street with Ace Lane/Caputo's Access Drive

The results of the capacity analysis indicate that the northbound and southbound approaches currently operate at LOS C during the weekday morning peak hour with the exception of the southbound approach which operates at LOS E during the weekday evening peak hour. Under Year 2028 no-build conditions, the northbound and southbound approaches are projected to operate at LOS D or better with the exception of the southbound approach which is projected to operate at LOS F during the weekday evening peak hour. However, this level of service is expected for access driveways/minor roadways that have unsignalized intersections with arterial roadways and given the proximity of this intersection to the signalized intersection of 111th Street with IL Route 59. Under Year 2028 projected conditions, the northbound and southbound approaches are projected to continue operating at no-build levels of service with increases in delay of approximately ten seconds or less. As such, the traffic estimated to be generated by the proposed development will have a limited impact on the operations of this intersection and no traffic control improvements will be required.

111th Street with Proposed Access Drives

As previously indicated, the proposed development will provide a full movement access drive and a right-in/right-out access drive off 111th Street. The full movement access drive will provide one inbound land and two outbound lanes with the outbound lanes striped to provide an exclusive left-turn lane and an exclusive right-turn lane. The right-in/right-out access drive will provide one inbound lane and one outbound lane with turning movements physically restricted to right-turns only via a raised triangular median. The full movement access drive will be located in the approximate location of the existing westerly access drive serving the site and will be served by the existing eastbound left-turn lane along 111th Street. The results of the capacity analysis indicate that outbound movements from the proposed development onto 111th Street are projected to operate at the acceptable LOS D or better during the peak hours. Furthermore, the eastbound left turn movement from 111th Street onto the proposed full movement access drive is projected to operate at LOS B or better during the peak hours with 95th percentile queues of one to two vehicles which can be accommodated within the existing 165 feet of left-turn lane storage provided. As such, the proposed access system will be adequate in accommodating the traffic estimated to be generated by the proposed development and will ensure efficient and flexible access is provided.
It should be noted that when the projected traffic volumes are compared to the right-turn lane guidelines published in the IDOT Bureau of Design and Environment (BDE) Manual, an exclusive right-turn lane is not warranted at either access drive.

Parking Evaluation

As proposed, the site will be developed with 10 multifamily residential buildings containing a total of 212 units. The development will provide a total of 480 parking spaces consisting of 76 garage spaces, 76 driveway parking spaces and 328 surface parking spaces. This results in a parking supply ratio of 2.26 spaces per unit.

The parking estimated to be generated by the proposed development was based on information published in the ITE *Parking Generation Manual* 5th Edition. The estimated parking demand for each methodology is as follows:

City of Naperville Code of Ordinances

Based on the City of Naperville Code of Ordinances, multiple-family residential developments are required to provide parking at a ratio of two parking spaces per unit, and 0.25 spaces per unit for guest parking. As proposed the development will provide 212 units, requiring 424 parking spaces for residents and 53 spaces for guests for a total of 477 parking spaces required. As such, the proposed 480 parking spaces exceeds the parking requirements for the City of Naperville.

ITE *Parking Generation Manual*, 5th Edition

- Multifamily Housing (Low-Rise): Land-Use Code 220 – 296 Units
  - Weekday
    - Average Peak Parking Demand: 257 spaces or 1.21 spaces per unit
    - 85th Percentile Parking Demand: 322 spaces or 1.52 spaces per unit
  - Saturday:
    - Average Peak Parking Demand: 278 spaces or 1.31 spaces per unit
    - 85th Percentile Parking Demand: 341 spaces or 1.61 spaces per unit

It should be noted that ITE indicates that the 85th percentile parking demand is a statistical value only and should not be utilized to determine parking estimates for land-uses. However, as can be seen from the above, the proposed 480 parking spaces will be adequate in meeting both the average and 85th percentile parking demands for the proposed residential development.

Parking Supplies at Similar Developments

The proposed parking ratios of 2.26 spaces per unit were compared to the parking supply ratios of other similar residential developments in the Chicagoland area. **Table 12** summarizes the number of units and number of parking spaces provided at ten other developments within the Chicagoland area. As can be seen from Table 12, these developments provide parking at an average of 1.65 spaces per unit. As such, the proposed parking ratio of 2.26 spaces per unit is greater than the average of other area developments.

Table 13
COMPARISON OF PARKING RATIOS AT SIMILAR DEVELOPMENTS

Development Name	Number of Units	Number of Parking Spaces	Spaces/Unit
AMLI – Deerfield	240	396	1.65
8700 Waukegan - Morton Grove	184	276	1.50
Tapestry – Glenview	290	490	1.69
Northshore 770 - Northbrook	347	571	1.65
Woodview - Deerfield	248	412	1.49
Mellody Farms – Vernon Hills	260	485	1.76
IL 62/Plum Grove Road – Schaumburg	372	635	1.71
Cedarlake – Plainfield	284	443	1.56
404 Social - Lincolnshire	302	534	1.77
The Elaine – Northbrook	338	580	1.72
		Average:	**1.65**
Proposed Apartment Development	212	480	2,26

6. Conclusion

Based on the preceding analyses and recommendations, the following conclusions have been made:

- The traffic that will be generated by the proposed residential development can be accommodated by the existing area roadway system.

- The levels of service and delay experienced at the signalized intersection of IL Route 59 with 111th Street is the result of the existing high volumes of traffic along IL Route 59 and long cycle lengths.

- The proposed development is only projected to increase the volume of traffic traversing the intersection of IL Route 59 with 111th Street by approximately one to two percent during the peak hours and will have a limited impact on the overall operations of the intersection.

- The proposed development is projected to increase the volume of traffic traversing the intersection of 111th Street with 248th Avenue by less than one percent and as such, will have a limited impact on the operation of this intersection.

- The traffic estimated to be generated by the proposed development will have a limited impact on the operations of all of the unsignalized intersections within the study area and no traffic control improvements will be required.

- The proposed access drives will be adequate in accommodating the traffic projected to be generated by the proposed development and will ensure efficient and flexible access is provided for the development.

- The proposed, 480 parking spaces will meet the City of Naperville Code of Ordinances and will be adequate in accommodating the parking demand for the development based on information published in the ITE *Parking Generation Manual* 5th Edition and based on parking supplies provided at similar developments.

Appendix

Traffic Count Summary Sheets
Site Plan
CMAP 2050 Projections Letter
Level of Service Criteria
Capacity Analysis Summary Sheets

Traffic Count Summary Sheets

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Count Name: Route+59+and+111th+Street/Hassert+Blvd TMC
Site Code:
Start Date: 04/07/2022

Turning Movement Data

Start Time	111th Street Eastbound				111th Street Westbound						IL-59 Northbound						IL-59 Southbound						
	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:00 PM	30	103	19	152	77	146	29	0	0	252	28	230	37	4	0	299	49	283	29	0	0	361	1064
4:15 PM	26	87	29	142	67	167	40	0	1	274	53	243	34	7	0	337	52	356	24	2	0	434	1187
4:30 PM	42	120	28	190	78	187	42	0	0	307	45	246	26	5	2	322	58	278	26	2	0	364	1183
4:45 PM	29	106	16	151	73	141	40	0	0	254	42	251	37	1	0	331	68	293	31	0	1	392	1128
Hourly Total	127	416	92	635	295	641	151	0	1	1087	168	970	134	17	2	1289	227	1210	110	4	1	1551	4562
5:00 PM	33	93	18	144	59	132	26	0	0	217	50	258	44	7	0	359	69	300	37	0	0	406	1126
5:15 PM	40	115	30	185	74	151	40	0	0	265	52	229	31	2	0	314	66	288	24	1	0	379	1143
5:30 PM	35	86	19	140	64	128	32	0	0	224	48	272	34	7	0	361	48	313	31	0	0	392	1117
5:45 PM	28	70	21	119	62	160	31	0	0	253	51	237	37	2	0	327	60	311	39	0	0	410	1109
Hourly Total	136	364	88	588	259	571	129	0	0	959	201	996	146	18	0	1361	243	1212	131	1	0	1587	4495
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 AM	26	89	10	125	21	44	42	0	0	107	24	303	37	2	0	366	33	122	10	0	0	165	763
7:15 AM	27	111	14	152	19	75	26	0	0	120	8	287	38	3	0	336	46	134	14	2	0	196	804
7:30 AM	24	122	10	156	31	107	24	0	0	162	26	274	38	3	0	341	45	144	14	0	0	203	862
7:45 AM	38	151	6	195	26	102	23	0	0	151	36	261	34	4	0	335	46	126	11	0	0	183	864
Hourly Total	115	473	40	628	97	328	115	0	0	540	94	1125	147	12	0	1378	170	526	49	2	0	747	3293
8:00 AM	17	119	18	154	21	72	25	0	0	118	28	260	30	3	0	321	43	158	15	0	0	216	809
8:15 AM	25	106	21	152	34	61	24	0	0	119	32	244	32	3	0	311	51	158	16	0	0	225	807
8:30 AM	34	104	16	154	43	65	17	0	0	125	27	240	32	4	0	303	43	182	10	0	0	235	817
8:45 AM	30	91	12	133	30	66	23	0	0	119	30	273	44	4	0	351	37	215	21	0	0	273	876
Hourly Total	106	420	67	593	128	264	89	0	0	481	117	1017	138	14	0	1286	174	713	62	0	0	949	3309
Grand Total	484	1673	287	2444	779	1804	484	0	1	3067	580	4108	565	61	2	5314	814	3661	352	7	1	4834	15659
Approach %	19.8	68.5	11.7	-	25.4	58.8	15.8	0.0	-	-	10.9	77.3	10.6	1.1	-	-	16.8	75.7	7.3	0.1	-	-	-
Total %	3.1	10.7	1.8	15.6	5.0	11.5	3.1	0.0	-	19.6	3.7	26.2	3.6	0.4	-	33.9	5.2	23.4	2.2	0.0	-	30.9	-
Lights	468	1622	267	2357	762	1738	461	0	-	2961	553	3955	546	60	-	5114	775	3524	339	7	-	4645	15077
% Lights	96.7	97.0	93.0	96.4	97.8	96.3	95.2	-	-	96.5	95.3	96.3	96.6	98.4	-	96.2	95.2	96.3	96.3	100.0	-	96.1	96.3
Buses	4	11	2	17	4	24	4	0	-	32	1	12	2	0	-	15	14	3	6	0	-	23	87
% Buses	0.8	0.7	0.7	0.7	0.5	1.3	0.8	-	-	1.0	0.2	0.3	0.4	0.0	-	0.3	1.7	0.1	1.7	0.0	-	0.5	0.6
Single-Unit Trucks	8	24	12	44	7	28	5	0	-	40	15	47	10	1	-	73	10	42	3	0	-	55	212
% Single-Unit Trucks	1.7	1.4	4.2	1.8	0.9	1.6	1.0	-	-	1.3	2.6	1.1	1.8	1.6	-	1.4	1.2	1.1	0.9	0.0	-	1.1	1.4
Articulated Trucks	4	16	6	26	6	14	14	0	-	34	11	94	7	0	-	112	15	92	4	0	-	111	283
% Articulated Trucks	0.8	1.0	2.1	1.1	0.8	0.8	2.9	-	-	1.1	1.9	2.3	1.2	0.0	-	2.1	1.8	2.5	1.1	0.0	-	2.3	1.8
Bicycles on Road	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	1	-	-

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Count Name: Route+59+and+111th+Street/Hassert+Blvd TMC
Site Code:
Start Date: 04/07/2022

Turning Movement Peak Hour Data (7:30 AM)

Start Time	111th Street Eastbound				111th Street Westbound						IL-59 Northbound						IL-59 Southbound						
	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	24	122	10	156	31	107	24	0	0	162	26	274	38	3	0	341	45	144	14	0	0	203	862
7:45 AM	38	151	6	195	26	102	23	0	0	151	36	261	34	4	0	335	46	126	11	0	0	183	864
8:00 AM	17	119	18	154	21	72	25	0	0	118	28	260	30	3	0	321	43	158	15	0	0	216	809
8:15 AM	25	106	21	152	34	61	24	0	0	119	32	244	32	3	0	311	51	158	16	0	0	225	807
Total	104	498	55	657	112	342	96	0	0	550	122	1039	134	13	0	1308	185	586	56	0	0	827	3342
Approach %	15.8	75.8	8.4	-	20.4	62.2	17.5	0.0	-	-	9.3	79.4	10.2	1.0	-	-	22.4	70.9	6.8	0.0	-	-	-
Total %	3.1	14.9	1.6	19.7	3.4	10.2	2.9	0.0	-	16.5	3.7	31.1	4.0	0.4	-	39.1	5.5	17.5	1.7	0.0	-	24.7	-
PHF	0.684	0.825	0.655	0.842	0.824	0.799	0.960	0.000	-	0.849	0.847	0.948	0.882	0.813	-	0.959	0.907	0.927	0.875	0.000	-	0.919	0.967
Lights	95	481	51	627	107	305	88	0	-	500	116	987	124	12	-	1239	170	535	51	0	-	756	3122
% Lights	91.3	96.6	92.7	95.4	95.5	89.2	91.7	-	-	90.9	95.1	95.0	92.5	92.3	-	94.7	91.9	91.3	91.1	-	-	91.4	93.4
Buses	3	5	0	8	1	18	1	0	-	20	0	5	1	0	-	6	6	1	4	0	-	11	45
% Buses	2.9	1.0	0.0	1.2	0.9	5.3	1.0	-	-	3.6	0.0	0.5	0.7	0.0	-	0.5	3.2	0.2	7.1	-	-	1.3	1.3
Single-Unit Trucks	4	5	2	11	1	16	0	0	-	17	3	18	6	1	-	28	5	18	0	0	-	23	79
% Single-Unit Trucks	3.8	1.0	3.6	1.7	0.9	4.7	0.0	-	-	3.1	2.5	1.7	4.5	7.7	-	2.1	2.7	3.1	0.0	-	-	2.8	2.4
Articulated Trucks	2	7	2	11	3	3	7	0	-	13	3	29	3	0	-	35	4	32	1	0	-	37	96
% Articulated Trucks	1.9	1.4	3.6	1.7	2.7	0.9	7.3	-	-	2.4	2.5	2.8	2.2	0.0	-	2.7	2.2	5.5	1.8	-	-	4.5	2.9
Bicycles on Road	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Pedestrians	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: Route+59+and+111th+Street/Hassert+Blvd TMC
Site Code:
Start Date: 04/07/2022

Turning Movement Peak Hour Data (4:15 PM)

Start Time	111th Street Eastbound				111th Street Westbound						IL-59 Northbound						IL-59 Southbound						
	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:15 PM	26	87	29	142	67	167	40	0	1	274	53	243	34	7	0	337	52	356	24	2	0	434	1187
4:30 PM	42	120	28	190	78	187	42	0	0	307	45	246	26	5	2	322	58	278	26	2	0	364	1183
4:45 PM	29	106	16	151	73	141	40	0	0	254	42	251	37	1	0	331	68	293	31	0	1	392	1128
5:00 PM	33	93	18	144	59	132	26	0	0	217	50	258	44	7	0	359	69	300	37	0	0	406	1126
Total	130	406	91	627	277	627	148	0	1	1052	190	998	141	20	2	1349	247	1227	118	4	1	1596	4624
Approach %	20.7	64.8	14.5	-	26.3	59.6	14.1	0.0	-	-	14.1	74.0	10.5	1.5	-	-	15.5	76.9	7.4	0.3	-	-	-
Total %	2.8	8.8	2.0	13.6	6.0	13.6	3.2	0.0	-	22.8	4.1	21.6	3.0	0.4	-	29.2	5.3	26.5	2.6	0.1	-	34.5	-
PHF	0.774	0.846	0.784	0.825	0.888	0.838	0.881	0.000	-	0.857	0.896	0.967	0.801	0.714	-	0.939	0.895	0.862	0.797	0.500	-	0.919	0.974
Lights	130	400	87	617	274	619	144	0	-	1037	188	972	141	20	-	1321	242	1197	116	4	-	1559	4534
% Lights	100.0	98.5	95.6	98.4	98.9	98.7	97.3	-	-	98.6	98.9	97.4	100.0	100.0	-	97.9	98.0	97.6	98.3	100.0	-	97.7	98.1
Buses	0	1	0	1	1	0	1	0	-	2	0	4	0	0	-	4	1	2	1	0	-	4	11
% Buses	0.0	0.2	0.0	0.2	0.4	0.0	0.7	-	-	0.2	0.0	0.4	0.0	0.0	-	0.3	0.4	0.2	0.8	0.0	-	0.3	0.2
Single-Unit Trucks	0	4	2	6	2	3	1	0	-	6	0	4	0	0	-	4	1	7	0	0	-	8	24
% Single-Unit Trucks	0.0	1.0	2.2	1.0	0.7	0.5	0.7	-	-	0.6	0.0	0.4	0.0	0.0	-	0.3	0.4	0.6	0.0	0.0	-	0.5	0.5
Articulated Trucks	0	1	2	3	0	5	2	0	-	7	2	18	0	0	-	20	3	21	1	0	-	25	55
% Articulated Trucks	0.0	0.2	2.2	0.5	0.0	0.8	1.4	-	-	0.7	1.1	1.8	0.0	0.0	-	1.5	1.2	1.7	0.8	0.0	-	1.6	1.2
Bicycles on Road	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 bmay@kloainc.com

