

Traffic Impact Study Downtown Orland Park

Orland Park, Illinois



Prepared For:

EDWARDS
REALTY COMPANY

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

July 22, 2024

1. Introduction

This report summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed development of Downtown Orland Park in Orland Park, Illinois. As proposed the remaining parcels will be developed to contain a mixture of uses including office, retail, restaurant, and entertainment. Parking will be provided via surface lots serving the different parcels as well as via the existing parking garages. Access will be provided via the existing access system serving the site.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed development will have on traffic conditions in the area, and determine if any roadway or access improvements are necessary to accommodate the traffic generated by the proposed development.

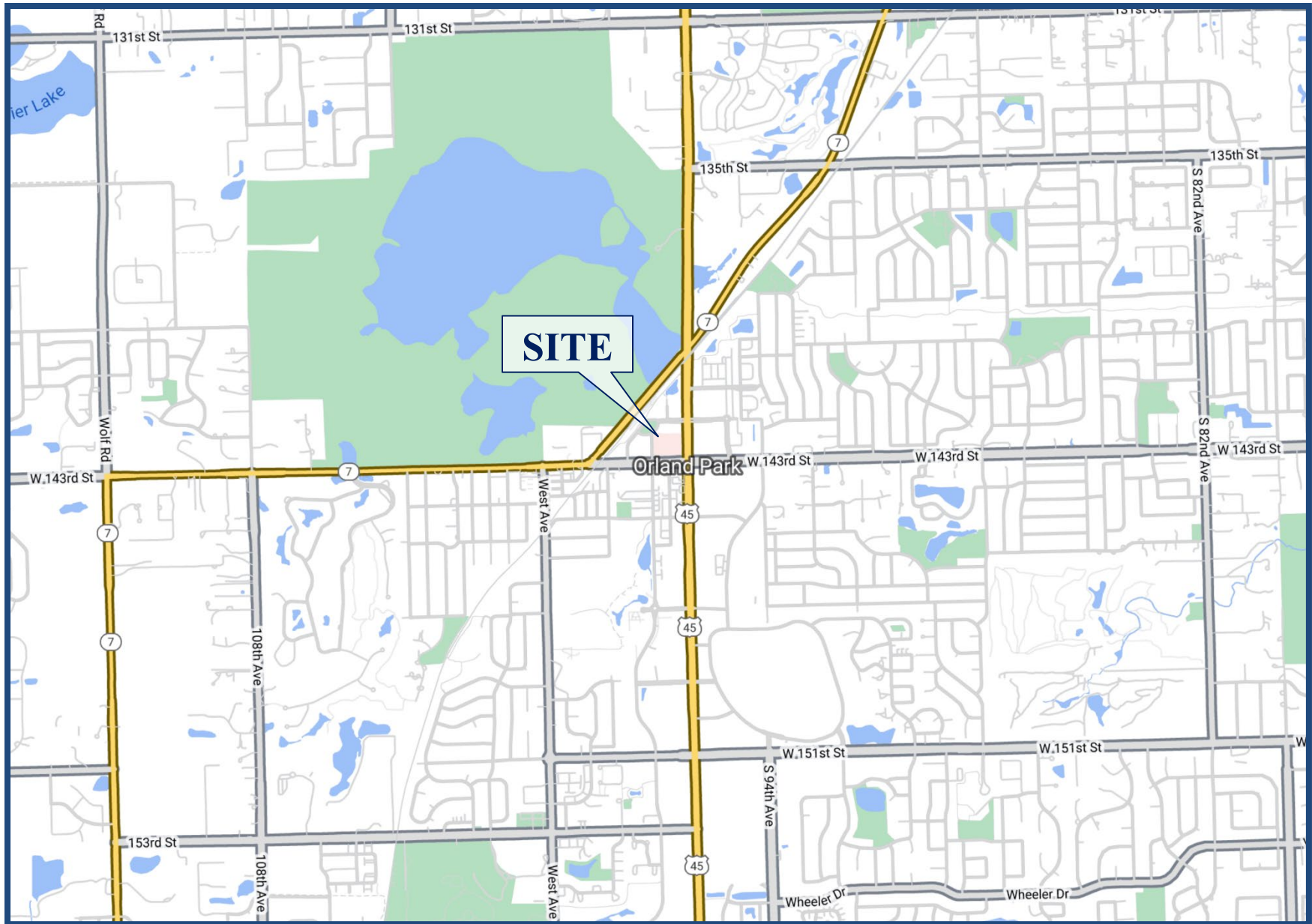
Figure 1 shows the location of the site in relation to the area roadway system. **Figure 2** shows an aerial view of the site with the parcels Downtown Orland Park.

The sections of this report present the following:

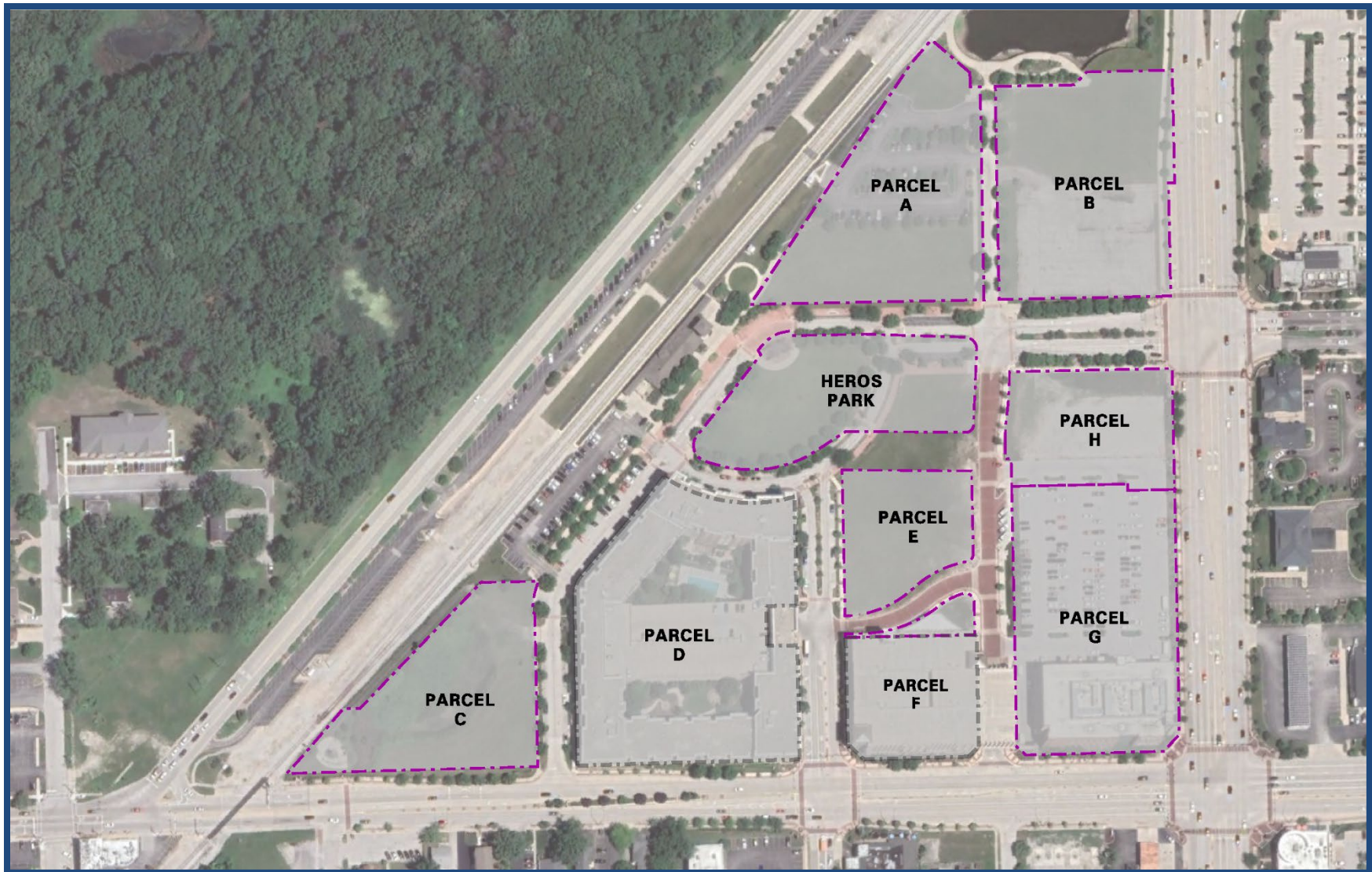
- Existing roadway conditions
- A description of the proposed development
- Directional distribution of the development traffic
- Vehicle trip generation for the development
- Future traffic conditions including access to the development
- Traffic analyses for the weekday morning, weekday evening, and Saturday midday peak hours
- Recommendations with respect to adequacy of the site access and adjacent roadway system
- Evaluation of the adequacy of the on site circulation and pedestrian accommodations.

Traffic capacity analyses were conducted for the weekday morning and weekday evening peak hours for the following conditions:

1. Year 2024 Existing Conditions – Analyze the capacity of the existing roadway system using existing peak hour traffic volumes in the surrounding area.
2. Year 2034 No-Build Conditions – Analyze the capacity of the future roadway system using the no-build traffic volumes that include the existing traffic volumes increased by an ambient area growth factor not attributable to any particular development.
3. Year 2034 Total Projected Conditions – Analyze the capacity of the future roadway system using the projected traffic volumes that include the existing traffic volumes, ambient traffic growth, and the traffic estimated to be generated by the full buildout of the proposed development.



Site Location
Orland Park, Illinois



Aerial View of Site

Figure 2

*Downtown Orland Park
Orland Park, Illinois*

2. Existing Conditions

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

Existing Downtown Orland Park

Downtown Orland Park area is bounded by the Metra Southwest Service railroad to the north, LaGrange Road (U.S. Route 45) to the east, and 143rd Street. Downtown Orland Park currently contains the following developments:

- The Orland Park 143rd Street Metra Station with an adjacent parking
- Crecent Park
- Parcel A contains an additional Metra surface parking lot
- Parcel B contains a closed surface parking lot
- Parcel C is undeveloped.
- Parcel D contains the Ninety7Fifty apartment building, which has a ground level parking garage for residents.
- Parcel E is undeveloped.
- Parcel F contains a parking garage with 359 public parking spaces and 173 reserved parking spaces.
- Garcel G contains the University of Chicago Medicine Center for Advanced Care, a CVS pharmacy, and a public surface parking lot.
- Parcel H is undeveloped.

