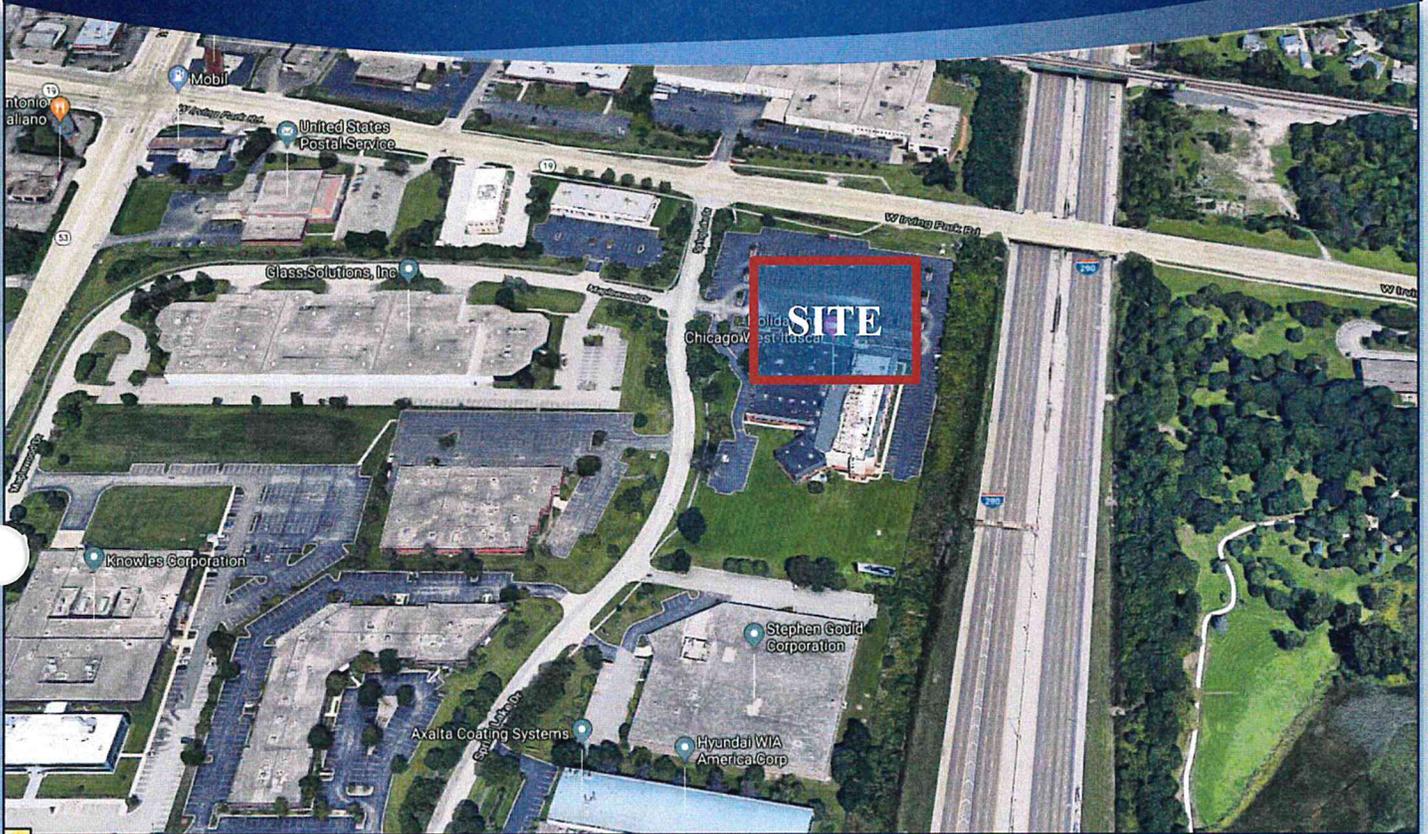


Traffic and Parking Impact Study Proposed Haymarket DuPage

Itasca, Illinois



Prepared For:

Haymarket DuPage

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

August 6, 2020

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I. Executive Summary

Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) conducted a traffic impact and parking study for the proposed Haymarket DuPage development to be located at 860 West Irving Park Road in Itasca, Illinois. The site is located adjacent to the Spring Lakes Business Park and is generally bordered by Irving Park Road (IL 19) to the north, office/industrial to the south, Spring Lake Drive to the west, and Interstate 290 to the east. A Holiday Inn formerly occupied the site and the building will be repurposed to accommodate the proposed development. The site includes approximately 384 parking spaces in a surface lot.

The development plans call for repurposing the existing 161-room hotel building for a health care facility with a range of medical and clinical services for individuals disabled by substance use and behavioral health disorders. The maximum occupancy is 240 total beds, comprised of 96 treatment beds and 144 recovery home beds, and 163 full-time employees plus nine contract food service workers over three shifts. Based on information provided by the operator, the facility anticipates seeing 96 outpatient clients daily with half of them coming from within the recovery home, thus not driving a vehicle and the other half coming to the facility either via their personal vehicle, Uber, taxi, a family member, or public transportation. Furthermore, the Haymarket DuPage will transport patients to doctor appointments, errands, etc. While recovery home patients begin their stay involved in intensive outpatient programming, thus generating little to no traffic, once they complete the outpatient program, they may be leaving during the day to interview for jobs or attend job training programs.

The site will continue to be accessed via the full access drive off Spring Lake Drive opposite Maplewood Drive in addition to the full access points serving the Spring Lakes Business Park, which includes the signalized intersection of Rohlwing Road (IL 53) at Spring Lake Drive, the unsignalized intersection of Spring Lake Drive at Irving Park Road, and the unsignalized intersection of Rohlwing Road at Hawthorn Drive.

Traffic capacity analyses were conducted for the following two conditions:

- *Year 2019 (Existing) Conditions.* This condition analyzes the existing weekday morning and weekday evening peak hours to establish a base condition.
- *Year 2026 Total (Buildout) Conditions.* This condition includes the projection of the existing traffic volumes increased by a compounded regional growth factor of three (3) percent and the traffic estimated to be generated by the proposed development.

Based on the proposed development plan and the traffic capacity analyses for the full buildout of the development, the findings and recommendations of this study are outlined below.

- The proposed development will have a low traffic impact on the surrounding roadway network.
- The signalized access off IL 53 and the two unsignalized access points off both IL 53 and IL 19 that serve the Spring Lakes Business Park and the proposed development will continue to operate at acceptable levels of service during peak hours and no roadway or traffic control improvements are recommended at these intersections in conjunction with the proposed development.
- The existing full access drive off Spring Lake Drive opposite Maplewood Drive that serves the site will continue to be adequate to accommodate the projected traffic estimated to be generated by the proposed redevelopment.
- Based on surveys of an existing similar facility and data provided by the Haymarket DuPage, the existing approximate 384-space parking lot serving the site will be adequate to accommodate the peak parking demand of the proposed development, which will primarily consist of employees.

1. Introduction

A traffic impact and parking study was conducted for the proposed Haymarket DuPage development to be located at 860 West Irving Park Road in Itasca, Illinois. The site is located adjacent to the Spring Lakes Business Park and is generally bordered by Irving Park Road (IL 19) to the north, office/industrial to the south, Spring Lake Drive to the west, and Interstate 290 to the east. A Holiday Inn formerly occupied the site and will be repurposed to accommodate the proposed development. The site includes approximately 384 parking spaces in a surface lot.

The development plans call for repurposing the former 161-room hotel building for a health care facility with a range of medical and clinical services for individuals disabled by substance use and behavioral health disorders. The facility will have 240 client beds, comprised of 96 treatment beds and 144 recovery home beds and 163 full-time employees plus nine contract food service workers over three shifts. The site will continue to be accessed via the full access drive off Spring Lake Drive opposite Maplewood Drive in addition to the full access points serving the Spring Lakes Business Park, which includes the signalized intersection of Rohlwing Road (IL 53) at Spring Lake Drive, the unsignalized intersection of Spring Lake Drive at Irving Park Road, and the unsignalized intersection of Rohlwing Road at Hawthorn Drive.

The sections of this report present the following:

- Existing roadway conditions including vehicle, pedestrian, and bicycle traffic volumes for the weekday morning and weekday evening peak hours
- A description of the proposed development
- Vehicle trip generation for the proposed development
- Directional distribution of development-generated traffic
- Regional growth in traffic for Year 2026 no-build conditions
- Future transportation conditions including access to and from the development
- Parking evaluation

The purpose of this study is as follows:

- Determine the existing vehicular, pedestrian, and bicycle conditions in the study area to establish a base condition.
- Assess the impact that the proposed development will have on transportation conditions in the area.
- Determine any roadway, traffic control, or access improvements that may be necessary to effectively accommodate and mitigate future conditions.
- Determine if the proposed parking supply is adequate to satisfy industry standards/peak parking demand.

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 is located adjacent to the Spring Lakes Business Park, which includes an array of office and light industrial land uses and was formerly occupied by an approximate 161-room Holiday Inn. The building will be repurposed to accommodate the proposed development.

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

Existing Roadway System Characteristics

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

Irving Park Road (IL 19) is a major east-west arterial providing two through lanes in each direction and a center lane allowing left-turn lanes/movements from intersecting roadways in the vicinity of the site. The posted speed limit is 35 mph in the vicinity of Spring Lake Drive. Irving Park Road is served by PACE Bus Route #616. Irving Park Road (IL 19) is under the jurisdiction of the Illinois Department of Transportation (IDOT) and is not designated as a Strategic Regional Arterial (SRA) in the vicinity of the site (IL 19 is designated as an SRA from IL 83 to the west to US 41-Lake Shore Drive to the east). According to IDOT's website, the annual average daily traffic volume (AADT) is 16,000 vehicles.

Rohlwing Road (IL 53) is a north-south arterial providing two through lanes in each direction and a center lane allowing left-turn lanes/movements from intersecting roadways in the vicinity of the site. The posted speed limit is 40 mph in the vicinity of the site. Rohlwing Road is under the jurisdiction of IDOT and is not designated as an SRA. According to IDOT's website, the AADT volume is 17,900 vehicles.

Spring Lake Drive is a two-lane collector roadway that extends south from its unsignalized, intersection terminus with Irving Park Road to its signalized intersection terminus with Rohlwing Road providing access to individual land use sites within the Spring Lakes Business Park in addition to its intersections with Maplewood Drive and Hawthorn Drive. The posted speed limit is 25 mph in the vicinity of the site and parking is restricted on both sides of the roadway. Spring Lake Drive is served by PACE Bus Route #616 and has numerous bus stops for both directions of travel, including at Maplewood Drive which is opposite the full access drive serving the site. Spring Lake Drive is under the jurisdiction of the Village of Itasca.



