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

MEMORANDUM TO:	Dani Toole Bright Horizons
FROM:	Javier Millan Senior Consultant
	Luay Aboona, PE Principal
DATE:	April 14, 2015
SUBJECT:	Traffic and Parking Study Proposed Bright Horizons Children's Center Arlington Heights, Illinois

This memorandum presents the findings and recommendations of a traffic and parking study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed Bright Horizons Childcare Center (Center) to be located at 1120 N. Arlington Heights Road in Arlington Heights, Illinois. The site is located on the west side of Arlington Heights Road approximately 330 feet north of Oakton Street.

The plans call for occupying the existing 16,500 square feet building with a child care center accommodating up to 192 children and up to 36 full and part-time employees. The Center will be open Monday through Friday between 6:30 A.M. and 6:30 P.M. and will provide off-street parking for approximately 60 vehicles.

Vehicular access will be provided via the existing full ingress/egress access drive on Arlington Heights Road.

The purpose of this study includes the following.

- Determine the existing traffic conditions in the area to establish a base condition.
- Assess the impact that the proposed Center will have on traffic conditions in the area.
- Determine what the parking requirement is to accommodate the proposed Center.

The following sections of this memorandum present the following.

- Existing site conditions.
- A description of the proposed Center development plan.
- Vehicle trip generation for the proposed Center.
- Traffic analyses for the weekday morning and evening peak hours for both the existing and future conditions.
- Parking analysis for the proposed development.
- Recommendations with respect to site access, internal circulation and parking for the future condition.

Existing Conditions

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

Site Location

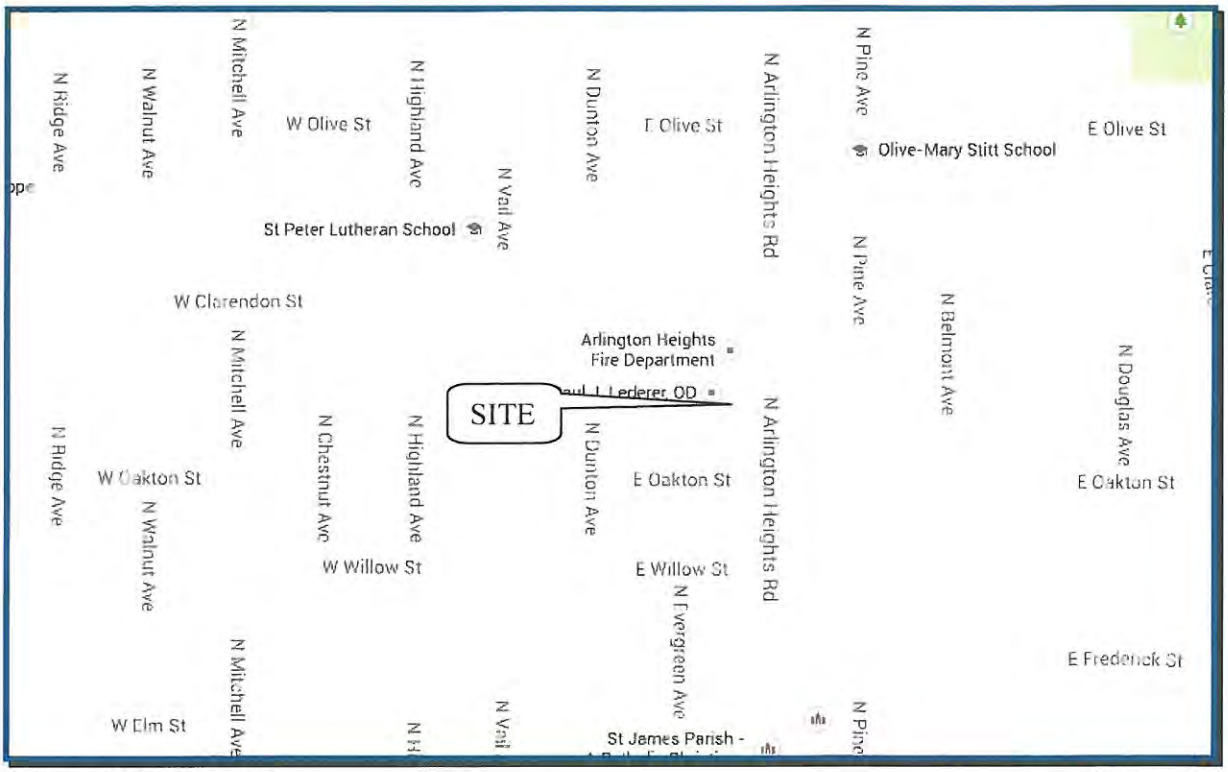
The site is located on the west side of Arlington Height Road approximately 330 feet north of Oakton Street. The site is bound by the Arlington Heights Fire Station No. 2 Headquarters to the north, an office building to the south, Arlington Heights Road to the east and single-family homes to the west. **Figure 1** illustrates the location of the proposed development with respect to the area roadway system. **Figure 2** shows an aerial photo of the site.

Existing Roadway System Characteristics

The principal roads in the vicinity of the site are described below.

Arlington Heights Road is a four lane roadway that is undivided between Miner Street to the south and the access drive serving the 1410/1420 Arlington Heights Road medical office buildings to the north (approximately 1.15 miles). Arlington Heights Road is signalized at its intersection with Oakton Street to the south and at its intersection with Olive Street to the north. No exclusive turn lanes are provided at either. On-street parking is not allowed on either side of the road. Arlington Heights Road has a posted speed limit of 30 mph, carries an average daily traffic (ADT) of 22,800 vehicles per day (vpd) and is under the jurisdiction of the Village of Arlington Heights.

Oakton Street is an east-west two-lane road with a posted speed limit of 25 mph that provides an exclusive left-turn lane and a shared through/right-turn lane on both approaches at its signalized intersection with Arlington Heights Road. On-street parking is not allowed on either side of the road, carries an ADT of 4,800 vpd and is under the jurisdiction of the Village of Arlington Heights.



Map of Site Location **Figure 1**

Aerial Photo of Site Location **Figure 2**

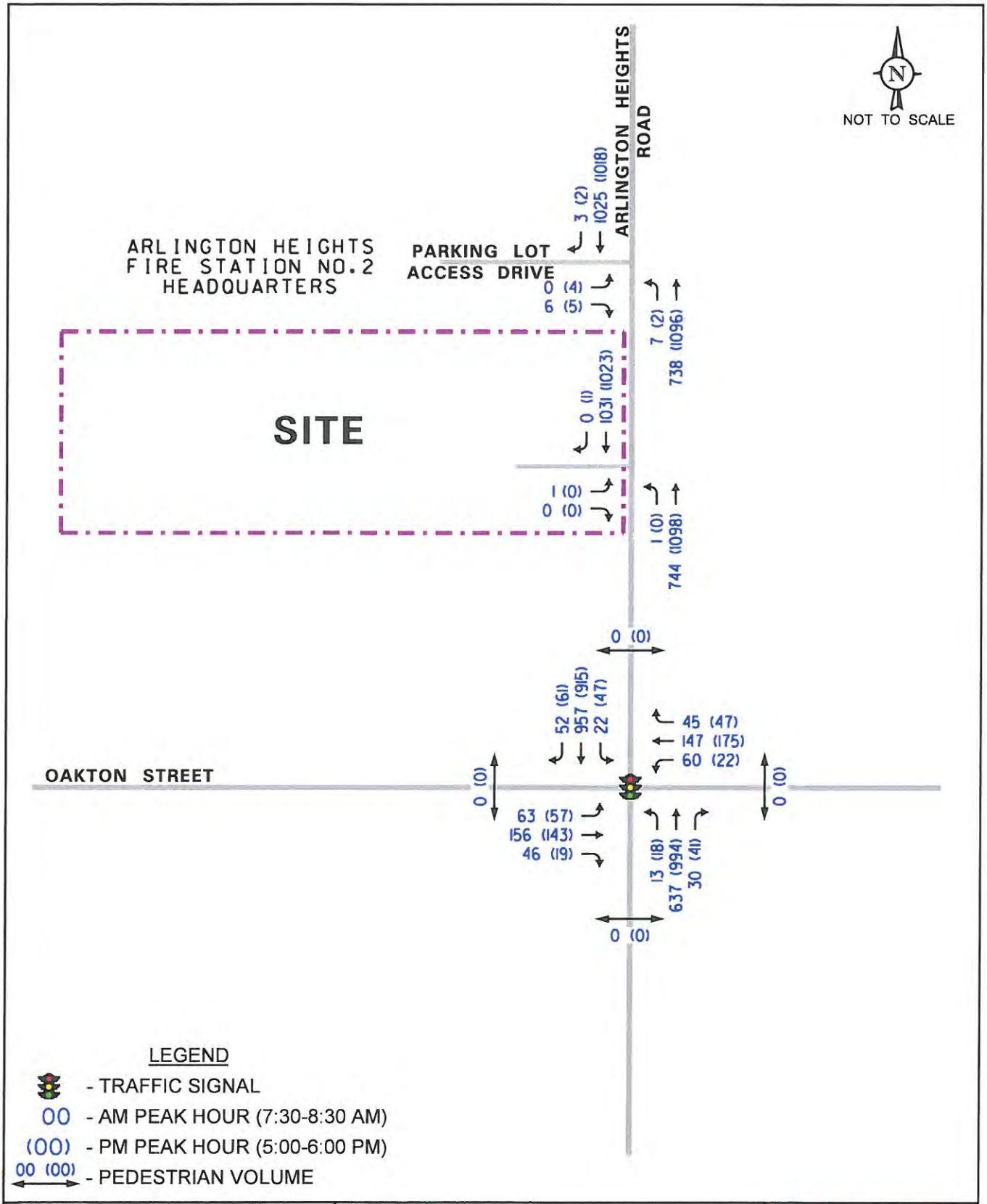
Existing Traffic Volumes

In order to determine current traffic conditions on the existing roadways, KLOA, Inc. conducted peak period traffic counts at the intersections of Arlington Heights Road with Oakton Street, the site's access drive and the Arlington Heights Fire Station No. 2 Headquarters access drive. The traffic counts were conducted on Tuesday March 17, 2015 during the morning (7:00 to 9:00 A.M.) and evening (4:00 to 6:00 P.M.) peak periods. The results of the traffic counts showed that the weekday morning peak hour of traffic occurs from 7:30 to 8:30 A.M. and the weekday evening peak hour of traffic occurs from 5:00 to 6:00 P.M. **Figure 3** illustrates the existing peak hour traffic volumes. Copies of the traffic counts are included in the Appendix.