Internal access to the existing uses and parking lots is provided via 142nd Street, Main Street, Ravinia Avenue, Jefferson Avenue, and Crescent Park Circle. These roadways provide connection to the surrounding area via the following intersections:

- The signalized intersection of 142nd Street with Lagrange Road located approximately 650 feet north of 143rd Street.
- The signalized intersection of Ravinia Avenue with 143rd Street located approximately 650 feet west of LaGrange Road.
- The unsignalized intersection of Main Street with 143rd Street located approximately 1,100 feet west of US 45. Turning movements at this intersection are restricted to right-turn only via the median on 143rd Street.
- The unsignalized intersection of Jefferson Avenue with 143rd Street located approximately 360 feet west of US 45. Turning movements at this intersection are restricted to right-turn only via the median on 143rd Street.

Existing Roadway System Characteristics

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

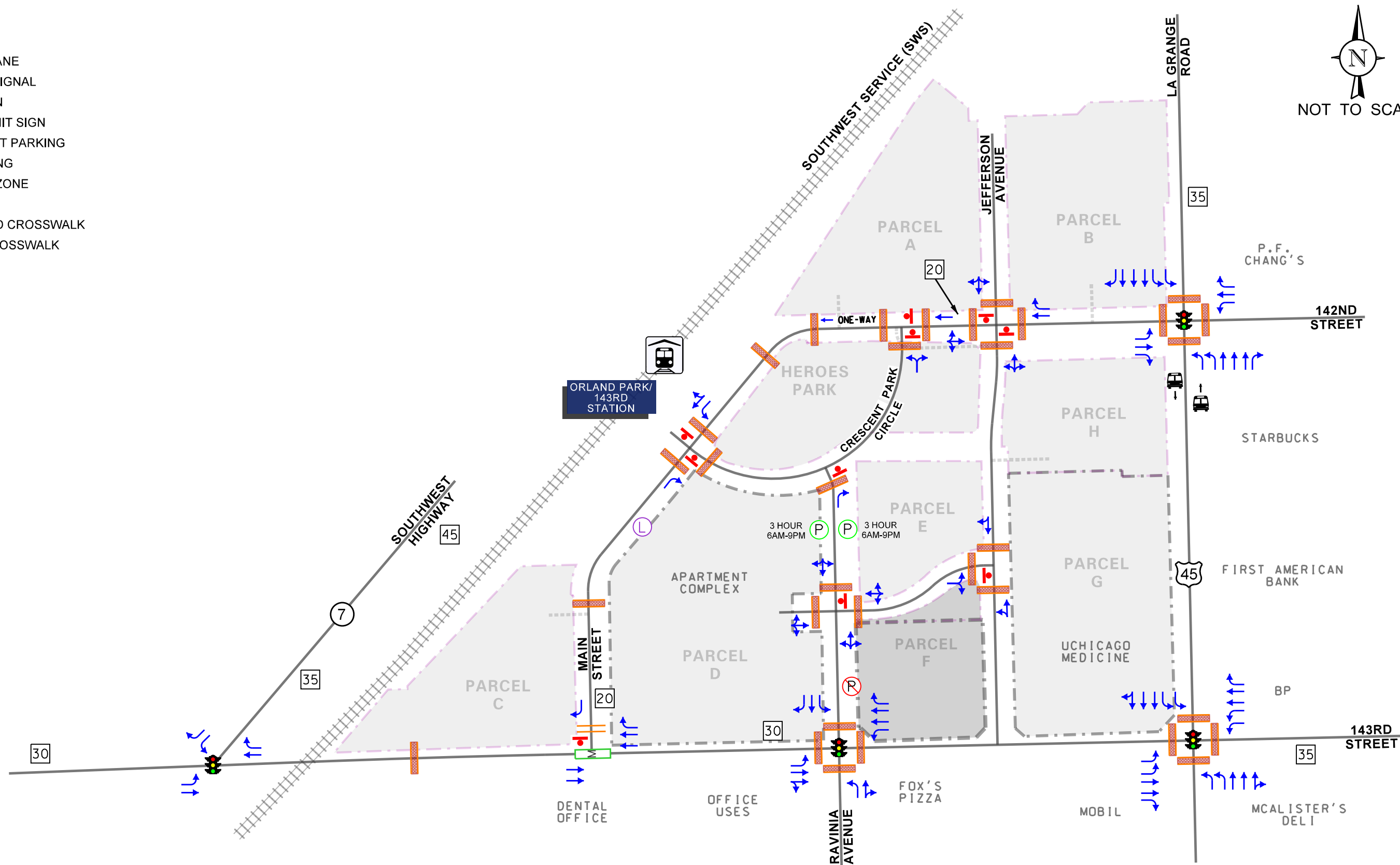
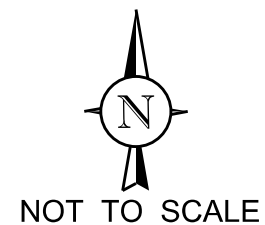
LaGrange Road (U.S. Route 45) is a north-south principal arterial roadway that provides three travel lanes in each direction. At its signalized intersection with 142nd Street, LaGrange Road provides dual left-turn lanes, three through lanes, and an exclusive right-turn lane on the northbound and southbound approaches. At its signalized intersection with 143rd Street, LaGrange Road provides dual left-turn lanes, two through lanes, and a shared through/right-turn lane on the northbound and southbound approaches. LaGrange Road is under the jurisdiction of the Illinois Department of Transportation (IDOT), carries an annual average daily traffic (AADT) of 35,700 vehicles (IDOT 2023) north of 142nd Street and 38,600 vehicles (IDOT 2023) south of 142nd Street, and has a posted speed limit of 35 miles per hour.

142nd Street is an east-west local roadway that extends between Crescent Park Circle and 95th Avenue and generally provides one travel lane in each direction. At its signalized intersection with LaGrange Road, 142nd Street provides an exclusive left-turn lane, a through lane, and an exclusive right-turn lane on the eastbound and westbound approaches. At its unsignalized intersection with Jefferson Avenue, 142nd Street provides a shared left-turn/through/right-turn lane on the eastbound approach and a through lane and an exclusive right-turn lane on the westbound approach. At its all-way stop controlled intersection with Crescent Park Circle, 142nd Street provides a through lane on the westbound approach. 142nd Street is under the jurisdiction of the Village of Orland Park and has a posted speed limit of 20 miles per hour.

143rd Street is an east-west minor arterial roadway that provides two travel lanes in each direction narrowing to one travel lane in each direction west of the site. At its signalized intersection with LaGrange Road, 143rd Street provides dual left-turn lanes, two through lanes, and an exclusive right-turn lane on the eastbound and westbound approaches. At its signalized intersection with Ravinia Avenue, 143rd Street provides an exclusive left-turn lane, a through lane, and a shared through/right-turn lane on the eastbound approach and an exclusive left-turn lane, two through lanes, and an exclusive right-turn lane on the westbound approach. At its unsignalized intersection with Main Street, 143rd Street provides two through lanes on the eastbound approach and two through lanes and an exclusive right-turn lane on the westbound approach. 143rd Street is under the jurisdiction of IDOT, carries an AADT of 14,100 vehicles (IDOT 2023), and has a posted speed limit of 30 miles per hour.

Ravinia Avenue is a north-south local roadway that extends south from Crescent Park Circle and provides one lane in each direction. At its signalized intersection with 143rd Street, Ravinia Avenue provides an exclusive left-turn lane and a shared through/right-turn lane on the northbound approach and an exclusive left-turn lane, a through lane, and an exclusive right-turn lane on the southbound approach. At its unsignalized intersection with Crescent Park Circle, Ravinia Avenue provides an exclusive right-turn lane on the northbound approach. At its unsignalized intersection with the Ninety7Fifty garage access, Ravinia Avenue provides a shared left-turn/through/right-turn lane on the northbound and southbound approaches. Ravinia Avenue is under the jurisdiction of the Village of Orland Park and has a posted speed limit of 20 miles per hour.

- LEGEND**
-  - TRAVEL LANE
 -  - TRAFFIC SIGNAL
 -  - STOP SIGN
 -  - SPEED LIMIT SIGN
 -  - ON-STREET PARKING
 -  - NO PARKING
 -  - LOADING ZONE
 -  - BUS STOP
 -  - STANDARD CROSSWALK
 -  - PAVED CROSSWALK
 -  - MEDIAN



DOWNTOWN
ORLAND PARK
ORLAND PARK, ILLINOIS

EXISTING ROADWAY CHARACTERISTICS

Main Street is a north-south local roadway that extends between 143rd Street and Crescent Park Circle and provides one travel lane in each direction. At its unsignalized intersection with 143rd Street, Main Street provides an exclusive right-turn lane on the southbound approach and is under stop sign control. Main Street is under the jurisdiction of the Village of Orland Park and has a posted speed limit of 20 miles per hour.

Jefferson Avenue is a north-south local roadway that provides one travel lane in each direction. At its unsignalized intersection with 142nd Street, Jefferson Avenue provides a shared left-turn/through/right-turn lane on the northbound and southbound approaches and is under stop sign control. Jefferson Avenue is under the jurisdiction of the Village of Orland Park,

Crescent Park Circle is a local roadway that surrounds Crescent Park and operates in a one-way counterclockwise direction. At its unsignalized intersection with Ravinia Avenue, Crescent Park Circle provides a shared through/right-turn lane on the eastbound approach. At its all-way stop controlled intersection with 142nd Street, Crescent Park Circle provides a shared through/right-turn lane on the northbound approach. Crescent Park Circle is under the jurisdiction of the Village of Orland Park.

Existing Traffic Volumes

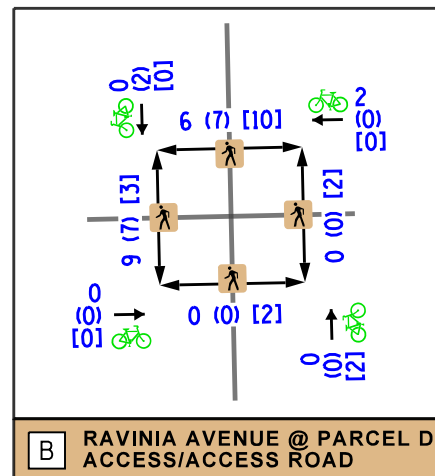
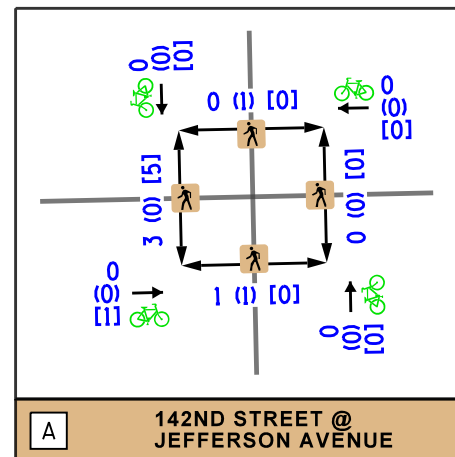
In order to determine current traffic conditions in the vicinity of the site, KLOA, Inc. conducted peak period traffic counts utilizing Miovision Scout Collection Units in April, 2024 during the weekday morning (7:00 to 9:00 A.M.), weekday evening (4:00 to 6:00 P.M.), and Saturday midday (12:00 to 2:00 P.M.) peak periods at the following intersections:

- US 45 with 142nd Street
- US 45 with 143rd Street
- 143rd Street with Ravinia Avenue
- 143rd Street with Main Street
- 142nd Street with Jefferson Avenue
- Ravinia Avenue with Crescent Park Circle
- Ravinia Avenue with Parking Lot Access Drive

The results of the traffic counts indicated that the weekday morning peak hour of traffic occurs from 7:45 A.M. to 8:45 A.M., the weekday evening peak hour of traffic occurs from 4:30 P.M. to 5:30 P.M., and the Saturday midday peak hour of traffic occurs from 12:00 P.M. to 1:00 P.M.