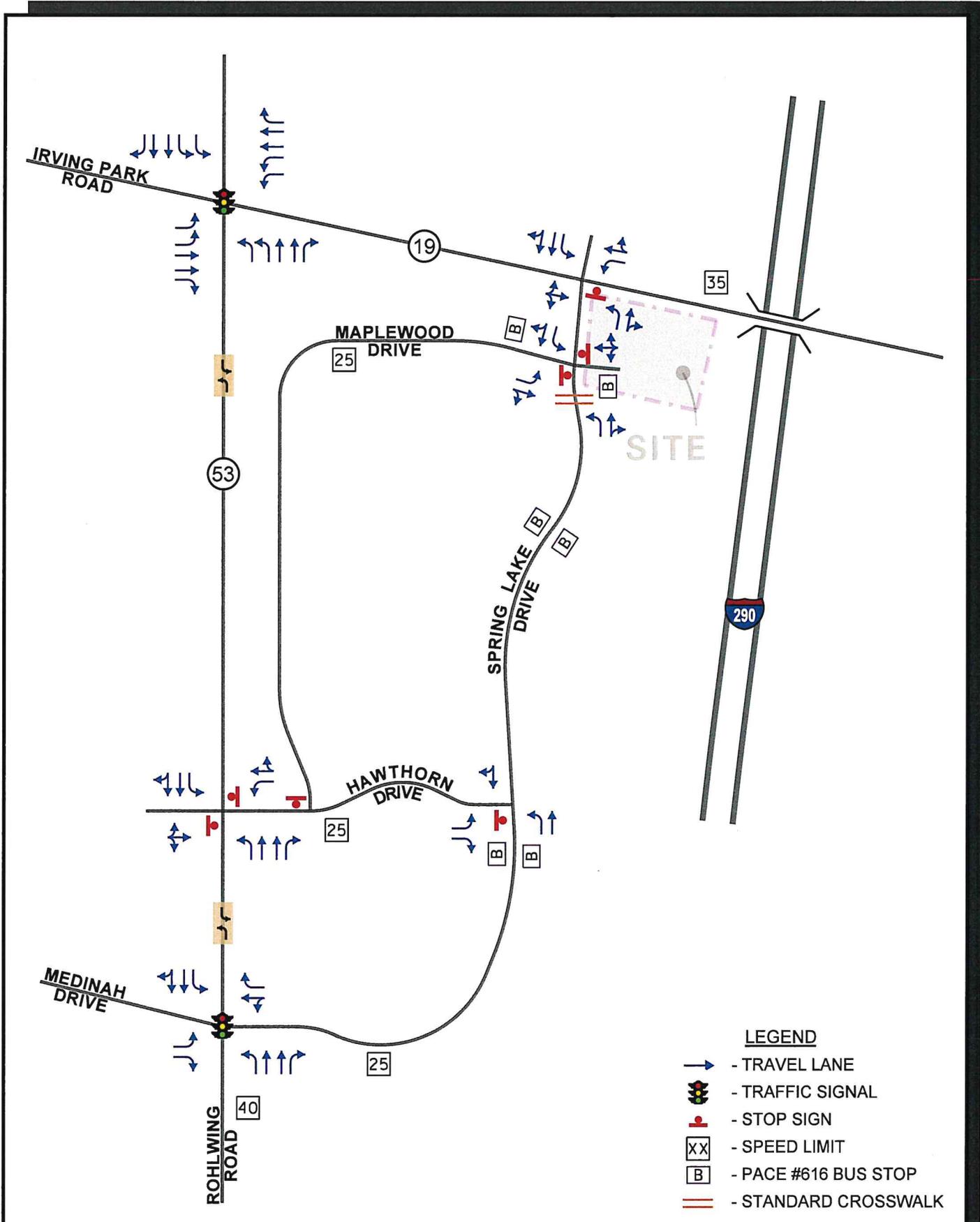
Site Location

Figure 1



Aerial Map

Figure 2



Maplewood Drive is a two-lane roadway that T-intersects Spring Lake Drive from the west opposite the full access drive serving the site and extends west and south to its T-intersection with Hawthorn Drive. The posted speed limit is 25 mph and parking is restricted on both sides of the roadway. Maplewood Drive is under the jurisdiction of the Village of Itasca.

Hawthorn Drive is a two-lane roadway that T-intersects Rohlwing Road from the east and extends east to its T-intersection with Spring Lake Drive. The posted speed limit is 25 mph and parking is restricted on both sides of the roadway. Hawthorn Drive is under the jurisdiction of the Village of Itasca.

Traffic Signal Interconnect

The signalized intersection of Rohlwing Road (IL 53) and Spring Lake Drive/Medinah Drive is part of a nine-signal interconnect system network that extends from Rohlwing Road and Nordic Drive to the south to Rohlwing Road and Interstate 390 Westbound Frontage/Ramps to the north. The intersection of Rohlwing Road and Irving Park Road is the master controller of the network, which operates on a 100-second cycle length during the weekday morning peak hour and 110-second cycle length during the weekday evening peak hour.

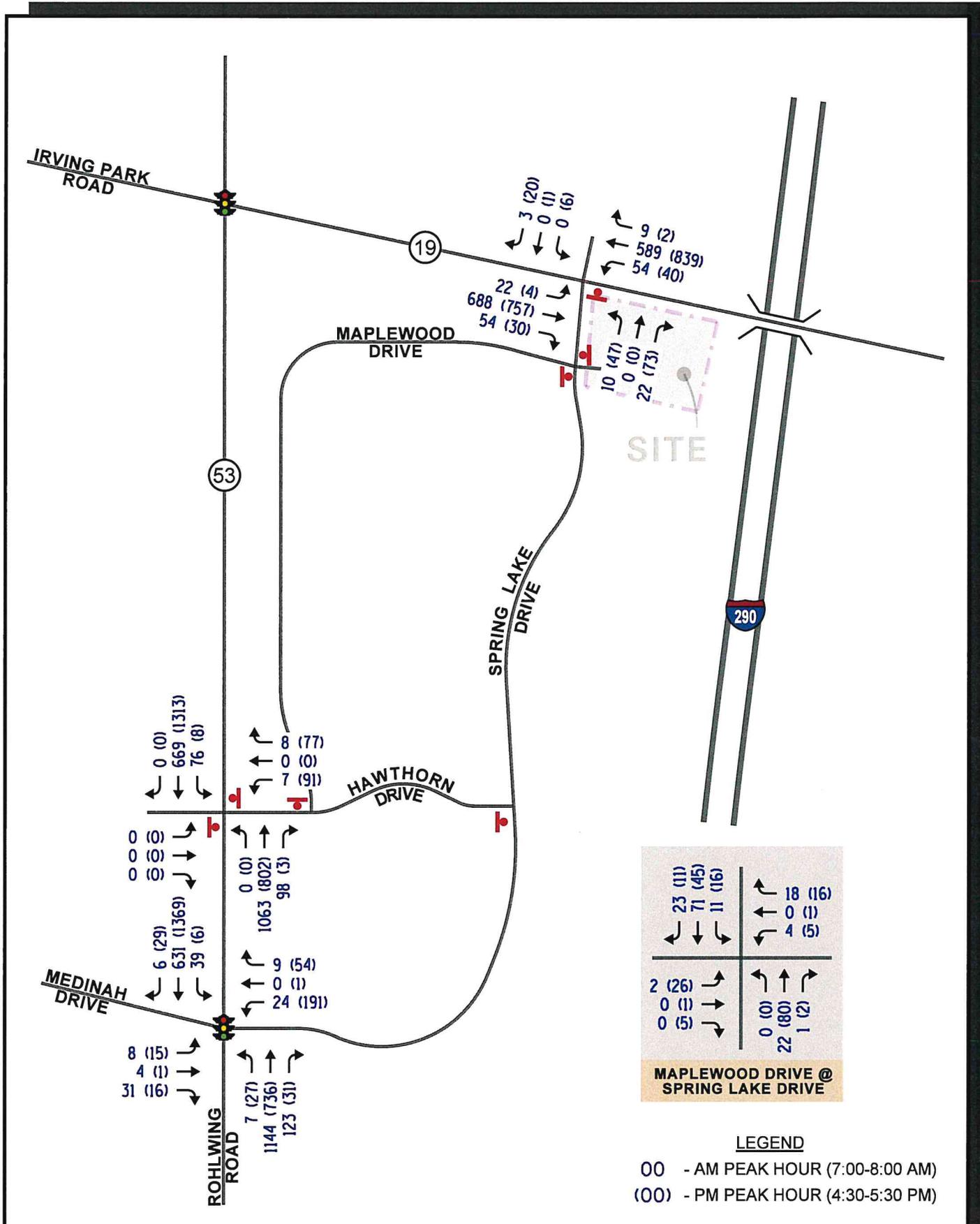
Existing Traffic Volumes

Vehicle, pedestrian, and bicycle movement traffic counts were conducted on Wednesday, May 29, 2019 during the morning (7:00 to 9:00 A.M.) and the evening (4:00 to 6:00 P.M.) peak periods at the following four (4) intersections:

1. Rohlwing Road (IL 53) and Spring Lake Drive/Medinah Drive (signalized)
2. Spring Lake Drive and Irving Park Road (IL 19)
3. Spring Lake Drive and Maplewood Drive/Site Access
4. Rohlwing Road and Hawthorn Drive

From the turning movement count data, it was determined that the weekday morning peak hour generally occurs between 7:00 and 8:00 A.M., and the weekday evening peak hour generally occurs between 4:30 and 5:30 P.M. These two respective peak hours will be used for the traffic capacity analyses and are presented later in this report. Pedestrian and bicycle activity was reported to be very low at the study intersections.

The existing peak hour vehicle traffic volumes are shown in **Figure 4**.



LEGEND
 OO - AM PEAK HOUR (7:00-8:00 AM)
 (OO) - PM PEAK HOUR (4:30-5:30 PM)

Haymarket Center
Itasca, Illinois

Existing Traffic Volumes

Accident Data Analysis

KLOA, Inc. obtained currently available crash data¹ from IDOT for a five-year period (Years 2013 through 2017) for the study area intersections, noted above. The crash data incidents are summarized by year and intersection in **Table 1**.

Table 1
ACCIDENT DATA SUMMARY

Year	Intersection			
	Rohlwing/ Spring Lake	Rohlwing/ Hawthorn	Spring Lake/ Irving Park	Spring Lake/ Maplewood
2013	3	0	1	0
2014	1	0	0	0
2015	3	0	1	0
2016	0	0	0	0
2017	<u>0</u>	<u>0</u>	<u>2</u>	<u>0</u>
Total	7	0	4	0
Average/ Year	<1	<1	<1	<1

¹ IDOT DISCLAIMER: The motor vehicle crash data referenced herein was provided by the Illinois Department of Transportation. The author is responsible for any data analyses and conclusions drawn.

