

Traffic Impact Study

Proposed Residential Development

Prospect Heights, Illinois



Prepared For:



May 19, 2020

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 a proposed residential development to be located in Prospect Heights, Illinois. The site, which currently contains a vacant building which was previously occupied by JFH school and the north side of Muir Park, is located in the southeast corner of the intersection of Oak Avenue with Drake Avenue. As proposed, the site will be redeveloped with a townhome residential development containing approximately 69 units. Additionally, the proposed residential development will provide 204 parking spaces including 138 parking garage spaces, 40 guest parking spaces, and 26 guest/shared parking spaces. Access to the proposed residential development will be provided off Drake Avenue via Oak Avenue.

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 the traffic generated by the proposed development.

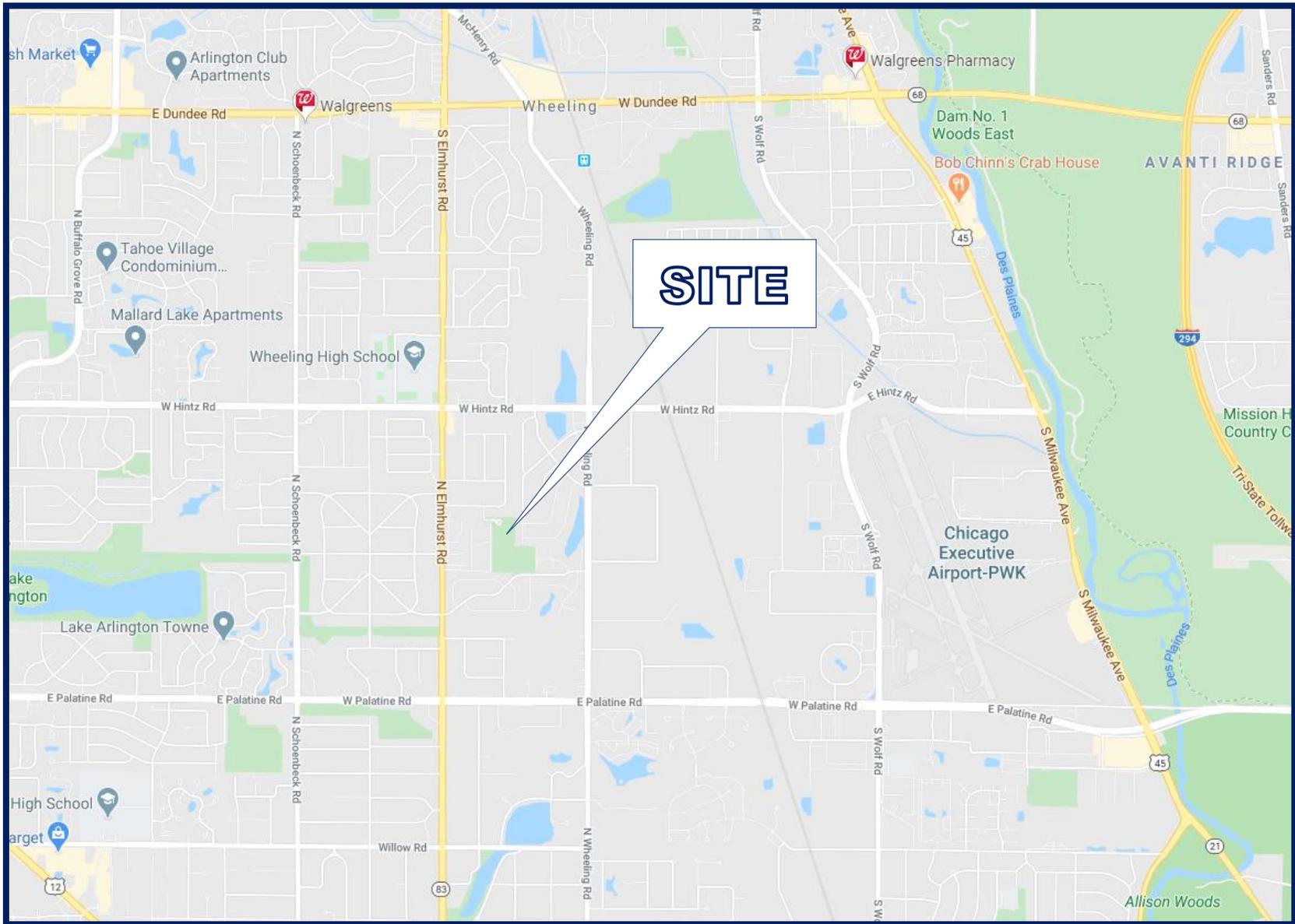
Figure 1 shows the location of the site in relation to the area roadway system. **Figure 2** shows an aerial view of the site.

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 evening peak hours
- Recommendations with respect to adequacy of the site access and adjacent roadway system

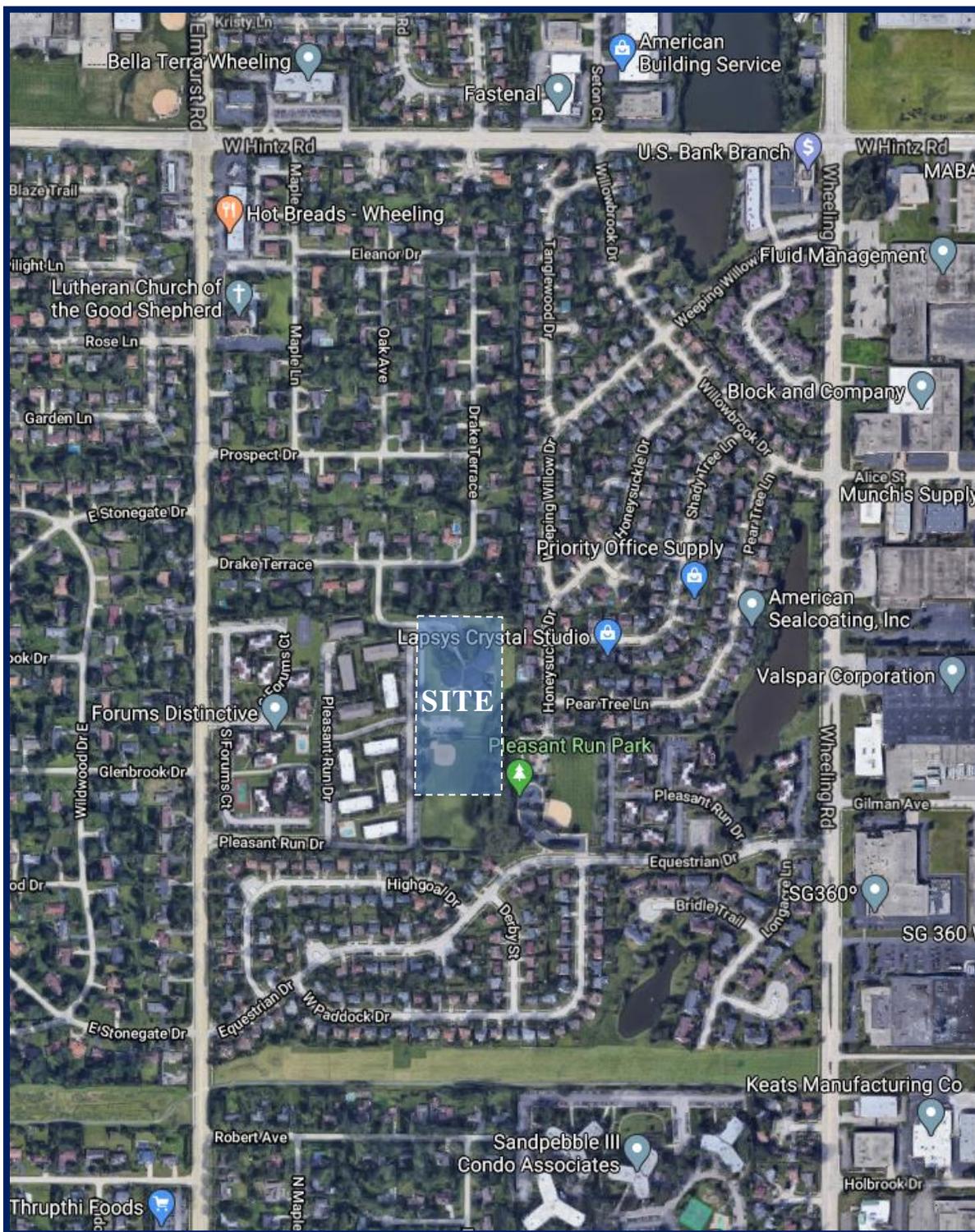
Traffic capacity analyses were conducted for the weekday morning and evening peak hours for the following conditions:

1. Existing Conditions – Analyze the capacity of the existing roadway system using existing peak hour traffic volumes in the surrounding area.
2. No-Build Conditions – Analyze the capacity of the existing roadway system using the background traffic volumes that include the existing traffic volumes, the ambient traffic growth and the traffic to be generated by one baseball field to be located south of the proposed development, as part of the Muir Park improvements.
3. Projected Conditions – Analyze the capacity of the future roadway system using the projected traffic volumes that include the background volumes and the traffic estimated to be generated by the full buildout of the proposed development



Site Location

Figure 1



Aerial View of Site

Figure 2

2. Existing Conditions

Existing traffic and roadway conditions were documented based on field visits and traffic counts conducted by KLOA, Inc. The following provides a detailed description of the physical characteristics of the roadways including geometry and traffic control, adjacent land uses and peak hour traffic flows along area roadways.

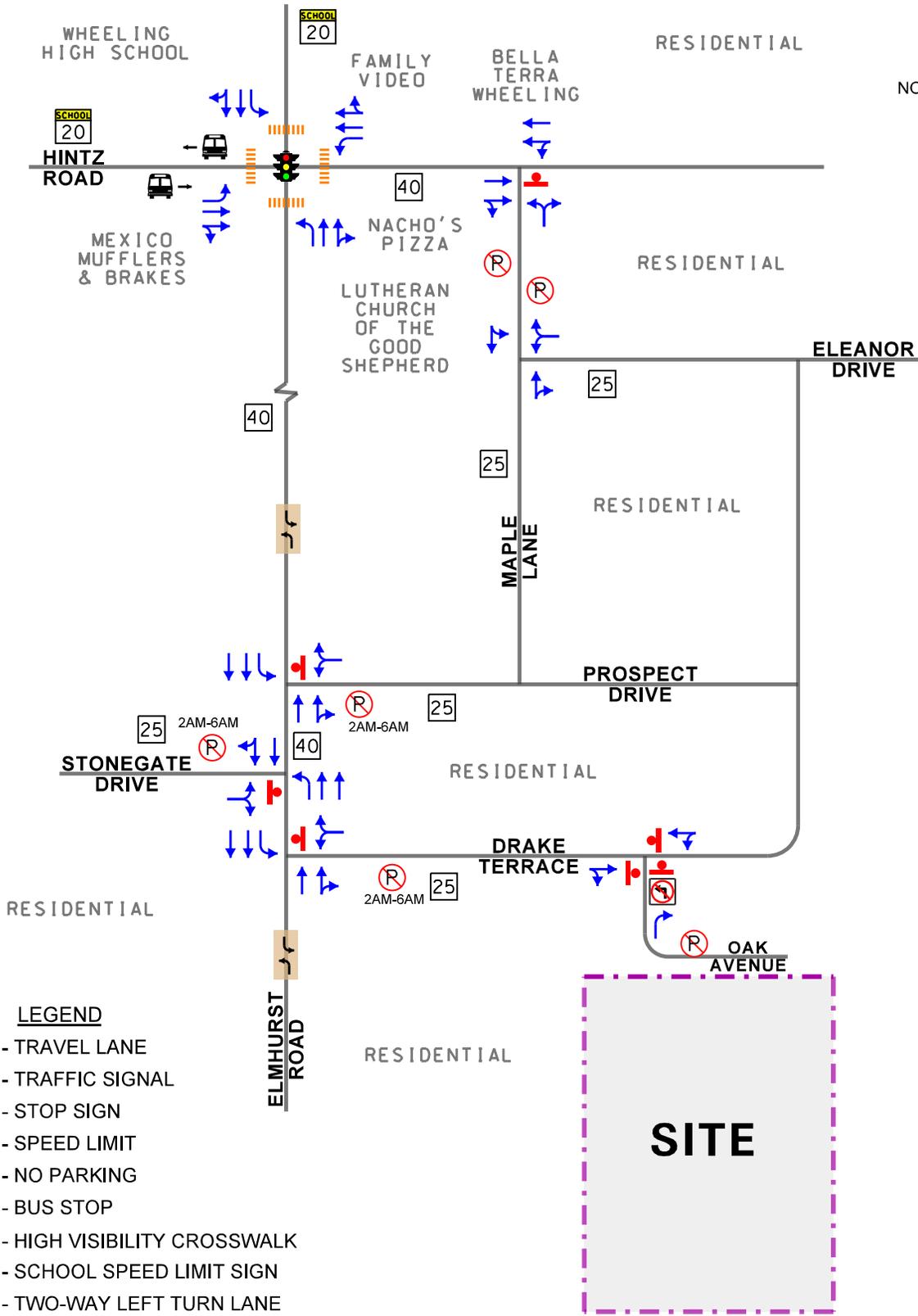
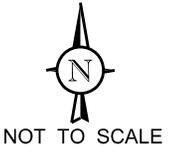
Site Location

The site, which currently contains a vacant building previously occupied by JFH school and the north side of Muir Park, is bordered by Oak Avenue to the north, single-family homes to the east, Pleasant Run Drive to the west, and Muir Park to the south. Land uses in the vicinity of the site are primarily residential in all directions and include Muir Park and Pleasant Run Park to the south. In addition, Wheeling High School is located in the northwest quadrant of the intersection of Elmhurst Road and Hintz Road.

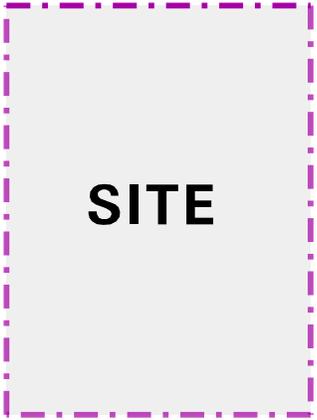
Existing Roadway System Characteristics

The characteristics of the existing roadways that surround the proposed development are illustrated in **Figure 3** and described below.

Elmhurst Road (IL Route 83) is a north-south other principal arterial that provides two lanes in each direction separated by a two-way left-turn lane in the vicinity of the site. At its signalized intersection with Hintz Road, Elmhurst Road provides an exclusive left-turn lane, a through lane, and a combined through/right-turn lane on both approaches. Additionally, Elmhurst Road provides high-visibility crosswalks on the north and south legs of its intersection with Hintz Road as well as push buttons and pedestrian countdown timers. At its unsignalized intersection with Prospect Drive, Elmhurst Road provides a through lane and a combined through/right-turn lane on the northbound approach. The southbound approach provides an exclusive left-turn lane and two through lanes. At its unsignalized intersection with Stonegate Drive, Elmhurst Road provides an exclusive left-turn lane and two through lanes on the northbound approach. The southbound approach provides a through lane and a combined through/right-turn lane. At its unsignalized intersection with Drake Terrace, Elmhurst Road provides a through lane and a combined through/right-turn lane on the northbound approach. The southbound approach provides an exclusive left-turn lane and two through lanes. Elmhurst Road is under the jurisdiction of the Illinois Department of Transportation (IDOT), is designated as a Strategic Regional Arterial (SRA), and carries an Annual Average Daily Traffic (AADT) volume of 16,200 vehicles (IDOT 2017) north of Hintz Road and 17,400 vehicles (IDOT 2017) south of Hintz Road. Additionally, Elmhurst Road has a posted speed limit of 40 miles per hour south of Hintz Road. It should be noted that, in the vicinity of Wheeling High School, Elmhurst Road has a school zone speed limit of 20 miles per hour.



- LEGEND**
- TRAVEL LANE
 - TRAFFIC SIGNAL
 - STOP SIGN
 - SPEED LIMIT
 - NO PARKING
 - BUS STOP
 - HIGH VISIBILITY CROSSWALK
 - SCHOOL SPEED LIMIT SIGN
 - TWO-WAY LEFT TURN LANE
 - NO LEFT TURN



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Existing Roadway Characteristics

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Hintz Road is an east-west major collector that generally provides two lanes separated by a mountable median in the vicinity of the site. At its signalized intersection with Elmhurst Road, Hintz Road provides an exclusive left-turn lane, a through lane, and a combined through/right-turn lane on both approaches. Additionally, Hintz Road provides high-visibility crosswalks on the east and west legs of its intersection with Elmhurst Road as well as push buttons and pedestrian countdown timers. At its unsignalized intersection with Maple Lane, Hintz Road provides a through lane and a combined through/right-turn lane on the eastbound approach and a through lane and a combined through/left-turn lane on the westbound approach. Hintz Road is under the jurisdiction of the Cook County Department of Transportation and Highways (CCDTH) and carries an AADT volume of 17,100 vehicles (IDOT 2018) west of Elmhurst Road and 17,000 vehicles (IDOT 2018) east of Elmhurst Road. Hintz Road has a posted speed limit of 40 miles per hour. It should be noted that, in the vicinity of Wheeling High School, Hintz Road has a school zone speed limit of 20 miles per hour.

Maple Lane is a north-south local road which extends from Prospect Drive to the south to Hintz Road to the north and provides one lane in each direction. At its unsignalized intersection with Hintz Road, Maple Lane provides a combined left-turn/right-turn lane on the northbound approach under stop sign control. At its unsignalized intersection with Eleanor Drive, Maple Lane provides a combined through/right-turn lane on the northbound approach and a combined through/left-turn lane on the southbound approach. Parking is not permitted on both sides of the road north of Eleanor Drive. Maple Lane is under the jurisdiction of the Village of Prospect Heights and has a posted speed limit of 25 miles per hour.

Prospect Drive is an east-west local road which extends from Elmhurst Road to Drake Terrace and provides one lane in each direction. At its unsignalized intersection with Elmhurst Road, Prospect Drive provides a combined left-turn/right-turn lane on the westbound approach under stop sign control. Parking is not permitted on both sides of the road between 2:00 A.M. to 6:00 A.M. Prospect Drive is under the jurisdiction of the Village of Prospect Heights and has a posted speed limit of 25 miles per hour.

Stonegate Drive is an east-west local road which extends from Elmhurst Drive to Wildwood Drive and provides one lane in each direction. At its unsignalized intersection with Elmhurst Drive, Stonegate Drive provides a combined left-turn/right-turn lane on the eastbound approach under stop sign control. Parking is not permitted on both sides of the road between 2:00 A.M. to 6:00 A.M. Stonegate Drive is under the jurisdiction of the Village of Prospect Heights and has a posted speed limit of 25 miles per hour.

Drake Terrace is an east-west local road which extends from Elmhurst Road to Eleanor Drive and provides one lane in each direction. At its unsignalized intersection with Elmhurst Road, Drake Terrace provides a combined left-turn/right-turn lane on the westbound approach under stop sign control. At its unsignalized intersection with Oak Avenue, Drake Terrace provides a through/right-turn lane on the eastbound approach and a through/left-turn lane on the southbound approach under stop sign control. Parking is not permitted between 2:00 A.M. to 6:00 A.M. Drake Terrace is under the jurisdiction of the Village of Prospect Heights and has a posted speed limit of 25 miles per hour.

Eleanor Drive is an east-west local road which extends from Maple Lane to Drake Terrace and provides one lane in each direction. At its unsignalized intersection with Maple Lane, Eleanor Drive provides a combined left-turn/right-turn lane on the westbound approach. Eleanor Drive is under the jurisdiction of the Village of Prospect Heights.

Oak Avenue is a local road which currently serves the former school. At its unsignalized intersection with Drake Terrace, Oak Avenue provides one northbound lane under stop sign control. It is important to note that the northbound left-turn movements are currently prohibited via signage. This prohibition will be removed with the proposed redevelopment, allowing traffic to turn left onto Drake Terrace. Additionally, parking is not permitted on both sides of the road. Oak Avenue is under the jurisdiction of the Village of Prospect Heights.