Figure 4 illustrates the existing peak hour vehicle traffic volumes. **Figure 5** illustrates the existing peak hour pedestrian and traffic volumes.

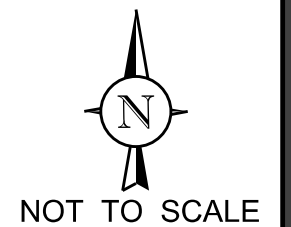
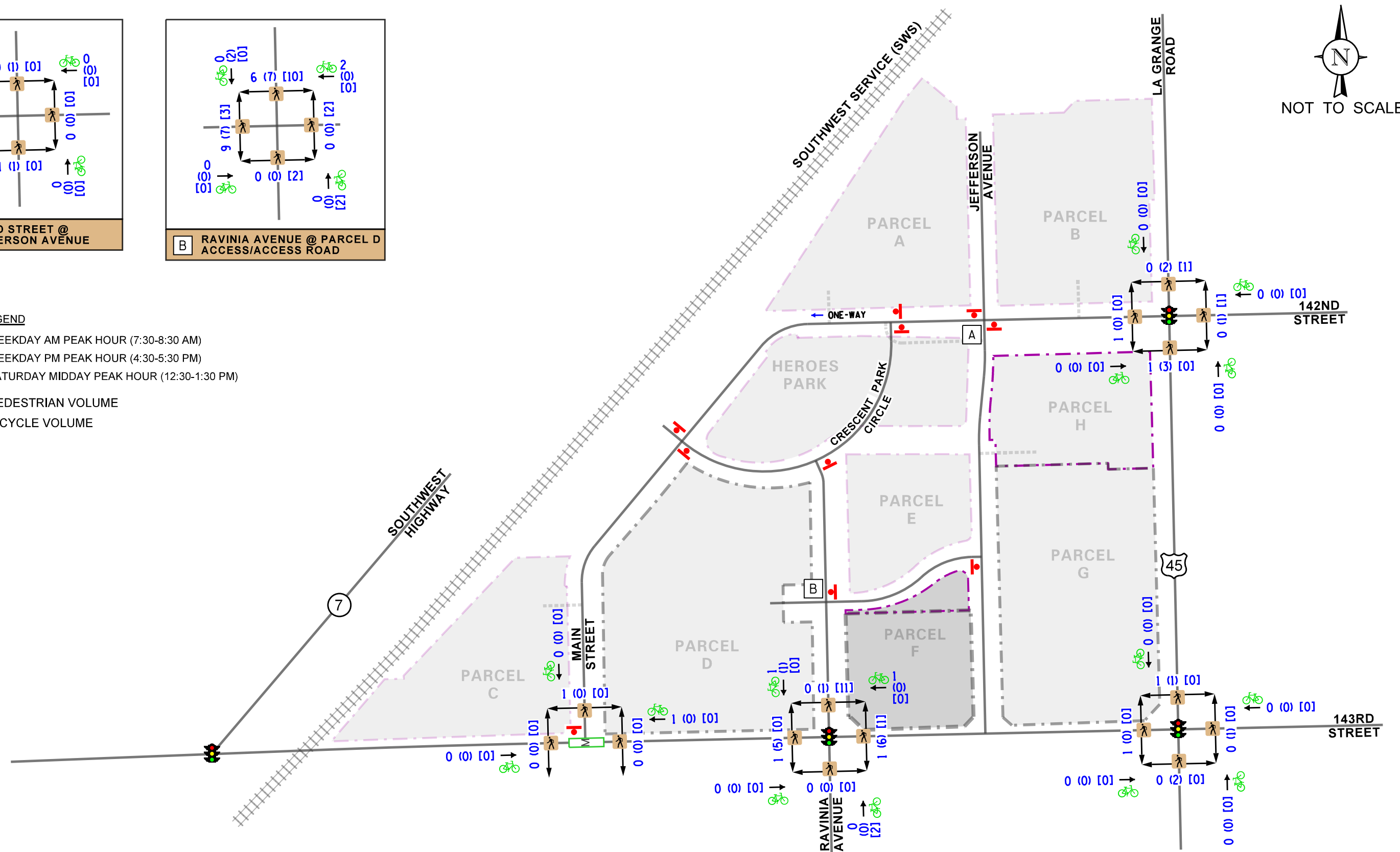
Copies of the traffic count summary sheets are included in the Appendix.



LEGEND

00 - WEEKDAY AM PEAK HOUR (7:30-8:30 AM)
 (00) - WEEKDAY PM PEAK HOUR (4:30-5:30 PM)
 [00] - SATURDAY MIDDAY PEAK HOUR (12:30-1:30 PM)

00 (00) [00] - PEDESTRIAN VOLUME
 00 (00) [00] - BICYCLE VOLUME



Crash Data Summary

KLOA, Inc. obtained crash data¹ for the most recent available past five years (2018 to 2022) for the intersections of US 45 with 142nd Street and 143rd Street, 142nd Street with Jefferson Avenue, 143rd Street with Main Street and Ravinia Avenue, and Ravinia Avenue with Crescent Park Circle. The crash data is summarized in **Tables 1** through **3**. It should be noted that the intersections of 142nd Street with Jefferson Avenue, 143rd Street with Main Street, and Ravinia Avenue with Crescent Park Circle experienced an average of less than one crash per year during the review period. Additionally, a review of the crash data indicated that no fatalities were reported at any of the intersections during the review period.

Table 1
US 45 WITH 142ND STREET – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2018	0	0	0	7	1	1	1	10
2019	0	1	0	5	0	0	0	6
2020	0	0	1	3	0	0	0	4
2021	0	0	0	4	0	0	0	4
2022	<u>0</u>	<u>0</u>	<u>1</u>	<u>5</u>	<u>1</u>	<u>2</u>	<u>0</u>	<u>9</u>
Total	0	1	2	24	2	3	1	33
Average	--	<1.0	<1.0	4.8	<1.0	<1.0	<1.0	6.6

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

Table 2
US 45 WITH 143RD STREET – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2018	0	0	0	12	0	2	0	14
2019	1	0	0	10	1	4	0	16
2020	3	0	0	9	3	4	0	19
2021	3	0	0	13	1	3	0	20
2022	<u>0</u>	<u>0</u>	<u>0</u>	<u>7</u>	<u>2</u>	<u>3</u>	<u>0</u>	<u>12</u>
Total	7	0	0	51	7	16	0	81
Average	1.4	--	--	10.2	1.4	3.2	--	14.2

Table 3
143RD STREET WITH RAVINIA AVENUE– CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2018	0	0	0	0	0	2	0	2
2019	0	0	0	2	1	1	0	4
2020	0	0	1	0	0	0	0	1
2021	0	0	0	2	0	3	0	5
2022	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>3</u>
Total	1	0	1	5	1	6	1	15
Average	<1.0	--	<1.0	1.0	<1.0	1.2	<1.0	3.0

3. Traffic Characteristics of the Proposed Development

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed additional developments, including the directional distribution and volumes of traffic that it will generate.

Proposed Roadway Modification Plan

As part of the development of Downtown Orland Park the following roadway modifications will be provided:

- Crescent Circle Drive currently encircles Crescent Park. As proposed, the segment of Crescent Circle Drive between Ravinia Avenue and 142nd Street will be removed and Crescent Circle Drive will instead continue east, terminating at Jefferson Avenue.
 - The intersection of 142nd Street with Crescent Park Circle will be eliminated and replaced with a U-turn lane to be used by pick-up/drop-off traffic.
 - At its new “T” intersection with Jefferson Avenue, Crescent Park Circle will provide a shared left-turn/right-turn lane on the eastbound approach and will be under stop sign control.
 - Diagonal parking will be provided on the south side of the new roadway segment.
 - The roadway realignment will result in a reduction of Parcel E on the south side of Crescent Circle Drive and an increase in the size of park area.
- Jefferson Avenue will be vacated north of 142nd Street.
 - The northbound approach (Jefferson Avenue) will remain under stop sign control and the westbound and east bound approaches will remain free flow.
 - The westbound approach will provide an exclusive left-turn lane and a through lane.
 - The eastbound approach will provide a shared through/right-turn lane and only carry traffic from the proposed U-turn lane.
 - The vacated roadway area will be used as a pedestrian walkway between the proposed developments in Parcel A and B.
- The existing diagonal parking spaces on the north side of 142nd Street between Jefferson Avenue and Crescent Park Circle will be removed. A designated pick-up/drop-off area will be provided at this location. Vehicles exiting this area will be able to directly enter the U-turn lane and return to LaGrange Road.

- A right-in/right-out access drive serving Parcel A will be provided on the north side of Crescent Park Circle west of Jefferson Avenue. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control.
- A right-in/right-out access drive serving Parcel B will be provided on the north side of 142nd Street between Jefferson Avenue and LaGrange Road. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control.
- A full movement access drive serving Parcel C will be provided on the west side of main Street between 143rd Street and Crescent Circle Drive. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control.

A site plan depicting the proposed site and development plan is included in the Appendix. A preliminary geometric plan showing the improvements planned for the intersections of 142nd Street with Jefferson Avenue and Crescent Park Circle is also included.

Proposed Development Plan

As proposed, all parcels within Downtown Orland Park will be developed. The proposed developments will consist of the following uses.