Area Traffic Observations

Traffic flow in the area was observed during the peak periods, particularly the southbound queues on Arlington Heights Road at its intersection with Oakton Street. Below is a summary of these observations.

- Morning peak period:
  - The maximum southbound queue observed was six vehicles occurring three times during the morning peak hour. The average queue was four vehicles.
  - The maximum eastbound and westbound queues observed on Oakton Street were approximately five to six vehicles.
- Evening peak period:
  - The maximum southbound queue observed was 11 vehicles occurring twice during the evening peak hour. The average queue was six vehicles.
  - The maximum eastbound and westbound queues observed on Oakton Street were approximately five vehicles and eight vehicles, respectively.
- As a result, none of the southbound queues extended to the site's access drive.
- Given the southbound lead phase on Arlington Heights Road at its intersection with Oakton Street, southbound queues are dissipated very quickly.
- Furthermore, it was observed that the traffic signal at Oakton Street and to the north at Olive Street created numerous gaps in the through traffic stream.



PROJECT:	TITLE:	
Proposed Bright Horizons Arlington Heights, Illinois	Existing Traffic Volumes	KLOA Job No: 15-068 Figure: 3

Gap Study

In order to determine the number and frequency of gaps in the Arlington Heights Road traffic stream, a gap study was conducted on the same day the traffic counts were conducted and during the same time periods. The gap study measured the number of gaps in the southbound direction that will accommodate the inbound left-turn movements and the outbound right-turn movements as well as the gaps in both directions (concurrent) that will accommodate the outbound left-turn movements. According to the Highway Capacity Manual published by the Transportation Research Board (TRB) of the National Academies, the critical gap is defined as the minimum time interval in the major-street traffic stream that allows intersection entry for one minor street vehicle and the follow-up time as the time between departure of one vehicle from the minor street and the departure of the next vehicle using the same major-street gap.

Based on numerous studies throughout the United States, the following is a summary for the critical gaps and follow up times required for vehicles to perform various maneuvers in and out of the access drive taking into consideration that Arlington Height Road is a four-lane undivided roadway.

Left-turn in from minor street

- critical gap: 7.1 seconds
- follow-up time: 3.5 seconds

Left-turn in from major street

- critical gap: 4.1 seconds
- follow-up time: 2.2 seconds

Right-turn out from minor street

- critical gap: 6.9 seconds
- follow-up time: 3.3 seconds

Table 1 shows the results of the available gaps (includes critical gap and follow-up time) to allow the left-turn in and left-turn out of the site in 15 minute intervals. Copies of the gap study are included in the Appendix.

Table 1
GAP STUDY SUMMARY – ARLINGTON HEIGHTS ROAD

Time Period	Available Gaps	
	Southbound Direction (Left-turn in)	Both Directions (Left-turn out)
7:00 - 7:15 A.M.	233	65
7:15 - 7:30 A.M.	213	52
7:30 - 7:45 A.M.	**219**	**56**
7:45 - 8:00 A.M.	**198**	**46**
8:00 - 8:15 A.M.	**241**	**63**
8:15 - 8:30 A.M.	**204**	**33**
8:30 - 8:45 A.M.	206	47
8:45 - 9:00 A.M.	242	66
4:00 - 4:15 P.M.	214	50
4:15 - 4:30 P.M.	204	37
4:30 - 4:45 P.M.	218	41
4:45 - 5:00 P.M.	211	28
5:00 - 5:15 P.M.	**199**	**23**
5:15 - 5:30 P.M.	**173**	**23**
5:30 - 5:45 P.M.	**179**	**20**
5:45 - 6:00 P.M.	**168**	**20**

Traffic Characteristics of the Bright Horizon Children's Center

In order to properly evaluate future traffic conditions, it was necessary to determine the traffic characteristics of the Center, including the directional distribution and the volume of traffic that will be generated by the proposed development.

Proposed Development Plan

As proposed, the Center will occupy the existing 16,500 square feet building with a maximum occupancy of 192 children and 36 staff. The drive aisle bordering the building to the south and one handicapped space east of the building will be removed to provide an outdoor playground area for infants and toddlers. The Center will be open Monday through Friday between 6:30 A.M. and 6:30 P.M.

Drop-Off/Pick-Up Operations and Parking

All drop off/pick up of children will occur on the east side of the building. Given their young age, parents will have to park their vehicles in order to escort their children in and out of the facility.

Access

Vehicular access will be provided via the existing full ingress/egress access drive on Arlington Heights Road. The access drive will continue providing one inbound lane and one outbound lane. Outbound movements should be under stop sign control.

Survey of existing Bright Horizons Daycare Center

At the request of the Village of Arlington Heights staff, a similar Bright Horizons daycare center located in Deer Park was surveyed to determine the traffic and parking characteristics of the proposed development. The center is located at 21955 W. Field Parkway, has an enrollment of 223 children, 36 staff and 44 parking spaces (seven spaces are dedicated drop-off/pick-up spaces). The survey was conducted on Thursday, March 19, 2015 from 7:00 to 9:00 A.M. and from 4:00 to 6:00 P.M. and included the number of vehicles going in and out of the daycare center parking lot, observations of drop-off and pick-ups and parking occupancy counts.

Table 2 summarizes the observed inbound and outbound traffic volumes every 15 minutes and the parking occupancy.

Table 2
Bright Horizons Day Care Center Trip Generation Survey (21955 W. Field Parkway, Deer Park, IL)

Time	Inbound			Outbound			Total	Parking Occupancy
	Parents	Employees	Total	Parents	Employees	Total		
7:00 A.M.	3	2	5	5	0	5	10	12
7:15 A.M.	11	3	14	7	0	7	21	19
7:30 A.M.	10	7	17	12	0	12	29	24
7:45 A.M.	17	3	20	13	0	13	33	31
8:00 A.M.	**19**	**1**	**20**	**22**	**0**	**22**	**42**	29
8:15 A.M.	**17**	**3**	**20**	**15**	**0**	**15**	**35**	34
8:30 A.M.	**14**	**2**	**16**	**16**	**0**	**16**	**32**	34
8:45 A.M.	**20**	**3**	**23**	**22**	**0**	**22**	**45**	35
Total	111	24	135	112	0	112	247	
4:00 P.M.	4	0	4	4	1	5	9	31
4:15 P.M.	8	0	8	4	0	4	12	35
4:30 P.M.	15	0	15	10	1	11	26	**39**
4:45 P.M.	10	0	10	16	1	17	27	32
5:00 P.M.	**14**	**0**	**14**	**11**	**4**	**15**	**29**	31
5:15 P.M.	**22**	**0**	**22**	**17**	**2**	**19**	**41**	34
5:30 P.M.	**17**	**0**	**17**	**22**	**2**	**24**	**41**	27
5:45 P.M.	**20**	**0**	**20**	**19**	**2**	**21**	**41**	26
Total	110	0	110	103	13	116	226	

Based on a review of the survey, the traffic volumes at the Deer Park center peaked from 8:00 to 9:00 A.M. generating 79 inbound trips and 75 outbound trips during the morning peak hour. During the evening, the center peaked between 5:00 and 6:00 P.M. generating 73 inbound trips and 79 outbound trips. This translates into 0.69 trips per child during the morning peak hour and 0.68 trips per child during the evening peak hour.

For comparison purposes, the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition was utilized to estimate the trips generated by the Deer Park daycare center. **Table 3** shows a trip generation comparison between the survey results and the ITE trip rates.

Table 3
TRIP GENERATION COMPARISON

Land Use	Morning Peak Hour In	Morning Peak Hour Out	Morning Peak Hour Total	Evening Peak Hour In	Evening Peak Hour Out	Evening Peak Hour Total
Deer Park Center (223 children)						
➢ Based on Survey	79	75	154	73	79	152
➢ Based on ITE (land Use Code 565)	88	79	167	72	81	153
Difference	-9	-4	-13	+1	-2	-1

Inspection of Table 3 indicates that the survey yielded very similar trip generation to the trip generation rates found in the ITE Trip Generation Manual, 9th Edition.

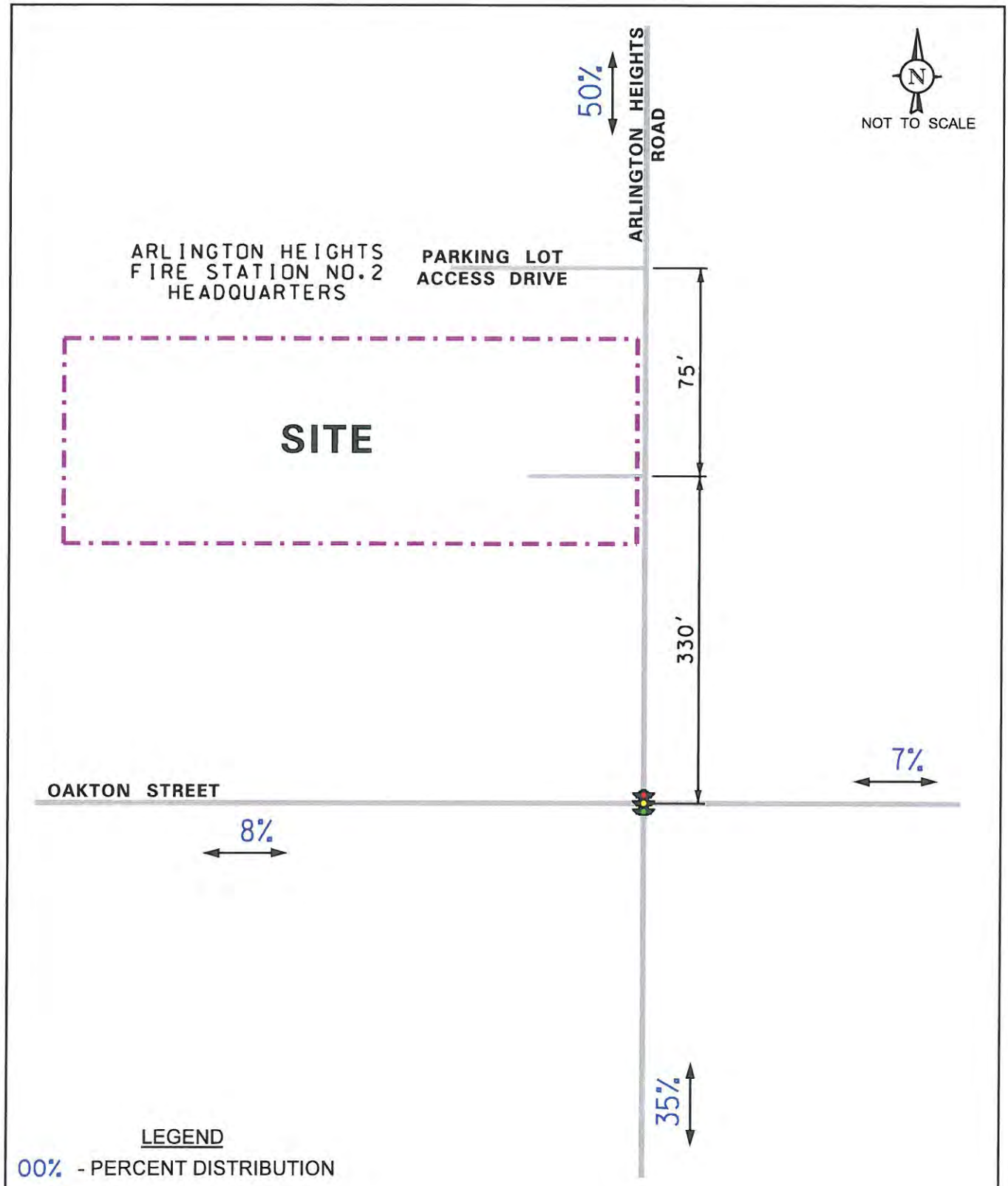
In addition and based on the parking survey, the peak parking demand occurred at 4:30 P.M. with 39 parked vehicles. This translates into 0.17 parking spaces per child.