Existing Traffic Volumes

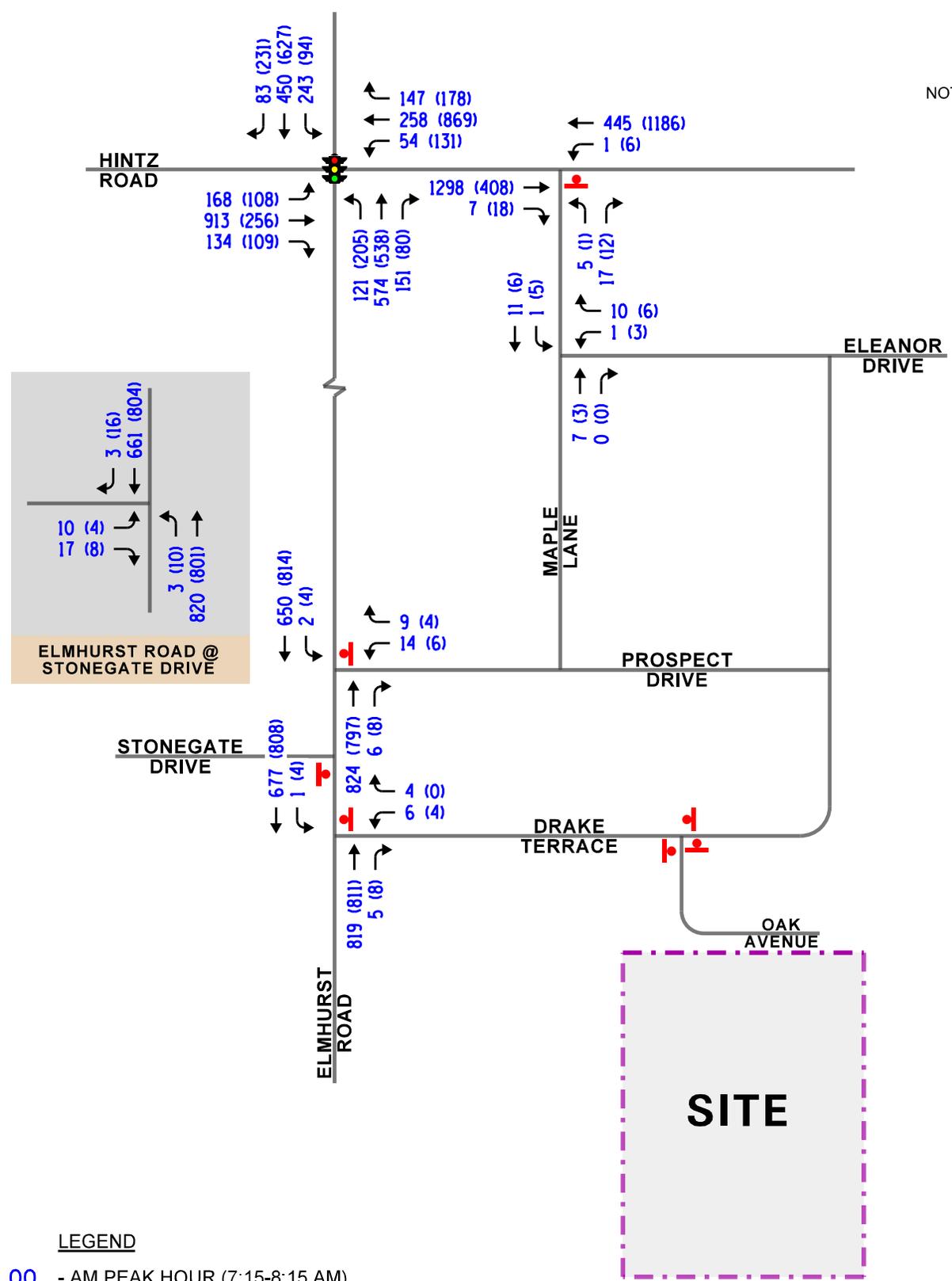
In order to determine current traffic conditions in the vicinity of the site, KLOA, Inc. conducted peak period vehicle, pedestrian, and bicycle traffic counts on Thursday, February 6th, 2020 during the weekday morning (6:30 to 9:00 A.M.) and weekday evening (2:00 to 6:00 P.M.) peak periods at the following intersections:

- Elmhurst Road with Hintz Road
- Elmhurst Road with Prospect Drive
- Elmhurst Road with Stonegate Drive
- Elmhurst Road with Drake Terrace
- Hintz Road with Maple Lane
- Maple Lane with Eleanor Drive

The results of the traffic counts showed that the weekday morning peak hour of traffic occurs from 7:15 A.M. to 8:15 A.M. and the weekday evening peak hour of traffic occurs from 4:45 P.M. to 5:45 P.M. taking into account the proximity of Wheeling High School. Figure 4 illustrates the existing peak hour traffic volumes. Copies of the traffic count summary sheets are included in the Appendix.



NOT TO SCALE



LEGEND

- 00 - AM PEAK HOUR (7:15-8:15 AM)
- (00) - PM PEAK HOUR (4:45-5:45 PM)

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Existing Traffic Volumes



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Figure: 4

Crash Analysis

KLOA, Inc. obtained crash data¹ from IDOT for the most recent available five years (2014 to 2018) for the intersections of Elmhurst Road with Hintz Road, Elmhurst Road with Prospect Drive, Elmhurst Road with Drake Terrace, Hintz Road with Maple Lane and Maple Lane with Eleanor Drive. The crash data for the intersection of Elmhurst Road with Hintz Road is summarized in **Table 1**. In addition, one turning crash was reported at the intersection of Elmhurst Road with Drake Terrace over the five-year period. No crashes were reported at the intersections of Elmhurst Road with Prospect Drive, Hintz Road with Maple Lane and Maple Lane with Eleanor Drive over the five-year period. A review of the crash data indicated that no fatalities were reported at these intersections.

Table 1
ELMHURST ROAD WITH HINTZ ROAD – CRASH SUMMARY

Year	Type of Crash Frequency						Total
	Angle	Object	Rear End	Sideswipe	Turning	Other	
2014	2	0	3	0	4	1	10
2015	3	1	6	0	8	1	19
2016	0	0	8	0	3	0	11
2017	3	0	3	0	5	0	11
2018	<u>1</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>11</u>	<u>0</u>	<u>15</u>
Total	9	1	23	0	31	2	66
Average	1.8	<1.0	4.6	0	6.2	<1.0	13.2

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.

3. Traffic Characteristics of the Proposed Development

To evaluate the impact of the subject development on the area roadway system, it was necessary to quantify the number of vehicle trips the site will generate during the peak hours and then determine the directions from which the proposed traffic will approach and depart the site.

Proposed Site and Development Plan

As proposed, the site will be developed with approximately 69 townhomes. Additionally, the proposed residential development will provide 204 parking spaces including 138 parking garage spaces, 40 guest parking spaces, and 26 guest/shared parking spaces. Access to the proposed development will be provided via Oak Avenue. As indicated earlier, it is important to note that the left-turn restriction at the intersection of Oak Avenue with Drake Terrace will be removed under future conditions. A site plan illustrating the proposed development is included in the Appendix.

Directional Distribution of Development Traffic

The directional distribution of how traffic will approach and depart the site was estimated based on the general travel patterns through the study area derived from the peak hour traffic volumes. **Figure 5** shows the established directional distribution for this development in addition to the distances, measured in feet, between the study area intersections. It should be noted that, as indicated earlier, the existing prohibition of left-turning movements from Oak Avenue onto Drake Terrace will be removed.

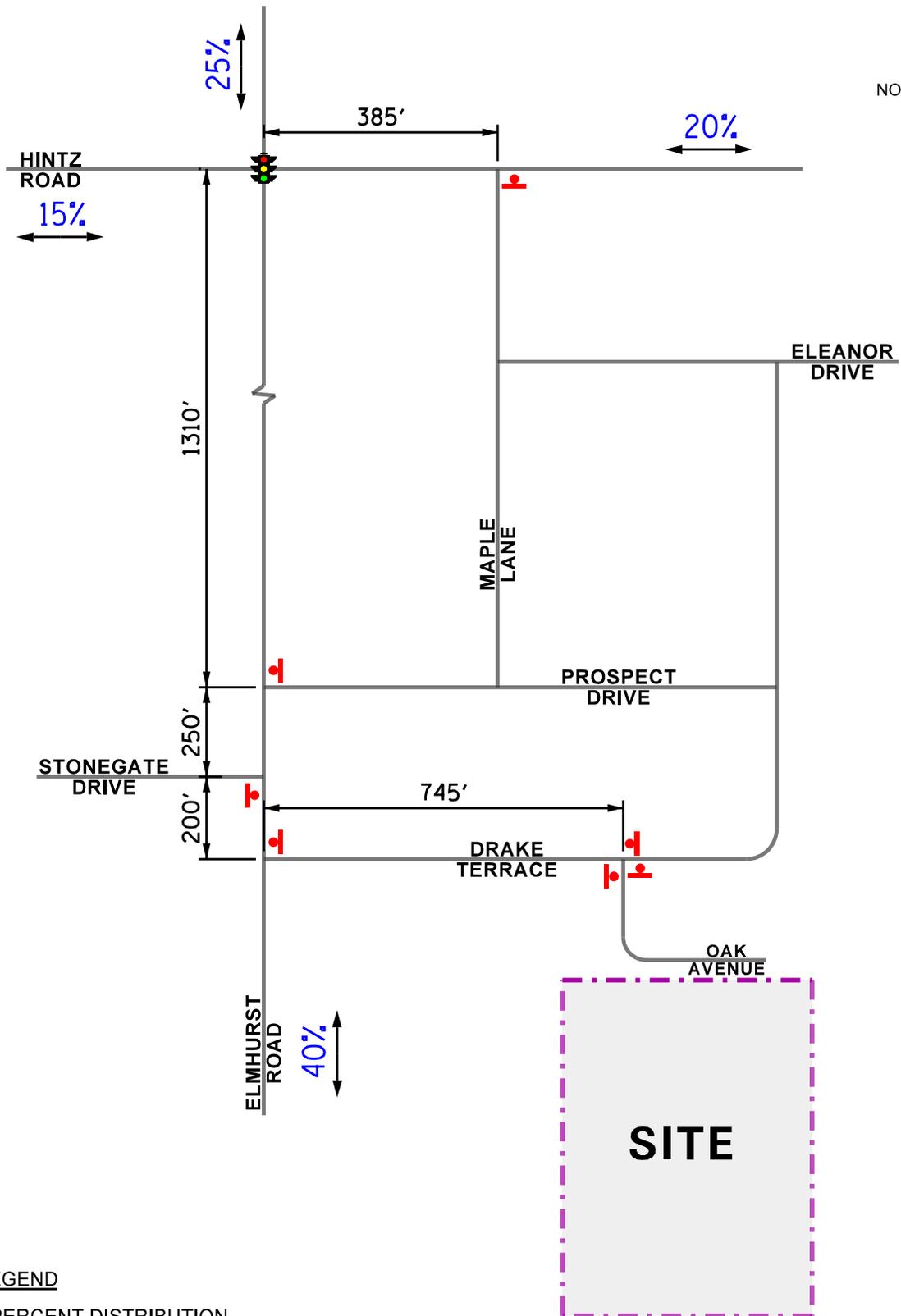
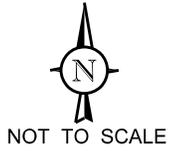
Development Traffic Generation

The vehicle trip generation for the overall development was calculated using data published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition and Land-Use Code 220 was utilized for the proposed townhome development. **Table 2** shows the estimated vehicle trip generation for the weekday morning and weekday evening peak hours as well as the daily two-way traffic.

It should be noted that, as indicated earlier, the site currently contains a vacant building which was previously occupied by JFH school with an attendance of 247 children. **Table 3** shows a comparison of the previous uses' traffic generations with the proposed townhomes.

Table 2
ESTIMATED PEAK HOUR VEHICLE TRIP GENERATION

ITE Land Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Daily Two-Way Traffic		
		In	Out	Total	In	Out	Total	In	Out	Total
220	Townhomes (69 units)	8	26	34	26	16	42	240	240	480



LEGEND

00% - PERCENT DISTRIBUTION

00' - DISTANCE IN FEET

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Estimated Directional Distribution



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Figure: 5

Table 3
TRIP GENERATION COMPARISON

ITE Land Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Daily Two-Way Traffic		
		In	Out	Total	In	Out	Total	In	Out	Total
220	Townhomes (69 units)	8	26	34	26	16	42	240	240	480
520	Elementary School (247 children)	89	76	165	20	22	42	233	233	466
	Difference	-81	-50	-131	+6	-6	0	+7	+7	+14

As can be seen in Table 3, the proposed townhomes will generate 131 trips less than the previous school during the weekday morning peak hour and similar number of trips during the weekday evening peak hour. As such, the proposed townhome development will have a reduced impact on the area roadway, especially during the weekday morning peak hour.

4. Projected Traffic Conditions

The total projected traffic volumes take into consideration the existing traffic volumes, increase in background traffic due to growth, and the traffic estimated to be generated by the proposed subject development.

Development Traffic Assignment

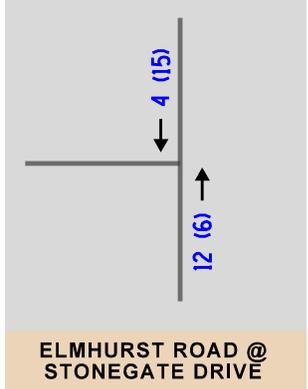
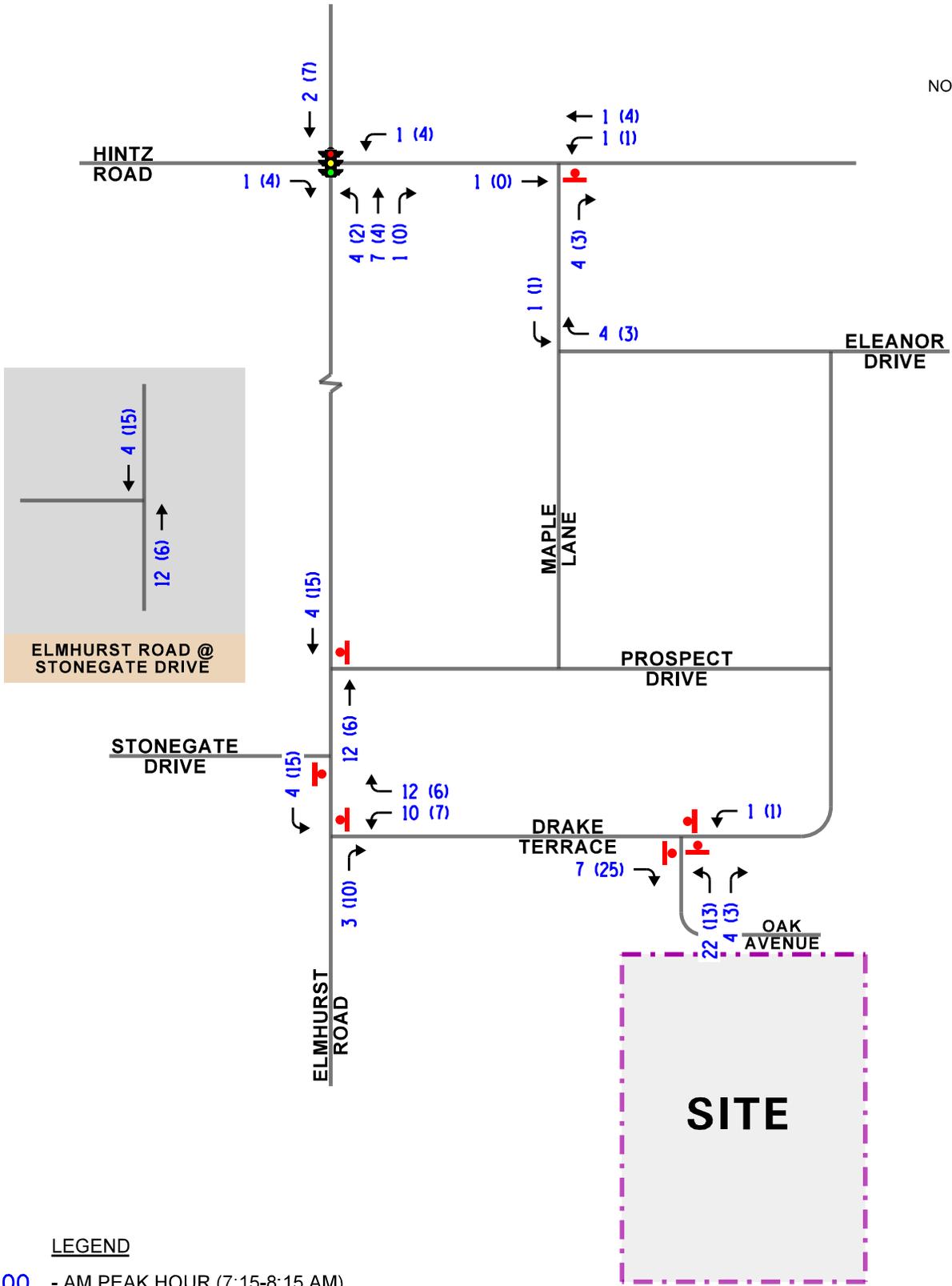
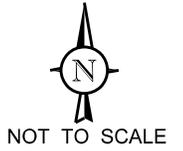
The estimated weekday morning and weekday evening peak hour traffic volumes that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution (Figure 5). **Figure 6** illustrates the traffic assignment for the development.

Year 2028 No-Build Traffic Conditions

The existing 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 planned development). Based on 2050 AADT projections provided by the Chicago Metropolitan Agency for Planning (CMAP), the existing traffic volumes in the area are projected to increase by an annual compounded growth rate of approximately 0.65 percent per year. As such, traffic volumes were increased by approximately four percent total to represent Year 2028 no-build traffic conditions (buildout plus five years). Additionally, as part of the Muir Park improvements, one baseball field will be located south of the proposed townhomes. The trips that will be generated by the baseball field are included in the Year 2028 no-build traffic conditions. A copy of the CMAP projections letter is included in the Appendix. **Figure 7** illustrates the Year 2028 no-build traffic volumes.

Year 2028 Total Projected Traffic Conditions

The new development-generated traffic (Figure 6) was added to the Year 2028 no-build traffic (Figure 7) to determine the Year 2028 total projected traffic volumes. **Figure 8** illustrates the Year 2028 total projected traffic volumes.



LEGEND

- 00 - AM PEAK HOUR (7:15-8:15 AM)
- (00) - PM PEAK HOUR (4:45-5:45 PM)

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Estimated Site-Generated
Traffic Volumes

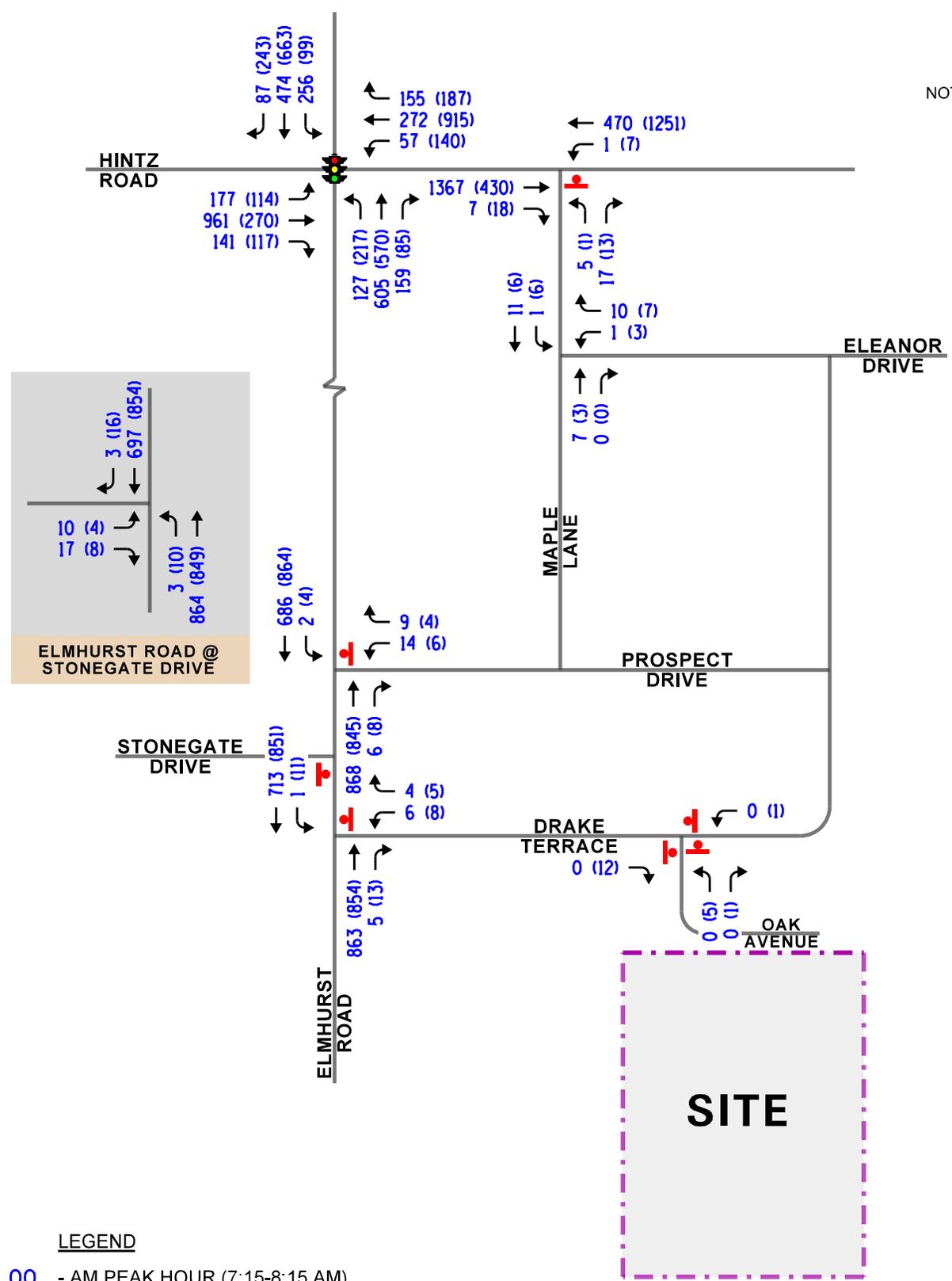


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Figure: 6



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LEGEND

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- (00) - PM PEAK HOUR (4:45-5:45 PM)