Count Name: 111th+with+248th
Site Code:
Start Date: 04/07/2022

Turning Movement Data

Start Time	111th Street Eastbound						111th Street Westbound						248th Street Northbound						248th Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:00 PM	10	76	6	0	0	92	30	133	29	0	0	192	6	44	20	0	0	70	33	94	25	0	0	152	506
4:15 PM	12	85	7	0	0	104	30	143	21	0	0	194	7	66	39	0	0	112	23	93	21	0	0	137	547
4:30 PM	6	80	2	0	0	88	50	184	19	0	0	253	19	57	67	0	0	143	21	77	27	0	0	125	609
4:45 PM	6	62	5	0	0	73	36	140	32	0	0	208	9	54	37	0	0	100	34	62	25	0	0	121	502
Hourly Total	34	303	20	0	0	357	146	600	101	0	0	847	41	221	163	0	0	425	111	326	98	0	0	535	2164
5:00 PM	10	54	6	0	0	70	34	104	36	0	0	174	8	56	56	0	0	120	19	88	21	0	0	128	492
5:15 PM	11	79	2	0	0	92	39	133	21	0	0	193	10	50	27	1	0	88	30	82	20	0	0	132	505
5:30 PM	6	70	5	0	0	81	33	106	35	0	0	174	5	55	26	0	0	86	31	70	21	0	0	122	463
5:45 PM	42	21	33	0	0	96	36	122	28	0	0	186	7	59	22	0	0	88	30	93	13	0	0	136	506
Hourly Total	69	224	46	0	0	339	142	465	120	0	0	727	30	220	131	1	0	382	110	333	75	0	0	518	1966
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 AM	21	99	0	0	0	120	13	39	9	0	0	61	7	91	32	0	0	130	16	13	6	0	0	35	346
7:15 AM	14	100	2	0	0	116	28	53	11	0	0	92	2	67	26	1	0	96	26	52	7	0	0	85	389
7:30 AM	11	105	2	0	0	118	22	83	15	0	0	120	16	63	46	0	0	125	27	25	9	0	1	61	424
7:45 AM	6	76	4	0	0	86	22	101	24	0	0	147	27	82	108	0	0	217	23	30	24	0	0	77	527
Hourly Total	52	380	8	0	0	440	85	276	59	0	0	420	52	303	212	1	0	568	92	120	46	0	1	258	1686
8:00 AM	18	83	4	0	0	105	15	67	22	0	0	104	3	57	29	0	0	89	33	31	9	0	0	73	371
8:15 AM	10	108	5	0	0	123	11	43	16	0	3	70	7	71	19	0	0	97	26	26	4	0	0	56	346
8:30 AM	6	90	1	0	0	97	17	53	20	0	1	90	6	73	26	0	0	105	15	29	4	0	0	48	340
8:45 AM	13	84	2	0	0	99	12	64	17	0	0	93	4	54	37	0	0	95	23	26	6	0	0	55	342
Hourly Total	47	365	12	0	0	424	55	227	75	0	4	357	20	255	111	0	0	386	97	112	23	0	0	232	1399
Grand Total	202	1272	86	0	0	1560	428	1568	355	0	4	2351	143	999	617	2	0	1761	410	891	242	0	1	1543	7215
Approach %	12.9	81.5	5.5	0.0	-	-	18.2	66.7	15.1	0.0	-	-	8.1	56.7	35.0	0.1	-	-	26.6	57.7	15.7	0.0	-	-	-
Total %	2.8	17.6	1.2	0.0	-	21.6	5.9	21.7	4.9	0.0	-	32.6	2.0	13.8	8.6	0.0	-	24.4	5.7	12.3	3.4	0.0	-	21.4	-
Lights	197	1218	83	0	-	1498	401	1511	340	0	-	2252	140	974	603	2	-	1719	394	876	232	0	-	1502	6971
% Lights	97.5	95.8	96.5	-	-	96.0	93.7	96.4	95.8	-	-	95.8	97.9	97.5	97.7	100.0	-	97.6	96.1	98.3	95.9	-	-	97.3	96.6
Buses	1	2	1	0	-	4	22	4	6	0	-	32	2	20	10	0	-	32	6	10	2	0	-	18	86
% Buses	0.5	0.2	1.2	-	-	0.3	5.1	0.3	1.7	-	-	1.4	1.4	2.0	1.6	0.0	-	1.8	1.5	1.1	0.8	-	-	1.2	1.2
Single-Unit Trucks	3	27	1	0	-	31	4	29	6	0	-	39	1	5	4	0	-	10	8	5	7	0	-	20	100
% Single-Unit Trucks	1.5	2.1	1.2	-	-	2.0	0.9	1.8	1.7	-	-	1.7	0.7	0.5	0.6	0.0	-	0.6	2.0	0.6	2.9	-	-	1.3	1.4
Articulated Trucks	1	25	1	0	-	27	1	24	3	0	-	28	0	0	0	0	-	0	2	0	1	0	-	3	58
% Articulated Trucks	0.5	2.0	1.2	-	-	1.7	0.2	1.5	0.8	-	-	1.2	0.0	0.0	0.0	0.0	-	0.0	0.5	0.0	0.4	-	-	0.2	0.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0

% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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Count Name: 111th+with+248th
Site Code:
Start Date: 04/07/2022

Turning Movement Peak Hour Data (7:30 AM)

Start Time	111th Street Eastbound						111th Street Westbound						248th Street Northbound						248th Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	11	105	2	0	0	118	22	83	15	0	0	120	16	63	46	0	0	125	27	25	9	0	1	61	424
7:45 AM	6	76	4	0	0	86	22	101	24	0	0	147	27	82	108	0	0	217	23	30	24	0	0	77	527
8:00 AM	18	83	4	0	0	105	15	67	22	0	0	104	3	57	29	0	0	89	33	31	9	0	0	73	371
8:15 AM	10	108	5	0	0	123	11	43	16	0	3	70	7	71	19	0	0	97	26	26	4	0	0	56	346
Total	45	372	15	0	0	432	70	294	77	0	3	441	53	273	202	0	0	528	109	112	46	0	1	267	1668
Approach %	10.4	86.1	3.5	0.0	-	-	15.9	66.7	17.5	0.0	-	-	10.0	51.7	38.3	0.0	-	-	40.8	41.9	17.2	0.0	-	-	-
Total %	2.7	22.3	0.9	0.0	-	25.9	4.2	17.6	4.6	0.0	-	26.4	3.2	16.4	12.1	0.0	-	31.7	6.5	6.7	2.8	0.0	-	16.0	-
PHF	0.625	0.861	0.750	0.000	-	0.878	0.795	0.728	0.802	0.000	-	0.750	0.491	0.832	0.468	0.000	-	0.608	0.826	0.903	0.479	0.000	-	0.867	0.791
Lights	42	352	14	0	-	408	46	276	71	0	-	393	51	261	191	0	-	503	106	103	42	0	-	251	1555
% Lights	93.3	94.6	93.3	-	-	94.4	65.7	93.9	92.2	-	-	89.1	96.2	95.6	94.6	-	-	95.3	97.2	92.0	91.3	-	-	94.0	93.2
Buses	0	1	1	0	-	2	21	1	3	0	-	25	2	11	9	0	-	22	2	7	1	0	-	10	59
% Buses	0.0	0.3	6.7	-	-	0.5	30.0	0.3	3.9	-	-	5.7	3.8	4.0	4.5	-	-	4.2	1.8	6.3	2.2	-	-	3.7	3.5
Single-Unit Trucks	2	8	0	0	-	10	3	12	1	0	-	16	0	1	2	0	-	3	1	2	3	0	-	6	35
% Single-Unit Trucks	4.4	2.2	0.0	-	-	2.3	4.3	4.1	1.3	-	-	3.6	0.0	0.4	1.0	-	-	0.6	0.9	1.8	6.5	-	-	2.2	2.1
Articulated Trucks	1	11	0	0	-	12	0	5	2	0	-	7	0	0	0	0	-	0	0	0	0	0	-	0	19
% Articulated Trucks	2.2	3.0	0.0	-	-	2.8	0.0	1.7	2.6	-	-	1.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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9575 W. Higgins Rd., Suite 400

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Count Name: 111th+with+248th
Site Code:
Start Date: 04/07/2022

Turning Movement Peak Hour Data (4:15 PM)

Start Time	111th Street Eastbound						111th Street Westbound						248th Street Northbound						248th Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:15 PM	12	85	7	0	0	104	30	143	21	0	0	194	7	66	39	0	0	112	23	93	21	0	0	137	547
4:30 PM	6	80	2	0	0	88	50	184	19	0	0	253	19	57	67	0	0	143	21	77	27	0	0	125	609
4:45 PM	6	62	5	0	0	73	36	140	32	0	0	208	9	54	37	0	0	100	34	62	25	0	0	121	502
5:00 PM	10	54	6	0	0	70	34	104	36	0	0	174	8	56	56	0	0	120	19	88	21	0	0	128	492
Total	34	281	20	0	0	335	150	571	108	0	0	829	43	233	199	0	0	475	97	320	94	0	0	511	2150
Approach %	10.1	83.9	6.0	0.0	-	-	18.1	68.9	13.0	0.0	-	-	9.1	49.1	41.9	0.0	-	-	19.0	62.6	18.4	0.0	-	-	-
Total %	1.6	13.1	0.9	0.0	-	15.6	7.0	26.6	5.0	0.0	-	38.6	2.0	10.8	9.3	0.0	-	22.1	4.5	14.9	4.4	0.0	-	23.8	-
PHF	0.708	0.826	0.714	0.000	-	0.805	0.750	0.776	0.750	0.000	-	0.819	0.566	0.883	0.743	0.000	-	0.830	0.713	0.860	0.870	0.000	-	0.932	0.883
Lights	34	276	18	0	-	328	150	559	106	0	-	815	42	232	199	0	-	473	93	320	93	0	-	506	2122
% Lights	100.0	98.2	90.0	-	-	97.9	100.0	97.9	98.1	-	-	98.3	97.7	99.6	100.0	-	-	99.6	95.9	100.0	98.9	-	-	99.0	98.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	4	1	0	-	5	0	3	1	0	-	4	1	0	0	0	-	1	2	0	1	0	-	3	13
% Single-Unit Trucks	0.0	1.4	5.0	-	-	1.5	0.0	0.5	0.9	-	-	0.5	2.3	0.0	0.0	-	-	0.2	2.1	0.0	1.1	-	-	0.6	0.6
Articulated Trucks	0	1	1	0	-	2	0	9	1	0	-	10	0	0	0	0	-	0	2	0	0	0	-	2	14
% Articulated Trucks	0.0	0.4	5.0	-	-	0.6	0.0	1.6	0.9	-	-	1.2	0.0	0.0	0.0	-	-	0.0	2.1	0.0	0.0	-	-	0.4	0.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: 111th Street with Royal Porthcawl Dr
Site Code:
Start Date: 04/07/2022

Turning Movement Data

Start Time	111th Street Eastbound						111th Street Westbound						Access Drive Northbound						Royal Porthcawl Dr Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:00 PM	3	134	0	0	0	137	2	196	8	0	0	206	0	0	1	0	0	1	3	0	1	0	0	4	348
4:15 PM	1	141	0	0	0	142	3	231	3	1	0	238	0	0	2	0	0	2	3	1	2	0	0	6	388
4:30 PM	4	173	1	0	0	178	5	229	11	0	0	245	0	0	8	0	0	8	5	0	4	0	0	9	440
4:45 PM	1	128	0	0	0	129	2	204	4	0	0	210	0	0	3	0	0	3	2	0	3	0	0	5	347
Hourly Total	9	576	1	0	0	586	12	860	26	1	0	899	0	0	14	0	0	14	13	1	10	0	0	24	1523
5:00 PM	0	126	0	0	0	126	2	173	5	0	0	180	1	0	1	0	0	2	6	0	0	0	0	6	314
5:15 PM	1	152	0	0	0	153	0	200	9	0	0	209	0	0	0	0	0	0	6	0	2	0	0	8	370
5:30 PM	0	121	0	0	0	121	1	181	10	0	0	192	0	0	0	0	0	0	2	0	2	0	0	4	317
5:45 PM	3	76	0	0	0	79	7	194	5	0	0	206	1	0	6	0	0	7	6	0	1	0	0	7	299
Hourly Total	4	475	0	0	0	479	10	748	29	0	0	787	2	0	7	0	0	9	20	0	5	0	0	25	1300
Grand Total	13	1051	1	0	0	1065	22	1608	55	1	0	1686	2	0	21	0	0	23	33	1	15	0	0	49	2823
Approach %	1.2	98.7	0.1	0.0	-	-	1.3	95.4	3.3	0.1	-	-	8.7	0.0	91.3	0.0	-	-	67.3	2.0	30.6	0.0	-	-	-
Total %	0.5	37.2	0.0	0.0	-	37.7	0.8	57.0	1.9	0.0	-	59.7	0.1	0.0	0.7	0.0	-	0.8	1.2	0.0	0.5	0.0	-	1.7	-
Lights	13	1030	1	0	-	1044	22	1583	55	1	-	1661	2	0	21	0	-	23	32	1	15	0	-	48	2776
% Lights	100.0	98.0	100.0	-	-	98.0	100.0	98.4	100.0	100.0	-	98.5	100.0	-	100.0	-	-	100.0	97.0	100.0	100.0	-	-	98.0	98.3
Buses	0	0	0	0	-	0	0	3	0	0	-	3	0	0	0	0	-	0	1	0	0	0	-	1	4
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	0.0	-	0.2	0.0	-	0.0	-	-	0.0	3.0	0.0	0.0	-	-	2.0	0.1
Single-Unit Trucks	0	15	0	0	-	15	0	8	0	0	-	8	0	0	0	0	-	0	0	0	0	0	-	0	23
% Single-Unit Trucks	0.0	1.4	0.0	-	-	1.4	0.0	0.5	0.0	0.0	-	0.5	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.8
Articulated Trucks	0	6	0	0	-	6	0	14	0	0	-	14	0	0	0	0	-	0	0	0	0	0	-	0	20
% Articulated Trucks	0.0	0.6	0.0	-	-	0.6	0.0	0.9	0.0	0.0	-	0.8	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 bmay@kloainc.com

Count Name: 111th Street with Royal Porthcawl Dr
Site Code:
Start Date: 04/07/2022

Turning Movement Peak Hour Data (4:15 PM)

Start Time	111th Street Eastbound						111th Street Westbound						Access Drive Northbound						Royal Porthcawl Dr Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:15 PM	1	141	0	0	0	142	3	231	3	1	0	238	0	0	2	0	0	2	3	1	2	0	0	6	388
4:30 PM	4	173	1	0	0	178	5	229	11	0	0	245	0	0	8	0	0	8	5	0	4	0	0	9	440
4:45 PM	1	128	0	0	0	129	2	204	4	0	0	210	0	0	3	0	0	3	2	0	3	0	0	5	347
5:00 PM	0	126	0	0	0	126	2	173	5	0	0	180	1	0	1	0	0	2	6	0	0	0	0	6	314
Total	6	568	1	0	0	575	12	837	23	1	0	873	1	0	14	0	0	15	16	1	9	0	0	26	1489
Approach %	1.0	98.8	0.2	0.0	-	-	1.4	95.9	2.6	0.1	-	-	6.7	0.0	93.3	0.0	-	-	61.5	3.8	34.6	0.0	-	-	-
Total %	0.4	38.1	0.1	0.0	-	38.6	0.8	56.2	1.5	0.1	-	58.6	0.1	0.0	0.9	0.0	-	1.0	1.1	0.1	0.6	0.0	-	1.7	-
PHF	0.375	0.821	0.250	0.000	-	0.808	0.600	0.906	0.523	0.250	-	0.891	0.250	0.000	0.438	0.000	-	0.469	0.667	0.250	0.563	0.000	-	0.722	0.846
Lights	6	559	1	0	-	566	12	823	23	1	-	859	1	0	14	0	-	15	16	1	9	0	-	26	1466
% Lights	100.0	98.4	100.0	-	-	98.4	100.0	98.3	100.0	100.0	-	98.4	100.0	-	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	98.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	6	0	0	-	6	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	10
% Single-Unit Trucks	0.0	1.1	0.0	-	-	1.0	0.0	0.5	0.0	0.0	-	0.5	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.7
Articulated Trucks	0	3	0	0	-	3	0	10	0	0	-	10	0	0	0	0	-	0	0	0	0	0	-	0	13
% Articulated Trucks	0.0	0.5	0.0	-	-	0.5	0.0	1.2	0.0	0.0	-	1.1	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.9
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 bmay@kloainc.com