- Parcel A, located in the northwest corner of 142nd Street with Jefferson Avenue, is planned to be developed with a mixture of commercial, office, hotel and restaurant uses and a new surface parking lot. The existing Metra Parking Lot that occupies this parcel will be removed and is to be replaced by the Village of Orland Park at an off-site location.
 - Option One
 - 11,650 s.f. commercial space
 - 20,600 s.f. office space
 - 22,500 s.f. restaurant space
 - Option Two
 - 11,650 s.f. commercial space
 - 3,624 s.f. office space
 - 13,645 s.f. restaurant space
 - 64,000 s.f. hotel (120 rooms)
- Parcel B, located in the northeast corner of 142nd Street with Jefferson Avenue, is planned to be developed with a mixture of commercial, office, and restaurant uses and a new surface parking lot.
 - 16,400 s.f. commercial space
 - 20,600 s.f. office space
 - 20,635 s.f. restaurant space

- Parcel C, located in the northwest corner of 143rd Street with Main Street, is planned to be developed with a day care building. Parcel C will have its own separate parking lot and pick-up/drop-off area.
 - 11,875 s.f. Daycare
- Parcel E, located on the south side of Crescent Circle Drive between Ravina Avenue and Jefferson Avenue, is planned to be developed with an entertainment facility. As previously mentioned, this parcel will be smaller than it is today.
 - 64,096 s.f. entertainment facility
- Parcel H, located on the south side 142nd Street between Jefferson Avenue and US 45, is planned to be developed with a restaurant or a medical office and a surface parking lot.
 - Option One
 - 8,000 s.f. Restaurant
 - Option Two
 - 12,000 s.f Medical Office Building
- Parcel F, located on the north side of 143rd Street between Ravina Avenue and Jefferson Avenue, currently contains the existing parking garage and is planned to be developed with additional commercial space.
 - 12,000 s.f. commercial space

Directional Distribution

The directions from which residents, patrons, and employees will approach and depart the site were estimated based on existing travel patterns, as determined from the traffic counts. **Figure 6** illustrates the directional distribution of the development-generated traffic.

Peak Hour Traffic Volumes

The number of peak hour trips estimated to be generated by the proposed developments was based on vehicle trip generation rates contained in Trip Generation Manual, 11th Edition, published by the Institute of Transportation Engineers (ITE). Copies of the ITE trip generation sheets are included in the Appendix.

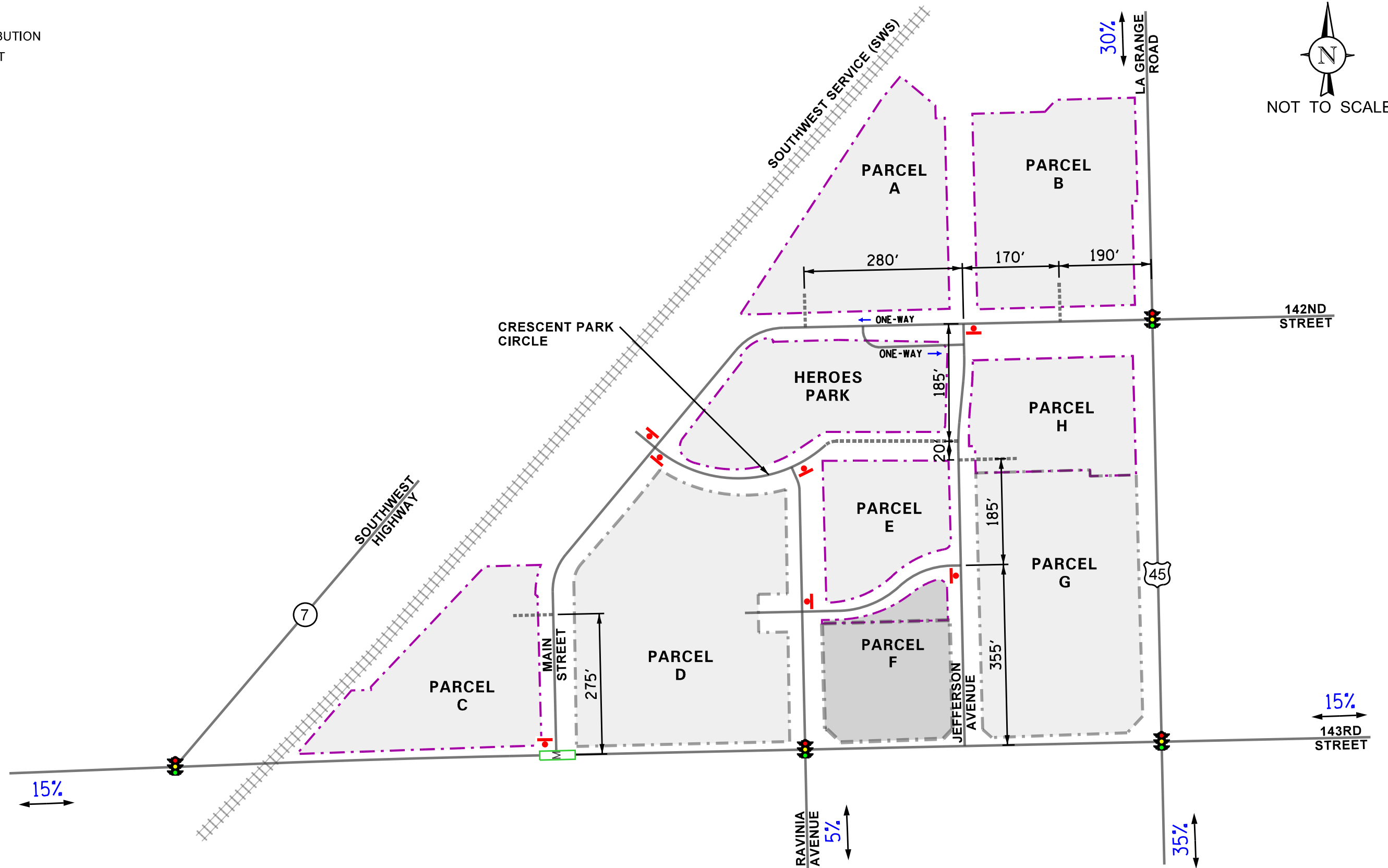
- The “Hotel” (Land-Use Code 310) rate was used for the hotel.
- The “Multipurpose Recreational Facility” (Land-Use Code 435) rate was used for the entertainment facility.
- The “Day Care Center” (Land-Use Code 565) rate was used for the daycare.
- The “General Office Building” (Land-Use Code 710) rate was used for the office space.
- The “Strip Retail Center” (Land-Use Code 822) rate was used for the commercial space.
- The “High Turnover Sit-Down Restaurant” (Land-Use Code 932) rate was used for the restaurant space.

LEGEND

- 00% - PERCENT DISTRIBUTION
00' - DISTANCE IN FEET



NOT TO SCALE



DOWNTOWN
ORLAND PARK
ORLAND PARK, ILLINOIS

DIRECTIONAL DISTRIBUTION

The following should be noted regarding the trip generation:

- Option One (No Hotel) was used for Parcel A and Option One (Restaurant) was used for Parcel H (Restaurant) as these options result in a higher trip generation.
- All restaurants were assumed to be high-turnover sit-down restaurants. In reality, some of these restaurants will be fine dining or other similar restaurant uses which typically generate a lower volume of traffic.
- Many of the restaurants will not be open for breakfast during the weekday morning. However, to provide a conservative analysis, it was assumed that half of the restaurant space would generate traffic during the weekday morning and half would be closed.
- The entertainment facility will not be open during the weekday morning peak hour.
- The development is located immediately adjacent to the Orland Park 143rd Metra Station. Based on US Census data approximately eight percent of people commute to work via public transportation. While patrons or employees of other uses may utilize the Metra station, to provide a conservative analysis this reduction was applied to the office uses only.
- A percentage of the trips generated by the proposed developments will be patrons or employees of other proposed developments within the site or employees or residents of the existing Downtown Orland Park uses. Based on ITE methodology, as outlined in the *Trip Generation Handbook*, 3rd Edition, approximately 15 percent of trips during the weekday morning peak hour and approximately 30 percent of trips during the weekday evening and Saturday midday will be captured internally. This reduction was applied to all new trips except the daycare. This interaction reduction does not take into consideration residents or employees of the existing uses in the Downtown Orland Park
- A percentage of the trips generated by the proposed restaurant and commercial uses will be existing trips from area roadways diverted to the proposed development. This is particularly true during the weekday morning and evening peak hours when traffic is diverted from the home-to-work and work-to-home trips (pass-by traffic). Based on surveys conducted by ITE, approximately 20 percent of trips made to commercial developments and up to 40 percent of trips made to high-turnover site-down restaurants are pass-by trips. However, given the intended development of Downtown Orland Park as a destination and to provide a conservative analysis, no reduction was taken.
- 10 percent of traffic generated by commercial, restaurant, and retail uses and five percent of traffic generated by the offices uses was assumed to be pick-up/drop-off traffic such as ride share traffic.

Table 4 summarizes the trips projected to be generated by the development during the peak hours and on a daily basis.

Table 4

ESTIMATED PEAK HOUR AND DAILY TRIP GENERATION

ITE Land-Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour			Daily Trips		
		In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
822	A: Retail Center (11,650 s.f.)	16	11	27	43	44	87	39	38	77	361	361	722
710	A: General Office Building (20,600 s.f.)	38	5	43	8	37	45	6	5	11	147	147	294
932	A: High-Turnover Restaurant (22,500 s.f.)	59	49	108	124	80	204	128	124	252	1,206	1,206	2,412
822	B: Retail Center (16,400 s.f.)	23	16	40	55	56	111	55	53	108	461	461	922
710	B: General Office Building (20,600 s.f.)	38	5	43	8	37	45	6	5	11	147	147	294
932	B: High-Turnover Restaurant (20,635 s.f.)	55	44	99	114	73	187	118	113	231	1,107	1,107	2,214
565	C: Day Care Center (11,875 s.f.)	69	62	131	62	70	132	13	7	20	283	283	566
932	E: Entertainment Facility ¹ (64,096 s.f.)	0	0	0	122	100	222	122	100	222	1,110	1,110	2,220
932	F: High-Turnover Restaurant (8,000 s.f.)	21	18	39	44	28	72	46	44	90	429	429	858
822	H: Retail Center (12,000 s.f.)	17	11	28	44	45	89	40	39	79	368	368	736
Subtotal		336	221	558	624	570	1,194	573	528	1,101	5,619	5,619	11,238
<i>Transit Reduction (8%)²</i>		<i>-6</i>	<i>-0</i>	<i>-6</i>	<i>-2</i>	<i>-6</i>	<i>-8</i>	<i>-0</i>	<i>-0</i>	<i>-0</i>	<i>-24</i>	<i>-24</i>	<i>-48</i>
<i>Interaction Reduction³</i>		<i>-39</i>	<i>-24</i>	<i>-63</i>	<i>-168</i>	<i>-148</i>	<i>-316</i>	<i>-168</i>	<i>-156</i>	<i>-324</i>	<i>-1,062</i>	<i>-1,062</i>	<i>-2,124</i>
Total Development Trips		291	197	489	454	416	870	405	372	777	4,533	4,533	9,066
1 – ITE does not provide Saturday midday peak hours. Weekday evening rates were used for the Saturday midday peak hour. 2 – Applied to office uses only. 3 – Not applied to the day care center. 15 percent reduction during the weekday morning peak hour, 30% during weekday evening and Saturday midday peak hours, and 20 percent on a daily basis.													

4. Projected Traffic Conditions

The total projected traffic volumes include the existing traffic volumes, increase in background traffic due to growth, and the traffic estimated to be generated by the proposed development.