Directional Distribution of Site Traffic

The directional distribution of future site-generated trips on the roadway system is a function of several variables, including the operational characteristics of the roadway system and the ease with which drivers can travel over various sections of the roadway system without encountering congestion. The directions from which traffic will approach and depart the site were estimated based on the existing travel patterns, as determined from the traffic counts. **Figure 4** illustrates the directional distribution of traffic which is also listed in **Table 4**.

Table 4
DIRECTIONAL DISTRIBUTION

Direction	
To/From the north on Arlington Heights Road	50%
To/From the south on Arlington Heights Road	35%
To/From the east on Oakton Street	7%
To/From the west on Oakton Street	8%
Total	100%



PROJECT:	TITLE:	
Proposed Bright Horizons Arlington Heights, Illinois	Estimated Directional Distribution	KLOA Job No: 15-068 Figure: 4

Site Traffic Generation

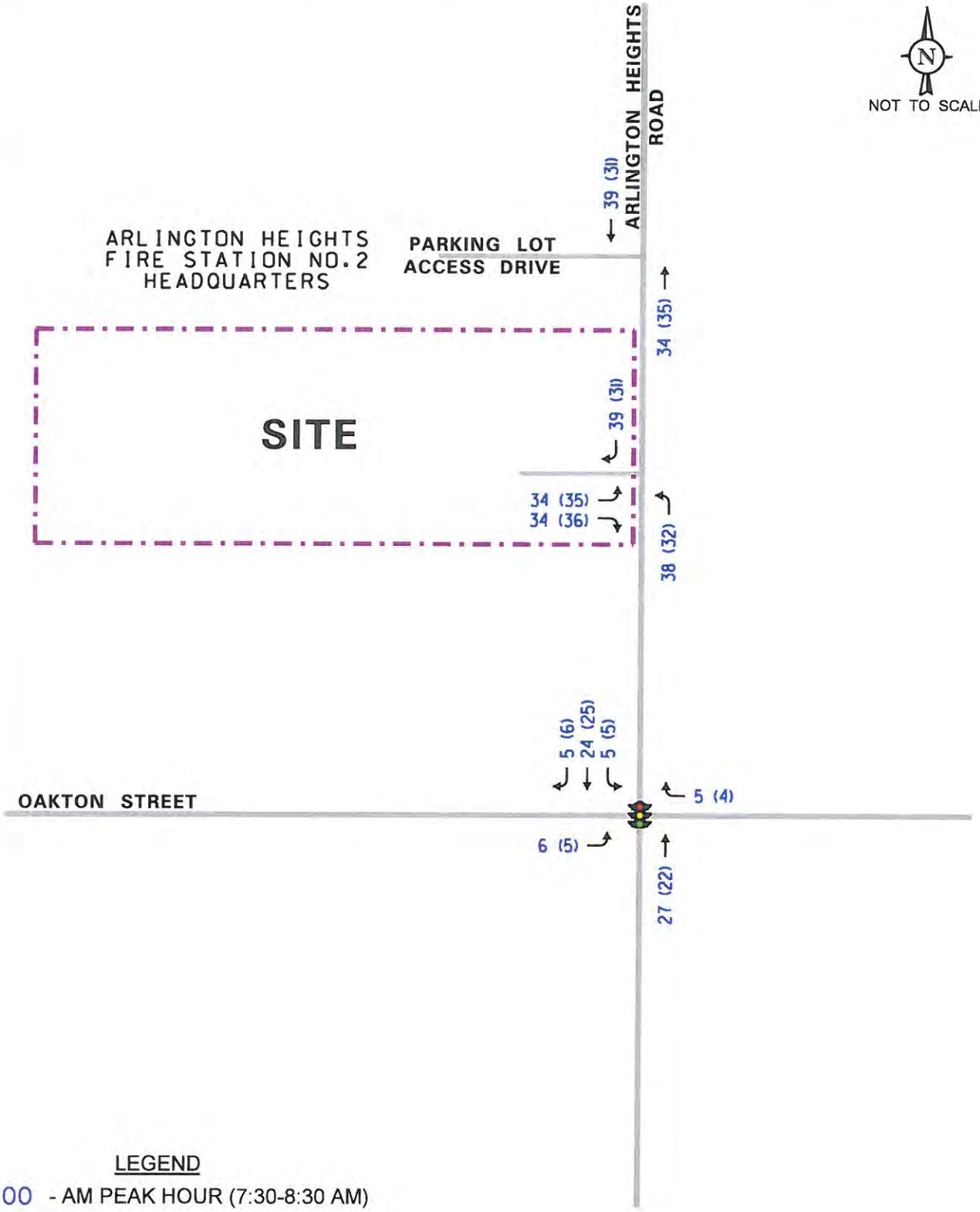
The traffic generation characteristics of any development are based on the magnitude and character of its land use. As proposed, the Center will have a maximum occupancy of 192 children. Although the trip generation survey from the existing Bright Horizons day care center in Deer Park was very comparable to the estimate using the trip generation rates found in the ITE *Trip Generation Manual*, 9th Edition, the ITE trip rates (Land Use 565) were used since they yield a slightly higher trip generation. **Table 5** shows the peak hour traffic estimated to be generated by the proposed day care center.

Table 5
TRIP GENERATION ESTIMATES

	Morning Peak Hour			Evening Peak Hour		
Land Use	In	Out	Total	In	Out	Total
Daycare Center (192 children)	77	68	145	63	71	134

Traffic Assignment

The estimated weekday morning and evening peak hour traffic volumes that will be generated by the Center were assigned to the roadway system in accordance with the previously described directional distribution as well as the proposed site operations. The peak hour traffic assignments for the site are illustrated in **Figure 5**. The development-generated traffic was added to the existing traffic volumes to obtain total traffic volumes which are illustrated in **Figure 6**. Included in the future traffic volumes is the traffic that will be generated by the Transitional Care Facility (120 units) currently under construction and located north of the Arlington Heights Fire Station No. 2 Headquarters.

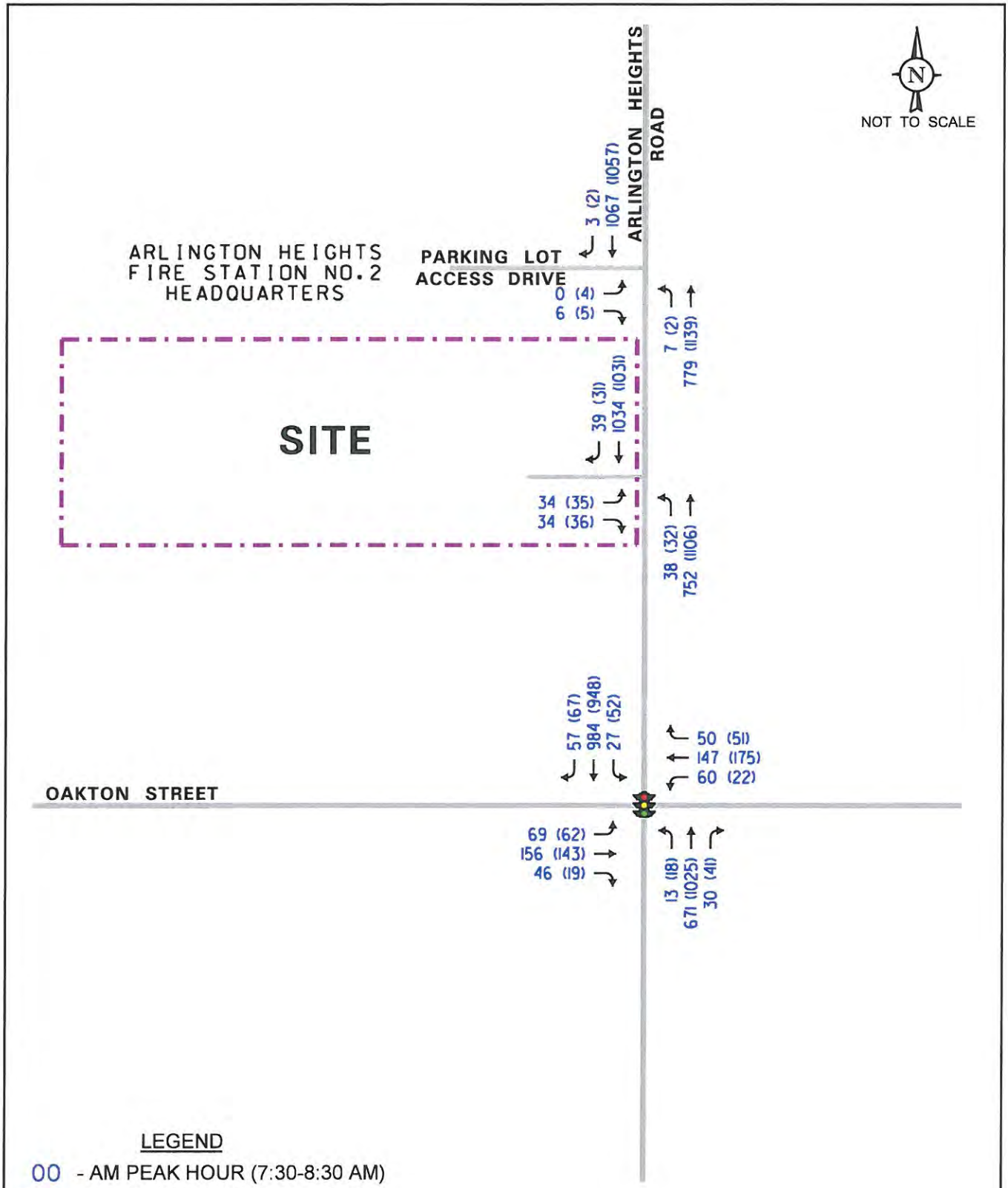


LEGEND

00 - AM PEAK HOUR (7:30-8:30 AM)

(00) - PM PEAK HOUR (5:00-6:00 PM)

PROJECT:	TITLE:	KLOA
Proposed Bright Horizons Arlington Heights, Illinois	Estimated Site Traffic Assignment	Job No: 15-068 Figure: 5



LEGEND

00 - AM PEAK HOUR (7:30-8:30 AM)

(00) - PM PEAK HOUR (5:00-6:00 PM)

PROJECT:	TITLE:	
Proposed Bright Horizons Arlington Heights, Illinois	Total Projected Traffic Volumes	KLOA Job No: 15-068 Figure: 6

Traffic Analysis

Traffic analyses were performed for the intersections of Arlington Heights Road and Oakton Street and the access drive to determine the operation of the existing roadway system, evaluate the impact of the proposed development, and determine the ability of the existing roadway system to accommodate projected traffic demands. Analyses were performed for the weekday morning and weekday evening peak hours for both the existing traffic volumes and the projected traffic volumes. The existing signal cycle length and phasing was used in the analysis.

