

Traffic Impact Study Proposed Wind Creek Casino

East Hazel Crest/Homewood, Illinois



Prepared For:



March 18, 2022

Executive Summary

A traffic impact study was conducted for the proposed Wind Creek Casino development to be located on the west side of Halsted Street (IL 1) between 175th Street and Interstate 80 in East Hazel Crest and Homewood, Illinois. The site is bounded by Interstate 80 to the north, a bank development and 175th Street to the south, residential homes/Lathrop Avenue to the west, and Halsted Street to the east. The conceptual site plan calls for the approximate 24-acre site to be developed with the following:

- Casino
 - 2,000 gaming positions
 - 13,000 square-foot buffet
 - 10,800 square feet of entertainment
- Hotels
 - Hotel 1 – 225 Rooms
 - Hotel 2 – 225 Rooms
- 2,200 Total Parking Spaces
 - 700 surface parking spaces
 - 1,500 garage parking spaces

Access to the proposed development will be provided via the following:

- A signalized full movement access drive off Halsted Street providing two inbound lanes and three outbound lanes striped to provide dual left-turn lanes and an exclusive right-turn lane.
- A full movement access drive off 175th Street providing one inbound lane and two outbound lanes striped for an exclusive left-turn lane and a shared through/right-turn lane. The east and west approaches of 175th Street will be restriped to provide an exclusive left-turn lane and a shared through/right-turn lane. This access drive, which will be aligned opposite the existing access drive serving Walmart to eliminate the existing offset between the northbound and southbound approaches, should be signalized.
- A right-in/right-out access drive off Halsted Street providing one inbound lane and one outbound lane. This access drive will replace the existing 25-foot-wide curb cut and will be approximately 40 feet wide.
- 174th Street through the property will be vacated and will terminate at the property line. Emergency access connectivity will be provided.
- The existing frontage road will remain and will connect to the proposed full movement access drive off Halsted Street.

Traffic, per IDOT's request, was projected to Year 2050 conditions. The traffic projections include existing weekday morning, weekday evening, and Saturday midday peak hour traffic volumes increased by a regional growth factor, as provided by the Chicago Metropolitan Area for Planning (CMAP), and the traffic estimated to be generated by the proposed casino development.

The findings and recommendations of this study are outlined below:

- The traffic estimated to be generated by the proposed casino development, given the currently under construction roadway improvements, will have a limited impact on the surrounding roadway network.
- No additional traffic control or roadway improvements are needed or recommended at the intersections of Halsted Street with the right-in/right-out access drive or at the intersection of 175th Street with Lathrop Avenue.
- Based on the results of the capacity analyses, the intersection of 175th Street with the Wal-Mart access drive and the proposed realigned access drive will operate at a LOS F during the weekday evening peak hour and the Saturday midday peak hour. As such, a traffic signal should be provided at this location. This traffic signal should be interconnected with the traffic signal at Halsted Street to the east.

Introduction

A traffic impact study was conducted for the proposed Wind Creek Casino development to be located on the west side of Halsted Street (IL 1) between 175th Street and Interstate 80 in East Hazel Crest/Homewood, Illinois. The site is currently vacant land and is bound by Interstate 80 to the north, a bank development and 175th Street to the south, residential homes/Lathrop Avenue to the west, and Halsted Street to the east.

The conceptual site plan calls for the approximate 24-acre site to be developed with a 2,000 gaming position casino that will include 13,000 square-foot buffet area and a 10,800 square-foot entertainment area. In addition, the site will include two hotels with a total of 450 rooms. Approximately 2,200 parking spaces will be provided via a combination of a surface parking lot and a parking garage.

Access to the site is proposed to be provided via a signalized full movement access drive off Halsted Street at the same location as 174th Street, a right-in/right-out access drive off Halsted Street approximately 275 feet north of 175th Street and a connection to the south with the existing full movement access drive off 175th Street approximately 510 feet west of Halsted Street. An emergency only access drive off 174th Street on the west side of the site will also be provided.

The sections of this report present the following:

- Existing roadway conditions including vehicle, pedestrian, and bicycle traffic volumes for the weekday morning and weekday evening peak hours
- A detailed description of the proposed development
- Vehicle trip generation for the proposed development
- Directional distribution of development-generated traffic
- Future transportation conditions including access to and from the development

Traffic capacity analyses were conducted for the weekday morning, weekday evening, and Saturday midday peak hours for the following two conditions.:

1. Existing Conditions - Analyzes the capacity of the existing roadway system using existing peak hour traffic volumes in the surrounding area.
2. Future Conditions – Traffic, per IDOT’s request, was projected for Year 2050 conditions. The traffic projections include existing weekday morning, weekday evening, and Saturday midday peak hour traffic volumes increased by a compounded regional growth factor of 0.37 percent per year as provided by the Chicago Metropolitan Area for Planning (CMAP) and the traffic estimated to be generated by the proposed development.

The purpose of this study is as follows:

- Determine the existing vehicular, pedestrian, and bicycle conditions in the study area to establish a base condition.
- Assess the impact that the proposed development will have on transportation conditions in the area.
- Determine any roadway, traffic control, or access improvements that may be necessary to effectively accommodate and mitigate future conditions.

Existing Conditions

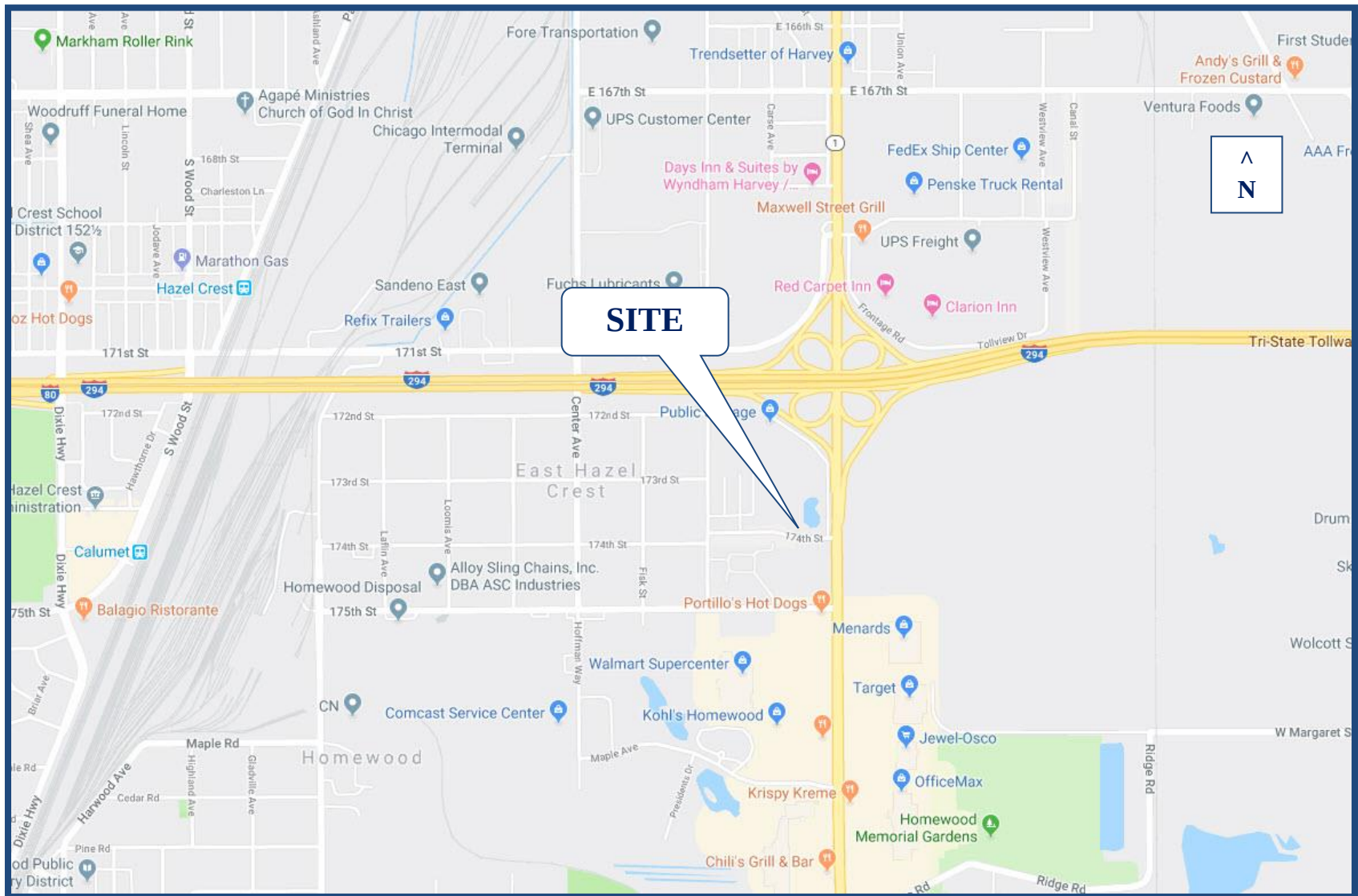
Transportation conditions in the vicinity of the site were inventoried to obtain a basis for projecting future conditions. Three components of existing conditions were considered:

- The geographic location of the site.
- The characteristics of the adjacent roadway system, including lane geometry and intersection traffic controls.
- The weekday peak-hour vehicle (passenger vehicles and trucks), bicycle, and pedestrian traffic volumes at the study intersections.

Site Location

The site is located on the west side of Halsted Street (IL 1) between 175th Street and Interstate 80 in East Hazel Crest, Illinois. The site is currently vacant land and is bound by Interstate 80 to the north, a bank development and 175th Street to the south, residential homes/Lathrop Avenue to the west, and Halsted Street to the east. Land uses in the vicinity of the site are public warehouse/storage to the north, multi-family residential to the west and retail/commercial to the south.

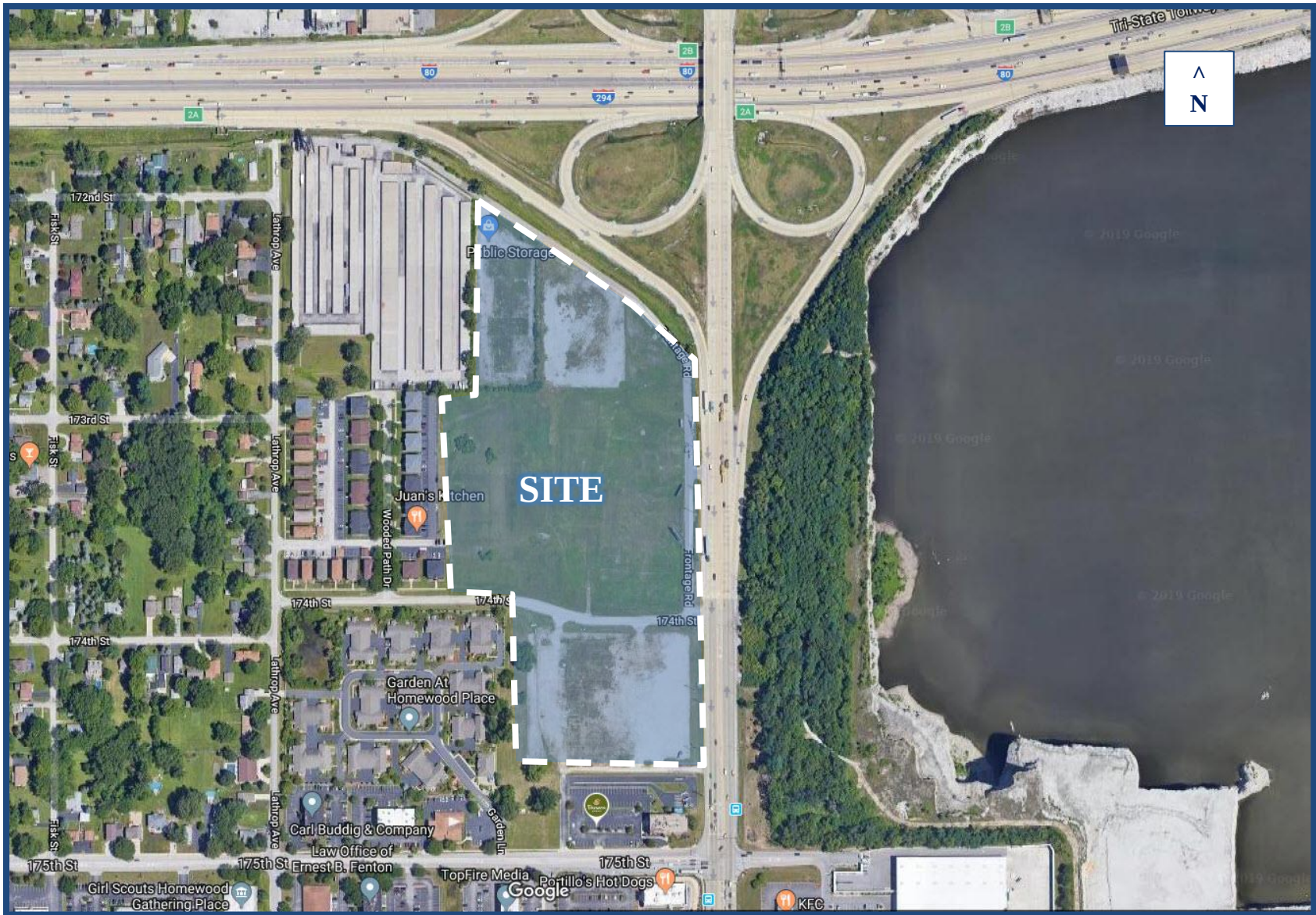
Figure 1 shows the site location with respect to the surrounding roadway system. **Figure 2** shows an aerial view of the site.



Site Location

Figure 1

*Proposed Wind Creek Casino
East Hazel Crest/Homewood, Illinois*



Aerial View of Site

Figure 2

*Proposed Wind Creek Casino
East Hazel Crest/Homewood, Illinois*

Existing Roadway System Characteristics

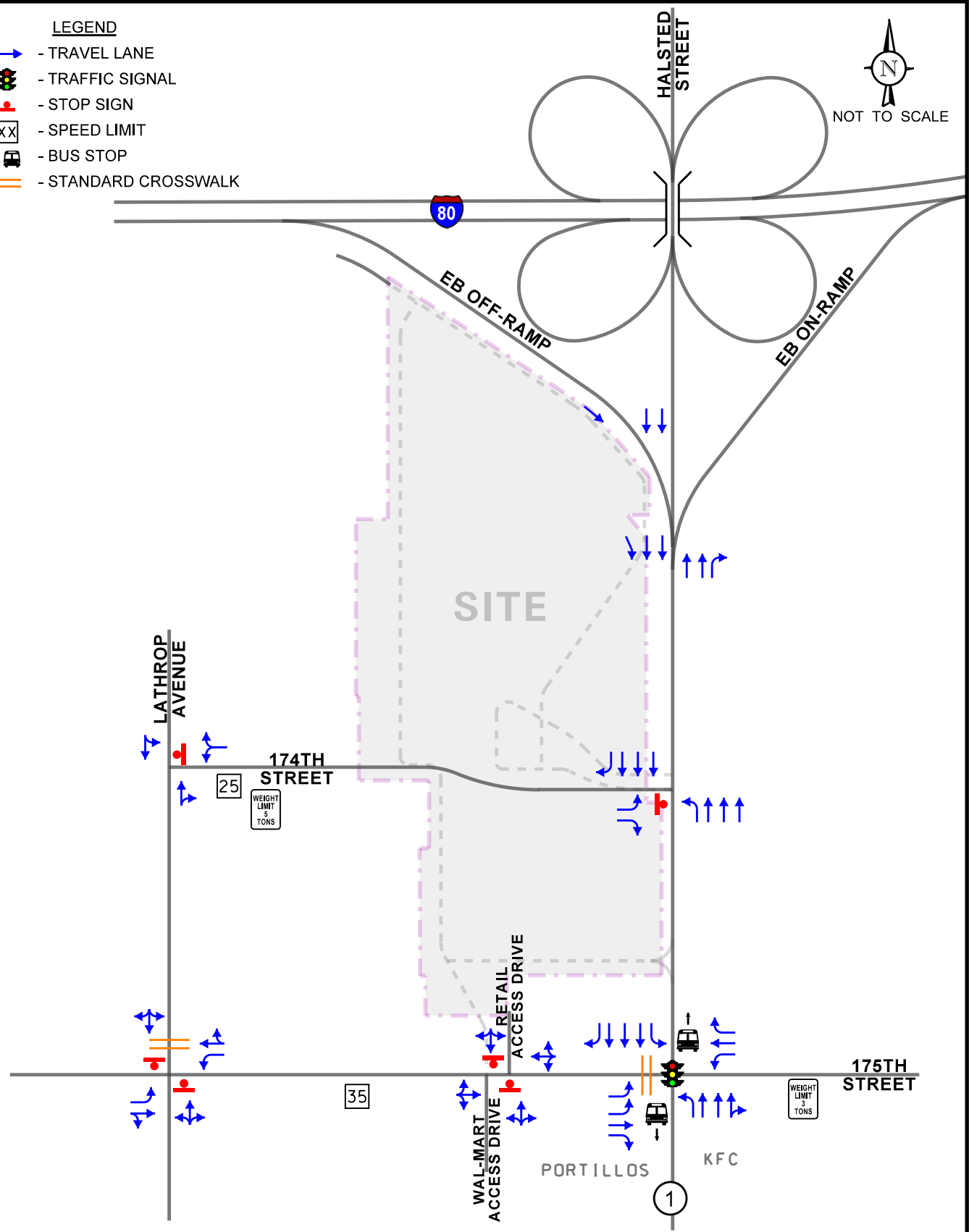
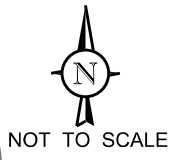
The characteristics of the existing roadways in the study area are illustrated in **Figure 3** and described below.

Halsted Street (IL 1) is a north-south other principal arterial roadway that has a full access cloverleaf (freeflow) interchange with I-80/I-294. Curb and gutter is located on both sides of the roadway. No sidewalks are provided on either side of the roadway. At its intersection with 174th Street, which will be signalized shortly, a left-turn lane and three through lanes are provided on the northbound approach, and two through lanes and a shared through/right-turn lane are provided on the southbound approach. At its signalized intersection with 175th Street, a left-turn lane, two through lanes, and a right-turn lane are provided on both the northbound and southbound approaches. A raised median is located on the southbound approach at its intersection with 175th Street. Pace Bus Route #370 runs along Halsted Street and has a posted bus stop at 174th Street and at 175th Street for both directions of travel. Parking is prohibited on both sides of the roadway, and the posted speed limit is 45 miles per hour (mph) in the vicinity of the site. Halsted Street is under the jurisdiction of the Illinois Department of Transportation (IDOT) and is designated as a Strategic Regional Arterial (SRA).

174th Street is an east-west two-lane collector road that runs west from its eastern T-intersection terminus with Halsted Street to its T-intersection with Ashland Avenue. It has an offset intersection at Lathrop Avenue. At its stop sign controlled intersection with 174th Street, a shared left/right-turn lane is provided. East of Halsted Street, the east leg in alignment with 174th Street is an abandoned driveway. 174th Street will not be extended east of Halsted Street because of the quarry that exists just east of Halsted Street. Therefore, this intersection will remain a T-intersection. 174th Street is located approximately 600 feet south of the I-80/I-294 EB On-Ramp, and approximately 715 feet north of 175th Street. The posted speed limit is 25 mph and parking is prohibited on both sides of the roadway. This road is under the jurisdictions of both the Village of East Hazel Crest and Village of Homewood.

Halsted Street Frontage Road is a north-south two-lane roadway that T-intersects 174th Street from the north and extends north/northwest, providing access to a public storage facility. Minimal traffic from these land uses was observed during the peak traffic periods. A right-in/right-out intersection with Halsted Street is provided approximately 400 feet north of 174th Street. The Frontage Road is offset less than 40 feet west of Halsted Street. The posted speed limit is 25 mph and on-street parking is prohibited. The Frontage Road is under jurisdiction of the Village of East Hazel Crest. As noted in this report, as part of the proposed development, this Frontage Road and the restricted access to Halsted Street will be vacated and removed and will provide a cross-access connection between the proposed development and the adjacent commercial uses to the north of the site.

- LEGEND**
- TRAVEL LANE
 - TRAFFIC SIGNAL
 - STOP SIGN
 - SPEED LIMIT
 - BUS STOP
 - STANDARD CROSSWALK



Proposed Wind
Creek Casino
East Hazel Crest/
Homewood, Illinois

Existing Roadway Characteristics

175th Street is an east-west four-lane major collector roadway that runs east from its western T-intersection terminus with Ashland Avenue to east of Halsted Street. The posted speed limit is 35 mph and parking is prohibited on both sides of the roadway. At its signalized intersection with Halsted Street, dual left-turn lanes, a through lane, and a right-turn lane are provided on the west approach, and a left-turn lane, through lane, and a shared through/right-turn lane are provided on the east approach. 175th Street is under both the jurisdictions of the Village of East Hazel Crest and the Village of Homewood, and is maintained by the Village of Homewood. 175th Street is not classified as a SRA.

Recent Roadway Improvements

It should be noted that Halsted Street has recently being improved as part of the original/approved plans for the site to provide the following geometrics:

Halsted Street with 175th Street

- Northbound Approach – An exclusive left-turn lane, two through lanes, and a shared through/right-turn lane
- Southbound Approach – an exclusive left-turn lane, three through lanes, and an exclusive right-turn lane
- Signal timing modifications

Halsted Street with 174th Street

- Northbound Approach – Dual left-turn lanes and three through lanes
- Southbound Approach – Three through lanes and an exclusive right-turn lane
- Eastbound Approach – Dual left-turn lanes and an exclusive right-turn lane
- Provision of a traffic signal

These improvements will alleviate much of the current traffic congestion experienced along Halsted Street south of the interchange with I-80/I-294.

Existing Traffic Volumes

Turning movement vehicle (passenger, truck, and bus), pedestrian, and bicycle traffic counts were conducted during the morning (7:00 to 9:00 A.M.), evening (4:00 to 7:00 P.M.) and Saturday midday (11:00 A.M. to 2:00 P.M.) peak periods on Thursday July 25, 2019 and Saturday September 14, 2019 at the following seven intersections:

1. 175th Street and Halsted Street
2. 174th Street and Halsted Street
3. I-80/I-294 Eastbound to southbound Off-Ramp and Halsted Street
4. I-80/I-294 Northbound to eastbound On-Ramp and Halsted Street
5. 175th Street and Retail Access Drive/Wal-Mart Access Drive
6. 175th Street and Lathrop Avenue
7. Lathrop Avenue and 174th Street

It should be noted that all lanes of traffic at all of the studied intersections were open when the traffic counts were conducted. From the turning movement count data, it was determined that the weekday morning peak hour generally occurs between 7:45 and 8:45 A.M., the weekday evening peak hour between 4:30 and 5:30 P.M., and the Saturday midday peak hour between 1:00 and 2:00 P.M. These three respective peak hours will be used for the traffic capacity analyses and are presented later in this report. Pedestrian and bicycle activity was observed and was reported to be relatively low at the study intersections.

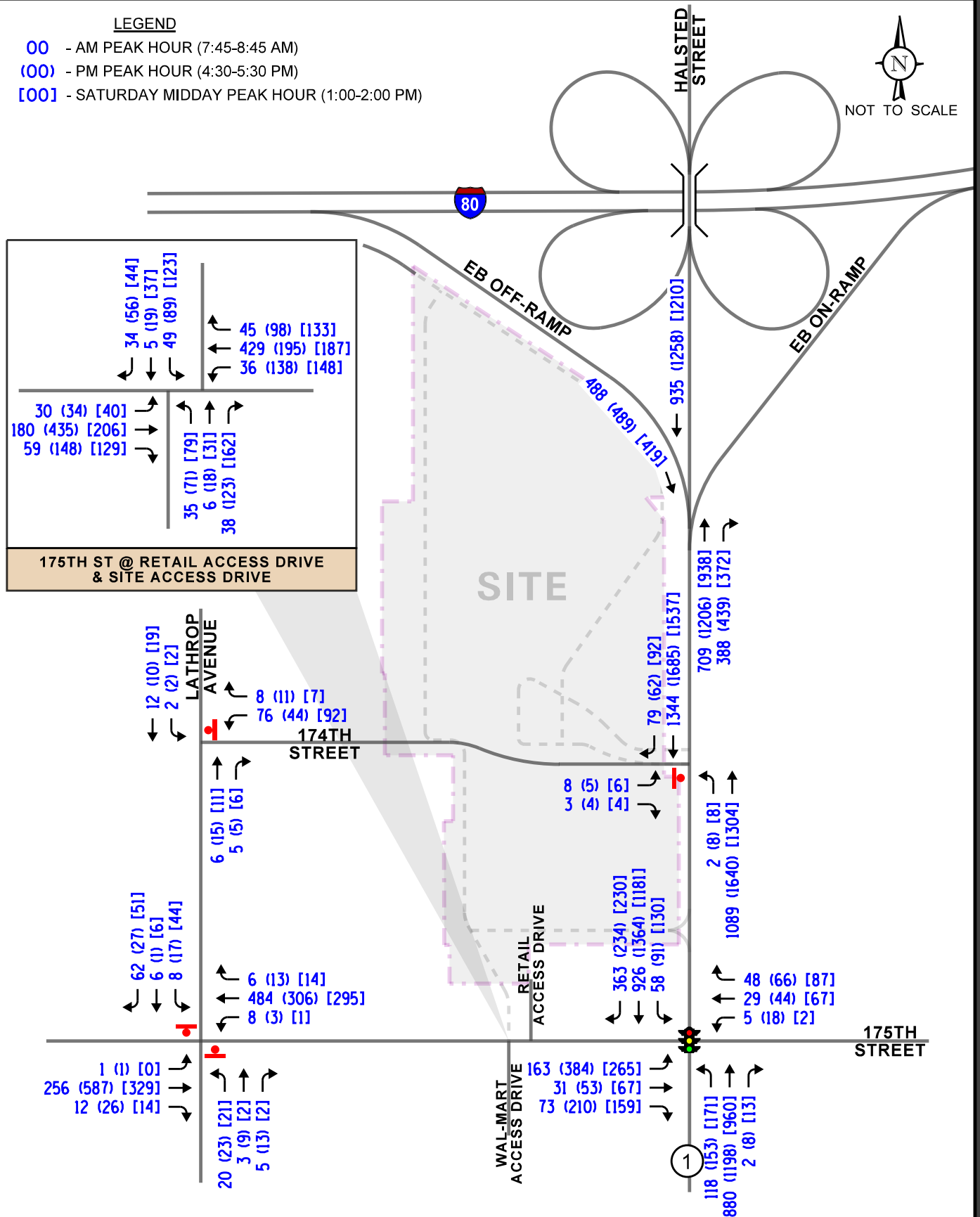
The existing peak hour vehicle traffic volumes (all vehicles) are shown in **Figure 4**.

LEGEND

- 00 - AM PEAK HOUR (7:45-8:45 AM)
- (00) - PM PEAK HOUR (4:30-5:30 PM)
- [00] - SATURDAY MIDDAY PEAK HOUR (1:00-2:00 PM)



NOT TO SCALE



Proposed Wind
Creek Casino
East Hazel Crest/
Homewood, Illinois

Existing Traffic Volumes

Traffic Characteristics of the Proposed Development

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

Proposed Site and Development Plan

The conceptual site plan calls for the approximate 24-acre site to be developed with a 2,000 gaming position casino that will include a 13,000 square-foot buffet area and a 10,800 square-foot entertainment area. In addition, the site will include two hotels with a total of 450 rooms. Approximately 2,200 parking spaces will be provided via a combination of surface parking lots/valet spaces and a parking garage.

Access

Access to the site is proposed to be provided via a signalized full movement access drive off Halsted Street at the same location as 174th Street, a right-in/right-out access drive off Halsted Street approximately 275 feet north of 175th Street and a connection to the south with the existing full movement access drive off 175th Street approximate 510 feet west of Halsted Street. An emergency only access drive off 174th Street on the west side of the site will also be provided.

