
Proposed Hotel and Banquet Center Traffic and Parking Study Arlington Heights, Illinois



Prepared For:

European Crystal Banquet & Conference Center

Prepared by:

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1 – INTRODUCTION AND EXISTING CONDITIONS

Eriksson Engineering Associates, Ltd. was retained by the European Crystal Banquet and Conference Center to conduct a traffic impact and parking demand study for the addition of a hotel with rooftop amenity space at their existing banquet facility in Arlington Heights, Illinois. The purpose of the study was to observe the existing traffic and parking patterns around the site, to determine the traffic characteristics and parking needs of the proposed hotel, and to develop any recommendations to accommodate the proposed change in use.

Site Location and Area Land-Use

The existing banquet facility is located at 519 West Algonquin Road on the south side of the street in Arlington Heights, Illinois. It is bounded by Algonquin Road (IL 62) to the north, a private access road serving several businesses to the west, Brite-O-Matic Manufacturing to the south, and a multi-tenant commercial building to the east. PACE Suburban Bus headquarters is located to the north across Algonquin Road. Land uses around the site include commercial, self-storage, office, and manufacturing.

Figure 1 illustrates the site location, surrounding land-uses, and area roadways.

Roadway Characteristics

A description of the area roadways around the site is provided below:

Algonquin Road (IL 62) is an east-west arterial roadway north of the site provides two through lanes in each direction separated by a two-way left-turn lane. At its unsignalized intersection with the north-south access roadway, Algonquin Road provides an exclusive through lane and a shared through/right-turn lane on the eastbound approach and an exclusive left-turn lane and two exclusive through lanes on the westbound approach. Algonquin Road is under the jurisdiction of the Illinois Department of Transportation (IDOT) with a posted speed limit of 45 miles per hour. An eastbound PACE bus stop is located in front of the site.

North-South Access Roadway is generally a north-south roadway that extends from Algonquin Road to its terminus approximately 1,400 feet south. The north-south access roadway provides one lane in each direction and serves as the shared access roadway for European Crystal Banquets and Conference Center, Safeguard Self Storage, Prima Power, Brite-O-Matic Manufacturing, Line Group, Kanematsu USA and KGK International. At its unsignalized intersection with Algonquin Road, the access roadway provides a shared left/right-turn lane under stop-sign control. This shared lane is wide enough to accommodate truck turning maneuvers to and from Algonquin Road and as such, operates as an exclusive left-turn and an exclusive right-turn for passenger vehicles. The site has four driveways along this road including three two-way drives to parking and one inbound lane to the drop-off lane by the main doors.

Figure 2 illustrates the existing intersection traffic control and travel lanes around the site.

Existing Traffic Volumes

Manual turning movement vehicle traffic counts were obtained from the previously conducted traffic study for the site during the weekday morning (7:00 to 9:00 A.M.) and the weekday evening (4:00 to 6:00 P.M.) peak periods and on a Saturday evening (5:30 to 7:30 P.M.) peak period at the intersection of Algonquin Road with the north-south access roadway. The Saturday evening peak period coincided with an event occurring at the banquet facility that had an attendance of 375 guests. The results of the manual turning movement counts indicated that the weekday morning peak hour occurs between 7:30 and 8:30 A.M., the weekday evening peak hour occurs between 4:30 and 5:30 P.M. and the Saturday evening peak hour occurs between 5:30 and 6:30 P.M. The existing peak hour traffic volumes for the weekday morning, evening and Saturday evening peak hours are shown in **Figure 3**. Please note that there was no traffic related to the banquet hall during the morning peak period.

Gap Study

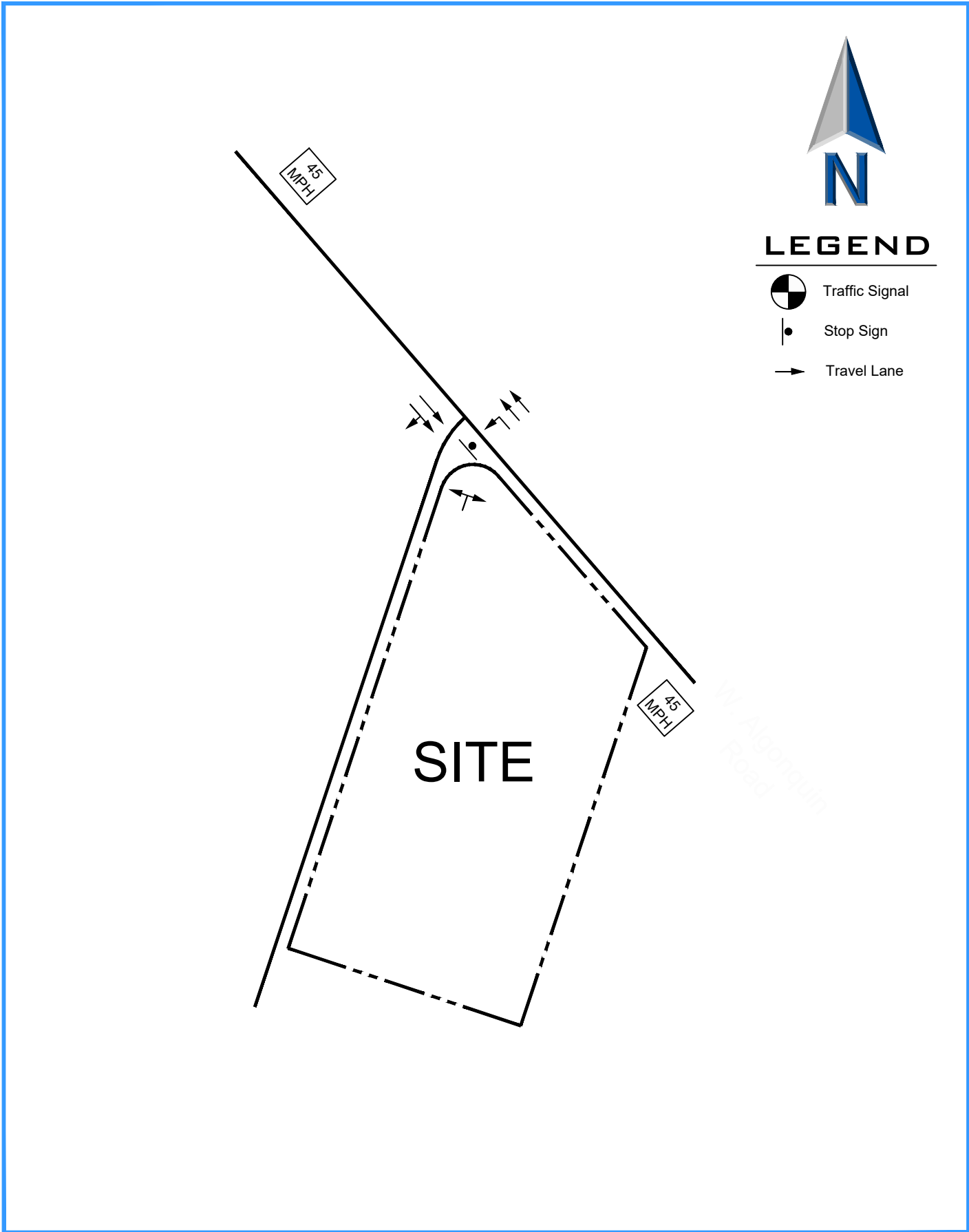
The previous traffic study also completed a gap study during the weekday morning and evening peak hours and Saturday evening peak hour along Algonquin Road in order to determine the availability of gaps or interruptions in the Algonquin Road traffic stream. Gaps in the eastbound direction on Algonquin Road will allow traffic to turn left onto the north-south access roadway and right out from the north-south access roadway onto Algonquin Road. Gaps in both directions on Algonquin Road will allow traffic to turn left from the north-south access roadway onto Algonquin Road. It should be noted that this gap study does not quantify the number of two-stage left-turn maneuvers that can be made utilizing the existing two-way left-turn lane. The results of the gap study are summarized in **Table 1**.