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 respective two peak hours and then determine the directions from which the proposed traffic will approach and depart the site.

Proposed Site and Development Plan

The development plans call for repurposing the former 161-room hotel building for a health care facility with a range of medical and clinical services for individuals disabled by substance use and behavioral health disorders. The facility will have 240 beds, comprised of 96 treatment beds and 144 recovery home beds and 163 full-time employees plus nine contract food service workers over three shifts. The first shift will be from 7:00 A.M. to 3:00 P.M.; the second shift will be from 3:00 P.M. to 11:00 P.M.; and the third shift will be from 11:00 P.M. to 7:00 A.M.

Based on information provided by the operator, the facility anticipates seeing 96 outpatient people daily with half of them from within the recovery home, thus not driving a vehicle and the other half coming to the facility either via their personal vehicle, Uber, taxi, a family member, or public transportation. Furthermore, Haymarket DuPage will provide van/auto transportation for doctor appointments, errands, etc. The assessment and outpatient hours are Monday through Saturday from 9:00 A.M. to 7:00 P.M. While the recovery home patients begin their stay involved in intensive outpatient programming thus generating little to no traffic, once they complete the outpatient program, they may be leaving during the day to interview for jobs or attend job training programs.

The site will continue to be accessed via the full access drive off Spring Lake Drive opposite Maplewood Drive, in addition to the full access points serving the Spring Lakes Business Park. The site includes approximately 384 parking spaces in a surface lot.

Development Access

Access to the development will continue to be accessed via the full access drive off Spring Lake Drive as described below.

Site Access and Spring Lake Drive. The existing, full access drive T-intersects Spring Lake Drive from the east, providing one lane inbound and one lane outbound under stop sign control. The west/fourth leg of the intersection is Maplewood Drive, which provides one acceptance lane and two lanes on the eastbound approach striped to provide a left-turn lane and a shared through/right-turn lane under stop sign control. Spring Lake Drive provides a left-turn lane and a shared through/right-turn lane on both the northbound and southbound approaches.

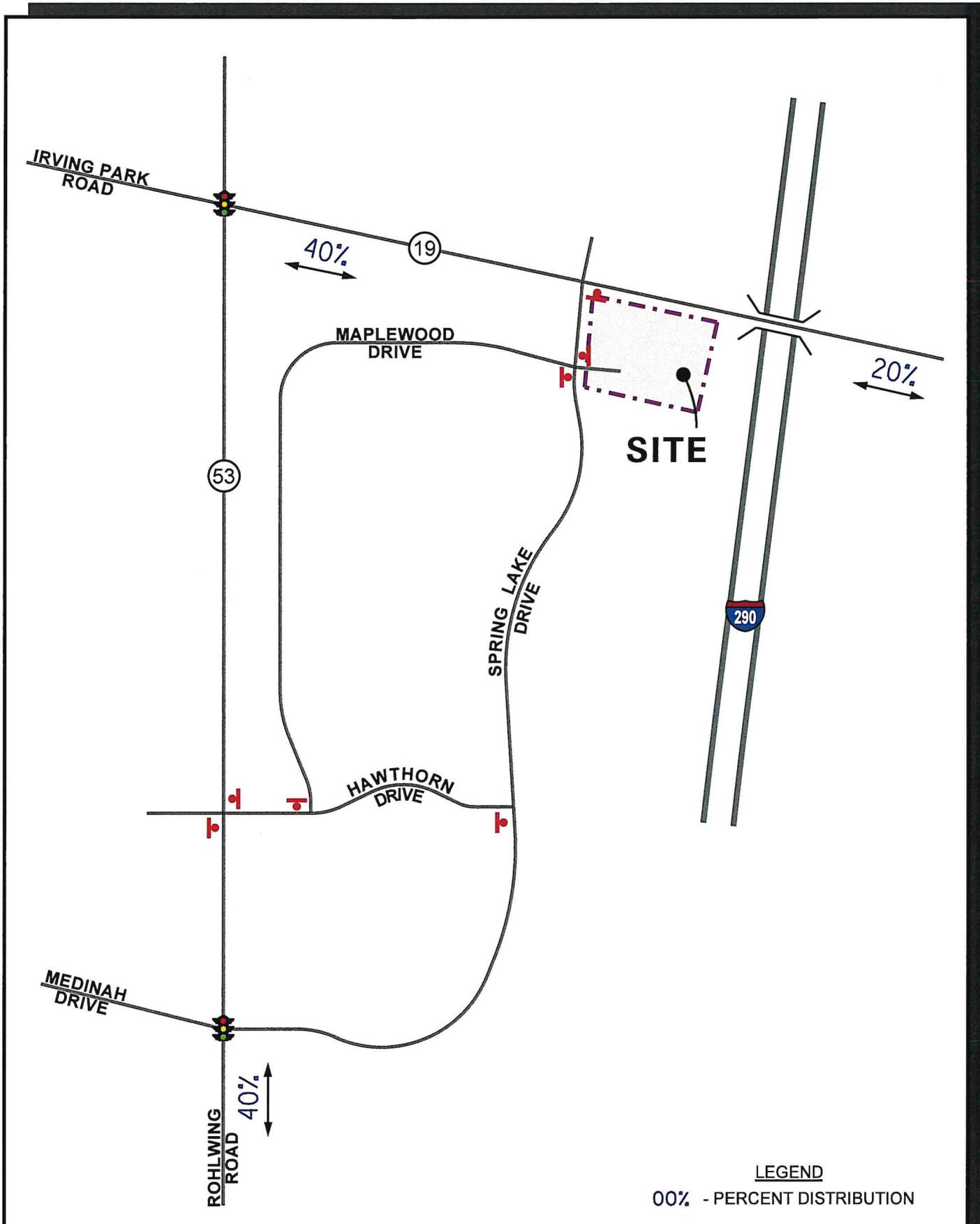
Directional Distribution of Development Traffic

The directional distribution of how traffic will approach and depart the site was estimated based on a combination of existing travel patterns of traffic traversing the study area, the location and types of access points serving the development, and the existing roadway characteristics and traffic controls surrounding the site. The established directional distribution for the proposed development is illustrated in **Figure 5**.

Development Traffic Generation

The estimate of vehicle traffic to be generated by the proposed development is based upon the proposed land use type and size. The vehicle trip generation for the overall development is typically calculated using data published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition. However, given the uniqueness of the proposed land use, lack of data in the Trip Generation Manual and for the purposes of this study, the peak hour and daily traffic data generation was calculated based on information provided by Haymarket DuPage. Based on this information, many of the services provided at the facility as well as visitor and vendor hours, occur outside of the peak hours of traffic, thus having a limited impact on traffic conditions. An Excel document with the information provided by Haymarket DuPage is included in the Appendix.

Table 2 shows the peak hour and daily trip generation of the proposed Haymarket DuPage by employee, visitor, and service type.



Haymarket Center
Itasca, Illinois

Estimated Directional Distribution



Job No: 19-133

Figure: 5

Table 2
ESTIMATED DEVELOPMENT-GENERATED TRAFFIC VOLUMES

Type/Size	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Weekday Daily (Two-Way)	
	In	Out	In	Out	In	Out
Assessment	--	--	1	1	10	10
Outpatient	--	--	5	5	24	24
Recovery Home	7	--	2	1	13	13
Employees	58	29	--	--	117	117
Visitors	--	--	2	2	24	24
Vendors	--	--	--	--	<u>9</u>	<u>9</u>
Total	65	29	10	9	197	197

It should be noted that the above trip generation estimates do not take into account proximity to public transportation. This includes Pace Bus Route 616, which has stops on Spring Lake Road along the site frontage, and the Itasca Metra station, which is located approximately 0.7 miles east of the site (approximately 14 minutes walking distance). The Pace bus route with its connectivity to the Metra station as well as the Rosemont Transit Center will afford the site with excellent access to multiple Pace bus routes and the CTA Blue Line. This will provide alternative modes of transportation which will reduce the trip generation estimates and further minimize the low traffic impact the proposed Haymarket DuPage will have on area roadways.

Table 3 shows a comparison of the estimated number of trips generated by a hotel (based on ITE Land Use Code 310 - Hotel) and the number of trips that will be generated by the proposed development.

Table 3
ESTIMATED TRAFFIC GENERATION COMPARISON

Type/Size	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Weekday Daily (Two-Way)	
	In	Out	In	Out	In	Out
Haymarket DuPage	65	29	10	9	197	197
Former Hotel (161 rooms)	<u>44</u>	<u>31</u>	<u>48</u>	<u>47</u>	<u>695</u>	<u>695</u>
Difference	+21	-2	-38	-38	-498	-498

As can be seen, the proposed development will generate approximately 19 more total (in and out) trips during the morning peak hour, approximately 76 less total trips during the evening peak hour and 996 less total trips on a daily basis than the existing land use in site and as such will overall have a lower impact on area roadways.

4. Projected Traffic Conditions

The total projected traffic volumes include the existing traffic volumes increased by a regional growth rate and the traffic estimated to be generated by the proposed subject development.

Development Traffic Assignment

The peak hour traffic volumes projected to be generated by the proposed development (Table 3) were assigned to the area roadways based on the directional distribution established (Figure 5).

Figure 6 shows the assignment of the development-generated traffic volumes.

Year 2026 Base (No-Build) Projected Traffic Conditions

Year 2026 represents the buildout year plus five years of the proposed development plan. The Year 2026 base traffic volume projections include regional growth in traffic, as described below.