Recent and Future Roadway and Traffic Control Improvements as part of Proposed Development

As previously indicated and in conjunction with this development, the following off-site roadway improvements have been recently constructed:

- Improve the intersection of Halsted Street and 174th Street to include the following:
 - Northbound approach: dual left-turn lanes, three through lanes
 - Southbound approach: three through lanes, right-turn lane
 - Eastbound approach (174th Street): dual left-turn lanes, right-turn lane
 - Signalize the intersection and interconnect and optimize offset timings with the existing traffic signal at 175th Street to the south
- Improve the intersection of Halsted Street 175th Street to include the following:
 - Northbound approach: left-turn lane, two through lanes, shared through/right-turn lane
 - Southbound approach: left-turn lane, three through lanes, right-turn lane
 - The eastbound and westbound approaches on 175th Street will remain as is
 - Modify traffic signal to provide southbound right-turn overlap phasing.
 - Modify traffic signal to restrict northbound and southbound left-turn movements to protected phasing only. This is in compliance with IDOT standards, which requires protected-only phasing when crossing three or more lanes of oncoming traffic.

- Widen 174th Street to provide two inbound lanes and three outbound lanes at its approach to Halsted Street.
- Halsted Street Frontage Road:
 - Vacate and remove Frontage Road between north site property line and 174th Street
 - Vacate and remove Frontage Road restricted access intersection with Halsted Street
 - Provide cross-connection access between the proposed development and adjacent commercial properties to the north and south
- Future 175th Street and Access Drive Improvement:
 - Relocate the north approach of the access drive approximately 40 feet to the west to line up opposite the south leg
 - Restripe 175th Street to provide an exclusive left-turn lane and a shared through/right-turn lane on both approaches
 - North approach of the access drive will provide one inbound lane and two outbound lanes
 - Provide a traffic signal (to be discussed later on)

Parking Garage

Based on the proposed plans, a parking garage for approximately 1,500 vehicles will be provided on the southern portion of the site. The parking garage will have access points on the north and south sides allowing customers and employees to utilize the signalized access drives off Halsted Street and 175th Street as well as the right in/right out access off Halsted Street.

Directional Distribution of Development-Generated Traffic

The directional distribution of how traffic will approach and depart the site was estimated based on the existing travel patterns near the site and the operational characteristics of the roadway system. The anticipated directional distribution established is illustrated in **Figure 5**. Figure 5 also shows the distances, in feet, between the existing intersections.

Development Traffic Generation

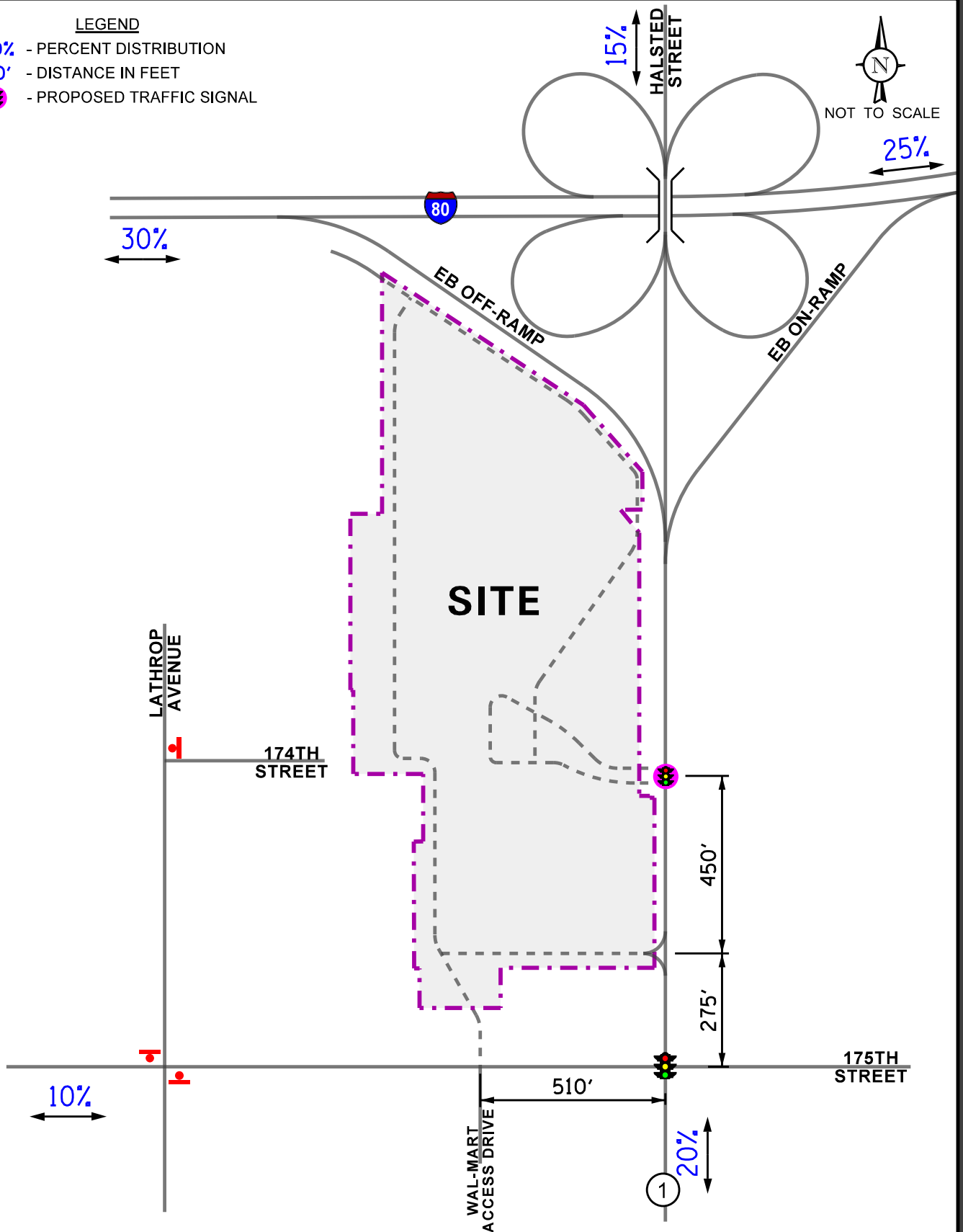
The volume of traffic estimated to be generated by the proposed development was estimated based on trip generation data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual*, 10th Edition. Based on ITE data, the mixture of land uses will result in internal, or captured, vehicles trips, for vehicles that may visit or patronize one or more of the proposed land uses within the same visit without the use of a vehicle or relying on the surrounding roadway network to access the multiple land uses. While it is anticipated that this reduction will be high due to the mixed-use nature of the development, only a 20 percent internal vehicle trip reduction was applied to the hotel, entertainment and buffet land uses. No reduction was applied to the casino.

Table 1 shows the estimated vehicle trip generation for the weekday morning, weekday evening, and Saturday midday peak hours for the overall development.

Table 1
PROJECTED SITE-GENERATED TRAFFIC VOLUMES

ITE Land Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
473	2,000 Gaming Positions	88	32	120	419	387	806	489 ¹	422 ¹	911 ¹
932	Buffet (13,000 square feet)	71	58	129	79	48	127	74	72	146
444	Entertainment (10,800 square feet)	1	2	3	63	4	67	166	130	296
310	Hotel One (225 rooms)	71	50	121	83	80	163	100	78	178
310	Hotel Two (225 rooms)	71	50	121	83	80	163	100	78	178
	<i>20 Percent Interaction Reduction²</i>	<u>-43</u>	<u>-32</u>	<u>-75</u>	<u>-62</u>	<u>-42</u>	<u>-104</u>	<u>-88</u>	<u>-72</u>	<u>-160</u>
	Casino Total	259	160	419	665	557	1,222	841	708	1549
1 – Trip generation for the Saturday midday peak hour based on surveys conducted by KLOA, Inc. of other casino establishments in Illinois										
2 - Interaction reduction only applied to the hotel, entertainment, and buffet land uses										

- LEGEND**
- 00% - PERCENT DISTRIBUTION
 - 00' - DISTANCE IN FEET
 -  - PROPOSED TRAFFIC SIGNAL



Development Traffic Assignment

The peak hour traffic volumes projected to be generated by the proposed development (Table 1) were assigned to the area roadways based on the directional distributions established (Figure 5).

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

Regional Traffic Growth

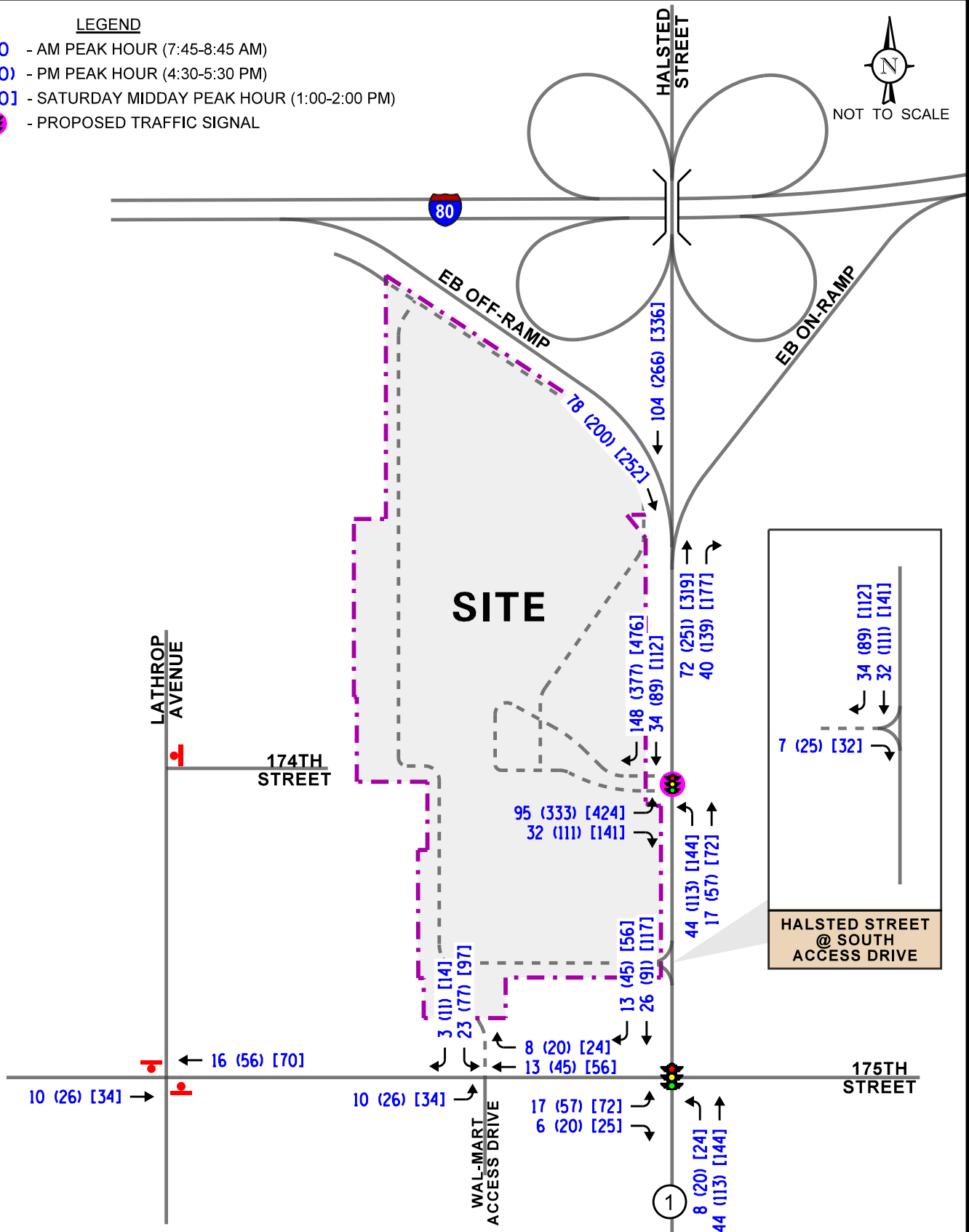
To account for the increase in existing traffic related to regional growth in the area (i.e. not attributable to any particular planned development), the Chicago Metropolitan Agency for Planning (CMAP) provided projected average daily traffic volumes (ADTs) for Year 2050 conditions. Based on ADT projections provided by the Chicago Metropolitan Agency for Planning (CMAP) in a letter dated September 11, 2019, the existing traffic volumes along Halsted Street are projected to increase by 12.5 percent while the traffic volumes along 175th Street are projected to decrease by 16 percent. As such, traffic volumes along Halsted Street were increased by 12.5 percent to represent Year 2050 conditions. No adjustments were made to the traffic volumes along 174th Street. A copy of the CMAP projections letter is included in the Appendix. The Year 2050 no-build traffic volumes, which include the existing traffic volumes increased by the regional growth factor, are illustrated in **Figure 7**.

Figure 8 shows the reassignment of existing traffic volumes as a result of the vacation of 174th Avenue.

Total Projected Traffic Conditions

The total projected traffic volume conditions include the Year 2050 background volumes (Figure 7), the reassignment of the existing traffic volumes (Figure 8) and the proposed casino development-generated traffic volumes (Figure 6). **Figure 9** shows the total projected Year 2050 traffic volumes.

- LEGEND**
- 00 - AM PEAK HOUR (7:45-8:45 AM)
 - (00) - PM PEAK HOUR (4:30-5:30 PM)
 - [00] - SATURDAY MIDDAY PEAK HOUR (1:00-2:00 PM)
 -  - PROPOSED TRAFFIC SIGNAL



Proposed Wind
Creek Casino
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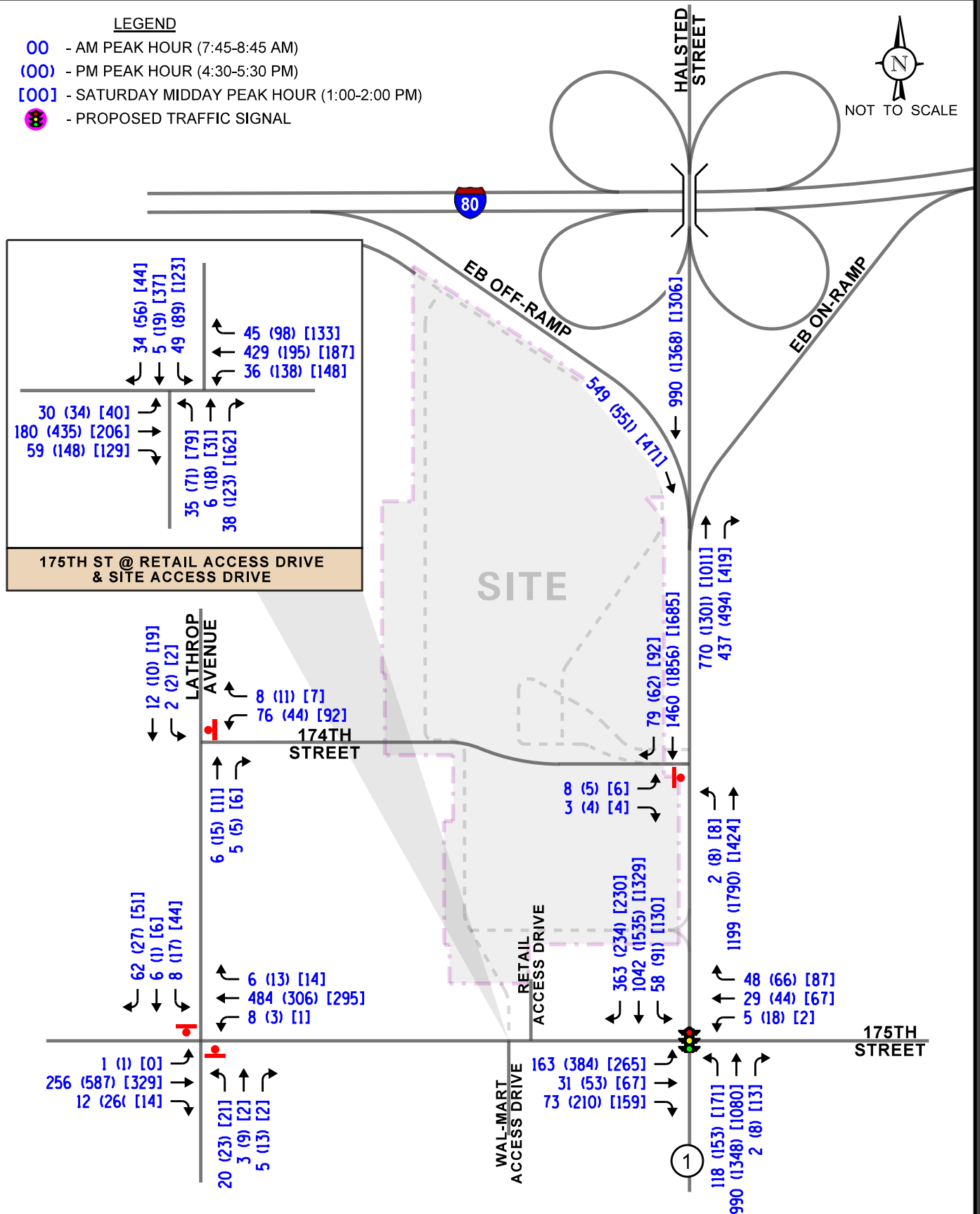
Estimated Site-Generated
Traffic Volumes

LEGEND

- 00 - AM PEAK HOUR (7:45-8:45 AM)
- (00) - PM PEAK HOUR (4:30-5:30 PM)
- [00] - SATURDAY MIDDAY PEAK HOUR (1:00-2:00 PM)
-  - PROPOSED TRAFFIC SIGNAL



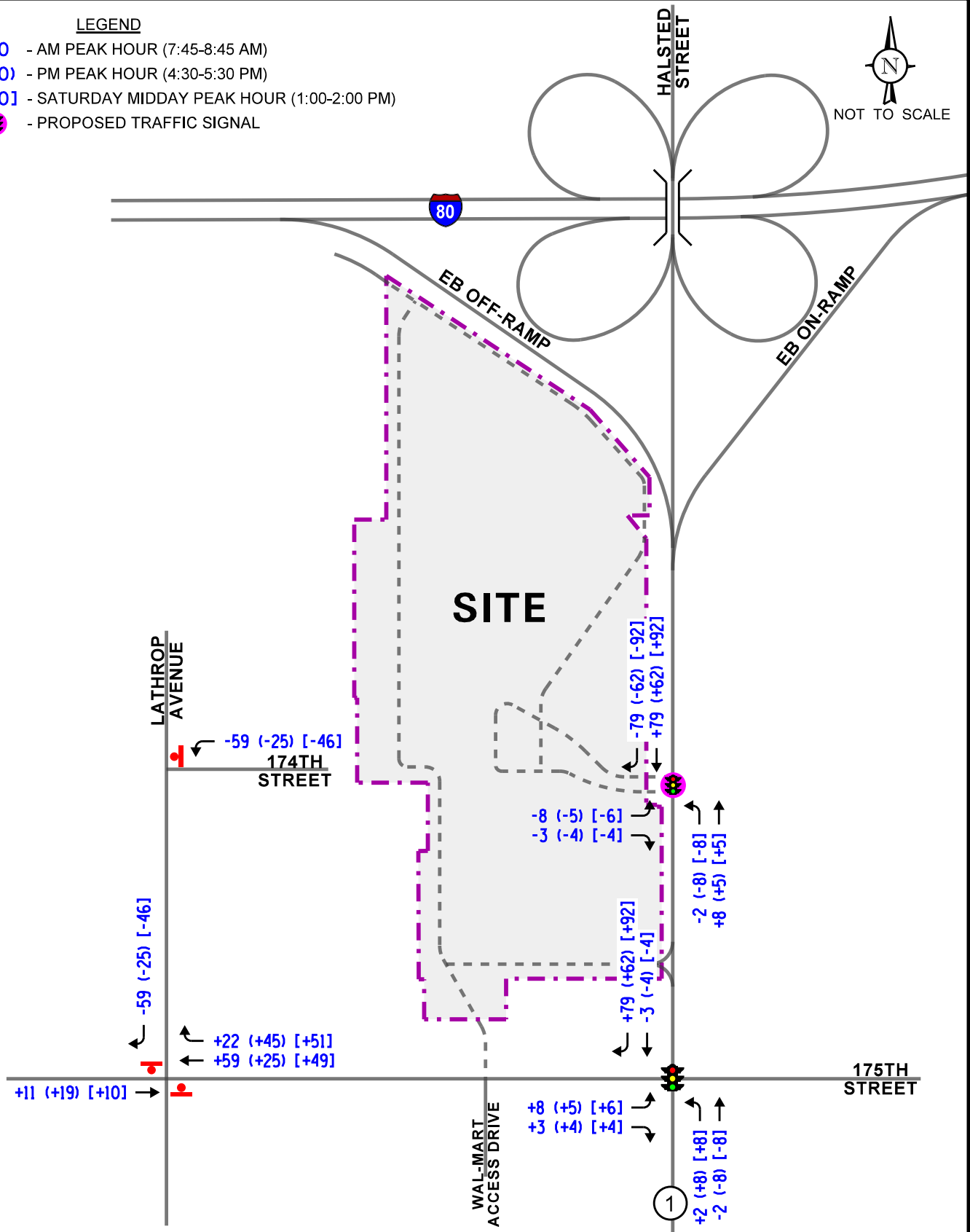
NOT TO SCALE



Proposed Wind
Creek Casino
East Hazel Crest/
Homewood, Illinois

Year 2050 No-Build Traffic Volumes

- LEGEND**
- 00 - AM PEAK HOUR (7:45-8:45 AM)
 - (00) - PM PEAK HOUR (4:30-5:30 PM)
 - [00] - SATURDAY MIDDAY PEAK HOUR (1:00-2:00 PM)
 -  - PROPOSED TRAFFIC SIGNAL



Proposed Wind
Creek Casino
East Hazel Crest/
Homewood, Illinois

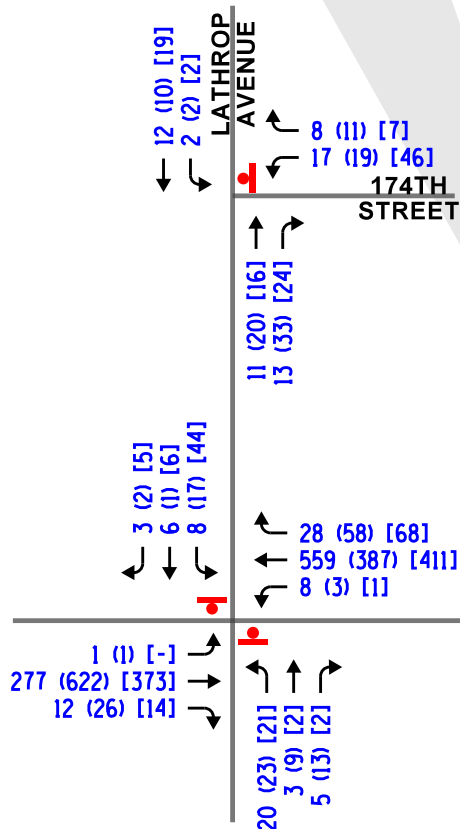
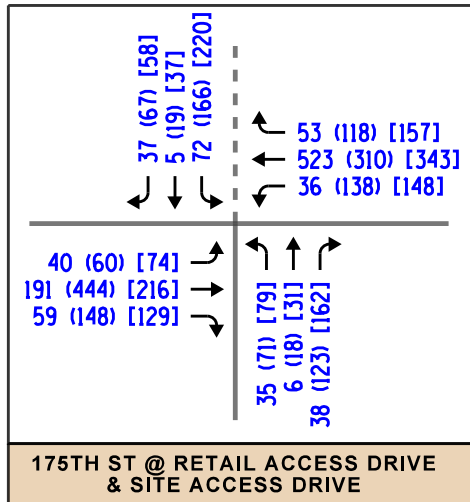
Reassigned Traffic Volumes

LEGEND

- 00 - AM PEAK HOUR (7:45-8:45 AM)
- (00) - PM PEAK HOUR (4:30-5:30 PM)
- [00] - SATURDAY MIDDAY PEAK HOUR (1:00-2:00 PM)
-  - PROPOSED TRAFFIC SIGNAL

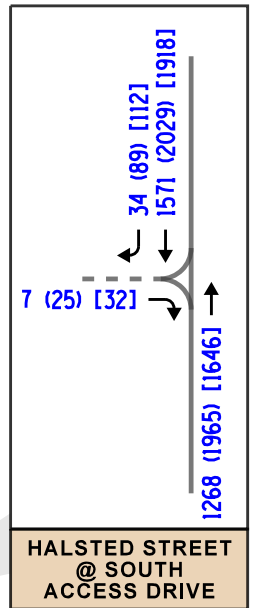
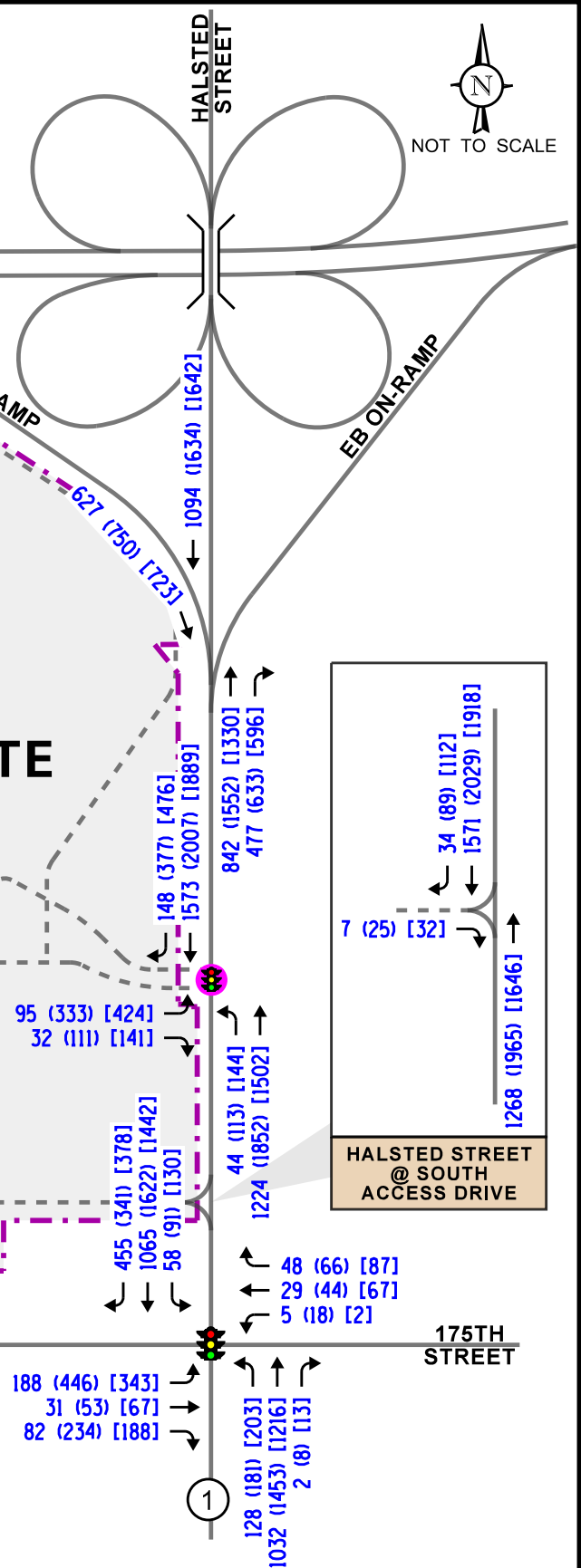


NOT TO SCALE



SITE

WAL-MART
ACCESS DRIVE



Proposed Wind
Creek Casino
East Hazel Crest/
Homewood, Illinois

Year 2050 Total Projected Traffic Volumes

Traffic Analysis and Recommendations

Capacity analyses were performed for the key intersections included in the study area to determine the ability of the existing roadway system to accommodate existing and future traffic demands. Analyses were performed for the weekday morning, weekday evening, and Saturday midday peak hours for both existing and future conditions.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM)*, 6th Edition and using Synchro/SimTraffic 10 analysis software. The analyses for the traffic-signal controlled intersections were accomplished using field measured cycle lengths and phasings to determine the average overall vehicle delay and levels of service.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay are included in the Appendix of this report.