Development Traffic Assignment

The estimated weekday morning, weekday evening, and Saturday midday peak hour traffic volumes that will be generated by the proposed additional developments were assigned to the roadway system in accordance with the previously described directional distribution (Figure 6). **Figure 7** illustrates the traffic assignment of the new passenger vehicle trips for the development.

Reassignment of Existing Traffic and Removal of Existing Traffic

As previously mentioned, Crescent Circle Drive between Ravinia Avenue and 142nd Street will be removed and Crescent Circle Drive will instead continue east, terminating at Jefferson Avenue. The existing traffic that traversed this segment was reassigned to the new roadway segment and Jefferson Avenue. In addition, the existing north Metra surface parking lot will be removed. The existing traffic that used this parking lot was removed from the roadway network.

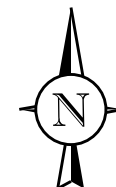
Under existing condition, westbound left-turn movements from 142nd Street on to Jefferson Avenue are currently not permitted and will be under future conditions. However, as can be seen by the large volume of left-turn vehicles today, this restriction is not observed by most drivers. As such, no reassignment was made. The reassigned and removed traffic volumes are illustrated in **Figure 8**.

Background (No-Build) Traffic Conditions

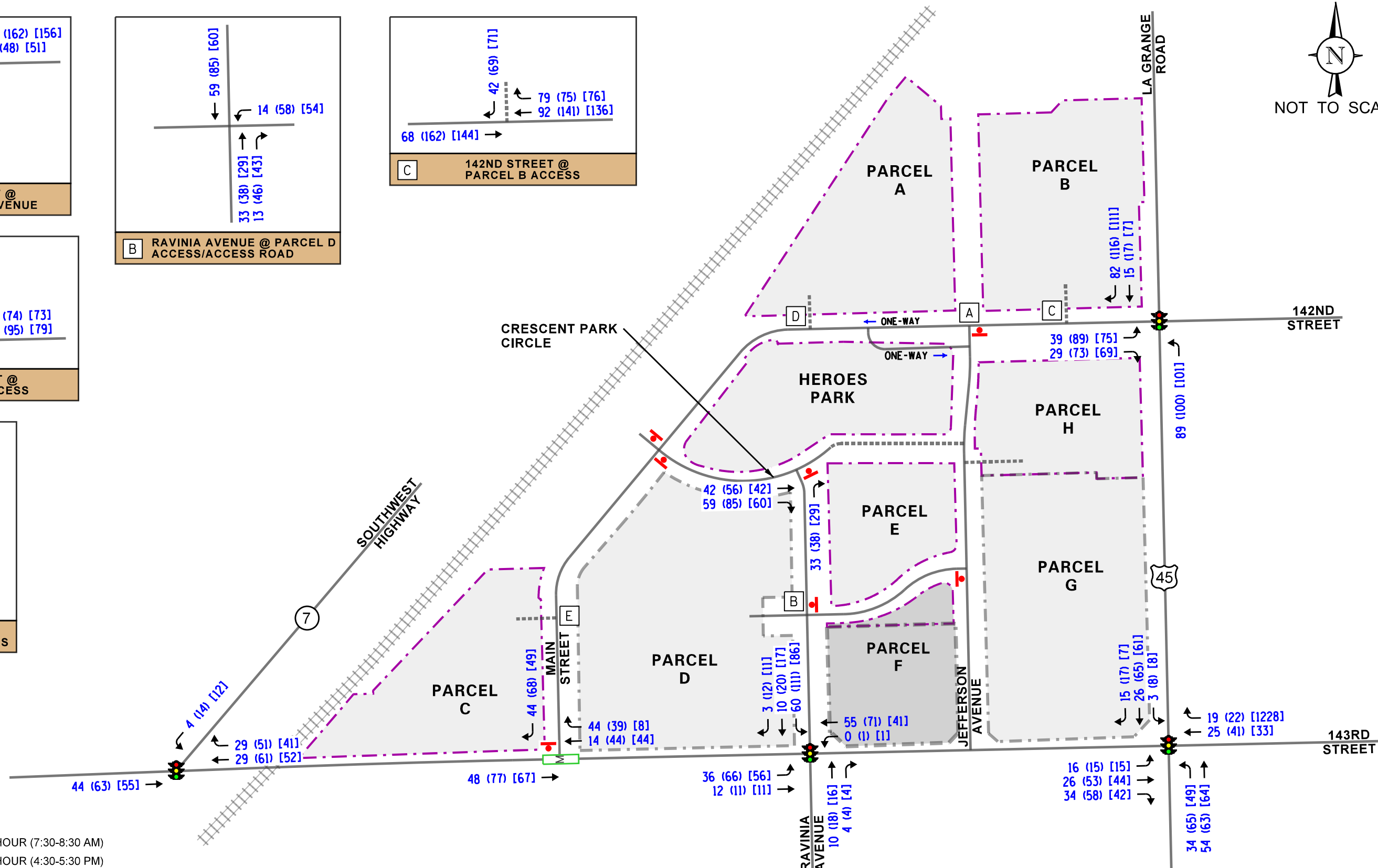
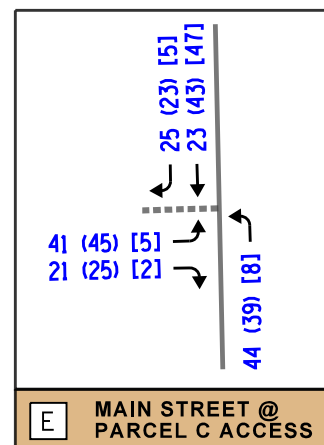
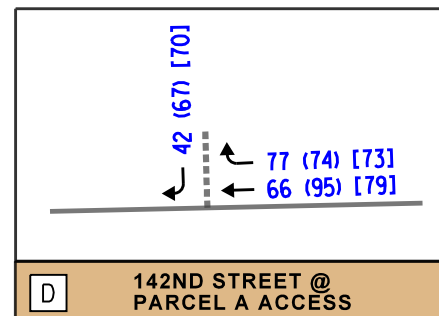
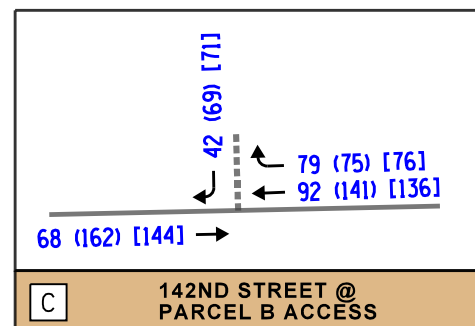
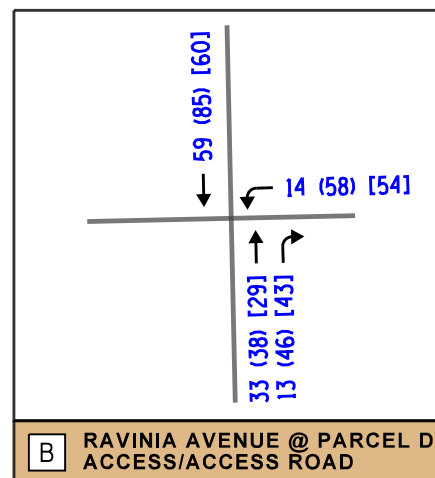
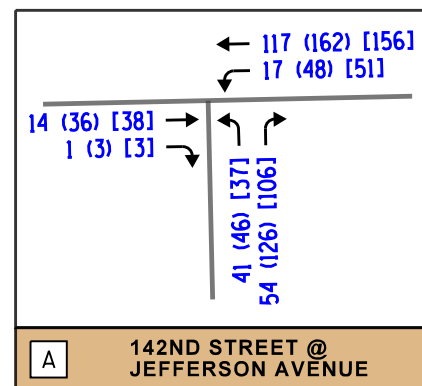
The existing traffic volumes (Figure 4) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any particular planned development). Based on Annual Average Daily Traffic (AADT) projections provided by the Chicago Metropolitan Agency for Planning (CMAP), the existing traffic volumes are projected to increase by an annual compounded growth rate of 0.8 percent per year. As such traffic volumes were increased by nine percent to represent Year 2034 no-build conditions. The Year 2034 no-build traffic volumes are illustrated in **Figure 9**. A copy of the CMAP projections letter is included in the Appendix.

Total Projected Traffic Volumes

The additional development-generated traffic (Figure 7) and reassignment and removal of existing traffic (Figure 8) was added to Year 2034 no-build traffic volumes to determine the Year 2034 projected traffic volumes, as shown in **Figure 10**.



NOT TO SCALE



LEGEND

- 00 - WEEKDAY AM PEAK HOUR (7:30-8:30 AM)
- (00) - WEEKDAY PM PEAK HOUR (4:30-5:30 PM)
- [00] - SATURDAY MIDDAY PEAK HOUR (12:30-1:30 PM)

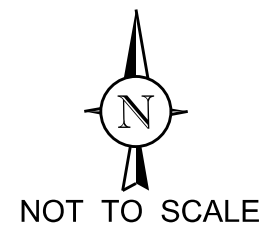
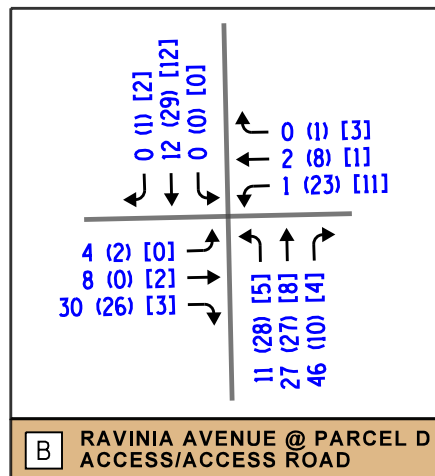
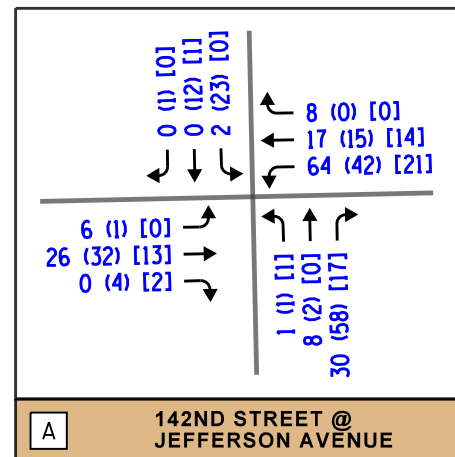
DOWNTOWN
ORLAND PARK
ORLAND PARK, ILLINOIS

SITE-GENERATED TRAFFIC VOLUMES



Job No: 24-170

Figure: 7



LEGEND

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

(00) - WEEKDAY PM PEAK HOUR (4:30-5:30 PM)

[00] - SATURDAY MIDDAY PEAK HOUR (12:30-1:30 PM)

DOWNTOWN
ORLAND PARK
ORLAND PARK, ILLINOIS

YEAR 2034 NO-BUILD TRAFFIC VOLUMES

5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning, weekday evening, and Saturday midday peak hours. The analysis includes conducting capacity analyses to determine how well the roadway system and access drives are projected to operate and whether any roadway improvements or modifications are required.

