September
2016

Thomas Middle School

Traffic and Parking Study

Prepared for:

Arlington Heights
School District 25

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INTRODUCTION

Eriksson Engineering Associates, Ltd. (EEA) was retained by Arlington Heights School District 25 (AHSD 25) to conduct a traffic and parking study for the proposed expansion of Thomas Middle School in Arlington Heights, Illinois. Thomas Middle School is located on the south side of Thomas Street between Arlington Heights Road and Belmont Avenue. The current enrollment of the school is 950 students in Grades 6th thru 8th with 127 staff members.

A proposed expansion of the school will provide additional space for the existing students and serve the projected growth in student population with a new gym and additional classrooms. Long term projections expect the enrollment to reach 1,030 students. The number of staff is expected to increase from 127 to 135 persons.

The purpose of the study was to observe the existing traffic patterns around the school, determine the traffic characteristics of the existing and expanded school, review the parking needs, and develop roadway and parking recommendations.

EXISTING CONDITIONS

Site Location and Area Land-Uses

The existing school is located at the southeast corner of Arlington Heights Road and Thomas Street in Arlington Heights, Illinois within in a single-family neighborhood. A church and a park are to the east of the school. West of Arlington Heights Road, there are a number of medical office buildings. Olive-Mary Stitt Elementary School is located a quarter mile to the south. **Figure 1** illustrates the site location and the surrounding land-uses and roads. (Note: all figures are located at the end of the report).

Bicycle and Pedestrian Routes

Thomas Street and Belmont Avenue are designated on-street bike routes. Public sidewalks are located along both sides of the streets around the school. The intersection of Thomas Street at Belmont Avenue has crosswalks on all four legs. Crosswalks with pedestrian signals are provided at Arlington Heights Road and Thomas Street.

Roadway Characteristics

A description of the area roadways providing access to the site is provided below:

Arlington Heights Road is a north-south major arterial roadway extending from Elk Grove Village thru Arlington Heights to Long Grove. It has two travel lanes in each direction with a painted left-turn lane. At Thomas Street, Arlington Heights Road is signalized with painted crosswalks/pedestrian signals on all four legs. The posted speed limit is 30 miles per hour and is under the jurisdiction of the Illinois Department of Transportation (IDOT). No right turn on red is permitted on school days when children are present.

Thomas Street is a secondary arterial east of Arlington Heights Road and a collector road west of Arlington Heights Road. It has one travel lane in each direction and left-turn lanes at its signalized intersection with Arlington Heights Road and its two-way stop intersection at Belmont Avenue which includes an eastbound right-turn lane. The posted speed limit is 25 miles per hour with a 20 mph school speed zone by the school. It is under the jurisdiction of the Village of Arlington Heights. No standing, stopping, or parking is permitted on either side of Thomas Street along the school's frontage.

Belmont Avenue is a two-lane local road extending north of Olive Street. The posted speed limit is 25 miles per hour with a 20 mph school speed zone by the school and is under the jurisdiction of the Village of Arlington Heights. A bump out loading zone is provided on the west side of Belmont Avenue.

Existing Traffic Volumes

Thomas Middle School starts the school day at 7:50 AM and ends at 2:45 PM. Weekday morning (7:00 to 8:30 AM) and afternoon (2:00 to 3:30 PM) manual traffic counts of vehicles and pedestrians were conducted in May, 2015 at the following intersections:

- Arlington Heights Road and Thomas Street
- West School Parking Lot Exit and Thomas Street
- Belmont Avenue and Olive Street
- South School Parking Lot Drive on Belmont Avenue

These counts showed the peak-hours of traffic occurring from 7:00 to 8:00 AM and 2:30 to 3:30 PM on a weekday. The existing traffic volumes are shown in **Figure 2** and included in the **Appendix**. **Figure 3** illustrates the pedestrian volumes around the school.

Existing School Operations

During the morning arrival period, 6th Grade parents are instructed to enter the West Parking Lot from Thomas Street, drop-off their student(s) and the exit right back onto Thomas Street. 7th and 8th grade parents are instructed to drop-off students on the west side of Belmont Avenue by the school. School buses also use the west side of Belmont Avenue to drop-off students. The South Lot is only used by teachers and visitors and is not open during arrival and dismissal. A copy of the school traffic procedures is included in the **Appendix**.

During the afternoon dismissal period, school buses are staged in the West Parking lot to pick-up students. All grades are picked up from the Belmont Average frontage.

Crossing guards are on Thomas Street at Belmont Avenue and at Arlington Heights Road before and after school.

SITE TRAFFIC CHARACTERISTICS

Site Plan

The proposed building plan includes additional commons space at the east side of the building and new gym locker rooms, office expansion and lobby along the south side of the building. Existing locker and fitness rooms will be renovated into a band room, music room, and classrooms. Parking will be increase with an expansion of the south parking lot from 27 spaces to 66 spaces and a second driveway added to the south end of the lot. The west parking lot will not be modified.

Trip Generation

Thomas Middle School currently serves 950 students and uses 11 school buses for transportation. With the expansion, the school population is projected to grow to 1,030 students or a net increase of 80 students over the next several years. One additional school bus may be needed in the future to accommodate the growth.

Traffic estimates were made for the additional students using the traffic counts at the current school. The trip generation rates for the existing school are higher than the data provided by the Institute of Transportation Engineer's Trip Generation, 9th Ed. manual for elementary schools due to a higher percentage of automobile usage. The rate of vehicle trip generation was applied to the proposed increase in students with the results shown in **Table 1**.

Table 1
School Expansion Traffic Volumes

Scenario	Morning Arrival			Afternoon Dismissal		
	In	Out	Total	In	Out	Total
Trip Generation Based on Existing Traffic Volumes						
Existing 950 Students	364	278	642	104	139	243
Total 1,030 Students	394	303	697	112	151	263
Net Additional Traffic	**+30**	**+25**	**+55**	**+8**	**+12**	**+20**
ITE Trip Generation Comparison(1)						
Existing 950 Students	282	231	513	128	157	285
Total 1,030 Students	306	250	556	139	170	309
Net Additional Traffic	**+24**	**+19**	**+43**	**+11**	**+13**	**+24**

(1) ITE Trip Generation Manual, 9th Edition – Land Use Code 522 (Middle/Junior High Schools)

Trip Distribution

The trip distribution for school is based on the existing traffic volumes at the school, the road network, and the circulation system. Based on the school's boundaries (see **Appendix**), the majority of the traffic approaches the school from Arlington Heights Road or west Thomas Street, circulates around the school, and exits southbound on Belmont Avenue. The trip distribution for the school is shown in **Table 2** and **Figure 4**.

Table 2
Directional Distribution

Direction	Inbound Percentage	Outbound Percentage
North on Arlington Heights Road	23%	0%
South on Arlington Heights Road	12%	0%
West on Thomas Street	37%	0%
East on Thomas Street	17%	36%
North on Belmont Avenue	4%	3%
South on Belmont Avenue	7%	61%
Total	**100%**	**100%**

Trip Assignment

The future vehicular trips that are generated by the expansion were distributed to the area roadways based on the directional distribution analysis and the proposed expansion plan. **Figure 5** displays the trip assignment for the projected site traffic volumes. **Figure 6** shows the Total Traffic volumes, which are the sum of the existing traffic volumes and the site traffic volumes.

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 3.**

Table 3
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 2010

Capacity analyses were conducted for each intersection using the computer program Highway Capacity Software (HCS) to determine the existing operating conditions of the access system. These analyses were performed for the school's peak arrival and dismissal periods. **Table 4** shows the existing and future level of service results for each intersection. Copies of the capacity analysis summaries are included in the **Appendix**. Overall, the intersections are working well around the school and will continue to do so.

Table 4
Intersection Level of Service and Delay

Intersection	Movement	AM Arrival		PM Dismissal	
		Existing	Future	Existing	Future
Thomas Street at:					
Arlington Heights Road (Traffic Signal)	**Intersection**	C-26.3	C-26.8	C-22.1	C-23.2
West Lot Access (Two-Way Stop)	**NB Lt/Rt**	D-27.8	C-20.2	B-14.1	B-12.6
	WB Left	A-10.0	B-10.1	A-8.6	A-8.6
Belmont Avenue (Two-Way Stop)	**EB Lt/Th/Rt**	A-8.2	A-8.2	A-8.5	A-8.5
	WB Lt/Th/Rt	A-9.3	A-9.6	A-8.4	A-8.5
	NB Lt/Th/Rt	D-27.0	D-30.4	C-24.1	C-24.9
	SB Lt/Th/Rt	C-20.1	C-22.0	B-15.0	C-15.5
Belmont Avenue at:					
North Lot Drive (Two-Way Stop)	**EB Lt/Th/Rt**	C-15.5	C-15.9	B-11.7	B-11.8
	WB Lt/Th/Rt	B-12.0	B-12.2	A-9.3	A-9.4
	NB Lt/Th/Rt	A-9.4	A-9.5	A-8.4	A-8.5
	SB Lt/Th/Rt	A-7.3	A-7.3	A-7.4	A-7.4

Arlington Height Road at Thomas Street

The traffic signal at Arlington Height Road and Thomas Street works well and will not be significantly impacted by the school expansion. Since Arlington Heights Road is an arterial route, it gets the majority of the green time at the signal and the side street gets less. Thomas Street traffic has higher delays but still falls within acceptable ranges. No improvements are needed to accommodate the school expansion.

West Lot Access on Thomas Street

The driveway is designed to allow right and left turns from Thomas into the West Lot and the outbound is restricted to a right-turn out due to its proximity to Arlington Heights Road. Traffic counts indicated that outbound left-turns are being made at the driveway. The driveway has a painted right-turn arrow and a small pork chop island to limit the left-turn outs. It is not recommended to modify the island because it will impact the school bus turning paths exiting the lot. Additional "No Left-Turn" signage should be added and reminders sent to parents that this movement is not allowed.

Thomas Street at Belmont Avenue

The intersection will continue to operate well as a two-way stop intersection. An existing crossing guard will still stop traffic at the pedestrian crosswalks for students crossing.

South Parking Lot Access

The South Parking Lot will be expanded from 27 to 66 parking spaces and be restricted to staff, visitor, and accessible parking. It will be accessed from a driveway about 25 feet south of the existing driveway with an east-west orientation instead of north-south to incorporate a fire lane around the south side of the building. School bus and parents will still use Belmont Avenue to drop-off students. School buses may use the parking lot for after school activities outside the peak arrival/dismissal periods.

PARKING

The existing school on-site parking supply provides a total of 102 parking spaces including four accessible spaces in the two on-site parking lots. With the proposed changes to the south parking lot, there will be a net increase of 39 spaces for a total of 141 spaces including five accessible spaces.

The Village of Arlington Heights Zoning Ordinance requires elementary schools to provide two parking spaces per each employee (135 staff) and one per classroom (44 rooms) for a total of 314 (270+44) spaces. A parking variation of 173 spaces (314-141) would be required.

National parking data is available from the Institute of Transportation Engineers (ITE) in their publication *Parking Generation*, 4th Edition for middle schools (Land Use Code 522). The peak demand was 0.09 spaces per student (1,030 students) or 93 spaces which is well under the 141 spaces proposed.

Parking counts were conducted on Wednesday May 3, 2016 which found 102 vehicles parked on-site including staff and visitors. Two of the 102 vehicles were maintenance vehicles parked in the school loading area. Minimal on-street parking near the school was observed outside of the arrival/dismissal periods (2-3 vehicles). It was also observed that two vehicles were parked in the small park district lot east of the school. The existing school parking demand is 107 vehicles. The school currently has 127 staff members but they are not all present on-site at the same time.

Projected parking demand was estimated based on the existing demand 107 vehicles increased 8.4% in proportion to the increase in students resulting in a total demand of 116 vehicles, which is less than the proposed supply of 141 spaces. Parking for special events at the school can be accommodated by a combination of the off-street parking and on-street parking by the school on Belmont Avenue.

SUMMARY

This report summarizes the results of traffic and parking study for the expansion of Thomas Middle School in Arlington Heights, Illinois. The findings of the study area:

- The volume of additional school traffic generated by the school expansion is low due to small increase in students. The net change in area traffic volumes is nominal.
- The existing West Lot exit drive will require additional signage to reinforce the current left-turn prohibition.
- Parking for the school provides 141 on-site parking spaces and exceeds the school's projected needs. It will require a parking variation of 173 spaces from the village zoning code requirements of 314 spaces.