Count Name: 111th Street with highland Dr
Site Code:
Start Date: 04/07/2022

Turning Movement Data

Start Time	111th Street Eastbound					111th Street Westbound					Highland Dr Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
4:00 PM	145	1	0	0	146	4	183	0	0	187	2	0	0	0	2	335
4:15 PM	144	1	0	0	145	1	254	0	0	255	2	1	0	0	3	403
4:30 PM	185	1	0	0	186	4	238	0	0	242	4	1	0	0	5	433
4:45 PM	118	0	0	0	118	3	192	0	0	195	0	2	0	0	2	315
Hourly Total	592	3	0	0	595	12	867	0	0	879	8	4	0	0	12	1486
5:00 PM	156	1	0	0	157	3	196	0	0	199	0	1	0	0	1	357
5:15 PM	131	1	0	0	132	4	191	0	0	195	0	6	0	0	6	333
5:30 PM	121	0	0	0	121	5	209	0	0	214	0	2	0	0	2	337
5:45 PM	79	0	0	0	79	3	199	0	0	202	0	3	0	0	3	284
Hourly Total	487	2	0	0	489	15	795	0	0	810	0	12	0	0	12	1311
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 AM	152	1	0	0	153	1	71	0	0	72	0	2	0	0	2	227
7:15 AM	155	2	0	0	157	0	94	0	0	94	1	6	0	0	7	258
7:30 AM	198	0	0	0	198	0	163	0	0	163	2	2	0	0	4	365
7:45 AM	202	0	0	0	202	1	127	0	0	128	1	3	0	0	4	334
Hourly Total	707	3	0	0	710	2	455	0	0	457	4	13	0	0	17	1184
8:00 AM	146	0	0	0	146	0	93	0	0	93	2	2	0	0	4	243
8:15 AM	152	2	0	0	154	2	70	0	0	72	0	4	0	0	4	230
8:30 AM	149	1	0	0	150	1	96	0	0	97	1	1	0	0	2	249
8:45 AM	138	0	0	0	138	0	104	0	0	104	3	4	0	0	7	249
Hourly Total	585	3	0	0	588	3	363	0	0	366	6	11	0	0	17	971
Grand Total	2371	11	0	0	2382	32	2480	0	0	2512	18	40	0	0	58	4952
Approach %	99.5	0.5	0.0	-	-	1.3	98.7	0.0	-	-	31.0	69.0	0.0	-	-	-
Total %	47.9	0.2	0.0	-	48.1	0.6	50.1	0.0	-	50.7	0.4	0.8	0.0	-	1.2	-
Lights	2287	7	0	-	2294	32	2378	0	-	2410	16	38	0	-	54	4758
% Lights	96.5	63.6	-	-	96.3	100.0	95.9	-	-	95.9	88.9	95.0	-	-	93.1	96.1
Buses	18	4	0	-	22	0	29	0	-	29	2	2	0	-	4	55
% Buses	0.8	36.4	-	-	0.9	0.0	1.2	-	-	1.2	11.1	5.0	-	-	6.9	1.1
Single-Unit Trucks	41	0	0	-	41	0	47	0	-	47	0	0	0	-	0	88
% Single-Unit Trucks	1.7	0.0	-	-	1.7	0.0	1.9	-	-	1.9	0.0	0.0	-	-	0.0	1.8
Articulated Trucks	25	0	0	-	25	0	26	0	-	26	0	0	0	-	0	51
% Articulated Trucks	1.1	0.0	-	-	1.0	0.0	1.0	-	-	1.0	0.0	0.0	-	-	0.0	1.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 bmay@kloainc.com

Count Name: 111th Street with highland Dr
Site Code:
Start Date: 04/07/2022

Turning Movement Peak Hour Data (7:30 AM)

Start Time	111th Street Eastbound					111th Street Westbound					Highland Dr Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	198	0	0	0	198	0	163	0	0	163	2	2	0	0	4	365
7:45 AM	202	0	0	0	202	1	127	0	0	128	1	3	0	0	4	334
8:00 AM	146	0	0	0	146	0	93	0	0	93	2	2	0	0	4	243
8:15 AM	152	2	0	0	154	2	70	0	0	72	0	4	0	0	4	230
Total	698	2	0	0	700	3	453	0	0	456	5	11	0	0	16	1172
Approach %	99.7	0.3	0.0	-	-	0.7	99.3	0.0	-	-	31.3	68.8	0.0	-	-	-
Total %	59.6	0.2	0.0	-	59.7	0.3	38.7	0.0	-	38.9	0.4	0.9	0.0	-	1.4	-
PHF	0.864	0.250	0.000	-	0.866	0.375	0.695	0.000	-	0.699	0.625	0.688	0.000	-	1.000	0.803
Lights	665	1	0	-	666	3	406	0	-	409	5	10	0	-	15	1090
% Lights	95.3	50.0	-	-	95.1	100.0	89.6	-	-	89.7	100.0	90.9	-	-	93.8	93.0
Buses	11	1	0	-	12	0	21	0	-	21	0	1	0	-	1	34
% Buses	1.6	50.0	-	-	1.7	0.0	4.6	-	-	4.6	0.0	9.1	-	-	6.3	2.9
Single-Unit Trucks	13	0	0	-	13	0	20	0	-	20	0	0	0	-	0	33
% Single-Unit Trucks	1.9	0.0	-	-	1.9	0.0	4.4	-	-	4.4	0.0	0.0	-	-	0.0	2.8
Articulated Trucks	9	0	0	-	9	0	6	0	-	6	0	0	0	-	0	15
% Articulated Trucks	1.3	0.0	-	-	1.3	0.0	1.3	-	-	1.3	0.0	0.0	-	-	0.0	1.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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(847)518-9990 bmay@kloainc.com

Count Name: 111th Street with highland Dr
Site Code:
Start Date: 04/07/2022

Turning Movement Peak Hour Data (4:15 PM)

Start Time	111th Street Eastbound					111th Street Westbound					Highland Dr Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
4:15 PM	144	1	0	0	145	1	254	0	0	255	2	1	0	0	3	403
4:30 PM	185	1	0	0	186	4	238	0	0	242	4	1	0	0	5	433
4:45 PM	118	0	0	0	118	3	192	0	0	195	0	2	0	0	2	315
5:00 PM	156	1	0	0	157	3	196	0	0	199	0	1	0	0	1	357
Total	603	3	0	0	606	11	880	0	0	891	6	5	0	0	11	1508
Approach %	99.5	0.5	0.0	-	-	1.2	98.8	0.0	-	-	54.5	45.5	0.0	-	-	-
Total %	40.0	0.2	0.0	-	40.2	0.7	58.4	0.0	-	59.1	0.4	0.3	0.0	-	0.7	-
PHF	0.815	0.750	0.000	-	0.815	0.688	0.866	0.000	-	0.874	0.375	0.625	0.000	-	0.550	0.871
Lights	594	3	0	-	597	11	866	0	-	877	6	5	0	-	11	1485
% Lights	98.5	100.0	-	-	98.5	100.0	98.4	-	-	98.4	100.0	100.0	-	-	100.0	98.5
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	7	0	0	-	7	0	4	0	-	4	0	0	0	-	0	11
% Single-Unit Trucks	1.2	0.0	-	-	1.2	0.0	0.5	-	-	0.4	0.0	0.0	-	-	0.0	0.7
Articulated Trucks	2	0	0	-	2	0	10	0	-	10	0	0	0	-	0	12
% Articulated Trucks	0.3	0.0	-	-	0.3	0.0	1.1	-	-	1.1	0.0	0.0	-	-	0.0	0.8
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 bmay@kloainc.com

Count Name: 111th Street with Ace Ln
Site Code:
Start Date: 04/07/2022

Turning Movement Data

Start Time	111th Street Eastbound						111th Street Westbound						Ace Ln Northbound						Access Drive Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:00 PM	16	113	7	0	0	136	16	181	3	0	0	200	5	1	12	0	0	18	14	3	16	0	0	33	387
4:15 PM	19	125	10	0	0	154	10	209	1	2	0	222	15	2	9	0	0	26	14	0	14	0	0	28	430
4:30 PM	17	157	6	1	0	181	14	225	2	0	0	241	7	1	14	0	0	22	15	0	18	1	0	34	478
4:45 PM	17	118	8	0	0	143	14	190	7	0	0	211	6	2	11	0	2	19	18	1	10	1	0	30	403
Hourly Total	69	513	31	1	0	614	54	805	13	2	0	874	33	6	46	0	2	85	61	4	58	2	0	125	1698
5:00 PM	19	113	7	0	0	139	23	173	4	0	0	200	6	3	12	0	0	21	17	0	17	0	0	34	394
5:15 PM	11	142	11	0	0	164	14	191	5	0	0	210	8	1	25	0	0	34	13	1	17	0	0	31	439
5:30 PM	16	99	11	0	0	126	23	180	6	0	0	209	8	0	17	0	0	25	19	0	14	0	0	33	393
5:45 PM	16	74	7	0	0	97	12	194	8	0	0	214	8	1	15	0	0	24	20	2	12	1	0	35	370
Hourly Total	62	428	36	0	0	526	72	738	23	0	0	833	30	5	69	0	0	104	69	3	60	1	0	133	1596
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 AM	5	138	6	0	0	149	4	75	0	0	0	79	0	0	1	0	0	1	3	0	0	0	0	3	232
7:15 AM	3	149	9	0	0	161	0	99	0	0	0	99	1	0	0	0	0	1	2	0	1	0	0	3	264
7:30 AM	12	168	7	0	0	187	8	142	0	0	0	150	1	0	3	0	0	4	3	0	2	0	0	5	346
7:45 AM	6	195	9	0	0	210	6	147	2	0	0	155	2	0	4	0	0	6	4	0	3	0	0	7	378
Hourly Total	26	650	31	0	0	707	18	463	2	0	0	483	4	0	8	0	0	12	12	0	6	0	0	18	1220
8:00 AM	6	130	7	0	0	143	9	82	0	0	0	91	1	0	8	0	0	9	3	0	4	0	0	7	250
8:15 AM	10	135	13	0	0	158	12	81	5	1	0	99	5	0	13	0	0	18	9	0	3	0	0	12	287
8:30 AM	12	126	11	0	0	149	6	84	2	0	0	92	2	0	17	0	0	19	5	0	7	0	0	12	272
8:45 AM	13	131	8	0	0	152	14	88	5	0	0	107	5	0	15	0	0	20	6	0	3	0	0	9	288
Hourly Total	41	522	39	0	0	602	41	335	12	1	0	389	13	0	53	0	0	66	23	0	17	0	0	40	1097
Grand Total	198	2113	137	1	0	2449	185	2341	50	3	0	2579	80	11	176	0	2	267	165	7	141	3	0	316	5611
Approach %	8.1	86.3	5.6	0.0	-	-	7.2	90.8	1.9	0.1	-	-	30.0	4.1	65.9	0.0	-	-	52.2	2.2	44.6	0.9	-	-	-
Total %	3.5	37.7	2.4	0.0	-	43.6	3.3	41.7	0.9	0.1	-	46.0	1.4	0.2	3.1	0.0	-	4.8	2.9	0.1	2.5	0.1	-	5.6	-
Lights	194	2030	133	1	-	2358	184	2230	50	3	-	2467	79	11	172	0	-	262	163	7	139	3	-	312	5399
% Lights	98.0	96.1	97.1	100.0	-	96.3	99.5	95.3	100.0	100.0	-	95.7	98.8	100.0	97.7	-	-	98.1	98.8	100.0	98.6	100.0	-	98.7	96.2
Buses	2	16	2	0	-	20	0	31	0	0	-	31	0	0	0	0	-	0	2	0	1	0	-	3	54
% Buses	1.0	0.8	1.5	0.0	-	0.8	0.0	1.3	0.0	0.0	-	1.2	0.0	0.0	0.0	-	-	0.0	1.2	0.0	0.7	0.0	-	0.9	1.0
Single-Unit Trucks	2	43	2	0	-	47	1	48	0	0	-	49	1	0	4	0	-	5	0	0	1	0	-	1	102
% Single-Unit Trucks	1.0	2.0	1.5	0.0	-	1.9	0.5	2.1	0.0	0.0	-	1.9	1.3	0.0	2.3	-	-	1.9	0.0	0.0	0.7	0.0	-	0.3	1.8
Articulated Trucks	0	24	0	0	-	24	0	32	0	0	-	32	0	0	0	0	-	0	0	0	0	0	-	0	56
% Articulated Trucks	0.0	1.1	0.0	0.0	-	1.0	0.0	1.4	0.0	0.0	-	1.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	1.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0

% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 bmay@kloainc.com

Count Name: 111th Street with Ace Ln
Site Code:
Start Date: 04/07/2022

Turning Movement Peak Hour Data (7:30 AM)

Start Time	111th Street Eastbound						111th Street Westbound						Ace Ln Northbound						Access Drive Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	12	168	7	0	0	187	8	142	0	0	0	150	1	0	3	0	0	4	3	0	2	0	0	5	346
7:45 AM	6	195	9	0	0	210	6	147	2	0	0	155	2	0	4	0	0	6	4	0	3	0	0	7	378
8:00 AM	6	130	7	0	0	143	9	82	0	0	0	91	1	0	8	0	0	9	3	0	4	0	0	7	250
8:15 AM	10	135	13	0	0	158	12	81	5	1	0	99	5	0	13	0	0	18	9	0	3	0	0	12	287
Total	34	628	36	0	0	698	35	452	7	1	0	495	9	0	28	0	0	37	19	0	12	0	0	31	1261
Approach %	4.9	90.0	5.2	0.0	-	-	7.1	91.3	1.4	0.2	-	-	24.3	0.0	75.7	0.0	-	-	61.3	0.0	38.7	0.0	-	-	-
Total %	2.7	49.8	2.9	0.0	-	55.4	2.8	35.8	0.6	0.1	-	39.3	0.7	0.0	2.2	0.0	-	2.9	1.5	0.0	1.0	0.0	-	2.5	-
PHF	0.708	0.805	0.692	0.000	-	0.831	0.729	0.769	0.350	0.250	-	0.798	0.450	0.000	0.538	0.000	-	0.514	0.528	0.000	0.750	0.000	-	0.646	0.834
Lights	32	596	35	0	-	663	35	400	7	1	-	443	9	0	28	0	-	37	18	0	12	0	-	30	1173
% Lights	94.1	94.9	97.2	-	-	95.0	100.0	88.5	100.0	100.0	-	89.5	100.0	-	100.0	-	-	100.0	94.7	-	100.0	-	-	96.8	93.0
Buses	2	8	1	0	-	11	0	23	0	0	-	23	0	0	0	0	-	0	1	0	0	0	-	1	35
% Buses	5.9	1.3	2.8	-	-	1.6	0.0	5.1	0.0	0.0	-	4.6	0.0	-	0.0	-	-	0.0	5.3	-	0.0	-	-	3.2	2.8
Single-Unit Trucks	0	16	0	0	-	16	0	19	0	0	-	19	0	0	0	0	-	0	0	0	0	0	-	0	35
% Single-Unit Trucks	0.0	2.5	0.0	-	-	2.3	0.0	4.2	0.0	0.0	-	3.8	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	2.8
Articulated Trucks	0	8	0	0	-	8	0	10	0	0	-	10	0	0	0	0	-	0	0	0	0	0	-	0	18
% Articulated Trucks	0.0	1.3	0.0	-	-	1.1	0.0	2.2	0.0	0.0	-	2.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	1.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 bmay@kloainc.com

Count Name: 111th Street with Ace Ln
Site Code:
Start Date: 04/07/2022

Turning Movement Peak Hour Data (4:15 PM)