Traffic Analyses

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning, weekday evening, and Saturday midday peak hours for the existing, Year 2030 no-build, and Year 2030 projected traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM)*, 6th Edition and analyzed using Synchro/SimTraffic 11 software.

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

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

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the existing, Year 2030 no-build, and Year 2030 total projected conditions are presented in **Tables 5** through **12**. A discussion of each intersection follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 5

LAGRANGE ROAD WITH 143RD STREET - SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Existing Conditions	Weekday Morning	D 48.8	D 47.1	A 9.8	E 61.1	D 50.3	D 35.5	E 57.4	C 23.3	E 62.3	B 16.3	D 48.8	D 47.1	C 31.0
		D - 41.5			D - 46.8			C - 26			C - 21.6			
	Weekday Evening	E 66.7	E 58	C 23.2	E 78.1	D 49.6	C 22.8	E 62.4	D 40.5	E 66.7	C 27.7	E 66.7	E 58	C 42.4
		D - 54.1			D - 51.5			D - 41.6			C - 33.3			
	Saturday Midday	E 62.9	D 54.6	C 24.2	E 66.2	D 50.2	B 18.3	E 62.9	C 30.2	E 78.9	C 23.7	E 62.9	D 54.6	D 36.2
		D - 47.4			D - 48.7			C - 33.2			C - 29			
No-Build Conditions	Weekday Morning	D 48.8	D 45.9	A 9.6	E 62.7	D 49.9	D 37.5	E 57.7	C 25.3	E 62.5	B 17.9	D 48.8	D 45.9	C 32.1
		D - 40.6			D - 47.8			C - 27.8			C - 22.9			
	Weekday Evening	E 68.5	E 60.0	C 26.7	F 86.2	D 50.4	C 23.9	E 62.5	D 49.7	E 67.7	C 31.8	E 68.5	E 60	D 47.4
		E - 56.3			D - 54.7			D - 50.4			D - 37			
	Saturday Midday	E 63.0	D 54.5	C 25.3	E 68.2	D 50.1	B 19.6	E 63.3	C 33.8	E 77.1	C 26.3	E 63	D 54.5	D 38.4
		D - 47.6			D - 49.6			D - 36.4			C - 31.2			
Projected Conditions	Weekday Morning	E 58.3	D 45.3	B 11.6	E 62.7	D 50.4	D 40.0	E 59.3	C 26.3	E 65.9	B 16.8	E 58.3	D 45.3	C 32.9
		D - 41.6			D - 48.8			C - 29.4			C - 22.3			
	Weekday Evening	E 69.5	E 59.1	C 30.5	F 86.2	D 51.6	C 25.2	E 63.7	E 58.3	E 66.1	D 39.4	E 69.5	E 59.1	D 52.3
		E - 55.6			D - 54.7			E - 58.8			D - 43.2			
	Saturday Midday	E 62.9	D 54.0	C 27	E 68.2	D 50.1	C 21.2	E 65.3	D 36.9	F 83.0	C 28.0	E 62.9	D 54.0	D 40.4
		D - 47.5			D - 49.2			D - 40			C - 33.3			
Letter denotes Level of Service Delay is measured in seconds.		L – Left Turn T – Through			R – Right Turn									

Table 6

LAGRANGE ROAD WITH 142ND STREET - SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Existing Conditions	Weekday Morning	D 48.6	D 51.2	A 4.9	D 51.6	D 50.9	A 1.2	D 54.2	A 4.5	A 0.4	E 55.9	A 7.0	A 0.7	A 7.7
		C - 28.6			D - 37.3			A - 5.4			A - 7.9			
	Weekday Evening	D 53.8	E 57.0	B 18.6	D 54.8	E 56.3	B 12.0	E 80.0	A 3.6	A 0.1	E 62.4	A 9.8	A 0.0	B 10.1
		C - 34.9			D - 38.3			A - 4.1			B - 12.1			
	Saturday Midday	D 45.6	E 56.3	A 0.7	E 59.1	D 52.5	B 12.1	E 60.4	A 4.7	A 0.1	E 62.3	A 7.7	A 0.0	A 9.6
		C - 26.8			D - 42.2			A - 4.6			B - 10.5			
No-Build Conditions	Weekday Morning	D 48.6	D 51.2	A 4.9	D 51.6	D 50.9	A 1.2	D 53.2	A 4.5	A 0.3	E 55.9	A 7.3	A 0.7	A 7.7
		C - 28.6			D - 37.3			A - 5.3			A - 8.1			
	Weekday Evening	D 53.8	E 57.0	B 18.6	D 54.8	E 56.3	B 12.0	E 78.5	A 4.3	A 0.1	E 62.4	B 10.4	A 0.0	B 10.4
		C - 34.9			D - 38.3			A - 4.6			B - 12.5			
	Saturday Midday	D 45.6	E 56.3	A 0.7	E 59.1	D 52.5	B 12.1	E 59.3	A 4.7	A 0.1	E 62.3	A 8.1	A 0.0	A 9.4
		C - 26.8			D - 42.2			A - 4.6			B - 10.6			
Projected Conditions	Weekday Morning	D 54.1	D 51.2	B 12.6	D 51.0	D 51.1	A 1.3	D 53.3	A 5.1	A 0.4	E 55.9	B 10.1	A 1.0	B 10.8
		D - 35.6			D - 37			A - 8.4			B - 10.3			
	Weekday Evening	E 67.1	E 57	C 27.0	D 54.3	E 57.2	B 13.2	E 78.6	A 4.8	A 0.1	E 62.4	B 13.6	A 1.0	B 14.4
		D - 46.6			D - 38.6			A - 8.5			B - 14.7			
	Saturday Midday	E 56.2	E 56.3	B 13.7	E 59.4	D 54	B 14.4	E 59.2	A 4.7	A 0.1	E 62.3	B 10.9	A 1.1	B 12.6
		D - 36			D - 43.3			A - 7.5			B - 12.5			
Letter denotes Level of Service Delay is measured in seconds.		L – Left Turn T – Through			R – Right Turn									

Table 7
143RD STREET WITH RAVINIA AVENUE - SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Existing Conditions	Weekday Morning	D 48.8	D 47.1	A 9.8	E 61.1	D 50.3	D 35.5	E 57.4	C 23.3	E 62.3	B 16.3	D 48.8	D 47.1	B 15.2
		D - 41.5			D - 46.8			C - 26			C - 21.6			
	Weekday Evening	E 66.7	E 58	C 23.2	E 78.1	D 49.6	C 22.8	E 62.4	D 40.5	E 66.7	C 27.7	E 66.7	E 58	C 21.1
		D - 54.1			D - 51.5			D - 41.6			C - 33.3			
	Saturday Midday	E 62.9	D 54.6	C 24.2	E 66.2	D 50.2	B 18.3	E 62.9	C 30.2	E 78.9	C 23.7	E 62.9	D 54.6	B 15.6
		D - 47.4			D - 48.7			C - 33.2			C - 29			
No-Build Conditions	Weekday Morning	D 48.8	D 45.9	A 9.6	E 62.7	D 49.9	D 37.5	E 57.7	C 25.3	E 62.5	B 17.9	D 48.8	D 45.9	B 14.8
		D - 40.6			D - 47.8			C - 27.8			C - 22.9			
	Weekday Evening	E 68.5	E 60	C 26.7	F 86.2	D 50.4	C 23.9	E 62.5	D 49.7	E 67.7	C 31.8	E 68.5	E 60	C 20.9
		E - 56.3			D - 54.7			D - 50.4			D - 37			
	Saturday Midday	E 63	D 54.5	C 25.3	E 68.2	D 50.1	B 19.6	E 63.3	C 33.8	E 77.1	C 26.3	E 63	D 54.5	B 15.4
		D - 47.6			D - 49.6			D - 36.4			C - 31.2			
Projected Conditions	Weekday Morning	E 58.3	D 45.3	B 11.6	E 62.7	D 50.4	D 40	E 59.3	C 26.3	E 65.9	B 16.8	E 58.3	D 45.3	B 18.9
		D - 41.6			D - 48.8			C - 29.4			C - 22.3			
	Weekday Evening	E 69.5	E 59.1	C 30.5	F 86.2	D 51.6	C 25.2	E 63.7	E 58.3	E 66.1	D 39.4	E 69.5	E 59.1	C 25.1
		E - 55.6			D - 54.7			E - 58.8			D - 43.2			
	Saturday Midday	E 62.9	D 54	C 27	E 68.2	D 50.1	C 21.2	E 65.3	D 36.9	F 83	C 28	E 62.9	D 54	C 21.1
D - 47.5			D - 49.2			D - 40.0			C - 33.3					
Letter denotes Level of Service Delay is measured in seconds.		L – Left Turn			R – Right Turn									
		T – Through												

Table 8

143RD STREET WITH SOUTHWEST HIGHWAY – SIGNALIZED – WITHOUT ROADWAY IMPROVEMENTS

Existing Conditions	Peak Hour	Eastbound		Westbound		Southbound		Overall
		L	T	T	R	L	R	
	Weekday Morning	C 22.7	A 1.7	C 26.4	A 1.5	D 44.6	B 10.5	B 16.3
		B - 11.9		C - 22		B - 17.9		
Weekday Evening	B 13.7	A 2.8	C 25.1	A 1.1	E 67.9	B 11.6	B 18.5	
	A - 6.4		C - 21.5		C - 31.7			
23.6No-Build Conditions	Weekday Morning	D 52.6	A 1.9	C 27.6	A 1.4	D 45.1	B 10.5	C 23.6
		C - 26.6		C - 23		B - 18		
	Weekday Evening	C 23.8	A 3.1	C 25.8	A 1.1	E 73.5	B 12.8	C 20.9
		A - 10		C - 22.1		C - 34.4		
Projected Conditions	Weekday Morning	F 83.5	A 2.1	C 29	A 1.3	D 44.9	B 10.1	C 29.9
		D - 40		C - 23.1		B - 18		
	Weekday Evening	D 44.1	A 3.8	C 27.3	A 1.0	E 78.7	B 14.2	C 24.4
		B - 16.4		C - 22.1		D - 38		
Letter denotes Level of Service Delay is measured in seconds.								
L – Left Turn R – Right Turn T – Through								