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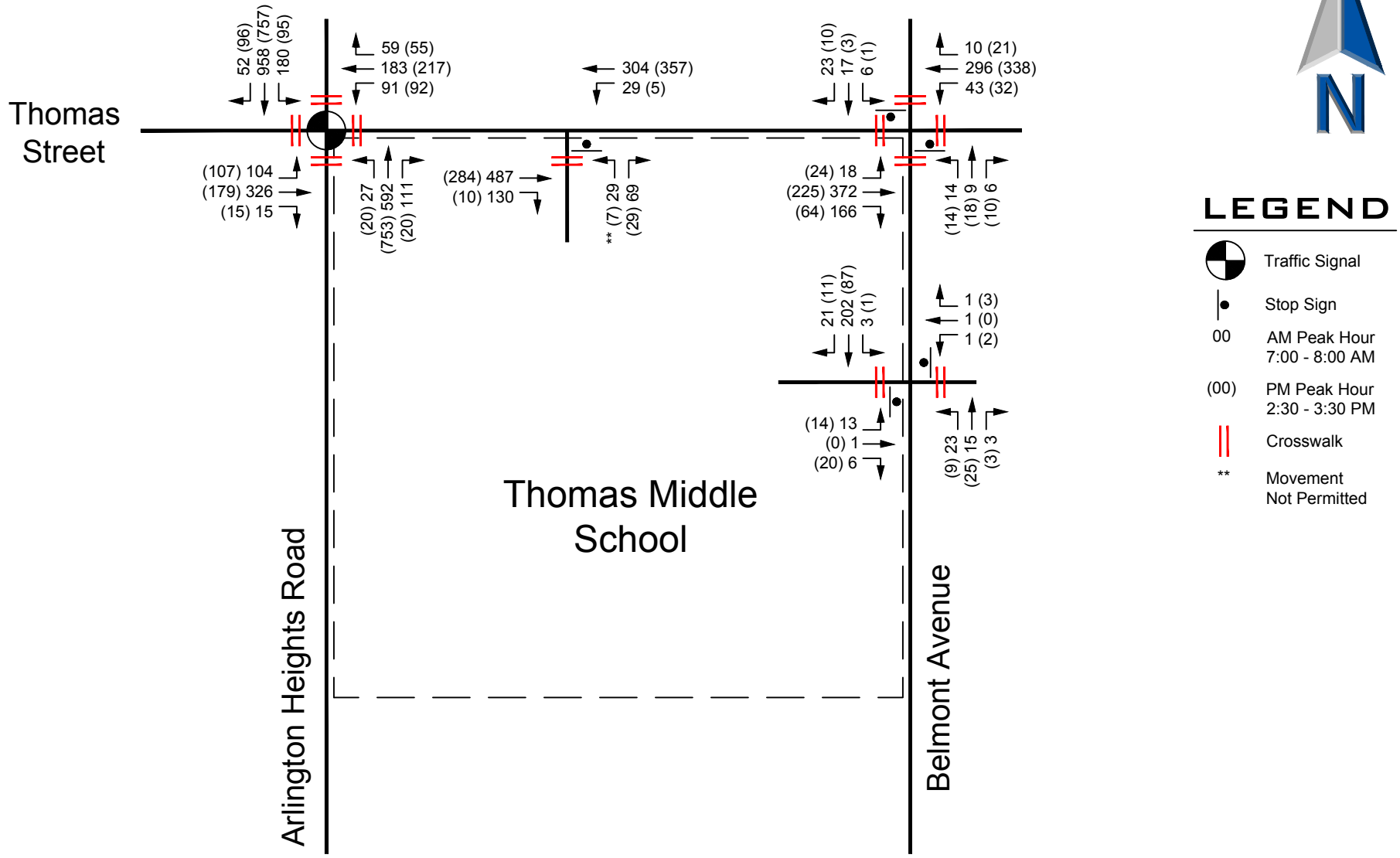
Site Location and Area Roadways

Figure 1



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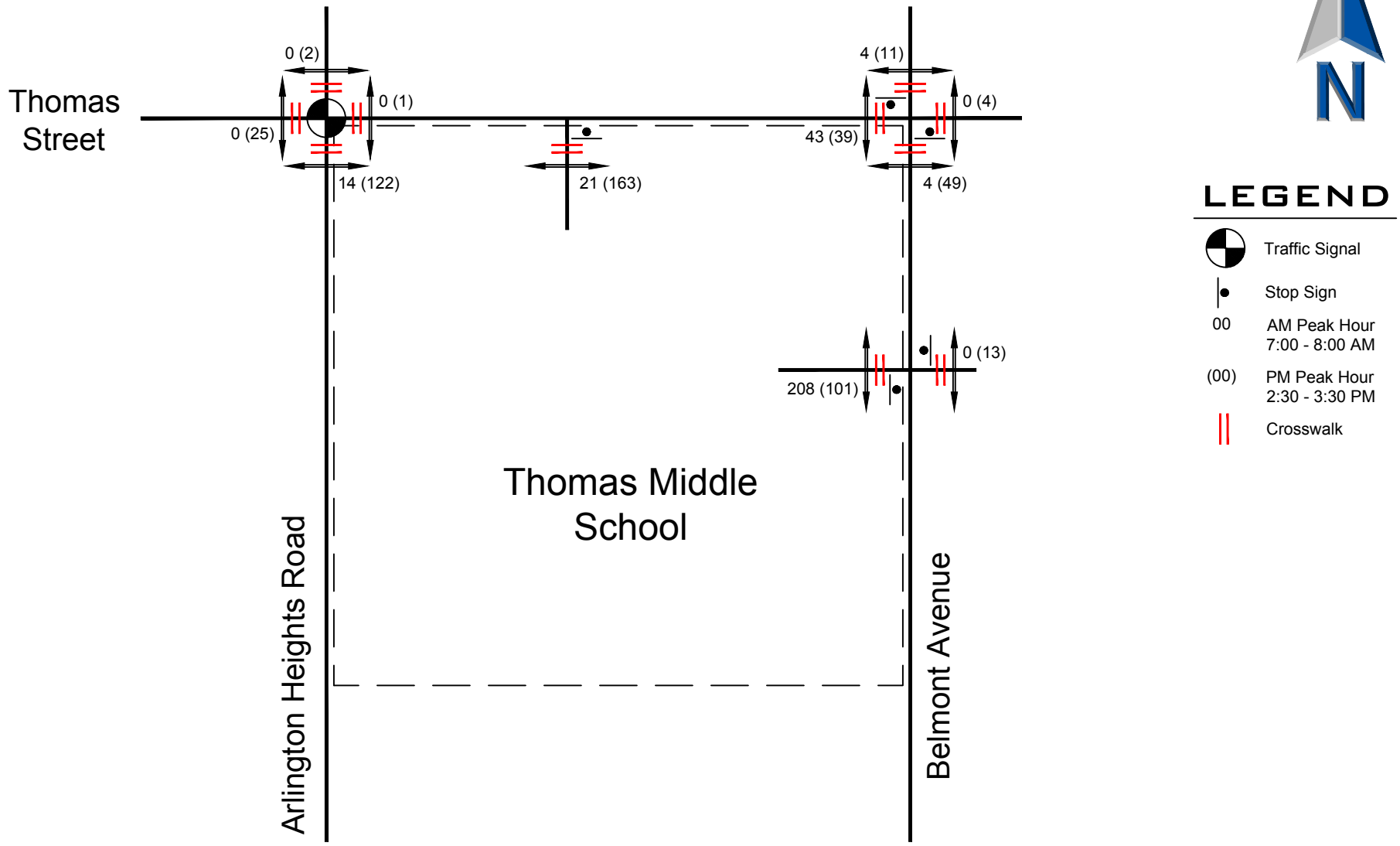
Existing Traffic Volumes

Figure 2



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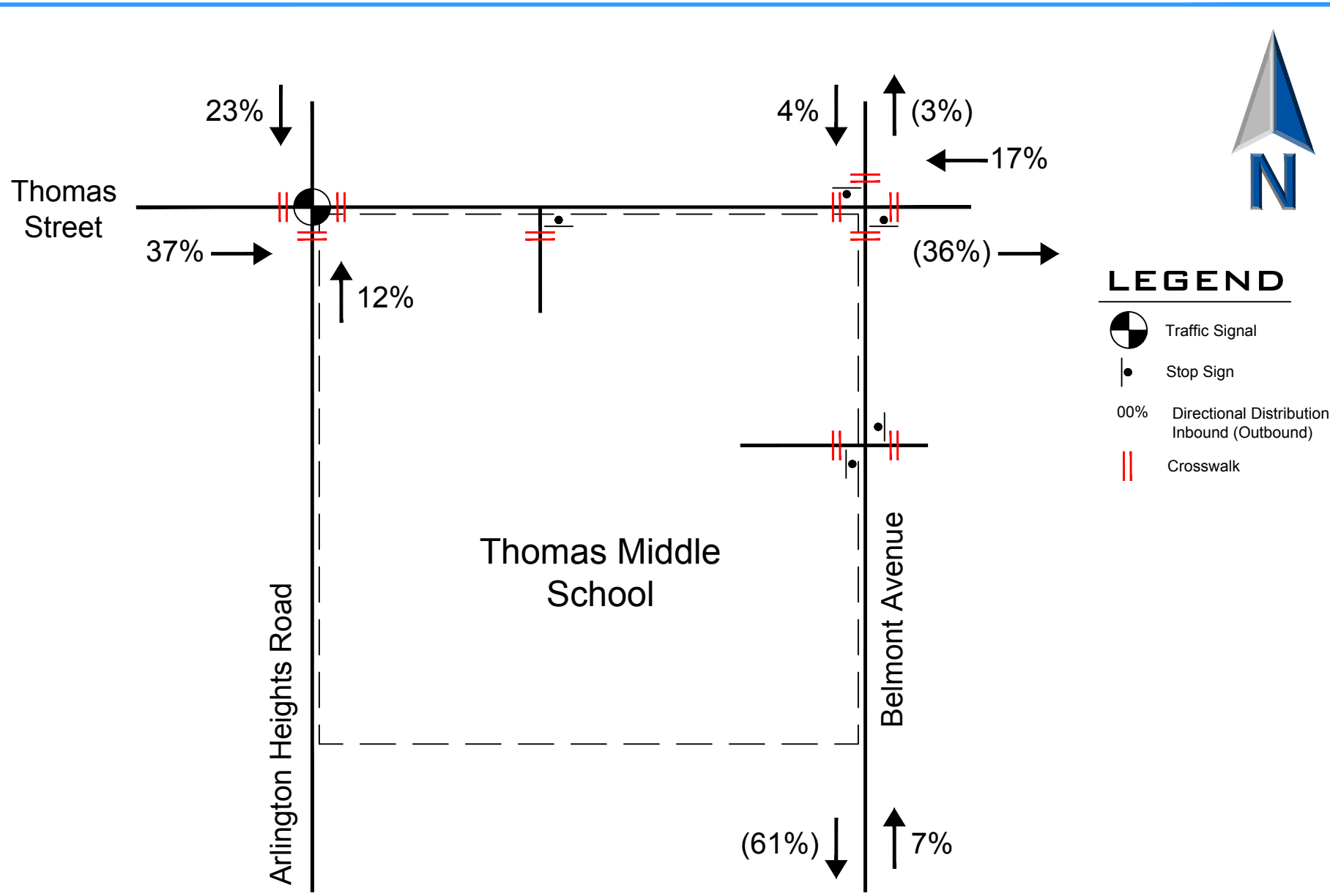
Existing Pedestrian Volumes

Figure 3



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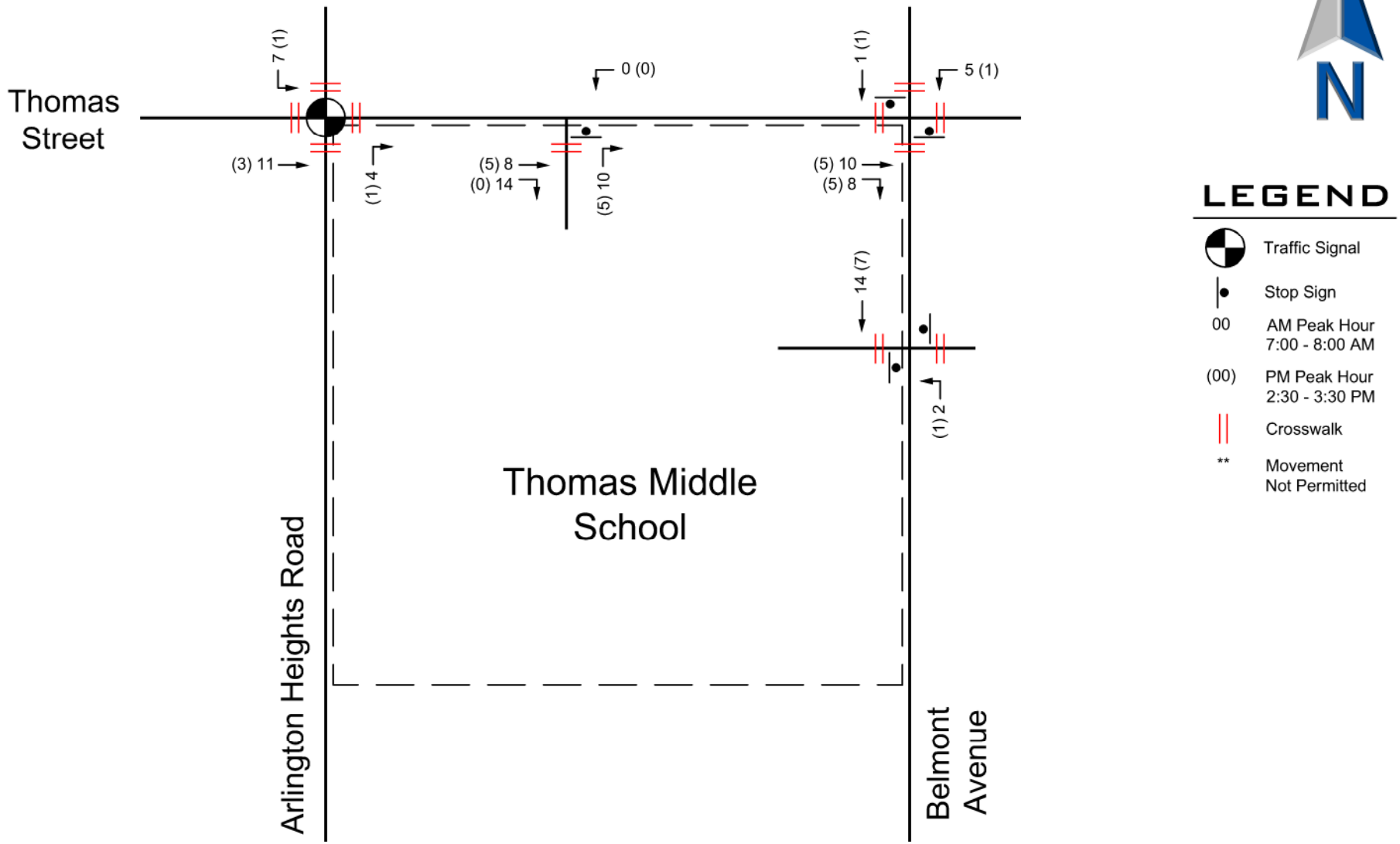
Directional Distribution