A summary of the level of service/delay results for both existing and future conditions are presented in **Tables 2** through **5**.

A discussion of the capacity analysis results and recommendations follows.

Table 2

CAPACITY ANALYSIS RESULTS – HALSTED STREET WITH 175th STREET – SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Weekday Morning Peak Hour	2019 Existing Conditions	D 54.2	D 39.9	C 24.8	D 53.0	D 53.1	D 39.4	D 54.3	B 12.8	E 58.8	B 16.8	A 9.3	C – 20.6	
		D – 44.5			D – 45.1			B – 17.7			B – 16.6			
	2050 Projected Conditions	D 51.6	D 41.2	B 19.2	D 53.0	D 53.1	D 39.4	E 56.3	B 14.4	E 64.6	B 13.8	A 5.9	B – 19.1	
		D – 41.8			D – 45.1			B – 19.1			B – 13.4			
Weekday Evening Peak Hour	2019 Existing Conditions	E 72.3	D 45.6	C 33.0	E 64.0	E 62.5	D 42.8	E 64.0	B 19.0	E 69.0	C 23.3	A 8.3	C – 30.5	
		E – 57.3			D – 52.6			C – 24.1			C – 23.7			
	2050 Projected Conditions	F 90.3	D 39.6	C 31.9	E 64.0	E 62.5	D 42.8	E 72.5	C 20.8	E 78.0	B 14.1	A 2.9	C – 28.8	
		E – 68.0			D – 52.6			C – 26.5			B – 15.1			
Saturday Midday Peak Hour	2019 Existing Conditions	E 57.2	D 36.3	C 20.5	D 52.5	E 55.1	C 32.3	D 49.8	C 20.7	D 54.0	C 25.0	B 11.5	C – 28.6	
		D – 42.4			D – 42.3			C – 25.0			C – 25.4			
	2050 Projected Conditions	E 59.5	C 30.8	B 13.3	D 52.5	E 55.1	C 32.3	D 50.3	C 23.3	E 67.9	B 17.2	A 4.0	C – 25.5	
		D – 41.8			D – 42.3			C – 27.1			B – 18.0			
Letter denotes Level of Service Delay is measured in seconds.														
L – Left Turns				R – Right Turns										
T – Through														

Table 3

CAPACITY ANALYSIS RESULTS – UNSIGNALIZED – EXISTING CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
Halsted Street with 174th Street						
• Eastbound Left Turn	E	41.2	F	83.5	F	53.7
• Eastbound Right Turn	C	16.2	C	19.5	C	17.5
• Northbound Left Turn	C	21.2	D	29.1	C	24.9
175th Street with Lathrop Avenue						
• Northbound Approach	C	20.9	D	26.6	C	17.1
• Southbound Approach	B	14.6	C	18.8	C	15.0
• Eastbound Left Turn	A	8.5	A	8.0	A	0.0
• Westbound Left Turn	A	8.3	A	9.8	A	8.0
Lathrop Avenue with 174th Street						
• Westbound Approach	A	9.0	A	9.0	A	9.1
• Southbound Left Turn	A	7.2	A	7.3	A	7.2
175th Street with Wal-Mart Access Drive/Retail Access Drive						
• Northbound Approach	C	17.3	F	114.2	F	74.1
• Southbound Approach	C	20.8	F	225.2	F	247.9
• Eastbound Left Turn	A	8.4	A	7.9	A	8.0
• Westbound Left Turn	A	7.8	A	9.3	A	8.4
LOS = Level of Service Delay is measured in seconds						

Table 4

CAPACITY ANALYSIS RESULTS – HALSTED STREET WITH ACCESS DRIVE
SIGNALIZED

Year 2050 Total Projected Conditions	Peak Hour	Eastbound		Northbound		Southbound		Overall	
		L	R	L	T	T	R		
	Weekday Morning Peak Hour	D 52.3	D 37.5	E 67.4	A 2.4	A 7.3	A 1.6	A – 7.6	
		D – 48.6		A – 4.6		A – 6.8			
	Weekday Evening Peak Hour	E 55.4	D 36.0	E 74.8	A 7.6	B 16.0	A 2.9	B – 16.3	
		D – 50.5		B – 11.5		B – 13.9			
	Saturday Midday Peak Hour	D 45.7	C 27.5	E 64.0	A 6.5	B 18.7	A 3.7	B – 17.4	
		D – 41.1		B – 11.5		B – 15.7			
	Letter denotes Level of Service		L – Left Turns		R – Right Turns				
	Delay is measured in seconds.		T – Through						

Table 5

CAPACITY ANALYSIS RESULTS – UNSIGNALIZED – PROJECTED CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
175th Street with Lathrop Avenue						
• Northbound Approach	C	21.4	D	32.6	C	20.3
• Southbound Approach	C	20.0	D	34.6	C	22.1
• Eastbound Left Turn	A	8.8	A	8.4	A	0.0
• Westbound Left Turn	A	8.4	B	10.0	A	8.1
Lathrop Avenue with 174th Street						
• Westbound Approach	A	8.8	A	9.3	A	9.2
• Southbound Left Turn	A	7.3	A	7.4	A	7.4
Halsted Street with Right-In/Right-Out						
• Eastbound Right Turn	A	8.8	A	9.4	A	9.4
175th Street with Wal-Mart Access Drive/Full Movement Access Drive						
• Northbound Approach	C (D)	21.0 (37.1)	F (D)	290.9 (44.6)	F (C)	297.6 (31.2)
• Southbound Approach	C (D)	26.9 (47.5)	F (E)	655.2 (66.8)	F (D)	818.9 (53.7)
• Eastbound Left Turn	A (A)	8.8 (2.8)	A (A)	8.4 (7.0)	A (B)	8.7 (11.1)
• Westbound Left Turn ¹	A (A)	7.9 (2.4)	A (A)	9.5 (7.4)	A (A)	8.5 (8.5)
LOS = Level of Service Delay is measured in seconds () – LOS and delay assuming the provision of a traffic signal 1 – Assumes the provision of an exclusive left-turn lane and a shared through/right-turn lane						

Discussion and Recommendations

The following summarizes how the intersections within the study area currently operate and are projected to operate assuming the total projected traffic volumes. It will also identify any roadway and traffic control improvements and/or modifications necessary to accommodate the projected traffic volumes.

Halsted Street (IL 1) with 175th Street

Based on the results of the capacity analyses and assuming the completion of the improvements currently being constructed, this intersection operates at an overall LOS C during the weekday morning, evening and Saturday midday peak hours. Under Year 2050 future conditions, the intersection will continue to operate at a good overall LOS with minimal increases in delay. Further inspection of the capacity analyses and the results of the traffic simulations indicate that queues will be contained within the provided storages and will not extend to other downstream or upstream intersections. Therefore, no additional geometric or traffic control improvements are necessary at this intersection to accommodate future traffic volumes.

Halsted Street (IL 1) with 174th Street

Based on the results of the capacity analyses and assuming the completion of the improvements currently being constructed including the provision of a traffic signal, this intersection will operate at an overall LOS B or better during the three studied peak hours. Further inspection of the capacity analyses and the results of the traffic simulations indicate that all of the queues will be contained within the provided storages and will not extend to other downstream or upstream intersections. Therefore, no additional geometric or traffic control improvements are necessary at this intersection to accommodate future traffic volumes.

175th Street with Lathrop Avenue

The results of the capacity analysis indicate that the northbound and southbound approaches of this intersection are operating at an acceptable LOS D or better during the three studied peak hours. Furthermore, the eastbound and westbound left-turn movements are operating at a LOS A. Under future conditions, the northbound and southbound approaches as well as the eastbound and westbound left-turning movements are projected to continue operating at the same LOS with minimal increases in delay. As such, no additional geometric or traffic control improvements are necessary at this intersection to accommodate future traffic volumes.

Lathrop Avenue with 174th Street

This intersection is currently operating at an acceptable LOS and will continue to do so under future conditions. As such, no additional geometric or traffic control improvements are necessary at this intersection to accommodate future traffic volumes.

175th Street with Wal-Mart Access Drive/Full Movement Access Drive

Currently the southbound approach of this intersection is offset from the northbound approach by approximately 40 feet. Based on the results of the capacity analyses, the northbound and southbound approaches operate at a LOS F during the evening peak hour and the Saturday midday peak hour. Under future conditions, the plans call for aligning the southbound approach opposite the northbound approach and provide two outbound lanes from the southbound approach striped for an exclusive left-turn lane and a shared through/right-turn lane. Furthermore, 175th Street will be restriped to provide an exclusive left-turn lane and a shared through/right-turn lane on both approaches (See Appendix). Based on the results of the capacity analyses and assuming these geometric improvements, the northbound and southbound approaches are projected to operate at a LOS F. Inspection of the projected traffic volumes and the requirements set forth in the Manual on Uniform Control Devices (MUTCD), indicate that a traffic signal is warranted and when the intersection is analyzed assuming a traffic signal, the intersection will operate at an overall LOS D or better during the peak hours. Furthermore, the westbound queues will not exceed 243 feet and, as such, will not have an impact on the intersection of 175th Street with Halsted Street. Therefore, consideration should be given to providing a traffic signal at this location. This traffic signal should be interconnected with the traffic signal to the east at the intersection of Halsted Street with 175th Street.

Halsted Street with Frontage Road

As noted, in conjunction with this development, the Frontage Road will be vacated and removed between the north site property line and 174th Street. A cross-access connection will be provided between the proposed development and the adjoining commercial properties to the north and south of the site.

Halsted Street with Right-In/Right-Out Access Drive

An access drive restricted to right-in/right-out only turning movements serving this development and the existing land uses south of the site is located off Halsted Street, approximately mid-distance between 174th Street and 175th Street with outbound movements under stop sign control. The proposed southbound right-turn lane on Halsted Street at 175th Street will extend north of this access drive, thereby providing right-turn storage for vehicles accessing this driveway access. Based on the results of the capacity analyses, the eastbound right-turn movement will operate at a LOS A. As such, no additional geometric or traffic control improvements are necessary at this intersection to accommodate future traffic volumes.

Conclusion

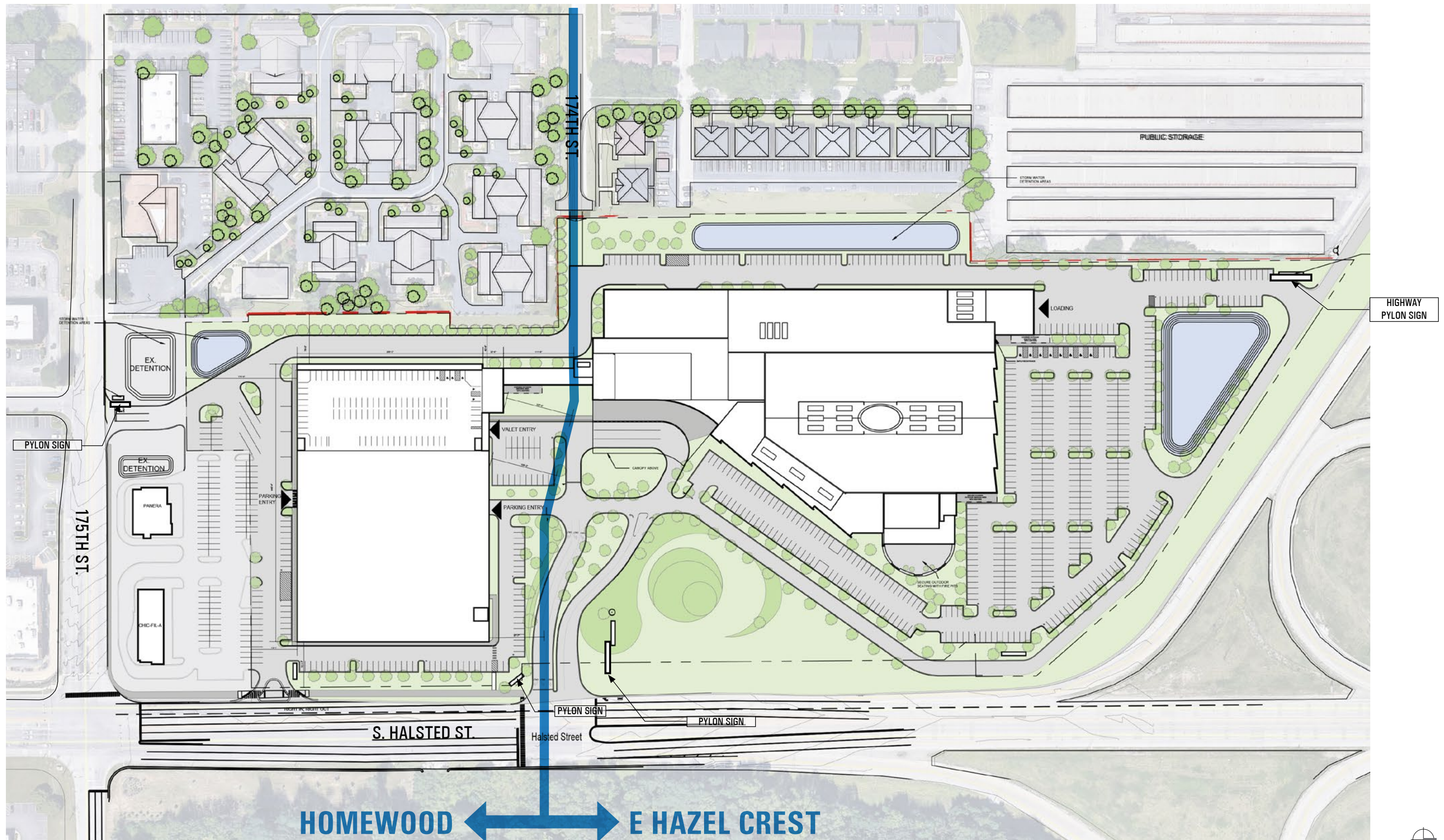
Based on the preceding analyses and recommendations, the following conclusions have been made:

- The traffic estimated to be generated by the proposed casino development, given the currently under construction roadway improvements, will have a limited impact on the surrounding roadway network.
- No additional traffic control or roadway improvements are needed or recommended at the intersections of Halsted Street with the right-in/right-out access drive or at the intersection of 175th Street with Lathrop Avenue.
- The realignment and signalization of the access drive off 175th Street coupled with the restriping of 175th Street will ensure that the existing and projected traffic volumes are accommodated efficiently.
- The provision of an emergency only access connection with 174th Street to the west will ensure that safe and efficient emergency access is provided.

Appendix

Site Plan
Traffic Count Summary Sheets
CMAP Traffic Projection Letter
Level of Service Criteria
Capacity Analysis
Proposed 175th Street Striping
Red Time Formula Queue Calculation

Site Plan



SITE PLAN

WIND CREEK CASINO PARKING GARAGE CONCEPT

EAST HAZEL CREST, ILLINOIS
HOMEWOOD, ILLINOIS
01.19.2022

Traffic Count Summary Sheets



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

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

Count Name: 175th Street with Lathrop Avenue
Site Code:
Start Date: 07/25/2019
Page No: 1

Turning Movement Data

Start Time	175th Street Eastbound						175th Street Westbound						Lathrop Avenue Northbound						Lathrop Avenue 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	0	67	2	0	69	0	1	58	0	1	59	0	3	0	1	0	4	0	2	0	7	0	9	141
7:15 AM	0	1	46	2	0	49	0	1	76	1	0	78	0	3	0	0	0	3	0	2	0	4	0	6	136
7:30 AM	0	0	47	4	0	51	0	1	56	0	0	57	0	3	0	0	0	3	0	0	0	4	0	4	115
7:45 AM	0	0	45	2	0	47	0	0	79	3	0	82	0	4	0	0	0	4	0	1	0	17	0	18	151
Hourly Total	0	1	205	10	0	216	0	3	269	4	1	276	0	13	0	1	0	14	0	5	0	32	0	37	543
8:00 AM	0	1	54	4	0	59	0	5	80	0	0	85	0	7	2	2	0	11	0	1	1	14	0	16	171
8:15 AM	0	0	74	2	0	76	0	1	78	1	0	80	0	7	0	1	0	8	0	3	1	20	0	24	188
8:30 AM	0	0	73	4	0	77	0	2	66	2	0	70	0	2	1	2	1	5	0	3	4	11	0	18	170
8:45 AM	0	2	65	3	0	70	0	2	60	1	0	63	0	2	1	0	0	3	0	0	1	8	0	9	145
Hourly Total	0	3	266	13	0	282	0	10	284	4	0	298	0	18	4	5	1	27	0	7	7	53	0	67	674
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	1	131	7	0	139	0	0	69	6	0	75	0	6	0	1	5	7	0	3	0	12	0	15	236
4:15 PM	0	1	104	6	0	111	0	0	74	3	1	77	0	6	1	0	0	7	0	3	0	7	0	10	205
4:30 PM	0	0	125	6	0	131	0	3	52	4	0	59	0	6	1	3	0	10	0	4	1	6	0	11	211
4:45 PM	0	0	91	3	0	94	0	0	76	3	0	79	0	7	2	2	0	11	0	6	0	3	1	9	193
Hourly Total	0	2	451	22	0	475	0	3	271	16	1	290	0	25	4	6	5	35	0	16	1	28	1	45	845
5:00 PM	0	1	133	6	0	140	0	0	76	5	0	81	0	7	5	8	0	20	0	3	0	10	1	13	254
5:15 PM	0	0	95	11	0	106	0	0	73	1	1	74	0	3	1	0	0	4	0	4	0	8	1	12	196
5:30 PM	0	0	102	5	0	107	0	0	58	2	0	60	0	7	1	1	0	9	0	5	0	7	0	12	188
5:45 PM	0	0	103	2	0	105	0	0	76	3	1	79	0	8	0	1	0	9	0	7	0	9	2	16	209
Hourly Total	0	1	433	24	0	458	0	0	283	11	2	294	0	25	7	10	0	42	0	19	0	34	4	53	847
6:00 PM	1	1	94	4	0	100	0	0	44	4	0	48	0	4	2	1	0	7	0	1	1	6	0	8	163
6:15 PM	0	3	76	2	0	81	0	0	64	4	0	68	0	5	4	0	0	9	0	5	1	5	0	11	169
6:30 PM	0	1	80	3	0	84	0	0	47	2	0	49	0	4	2	0	0	6	0	7	2	2	0	11	150
6:45 PM	0	0	75	3	0	78	0	3	51	4	0	58	0	3	2	1	0	6	0	3	0	1	0	4	146
Hourly Total	1	5	325	12	0	343	0	3	206	14	0	223	0	16	10	2	0	28	0	16	4	14	0	34	628
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	1	88	4	0	93	0	0	74	3	0	77	0	6	1	2	0	9	0	3	0	5	0	8	187
11:15 AM	0	0	76	1	0	77	0	0	68	2	0	70	0	8	0	1	0	9	0	5	3	4	1	12	168
11:30 AM	0	0	83	4	0	87	0	1	52	3	0	56	0	6	2	1	0	9	0	4	1	1	0	6	158
11:45 AM	0	3	70	5	0	78	0	0	62	0	1	62	0	4	1	0	0	5	0	3	0	2	0	5	150
Hourly Total	0	4	317	14	0	335	0	1	256	8	1	265	0	24	4	4	0	32	0	15	4	12	1	31	663
12:00 PM	0	0	97	7	1	104	0	0	43	4	0	47	0	7	0	0	0	7	0	3	2	6	0	11	169
12:15 PM	0	4	90	9	0	103	0	0	63	4	1	67	0	7	2	0	0	9	0	2	1	7	0	10	189
12:30 PM	0	0	93	8	0	101	0	0	65	1	0	66	0	6	2	0	0	8	0	3	1	5	0	9	184

12:45 PM	0	0	85	2	0	87	0	0	59	4	2	63	0	7	2	1	0	10	0	7	0	4	0	11	171
Hourly Total	0	4	365	26	1	395	0	0	230	13	3	243	0	27	6	1	0	34	0	15	4	22	0	41	713
1:00 PM	0	0	74	3	0	77	0	0	69	4	1	73	0	9	1	0	0	10	0	9	0	8	0	17	177
1:15 PM	0	0	95	3	0	98	0	1	55	3	0	59	0	4	0	1	0	5	0	15	3	10	0	28	190
1:30 PM	0	0	82	2	0	84	0	0	71	2	0	73	0	1	1	1	0	3	0	11	1	20	0	32	192
1:45 PM	0	0	98	6	0	104	0	0	73	5	0	78	0	7	0	0	0	7	0	9	2	13	0	24	213
Hourly Total	0	0	349	14	0	363	0	1	268	14	1	283	0	21	2	2	0	25	0	44	6	51	0	101	772
Grand Total	1	20	2711	135	1	2867	0	21	2067	84	9	2172	0	169	37	31	6	237	0	137	26	246	6	409	5685
Approach %	0.0	0.7	94.6	4.7	-	-	0.0	1.0	95.2	3.9	-	-	0.0	71.3	15.6	13.1	-	-	0.0	33.5	6.4	60.1	-	-	-
Total %	0.0	0.4	47.7	2.4	-	50.4	0.0	0.4	36.4	1.5	-	38.2	0.0	3.0	0.7	0.5	-	4.2	0.0	2.4	0.5	4.3	-	7.2	-
Lights	1	20	2658	135	-	2814	0	10	2004	83	-	2097	0	167	37	22	-	226	0	136	26	243	-	405	5542
% Lights	100.0	100.0	98.0	100.0	-	98.2	-	47.6	97.0	98.8	-	96.5	-	98.8	100.0	71.0	-	95.4	-	99.3	100.0	98.8	-	99.0	97.5
Buses	0	0	8	0	-	8	0	0	11	0	-	11	0	0	0	0	-	0	0	0	0	2	-	2	21
% Buses	0.0	0.0	0.3	0.0	-	0.3	-	0.0	0.5	0.0	-	0.5	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.8	-	0.5	0.4
Single-Unit Trucks	0	0	23	0	-	23	0	4	27	1	-	32	0	1	0	4	-	5	0	1	0	1	-	2	62
% Single-Unit Trucks	0.0	0.0	0.8	0.0	-	0.8	-	19.0	1.3	1.2	-	1.5	-	0.6	0.0	12.9	-	2.1	-	0.7	0.0	0.4	-	0.5	1.1
Articulated Trucks	0	0	22	0	-	22	0	7	25	0	-	32	0	1	0	4	-	5	0	0	0	0	-	0	59
% Articulated Trucks	0.0	0.0	0.8	0.0	-	0.8	-	33.3	1.2	0.0	-	1.5	-	0.6	0.0	12.9	-	2.1	-	0.0	0.0	0.0	-	0.0	1.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	1	-	1	0	0	0	0	-	0	1
% 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	3.2	-	0.4	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	1	-	-	-	-	-	9	-	-	-	-	-	6	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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

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

Count Name: 175th Street with Lathrop Avenue
Site Code:
Start Date: 07/25/2019
Page No: 3

Turning Movement Peak Hour Data (7:45 AM)

Start Time	175th Street Eastbound						175th Street Westbound						Lathrop Avenue Northbound						Lathrop Avenue 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	
7:45 AM	0	0	45	2	0	47	0	0	79	3	0	82	0	4	0	0	0	4	0	1	0	17	0	18	151
8:00 AM	0	1	54	4	0	59	0	5	80	0	0	85	0	7	2	2	0	11	0	1	1	14	0	16	171
8:15 AM	0	0	74	2	0	76	0	1	78	1	0	80	0	7	0	1	0	8	0	3	1	20	0	24	188
8:30 AM	0	0	73	4	0	77	0	2	66	2	0	70	0	2	1	2	1	5	0	3	4	11	0	18	170
Total	0	1	246	12	0	259	0	8	303	6	0	317	0	20	3	5	1	28	0	8	6	62	0	76	680
Approach %	0.0	0.4	95.0	4.6	-	-	0.0	2.5	95.6	1.9	-	-	0.0	71.4	10.7	17.9	-	-	0.0	10.5	7.9	81.6	-	-	-
Total %	0.0	0.1	36.2	1.8	-	38.1	0.0	1.2	44.6	0.9	-	46.6	0.0	2.9	0.4	0.7	-	4.1	0.0	1.2	0.9	9.1	-	11.2	-
PHF	0.000	0.250	0.831	0.750	-	0.841	0.000	0.400	0.947	0.500	-	0.932	0.000	0.714	0.375	0.625	-	0.636	0.000	0.667	0.375	0.775	-	0.792	0.904
Lights	0	1	236	12	-	249	0	5	287	6	-	298	0	19	3	1	-	23	0	8	6	60	-	74	644
% Lights	-	100.0	95.9	100.0	-	96.1	-	62.5	94.7	100.0	-	94.0	-	95.0	100.0	20.0	-	82.1	-	100.0	100.0	96.8	-	97.4	94.7
Buses	0	0	3	0	-	3	0	0	3	0	-	3	0	0	0	0	-	0	0	0	0	2	-	2	8
% Buses	-	0.0	1.2	0.0	-	1.2	-	0.0	1.0	0.0	-	0.9	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	3.2	-	2.6	1.2
Single-Unit Trucks	0	0	3	0	-	3	0	2	7	0	-	9	0	1	0	2	-	3	0	0	0	0	-	0	15
% Single-Unit Trucks	-	0.0	1.2	0.0	-	1.2	-	25.0	2.3	0.0	-	2.8	-	5.0	0.0	40.0	-	10.7	-	0.0	0.0	0.0	-	0.0	2.2
Articulated Trucks	0	0	4	0	-	4	0	1	6	0	-	7	0	0	0	2	-	2	0	0	0	0	-	0	13
% Articulated Trucks	-	0.0	1.6	0.0	-	1.5	-	12.5	2.0	0.0	-	2.2	-	0.0	0.0	40.0	-	7.1	-	0.0	0.0	0.0	-	0.0	1.9
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-



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

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

Count Name: 175th Street with Lathrop Avenue
Site Code:
Start Date: 07/25/2019
Page No: 4

Turning Movement Peak Hour Data (4:30 PM)

Start Time	175th Street Eastbound						175th Street Westbound						Lathrop Avenue Northbound						Lathrop Avenue 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	
4:30 PM	0	0	125	6	0	131	0	3	52	4	0	59	0	6	1	3	0	10	0	4	1	6	0	11	211
4:45 PM	0	0	91	3	0	94	0	0	76	3	0	79	0	7	2	2	0	11	0	6	0	3	1	9	193
5:00 PM	0	1	133	6	0	140	0	0	76	5	0	81	0	7	5	8	0	20	0	3	0	10	1	13	254
5:15 PM	0	0	95	11	0	106	0	0	73	1	1	74	0	3	1	0	0	4	0	4	0	8	1	12	196
Total	0	1	444	26	0	471	0	3	277	13	1	293	0	23	9	13	0	45	0	17	1	27	3	45	854
Approach %	0.0	0.2	94.3	5.5	-	-	0.0	1.0	94.5	4.4	-	-	0.0	51.1	20.0	28.9	-	-	0.0	37.8	2.2	60.0	-	-	-
Total %	0.0	0.1	52.0	3.0	-	55.2	0.0	0.4	32.4	1.5	-	34.3	0.0	2.7	1.1	1.5	-	5.3	0.0	2.0	0.1	3.2	-	5.3	-
PHF	0.000	0.250	0.835	0.591	-	0.841	0.000	0.250	0.911	0.650	-	0.904	0.000	0.821	0.450	0.406	-	0.563	0.000	0.708	0.250	0.675	-	0.865	0.841
Lights	0	1	437	26	-	464	0	2	274	13	-	289	0	23	9	11	-	43	0	17	1	27	-	45	841
% Lights	-	100.0	98.4	100.0	-	98.5	-	66.7	98.9	100.0	-	98.6	-	100.0	100.0	84.6	-	95.6	-	100.0	100.0	100.0	-	100.0	98.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	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
Single-Unit Trucks	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	1	-	1	0	0	0	0	-	0	3
% Single-Unit Trucks	-	0.0	0.5	0.0	-	0.4	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	7.7	-	2.2	-	0.0	0.0	0.0	-	0.0	0.4
Articulated Trucks	0	0	5	0	-	5	0	1	3	0	-	4	0	0	0	1	-	1	0	0	0	0	-	0	10
% Articulated Trucks	-	0.0	1.1	0.0	-	1.1	-	33.3	1.1	0.0	-	1.4	-	0.0	0.0	7.7	-	2.2	-	0.0	0.0	0.0	-	0.0	1.2
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	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