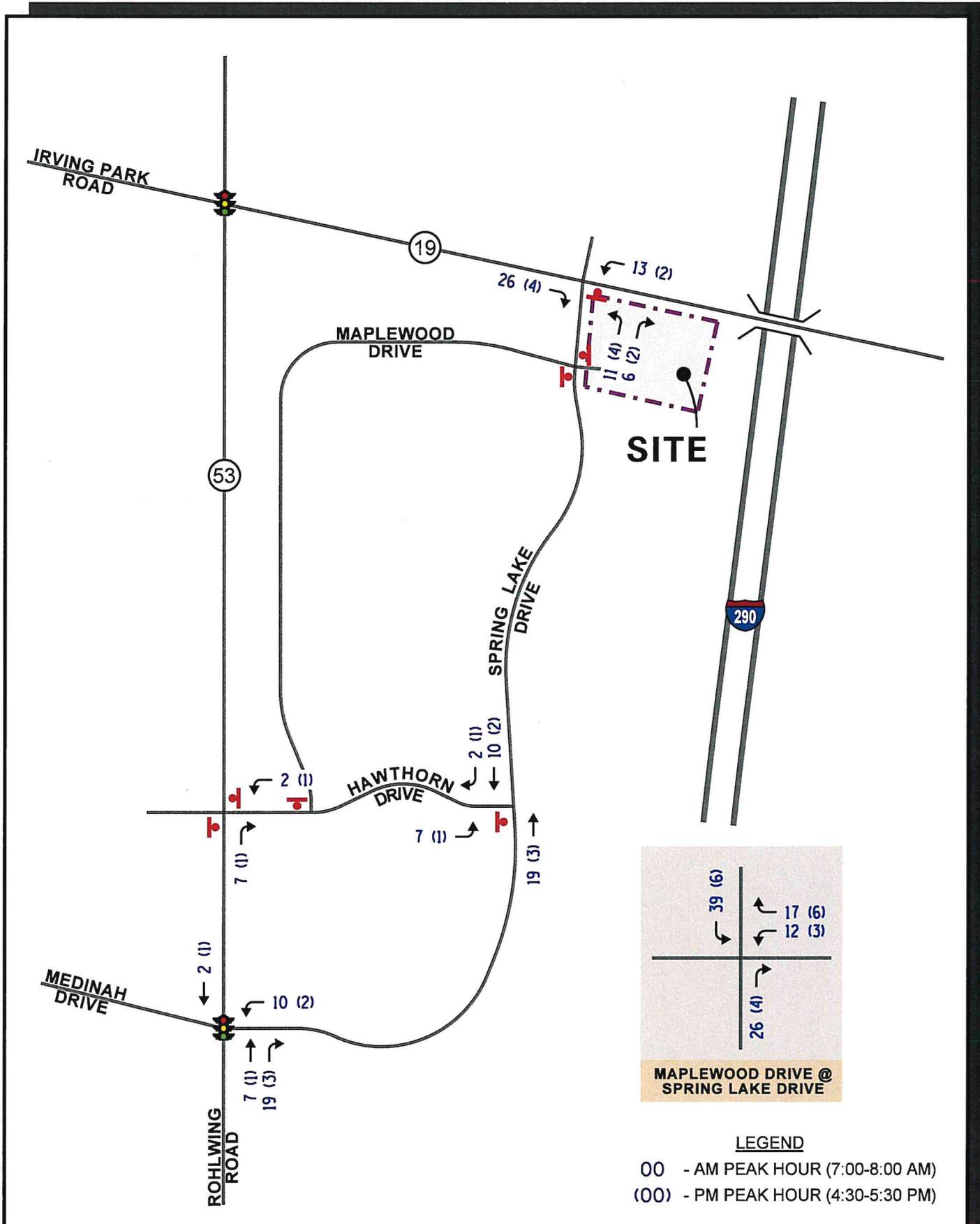
Regional Traffic Growth

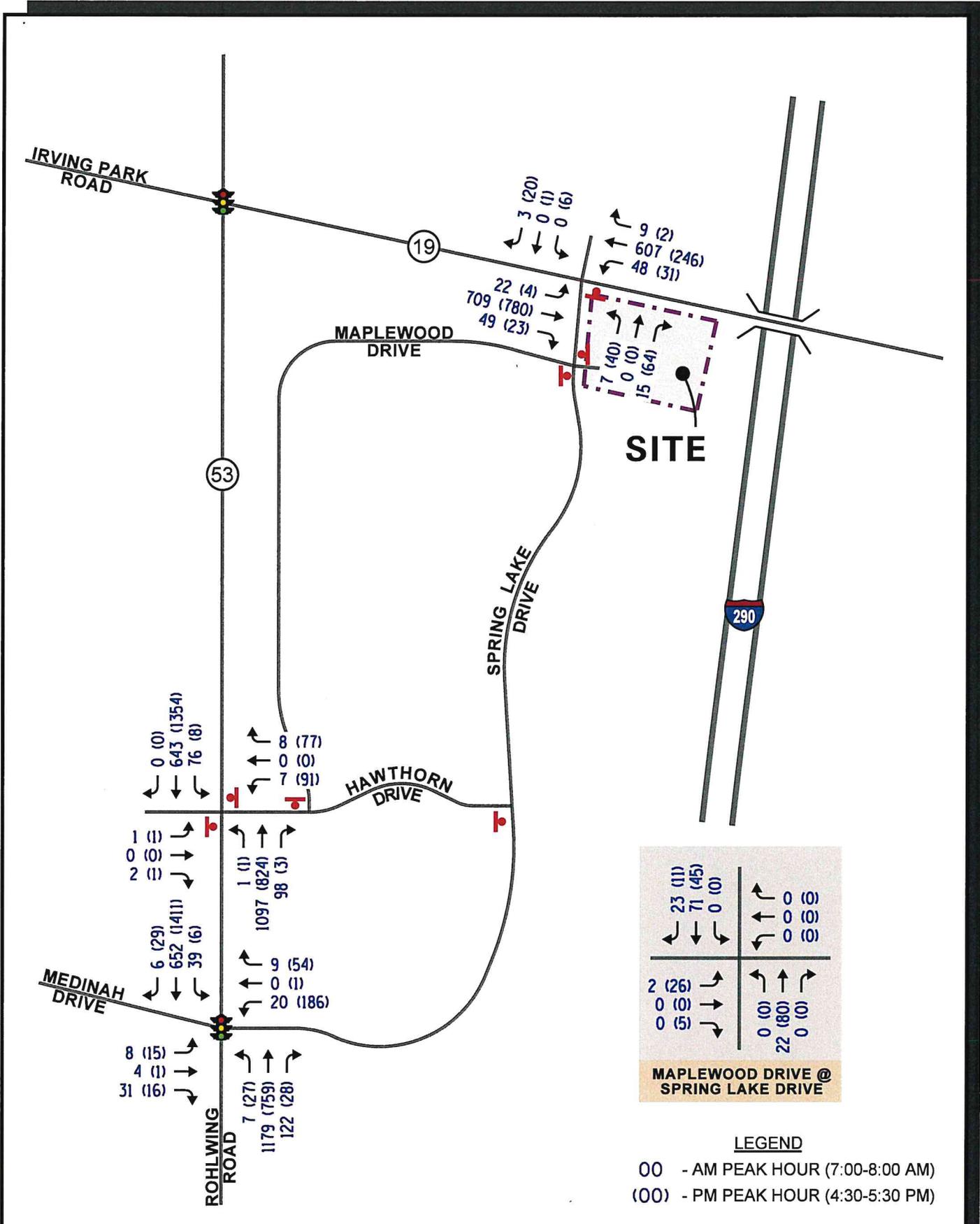
To account for the increase in existing traffic related to regional growth in the area (i.e. not attributable to any particular planned development) for Year 2026 conditions, the existing peak hour traffic volumes were increased by a compounded growth percentage of three (3) percent. This increase percentage was based on Year 2050 population forecasts provided by the Chicago Metropolitan Agency for Planning (CMAP). A copy of the CMAP letter is included in the Appendix of this report.

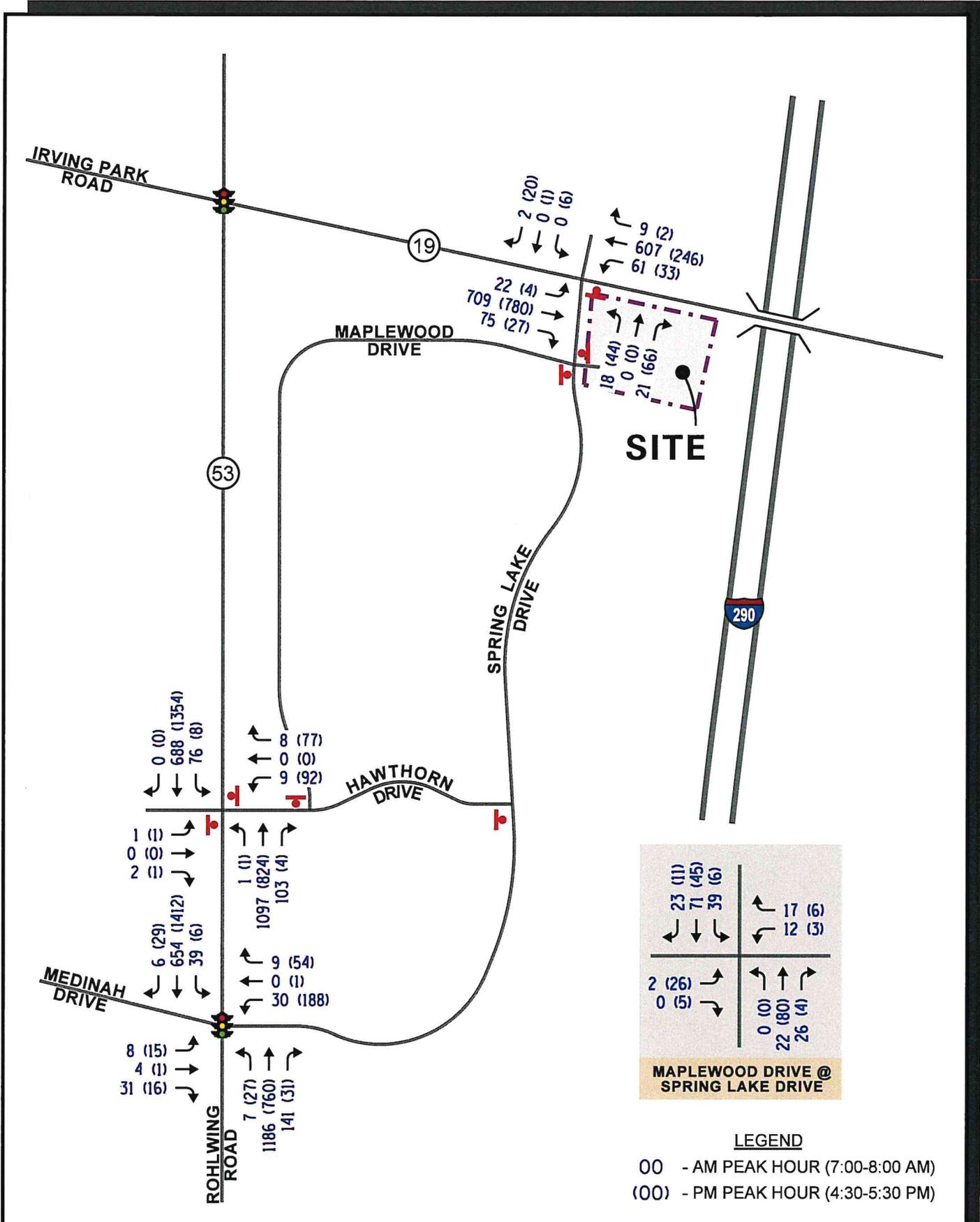
Figure 7 shows the Year 2026 Base (No-Build) projected traffic volumes, which includes the removal of the site traffic generated by the existing hotel land use.