Figure 4



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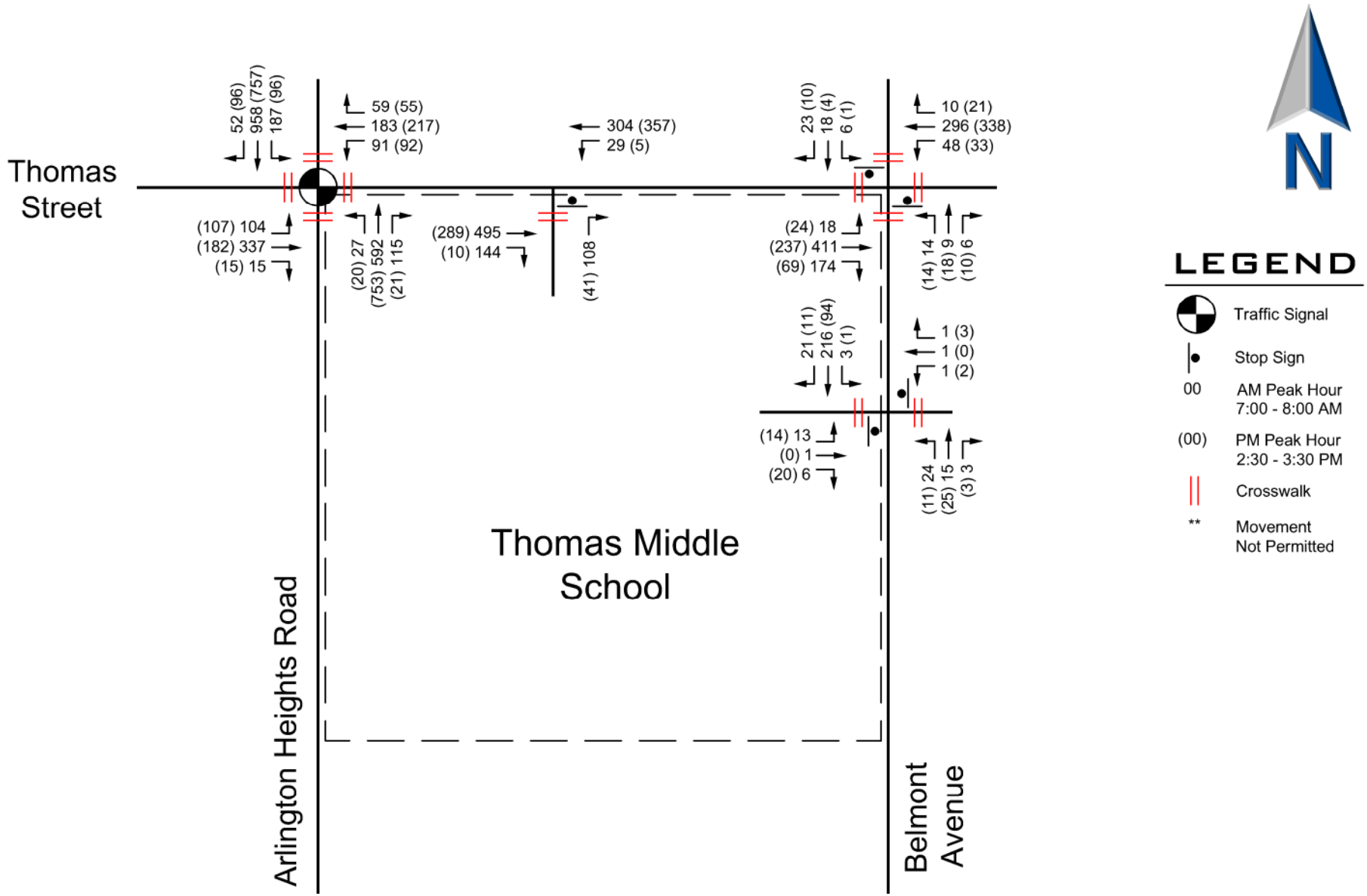
Site Traffic Assignment

Figure 5



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Total Traffic Volumes

Figure 6

Traffic and Parking Study
Appendix

- School Boundaries and Loading Areas
- 2016 Existing Traffic Counts
- 2016 Existing Capacity Analyses
- Total Capacity Analyses

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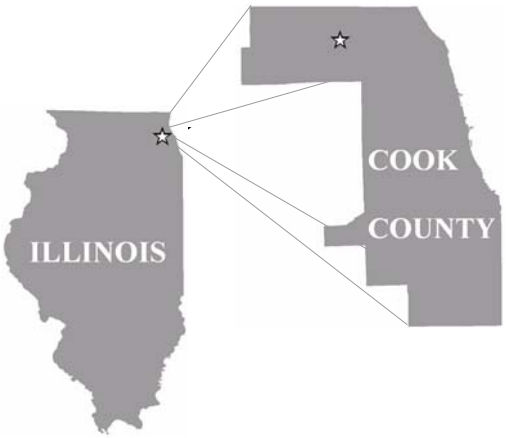
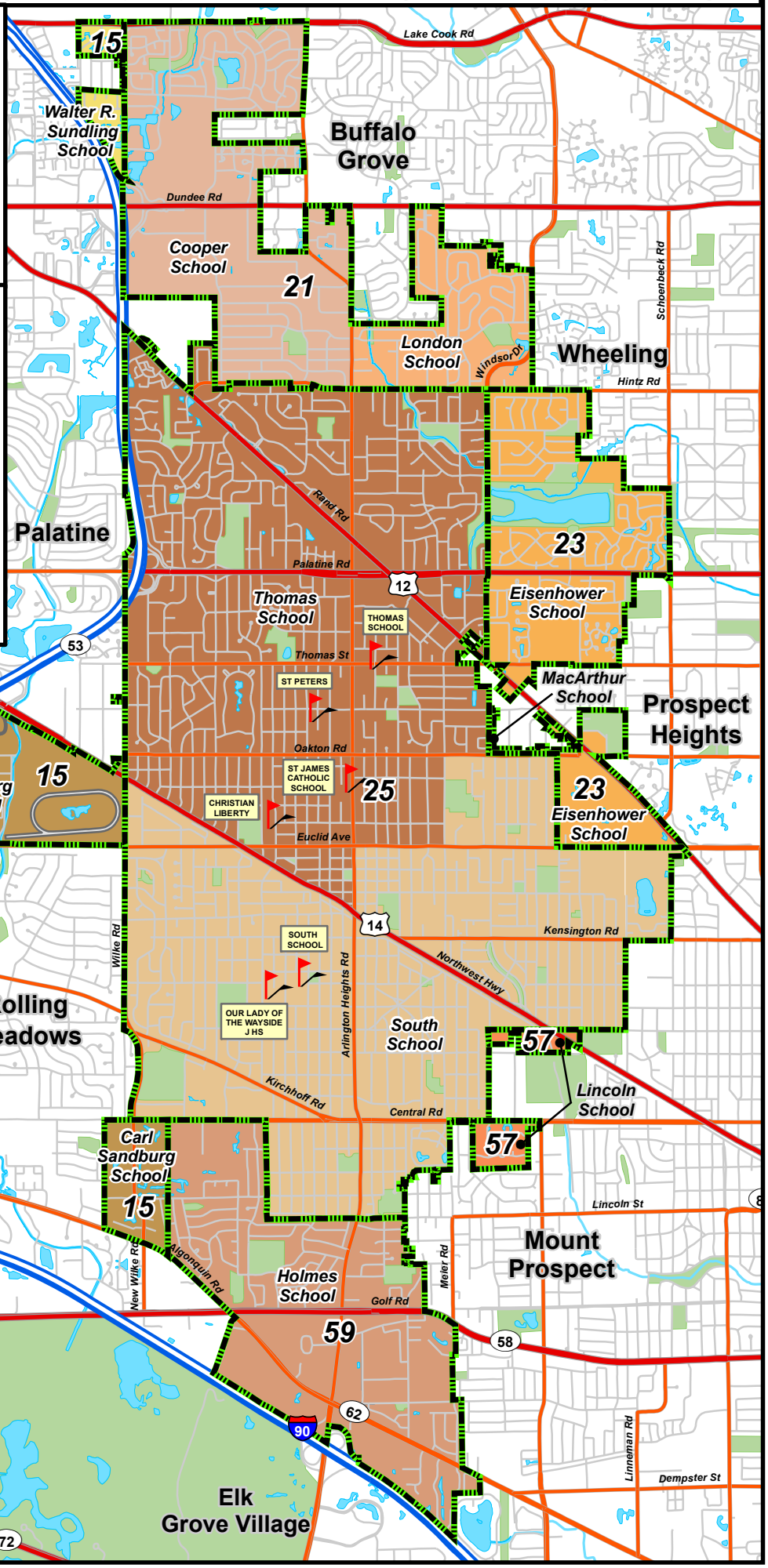
MIDDLE SCHOOL DISTRICTS

Village of Arlington Heights

Cook County - Illinois





Legend

- VAH Middle Schools

MIDDLE SCHOOL DISTRICTS

- Carl Sandburg Middle School
- Cooper Middle School
- Eisenhower Middle School
- Holmes Middle School
- Lincoln Middle School
- London Middle School
- South Middle School
- Thomas Middle School
- Walter R. Sundling Middle Sch

MIDDLE SCHOOL BOUNDARIES 2008

STREETS

Feature Class Type

- Interstate Highway
- US and State Highway
- Major Streets
- Local City Streets

N

Scale 1:52,300

1 inch equals 0.83 miles

Miles 0 0.35 0.7 1.4

Feet 0 1,750 3,500 7,000

Data Sources:
1. Planimetric Data - Cook County, IL (2001) - VAH GIS Div. (rev. 2004)
2. Annotation - VAH GIS Div. (2004)

Projection: State Plane Coordinate System (Illinois East)
Datum: NAD83 Map Units: feet

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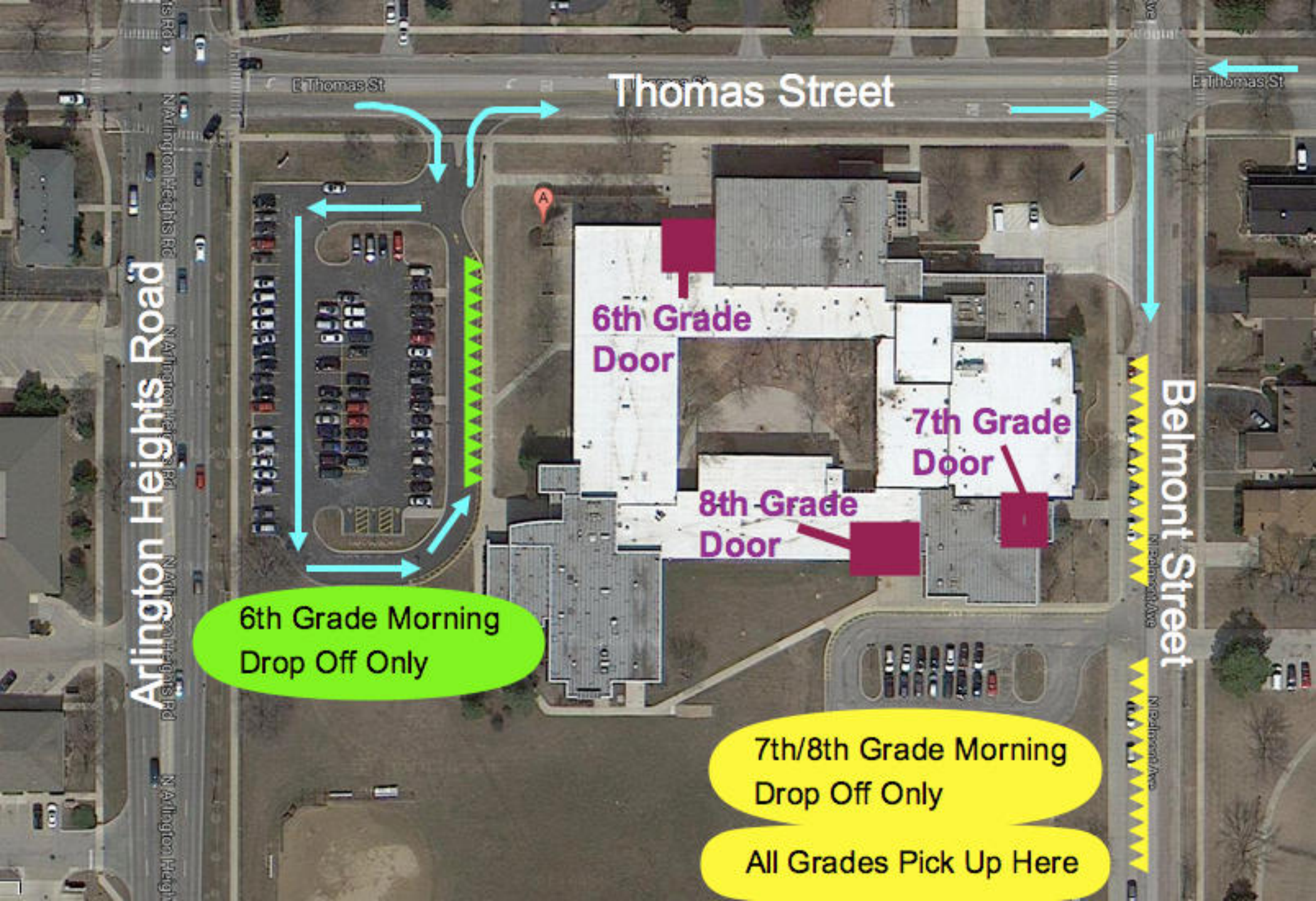
APRIL 2008