**Table 1
Algonquin Road Gap Study**

Peak Period	Potential Vehicle Movements		
	Westbound Left-turn	Northbound Left-turn	Northbound Right-turn
Morning	709	86	358
Evening	511	54	195
Saturday	733	128	355



Source: KLOA August, 2017 Traffic Study

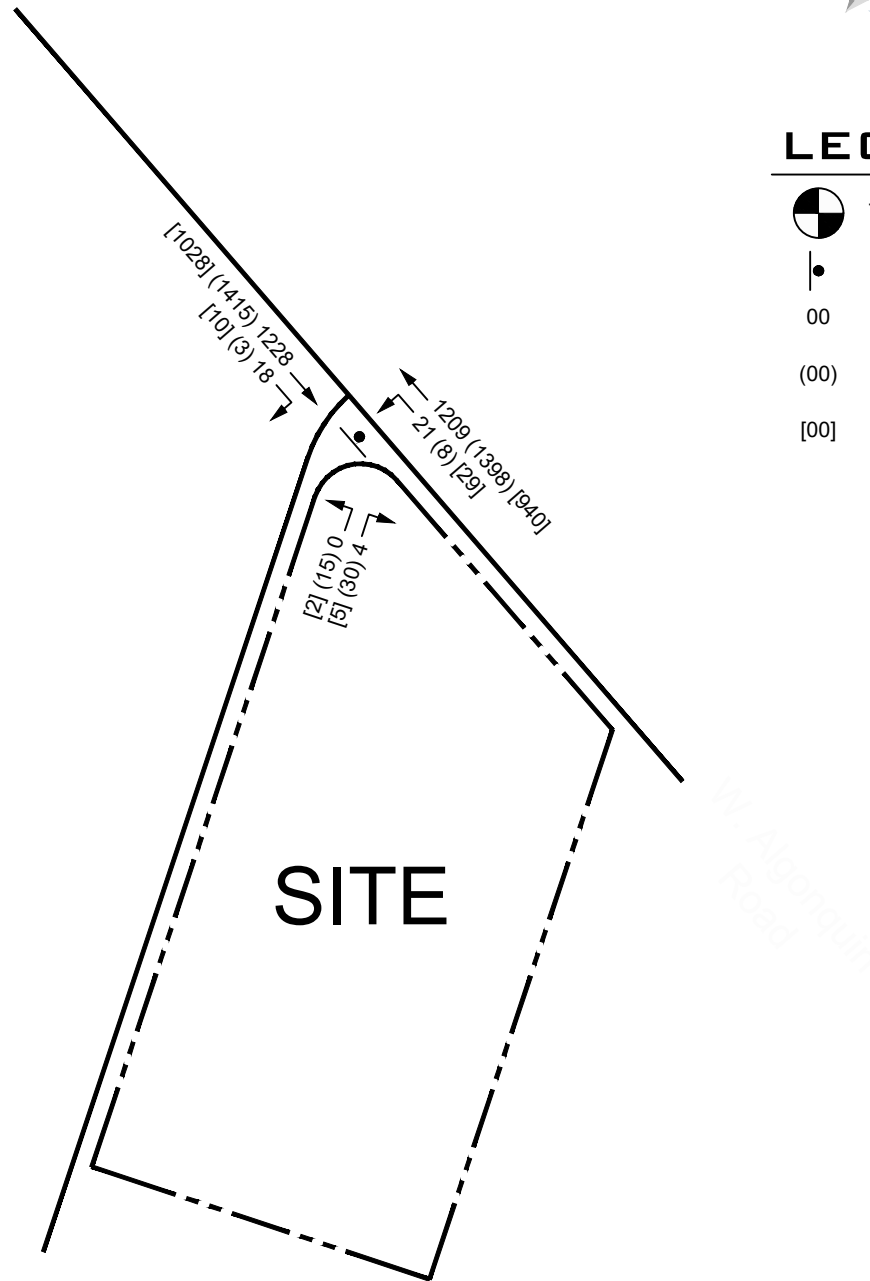






LEGEND

-  Traffic Signal
-  Stop Sign
- 00 AM Peak Hour
7:30AM - 8:30AM
- (00) PM Peak Hour
4:30PM - 5:30PM
- [00] Saturday Peak Hour
5:30PM - 6:30PM



2 - SITE TRAFFIC CHARACTERISTICS

Site Plan

The proposed development plan calls for the construction of a 62 room hotel on the northern portion of the existing building with the existing banquet facility reduced in size. It includes a rooftop amenity space (3,670 square feet). The four existing access drives along the north-south private road will remain. The parking lot provides 171 parking spaces. Twenty three additional valet parking spaces are proposed in the parking aisles.

Trip Generation

Traffic estimates for the hotel and rooftop amenity space were made using data provided by the Institute of Transportation Engineer's Trip Generation, 10th Ed. manual which contains trip generation surveys of other similar uses. The volume of traffic generated by the existing banquet hall was based on the existing traffic counts which were then adjusted higher to represent a peak event. During the morning peak, the banquet facility is closed and does not generate traffic. The resulting additional traffic generated by the hotel and banquet hall at peak operations is summarized in **Table 2**. Please note that this analysis is conservative because the banquet operations generally do not operate at full occupancy (see parking section for more details).

Table 2
Projected Site Traffic Volumes

Use	ITE Code	Size	Morning Peak			Evening Peak			Saturday Peak		
			In	Out	Total	In	Out	Total	In	Out	Total
Hotel	312	62 rooms	11	15	26	12	8	20	14	16	30
Rooftop Amenity (Drinking Place)	925	3,670 sq. ft.	Hotel Guests Only until after 6:00 PM						28	14	42 ⁽¹⁾
Banquet Hall 377 persons 5,654 sq. ft.	Existing Volumes		-	-	-	11	5	16	39	5	44
	Additional Traffic		-	-	-	79	-	79	51	-	51
	Banquet subtotal		-	-	-	90	5	90	90	5	95
Net additional traffic			+11	+15	+26	+91	+8	+99	+93	+30	+123

(1) Assumes indoor/ outdoor rooftop space open. Indoor space would generate 15 vehicles per hour during inclement weather.

Trip Distribution

The trip distribution for development is based on a combination of the existing traffic conditions, the distribution of attendees, and the regional road network. With regional access located east (I-90) and west (IL 53) of the site, it is expected that hotel, rooftop, and banquet guests will be evenly distributed in both directions. The distribution of site traffic is shown in **Table 3** and on **Figure 4**.

Table 3
Directional Distribution

Direction	Percentage
East on Algonquin Road	50%
West on Algonquin Road	50%
Total	100%

Site Traffic Trip Assignments



The additional vehicular trips that are generated by the development were distributed to the area roadways based on the directional distribution analysis. **Figure 5** displays the trip assignment for the hotel site traffic volumes. **Figure 6** illustrates the additional banquet traffic volumes. **Figure 7** shows the traffic volumes related to the rooftop traffic volumes on a Saturday.

The total future traffic volumes on the adjacent road system are a combination of the existing traffic volumes, projected non-site growth in those volumes, and the site traffic. Construction and opening of the hotel building is planned to be completed in 2019. Total traffic volumes are estimated for a period five years after the projected opening which is the Year 2024.

Data was provided by the Chicago Metropolitan Agency for Planning (CMAP) on the projected growth rates of the Average Daily Traffic (ADT) on Algonquin Road. A copy of the CMAP letter is included in the **Appendix**. There is a minimal amount growth projected along Algonquin Road (0.2 percent per year). These growth rates were applied to the existing Algonquin Road through volumes and were combined with the site traffic volumes to generate the Year 2024 total traffic volumes (**Figure 8**).