Year 2026 Total Projected Traffic Conditions

Figure 8 shows the Year 2026 Total Projected traffic volumes that include the Year 2026 Base (No-Build) traffic volumes (Figure 7) and the buildout of the proposed development (Figure 8).







LEGEND
 00 - AM PEAK HOUR (7:00-8:00 AM)
 (00) - PM PEAK HOUR (4:30-5:30 PM)

Haymarket Center
Itasca, Illinois

Total Projected Traffic Volumes

5. Traffic Analysis and Recommendations

Capacity analyses were performed for the key intersections included in the study area to determine the ability of the existing roadway system to accommodate existing and future traffic demands. Analyses were performed for the weekday morning and weekday evening peak hours for the existing (Year 2019) and total projected (Year 2026) conditions.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM)*, 6th Edition and using Synchro/SimTraffic 10 analysis software.

The signalized intersection of Rohlwing Road (IL 53) and Spring Lake Drive/Medinah Drive was analyzed using the programmed cycle lengths (100 seconds for the weekday morning peak hour and 110 seconds for the weekday evening peak hour), offsets, and phasings to determine the average overall vehicle delay, volume-to-capacity ratios, and levels of service.

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.

A summary of the traffic analysis results showing the level of service and delay (measured in seconds) for the signalized intersection for the existing (Year 2019) and future total (Year 2026) conditions is presented in **Table 4**. The unsignalized access intersections are presented in **Table 5** and **Table 6**. A discussion of each of the intersections follows.

Table 5
 CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTIONS
 EXISTING (YEAR 2019) CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Spring Lake Drive and Irving Park Road (IL 19)				
• Eastbound Left Turn	A	9.0	A	9.7
• Westbound Left Turn	B	10.4	A	9.8
• Northbound Left-Turn	D	25.3	D	26.6
• Northbound Right-Turn	B	11.6	B	12.2
• Southbound Approach	B	10.5	C	15.6
Rohlwing Road (IL 53) and Hawthorn Drive				
• Westbound Left-Turn	D	34.7	E	36.3
• Westbound Right-Turn	B	13.1	B	12.0
• Southbound Left-Turn	B	13.3	B	10.9
Site Access/Maplewood Drive and Spring Lake Drive				
• Eastbound Left-Turn	A	9.8	B	10.3
• Eastbound Through/Right-Turn	B	10.2	A	9.1
• Westbound Approach	A	9.0	A	9.3
• Northbound Left-Turn	A	7.5	A	7.3
• Southbound Left-Turn	A	7.3	A	7.6
LOS = Level of Service Delay is measured in seconds.				

Table 6
 CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTIONS
 FUTURE (YEAR 2026) CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Spring Lake Drive and Irving Park Road (IL 19)				
• Eastbound Left Turn	A	9.1	A	7.8
• Westbound Left Turn	B	10.8	A	9.8
• Northbound Left-Turn	D	28.2	D	34.5
• Northbound Right-Turn	B	11.9	B	12.3
• Southbound Approach	B	10.6	B	12.3
Rohlwing Road (IL 53) and Hawthorn Drive				
• Westbound Left-Turn	E	37.4	E	39.2
• Westbound Right-Turn	B	13.4	B	12.1
• Southbound Left-Turn	B	13.7	B	11.1
Site Access/Maplewood Drive and Spring Lake Drive				
• Eastbound Left-Turn	B	10.9	B	10.0
• Eastbound Through/Right-Turn	A	8.9	A	9.0
• Westbound Approach	A	9.7	A	9.3
• Northbound Left-Turn	A	7.5	A	7.3
• Southbound Left-Turn	A	7.4	A	7.5
LOS = Level of Service Delay is measured in seconds.				

6. Discussion and Recommendations

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

Rohlwing Road (IL 53) and Spring Lake Drive/Medinah Drive

The signalized intersection of Rohlwing Road and Spring Lake Drive will continue to operate at overall acceptable levels of service under projected traffic conditions. Further, the queue analysis shows that the storage provided for the left-turn lanes and the right-turn lanes will continue to be adequate to accommodate the nominal increase in queuing. No roadway or traffic control improvements are needed or recommended at this intersection in conjunction with the proposed development.

Irving Park Road (IL 19) and Spring Lake Drive

Spring Lake Drive T-intersects Irving Park Road from the south providing one acceptance lane and two outbound lanes striped to provide a left-turn lane and a right-turn lane under stop sign control. The north/fourth leg of the unsignalized intersection is an access drive serving a commercial development. Irving Park Road provides a left-turn lane, a through lane, and a shared through/right-turn lane on both the eastbound and westbound approaches. The capacity analyses show that this unsignalized intersection will continue to operate at acceptable levels of service under projected traffic conditions. Further, the queue analysis shows that the northbound queuing on Spring Lake Drive will not extend to the Site Access Drive/Maplewood Drive intersection to the south, thereby not impeding traffic operations at this intersection. Also, the queue analysis shows that the provided westbound left-turn lane storage on Irving Park Road will continue to be adequate to accommodate projected queues. Therefore, no roadway or traffic control improvements are needed or recommended at this intersection in conjunction with the proposed development.

Spring Lake Drive and Site Access Drive/Maplewood Drive

The site access drive is the fourth/east leg of this intersection, providing one lane inbound and one lane outbound under stop sign control. Maplewood Drive is opposite the site access drive providing one acceptance lane and two lanes at the eastbound approach striped to provide a left-turn lane and a through/right-turn lane under stop sign control. Spring Lake Drive provides a left-turn lane and a shared through/right-turn lane on both the northbound and southbound approaches. The capacity analysis shows that this intersection will continue to operate at acceptable levels of service under projected traffic conditions. Further, the queue analysis shows that the southbound queuing on Spring Lake Drive will not extend beyond the provided storage. As such, no roadway or traffic control improvements are needed or recommended at this intersection in conjunction with the proposed development.

Rohlwing Road (IL 53) and Hawthorn Drive

All of the turning movements at this unsignalized intersection operate at acceptable levels of service with the exception of the westbound left-turn movement which operates at a level of service E during the weekday evening peak hour. This is not uncommon and it is expected at an unsignalized intersection where a minor road intersects a major arterial such as Rohlwing Road. Under future conditions, the westbound left-turn movement will operate at a level of service E during both the weekday morning and evening peak hours. However, it is important to note that further inspection of the capacity analyses indicate that the westbound 95th percentile outbound queues will be 50 feet or less. As such, no roadway or traffic control improvements are needed or recommended at this intersection in conjunction with the proposed development.

7. Parking Evaluation

The site currently provides approximately 384 parking spaces on a surface parking lot that surrounds the existing hotel building. Haymarket DuPage also proposes installation of three bicycle racks to each hold seven bicycles. As shown in the evaluation below, the existing parking spaces will be adequate in accommodating the peak parking demands based on surveys of an existing facility.

Projected Parking Demand

Given the proposed development's unique nature, no parking data is provided in the ITE *Parking Generation Manual*, 5th Edition. However, solely for analysis purposes and consistent with the Village of Itasca evaluation, the principal uses within the facility were classified as follows:

- Lodging, Rooming and Boarding Houses – 240 beds
- Medical Office – 12,788 square feet
- Health Center/Clinic – 61 employees (peak number of employees at any given time)

The Village of Itasca's staff report stated that the following parking requirements were applied for the above land uses:

- Lodging, Rooming and Boarding Houses – One space/lodging room plus one space for the owner or manager
- Medical Office – Six spaces per 1,000 square feet of gross floor area
- Health Center/Clinic – Six spaces for staff and visiting doctor plus one space per employee

Based on the above and on data provided in the ITE *Parking Generation Manual*, 5th Edition, **Table 7** presents a summary and comparison of the anticipated peak parking demand.

Table 7

PEAK PARKING DEMAND AND VILLAGE PARKING REQUIREMENT COMPARISON

ITE LUC	Land Use	Size	ITE Peak Parking Demand	Village Requirement
Business Hotel (311)	Lodging	240 beds ¹	178	241
Medical Office (720)	Medical Office	12,788 s.f.	41	77
Clinic (630)	Health Center	61 employees ²	51	67
Total Parking Demand			270 spaces	385 Spaces
LUC – Land Use Code				
1 – It is estimated that approximately 227 residents will not have cars. However, for analysis purposes, no reduction was applied to account for this.				
2 - Peak number of employees at any given time (61 employees)				

As can be seen from Table 7, the anticipated peak parking demand as calculated using ITE rates and assuming each individual land use peaks at the same time, can be accommodated by the existing 384 parking spaces. Additionally, the inclusion of the bicycle racks with more than 20 bicycle spaces meet Village bicycle parking requirements for the facility. It is important to note that this calculated parking demand using the ITE *Parking Generation Manual* is very conservative given that, as previously stated, many of the patients will not have a vehicle or drive, unlike a hotel in which many of the guests do drive their own personal vehicle. Furthermore, the inclusion of the proposed bicycle racks results in compliance with Village Code requirements for off-street parking.

Parking Based on Existing Facility

For comparison purposes, parking occupancy counts were conducted at the Woodridge Interventions facility throughout the day on May 30, 2019 and is included in the Appendix of this report. The peak parking demand of 69 parked vehicles occurred at 12:00 P.M., resulting in a parking rate of 0.87 spaces per bed (79 beds). As such, assuming the proposed development is at maximum occupancy of 240 beds, the peak parking demand will be 210 parking spaces. Therefore, the approximate 384 existing parking spaces plus the inclusion of the bicycle racks are more than adequate to accommodate either projected peak parking demand (ITE or existing similar facility).

8. Conclusion

Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) conducted a traffic impact and parking study for the proposed Haymarket DuPage development to be located at 860 West Irving Park Road in Itasca, Illinois. A Holiday Inn formerly occupied the site and will be repurposed to accommodate the proposed development. The site includes approximately 384 parking spaces in a surface lot. The development plans call for repurposing the former 161-room hotel building for a health care center with a range of medical and clinical services for individuals with substance use disorders and mental health conditions. The facility will have 240 beds comprised of 96 treatment beds and 144 recovery home beds and 163 full-time employees plus nine contract food service workers over three shifts. Based on information provided by the operator, the facility anticipates seeing 96 outpatient people daily with half of them coming from within the recovery home, thus not driving a vehicle and the other half coming to the facility either via their personal vehicle, Uber, taxi, a family member, or public transportation. In addition, Haymarket DuPage will provide van/auto transportation to doctor appointments, errands, etc. While the recovery home patients begin their stay involved in intensive outpatient programming thus generating little to no traffic, once they complete the outpatient program, they may be leaving during the day to interview for jobs or attend job training programs.