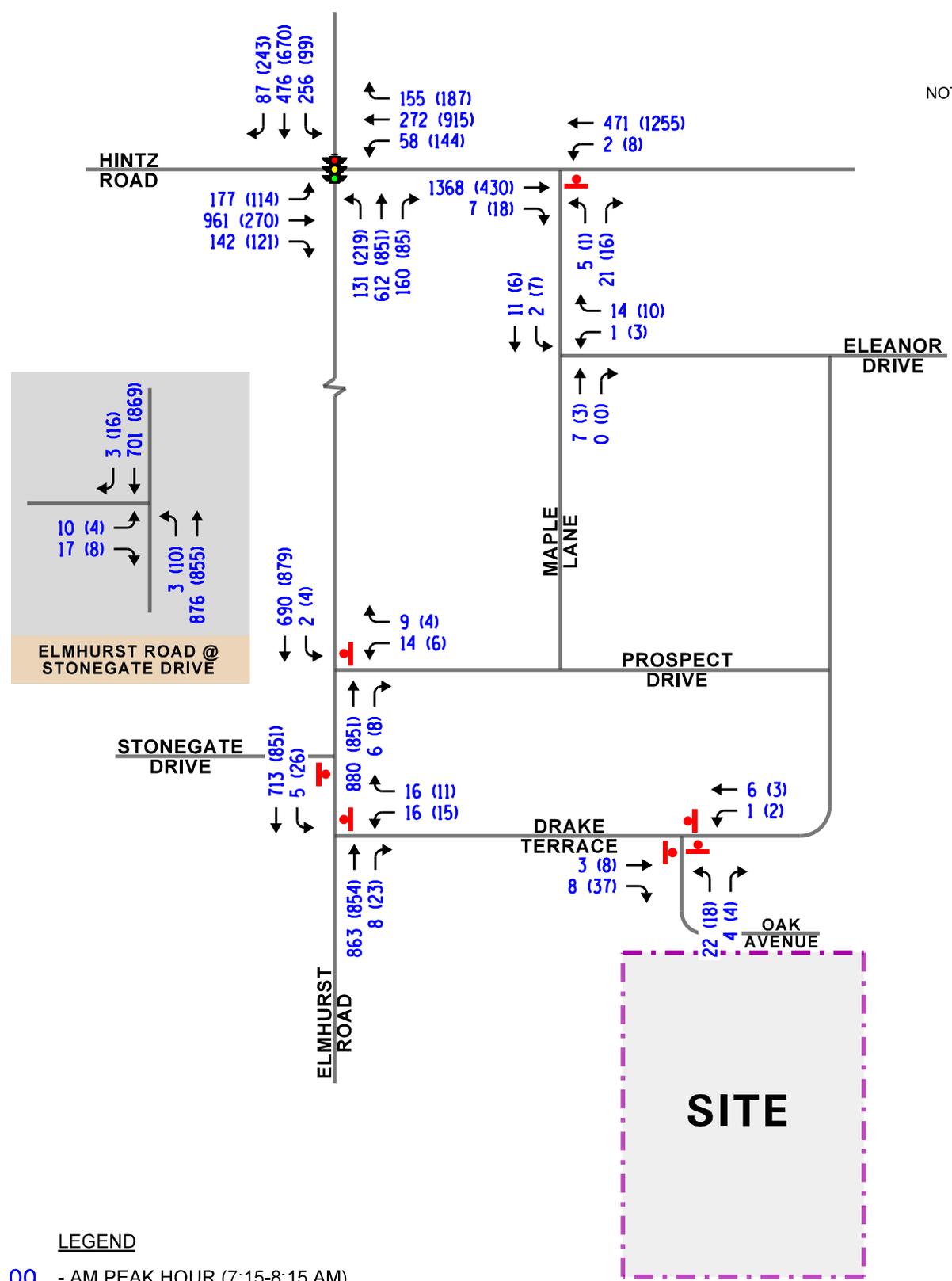
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Year 2028 No-Build Traffic Volumes

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Proposed Residential Development
Prospect Heights, Illinois

Year 2028 Total Projected Traffic Volumes

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 Job No: 20-047 Figure: 8

5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and 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 existing (Year 2020), Year 2028 no-build, and Year 2028 total projected 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 10 software. To determine the average overall vehicle delay and levels of service for the traffic signal-controlled intersections, actual cycle lengths and phasings were utilized for the intersections of Elmhurst Road with Hintz Road.

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 existing, no-build, and total projected conditions are presented in **Tables 4** through **7**. A discussion of each intersection follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 4

CAPACITY ANALYSIS RESULTS – ELMHURST ROAD WITH HINTZ ROAD – SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Year 2020 Existing Traffic Volumes	Weekday Morning Peak Hour	C 23.4	D 54.6		C 28.9	C 34.5		C 22.6	D 49.2		E 73.7	C 33.0		D 45.7
		D – 50.3			C – 33.8			D – 45.4			D – 45.8			
Year 2020 Existing Traffic Volumes	Weekday Evening Peak Hour	D 40.0	D 35.8		C 23.5	D 53.6		D 38.6	C 31.1		C 24.1	D 48.3		D 43.0
		D – 36.8			D – 50.2			C – 32.9			D – 45.9			
Year 2028 No-Build Traffic Volumes	Weekday Morning Peak Hour	C 24.4	E 65.9		C 29.8	C 35.0		C 23.6	D 53.4		F 93.8	C 33.6		D 51.9
		E – 60.1			C – 34.4			D – 49.2			D – 52.5			
Year 2028 No-Build Traffic Volumes	Weekday Evening Peak Hour	D 43.9	D 36.3		C 23.8	E 57.0		D 53.0	C 32.3		C 25.5	D 53.1		D 46.6
		D – 38.0			D – 53.3			D – 37.5			D – 50.4			
Year 2028 Projected Traffic Volumes	Weekday Morning Peak Hour	C 24.4	E 66.1		C 30.1	C 35.0		C 24.1	D 54.4		F 93.8	C 33.7		D 52.2
		E – 60.3			C – 34.4			D – 50.0			D – 52.4			
Year 2028 Projected Traffic Volumes	Weekday Evening Peak Hour	D 44.0	C 36.5		C 24.0	E 57.1		E 55.2	C 32.4		C 25.6	D 53.7		D 46.9
		D – 38.2			D – 53.3			D – 38.1			D – 50.9			
Letter denotes Level of Service Delay is measured in seconds.		L – Left Turns			R – Right Turns									
		T – Through												

Table 5
 CAPACITY ANALYSIS RESULTS
 UNSIGNALIZED INTERSECTIONS – EXISTING CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Maple Lane with Hintz Road				
• Northbound Approach	C	21.1	B	10.3
• Westbound Left Turns	B	13.2	A	8.2
Elmhurst Road with Prospect Drive				
• Westbound Approach	C	16.9	C	16.0
• Southbound Left Turns	A	9.9	A	9.7
Elmhurst Road with Stonegate Drive				
• Eastbound Approach	B	13.7	B	14.2
• Northbound Left Turns	B	10.3	B	10.7
Elmhurst Road with Drake Terrace				
• Westbound Approach	C	16.4	C	18.9
• Southbound Left Turns	A	9.8	A	9.8
Maple Lane with Eleanor Drive				
• Overall	A	6.8	A	7.2
• Westbound Approach	A	6.5	A	7.3
• Northbound Approach	A	7.0	A	7.0
• Southbound Approach	A	7.0	A	7.1
LOS = Level of Service Delay is measured in seconds.				

Table 6
 CAPACITY ANALYSIS RESULTS
 UNSIGNALIZED INTERSECTIONS – YEAR 2028 NO-BUILD PROJECTED CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Maple Lane with Hintz Road				
• Northbound Approach	C	22.5	B	10.4
• Westbound Left Turns	B	13.8	A	8.3
Elmhurst Road with Prospect Drive				
• Westbound Approach	C	17.7	C	16.7
• Southbound Left Turns	B	10.1	A	9.9
Elmhurst Road with Stonegate Drive				
• Eastbound Approach	B	14.1	B	14.8
• Northbound Left Turns	B	10.5	B	11.0
Elmhurst Road with Drake Terrace				
• Westbound Approach	C	17.1	C	17.3
• Southbound Left Turns	B	10.1	B	10.1
Maple Lane with Eleanor Drive				
• Overall	A	6.8	A	7.2
• Westbound Approach	A	6.5	A	7.3
• Northbound Approach	A	7.0	A	7.0
• Southbound Approach	A	7.0	A	7.2
LOS = Level of Service Delay is measured in seconds.				

Table 7
 CAPACITY ANALYSIS RESULTS
 UNSIGNALIZED INTERSECTIONS – YEAR 2028 TOTAL PROJECTED CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Maple Lane with Hintz Road				
• Northbound Approach	C	22.0	B	10.3
• Westbound Left Turns	B	13.9	A	8.3
Elmhurst Road with Prospect Drive				
• Westbound Approach	C	17.9	C	16.9
• Southbound Left Turns	B	10.2	A	10.0
Elmhurst Road with Stonegate Drive				
• Eastbound Approach	B	14.2	C	15.0
• Northbound Left Turns	B	10.6	B	11.1
Elmhurst Road with Drake Terrace				
• Westbound Approach	C	17.0	C	18.1
• Southbound Left Turns	B	10.1	B	10.2
Maple Lane with Eleanor Drive				
• Overall	A	6.8	A	7.2
• Westbound Approach	A	6.5	A	7.2
• Northbound Approach	A	7.0	A	7.0
• Southbound Approach	A	7.1	A	7.2
Oak Avenue with Drake Terrace				
• Overall	A	7.0	A	6.9
• Eastbound Approach	A	6.6	A	6.7
• Westbound Approach	A	7.0	A	7.1
• Northbound Approach	A	7.1	A	7.2
LOS = Level of Service Delay is measured in seconds.				

Discussion and Recommendations

The following is an evaluation of the analyzed intersections based on the projected traffic volumes and the capacity analyses performed.

Elmhurst Road with Hintz Road

The results of the capacity analysis indicate that overall this intersection currently operates at Level of Service (LOS) D during the weekday morning and evening peak hours. Furthermore, all of the approaches operate at an acceptable LOS D or better during both peak hours. It should be noted that the southbound left-turn movement currently operates at LOS E during the weekday morning peak hour and at LOS C during the weekday evening peak hour. This is expected given the high number of southbound left-turn movements during the weekday evening peak hour and the limited amount of green time allotted to the movement.

Under Year 2028 no-build conditions, overall this intersection will continue to operate at the same existing levels of service during the weekday morning and evening peak hours with increases in delay of approximately six seconds and four seconds, respectively. Additionally, the eastbound approach will operate at LOS E during the weekday morning peak hour and at LOS D during the weekday evening peak hour with increases in delay of ten seconds and one second, respectively. All other approaches will continue to operate at an acceptable LOS D or better during both peak hours with increases in delay of approximately seven seconds or less.

Under Year 2028 total projected conditions, this intersection overall and all the approaches will continue to operate at the same levels of service with increases in delay of less than one second during the weekday morning and evening peak hours over no-build conditions. When compared to the projected traffic volumes that will travel through this intersection, the proposed development will increase the volume of traffic by less than one percent during both peak hours. As such, this intersection has sufficient reserve capacity to accommodate the traffic to be generated by the proposed development and no roadway improvements and/or traffic control modifications are required.

Maple Lane with Hintz Road

The results of the capacity analysis indicate that the northbound approach currently operates at LOS C during the weekday morning peak hour and LOS B during the weekday evening peak hour. Additionally, the westbound left-turn movement currently operates at LOS B during the weekday morning peak hour and at LOS A during the weekday evening peak hour.

Under Year 2028 no-build conditions, the northbound approach and the westbound left-turn movement will continue to operate at the same existing levels of service with increases in delay of less than two seconds during both peak hours.

Under Year 2028 total projected conditions, the northbound approach and the westbound left-turn movement will continue to operate at the same levels of service with increases in delay of less than one second during both peak hours over no-build conditions. A review of the right-turn lane warrant guidelines published in Chapter 36 of the IDOT *Bureau of Design and Environment* (BDE) Manual, Figure 36-3.B, indicated that an exclusive eastbound right-turn lane serving the proposed access drive is not warranted. A copy of Figure 36-3.B is included in the Appendix. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no roadway or traffic control improvements will be required.

Elmhurst Road with Prospect Drive

The results of the capacity analysis indicate that the westbound approach currently operates at LOS C during the weekday morning and evening peak hours and the southbound left-turn movement currently operates at LOS A during both peak hours.

Under Year 2028 no-build conditions, the westbound approach will continue to operate at LOS C with increases in delay of less than one second during both peak hours. Furthermore, the southbound left-turn movement will operate at LOS B during the weekday morning peak hour and at LOS A during the weekday evening peak hour with increases in delay of less than one second during both peak hours.

Under Year 2028 total projected conditions, the westbound approach and the southbound left-turn movement will operate at the same levels of service with increases in delay of less than one second during both peak hours over no-build conditions. It should be noted that the southbound left-turn movement will experience 95th percentile queues of one to two vehicles, which can be accommodated by the existing exclusive southbound left-turn lane. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no roadway or traffic control improvements will be required.

Elmhurst Road with Stonegate Drive

The results of the capacity analysis indicate that the eastbound approach and the northbound left-turn movement currently operate at LOS B during the weekday morning and evening peak hours.

Under Year 2028 no-build conditions, the eastbound approach and the northbound left-turn movement will operate at the same existing levels of service with increases in delay of less than one second during both peak hours.

Under Year 2028 total projected conditions, the eastbound approach and the northbound left-turn movement will continue to operate at LOS B with increases in delay of less than one second during both peak hours over no-build conditions. It should be noted that the northbound left-turn movement will experience 95th percentile queues of one to two vehicles during both peak hours, which can be accommodated by the existing exclusive northbound left-turn lane. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no roadway or traffic control improvements will be required.

Elmhurst Road with Drake Terrace

The results of the capacity analysis indicate that the westbound approach currently operates at LOS C during the weekday morning and evening peak hours and the southbound left-turn movement currently operates at LOS A during both peak hours.

Under Year 2028 no-build conditions, the westbound approach will continue to operate at LOS C with increases in delay of less than one second during both peak hours. Furthermore, the southbound left-turn movement will operate at LOS B during the weekday morning peak hour and at LOS A during the weekday evening peak hour with increases in delay of less than one second during both peak hours.

Under Year 2028 total projected conditions, the westbound approach will continue to operate at LOS C with increases in delay of less than one second during both peak hours over no-build conditions. Additionally, the southbound left-turn movement from Elmhurst Road onto Drake Terrace will operate at LOS B during both peak hours with increases in delay of less than one second over no-build conditions. It should be noted that the southbound left-turn movement will experience 95th percentile queues of one to two vehicles, which can be accommodated by the existing exclusive southbound left-turn lane. A review of the right-turn lane warrant guidelines published in Chapter 36 of the IDOT BDE Manual, Figure 36-3.B, indicated that an exclusive northbound right-turn lane on Elmhurst Road will not be warranted. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no roadway or traffic control improvements will be required.

Maple Lane with Eleanor Drive

The results of the capacity analysis indicate that this intersection overall and all of the approaches currently operate at LOS A during the weekday morning and evening peak hours. Under future conditions, this intersection overall and all of the approaches are projected to continue operating at LOS A during the peak hours with increases in delay of less than one second and 95th percentile queues of one to two vehicles. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no roadway or traffic control improvements will be required.

Oak Avenue with Drake Terrace

As previously indicated, the left-turn restriction at the intersection of Oak Avenue with Drake Terrace will be removed under future conditions. Under 2028 total projected conditions, the results of the capacity analysis indicate that this intersection overall and all of the approaches will operate at LOS A during the weekday morning and evening peak hours. It should be noted that the northbound approach will experience 95th percentile queues of one to two vehicles during both peak hours. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no roadway or traffic control improvements will be required.

Parking Demand

As previously indicated, the proposed residential development will provide 204 parking spaces including 138 parking garage spaces, 40 guest parking spaces, and 26 parking spaces for guest and park parking. Based on ITE's *Parking Generation Manual*, 5th Edition, the parking demand for the proposed townhomes will be 77 parking spaces for the baseball field will be six parking spaces. As such, the proposed supply of 204 parking spaces will be adequate in accommodating the projected peak parking demand of the proposed townhomes and the baseball field.

6. Conclusion

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

- The roadway system has sufficient reserve capacity to accommodate the traffic projected to be generated by the proposed development and no additional roadway improvements or traffic control modifications are required.
- The traffic that will be generated by the proposed development will not be significant during the peak hours.
- The signalized intersection of Elmhurst Road with Hintz Road is projected to continue operating at acceptable levels of service during the peak hours and no roadway improvements or signal modifications will be required.
- The unsignalized intersections in the study area are projected to continue operating at acceptable levels of service during the peak hours and no roadway or traffic control improvements will be required.
- The left-turn restriction at the intersection of Oak Avenue with Drake Terrace will be removed under future conditions.
- The proposed access off Oak Avenue will be sufficient to accommodate the traffic projected to be generated by the proposed development.
- The proposed supply of 204 parking spaces will be adequate in accommodating the projected peak parking demand of the proposed townhomes and the baseball field.

Appendix

Traffic Count Summary Sheets
Preliminary Site Plan
ITE Trip Generation Worksheets
CMAP 2050 Projections Letter
Level of Service Criteria
Capacity Analysis Summary Sheets
Turn Lane Warrants

Traffic Count Summary Sheets



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

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Elmhurst Road with Hintz Road
Site Code:
Start Date: 02/06/2020
Page No: 1

Turning Movement Data

Start Time	Hintz Road Eastbound					Hintz Road Westbound					Elmhurst Road Northbound					Elmhurst Road Southbound					Int. Total				
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left		Thru	Right	Peds	App. Total
6:30 AM	0	18	127	20	0	165	0	11	26	13	0	50	0	18	65	33	0	116	0	51	67	14	0	132	463
6:45 AM	0	19	239	30	0	288	0	6	56	22	0	84	0	18	72	49	0	139	0	51	67	9	0	127	638
Hourly Total	0	37	366	50	0	453	0	17	82	35	0	134	0	36	137	82	0	255	0	102	134	23	0	259	1101
7:00 AM	0	33	187	21	0	241	0	12	53	21	0	86	0	19	98	23	0	140	0	35	78	7	0	120	587
7:15 AM	0	37	226	32	1	295	0	12	48	22	0	82	0	15	131	27	0	173	0	43	96	20	0	159	709
7:30 AM	0	38	230	31	4	299	0	17	78	33	1	128	0	24	138	47	0	209	0	63	114	16	0	193	829
7:45 AM	0	45	240	37	4	322	0	13	87	59	2	159	0	58	156	42	0	256	0	72	127	33	3	232	969
Hourly Total	0	153	883	121	9	1157	0	54	266	135	3	455	0	116	523	139	0	778	0	213	415	76	3	704	3084
8:00 AM	0	48	217	34	1	299	0	12	45	33	0	90	0	24	149	35	0	208	1	64	113	14	0	192	789
8:15 AM	0	37	232	38	0	307	0	13	53	22	0	88	0	18	104	41	0	163	0	29	81	16	0	126	684
8:30 AM	0	52	163	29	1	244	0	16	54	25	1	95	0	22	109	50	0	181	0	34	90	17	3	141	661
8:45 AM	0	59	191	29	0	279	0	16	74	36	0	126	0	21	104	27	0	152	0	37	104	21	0	162	719
Hourly Total	0	196	803	130	2	1129	0	57	226	116	1	399	0	85	466	153	0	704	1	164	388	68	3	621	2853
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	20	59	26	0	105	0	32	179	40	0	251	0	34	102	25	0	161	0	29	139	51	0	219	736
4:15 PM	0	30	68	24	1	122	0	32	199	49	0	280	0	34	107	14	0	155	0	28	137	29	0	194	751
4:30 PM	0	30	56	22	3	108	0	29	193	45	0	267	0	29	117	15	0	161	0	27	131	41	0	199	735
4:45 PM	0	29	74	33	0	136	0	19	199	44	1	262	0	51	115	24	0	190	0	26	165	49	0	240	828
Hourly Total	0	109	257	105	4	471	0	112	770	178	1	1060	0	148	441	78	0	667	0	110	572	170	0	852	3050
5:00 PM	0	28	62	25	0	115	0	50	241	40	0	331	0	46	122	24	0	192	0	23	164	63	0	250	888
5:15 PM	0	21	57	26	0	104	0	31	213	44	0	288	0	60	168	18	0	246	0	29	171	57	0	257	895
5:30 PM	0	30	63	25	0	118	0	31	216	50	0	297	0	48	133	14	0	195	0	16	127	62	0	205	815
5:45 PM	0	18	67	50	0	135	0	23	190	30	1	243	0	53	125	14	0	192	0	30	127	37	0	194	764
Hourly Total	0	97	249	126	0	472	0	135	860	164	1	1159	0	207	548	70	0	825	0	98	589	219	0	906	3362
6:00 PM	0	26	54	32	0	112	0	20	157	29	0	206	0	51	155	16	0	222	0	21	119	48	0	188	728
6:15 PM	0	17	55	29	0	101	0	19	159	40	0	218	0	39	127	9	0	175	0	20	97	32	0	149	643
Grand Total	0	635	2667	593	15	3895	0	414	2520	697	6	3631	0	682	2397	547	0	3626	1	728	2314	636	6	3679	14831
Approach %	0.0	16.3	68.5	15.2	-	-	0.0	11.4	69.4	19.2	-	-	0.0	18.8	66.1	15.1	-	-	0.0	19.8	62.9	17.3	-	-	-
Total %	0.0	4.3	18.0	4.0	-	26.3	0.0	2.8	17.0	4.7	-	24.5	0.0	4.6	16.2	3.7	0	24.4	0.0	4.9	15.6	4.3	-	24.8	-
Lights	0	628	2572	586	-	3786	0	398	2434	674	-	3506	0	674	2346	517	0	3537	1	678	2267	627	-	3573	14402
% Lights	-	98.9	96.4	98.8	-	97.2	-	96.1	96.6	96.7	-	96.6	-	98.8	97.9	94.5	0	97.5	100.0	93.1	98.0	98.6	-	97.1	97.1
Buses	0	4	62	6	-	72	0	6	52	17	-	75	0	7	22	18	0	47	0	37	23	8	-	68	262
% Buses	-	0.6	2.3	1.0	-	1.8	-	1.4	2.1	2.4	-	2.1	-	1.0	0.9	3.3	0	1.3	0.0	5.1	1.0	1.3	-	1.8	1.8
Single-Unit Trucks	0	2	19	1	-	22	0	5	22	5	-	32	0	1	18	8	0	27	0	8	19	1	-	28	109
% Single-Unit Trucks	-	0.3	0.7	0.2	-	0.6	-	1.2	0.9	0.7	-	0.9	-	0.1	0.8	1.5	0	0.7	0.0	1.1	0.8	0.2	-	0.8	0.7