[illegible]



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

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

Count Name: 195th Street with Access Drive -
Weekday
Site Code:
Start Date: 09/16/2019
Page No: 1

Turning Movement Data

Start Time	175th Street Eastbound						175th Street Westbound						Walmart Access Drive Northbound						Access Drive 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	5	36	8	0	49	0	6	64	9	0	79	0	9	1	6	0	16	0	7	0	2	0	9	153
7:15 AM	0	6	49	11	0	66	0	7	79	10	0	96	0	4	3	7	0	14	0	8	0	8	0	16	192
7:30 AM	0	4	38	7	0	49	0	9	92	14	0	115	0	12	2	6	0	20	0	10	2	12	0	24	208
7:45 AM	0	6	40	9	0	55	0	13	115	10	0	138	0	4	1	8	0	13	0	13	2	8	1	23	229
Hourly Total	0	21	163	35	0	219	0	35	350	43	0	428	0	29	7	27	0	63	0	38	4	30	1	72	782
8:00 AM	0	5	53	9	0	67	0	4	117	14	0	135	0	8	0	10	0	18	0	3	0	8	0	11	231
8:15 AM	0	7	43	16	0	66	0	5	123	8	0	136	0	10	2	12	0	24	0	20	2	9	2	31	257
8:30 AM	0	12	44	25	1	81	0	14	74	13	0	101	0	13	3	8	0	24	0	13	1	9	3	23	229
8:45 AM	0	9	46	10	0	65	0	13	68	10	0	91	0	13	1	13	0	27	0	16	3	7	2	26	209
Hourly Total	0	33	186	60	1	279	0	36	382	45	0	463	0	44	6	43	0	93	0	52	6	33	7	91	926
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	5	129	35	0	169	0	22	48	17	0	87	0	19	4	33	0	56	0	21	4	16	0	41	353
4:15 PM	0	6	79	26	0	111	1	34	55	22	3	112	0	22	3	35	0	60	0	25	5	14	0	44	327
4:30 PM	0	6	100	26	0	132	1	30	39	23	0	93	0	22	6	32	0	60	0	32	4	15	1	51	336
4:45 PM	0	11	98	44	0	153	0	45	57	28	2	130	0	16	3	27	0	46	0	22	9	11	0	42	371
Hourly Total	0	28	406	131	0	565	2	131	199	90	5	422	0	79	16	127	0	222	0	100	22	56	1	178	1387
5:00 PM	0	8	140	43	0	191	0	29	51	26	0	106	0	17	5	30	0	52	0	13	5	16	1	34	383
5:15 PM	0	9	97	35	0	141	0	34	48	21	0	103	0	16	4	34	0	54	0	22	1	14	0	37	335
5:30 PM	0	11	71	35	0	117	0	34	62	19	0	115	0	15	7	44	0	66	0	22	5	8	0	35	333
5:45 PM	0	12	79	27	0	118	0	27	62	21	0	110	0	18	10	36	0	64	0	21	1	17	0	39	331
Hourly Total	0	40	387	140	0	567	0	124	223	87	0	434	0	66	26	144	0	236	0	78	12	55	1	145	1382
6:00 PM	0	7	72	37	0	116	2	39	58	29	0	128	0	19	7	47	0	73	0	25	11	11	0	47	364
6:15 PM	0	13	53	34	0	100	0	30	40	24	0	94	0	23	6	46	0	75	0	30	9	13	0	52	321
6:30 PM	0	7	48	25	0	80	0	30	61	15	0	106	0	23	4	46	0	73	0	18	4	9	0	31	290
6:45 PM	0	11	42	27	0	80	1	22	48	24	0	95	0	25	9	43	0	77	0	19	3	7	1	29	281
Hourly Total	0	38	215	123	0	376	3	121	207	92	0	423	0	90	26	182	0	298	0	92	27	40	1	159	1256
Grand Total	0	160	1357	489	1	2006	5	447	1361	357	5	2170	0	308	81	523	0	912	0	360	71	214	11	645	5733
Approach %	0.0	8.0	67.6	24.4	-	-	0.2	20.6	62.7	16.5	-	-	0.0	33.8	8.9	57.3	-	-	0.0	55.8	11.0	33.2	-	-	-
Total %	0.0	2.8	23.7	8.5	-	35.0	0.1	7.8	23.7	6.2	-	37.9	0.0	5.4	1.4	9.1	-	15.9	0.0	6.3	1.2	3.7	-	11.3	-
Lights	0	157	1290	484	-	1931	5	438	1289	353	-	2085	0	301	80	510	-	891	0	357	69	212	-	638	5545
% Lights	-	98.1	95.1	99.0	-	96.3	100.0	98.0	94.7	98.9	-	96.1	-	97.7	98.8	97.5	-	97.7	-	99.2	97.2	99.1	-	98.9	96.7
Buses	0	2	12	4	-	18	0	3	6	0	-	9	0	1	0	1	-	2	0	1	0	1	-	2	31
% Buses	-	1.3	0.9	0.8	-	0.9	0.0	0.7	0.4	0.0	-	0.4	-	0.3	0.0	0.2	-	0.2	-	0.3	0.0	0.5	-	0.3	0.5
Single-Unit Trucks	0	1	23	1	-	25	0	3	32	4	-	39	0	5	0	7	-	12	0	2	2	1	-	5	81
% Single-Unit Trucks	-	0.6	1.7	0.2	-	1.2	0.0	0.7	2.4	1.1	-	1.8	-	1.6	0.0	1.3	-	1.3	-	0.6	2.8	0.5	-	0.8	1.4

Articulated Trucks	0	0	32	0	-	32	0	3	34	0	-	37	0	1	0	5	-	6	0	0	0	0	-	0	75
% Articulated Trucks	-	0.0	2.4	0.0	-	1.6	0.0	0.7	2.5	0.0	-	1.7	-	0.3	0.0	1.0	-	0.7	-	0.0	0.0	0.0	-	0.0	1.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	1.2	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	11	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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

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

Count Name: 195th Street with Access Drive -
Weekday
Site Code:
Start Date: 09/16/2019
Page No: 3

Turning Movement Peak Hour Data (7:45 AM)

Start Time	175th Street Eastbound						175th Street Westbound						Walmart Access Drive Northbound						Access Drive 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	
7:45 AM	0	6	40	9	0	55	0	13	115	10	0	138	0	4	1	8	0	13	0	13	2	8	1	23	229
8:00 AM	0	5	53	9	0	67	0	4	117	14	0	135	0	8	0	10	0	18	0	3	0	8	0	11	231
8:15 AM	0	7	43	16	0	66	0	5	123	8	0	136	0	10	2	12	0	24	0	20	2	9	2	31	257
8:30 AM	0	12	44	25	1	81	0	14	74	13	0	101	0	13	3	8	0	24	0	13	1	9	3	23	229
Total	0	30	180	59	1	269	0	36	429	45	0	510	0	35	6	38	0	79	0	49	5	34	6	88	946
Approach %	0.0	11.2	66.9	21.9	-	-	0.0	7.1	84.1	8.8	-	-	0.0	44.3	7.6	48.1	-	-	0.0	55.7	5.7	38.6	-	-	-
Total %	0.0	3.2	19.0	6.2	-	28.4	0.0	3.8	45.3	4.8	-	53.9	0.0	3.7	0.6	4.0	-	8.4	0.0	5.2	0.5	3.6	-	9.3	-
PHF	0.000	0.625	0.849	0.590	-	0.830	0.000	0.643	0.872	0.804	-	0.924	0.000	0.673	0.500	0.792	-	0.823	0.000	0.613	0.625	0.944	-	0.710	0.920
Lights	0	28	160	56	-	244	0	35	399	44	-	478	0	32	6	35	-	73	0	48	4	32	-	84	879
% Lights	-	93.3	88.9	94.9	-	90.7	-	97.2	93.0	97.8	-	93.7	-	91.4	100.0	92.1	-	92.4	-	98.0	80.0	94.1	-	95.5	92.9
Buses	0	2	4	2	-	8	0	1	3	0	-	4	0	0	0	0	-	0	0	1	0	1	-	2	14
% Buses	-	6.7	2.2	3.4	-	3.0	-	2.8	0.7	0.0	-	0.8	-	0.0	0.0	0.0	-	0.0	-	2.0	0.0	2.9	-	2.3	1.5
Single-Unit Trucks	0	0	6	1	-	7	0	0	15	1	-	16	0	2	0	3	-	5	0	0	1	1	-	2	30
% Single-Unit Trucks	-	0.0	3.3	1.7	-	2.6	-	0.0	3.5	2.2	-	3.1	-	5.7	0.0	7.9	-	6.3	-	0.0	20.0	2.9	-	2.3	3.2
Articulated Trucks	0	0	10	0	-	10	0	0	12	0	-	12	0	1	0	0	-	1	0	0	0	0	-	0	23
% Articulated Trucks	-	0.0	5.6	0.0	-	3.7	-	0.0	2.8	0.0	-	2.4	-	2.9	0.0	0.0	-	1.3	-	0.0	0.0	0.0	-	0.0	2.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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

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

Count Name: 195th Street with Access Drive -
Weekday
Site Code:
Start Date: 09/16/2019
Page No: 4

Turning Movement Peak Hour Data (4:30 PM)

Start Time	175th Street Eastbound						175th Street Westbound						Walmart Access Drive Northbound						Access Drive 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	
4:30 PM	0	6	100	26	0	132	1	30	39	23	0	93	0	22	6	32	0	60	0	32	4	15	1	51	336
4:45 PM	0	11	98	44	0	153	0	45	57	28	2	130	0	16	3	27	0	46	0	22	9	11	0	42	371
5:00 PM	0	8	140	43	0	191	0	29	51	26	0	106	0	17	5	30	0	52	0	13	5	16	1	34	383
5:15 PM	0	9	97	35	0	141	0	34	48	21	0	103	0	16	4	34	0	54	0	22	1	14	0	37	335
Total	0	34	435	148	0	617	1	138	195	98	2	432	0	71	18	123	0	212	0	89	19	56	2	164	1425
Approach %	0.0	5.5	70.5	24.0	-	-	0.2	31.9	45.1	22.7	-	-	0.0	33.5	8.5	58.0	-	-	0.0	54.3	11.6	34.1	-	-	-
Total %	0.0	2.4	30.5	10.4	-	43.3	0.1	9.7	13.7	6.9	-	30.3	0.0	5.0	1.3	8.6	-	14.9	0.0	6.2	1.3	3.9	-	11.5	-
PHF	0.000	0.773	0.777	0.841	-	0.808	0.250	0.767	0.855	0.875	-	0.831	0.000	0.807	0.750	0.904	-	0.883	0.000	0.695	0.528	0.875	-	0.804	0.930
Lights	0	34	425	148	-	607	1	136	188	98	-	423	0	71	18	120	-	209	0	89	18	56	-	163	1402
% Lights	-	100.0	97.7	100.0	-	98.4	100.0	98.6	96.4	100.0	-	97.9	-	100.0	100.0	97.6	-	98.6	-	100.0	94.7	100.0	-	99.4	98.4
Buses	0	0	1	0	-	1	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	3
% Buses	-	0.0	0.2	0.0	-	0.2	0.0	1.4	0.0	0.0	-	0.5	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.2
Single-Unit Trucks	0	0	1	0	-	1	0	0	2	0	-	2	0	0	0	2	-	2	0	0	1	0	-	1	6
% Single-Unit Trucks	-	0.0	0.2	0.0	-	0.2	0.0	0.0	1.0	0.0	-	0.5	-	0.0	0.0	1.6	-	0.9	-	0.0	5.3	0.0	-	0.6	0.4
Articulated Trucks	0	0	8	0	-	8	0	0	5	0	-	5	0	0	0	1	-	1	0	0	0	0	-	0	14
% Articulated Trucks	-	0.0	1.8	0.0	-	1.3	0.0	0.0	2.6	0.0	-	1.2	-	0.0	0.0	0.8	-	0.5	-	0.0	0.0	0.0	-	0.0	1.0
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	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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

Count Name: 195th Street with Access Drives
Site Code:
Start Date: 09/14/2019
Page No: 1

Turning Movement Data

Start Time	195th Street Eastbound						195th Street Westbound						Walmart Access Drive Northbound						Access Drive 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	
11:00 AM	0	9	69	29	1	107	0	26	52	21	0	99	0	18	7	23	0	48	0	21	2	10	1	33	287
11:15 AM	0	14	49	27	1	90	1	33	41	19	0	94	0	13	10	36	0	59	0	25	4	11	0	40	283
11:30 AM	0	18	52	21	0	91	0	24	47	18	0	89	0	23	9	30	0	62	1	29	6	14	0	50	292
11:45 AM	0	13	58	24	1	95	0	27	55	32	2	114	0	13	8	29	0	50	0	18	3	15	0	36	295
Hourly Total	0	54	228	101	3	383	1	110	195	90	2	396	0	67	34	118	0	219	1	93	15	50	1	159	1157
12:00 PM	0	13	70	32	0	115	0	43	46	29	0	118	0	21	5	31	0	57	0	26	7	15	0	48	338
12:15 PM	0	10	61	32	1	103	1	40	55	37	0	133	0	23	8	27	0	58	0	19	13	8	1	40	334
12:30 PM	0	9	63	29	0	101	0	48	50	39	2	137	0	19	10	38	0	67	0	22	12	13	0	47	352
12:45 PM	0	18	53	34	0	105	0	29	55	34	1	118	0	21	10	44	1	75	0	32	13	20	0	65	363
Hourly Total	0	50	247	127	1	424	1	160	206	139	3	506	0	84	33	140	1	257	0	99	45	56	1	200	1387
1:00 PM	0	6	52	37	1	95	0	40	45	40	1	125	0	23	8	38	1	69	0	26	4	12	0	42	331
1:15 PM	0	13	55	35	0	103	0	33	37	26	1	96	0	25	7	36	0	68	0	32	8	9	1	49	316
1:30 PM	0	11	43	29	0	83	0	40	53	33	0	126	0	18	6	51	0	75	0	31	7	11	0	49	333
1:45 PM	0	10	56	28	1	94	0	35	52	34	0	121	0	13	10	37	1	60	0	34	18	12	1	64	339
Hourly Total	0	40	206	129	2	375	0	148	187	133	2	468	0	79	31	162	2	272	0	123	37	44	2	204	1319
Grand Total	0	144	681	357	6	1182	2	418	588	362	7	1370	0	230	98	420	3	748	1	315	97	150	4	563	3863
Approach %	0.0	12.2	57.6	30.2	-	-	0.1	30.5	42.9	26.4	-	-	0.0	30.7	13.1	56.1	-	-	0.2	56.0	17.2	26.6	-	-	-
Total %	0.0	3.7	17.6	9.2	-	30.6	0.1	10.8	15.2	9.4	-	35.5	0.0	6.0	2.5	10.9	-	19.4	0.0	8.2	2.5	3.9	-	14.6	-
Lights	0	144	675	355	-	1174	2	414	582	362	-	1360	0	228	98	415	-	741	1	314	97	150	-	562	3837
% Lights	-	100.0	99.1	99.4	-	99.3	100.0	99.0	99.0	100.0	-	99.3	-	99.1	100.0	98.8	-	99.1	100.0	99.7	100.0	100.0	-	99.8	99.3
Buses	0	0	0	1	-	1	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	3
% Buses	-	0.0	0.0	0.3	-	0.1	0.0	0.2	0.0	0.0	-	0.1	-	0.4	0.0	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.1
Single-Unit Trucks	0	0	3	1	-	4	0	1	4	0	-	5	0	1	0	4	-	5	0	1	0	0	-	1	15
% Single-Unit Trucks	-	0.0	0.4	0.3	-	0.3	0.0	0.2	0.7	0.0	-	0.4	-	0.4	0.0	1.0	-	0.7	0.0	0.3	0.0	0.0	-	0.2	0.4
Articulated Trucks	0	0	3	0	-	3	0	1	2	0	-	3	0	0	0	1	-	1	0	0	0	0	-	0	7
% Articulated Trucks	-	0.0	0.4	0.0	-	0.3	0.0	0.2	0.3	0.0	-	0.2	-	0.0	0.0	0.2	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.2
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	0.0	0.2	0.0	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	6	-	-	-	-	-	7	-	-	-	-	-	3	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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

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

Count Name: 195th Street with Access Drives
Site Code:
Start Date: 09/14/2019
Page No: 2

Turning Movement Peak Hour Data (11:00 AM)

Start Time	195th Street Eastbound						195th Street Westbound						Walmart Access Drive Northbound						Access Drive 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	
11:00 AM	0	9	69	29	1	107	0	26	52	21	0	99	0	18	7	23	0	48	0	21	2	10	1	33	287
11:15 AM	0	14	49	27	1	90	1	33	41	19	0	94	0	13	10	36	0	59	0	25	4	11	0	40	283
11:30 AM	0	18	52	21	0	91	0	24	47	18	0	89	0	23	9	30	0	62	1	29	6	14	0	50	292
11:45 AM	0	13	58	24	1	95	0	27	55	32	2	114	0	13	8	29	0	50	0	18	3	15	0	36	295
Total	0	54	228	101	3	383	1	110	195	90	2	396	0	67	34	118	0	219	1	93	15	50	1	159	1157
Approach %	0.0	14.1	59.5	26.4	-	-	0.3	27.8	49.2	22.7	-	-	0.0	30.6	15.5	53.9	-	-	0.6	58.5	9.4	31.4	-	-	-
Total %	0.0	4.7	19.7	8.7	-	33.1	0.1	9.5	16.9	7.8	-	34.2	0.0	5.8	2.9	10.2	-	18.9	0.1	8.0	1.3	4.3	-	13.7	-
PHF	0.000	0.750	0.826	0.871	-	0.895	0.250	0.833	0.886	0.703	-	0.868	0.000	0.728	0.850	0.819	-	0.883	0.250	0.802	0.625	0.833	-	0.795	0.981
Lights	0	54	226	100	-	380	1	109	192	90	-	392	0	65	34	116	-	215	1	93	15	50	-	159	1146
% Lights	-	100.0	99.1	99.0	-	99.2	100.0	99.1	98.5	100.0	-	99.0	-	97.0	100.0	98.3	-	98.2	100.0	100.0	100.0	100.0	-	100.0	99.0
Buses	0	0	0	1	-	1	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	2
% Buses	-	0.0	0.0	1.0	-	0.3	0.0	0.0	0.0	0.0	-	0.0	-	1.5	0.0	0.0	-	0.5	0.0	0.0	0.0	0.0	-	0.0	0.2
Single-Unit Trucks	0	0	1	0	-	1	0	1	2	0	-	3	0	1	0	1	-	2	0	0	0	0	-	0	6
% Single-Unit Trucks	-	0.0	0.4	0.0	-	0.3	0.0	0.9	1.0	0.0	-	0.8	-	1.5	0.0	0.8	-	0.9	0.0	0.0	0.0	0.0	-	0.0	0.5
Articulated Trucks	0	0	1	0	-	1	0	0	1	0	-	1	0	0	0	1	-	1	0	0	0	0	-	0	3
% Articulated Trucks	-	0.0	0.4	0.0	-	0.3	0.0	0.0	0.5	0.0	-	0.3	-	0.0	0.0	0.8	-	0.5	0.0	0.0	0.0	0.0	-	0.0	0.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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

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

Count Name: 195th Street with Access Drives
Site Code:
Start Date: 09/14/2019
Page No: 3

Turning Movement Peak Hour Data (12:00 PM)

Start Time	195th Street Eastbound						195th Street Westbound						Walmart Access Drive Northbound						Access Drive 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	
12:00 PM	0	13	70	32	0	115	0	43	46	29	0	118	0	21	5	31	0	57	0	26	7	15	0	48	338
12:15 PM	0	10	61	32	1	103	1	40	55	37	0	133	0	23	8	27	0	58	0	19	13	8	1	40	334
12:30 PM	0	9	63	29	0	101	0	48	50	39	2	137	0	19	10	38	0	67	0	22	12	13	0	47	352
12:45 PM	0	18	53	34	0	105	0	29	55	34	1	118	0	21	10	44	1	75	0	32	13	20	0	65	363
Total	0	50	247	127	1	424	1	160	206	139	3	506	0	84	33	140	1	257	0	99	45	56	1	200	1387
Approach %	0.0	11.8	58.3	30.0	-	-	0.2	31.6	40.7	27.5	-	-	0.0	32.7	12.8	54.5	-	-	0.0	49.5	22.5	28.0	-	-	-
Total %	0.0	3.6	17.8	9.2	-	30.6	0.1	11.5	14.9	10.0	-	36.5	0.0	6.1	2.4	10.1	-	18.5	0.0	7.1	3.2	4.0	-	14.4	-
PHF	0.000	0.694	0.882	0.934	-	0.922	0.250	0.833	0.936	0.891	-	0.923	0.000	0.913	0.825	0.795	-	0.857	0.000	0.773	0.865	0.700	-	0.769	0.955
Lights	0	50	244	126	-	420	1	160	204	139	-	504	0	84	33	138	-	255	0	99	45	56	-	200	1379
% Lights	-	100.0	98.8	99.2	-	99.1	100.0	100.0	99.0	100.0	-	99.6	-	100.0	100.0	98.6	-	99.2	-	100.0	100.0	100.0	-	100.0	99.4
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	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
Single-Unit Trucks	0	0	2	1	-	3	0	0	1	0	-	1	0	0	0	2	-	2	0	0	0	0	-	0	6
% Single-Unit Trucks	-	0.0	0.8	0.8	-	0.7	0.0	0.0	0.5	0.0	-	0.2	-	0.0	0.0	1.4	-	0.8	-	0.0	0.0	0.0	-	0.0	0.4
Articulated Trucks	0	0	1	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	-	0.0	0.4	0.0	-	0.2	0.0	0.0	0.5	0.0	-	0.2	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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

Count Name: Halsted Street with 174th Street
Site Code:
Start Date: 07/25/2019
Page No: 1

Turning Movement Data

Start Time	174th Street Eastbound					Halsted Street Northbound					Halsted Street Southbound					Int. Total
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	
7:00 AM	0	3	2	0	5	0	1	269	0	270	0	241	9	0	250	525
7:15 AM	0	2	0	0	2	0	1	259	0	260	1	263	6	0	270	532
7:30 AM	0	1	3	0	4	0	0	284	0	284	1	284	8	0	293	581
7:45 AM	0	3	0	0	3	0	2	268	0	270	0	339	26	0	365	638
Hourly Total	0	9	5	0	14	0	4	1080	0	1084	2	1127	49	0	1178	2276
8:00 AM	0	3	2	0	5	0	0	247	0	247	1	301	12	0	314	566
8:15 AM	0	0	1	1	1	0	0	311	0	311	0	314	30	0	344	656
8:30 AM	0	2	0	0	2	0	0	274	0	274	0	306	11	0	317	593
8:45 AM	0	3	0	0	3	0	1	281	0	282	0	292	9	0	301	586
Hourly Total	0	8	3	1	11	0	1	1113	0	1114	1	1213	62	0	1276	2401
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	5	1	0	6	0	0	344	0	344	2	398	15	0	415	765
4:15 PM	0	5	0	0	5	0	1	376	0	377	1	367	10	0	378	760
4:30 PM	0	2	2	0	4	1	1	404	0	406	1	398	8	0	407	817
4:45 PM	0	2	0	2	2	0	1	386	0	387	2	411	11	0	424	813
Hourly Total	0	14	3	2	17	1	3	1510	0	1514	6	1574	44	0	1624	3155
5:00 PM	1	0	1	1	2	0	1	417	0	418	3	419	19	0	441	861
5:15 PM	0	1	1	0	2	0	4	416	0	420	3	424	24	0	451	873
5:30 PM	0	3	0	0	3	0	1	354	0	355	0	430	19	0	449	807
5:45 PM	0	3	0	2	3	0	2	334	0	336	4	407	12	0	423	762
Hourly Total	1	7	2	3	10	0	8	1521	0	1529	10	1680	74	0	1764	3303
6:00 PM	0	0	2	0	2	1	1	368	0	370	1	379	11	0	391	763
6:15 PM	0	3	4	0	7	0	4	327	0	331	0	372	13	0	385	723
6:30 PM	0	2	3	2	5	0	4	327	0	331	0	335	6	0	341	677
6:45 PM	0	0	1	0	1	1	0	286	0	287	0	347	3	0	350	638
Hourly Total	0	5	10	2	15	2	9	1308	0	1319	1	1433	33	0	1467	2801
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	1	3	0	4	0	2	333	0	335	2	292	8	0	302	641
11:15 AM	0	1	1	0	2	1	1	321	0	323	6	354	5	0	365	690
11:30 AM	0	3	1	0	4	1	1	332	0	334	1	303	2	0	306	644
11:45 AM	0	3	2	0	5	0	4	298	0	302	1	293	10	0	304	611
Hourly Total	0	8	7	0	15	2	8	1284	0	1294	10	1242	25	0	1277	2586
12:00 PM	0	1	2	1	3	0	1	336	0	337	5	366	9	0	380	720
12:15 PM	0	5	3	1	8	0	2	326	0	328	2	358	14	0	374	710
12:30 PM	0	2	2	0	4	0	2	320	0	322	0	358	10	0	368	694
12:45 PM	2	0	3	1	5	0	0	305	0	305	6	329	11	0	346	656

[illegible]

[illegible]

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

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

Count Name: Halsted Street with 174th Street
Site Code:
Start Date: 07/25/2019
Page No: 4

Turning Movement Peak Hour Data (4:30 PM)

[illegible]

[illegible]



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

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

Count Name: Halsted Street with 175th Street
Site Code:
Start Date: 07/25/2019
Page No: 1