The site will continue to be accessed via the full access drive off Spring Lake Drive opposite Maplewood Drive, in addition to the full access points serving the Spring Lakes Business Park, which includes the signalized intersection of Rohlwing Road (IL 53) at Spring Lake Drive, the unsignalized intersection of Spring Lake Drive at Irving Park Road, and the unsignalized intersection of Rohlwing Road at Hawthorn Drive.

Based on the proposed development plan and the traffic capacity analyses for the full buildout of the development, the findings and recommendations of this study are outlined below.

- The proposed development will have a low traffic impact on the surrounding roadway network.
- The signalized access off IL 53 and the two unsignalized access points off both IL 53 and IL 19 that serve the Spring Lakes Business Park, which includes the proposed development, will continue to operate at acceptable levels of service during peak hours and no roadway or traffic control improvements are recommended at these intersections in conjunction with the proposed development.
- The existing full access drive off Spring Lake Drive opposite Maplewood Drive that serves the site will continue to be adequate to accommodate the projected traffic estimated to be generated by the proposed redevelopment.
- Based on the ITE *Parking Generation Manual*, 5th Edition and a survey of an existing, similar facility, the existing approximate 384-space parking lot serving the site will be adequate to accommodate the peak parking demand of the proposed development, which will primarily consist of employees and visitors.

Appendix

Traffic Count Summary Sheets
Haymarket DuPage Average Daily Vehicles
CMAP Projections Letter
Level of Service Criteria
Capacity Analysis – Existing Conditions
Capacity Analysis – Year 2026 Total Conditions

Traffic Count Summary Sheets



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
 Rosemont, Illinois, United States 60018
 (847)518-9990 bmay@kloainc.com

Count Name: Spring Lake Dr and Rohlwing Rd
 Site Code:
 Start Date: 05/29/2019
 Page No: 4

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Medinah Dr Eastbound					Spring Lake Dr Westbound					Rohlwing Rd Northbound					Rohlwing Rd 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
4:30 PM	0	4	0	5	0	9	0	53	0	17	0	70	0	10	165	7	0	182	1	1	351	8	0	361	622
4:45 PM	0	3	0	8	0	11	0	43	0	13	0	56	0	6	180	7	0	187	0	0	387	8	0	395	655
5:00 PM	0	5	0	1	0	6	0	56	0	17	0	73	0	5	174	6	0	180	0	2	347	7	0	356	620
5:15 PM	0	3	1	2	0	6	0	39	1	7	0	47	0	6	220	11	0	231	0	2	343	6	0	351	641
Total	0	15	1	16	0	32	0	191	1	54	0	246	0	27	739	31	0	797	1	5	1428	29	0	1463	2538
Approach %	0.0	46.9	3.1	50.0	-	-	0.0	77.6	0.4	22.0	-	-	0.0	3.4	92.7	3.9	-	-	0.1	0.3	97.6	2.0	-	-	-
Total %	0.0	0.6	0.0	0.6	-	1.3	0.0	7.5	0.0	2.1	-	9.7	0.0	1.1	29.1	1.2	-	31.4	0.0	0.2	56.3	1.1	-	57.6	-
PHF	0.000	0.750	0.250	0.500	-	0.727	0.000	0.853	0.250	0.794	-	0.842	0.000	0.675	0.840	0.705	-	0.841	0.250	0.625	0.922	0.906	-	0.926	0.969
% Lights	0	15	1	16	-	32	0	190	1	54	-	245	0	26	707	30	-	763	1	3	1383	28	-	1415	2455
% Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	3
% Single-Unit Trucks	0	0	0	0	-	0	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	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
% Pedestrians	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0



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9575 W. Higgins Rd., Suite 400

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

Count Name: Spring Lake Dr and Irving Park Rd
Site Code:
Start Date: 05/29/2019
Page No: 3

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Irving Park Rd Eastbound					Irving Park Rd Westbound					Spring Lake Dr Northbound					Spring Lake Dr Southbound					App. Total	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			
7:00 AM	0	6	170	12	0	188	0	9	142	1	0	152	0	2	0	8	0	10	0	0	0	1	0	1	0	1	351		
7:15 AM	1	5	162	11	0	179	0	10	129	1	0	140	0	3	0	3	0	6	0	0	0	0	1	0	0	1	0	325	
7:30 AM	0	4	173	12	0	189	0	8	151	3	0	162	0	2	0	5	0	7	0	0	0	2	0	0	2	0	360		
7:45 AM	0	6	183	19	0	208	0	27	167	4	0	198	0	3	0	6	0	9	0	0	0	0	0	0	0	0	415		
Total	1	21	688	54	0	764	0	54	589	9	0	652	0	10	0	22	0	32	0	0	0	3	1	3	1	3	1451		
Approach %	0.1	2.7	90.1	7.1	-	-	0.0	8.3	90.3	1.4	-	-	0.0	31.3	0.0	68.8	-	-	0.0	0.0	0.0	100.0	-	-	-	-	-	-	
Total %	0.1	1.4	47.4	3.7	-	52.7	0.0	3.7	40.6	0.6	-	44.9	0.0	0.7	0.0	1.5	-	2.2	0.0	0.0	0.0	0.2	-	-	-	-	-	-	
PHF	0.250	0.875	0.940	0.711	-	0.918	0.000	0.500	0.882	0.563	-	0.823	0.000	0.833	0.000	0.688	-	0.800	0.000	0.000	0.000	0.375	-	-	-	-	0.375	0.874	
Lights	1	21	663	52	-	737	0	48	558	7	-	613	0	8	0	21	-	29	0	0	0	1	-	-	-	-	1	1380	
Buses	0	0	6	0	-	6	-	88.9	94.7	77.8	-	94.0	-	80.0	-	95.5	-	90.6	-	-	-	33.3	-	-	-	-	-	95.1	
% Buses	0.0	0.0	0.9	0.0	-	0.8	-	5.6	1.5	0.0	-	1.8	-	10.0	-	4.5	-	6.3	-	-	-	0.0	-	-	-	-	-	20	
Single-Unit Trucks	0	0	11	0	-	11	0	1	4	1	-	6	0	1	0	0	-	1	0	0	0	1	-	-	-	-	1	19	
% Single-Unit Trucks	0.0	0.0	1.6	0.0	-	1.4	-	1.9	0.7	11.1	-	0.9	-	10.0	-	0.0	-	3.1	-	-	-	33.3	-	-	-	-	-	1.3	
Articulated Trucks	0	0	8	2	-	10	0	0	18	1	-	19	0	0	0	0	-	0	0	0	0	1	-	-	-	-	1	30	
% Articulated Trucks	0.0	0.0	1.2	3.7	-	1.3	-	0.0	3.1	11.1	-	2.9	-	0.0	-	0.0	-	0.0	-	-	-	33.3	-	-	-	-	-	2.1	
Bicycles on Road	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	-	-	-	0	2	
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	-	3.7	0.0	0.0	-	0.3	-	0.0	-	0.0	-	0.0	-	-	-	0.0	-	-	-	-	-	0.1	
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	1	-	-	-	-	-	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	



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(847)518-9990 bmay@kloainc.com

Count Name: Spring Lake Dr and Maplewood Dr
Site Code:
Start Date: 05/29/2019
Page No: 1

Turning Movement Data

Start Time	Maplewood Dr Eastbound					Holiday Inn Entrance Westbound					Spring Lake Dr Northbound					Spring Lake Dr 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
7:00 AM	0	1	0	0	0	1	0	0	0	3	0	3	0	0	9	1	0	10	0	2	16	2	0	20	34
7:15 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	3	0	3	0	2	11	8	0	21	26	
7:30 AM	0	1	0	0	0	1	0	2	0	1	0	3	0	0	5	0	5	0	3	13	4	0	20	29	
7:45 AM	0	0	0	0	0	0	0	0	0	4	0	4	0	0	5	0	5	0	4	31	9	0	44	53	
Hourly Total	0	2	0	0	0	2	0	4	0	8	0	12	0	0	22	1	23	0	11	71	23	0	105	142	
8:00 AM	0	0	0	1	0	1	0	0	0	4	0	4	0	1	10	1	12	0	1	20	13	0	34	51	
8:15 AM	0	1	0	0	0	1	0	1	0	4	0	5	0	0	7	2	9	0	2	21	8	0	31	46	
8:30 AM	0	1	0	1	0	2	0	0	0	3	0	3	0	1	6	0	7	0	2	19	6	0	27	39	
8:45 AM	0	1	0	0	0	1	0	1	0	0	0	1	0	0	3	0	3	0	2	15	9	0	26	31	
Hourly Total	0	3	0	2	0	5	0	2	0	11	0	13	0	2	26	3	31	0	7	75	36	0	118	167	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4:00 PM	0	8	0	2	1	10	0	1	0	3	0	4	0	0	19	2	21	0	4	15	2	0	21	56	
4:15 PM	0	6	1	1	0	8	0	2	1	3	0	6	0	1	18	1	20	0	4	7	1	0	12	46	
4:30 PM	0	7	1	1	0	9	0	2	0	4	0	6	0	0	30	0	30	0	2	17	2	0	21	66	
4:45 PM	0	5	0	2	1	7	0	0	0	3	0	3	0	0	16	1	17	0	5	7	4	0	16	43	
Hourly Total	0	26	2	6	2	34	0	5	1	13	0	19	0	1	83	4	88	0	15	46	9	0	70	211	
5:00 PM	0	8	0	1	0	9	0	0	1	6	0	7	0	0	23	0	23	0	6	10	1	0	17	56	
5:15 PM	0	6	0	1	0	7	0	3	0	3	1	6	0	0	11	1	12	0	3	11	4	0	18	43	
5:30 PM	0	11	0	0	0	11	0	0	0	1	0	1	0	0	12	1	13	0	1	8	3	0	12	37	
5:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	5	0	5	0	2	12	1	1	15	21	
Hourly Total	0	26	0	2	0	28	0	3	1	10	1	14	0	0	51	2	53	0	12	41	9	1	62	157	
Grand Total	0	57	2	10	2	69	0	14	2	42	1	58	0	3	182	10	195	0	45	233	77	1	355	677	
Approach %	0.0	82.6	2.9	14.5	-	-	0.0	24.1	3.4	72.4	-	-	0.0	1.5	93.3	5.1	-	0.0	12.7	65.6	21.7	-	-	-	
Total %	0.0	8.4	0.3	1.5	-	10.2	0.0	2.1	0.3	6.2	-	8.6	0.0	0.4	26.9	1.5	-	0.0	6.6	34.4	11.4	-	52.4	-	
Lights	0	55	1	9	-	65	0	13	2	39	-	54	0	2	169	10	181	0	42	214	71	-	327	627	
% Lights	-	96.5	50.0	90.0	-	94.2	-	92.9	100.0	92.9	-	93.1	-	66.7	92.9	100.0	-	-	93.3	91.8	92.2	-	92.1	92.6	
Buses	0	0	0	0	-	0	0	0	0	1	-	1	0	0	4	0	4	0	0	5	0	-	5	10	
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	2.4	-	1.7	-	0.0	2.2	0.0	-	-	0.0	2.1	0.0	-	1.4	1.5	
Single-Unit Trucks	0	1	1	1	-	3	0	1	0	0	-	1	0	1	5	0	6	0	1	8	4	-	13	23	
% Single-Unit Trucks	-	1.8	50.0	10.0	-	4.3	-	7.1	0.0	0.0	-	1.7	-	33.3	2.7	0.0	-	-	2.2	3.4	5.2	-	3.7	3.4	
Articulated Trucks	0	0	0	0	-	0	0	0	0	2	-	2	0	0	1	0	1	0	2	4	0	-	6	9	
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	4.8	-	3.4	-	0.0	0.5	0.0	-	-	4.4	1.7	0.0	-	1.7	1.3	
Bicycles on Road	0	1	0	0	-	1	0	0	0	0	-	0	0	0	3	0	3	0	0	2	2	-	4	8	
% Bicycles on Road	-	1.8	0.0	0.0	-	1.4	-	0.0	0.0	0.0	-	0.0	-	0.0	1.6	0.0	-	-	0.0	0.9	2.6	-	1.1	1.2	
Pedestrians	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	1	-	-	