LEGEND

-  Traffic Signal
-  Stop Sign
- 00% Trip Distribution

50%



50%

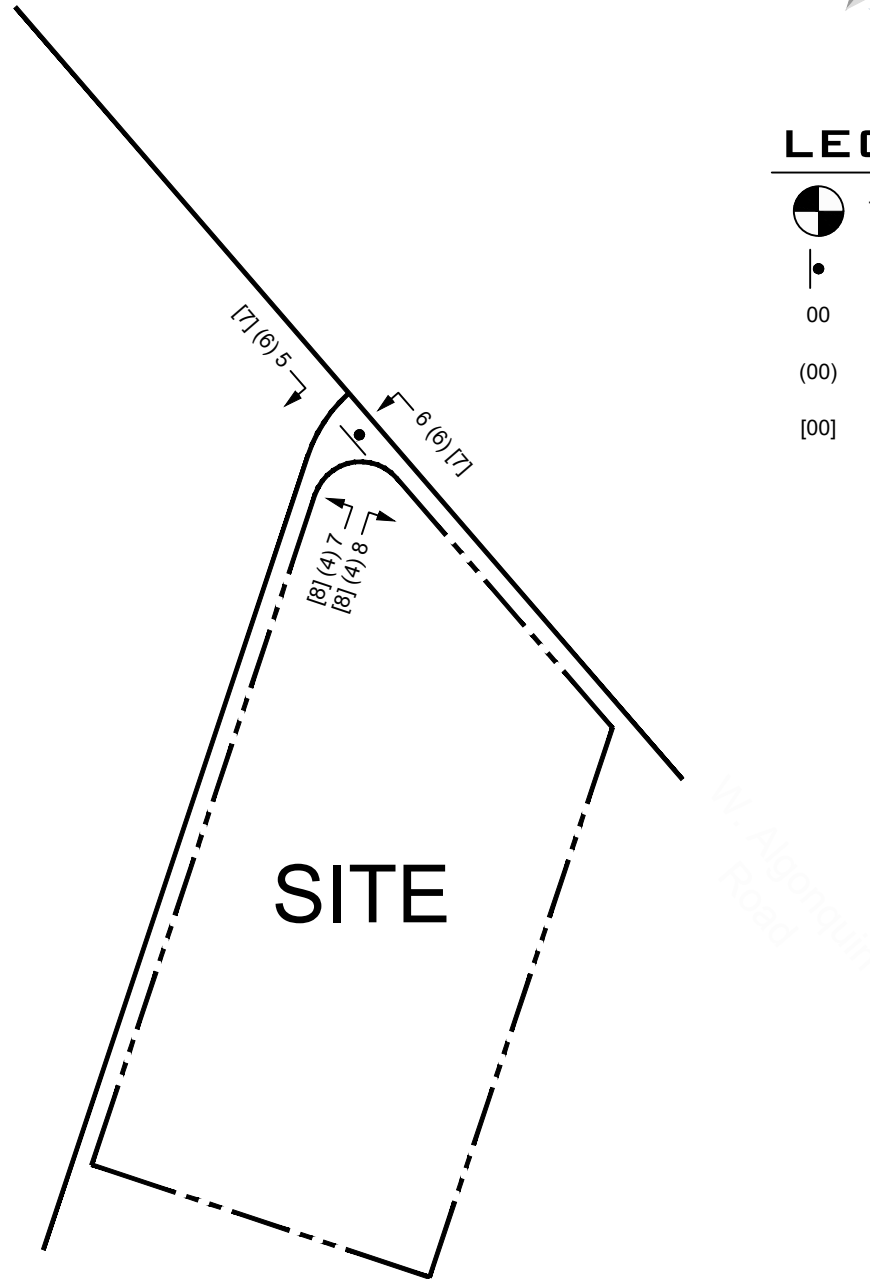
SITE

W. Algonquin Road





LEGEND

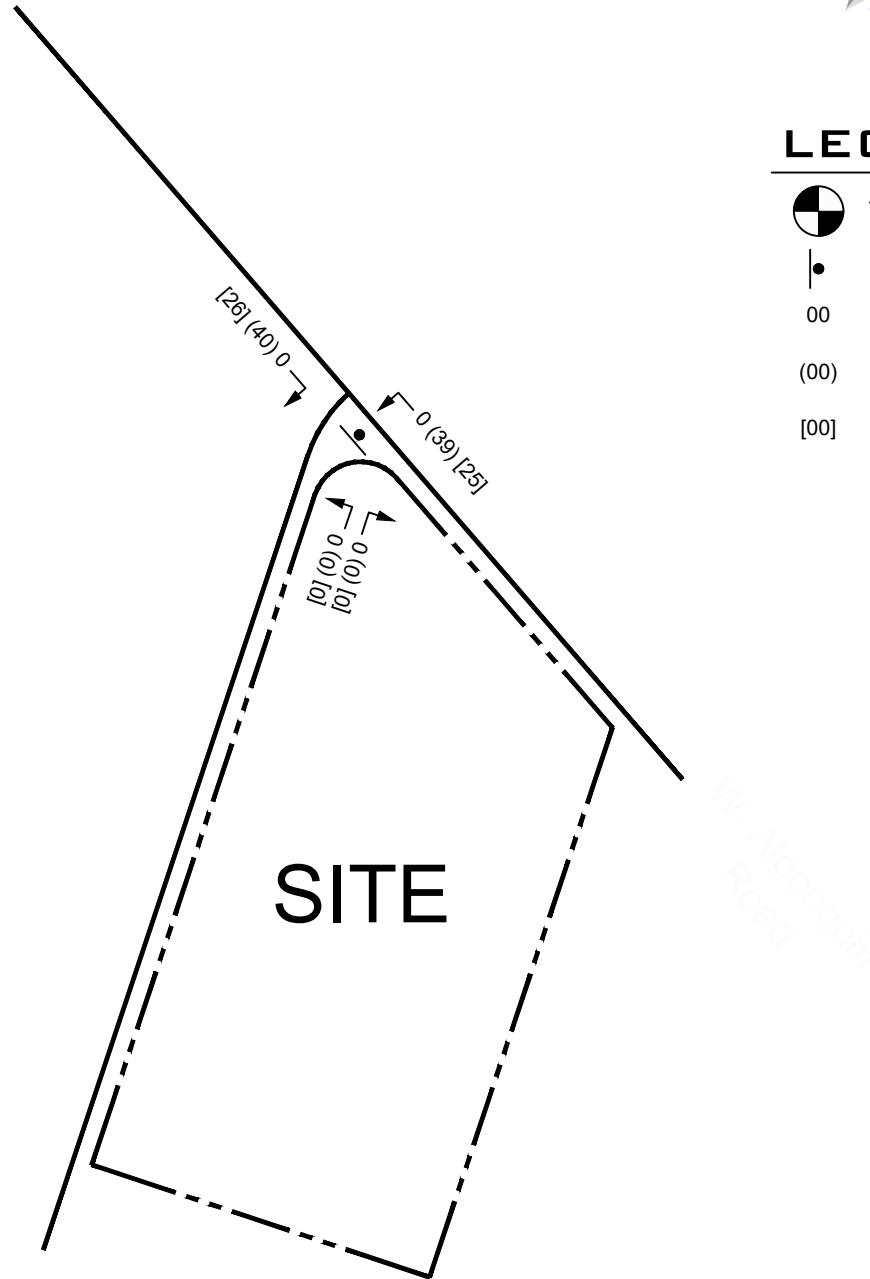
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- 00 AM Peak Hour
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- (00) PM Peak Hour
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5:30PM - 6:30PM