Turning Movement Data

Start Time	175th Street Eastbound						175th Street Westbound						Halsted Street Northbound						Halsted Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total		
7:00 AM	0	44	3	16	0	63	0	0	2	6	0	8	0	10	213	0	223	1	7	189	49	0	246	540	
7:15 AM	0	34	5	11	0	50	0	2	4	18	0	24	0	16	207	0	223	0	8	177	78	0	263	560	
7:30 AM	0	45	2	10	0	57	0	2	3	8	0	13	0	13	225	0	238	0	8	188	50	0	246	554	
7:45 AM	0	35	6	15	0	56	0	1	8	13	0	22	0	27	211	0	238	0	18	245	95	0	358	674	
Hourly Total	0	158	16	52	0	226	0	5	17	45	0	67	0	66	856	0	922	1	41	799	272	0	1113	2328	
8:00 AM	0	32	3	15	0	50	0	2	7	9	0	18	0	25	207	0	232	0	13	217	76	0	306	606	
8:15 AM	0	43	7	22	0	72	0	0	2	17	1	19	0	25	244	0	269	0	13	237	75	0	325	685	
8:30 AM	0	43	13	17	0	73	0	2	7	9	0	18	0	20	218	0	238	0	14	227	54	0	295	624	
8:45 AM	0	36	5	16	0	57	0	3	11	11	0	25	0	24	231	0	255	0	12	245	47	0	304	641	
Hourly Total	0	154	28	70	0	252	0	7	27	46	1	80	0	94	900	0	994	0	52	926	252	0	1230	2556	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4:00 PM	0	97	13	48	0	158	0	4	16	15	1	35	0	23	228	0	251	0	28	294	58	0	380	824	
4:15 PM	0	83	21	43	0	147	0	3	10	18	0	31	0	28	265	0	293	0	26	289	43	0	358	829	
4:30 PM	0	106	15	58	0	179	0	4	9	20	0	33	0	21	277	0	298	0	17	320	56	0	393	903	
4:45 PM	0	85	10	45	0	140	0	7	13	17	0	37	0	32	305	0	337	0	21	346	39	0	406	920	
Hourly Total	0	371	59	194	0	624	0	18	48	70	1	136	0	104	1075	0	1179	0	92	1249	196	0	1537	3476	
5:00 PM	0	114	21	68	1	203	0	1	8	14	0	23	0	28	288	0	316	0	26	343	47	0	416	958	
5:15 PM	0	79	7	38	0	124	0	6	5	15	0	26	0	41	328	0	369	0	27	355	46	0	428	947	
5:30 PM	0	62	10	47	0	119	0	4	12	15	1	31	0	29	275	0	304	0	30	352	52	0	434	888	
5:45 PM	0	66	20	49	0	135	0	4	15	17	0	36	0	21	244	0	265	0	20	348	56	0	424	860	
Hourly Total	0	321	58	202	1	581	0	15	40	61	1	116	0	119	1135	0	1254	0	103	1398	201	0	1702	3653	
6:00 PM	0	74	15	38	0	127	0	3	8	14	0	25	0	30	241	0	271	0	22	295	45	0	362	785	
6:15 PM	0	65	8	32	0	105	0	5	8	22	0	35	0	31	232	0	263	0	17	312	47	0	376	779	
6:30 PM	0	65	11	41	0	117	0	7	6	13	0	26	0	31	238	0	269	0	12	270	27	0	309	721	
6:45 PM	0	54	13	33	0	100	0	6	13	16	0	35	0	20	204	0	224	0	18	280	64	0	362	721	
Hourly Total	0	258	47	144	0	449	0	21	35	65	0	121	0	112	915	0	1027	0	69	1157	183	0	1409	3006	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11:00 AM	0	51	11	29	0	91	0	2	11	19	0	32	2	27	262	0	291	0	20	238	45	0	303	717	
11:15 AM	0	61	14	30	0	105	0	5	12	24	0	41	0	28	235	0	263	0	22	256	41	0	319	728	
11:30 AM	0	65	21	32	0	118	0	8	9	14	0	31	0	29	250	0	279	1	28	230	38	0	297	725	
11:45 AM	0	53	8	42	0	103	0	6	9	21	0	36	0	34	237	0	271	0	26	212	39	0	277	687	
Hourly Total	0	230	54	133	0	417	0	21	41	78	0	140	2	118	984	0	1104	1	96	936	163	0	1196	2857	
12:00 PM	0	51	16	42	1	109	0	4	10	21	0	35	0	32	265	0	297	0	18	293	43	0	354	795	
12:15 PM	0	65	19	45	1	129	0	2	10	14	0	26	0	28	249	0	277	1	27	272	60	0	360	792	
12:30 PM	0	59	16	38	0	113	0	5	14	18	0	37	0	34	252	0	286	0	34	281	41	0	356	792	

[illegible]

[illegible]

[illegible]

[illegible]



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

Count Name: Halsted Street with Eastbound Off
Ramp
Site Code:
Start Date: 07/25/2019
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Lane 1 (Southbound)

Start Time	Lights	Buses	Single-Unit Trucks	Articulated Trucks	Bicycles on Road	Total
7:00 AM	86	0	3	10	0	99
7:15 AM	94	0	3	5	0	102
7:30 AM	85	0	1	9	0	95
7:45 AM	129	0	4	4	0	137
8:00 AM	109	0	6	7	0	122
8:15 AM	97	0	6	4	0	107
8:30 AM	85	0	4	12	0	101
8:45 AM	64	0	2	5	0	71
4:00 PM	98	0	1	7	0	106
4:15 PM	95	0	1	4	0	100
4:30 PM	114	0	2	4	0	120
4:45 PM	100	0	1	5	0	106
5:00 PM	118	0	2	1	0	121
5:15 PM	124	0	2	3	0	129
5:30 PM	128	0	3	3	0	134
5:45 PM	97	1	3	2	0	103
6:00 PM	109	0	3	6	0	118
6:15 PM	95	0	3	3	0	101
6:30 PM	105	0	2	6	0	113
6:45 PM	74	0	1	4	0	79
11:00 AM	52	0	1	0	0	53
11:15 AM	62	0	3	4	0	69
11:30 AM	61	0	2	2	0	65
11:45 AM	51	0	3	3	0	57
12:00 PM	83	1	3	2	0	89
12:15 PM	77	0	2	1	0	80
12:30 PM	105	0	0	3	0	108
12:45 PM	96	0	3	5	0	104
1:00 PM	94	0	3	2	0	99
1:15 PM	98	0	2	2	0	102
1:30 PM	97	0	1	4	0	102
1:45 PM	103	0	0	1	0	104
Total	2985	2	76	133	0	3196
Total %	93.4	0.1	2.4	4.2	0.0	100.0
AM Times	11:00 AM	7:00 AM	7:45 AM	7:00 AM	11:00 AM	11:00 AM
AM Peaks	226	0	20	28	0	244
PM Times	4:45 PM	5:30 PM	12:45 PM	5:45 PM	6:00 PM	4:45 PM
PM Peaks	470	1	9	17	0	490



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9575 W. Higgins Rd., Suite 400
Rosemont, Illinois, United States 60018
(847)518-9990 bmay@kloainc.com

Count Name: Halsted Street with Eastbound Off Ramp
Site Code:
Start Date: 07/25/2019
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Lane 2 (Southbound)

Start Time	Lights	Buses	Single-Unit Trucks	Articulated Trucks	Bicycles on Road	Total
7:00 AM	77	0	3	5	0	85
7:15 AM	80	3	3	8	0	94
7:30 AM	95	0	4	6	0	105
7:45 AM	111	3	5	1	0	120
8:00 AM	87	1	4	2	0	94
8:15 AM	129	1	2	3	0	135
8:30 AM	96	0	6	7	0	109
8:45 AM	120	2	0	4	0	126
4:00 PM	146	0	3	1	0	150
4:15 PM	132	2	1	1	0	136
4:30 PM	154	0	0	1	0	155
4:45 PM	156	1	1	0	0	158
5:00 PM	152	1	0	2	0	155
5:15 PM	142	1	0	3	0	146
5:30 PM	148	0	0	1	0	149
5:45 PM	141	1	1	3	0	146
6:00 PM	135	1	1	1	0	138
6:15 PM	138	1	1	0	0	140
6:30 PM	101	0	1	1	0	103
6:45 PM	132	1	1	1	0	135
11:00 AM	121	1	2	0	3	127
11:15 AM	147	1	3	0	0	151
11:30 AM	113	0	1	1	0	115
11:45 AM	133	1	0	0	0	134
12:00 PM	143	2	2	1	0	148
12:15 PM	120	1	0	1	0	122
12:30 PM	133	0	0	0	0	133
12:45 PM	108	0	1	2	0	111
1:00 PM	101	1	2	0	0	104
1:15 PM	125	0	0	2	0	127
1:30 PM	125	2	2	0	0	129
1:45 PM	120	0	3	0	0	123
Total	3961	28	53	58	3	4103
Total %	96.5	0.7	1.3	1.4	0.1	100.0
AM Times	11:00 AM	7:00 AM	7:45 AM	7:00 AM	11:00 AM	11:00 AM
AM Peaks	514	6	17	20	3	527
PM Times	4:45 PM	5:30 PM	12:45 PM	5:45 PM	6:00 PM	4:45 PM
PM Peaks	598	3	5	5	0	608



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

Count Name: Halsted Street with Eastbound Off
Ramp
Site Code:
Start Date: 07/25/2019
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Lane 3 (Southbound)

Start Time	Lights	Buses	Single-Unit Trucks	Articulated Trucks	Bicycles on Road	Total
7:00 AM	71	1	2	1	0	75
7:15 AM	77	0	1	0	0	78
7:30 AM	74	0	2	1	0	77
7:45 AM	110	0	5	1	0	116
8:00 AM	92	0	0	1	0	93
8:15 AM	104	1	4	0	0	109
8:30 AM	102	0	4	1	0	107
8:45 AM	111	0	2	3	0	116
4:00 PM	147	0	0	1	0	148
4:15 PM	136	0	2	2	0	140
4:30 PM	150	0	0	0	0	150
4:45 PM	146	0	1	5	0	152
5:00 PM	168	0	0	2	0	170
5:15 PM	207	0	0	0	0	207
5:30 PM	165	0	3	1	0	169
5:45 PM	153	0	1	0	0	154
6:00 PM	136	0	0	1	0	137
6:15 PM	145	0	2	0	0	147
6:30 PM	106	0	2	2	0	110
6:45 PM	140	1	1	2	0	144
11:00 AM	126	0	1	0	0	127
11:15 AM	126	0	2	1	0	129
11:30 AM	120	0	2	0	0	122
11:45 AM	137	0	0	1	0	138
12:00 PM	142	0	1	1	0	144
12:15 PM	132	0	2	1	0	135
12:30 PM	137	1	0	0	0	138
12:45 PM	153	1	1	1	0	156
1:00 PM	176	0	1	1	0	178
1:15 PM	178	0	3	2	0	183
1:30 PM	158	0	0	2	0	160
1:45 PM	195	0	0	0	0	195
Total	4320	5	45	34	0	4404
Total %	98.1	0.1	1.0	0.8	0.0	100.0
AM Times	11:00 AM	7:00 AM	7:45 AM	7:00 AM	11:00 AM	11:00 AM
AM Peaks	509	1	13	3	0	516
PM Times	4:45 PM	5:30 PM	12:45 PM	5:45 PM	6:00 PM	4:45 PM
PM Peaks	686	0	5	3	0	698



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

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Ramp
Site Code:
Start Date: 07/25/2019
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Lane 1 (Northbound)

Start Time	Lights	Buses	Single-Unit Trucks	Articulated Trucks	Bicycles on Road	Total
7:00 AM	84	4	3	9	0	100
7:15 AM	94	1	3	12	0	110
7:30 AM	95	1	4	7	0	107
7:45 AM	97	0	7	8	0	112
8:00 AM	86	1	3	6	0	96
8:15 AM	97	0	5	9	0	111
8:30 AM	85	3	4	2	0	94
8:45 AM	87	2	3	11	0	103
4:00 PM	145	1	2	1	0	149
4:15 PM	149	0	4	2	0	155
4:30 PM	131	2	5	4	0	142
4:45 PM	151	0	2	3	0	156
5:00 PM	153	2	4	2	0	161
5:15 PM	145	0	7	2	0	154
5:30 PM	142	2	1	4	0	149
5:45 PM	138	0	3	9	0	150
6:00 PM	124	2	1	2	0	129
6:15 PM	134	1	1	1	1	138
6:30 PM	110	1	1	7	1	120
6:45 PM	84	1	2	1	1	89
11:00 AM	123	2	5	1	0	131
11:15 AM	111	0	5	0	0	116
11:30 AM	128	2	1	2	0	133
11:45 AM	88	2	4	1	0	95
12:00 PM	110	0	5	1	0	116
12:15 PM	121	1	2	2	0	126
12:30 PM	128	2	3	0	0	133
12:45 PM	123	0	4	3	0	130
1:00 PM	137	2	3	1	0	143
1:15 PM	100	0	1	1	0	102
1:30 PM	145	1	5	0	0	151
1:45 PM	108	2	4	1	0	115
Total	3753	38	107	115	3	4016
Total %	93.5	0.9	2.7	2.9	0.1	100.0
AM Times	11:00 AM	7:00 AM	7:45 AM	7:00 AM	11:00 AM	11:00 AM
AM Peaks	450	6	19	36	0	475
PM Times	4:45 PM	5:30 PM	12:45 PM	5:45 PM	6:00 PM	4:45 PM
PM Peaks	591	5	13	19	3	620



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9575 W. Higgins Rd., Suite 400
Rosemont, Illinois, United States 60018
(847)518-9990 bmay@kloainc.com

Count Name: Halsted Street with Eastbound Off
Ramp
Site Code:
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Lane 2 (Northbound)

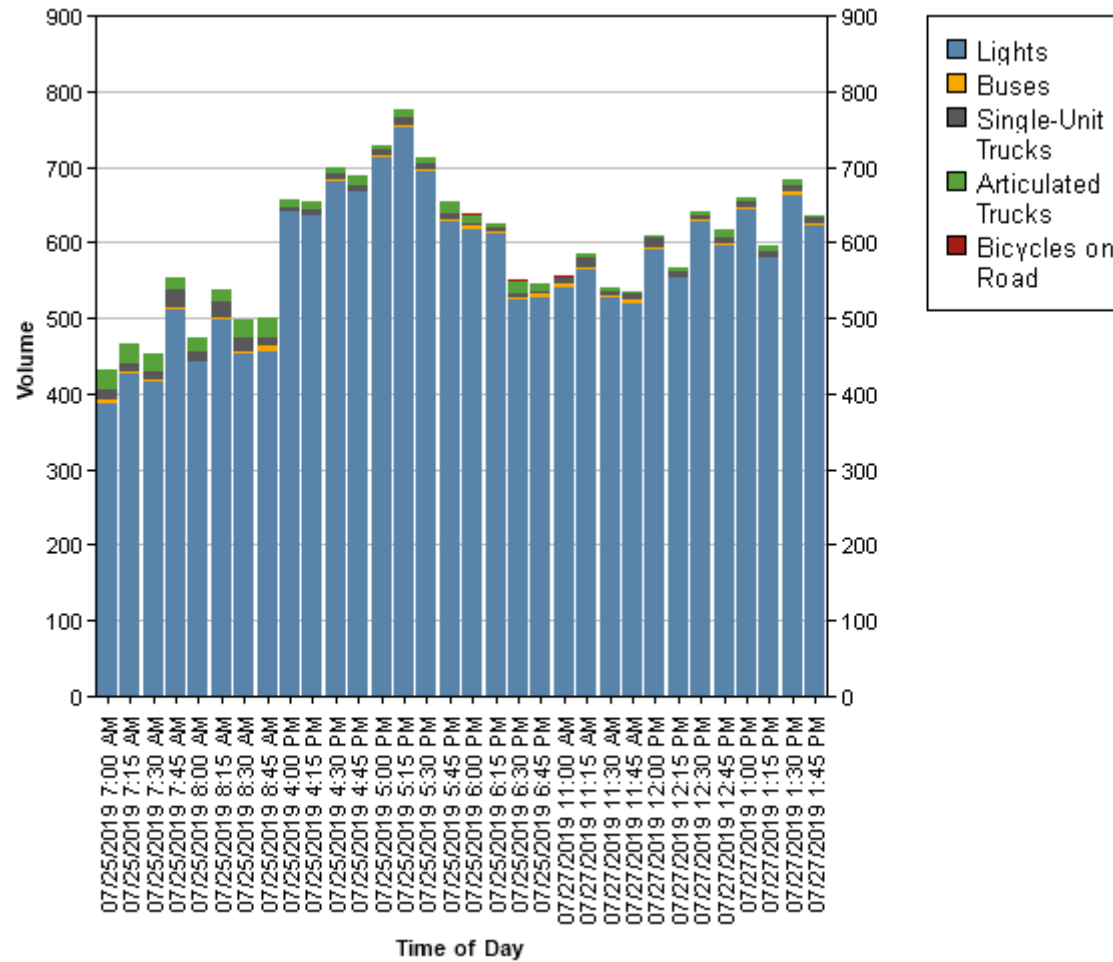
Start Time	Lights	Buses	Single-Unit Trucks	Articulated Trucks	Bicycles on Road	Total
7:00 AM	68	0	2	2	0	72
7:15 AM	81	0	0	2	0	83
7:30 AM	66	1	1	0	0	68
7:45 AM	64	0	2	1	0	67
8:00 AM	67	0	0	2	0	69
8:15 AM	70	0	5	1	0	76
8:30 AM	84	0	2	1	0	87
8:45 AM	74	2	4	3	0	83
4:00 PM	104	0	0	0	0	104
4:15 PM	122	0	0	0	0	122
4:30 PM	132	0	0	0	0	132
4:45 PM	114	0	1	0	0	115
5:00 PM	122	0	0	0	0	122
5:15 PM	135	0	1	3	0	139
5:30 PM	110	1	0	0	0	111
5:45 PM	99	0	1	0	0	100
6:00 PM	114	0	0	0	1	115
6:15 PM	99	0	0	1	0	100
6:30 PM	103	0	1	0	1	105
6:45 PM	98	0	0	0	0	98
11:00 AM	119	0	0	0	0	119
11:15 AM	119	0	1	1	0	121
11:30 AM	105	0	0	0	0	105
11:45 AM	111	0	1	0	0	112
12:00 PM	113	0	0	0	0	113
12:15 PM	102	0	1	0	0	103
12:30 PM	125	0	2	1	0	128
12:45 PM	116	0	0	0	0	116
1:00 PM	135	0	0	1	0	136
1:15 PM	79	0	2	0	0	81
1:30 PM	138	0	1	1	0	140
1:45 PM	97	0	0	0	0	97
Total	3285	4	28	20	2	3339
Total %	98.4	0.1	0.8	0.6	0.1	100.0
AM Times	11:00 AM	7:00 AM	7:45 AM	7:00 AM	11:00 AM	11:00 AM
AM Peaks	454	1	9	5	0	457
PM Times	4:45 PM	5:30 PM	12:45 PM	5:45 PM	6:00 PM	4:45 PM
PM Peaks	481	1	3	1	2	487



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

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

Count Name: Halsted Street with Eastbound Off
Ramp
Site Code:
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Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400
Rosemont, Illinois, United States 60018
(847)518-9990 bmay@kloainc.com

Count Name: I-294 Eastbound On Ramp
Site Code:
Start Date: 07/25/2019
Page No: 1

Direction (Northbound)

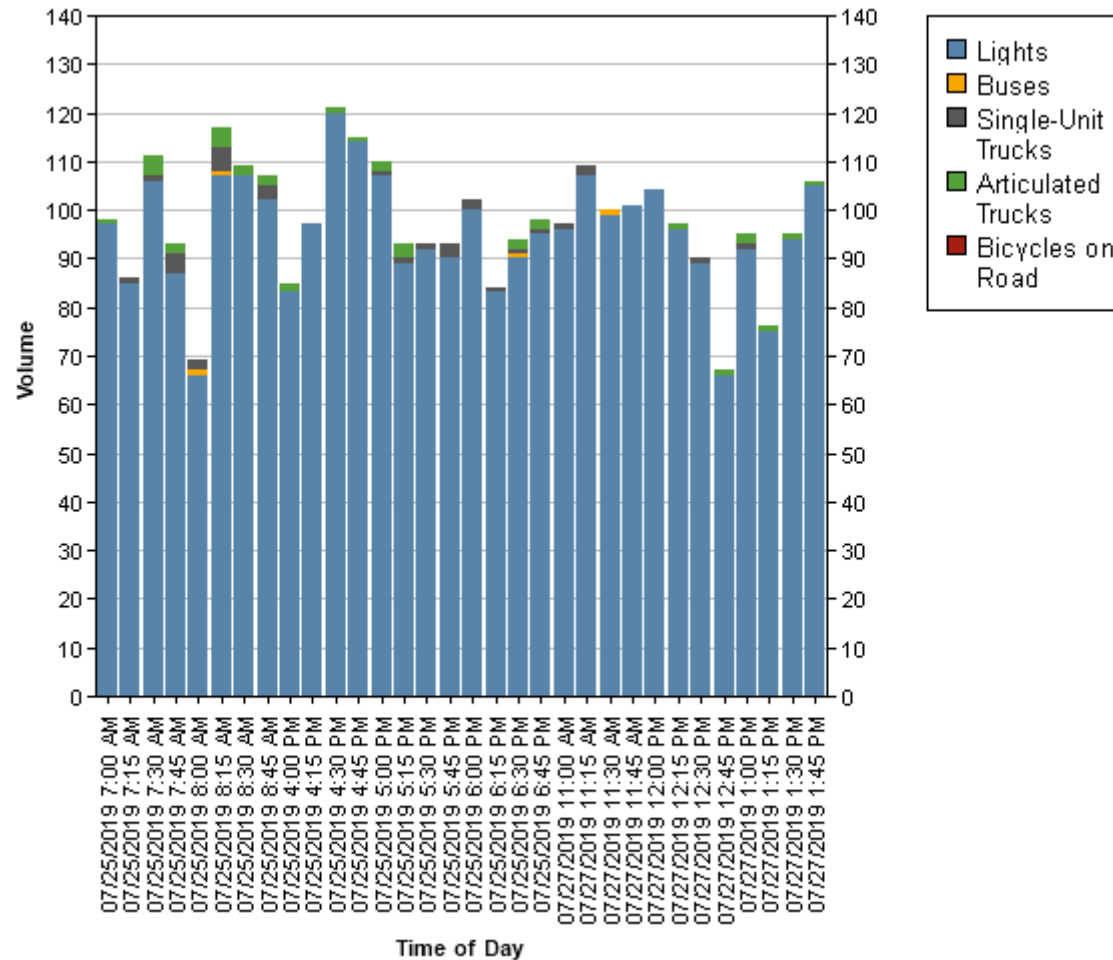
Start Time	Lights	Buses	Single-Unit Trucks	Articulated Trucks	Bicycles on Road	Total
7:00 AM	97	0	0	1	0	98
7:15 AM	85	0	1	0	0	86
7:30 AM	106	0	1	4	0	111
7:45 AM	87	0	4	2	0	93
8:00 AM	66	1	2	0	0	69
8:15 AM	107	1	5	4	0	117
8:30 AM	107	0	0	2	0	109
8:45 AM	102	0	3	2	0	107
4:00 PM	83	0	0	2	0	85
4:15 PM	97	0	0	0	0	97
4:30 PM	120	0	0	1	0	121
4:45 PM	114	0	0	1	0	115
5:00 PM	107	0	1	2	0	110
5:15 PM	89	0	1	3	0	93
5:30 PM	92	0	1	0	0	93
5:45 PM	90	0	3	0	0	93
6:00 PM	100	0	2	0	0	102
6:15 PM	83	0	1	0	0	84
6:30 PM	90	1	1	2	0	94
6:45 PM	95	0	1	2	0	98
11:00 AM	96	0	1	0	0	97
11:15 AM	107	0	2	0	0	109
11:30 AM	99	1	0	0	0	100
11:45 AM	101	0	0	0	0	101
12:00 PM	104	0	0	0	0	104
12:15 PM	96	0	0	1	0	97
12:30 PM	89	0	1	0	0	90
12:45 PM	66	0	0	1	0	67
1:00 PM	92	0	1	2	0	95
1:15 PM	75	0	0	1	0	76
1:30 PM	94	0	0	1	0	95
1:45 PM	105	0	0	1	0	106
Total	3041	4	32	35	0	3112
Total %	97.7	0.1	1.0	1.1	0.0	100.0
AM Times	11:00 AM	7:30 AM	7:30 AM	7:30 AM	7:00 AM	11:00 AM
AM Peaks	403	2	12	10	0	407
PM Times	4:15 PM	5:45 PM	5:15 PM	4:30 PM	4:00 PM	4:15 PM
PM Peaks	438	1	7	7	0	443



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

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

Count Name: I-294 Eastbound On Ramp
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Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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

Count Name: Lathrop Avenue with 174th Street
Site Code:
Start Date: 07/25/2019
Page No: 1

Turning Movement Data

Start Time	174th Street Westbound					Lathrop Avenue Northbound					Lathrop Avenue Southbound					Int. Total
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	
7:00 AM	0	8	1	0	9	0	0	1	0	1	0	0	2	0	2	12
7:15 AM	0	4	1	0	5	0	4	0	0	4	0	0	4	0	4	13
7:30 AM	0	6	1	1	7	0	0	0	1	0	0	2	0	1	2	9
7:45 AM	0	25	2	1	27	0	2	2	0	4	0	1	1	0	2	33
Hourly Total	0	43	5	2	48	0	6	3	1	9	0	3	7	1	10	67
8:00 AM	0	10	3	0	13	0	2	1	0	3	0	1	4	0	5	21
8:15 AM	0	28	1	0	29	0	1	0	0	1	0	0	3	0	3	33
8:30 AM	0	13	2	0	15	0	1	2	0	3	0	0	4	0	4	22
8:45 AM	0	8	2	0	10	0	2	2	0	4	0	1	0	0	1	15
Hourly Total	0	59	8	0	67	0	6	5	0	11	0	2	11	0	13	91
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	11	1	2	12	0	3	4	2	7	0	1	5	0	6	25
4:15 PM	0	8	5	0	13	0	6	0	0	6	0	0	4	0	4	23
4:30 PM	0	7	0	0	7	0	3	1	0	4	0	0	3	0	3	14
4:45 PM	0	6	5	0	11	0	2	2	0	4	0	1	1	0	2	17
Hourly Total	0	32	11	2	43	0	14	7	2	21	0	2	13	0	15	79
5:00 PM	0	15	5	0	20	0	10	1	0	11	0	1	2	0	3	34
5:15 PM	0	16	1	2	17	0	0	1	0	1	0	0	4	0	4	22
5:30 PM	0	17	4	0	21	0	4	0	0	4	0	0	5	0	5	30
5:45 PM	0	16	1	0	17	0	3	2	0	5	0	1	4	0	5	27
Hourly Total	0	64	11	2	75	0	17	4	0	21	0	2	15	0	17	113
6:00 PM	0	7	2	1	9	0	3	3	1	6	0	0	3	0	3	18
6:15 PM	0	8	3	0	11	0	8	2	0	10	0	0	4	0	4	25
6:30 PM	0	6	1	0	7	0	3	3	0	6	0	1	5	0	6	19
6:45 PM	0	2	0	0	2	0	5	0	0	5	0	0	1	0	1	8
Hourly Total	0	23	6	1	29	0	19	8	1	27	0	1	13	0	14	70
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	9	3	0	12	0	5	0	0	5	0	0	2	0	2	19
11:15 AM	0	5	0	1	5	0	1	0	1	1	0	0	3	0	3	9
11:30 AM	0	4	0	0	4	0	4	2	0	6	0	0	3	0	3	13
11:45 AM	0	5	3	1	8	0	3	3	0	6	0	0	5	0	5	19
Hourly Total	0	23	6	2	29	0	13	5	1	18	0	0	13	0	13	60
12:00 PM	0	8	3	0	11	0	3	0	0	3	0	0	3	0	3	17
12:15 PM	0	8	2	1	10	0	5	3	0	8	0	2	2	0	4	22
12:30 PM	0	7	3	2	10	0	4	1	0	5	0	1	2	0	3	18
12:45 PM	0	13	2	1	15	0	5	1	0	6	0	0	1	0	1	22

Hourly Total	0	36	10	4	46	0	17	5	0	22	0	3	8	0	11	79
1:00 PM	0	14	2	1	16	0	4	3	0	7	0	1	5	0	6	29
1:15 PM	0	25	1	0	26	0	3	1	0	4	0	0	6	0	6	36
1:30 PM	0	30	2	0	32	0	1	2	0	3	0	0	2	2	2	37
1:45 PM	0	23	2	0	25	0	3	0	0	3	0	1	6	0	7	35
Hourly Total	0	92	7	1	99	0	11	6	0	17	0	2	19	2	21	137
Grand Total	0	372	64	14	436	0	103	43	5	146	0	15	99	3	114	696
Approach %	0.0	85.3	14.7	-	-	0.0	70.5	29.5	-	-	0.0	13.2	86.8	-	-	-
Total %	0.0	53.4	9.2	-	62.6	0.0	14.8	6.2	-	21.0	0.0	2.2	14.2	-	16.4	-
Lights	0	366	64	-	430	0	100	42	-	142	0	15	96	-	111	683
% Lights	-	98.4	100.0	-	98.6	-	97.1	97.7	-	97.3	-	100.0	97.0	-	97.4	98.1
Buses	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Buses	-	0.3	0.0	-	0.2	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.1
Single-Unit Trucks	0	2	0	-	2	0	1	1	-	2	0	0	2	-	2	6
% Single-Unit Trucks	-	0.5	0.0	-	0.5	-	1.0	2.3	-	1.4	-	0.0	2.0	-	1.8	0.9
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Articulated Trucks	-	0.0	0.0	-	0.0	-	1.0	0.0	-	0.7	-	0.0	0.0	-	0.0	0.1
Bicycles on Road	0	3	0	-	3	0	1	0	-	1	0	0	1	-	1	5
% Bicycles on Road	-	0.8	0.0	-	0.7	-	1.0	0.0	-	0.7	-	0.0	1.0	-	0.9	0.7
Pedestrians	-	-	-	14	-	-	-	-	5	-	-	-	-	3	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

[illegible]

[illegible]



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

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

Count Name: Lathrop Avenue with 174th Street
Site Code:
Start Date: 07/25/2019
Page No: 5

Turning Movement Peak Hour Data (1:00 PM)

Start Time	174th Street Westbound					Lathrop Avenue Northbound					Lathrop Avenue Southbound					Int. Total
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	
1:00 PM	0	14	2	1	16	0	4	3	0	7	0	1	5	0	6	29
1:15 PM	0	25	1	0	26	0	3	1	0	4	0	0	6	0	6	36
1:30 PM	0	30	2	0	32	0	1	2	0	3	0	0	2	2	2	37
1:45 PM	0	23	2	0	25	0	3	0	0	3	0	1	6	0	7	35
Total	0	92	7	1	99	0	11	6	0	17	0	2	19	2	21	137
Approach %	0.0	92.9	7.1	-	-	0.0	64.7	35.3	-	-	0.0	9.5	90.5	-	-	-
Total %	0.0	67.2	5.1	-	72.3	0.0	8.0	4.4	-	12.4	0.0	1.5	13.9	-	15.3	-
PHF	0.000	0.767	0.875	-	0.773	0.000	0.688	0.500	-	0.607	0.000	0.500	0.792	-	0.750	0.926
Lights	0	92	7	-	99	0	11	6	-	17	0	2	18	-	20	136
% Lights	-	100.0	100.0	-	100.0	-	100.0	100.0	-	100.0	-	100.0	94.7	-	95.2	99.3
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	0	1	-	1	1
% Single-Unit Trucks	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	5.3	-	4.8	0.7
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	2	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-

CMAP Traffic Projection Letter



Chicago Metropolitan Agency for Planning

233 South Wacker Drive
Suite 800
Chicago, Illinois 60606

312 454 0400
www.cmap.illinois.gov

September 11, 2019

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

Subject: Halsted Street (IL 1) @ 175th Street
IDOT

Dear Mr. May:

In response to a request made on your behalf and dated September 10, 2019, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current Volumes	Year 2050 ADT
Halsted St (IL 1) north of 175 th St	39,200	44,100
175 th St west of Halsted St	10,000	8,400

Traffic projections are developed using existing ADT data provided in the request letter and the results from the March 2019 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

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

Sincerely,

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

cc: Quigley (IDOT)
S:\AdminGroups\ResearchAnalysis\2019_ForecastsTraffic\Homewood\ck-116-19\ck-116-19.docx

Level of Service Criteria

LEVEL OF SERVICE CRITERIA

Signalized Intersections		
Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤ 10
B	Good progression, with more vehicles stopping than for Level of Service A.	$> 10 - 20$
C	Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	$> 20 - 35$
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	$> 35 - 55$
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	$> 55 - 80$
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	> 80.0
Unsignalized Intersections		
Level of Service		Average Total Delay (SEC/VEH)
A		0 - 10
B		$> 10 - 15$
C		$> 15 - 25$
D		$> 25 - 35$
E		$> 35 - 50$
F		> 50

Source: *Highway Capacity Manual*, 2010.