The traffic analyses were performed using Synchro/SimTraffic 9 computer software. The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter grade from A to F based on the average control delay experienced by vehicles passing through the intersection. Control delay is that portion of the total delay attributed to the traffic signal or stop sign control operation and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Level of Service A is the highest grade (best traffic flow and least delay), Level of Service E represents saturated or at-capacity conditions, and Level of Service F is the lowest grade (oversaturated conditions, extensive delays).

For signal controlled intersections, levels of service are calculated for lane groups, intersection approaches, and the intersection as a whole. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized and unsignalized intersections are shown in the Appendix. The results of the capacity analysis are summarized in **Tables 6** and **7**. Copies of the capacity analyses worksheets are included in the Appendix.

Table 6
INTERSECTION LEVEL OF SERVICE AND DELAY - EXISTING CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	Level of Service	Delay (seconds)	Level of Service	Delay (seconds)
Arlington Heights Rd with Oakton Street[1]	C	21.3	C	22.2
Arlington Heights Rd with Access Drive[2]				
➢ Northbound Left/Through	A	0.1	A	0.0
➢ Eastbound Left/Right	C	21.1	A	0.0
Arlington Heights Rd with Fire Station Drive[2]				
➢ Northbound Left/Through	A	0.1	A	0.1
➢ Eastbound Left/Right	B	10.8	C	17.5

[1]Signalized Intersection
[2]Unsignalized Intersection

Table 7
INTERSECTION LEVEL OF SERVICE AND DELAY - FUTURE CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	Level of Service	Delay (seconds)	Level of Service	Delay (seconds)
Arlington Heights Rd with Oakton Street[1]	C	21.7	C	22.8
Arlington Heights Rd with Access Drive[2]				
➢ Northbound Left/Through	A	2.1	A	1.5
➢ Eastbound Left/Right	C	21.5	D	26.2
Arlington Heights Rd with Fire Station Drive[2]				
➢ Northbound Left/Through	A	0.1	A	0.1
➢ Eastbound Left/Right	B	10.9	C	18.1

[1]Signalized Intersection
[2]Unsignalized Intersection

Traffic Evaluation

The results of the capacity analyses are discussed in detail below.

Arlington Heights Road and Oakton Street

The results of the capacity analysis indicate that this intersection is operating at an acceptable level of service C during the morning and evening peak hours and will continue operating at the same level of service with minimal increase in the overall delay under future conditions. Further inspection of the capacity analyses indicates that the southbound movements will continue to operate at acceptable levels of service and that the southbound queues on Arlington Heights Road will not exceed 185 feet and as such will not extend to the access drive and will not have a negative impact on the accessibility of the site. As such, no geometric or traffic signal control improvements will be necessary in conjunction with the proposed development.

Arlington Heights Road and Site Access Drive

The proposed center will utilize the existing access drive on Arlington Heights Road. Based on the results of the capacity analyses, the outbound movements from the access drive will operate at acceptable Levels of Service C and D during the morning and evening peak hours, respectively, with outbound queues of less than two vehicles. Furthermore, the northbound left-turn movements into the site will operate at a Level of Service A during both peak hours and the queues for vehicles waiting to turn left into the site will not exceed two vehicles. This was further validated by the results of the traffic simulation which show a maximum queue of two vehicles. As such the addition of site traffic is projected to have minimal impact on the roadway system.

Based on a review of IDOT's Bureau of Design and Environment (BDE) Manual auxiliary turn lane guidelines, allowing left-turn movements from a shared through lane can be considered at any intersection where (1) a capacity analysis determines a left-turn lane is not necessary to meet the level of service criteria or (2) for uniformity of intersection design along the roadway if other intersections do not have left-turn lanes (i.e. to satisfy drive expectancy). Given that the northbound left-turn movement, as previously indicated, will operate at a level of service A during both peak hours with minimal queues and given that exclusive left-turn lanes are not provided along Arlington Heights Road for a distance of 1.15 miles within proximity of the site, allowing the left-turn movements will not be detrimental to the through traffic and can operate adequately.

Arlington Heights Road and Fire Station Access Drive

This access drive serves the parking lot of the Fire Station and is located approximately 75 feet north of the center's access drive. Based on a review of the capacity analyses, the outbound movements from this intersection currently operate at a level of service B and C during the morning and evening peak hours, respectively. Under future conditions, the outbound movements will continue operating at the same levels of service with minimal increases in the delay outbound vehicles will experience. As such, the proposed development traffic will have limited impact on the operations of this access drive and roadway or traffic control improvements will not be necessary.

Gap Evaluation

As previously indicated, a gap study was conducted on Arlington Heights Road at its intersection with the access drive. Based on a review of Table 1, the results of the gap study for the peak hours of traffic are summarized in **Table 8**.

Table 8
GAP STUDY RESULTS

Time Periods	Number of Potential Movements Based on Gaps Available		
	Northbound Left-Turn In	Eastbound Left-Turn Out	Eastbound Right-Turn Out
7:30 - 8:30 A.M.	>400	198	>400
5:00 - 6:00 P.M.	>400	86	391

Table 9 shows the number of available gaps compared to the number of required gaps that are needed to accommodate the projected development traffic turning into and out of this proposed access drive.

Table 9
REQUIRED GAPS AT PROPOSED FULL ACCESS

	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
Time Periods	Available Gaps	Required Gaps	Available Gaps	Required Gaps
Left Turns In	>400	38	>400	32
Right Turns Out	>400	34	391	36
Left Turns Out	198	34	86	35

As shown in Table 9, there are more than ten times the number of gaps needed in the through traffic stream to accommodate the northbound left-turns in, the eastbound right-turns out, and more than twice the number of gaps in both directions needed to accommodate the eastbound left-turn out for both the weekday morning and evening peak hours. This validates the results of the capacity analyses and the traffic simulations and indicates that this access drive will operate adequately and will provide safe and efficient access to the site.

Site Circulation and Design

As proposed, vehicles will enter the site via the existing access drive and either continue west or turn left where parents can park on any of the parking stalls. Based on a review of the site plan, the parking drive aisles are wide enough to allow two-way traffic thus providing efficient on-site circulation.

Parking Evaluation

As proposed, the site will provide parking for approximately 60 vehicles. A review of the Village of Arlington Heights zoning ordinance indicates that the Center should provide three spaces per every two employees. This would yield a parking requirement of 54 spaces which is six less than what is being provided.

As previously indicated, KLOA, Inc. conducted a parking survey at the Bright Horizons daycare center in Deer Park. Based on the survey, the Center had a peak parking demand of 39 parked vehicles which translates into 0.17 parking spaces per child. Applying this rate to the projected number of children (192) will yield a peak parking demand of 33 spaces which can easily be accommodated by the proposed number of parking spaces.

For comparison purposes, KLOA, Inc. also reviewed the projected parking demand of the proposed daycare center using the ITE Parking Generation Manual, 4th Edition. Based on ITE, the projected peak parking demand of a daycare center with 192 children will be 53 parking spaces and as such can be accommodated by the proposed number of parking spaces.

Conclusion

Based on the results of the traffic study, the traffic and parking impacts of the proposed Center will be adequately accommodated based on the following.

- The site generated traffic will not have a significant impact on the roadway system and can be accommodated adequately without any geometric or traffic control improvements.

- Sufficient gaps are available in the Arlington Heights Road traffic stream to allow for site traffic to ingress and egress the site efficiently.

- Northbound left-turns into the site off the through lane will not be detrimental to the through traffic flow based on the results of the capacity analyses and is consistent with the other intersections along Arlington Heights Road.

- The proposed number of parking spaces exceeds the Village of Arlington Heights requirements and will be adequate in accommodating the peak parking demand of the Center.

- Parents dropping-off and picking-up will be required to park and accompany their children in and out of the center.

Appendix

- Level of Service Criteria
- Traffic Counts
- Gap Study
- Capacity Analyses

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.