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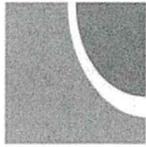
Turning Movement Peak Hour Data (4:30 PM)

Start Time	Maplewood Dr Eastbound					Holiday Inn Entrance Westbound					Spring Lake Dr Northbound					Spring Lake Dr 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	
4:30 PM	0	7	1	1	0	9	0	2	0	4	0	6	0	0	30	0	0	0	0	0	2	17	2	0	21
4:45 PM	0	5	0	2	1	7	0	0	0	3	0	3	0	0	16	1	1	1	0	0	5	7	4	0	16
5:00 PM	0	8	0	1	0	9	0	0	1	6	0	7	0	0	23	0	0	0	0	0	6	10	1	0	17
5:15 PM	0	6	0	1	0	7	0	3	0	3	1	6	0	0	11	1	0	0	0	0	3	11	4	0	18
Total	0	26	1	5	1	32	0	5	1	16	1	22	0	0	80	2	1	82	0	16	45	11	0	72	
Approach %	0.0	81.3	3.1	15.6	-	-	0.0	22.7	4.5	72.7	-	-	0.0	0.0	97.6	2.4	-	-	0.0	22.2	62.5	15.3	-	-	
Total %	0.0	12.5	0.5	2.4	-	15.4	0.0	2.4	0.5	7.7	-	10.6	0.0	0.0	38.5	1.0	-	39.4	0.0	7.7	21.6	5.3	-	34.6	
PHF	0.000	0.813	0.250	0.625	-	0.889	0.000	0.417	0.250	0.657	-	0.786	0.000	0.000	0.687	0.500	-	0.683	0.000	0.667	0.662	0.688	-	0.857	
Lights	0	25	0	4	-	29	0	4	1	16	-	21	0	0	75	2	-	77	0	14	43	10	-	67	
% Lights	-	96.2	0.0	80.0	-	90.6	-	80.0	100.0	100.0	-	95.5	-	-	93.8	100.0	-	93.9	-	87.5	95.6	90.9	-	93.1	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	1.3	0.0	-	1.2	-	0.0	2.2	0.0	-	1.4	
Single-Unit Trucks	0	0	1	1	-	2	0	1	0	0	-	1	0	0	1	0	-	1	0	1	1	1	1	-	3
% Single-Unit Trucks	-	0.0	100.0	20.0	-	6.3	-	20.0	0.0	0.0	-	4.5	-	-	1.3	0.0	-	1.2	-	6.3	2.2	9.1	-	4.2	
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	1	0	0	-	1	
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	1.3	0.0	-	1.2	-	6.3	0.0	0.0	-	1.4	
Bicycles on Road	0	1	0	0	-	1	0	0	0	0	-	0	0	0	2	0	-	2	0	0	0	0	0	0	
% Bicycles on Road	-	3.8	0.0	0.0	-	3.1	-	0.0	0.0	0.0	-	0.0	-	-	2.5	0.0	-	2.4	-	0.0	0.0	0.0	-	0.0	
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-	-	-	-	-	

Haymarket DuPage Average Daily Vehicles

Type	Daily Average	Daily Average Using Vehicle	Days of the Week	Times	Assumptions
1 Assessment	10	10	Monday - Sunday	9 AM - 7 PM	- 100% of clients will be driven to the facility
2 Outpatient	48	48	Monday - Saturday	9 AM - 7 PM	- 50% clients are in recovery homes - All Clients attend outpatient services 3 days a week on average - 100% of non-RH clients will be driving/commuting to the facility - (uber/public transit/family)
3 Recovery Home	130	13	Monday - Sunday	7 AM - 9 PM	- 90 Census on Recovery Homes - 10% of Recovery Home clients will be driving
4 Staff - 1st Shift	58	58	Sunday - Saturday	7 AM - 3 PM	
5 Staff - 2nd Shift	47	47	Sunday - Saturday	3 PM - 11 PM	- Staff is distributed 50% 1st shift, 40% 2nd, 10% 3rd - 100% of 1st and 2nd and 3rd shift will be driving
6 Staff - 3rd Shift	12	12	Monday - Sunday	11 PM - 7 AM	
7 Visitors	24	24	Saturday - Sunday	9 AM - 5 PM	Weekends (alumni groups)
8 Vendors	3	9	Monday - Sunday	9 AM - 5 PM	Garbage, Maintenance, Food Delivery, Food Service, Postal, UPS

CMAP Traffic Projection Letter



Chicago Metropolitan
Agency for Planning

233 South Wacker Drive
Suite 800
Chicago, Illinois 60606

312 454 0400
www.cmap.illinois.gov

June 25, 2019

William R. Woodward
Senior Consultant
Koenig, Lindgren, O'Hara and Aboona, Inc.
9575 West Higgins Road
Suite 400
Chicago, IL 60602

Subject: IL 19 @ IL 53
IDOT

Dear Mr. Woodward:

In response to a request made on your behalf and dated June 25, 2019, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current Volumes	Year 2050 ADT
IL 19 east of IL 53	16,000	16,700
IL 53 south of IL 19	17,900	22,300

Traffic projections are developed using existing ADT data provided in the request letter and the results from the March 2019 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)
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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 – Existing Conditions

Lanes, Volumes, Timings

1: Rohlwing Rd (IL 53) & Medinah Dr/Spring Lake Dr

06/22/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	4	31	24	0	9	7	1144	123	39	631	6
Future Volume (vph)	8	4	31	24	0	9	7	1144	123	39	631	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		150	250		170	245		0
Storage Lanes	1		0	0		1	1		1	1		0
Taper Length (ft)	50			25			100			155		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frnt		0.866				0.850			0.850		0.999	
Flt Protected	0.950				0.950		0.950			0.950		
Satd. Flow (prot)	1805	1562	0	0	1736	1214	1410	3438	1583	1752	3306	0
Flt Permitted	0.755				0.755		0.382			0.188		
Satd. Flow (perm)	1434	1562	0	0	1379	1214	567	3438	1583	347	3306	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34				71			125		1	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		420			575			842			768	
Travel Time (s)		11.5			15.7			14.4			13.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	6%	4%	2%	33%	28%	5%	2%	3%	9%	17%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	38	0	0	27	10	8	1271	137	43	708	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	24.5	24.5		24.5	24.5	24.5	9.5	24.5	24.5	9.5	24.5	
Total Split (s)	25.0	25.0		25.0	25.0	25.0	15.0	60.0	60.0	15.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%	25.0%	15.0%	60.0%	60.0%	15.0%	60.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	4.0	4.0	3.5	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	0.0	2.0	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	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0	3.5	6.0	6.0	3.5	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Act Effct Green (s)	7.5	7.5			7.6	7.6	85.2	81.7	81.7	87.1	85.7	
Actuated g/C Ratio	0.08	0.08			0.08	0.08	0.85	0.82	0.82	0.87	0.86	
v/c Ratio	0.08	0.26			0.26	0.06	0.02	0.45	0.10	0.11	0.25	
Control Delay	43.4	20.6			48.8	0.8	2.0	5.8	1.4	2.3	3.1	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	43.4	20.6			48.8	0.8	2.0	5.8	1.4	2.3	3.1	
LOS	D	C			D	A	A	A	A	A	A	
Approach Delay		25.0			35.8			5.4			3.0	
Approach LOS		C			D			A			A	
Queue Length 50th (ft)	5	2			17	0	1	167	2	3	44	
Queue Length 95th (ft)	21	33			43	0	3	245	20	10	111	

HCM 6th TWSC
 2: Spring Lake Dr & Irving Park Rd (IL 19)

06/22/2020

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↔		↔	↕			↕	
Traffic Vol, veh/h	22	688	54	54	589	9	10	0	22	0	0	3
Future Vol, veh/h	22	688	54	54	589	9	10	0	22	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	100	-	-	105	-	-	130	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	4	4	11	5	22	20	2	5	0	0	0
Mvmt Flow	25	791	62	62	677	10	11	0	25	0	0	3

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	687	0	0	853
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.32
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.31
Pot Cap-1 Maneuver	916	-	-	727
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	916	-	-	727
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	15.9	10.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	189	568	916	-	-	727	-	-	658
HCM Lane V/C Ratio	0.061	0.045	0.028	-	-	0.085	-	-	0.005
HCM Control Delay (s)	25.3	11.6	9	-	-	10.4	-	-	10.5
HCM Lane LOS	D	B	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	0.1	-	-	0.3	-	-	0

HCM 6th TWSC

4: Spring Lake Dr & Maplewood Dr/Access

06/22/2020

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔			↔		↔	↔		↔	↔	
Traffic Vol, veh/h	2	1	0	4	0	8	1	22	1	11	71	23
Future Vol, veh/h	2	1	0	4	0	8	1	22	1	11	71	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	100	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	0	0	0	0	0	12	0	14	0	0	8	9
Mvmt Flow	3	1	0	6	0	12	1	33	1	16	106	34