LEGEND

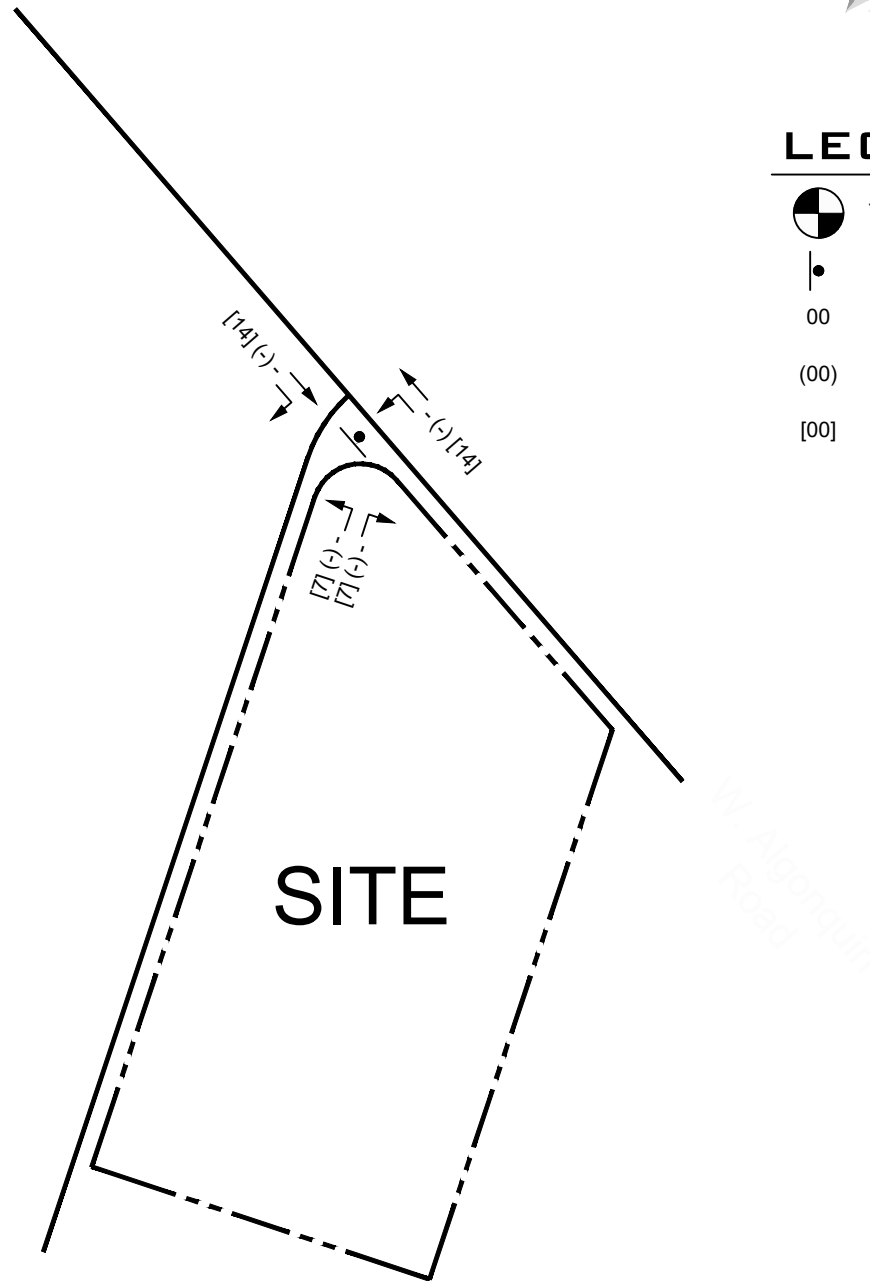
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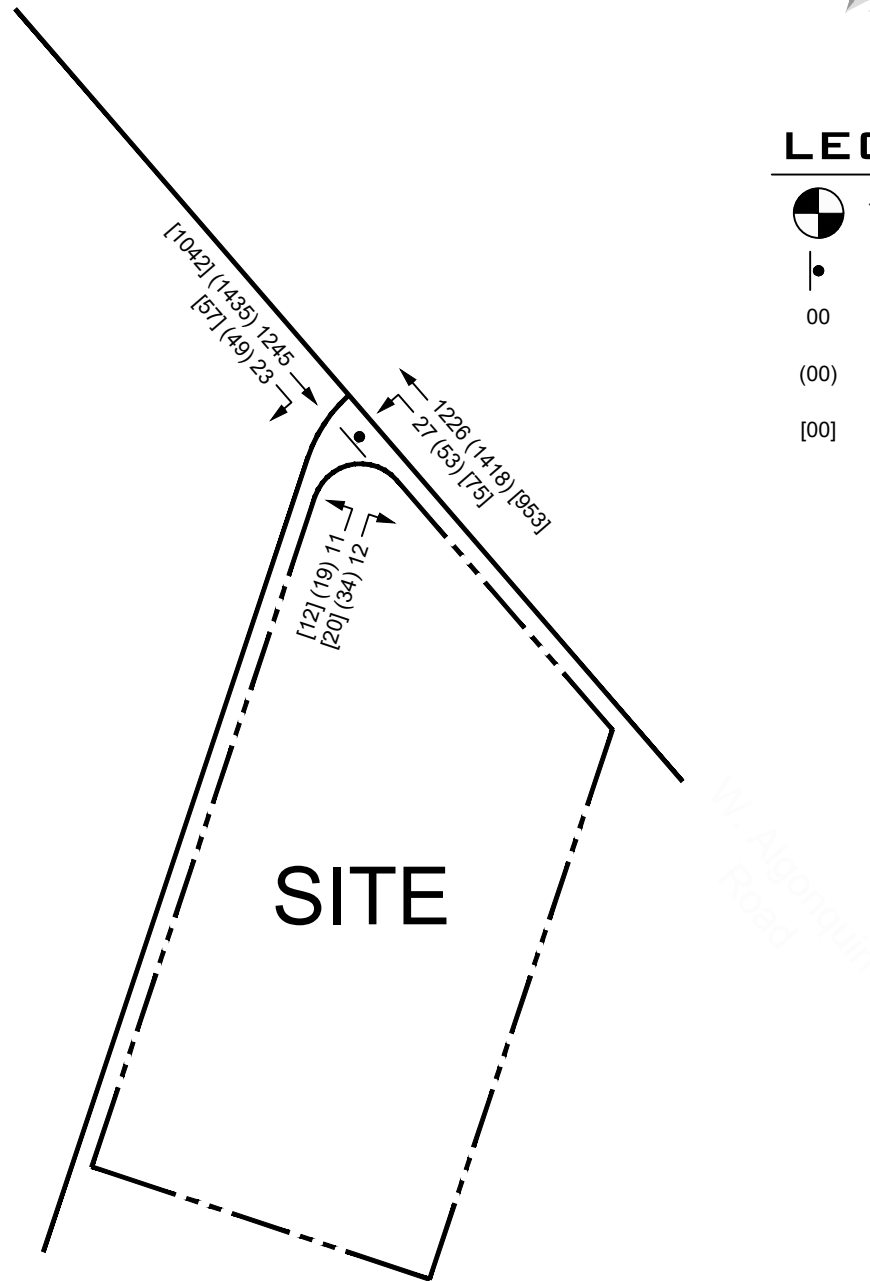
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3 – TRAFFIC ANALYSES

Intersection Capacity Analyses

An intersection’s ability to accommodate traffic flow is based on the average control delay experienced by vehicles passing through the intersection. The intersection and individual traffic movements are assigned a level of service (LOS), ranging from A to F based on the control delay created by a traffic signal or stop sign. Control delay consists of the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. LOS A has the best traffic flow and least delay. LOS E represents saturated or at capacity conditions. LOS F experiences oversaturated conditions and extensive delays. The Highway Capacity Manual definitions for levels of service and the corresponding control delay for both signalized and unsignalized intersections are shown in **Table 4**.

Capacity analyses were conducted for each intersection using the Highway Capacity Software (HCS v7.5) to determine the existing and future operating conditions of the access system. These analyses were performed for the weekday and Saturday peak-hours and are summarized in **Table 5**. Copies of the capacity analyses are included in the **Appendix**.

Table 4
Level of Service Criteria for Intersections

Level of Service	Description	Control Delay (seconds/vehicle)	
		Signals	Stop Signs
A	Minimal delay and few stops	<10	<10
B	Low delay with more stops	>10-20	>10-15
C	Light congestion	>20-35	>15-25
D	Congestion is more noticeable with longer delays	>35-55	>25-35
E	High delays and number of stops	>55-80	>35-50
F	Unacceptable delays and over capacity	>80	>50

Source: Highway Capacity Manual

Table 5
Intersection Level of Service and Delay
Algonquin Road at Access Road

Scenario	Movement	AM Peak	PM Peak	Saturday Peak
2017 Existing	Westbound Left	B-12.6	B-13.4	B-10.8
	Northbound Left/Right	B-14.3	D-26.5	C-15.2
2024 Total Traffic	Westbound Left	B-12.8	C-15.2	B-11.6
	Northbound Left/Right	C-24.5	D-32.2	C-18.4

The results of the capacity analyses indicate that at the intersection of Algonquin Road with the north-south access roadway the northbound approach (exiting movements) currently operates at acceptable levels of service during the peak hours. Under Year 2024 projected traffic conditions, the northbound approach is projected to continue operating at an acceptable level of service and no roadway improvements are recommended.