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Count Name: Arlington Heights Oakton
Site Code:
Start Date: 03/17/2015
Page No: 1

Turning Movement Data

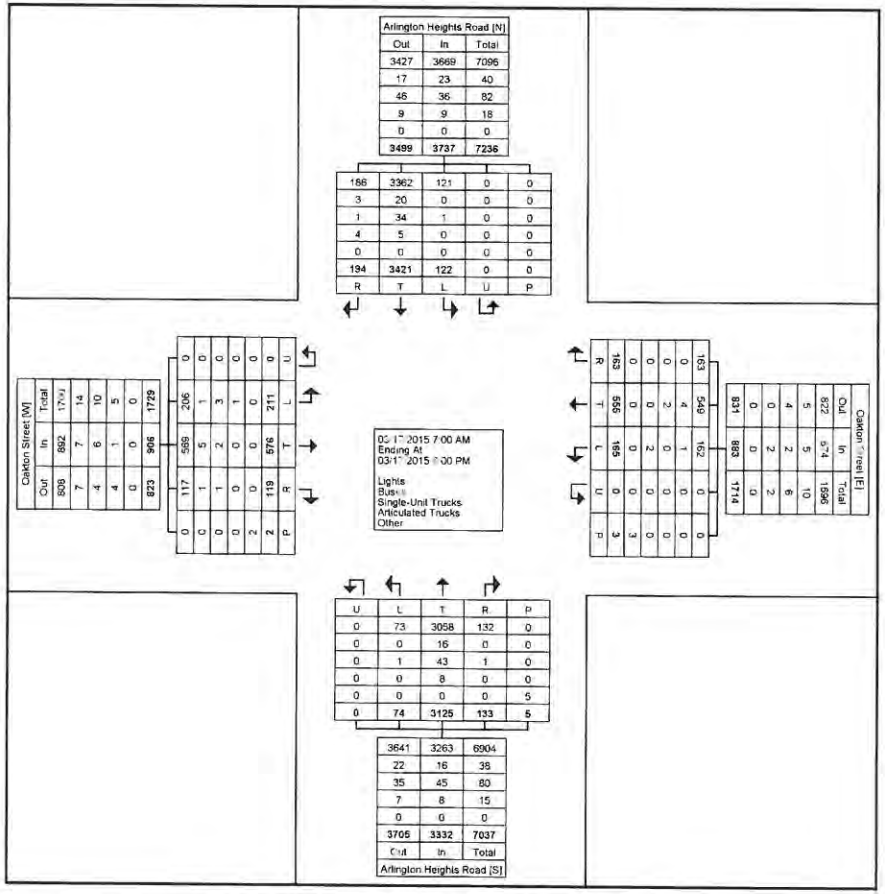
Start Time	Oakton Street Eastbound						Oakton Street Westbound						Arlington Heights Road Northbound						Arlington Heights Road Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	16	56	8		80	0	5	19	6		30	0	3	147	5		155	0	9	186	6		201	466
7:15 AM	0	13	66	4		83	0	9	28	10		47	0	5	143	2		150	0	8	210	10		228	508
7:30 AM	0	19	74	7		100	0	7	46	13		66	0	3	171	11		185	0	9	271	6		286	637
7:45 AM	0	15	47	11		73	0	23	54	16		93	0	1	166	4		171	0	8	224	10		242	579
Hourly Total	0	63	243	30	0	336	0	44	147	45	1	236	0	12	627	22	4	661	0	34	891	32	0	957	2190
8:00 AM	0	11	17	9		37	0	9	30	8		47	0	2	149	5		156	0	2	213	18		233	473
8:15 AM	0	18	18	19		55	0	21	17	8		46	0	7	151	10		168	0	3	249	18		270	539
8:30 AM	0	10	18	6		34	0	18	19	5		42	0	9	180	22		211	0	7	212	12		231	518
8:45 AM	0	11	44	10		65	0	25	40	15		80	0	11	164	5		180	0	0	192	3		195	520
Hourly Total	0	50	97	44	0	191	0	73	106	36	1	215	0	29	644	42	0	715	0	12	866	51	0	929	2050
*** BREAK ***	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-
4:00 PM	0	6	26	7		39	0	7	27	5		39	0	6	195	8		209	0	10	197	9		216	503
4:15 PM	0	13	19	6		38	0	5	34	11		50	0	2	223	10		235	0	5	186	14		205	528
4:30 PM	0	9	22	6		37	0	7	32	10		49	0	4	220	5		229	0	7	187	13		207	522
4:45 PM	0	13	26	7		46	0	7	34	9		50	0	3	222	5		230	0	7	179	14		200	526
Hourly Total	0	41	93	26	2	160	0	26	127	35	1	188	0	15	860	28	1	903	0	29	749	50	0	828	2079
5:00 PM	0	19	36	4		59	0	4	44	7		55	0	5	272	8		285	0	6	200	17		223	622
5:15 PM	0	18	36	3		57	0	6	42	9		57	0	3	235	8		246	0	14	240	13		267	627
5:30 PM	0	10	34	8		52	0	6	47	16		69	0	4	262	18		284	0	18	233	16		267	672
5:45 PM	0	10	37	4		51	0	6	42	15		63	0	6	225	7		238	0	9	242	15		266	618
Hourly Total	0	57	143	19	0	219	0	22	175	47	0	244	0	18	994	41	0	1053	0	47	915	61	0	1023	2539
Grand Total	0	211	576	119		906	0	165	555	163		883	0	74	3125	133		3332	0	122	3421	194		3737	8858
Approach %	0.0	23.3	63.6	13.1		-	0.0	18.7	62.9	18.5		-	0.0	2.2	93.8	4.0		-	0.0	3.3	91.5	5.2		-	-
Total %	0.0	2.4	6.5	1.3		10.2	0.0	1.9	6.3	1.8		10.0	0.0	0.8	35.3	1.5		37.6	0.0	1.4	38.6	2.2		42.2	-
Lights	0	206	569	117		892	0	162	549	163		874	0	73	3058	132		3263	0	121	3362	186		3669	8698
% Lights	-	97.6	98.8	98.3		98.5	-	98.2	98.9	100.0		99.0	-	98.6	97.9	99.2		97.9	-	99.2	98.3	95.9		98.2	98.2
Buses	0	1	5	1		7	0	1	4	0		5	0	0	16	0		16	0	0	20	3		23	51
% Buses	-	0.5	0.9	0.8		0.8	-	0.6	0.7	0.0		0.6	-	0.0	0.5	0.0		0.5	-	0.0	0.6	1.5		0.6	0.6
Single-Unit Trucks	0	3	2	1		6	0	0	2	0		2	0	1	43	1		45	0	1	34	1		36	89
% Single-Unit Trucks	-	1.4	0.3	0.8		0.7	-	0.0	0.4	0.0		0.2	-	1.4	1.4	0.8		1.4	-	0.8	1.0	0.5		1.0	1.0
Articulated Trucks	0	1	0	0		1	0	2	0	0		2	0	0	8	0		8	0	0	5	4		9	20
% Articulated Trucks	-	0.5	0.0	0.0		0.1	-	1.2	0.0	0.0		0.2	-	0.0	0.3	0.0		0.2	-	0.0	0.1	2.1		0.2	0.2
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles on Road	-	0.0	0.0	0.0		0.0	-	0.0	0.0	0.0		0.0	-	0.0	0.0	0.0		0.0	-	0.0	0.0	0.0		0.0	0.0
Pedestrians	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-

| | | |

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

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

Count Name: Arlington Heights/Oakton
Site Code:
Start Date: 03/17/2015



Turning Movement Data Plot

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

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

Count Name: Arlington Heights/Oakton
Site Code:
Start Date: 03/17/2015

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Oakton Street Eastbound						Oakton Street Westbound						Arlington Heights Road Northbound						Arlington Heights Road Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	19	74	7		100	0	7	46	13		66	0	3	171	11		185	0	9	271	6		286	637
7:45 AM	0	15	47	11		73	0	23	54	16		93	0	1	166	4		171	0	8	224	10		242	579
8:00 AM	0	11	17	9		37	0	9	30	8		47	0	2	149	5		156	0	2	213	18		233	473
8:15 AM	0	18	18	19		55	0	21	17	8		46	0	7	151	10		168	0	3	249	18		270	539
Total	0	63	156	46		265	0	60	147	45		252	0	13	637	30		680	0	22	957	52		1031	2228
Approach %	0.0	23.8	58.9	17.4		-	0.0	23.8	58.3	17.9		-	0.0	1.9	93.7	4.4		-	0.0	2.1	92.8	5.0		-	-
Total %	0.0	2.8	7.0	2.1		11.9	0.0	2.7	6.6	2.0		11.3	0.0	0.6	28.6	1.3		30.5	0.0	1.0	43.0	2.3		46.3	-
PHF	0.000	0.829	0.527	0.605		0.663	0.000	0.652	0.681	0.703		0.677	0.000	0.464	0.931	0.682		0.919	0.000	0.611	0.883	0.722		0.901	0.874
Lights	0	62	153	46		261	0	59	142	45		246	0	12	609	30		651	0	22	935	48		1005	2163
% Lights	-	98.4	98.1	100.0		98.5	-	98.3	96.6	100.0		97.6	-	92.3	95.6	100.0		95.7	-	100.0	97.7	92.3		97.5	97.1
Buses	0	0	3	0		3	0	0	4	0		4	0	0	5	0		5	0	0	9	2		11	23
% Buses	-	0.0	1.9	0.0		1.1	-	0.0	2.7	0.0		1.6	-	0.0	0.8	0.0		0.7	-	0.0	0.9	3.8		1.1	1.0
Single-Unit Trucks	0	0	0	0		0	0	0	1	0		1	0	1	18	0		19	0	0	10	0		10	30
% Single-Unit Trucks	-	0.0	0.0	0.0		0.0	-	0.0	0.7	0.0		0.4	-	7.7	2.8	0.0		2.8	-	0.0	1.0	0.0		1.0	1.3
Articulated Trucks	0	1	0	0		1	0	1	0	0		1	0	0	5	0		5	0	0	3	2		5	12
% Articulated Trucks	-	1.6	0.0	0.0		0.4	-	1.7	0.0	0.0		0.4	-	0.0	0.8	0.0		0.7	-	0.0	0.3	3.8		0.5	0.5
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles on Road	-	0.0	0.0	0.0		0.0	-	0.0	0.0	0.0		0.0	-	0.0	0.0	0.0		0.0	-	0.0	0.0	0.0		0.0	0.0
Pedestrians	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-
% Pedestrians	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-