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Count Name: Elmhurst Road with Hintz Road
Site Code:
Start Date: 02/06/2020
Page No: 3

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Hintz Road Eastbound					Hintz Road Westbound					Elmhurst Road Northbound					Elmhurst Road Southbound									
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	0	37	226	32	1	295	0	12	48	22	0	82	0	15	131	27	0	173	0	43	96	20	0	159	709
7:30 AM	0	38	230	31	4	299	0	17	78	33	1	128	0	24	138	47	0	209	0	63	114	16	0	193	829
7:45 AM	0	45	240	37	4	322	0	13	87	59	2	159	0	58	156	42	0	256	0	72	127	33	3	232	969
8:00 AM	0	48	217	34	1	299	0	12	45	33	0	90	0	24	149	35	0	208	1	64	113	14	0	192	789
Total	0	168	913	134	10	1215	0	54	258	147	3	459	0	121	574	151	0	846	1	242	450	83	3	776	3296
Approach %	0.0	13.8	75.1	11.0	-	-	0.0	11.8	56.2	32.0	-	-	0.0	14.3	67.8	17.8	-	-	0.1	31.2	58.0	10.7	-	-	-
Total %	0.0	5.1	27.7	4.1	-	36.9	0.0	1.6	7.8	4.5	-	13.9	0.0	3.7	17.4	4.6	-	25.7	0.0	7.3	13.7	2.5	-	23.5	-
PHF	0.000	0.875	0.951	0.905	-	0.943	0.000	0.794	0.741	0.623	-	0.722	0.000	0.522	0.920	0.803	-	0.826	0.250	0.840	0.886	0.629	-	0.836	0.850
Lights	0	165	895	129	-	1189	0	45	222	144	-	411	0	116	553	147	-	816	1	230	432	78	-	741	3157
% Lights	-	98.2	98.0	96.3	-	97.9	-	83.3	86.0	98.0	-	89.5	-	95.9	96.3	97.4	-	96.5	100.0	95.0	96.0	94.0	-	95.5	95.8
Buses	0	3	9	4	-	16	0	4	26	3	-	33	0	5	11	3	-	19	0	8	13	5	-	26	94
% Buses	-	1.8	1.0	3.0	-	1.3	-	7.4	10.1	2.0	-	7.2	-	4.1	1.9	2.0	-	2.2	0.0	3.3	2.9	6.0	-	3.4	2.9
Single-Unit Trucks	0	0	5	1	-	6	0	2	8	0	-	10	0	0	8	1	-	9	0	3	5	0	-	8	33
% Single-Unit Trucks	-	0.0	0.5	0.7	-	0.5	-	3.7	3.1	0.0	-	2.2	-	0.0	1.4	0.7	-	1.1	0.0	1.2	1.1	0.0	-	1.0	1.0
Articulated Trucks	0	0	4	0	-	4	0	3	2	0	-	5	0	0	2	0	-	2	0	1	0	0	-	1	12
% Articulated Trucks	-	0.0	0.4	0.0	-	0.3	-	5.6	0.8	0.0	-	1.1	-	0.0	0.3	0.0	-	0.2	0.0	0.4	0.0	0.0	-	0.1	0.4
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	-	0.0	0.0
Pedestrians	-	-	-	-	10	100.0	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Count Name: Elmhurst Road with Hintz Road
Site Code:
Start Date: 02/06/2020
Page No: 4

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Hintz Road Eastbound						Hintz Road Westbound						Elmhurst Road Northbound						Elmhurst Road Southbound					
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total
4:45 PM	0	29	74	33	0	136	0	19	199	44	1	262	0	51	115	24	190	0	26	165	49	0	240	828
5:00 PM	0	28	62	25	0	115	0	50	241	40	0	331	0	46	122	24	192	0	23	164	63	0	250	888
5:15 PM	0	21	57	26	0	104	0	31	213	44	0	288	0	60	168	18	246	0	29	171	57	0	257	895
5:30 PM	0	30	63	25	0	118	0	31	216	50	0	297	0	48	133	14	195	0	16	127	62	0	205	815
Total	0	108	256	109	0	473	0	131	869	178	1	1178	0	205	538	80	823	0	94	627	231	0	952	3426
Approach %	0.0	22.8	54.1	23.0	-	-	0.0	11.1	73.8	15.1	-	-	0.0	24.9	65.4	9.7	-	0.0	9.9	65.9	24.3	-	-	-
Total %	0.0	3.2	7.5	3.2	-	13.8	0.0	3.8	25.4	5.2	-	34.4	0.0	6.0	15.7	2.3	24.0	0.0	2.7	18.3	6.7	-	27.8	-
PHF	0.000	0.900	0.865	0.826	-	0.869	0.000	0.655	0.901	0.890	-	0.890	0.000	0.854	0.801	0.833	0.836	0.000	0.810	0.917	0.917	-	0.926	0.957
Lights	0	108	244	109	-	461	0	129	860	178	-	1167	0	204	533	77	814	0	91	621	229	-	941	3383
% Lights	-	100.0	95.3	100.0	-	97.5	-	98.5	99.0	100.0	-	99.1	-	99.5	99.1	96.3	98.9	-	96.8	99.0	99.1	-	98.8	98.7
Buses	0	0	5	0	-	5	0	0	1	0	-	1	0	1	1	1	3	0	2	2	2	-	6	15
% Buses	-	0.0	2.0	0.0	-	1.1	-	0.0	0.1	0.0	-	0.1	-	0.5	0.2	1.3	0.4	-	2.1	0.3	0.9	-	0.6	0.4
Single-Unit Trucks	0	0	2	0	-	2	0	1	3	0	-	4	0	0	3	1	4	0	0	2	0	-	2	12
% Single-Unit Trucks	-	0.0	0.8	0.0	-	0.4	-	0.8	0.3	0.0	-	0.3	-	0.0	0.6	1.3	0.5	-	0.0	0.3	0.0	-	0.2	0.4
Articulated Trucks	0	0	5	0	-	5	0	1	5	0	-	6	0	0	1	1	2	0	1	2	0	-	3	16
% Articulated Trucks	-	0.0	2.0	0.0	-	1.1	-	0.8	0.6	0.0	-	0.5	-	0.0	0.2	1.3	0.2	-	1.1	0.3	0.0	-	0.3	0.5
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	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-



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Count Name: Hintz Road with Maple Lane
Site Code:
Start Date: 02/06/2020
Page No: 1

Turning Movement Data

Start Time	Hintz Road Eastbound					Hintz Road Westbound					Maple Lane Northbound					
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
6:30 AM	0	214	0	0	214	0	0	51	0	51	0	1	2	1	3	268
6:45 AM	0	335	0	0	335	0	0	80	0	80	0	0	2	0	2	417
Hourly Total	0	549	0	0	549	0	0	131	0	131	0	1	4	1	5	685
7:00 AM	0	257	0	0	257	0	1	84	0	85	0	0	1	0	1	343
7:15 AM	0	285	0	0	285	0	0	70	0	70	0	2	5	0	7	362
7:30 AM	0	344	2	0	346	0	0	130	0	130	0	1	4	0	5	481
7:45 AM	0	360	1	0	361	0	0	155	0	155	0	2	6	1	8	524
Hourly Total	0	1246	3	0	1249	0	1	439	0	440	0	5	16	1	21	1710
8:00 AM	0	309	4	0	313	0	1	90	0	91	0	0	2	0	2	406
8:15 AM	0	301	1	0	302	0	0	90	0	90	0	1	5	0	6	398
8:30 AM	0	256	0	0	256	0	0	95	0	95	0	0	2	0	2	353
8:45 AM	0	251	1	0	252	0	1	117	0	118	0	1	2	0	3	373
Hourly Total	0	1117	6	0	1123	0	2	392	0	394	0	2	11	0	13	1530
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	109	1	0	110	0	1	262	0	263	0	1	0	0	1	374
4:15 PM	0	100	5	0	105	0	0	264	0	264	0	2	4	0	6	375
4:30 PM	0	91	4	0	95	1	0	294	0	295	0	0	2	0	2	392
4:45 PM	0	120	4	0	124	0	1	274	0	275	0	0	2	0	2	401
Hourly Total	0	420	14	0	434	1	2	1094	0	1097	0	3	8	0	11	1542
5:00 PM	0	109	6	0	115	0	1	303	0	304	0	0	5	5	5	424
5:15 PM	0	95	5	0	100	0	2	295	0	297	0	1	4	0	5	402
5:30 PM	0	84	3	0	87	0	2	314	0	316	0	0	1	0	1	404
5:45 PM	0	105	2	0	107	0	1	229	0	230	0	0	1	1	1	338
Hourly Total	0	393	16	0	409	0	6	1141	0	1147	0	1	11	6	12	1568
6:00 PM	0	91	0	0	91	0	2	213	0	215	0	0	1	0	1	307
6:15 PM	0	80	1	0	81	0	1	184	0	185	0	1	0	0	1	267
Grand Total	0	3896	40	0	3936	1	14	3594	0	3609	0	13	51	8	64	7609
Approach %	0.0	99.0	1.0	-	-	0.0	0.4	99.6	-	-	0.0	20.3	79.7	-	-	-
Total %	0.0	51.2	0.5	-	51.7	0.0	0.2	47.2	-	47.4	0.0	0.2	0.7	-	0.8	-
Lights	0	3728	37	-	3765	1	14	3465	-	3480	0	13	47	-	60	7305
% Lights	-	95.7	92.5	-	95.7	100.0	100.0	96.4	-	96.4	-	100.0	92.2	-	93.8	96.0
Buses	0	109	3	-	112	0	0	77	-	77	0	0	2	-	2	191
% Buses	-	2.8	7.5	-	2.8	0.0	0.0	2.1	-	2.1	-	0.0	3.9	-	3.1	2.5
Single-Unit Trucks	0	36	0	-	36	0	0	35	-	35	0	0	2	-	2	73
% Single-Unit Trucks	-	0.9	0.0	-	0.9	0.0	0.0	1.0	-	1.0	-	0.0	3.9	-	3.1	1.0
Articulated Trucks	0	23	0	-	23	0	0	17	-	17	0	0	0	-	0	40

% Articulated Trucks	-	-	0.0	-	0.6	0.0	0.0	0.0	0.5	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.5
Bicycles on Road	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
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	-	8	-	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-



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Count Name: Hintz Road with Maple Lane
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Turning Movement Peak Hour Data (7:15 AM)

Start Time	Hintz Road Eastbound				Hintz Road Westbound				Maple Lane Northbound							
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
7:15 AM	0	285	0	0	285	0	0	70	0	70	0	2	5	0	7	362
7:30 AM	0	344	2	0	346	0	0	130	0	130	0	1	4	0	5	481
7:45 AM	0	360	1	0	361	0	0	155	0	155	0	2	6	1	8	524
8:00 AM	0	309	4	0	313	0	1	90	0	91	0	0	2	0	2	406
Total	0	1298	7	0	1305	0	1	445	0	446	0	5	17	1	22	1773
Approach %	0.0	99.5	0.5	-	-	0.0	0.2	99.8	-	-	0.0	22.7	77.3	-	-	-
Total %	0.0	73.2	0.4	-	73.6	0.0	0.1	25.1	-	25.2	0.0	0.3	1.0	-	1.2	-
PHF	0.000	0.901	0.438	-	0.904	0.000	0.250	0.718	-	0.719	0.000	0.625	0.708	-	0.688	0.846
Lights	0	1268	5	-	1273	0	1	394	-	395	0	5	15	-	20	1688
% Lights	-	97.7	71.4	-	97.5	-	100.0	88.5	-	88.6	-	100.0	88.2	-	90.9	95.2
Buses	0	17	2	-	19	0	0	36	-	36	0	0	2	-	2	57
% Buses	-	1.3	28.6	-	1.5	-	0.0	8.1	-	8.1	-	0.0	11.8	-	9.1	3.2
Single-Unit Trucks	0	9	0	-	9	0	0	10	-	10	0	0	0	-	0	19
% Single-Unit Trucks	-	0.7	0.0	-	0.7	-	0.0	2.2	-	2.2	-	0.0	0.0	-	0.0	1.1
Articulated Trucks	0	4	0	-	4	0	0	5	-	5	0	0	0	-	0	9
% Articulated Trucks	-	0.3	0.0	-	0.3	-	0.0	1.1	-	1.1	-	0.0	0.0	-	0.0	0.5
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	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Turning Movement Peak Hour Data (4:45 PM)

Start Time	Hintz Road Eastbound				Hintz Road Westbound				Maple Lane Northbound							
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
4:45 PM	0	120	4	0	124	0	1	274	0	275	0	0	2	0	2	401
5:00 PM	0	109	6	0	115	0	1	303	0	304	0	0	5	5	5	424
5:15 PM	0	95	5	0	100	0	2	295	0	297	0	1	4	0	5	402
5:30 PM	0	84	3	0	87	0	2	314	0	316	0	0	1	0	1	404
Total	0	408	18	0	426	0	6	1186	0	1192	0	1	12	5	13	1631
Approach %	0.0	95.8	4.2	-	-	0.0	0.5	99.5	-	-	0.0	7.7	92.3	-	-	-
Total %	0.0	25.0	1.1	-	26.1	0.0	0.4	72.7	-	73.1	0.0	0.1	0.7	-	0.8	-
PHF	0.000	0.850	0.750	-	0.859	0.000	0.750	0.944	-	0.943	0.000	0.250	0.600	-	0.650	0.962
Lights	0	390	18	-	408	0	6	1175	-	1181	0	1	11	-	12	1601
% Lights	-	95.6	100.0	-	95.8	-	100.0	99.1	-	99.1	-	100.0	91.7	-	92.3	98.2
Buses	0	7	0	-	7	0	0	1	-	1	0	0	0	-	0	8
% Buses	-	1.7	0.0	-	1.6	-	0.0	0.1	-	0.1	-	0.0	0.0	-	0.0	0.5
Single-Unit Trucks	0	4	0	-	4	0	0	6	-	6	0	0	1	-	1	11
% Single-Unit Trucks	-	1.0	0.0	-	0.9	-	0.0	0.5	-	0.5	-	0.0	8.3	-	7.7	0.7
Articulated Trucks	0	7	0	-	7	0	0	4	-	4	0	0	0	-	0	11
% Articulated Trucks	-	1.7	0.0	-	1.6	-	0.0	0.3	-	0.3	-	0.0	0.0	-	0.0	0.7
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	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Turning Movement Data

Start Time	Prospect Drive Westbound					Elmhurst Road Northbound					Elmhurst Road Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Total
6:30 AM	0	2	0	0	2	0	109	0	0	109	0	0	96	0	96	207
6:45 AM	0	1	0	0	1	0	138	1	0	139	0	1	106	0	107	247
Hourly Total	0	3	0	0	3	0	247	1	0	248	0	1	202	0	203	454
7:00 AM	0	1	0	0	1	0	144	1	0	145	0	0	103	0	103	249
7:15 AM	0	3	1	0	4	0	172	2	0	174	0	0	145	0	145	323
7:30 AM	0	3	2	0	5	0	215	1	1	216	0	0	165	0	165	386
7:45 AM	0	3	4	0	7	0	234	1	0	235	0	1	181	0	182	424
Hourly Total	0	10	7	0	17	0	765	5	1	770	0	1	594	0	595	1382
8:00 AM	0	5	2	0	7	0	196	2	0	198	0	1	159	0	160	365
8:15 AM	0	1	1	0	2	0	140	2	0	142	0	1	133	0	134	278
8:30 AM	0	0	0	0	0	0	184	2	0	186	0	0	130	0	130	316
8:45 AM	0	2	2	0	4	0	139	0	0	139	0	1	137	0	138	281
Hourly Total	0	8	5	0	13	0	659	6	0	665	0	3	559	0	562	1240
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	1	3	0	4	0	151	6	0	157	0	1	176	0	177	338
4:15 PM	0	2	1	0	3	0	141	6	0	147	0	0	183	0	183	333
4:30 PM	0	0	3	0	3	0	154	4	0	158	0	1	176	0	177	338
4:45 PM	0	0	1	0	1	0	182	5	0	187	0	1	213	0	214	402
Hourly Total	0	3	8	0	11	0	628	21	0	649	0	3	748	0	751	1411
5:00 PM	0	2	2	0	4	0	189	2	0	191	0	1	225	0	226	421
5:15 PM	0	1	1	0	2	0	231	2	0	233	0	2	211	0	213	448
5:30 PM	0	3	0	0	3	0	187	0	0	187	0	0	155	0	155	345
5:45 PM	0	2	0	2	2	0	195	2	0	197	0	0	171	0	171	370
Hourly Total	0	8	3	2	11	0	802	6	0	808	0	3	762	0	765	1584
6:00 PM	0	0	0	0	0	0	189	2	0	191	0	1	176	0	177	368
6:15 PM	0	3	0	0	3	0	178	1	0	179	0	3	144	0	147	329
Grand Total	0	35	23	2	58	0	3468	42	1	3510	0	15	3185	0	3200	6768
Approach %	0.0	60.3	39.7	-	-	0.0	98.8	1.2	-	-	0.0	0.5	99.5	-	-	-
Total %	0.0	0.5	0.3	-	0.9	0.0	51.2	0.6	-	51.9	0.0	0.2	47.1	-	47.3	-
Lights	0	35	22	-	57	0	3378	41	-	3419	0	15	3109	-	3124	6600
% Lights	-	100.0	95.7	-	98.3	-	97.4	97.6	-	97.4	-	100.0	97.6	-	97.6	97.5
Buses	0	0	1	-	1	0	45	0	-	45	0	0	39	-	39	85
% Buses	-	0.0	4.3	-	1.7	-	1.3	0.0	-	1.3	-	0.0	1.2	-	1.2	1.3
Single-Unit Trucks	0	0	0	-	0	0	30	1	-	31	0	0	28	-	28	59
% Single-Unit Trucks	-	0.0	0.0	-	0.0	-	0.9	2.4	-	0.9	-	0.0	0.9	-	0.9	0.9
Articulated Trucks	0	0	0	-	0	0	15	0	-	15	0	0	9	-	9	24

% Articulated Trucks	-	-	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.3	-	-	0.3	0.4
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	0.0
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-



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Turning Movement Peak Hour Data (7:15 AM)