Table 9

143RD STREET WITH SOUTHWEST HIGHWAY – SIGNALIZED – WITH ROADWAY IMPROVMENTS

	Peak Hour	Eastbound		Westbound		Southeast-bound (Union Street)	Southwest-bound (Southwest Highway)		Overall
		L	T	T	R	L/R	L	R	
Projected Conditions	Weekday Morning	D 54.0	A 9.2	C 22.8	A 1.7	A 7.0	D 47.9	D 39.1	C 29.0
		C – 31.7		B – 18.4			D – 41.0		
	Weekday Evening	E 56.7	B 10.3	C 22.1	A 1.0	A 0.3	D 48.8	D 48.6	C 29.5
		C – 24.7		B – 17.9			D – 48.7		
Letter denotes Level of Service Delay is measured in seconds.		L – Left Turn T – Through		R – Right Turn					

Table 10
EXISTING CONDITIONS - UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
143rd Street with Main Street						
• Southbound Approach	A	9.5	B	10.1	B	10.2
142nd Street with Jefferson Avenue						
• Eastbound Left Turn	A	7.3	A	7.2	--	--
• Westbound Left Turn	A	7.4	A	7.4	A	7.3
• Northbound Approach	A	9.4	A	8.9	A	8.5
• Southbound Approach	B	11.2	B	10.5	A	9.7
Ravinia Avenue with Crescent Park Circle						
• Northbound Approach	A	8.7	A	8.7	A	8.5
Ravinia Avenue with Parking Garage Access/Access Road						
• Eastbound Approach	A	9.0	A	8.7	A	8.8
• Westbound Approach	A	9.7	A	9.9	A	8.8
• Northbound Left Turn	A	7.3	A	7.3	A	7.2
• Southbound Left Turn	--	--	--	--	--	--
LOS = Level of Service Delay is measured in seconds.			1 – All-way stop control 2 – Two-way stop control			

Table 11
NO BUILD CONDITIONS - UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
143rd Street with Main Street						
• Southbound Approach	A	9.6	B	10.5	B	10.3
142nd Street with Jefferson Avenue						
• Eastbound Left Turn	A	7.3	A	7.2	--	--
• Westbound Left Turn	A	7.4	A	7.4	A	7.3
• Northbound Approach	A	9.4	A	8.9	A	8.5
• Southbound Approach	B	11.2	B	10.5	A	9.7
Ravinia Avenue with Crescent Park Circle						
• Northbound Approach	A	8.7	A	8.7	A	8.5
Ravinia Avenue with Parking Garage Access/Access Road						
• Eastbound Approach	A	9.0	A	8.7	A	8.8
• Westbound Approach	A	9.7	A	9.9	A	8.8
• Northbound Left Turn	A	7.3	A	7.3	A	7.2
• Southbound Left Turn	--	--	--	--	--	--
LOS = Level of Service Delay is measured in seconds.			1 – All-way stop control 2 – Two-way stop control			

Table 12

PROJECTED CONDITIONS - UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
143rd Street with Main Street						
• Southbound Approach	B	10.0	B	11.4	B	11.0
142nd Street with Jefferson Avenue						
• Westbound Left Turn	A	7.5	A	7.5	A	7.5
• Northbound Approach	B	10.0	B	14.2	B	12.8
Ravinia Avenue with Crescent Park Circle						
• Northbound Approach	A	9.9	A	9.7	A	9.0
Ravinia Avenue with Parking Garage Access/Access Road						
• Eastbound Approach	A	9.7	A	9.3	A	9.8
• Westbound Approach	A	11.0	B	14.1	B	11.6
• Northbound Left Turn	A	7.4	A	7.5	A	7.4
• Southbound Left Turn	--	--	--	--	--	--
142nd Street with Parcel B Access Drive						
• Southbound Approach	A	9.2	A	9.4	A	9.4
Crescent Park Circle with Parcel A Access						
• Southbound Approach	A	9.2	A	9.5	A	9.3
LOS = Level of Service			1 – All-way stop control			
Delay is measured in seconds.			2 – Two-way stop control			

Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identifies any roadway and traffic control improvements necessary to accommodate the development-generated traffic.

LaGrange Road with 143rd Street

The results of the capacity analysis indicate that this intersection currently operates at an overall Level of Service (LOS) C during the weekday morning and Saturday midday peak hours and at LOS D during the weekday evening peak hour. It should be noted that multiple movements currently operate at LOS E. This is the result of the long cycle length (120 to 130 seconds), protected only nature of the left-turn movements, high volumes of existing traffic, and limited green time given to 143rd Street movements. Under Year 2034 no-build, this intersection is projected to operate at an LOS C during the weekday morning peak hours and at LOS D during the weekday evening and Saturday midday peak hours.

Under Year 2034 total projected conditions, this intersection is projected to operate at the same LOS as no-build conditions during all three peak hours. It should be noted that all movements are projected to operate with a volume to capacity (v/c) ratio of less than 1.0 and with 95th percentile queues that can be accommodated within the existing turn lanes. Overall, the proposed development is projected to increase the volume of traffic at this intersection by five to seven percent. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development.

LaGrange Road with 142nd Street

The results of the capacity analysis indicate that this intersection currently operates at an overall LOS A during the weekday morning and Saturday midday peak hours and at LOS B during the weekday evening peak hour. It should be noted that multiple movements currently operate at LOS E. This is the result of the long cycle length (120 to 130 seconds), protected only nature of the left-turn movements, high volumes of existing traffic, and limited green time given to 142nd Street movements. It should be noted that through movements on LaGrange Road operate at LOS A during all three peak hours. Under Year 2034 no-build, this intersection is projected to operate at the same LOS during all three peak hours.

Under Year 2034 total projected conditions, this intersection is projected to operate at LOS B during the weekday morning and Saturday midday peak hours and at LOS C during the weekday evening peak hour. The following should be noted:

- The through movements on LaGrange Road are projected to operate at LOS B or better during all three peak hours.
- Turning movements onto 142nd Street from LaGrange Road into Downtown Orland Park will operate at LOS E or better during all three peak hours with 95th percentile queues that can be accommodated with the existing turn lanes.

- Eastbound 95th percentile queues at this intersection are not projected to exceed 150 feet and will not extend to Jefferson Avenue. As such, these queues will not negatively impact the internal circulation of the nearby intersections.
- Reassignment of additional green time to the turning movement in or out of Downtown Orland Park is not necessary.

As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development.

142nd Street with Southwest Highway (and Union Street)

The results of the capacity analysis indicate that this intersection currently operates at an overall LOS B during the weekday morning, weekday evening. Further, 142nd Street movements operate at LOS C or better during both peak hours and southwest highway movements operate at LOS E or better. Under 2024 No-build conditions, the intersection is projected to operate at LOS C during the weekday morning at LOS B during the weekday evening peak hour.

This intersection is planned to be improved by IDOT as part of improvements along 142nd Street west of the site. This intersection improvements will include the following:

- This intersection currently operates in direct connection with the intersection of 142nd Street with Union Street. As part of the improvements, these intersections will be combined.
- 142nd Street will be widened to provide two through lanes in each direction and dual eastbound left-turn lanes.
- Southwest highway will be widened to provide dual southbound right-turn lanes.

Under Year 2034 total projected conditions, without the improvements, this intersection is projected to operate at LOS C during the weekday morning and weekday evening peak hours. However, the eastbound left-turn movement is projected to operate at LOS F during the weekday morning peak hours. With the completion of the proposed improvements, this intersection will continue to operate at LOS C with similar delays. However, all movements are projected to operate at LOS E or better and these improvements will simplify operations as the two adjacent intersections will be combined into a single intersection. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and the proposed improvements will improve and simplify area operations.

142nd Street with Ravinia Avenue

The results of the capacity analysis indicate that this intersection currently operates at an overall LOS B during the weekday morning and Saturday midday peak hours and at LOS C during the weekday evening peak hour. It should be noted that multiple movements currently operate at LOS E. This is the result of the long cycle length (120 to 130 seconds) and limited green time given to

Ravinia Avenue movements. It should be noted that through movements on 142nd Street operate at LOS B or better during all three peak hours. Under Year 2034 no-build, this intersection is projected to operate at the same LOS during all three peak hours.

Under Year 2034 total projected conditions, this intersection is projected to operate at LOS B during the weekday evening peak hours and LOS C during the weekday evening and Saturday midday peak hour. The following should be noted:

- The through movements on 142nd Street are projected to operate at LOS C or better during all three peak hours.
- Turning movements from 142nd Street entering Downtown Orland Park will operate at LOS A during all three peak hours with 95th percentile queues that can be accommodated with the existing turn lanes.
- Turning movements exiting Downtown Orland Park from Ravinia Avenue will operate at LOS D or better during all three peak hours with 95th percentile queues of up to 175 feet. These queues will not extend to the internal intersection north of this intersection and will not impact internal circulation.

As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development.

142nd Street with Main Street

The results of the capacity analysis indicate that the southbound approach currently operates at an overall LOS A during the weekday morning peak hour and at LOS B during the weekday evening peak hour and Saturday midday peak hour. Under Year 2034 total projected conditions, this the southbound approach is projected to operate at LOS B during all three peak hours. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development.

Internal Intersections

The results of the capacity analysis indicate that the critical movements at the internal intersections within the Downtown Orland Park currently operate at LOS B or better. Under Year 2034 total projected conditions, all critical movements are projected to continue to operate at LOS C or better. The following should be noted:

- As previously mentioned, queues from the access intersections are not projected to extend to the internal intersections and will not impact their operations.
- The intersection of 142nd Street with Jefferson Avenue will be simplified as the north leg will be removed. This is important as this intersection will carry a large volume of traffic entering and exiting the site as well as high volumes of pedestrian traffic.

- SimTraffic simulation of the roadway network indicated that queues from the intersections of 142nd Street with Jefferson Street and the Parcel B access will not extend to LaGrange Road and will not impact operations of the signalized intersection.

Internal Circulation

As previously mentioned, the circulation of the Downton Orland Park will be modified as part of this development. As proposed, the following changes will be made:

- Crescent Circle Drive, which currently encircles Crescent Park, will be vacated between Ravinia Avenue and 142nd Street. Instead, Crescent Circle Drive will continue east, terminating at Jefferson Avenue.
- Jefferson Avenue will be vacated north of 142nd Street.
- A designated pick-up/drop-off area will be provided on the north side of 142nd Street between Jefferson Avenue and Crescent Park Circle. A U-turn lane will be provided allowing pick-up/drop-off traffic to return to 142nd Street.
- New Access drives serving Parcels A, B, and C will be provided.

In addition to these changes, it is recommended that additional signage directing traffic throughout the sit to the public parking within the parking garage.

Internal circulation and operations within the site are projected to continue to operate efficiently given the following:

- Downtown Orland Park is served by two full movement signalized access drives. Both of these access points are projected to accommodate projected traffic volumes without impacting internal operations.
- Traffic entering the site on 142nd Street will be able to operate efficiently and not negatively impact the signalized intersection of 142nd Street with LaGrange Road.
 - 142nd Street will provide two lanes between LaGrange Road and Jefferson Avenue. A majority of westbound traffic at the intersection of 142nd Street with Jefferson Avenue will turn left from the south lane, and, as such, will not be slowed by vehicles entering Parcel B from the north lane.
 - Westbound 142nd Street is free flow at its intersection with Jefferson Avenue. Further, westbound left-turn movements will only be required to wait on traffic from the U-Turn lane.
 - As previously mentioned, SimTraffic simulation of the roadway network indicated that queues from the intersections of 142nd Street with Jefferson Street and the

Parcel B access will not extend to LaGrange Road and will not impact operations of the signalized intersection.