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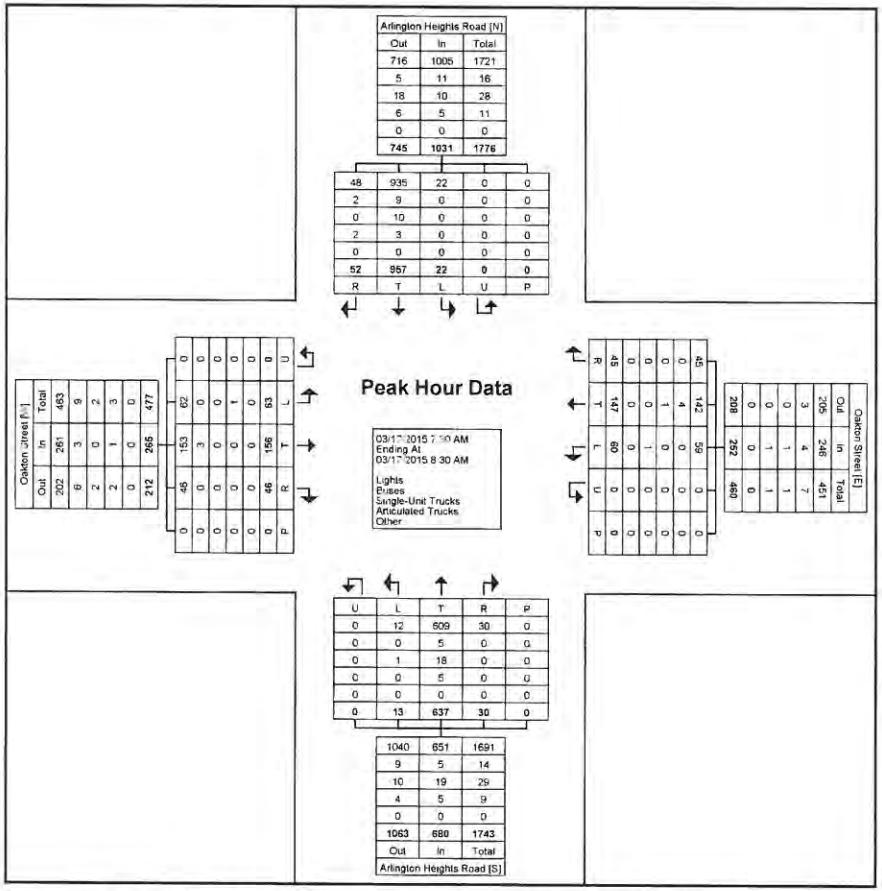
Start Date: 03/17/2015



Turning Movement Peak Hour Data Plot (7:30 AM)

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

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(847)518-9990

Count Name: Arlington Heights/Oakton
Site Code:
Start Date: 03/17/2015

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Oakton Street Eastbound						Oakton Street Westbound						Arlington Heights Road Northbound						Arlington Heights Road Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	19	36	4		59	0	4	44	7		55	0	5	272	8		285	0	6	200	17		223	622
5:15 PM	0	18	36	3		57	0	6	42	9		57	0	3	235	8		246	0	14	240	13		267	627
5:30 PM	0	10	34	8		52	0	6	47	16		69	0	4	262	18		284	0	18	233	16		267	672
5:45 PM	0	10	37	4		51	0	6	42	15		63	0	6	225	7		238	0	9	242	15		266	618
Total	0	57	143	19		219	0	22	175	47		244	0	18	994	41		1053	0	47	915	61		1023	2539
Approach %	0.0	26.0	65.3	8.7		-	0.0	9.0	71.7	19.3		-	0.0	1.7	94.4	3.9		-	0.0	4.6	89.4	6.0		-	-
Total %	0.0	2.2	5.6	0.7		8.6	0.0	0.9	6.9	1.9		9.6	0.0	0.7	39.1	1.6		41.5	0.0	1.9	36.0	2.4		40.3	-
PHF	0.000	0.750	0.966	0.594		0.928	0.000	0.917	0.931	0.734		0.884	0.000	0.750	0.914	0.569		0.924	0.000	0.653	0.945	0.897		0.958	0.945
Lights	0	55	143	18		216	0	22	175	47		244	0	18	988	41		1047	0	47	909	61		1017	2524
% Lights	-	96.5	100.0	94.7		98.6	-	100.0	100.0	100.0		100.0	-	100.0	99.4	100.0		99.4	-	100.0	99.3	100.0		99.4	99.4
Buses	0	0	0	1		1	0	0	0	0		0	0	0	1	0		1	0	0	1	0		1	3
% Buses	-	0.0	0.0	5.3		0.5	-	0.0	0.0	0.0		0.0	-	0.0	0.1	0.0		0.1	-	0.0	0.1	0.0		0.1	0.1
Single-Unit Trucks	0	2	0	0		2	0	0	0	0		0	0	0	4	0		4	0	0	5	0		5	11
% Single-Unit Trucks	-	3.5	0.0	0.0		0.9	-	0.0	0.0	0.0		0.0	-	0.0	0.4	0.0		0.4	-	0.0	0.5	0.0		0.5	0.4
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	1	0		1	0	0	0	0		0	1
% Articulated Trucks	-	0.0	0.0	0.0		0.0	-	0.0	0.0	0.0		0.0	-	0.0	0.1	0.0		0.1	-	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
% Bicycles on Road	-	0.0	0.0	0.0		0.0	-	0.0	0.0	0.0		0.0	-	0.0	0.0	0.0		0.0	-	0.0	0.0	0.0		0.0	0.0
Pedestrians	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-
% Pedestrians	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-

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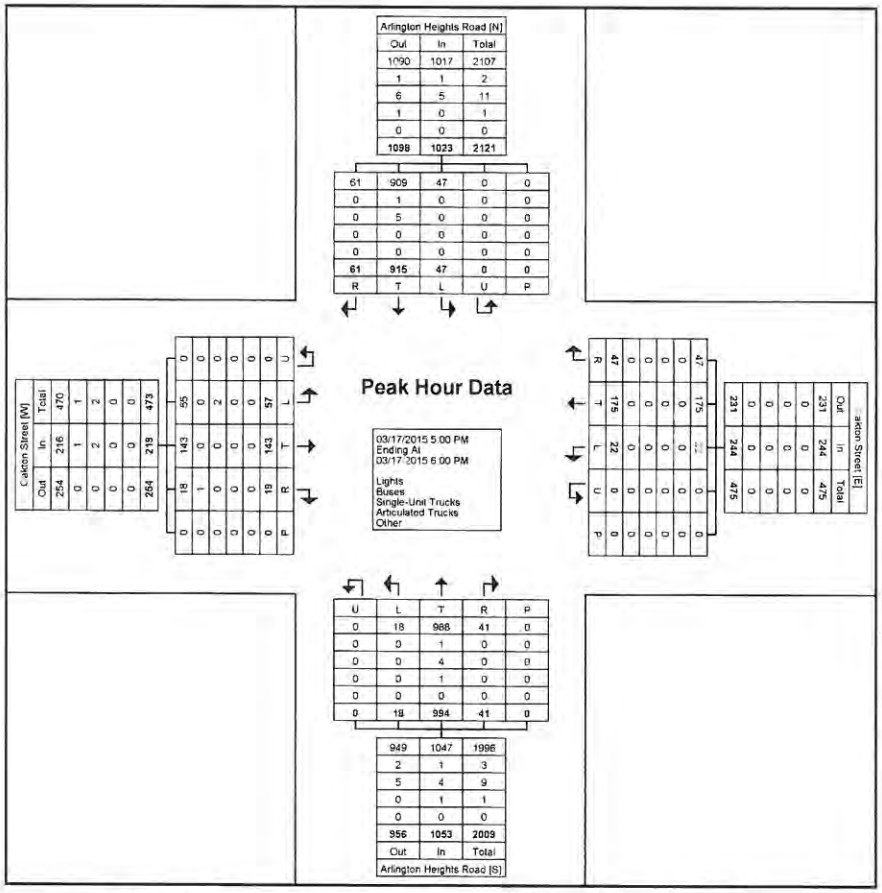
Count Name: Arlington Heights Oakton
Site Code:
Start Date: 03/17/2015



Turning Movement Peak Hour Data Plot (5:00 PM)

Study Name	Arlington Heights/Access Drives
Start Date	Tuesday, March 17, 2015 7:00 AM
End Date	Tuesday, March 17, 2015 6:00 PM
Site Code	

Report Summary

		Eastbound						Northbound						Southbound						Southeastbound							Crosswalk	
Time Period	**Class.**	**U**	**HL**	**L**	**R**	**I**	**O**	**U**	**L**	**BL**	**T**	**I**	**O**	**U**	**T**	**R**	**HR**	**I**	**O**	**U**	**HL**	**BR**	**HR**	**I**	**O**	**Total**		**destria**	**Total**
Peak 1	Lights	0	0	1	0	1	1	0	1	7	703	711	1015	0	1009	0	3	1012	704	0	0	6	0	6	10	1730	W	2	2
Specified Period	%	0%	0%	100%	0%	100%	100%	0%	100%	100%	96%	98%	98%	0%	97%	0%	100%	97%	94%	0%	0%	100%	0%	100%	100%	97%		100%	
7:00 AM - 9:00 AM	Buses	0	0	0	0	0	0	0	0	0	9	9	9	0	9	0	0	9	9	0	0	0	0	0	0	18	S	0	0
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	1%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	1%		0%	
7:30 AM - 8:30 AM	ngle-Unit Truc	0	0	0	0	0	0	0	0	0	15	15	12	0	12	0	0	12	15	0	0	0	0	0	0	27	N	0	0
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	1%	0%	1%	0%	0%	1%	2%	0%	0%	0%	0%	0%	0%	2%		0%	
	ticulated Truc	0	0	0	0	0	0	0	0	0	4	4	5	0	5	0	0	5	4	0	0	0	0	0	0	9	NW	0	0
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%		0%	
	icycles on Roa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		2	2
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%			
	Total	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**1**	**7**	**731**	**739**	**1041**	**0**	**1035**	**0**	**3**	**1038**	**732**	**0**	**0**	**6**	**0**	**6**	**10**	**1784**			
	PHF	0	0	0.25	0	0.25	0.25	0	0.25	0.58	0.87	0.88	0.95	0	0.94	0	0.25	0.95	0.87	0	0	0.75	0	0.75	0.83	0.94			
	Approach %					0%	0%					41%	58%					58%	41%					0%	1%				
Peak 2	Lights	0	0	0	0	0	1	0	0	2	1086	1088	1048	0	1043	1	2	1046	1090	0	4	5	0	9	4	2143	W	0	0
Specified Period	%	0%	0%	0%	0%	0%	100%	0%	0%	100%	99%	99%	100%	0%	100%	100%	100%	100%	99%	0%	100%	100%	0%	100%	100%	99%		0%	
4:00 PM - 6:00 PM	Buses	0	0	0	0	0	0	0	0	0	3	3	1	0	1	0	0	1	3	0	0	0	0	0	0	4	S	0	0
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
5:00 PM - 6:00 PM	ngle-Unit Truc	0	0	0	0	0	0	0	0	0	5	5	4	0	4	0	0	4	5	0	0	0	0	0	0	9	N	0	0
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
	ticulated Truc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NW	0	0
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
	icycles on Roa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%			
	Total	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**1094**	**1096**	**1053**	**0**	**1048**	**1**	**2**	**1051**	**1098**	**0**	**4**	**5**	**0**	**9**	**4**	**2156**			
	PHF	0	0	0	0	0	0.25	0	0	0.25	0.9	0.9	0.94	0	0.93	0.25	0.25	0.93	0.9	0	0.5	0.42	0	0.45	0.5	0.96			
	Approach %					0%	0%					51%	49%					49%	51%					0%	0%				