Start Time	111th Street Eastbound						111th Street Westbound						Ace Ln Northbound						Access Drive Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:15 PM	19	125	10	0	0	154	10	209	1	2	0	222	15	2	9	0	0	26	14	0	14	0	0	28	430
4:30 PM	17	157	6	1	0	181	14	225	2	0	0	241	7	1	14	0	0	22	15	0	18	1	0	34	478
4:45 PM	17	118	8	0	0	143	14	190	7	0	0	211	6	2	11	0	2	19	18	1	10	1	0	30	403
5:00 PM	19	113	7	0	0	139	23	173	4	0	0	200	6	3	12	0	0	21	17	0	17	0	0	34	394
Total	72	513	31	1	0	617	61	797	14	2	0	874	34	8	46	0	2	88	64	1	59	2	0	126	1705
Approach %	11.7	83.1	5.0	0.2	-	-	7.0	91.2	1.6	0.2	-	-	38.6	9.1	52.3	0.0	-	-	50.8	0.8	46.8	1.6	-	-	-
Total %	4.2	30.1	1.8	0.1	-	36.2	3.6	46.7	0.8	0.1	-	51.3	2.0	0.5	2.7	0.0	-	5.2	3.8	0.1	3.5	0.1	-	7.4	-
PHF	0.947	0.817	0.775	0.250	-	0.852	0.663	0.886	0.500	0.250	-	0.907	0.567	0.667	0.821	0.000	-	0.846	0.889	0.250	0.819	0.500	-	0.926	0.892
Lights	72	505	31	1	-	609	61	785	14	2	-	862	34	8	46	0	-	88	63	1	59	2	-	125	1684
% Lights	100.0	98.4	100.0	100.0	-	98.7	100.0	98.5	100.0	100.0	-	98.6	100.0	100.0	100.0	-	-	100.0	98.4	100.0	100.0	100.0	-	99.2	98.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	1
% Buses	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	1.6	0.0	0.0	0.0	-	0.8	0.1
Single-Unit Trucks	0	6	0	0	-	6	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	10
% Single-Unit Trucks	0.0	1.2	0.0	0.0	-	1.0	0.0	0.5	0.0	0.0	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.6
Articulated Trucks	0	2	0	0	-	2	0	8	0	0	-	8	0	0	0	0	-	0	0	0	0	0	-	0	10
% Articulated Trucks	0.0	0.4	0.0	0.0	-	0.3	0.0	1.0	0.0	0.0	-	0.9	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

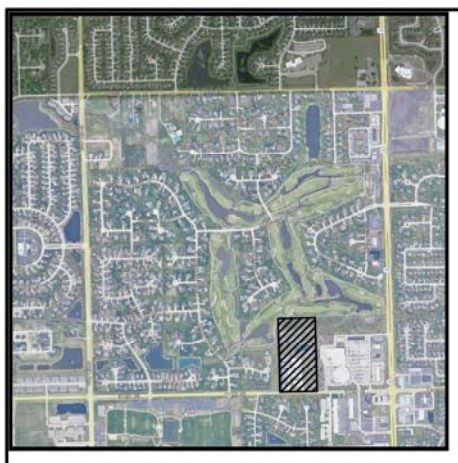
Site Plan

PRELIMINARY P.U.D.

FOR

THE BELVEDERE

THE EAST HALF OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 16, TOWNSHIP 37 NORTH, RANGE 9, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN WILL COUNTY, ILLINOIS.



LOCATION MAP

PARCEL INDEX NUMBER
07-01-16-400-004

PARCEL AREA
PARCEL AREA = 878,719 S.F.
OR 20.173 ACRES

LOT DIMENSIONS & AREAS ARE APPROXIMATIONS & WILL VARY AT TIME OF FINAL PLATTING.

SITE DATA

A. TOTAL AREA	20.17 AC.±
PROPOSED ZONING OCI PUD	
B. 111th R.O.W. DEDICATION	0.91 AC.±
C. P.U.D. OPEN SPACE CALCULATION	9.63 AC. OR 47.74%
D. UNITS	212 UNITS
E. DENSITY	10.51 DU/AC.
F. 111th STREET SETBACK	20 FT.
G. BUILDING HEIGHT	28 FT.
H. PARKING REQUIRED	477
I. PARKING PROVIDED	480
GARAGE PARKING	76
DRIVEWAY PARKING	76
SURFACE PARKING	328
J. ACCESSIBLE PARKING SPACES REQUIRED	9
K. ACCESSIBLE PARKING SPACES PROVIDIED	10

NOTES

1. ADDITIONAL P.U. & D.E. EASEMENTS MAY BE REQUIRED ON FINAL PLATS BASED ON UTILITY SIZE AND LOCATIONS FROM FINAL ENGINEERING.
2. DIMENSIONS SHOWN ALONG CURVED LINES ARE ARC DISTANCES.
3. ALL RIGHT-OF-WAYS ARE TO BE PUBLIC DEDICATIONS.
4. ALL STREETS, UTILITY PIPES AND MAINS SHALL BE PUBLICLY OWNED AND MAINTAINED.
5. ALL EASEMENTS DEPICTED ON THIS PLAT WILL BE GRANTED ON THE FINAL SUBDIVISION PLATS (UNLESS OTHERWISE NOTED)
6. ALL EASEMENTS ON THE PLAT MAP ARE FOR PUBLIC UTILITIES AND DRAINAGE PURPOSES (UNLESS OTHERWISE NOTED)
7. STORMWATER MANAGEMENT AND PCBMP EASEMENTS WILL BE GRANTED ON THE FINAL SUBDIVISION PLATS (UNLESS OTHERWISE NOTED)
8. STORMWATER STORAGE VOLUMES TO BE PROVIDED AND THE DESIGN OF STORMWATER MANAGEMENT FACILITIES SHALL BE IN ACCORDACE WITH CITY OF NAPERVILLE AND WILL COUNTY REQUIREMENTS.
9. EASEMENTS TO BE PROVIDED PER CITY AND UTILITY COMPANY REQUIREMENTS.
10. FOR PROPOSED CONTOURS, GRADES, UTILITIES, STREETS AND SIDEWALKS REFER TO THE PRELIMINARY ENGINEERING DRAWINGS FOR THIS DEVELOPMENT.
11. ALL REQUIRED CERTIFICATES, STATEMENTS AND CITY CLERK RECORDING NOTE WILL BE PROVIDED ON FINAL PLAT.
12. ALL R.O.W. DEPICTED ON THIS PLAT WILL BE GRANTED ON THE FINAL SUBDIVISION PLATS (UNLESS OTHERWISE NOTED).
13. THE MEASURED BEARINGS SHOWN HEREON ARE BASED ON THE NORTH LINE OF SUBJECT PROPERTY BEING N 88°16'19" E (ASSUMED).
14. SIGNAGE EASEMENT WILL BE PROVIDED ON THE FINAL PLAT
15. ALL REQUIRED MONUMENTATION WILL BE PROVIDED ON THE FINAL SUBDIVISION PLAT

BENCHMARK\CONTROL POINTS

ELEVATION REFERENCE MARK:

NGS MONUMENT NAPERVILLE 248 (PID AA3771): STATION IS IN SOUTHWEST CORNER OF INTERSECTION IN FRONT OF A SELF SERVE GAS STATION AND CONVENIENCE STORE, 5 FEET FROM BACK OF CURB ON WEST SIDE OF IL 59. STATION IS 118.04 FEETSOUTH OF NAIL WITH PLASTIC TAG IN EAST FACE OF POWER POLE, 21.44 FEETSOUTHEAST OF + CHISILED ON TOP OF CONCRETE SIGN BASE, AND 15.24 FEETNORTH OF NAIL WITH PLASTIC TAG IN SOUTHEAST FACE OF POWER POLE. STATION IS STAINLESS STEEL ROD IN PVC SLEEVE WITH METAL CAP AND LID SET FLUSH WITH GROUND.
ELEVATION: 657 NAVD88

CONTROL POINTS:

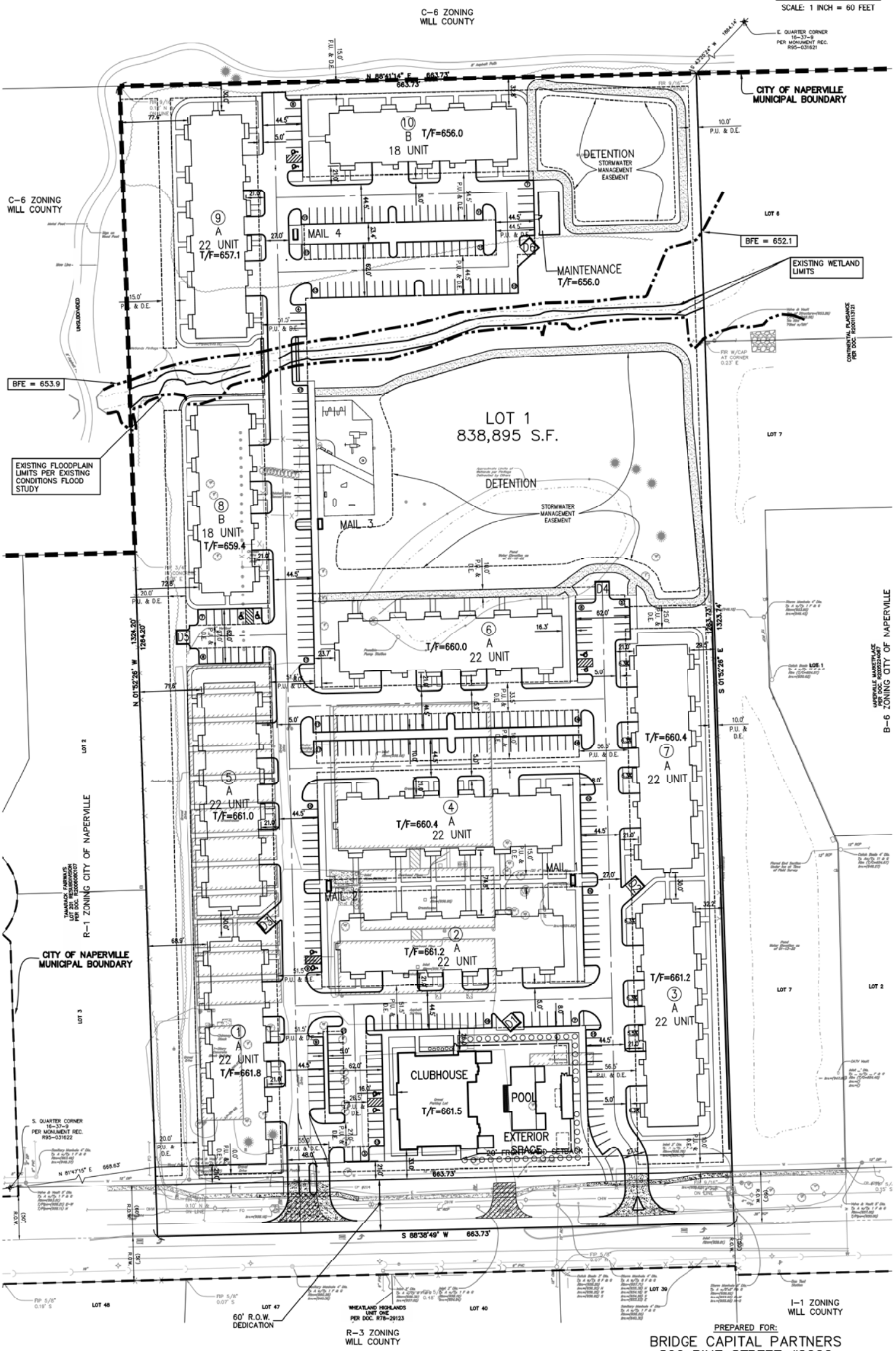
CP #204: SET '+' IN CONCRETE SIDEWALK ON EAST SIDE OF WESTERN ENTRANCE ON THE NORTH SIDE OF 111TH STREET.
NORTHING: 1826258.45
EASTING: 1017599.24
ELEVATION: 659.87 NAVD 88

CP #205: SET '+' IN CONCRETE THE MIDDLE OF THE WESTERN PARKING LOT ENTRANCE TO SHOPPING CENTER NEAR THE SOUTHEAST CORNER OF THE SUBJECT SITE.
NORTHING: 1826294.74
EASTING: 1018239.00
ELEVATION: 657.41 NAVD 88

NOTES

BOUNDARY INFORMATION BASED ON BOUNDARY SURVEY PERFORMED BY CEMCON, LTD. ON JANUARY 16, 2022.

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND DRAWINGS IN SURVEYOR'S POSSESSION. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES STATE THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.



ABBREVIATIONS

N.	- NORTH
S.	- SOUTH
E.	- EAST
W.	- WEST
NW.	- NORTHWEST
DOC.	- DOCUMENT
F.I.P.	- FOUND IRON PIPE
F.I.R.	- FOUND IRON ROD
MON.	- MONUMENT
@	- ON LINE
REC.	- RECORD
L	- ARC LENGTH
R	- RADIUS
R.O.W.	- RIGHT OF WAY
Ac.	- ACRE
S.F	- SQUARE FEET
B.S.L.	- BUILDING SETBACK LINE
DU/AC	- DWELLING UNITS PER ACRE
B/C	- BACK OF CURB
B-B	- BACK TO BACK
P.U.D.	- PLANNED UNIT DEVELOPMENT
P.U.& D.E.-	INDICATES PUBLIC UTILITIES AND DRAINAGE EASEMENT

LINE LEGEND

- SUBDIVISION BOUNDARY LINE (Heavy Solid Line)
- LOT LINE/PROPERTY LINE (Solid Line)
- EXISTING CORPORATE LIMITS OF THE CITY OF NAPERVILLE (Heavy Dashed Line)
- BUILDING LINE (Long Dashed Lines)
- EASEMENT LINE/LIMITS OF EASEMENT (Short Dashed Lines)
- CENTERLINE (Single Dashed Lines)

STATEMENT OF INTENT AND CONCEPT

PETITIONER IS REQUESTING ANNEXATION, REZONING TO OCI, A CONDITIONAL USE TO LOCATE MULTIFAMILY APARTMENT UNITS IN THE OCI DISTRICT, AND PRELIMINARY PLAT APPROVAL WITH THE INTENT TO LOCATE 212 APARTMENT UNITS IN TEN (10) TWO-STORY BUILDINGS ON THE PROPERTY. THE DEVELOPMENT IS TO BE KNOWN AS THE BELVEDERE. ACCESS WILL BE PROVIDED OFF OF 111TH STREET. THE PROPERTY CURRENTLY CONSISTS OF A VACANT NURSERY AND GREENHOUSES, WHICH WILL BE DEMOLISHED. THERE IS A CREEK AND A WETLAND ON THE PROPERTY WHICH WILL REMAIN UNDISTURBED. STORMWATER MANAGEMENT SUFFICIENT FOR THE DEVELOPMENT WILL BE PROVIDED. THE BUILDING MATERIALS WILL UTILIZE MODERN DESIGN ELEMENTS, CONSISTING OF STONE MASONRY, FIBER CEMENT VERTICAL BOARD AND BATTEN SIDING, HORIZONTAL FIBER CEMENT SIDING, WOOD ARCHITECTURAL FEATURES ON THE CLUBHOUSE, STANDING SEAM METAL AND ARCHITECTURAL SHINGLE ROOFING MATERIALS THE APARTMENTS WILL HAVE A NUMBER OF AMENITIES INCLUDING A CLUBHOUSE, SWIMMING POOL, PLAYGROUND, AND DOG PARK. THE BELVEDERE WILL PROVIDE A MUCH-NEEDED RENTAL HOUSING OPPORTUNITY IN SOUTH NAPERVILLE.

PREPARED FOR:

BRIDGE CAPITAL PARTNERS
899 PINE STREET #2000
SAN FRANCISCO, CA. 94108

PREPARED BY:

CEMCON, Ltd.
Consulting Engineers, Land Surveyors & Planners
2280 White Oak Circle, Suite 100
Aurora, Illinois 60502-9675
PH: 630.862.2100 FAX: 630.862.2199
E-Mail: info@cemcon.com Website: www.cemcon.com

DISC NO.: 904411 FILE NAME: PREOVER
DRAWN BY: KMS FLD. BK. / PG. NO.: -----
COMPLETION DATE: 03-29-22 JOB NO.: 904.411
XREF : TOPO PROJECT MANAGER : KMM
REV.: 05-11-22/KMS PER CITY COMMENTS 04-26-22

PRELIMINARY P.U.D. FOR THE BELVEDERE
CITY OF NAPERVILLE PROJECT NO.: 22-1-023

PLOT FILE CREATED: 5/9/2022 BY: KRISTIN STADFELD DRAWING PATH: P:\904411\ENG\DRAWINGS\PRELIMINARY\PREOVER.DWG

CMAP 2050 Projections Letter

Chicago Metropolitan Agency for Planning

433 West Van Buren Street
Suite 450
Chicago, IL 60607

312-454-0400
cmap.illinois.gov

April 18, 2022

Brendan S. May
Senior Consultant
Kenig, Lindgren, O'Hara and Aboona, Inc.
9575 West Higgins Road
Suite 400
Rosemont, IL 60048

Subject: 111th Street @ IL 59
IDOT

Dear Mr. May:

In response to a request made on your behalf and dated April 18, 2022, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current ADT	Year 2050 ADT
IL 59 north of 111th St	34,500	38,500
IL 59 south of 111th St	30,100	35,200
Hassert Blvd east of IL 59	18,900	23,800
111th St west of IL 59	15,100	19,900
248th Ave, @ 111th St	10,200	13,500

Traffic projections are developed using existing ADT data provided in the request letter and the results from the December 2021 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

If you have any questions, please call me at (312) 386-8806.