Westbound left-turn movements from Algonquin Road onto the access roadway are projected to continue operating well during all three peak hours with 95th percentile queues of one vehicle.

As such, the proposed expansion traffic will have a limited impact on the operations of the intersection of Algonquin Road with the north-south Access Roadway and the expansion generated traffic will not have a significant impact on the industrial developments that also utilize the access roadway. Furthermore, the existing two-way left-turn lane along Algonquin Road will continue to be adequate in accommodating left-turns onto the access roadway.

4 - PARKING

The site plan for the combined hotel and banquet facility provides a total of 171 parking spaces including 6 accessible spaces. An additional 23 valet parking spaces are proposed in the northern and southern parking aisles to provide additional parking if needed.

Village Parking Requirements

The parking requirements based on the Village of Arlington Heights's Zoning Code are summarized in **Table 6**. The proposed 171 space parking plan, not including 23 valet parking stalls, does not meet the zoning requirements and a variation of 77 spaces would be needed. If the capacity of the banquet spaces is reduced to 250 persons, then the variation needed would be 39 spaces. Six accessible stalls are provided and meet the ADA requirements.

Table 6
Arlington Heights Zoning Requirements

Use	Size	Zoning Code	Required Spaces	Proposed Spaces
Banquet/Convention	377 (250) ⁽¹⁾ persons	30% of occupancy	113 (75) ⁽¹⁾	
Hotel	62 rooms	1 space per room	62	
Amenity Space	244 persons	30% of occupancy	73	
Totals			248 (210)	171⁽²⁾

(1) Alternate plan with Banquet area reduced to 250 persons maximum attendance

(2) Does not include 23 valet on-site parking stalls

The shortfall in the parking required by zoning (39 or 77 spaces) can be accommodated by a combination of 23 on-site valet spaces and overflow parking agreements with three adjacent parcels to the property providing over 250 spaces. These additional 273 spaces exceed the zoning shortfall. The peak demand of the hotel, amenity space, and the banquet facility is at night and on weekends when the three businesses are closed.

The off-site agreements are with:

Brit-O-Matic to the south to allow their northern parking lot (25 spaces)

Chicago Metro Hand Therapy to the east for 60 plus spaces.

PACE to the north across Algonquin Road has 168 spaces. These spaces would be used by staff and valet parking only so no patrons will cross the road.

Parking surveys were conducted at these three facilities after 6 PM on a weeknight and weekends to verify that they were empty during those time frames. The PACE parking lot had 1 or 2 cars parked in their lot most likely for maintenance or security purposes. Brit-O-Matic and Chicago Metro had no vehicles parked. The PACE lot and the Chicago Metro lot also had PACE shuttle buses parked in both lots which were not included in the available parking supply.

National Parking Data

The parking requirements for the hotel were also calculated based on data in the Institute of Transportation Engineer’s Parking Generation 4th Ed. manual for the hotel rooms and the Urban Land Institute Shared Parking 2nd Edition manual for the night clubs banquet/convention space. The results are shown in **Table 7**. The ITE manual does not have data for banquet halls. The national data shows the peak parking demand is about 53 spaces over the proposed supply for the development. No adjustment was taken for hotel guests also using the banquet or rooftop spaces that would reduce the overall demand.

**Table 7
ITE/ULI Parking Requirements**

Use	Size	ITE/ULI Data (weekday/Saturday)	Weekday	Saturday	Proposed Spaces
Banquet/Convention	5,654 sq. ft.	20/20 spaces per 1,000 sq. ft.	113	113	
Hotel	62 rooms	0.6/0.66 spaces per room	37	41	
Coffee/Drink Area	90 sq. ft. of seating area	Included in hotel rate	-	-	
Rooftop	3,670 sq. ft. (244 persons)	16.5/19.0 spaces per 1,000 sq. ft.	61	70	
Total			211	224	171⁽¹⁾

(1) Does not include 23 valet parking stalls

Shared Parking Analysis

The zoning analysis has not taken into account the shared parking characteristics of each individual use. The Village of Arlington Heights permits the consideration of shared parking when several different land-uses occupy the same site. Shared parking is defined as the use of a parking space to serve two or more individual land uses without conflict or encroachment. A detailed shared parking study was conducted for each development zone from 6:00 AM to Midnight based on the ULI methodology and is summarized in **Table 8**. The shared parking analysis shows that there is a shortage of 75 to 93 spaces on-site if all uses are fully occupied.

As mentioned under zoning requirements, there are overflow parking provisions for 273 spaces to accommodate those additional vehicles.

**Table 8
Shared Parking Analysis**

	Banquet Space		Hotel Guest Parking		Hotel Employee Parking		Rooftop			
Weekday	Size	5,654	Rooms	100	Rooms	100		Total Parking	Parking Available	Diff.
	Units	20	Units =	0.8	Units =	0.2				
	Peak	113.1	Peak	80	Peak	20				
	% Veh.		% Veh.		% Veh.					
6:00 AM	0%	0.0	95%	47.1	5%	0.6		77.0	171	94.0
7:00 AM	0%	0.0	90%	44.6	30%	3.7		78.0	171	93.0
8:00 AM	30%	33.9	80%	39.7	90%	11.2		115.9	171	55.1
9:00 AM	60%	67.8	70%	34.7	90%	11.2		141.8	171	29.2
10:00 AM	60%	67.8	60%	29.8	100%	12.4		135.8	171	35.2
11:00 AM	60%	67.8	60%	29.8	100%	12.4		135.8	171	35.2
Noon	65%	73.5	55%	27.3	100%	12.4		137.5	171	33.5
1:00 PM	65%	73.5	55%	27.3	100%	12.4		137.5	171	33.5
2:00 PM	65%	73.5	60%	29.8	100%	12.4		141.5	171	29.5
3:00 PM	65%	73.5	60%	29.8	100%	12.4		141.5	171	29.5
4:00 PM	65%	73.5	65%	32.2	90%	11.2		143.5	171	27.5
5:00 PM	100%	113.1	70%	34.7	70%	8.7	5	188.1	171	-17.1
6:00 PM	100%	113.1	75%	37.2	40%	5.0	15	196.1	171	-25.1
7:00 PM	100%	113.1	75%	37.2	20%	2.5	40	217.1	171	-46.1
8:00 PM	100%	113.1	80%	39.7	20%	2.5	61	242.1	171	-71.1
9:00 PM	100%	113.1	85%	42.2	20%	2.5	61	246.1	171	-75.1
10:00 PM	50%	56.5	95%	47.1	20%	2.5	61	197.5	171	-26.5
11:00 PM	0%	0.0	100%	49.6	10%	1.2	61	143.0	171	28.0
Midnight	0%	0.0	100%	49.6	5%	0.6	61	142.0	171	29.0
Weekend	Size	5,654	Rooms	100	Rooms	100		Total Parking	Parking Available	Diff.
	Units	20	Units =	0.85	Units =	0.15				
	Peak	113.1	Peak	85	Peak	15				
	% Veh.		% Veh.		% Veh.					
6:00 AM	0%	0.0	95%	80.8	5%	0.8		81.5	171	89.5
7:00 AM	0%	0.0	90%	76.5	30%	4.5		81.0	171	90.0
8:00 AM	30%	33.9	80%	68.0	90%	13.5		115.4	171	55.6
9:00 AM	60%	67.8	70%	59.5	90%	13.5		140.8	171	30.2
10:00 AM	60%	67.8	60%	51.0	100%	15.0		133.8	171	37.2
11:00 AM	60%	67.8	60%	51.0	100%	15.0		133.8	171	37.2
Noon	65%	73.5	55%	46.8	100%	15.0		135.3	171	35.7
1:00 PM	65%	73.5	55%	46.8	100%	15.0		135.3	171	35.7
2:00 PM	65%	73.5	60%	51.0	100%	15.0		139.5	171	31.5
3:00 PM	65%	73.5	60%	51.0	100%	15.0		139.5	171	31.5
4:00 PM	65%	73.5	65%	55.3	90%	13.5		142.3	171	28.7
5:00 PM	100%	113.1	70%	59.5	75%	11.3	5	188.8	171	-17.8
6:00 PM	100%	113.1	75%	63.8	60%	9.0	25	210.8	171	-39.8
7:00 PM	100%	113.1	75%	63.8	55%	8.3	40	225.1	171	-54.1
8:00 PM	100%	113.1	80%	68.0	55%	8.3	70	259.3	171	-88.3
9:00 PM	100%	113.1	85%	72.3	55%	8.3	70	263.6	171	-92.6
10:00 PM	50%	56.5	95%	80.8	45%	6.8	70	214.0	171	-43.0
11:00 PM	0%	0.0	100%	85.0	45%	6.8	70	161.8	171	9.3
Midnight	0%	0.0	100%	85.0	30%	4.5	70	159.5	171	11.5

Banquet Hall/Convention Center Usage

The remaining banquet hall area after the hotel construction will cover 5,654 square feet and accommodate up to 377 guests. While the zoning code and its parking requirements are based on the maximum room capacity, rarely does the maximum occupancy occur. The European Crystal Banquet and Convention Center provided the top nine events by attendance for the year 2017. Overall, 98% events will be less than 250 persons at the banquet facility. In other words, while peak events do occur, they don't represent typical conditions.