Capacity Analysis

Lanes, Volumes, Timings
1: Halsted Street & 175th Street

01/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 							  			  	
Traffic Volume (vph)	163	31	73	5	29	48	118	880	2	58	926	363
Future Volume (vph)	163	31	73	5	29	48	118	880	2	58	926	363
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	10	10	10	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		258	110		110	245		0	145		365
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	215			175			240			220		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor												
Frt			0.850			0.850						0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3164	1933	1473	1685	1867	1478	1736	5056	0	1752	5056	1538
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3164	1933	1473	1685	1867	1478	1736	5056	0	1752	5056	1538
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		509			436			971			707	
Travel Time (s)		11.6			9.9			14.7			10.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	0%	6%	0%	0%	2%	4%	8%	0%	3%	8%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	33	77	5	31	51	124	928	0	61	975	382
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases			4			8						6
Detector Phase	7	4	5	3	8	1	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	3.0	3.0	8.0	3.0	3.0	15.0		3.0	15.0	3.0
Minimum Split (s)	7.5	14.0	7.5	7.5	14.0	7.5	7.5	21.0		7.5	33.0	7.5
Total Split (s)	22.0	21.0	13.0	22.0	21.0	13.0	13.0	59.0		13.0	59.0	22.0
Total Split (%)	19.1%	18.3%	11.3%	19.1%	18.3%	11.3%	11.3%	51.3%		11.3%	51.3%	19.1%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	3.5
All-Red Time (s)	1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5		1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	4.5	6.0	4.5	4.5	6.0		4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	None
Act Effect Green (s)	12.0	17.5	39.1	6.0	8.8	18.6	15.6	71.5		9.3	63.1	81.1
Actuated g/C Ratio	0.10	0.15	0.34	0.05	0.08	0.16	0.14	0.62		0.08	0.55	0.71

Lanes, Volumes, Timings
1: Halsted Street & 175th Street

01/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.52	0.11	0.15	0.06	0.22	0.21	0.53	0.30		0.43	0.35	0.35
Control Delay	54.2	39.9	24.8	53.0	53.1	39.4	54.3	12.8		58.8	16.8	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	54.2	39.9	24.8	53.0	53.1	39.4	54.3	12.8		58.8	16.8	9.3
LOS	D	D	C	D	D	D	D	B		E	B	A
Approach Delay		44.5			45.1			17.7			16.6	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	63	20	36	4	22	31	87	127		44	155	117
Queue Length 95th (ft)	96	50	71	17	53	62	145	191		86	223	200
Internal Link Dist (ft)		429			356			891			627	
Turn Bay Length (ft)	300		258	110		110	245			145		365
Base Capacity (vph)	481	338	500	256	243	247	235	3142		152	2810	1158
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.36	0.10	0.15	0.02	0.13	0.21	0.53	0.30		0.40	0.35	0.33

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 114 (99%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 20.6

Intersection LOS: C

Intersection Capacity Utilization 48.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Halsted Street & 175th Street

				
Ø1	Ø2 (R)		Ø3	Ø4
13 s	59 s		22 s	21 s
				
Ø5	Ø6 (R)		Ø7	Ø8
13 s	59 s		22 s	21 s

HCM 6th TWSC

2: Halsted Street & Full Access Drive

01/29/2020

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	3	2	1089	1344	79
Future Vol, veh/h	8	3	2	1089	1344	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	230	-	-	215
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	8	8	1
Mvmt Flow	9	3	2	1159	1430	84

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1898	715	1514	0	-	0
Stage 1	1430	-	-	-	-	-
Stage 2	468	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.3	-	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	3.1	-	-	-
Pot Cap-1 Maneuver	109	324	224	-	-	-
Stage 1	133	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	108	324	224	-	-	-
Mov Cap-2 Maneuver	108	-	-	-	-	-
Stage 1	132	-	-	-	-	-
Stage 2	550	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.4	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	224	-	108	324	-	-
HCM Lane V/C Ratio	0.009	-	0.079	0.01	-	-
HCM Control Delay (s)	21.2	-	41.2	16.2	-	-
HCM Lane LOS	C	-	E	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	0	-	-

HCM 6th TWSC
3: Lathrop Avenue & 175th Street

01/29/2020

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	256	12	8	484	6	20	3	5	8	6	62
Future Vol, veh/h	1	256	12	8	484	6	20	3	5	8	6	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	110	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	4	0	37	6	0	5	0	80	0	0	3
Mvmt Flow	1	284	13	9	538	7	22	3	6	9	7	69

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	545	0	0	297	0	0	891	856	291	857	859	542
Stage 1	-	-	-	-	-	-	293	293	-	560	560	-
Stage 2	-	-	-	-	-	-	598	563	-	297	299	-
Critical Hdwy	4.1	-	-	4.47	-	-	7.15	6.5	7	7.1	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.533	-	-	3.545	4	4.02	3.5	4	3.327
Pot Cap-1 Maneuver	1034	-	-	1089	-	-	260	297	596	280	296	538
Stage 1	-	-	-	-	-	-	709	674	-	516	514	-
Stage 2	-	-	-	-	-	-	484	512	-	716	670	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1034	-	-	1089	-	-	221	294	596	273	293	538
Mov Cap-2 Maneuver	-	-	-	-	-	-	221	294	-	273	293	-
Stage 1	-	-	-	-	-	-	708	673	-	515	510	-
Stage 2	-	-	-	-	-	-	413	508	-	705	669	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			20.9			14.6		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	257	1034	-	-	1089	-	-	461
HCM Lane V/C Ratio	0.121	0.001	-	-	0.008	-	-	0.183
HCM Control Delay (s)	20.9	8.5	-	-	8.3	-	-	14.6
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.7

HCM 6th TWSC
4: Lathrop Avenue & 174th Street

01/29/2020

Intersection

Int Delay, s/veh 7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	76	8	6	5	2	12
Future Vol, veh/h	76	8	6	5	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	0	0	0	0
Mvmt Flow	92	10	7	6	2	14

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	28	10	0
Stage 1	10	-	-
Stage 2	18	-	-
Critical Hdwy	6.41	6.2	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.3	-
Pot Cap-1 Maneuver	989	1077	-
Stage 1	1016	-	-
Stage 2	1007	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	988	1077	-
Mov Cap-2 Maneuver	988	-	-
Stage 1	1016	-	-
Stage 2	1006	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	996	1619
HCM Lane V/C Ratio	-	-	0.102	0.001
HCM Control Delay (s)	-	-	9	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	180	59	36	429	45	35	6	38	49	5	34
Future Vol, veh/h	30	180	59	36	429	45	35	6	38	49	5	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	32	189	62	38	452	47	37	6	40	52	5	36
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	499	0	0	251	0	0	856	859	220	859	867	476
Stage 1	-	-	-	-	-	-	284	284	-	552	552	-
Stage 2	-	-	-	-	-	-	572	575	-	307	315	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1075	-	-	1326	-	-	280	296	825	279	293	593
Stage 1	-	-	-	-	-	-	727	680	-	522	518	-
Stage 2	-	-	-	-	-	-	509	506	-	707	659	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1075	-	-	1326	-	-	245	274	825	246	271	593
Mov Cap-2 Maneuver	-	-	-	-	-	-	245	274	-	246	271	-
Stage 1	-	-	-	-	-	-	702	656	-	504	497	-
Stage 2	-	-	-	-	-	-	454	486	-	643	636	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			0.6			17.3			20.8		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	375	1075	-	-	1326	-	-	320				
HCM Lane V/C Ratio	0.222	0.029	-	-	0.029	-	-	0.289				
HCM Control Delay (s)	17.3	8.4	0	-	7.8	0	-	20.8				
HCM Lane LOS	C	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0.1	-	-	1.2				

Lanes, Volumes, Timings
1: Halsted Street & 175th Street

01/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 							  			  	
Traffic Volume (vph)	384	53	210	18	44	66	153	1198	8	91	1364	234
Future Volume (vph)	384	53	210	18	44	66	153	1198	8	91	1364	234
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	10	10	10	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		258	110		110	245		0	145		365
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	215			175			240			220		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.999				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3319	1895	1546	1589	1867	1463	1787	5297	0	1770	5353	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3319	1895	1546	1589	1867	1463	1787	5297	0	1770	5353	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		519			436			971			707	
Travel Time (s)		11.8			9.9			14.7			10.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	6%	0%	3%	1%	3%	0%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	396	55	216	19	45	68	158	1243	0	94	1406	241
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases			4			8						6
Detector Phase	7	4	5	3	8	1	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	3.0	3.0	8.0	3.0	3.0	15.0		3.0	15.0	3.0
Minimum Split (s)	7.5	14.0	7.5	7.5	14.0	7.5	7.5	21.0		7.5	33.0	7.5
Total Split (s)	22.0	25.0	13.0	20.0	23.0	17.0	13.0	68.0		17.0	72.0	22.0
Total Split (%)	16.9%	19.2%	10.0%	15.4%	17.7%	13.1%	10.0%	52.3%		13.1%	55.4%	16.9%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	3.5
All-Red Time (s)	1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5		1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	4.5	6.0	4.5	4.5	6.0		4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	None
Act Effect Green (s)	18.2	24.5	49.7	7.1	9.8	25.2	19.2	71.6		12.2	64.6	88.8
Actuated g/C Ratio	0.14	0.19	0.38	0.05	0.08	0.19	0.15	0.55		0.09	0.50	0.68

Lanes, Volumes, Timings
1: Halsted Street & 175th Street

01/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.85	0.15	0.37	0.22	0.32	0.24	0.60	0.43		0.57	0.53	0.22
Control Delay	72.3	45.6	33.0	64.0	62.5	42.8	64.0	19.0		69.0	23.3	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	72.3	45.6	33.0	64.0	62.5	42.8	64.0	19.0		69.0	23.3	8.3
LOS	E	D	C	E	E	D	E	B		E	C	A
Approach Delay	57.3			52.6			24.1			23.7		
Approach LOS	E			D			C			C		
Queue Length 50th (ft)	167	35	119	16	37	48	130	234		77	293	68
Queue Length 95th (ft)	#259	81	226	42	76	84	#264	297		131	324	103
Internal Link Dist (ft)	439			356			891			627		
Turn Bay Length (ft)	300		258	110		110	245			145		365
Base Capacity (vph)	470	368	590	189	244	300	263	2916		186	2745	1083
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.84	0.15	0.37	0.10	0.18	0.23	0.60	0.43		0.51	0.51	0.22

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 9 (7%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 30.5

Intersection LOS: C

Intersection Capacity Utilization 64.9%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Halsted Street & 175th Street

 Ø1	 Ø2 (R)	 Ø3	 Ø4
17 s	68 s	20 s	25 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13 s	72 s	22 s	23 s

HCM 6th TWSC
2: Halsted Street & Full Access Drive

01/29/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	4	8	1640	1685	62
Future Vol, veh/h	5	4	8	1640	1685	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	230	-	-	215
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	3	2	2
Mvmt Flow	5	4	8	1708	1755	65
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2454	878	1820	0	-	0
Stage 1	1755	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.3	-	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	3.1	-	-	-
Pot Cap-1 Maneuver	54	253	158	-	-	-
Stage 1	83	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	51	253	158	-	-	-
Mov Cap-2 Maneuver	51	-	-	-	-	-
Stage 1	79	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	55.1	0.1		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	158	-	51	253	-	-
HCM Lane V/C Ratio	0.053	-	0.102	0.016	-	-
HCM Control Delay (s)	29.1	-	83.5	19.5	-	-
HCM Lane LOS	D	-	F	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.3	0.1	-	-

HCM 6th TWSC
3: Lathrop Avenue & 175th Street

01/29/2020

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	587	26	3	306	13	23	9	13	17	1	27
Future Vol, veh/h	1	587	26	3	306	13	23	9	13	17	1	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	110	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	2	0	33	1	0	0	0	15	0	0	0
Mvmt Flow	1	699	31	4	364	15	27	11	15	20	1	32
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	379	0	0	730	0	0	1113	1104	715	1110	1112	372
Stage 1	-	-	-	-	-	-	717	717	-	380	380	-
Stage 2	-	-	-	-	-	-	396	387	-	730	732	-
Critical Hdwy	4.1	-	-	4.43	-	-	7.1	6.5	6.35	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.497	-	-	3.5	4	3.435	3.5	4	3.3
Pot Cap-1 Maneuver	1191	-	-	748	-	-	187	213	410	188	211	678
Stage 1	-	-	-	-	-	-	424	437	-	646	617	-
Stage 2	-	-	-	-	-	-	633	613	-	417	430	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1191	-	-	748	-	-	177	212	410	173	210	678
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	212	-	173	210	-
Stage 1	-	-	-	-	-	-	424	437	-	645	614	-
Stage 2	-	-	-	-	-	-	599	610	-	391	430	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			26.6			18.8		
HCM LOS							D			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	220	1191	-	-	748	-	-	315				
HCM Lane V/C Ratio	0.244	0.001	-	-	0.005	-	-	0.17				
HCM Control Delay (s)	26.6	8	-	-	9.8	-	-	18.8				
HCM Lane LOS	D	A	-	-	A	-	-	C				
HCM 95th %tile O(veh)	0.9	0	-	-	0	-	-	0.6				

HCM 6th TWSC
4: Lathrop Avenue & 174th Street

01/29/2020

Intersection

Int Delay, s/veh 5.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	11	15	5	2	10
Future Vol, veh/h	44	11	15	5	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	69	17	23	8	3	16

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	49	27	0
Stage 1	27	-	-
Stage 2	22	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	965	1054	-
Stage 1	1001	-	-
Stage 2	1006	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	963	1054	-
Mov Cap-2 Maneuver	963	-	-
Stage 1	1001	-	-
Stage 2	1004	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	980	1595
HCM Lane V/C Ratio	-	-	0.088	0.002
HCM Control Delay (s)	-	-	9	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Intersection												
Int Delay, s/veh	44											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	435	148	138	195	98	71	18	123	89	19	56
Future Vol, veh/h	34	435	148	138	195	98	71	18	123	89	19	56
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	36	458	156	145	205	103	75	19	129	94	20	59
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	308	0	0	614	0	0	1194	1206	536	1229	1233	257
Stage 1	-	-	-	-	-	-	608	608	-	547	547	-
Stage 2	-	-	-	-	-	-	586	598	-	682	686	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1264	-	-	975	-	-	165	185	549	156	178	787
Stage 1	-	-	-	-	-	-	486	489	-	525	521	-
Stage 2	-	-	-	-	-	-	500	494	-	443	451	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1264	-	-	975	-	-	114	145	549	~ 90	139	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	114	145	-	~ 90	139	-
Stage 1	-	-	-	-	-	-	465	467	-	502	426	-
Stage 2	-	-	-	-	-	-	361	404	-	310	431	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			3			114.2			225.2		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	218	1264	-	-	975	-	-	137				
HCM Lane V/C Ratio	1.024	0.028	-	-	0.149	-	-	1.26				
HCM Control Delay (s)	114.2	7.9	0	-	9.3	0	-	225.2				
HCM Lane LOS	F	A	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	9.5	0.1	-	-	0.5	-	-	10.6				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon		

Lanes, Volumes, Timings
1: Halsted Street & 175th Street

01/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 							  			  	
Traffic Volume (vph)	265	67	159	2	67	87	171	960	13	130	1181	230
Future Volume (vph)	265	67	159	2	67	87	171	960	13	130	1181	230
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	10	10	10	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		258	110		110	245		0	145		365
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	215			175			240			220		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3351	1933	1546	1685	1867	1492	1805	5394	0	1787	5353	1568
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3351	1933	1546	1685	1867	1492	1805	5394	0	1787	5353	1568
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		517			436			971			707	
Travel Time (s)		11.8			9.9			14.7			10.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	0%	1%	0%	0%	1%	0%	1%	3%	1%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	69	164	2	69	90	176	1003	0	134	1218	237
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases			4			8						6
Detector Phase	7	4	5	3	8	1	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	3.0	3.0	8.0	3.0	3.0	15.0		3.0	15.0	3.0
Minimum Split (s)	7.5	14.0	7.5	7.5	14.0	7.5	7.5	21.0		7.5	33.0	7.5
Total Split (s)	20.0	29.0	13.0	20.0	29.0	13.0	13.0	53.0		13.0	53.0	20.0
Total Split (%)	17.4%	25.2%	11.3%	17.4%	25.2%	11.3%	11.3%	46.1%		11.3%	46.1%	17.4%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	3.5
All-Red Time (s)	1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5		1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	4.5	6.0	4.5	4.5	6.0		4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	None
Act Effect Green (s)	13.8	24.2	51.6	5.7	10.8	30.2	21.5	55.9		16.2	50.7	70.6
Actuated g/C Ratio	0.12	0.21	0.45	0.05	0.09	0.26	0.19	0.49		0.14	0.44	0.61

19-160 - Wind Creek Casino - East Hazel Crest
Existing Saturday Peak Hour

Synchro 10 Report

Lanes, Volumes, Timings
1: Halsted Street & 175th Street

01/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.68	0.17	0.24	0.02	0.40	0.23	0.52	0.38		0.53	0.52	0.25
Control Delay	57.2	36.3	20.5	52.5	55.1	32.3	49.8	20.7		54.0	25.0	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	57.2	36.3	20.5	52.5	55.1	32.3	49.8	20.7		54.0	25.0	11.5
LOS	E	D	C	D	E	C	D	C		D	C	B
Approach Delay		42.4			42.3			25.0			25.4	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	100	39	67	1	49	51	119	177		93	245	79
Queue Length 95th (ft)	144	83	131	10	93	88	201	234		157	294	123
Internal Link Dist (ft)		437			356			891			627	
Turn Bay Length (ft)	300		258	110		110	245			145		365
Base Capacity (vph)	451	453	694	227	373	392	337	2623		252	2360	984
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.61	0.15	0.24	0.01	0.18	0.23	0.52	0.38		0.53	0.52	0.24

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 2 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 28.6

Intersection LOS: C

Intersection Capacity Utilization 59.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Halsted Street & 175th Street

 Ø1	 Ø2 (R)	 Ø3	 Ø4
13 s	53 s	20 s	29 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13 s	53 s	20 s	29 s

HCM 6th TWSC

2: Halsted Street & Full Access Drive

01/29/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	4	8	1304	1537	92
Future Vol, veh/h	6	4	8	1304	1537	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	230	-	-	215
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	6	4	8	1331	1568	94
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2116	784	1662	0	-	0
Stage 1	1568	-	-	-	-	-
Stage 2	548	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.3	-	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	3.1	-	-	-
Pot Cap-1 Maneuver	83	292	189	-	-	-
Stage 1	109	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	80	292	189	-	-	-
Mov Cap-2 Maneuver	80	-	-	-	-	-
Stage 1	104	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	39.2	0.2		0		
HCM LOS	E					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	189	-	80	292	-	-
HCM Lane V/C Ratio	0.043	-	0.077	0.014	-	-
HCM Control Delay (s)	24.9	-	53.7	17.5	-	-
HCM Lane LOS	C	-	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0	-	-

HCM 6th TWSC
3: Lathrop Avenue & 175th Street

01/29/2020

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	329	14	1	295	14	21	2	2	44	6	51
Future Vol, veh/h	0	329	14	1	295	14	21	2	2	44	6	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	110	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	1	0	0	2	0	0	0	0	0	0	2
Mvmt Flow	0	362	15	1	324	15	23	2	2	48	7	56

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	339	0	0	377	0	0	735	711	370	706	711	332
Stage 1	-	-	-	-	-	-	370	370	-	334	334	-
Stage 2	-	-	-	-	-	-	365	341	-	372	377	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.318
Pot Cap-1 Maneuver	1231	-	-	1193	-	-	338	361	680	353	361	710
Stage 1	-	-	-	-	-	-	654	624	-	684	647	-
Stage 2	-	-	-	-	-	-	658	642	-	653	619	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1231	-	-	1193	-	-	307	361	680	350	361	710
Mov Cap-2 Maneuver	-	-	-	-	-	-	307	361	-	350	361	-
Stage 1	-	-	-	-	-	-	654	624	-	684	646	-
Stage 2	-	-	-	-	-	-	599	641	-	649	619	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			17.1			15		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	325	1231	-	-	1193	-	-	472
HCM Lane V/C Ratio	0.085	-	-	-	0.001	-	-	0.235
HCM Control Delay (s)	17.1	0	-	-	8	-	-	15
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.9

HCM 6th TWSC
4: Lathrop Avenue & 174th Street

01/29/2020

Intersection

Int Delay, s/veh 6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	92	7	11	6	2	19
Future Vol, veh/h	92	7	11	6	2	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	5
Mvmt Flow	99	8	12	6	2	20

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	39	15	0
Stage 1	15	-	-
Stage 2	24	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	978	1070	-
Stage 1	1013	-	-
Stage 2	1004	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	977	1070	-
Mov Cap-2 Maneuver	977	-	-
Stage 1	1013	-	-
Stage 2	1003	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	983	1612
HCM Lane V/C Ratio	-	-	0.108	0.001
HCM Control Delay (s)	-	-	9.1	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0

HCM 6th TWSC

6: Wal-Mart Access Drive/Retail Access Drive & 175th Street

01/29/2020

Intersection												
Int Delay, s/veh	54.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	40	206	129	148	187	133	79	31	162	123	37	44
Future Vol, veh/h	40	206	129	148	187	133	79	31	162	123	37	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	42	217	136	156	197	140	83	33	171	129	39	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	337	0	0	353	0	0	991	1018	285	1050	1016	267
Stage 1	-	-	-	-	-	-	369	369	-	579	579	-
Stage 2	-	-	-	-	-	-	622	649	-	471	437	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1234	-	-	1217	-	-	227	239	759	207	240	777
Stage 1	-	-	-	-	-	-	655	624	-	504	504	-
Stage 2	-	-	-	-	-	-	478	469	-	577	583	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1234	-	-	1217	-	-	154	192	759	~ 119	193	777
Mov Cap-2 Maneuver	-	-	-	-	-	-	154	192	-	~ 119	193	-
Stage 1	-	-	-	-	-	-	627	597	-	482	423	-
Stage 2	-	-	-	-	-	-	342	393	-	405	558	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	2.7	74.1	247.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	306	1234	-	-	1217	-	-	159
HCM Lane V/C Ratio	0.936	0.034	-	-	0.128	-	-	1.351
HCM Control Delay (s)	74.1	8	0	-	8.4	0	-	247.9
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	9.2	0.1	-	-	0.4	-	-	13.1

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

Lanes, Volumes, Timings
1: Halsted Street & 175th Street

03/17/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	31	82	5	29	48	128	1032	2	58	1065	455
Future Volume (vph)	188	31	82	5	29	48	128	1032	2	58	1065	455
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Lane Width (ft)	11	11	11	10	10	10	12	12	12	12	12	12
Storage Length (ft)	300		258	110		110	245		0	145		0
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	115			175			240			220		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Frt			0.850			0.850						0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3164	1933	1473	1685	1867	1478	1736	4803	0	1752	5056	1538
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3164	1933	1473	1685	1867	1478	1736	4803	0	1752	5056	1538
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		517			436			971			278	
Travel Time (s)		11.8			9.9			14.7			4.2	
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
Heavy Vehicles (%)	7%	0%	6%	0%	0%	2%	4%	8%	0%	3%	8%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	198	33	86	5	31	51	135	1088	0	61	1121	479
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases			4			8						6
Detector Phase	7	4	5	3	8	1	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	3.0	3.0	8.0	3.0	3.0	15.0		3.0	15.0	3.0
Minimum Split (s)	7.5	14.0	7.5	7.5	14.0	7.5	7.5	21.0		7.5	33.0	7.5
Total Split (s)	22.0	21.0	13.0	22.0	21.0	13.0	13.0	59.0		13.0	59.0	22.0
Total Split (%)	19.1%	18.3%	11.3%	19.1%	18.3%	11.3%	11.3%	51.3%		11.3%	51.3%	19.1%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	3.5
All-Red Time (s)	1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5		1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	4.5	6.0	4.5	4.5	6.0		4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	None
Act Effect Green (s)	13.3	18.7	40.8	6.0	8.8	18.6	16.0	70.2		9.3	61.5	80.7
Actuated g/C Ratio	0.12	0.16	0.35	0.05	0.08	0.16	0.14	0.61		0.08	0.53	0.70
v/c Ratio	0.54	0.11	0.16	0.06	0.22	0.21	0.56	0.37		0.43	0.41	0.44
Control Delay	51.7	41.1	19.3	53.0	53.1	39.4	56.3	14.4		64.6	13.8	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	51.7	41.1	19.3	53.0	53.1	39.4	56.3	14.4		64.6	13.8	5.9
LOS	D	D	B	D	D	D	E	B		E	B	A
Approach Delay		41.8			45.1			19.1			13.4	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	56	17	26	4	22	31	94	164		46	128	86