Start Time	Prospect Drive Westbound					Elmhurst Road Northbound					Elmhurst Road Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Total
7:15 AM	0	3	1	0	4	0	172	2	0	174	0	0	145	0	145	323
7:30 AM	0	3	2	0	5	0	215	1	1	216	0	0	165	0	165	386
7:45 AM	0	3	4	0	7	0	234	1	0	235	0	1	181	0	182	424
8:00 AM	0	5	2	0	7	0	196	2	0	198	0	1	159	0	160	365
Total	0	14	9	0	23	0	817	6	1	823	0	2	650	0	652	1498
Approach %	0.0	60.9	39.1	-	-	0.0	99.3	0.7	-	-	0.0	0.3	99.7	-	-	-
Total %	0.0	0.9	0.6	-	1.5	0.0	54.5	0.4	-	54.9	0.0	0.1	43.4	-	43.5	-
PHF	0.000	0.700	0.563	-	0.821	0.000	0.873	0.750	-	0.876	0.000	0.500	0.898	-	0.896	0.883
Lights	0	14	8	-	22	0	786	6	-	792	0	2	613	-	615	1429
% Lights	-	100.0	88.9	-	95.7	-	96.2	100.0	-	96.2	-	100.0	94.3	-	94.3	95.4
Buses	0	0	1	-	1	0	18	0	-	18	0	0	25	-	25	44
% Buses	-	0.0	11.1	-	4.3	-	2.2	0.0	-	2.2	-	0.0	3.8	-	3.8	2.9
Single-Unit Trucks	0	0	0	-	0	0	11	0	-	11	0	0	9	-	9	20
% Single-Unit Trucks	-	0.0	0.0	-	0.0	-	1.3	0.0	-	1.3	-	0.0	1.4	-	1.4	1.3
Articulated Trucks	0	0	0	-	0	0	2	0	-	2	0	0	3	-	3	5
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.2	0.0	-	0.2	-	0.0	0.5	-	0.5	0.3
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	-	-	-	-	1	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-



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Turning Movement Data

Start Time	Drake Terrace Westbound					Elmhurst Road Northbound					Elmhurst Road Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Total
6:30 AM	0	1	0	0	1	0	106	0	0	106	0	0	103	0	103	210
6:45 AM	0	2	1	0	3	0	136	0	0	136	0	0	101	0	101	240
Hourly Total	0	3	1	0	4	0	242	0	0	242	0	0	204	0	204	450
7:00 AM	0	2	2	0	4	0	149	0	0	149	0	0	104	0	104	257
7:15 AM	0	2	0	0	2	0	177	2	0	179	0	1	154	1	155	336
7:30 AM	0	1	2	0	3	0	213	0	0	213	0	0	161	0	161	377
7:45 AM	0	1	1	1	3	0	232	2	0	234	0	0	191	1	191	427
Hourly Total	0	6	5	2	11	0	771	4	0	775	0	1	610	2	611	1397
8:00 AM	0	2	1	0	3	0	197	1	0	198	0	0	171	0	171	372
8:15 AM	0	1	2	0	3	0	140	2	0	142	0	0	134	0	134	279
8:30 AM	0	4	0	0	4	0	183	1	0	184	0	0	134	0	134	322
8:45 AM	0	0	1	0	1	0	139	0	0	139	0	0	139	0	139	279
Hourly Total	0	7	4	0	11	0	659	4	0	663	0	0	578	0	578	1252
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	1	0	1	0	161	2	0	163	0	0	195	0	195	359
4:15 PM	0	0	1	0	1	0	149	2	0	151	0	1	182	0	183	335
4:30 PM	0	0	0	0	0	0	155	1	0	156	0	0	178	0	178	334
4:45 PM	0	0	0	0	0	0	190	1	0	191	0	1	210	0	211	402
Hourly Total	0	0	2	0	2	0	655	6	0	661	0	2	765	0	767	1430
5:00 PM	0	0	0	0	0	0	197	1	0	198	0	1	226	0	227	425
5:15 PM	0	2	0	0	2	0	232	4	0	236	0	2	212	0	214	452
5:30 PM	0	2	0	0	2	0	192	2	0	194	0	0	160	0	160	356
5:45 PM	0	1	1	1	3	0	209	2	0	211	0	0	177	0	177	390
Hourly Total	0	5	1	1	7	0	830	9	0	839	0	3	775	0	778	1623
6:00 PM	0	0	1	0	1	0	189	1	0	190	0	2	167	0	169	360
6:15 PM	0	1	0	0	1	0	182	2	0	184	0	0	146	0	146	331
Grand Total	0	22	14	3	36	0	3528	26	0	3554	0	8	3245	2	3253	6843
Approach %	0.0	61.1	38.9	-	-	0.0	99.3	0.7	-	-	0.0	0.2	99.8	-	-	-
Total %	0.0	0.3	0.2	-	0.5	0.0	51.6	0.4	-	51.9	0.0	0.1	47.4	-	47.5	-
Lights	0	22	12	-	34	0	3438	23	-	3461	0	8	3169	-	3177	6672
% Lights	-	100.0	85.7	-	94.4	-	97.4	88.5	-	97.4	-	100.0	97.7	-	97.7	97.5
Buses	0	0	1	-	1	0	46	1	-	47	0	0	39	-	39	87
% Buses	-	0.0	7.1	-	2.8	-	1.3	3.8	-	1.3	-	0.0	1.2	-	1.2	1.3
Single-Unit Trucks	0	0	1	-	1	0	29	2	-	31	0	0	27	-	27	59
% Single-Unit Trucks	-	0.0	7.1	-	2.8	-	0.8	7.7	-	0.9	-	0.0	0.8	-	0.8	0.9
Articulated Trucks	0	0	0	-	0	0	15	0	-	15	0	0	10	-	10	25



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

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Elmhurst Road with Drake Terrace
Site Code:
Start Date: 02/06/2020
Page No: 3

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Drake Terrace Westbound					Elmhurst Road Northbound					Elmhurst Road Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Total
7:15 AM	0	2	0	0	2	0	177	2	0	179	0	1	154	1	155	336
7:30 AM	0	1	2	1	3	0	213	0	0	213	0	0	161	0	161	377
7:45 AM	0	1	1	1	2	0	232	2	0	234	0	0	191	1	191	427
8:00 AM	0	2	1	0	3	0	197	1	0	198	0	0	171	0	171	372
Total	0	6	4	2	10	0	819	5	0	824	0	1	677	2	678	1512
Approach %	0.0	60.0	40.0	-	-	0.0	99.4	0.6	-	-	0.0	0.1	99.9	-	-	-
Total %	0.0	0.4	0.3	-	0.7	0.0	54.2	0.3	-	54.5	0.0	0.1	44.8	-	44.8	-
PHF	0.000	0.750	0.500	-	0.833	0.000	0.883	0.625	-	0.880	0.000	0.250	0.886	-	0.887	0.885
Lights	0	6	3	-	9	0	786	3	-	789	0	1	639	-	640	1438
% Lights	-	100.0	75.0	-	90.0	-	96.0	60.0	-	95.8	-	100.0	94.4	-	94.4	95.1
Buses	0	0	0	-	0	0	20	1	-	21	0	0	25	-	25	46
% Buses	-	0.0	0.0	-	0.0	-	2.4	20.0	-	2.5	-	0.0	3.7	-	3.7	3.0
Single-Unit Trucks	0	0	1	-	1	0	11	1	-	12	0	0	10	-	10	23
% Single-Unit Trucks	-	0.0	25.0	-	10.0	-	1.3	20.0	-	1.5	-	0.0	1.5	-	1.5	1.5
Articulated Trucks	0	0	0	-	0	0	2	0	-	2	0	0	3	-	3	5
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.2	0.0	-	0.2	-	0.0	0.4	-	0.4	0.3
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	-	-	-	2	-	-	-	-	0	-	-	-	-	2	-	-
% 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

Count Name: Maple Lane with Eleanor Drive
Site Code:
Start Date: 02/06/2020
Page No: 1

Turning Movement Data

Start Time	Eleanor Drive Westbound				Maple Lane Northbound				Maple Lane Southbound							
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Total
6:30 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	2
6:45 AM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
Hourly Total	0	0	3	0	3	0	0	0	0	0	0	0	1	0	1	4
7:00 AM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2
7:15 AM	0	1	1	0	2	0	2	0	0	2	0	0	1	1	1	5
7:30 AM	0	0	3	0	3	0	0	0	0	0	0	0	2	0	2	5
7:45 AM	0	0	4	0	4	0	2	0	0	2	0	0	2	0	2	8
Hourly Total	0	1	8	0	9	1	5	0	0	6	0	0	5	1	5	20
8:00 AM	0	0	2	0	2	0	3	0	0	3	0	1	6	0	7	12
8:15 AM	0	0	3	0	3	0	3	0	0	3	0	0	2	0	2	8
8:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	3
Hourly Total	0	0	5	0	5	0	8	0	0	8	0	3	8	0	11	24
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	0	0	0	0	2	1	0	3	0	2	0	0	2	5
4:15 PM	0	1	1	0	2	0	4	1	0	5	0	0	3	0	3	10
4:30 PM	0	1	2	0	3	0	2	1	0	3	0	2	1	0	3	9
4:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	2	0	2	3
Hourly Total	0	2	4	0	6	0	8	3	0	11	0	4	6	0	10	27
5:00 PM	0	1	1	0	2	0	1	0	0	1	0	2	2	0	4	7
5:15 PM	0	2	3	0	5	0	2	0	0	2	1	1	2	0	4	11
5:30 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	2
5:45 PM	0	0	1	0	1	0	1	0	0	1	0	2	3	0	5	7
Hourly Total	0	3	6	0	9	0	4	0	0	4	1	6	7	0	14	27
6:00 PM	0	0	0	1	0	0	1	0	0	1	0	1	0	0	1	2
6:15 PM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
Grand Total	0	6	26	1	32	1	27	3	0	31	1	15	27	2	43	106
Approach %	0.0	18.8	81.3	-	-	3.2	87.1	9.7	-	-	2.3	34.9	62.8	-	-	-
Total %	0.0	5.7	24.5	-	30.2	0.9	25.5	2.8	-	29.2	0.9	14.2	25.5	-	40.6	-
Lights	0	5	23	-	28	1	26	3	-	30	1	15	24	-	40	98
% Lights	-	83.3	88.5	-	87.5	100.0	96.3	100.0	-	96.8	100.0	100.0	86.9	-	93.0	92.5
Buses	0	0	2	-	2	0	0	0	-	0	0	0	3	-	3	5
% Buses	-	0.0	7.7	-	6.3	0.0	0.0	0.0	-	0.0	0.0	0.0	11.1	-	7.0	4.7
Single-Unit Trucks	0	1	1	-	2	0	1	0	-	1	0	0	0	-	0	3
% Single-Unit Trucks	-	16.7	3.8	-	6.3	0.0	3.7	0.0	-	3.2	0.0	0.0	0.0	-	0.0	2.8
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0



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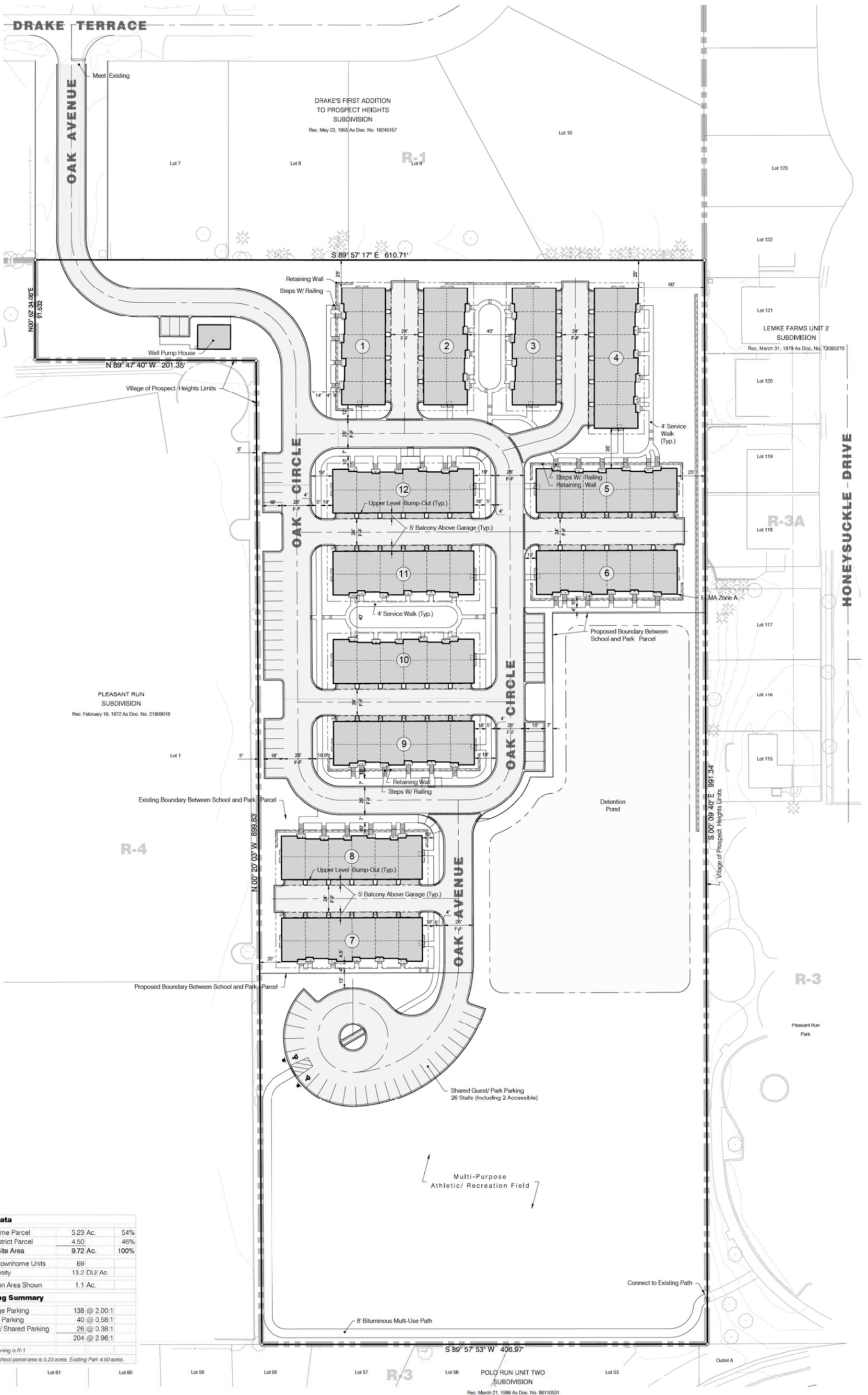
Count Name: Maple Lane with Eleanor Drive
Site Code:
Start Date: 02/06/2020
Page No: 3

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Eleanor Drive Westbound				Maple Lane Northbound				Maple Lane Southbound				Int. Total		
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left		Thru	Peds
7:15 AM	0	1	1	0	2	0	2	0	0	2	0	0	1	1	1
7:30 AM	0	0	3	0	3	0	0	0	0	0	0	0	2	0	2
7:45 AM	0	0	4	0	4	0	2	0	0	2	0	0	2	0	2
8:00 AM	0	0	2	0	2	0	3	0	0	3	0	1	6	0	7
Total	0	1	10	0	11	0	7	0	0	7	0	1	11	1	12
Approach %	0.0	9.1	90.9	-	-	0.0	100.0	0.0	-	-	0.0	8.3	91.7	-	-
Total %	0.0	3.3	33.3	-	36.7	0.0	23.3	0.0	-	23.3	0.0	3.3	36.7	-	40.0
PHF	0.000	0.250	0.625	-	0.688	0.000	0.583	0.000	-	0.583	0.000	0.250	0.458	-	0.429
Lights	0	1	8	-	9	0	7	0	-	7	0	1	9	-	10
% Lights	-	100.0	80.0	-	81.8	-	100.0	-	-	100.0	-	100.0	81.8	-	83.3
Buses	0	0	2	-	2	0	0	0	-	0	0	0	2	-	2
% Buses	-	0.0	20.0	-	18.2	-	0.0	-	-	0.0	-	0.0	18.2	-	16.7
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Single-Unit Trucks	-	0.0	0.0	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	0.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Articulated Trucks	-	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
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-

Preliminary Site Plan

Plot Date: May 17, 2020; 3:05pm
 File Name: C:\Users\jshelton\Documents\Prospect\Prospect Pointe\Prospect Pointe.dwg



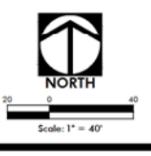
Site Data		
Townhome Parcel	5.23 Ac.	54%
Park District Parcel	4.50	46%
Gross Site Area	9.72 Ac.	100%
No. of Townhome Units	69	
Net Density	13.2 DU/ Ac.	
Detention Area Shown	1.1 Ac.	
Parking Summary		
Garage Parking	138 @ 2.00:1	
Guest Parking	40 @ 0.58:1	
Guest/ Shared Parking	26 @ 0.38:1	
Total	204 @ 2.96:1	
Existing zoning is R-1		
Existing school parcel area is 5.23 acres. Existing Park 4.50 acres.		

PRELIMINARY PUD SITE PLAN
PROSPECT POINTE
 VILLAGE OF PROSPECT HEIGHTS, COOK COUNTY, ILLINOIS

HAEGER ENGINEERING
 consulting engineers • land surveyors
 100 East State Parkway, Schaumburg, IL 60173 • Tel: 847.394.6600 Fax: 847.394.6608
 Illinois Professional Design Firm License No. 184-000312
 www.haegerengineering.com

Preliminary 3-17-2020
Not for Public Distribution

No. _____ Date _____ Revision _____



ITE Trip Generation Worksheets

Multifamily Housing (Low-Rise) (220)

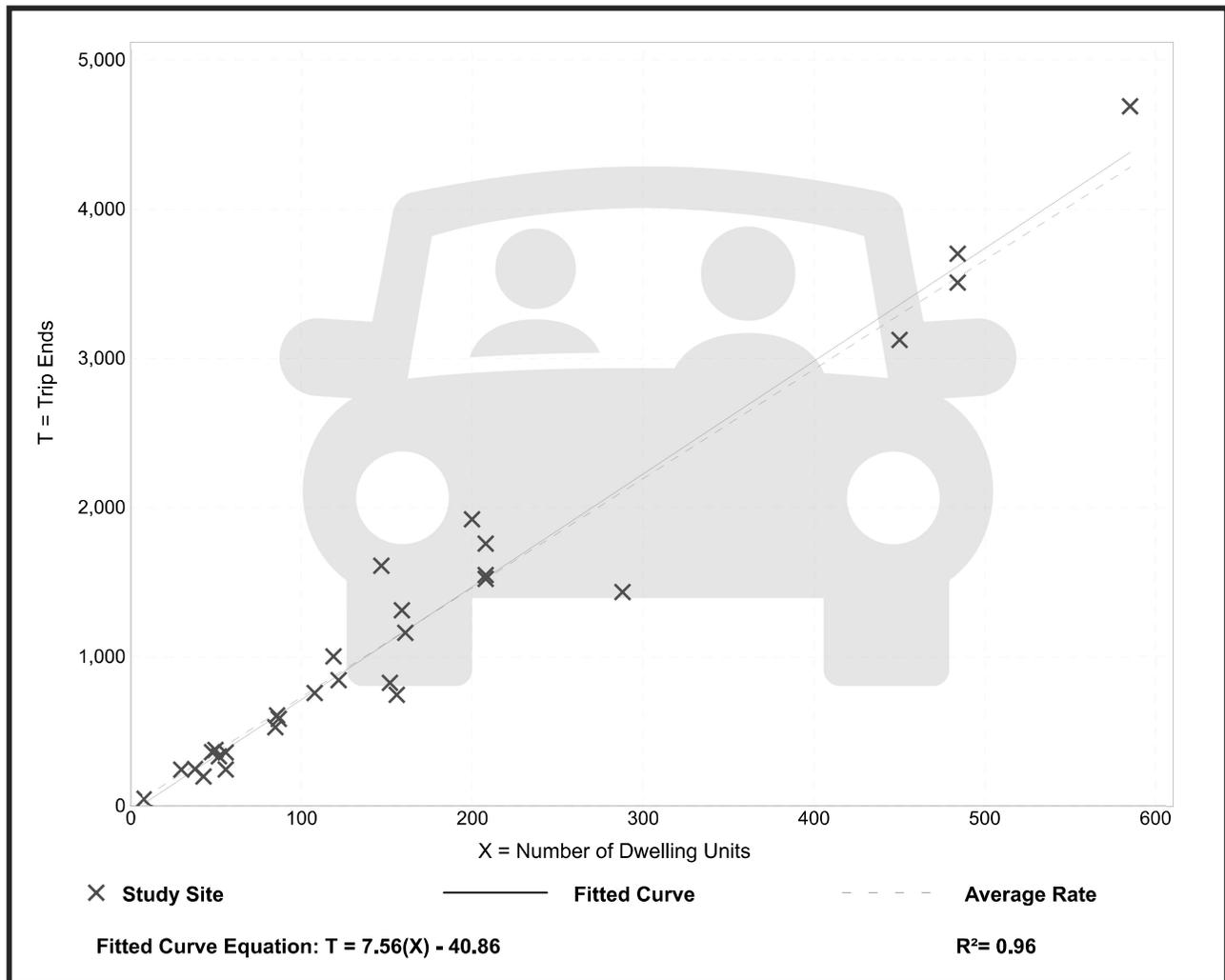
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 29
Avg. Num. of Dwelling Units: 168
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.32	4.45 - 10.97	1.31

Data Plot and Equation



Multifamily Housing (Low-Rise) (220)