Study Name Gap Study - Arlington Heights/Access Drive
Start Date 03/17/2015
Start Time 7:00 AM

Northbound Left from Major

Time	2.0 - 3.0	3.0 - 4.0	4.0 - 5.0	5.0 - 6.0	6.0 - 7.0	7.0 - 8.0	8.0 - 9.0	9.0 - 10.0	10.0 - 11.0	11.0 - 12.0	12.0 - 13.0	13.0 - 14.0	14.0 - 15.0	15.0 - 16.0	16.0 - 17.0	17.0 - 18.0	18.0 - 19.0	19.0 - 20.0	20.0 - 21.0	21.0 - 22.0	22.0 - 23.0	23.0 - 24.0	24.0 - 25.0	25.0 - 26.0	26.0 - 27.0	27.0 - 28.0	28.0 - 99.0	Critical Gaps (4.1 sec)	Follow-up Gaps (2.2 sec)	Total Gaps
7:00 AM	25	11	8	4	9	1	1	1	3	3	0	2	3	2	0	2	0	2	0	1	2	0	2	1	0	1	3	51	182	233
7:15 AM	19	10	9	4	9	1	2	1	3	4	2	5	2	1	2	1	2	0	0	0	0	0	1	0	2	0	3	53	160	213
7:30 AM	23	13	5	5	3	3	5	1	0	2	0	1	0	2	0	0	1	0	1	0	1	0	2	1	1	0	5	39	180	219
7:45 AM	22	14	10	4	3	2	2	4	2	1	0	3	0	2	0	0	0	0	2	1	1	0	0	0	0	0	6	41	157	198
8:00 AM	21	11	10	5	1	2	1	4	2	0	1	0	1	1	0	1	1	1	1	0	0	1	0	0	0	0	6	41	157	198
8:15 AM	21	11	9	4	3	1	1	3	2	0	1	4	2	0	0	2	1	1	2	2	0	0	1	1	1	0	3	43	161	204
8:30 AM	33	15	6	7	3	3	2	1	2	1	1	1	2	0	2	0	3	1	0	0	0	0	0	1	2	1	3	41	165	206
8:45 AM	21	6	4	8	4	1	2	2	2	0	1	4	1	0	1	0	1	1	0	0	0	1	1	0	1	0	7	42	200	242
4:00 PM	23	18	6	4	4	3	2	3	2	0	3	2	0	1	0	0	2	1	1	3	1	1	2	0	0	0	3	43	171	214
4:15 PM	29	18	8	3	4	1	4	3	4	0	5	0	1	0	1	3	2	0	0	1	1	1	1	0	0	0	4	45	159	204
4:30 PM	36	8	9	1	4	3	2	3	3	2	2	1	1	3	1	1	0	0	0	0	0	0	1	1	1	0	8	43	175	218
4:45 PM	34	11	10	9	5	3	3	2	1	3	1	2	1	0	0	2	1	0	2	0	0	1	0	1	1	0	4	51	160	211
5:00 PM	29	14	9	5	4	2	5	1	2	3	2	2	0	1	1	0	0	1	0	3	0	0	0	0	1	0	4	46	153	199
5:15 PM	34	11	4	4	6	3	5	3	1	0	2	0	4	3	1	1	1	1	0	0	0	2	0	0	1	2	0	43	130	173
5:30 PM	40	8	9	7	4	5	1	1	5	2	1	2	0	1	0	0	3	0	0	0	0	1	2	0	1	0	3	47	132	179
5:45 PM	28	13	9	4	5	6	4	1	5	1	1	2	1	1	4	1	0	0	0	0	2	1	0	0	0	0	1	48	120	168

Study Name Gap Study - Arlington Heights/Access Drive
Start Date 03/17/2015
Start Time 7:00 AM

Left from Minor

Time	2.0 - 3.0	3.0 - 4.0	4.0 - 5.0	5.0 - 6.0	6.0 - 7.0	7.0 - 8.0	8.0 - 9.0	9.0 - 10.0	10.0 - 11.0	11.0 - 12.0	12.0 - 13.0	13.0 - 14.0	14.0 - 15.0	15.0 - 16.0	16.0 - 17.0	17.0 - 18.0	18.0 - 19.0	19.0 - 20.0	20.0 - 21.0	21.0 - 22.0	22.0 - 23.0	23.0 - 24.0	24.0 - 25.0	25.0 - 26.0	26.0 - 27.0	27.0 - 28.0	28.0 - 99.0	Critical Gaps (7.1 sec)	Follow-up Gaps (3.5 sec)	Total Gaps
7:00 AM	40	15	11	6	6	5	2	5	2	1	1	3	0	3	0	1	0	1	1	0	0	1	0	0	0	0	2	28	37	65
7:15 AM	35	17	11	7	9	2	3	2	1	3	0	5	0	0	0	0	1	2	1	0	0	1	0	0	0	1	0	22	30	52
7:30 AM	30	12	8	6	10	7	4	1	1	3	2	1	1	1	2	0	0	0	1	2	1	0	0	0	0	0	0	27	29	56
7:45 AM	25	16	13	5	3	5	6	4	0	1	1	3	0	3	0	1	1	0	0	0	1	0	0	0	0	0	0	26	20	46
8:00 AM	32	16	14	6	3	5	2	3	2	1	1	2	1	1	1	0	2	1	0	1	0	0	0	0	0	0	0	25	38	63
8:15 AM	35	24	14	6	7	8	2	2	2	1	0	1	0	0	1	1	3	0	0	0	0	0	0	0	0	0	2	25	38	63
8:30 AM	48	20	6	10	3	1	3	2	1	0	3	1	2	0	0	3	1	1	1	0	1	0	0	0	0	0	0	16	17	33
8:45 AM	38	13	6	7	6	1	1	3	2	1	3	1	0	2	0	2	3	1	1	0	1	0	0	0	0	0	0	19	28	47
4:00 PM	32	22	8	5	6	5	1	4	1	3	2	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	1	23	43	66
4:15 PM	53	20	8	3	3	0	2	3	4	0	3	1	0	0	0	0	2	0	1	0	0	0	0	0	0	0	1	22	28	50
4:30 PM	44	19	9	2	7	6	2	2	2	2	0	2	2	1	0	0	0	0	1	0	0	0	0	0	0	0	1	17	20	37
4:45 PM	50	24	11	4	10	4	1	3	4	0	0	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	21	20	41
5:00 PM	41	19	13	4	4	2	2	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	16	12	28
5:15 PM	40	16	8	8	5	3	2	2	2	0	1	1	1	0	0	2	0	0	0	0	0	1	0	0	1	0	0	12	11	23
5:30 PM	62	13	8	2	5	5	1	2	3	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	9	23
5:45 PM	43	18	10	11	5	3	1	0	1	1	2	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	14	6	20
																												11	9	20

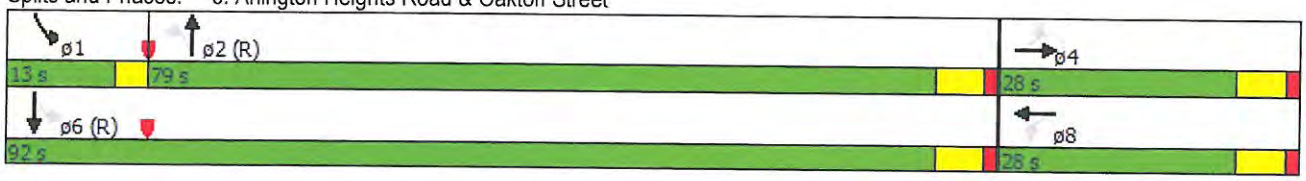
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	156	46	60	147	45	13	637	30	22	957	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	55			125			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.966			0.965			0.993			0.992	
Flt Protected	0.950			0.950				0.999			0.999	
Satd. Flow (prot)	1770	1799	0	1770	1798	0	0	3511	0	0	3507	0
Flt Permitted	0.389			0.361				0.922			0.932	
Satd. Flow (perm)	725	1799	0	672	1798	0	0	3240	0	0	3272	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			11			7			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		531			646			301			330	
Travel Time (s)		12.1			14.7			6.8			7.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	212	0	63	202	0	0	717	0	0	1085	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		9.5	24.0	
Total Split (s)	28.0	28.0		28.0	28.0		79.0	79.0		13.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		65.8%	65.8%		10.8%	76.7%	
Yellow Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		3.0	4.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		Max	C-Max	
Act Effct Green (s)	18.0	18.0		18.0	18.0			73.0			90.0	
Actuated g/C Ratio	0.15	0.15		0.15	0.15			0.61			0.75	
v/c Ratio	0.61	0.76		0.63	0.73			0.36			0.44	
Control Delay	70.4	63.6		73.8	60.7			12.3			5.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	70.4	63.6		73.8	60.7			12.3			5.7	
LOS	E	E		E	E			B			A	
Approach Delay		65.2			63.8			12.3			5.7	
Approach LOS		E			E			B			A	
Queue Length 50th (ft)	48	150		46	142			136			121	
Queue Length 95th (ft)	97	230		95	218			174			167	
Internal Link Dist (ft)		451			566			221			250	
Turn Bay Length (ft)	80			100								

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	132	338		123	338			1973			2478	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.50	0.63		0.51	0.60			0.36			0.44	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 21.3 Intersection LOS: C
Intersection Capacity Utilization 74.1% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Arlington Heights Road & Oakton Street



HCM Unsignalized Intersection Capacity Analysis
6: Arlington Heights Road & Access Drive

4/14/2015

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	0	1	744	1031	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	0	1	783	1085	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				330	1004	
pX, platoon unblocked	0.95	0.92	0.92			
vC, conflicting volume	1479	543	1085			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1003	324	915			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	225	617	680			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	1	262	522	724	362
Volume Left	1	1	0	0	0
Volume Right	0	0	0	0	0
cSH	225	680	1700	1700	1700
Volume to Capacity	0.00	0.00	0.31	0.43	0.21
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	21.1	0.1	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	21.1	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	6	7	738	1025	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	6	7	777	1079	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				437	897	
pX, platoon unblocked	0.95	0.91	0.91			
vC, conflicting volume	1484	541	1082			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	998	311	903			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	226	626	685			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	6	266	518	719	363
Volume Left	0	7	0	0	0
Volume Right	6	0	0	0	3
cSH	626	685	1700	1700	1700
Volume to Capacity	0.01	0.01	0.30	0.42	0.21
Queue Length 95th (ft)	1	1	0	0	0
Control Delay (s)	10.8	0.4	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	10.8	0.1		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