Lanes, Volumes, Timings
1: Halsted Street & 175th Street

03/17/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	103	55	82	17	53	62	#187	241		96	112	49
Internal Link Dist (ft)		437			356			891			198	
Turn Bay Length (ft)	300		258	110		110	245			145		
Base Capacity (vph)	481	357	522	256	243	247	242	2933		152	2709	1136
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.41	0.09	0.16	0.02	0.13	0.21	0.56	0.37		0.40	0.41	0.42

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 114 (99%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 19.1

Intersection LOS: B

Intersection Capacity Utilization 54.4%

ICU Level of Service A

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Halsted Street & 175th Street

				
Ø1	Ø2 (R)		Ø3	Ø4
13 s	59 s		22 s	21 s
				
Ø5	Ø6 (R)		Ø7	Ø8
13 s	59 s		22 s	21 s

Lanes, Volumes, Timings

2: Halsted Street & Full Access Drive

03/17/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰↰	↱	↰↰	↑↑↑	↑↑↑	↱
Traffic Volume (vph)	95	32	44	1224	1573	148
Future Volume (vph)	95	32	44	1224	1573	148
Ideal Flow (vphpl)	1900	1900	1900	2000	2000	1900
Storage Length (ft)	0	0	230			215
Storage Lanes	2	1	2			1
Taper Length (ft)	25		250			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3502	1615	3502	5056	5056	1599
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3502	1615	3502	5056	5056	1599
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			45	45	
Link Distance (ft)	388			429	591	
Travel Time (s)	10.6			6.5	9.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	8%	8%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	100	34	46	1288	1656	156
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	4
Switch Phase						
Minimum Initial (s)	8.0	3.0	3.0	15.0	3.0	8.0
Minimum Split (s)	14.0	7.5	7.5	21.0	38.0	14.0
Total Split (s)	20.0	12.0	12.0	95.0	83.0	20.0
Total Split (%)	17.4%	10.4%	10.4%	82.6%	72.2%	17.4%
Yellow Time (s)	4.5	3.5	3.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	4.5	4.5	6.0	6.0	6.0
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	None	C-Min	C-Min	None
Act Effect Green (s)	9.7	22.7	7.0	93.3	83.8	100.7
Actuated g/C Ratio	0.08	0.20	0.06	0.81	0.73	0.88
v/c Ratio	0.34	0.11	0.22	0.31	0.45	0.11
Control Delay	52.3	37.5	67.7	2.4	7.3	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	37.5	67.7	2.4	7.3	1.6
LOS	D	D	E	A	A	A
Approach Delay	48.6			4.6	6.8	
Approach LOS	D			A	A	
Queue Length 50th (ft)	36	21	18	13	169	14
Queue Length 95th (ft)	63	48	39	41	224	26

Lanes, Volumes, Timings

2: Halsted Street & Full Access Drive

03/17/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Internal Link Dist (ft)	308			349	511	
Turn Bay Length (ft)			230			215
Base Capacity (vph)	426	329	235	4100	3684	1443
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	0.23	0.10	0.20	0.31	0.45	0.11

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 112 (97%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.45

Intersection Signal Delay: 7.6

Intersection LOS: A

Intersection Capacity Utilization 45.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Halsted Street & Full Access Drive

Ø2 (R) 95 s	Ø4 20 s
Ø5 12 s	Ø6 (R) 83 s

Lanes, Volumes, Timings

6: 175th Street & Proposed Full Access Drive

03/17/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	191	59	36	523	53	35	6	38	72	5	37
Future Volume (vph)	40	191	59	36	523	53	35	6	38	72	5	37
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	11	12	12	12	12	12	12
Storage Length (ft)	125		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	155			155			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.965			0.986			0.935			0.867	
Flt Protected	0.950			0.950				0.978		0.950		
Satd. Flow (prot)	1805	2082	0	1770	1792	0	0	1703	0	1805	1644	0
Flt Permitted	0.379			0.597				0.836		0.703		
Satd. Flow (perm)	720	2082	0	1112	1792	0	0	1456	0	1336	1644	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			8			36			39	
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		808			517			363			470	
Travel Time (s)		18.4			11.8			8.3			12.8	
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
Heavy Vehicles (%)	0%	6%	2%	2%	5%	0%	2%	2%	2%	0%	2%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	263	0	38	607	0	0	83	0	76	44	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	11.0	76.0		11.0	76.0		28.0	28.0		28.0	28.0	
Total Split (%)	9.6%	66.1%		9.6%	66.1%		24.3%	24.3%		24.3%	24.3%	
Yellow Time (s)	3.5	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0			6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Recall Mode	None	C-Min		None	C-Max		None	None		None	None	
Act Effct Green (s)	94.3	89.2		93.5	87.3			11.5		11.7	11.7	
Actuated g/C Ratio	0.82	0.78		0.81	0.76			0.10		0.10	0.10	
v/c Ratio	0.06	0.16		0.04	0.45			0.47		0.56	0.22	
Control Delay	2.8	5.0		2.4	6.7			37.1		64.2	18.6	
Queue Delay	0.0	0.0		0.0	0.2			0.0		0.0	0.0	
Total Delay	2.8	5.0		2.4	6.9			37.1		64.2	18.6	
LOS	A	A		A	A			D		E	B	
Approach Delay		4.7			6.6			37.1			47.5	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	5	51		3	107			33		54	3	

Lanes, Volumes, Timings

6: 175th Street & Proposed Full Access Drive

03/17/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	14	95		m11	225			80		100	37	
Internal Link Dist (ft)		728			437			283			390	
Turn Bay Length (ft)	125			125								
Base Capacity (vph)	665	1620		957	1361			307		255	346	
Starvation Cap Reductn	0	0		0	217			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.06	0.16		0.04	0.53			0.27		0.30	0.13	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 82 (71%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 12.6

Intersection LOS: B

Intersection Capacity Utilization 54.5%

ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: 175th Street & Proposed Full Access Drive

													
Ø1	Ø2 (R)	Ø3	Ø4	Ø5	Ø6 (R)	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø13	Ø14
11 s	76 s			11 s	76 s			28 s					

HCM 6th TWSC
3: Lathrop Avenue & 175th Street

03/17/2022

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	277	12	8	559	28	20	3	5	8	6	3
Future Vol, veh/h	1	277	12	8	559	28	20	3	5	8	6	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	110	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	4	0	37	6	0	5	0	80	0	0	3
Mvmt Flow	1	308	13	9	621	31	22	3	6	9	7	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	652	0	0	321	0	0	977	987	315	976	978	637
Stage 1	-	-	-	-	-	-	317	317	-	655	655	-
Stage 2	-	-	-	-	-	-	660	670	-	321	323	-
Critical Hdwy	4.1	-	-	4.47	-	-	7.15	6.5	7	7.1	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.533	-	-	3.545	4	4.02	3.5	4	3.327
Pot Cap-1 Maneuver	944	-	-	1066	-	-	227	249	576	232	252	475
Stage 1	-	-	-	-	-	-	688	658	-	458	466	-
Stage 2	-	-	-	-	-	-	447	459	-	695	654	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	944	-	-	1066	-	-	219	247	576	226	250	475
Mov Cap-2 Maneuver	-	-	-	-	-	-	219	247	-	226	250	-
Stage 1	-	-	-	-	-	-	687	657	-	458	462	-
Stage 2	-	-	-	-	-	-	434	455	-	684	653	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			21.4			20		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	250	944	-	-	1066	-	-	259
HCM Lane V/C Ratio	0.124	0.001	-	-	0.008	-	-	0.073
HCM Control Delay (s)	21.4	8.8	-	-	8.4	-	-	20
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.2

HCM 6th TWSC
4: Lathrop Avenue & 174th Street

03/17/2022

Intersection

Int Delay, s/veh 3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	8	27	10	2	12
Future Vol, veh/h	17	8	27	10	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	0	0	0	0
Mvmt Flow	20	10	33	12	2	14

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	57	39	0
Stage 1	39	-	-
Stage 2	18	-	-
Critical Hdwy	6.41	6.2	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.3	-
Pot Cap-1 Maneuver	953	1038	-
Stage 1	986	-	-
Stage 2	1007	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	952	1038	-
Mov Cap-2 Maneuver	952	-	-
Stage 1	986	-	-
Stage 2	1006	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	978	1576
HCM Lane V/C Ratio	-	-	0.031	0.002
HCM Control Delay (s)	-	-	8.8	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM Unsignalized Intersection Capacity Analysis

5: Halsted Street & Right-In/Right-Out Access Drive

03/16/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations		↗		↑↑↑	↑↑↑↗				
Traffic Volume (veh/h)	0	7	0	1268	1571	34			
Future Volume (Veh/h)	0	7	0	1268	1571	34			
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	7	0	1335	1654	36			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type				None	None				
Median storage veh)									
Upstream signal (ft)				278	429				
pX, platoon unblocked	0.94	0.89	0.89						
vC, conflicting volume	2117	432	1690						
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	951	0	1137						
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	100						
cM capacity (veh/h)	245	967	551						
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4	
Volume Total	7	445	445	445	473	473	473	272	
Volume Left	0	0	0	0	0	0	0	0	
Volume Right	7	0	0	0	0	0	0	36	
cSH	967	1700	1700	1700	1700	1700	1700	1700	
Volume to Capacity	0.01	0.26	0.26	0.26	0.28	0.28	0.28	0.16	
Queue Length 95th (ft)	1	0	0	0	0	0	0	0	
Control Delay (s)	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lane LOS									
Approach Delay (s)	8.8	0.0	0.0						
Approach LOS									
Intersection Summary									
Average Delay			0.0						
Intersection Capacity Utilization			33.3%		ICU Level of Service		A		
Analysis Period (min)			15						

HCM 6th TWSC
6: 175th Street & Proposed Full Access Drive

03/16/2022

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	191	59	36	523	53	35	6	38	72	5	37
Future Vol, veh/h	40	191	59	36	523	53	35	6	38	72	5	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	125	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	0	6	2	2	5	0	2	2	2	0	2	0
Mvmt Flow	42	201	64	39	551	56	38	7	41	76	5	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	607	0	0	265	0	0	996	1002	233	998	1006	579
Stage 1	-	-	-	-	-	-	317	317	-	657	657	-
Stage 2	-	-	-	-	-	-	679	685	-	341	349	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	981	-	-	1299	-	-	223	242	806	224	241	519
Stage 1	-	-	-	-	-	-	694	654	-	457	462	-
Stage 2	-	-	-	-	-	-	441	448	-	678	633	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	981	-	-	1299	-	-	191	225	806	196	224	519
Mov Cap-2 Maneuver	-	-	-	-	-	-	191	225	-	196	224	-
Stage 1	-	-	-	-	-	-	664	626	-	437	448	-
Stage 2	-	-	-	-	-	-	391	435	-	609	606	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			0.5			21.2			26.9		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	307	981	-	-	1299	-	-	196	447
HCM Lane V/C Ratio	0.28	0.043	-	-	0.03	-	-	0.387	0.099
HCM Control Delay (s)	21.2	8.8	-	-	7.9	-	-	34.5	13.9
HCM Lane LOS	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0.1	-	-	1.7	0.3

Lanes, Volumes, Timings
1: Halsted Street & 175th Street

03/17/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	446	53	234	18	44	66	181	1453	8	91	1622	341
Future Volume (vph)	446	53	234	18	44	66	181	1453	8	91	1622	341
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Lane Width (ft)	11	11	11	10	10	10	12	12	12	12	12	12
Storage Length (ft)	300		258	110		110	245		0	145		0
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	115			175			240			220		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Frt			0.850			0.850		0.999				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3319	1895	1546	1589	1867	1463	1787	5032	0	1770	5353	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3319	1895	1546	1589	1867	1463	1787	5032	0	1770	5353	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		517			436			971			278	
Travel Time (s)		11.8			9.9			14.7			4.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	1%	6%	0%	3%	1%	3%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	460	55	241	19	45	68	187	1506	0	94	1672	352
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases			4			8						6
Detector Phase	7	4	5	3	8	1	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	3.0	3.0	8.0	3.0	3.0	15.0		3.0	15.0	3.0
Minimum Split (s)	7.5	14.0	7.5	7.5	14.0	7.5	7.5	21.0		7.5	33.0	7.5
Total Split (s)	22.0	25.0	13.0	20.0	23.0	17.0	13.0	68.0		17.0	72.0	22.0
Total Split (%)	16.9%	19.2%	10.0%	15.4%	17.7%	13.1%	10.0%	52.3%		13.1%	55.4%	16.9%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	3.5
All-Red Time (s)	1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5		1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	4.5	6.0	4.5	4.5	6.0		4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	None
Act Effct Green (s)	18.2	24.4	48.9	7.1	9.8	25.2	18.5	71.7		12.2	65.3	89.5
Actuated g/C Ratio	0.14	0.19	0.38	0.05	0.08	0.19	0.14	0.55		0.09	0.50	0.69
v/c Ratio	0.99	0.15	0.41	0.22	0.32	0.24	0.74	0.54		0.57	0.62	0.32
Control Delay	90.0	39.5	32.0	64.0	62.5	42.8	72.5	20.8		78.0	14.1	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	90.0	39.5	32.0	64.0	62.5	42.8	72.5	20.8		78.0	14.1	2.9
LOS	F	D	C	E	E	D	E	C		E	B	A
Approach Delay		67.8			52.6			26.5			15.1	
Approach LOS		E			D			C			B	
Queue Length 50th (ft)	~197	30	134	16	37	48	157	296		84	138	24

Lanes, Volumes, Timings

1: Halsted Street & 175th Street

03/17/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	#319	m64	m246	42	76	84	#325	389		m137	148	30
Internal Link Dist (ft)		437			356			891			198	
Turn Bay Length (ft)	300		258	110		110	245			145		
Base Capacity (vph)	463	356	581	189	244	300	254	2773		186	2717	1089
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.99	0.15	0.41	0.10	0.18	0.23	0.74	0.54		0.51	0.62	0.32

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 9 (7%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 28.7

Intersection LOS: C

Intersection Capacity Utilization 72.9%

ICU Level of Service C

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Halsted Street & 175th Street

 Ø1	 Ø2 (R)	 Ø3	 Ø4
17 s	68 s	20 s	25 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13 s	72 s	22 s	23 s

Lanes, Volumes, Timings

2: Halsted Street & Full Access Drive

03/17/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	←←	→	←←	↑↑↑	↑↑↑	→
Traffic Volume (vph)	333	111	113	1852	2007	377
Future Volume (vph)	333	111	113	1852	2007	377
Ideal Flow (vphpl)	1900	1900	1900	2000	2000	1900
Storage Length (ft)	0	0	230			215
Storage Lanes	2	1	2			1
Taper Length (ft)	25		250			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3502	1615	3502	5301	5353	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3502	1615	3502	5301	5353	1583
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			45	45	
Link Distance (ft)	388			429	591	
Travel Time (s)	10.6			6.5	9.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	3%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	351	117	119	1949	2113	397
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	4
Switch Phase						
Minimum Initial (s)	8.0	3.0	3.0	15.0	3.0	8.0
Minimum Split (s)	14.0	7.5	7.5	21.0	38.0	14.0
Total Split (s)	33.0	17.0	17.0	97.0	80.0	33.0
Total Split (%)	25.4%	13.1%	13.1%	74.6%	61.5%	25.4%
Yellow Time (s)	4.5	3.5	3.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	4.5	4.5	6.0	6.0	6.0
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	None	C-Min	C-Min	None
Act Effect Green (s)	20.9	36.7	9.8	97.1	82.8	109.7
Actuated g/C Ratio	0.16	0.28	0.08	0.75	0.64	0.84
v/c Ratio	0.62	0.26	0.45	0.49	0.62	0.30
Control Delay	55.4	36.0	74.8	7.6	16.0	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	36.0	74.8	7.6	16.0	2.9
LOS	E	D	E	A	B	A
Approach Delay	50.5			11.5	13.9	
Approach LOS	D			B	B	
Queue Length 50th (ft)	143	76	55	167	366	53
Queue Length 95th (ft)	185	117	m81	m178	498	89

Lanes, Volumes, Timings

2: Halsted Street & Full Access Drive

03/17/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Internal Link Dist (ft)	308			349	511	
Turn Bay Length (ft)			230			215
Base Capacity (vph)	727	489	336	3959	3409	1409
Starvation Cap Reductn	0	0	0	383	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.24	0.35	0.55	0.62	0.28

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 13 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 16.3

Intersection LOS: B

Intersection Capacity Utilization 63.4%

ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Halsted Street & Full Access Drive

Ø2 (R) 97 s	Ø4 33 s
Ø5 17 s	Ø6 (R) 80 s

Lanes, Volumes, Timings

6: 175th Street & Proposed Full Access Drive

03/17/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	444	148	138	310	118	71	18	123	166	19	67
Future Volume (vph)	60	444	148	138	310	118	71	18	123	166	19	67
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	125		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	155			155			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.959			0.922			0.883	
Flt Protected	0.950			0.950				0.983		0.950		
Satd. Flow (prot)	1805	2154	0	1770	1809	0	0	1688	0	1805	1670	0
Flt Permitted	0.463			0.301				0.852		0.494		
Satd. Flow (perm)	880	2154	0	561	1809	0	0	1463	0	939	1670	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			25			51			71	
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		808			517			201			470	
Travel Time (s)		18.4			11.8			4.6			12.8	
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
Heavy Vehicles (%)	0%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	623	0	145	450	0	0	223	0	175	91	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	10.0	71.0		20.0	81.0		39.0	39.0		39.0	39.0	
Total Split (%)	7.7%	54.6%		15.4%	62.3%		30.0%	30.0%		30.0%	30.0%	
Yellow Time (s)	3.5	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0			6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Recall Mode	None	C-Min		None	C-Max		None	None		None	None	
Act Effct Green (s)	87.7	78.8		93.0	83.2			26.7		26.7	26.7	
Actuated g/C Ratio	0.67	0.61		0.72	0.64			0.21		0.21	0.21	
v/c Ratio	0.10	0.47		0.30	0.39			0.65		0.91	0.23	
Control Delay	7.0	16.5		7.4	11.8			44.6		94.2	14.0	
Queue Delay	0.0	0.0		0.0	0.5			0.0		0.0	0.0	
Total Delay	7.0	16.5		7.4	12.3			44.6		94.2	14.0	
LOS	A	B		A	B			D		F	B	
Approach Delay		15.6			11.1			44.6			66.8	
Approach LOS		B			B			D			E	
Queue Length 50th (ft)	14	273		39	172			133		143	14	

Lanes, Volumes, Timings

6: 175th Street & Proposed Full Access Drive

03/17/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	32	425		m49	243			212		#248	57	
Internal Link Dist (ft)		728			437			121			390	
Turn Bay Length (ft)	125			125								
Base Capacity (vph)	642	1313		558	1166			409		238	476	
Starvation Cap Reductn	0	0		0	355			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.10	0.47		0.26	0.55			0.55		0.74	0.19	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 77 (59%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 25.4

Intersection LOS: C

Intersection Capacity Utilization 74.6%

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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: 175th Street & Proposed Full Access Drive

		
Ø1	Ø2 (R)	Ø4
20 s	71 s	39 s
		
Ø5	Ø6 (R)	Ø8
10 s	81 s	39 s

HCM 6th TWSC
3: Lathrop Avenue & 175th Street

03/17/2022

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	622	26	3	387	58	23	9	13	17	1	2
Future Vol, veh/h	1	622	26	3	387	58	23	9	13	17	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	110	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	2	0	33	1	0	0	0	15	0	0	0
Mvmt Flow	1	740	31	4	461	69	27	11	15	20	1	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	530	0	0	771	0	0	1263	1296	756	1275	1277	496
Stage 1	-	-	-	-	-	-	758	758	-	504	504	-
Stage 2	-	-	-	-	-	-	505	538	-	771	773	-
Critical Hdwy	4.1	-	-	4.43	-	-	7.1	6.5	6.35	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.497	-	-	3.5	4	3.435	3.5	4	3.3
Pot Cap-1 Maneuver	1048	-	-	721	-	-	148	164	388	145	168	578
Stage 1	-	-	-	-	-	-	402	418	-	554	544	-
Stage 2	-	-	-	-	-	-	553	526	-	396	412	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1048	-	-	721	-	-	146	163	388	132	167	578
Mov Cap-2 Maneuver	-	-	-	-	-	-	146	163	-	132	167	-
Stage 1	-	-	-	-	-	-	402	418	-	553	541	-
Stage 2	-	-	-	-	-	-	546	523	-	370	412	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			32.6			34.6		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	183	1048	-	-	721	-	-	145
HCM Lane V/C Ratio	0.293	0.001	-	-	0.005	-	-	0.164
HCM Control Delay (s)	32.6	8.4	-	-	10	-	-	34.6
HCM Lane LOS	D	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	1.2	0	-	-	0	-	-	0.6

HCM 6th TWSC
4: Lathrop Avenue & 174th Street

03/17/2022

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	11	63	18	2	10
Future Vol, veh/h	19	11	63	18	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	30	17	98	28	3	16

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	134	112	0
Stage 1	112	-	-
Stage 2	22	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	864	947	-
Stage 1	918	-	-
Stage 2	1006	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	862	947	-
Mov Cap-2 Maneuver	862	-	-
Stage 1	918	-	-
Stage 2	1004	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	891	1473
HCM Lane V/C Ratio	-	-	0.053	0.002
HCM Control Delay (s)	-	-	9.3	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0

HCM Unsignalized Intersection Capacity Analysis

5: Halsted Street & Right-In/Right-Out Access Drive

03/16/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations									
Traffic Volume (veh/h)	0	25	0	1965	2029	89			
Future Volume (Veh/h)	0	25	0	1965	2029	89			
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	26	0	2068	2136	94			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type				None	None				
Median storage (veh)									
Upstream signal (ft)				278	429				
pX, platoon unblocked	0.88	0.78	0.78						
vC, conflicting volume	2872	581	2230						
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	725	0	1148						
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	97	100						
cM capacity (veh/h)	319	848	479						
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4	
Volume Total	26	689	689	689	610	610	610	399	
Volume Left	0	0	0	0	0	0	0	0	
Volume Right	26	0	0	0	0	0	0	94	
cSH	848	1700	1700	1700	1700	1700	1700	1700	
Volume to Capacity	0.03	0.41	0.41	0.41	0.36	0.36	0.36	0.23	
Queue Length 95th (ft)	2	0	0	0	0	0	0	0	
Control Delay (s)	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A								
Approach Delay (s)	9.4	0.0				0.0			
Approach LOS	A								
Intersection Summary									
Average Delay			0.1						
Intersection Capacity Utilization			40.9%		ICU Level of Service		A		
Analysis Period (min)			15						

HCM 6th TWSC
6: 175th Street & Proposed Full Access Drive

03/16/2022

Intersection												
Int Delay, s/veh	136											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	444	148	138	310	118	71	18	123	166	19	67
Future Vol, veh/h	60	444	148	138	310	118	71	18	123	166	19	67
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	125	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	0	1	2	2	1	0	2	2	2	0	2	0
Mvmt Flow	63	467	161	150	326	124	77	20	134	175	21	71
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	450	0	0	628	0	0	1408	1424	548	1439	1442	388
Stage 1	-	-	-	-	-	-	674	674	-	688	688	-
Stage 2	-	-	-	-	-	-	734	750	-	751	754	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	1121	-	-	954	-	-	116	136	536	~ 112	132	665
Stage 1	-	-	-	-	-	-	444	454	-	440	447	-
Stage 2	-	-	-	-	-	-	412	419	-	406	417	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1121	-	-	954	-	-	~ 75	108	536	~ 61	105	665
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 75	108	-	~ 61	105	-
Stage 1	-	-	-	-	-	-	419	429	-	415	377	-
Stage 2	-	-	-	-	-	-	293	353	-	274	394	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			2.4			290.9			\$ 655.2		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	158	1121	-	-	954	-	-	61	301			
HCM Lane V/C Ratio	1.458	0.056	-	-	0.157	-	-	2.865	0.303			
HCM Control Delay (s)	290.9	8.4	-	-	9.5	-	-	\$ 985.6	22.1			
HCM Lane LOS	F	A	-	-	A	-	-	F	C			
HCM 95th %tile Q(veh)	14.9	0.2	-	-	0.6	-	-	17.9	1.2			
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Lanes, Volumes, Timings
1: Halsted Street & 175th Street

03/17/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 							  			  	
Traffic Volume (vph)	343	67	188	2	67	87	203	1216	13	130	1442	378
Future Volume (vph)	343	67	188	2	67	87	203	1216	13	130	1442	378
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Lane Width (ft)	11	11	11	10	10	10	12	12	12	12	12	12
Storage Length (ft)	300		258	110		110	245		0	145		0
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	115			175			240			220		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Frt			0.850			0.850		0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3351	1933	1546	1685	1867	1492	1805	5124	0	1787	5353	1568
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3351	1933	1546	1685	1867	1492	1805	5124	0	1787	5353	1568
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		517			436			971			278	
Travel Time (s)		11.8			9.9			14.7			4.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	1%	0%	0%	1%	0%	1%	3%	1%	2%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	354	69	194	2	69	90	209	1267	0	134	1487	390
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases			4			8						6
Detector Phase	7	4	5	3	8	1	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	3.0	3.0	8.0	3.0	3.0	15.0		3.0	15.0	3.0
Minimum Split (s)	7.5	14.0	7.5	7.5	14.0	7.5	7.5	21.0		7.5	33.0	7.5
Total Split (s)	20.0	29.0	13.0	20.0	29.0	13.0	13.0	53.0		13.0	53.0	20.0
Total Split (%)	17.4%	25.2%	11.3%	17.4%	25.2%	11.3%	11.3%	46.1%		11.3%	46.1%	17.4%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	3.5
All-Red Time (s)	1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5		1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	4.5	6.0	4.5	4.5	6.0		4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	None
Act Effect Green (s)	15.0	25.4	54.9	5.7	10.8	30.2	23.6	54.8		16.2	47.4	68.4
Actuated g/C Ratio	0.13	0.22	0.48	0.05	0.09	0.26	0.21	0.48		0.14	0.41	0.59
v/c Ratio	0.81	0.16	0.26	0.02	0.40	0.23	0.56	0.52		0.53	0.67	0.42
Control Delay	59.5	30.7	13.4	52.5	55.1	32.3	50.3	23.3		67.9	17.2	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	59.5	30.7	13.4	52.5	55.1	32.3	50.3	23.3		67.9	17.2	4.0
LOS	E	C	B	D	E	C	D	C		E	B	A
Approach Delay		41.8			42.3			27.1			18.0	
Approach LOS		D			D			C			B	
Queue Length 50th (ft)	103	22	40	1	49	51	145	246		105	110	26

Lanes, Volumes, Timings

1: Halsted Street & 175th Street

03/17/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	m#201	m68	m94	10	93	88	#266	314		m168	152	32
Internal Link Dist (ft)		437			356			891			198	
Turn Bay Length (ft)	300		258	110		110	245			145		
Base Capacity (vph)	451	464	738	227	373	392	370	2439		252	2207	939
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.78	0.15	0.26	0.01	0.18	0.23	0.56	0.52		0.53	0.67	0.42

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 2 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 25.5

Intersection LOS: C

Intersection Capacity Utilization 67.9%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Halsted Street & 175th Street

											
Ø1	Ø2 (R)		Ø3	Ø4		Ø5	Ø6 (R)	Ø7	Ø8		
13 s	53 s		20 s	29 s		13 s	53 s	20 s	29 s		

Lanes, Volumes, Timings

2: Halsted Street & Full Access Drive

03/17/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔↔	↗	↔↔	↑↑↑	↑↑↑	↗
Traffic Volume (vph)	424	141	144	1502	1889	476
Future Volume (vph)	424	141	144	1502	1889	476
Ideal Flow (vphpl)	1900	1900	1900	2000	2000	1900
Storage Length (ft)	0	0	230			215
Storage Lanes	2	1	2			1
Taper Length (ft)	25		250			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3502	1615	3502	5406	5353	1615
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3502	1615	3502	5406	5353	1615
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			45	45	
Link Distance (ft)	388			429	591	
Travel Time (s)	10.6			6.5	9.0	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	1%	2%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	433	144	147	1533	1928	486
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	4
Switch Phase						
Minimum Initial (s)	8.0	3.0	3.0	15.0	3.0	8.0
Minimum Split (s)	14.0	7.5	7.5	21.0	38.0	14.0
Total Split (s)	35.0	17.0	17.0	80.0	63.0	35.0
Total Split (%)	30.4%	14.8%	14.8%	69.6%	54.8%	30.4%
Yellow Time (s)	4.5	3.5	3.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	4.5	4.5	6.0	6.0	6.0
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	None	C-Min	C-Min	None
Act Effect Green (s)	22.8	38.9	10.1	80.2	65.6	94.4
Actuated g/C Ratio	0.20	0.34	0.09	0.70	0.57	0.82
v/c Ratio	0.62	0.26	0.48	0.41	0.63	0.37
Control Delay	45.7	27.5	64.0	6.5	18.7	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.7	27.5	64.0	6.5	18.7	3.7
LOS	D	C	E	A	B	A
Approach Delay	41.1			11.5	15.7	
Approach LOS	D			B	B	
Queue Length 50th (ft)	152	77	60	115	334	71
Queue Length 95th (ft)	192	114	m91	129	457	119