Sincerely,

Jose Rodriguez, PTP, AICP
Senior Planner, Research & Analysis

cc: Rios (IDOT)
2022_ForecastTraffic\Naperville\wi-14-22\wi-14-22.docx

Level of Service Criteria

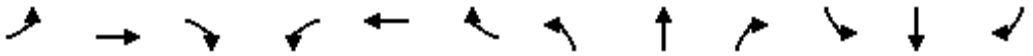
LEVEL OF SERVICE CRITERIA

Signalized Intersections		
Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Good progression, with more vehicles stopping than for Level of Service A.	>10 - 20
C	Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 - 35
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	>35 - 55
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	>55 - 80
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80.0

Unsignalized Intersections	
Level of Service	Average Total Delay (SEC/VEH)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Source: *Highway Capacity Manual*, 2010.

Capacity Analysis Summary Sheets



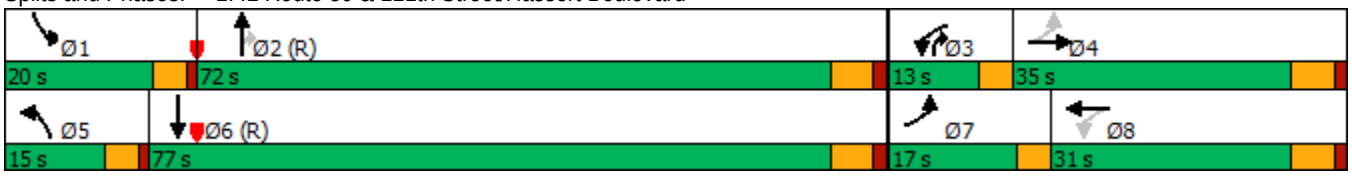
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	697	55	112	342	96	177	1351	188	259	586	56
Future Volume (vph)	104	697	55	112	342	96	177	1351	188	259	586	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	320		0	300		0	250		340	235		0
Storage Lanes	1		0	1		0	2		1	2		0
Taper Length (ft)	115			185			220			235		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor												
Frt		0.989			0.967				0.850		0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	3456	0	1736	3164	0	3335	3619	1495	3242	3269	0
Flt Permitted	0.267			0.148			0.950			0.950		
Satd. Flow (perm)	465	3456	0	270	3164	0	3335	3619	1495	3242	3269	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			22				121		10	
Link Speed (mph)		40			45			45			45	
Link Distance (ft)		605			1307			739			1001	
Travel Time (s)		10.3			19.8			11.2			15.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	9%	3%	7%	4%	11%	8%	5%	5%	8%	8%	9%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	776	0	115	452	0	182	1393	194	267	662	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8					2			
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0	3.0	3.0	15.0	
Minimum Split (s)	6.5	14.0		6.5	14.0		7.5	21.0	6.5	7.5	21.0	
Total Split (s)	17.0	35.0		13.0	31.0		15.0	72.0	13.0	20.0	77.0	
Total Split (%)	12.1%	25.0%		9.3%	22.1%		10.7%	51.4%	9.3%	14.3%	55.0%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5	3.5	3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		1.0	1.5	0.0	1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		4.5	6.0	3.5	4.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	None	None	C-Min	
Act Effct Green (s)	43.0	29.3		38.8	27.1		10.3	66.7	82.0	14.8	71.2	
Actuated g/C Ratio	0.31	0.21		0.28	0.19		0.07	0.48	0.59	0.11	0.51	

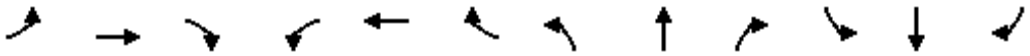
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.45	1.07		0.67	0.72		0.74	0.81	0.21	0.78	0.40	
Control Delay	41.2	105.1		55.8	57.9		81.9	36.0	5.8	77.3	21.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	41.2	105.1		55.8	57.9		81.9	36.0	5.8	77.3	21.7	
LOS	D	F		E	E		F	D	A	E	C	
Approach Delay		97.3			57.5			37.4			37.7	
Approach LOS		F			E			D			D	
Queue Length 50th (ft)	71	~412		77	196		85	563	28	123	187	
Queue Length 95th (ft)	121	#544		#135	263		#137	662	65	#175	236	
Internal Link Dist (ft)		525			1227			659			921	
Turn Bay Length (ft)	320			300			250		340	235		
Base Capacity (vph)	262	725		174	630		250	1725	927	358	1667	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.41	1.07		0.66	0.72		0.73	0.81	0.21	0.75	0.40	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 53.0 Intersection LOS: D
Intersection Capacity Utilization 87.2% ICU Level of Service E
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: IL Route 59 & 111th Street/Hassert Boulevard



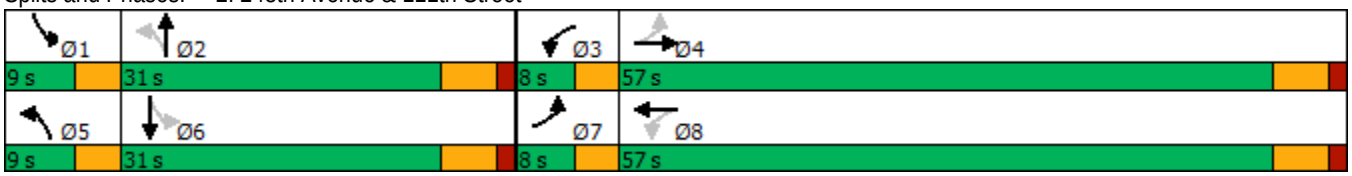


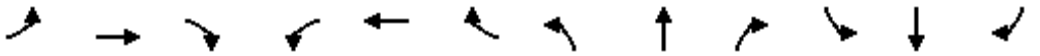
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	531	126	70	368	77	69	355	263	109	196	46
Future Volume (vph)	45	531	126	70	368	77	69	355	263	109	196	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	170		0	205		0	150		0	170		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	200			180			100			200		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.971			0.974			0.936			0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	1751	0	1347	1740	0	1736	3236	0	1752	3243	0
Flt Permitted	0.299			0.076			0.550			0.149		
Satd. Flow (perm)	531	1751	0	108	1740	0	1005	3236	0	275	3243	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			14			168			25	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		771			2429			1139			1352	
Travel Time (s)		11.7			36.8			17.3			20.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	5%	7%	34%	6%	8%	4%	4%	5%	3%	8%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	831	0	89	563	0	87	782	0	138	306	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	8.0	20.0		8.0	20.0		8.0	21.0		8.0	21.0	
Total Split (s)	8.0	57.0		8.0	57.0		9.0	31.0		9.0	31.0	
Total Split (%)	7.6%	54.3%		7.6%	54.3%		8.6%	29.5%		8.6%	29.5%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effct Green (s)	57.9	50.9		58.6	52.5		33.0	25.0		33.7	26.8	
Actuated g/C Ratio	0.55	0.49		0.56	0.50		0.31	0.24		0.32	0.26	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.97		0.79	0.64		0.25	0.87		0.84	0.36	
Control Delay	10.6	51.0		59.8	23.5		25.8	41.8		66.6	31.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.6	51.0		59.8	23.5		25.8	41.8		66.6	31.5	
LOS	B	D		E	C		C	D		E	C	
Approach Delay		48.4			28.4			40.2			42.4	
Approach LOS		D			C			D			D	
Queue Length 50th (ft)	15	516		25	270		40	214		65	83	
Queue Length 95th (ft)	29	#621		#81	318		66	236		#111	106	
Internal Link Dist (ft)		691			2349			1059			1272	
Turn Bay Length (ft)	170			205			150			170		
Base Capacity (vph)	342	859		113	878		354	899		165	847	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.97		0.79	0.64		0.25	0.87		0.84	0.36	

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 104.9			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 40.4		Intersection LOS: D	
Intersection Capacity Utilization 80.4%		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: 2: 248th Avenue & 111th Street





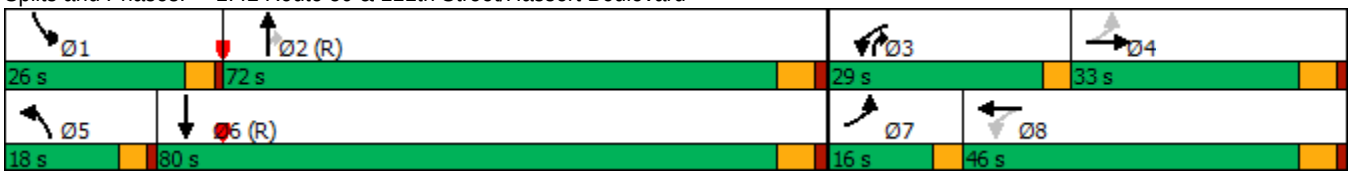
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	486	91	346	784	185	210	998	141	251	1472	142
Future Volume (vph)	130	486	91	346	784	185	210	998	141	251	1472	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	320		0	300		0	250		340	235		0
Storage Lanes	1		0	1		0	2		1	2		0
Taper Length (ft)	115			185			220			235		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor												
Frt		0.976			0.971				0.850		0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3444	0	1787	3458	0	3467	3689	1615	3433	3493	0
Flt Permitted	0.148			0.131			0.950			0.950		
Satd. Flow (perm)	281	3444	0	246	3458	0	3467	3689	1615	3433	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			17				82		8	
Link Speed (mph)		40			45			45			45	
Link Distance (ft)		605			1307			739			1001	
Travel Time (s)		10.3			19.8			11.2			15.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	1%	1%	3%	1%	3%	0%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	595	0	357	999	0	216	1029	145	259	1664	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8					2			
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0	3.0	3.0	15.0	
Minimum Split (s)	6.5	14.0		6.5	14.0		7.5	21.0	6.5	7.5	21.0	
Total Split (s)	16.0	33.0		29.0	46.0		18.0	72.0	29.0	26.0	80.0	
Total Split (%)	10.0%	20.6%		18.1%	28.8%		11.3%	45.0%	18.1%	16.3%	50.0%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5	3.5	3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		1.0	1.5	0.0	1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		4.5	6.0	3.5	4.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	None	None	C-Min	
Act Effct Green (s)	41.3	27.0		58.5	40.7		13.1	70.2	101.7	17.3	74.4	
Actuated g/C Ratio	0.26	0.17		0.37	0.25		0.08	0.44	0.64	0.11	0.46	

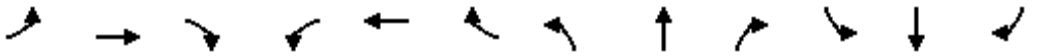
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.73	1.01		1.07	1.12		0.76	0.64	0.14	0.70	1.02	
Control Delay	60.1	102.2		111.9	120.7		89.5	37.6	5.8	79.0	69.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.1	102.2		111.9	120.7		89.5	37.6	5.8	79.0	69.6	
LOS	E	F		F	F		F	D	A	E	E	
Approach Delay		94.5			118.4			42.3			70.9	
Approach LOS		F			F			D			E	
Queue Length 50th (ft)	96	~329		~354	~633		115	437	24	137	~972	
Queue Length 95th (ft)	#171	#465		#567	#774		#169	538	57	182	#1111	
Internal Link Dist (ft)		525			1227			659			921	
Turn Bay Length (ft)	320			300			250		340	235		
Base Capacity (vph)	192	591		335	892		292	1619	1056	461	1628	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.70	1.01		1.07	1.12		0.74	0.64	0.14	0.56	1.02	

Intersection Summary

Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 146 (91%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 78.7 Intersection LOS: E
Intersection Capacity Utilization 103.8% 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: IL Route 59 & 111th Street/Hassert Boulevard





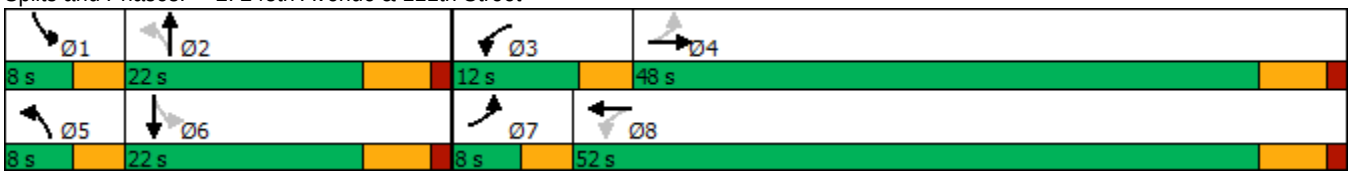
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	392	120	150	759	108	43	233	199	97	480	94
Future Volume (vph)	34	392	120	150	759	108	43	233	199	97	480	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	170		0	205		0	150		0	170		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	200			180			100			200		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.965			0.981			0.931			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1765	0	1805	1827	0	1770	3343	0	1736	3514	0
Flt Permitted	0.098			0.244			0.237			0.290		
Satd. Flow (perm)	186	1765	0	464	1827	0	441	3343	0	530	3514	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			12			207			22	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		771			2429			1139			1352	
Travel Time (s)		11.7			36.8			17.3			20.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	10%	0%	2%	2%	2%	1%	0%	4%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	581	0	170	986	0	49	491	0	110	652	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	8.0	20.0		8.0	20.0		8.0	21.0		8.0	21.0	
Total Split (s)	8.0	48.0		12.0	52.0		8.0	22.0		8.0	22.0	
Total Split (%)	8.9%	53.3%		13.3%	57.8%		8.9%	24.4%		8.9%	24.4%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effct Green (s)	46.4	39.3		53.3	46.3		22.1	16.1		22.8	17.8	
Actuated g/C Ratio	0.54	0.46		0.63	0.54		0.26	0.19		0.27	0.21	

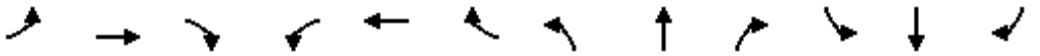
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.21	0.70		0.41	0.99		0.26	0.61		0.54	0.87	
Control Delay	9.5	23.5		10.0	48.4		26.6	22.5		35.2	47.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.5	23.5		10.0	48.4		26.6	22.5		35.2	47.6	
LOS	A	C		A	D		C	C		D	D	
Approach Delay		22.6			42.7			22.9			45.8	
Approach LOS		C			D			C			D	
Queue Length 50th (ft)	8	241		36	~615		20	77		47	~195	
Queue Length 95th (ft)	19	352		60	#821		46	125		87	#302	
Internal Link Dist (ft)		691			2349			1059			1272	
Turn Bay Length (ft)	170			205			150			170		
Base Capacity (vph)	187	886		424	997		185	799		205	749	
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	0.21	0.66		0.40	0.99		0.26	0.61		0.54	0.87	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 85.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 36.0 Intersection LOS: D
Intersection Capacity Utilization 86.1% ICU Level of Service E
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: 2: 248th Avenue & 111th Street





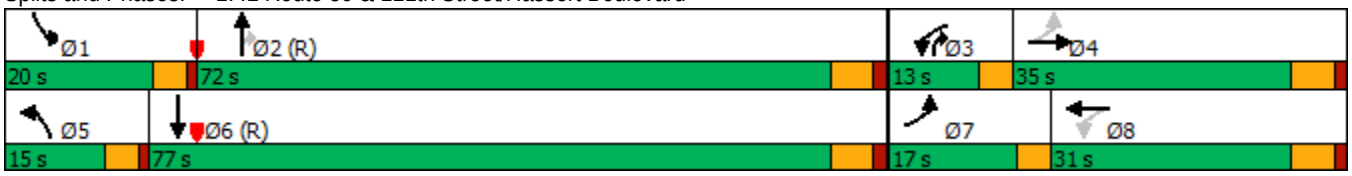
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	744	57	116	364	100	184	1420	196	269	652	58
Future Volume (vph)	108	744	57	116	364	100	184	1420	196	269	652	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	320		0	300		0	250		340	235		0
Storage Lanes	1		0	1		0	2		1	2		0
Taper Length (ft)	115			185			220			235		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor												
Frt		0.989			0.968				0.850		0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	3457	0	1736	3167	0	3335	3619	1495	3242	3272	0
Flt Permitted	0.238			0.149			0.950			0.950		
Satd. Flow (perm)	415	3457	0	272	3167	0	3335	3619	1495	3242	3272	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			22				121		10	
Link Speed (mph)		40			45			45			45	
Link Distance (ft)		605			1307			739			1001	
Travel Time (s)		10.3			19.8			11.2			15.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	9%	3%	7%	4%	11%	8%	5%	5%	8%	8%	9%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	826	0	120	478	0	190	1464	202	277	732	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8					2			
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0	3.0	3.0	15.0	
Minimum Split (s)	6.5	14.0		6.5	14.0		7.5	21.0	6.5	7.5	21.0	
Total Split (s)	17.0	35.0		13.0	31.0		15.0	72.0	13.0	20.0	77.0	
Total Split (%)	12.1%	25.0%		9.3%	22.1%		10.7%	51.4%	9.3%	14.3%	55.0%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5	3.5	3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		1.0	1.5	0.0	1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		4.5	6.0	3.5	4.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	None	None	C-Min	
Act Effct Green (s)	43.0	29.2		38.8	26.9		10.4	66.5	81.8	15.0	71.1	
Actuated g/C Ratio	0.31	0.21		0.28	0.19		0.07	0.48	0.58	0.11	0.51	