**Table 9
Top Nine Events in 2017 by Attendance**

Rank	Date	Day	Attendance	Percent of Banquet Capacity
1	February 25 th	Saturday	335	89%
2	September 22 nd	Friday	331	88%
3	May 20 th	Saturday	320	85%
4	August 12 th	Saturday	318	84%
5	April 8 th	Saturday	317	84%
6	July 29 th	Saturday	302	80%
7	December 29 th	Friday	289	77%
8	November 25 th	Saturday	275	73%
9	October 28 th	Saturday	246	65%

Parking Surveys

European Crystal Banquet and Convention Center provided to EEA the following parking data in **Table 10** that they collected at their facility. Overall the attendance was a fraction of the facilities capacity and had average vehicle occupancy of 2.06 persons per vehicle for events ranging 69 to 153 attendees.

**Table 10
Typical Events in 2018**

Event	Date	Day	Attendance	Parked Vehicles	Occupancy	Vehicles per person
Wedding	March 10 th	Saturday	103	49	28%	2.10
Lunch	March 15 th	Thursday	69	31	18%	2.22
Wedding	March 23 rd	Friday	133	67	38%	1.98
Wedding	April 7 th	Saturday	149	73	42%	2.04
Wedding	April 7 th	Saturday	153	76	43%	2.01
Lunch	April 10 th	Tuesday	88	41	23%	2.14

EEA conducted parking surveys at three weekend events in April 2018 as summarized below in **Table 11**. Two events had 346 and 359 attendees with the peak demand of 125 and 129 vehicles respectively. The average automobile occupancy was 2.77 or 2.78 persons per vehicle. A smaller event of 103 persons had 54 parked vehicles or 1.91 persons per vehicle.

**Table 11
EEA 2018 Parking Surveys**

Date	April 21 st	April 22 nd	April 28 th
Day	Saturday	Sunday	Saturday
Attendees	346	103	359
5:00 PM	-	54	-
6:00 PM	90	53	129
7:00 PM	119	52	128
8:00 PM	125	52	117
9:00 PM	123	13	62
Persons Per Vehicle	2.77	1.91	2.78

For the April 21st event, EEA also did a representative sample of the number of persons per vehicle and found results consistent with the overall parking count (2.86 vs 2.77 persons per vehicle). A shuttle bus was observed dropping off 30 attendees.

**Table 12
Auto Occupancy Survey – April 21st**

Persons In Vehicle	Number of Vehicles	Total Persons
1	7	7
2	24	48
3	7	21
4	5	20
30 ⁽¹⁾	1	30
Totals	44	126
Average of 2.86 persons/vehicle		

(1) Shuttle Bus

The results of the parking surveys indicate that as the number of attendees increase so does the vehicle occupancy rates increase. For the smaller events, the vehicle occupancy was around 2 persons per vehicle. As the events exceeded 300+ attendees, the parking occupancy varied from 2.77 to 2.86 persons per vehicles. The Village Zoning Code parking requirement is based on 30% of the allowed occupancy or the equivalent of 3.33 persons per vehicle. The surveyed occupancy data is lower (-17%) which would result in a higher parking demand. The banquet facility would need 136 spaces (377/2.77) instead of the 113 spaces required by code or 23 more spaces. A smaller facility would need 90 spaces (250/2.77).

Parking Summary

The various parking methods indicate that the site is short 39 to 93 parking spaces when all three uses are fully occupied at the same time. It is also assumed that the rooftop amenity space will be at maximum capacity (244 persons) per the building code. Under any of the scenarios, overflow parking has been arranged to accommodate the development's needs.

Contingency Planning

The owners of the facility have been using several strategies to accommodate parking at peak times.

- Valet Parking – The site plan shows 23 additional parking spaces to be used in conjunction with a valet parking operation which stacks one row of vehicles in the drive aisle at the north end and at the south end of the site. Emergency vehicle circulation will not be impeded around the building.
- Off-site Parking – The banquet hall has agreements with their neighbors for 273 additional spaces.
- Replacement Parking – In the event that the parking agreement expires with Brite-O-Matic, there are a number of commercial businesses within 1,000 feet of the hotel/banquet site with hundreds of parking spaces empty in the evenings and weekends. The owners could negotiate a replacement agreement for overflow or valet parking.

5 - SUMMARY

The findings of the traffic and parking study for the addition of a 100 room hotel at the European Crystal Banquet and Convention Center are:

1. The proposed 62 room hotel will generate a low volume of traffic (20-30 vehicles per hour) on the adjacent road network.
2. The addition of the hotel will not adversely impact the level of service and delay at the existing access road and will not impede Algonquin Road (IL 62) through traffic.
3. Parking provided for the combined banquet hall, rooftop amenity, and hotel does not meet the Village of Arlington Heights zoning code requirement of 248 spaces.
4. Review of national parking data and a shared parking analysis indicates the peak parking demand of the combined uses ranges from 211 to 224 vehicles.
5. The peak-occupancy of the banquet facility rarely occurs with the majority of the events under two-thirds of the banquet hall's capacity.
6. The parking surveys conducted by the applicant and separate surveys by EEA indicated the following:
 - a. The lower attended events have higher vehicle occupancy ratios (around 2 persons per vehicle) than the higher attended events (2.77-2.86 persons per vehicle).
 - b. The higher attendance events had higher parking ratios than the Village zoning code (30% vs 36% occupancy).
7. The resulting worst-case parking demand is 264 vehicles for all uses at peak occupancy.
8. With the 23 valet parking and 171 marked spaces, there is sufficient parking on-site to accommodate 198 vehicles.
9. Contingency plans are in place with three adjoining properties to provide overflow parking in the evenings and weekends during the peak times for the facility (273 spaces). One agreement has been in place for 18 years.
10. In the unlikely event that these agreements are not continued, there are a number of businesses with available parking in the immediate area that can be contacted in the future if needed.