Lanes, Volumes, Timings

2: Halsted Street & Full Access Drive

03/17/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Internal Link Dist (ft)	308			349	511	
Turn Bay Length (ft)			230			215
Base Capacity (vph)	883	580	380	3768	3052	1412
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	0.49	0.25	0.39	0.41	0.63	0.34

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 2 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 17.4

Intersection LOS: B

Intersection Capacity Utilization 64.6%

ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Halsted Street & Full Access Drive



Lanes, Volumes, Timings

6: 175th Street & Proposed Full Access Drive

03/17/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	216	129	148	343	157	79	31	162	220	37	58
Future Volume (vph)	74	216	129	148	343	157	79	31	162	220	37	58
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	125		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	155			155			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.944			0.953			0.920			0.908	
Flt Protected	0.950			0.950				0.986		0.950		
Satd. Flow (prot)	1805	2111	0	1770	1786	0	0	1690	0	1805	1712	0
Flt Permitted	0.368			0.434				0.870		0.484		
Satd. Flow (perm)	699	2111	0	808	1786	0	0	1491	0	920	1712	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			28			68			61	
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		808			517			447			470	
Travel Time (s)		18.4			11.8			10.2			12.8	
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
Heavy Vehicles (%)	0%	1%	2%	2%	2%	0%	2%	2%	2%	0%	2%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	363	0	156	526	0	0	287	0	232	100	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	26.0		9.5	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	10.0	52.0		20.0	62.0		43.0	43.0		43.0	43.0	
Total Split (%)	8.7%	45.2%		17.4%	53.9%		37.4%	37.4%		37.4%	37.4%	
Yellow Time (s)	3.5	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0			6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Recall Mode	None	C-Min		Min	C-Min		None	None		None	None	
Act Effct Green (s)	66.3	56.9		72.0	61.7			32.8		32.8	32.8	
Actuated g/C Ratio	0.58	0.49		0.63	0.54			0.29		0.29	0.29	
v/c Ratio	0.17	0.34		0.27	0.54			0.61		0.89	0.19	
Control Delay	11.1	19.4		8.5	16.8			31.2		71.2	12.9	
Queue Delay	0.0	0.0		0.0	0.5			0.0		0.0	0.0	
Total Delay	11.1	19.4		8.5	17.3			31.2		71.2	12.9	
LOS	B	B		A	B			C		E	B	
Approach Delay		17.9			15.3			31.2			53.7	
Approach LOS		B			B			C			D	
Queue Length 50th (ft)	21	146		30	116			138		162	21	

Lanes, Volumes, Timings

6: 175th Street & Proposed Full Access Drive

03/17/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	49	262		58	138			208		#251	56	
Internal Link Dist (ft)		728			437			367			390	
Turn Bay Length (ft)	125			125								
Base Capacity (vph)	471	1065		649	994			540		306	609	
Starvation Cap Reductn	0	0		0	163			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.17	0.34		0.24	0.63			0.53		0.76	0.16	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 16 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 25.9

Intersection LOS: C

Intersection Capacity Utilization 78.3%

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: 6: 175th Street & Proposed Full Access Drive

		
Ø1	Ø2 (R)	Ø4
20 s	52 s	43 s
		
Ø5	Ø6 (R)	Ø8
10 s	62 s	43 s

HCM 6th TWSC
3: Lathrop Avenue & 175th Street

03/17/2022

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	373	14	1	411	68	21	2	2	44	6	5
Future Vol, veh/h	0	373	14	1	411	68	21	2	2	44	6	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	110	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	1	0	0	2	0	0	0	0	0	0	2
Mvmt Flow	0	410	15	1	452	75	23	2	2	48	7	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	527	0	0	425	0	0	916	947	418	912	917	490
Stage 1	-	-	-	-	-	-	418	418	-	492	492	-
Stage 2	-	-	-	-	-	-	498	529	-	420	425	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.318
Pot Cap-1 Maneuver	1050	-	-	1145	-	-	255	263	639	257	274	578
Stage 1	-	-	-	-	-	-	616	594	-	562	551	-
Stage 2	-	-	-	-	-	-	558	530	-	615	590	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1050	-	-	1145	-	-	248	263	639	254	274	578
Mov Cap-2 Maneuver	-	-	-	-	-	-	248	263	-	254	274	-
Stage 1	-	-	-	-	-	-	616	594	-	562	550	-
Stage 2	-	-	-	-	-	-	546	529	-	611	590	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			20.3			22.1		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	262	1050	-	-	1145	-	-	270
HCM Lane V/C Ratio	0.105	-	-	-	0.001	-	-	0.224
HCM Control Delay (s)	20.3	0	-	-	8.1	-	-	22.1
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.8

HCM 6th TWSC
4: Lathrop Avenue & 174th Street

03/17/2022

Intersection

Int Delay, s/veh 3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	7	64	23	2	19
Future Vol, veh/h	46	7	64	23	2	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	5
Mvmt Flow	49	8	69	25	2	20

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	106	82	0
Stage 1	82	-	-
Stage 2	24	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	897	983	-
Stage 1	946	-	-
Stage 2	1004	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	896	983	-
Mov Cap-2 Maneuver	896	-	-
Stage 1	946	-	-
Stage 2	1003	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	907	1513
HCM Lane V/C Ratio	-	-	0.063	0.001
HCM Control Delay (s)	-	-	9.2	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0

HCM Unsignalized Intersection Capacity Analysis

5: Halsted Street & Right-In/Right-Out Access Drive

03/16/2022



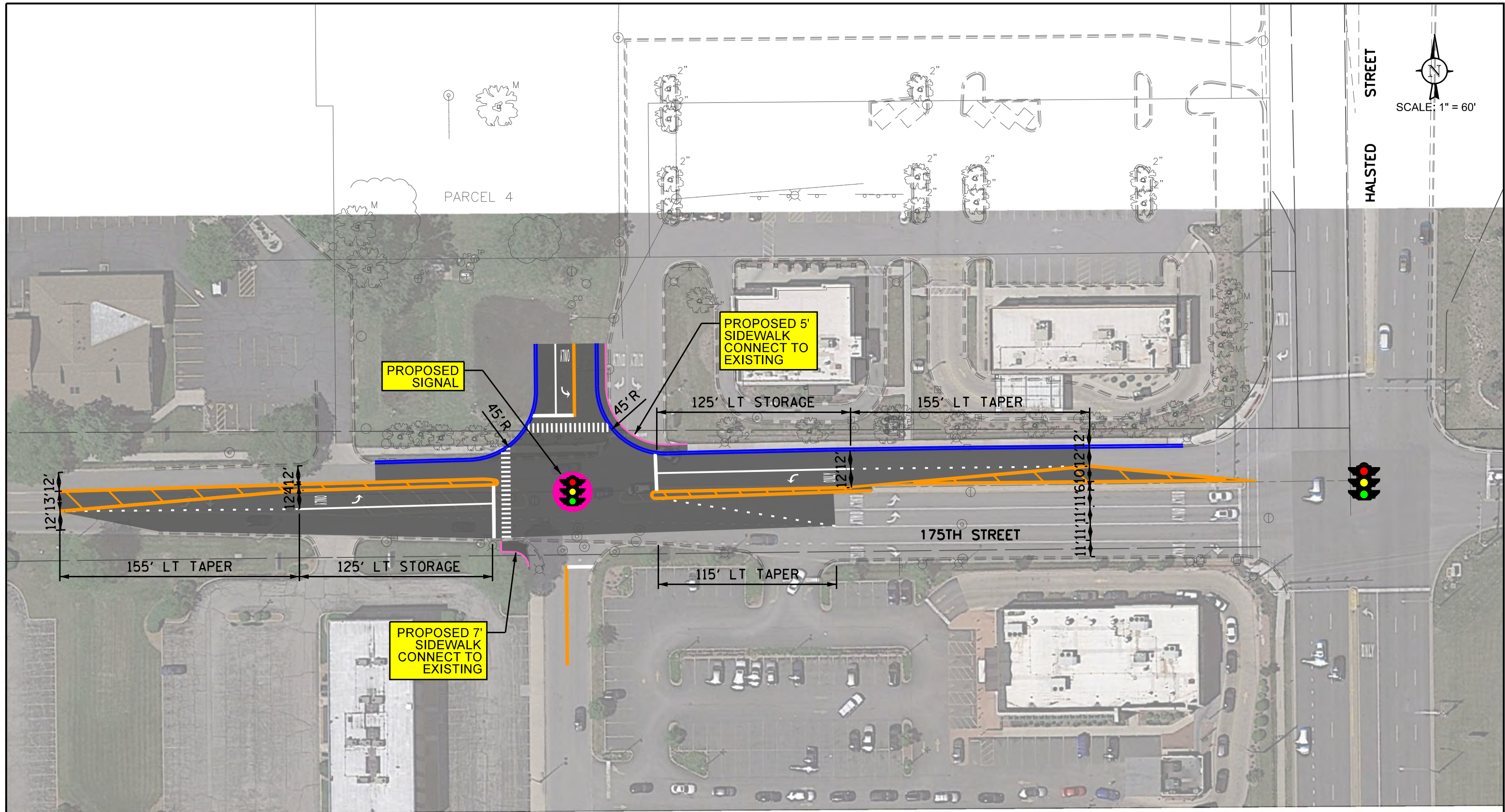
Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations									
Traffic Volume (veh/h)	0	32	0	1646	1918	112			
Future Volume (Veh/h)	0	32	0	1646	1918	112			
Sign Control	Stop			Free	Free				
Grade	0%			0%	0%				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95			
Hourly flow rate (vph)	0	34	0	1733	2019	118			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type				None	None				
Median storage (veh)									
Upstream signal (ft)				278	429				
pX, platoon unblocked	0.86	0.77	0.77						
vC, conflicting volume	2656	564	2137						
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	566	0	1012						
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	96	100						
cM capacity (veh/h)	397	845	537						
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4	
Volume Total	34	578	578	578	577	577	577	406	
Volume Left	0	0	0	0	0	0	0	0	
Volume Right	34	0	0	0	0	0	0	118	
cSH	845	1700	1700	1700	1700	1700	1700	1700	
Volume to Capacity	0.04	0.34	0.34	0.34	0.34	0.34	0.34	0.24	
Queue Length 95th (ft)	3	0	0	0	0	0	0	0	
Control Delay (s)	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lane LOS									
Approach Delay (s)	9.4	0.0	0.0						
Approach LOS									
A									
Intersection Summary									
Average Delay			0.1						
Intersection Capacity Utilization			39.7%		ICU Level of Service		A		
Analysis Period (min)			15						

HCM 6th TWSC
6: 175th Street & Proposed Full Access Drive

03/16/2022

Intersection												
Int Delay, s/veh	205.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	74	216	129	148	343	157	79	31	162	220	37	58
Future Vol, veh/h	74	216	129	148	343	157	79	31	162	220	37	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	125	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	0	1	2	2	2	0	2	2	2	0	2	0
Mvmt Flow	78	227	140	161	361	165	86	34	176	232	40	61
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	526	0	0	367	0	0	1269	1301	297	1324	1289	444
Stage 1	-	-	-	-	-	-	453	453	-	766	766	-
Stage 2	-	-	-	-	-	-	816	848	-	558	523	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	1051	-	-	1192	-	-	145	161	742	~ 134	164	618
Stage 1	-	-	-	-	-	-	586	570	-	398	412	-
Stage 2	-	-	-	-	-	-	371	378	-	518	530	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1051	-	-	1192	-	-	~ 85	129	742	~ 70	131	618
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 85	129	-	~ 70	131	-
Stage 1	-	-	-	-	-	-	543	528	-	369	356	-
Stage 2	-	-	-	-	-	-	257	327	-	342	491	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			2			297.6			\$ 818.9		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	196	1051	-	-	1192	-	-	70	250			
HCM Lane V/C Ratio	1.508	0.074	-	-	0.135	-	-	3.308	0.405			
HCM Control Delay (s)	297.6	8.7	-	-	8.5	-	-	\$ 1164.3	28.9			
HCM Lane LOS	F	A	-	-	A	-	-	F	D			
HCM 95th %tile Q(veh)	18.5	0.2	-	-	0.5	-	-	23.8	1.9			
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

175th Street Proposed Striping



PROPOSED
WIND CREEK CASINO
EAST HAZEL CREST/
HOMEWOOD, ILLINOIS

PRELIMINARY PROPOSED STRIPING 175TH STREET

DRAWN: MD
DATE: 01-17-22
PROJECT # 19-160
EXHIBIT: A

CHECKED: LA
REV:



Red Time Formula Queue Calculation Sheets

RED TIME QUEUE FOR 175TH STREET AND ACCESS DRIVE

(1 + T%) * (1 - G/C) * (2 * 25) * (DHV) / (# LANES) * (CYCLES / HR)

APR C - EASTBOUND

APR C - EASTBOUND						= ENTER MANUALLY									
	MOVEMENT	LANES	T %	DHV	G (SEC.)	Gu (SEC.)	G + Gu (SEC.)	CYCLE LENGTH	(G+Gu)/C	1 + T%	CYCLES/HR	BACK OF QUEUE	95TH % QUEUE	RED-TIME QUEUE	
AM	CA (L)	1	0	40	7.5	74.4	81.9	115	0.71	1.00	31.304	0.6	14 FT	18 FT	
	CD+CB (TR)	1	5	250	70.0	0.0	70.0	115	0.61	1.05	31.304	3.8	95 FT	164 FT	
PM	CA (L)	1	0	60	6.5	72.7	79.2	130	0.61	1.00	27.692	1.3	32 FT	42 FT	
	CD+CB (TR)	1	1	592	65.0	0.0	65.0	130	0.50	1.01	27.692	17.0	425 FT	540 FT	
SAT	CA (L)	1	0	74	6.5	44.6	51.1	115	0.44	1.00	31.304	2.0	49 FT	66 FT	
	CD+CB (TR)	1	1	345	46.0	0.0	46.0	115	0.40	1.01	31.304	10.5	262 FT	334 FT	

APR D - WESTBOUND

	MOVEMENT	LANES	T %	DHV	G (SEC.)	Gu (SEC.)	G + Gu (SEC.)	CYCLE LENGTH	(G+Gu)/C	1 + T%	CYCLES/HR	BACK OF QUEUE	95TH % QUEUE	RED-TIME QUEUE
AM	DB (L)	1	2	36	7.5	84.1	91.6	115	0.80	1.02	31.304	0.4	11 FT	12 FT
	DC+DA (TR)	1	5	576	70.0	0.0	70.0	115	0.61	1.05	31.304	9.0	225 FT	378 FT
PM	DB (L)	1	2	138	16.5	57.9	74.4	130	0.57	1.02	27.692	2.0	49 FT	109 FT
	DC+DA (TR)	1	1	428	75.0	0.0	75.0	130	0.58	1.01	27.692	9.7	243 FT	330 FT
SAT	DB (L)	1	2	148	16.5	48.1	64.6	115	0.56	1.02	31.304	2.3	58 FT	106 FT
	DC+DA (TR)	1	1	500	56.0	0.0	56.0	115	0.49	1.01	31.304	5.5	138 FT	414 FT

APR B - NORTHBOUND

	MOVEMENT	LANES	T %	DHV	G (SEC.)	Gu (SEC.)	G + Gu (SEC.)	CYCLE LENGTH	(G+Gu)/C	1 + T%	CYCLES/HR	BACK OF QUEUE	95TH % QUEUE	RED-TIME QUEUE
AM	BC+BA+BD (LTR)	1	2	79	22.0	0.0	22.0	115	0.19	1.02	31.304	3.2	80 FT	104 FT
PM	BC+BA+BD (LTR)	1	2	212	33.0	0.0	33.0	130	0.25	1.02	27.692	8.5	212 FT	291 FT
SAT	BC+BA+BD (LTR)	1	2	272	37.0	0.0	37.0	115	0.32	1.02	31.304	8.3	208 FT	301 FT

APR A - SOUTHBOUND

	MOVEMENT	LANES	T %	DHV	G (SEC.)	Gu (SEC.)	G + Gu (SEC.)	CYCLE LENGTH	(G+Gu)/C	1 + T%	CYCLES/HR	BACK OF QUEUE	95TH % QUEUE	RED-TIME QUEUE
AM	AD (L)	1	0	72	22.0	0.0	22.0	115	0.19	1.00	31.304	4.0	100 FT	93 FT
	AB+AC (TR)	1	0	42	22.0	0.0	22.0	115	0.19	1.00	31.304	1.5	37 FT	54 FT
PM	AD (L)	1	0	166	33.0	0.0	33.0	130	0.25	1.00	27.692	9.9	248 FT	224 FT
	AB+AC (TR)	1	0	86	33.0	0.0	33.0	130	0.25	1.00	27.692	2.3	57 FT	116 FT
SAT	AD (L)	1	0	220	37.0	0.0	37.0	115	0.32	1.00	31.304	10.0	251 FT	238 FT
	AB+AC (TR)	1	0	95	37.0	0.0	37.0	115	0.32	1.00	31.304	2.2	56 FT	103 FT

RED TIME QUEUE FOR HALSTED STREET AND 175TH STREET

(1 + T%) * (1 - G/C) * (2 * 25) * (DHV) / (# LANES) * (CYCLES / HR)

APR C - EASTBOUND

= ENTER MANUALLY

AM 115

PM 130

SAT 115

	MOVEMENT	LANES	T %	DHV	G (SEC.)	Gu (SEC.)	G + Gu (SEC.)	CYCLE LENGTH	(G+Gu)/C	1 + T%	CYCLES/HR	BACK OF QUEUE	95TH % QUEUE	RED-TIME QUEUE
AM	CA (L)	2	7	188	17.5	0.0	17.5	115	0.15	1.07	31.304	4.1	103 FT	136 FT
	CD (T)	1	0	31	15.0	0.0	15.0	115	0.13	1.00	31.304	2.2	55 FT	43 FT
	CB (R)	1	6	82	23.5	0.0	23.5	115	0.20	1.06	31.304	3.3	82 FT	110 FT
PM	CA (L)	2	2	446	17.5	0.0	17.5	130	0.13	1.02	27.692	12.8	319 FT	355 FT
	CD (T)	1	2	53	19.0	0.0	19.0	130	0.15	1.02	27.692	2.6	64 FT	83 FT
	CB (R)	1	1	234	27.5	0.0	27.5	130	0.21	1.01	27.692	9.8	246 FT	336 FT
SAT	CA (L)	2	1	343	15.5	0.0	15.5	115	0.13	1.01	31.304	8.0	201 FT	239 FT
	CD (T)	1	0	67	23.0	0.0	23.0	115	0.20	1.00	31.304	2.7	68 FT	86 FT
	CB (R)	1	1	188	31.5	0.0	31.5	115	0.27	1.01	31.304	3.8	94 FT	220 FT

APR D - WESTBOUND

	MOVEMENT	LANES	T %	DHV	G (SEC.)	Gu (SEC.)	G + Gu (SEC.)	CYCLE LENGTH	(G+Gu)/C	1 + T%	CYCLES/HR	BACK OF QUEUE	95TH % QUEUE	RED-TIME QUEUE
AM	DB (L)	1	0	5	17.5	0.0	17.5	115	0.15	1.00	31.304	0.7	17 FT	7 FT
	DC (T)	1	0	29	15.0	0.0	15.0	115	0.13	1.00	31.304	2.1	53 FT	40 FT
	DA (R)	1	2	48	23.5	0.0	23.5	115	0.20	1.02	31.304	2.5	62 FT	62 FT
PM	DB (L)	1	6	18	15.5	0.0	15.5	130	0.12	1.06	27.692	1.7	42 FT	30 FT
	DC (T)	1	0	44	17.0	0.0	17.0	130	0.13	1.00	27.692	3.0	76 FT	69 FT
	DA (R)	1	3	66	29.5	0.0	29.5	130	0.23	1.03	27.692	3.4	84 FT	95 FT
SAT	DB (L)	1	0	2	15.5	0.0	15.5	115	0.13	1.00	31.304	0.4	10 FT	3 FT
	DC (T)	1	0	67	23.0	0.0	23.0	115	0.20	1.00	31.304	3.7	93 FT	86 FT
	DA (R)	1	1	87	31.5	0.0	31.5	115	0.27	1.01	31.304	3.5	88 FT	102 FT

APR B - NORTHBOUND

	MOVEMENT	LANES	T %	DHV	G (SEC.)	Gu (SEC.)	G + Gu (SEC.)	CYCLE LENGTH	(G+Gu)/C	1 + T%	CYCLES/HR	BACK OF QUEUE	95TH % QUEUE	RED-TIME QUEUE
AM	BC (L)	1	4	128	8.5	0.0	8.5	115	0.07	1.04	31.304	7.5	187 FT	197 FT
	BA (T)	2	8	688	53.0	0.0	53.0	115	0.46	1.08	31.304	9.6	241 FT	320 FT
	BA+BD (TR)	1	8	346	53.0	0.0	53.0	115	0.46	1.08	31.304	9.6	241 FT	322 FT
PM	BC (L)	1	1	181	8.5	0.0	8.5	130	0.07	1.01	27.692	13.0	325 FT	308 FT
	BA (T)	2	3	969	62.0	0.0	62.0	130	0.48	1.03	27.692	15.6	389 FT	471 FT
	BA+BD (TR)	1	3	492	62.0	0.0	62.0	130	0.48	1.03	27.692	15.6	389 FT	479 FT
SAT	BC (L)	1	0	203	8.5	0.0	8.5	115	0.07	1.00	31.304	10.6	266 FT	300 FT
	BA (T)	2	1	811	47.0	0.0	47.0	115	0.41	1.01	31.304	12.6	314 FT	387 FT
	BA+BD (TR)	1	1	418	47.0	0.0	47.0	115	0.41	1.01	31.304	12.6	314 FT	399 FT

APR A - SOUTHBOUND

	MOVEMENT	LANES	T %	DHV	G (SEC.)	Gu (SEC.)	G + Gu (SEC.)	CYCLE LENGTH	(G+Gu)/C	1 + T%	CYCLES/HR	BACK OF QUEUE	95TH % QUEUE	RED-TIME QUEUE
AM	AD (L)	1	3	58	8.5	0.0	8.5	115	0.07	1.03	31.304	3.8	96 FT	88 FT
	AB (T)	3	8	1065	53.0	0.0	53.0	115	0.46	1.08	31.304	4.5	112 FT	330 FT
	AC (R)	1	5	455	70.5	0.0	70.5	115	0.61	1.05	31.304	2.0	49 FT	295 FT
PM	AD (L)	1	2	91	12.5	0.0	12.5	130	0.10	1.02	27.692	5.5	137 FT	151 FT
	AB (T)	3	2	1622	66.0	0.0	66.0	130	0.51	1.02	27.692	5.9	148 FT	490 FT
	AC (R)	1	2	341	83.5	0.0	83.5	130	0.64	1.02	27.692	1.2	30 FT	225 FT
SAT	AD (L)	1	1	130	8.5	0.0	8.5	115	0.07	1.01	31.304	6.7	168 FT	194 FT
	AB (T)	3	2	1442	47.0	0.0	47.0	115	0.41	1.02	31.304	6.1	152 FT	463 FT
	AC (R)	1	3	378	62.5	0.0	62.5	115	0.54	1.03	31.304	1.3	32 FT	284 FT

RED TIME QUEUE FOR HALSTED STREET AND 174TH STREET

(1 + T%) * (1 - G/C) * (2 * 25) * (DHV) / (# LANES) * (CYCLES / HR)

APR C - EASTBOUND

= ENTER MANUALLY

	MOVEMENT	LANES	T %	DHV	G (SEC.)	Gu (SEC.)	G + Gu (SEC.)	CYCLE LENGTH	(G+Gu)/C	1 + T%	CYCLES/HR	BACK OF QUEUE	95TH % QUEUE	RED-TIME QUEUE
AM	CA (L)	2	0	95	14.0	0.0	14.0	115	0.12	1.00	31.304	2.5	63 FT	67 FT
	CB (R)	1	0	32	21.5	0.0	21.5	115	0.19	1.00	31.304	1.9	48 FT	42 FT
PM	CA (L)	2	0	333	27.0	0.0	27.0	130	0.21	1.00	27.692	7.4	185 FT	238 FT
	CB (R)	1	0	111	39.5	0.0	39.5	130	0.30	1.00	27.692	4.7	117 FT	140 FT
SAT	CA (L)	2	0	424	29.0	0.0	29.0	115	0.25	1.00	31.304	7.7	192 FT	253 FT
	CB (R)	1	0	141	41.5	0.0	41.5	115	0.36	1.00	31.304	4.6	114 FT	144 FT

APR D - WESTBOUND

	MOVEMENT	LANES	T %	DHV	G (SEC.)	Gu (SEC.)	G + Gu (SEC.)	CYCLE LENGTH	(G+Gu)/C	1 + T%	CYCLES/HR	BACK OF QUEUE	95TH % QUEUE	RED-TIME QUEUE
AM														
PM														
SAT														

APR B - NORTHBOUND

	MOVEMENT	LANES	T %	DHV	G (SEC.)	Gu (SEC.)	G + Gu (SEC.)	CYCLE LENGTH	(G+Gu)/C	1 + T%	CYCLES/HR	BACK OF QUEUE	95TH % QUEUE	RED-TIME QUEUE
AM	BC (L)	2	0	44	7.5	0.0	7.5	115	0.07	1.00	31.304	1.6	39 FT	33 FT
	BA (T)	3	8	1224	89.0	0.0	89.0	115	0.77	1.08	31.304	1.6	41 FT	159 FT
PM	BC (L)	2	0	113	12.5	0.0	12.5	130	0.10	1.00	27.692	3.2	81 FT	92 FT
	BA (T)	3	3	1852	91.0	0.0	91.0	130	0.70	1.03	27.692	7.1	178 FT	344 FT
SAT	BC (L)	2	0	144	12.5	0.0	12.5	115	0.11	1.00	31.304	3.6	91 FT	103 FT
	BA (T)	3	1	1502	74.0	0.0	74.0	115	0.64	1.01	31.304	5.2	129 FT	288 FT

APR A - SOUTHBOUND

	MOVEMENT	LANES	T %	DHV	G (SEC.)	Gu (SEC.)	G + Gu (SEC.)	CYCLE LENGTH	(G+Gu)/C	1 + T%	CYCLES/HR	BACK OF QUEUE	95TH % QUEUE	RED-TIME QUEUE
AM	AB (T)	3	8	1573	77.0	0.0	77.0	115	0.67	1.08	31.304	9.0	224 FT	299 FT
	AC (R)	1	1	148	91.0	0.0	91.0	115	0.79	1.01	31.304	1.0	26 FT	50 FT
PM	AB (T)	3	2	2007	74.0	0.0	74.0	130	0.57	1.02	27.692	19.9	498 FT	531 FT
	AC (R)	1	2	377	101.0	0.0	101.0	130	0.78	1.02	27.692	3.6	89 FT	155 FT
SAT	AB (T)	3	2	1889	57.0	0.0	57.0	115	0.50	1.02	31.304	18.3	457 FT	517 FT
	AC (R)	1	0	476	86.0	0.0	86.0	115	0.75	1.00	31.304	4.8	119 FT	192 FT