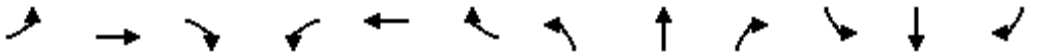
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.48	1.14		0.70	0.76		0.77	0.85	0.22	0.80	0.44	
Control Delay	42.5	127.8		57.6	60.2		84.0	38.5	6.1	78.5	22.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	42.5	127.8		57.6	60.2		84.0	38.5	6.1	78.5	22.5	
LOS	D	F		E	E		F	D	A	E	C	
Approach Delay		117.7			59.7			39.7			37.9	
Approach LOS		F			E			D			D	
Queue Length 50th (ft)	74	~463		80	211		89	611	31	128	214	
Queue Length 95th (ft)	125	#597		#145	#291		#145	717	70	#189	266	
Internal Link Dist (ft)		525			1227			659			921	
Turn Bay Length (ft)	320			300			250		340	235		
Base Capacity (vph)	251	724		175	627		250	1719	925	358	1667	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.44	1.14		0.69	0.76		0.76	0.85	0.22	0.77	0.44	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 58.6 Intersection LOS: E
Intersection Capacity Utilization 90.9% ICU Level of Service E
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: IL Route 59 & 111th Street/Hassert Boulevard





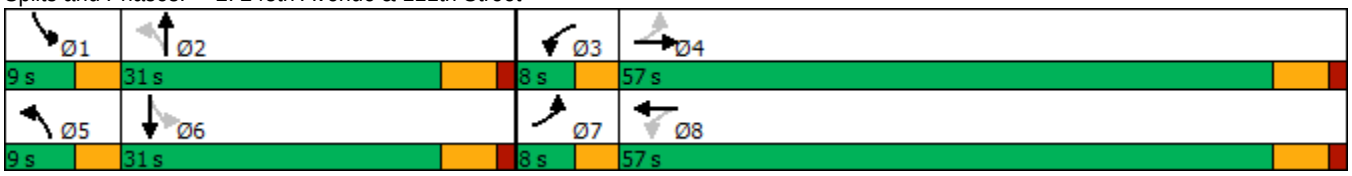
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	571	131	73	391	80	72	369	274	113	204	48
Future Volume (vph)	47	571	131	73	391	80	72	369	274	113	204	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	170		0	205		0	150		0	170		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	200			180			100			200		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.972			0.975			0.936			0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	1753	0	1347	1742	0	1736	3236	0	1752	3240	0
Flt Permitted	0.272			0.076			0.535			0.149		
Satd. Flow (perm)	483	1753	0	108	1742	0	977	3236	0	275	3240	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			14			168			26	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		771			2429			1139			1352	
Travel Time (s)		11.7			36.8			17.3			20.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	5%	7%	34%	6%	8%	4%	4%	5%	3%	8%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	889	0	92	596	0	91	814	0	143	319	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	8.0	20.0		8.0	20.0		8.0	21.0		8.0	21.0	
Total Split (s)	8.0	57.0		8.0	57.0		9.0	31.0		9.0	31.0	
Total Split (%)	7.6%	54.3%		7.6%	54.3%		8.6%	29.5%		8.6%	29.5%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effct Green (s)	58.0	51.0		58.7	52.6		33.0	25.0		33.7	26.8	
Actuated g/C Ratio	0.55	0.49		0.56	0.50		0.31	0.24		0.32	0.26	

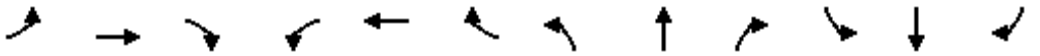
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	1.03		0.81	0.68		0.26	0.91		0.87	0.38	
Control Delay	10.9	67.6		64.4	24.7		26.1	45.8		72.1	31.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.9	67.6		64.4	24.7		26.1	45.8		72.1	31.7	
LOS	B	E		E	C		C	D		E	C	
Approach Delay		64.1			30.0			43.8			44.2	
Approach LOS		E			C			D			D	
Queue Length 50th (ft)	16	~640		26	294		42	228		68	87	
Queue Length 95th (ft)	29	#697		#85	343		69	249		#119	110	
Internal Link Dist (ft)		691			2349			1059			1272	
Turn Bay Length (ft)	170			205			150			170		
Base Capacity (vph)	318	859		113	879		346	898		165	846	
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	0.19	1.03		0.81	0.68		0.26	0.91		0.87	0.38	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 47.1 Intersection LOS: D
Intersection Capacity Utilization 84.0% ICU Level of Service E
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: 2: 248th Avenue & 111th Street





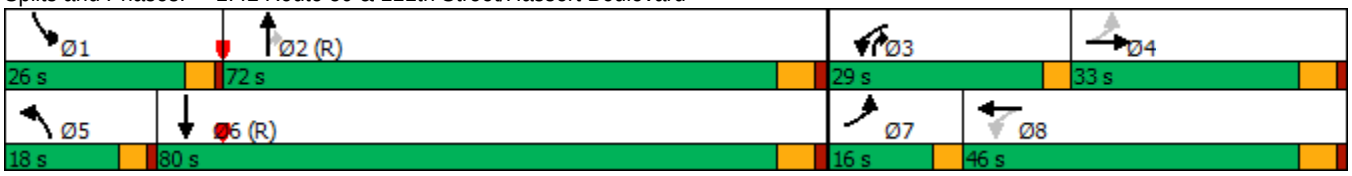
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	518	95	360	836	192	218	1088	147	261	1562	148
Future Volume (vph)	135	518	95	360	836	192	218	1088	147	261	1562	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	320		0	300		0	250		340	235		0
Storage Lanes	1		0	1		0	2		1	2		0
Taper Length (ft)	115			185			220			235		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor												
Frt		0.977			0.972				0.850		0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3447	0	1787	3461	0	3467	3689	1615	3433	3493	0
Flt Permitted	0.148			0.131			0.950			0.950		
Satd. Flow (perm)	281	3447	0	246	3461	0	3467	3689	1615	3433	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			16				82		8	
Link Speed (mph)		40			45			45			45	
Link Distance (ft)		605			1307			739			1001	
Travel Time (s)		10.3			19.8			11.2			15.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	1%	1%	3%	1%	3%	0%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	632	0	371	1060	0	225	1122	152	269	1763	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8					2			
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0	3.0	3.0	15.0	
Minimum Split (s)	6.5	14.0		6.5	14.0		7.5	21.0	6.5	7.5	21.0	
Total Split (s)	16.0	33.0		29.0	46.0		18.0	72.0	29.0	26.0	80.0	
Total Split (%)	10.0%	20.6%		18.1%	28.8%		11.3%	45.0%	18.1%	16.3%	50.0%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5	3.5	3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		1.0	1.5	0.0	1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		4.5	6.0	3.5	4.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	None	None	C-Min	
Act Effct Green (s)	41.5	27.0		58.5	40.5		13.2	69.9	101.4	17.6	74.3	
Actuated g/C Ratio	0.26	0.17		0.37	0.25		0.08	0.44	0.63	0.11	0.46	

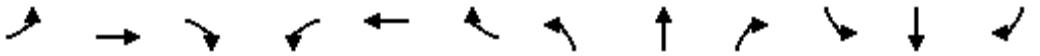
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.75	1.07		1.11	1.19		0.79	0.70	0.14	0.71	1.08	
Control Delay	62.0	117.5		124.5	147.0		91.6	39.8	6.1	79.3	89.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	62.0	117.5		124.5	147.0		91.6	39.8	6.1	79.3	89.2	
LOS	E	F		F	F		F	D	A	E	F	
Approach Delay		107.5			141.2			44.1			87.9	
Approach LOS		F			F			D			F	
Queue Length 50th (ft)	100	~379		~385	~704		121	496	27	142	~1086	
Queue Length 95th (ft)	#184	#510		#600	#846		#180	604	61	189	#1224	
Internal Link Dist (ft)		525			1227			659			921	
Turn Bay Length (ft)	320			300			250		340	235		
Base Capacity (vph)	192	590		335	889		292	1611	1053	461	1626	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.72	1.07		1.11	1.19		0.77	0.70	0.14	0.58	1.08	

Intersection Summary

Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 146 (91%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 92.4 Intersection LOS: F
Intersection Capacity Utilization 108.5% 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: IL Route 59 & 111th Street/Hassert Boulevard



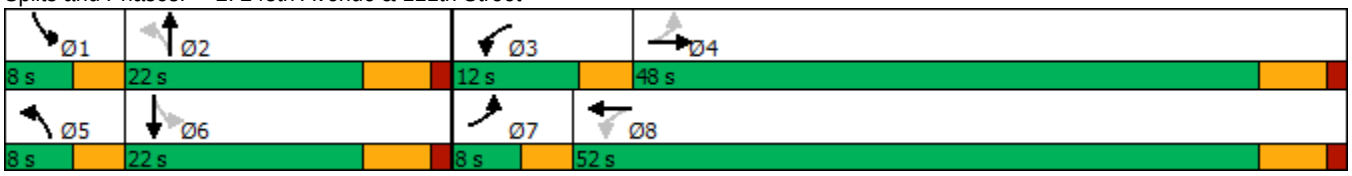


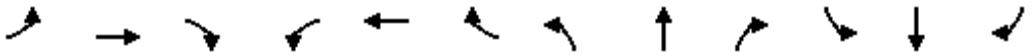
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	421	125	156	810	112	45	242	207	101	499	98
Future Volume (vph)	35	421	125	156	810	112	45	242	207	101	499	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	170		0	205		0	150		0	170		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	200			180			100			200		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.966			0.982			0.931			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1768	0	1805	1829	0	1770	3343	0	1736	3514	0
Flt Permitted	0.099			0.204			0.231			0.257		
Satd. Flow (perm)	188	1768	0	388	1829	0	430	3343	0	470	3514	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			11			208			22	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		771			2429			1139			1352	
Travel Time (s)		11.7			36.8			17.3			20.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	10%	0%	2%	2%	2%	1%	0%	4%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	620	0	177	1047	0	51	510	0	115	678	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	8.0	20.0		8.0	20.0		8.0	21.0		8.0	21.0	
Total Split (s)	8.0	48.0		12.0	52.0		8.0	22.0		8.0	22.0	
Total Split (%)	8.9%	53.3%		13.3%	57.8%		8.9%	24.4%		8.9%	24.4%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effct Green (s)	46.2	39.2		53.2	46.1		22.8	15.8		24.3	19.2	
Actuated g/C Ratio	0.53	0.45		0.61	0.53		0.26	0.18		0.28	0.22	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.22	0.76		0.48	1.07		0.28	0.65		0.58	0.85	
Control Delay	9.7	26.5		11.6	72.2		26.9	24.0		38.4	45.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.7	26.5		11.6	72.2		26.9	24.0		38.4	45.8	
LOS	A	C		B	E		C	C		D	D	
Approach Delay		25.5			63.4			24.2			44.7	
Approach LOS		C			E			C			D	
Queue Length 50th (ft)	8	268		38	~689		21	83		49	~218	
Queue Length 95th (ft)	19	389		62	#898		47	133		#101	#320	
Internal Link Dist (ft)		691			2349			1059			1272	
Turn Bay Length (ft)	170			205			150			170		
Base Capacity (vph)	184	870		378	979		183	788		198	797	
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	0.22	0.71		0.47	1.07		0.28	0.65		0.58	0.85	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 86.6			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 44.3		Intersection LOS: D	
Intersection Capacity Utilization 89.7%		ICU Level of Service E	
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: 2: 248th Avenue & 111th Street





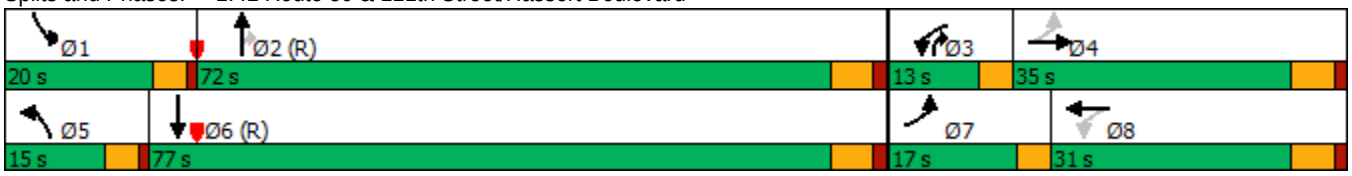
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	761	67	116	369	100	187	1420	196	269	652	65
Future Volume (vph)	132	761	67	116	369	100	187	1420	196	269	652	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	320		0	300		0	250		340	235		0
Storage Lanes	1		0	1		0	2		1	2		0
Taper Length (ft)	115			185			220			235		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor												
Frt		0.988			0.968				0.850		0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	3452	0	1736	3166	0	3335	3619	1495	3242	3266	0
Flt Permitted	0.220			0.153			0.950			0.950		
Satd. Flow (perm)	383	3452	0	280	3166	0	3335	3619	1495	3242	3266	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			21				121		11	
Link Speed (mph)		40			45			45			45	
Link Distance (ft)		605			1307			739			1001	
Travel Time (s)		10.3			19.8			11.2			15.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	9%	3%	7%	4%	11%	8%	5%	5%	8%	8%	9%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	854	0	120	483	0	193	1464	202	277	739	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8					2			
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0	3.0	3.0	15.0	
Minimum Split (s)	6.5	14.0		6.5	14.0		7.5	21.0	6.5	7.5	21.0	
Total Split (s)	17.0	35.0		13.0	31.0		15.0	72.0	13.0	20.0	77.0	
Total Split (%)	12.1%	25.0%		9.3%	22.1%		10.7%	51.4%	9.3%	14.3%	55.0%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5	3.5	3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		1.0	1.5	0.0	1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		4.5	6.0	3.5	4.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	None	None	C-Min	
Act Effct Green (s)	43.7	29.2		38.0	26.2		10.4	66.5	81.8	15.0	71.1	
Actuated g/C Ratio	0.31	0.21		0.27	0.19		0.07	0.48	0.58	0.11	0.51	

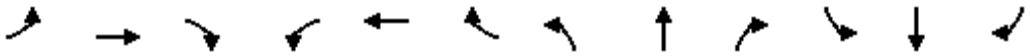
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.59	1.18		0.70	0.79		0.78	0.85	0.22	0.80	0.44	
Control Delay	46.6	142.2		57.6	62.6		84.8	38.5	6.1	78.5	22.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	46.6	142.2		57.6	62.6		84.8	38.5	6.1	78.5	22.6	
LOS	D	F		E	E		F	D	A	E	C	
Approach Delay		129.1			61.6			39.8			37.8	
Approach LOS		F			E			D			D	
Queue Length 50th (ft)	92	~491		80	216		90	611	31	128	216	
Queue Length 95th (ft)	150	#626		#142	#297		#148	717	70	#189	268	
Internal Link Dist (ft)		525			1227			659			921	
Turn Bay Length (ft)	320			300			250		340	235		
Base Capacity (vph)	244	723		175	609		250	1719	925	358	1663	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.56	1.18		0.69	0.79		0.77	0.85	0.22	0.77	0.44	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 62.1 Intersection LOS: E
Intersection Capacity Utilization 91.6% ICU Level of Service F
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: IL Route 59 & 111th Street/Hassert Boulevard