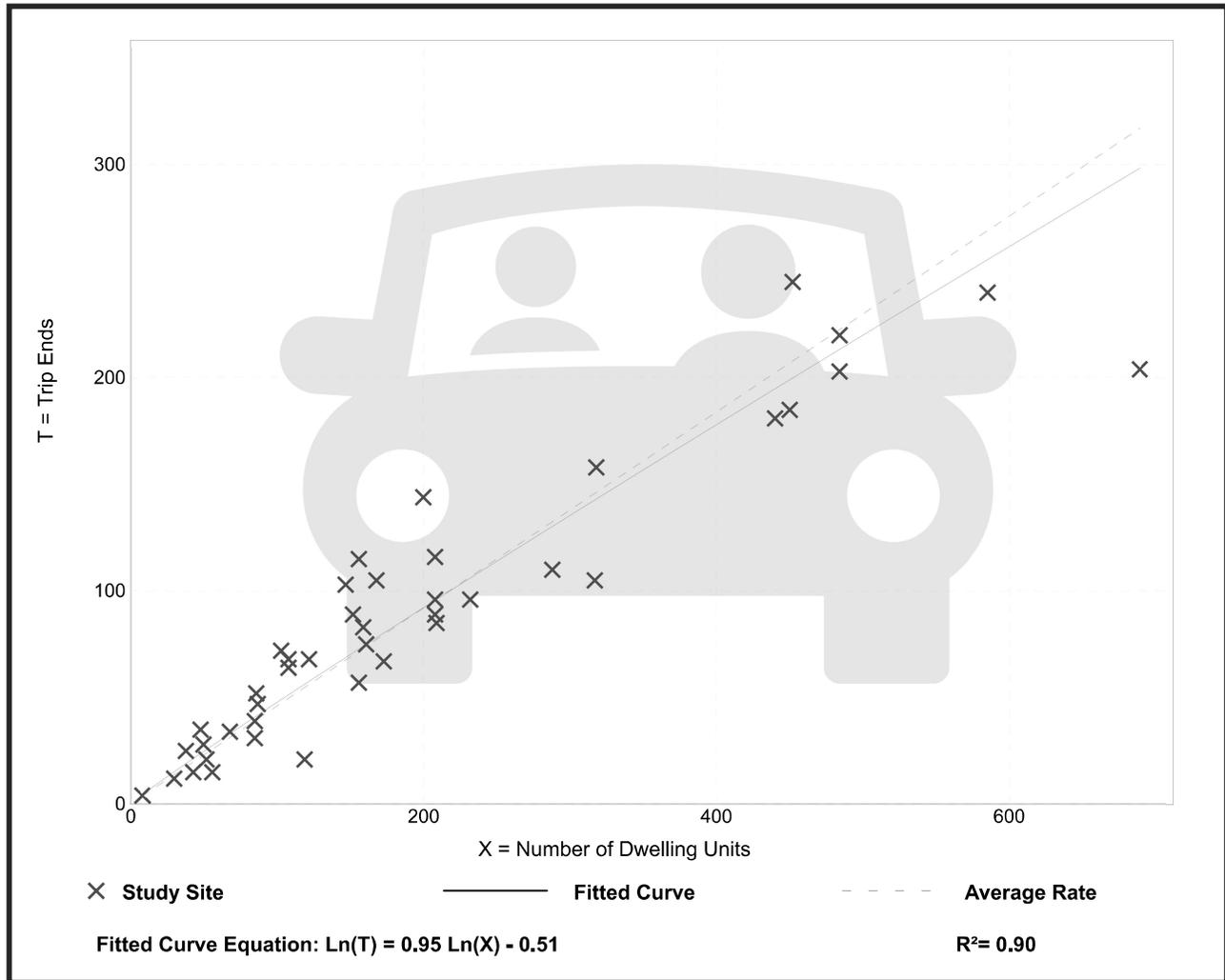
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban
 Number of Studies: 42
 Avg. Num. of Dwelling Units: 199
 Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



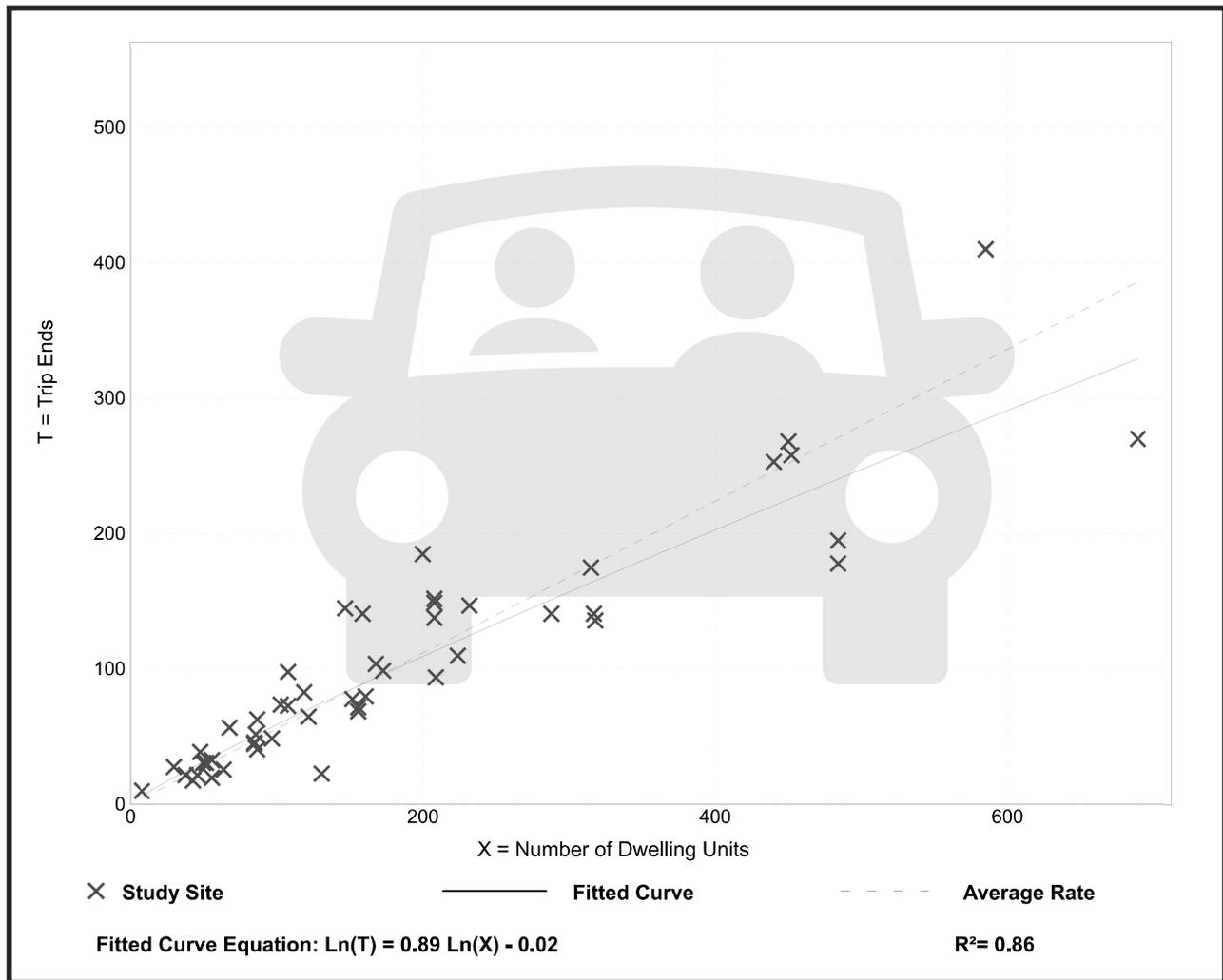
Multifamily Housing (Low-Rise) (220)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 50
 Avg. Num. of Dwelling Units: 187
 Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



CMAP 2050 Projections Letter



Chicago Metropolitan Agency for Planning

233 South Wacker Drive
Suite 800
Chicago, Illinois 60606

312 454 0400
www.cmap.illinois.gov

March 20, 2020

Elise Purguette
Consultant
Kenig, Lindgren, O'Hara and Aboona, Inc.
9575 West Higgins Road
Suite 400
Rosemont, IL 60018

Subject: *Elmhurst Rd @ Hintz Rd*
IDOT

Dear Ms. Purguette:

In response to a request made on your behalf and dated March 18, 2020, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current Volumes	Year 2050 ADT
Elmhurst Rd north of Hintz Rd	16,200	18,800
Elmhurst Rd south of Hintz Rd	17,400	20,000
Hintz Rd east of Elmhurst Rd	17,000	22,600
Hintz Rd west of Elmhurst Rd	17,100	22,300

Traffic projections are developed using existing ADT data provided in the request letter and the results from the March 2020 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: Quigley (IDOT)
2020_TrafficForecast\ProspectHeigts\ck-28-20\ck-28-20.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
Existing Weekday Morning Peak Hour Conditions

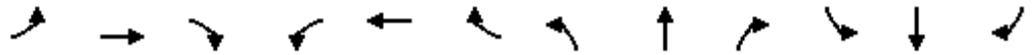
Lanes, Volumes, Timings
1: Elmhurst Road & Hintz Road

03/23/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	913	134	54	258	147	121	574	151	243	450	83
Future Volume (vph)	168	913	134	54	258	147	121	574	151	243	450	83
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)	220		0	145		0	175		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	85			115			80			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99		1.00	1.00		1.00	1.00	
Frt		0.981			0.946			0.969			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3429	0	1543	3098	0	1736	3360	0	1719	3370	0
Flt Permitted	0.358			0.105			0.357			0.114		
Satd. Flow (perm)	666	3429	0	171	3098	0	650	3360	0	206	3370	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			40			40			20	
Link Distance (ft)		868			394			1322			411	
Travel Time (s)		29.6			6.7			22.5			14.0	
Confl. Peds. (#/hr)	3					3	10		3	3		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	17%	14%	2%	4%	4%	3%	5%	4%	6%
Bus Blockages (#/hr)	0	5	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)	198	1232	0	64	477	0	142	853	0	286	627	0
Turn Type	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)	7.0	38.0		9.5	35.0		9.5	41.0		9.5	39.0	
Total Split (s)	15.0	50.0		10.0	45.0		13.0	41.0		19.0	47.0	
Total Split (%)	12.5%	41.7%		8.3%	37.5%		10.8%	34.2%		15.8%	39.2%	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag										
Lead-Lag Optimize?	Yes	Yes										
Recall Mode	None	None										
Act Effect Green (s)	54.4	44.1		46.3	37.4		46.6	35.0		56.6	41.5	
Actuated g/C Ratio	0.46	0.37		0.39	0.32		0.39	0.30		0.48	0.35	

Lanes, Volumes, Timings
 1: Elmhurst Road & Hintz Road

03/23/2020

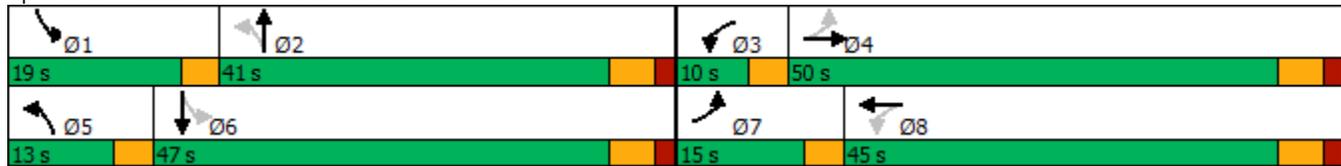


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.48	0.96		0.46	0.49		0.42	0.85		0.96	0.53	
Control Delay	23.4	54.6		28.9	34.5		22.6	49.2		73.7	33.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	23.4	54.6		28.9	34.5		22.6	49.2		73.7	33.0	
LOS	C	D		C	C		C	D		E	C	
Approach Delay		50.3			33.8			45.4			45.8	
Approach LOS		D			C			D			D	
Queue Length 50th (ft)	89	492		27	154		62	330		164	205	
Queue Length 95th (ft)	131	#583		50	192		97	382		#308	246	
Internal Link Dist (ft)		788			314			1242			331	
Turn Bay Length (ft)	220			145			175			200		
Base Capacity (vph)	414	1280		142	1024		346	998		297	1185	
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	0.48	0.96		0.45	0.47		0.41	0.85		0.96	0.53	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 118
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 45.7
 Intersection LOS: D
 Intersection Capacity Utilization 83.7%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Elmhurst Road & Hintz Road



HCM 6th TWSC
2: Maple Lane & Hintz Road

03/23/2020

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	1298	7	1	445	5	17
Future Vol, veh/h	1298	7	1	445	5	17
Conflicting Peds, #/hr	0	1	1	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	85	85	85	85	85	85
Heavy Vehicles, %	2	29	0	12	0	12
Mvmt Flow	1527	8	1	524	6	20

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1536	0	1796
Stage 1	-	-	-	-	1532
Stage 2	-	-	-	-	264
Critical Hdwy	-	-	4.1	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	439	-	73
Stage 1	-	-	-	-	168
Stage 2	-	-	-	-	762
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	439	-	73
Mov Cap-2 Maneuver	-	-	-	-	142
Stage 1	-	-	-	-	167
Stage 2	-	-	-	-	762

Approach	EB	WB	NB
HCM Control Delay, s	0	0	21.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	250	-	-	439	-
HCM Lane V/C Ratio	0.104	-	-	0.003	-
HCM Control Delay (s)	21.1	-	-	13.2	0
HCM Lane LOS	C	-	-	B	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

HCM 6th TWSC
3: Elmhurst Road & Prospect Drive

03/23/2020

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	9	824	6	2	650
Future Vol, veh/h	14	9	824	6	2	650
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	110	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	11	4	0	0	6
Mvmt Flow	16	10	936	7	2	739

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1315	472	0	0	943
Stage 1	940	-	-	-	-
Stage 2	375	-	-	-	-
Critical Hdwy	6.8	7.12	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.41	-	-	2.2
Pot Cap-1 Maneuver	152	515	-	-	736
Stage 1	345	-	-	-	-
Stage 2	671	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	151	515	-	-	736
Mov Cap-2 Maneuver	266	-	-	-	-
Stage 1	344	-	-	-	-
Stage 2	670	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	328	736
HCM Lane V/C Ratio	-	-	0.08	0.003
HCM Control Delay (s)	-	-	16.9	9.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.3	0

HCM 6th TWSC
4: Elmhurst Road & Stonegate Drive

03/23/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	10	17	3	820	661	3
Future Vol, veh/h	10	17	3	820	661	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	45	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	12	33	4	6	33
Mvmt Flow	11	19	3	921	743	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1212	373	746	0	-	0
Stage 1	745	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Critical Hdwy	6.8	7.14	4.76	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.42	2.53	-	-	-
Pot Cap-1 Maneuver	177	597	682	-	-	-
Stage 1	435	-	-	-	-	-
Stage 2	603	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	176	597	682	-	-	-
Mov Cap-2 Maneuver	307	-	-	-	-	-
Stage 1	433	-	-	-	-	-
Stage 2	603	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	682	-	442	-	-
HCM Lane V/C Ratio	0.005	-	0.069	-	-
HCM Control Delay (s)	10.3	-	13.7	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM 6th TWSC
5: Elmhurst Road & Drake Terrace

03/23/2020

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↗		↑↓		↘	↑↑
Traffic Vol, veh/h	6	4	819	5	1	677
Future Vol, veh/h	6	4	819	5	1	677
Conflicting Peds, #/hr	0	2	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	25	4	40	0	6
Mvmt Flow	7	4	920	6	1	761

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1308	467	0	0	928
Stage 1	925	-	-	-	-
Stage 2	383	-	-	-	-
Critical Hdwy	6.8	7.4	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.55	-	-	2.2
Pot Cap-1 Maneuver	154	485	-	-	745
Stage 1	351	-	-	-	-
Stage 2	665	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	154	483	-	-	744
Mov Cap-2 Maneuver	270	-	-	-	-
Stage 1	350	-	-	-	-
Stage 2	665	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	328	744
HCM Lane V/C Ratio	-	-	0.034	0.002
HCM Control Delay (s)	-	-	16.4	9.8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 6th AWSC
6: Maple Lane & Eleanor Drive

03/23/2020

Intersection	
Intersection Delay, s/veh	6.8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	10	7	0	1	11
Future Vol, veh/h	1	10	7	0	1	11
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles, %	0	20	0	0	0	18
Mvmt Flow	2	16	11	0	2	18
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	6.5	7	7
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	9%	8%
Vol Thru, %	100%	0%	92%
Vol Right, %	0%	91%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	7	11	12
LT Vol	0	1	1
Through Vol	7	0	11
RT Vol	0	10	0
Lane Flow Rate	11	18	19
Geometry Grp	1	1	1
Degree of Util (X)	0.012	0.017	0.021
Departure Headway (Hd)	3.946	3.425	3.957
Convergence, Y/N	Yes	Yes	Yes
Cap	911	1048	909
Service Time	1.951	1.437	1.96
HCM Lane V/C Ratio	0.012	0.017	0.021
HCM Control Delay	7	6.5	7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.1

Capacity Analysis Summary Sheets
Existing Weekday Evening Peak Hour Conditions

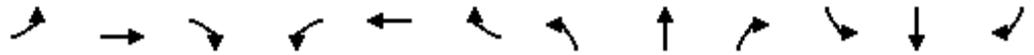
Lanes, Volumes, Timings
1: Elmhurst Road & Hintz Road

03/23/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	256	109	131	869	178	205	538	80	94	627	231
Future Volume (vph)	108	256	109	131	869	178	205	538	80	94	627	231
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)	220		0	145		0	175		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	85			115			80			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Frt		0.955			0.975			0.981				0.960
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3298	0	1770	3491	0	1805	3487	0	1752	3431	0
Flt Permitted	0.090			0.441			0.122			0.387		
Satd. Flow (perm)	171	3298	0	821	3491	0	232	3487	0	714	3431	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			40			40				20
Link Distance (ft)		868			394			1322				411
Travel Time (s)		29.6			6.7			22.5				14.0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	5%	0%	2%	1%	0%	0%	1%	4%	3%	1%	1%
Bus Blockages (#/hr)	0	5	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)	113	381	0	136	1090	0	214	643	0	98	894	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)	9.5	38.0		9.5	35.0		9.5	41.0		9.0	39.0	
Total Split (s)	13.0	51.0		18.0	56.0		21.0	62.0		9.0	50.0	
Total Split (%)	9.3%	36.4%		12.9%	40.0%		15.0%	44.3%		6.4%	35.7%	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	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 Effect Green (s)	55.9	44.2		60.0	46.4		65.9	54.4		52.2	44.2	
Actuated g/C Ratio	0.42	0.33		0.45	0.34		0.49	0.40		0.39	0.33	

Lanes, Volumes, Timings
1: Elmhurst Road & Hintz Road

03/23/2020

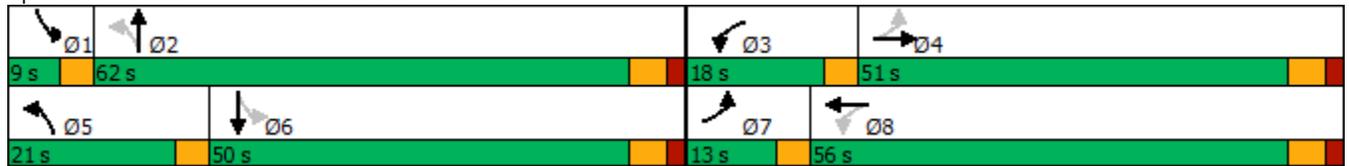


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.62	0.35		0.30	0.91		0.72	0.46		0.31	0.79	
Control Delay	40.0	35.8		23.5	53.6		38.6	31.1		24.1	48.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.0	35.8		23.5	53.6		38.6	31.1		24.1	48.3	
LOS	D	D		C	D		D	C		C	D	
Approach Delay		36.8			50.2			32.9			45.9	
Approach LOS		D			D			C			D	
Queue Length 50th (ft)	57	135		70	486		112	224		48	397	
Queue Length 95th (ft)	#114	187		113	582		197	282		83	483	
Internal Link Dist (ft)		788			314			1242			331	
Turn Bay Length (ft)	220			145			175			200		
Base Capacity (vph)	187	1127		478	1301		318	1455		319	1125	
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	0.60	0.34		0.28	0.84		0.67	0.44		0.31	0.79	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 134.6
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 43.0
 Intersection LOS: D
 Intersection Capacity Utilization 88.4%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Elmhurst Road & Hintz Road



HCM 6th TWSC
2: Maple Lane & Hintz Road

03/23/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	408	18	6	1186	1	12
Future Vol, veh/h	408	18	6	1186	1	12
Conflicting Peds, #/hr	0	5	5	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	96	96	96	96	96	96
Heavy Vehicles, %	4	0	0	1	0	8
Mvmt Flow	425	19	6	1235	1	13

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	449	0	1070	227
Stage 1	-	-	-	-	440	-
Stage 2	-	-	-	-	630	-
Critical Hdwy	-	-	4.1	-	6.8	7.06
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.38
Pot Cap-1 Maneuver	-	-	1122	-	219	758
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	498	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1117	-	214	754
Mov Cap-2 Maneuver	-	-	-	-	344	-
Stage 1	-	-	-	-	608	-
Stage 2	-	-	-	-	498	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	691	-	-	1117	-
HCM Lane V/C Ratio	0.02	-	-	0.006	-
HCM Control Delay (s)	10.3	-	-	8.2	0.1
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC
3: Elmhurst Road & Prospect Drive