Thomas Street
E Thomas St
Arlington Heights Road
N Arlington Heights Rd
Belmont Street
N Belmont Ave
6th Grade Door
7th Grade Door
8th Grade Door
6th Grade Morning Drop Off Only
7th/8th Grade Morning Drop Off Only
All Grades Pick Up Here

Intersection Counts
Arlington Heights Road at Thomas Street

Arlington Heights School District 25																						Arlington Heights, Illinois
	Arlington Hts Road Southbound			Thomas Street Westbound			Arlington Hts Road Northbound			Thomas Street Eastbound			15	60	Peak	Pedestrian Counts				Biker Counts			
Begin Time	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Minute Totals	Minute Totals	Hour Factor	North Leg	East Leg	South Leg	West Leg	North Leg	East Leg	South Leg	West Leg
	Tuesday May 10, 2016																						
7:00 AM	9	221	58	21	41	11	25	141	8	3	104	14	656	**2690**	**0.95**	0	0	0	0	0	0	0	0
7:15 AM	12	227	39	16	49	26	23	154	1	2	87	28	664	2604	0.92	0	0	8	0	0	0	0	0
7:30 AM	14	248	63	15	54	23	47	138	11	2	72	24	711	2502	0.88	0	0	6	0	0	0	0	0
7:45 AM	17	262	20	7	31	31	16	159	7	8	63	38	659			0	0	0	0	0	0	0	0
8:00 AM	16	266	23	12	21	17	15	135	7	4	22	32	570			0	0	0	0	0	0	0	0
8:15 AM	16	205	11	13	67	21	7	144	7	3	36	32	562			0	0	0	0	0	0	0	0
Total	84	1429	214	84	263	129	133	871	41	22	384	168				0	0	14	0	0	0	0	0
7:00-8:00 AM	**52**	**958**	**180**	**59**	**175**	**91**	**111**	**592**	**27**	**15**	**326**	**104**	**2690**			**0**	**0**	**14**	**0**	**0**	**0**	**0**	**0**
	Tuesday May 10, 2016																						
2:00 PM	14	173	17	15	33	17	21	139	6	0	26	19	480	2132	0.91	0	0	0	0	0	0	0	0
2:15 PM	23	189	16	10	20	22	18	163	5	2	26	15	509	2275	0.91	0	0	0	1	0	0	0	0
2:30 PM	22	175	32	15	26	16	22	201	3	1	17	27	557	**2377**	**0.95**	0	0	0	0	0	0	0	0
2:45 PM	18	195	23	6	64	28	11	171	5	5	36	24	586			0	0	109	22	0	0	0	0
3:00 PM	16	182	21	20	74	30	20	185	8	5	35	27	623			1	0	9	1	0	1	0	0
3:15 PM	40	205	19	14	39	18	16	196	4	4	27	29	611			1	1	4	2	0	0	0	0
Total	133	1119	128	80	256	131	108	1055	31	17	167	141				2	1	122	26	0	1	0	0
2:30-3:30 PM	**96**	**757**	**95**	**55**	**203**	**92**	**69**	**753**	**20**	**15**	**115**	**107**	**2377**			**2**	**1**	**122**	**25**	**0**	**1**	**0**	**0**

Intersection Counts
Thomas Street at School Lot Access

Arlington Heights School District 25								Arlington Heights, Illinois		
	Thomas Street Westbound		Lot Access Northbound		Thomas Street Eastbound		15	60	Peak	Pedestrian Counts
Begin Time	Through	Left Turn	Right Turn	Left Turn	Right Turn	Through	Minute Totals	Minute Totals	Hour Factor	South Leg
	Tuesday May 10, 2016									
7:00 AM	75	4	4	4	19	165	271	**1025**	**0.74**	2
7:15 AM	82	7	7	7	23	120	246	874	0.63	4
7:30 AM	79	16	58	18	84	91	346	754	0.54	13
7:45 AM	68	2	0	0	4	88	162			2
8:00 AM	55	0	0	0	0	65	120			0
8:15 AM	63	0	0	0	0	63	126			0
Total	422	29	69	29	130	592				21
7:00-8:00 AM	**304**	**29**	**69**	**29**	**130**	**464**	**1025**			**21**
	Tuesday May 10, 2016									
2:00 PM	65	0	1	0	0	56	122	563	0.73	0
2:15 PM	51	3	0	0	3	61	118	661	0.75	0
2:30 PM	60	4	0	0	3	62	129	**684**	**0.78**	1
2:45 PM	99	1	13	2	1	78	194			150
3:00 PM	125	0	13	2	2	78	220			7
3:15 PM	73	0	3	3	4	58	141			5
Total	473	8	30	7	13	393				163
2:30-3:30 PM	**357**	**5**	**29**	**7**	**10**	**276**	**684**			**163**

Intersection Counts
Thomas Street at Belmont Avenue

Arlington Heights School District 25 — **Arlington Heights, Illinois**

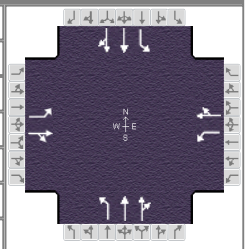
Begin Time	Belmont Avenue Southbound			Thomas Street Westbound			Belmont Avenue Northbound			Thomas Street Eastbound			15 Minute Totals	60 Minute Totals	Peak Hour Factor	Pedestrian Counts				Biker Counts			
	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn				North Leg	East Leg	South Leg	West Leg	North Leg	East Leg	South Leg	West Leg
	Tuesday May 10, 2016																						
7:00 AM	1	5	0	2	59	13	5	5	14	61	102	0	267	**1005**	**0.79**	0	0	0	0	0	0	0	0
7:15 AM	5	1	0	3	87	11	1	3	5	44	97	0	257	854	0.67	1	0	1	3	0	0	0	0
7:30 AM	15	12	4	2	85	29	4	1	5	76	66	18	317	705	0.56	3	0	2	39	0	0	0	0
7:45 AM	3	3	1	2	55	2	0	2	2	33	61	0	164			0	0	1	1	0	0	0	0
8:00 AM	0	1	1	3	45	1	1	0	2	13	49	0	116			0	0	0	0	0	0	0	0
8:15 AM	1	0	0	1	51	0	0	0	0	9	46	0	108			0	0	1	0	0	0	0	0
Total	25	22	6	13	382	56	11	11	28	236	421	18				4	0	5	43	0	0	0	0
7:00-8:00 AM	**23**	**17**	**6**	**10**	**272**	**43**	**6**	**6**	**14**	**166**	**273**	**18**	**854**			**4**	**0**	**4**	**43**	**0**	**0**	**0**	**0**
	Tuesday May 10, 2016																						
2:00 PM	0	0	1	0	78	2	2	2	3	4	56	0	148	633	0.73	0	0	1	0	0	0	0	0
2:15 PM	1	0	0	3	53	5	1	0	0	9	51	0	123	740	0.73	0	0	0	0	0	0	0	0
2:30 PM	1	0	0	3	63	8	2	0	2	12	49	4	144	**761**	**0.75**	0	0	0	0	0	0	0	0
2:45 PM	6	2	1	5	85	10	6	3	9	26	52	13	218			8	0	9	37	0	0	0	0
3:00 PM	2	1	0	10	125	9	1	7	3	17	73	7	255			3	2	1	2	0	0	0	0
3:15 PM	0	2	0	6	65	7	3	2	3	18	36	2	144			0	2	39	0	0	0	0	0
Total	10	5	2	27	469	41	15	14	20	86	317	26				11	4	50	39	0	0	0	0
2:30-3:30 PM	**10**	**3**	**1**	**21**	**326**	**32**	**10**	**10**	**14**	**64**	**225**	**24**	**740**			**11**	**4**	**49**	**39**	**0**	**0**	**0**	**0**

Intersection Counts
Belmont Avenue at South Parking Lot

Arlington Heights School District 25														Arlington Heights, Illinois					
	Belmont Avenue Southbound			Park District Lot Westbound			Belmont Avenue Northbound			South Parking Lot Eastbound			15	60	Peak	Pedestrian Counts		Biker Counts	
Begin Time	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Minute Totals	Minute Totals	Hour Factor	East Leg	West Leg	North Leg	South Leg
	Thursday May 12, 2016																		
7:00 AM	10	60	1	0	0	0	0	10	4	1	0	5	91	**343**	**0.78**	0	0	0	0
7:15 AM	11	49	3	0	0	0	0	2	11	2	0	5	83	268	0.61	0	89	0	1
7:30 AM	7	80	0	1	1	0	2	9	6	1	1	2	110	197	0.45	0	119	0	2
7:45 AM	3	38	0	0	0	1	1	3	5	2	0	6	59			0	0	0	0
8:00 AM	0	13	0	0	0	0	0	1	1	1	0	0	16			0	0	0	0
8:15 AM	0	8	0	0	0	0	0	2	1	1	0	0	12			0	0	0	0
Total	31	248	4	1	1	1	3	27	28	8	1	18				0	208	0	3
7:00-8:00 AM	**21**	**180**	**3**	**1**	**1**	**1**	**3**	**15**	**23**	**6**	**1**	**13**	**268**			**0**	**208**	**0**	**3**
	Thursday May 12, 2016																		
2:00 PM	2	5	0	0	0	0	0	1	0	0	0	1	9	134	0.51	1	0	0	0
2:15 PM	0	12	0	0	0	0	0	3	2	0	0	0	17	167	0.63	0	0	0	0
2:30 PM	4	18	1	0	0	0	2	4	5	3	0	5	42	**191**	**0.72**	0	0	0	0
2:45 PM	3	31	0	2	0	2	1	10	0	12	0	5	66			10	92	6	0
3:00 PM	4	18	0	1	0	0	0	8	2	5	0	4	42			1	5	0	0
3:15 PM	2	21	1	1	0	0	0	7	4	2	0	3	41			2	4	1	0
Total	15	105	2	4	0	2	3	33	13	22	0	18				14	101	7	0
2:30-3:30 PM	**11**	**79**	**1**	**3**	**0**	**2**	**3**	**25**	**9**	**20**	**0**	**14**	**167**			**13**	**101**	**7**	**0**

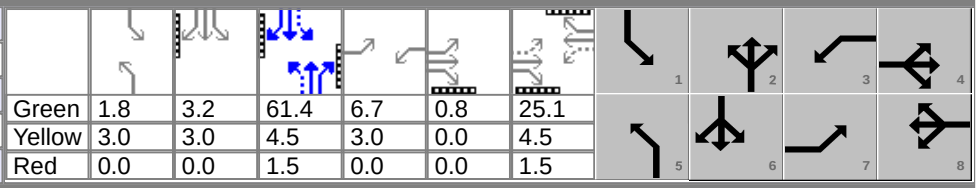
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Eriksson Engineering			Duration, h	0.25
Analyst	AJB	Analysis Date	Jul 25, 2016	Area Type	Other
Jurisdiction	Arlington Heights	Time Period	7:00 - 8:00 AM	PHF	0.95
Urban Street	Arlington Heights Road	Analysis Year	2016	Analysis Period	1> 7:00
Intersection	Arlington Heights/Thomas	File Name	Arl Hts 700 Exst.xus		
Project Description	Existing Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	104	326	15	91	175	59	27	592	111	180	958	52

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.8	3.2	61.4	6.7	0.8	25.1						
Yellow	3.0	3.0	4.5	3.0	0.0	4.5						
Red	0.0	0.0	1.5	0.0	0.0	1.5						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	104	326	15	91	175	59	27	592	111	180	958	52
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	0	0		0	0		0	0		0	0	
Ped / Bike / RTOR, /h	0	0	15	0	0	15	14	0	15	0	0	15
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Turn Bay Length, ft	140	0		200	0		100	0		100	0	
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	25	25	25	30	30	30	35	35	35	35	35	35