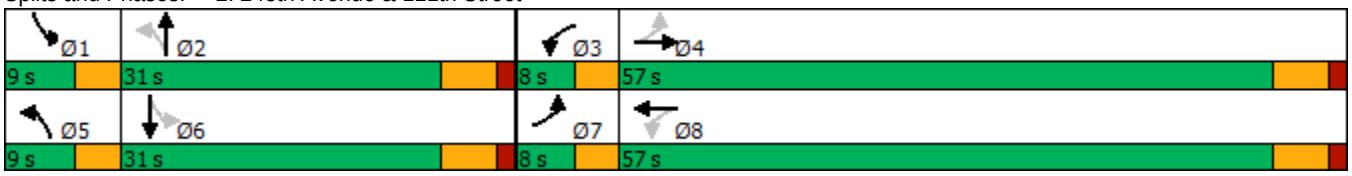
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	573	131	76	398	87	72	369	276	115	204	48
Future Volume (vph)	47	573	131	76	398	87	72	369	276	115	204	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	170		0	205		0	150		0	170		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	200			180			100			200		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.972			0.973			0.936			0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	1753	0	1347	1738	0	1736	3236	0	1752	3240	0
Flt Permitted	0.257			0.076			0.535			0.149		
Satd. Flow (perm)	456	1753	0	108	1738	0	977	3236	0	275	3240	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			15			169			26	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		771			2429			1139			1352	
Travel Time (s)		11.7			36.8			17.3			20.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	5%	7%	34%	6%	8%	4%	4%	5%	3%	8%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	891	0	96	614	0	91	816	0	146	319	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	8.0	20.0		8.0	20.0		8.0	21.0		8.0	21.0	
Total Split (s)	8.0	57.0		8.0	57.0		9.0	31.0		9.0	31.0	
Total Split (%)	7.6%	54.3%		7.6%	54.3%		8.6%	29.5%		8.6%	29.5%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effct Green (s)	58.0	51.0		58.7	52.6		33.0	25.0		33.7	26.8	
Actuated g/C Ratio	0.55	0.49		0.56	0.50		0.31	0.24		0.32	0.26	

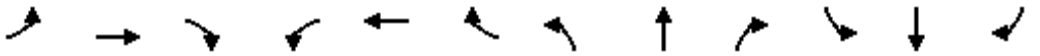
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	1.04		0.85	0.70		0.26	0.91		0.88	0.38	
Control Delay	11.0	68.3		71.1	25.5		26.1	45.9		75.5	31.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.0	68.3		71.1	25.5		26.1	45.9		75.5	31.7	
LOS	B	E		E	C		C	D		E	C	
Approach Delay		64.8			31.7			43.9			45.5	
Approach LOS		E			C			D			D	
Queue Length 50th (ft)	16	~643		27	308		42	228		69	87	
Queue Length 95th (ft)	29	#700		#92	358		69	250		#123	110	
Internal Link Dist (ft)		691			2349			1059			1272	
Turn Bay Length (ft)	170			205			150			170		
Base Capacity (vph)	304	859		113	877		346	899		165	846	
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	0.19	1.04		0.85	0.70		0.26	0.91		0.88	0.38	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 47.8 Intersection LOS: D
Intersection Capacity Utilization 84.4% ICU Level of Service E
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: 2: 248th Avenue & 111th Street





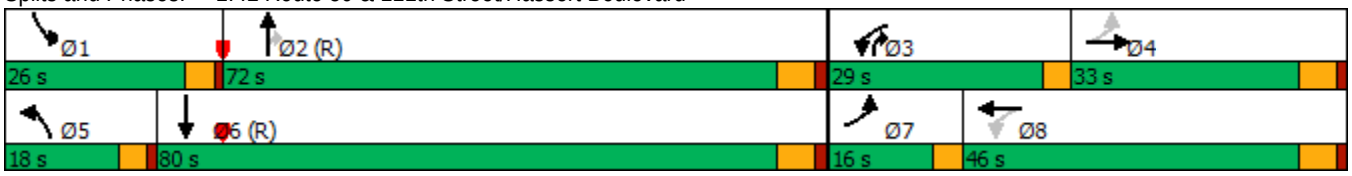
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	528	101	360	853	192	229	1088	147	261	1562	173
Future Volume (vph)	150	528	101	360	853	192	229	1088	147	261	1562	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	320		0	300		0	250		340	235		0
Storage Lanes	1		0	1		0	2		1	2		0
Taper Length (ft)	115			185			220			235		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor												
Frt		0.976			0.972				0.850		0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3443	0	1787	3462	0	3467	3689	1615	3433	3486	0
Flt Permitted	0.148			0.131			0.950			0.950		
Satd. Flow (perm)	281	3443	0	246	3462	0	3467	3689	1615	3433	3486	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			16				82		10	
Link Speed (mph)		40			45			45			45	
Link Distance (ft)		605			1307			739			1001	
Travel Time (s)		10.3			19.8			11.2			15.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	1%	1%	3%	1%	3%	0%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	155	648	0	371	1077	0	236	1122	152	269	1788	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8					2			
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0	3.0	3.0	15.0	
Minimum Split (s)	6.5	14.0		6.5	14.0		7.5	21.0	6.5	7.5	21.0	
Total Split (s)	16.0	33.0		29.0	46.0		18.0	72.0	29.0	26.0	80.0	
Total Split (%)	10.0%	20.6%		18.1%	28.8%		11.3%	45.0%	18.1%	16.3%	50.0%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5	3.5	3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		1.0	1.5	0.0	1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		4.5	6.0	3.5	4.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	None	None	C-Min	
Act Effct Green (s)	41.7	27.0		58.5	40.3		13.3	69.9	101.4	17.6	74.2	
Actuated g/C Ratio	0.26	0.17		0.37	0.25		0.08	0.44	0.63	0.11	0.46	

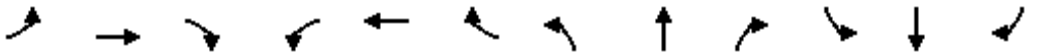
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.82	1.10		1.11	1.22		0.82	0.70	0.14	0.71	1.10	
Control Delay	70.6	125.2		124.5	157.4		94.4	39.8	6.1	79.3	95.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	70.6	125.2		124.5	157.4		94.4	39.8	6.1	79.3	95.9	
LOS	E	F		F	F		F	D	A	E	F	
Approach Delay		114.6			148.9			44.9			93.7	
Approach LOS		F			F			D			F	
Queue Length 50th (ft)	112	~397		~385	~723		127	496	27	142	~1116	
Queue Length 95th (ft)	#225	#528		#600	#865		#194	604	61	189	#1252	
Internal Link Dist (ft)		525			1227			659			921	
Turn Bay Length (ft)	320			300			250		340	235		
Base Capacity (vph)	192	590		335	883		292	1611	1053	461	1622	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.81	1.10		1.11	1.22		0.81	0.70	0.14	0.58	1.10	

Intersection Summary

Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 146 (91%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 97.7 Intersection LOS: F
Intersection Capacity Utilization 110.3% ICU Level of Service H
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: IL Route 59 & 111th Street/Hassert Boulevard





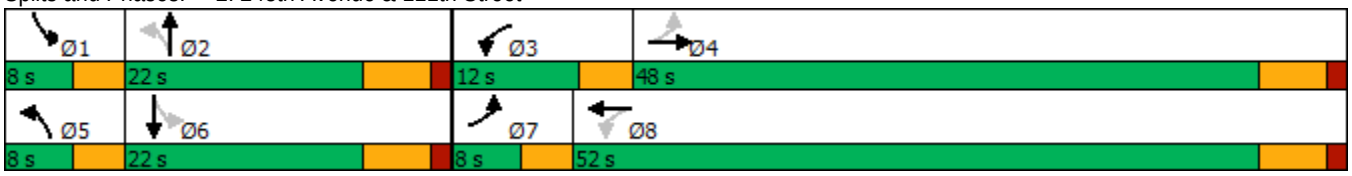
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	428	125	159	814	116	45	242	210	101	499	105
Future Volume (vph)	35	428	125	159	814	116	45	242	210	101	499	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	170		0	205		0	150		0	170		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	200			180			100			200		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.966			0.981			0.930			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1768	0	1805	1827	0	1770	3339	0	1736	3510	0
Flt Permitted	0.099			0.197			0.231			0.254		
Satd. Flow (perm)	188	1768	0	374	1827	0	430	3339	0	464	3510	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			12			211			24	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		771			2429			1139			1352	
Travel Time (s)		11.7			36.8			17.3			20.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	10%	0%	2%	2%	2%	1%	0%	4%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	628	0	181	1057	0	51	514	0	115	686	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	8.0	20.0		8.0	20.0		8.0	21.0		8.0	21.0	
Total Split (s)	8.0	48.0		12.0	52.0		8.0	22.0		8.0	22.0	
Total Split (%)	8.9%	53.3%		13.3%	57.8%		8.9%	24.4%		8.9%	24.4%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effct Green (s)	46.1	39.1		53.2	46.1		22.8	15.8		24.3	19.2	
Actuated g/C Ratio	0.53	0.45		0.61	0.53		0.26	0.18		0.28	0.22	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.22	0.78		0.50	1.08		0.28	0.66		0.59	0.86	
Control Delay	9.7	27.1		12.0	76.1		26.9	23.9		38.7	46.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.7	27.1		12.0	76.1		26.9	23.9		38.7	46.5	
LOS	A	C		B	E		C	C		D	D	
Approach Delay		26.1			66.7			24.2			45.4	
Approach LOS		C			E			C			D	
Queue Length 50th (ft)	8	273		38	~701		21	83		49	~223	
Queue Length 95th (ft)	19	396		64	#910		47	133		#102	#324	
Internal Link Dist (ft)		691			2349			1059			1272	
Turn Bay Length (ft)	170			205			150			170		
Base Capacity (vph)	184	870		370	978		183	790		196	797	
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	0.22	0.72		0.49	1.08		0.28	0.65		0.59	0.86	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 86.6
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 45.9 Intersection LOS: D
Intersection Capacity Utilization 90.4% ICU Level of Service E
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: 2: 248th Avenue & 111th Street



Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	873	0	4	483	12	1	0	3	23	0	2
Future Vol, veh/h	5	873	0	4	483	12	1	0	3	23	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	120	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	0	4	0	0	4	0	0	0	0	0	0	0
Mvmt Flow	7	1303	0	6	721	18	1	0	4	34	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	739	0	0	1303	0	0	2061	2068	1303	2061	2059	730
Stage 1	-	-	-	-	-	-	1317	1317	-	742	742	-
Stage 2	-	-	-	-	-	-	744	751	-	1319	1317	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	876	-	-	538	-	-	41	55	198	41	56	426
Stage 1	-	-	-	-	-	-	196	229	-	411	425	-
Stage 2	-	-	-	-	-	-	410	421	-	195	229	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	876	-	-	538	-	-	40	54	198	39	55	426
Mov Cap-2 Maneuver	-	-	-	-	-	-	40	54	-	130	154	-
Stage 1	-	-	-	-	-	-	194	227	-	408	420	-
Stage 2	-	-	-	-	-	-	403	416	-	189	227	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	43.3	40.5
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	100	876	-	-	538	-	-	138
HCM Lane V/C Ratio	0.06	0.009	-	-	0.011	-	-	0.27
HCM Control Delay (s)	43.3	9.1	-	-	11.8	-	-	40.5
HCM Lane LOS	E	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	1

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	897	2	3	494	5	11
Future Vol, veh/h	897	2	3	494	5	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	5	50	0	10	0	9
Mvmt Flow	1121	3	4	618	6	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1124	0	1749	1123
Stage 1	-	-	-	-	1123	-
Stage 2	-	-	-	-	626	-
Critical Hdwy	-	-	4.1	-	6.4	6.29
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.381
Pot Cap-1 Maneuver	-	-	629	-	95	242
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	537	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	629	-	94	242
Mov Cap-2 Maneuver	-	-	-	-	220	-
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	534	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	21.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	235	-	-	629	-
HCM Lane V/C Ratio	0.085	-	-	0.006	-
HCM Control Delay (s)	21.7	-	-	10.8	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	827	36	35	493	7	9	0	28	19	0	12
Future Vol, veh/h	34	827	36	35	493	7	9	0	28	19	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	6	5	3	0	12	0	0	0	0	5	0	0
Mvmt Flow	41	996	43	42	594	8	11	0	34	23	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	602	0	0	1039	0	0	1481	1786	520	1262	1803	301
Stage 1	-	-	-	-	-	-	1100	1100	-	682	682	-
Stage 2	-	-	-	-	-	-	381	686	-	580	1121	-
Critical Hdwy	4.22	-	-	4.1	-	-	7.5	6.5	6.9	7.6	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Follow-up Hdwy	2.26	-	-	2.2	-	-	3.5	4	3.3	3.55	4	3.3
Pot Cap-1 Maneuver	945	-	-	677	-	-	89	82	506	123	80	701
Stage 1	-	-	-	-	-	-	230	290	-	399	453	-
Stage 2	-	-	-	-	-	-	619	451	-	460	284	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	945	-	-	677	-	-	80	74	506	106	72	701
Mov Cap-2 Maneuver	-	-	-	-	-	-	170	180	-	220	165	-
Stage 1	-	-	-	-	-	-	220	278	-	382	425	-
Stage 2	-	-	-	-	-	-	569	423	-	411	272	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.7	16.2	18.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	170	506	945	-	-	677	-	-	220	701
HCM Lane V/C Ratio	0.064	0.067	0.043	-	-	0.062	-	-	0.104	0.021
HCM Control Delay (s)	27.6	12.6	9	-	-	10.7	-	-	23.3	10.2
HCM Lane LOS	D	B	A	-	-	B	-	-	C	B
HCM 95th %tile Q(veh)	0.2	0.2	0.1	-	-	0.2	-	-	0.3	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	656	1	12	1032	23	1	0	14	16	1	9
Future Vol, veh/h	6	656	1	12	1032	23	1	0	14	16	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	120	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	7	772	1	14	1214	27	1	0	16	19	1	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1241	0	0	773	0	0	2049	2056	773	2051	2043	1228
Stage 1	-	-	-	-	-	-	787	787	-	1256	1256	-
Stage 2	-	-	-	-	-	-	1262	1269	-	795	787	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	568	-	-	851	-	-	42	56	402	42	57	219
Stage 1	-	-	-	-	-	-	388	406	-	212	245	-
Stage 2	-	-	-	-	-	-	210	242	-	384	406	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	568	-	-	851	-	-	39	54	402	39	55	219
Mov Cap-2 Maneuver	-	-	-	-	-	-	39	54	-	136	159	-
Stage 1	-	-	-	-	-	-	383	401	-	209	241	-
Stage 2	-	-	-	-	-	-	196	238	-	364	401	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	20.6	33.2
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	248	568	-	-	851	-	-	158
HCM Lane V/C Ratio	0.071	0.012	-	-	0.017	-	-	0.194
HCM Control Delay (s)	20.6	11.4	-	-	9.3	-	-	33.2
HCM Lane LOS	C	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.7

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	683	3	11	1061	6	5
Future Vol, veh/h	683	3	11	1061	6	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	785	3	13	1220	7	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	788	0	2033	787
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	1246	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	840	-	64	395
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	274	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	840	-	63	395
Mov Cap-2 Maneuver	-	-	-	-	181	-
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	270	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	20.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	240	-	-	840	-
HCM Lane V/C Ratio	0.053	-	-	0.015	-
HCM Control Delay (s)	20.8	-	-	9.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	593	31	61	978	14	34	8	46	64	1	59
Future Vol, veh/h	72	593	31	61	978	14	34	8	46	64	1	59
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	2	0	0	1	0	0	0	0	2	0	0
Mvmt Flow	81	666	35	69	1099	16	38	9	52	72	1	66

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1115	0	0	701	0	0	1534	2099	351	1745	2108	558
Stage 1	-	-	-	-	-	-	846	846	-	1245	1245	-
Stage 2	-	-	-	-	-	-	688	1253	-	500	863	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.54	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.54	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.54	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.52	4	3.3
Pot Cap-1 Maneuver	634	-	-	905	-	-	81	53	651	~ 55	52	478
Stage 1	-	-	-	-	-	-	328	381	-	184	248	-
Stage 2	-	-	-	-	-	-	407	246	-	521	374	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	634	-	-	905	-	-	59	43	651	~ 40	42	478
Mov Cap-2 Maneuver	-	-	-	-	-	-	146	109	-	115	130	-
Stage 1	-	-	-	-	-	-	286	332	-	160	229	-
Stage 2	-	-	-	-	-	-	322	227	-	407	326	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.5	24.8	47.2
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	146	375	634	-	-	905	-	-	115	458
HCM Lane V/C Ratio	0.262	0.162	0.128	-	-	0.076	-	-	0.625	0.147
HCM Control Delay (s)	38.2	16.4	11.5	-	-	9.3	-	-	78.2	14.2
HCM Lane LOS	E	C	B	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	1	0.6	0.4	-	-	0.2	-	-	3.2	0.5