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	197	191	123	192	208	34	140	0	0	34	0	0
Stage 1	155	155	-	36	36	-	-	-	-	-	-	-
Stage 2	42	36	-	156	172	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.32	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.408	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	766	708	933	772	692	1011	1456	-	-	1591	-	-
Stage 1	852	773	-	985	869	-	-	-	-	-	-	-
Stage 2	978	869	-	851	760	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	751	700	933	764	684	1011	1456	-	-	1591	-	-
Mov Cap-2 Maneuver	751	700	-	764	684	-	-	-	-	-	-	-
Stage 1	851	765	-	984	868	-	-	-	-	-	-	-
Stage 2	966	868	-	841	752	-	-	-	-	-	-	-

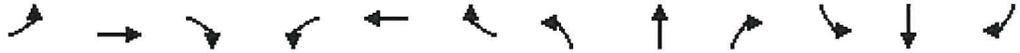
Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	9	0.3	0.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1456	-	-	751	700	913	1591	-	-
HCM Lane V/C Ratio	0.001	-	-	0.004	0.002	0.02	0.01	-	-
HCM Control Delay (s)	7.5	-	-	9.8	10.2	9	7.3	-	-
HCM Lane LOS	A	-	-	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.1	0	-	-

Lanes, Volumes, Timings

1: Rohlwing Rd (IL 53) & Medinah Dr/Spring Lake Dr

06/22/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		340			495			762			688	
Turn Bay Length (ft)	100					150	250		170	245		
Base Capacity (vph)	196	368			293	402	291	2395	1101	419	2285	
Starvation Cap Reductn	0	0			0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0			0	0	0	0	0	0	0	
Storage Cap Reductn	0	0			0	0	0	0	0	0	0	
Reduced v/c Ratio	0.08	0.05			0.68	0.14	0.10	0.32	0.03	0.01	0.63	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 22 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 16.3

Intersection LOS: B

Intersection Capacity Utilization 66.1%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rohlwing Rd (IL 53) & Medinah Dr/Spring Lake Dr

13 s	67 s	30 s
13 s	67 s	30 s

HCM 6th TWSC
 3: Rohlwing Rd (IL 53) & Hawthorn Dr

06/22/2020

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	0	0	0	91	0	77	0	802	3	8	1313	0
Future Vol, veh/h	0	0	0	91	0	77	0	802	3	8	1313	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	0	-	-	180	-	210	180	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	1	0	1	0	4	0	37	3	0
Mvmt Flow	0	0	0	93	0	79	0	818	3	8	1340	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1765	2177	670	1504	2174	409	1340	0	0	821	0	0
Stage 1	1356	1356	-	818	818	-	-	-	-	-	-	-
Stage 2	409	821	-	686	1356	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.52	6.5	6.92	4.1	-	-	4.84	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.52	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.52	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.51	4	3.31	2.2	-	-	2.57	-	-
Pot Cap-1 Maneuver	54	47	404	~84	47	594	521	-	-	614	-	-
Stage 1	160	219	-	338	393	-	-	-	-	-	-	-
Stage 2	596	391	-	406	219	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	46	46	404	~83	46	594	521	-	-	614	-	-
Mov Cap-2 Maneuver	125	145	-	205	146	-	-	-	-	-	-	-
Stage 1	160	216	-	338	393	-	-	-	-	-	-	-
Stage 2	517	391	-	401	216	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	25.2	0	0.1
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	521	-	-	-	205	594	614	-	-
HCM Lane V/C Ratio	-	-	-	-	0.453	0.132	0.013	-	-
HCM Control Delay (s)	0	-	-	0	36.3	12	10.9	-	-
HCM Lane LOS	A	-	-	A	E	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	2.2	0.5	0	-	-

Notes

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

Capacity Analysis – Year 2026 Total
Projected Conditions

Lanes, Volumes, Timings

1: Rohlwing Rd (IL 53) & Medinah Dr/Spring Lake Dr

06/22/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	4	31	30	0	9	7	1186	141	39	654	6
Future Volume (vph)	8	4	31	30	0	9	7	1186	141	39	654	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		150	250		170	245		0
Storage Lanes	1		0	0		1	1		1	1		0
Taper Length (ft)	50			25			100			155		
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frnt		0.866				0.850			0.850		0.999	
Flt Protected	0.950				0.950		0.950			0.950		
Satd. Flow (prot)	1805	1562	0	0	1736	1214	1410	3438	1583	1752	3306	0
Flt Permitted	0.736				0.732		0.373			0.176		
Satd. Flow (perm)	1398	1562	0	0	1337	1214	554	3438	1583	325	3306	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34				71			138		1	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		420			575			842			768	
Travel Time (s)		11.5			15.7			14.4			13.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	6%	4%	2%	33%	28%	5%	2%	3%	9%	17%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	38	0	0	33	10	8	1318	157	43	734	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	24.5	24.5		24.5	24.5	24.5	9.5	24.5	24.5	9.5	24.5	
Total Split (s)	25.0	25.0		25.0	25.0	25.0	15.0	60.0	60.0	15.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%	25.0%	15.0%	60.0%	60.0%	15.0%	60.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	4.0	4.0	3.5	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	0.0	2.0	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	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0	3.5	6.0	6.0	3.5	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Act Effct Green (s)	7.8	7.8			8.0	8.0	84.8	81.3	81.3	86.7	85.3	
Actuated g/C Ratio	0.08	0.08			0.08	0.08	0.85	0.81	0.81	0.87	0.85	
v/c Ratio	0.08	0.25			0.31	0.06	0.02	0.47	0.12	0.12	0.26	
Control Delay	42.6	20.0			50.0	0.8	2.1	6.2	1.5	2.4	3.3	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	42.6	20.0			50.0	0.8	2.1	6.2	1.5	2.4	3.3	
LOS	D	B			D	A	A	A	A	A	A	
Approach Delay		24.3			38.6			5.7			3.2	
Approach LOS		C			D			A			A	
Queue Length 50th (ft)	5	2			20	0	1	182	3	4	47	
Queue Length 95th (ft)	21	33			50	0	3	267	23	11	120	

HCM 6th TWSC
 2: Spring Lake Dr & Irving Park Rd (IL 19)

06/22/2020

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕			↕	
Traffic Vol, veh/h	22	709	75	61	607	9	18	0	21	0	0	3
Future Vol, veh/h	22	709	75	61	607	9	18	0	21	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	100	-	-	105	-	-	130	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	4	4	11	5	22	20	2	5	0	0	0
Mvmt Flow	25	815	86	70	698	10	21	0	24	0	0	3

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	708	0	0	901
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.32
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.31
Pot Cap-1 Maneuver	900	-	-	696
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	900	-	-	696
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1	19.4	10.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	176	547	900	-	-	696	-	-	648
HCM Lane V/C Ratio	0.118	0.044	0.028	-	-	0.101	-	-	0.005
HCM Control Delay (s)	28.2	11.9	9.1	-	-	10.8	-	-	10.6
HCM Lane LOS	D	B	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.4	0.1	0.1	-	-	0.3	-	-	0

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↔		↖	↗		↖	↗	
Traffic Vol, veh/h	2	0	1	12	0	17	1	22	26	39	71	23
Future Vol, veh/h	2	0	1	12	0	17	1	22	26	39	71	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	100	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	0	0	0	0	0	12	0	14	0	0	8	9
Mvmt Flow	3	0	1	18	0	25	1	33	39	58	106	34

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	306	313	123	295	311	53	140	0	0	72	0	0
Stage 1	239	239	-	55	55	-	-	-	-	-	-	-
Stage 2	67	74	-	240	256	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.32	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.408	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	650	606	933	661	607	987	1456	-	-	1541	-	-
Stage 1	769	711	-	962	853	-	-	-	-	-	-	-
Stage 2	948	837	-	768	699	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	615	582	933	641	583	987	1456	-	-	1541	-	-
Mov Cap-2 Maneuver	615	582	-	641	583	-	-	-	-	-	-	-
Stage 1	768	684	-	961	852	-	-	-	-	-	-	-
Stage 2	923	836	-	738	672	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	9.7	0.2	2.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1456	-	-	615	933	807	1541	-	-
HCM Lane V/C Ratio	0.001	-	-	0.005	0.002	0.054	0.038	-	-
HCM Control Delay (s)	7.5	-	-	10.9	8.9	9.7	7.4	-	-
HCM Lane LOS	A	-	-	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.2	0.1	-	-

Lanes, Volumes, Timings

1: Rohlwing Rd (IL 53) & Medinah Dr/Spring Lake Dr

06/22/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		340			495			762			688	
Turn Bay Length (ft)	100					150	250		170	245		
Base Capacity (vph)	198	368			293	402	282	2401	1104	410	2291	
Starvation Cap Reductn	0	0			0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0			0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0			0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.05			0.67	0.14	0.10	0.33	0.03	0.01	0.65	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 22 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 16.3

Intersection LOS: B

Intersection Capacity Utilization 67.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Rohlwing Rd (IL 53) & Medinah Dr/Spring Lake Dr

Ø1	Ø2 (R)	Ø4
13 s	67 s	30 s
Ø5	Ø6 (R)	Ø8
13 s	67 s	30 s

HCM 6th TWSC
 3: Rohlwing Rd (IL 53) & Hawthorn Dr

06/22/2020

Intersection

Int Delay, s/veh 2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕	↕	↕	↕	
Traffic Vol, veh/h	1	0	1	92	0	77	1	824	4	8	1354	0
Future Vol, veh/h	1	0	1	92	0	77	1	824	4	8	1354	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	0	-	-	180	-	210	180	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	1	0	1	0	4	0	37	3	0
Mvmt Flow	1	0	1	94	0	79	1	841	4	8	1382	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1821	2245	691	1550	2241	421	1382	0	0	845	0	0
Stage 1	1398	1398	-	843	843	-	-	-	-	-	-	-
Stage 2	423	847	-	707	1398	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.52	6.5	6.92	4.1	-	-	4.84	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.52	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.52	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.51	4	3.31	2.2	-	-	2.57	-	-
Pot Cap-1 Maneuver	49	42	392	~78	43	584	502	-	-	599	-	-
Stage 1	151	209	-	327	382	-	-	-	-	-	-	-
Stage 2	585	381	-	394	209	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	42	41	392	~77	42	584	502	-	-	599	-	-
Mov Cap-2 Maneuver	119	138	-	196	139	-	-	-	-	-	-	-
Stage 1	151	206	-	326	381	-	-	-	-	-	-	-
Stage 2	505	380	-	388	206	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.9	26.9	0	0.1
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	502	-	-	183	196	584	599	-	-
HCM Lane V/C Ratio	0.002	-	-	0.011	0.479	0.135	0.014	-	-
HCM Control Delay (s)	12.2	-	-	24.9	39.2	12.1	11.1	-	-
HCM Lane LOS	B	-	-	C	E	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	2.3	0.5	0	-	-

Notes

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