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	13.2	34.8	13.2	34.8	13.2	58.8	13.2	58.8
Yellow Change Interval (*Y*), s	3.0	4.5	3.0	4.5	3.0	4.5	3.0	4.5
Red Clearance Interval (R_c), s	0.0	1.5	0.0	1.5	0.0	1.5	0.0	1.5
Minimum Green (G_{min}), s	3	3	3	3	3	3	3	3
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	3.0	5.0	3.0	5.0	3.0	7.0	3.0	7.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s	0.0	10.0	0.0	10.0	0.0	10.0	0.0	10.0
Pedestrian Clearance Time (*PC*), s	0.0	14.0	0.0	18.0	0.0	11.0	0.0	15.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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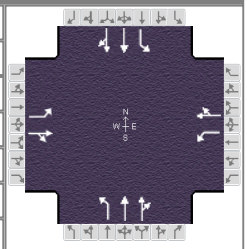
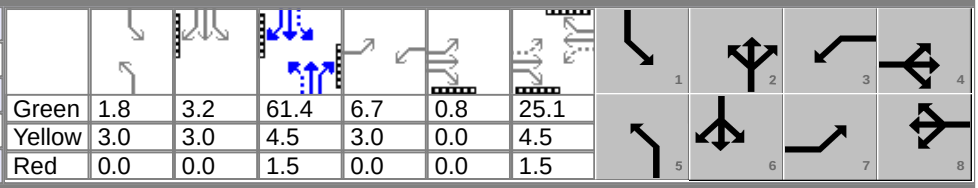
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Eriksson Engineering			Duration, h	0.25
Analyst	AJB	Analysis Date	Jul 25, 2016	Area Type	Other
Jurisdiction	Arlington Heights	Time Period	7:00 - 8:00 AM	PHF	0.95
Urban Street	Arlington Heights Road	Analysis Year	2016	Analysis Period	1> 7:00
Intersection	Arlington Heights/Thomas	File Name	Arl Hts 700 Exst.xus		
Project Description	Existing Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	104	326	15	91	175	59	27	592	111	180	958	52

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.8	3.2	61.4	6.7	0.8	25.1						
Yellow	3.0	3.0	4.5	3.0	0.0	4.5						
Red	0.0	0.0	1.5	0.0	0.0	1.5						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	10.5	31.9	9.7	31.1	4.8	67.4	11.1	73.6
Change Period, ($Y+R_c$), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Allow Headway (*MAH*), s	4.3	6.2	4.2	6.2	4.1	0.0	4.1	0.0
Queue Clearance Time (g_s), s	7.6	22.7	6.9	15.6	2.9		7.7	
Green Extension Time (g_e), s	0.1	3.1	0.1	4.2	0.0	0.0	0.4	0.0
Phase Call Probability	0.97	1.00	0.96	1.00	0.61		1.00	
Max Out Probability	1.00	0.58	1.00	0.21	0.00		0.03	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	109	0		96	231		28	371	353	189	527	520
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	0		1810	1834		1810	1900	1799	1810	1900	1875
Queue Service Time (g_s), s	5.6	0.0		4.9	13.6		0.9	14.2	14.3	5.7	20.1	20.1
Cycle Queue Clearance Time (g_c), s	5.6	0.0		4.9	13.6		0.9	14.2	14.3	5.7	20.1	20.1
Green Ratio (*g/C*)	0.27			0.26	0.21		0.53	0.51	0.51	0.60	0.56	0.56
Capacity (*c*), veh/h	284			189	383		295	972	920	472	1070	1056
Volume-to-Capacity Ratio (*X*)	0.385	0.000		0.508	0.602		0.096	0.382	0.383	0.401	0.493	0.493
Back of Queue (*Q*), ft/ln (95 th percentile)	116.3	0		103.2	268.2		16.9	263.5	253.5	101.8	343	339.5
Back of Queue (*Q*), veh/ln (95 th percentile)	4.7	0.0		4.1	10.7		0.7	10.5	10.1	4.1	13.7	13.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.83	0.00		0.52	0.00		0.17	0.00	0.00	1.02	0.00	0.00
Uniform Delay (d_1), s/veh	34.8			36.4	42.9		14.8	17.8	17.8	12.5	15.8	15.8
Incremental Delay (d_2), s/veh	0.9	0.0		2.1	3.2		0.1	1.1	1.2	0.6	1.6	1.6
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	35.6			38.6	46.2		14.9	18.9	19.0	13.0	17.5	17.5
Level of Service (LOS)	D			D	D		B	B	B	B	B	B
Approach Delay, s/veh / LOS	52.3	D		43.9	D		18.8	B		16.8	B	
Intersection Delay, s/veh / LOS	26.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.9	C	2.3	B	2.3	B
Bicycle LOS Score / LOS	1.2	A	1.0	A	1.1	A	1.5	A

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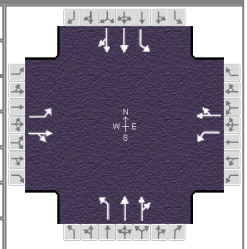
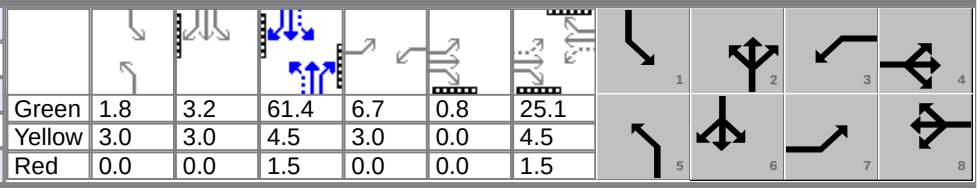
HCS 2010 Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Eriksson Engineering			Duration, h	0.25
Analyst	AJB	Analysis Date	Jul 25, 2016	Area Type	Other
Jurisdiction	Arlington Heights	Time Period	7:00 - 8:00 AM	PHF	0.95
Urban Street	Arlington Heights Road	Analysis Year	2016	Analysis Period	1> 7:00
Intersection	Arlington Heights/Thomas	File Name	Arl Hts 700 Exst.xus		
Project Description	Existing Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	104	326	15	91	175	59	27	592	111	180	958	52

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



	EB			WB			NB			SB		
Green	1.8	3.2		61.4	6.7	0.8	25.1					
Yellow	3.0	3.0		4.5	3.0	0.0	4.5					
Red	0.0	0.0		1.5	0.0	0.0	1.5					

Saturation Flow / Delay	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor (f_w)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicle Adjustment Factor (f_{HV})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Approach Grade Adjustment Factor (f_g)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Parking Activity Adjustment Factor (f_p)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor (f_{bb})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor (f_a)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor (f_{LU})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor (f_{LT})	0.952	0.000		0.952	0.000		0.952	0.000		0.952	0.000	
Right-Turn Adjustment Factor (f_{RT})		1.000			0.965			0.947			0.987	
Left-Turn Pedestrian Adjustment Factor (f_{Lpb})	1.000			1.000			1.000			0.999		
Right-Turn Ped-Bike Adjustment Factor (f_{Rpb})			1.000			1.000			0.986			1.000
Movement Saturation Flow Rate (s), veh/h	1810	1900		1810	1465		1810	3184		1810	3634	
Proportion of Vehicles Arriving on Green (P)	0.06	0.22	0.00	0.06	0.21	0.21	0.02	0.51	0.51	0.07	0.56	0.56
Incremental Delay Factor (k)	0.11			0.11	0.23		0.11	0.50	0.50	0.11	0.50	0.50

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time (t_L)	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Green Ratio (g/C)	0.27	0.22	0.26	0.21	0.53	0.51	0.60	0.56
Permitted Saturation Flow Rate (s_p), veh/h/ln	1168	0	1054	0	547	0	741	0
Shared Saturation Flow Rate (s_{sh}), veh/h/ln								
Permitted Effective Green Time (g_p), s	25.1	0.0	25.1	0.0	61.4	0.0	63.4	0.0
Permitted Service Time (g_u), s	11.4	0.0	3.1	0.0	45.5	0.0	47.1	0.0
Permitted Queue Service Time (g_{ps}), s	1.4		2.2		0.9		5.6	
Time to First Blockage (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Service Time Before Blockage (g_{fs}), s								
Protected Right Saturation Flow (s_R), veh/h/ln								
Protected Right Effective Green Time (g_R), s								

Multimodal	EB		WB		NB		SB	
Pedestrian F_w / F_v	2.107	0.02	2.107	0.02	1.557	0.02	1.557	0.02
Pedestrian F_s / F_{delay}	0.000	0.145	0.000	0.145	0.000	0.107	0.000	0.098
Pedestrian M_{corner} / M_{cw}			4087.61		4069.71			
Bicycle c_b / d_b	431.03	36.93	417.90	37.55	1022.92	14.32	1126.53	11.44
Bicycle F_w / F_v	-3.64	0.75	-3.64	0.54	-3.64	0.62	-3.64	1.02

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--- Messages ---

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

--- Comments ---

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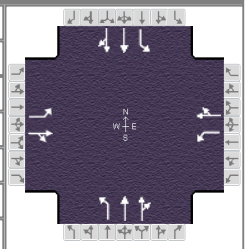
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Eriksson Engineering			Duration, h	0.25
Analyst	AJB	Analysis Date	Jul 25, 2016	Area Type	Other
Jurisdiction	Arlington Heights	Time Period	2:30 - 3:30 PM	PHF	0.95
Urban Street	Arlington Heights Road	Analysis Year	2016	Analysis Period	1> 2:30
Intersection	Arlington Heights/Thomas	File Name	Arl Hts 230 Exst.xus		
Project Description	Existing Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	107	115	15	92	203	55	20	753	20	95	757	96

Signal Information			
Cycle, s	115.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	1.5	0.2	61.9	6.6	0.9	22.9						
Yellow	3.0	3.0	4.5	3.0	0.0	4.5						
Red	0.0	0.0	1.5	0.0	0.0	1.5						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	107	115	15	92	203	55	20	753	20	95	757	96
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	0	0		0	0		0	0		0	0	
Ped / Bike / RTOR, /h	25	0	15	1	1	15	122	0	15	2	0	15
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Turn Bay Length, ft	140	0		200	0		100	0		100	0	
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	25	25	25	30	30	30	35	35	35	35	35	35

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	12.7	34.5	12.7	34.5	12.7	55.1	12.7	55.1
Yellow Change Interval (*Y*), s	3.0	4.5	3.0	4.5	3.0	4.5	3.0	4.5
Red Clearance Interval (R_c), s	0.0	1.5	0.0	1.5	0.0	1.5	0.0	1.5
Minimum Green (G_{min}), s	3	3	3	3	3	3	3	3
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	3.0	5.0	3.0	5.0	3.0	7.0	3.0	7.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s	0.0	10.0	0.0	10.0	0.0	10.0	0.0	10.0
Pedestrian Clearance Time (*PC*), s	0.0	14.0	0.0	18.0	0.0	11.0	0.0	15.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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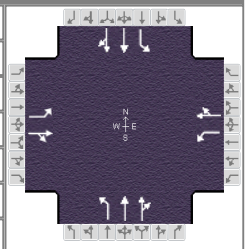
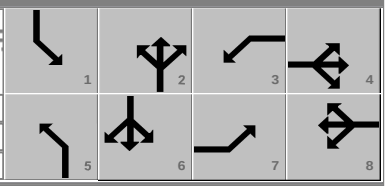
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Eriksson Engineering			Duration, h	0.25
Analyst	AJB	Analysis Date	Jul 25, 2016	Area Type	Other
Jurisdiction	Arlington Heights	Time Period	2:30 - 3:30 PM	PHF	0.95
Urban Street	Arlington Heights Road	Analysis Year	2016	Analysis Period	1> 2:30
Intersection	Arlington Heights/Thomas	File Name	Arl Hts 230 Exst.xus		
Project Description	Existing Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	107	115	15	92	203	55	20	753	20	95	757	96

Signal Information			
Cycle, s	115.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.5	0.2	61.9	6.6	0.9	22.9
Yellow	3.0	3.0	4.5	3.0	0.0	4.5
Red	0.0	0.0	1.5	0.0	0.0	1.5

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	10.5	29.8	9.6	28.9	4.5	67.9	7.7	71.1
Change Period, ($Y+R_c$), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Allow Headway (*MAH*), s	4.3	6.2	4.2	6.2	4.1	0.0	4.1	0.0
Queue Clearance Time (g_s), s	7.6	8.2	6.8	16.9	2.6		4.7	
Green Extension Time (g_e), s	0.1	3.0	0.1	2.4	0.0	0.0	0.2	0.0
Phase Call Probability	0.97	1.00	0.95	1.00	0.49		0.96	
Max Out Probability	1.00	0.01	1.00	0.15	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	113	0		97	256		21	400	398	100	449	433
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	0		1810	1840		1810	1900	1892	1810	1900	1834
Queue Service Time (g_s), s	5.6	0.0		4.8	14.9		0.6	14.2	14.2	2.7	15.4	15.4
Cycle Queue Clearance Time (g_c), s	5.6	0.0		4.8	14.9		0.6	14.2	14.2	2.7	15.4	15.4
Green Ratio (*g/C*)	0.26			0.26	0.20		0.55	0.54	0.54	0.60	0.57	0.57
Capacity (*c*), veh/h	260			341	367		351	1023	1018	424	1076	1039
Volume-to-Capacity Ratio (*X*)	0.433	0.000		0.284	0.697		0.060	0.391	0.391	0.236	0.417	0.417
Back of Queue (*Q*), ft/ln (95 th percentile)	116	0		97.8	292.4		11	257.6	256.8	47.9	272.4	265.3
Back of Queue (*Q*), veh/ln (95 th percentile)	4.6	0.0		3.9	11.7		0.4	10.3	10.3	1.9	10.9	10.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.83	0.00		0.49	0.00		0.11	0.00	0.00	0.48	0.00	0.00
Uniform Delay (d_1), s/veh	34.3			33.8	42.8		12.6	15.5	15.5	11.2	14.2	14.2
Incremental Delay (d_2), s/veh	1.1	0.0		0.5	5.3		0.1	1.1	1.1	0.3	1.2	1.2
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	35.4			34.3	48.1		12.7	16.7	16.7	11.5	15.3	15.4
Level of Service (LOS)	D			C	D		B	B	B	B	B	B
Approach Delay, s/veh / LOS	37.5	D		44.3	D		16.6	B		15.0	B	
Intersection Delay, s/veh / LOS	22.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.9	C	2.3	B	2.3	B
Bicycle LOS Score / LOS	0.9	A	1.1	A	1.2	A	1.3	A