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

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	927	0	4	510	12	1	0	3	24	0	2
Future Vol, veh/h	5	927	0	4	510	12	1	0	3	24	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	120	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	0	4	0	0	4	0	0	0	0	0	0	0
Mvmt Flow	7	1384	0	6	761	18	1	0	4	36	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	779	0	0	1384	0	0	2182	2189	1384	2182	2180	770
Stage 1	-	-	-	-	-	-	1398	1398	-	782	782	-
Stage 2	-	-	-	-	-	-	784	791	-	1400	1398	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	847	-	-	501	-	-	34	46	178	~ 34	47	404
Stage 1	-	-	-	-	-	-	176	209	-	390	408	-
Stage 2	-	-	-	-	-	-	389	404	-	176	209	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	847	-	-	501	-	-	33	45	178	~ 33	46	404
Mov Cap-2 Maneuver	-	-	-	-	-	-	33	45	-	117	141	-
Stage 1	-	-	-	-	-	-	175	207	-	387	403	-
Stage 2	-	-	-	-	-	-	382	399	-	170	207	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	50.5	46.7
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	85	847	-	-	501	-	-	124
HCM Lane V/C Ratio	0.07	0.009	-	-	0.012	-	-	0.313
HCM Control Delay (s)	50.5	9.3	-	-	12.3	-	-	46.7
HCM Lane LOS	F	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	1.2

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	952	2	3	522	5	11
Future Vol, veh/h	952	2	3	522	5	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	5	50	0	10	0	9
Mvmt Flow	1190	3	4	653	6	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1193	0	1853	1192
Stage 1	-	-	-	-	1192	-
Stage 2	-	-	-	-	661	-
Critical Hdwy	-	-	4.1	-	6.4	6.29
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.381
Pot Cap-1 Maneuver	-	-	592	-	82	220
Stage 1	-	-	-	-	291	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	592	-	81	220
Mov Cap-2 Maneuver	-	-	-	-	203	-
Stage 1	-	-	-	-	291	-
Stage 2	-	-	-	-	513	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	23.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	214	-	-	592	-
HCM Lane V/C Ratio	0.093	-	-	0.006	-
HCM Control Delay (s)	23.5	-	-	11.1	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	879	37	36	521	7	9	0	29	20	0	12
Future Vol, veh/h	35	879	37	36	521	7	9	0	29	20	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	6	5	3	0	12	0	0	0	0	5	0	0
Mvmt Flow	42	1059	45	43	628	8	11	0	35	24	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	636	0	0	1104	0	0	1566	1888	552	1332	1906	318
Stage 1	-	-	-	-	-	-	1166	1166	-	718	718	-
Stage 2	-	-	-	-	-	-	400	722	-	614	1188	-
Critical Hdwy	4.22	-	-	4.1	-	-	7.5	6.5	6.9	7.6	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Follow-up Hdwy	2.26	-	-	2.2	-	-	3.5	4	3.3	3.55	4	3.3
Pot Cap-1 Maneuver	917	-	-	640	-	-	77	71	483	109	69	684
Stage 1	-	-	-	-	-	-	209	270	-	379	436	-
Stage 2	-	-	-	-	-	-	603	434	-	439	264	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	917	-	-	640	-	-	69	63	483	93	61	684
Mov Cap-2 Maneuver	-	-	-	-	-	-	155	165	-	204	150	-
Stage 1	-	-	-	-	-	-	199	258	-	362	407	-
Stage 2	-	-	-	-	-	-	551	405	-	389	252	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.7	17	19.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	155	483	917	-	-	640	-	-	204	684
HCM Lane V/C Ratio	0.07	0.072	0.046	-	-	0.068	-	-	0.118	0.021
HCM Control Delay (s)	30	13	9.1	-	-	11	-	-	25	10.4
HCM Lane LOS	D	B	A	-	-	B	-	-	D	B
HCM 95th %tile Q(veh)	0.2	0.2	0.1	-	-	0.2	-	-	0.4	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	695	1	12	1094	24	1	0	15	17	1	9
Future Vol, veh/h	6	695	1	12	1094	24	1	0	15	17	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	120	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	7	818	1	14	1287	28	1	0	18	20	1	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1315	0	0	819	0	0	2168	2176	819	2171	2162	1301
Stage 1	-	-	-	-	-	-	833	833	-	1329	1329	-
Stage 2	-	-	-	-	-	-	1335	1343	-	842	833	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	533	-	-	818	-	-	34	47	379	34	48	199
Stage 1	-	-	-	-	-	-	366	386	-	193	226	-
Stage 2	-	-	-	-	-	-	191	223	-	362	386	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	533	-	-	818	-	-	31	46	379	32	47	199
Mov Cap-2 Maneuver	-	-	-	-	-	-	31	46	-	123	146	-
Stage 1	-	-	-	-	-	-	361	381	-	190	222	-
Stage 2	-	-	-	-	-	-	177	219	-	341	381	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	22.6	37.5
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	223	533	-	-	818	-	-	142
HCM Lane V/C Ratio	0.084	0.013	-	-	0.017	-	-	0.224
HCM Control Delay (s)	22.6	11.8	-	-	9.5	-	-	37.5
HCM Lane LOS	C	B	-	-	A	-	-	E
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.8

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	723	3	11	1124	6	5
Future Vol, veh/h	723	3	11	1124	6	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	831	3	13	1292	7	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	834	0	2151	833
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	1318	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	808	-	54	372
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	253	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	808	-	53	372
Mov Cap-2 Maneuver	-	-	-	-	166	-
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	249	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	22.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	222	-	-	808	-
HCM Lane V/C Ratio	0.057	-	-	0.016	-
HCM Control Delay (s)	22.2	-	-	9.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	630	32	63	1038	15	35	8	48	67	1	61
Future Vol, veh/h	75	630	32	63	1038	15	35	8	48	67	1	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	2	0	0	1	0	0	0	0	2	0	0
Mvmt Flow	84	708	36	71	1166	17	39	9	54	75	1	69

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1183	0	0	744	0	0	1620	2219	372	1844	2229	592
Stage 1	-	-	-	-	-	-	894	894	-	1317	1317	-
Stage 2	-	-	-	-	-	-	726	1325	-	527	912	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.54	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.54	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.54	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.52	4	3.3
Pot Cap-1 Maneuver	597	-	-	873	-	-	70	44	631	~ 46	43	454
Stage 1	-	-	-	-	-	-	306	362	-	166	229	-
Stage 2	-	-	-	-	-	-	387	227	-	502	355	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	597	-	-	873	-	-	49	35	631	~ 33	34	454
Mov Cap-2 Maneuver	-	-	-	-	-	-	130	94	-	102	116	-
Stage 1	-	-	-	-	-	-	263	311	-	143	210	-
Stage 2	-	-	-	-	-	-	300	209	-	383	305	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.5	27.9	61.5
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	130	347	597	-	-	873	-	-	102	434
HCM Lane V/C Ratio	0.303	0.181	0.141	-	-	0.081	-	-	0.738	0.161
HCM Control Delay (s)	44.3	17.7	12	-	-	9.5	-	-	104.6	14.9
HCM Lane LOS	E	C	B	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	1.2	0.7	0.5	-	-	0.3	-	-	3.9	0.6

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

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	933	0	4	527	12	1	0	3	24	0	2
Future Vol, veh/h	5	933	0	4	527	12	1	0	3	24	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	120	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	0	4	0	0	4	0	0	0	0	0	0	0
Mvmt Flow	7	1393	0	6	787	18	1	0	4	36	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	805	0	0	1393	0	0	2217	2224	1393	2217	2215	796
Stage 1	-	-	-	-	-	-	1407	1407	-	808	808	-
Stage 2	-	-	-	-	-	-	810	817	-	1409	1407	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	828	-	-	497	-	-	32	44	175	~ 32	44	390
Stage 1	-	-	-	-	-	-	174	207	-	378	397	-
Stage 2	-	-	-	-	-	-	377	393	-	174	207	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	828	-	-	497	-	-	31	43	175	~ 31	43	390
Mov Cap-2 Maneuver	-	-	-	-	-	-	31	43	-	115	138	-
Stage 1	-	-	-	-	-	-	173	205	-	375	392	-
Stage 2	-	-	-	-	-	-	370	388	-	168	205	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	53	47.7
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	81	828	-	-	497	-	-	122
HCM Lane V/C Ratio	0.074	0.009	-	-	0.012	-	-	0.318
HCM Control Delay (s)	53	9.4	-	-	12.3	-	-	47.7
HCM Lane LOS	F	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	1.2

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	958	2	3	539	5	11
Future Vol, veh/h	958	2	3	539	5	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	5	50	0	10	0	9
Mvmt Flow	1198	3	4	674	6	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1201	0	1882	1200
Stage 1	-	-	-	-	1200	-
Stage 2	-	-	-	-	682	-
Critical Hdwy	-	-	4.1	-	6.4	6.29
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.381
Pot Cap-1 Maneuver	-	-	588	-	79	218
Stage 1	-	-	-	-	288	-
Stage 2	-	-	-	-	506	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	588	-	78	218
Mov Cap-2 Maneuver	-	-	-	-	199	-
Stage 1	-	-	-	-	288	-
Stage 2	-	-	-	-	502	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	23.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	212	-	-	588	-
HCM Lane V/C Ratio	0.094	-	-	0.006	-
HCM Control Delay (s)	23.7	-	-	11.2	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	930	37	36	536	7	9	0	29	20	0	12
Future Vol, veh/h	35	930	37	36	536	7	9	0	29	20	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	6	5	3	0	12	0	0	0	0	5	0	0
Mvmt Flow	42	1120	45	43	646	8	11	0	35	24	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	654	0	0	1165	0	0	1636	1967	583	1380	1985	327
Stage 1	-	-	-	-	-	-	1227	1227	-	736	736	-
Stage 2	-	-	-	-	-	-	409	740	-	644	1249	-
Critical Hdwy	4.22	-	-	4.1	-	-	7.5	6.5	6.9	7.6	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Follow-up Hdwy	2.26	-	-	2.2	-	-	3.5	4	3.3	3.55	4	3.3
Pot Cap-1 Maneuver	902	-	-	607	-	-	68	64	461	101	62	675
Stage 1	-	-	-	-	-	-	192	253	-	370	428	-
Stage 2	-	-	-	-	-	-	596	426	-	421	247	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	902	-	-	607	-	-	61	57	461	85	55	675
Mov Cap-2 Maneuver	-	-	-	-	-	-	143	156	-	194	140	-
Stage 1	-	-	-	-	-	-	183	241	-	353	398	-
Stage 2	-	-	-	-	-	-	542	396	-	371	235	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.7	17.9	20.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	143	461	902	-	-	607	-	-	194	675
HCM Lane V/C Ratio	0.076	0.076	0.047	-	-	0.071	-	-	0.124	0.021
HCM Control Delay (s)	32.2	13.4	9.2	-	-	11.4	-	-	26.2	10.5
HCM Lane LOS	D	B	A	-	-	B	-	-	D	B
HCM 95th %tile Q(veh)	0.2	0.2	0.1	-	-	0.2	-	-	0.4	0.1

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	963	533	7	51	9
Future Vol, veh/h	6	963	533	7	51	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	5	10	0	0	0
Mvmt Flow	6	1014	561	7	54	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	568	0	-	0	1591	565
Stage 1	-	-	-	-	565	-
Stage 2	-	-	-	-	1026	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1014	-	-	-	119	528
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	349	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1014	-	-	-	118	528
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	570	-
Stage 2	-	-	-	-	349	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	21.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1014	-	-	-	247	528
HCM Lane V/C Ratio	0.006	-	-	-	0.217	0.018
HCM Control Delay (s)	8.6	-	-	-	23.6	11.9
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	0.8	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱			↗
Traffic Vol, veh/h	0	1014	532	8	0	8
Future Vol, veh/h	0	1014	532	8	0	8
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	95	95	95	95	95	95
Heavy Vehicles, %	0	5	10	0	0	0
Mvmt Flow	0	1067	560	8	0	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	564
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	529
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	529
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	529
HCM Lane V/C Ratio	-	-	-	0.016
HCM Control Delay (s)	-	-	-	11.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	712	1	12	1105	24	1	0	15	17	1	9
Future Vol, veh/h	6	712	1	12	1105	24	1	0	15	17	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	120	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	7	838	1	14	1300	28	1	0	18	20	1	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1328	0	0	839	0	0	2201	2209	839	2204	2195	1314
Stage 1	-	-	-	-	-	-	853	853	-	1342	1342	-
Stage 2	-	-	-	-	-	-	1348	1356	-	862	853	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	527	-	-	804	-	-	32	45	369	32	46	195
Stage 1	-	-	-	-	-	-	357	378	-	190	223	-
Stage 2	-	-	-	-	-	-	188	219	-	353	378	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	527	-	-	804	-	-	29	44	369	30	45	195
Mov Cap-2 Maneuver	-	-	-	-	-	-	29	44	-	121	143	-
Stage 1	-	-	-	-	-	-	352	373	-	188	219	-
Stage 2	-	-	-	-	-	-	174	215	-	332	373	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	23.5	38.4
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	213	527	-	-	804	-	-	139
HCM Lane V/C Ratio	0.088	0.013	-	-	0.018	-	-	0.229
HCM Control Delay (s)	23.5	11.9	-	-	9.6	-	-	38.4
HCM Lane LOS	C	B	-	-	A	-	-	E
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.8

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	740	3	11	1135	6	5
Future Vol, veh/h	740	3	11	1135	6	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	851	3	13	1305	7	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	854	0	2184	853
Stage 1	-	-	-	-	853	-
Stage 2	-	-	-	-	1331	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	794	-	51	362
Stage 1	-	-	-	-	421	-
Stage 2	-	-	-	-	249	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	794	-	50	362
Mov Cap-2 Maneuver	-	-	-	-	162	-
Stage 1	-	-	-	-	421	-
Stage 2	-	-	-	-	245	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	22.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	216	-	-	794	-
HCM Lane V/C Ratio	0.059	-	-	0.016	-
HCM Control Delay (s)	22.7	-	-	9.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	661	32	63	1091	15	35	8	48	67	1	61
Future Vol, veh/h	75	661	32	63	1091	15	35	8	48	67	1	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	2	0	0	1	0	0	0	0	2	0	0
Mvmt Flow	84	743	36	71	1226	17	39	9	54	75	1	69

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1243	0	0	779	0	0	1685	2314	390	1921	2324	622
Stage 1	-	-	-	-	-	-	929	929	-	1377	1377	-
Stage 2	-	-	-	-	-	-	756	1385	-	544	947	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.54	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.54	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.54	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.52	4	3.3
Pot Cap-1 Maneuver	567	-	-	847	-	-	63	38	614	~ 41	38	434
Stage 1	-	-	-	-	-	-	292	349	-	153	214	-
Stage 2	-	-	-	-	-	-	371	213	-	491	342	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	567	-	-	847	-	-	44	30	614	~ 29	30	434
Mov Cap-2 Maneuver	-	-	-	-	-	-	121	84	-	94	108	-
Stage 1	-	-	-	-	-	-	249	297	-	130	196	-
Stage 2	-	-	-	-	-	-	285	195	-	370	291	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.5	30.2	71.9
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	121	323	567	-	-	847	-	-	94	414
HCM Lane V/C Ratio	0.325	0.195	0.149	-	-	0.084	-	-	0.801	0.168
HCM Control Delay (s)	48.5	18.8	12.5	-	-	9.6	-	-	124.2	15.4
HCM Lane LOS	E	C	B	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	1.3	0.7	0.5	-	-	0.3	-	-	4.3	0.6

Notes

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

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	728	1140	26	31	6
Future Vol, veh/h	17	728	1140	26	31	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	18	766	1200	27	33	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1227	0	-	0	2016	1214
Stage 1	-	-	-	-	1214	-
Stage 2	-	-	-	-	802	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	575	-	-	-	65	223
Stage 1	-	-	-	-	284	-
Stage 2	-	-	-	-	445	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	575	-	-	-	63	223
Mov Cap-2 Maneuver	-	-	-	-	182	-
Stage 1	-	-	-	-	275	-
Stage 2	-	-	-	-	445	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	27.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	575	-	-	-	182	223
HCM Lane V/C Ratio	0.031	-	-	-	0.179	0.028
HCM Control Delay (s)	11.5	-	-	-	29.1	21.6
HCM Lane LOS	B	-	-	-	D	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	759	1161	27	0	5
Future Vol, veh/h	0	759	1161	27	0	5
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	95	95	95	95	95	95
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	0	799	1222	28	0	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1236
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	217
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	217
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	22
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	217
HCM Lane V/C Ratio	-	-	-	0.024
HCM Control Delay (s)	-	-	-	22
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.1