03/23/2020

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↕		↔	↕
Traffic Vol, veh/h	6	4	797	8	4	814
Future Vol, veh/h	6	4	797	8	4	814
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	110	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	7	4	886	9	4	904

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1351	448	0	0	895
Stage 1	891	-	-	-	-
Stage 2	460	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	144	564	-	-	767
Stage 1	366	-	-	-	-
Stage 2	608	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	143	564	-	-	767
Mov Cap-2 Maneuver	267	-	-	-	-
Stage 1	364	-	-	-	-
Stage 2	608	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	338	767
HCM Lane V/C Ratio	-	-	0.033	0.006
HCM Control Delay (s)	-	-	16	9.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 6th TWSC
4: Elmhurst Road & Stonegate Drive

03/23/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	4	8	10	801	804	16
Future Vol, veh/h	4	8	10	801	804	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	45	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	20	1	1	6
Mvmt Flow	4	9	11	890	893	18

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1369	456	911	0	-	0
Stage 1	902	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.5	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.4	-	-	-
Pot Cap-1 Maneuver	140	557	641	-	-	-
Stage 1	361	-	-	-	-	-
Stage 2	603	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	138	557	641	-	-	-
Mov Cap-2 Maneuver	260	-	-	-	-	-
Stage 1	355	-	-	-	-	-
Stage 2	603	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	641	-	403	-	-
HCM Lane V/C Ratio	0.017	-	0.033	-	-
HCM Control Delay (s)	10.7	-	14.2	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

HCM 6th TWSC
5: Elmhurst Road & Drake Terrace

03/23/2020

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↓		Y	↑↑
Traffic Vol, veh/h	4	0	811	8	4	808
Future Vol, veh/h	4	0	811	8	4	808
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	12	0	1
Mvmt Flow	4	0	901	9	4	898

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1363	455	0	0	910
Stage 1	906	-	-	-	-
Stage 2	457	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	141	558	-	-	757
Stage 1	359	-	-	-	-
Stage 2	610	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	140	558	-	-	757
Mov Cap-2 Maneuver	263	-	-	-	-
Stage 1	357	-	-	-	-
Stage 2	610	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	263	757
HCM Lane V/C Ratio	-	-	0.017	0.006
HCM Control Delay (s)	-	-	18.9	9.8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 6th AWSC
6: Maple Lane & Eleanor Drive

03/23/2020

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	6	3	0	5	6
Future Vol, veh/h	3	6	3	0	5	6
Peak Hour Factor	0.52	0.52	0.52	0.52	0.52	0.52
Heavy Vehicles, %	33	17	0	0	0	0
Mvmt Flow	6	12	6	0	10	12
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.3	7	7.1
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	33%	45%
Vol Thru, %	100%	0%	55%
Vol Right, %	0%	67%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	3	9	11
LT Vol	0	3	5
Through Vol	3	0	6
RT Vol	0	6	0
Lane Flow Rate	6	17	21
Geometry Grp	1	1	1
Degree of Util (X)	0.006	0.02	0.024
Departure Headway (Hd)	3.946	4.175	4.025
Convergence, Y/N	Yes	Yes	Yes
Cap	909	860	892
Service Time	1.96	2.186	2.035
HCM Lane V/C Ratio	0.007	0.02	0.024
HCM Control Delay	7	7.3	7.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.1

Capacity Analysis Summary Sheets
No-Build Weekday Morning Peak Hour Conditions

Lanes, Volumes, Timings
1: Elmhurst Road & Hintz Road

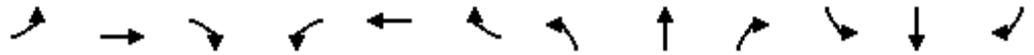
05/18/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	961	141	57	272	155	127	605	159	256	474	87
Future Volume (vph)	177	961	141	57	272	155	127	605	159	256	474	87
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)	220		0	145		0	175		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	85			115			80			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99		1.00	1.00		1.00	1.00	
Frt		0.981			0.946			0.969			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3429	0	1543	3098	0	1736	3360	0	1719	3371	0
Flt Permitted	0.340			0.105			0.331			0.104		
Satd. Flow (perm)	633	3429	0	171	3098	0	603	3360	0	188	3371	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			40			40			20	
Link Distance (ft)		868			394			1322			411	
Travel Time (s)		29.6			6.7			22.5			14.0	
Confl. Peds. (#/hr)	3					3	10		3	3		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	17%	14%	2%	4%	4%	3%	5%	4%	6%
Bus Blockages (#/hr)	0	5	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)	208	1297	0	67	502	0	149	899	0	301	660	0
Turn Type	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)	7.0	38.0		9.5	35.0		9.5	41.0		9.5	39.0	
Total Split (s)	15.0	50.0		10.0	45.0		13.0	41.0		19.0	47.0	
Total Split (%)	12.5%	41.7%		8.3%	37.5%		10.8%	34.2%		15.8%	39.2%	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag										
Lead-Lag Optimize?	Yes	Yes										
Recall Mode	None	None										
Act Effect Green (s)	54.4	44.1		46.2	37.3		46.6	35.0		56.6	41.5	
Actuated g/C Ratio	0.46	0.37		0.39	0.32		0.39	0.30		0.48	0.35	

Lanes, Volumes, Timings
 1: Elmhurst Road & Hintz Road

05/18/2020

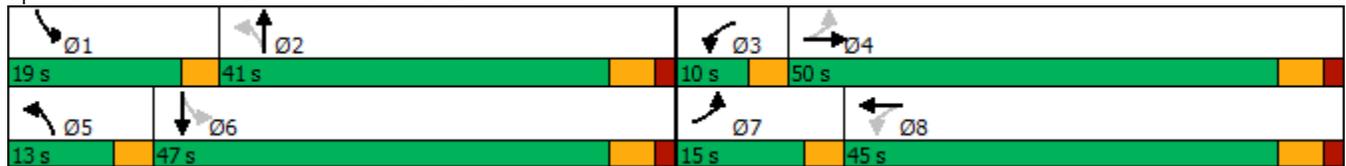


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.52	1.01		0.48	0.51		0.46	0.90		1.03	0.56	
Control Delay	24.4	65.9		29.8	35.0		23.6	53.4		93.8	33.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.4	65.9		29.8	35.0		23.6	53.4		93.8	33.6	
LOS	C	E		C	D		C	D		F	C	
Approach Delay		60.1			34.4			49.2			52.5	
Approach LOS		E			C			D			D	
Queue Length 50th (ft)	94	-566		28	164		65	354		-201	218	
Queue Length 95th (ft)	137	#635		52	203		101	#416		#344	260	
Internal Link Dist (ft)		788			314			1242			331	
Turn Bay Length (ft)	220			145			175			200		
Base Capacity (vph)	403	1280		142	1024		331	998		291	1184	
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	0.52	1.01		0.47	0.49		0.45	0.90		1.03	0.56	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 118
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.03
 Intersection Signal Delay: 51.9
 Intersection LOS: D
 Intersection Capacity Utilization 87.1%
 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: 1: Elmhurst Road & Hintz Road



HCM 6th TWSC
2: Maple Lane & Hintz Road

05/18/2020

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	1367	7	1	470	5	17
Future Vol, veh/h	1367	7	1	470	5	17
Conflicting Peds, #/hr	0	1	1	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	85	85	85	85	85	85
Heavy Vehicles, %	2	29	0	12	0	12
Mvmt Flow	1608	8	1	553	6	20

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1617	0	1892
Stage 1	-	-	-	-	1613
Stage 2	-	-	-	-	279
Critical Hdwy	-	-	4.1	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	408	-	63
Stage 1	-	-	-	-	152
Stage 2	-	-	-	-	749
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	408	-	63
Mov Cap-2 Maneuver	-	-	-	-	128
Stage 1	-	-	-	-	151
Stage 2	-	-	-	-	749

Approach	EB	WB	NB
HCM Control Delay, s	0	0	22.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	231	-	-	408	-
HCM Lane V/C Ratio	0.112	-	-	0.003	-
HCM Control Delay (s)	22.5	-	-	13.8	0
HCM Lane LOS	C	-	-	B	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

HCM 6th TWSC
3: Elmhurst Road & Prospect Drive

05/18/2020

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	9	868	6	2	686
Future Vol, veh/h	14	9	868	6	2	686
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	110	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	11	4	0	0	6
Mvmt Flow	16	10	986	7	2	780

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1385	497	0	0	993
Stage 1	990	-	-	-	-
Stage 2	395	-	-	-	-
Critical Hdwy	6.8	7.12	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.41	-	-	2.2
Pot Cap-1 Maneuver	137	495	-	-	704
Stage 1	325	-	-	-	-
Stage 2	656	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	136	495	-	-	704
Mov Cap-2 Maneuver	250	-	-	-	-
Stage 1	324	-	-	-	-
Stage 2	655	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	310	704
HCM Lane V/C Ratio	-	-	0.084	0.003
HCM Control Delay (s)	-	-	17.7	10.1
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.3	0

HCM 6th TWSC
4: Elmhurst Road & Stonegate Drive

05/18/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	10	17	3	864	697	3
Future Vol, veh/h	10	17	3	864	697	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	45	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	12	33	4	6	33
Mvmt Flow	11	19	3	971	783	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1277	393	786	0	-	0
Stage 1	785	-	-	-	-	-
Stage 2	492	-	-	-	-	-
Critical Hdwy	6.8	7.14	4.76	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.42	2.53	-	-	-
Pot Cap-1 Maneuver	161	579	655	-	-	-
Stage 1	415	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	160	579	655	-	-	-
Mov Cap-2 Maneuver	291	-	-	-	-	-
Stage 1	413	-	-	-	-	-
Stage 2	586	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	655	-	424	-	-
HCM Lane V/C Ratio	0.005	-	0.072	-	-
HCM Control Delay (s)	10.5	-	14.1	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM 6th TWSC
5: Elmhurst Road & Drake Terrace

05/18/2020

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑↓		↔	↑↑
Traffic Vol, veh/h	6	4	863	5	1	713
Future Vol, veh/h	6	4	863	5	1	713
Conflicting Peds, #/hr	0	2	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	25	4	40	0	6
Mvmt Flow	7	4	970	6	1	801

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1378	492	0	0	978	0
Stage 1	975	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Critical Hdwy	6.8	7.4	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.55	-	-	2.2	-
Pot Cap-1 Maneuver	138	466	-	-	714	-
Stage 1	331	-	-	-	-	-
Stage 2	649	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	138	464	-	-	713	-
Mov Cap-2 Maneuver	253	-	-	-	-	-
Stage 1	330	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	309	713
HCM Lane V/C Ratio	-	-	0.036	0.002
HCM Control Delay (s)	-	-	17.1	10.1
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 6th AWSC
6: Maple Lane & Eleanor Drive

05/18/2020

Intersection	
Intersection Delay, s/veh	6.8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	10	7	0	1	11
Future Vol, veh/h	1	10	7	0	1	11
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles, %	0	20	0	0	0	18
Mvmt Flow	2	16	11	0	2	18
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	6.5	7	7
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	9%	8%
Vol Thru, %	100%	0%	92%
Vol Right, %	0%	91%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	7	11	12
LT Vol	0	1	1
Through Vol	7	0	11
RT Vol	0	10	0
Lane Flow Rate	11	18	19
Geometry Grp	1	1	1
Degree of Util (X)	0.012	0.017	0.021
Departure Headway (Hd)	3.946	3.425	3.957
Convergence, Y/N	Yes	Yes	Yes
Cap	911	1048	909
Service Time	1.951	1.437	1.96
HCM Lane V/C Ratio	0.012	0.017	0.021
HCM Control Delay	7	6.5	7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.1

Capacity Analysis Summary Sheets
No-Build Weekday Evening Peak Hour Conditions

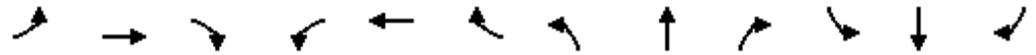
Lanes, Volumes, Timings
1: Elmhurst Road & Hintz Road

05/18/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	270	117	140	915	187	217	570	85	99	663	243
Future Volume (vph)	114	270	117	140	915	187	217	570	85	99	663	243
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)	220		0	145		0	175		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	85			115			80			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Frt		0.955			0.975			0.980				0.960
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3298	0	1770	3491	0	1805	3483	0	1752	3431	0
Flt Permitted	0.087			0.422			0.093			0.361		
Satd. Flow (perm)	165	3298	0	786	3491	0	177	3483	0	666	3431	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			40			40				20
Link Distance (ft)		868			394			1322				411
Travel Time (s)		29.6			6.7			22.5				14.0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	5%	0%	2%	1%	0%	0%	1%	4%	3%	1%	1%
Bus Blockages (#/hr)	0	5	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)	119	403	0	146	1148	0	226	683	0	103	944	0
Turn Type	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)	9.5	38.0		9.5	35.0		9.5	41.0		9.0	39.0	
Total Split (s)	13.0	51.0		18.0	56.0		21.0	62.0		9.0	50.0	
Total Split (%)	9.3%	36.4%		12.9%	40.0%		15.0%	44.3%		6.4%	35.7%	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag										
Lead-Lag Optimize?	Yes	Yes										
Recall Mode	None	None										
Act Effect Green (s)	57.7	45.9		62.2	48.4		66.5	55.0		52.1	44.1	
Actuated g/C Ratio	0.42	0.33		0.45	0.35		0.48	0.40		0.38	0.32	

Lanes, Volumes, Timings
1: Elmhurst Road & Hintz Road

05/18/2020

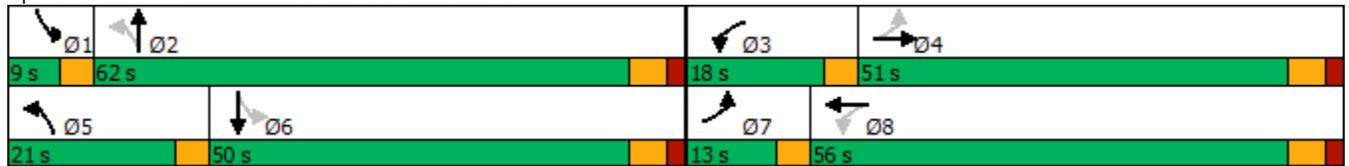


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.66	0.37		0.33	0.93		0.81	0.49		0.35	0.86	
Control Delay	43.9	36.3		23.8	57.0		53.0	32.3		25.5	53.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	43.9	36.3		23.8	57.0		53.0	32.3		25.5	53.1	
LOS	D	D		C	E		D	C		C	D	
Approach Delay		38.0			53.3			37.5			50.4	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	61	145		76	525		139	242		51	428	
Queue Length 95th (ft)	#134	197		121	#661		#264	301		86	#520	
Internal Link Dist (ft)		788			314			1242			331	
Turn Bay Length (ft)	220			145			175			200		
Base Capacity (vph)	183	1116		468	1273		293	1423		296	1102	
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	0.65	0.36		0.31	0.90		0.77	0.48		0.35	0.86	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 137.2
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 46.6
 Intersection LOS: D
 Intersection Capacity Utilization 92.4%
 ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Elmhurst Road & Hintz Road



HCM 6th TWSC
2: Maple Lane & Hintz Road

05/18/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	↑
Traffic Vol, veh/h	430	18	7	1251	1	13
Future Vol, veh/h	430	18	7	1251	1	13
Conflicting Peds, #/hr	0	5	5	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	96	96	96	96	96	96
Heavy Vehicles, %	4	0	0	1	0	8
Mvmt Flow	448	19	7	1303	1	14

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	472	0	1129
Stage 1	-	-	-	-	463
Stage 2	-	-	-	-	666
Critical Hdwy	-	-	4.1	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1100	-	201
Stage 1	-	-	-	-	606
Stage 2	-	-	-	-	478
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1095	-	195
Mov Cap-2 Maneuver	-	-	-	-	326
Stage 1	-	-	-	-	589
Stage 2	-	-	-	-	478

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	678	-	-	1095	-
HCM Lane V/C Ratio	0.022	-	-	0.007	-
HCM Control Delay (s)	10.4	-	-	8.3	0.1
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC
3: Elmhurst Road & Prospect Drive

05/18/2020

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↕		↔	↕
Traffic Vol, veh/h	6	4	845	8	4	864
Future Vol, veh/h	6	4	845	8	4	864
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	110	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	7	4	939	9	4	960

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1432	474	0	0	948
Stage 1	944	-	-	-	-
Stage 2	488	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	127	542	-	-	732
Stage 1	343	-	-	-	-
Stage 2	588	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	126	542	-	-	732
Mov Cap-2 Maneuver	249	-	-	-	-
Stage 1	341	-	-	-	-
Stage 2	588	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	318	732
HCM Lane V/C Ratio	-	-	0.035	0.006
HCM Control Delay (s)	-	-	16.7	9.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 6th TWSC
4: Elmhurst Road & Stonegate Drive

05/18/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	8	10	849	854	16
Future Vol, veh/h	4	8	10	849	854	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	45	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	20	1	1	6
Mvmt Flow	4	9	11	943	949	18

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1452	484	967	0	-	0
Stage 1	958	-	-	-	-	-
Stage 2	494	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.5	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.4	-	-	-
Pot Cap-1 Maneuver	124	534	608	-	-	-
Stage 1	338	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	122	534	608	-	-	-
Mov Cap-2 Maneuver	242	-	-	-	-	-
Stage 1	332	-	-	-	-	-
Stage 2	584	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	608	-	381	-	-
HCM Lane V/C Ratio	0.018	-	0.035	-	-
HCM Control Delay (s)	11	-	14.8	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

HCM 6th TWSC
5: Elmhurst Road & Drake Terrace

05/18/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	5	854	13	11	851
Future Vol, veh/h	8	5	854	13	11	851
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	12	0	1
Mvmt Flow	9	6	949	14	12	946

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1453	482	0	0	963
Stage 1	956	-	-	-	-
Stage 2	497	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	123	536	-	-	723
Stage 1	339	-	-	-	-
Stage 2	582	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	121	536	-	-	723
Mov Cap-2 Maneuver	242	-	-	-	-
Stage 1	333	-	-	-	-
Stage 2	582	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.3	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	307	723
HCM Lane V/C Ratio	-	-	0.047	0.017
HCM Control Delay (s)	-	-	17.3	10.1
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.1	0.1

HCM 6th AWSC
6: Maple Lane & Eleanor Drive

05/18/2020

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	7	3	0	6	6
Future Vol, veh/h	3	7	3	0	6	6
Peak Hour Factor	0.52	0.52	0.52	0.52	0.52	0.52
Heavy Vehicles, %	33	17	0	0	0	0
Mvmt Flow	6	13	6	0	12	12
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.3	7	7.2
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	30%	50%
Vol Thru, %	100%	0%	50%
Vol Right, %	0%	70%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	3	10	12
LT Vol	0	3	6
Through Vol	3	0	6
RT Vol	0	7	0
Lane Flow Rate	6	19	23
Geometry Grp	1	1	1
Degree of Util (X)	0.006	0.022	0.026
Departure Headway (Hd)	3.951	4.152	4.038
Convergence, Y/N	Yes	Yes	Yes
Cap	908	865	890
Service Time	1.965	2.163	2.048
HCM Lane V/C Ratio	0.007	0.022	0.026
HCM Control Delay	7	7.3	7.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.1

Capacity Analysis Summary Sheets
Projected Weekday Morning Peak Hour Conditions

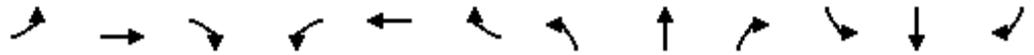
Lanes, Volumes, Timings
1: Elmhurst Road & Hintz Road

05/18/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	961	142	58	272	155	131	612	160	256	476	87
Future Volume (vph)	177	961	142	58	272	155	131	612	160	256	476	87
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)	220		0	145		0	175		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	85			115			80			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99		1.00	1.00		1.00	1.00	
Frt		0.981			0.946			0.969			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3429	0	1543	3098	0	1736	3360	0	1719	3371	0
Flt Permitted	0.340			0.105			0.330			0.104		
Satd. Flow (perm)	633	3429	0	171	3098	0	601	3360	0	188	3371	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			40			40			20	
Link Distance (ft)		868			394			1322			411	
Travel Time (s)		29.6			6.7			22.5			14.0	
Confl. Peds. (#/hr)	3					3	10		3	3		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	17%	14%	2%	4%	4%	3%	5%	4%	6%
Bus Blockages (#/hr)	0	5	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)	208	1298	0	68	502	0	154	908	0	301	662	0
Turn Type	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)	7.0	38.0		9.5	35.0		9.5	41.0		9.5	39.0	
Total Split (s)	15.0	50.0		10.0	45.0		13.0	41.0		19.0	47.0	
Total Split (%)	12.5%	41.7%		8.3%	37.5%		10.8%	34.2%		15.8%	39.2%	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag										
Lead-Lag Optimize?	Yes	Yes										
Recall Mode	None	None										
Act Effect Green (s)	54.4	44.1		46.2	37.3		46.6	35.0		56.6	41.5	
Actuated g/C Ratio	0.46	0.37		0.39	0.32		0.39	0.30		0.48	0.35	