APPENDIX

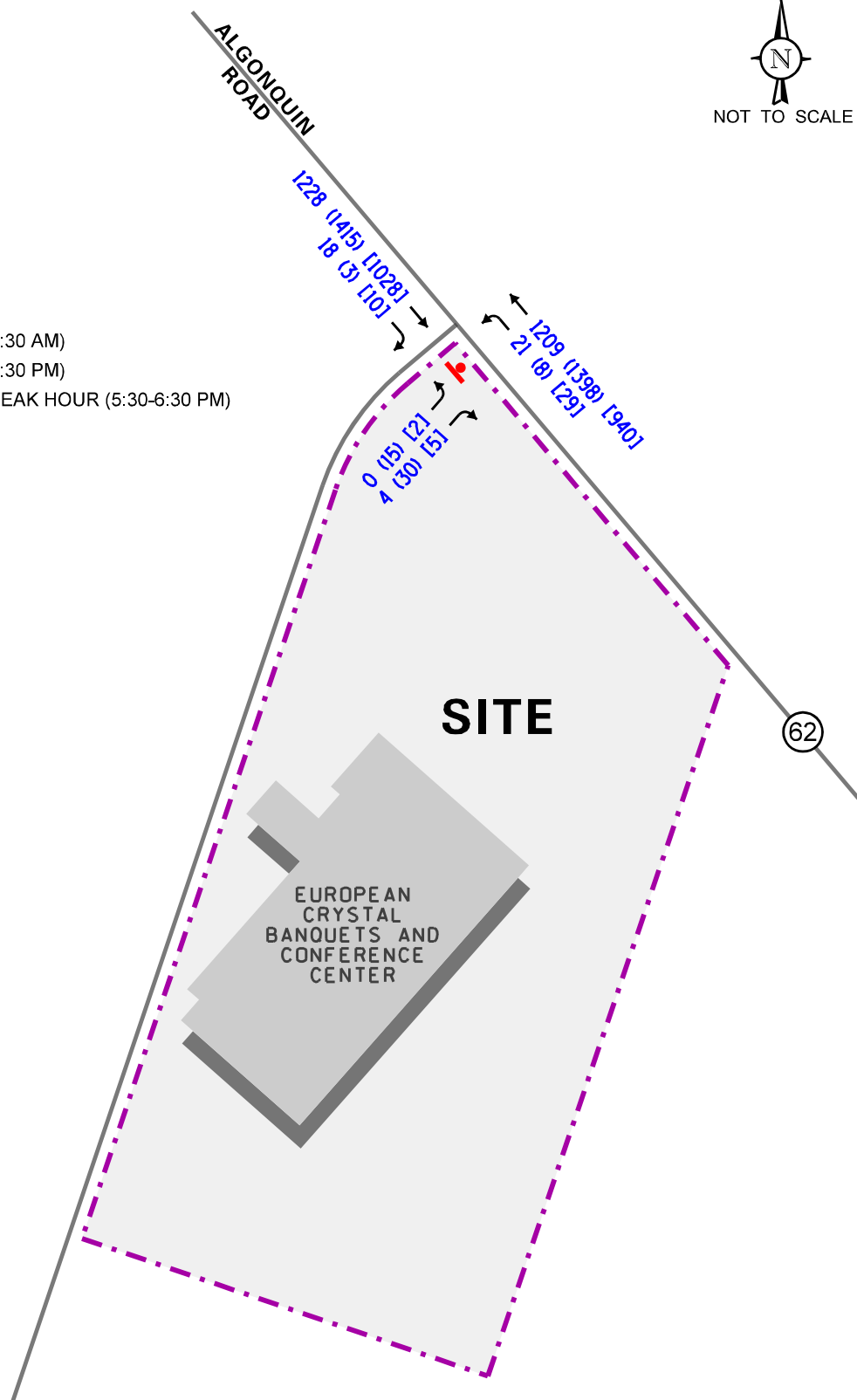
- **Existing Traffic Counts**
- **CMAQ Letter**
- **Intersection Capacity Analyses**



NOT TO SCALE

LEGEND

- 00** - AM PEAK HOUR (7:30-8:30 AM)
- (00)** - PM PEAK HOUR (4:30-5:30 PM)
- [00]** - SATURDAY EVENING PEAK HOUR (5:30-6:30 PM)



Proposed Ivy Hotel
Arlington Heights, Illinois

Existing Traffic Volumes



Job No: 16-051

Figure: 4



Chicago Metropolitan Agency for Planning

233 South Wacker Drive
Suite 800
Chicago, Illinois 60606

312 454 0400
www.cmap.illinois.gov

April 11, 2017

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

**Subject: IL 62 (Algonquin Road) from Golf Road to Arlington Heights Road
IDOT**

Dear Mr. May:

In response to a request made on your behalf and dated April 10, 2017, we have developed year 2040 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current ADT	Year 2040 ADT
IL 62 (Algonquin Rd) - Golf Rd to Arlington Heights Rd	29,900	31,400

Traffic projections are developed using existing ADT data provided in the request letter and the results from the March 2017 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2040 socioeconomic projections and assumes the implementation of the GO TO 2040 Comprehensive Regional Plan for the Northeastern Illinois area.

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

Sincerely,

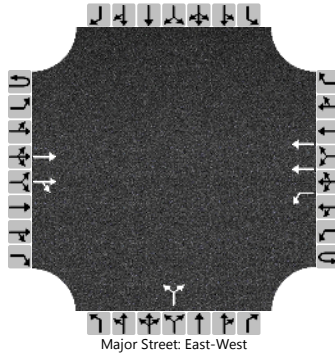
Jose Rodriguez, PTP, AICP
Senior Planner, Research & Analysis

cc: Fortmann (IDOT)
S:\AdminGroups\ResearchAnalysis\TrafficForecasts_CY2017\ArlingtonHeights\ck-30-17\ck-30-17.docx

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	AJB			Intersection	Algonquin Road Access		
Agency/Co.	Eriksson Engineering			Jurisdiction	IDOT/Arl. Heights		
Date Performed	5/3/2018			East/West Street	W. Algonquin Road		
Analysis Year	2018			North/South Street	Site Access Driveway		
Time Analyzed	AM Peak Hour			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Existing Conditions						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	0	2	0	0	1	2	0	0	1	0		0	0	0	
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1228	18	0	21	1209		0		4					
Percent Heavy Vehicles (%)					3	3			3		3					
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

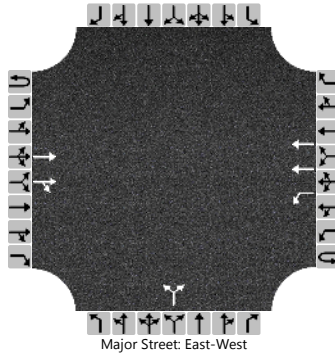
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)					23					4						
Capacity, c (veh/h)					499					393						
v/c Ratio					0.05					0.01						
95% Queue Length, Q ₉₅ (veh)					0.1					0.0						
Control Delay (s/veh)					12.6					14.3						
Level of Service (LOS)					B					B						
Approach Delay (s/veh)					0.2				14.3							
Approach LOS									B							

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	AJB			Intersection	Algonquin Road Access		
Agency/Co.	Eriksson Engineering			Jurisdiction	IDOT/Arl. Heights		
Date Performed	5/3/2018			East/West Street	W. Algonquin Road		
Analysis Year	2018			North/South Street	Site Access Driveway		
Time Analyzed	PM Peak Hour			Peak Hour Factor	0.94		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Existing Conditions						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1415	3	0	8	1398			15		30				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

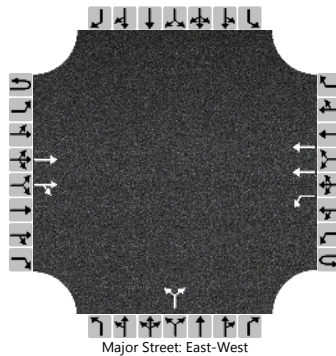
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						9						48				
Capacity, c (veh/h)						435						214				
v/c Ratio						0.02						0.22				
95% Queue Length, Q ₉₅ (veh)						0.1						0.8				
Control Delay (s/veh)						13.4						26.5				
Level of Service (LOS)						B						D				
Approach Delay (s/veh)					0.1				26.5							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	AJB			Intersection	Algonquin Road Access		
Agency/Co.	Eriksson Engineering			Jurisdiction	IDOT/Arl. Heights		
Date Performed	5/3/2018			East/West Street	W. Algonquin Road		
Analysis Year	2018			North/South Street	Site Access Driveway		
Time Analyzed	Saturday Peak Hour			Peak Hour Factor	0.99		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Existing Conditions						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1028	10	0	29	940			2		5				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.5		6.9			
Critical Headway (sec)						4.16					6.86		6.96			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.23					3.53		3.33			