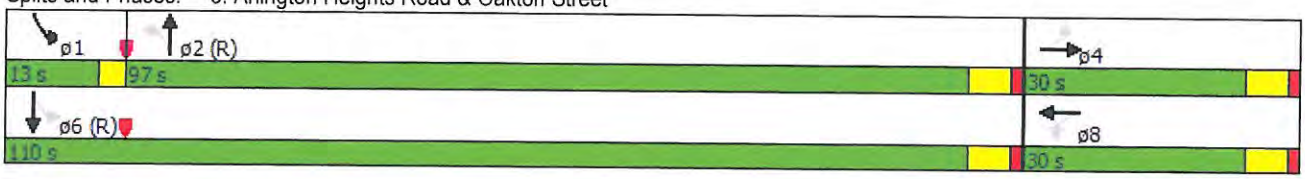
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	143	19	22	175	47	18	994	41	47	915	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	55			125			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.982			0.968			0.994			0.991	
Flt Protected	0.950			0.950				0.999			0.998	
Satd. Flow (prot)	1770	1829	0	1770	1803	0	0	3514	0	0	3500	0
Flt Permitted	0.278			0.452				0.918			0.823	
Satd. Flow (perm)	518	1829	0	842	1803	0	0	3230	0	0	2887	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			8			6			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		531			646			301			330	
Travel Time (s)		12.1			14.7			6.8			7.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	171	0	23	233	0	0	1108	0	0	1076	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		9.5	24.0	
Total Split (s)	30.0	30.0		30.0	30.0		97.0	97.0		13.0	110.0	
Total Split (%)	21.4%	21.4%		21.4%	21.4%		69.3%	69.3%		9.3%	78.6%	
Yellow Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		3.0	4.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		Max	C-Max	
Act Effct Green (s)	21.3	21.3		21.3	21.3			91.0			106.7	
Actuated g/C Ratio	0.15	0.15		0.15	0.15			0.65			0.76	
v/c Ratio	0.77	0.61		0.18	0.83			0.53			0.48	
Control Delay	108.4	63.3		54.0	79.5			14.1			6.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	108.4	63.3		54.0	79.5			14.1			6.2	
LOS	F	E		D	E			B			A	
Approach Delay		75.0			77.2			14.1			6.2	
Approach LOS		E			E			B			A	
Queue Length 50th (ft)	52	142		18	199			263			140	
Queue Length 95th (ft)	#130	219		47	#308			317			172	
Internal Link Dist (ft)		451			566			221			250	
Turn Bay Length (ft)	80			100								

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	88	316		144	315			2101			2246	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.68	0.54		0.16	0.74			0.53			0.48	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 22.2 Intersection LOS: C
Intersection Capacity Utilization 93.5% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Arlington Heights Road & Oakton Street



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	1098	1023	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	1156	1077	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				330	1004	
pX, platoon unblocked	0.87	0.93	0.93			
vC, conflicting volume	1655	539	1078			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1106	356	935			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	179	596	678			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	385	771	718	360
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	1
cSH	1700	678	1700	1700	1700
Volume to Capacity	0.00	0.00	0.45	0.42	0.21
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.0	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	4	5	2	1096	1018	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	4	5	2	1154	1072	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				437	897	
pX, platoon unblocked	0.88	0.93	0.93			
vC, conflicting volume	1654	537	1074			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1091	344	923			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	183	605	682			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	9	387	769	714	359
Volume Left	4	2	0	0	0
Volume Right	5	0	0	0	2
cSH	298	682	1700	1700	1700
Volume to Capacity	0.03	0.00	0.45	0.42	0.21
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	17.5	0.1	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	17.5	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

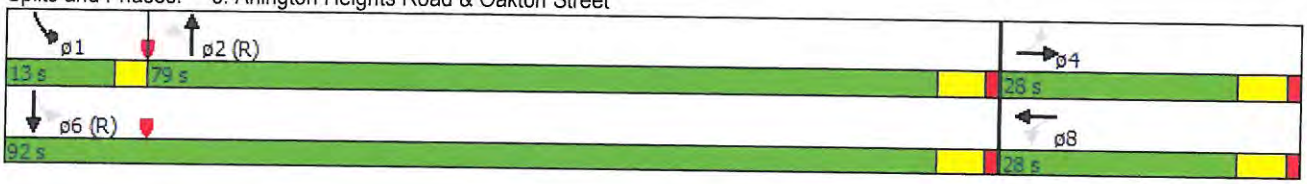
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	156	46	60	147	50	13	671	30	27	984	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	55			125			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.966			0.962			0.994			0.992	
Flt Protected	0.950			0.950				0.999			0.999	
Satd. Flow (prot)	1770	1799	0	1770	1792	0	0	3514	0	0	3507	0
Flt Permitted	0.372			0.361				0.922			0.923	
Satd. Flow (perm)	693	1799	0	672	1792	0	0	3244	0	0	3241	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			13			7			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		531			646			301			330	
Travel Time (s)		12.1			14.7			6.8			7.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	212	0	63	208	0	0	752	0	0	1124	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		9.5	24.0	
Total Split (s)	28.0	28.0		28.0	28.0		79.0	79.0		13.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		65.8%	65.8%		10.8%	76.7%	
Yellow Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		3.0	4.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		Max	C-Max	
Act Effct Green (s)	18.0	18.0		18.0	18.0			73.0			90.0	
Actuated g/C Ratio	0.15	0.15		0.15	0.15			0.61			0.75	
v/c Ratio	0.71	0.76		0.63	0.75			0.38			0.46	
Control Delay	81.8	63.6		73.8	61.6			12.5			5.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	81.8	63.6		73.8	61.6			12.5			5.8	
LOS	F	E		E	E			B			A	
Approach Delay		68.2			64.4			12.5			5.8	
Approach LOS		E			E			B			A	
Queue Length 50th (ft)	54	150		46	145			145			127	
Queue Length 95th (ft)	#115	230		95	223			184			175	
Internal Link Dist (ft)		451			566			221			250	
Turn Bay Length (ft)	80			100								

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	127	338		123	339			1976			2458	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.57	0.63		0.51	0.61			0.38			0.46	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 21.7 Intersection LOS: C
Intersection Capacity Utilization 78.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Arlington Heights Road & Oakton Street



HCM Unsignalized Intersection Capacity Analysis
6: Arlington Heights Road & Access Drive

4/14/2015

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	34	34	38	752	1034	39
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	36	36	40	792	1088	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				330	1004	
pX, platoon unblocked	0.94	0.91	0.91			
vC, conflicting volume	1585	565	1129			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1074	327	947			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	81	94	94			
cM capacity (veh/h)	190	609	656			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	72	304	528	726	404
Volume Left	36	40	0	0	0
Volume Right	36	0	0	0	41
cSH	290	656	1700	1700	1700
Volume to Capacity	0.25	0.06	0.31	0.43	0.24
Queue Length 95th (ft)	24	5	0	0	0
Control Delay (s)	21.5	2.1	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	21.5	0.8		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	6	7	779	1067	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	6	7	820	1123	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				437	897	
pX, platoon unblocked	0.95	0.91	0.91			
vC, conflicting volume	1549	563	1126			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1035	314	935			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	214	618	661			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	6	281	547	749	378
Volume Left	0	7	0	0	0
Volume Right	6	0	0	0	3
cSH	618	661	1700	1700	1700
Volume to Capacity	0.01	0.01	0.32	0.44	0.22
Queue Length 95th (ft)	1	1	0	0	0
Control Delay (s)	10.9	0.4	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	10.9	0.1		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	143	19	22	175	51	18	1025	41	52	948	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	55			125			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.982			0.966			0.994			0.991	
Flt Protected	0.950			0.950				0.999			0.998	
Satd. Flow (prot)	1770	1829	0	1770	1799	0	0	3514	0	0	3500	0
Flt Permitted	0.268			0.455				0.917			0.787	
Satd. Flow (perm)	499	1829	0	848	1799	0	0	3226	0	0	2760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			9			6			14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		531			646			301			330	
Travel Time (s)		12.1			14.7			6.8			7.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	171	0	23	238	0	0	1141	0	0	1124	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		9.5	24.0	
Total Split (s)	30.0	30.0		30.0	30.0		97.0	97.0		13.0	110.0	
Total Split (%)	21.4%	21.4%		21.4%	21.4%		69.3%	69.3%		9.3%	78.6%	
Yellow Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		3.0	4.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		Max	C-Max	
Act Effct Green (s)	21.5	21.5		21.5	21.5			91.0			106.5	
Actuated g/C Ratio	0.15	0.15		0.15	0.15			0.65			0.76	
v/c Ratio	0.86	0.60		0.18	0.84			0.54			0.52	
Control Delay	125.1	62.8		53.7	79.8			14.4			6.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	125.1	62.8		53.7	79.8			14.4			6.7	
LOS	F	E		D	E			B			A	
Approach Delay		80.0			77.5			14.4			6.7	
Approach LOS		E			E			B			A	
Queue Length 50th (ft)	57	141		18	202			276			152	
Queue Length 95th (ft)	#144	219		47	#318			332			183	
Internal Link Dist (ft)		451			566			221			250	
Turn Bay Length (ft)	80			100								

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	85	316		145	315			2099			2152	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.76	0.54		0.16	0.76			0.54			0.52	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 22.8 Intersection LOS: C
Intersection Capacity Utilization 96.5% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Arlington Heights Road & Oakton Street

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	35	36	32	1106	1031	31
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	37	38	34	1164	1085	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				330	1004	
pX, platoon unblocked	0.87	0.93	0.93			
vC, conflicting volume	1751	559	1118			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1177	362	966			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	94	95			
cM capacity (veh/h)	152	587	656			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	75	422	776	724	394
Volume Left	37	34	0	0	0
Volume Right	38	0	0	0	33
cSH	243	656	1700	1700	1700
Volume to Capacity	0.31	0.05	0.46	0.43	0.23
Queue Length 95th (ft)	31	4	0	0	0
Control Delay (s)	26.2	1.5	0.0	0.0	0.0
Lane LOS	D	A			
Approach Delay (s)	26.2	0.5		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	4	5	2	1139	1057	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	4	5	2	1199	1113	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				437	897	
pX, platoon unblocked	0.87	0.92	0.92			
vC, conflicting volume	1717	557	1115			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1131	351	956			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	172	595	659			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	9	402	799	742	373
Volume Left	4	2	0	0	0
Volume Right	5	0	0	0	2
cSH	284	659	1700	1700	1700
Volume to Capacity	0.03	0.00	0.47	0.44	0.22
Queue Length 95th (ft)	3	0	0	0	0
Control Delay (s)	18.1	0.1	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	18.1	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		