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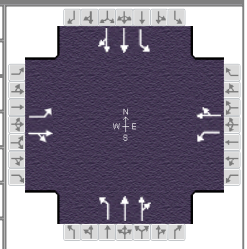
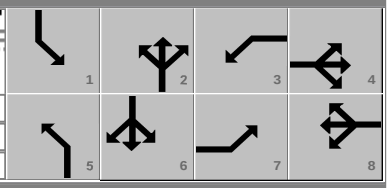
HCS 2010 Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Eriksson Engineering			Duration, h	0.25
Analyst	AJB	Analysis Date	Jul 25, 2016	Area Type	Other
Jurisdiction	Arlington Heights	Time Period	2:30 - 3:30 PM	PHF	0.95
Urban Street	Arlington Heights Road	Analysis Year	2016	Analysis Period	1> 2:30
Intersection	Arlington Heights/Thomas	File Name	Arl Hts 230 Exst.xus		
Project Description	Existing Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	107	115	15	92	203	55	20	753	20	95	757	96

Signal Information			
Cycle, s	115.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



	EB			WB			NB			SB		
Green	1.5	0.2		61.9	6.6	0.9	22.9					
Yellow	3.0	3.0		4.5	3.0	0.0	4.5					
Red	0.0	0.0		1.5	0.0	0.0	1.5					

Saturation Flow / Delay	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor (f_w)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicle Adjustment Factor (f_{HV})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Approach Grade Adjustment Factor (f_g)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Parking Activity Adjustment Factor (f_p)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor (f_{bb})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor (f_a)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor (f_{LU})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor (f_{LT})	0.952	0.000		0.952	0.000		0.952	0.000		0.952	0.000	
Right-Turn Adjustment Factor (f_{RT})		1.000			0.969			0.996			0.965	
Left-Turn Pedestrian Adjustment Factor (f_{Lpb})	0.999			0.973			1.000			0.993		
Right-Turn Ped-Bike Adjustment Factor (f_{Rpb})			1.000			0.985			0.887			0.998
Movement Saturation Flow Rate (s), veh/h	1810	1900		1810	1537		1810	3767		1810	3373	
Proportion of Vehicles Arriving on Green (P)	0.06	0.21	0.00	0.06	0.20	0.20	0.01	0.54	0.54	0.04	0.57	0.57
Incremental Delay Factor (k)	0.11			0.11	0.24		0.11	0.50	0.50	0.11	0.50	0.50

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time (t_L)	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Green Ratio (g/C)	0.26	0.21	0.26	0.20	0.55	0.54	0.60	0.57
Permitted Saturation Flow Rate (s_p), veh/h/ln	1142	0	1291	0	639	0	692	0
Shared Saturation Flow Rate (s_{sh}), veh/h/ln								
Permitted Effective Green Time (g_p), s	22.9	0.0	22.9	0.0	61.9	0.0	63.9	0.0
Permitted Service Time (g_u), s	8.1	0.0	15.6	0.0	47.7	0.0	47.7	0.0
Permitted Queue Service Time (g_{ps}), s	1.6		0.6		0.5		2.7	
Time to First Blockage (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Service Time Before Blockage (g_{fs}), s								
Protected Right Saturation Flow (s_R), veh/h/ln								
Protected Right Effective Green Time (g_R), s								

Multimodal	EB		WB		NB		SB	
Pedestrian F_w / F_v	2.107	0.02	2.107	0.02	1.557	0.02	1.557	0.02
Pedestrian F_s / F_{delay}	0.000	0.144	0.000	0.145	0.000	0.101	0.000	0.095
Pedestrian M_{corner} / M_{cw}	2077.66	0.00	464.88	-6304.45	376.58	-5.74	19066.49	-6382.31
Bicycle c_b / d_b	414.11	36.15	398.76	36.88	1076.42	12.26	1132.85	10.81
Bicycle F_w / F_v	-3.64	0.39	-3.64	0.58	-3.64	0.68	-3.64	0.81

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--- Messages ---

No errors or warnings exist.

--- Comments ---

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HCS 2010 Two-Way Stop Control Summary Report

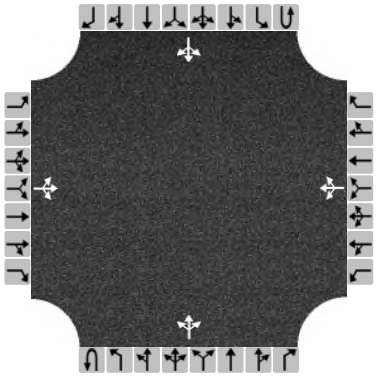
General Information

Analyst	AJB
Agency/Co.	Eriksson Engineering
Date Performed	7/25/2016
Analysis Year	2016
Time Analyzed	2:30 - 3:30 PM
Intersection Orientation	North-South
Project Description	Existing Conditions

Site Information

Intersection	Belmont/South Parking Lot
Jurisdiction	Arlington Heights
East/West Street	South Parking Lot
North/South Street	Belmont Avenue
Peak Hour Factor	0.72
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		14	0	20		2	0	3		9	25	3		1	87	11
Percent Heavy Vehicles		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			47				7			12				1		
Capacity			588				838			1061				1527		
v/c Ratio			0.08				0.01			0.01				0.00		
95% Queue Length			0.3				0.0			0.0				0.0		
Control Delay (s/veh)			11.7				9.3			8.4				7.4		
Level of Service (LOS)			B				A			A				A		
Approach Delay (s/veh)	11.7				9.3				2.1				0.1			
Approach LOS	B				A											

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HCS 2010 Two-Way Stop Control Summary Report

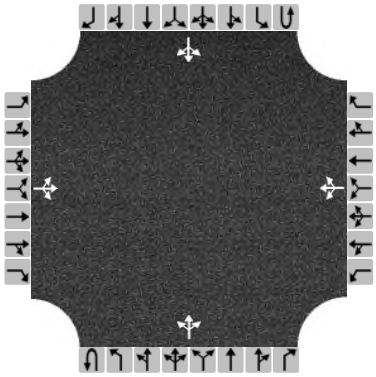
General Information

Analyst	AJB
Agency/Co.	Eriksson Engineering
Date Performed	7/25/2016
Analysis Year	2016
Time Analyzed	7:00 - 8:00 AM
Intersection Orientation	North-South
Project Description	Existing Conditions

Site Information

Intersection	Belmont/South Parking Lot
Jurisdiction	Arlington Heights
East/West Street	South Parking Lot
North/South Street	Belmont Avenue
Peak Hour Factor	0.78
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		13	1	6		1	1	1		23	15	3		3	202	21
Percent Heavy Vehicles		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			26				3			29				4		
Capacity			367				518			853				1584		
v/c Ratio			0.07				0.01			0.03				0.00		
95% Queue Length			0.2				0.0			0.1				0.0		
Control Delay (s/veh)			15.5				12.0			9.4				7.3		
Level of Service (LOS)			C				B			A				A		
Approach Delay (s/veh)	15.5				12.0				5.4				0.1			
Approach LOS	C				B											

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HCS 2010 Two-Way Stop Control Summary Report

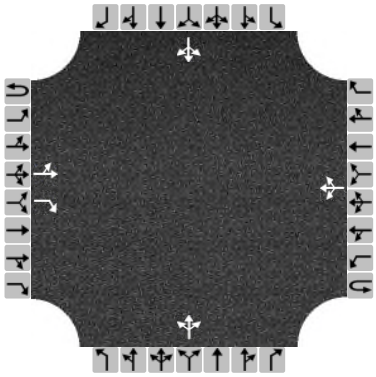
General Information

Analyst	AJB
Agency/Co.	Eriksson Engineering
Date Performed	7/25/2016
Analysis Year	2016
Time Analyzed	2:30 - 3:30 PM
Intersection Orientation	East-West
Project Description	Existing Conditions

Site Information

Intersection	Thomas/Belmont
Jurisdiction	Arlington Heights
East/West Street	Thomas Street
North/South Street	Belmont Avenue
Peak Hour Factor	0.75
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	1	0		0	1	0		0	1	0
Configuration		LT		R			LTR				LTR				LTR	
Volume (veh/h)		24	225	64		32	338	21		14	18	10		1	3	10
Percent Heavy Vehicles		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		332				43					56				18	
Capacity		1063				1097					244				380	
v/c Ratio		0.31				0.04					0.23				0.05	
95% Queue Length		0.1				0.1					0.9				0.1	
Control Delay (s/veh)		8.5				8.4					24.1				15.0	
Level of Service (LOS)		A				A					C				B	
Approach Delay (s/veh)	0.9				1.1				24.1				15.0			
Approach LOS									C				B			

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HCS 2010 Two-Way Stop Control Summary Report

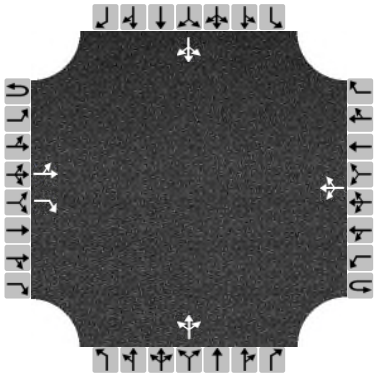
General Information

Analyst	AJB
Agency/Co.	Eriksson Engineering
Date Performed	7/25/2016
Analysis Year	2016
Time Analyzed	7:00 - 8:00 AM
Intersection Orientation	East-West
Project Description	Existing Conditions

Site Information

Intersection	Thomas/Belmont
Jurisdiction	Arlington Heights
East/West Street	Thomas Street
North/South Street	Belmont Avenue
Peak Hour Factor	0.79
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	1	0		0	1	0		0	1	0
Configuration		LT		R			LTR				LTR				LTR	
Volume (veh/h)		18	372	166		43	296	10		14	9	6		6	17	23
Percent Heavy Vehicles		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		494				54					37				59	
Capacity		1155				885					200				298	
v/c Ratio		0.43				0.06					0.18				0.20	
95% Queue Length		0.1				0.2					0.7				0.7	
Control Delay (s/veh)		8.2				9.3					27.0				20.1	
Level of Service (LOS)		A				A					D				C	
Approach Delay (s/veh)	0.4				1.8				27.0				20.1			
Approach LOS									D				C			

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HCS 2010 Two-Way Stop Control Summary Report

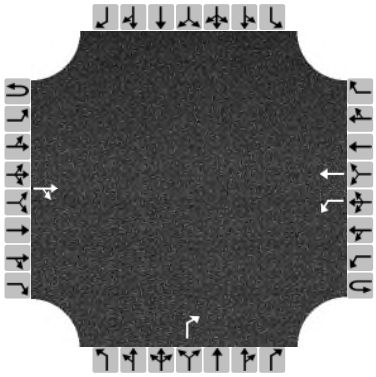
General Information

Analyst	AJB
Agency/Co.	Eriksson Engineering
Date Performed	7/25/2016
Analysis Year	2016
Time Analyzed	7:00 - 8:00 AM
Intersection Orientation	East-West
Project Description	Proposed Conditions

Site Information

Intersection	Thomas/Parking Lot Access
Jurisdiction	Arlington Heights
East/West Street	Thomas Street
North/South Street	Parking Lot Access
Peak Hour Factor	0.74
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	0	1		0	0	0
Configuration				TR		L	T					R				
Volume (veh/h)			495	144		29	304					108				
Percent Heavy Vehicles						3						3				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						39						146				
Capacity						745						382				
v/c Ratio						0.05						0.38				
95% Queue Length						0.2						1.8				
Control Delay (s/veh)						10.1						20.2				
Level of Service (LOS)						B						C				
Approach Delay (s/veh)					0.9				20.2							
Approach LOS									C							

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HCS 2010 Two-Way Stop Control Summary Report

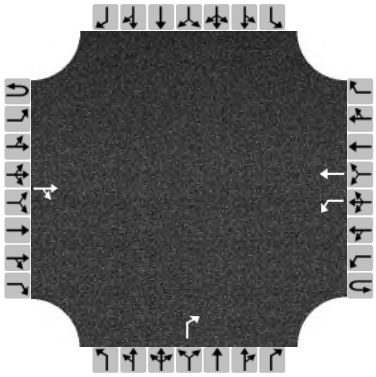
General Information

Analyst	AJB
Agency/Co.	Eriksson Engineering
Date Performed	7/25/2016
Analysis Year	2016
Time Analyzed	2:30 - 3:30 PM
Intersection Orientation	East-West
Project Description	Proposed Conditions