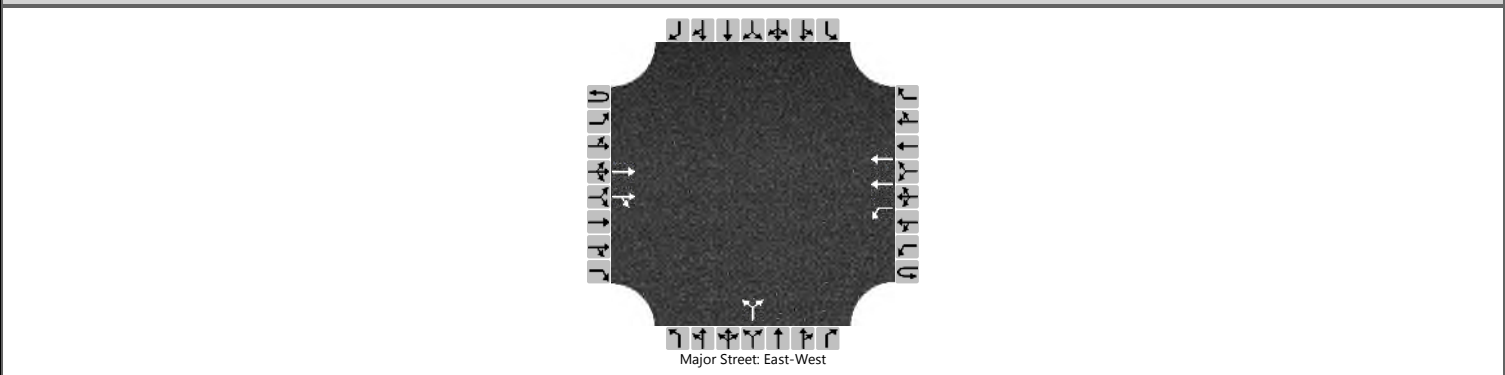
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						29						7				
Capacity, c (veh/h)						653						359				
v/c Ratio						0.04						0.02				
95% Queue Length, Q ₉₅ (veh)						0.1						0.1				
Control Delay (s/veh)						10.8						15.2				
Level of Service (LOS)						B						C				
Approach Delay (s/veh)					0.3				15.2							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	AJB			Intersection	Algonquin Road Access		
Agency/Co.	Eriksson Engineering			Jurisdiction	IDOT/Arl. Heights		
Date Performed	10/18/2018			East/West Street	W. Algonquin Road		
Analysis Year	2024			North/South Street	Site Access Driveway		
Time Analyzed	AM Peak Hour			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Proposed Conditions						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1245	23	0	27	1226			11		12				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.5		6.9			
Critical Headway (sec)						4.16					6.86		6.96			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.23					3.53		3.33			

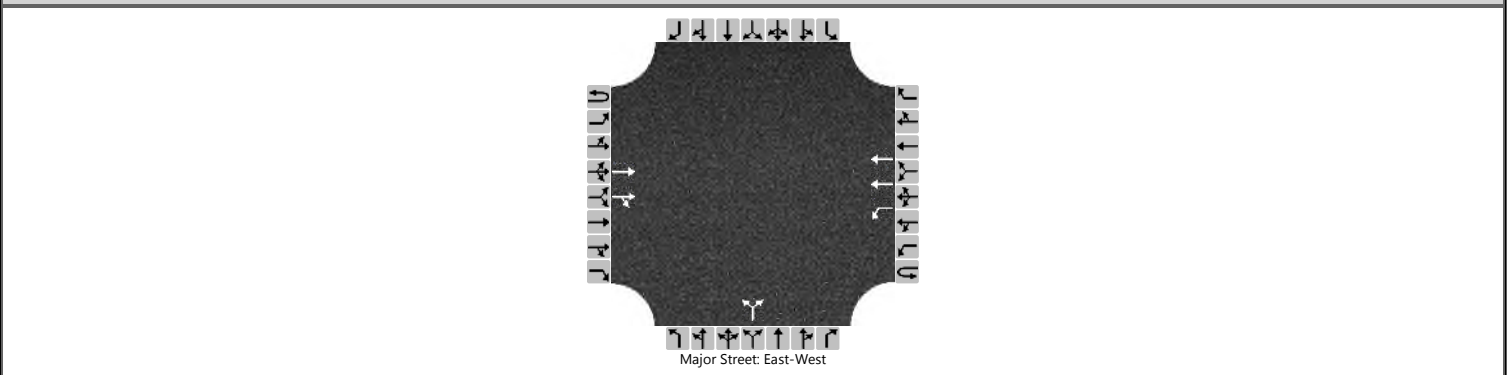
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						29						25				
Capacity, c (veh/h)						488						209				
v/c Ratio						0.06						0.12				
95% Queue Length, Q ₉₅ (veh)						0.2						0.4				
Control Delay (s/veh)						12.8						24.5				
Level of Service (LOS)						B						C				
Approach Delay (s/veh)					0.3				24.5							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	AJB			Intersection	Algonquin Road Access		
Agency/Co.	Eriksson Engineering			Jurisdiction	IDOT/Arl. Heights		
Date Performed	10/18/2018			East/West Street	W. Algonquin Road		
Analysis Year	2024			North/South Street	Site Access Driveway		
Time Analyzed	PM Peak Hour			Peak Hour Factor	0.94		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Proposed Conditions						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	0	2	0	0	1	2	0	0	1	0		0	0	0	
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1435	49	0	53	1418		19		34					
Percent Heavy Vehicles (%)					3	3			3		3					
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

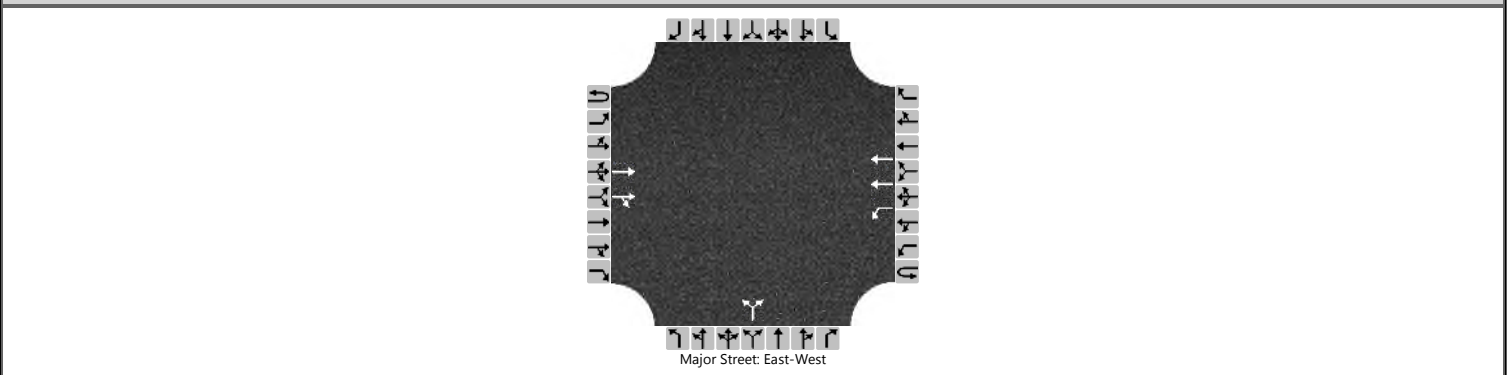
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						56				56						
Capacity, c (veh/h)						408				188						
v/c Ratio						0.14				0.30						
95% Queue Length, Q ₉₅ (veh)						0.5				1.2						
Control Delay (s/veh)						15.2				32.2						
Level of Service (LOS)						C				D						
Approach Delay (s/veh)					0.5				32.2							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	AJB			Intersection	Algonquin Road Access		
Agency/Co.	Eriksson Engineering			Jurisdiction	IDOT/Arl. Heights		
Date Performed	10/18/2018			East/West Street	W. Algonquin Road		
Analysis Year	2024			North/South Street	Site Access Driveway		
Time Analyzed	Saturday Peak Hour			Peak Hour Factor	0.99		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Proposed Conditions						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1042	57	0	75	953			12		20				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.5		6.9			
Critical Headway (sec)						4.16					6.86		6.96			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.23					3.53		3.33			

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						76						32				
Capacity, c (veh/h)						619						300				
v/c Ratio						0.12						0.11				
95% Queue Length, Q ₉₅ (veh)						0.4						0.4				
Control Delay (s/veh)						11.6						18.4				
Level of Service (LOS)						B						C				
Approach Delay (s/veh)					0.8				18.4							
Approach LOS									C							