Lanes, Volumes, Timings
1: Elmhurst Road & Hintz Road

05/18/2020

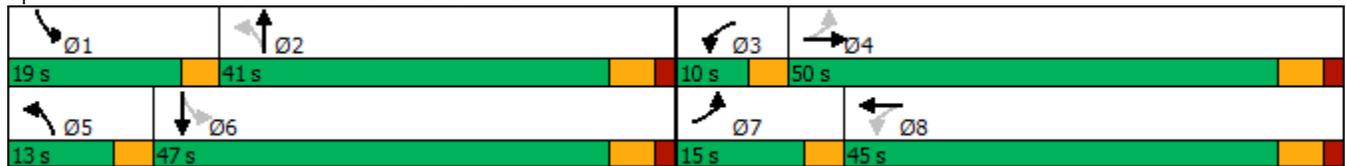


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.52	1.01		0.49	0.51		0.47	0.91		1.03	0.56	
Control Delay	24.4	66.1		30.1	35.0		24.1	54.4		93.8	33.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.4	66.1		30.1	35.0		24.1	54.4		93.8	33.7	
LOS	C	E		C	D		C	D		F	C	
Approach Delay		60.3			34.4			50.0			52.4	
Approach LOS		E			C			D			D	
Queue Length 50th (ft)	94	-567		28	164		67	359		-201	220	
Queue Length 95th (ft)	137	#637		52	203		104	#434		#344	261	
Internal Link Dist (ft)		788			314			1242			331	
Turn Bay Length (ft)	220			145			175			200		
Base Capacity (vph)	403	1280		142	1024		331	998		291	1184	
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	0.52	1.01		0.48	0.49		0.47	0.91		1.03	0.56	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 118
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.03
 Intersection Signal Delay: 52.2
 Intersection LOS: D
 Intersection Capacity Utilization 87.4%
 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: 1: Elmhurst Road & Hintz Road



HCM 6th TWSC
2: Maple Lane & Hintz Road

05/18/2020

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	1368	7	2	471	5	21
Future Vol, veh/h	1368	7	2	471	5	21
Conflicting Peds, #/hr	0	1	1	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	85	85	85	85	85	85
Heavy Vehicles, %	2	29	0	12	0	10
Mvmt Flow	1609	8	2	554	6	25

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1618	0	1895
Stage 1	-	-	-	-	1614
Stage 2	-	-	-	-	281
Critical Hdwy	-	-	4.1	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	408	-	63
Stage 1	-	-	-	-	151
Stage 2	-	-	-	-	747
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	408	-	62
Mov Cap-2 Maneuver	-	-	-	-	128
Stage 1	-	-	-	-	150
Stage 2	-	-	-	-	747

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	22
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	242	-	-	408	-
HCM Lane V/C Ratio	0.126	-	-	0.006	-
HCM Control Delay (s)	22	-	-	13.9	0
HCM Lane LOS	C	-	-	B	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

HCM 6th TWSC
 3: Elmhurst Road & Prospect Drive

05/18/2020

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑↓		↔	↑↑
Traffic Vol, veh/h	14	9	880	6	2	690
Future Vol, veh/h	14	9	880	6	2	690
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	110	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	11	4	0	0	6
Mvmt Flow	16	10	1000	7	2	784

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1401	504	0	0	1007
Stage 1	1004	-	-	-	-
Stage 2	397	-	-	-	-
Critical Hdwy	6.8	7.12	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.41	-	-	2.2
Pot Cap-1 Maneuver	134	490	-	-	696
Stage 1	320	-	-	-	-
Stage 2	654	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	133	490	-	-	696
Mov Cap-2 Maneuver	246	-	-	-	-
Stage 1	319	-	-	-	-
Stage 2	653	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	306	696
HCM Lane V/C Ratio	-	-	0.085	0.003
HCM Control Delay (s)	-	-	17.9	10.2
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.3	0

HCM 6th TWSC
4: Elmhurst Road & Stonegate Drive

05/18/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	10	17	3	876	701	3
Future Vol, veh/h	10	17	3	876	701	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	45	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	12	33	4	6	33
Mvmt Flow	11	19	3	984	788	3

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1288	396	791	0	0
Stage 1	790	-	-	-	-
Stage 2	498	-	-	-	-
Critical Hdwy	6.8	7.14	4.76	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.42	2.53	-	-
Pot Cap-1 Maneuver	158	576	652	-	-
Stage 1	413	-	-	-	-
Stage 2	582	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	157	576	652	-	-
Mov Cap-2 Maneuver	288	-	-	-	-
Stage 1	411	-	-	-	-
Stage 2	582	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	652	-	420	-	-
HCM Lane V/C Ratio	0.005	-	0.072	-	-
HCM Control Delay (s)	10.6	-	14.2	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM 6th TWSC
5: Elmhurst Road & Drake Terrace

05/18/2020

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑↓		↔	↑↑
Traffic Vol, veh/h	16	16	863	8	5	713
Future Vol, veh/h	16	16	863	8	5	713
Conflicting Peds, #/hr	0	2	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	6	4	25	0	6
Mvmt Flow	18	18	970	9	6	801

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1390	494	0	0	981
Stage 1	977	-	-	-	-
Stage 2	413	-	-	-	-
Critical Hdwy	6.8	7.02	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.36	-	-	2.2
Pot Cap-1 Maneuver	136	510	-	-	712
Stage 1	330	-	-	-	-
Stage 2	642	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	135	508	-	-	711
Mov Cap-2 Maneuver	250	-	-	-	-
Stage 1	327	-	-	-	-
Stage 2	642	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	335	711
HCM Lane V/C Ratio	-	-	0.107	0.008
HCM Control Delay (s)	-	-	17	10.1
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.4	0

HCM 6th AWSC
6: Maple Lane & Eleanor Drive

05/18/2020

Intersection	
Intersection Delay, s/veh	6.8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	14	7	0	2	11
Future Vol, veh/h	1	14	7	0	2	11
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles, %	0	14	0	0	0	18
Mvmt Flow	2	23	11	0	3	18
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	6.5	7	7.1
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	7%	15%
Vol Thru, %	100%	0%	85%
Vol Right, %	0%	93%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	7	15	13
LT Vol	0	1	2
Through Vol	7	0	11
RT Vol	0	14	0
Lane Flow Rate	11	24	21
Geometry Grp	1	1	1
Degree of Util (X)	0.012	0.023	0.023
Departure Headway (Hd)	3.959	3.41	3.983
Convergence, Y/N	Yes	Yes	Yes
Cap	908	1053	904
Service Time	1.965	1.421	1.986
HCM Lane V/C Ratio	0.012	0.023	0.023
HCM Control Delay	7	6.5	7.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.1

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	8	1	6	22	4
Future Vol, veh/h	3	8	1	6	22	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	8	1	6	23	4
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.6	7	7.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	85%	0%	14%
Vol Thru, %	0%	27%	86%
Vol Right, %	15%	73%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	26	11	7
LT Vol	22	0	1
Through Vol	0	3	6
RT Vol	4	8	0
Lane Flow Rate	27	12	7
Geometry Grp	1	1	1
Degree of Util (X)	0.03	0.011	0.008
Departure Headway (Hd)	4.01	3.517	3.984
Convergence, Y/N	Yes	Yes	Yes
Cap	897	1020	901
Service Time	2.014	1.529	1.997
HCM Lane V/C Ratio	0.03	0.012	0.008
HCM Control Delay	7.1	6.6	7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0	0

Capacity Analysis Summary Sheets
Projected Weekday Evening Peak Hour Conditions

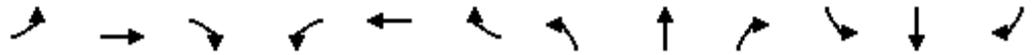
Lanes, Volumes, Timings
1: Elmhurst Road & Hintz Road

05/18/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	270	121	144	915	187	219	574	85	99	670	243
Future Volume (vph)	114	270	121	144	915	187	219	574	85	99	670	243
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)	220		0	145		0	175		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	85			115			80			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Frt		0.954			0.975			0.981				0.960
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3296	0	1770	3491	0	1805	3487	0	1752	3431	0
Flt Permitted	0.087			0.418			0.090			0.359		
Satd. Flow (perm)	165	3296	0	779	3491	0	171	3487	0	662	3431	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			40			40				20
Link Distance (ft)		868			394			1322				411
Travel Time (s)		29.6			6.7			22.5				14.0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	5%	0%	2%	1%	0%	0%	1%	4%	3%	1%	1%
Bus Blockages (#/hr)	0	5	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)	119	407	0	150	1148	0	228	687	0	103	951	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)	9.5	38.0		9.5	35.0		9.5	41.0		9.0	39.0	
Total Split (s)	13.0	51.0		18.0	56.0		21.0	62.0		9.0	50.0	
Total Split (%)	9.3%	36.4%		12.9%	40.0%		15.0%	44.3%		6.4%	35.7%	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	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 Effect Green (s)	57.5	45.8		62.3	48.4		66.6	55.1		52.1	44.1	
Actuated g/C Ratio	0.42	0.33		0.45	0.35		0.49	0.40		0.38	0.32	

Lanes, Volumes, Timings
 1: Elmhurst Road & Hintz Road

05/18/2020

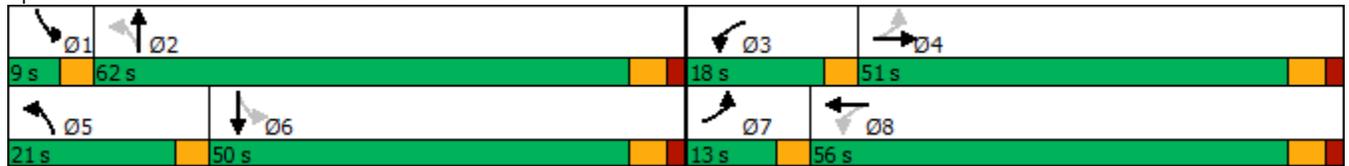


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.66	0.37		0.34	0.93		0.82	0.49		0.35	0.86	
Control Delay	44.0	36.5		24.0	57.1		55.2	32.4		25.6	53.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.0	36.5		24.0	57.1		55.2	32.4		25.6	53.7	
LOS	D	D		C	E		E	C		C	D	
Approach Delay		38.2			53.3			38.1			50.9	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	61	147		78	525		143	244		51	433	
Queue Length 95th (ft)	#134	200		124	#661		#273	303		86	#530	
Internal Link Dist (ft)		788			314			1242			331	
Turn Bay Length (ft)	220			145			175			200		
Base Capacity (vph)	183	1112		466	1272		291	1423		294	1101	
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	0.65	0.37		0.32	0.90		0.78	0.48		0.35	0.86	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 137.3
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 46.9
 Intersection LOS: D
 Intersection Capacity Utilization 92.7%
 ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Elmhurst Road & Hintz Road



HCM 6th TWSC
2: Maple Lane & Hintz Road

05/18/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	↑
Traffic Vol, veh/h	430	18	8	1255	1	16
Future Vol, veh/h	430	18	8	1255	1	16
Conflicting Peds, #/hr	0	5	5	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	96	96	96	96	96	96
Heavy Vehicles, %	4	0	0	1	0	7
Mvmt Flow	448	19	8	1307	1	17

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	472	0	1133
Stage 1	-	-	-	-	463
Stage 2	-	-	-	-	670
Critical Hdwy	-	-	4.1	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1100	-	200
Stage 1	-	-	-	-	606
Stage 2	-	-	-	-	476
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1095	-	194
Mov Cap-2 Maneuver	-	-	-	-	325
Stage 1	-	-	-	-	587
Stage 2	-	-	-	-	476

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	691	-	-	1095	-
HCM Lane V/C Ratio	0.026	-	-	0.008	-
HCM Control Delay (s)	10.3	-	-	8.3	0.1
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC
3: Elmhurst Road & Prospect Drive

05/18/2020

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↗		↑↓		↘↗	↑↑
Traffic Vol, veh/h	6	4	851	8	4	879
Future Vol, veh/h	6	4	851	8	4	879
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	110	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	7	4	946	9	4	977

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1448	478	0	0	955
Stage 1	951	-	-	-	-
Stage 2	497	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	124	539	-	-	728
Stage 1	341	-	-	-	-
Stage 2	582	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	123	539	-	-	728
Mov Cap-2 Maneuver	246	-	-	-	-
Stage 1	339	-	-	-	-
Stage 2	582	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	314	728
HCM Lane V/C Ratio	-	-	0.035	0.006
HCM Control Delay (s)	-	-	16.9	10
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 6th TWSC
4: Elmhurst Road & Stonegate Drive

05/18/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	8	10	855	869	16
Future Vol, veh/h	4	8	10	855	869	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	45	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	20	1	1	6
Mvmt Flow	4	9	11	950	966	18

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1472	492	984	0	-	0
Stage 1	975	-	-	-	-	-
Stage 2	497	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.5	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.4	-	-	-
Pot Cap-1 Maneuver	120	528	598	-	-	-
Stage 1	331	-	-	-	-	-
Stage 2	582	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	118	528	598	-	-	-
Mov Cap-2 Maneuver	237	-	-	-	-	-
Stage 1	325	-	-	-	-	-
Stage 2	582	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	598	-	375	-	-
HCM Lane V/C Ratio	0.019	-	0.036	-	-
HCM Control Delay (s)	11.1	-	15	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

HCM 6th TWSC
5: Elmhurst Road & Drake Terrace

05/18/2020

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↓		Y	↑↑
Traffic Vol, veh/h	15	11	854	23	26	851
Future Vol, veh/h	15	11	854	23	26	851
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	1	0	1
Mvmt Flow	17	12	949	26	29	946

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1493	488	0	0	975
Stage 1	962	-	-	-	-
Stage 2	531	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	116	531	-	-	716
Stage 1	336	-	-	-	-
Stage 2	560	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	111	531	-	-	716
Mov Cap-2 Maneuver	230	-	-	-	-
Stage 1	322	-	-	-	-
Stage 2	560	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.1	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	303	716
HCM Lane V/C Ratio	-	-	0.095	0.04
HCM Control Delay (s)	-	-	18.1	10.2
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.3	0.1

HCM 6th AWSC
6: Maple Lane & Eleanor Drive

05/18/2020

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	10	3	0	7	6
Future Vol, veh/h	3	10	3	0	7	6
Peak Hour Factor	0.52	0.52	0.52	0.52	0.52	0.52
Heavy Vehicles, %	33	11	0	0	0	0
Mvmt Flow	6	19	6	0	13	12
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.2	7	7.2
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	23%	54%
Vol Thru, %	100%	0%	46%
Vol Right, %	0%	77%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	3	13	13
LT Vol	0	3	7
Through Vol	3	0	6
RT Vol	0	10	0
Lane Flow Rate	6	25	25
Geometry Grp	1	1	1
Degree of Util (X)	0.006	0.028	0.028
Departure Headway (Hd)	3.962	4.098	4.055
Convergence, Y/N	Yes	Yes	Yes
Cap	905	876	885
Service Time	1.979	2.112	2.068
HCM Lane V/C Ratio	0.007	0.029	0.028
HCM Control Delay	7	7.2	7.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.1

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Traffic Vol, veh/h	8	37	2	3	18	4
Future Vol, veh/h	8	37	2	3	18	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	0	0	0	0	0
Mvmt Flow	8	39	2	3	19	4
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.7	7.1	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	82%	0%	40%
Vol Thru, %	0%	18%	60%
Vol Right, %	18%	82%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	22	45	5
LT Vol	18	0	2
Through Vol	0	8	3
RT Vol	4	37	0
Lane Flow Rate	23	47	5
Geometry Grp	1	1	1
Degree of Util (X)	0.026	0.046	0.006
Departure Headway (Hd)	4.046	3.503	4.057
Convergence, Y/N	Yes	Yes	Yes
Cap	888	1025	885
Service Time	2.056	1.514	2.07
HCM Lane V/C Ratio	0.026	0.046	0.006
HCM Control Delay	7.2	6.7	7.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.1	0

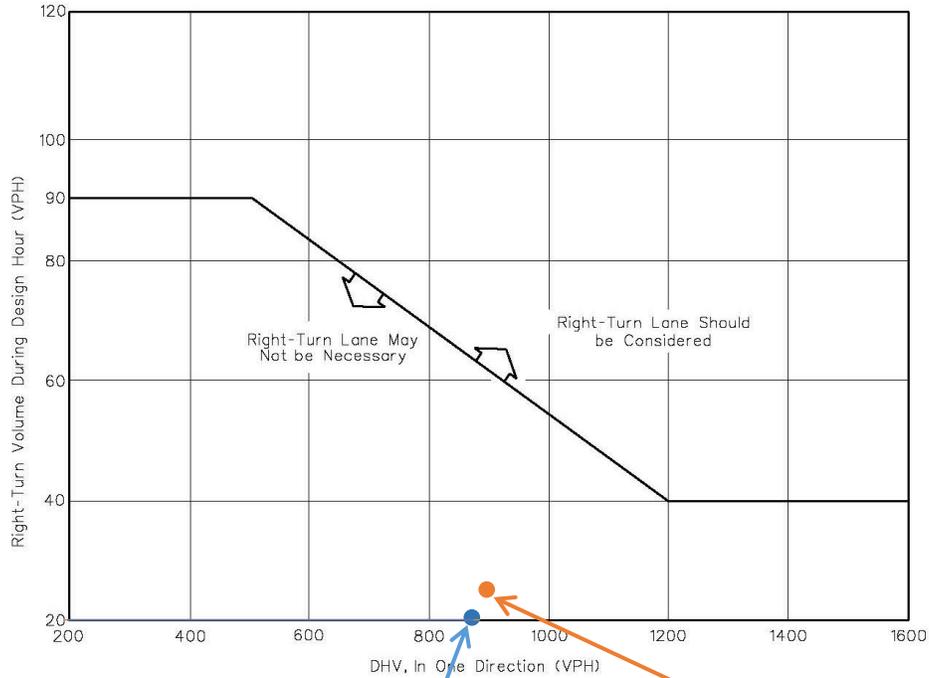
Turn Lane Warrants

Elmhurst Road with Drake Terrace Right Turn Lane Guidelines

Illinois

INTERSECTIONS

October 2015



Note: For speeds less than 50 mph (80 km/hr), see Section 36-3.01(a).

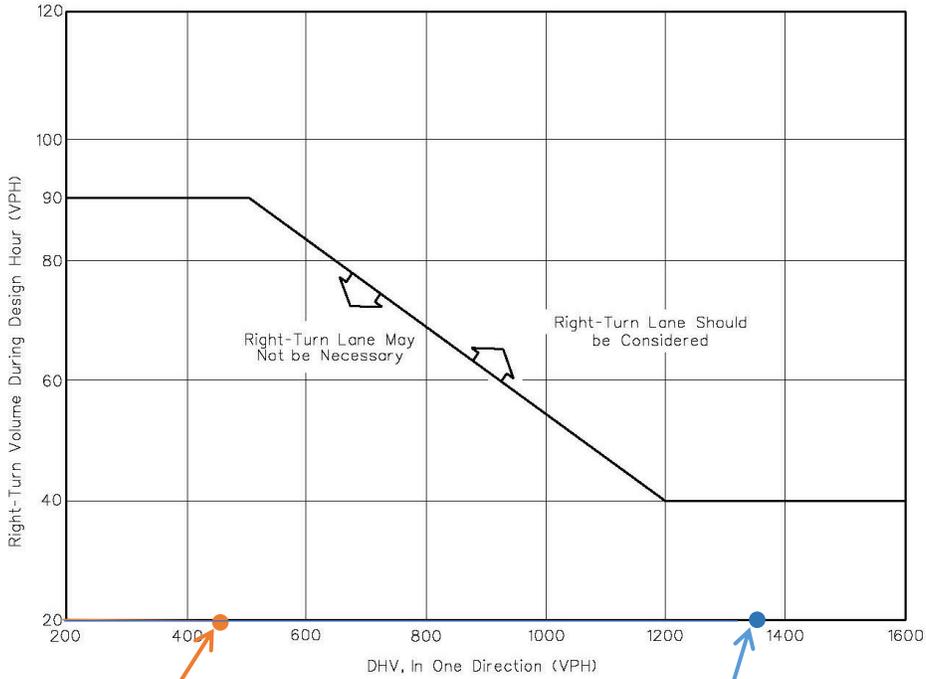
AM Peak Hour:
(871,8)

PM Peak Hour:
(877, 23)

**GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTION
ON FOUR-LANE HIGHWAYS
(Design Speed of 50 mph (80 km/hr) or Greater)**

Figure 36-3.B

Hintz Road with Maple Lane Right Turn Lane Guidelines



Note: For speeds less than 50 mph (80 km/hr), see Section 36-3.01(a).

PM Peak Hour:
(442,18)

AM Peak Hour:
(1358,7)

**GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTION
ON FOUR-LANE HIGHWAYS
(Design Speed of 50 mph (80 km/hr) or Greater)**

Figure 36-3.B