Site Information

Intersection	Thomas/Parking Lot Access
Jurisdiction	Arlington Heights
East/West Street	Thomas Street
North/South Street	Parking Lot Access
Peak Hour Factor	0.78
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	0	1		0	0	0
Configuration				TR		L	T					R				
Volume (veh/h)			289	10		5	357					41				
Percent Heavy Vehicles						3						3				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						6						53				
Capacity						996						529				
v/c Ratio						0.01						0.10				
95% Queue Length						0.0						0.3				
Control Delay (s/veh)						8.6						12.6				
Level of Service (LOS)						A						B				
Approach Delay (s/veh)					0.1				12.6							
Approach LOS									B							

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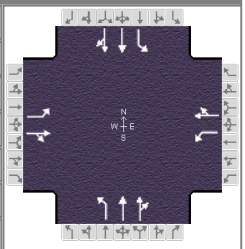
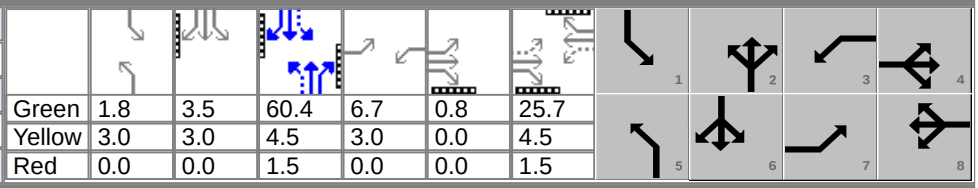
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Eriksson Engineering			Duration, h	0.25
Analyst	AJB	Analysis Date	Jul 25, 2016	Area Type	Other
Jurisdiction	Arlington Heights	Time Period	7:00 - 8:00 AM	PHF	0.95
Urban Street	Arlington Heights Road	Analysis Year	2016	Analysis Period	1> 7:00
Intersection	Arlington Heights/Thomas	File Name	Arl Hts 700 Prop.xus		
Project Description	Proposed Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	104	337	15	91	183	59	27	592	115	187	958	52

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.8	3.5	60.4	6.7	0.8	25.7						
Yellow	3.0	3.0	4.5	3.0	0.0	4.5						
Red	0.0	0.0	1.5	0.0	0.0	1.5						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	104	337	15	91	183	59	27	592	115	187	958	52
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	0	0		0	0		0	0		0	0	
Ped / Bike / RTOR, /h	0	0	15	0	0	15	14	0	15	0	0	15
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Turn Bay Length, ft	140	0		200	0		100	0		100	0	
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	25	25	25	30	30	30	35	35	35	35	35	35

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	13.2	34.8	13.2	34.8	13.2	58.8	13.2	58.8
Yellow Change Interval (*Y*), s	3.0	4.5	3.0	4.5	3.0	4.5	3.0	4.5
Red Clearance Interval (R_c), s	0.0	1.5	0.0	1.5	0.0	1.5	0.0	1.5
Minimum Green (G_{min}), s	3	3	3	3	3	3	3	3
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	3.0	5.0	3.0	5.0	3.0	7.0	3.0	7.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s	0.0	10.0	0.0	10.0	0.0	10.0	0.0	10.0
Pedestrian Clearance Time (*PC*), s	0.0	14.0	0.0	18.0	0.0	11.0	0.0	15.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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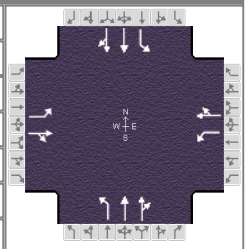
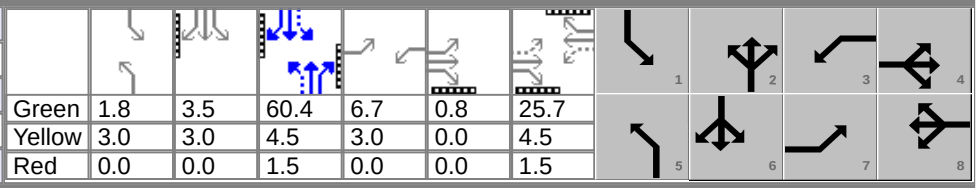
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Eriksson Engineering			Duration, h	0.25
Analyst	AJB	Analysis Date	Jul 25, 2016	Area Type	Other
Jurisdiction	Arlington Heights	Time Period	7:00 - 8:00 AM	PHF	0.95
Urban Street	Arlington Heights Road	Analysis Year	2016	Analysis Period	1> 7:00
Intersection	Arlington Heights/Thomas	File Name	Arl Hts 700 Prop.xus		
Project Description	Proposed Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	104	337	15	91	183	59	27	592	115	187	958	52

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.8	3.5	60.4	6.7	0.8	25.7						
Yellow	3.0	3.0	4.5	3.0	0.0	4.5						
Red	0.0	0.0	1.5	0.0	0.0	1.5						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	10.5	32.5	9.7	31.7	4.8	66.4	11.4	73.0
Change Period, ($Y+R_c$), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Allow Headway (*MAH*), s	4.3	6.2	4.2	6.2	4.1	0.0	4.1	0.0
Queue Clearance Time (g_s), s	7.6	23.5	6.9	16.1	2.9		8.0	
Green Extension Time (g_e), s	0.1	3.1	0.1	4.3	0.0	0.0	0.4	0.0
Phase Call Probability	0.97	1.00	0.96	1.00	0.61		1.00	
Max Out Probability	1.00	0.65	1.00	0.23	0.00		0.07	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	109	0		96	239		28	374	355	197	527	520
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	0		1810	1836		1810	1900	1795	1810	1900	1875
Queue Service Time (g_s), s	5.6	0.0		4.9	14.1		0.9	14.6	14.7	6.0	20.4	20.4
Cycle Queue Clearance Time (g_c), s	5.6	0.0		4.9	14.1		0.9	14.6	14.7	6.0	20.4	20.4
Green Ratio (*g/C*)	0.28			0.27	0.21		0.52	0.50	0.50	0.59	0.56	0.56
Capacity (*c*), veh/h	285			187	394		291	957	904	468	1060	1046
Volume-to-Capacity Ratio (*X*)	0.384	0.000		0.511	0.607		0.098	0.391	0.392	0.421	0.497	0.497
Back of Queue (*Q*), ft/ln (95 th percentile)	115.2	0		102.5	275.2		17.3	269.4	259.1	108.1	347	343.5
Back of Queue (*Q*), veh/ln (95 th percentile)	4.6	0.0		4.1	11.0		0.7	10.8	10.4	4.3	13.9	13.7
Queue Storage Ratio (*RQ*) (95 th percentile)	0.82	0.00		0.51	0.00		0.17	0.00	0.00	1.08	0.00	0.00
Uniform Delay (d_1), s/veh	34.3			36.1	42.6		15.2	18.4	18.4	12.9	16.2	16.2
Incremental Delay (d_2), s/veh	0.8	0.0		2.2	3.2		0.1	1.2	1.3	0.6	1.7	1.7
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	35.2			38.3	45.8		15.4	19.6	19.7	13.5	17.9	17.9
Level of Service (LOS)	D			D	D		B	B	B	B	B	B
Approach Delay, s/veh / LOS	52.5	D		43.6	D		19.5	B		17.2	B	
Intersection Delay, s/veh / LOS	26.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.9	C	2.3	B	2.3	B
Bicycle LOS Score / LOS	1.3	A	1.0	A	1.1	A	1.5	A

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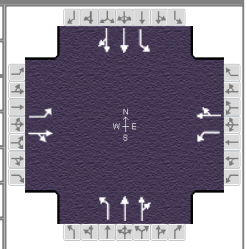
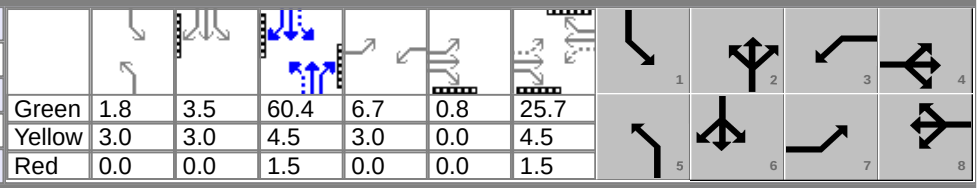
HCS 2010 Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Eriksson Engineering			Duration, h	0.25
Analyst	AJB	Analysis Date	Jul 25, 2016	Area Type	Other
Jurisdiction	Arlington Heights	Time Period	7:00 - 8:00 AM	PHF	0.95
Urban Street	Arlington Heights Road	Analysis Year	2016	Analysis Period	1> 7:00
Intersection	Arlington Heights/Thomas	File Name	Arl Hts 700 Prop.xus		
Project Description	Proposed Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	104	337	15	91	183	59	27	592	115	187	958	52

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



	EB			WB			NB			SB		
Green	1.8	3.5		60.4	6.7	0.8	25.7					
Yellow	3.0	3.0		4.5	3.0	0.0	4.5					
Red	0.0	0.0		1.5	0.0	0.0	1.5					

Saturation Flow / Delay	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor (f_w)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicle Adjustment Factor (f_{HV})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Approach Grade Adjustment Factor (f_g)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Parking Activity Adjustment Factor (f_p)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor (f_{bb})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor (f_a)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor (f_{LU})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor (f_{LT})	0.952	0.000		0.952	0.000		0.952	0.000		0.952	0.000	
Right-Turn Adjustment Factor (f_{RT})		1.000			0.966			0.945			0.987	
Left-Turn Pedestrian Adjustment Factor (f_{Lpb})	1.000			1.000			1.000			0.999		
Right-Turn Ped-Bike Adjustment Factor (f_{Rpb})			1.000			1.000			0.986			1.000
Movement Saturation Flow Rate (s), veh/h	1810	1900		1810	1480		1810	3162		1810	3634	
Proportion of Vehicles Arriving on Green (P)	0.06	0.22	0.00	0.06	0.21	0.21	0.02	0.50	0.50	0.07	0.56	0.56
Incremental Delay Factor (k)	0.11			0.11	0.23		0.11	0.50	0.50	0.11	0.50	0.50

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time (t_L)	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Green Ratio (g/C)	0.28	0.22	0.27	0.21	0.52	0.50	0.59	0.56
Permitted Saturation Flow Rate (s_p), veh/h/ln	1159	0	1043	0	547	0	738	0
Shared Saturation Flow Rate (s_{sh}), veh/h/ln								
Permitted Effective Green Time (g_p), s	25.7	0.0	25.7	0.0	60.4	0.0	62.4	0.0
Permitted Service Time (g_u), s	11.6	0.0	3.1	0.0	44.6	0.0	45.8	0.0
Permitted Queue Service Time (g_{ps}), s	1.5		2.3		0.9		6.1	
Time to First Blockage (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Service Time Before Blockage (g_{fs}), s								
Protected Right Saturation Flow (s_R), veh/h/ln								
Protected Right Effective Green Time (g_R), s								

Multimodal	EB		WB		NB		SB	
Pedestrian F_w / F_v	2.107	0.02	2.107	0.02	1.557	0.02	1.557	0.02
Pedestrian F_s / F_{delay}	0.000	0.144	0.000	0.145	0.000	0.108	0.000	0.099
Pedestrian M_{corner} / M_{cw}			4087.61		4069.12			
Bicycle c_b / d_b	442.15	36.40	429.11	37.02	1007.04	14.79	1115.97	11.72
Bicycle F_w / F_v	-3.64	0.77	-3.64	0.55	-3.64	0.62	-3.64	1.03

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--- Messages ---

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

--- Comments ---

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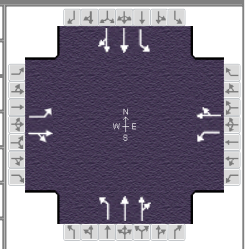
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Eriksson Engineering			Duration, h	0.25
Analyst	AJB	Analysis Date	Jul 25, 2016	Area Type	Other
Jurisdiction	Arlington Heights	Time Period	2:30 - 3:30 PM	PHF	0.95
Urban Street	Arlington Heights Road	Analysis Year	2016	Analysis Period	1> 2:30
Intersection	Arlington Heights/Thomas	File Name	Arl Hts 230 Prop.xus		
Project Description	Proposed Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	107	182	15	92	218	55	20	753	21	96	757	96

Signal Information			
Cycle, s	115.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	1.5	0.3	61.0	6.5	0.9	23.8						
Yellow	3.0	3.0	4.5	3.0	0.0	4.5						
Red	0.0	0.0	1.5	0.0	0.0	1.5						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	107	182	15	92	218	55	20	753	21	96	757	96
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	0	0		0	0		0	0		0	0	
Ped / Bike / RTOR, /h	25	0	15	1	1	15	122	0	15	2	0	15
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Turn Bay Length, ft	140	0		200	0		100	0		100	0	
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	25	25	25	30	30	30	35	35	35	35	35	35

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	12.7	34.5	12.7	34.5	12.7	55.1	12.7	55.1
Yellow Change Interval (*Y*), s	3.0	4.5	3.0	4.5	3.0	4.5	3.0	4.5
Red Clearance Interval (R_c), s	0.0	1.5	0.0	1.5	0.0	1.5	0.0	1.5
Minimum Green (G_{min}), s	3	3	3	3	3	3	3	3
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	3.0	5.0	3.0	5.0	3.0	7.0	3.0	7.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s	0.0	10.0	0.0	10.0	0.0	10.0	0.0	10.0
Pedestrian Clearance Time (*PC*), s	0.0	14.0	0.0	18.0	0.0	11.0	0.0	15.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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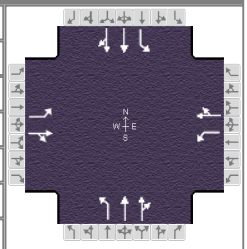
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Eriksson Engineering			Duration, h	0.25
Analyst	AJB	Analysis Date	Jul 25, 2016	Area Type	Other
Jurisdiction	Arlington Heights	Time Period	2:30 - 3:30 PM	PHF	0.95
Urban Street	Arlington Heights Road	Analysis Year	2016	Analysis Period	1> 2:30
Intersection	Arlington Heights/Thomas	File Name	Arl Hts 230 Prop.xus		
Project Description	Proposed Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	107	182	15	92	218	55	20	753	21	96	757	96

Signal Information			
Cycle, s	115.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	1.5	0.3	61.0	6.5	0.9	23.8
Yellow	3.0	3.0	4.5	3.0	0.0	4.5
Red	0.0	0.0	1.5	0.0	0.0	1.5

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	10.4	30.6	9.5	29.8	4.5	67.0	7.8	70.4
Change Period, ($Y+R_c$), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Allow Headway (*MAH*), s	4.3	6.1	4.2	6.1	4.1	0.0	4.1	0.0
Queue Clearance Time (g_s), s	7.6	12.1	6.8	17.8	2.6		4.8	
Green Extension Time (g_e), s	0.1	3.6	0.1	3.0	0.0	0.0	0.2	0.0
Phase Call Probability	0.97	1.00	0.95	1.00	0.49		0.96	
Max Out Probability	1.00	0.06	1.00	0.24	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	113	0		97	272		21	400	398	101	449	433
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	0		1810	1844		1810	1900	1890	1810	1900	1834
Queue Service Time (g_s), s	5.6	0.0		4.8	15.8		0.6	14.4	14.4	2.8	15.7	15.7
Cycle Queue Clearance Time (g_c), s	5.6	0.0		4.8	15.8		0.6	14.4	14.4	2.8	15.7	15.7
Green Ratio (*g/C*)	0.27			0.26	0.21		0.54	0.53	0.53	0.59	0.56	0.56
Capacity (*c*), veh/h	258			297	381		345	1008	1003	418	1063	1027
Volume-to-Capacity Ratio (*X*)	0.437	0.000		0.326	0.713		0.061	0.397	0.397	0.242	0.422	0.422
Back of Queue (*Q*), ft/ln (95 th percentile)	115	0		97.1	308.4		11.3	262.3	261.3	49.5	277.2	269.9
Back of Queue (*Q*), veh/ln (95 th percentile)	4.6	0.0		3.9	12.3		0.5	10.5	10.5	2.0	11.1	10.8
Queue Storage Ratio (*RQ*) (95 th percentile)	0.82	0.00		0.49	0.00		0.11	0.00	0.00	0.50	0.00	0.00
Uniform Delay (d_1), s/veh	33.8			33.6	42.4		13.0	16.0	16.0	11.6	14.6	14.6
Incremental Delay (d_2), s/veh	1.2	0.0		0.6	5.8		0.1	1.2	1.2	0.3	1.2	1.3
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	34.9			34.2	48.3		13.1	17.2	17.2	11.9	15.8	15.9
Level of Service (LOS)	C			C	D		B	B	B	B	B	B
Approach Delay, s/veh / LOS	38.9	D		44.6	D		17.1	B		15.4	B	
Intersection Delay, s/veh / LOS	23.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.9	C	2.3	B	2.3	B
Bicycle LOS Score / LOS	1.0	A	1.1	A	1.2	A	1.3	A

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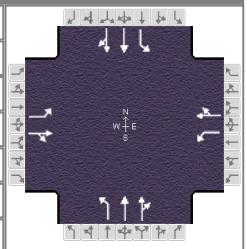
HCS 2010 Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Eriksson Engineering			Duration, h	0.25
Analyst	AJB	Analysis Date	Jul 25, 2016	Area Type	Other
Jurisdiction	Arlington Heights	Time Period	2:30 - 3:30 PM	PHF	0.95
Urban Street	Arlington Heights Road	Analysis Year	2016	Analysis Period	1> 2:30
Intersection	Arlington Heights/Thomas	File Name	Arl Hts 230 Prop.xus		
Project Description	Proposed Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	107	182	15	92	218	55	20	753	21	96	757	96

Signal Information			
Cycle, s	115.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

	EB			WB			NB			SB		
Green	1.5	0.3		61.0	6.5	0.9	23.8					
Yellow	3.0	3.0		4.5	3.0	0.0	4.5					
Red	0.0	0.0		1.5	0.0	0.0	1.5					

Saturation Flow / Delay	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor (f_w)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicle Adjustment Factor (f_{HV})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Approach Grade Adjustment Factor (f_g)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Parking Activity Adjustment Factor (f_p)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor (f_{bb})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor (f_a)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor (f_{LU})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor (f_{LT})	0.952	0.000		0.952	0.000		0.952	0.000		0.952	0.000	
Right-Turn Adjustment Factor (f_{RT})		1.000			0.970			0.995			0.965	
Left-Turn Pedestrian Adjustment Factor (f_{Lpb})	0.999			0.979			1.000			0.993		
Right-Turn Ped-Bike Adjustment Factor (f_{Rpb})			1.000			0.986			0.885			0.998
Movement Saturation Flow Rate (s), veh/h	1810	1900		1810	1558		1810	3760		1810	3373	
Proportion of Vehicles Arriving on Green (P)	0.06	0.21	0.00	0.06	0.21	0.21	0.01	0.53	0.53	0.04	0.56	0.56
Incremental Delay Factor (k)	0.11			0.11	0.26		0.11	0.50	0.50	0.11	0.50	0.50

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time (t_L)	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Green Ratio (g/C)	0.27	0.21	0.26	0.21	0.54	0.53	0.59	0.56
Permitted Saturation Flow Rate (s_p), veh/h/ln	1125	0	1210	0	639	0	691	0
Shared Saturation Flow Rate (s_{sh}), veh/h/ln								
Permitted Effective Green Time (g_p), s	23.8	0.0	23.8	0.0	61.0	0.0	63.0	0.0
Permitted Service Time (g_u), s	8.0	0.0	12.5	0.0	46.7	0.0	46.6	0.0
Permitted Queue Service Time (g_{ps}), s	1.8		1.0		0.5		2.8	
Time to First Blockage (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Service Time Before Blockage (g_{fs}), s								
Protected Right Saturation Flow (s_R), veh/h/ln								
Protected Right Effective Green Time (g_R), s								

Multimodal	EB		WB		NB		SB	
Pedestrian F_w / F_v	2.107	0.02	2.107	0.02	1.557	0.02	1.557	0.02
Pedestrian F_s / F_{delay}	0.000	0.143	0.000	0.144	0.000	0.102	0.000	0.097
Pedestrian M_{corner} / M_{cw}	2078.41	0.00	464.89	-6304.55	376.16	-6.88	19066.21	-6382.11
Bicycle c_b / d_b	428.43	35.50	413.21	36.21	1061.54	12.66	1119.26	11.15
Bicycle F_w / F_v	-3.64	0.50	-3.64	0.61	-3.64	0.68	-3.64	0.81

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--- Messages ---

No errors or warnings exist.

--- Comments ---

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HCS 2010 Two-Way Stop Control Summary Report

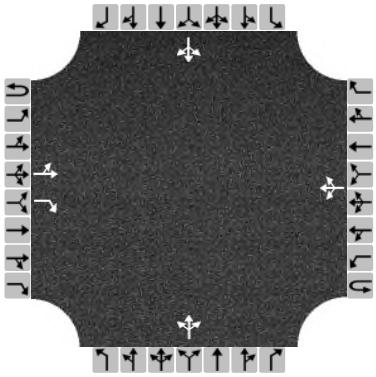
General Information

Analyst	AJB
Agency/Co.	Eriksson Engineering
Date Performed	7/25/2016
Analysis Year	2016
Time Analyzed	7:00 - 8:00 AM
Intersection Orientation	East-West
Project Description	Proposed Conditions

Site Information

Intersection	Thomas/Belmont
Jurisdiction	Arlington Heights
East/West Street	Thomas Street
North/South Street	Belmont Avenue
Peak Hour Factor	0.79
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	1	0		0	1	0		0	1	0
Configuration		LT		R			LTR				LTR				LTR	
Volume (veh/h)		18	411	174		48	296	10		14	9	6		6	18	23
Percent Heavy Vehicles		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		543				61					37				60	
Capacity		1155				841					178				272	
v/c Ratio		0.47				0.07					0.21				0.22	
95% Queue Length		0.1				0.2					0.8				0.8	
Control Delay (s/veh)		8.2				9.6					30.4				22.0	
Level of Service (LOS)		A				A					D				C	
Approach Delay (s/veh)	0.4				2.1				30.4				22.0			
Approach LOS									D				C			

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HCS 2010 Two-Way Stop Control Summary Report

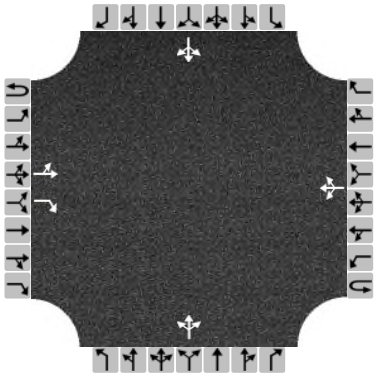
General Information

Analyst	AJB
Agency/Co.	Eriksson Engineering
Date Performed	7/25/2016
Analysis Year	2016
Time Analyzed	2:30 - 3:30 PM
Intersection Orientation	East-West
Project Description	Proposed Conditions

Site Information

Intersection	Thomas/Belmont
Jurisdiction	Arlington Heights
East/West Street	Thomas Street
North/South Street	Belmont Avenue
Peak Hour Factor	0.75
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	1	0		0	1	0		0	1	0
Configuration		LT		R			LTR				LTR				LTR	
Volume (veh/h)		24	237	69		33	338	21		14	18	10		1	4	10
Percent Heavy Vehicles		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		348				44					56				19	
Capacity		1063				1076					237				360	
v/c Ratio		0.33				0.04					0.24				0.05	
95% Queue Length		0.1				0.1					0.9				0.2	
Control Delay (s/veh)		8.5				8.5					24.9				15.5	
Level of Service (LOS)		A				A					C				C	
Approach Delay (s/veh)	0.9				1.1				24.9				15.5			
Approach LOS									C				C			

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HCS 2010 Two-Way Stop Control Summary Report

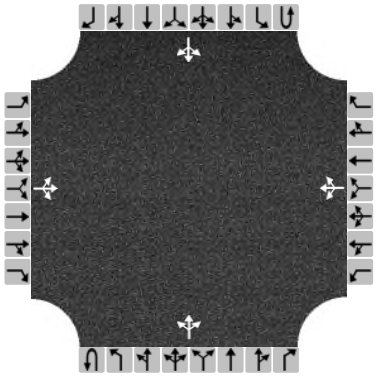
General Information

Analyst	AJB
Agency/Co.	Eriksson Engineering
Date Performed	9/23/2016
Analysis Year	2016
Time Analyzed	7:00 - 8:00 AM
Intersection Orientation	North-South
Project Description	Proposed Conditions

Site Information

Intersection	Belmont/Ex. Parking Lot
Jurisdiction	Arlington Heights
East/West Street	Ex. Parking Lot Driveway
North/South Street	Belmont Avenue
Peak Hour Factor	0.78
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		13	1	6		1	1	1		24	15	3		3	216	21
Percent Heavy Vehicles		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			26				3			31				4		
Capacity			355				504			840				1584		
v/c Ratio			0.07				0.01			0.04				0.00		
95% Queue Length			0.2				0.0			0.1				0.0		
Control Delay (s/veh)			15.9				12.2			9.5				7.3		
Level of Service (LOS)			C				B			A				A		
Approach Delay (s/veh)	15.9				12.2				5.6				0.1			
Approach LOS	C				B											

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HCS 2010 Two-Way Stop Control Summary Report

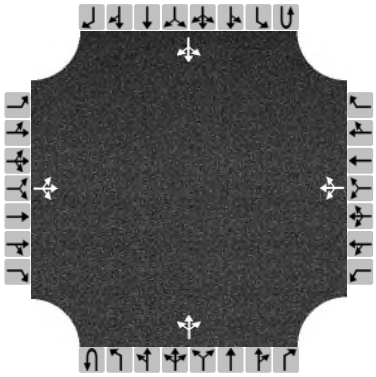
General Information

Analyst	AJB
Agency/Co.	Eriksson Engineering
Date Performed	9/23/2016
Analysis Year	2016
Time Analyzed	2:30 - 3:30 PM
Intersection Orientation	North-South
Project Description	Proposed Conditions

Site Information

Intersection	Belmont/Ex. Parking Lot
Jurisdiction	Arlington Heights
East/West Street	Ex. Parking Lot Driveway
North/South Street	Belmont Avenue
Peak Hour Factor	0.72
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		14	0	20		2	0	3		11	25	3		1	94	11
Percent Heavy Vehicles		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Right Turn Channelized		No				No				No				No		
Median Type		Undivided														
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			47				7			15				1		
Capacity			577				827			1052				1527		
v/c Ratio			0.08				0.01			0.01				0.00		
95% Queue Length			0.3				0.0			0.0				0.0		
Control Delay (s/veh)			11.8				9.4			8.5				7.4		
Level of Service (LOS)			B				A			A				A		
Approach Delay (s/veh)		11.8				9.4				2.4				0.1		
Approach LOS		B				A										

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