- The intersection of Jefferson Avenue with 142nd Street will become a “T” intersection. This will significantly reduce the number of different movements at this intersection leading to simpler and more efficient operations.
- The realignment of Crescent Park Circle will not negatively impact internal circulation as vehicles will be able to use Jefferson Avenue to access 142nd Street.
- Parking will be provided throughout the site with surface lots located within a majority of the parcels and on-street parking on many of the internal roads. This will allow a majority of vehicles to park near their destination. The remainder of vehicles will be able to park in the parking garage which is located immediately next to 142nd Street with Ravinia Avenue signalized access point.
- The designated drop-off/pick-up area will consolidate these activities to a single location.
 - Provision of this area will help prevent vehicles from blocking other vehicles on 142nd Street.
 - This area is centrally located and is immediately adjacent to the pedestrian walkway serving Parcels A and B.
 - The proposed U-Turn lane will allow pick-up/drop-off vehicles to return directly to LaGrange Road reducing unnecessary circulation of the site.

Traffic Control

- It is important that inbound movements on 142nd Street, Ravinia Avenue, Main Street, and Jefferson Avenue near the site access points do not stop such that queues on these roadways cannot extend out of the site.
- The proposed access points to Parcels A, B, and C should be under stop sign control. Having vehicles queues within the surface parking lots is more desirable than on the circulation roadways.
- Consideration should be given to placing the intersection of Jefferson Avenue with Crescent Circle Drive or with the Parcel H parking lot entrance under all-way stop sign control. It is anticipated that a high number of pedestrians will cross Jefferson Avenue along this segment and stopping traffic on Jefferson Avenue would be beneficial for pedestrian safety.

Pedestrian Activity

The development of the vacant parcels will increase the pedestrian activity within the site as a result of the interaction between proposed and existing uses with pedestrians walking between the sites. Pedestrian activity will be well accommodated within Downtown Orland Park given the following:

- Sidewalks and pedestrian areas are provided along all roadways within the site and will be provided along the new segment of Crescent Circle Drive.
- Pedestrians leaving the parking garage will have a pathway to all existing and proposed uses via sidewalks and crosswalks.
- Crosswalks will be provided at all intersections.
- Internal roadways have a low speed limit of 20 miles per hour.

6. Conclusion

Based on existing conditions and the traffic capacity analyses for the full buildout of the development, the findings and recommendations of this study are outlined below:

- As proposed, the remaining parcels in Downtown Orland Park will be developed with a mixture of commercial, entertainment, office, and restaurant uses.
- As part of the development, the following modifications to the roadway network within the site will be provided:
 - Crescent Circle Drive, which currently encircles Crescent Park, will be vacated between Ravinia Avenue and 142nd Street. Instead, Crescent Circle Drive will continue east, terminating at Jefferson Avenue.
 - Jefferson Avenue will be vacated north of 142nd Street.
 - A designated pick-up/drop-off area will be provided on the north side of 142nd Street between Jefferson Avenue and Crescent Park Circle. A U-turn lane will be provided allowing pick-up/drop-off traffic to return to 142nd Street.
 - New access drives serving Parcels A, B, and C will be provided.
- The intersections that provide access to Downtown Orland Park will adequately accommodate development generated traffic without impacting internal intersection operations.
- The internal intersections within the site are projected to operate efficiently and will not impact the access intersection operations.
- Consideration should be given to placing the intersection of Jefferson Avenue with Crescent Circle Drive or with the Parcel H parking lot entrance under all-way stop sign control.
- Signage should be provided throughout the site directing traffic to the public parking within the parking garage.
- The site will continue to provide adequate accommodations for pedestrians.

Appendix

Traffic Count Summary Sheets
Preliminary Site Plan
Preliminary Geometric Plan (Exhibit A)
ITE Trip Generation Worksheets
CMAP Projections Letter
Level of Service Criteria
Capacity Analysis Summary Sheets

Traffic Count Summary Sheets



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Count Name:
142nd+Street+with+Jefferson+Street TMC
Site Code:
Start Date: 07/11/2024
Page No: 1

Turning Movement Data

Start Time	142nd Street Eastbound						142nd Street Westbound						Jefferson Avenue Northbound						Jefferson 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	7	4	0	1	11	0	8	1	4	0	13	0	0	4	4	0	8	0	0	1	0	0	1	33
7:15 AM	0	1	6	0	0	7	0	18	1	1	0	20	0	0	1	2	0	3	0	0	1	0	0	1	31
7:30 AM	0	4	6	0	0	10	0	19	5	7	0	31	0	1	5	10	0	16	0	0	0	0	0	0	57
7:45 AM	0	2	11	0	2	13	2	17	7	1	0	27	0	0	2	7	1	9	0	1	0	0	0	1	50
Hourly Total	0	14	27	0	3	41	2	62	14	13	0	91	0	1	12	23	1	36	0	1	2	0	0	3	171
8:00 AM	0	0	4	0	0	4	1	11	1	0	0	13	0	0	0	6	0	6	0	0	0	0	0	0	23
8:15 AM	0	0	1	0	1	1	0	14	2	0	0	16	0	0	1	7	0	8	0	1	0	0	0	1	26
8:30 AM	0	0	2	0	0	2	0	13	3	2	1	18	0	0	0	8	0	8	0	1	1	0	1	2	30
8:45 AM	0	1	7	0	0	8	0	16	3	0	0	19	0	0	1	12	1	13	0	0	0	0	0	0	40
Hourly Total	0	1	14	0	1	15	1	54	9	2	1	66	0	0	2	33	1	35	0	2	1	0	1	3	119
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	2	1	0	3	0	13	4	0	0	17	0	0	1	28	0	29	0	0	1	0	0	1	50
4:15 PM	0	0	4	1	3	5	0	7	5	1	0	13	0	2	0	14	0	16	0	0	0	0	0	0	34
4:30 PM	0	0	13	2	0	15	0	9	2	0	0	11	0	0	1	16	1	17	0	9	5	1	1	15	58
4:45 PM	0	1	5	2	0	8	1	6	5	0	0	12	0	0	0	15	0	15	0	0	1	0	0	1	36
Hourly Total	0	1	24	6	3	31	1	35	16	1	0	53	0	2	2	73	1	77	0	9	7	1	1	17	178
5:00 PM	0	0	6	0	0	6	0	12	4	0	0	16	0	0	0	15	0	15	0	0	0	0	0	0	37
5:15 PM	0	0	7	0	0	7	1	13	3	0	0	17	0	1	1	12	0	14	0	14	6	0	0	20	58
5:30 PM	0	0	4	1	0	5	0	8	6	0	0	14	0	1	0	16	1	17	0	5	4	0	0	9	45
5:45 PM	0	1	3	1	1	5	1	4	10	0	0	15	0	0	0	11	1	11	0	0	1	0	0	1	32
Hourly Total	0	1	20	2	1	23	2	37	23	0	0	62	0	2	1	54	2	57	0	19	11	0	0	30	172
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	0	1	0	0	1	0	3	2	0	0	5	0	0	0	9	0	9	0	0	0	0	1	0	15
11:45 AM	0	0	1	0	0	1	1	3	4	0	0	8	0	0	0	7	0	7	0	1	0	0	0	1	17
Hourly Total	0	0	2	0	0	2	1	6	6	0	0	13	0	0	0	16	0	16	0	1	0	0	1	1	32
12:00 PM	0	0	4	0	0	4	1	11	4	0	0	16	0	1	0	9	0	10	0	0	0	0	0	0	30
12:15 PM	0	1	4	1	0	6	2	3	2	0	0	7	0	0	0	5	1	5	0	0	0	0	0	0	18
12:30 PM	0	0	4	1	0	5	2	7	4	0	0	13	0	0	0	6	0	6	0	0	0	0	0	0	24
12:45 PM	0	1	0	0	0	1	0	4	1	0	0	5	0	0	0	2	0	2	0	0	1	0	1	1	9
Hourly Total	0	2	12	2	0	16	5	25	11	0	0	41	0	1	0	22	1	23	0	0	1	0	1	1	81
1:00 PM	0	0	1	0	0	1	0	5	5	0	0	10	0	0	0	8	0	8	0	0	0	0	0	0	19
1:15 PM	0	0	6	1	0	7	0	3	2	0	0	5	0	1	0	1	0	2	0	0	0	0	0	0	14
Grand Total	0	19	106	11	8	136	12	227	86	16	1	341	0	7	17	230	6	254	0	32	22	1	4	55	786
Approach %	0.0	14.0	77.9	8.1	-	-	3.5	66.6	25.2	4.7	-	-	0.0	2.8	6.7	90.6	-	-	0.0	58.2	40.0	1.8	-	-	-
Total %	0.0	2.4	13.5	1.4	-	17.3	1.5	28.9	10.9	2.0	-	43.4	0.0	0.9	2.2	29.3	-	32.3	0.0	4.1	2.8	0.1	-	7.0	-

Lights	0	18	105	11	-	134	12	227	83	16	-	338	0	7	17	230	-	254	0	32	21	1	-	54	780
% Lights	-	94.7	99.1	100.0	-	98.5	100.0	100.0	96.5	100.0	-	99.1	-	100.0	100.0	100.0	-	100.0	-	100.0	95.5	100.0	-	98.2	99.2
Buses	0	0	1	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Buses	-	0.0	0.9	0.0	-	0.7	0.0	0.0	1.2	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.3
Single-Unit Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	0.0	0.0	1.2	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	1	0	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	3
% Bicycles on Road	-	5.3	0.0	0.0	-	0.7	0.0	0.0	1.2	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.0	4.5	0.0	-	1.8	0.4
Pedestrians	-	-	-	-	8	-	-	-	-	-	1	-	-	-	-	-	6	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Start Date: 07/11/2024
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	142nd Street Eastbound						142nd Street Westbound						Jefferson Avenue Northbound						Jefferson 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	
7:30 AM	0	4	6	0	0	10	0	19	5	7	0	31	0	1	5	10	0	16	0	0	0	0	0	0	57
7:45 AM	0	2	11	0	2	13	2	17	7	1	0	27	0	0	2	7	1	9	0	1	0	0	0	1	50
8:00 AM	0	0	4	0	0	4	1	11	1	0	0	13	0	0	0	6	0	6	0	0	0	0	0	0	23
8:15 AM	0	0	1	0	1	1	0	14	2	0	0	16	0	0	1	7	0	8	0	1	0	0	0	1	26
Total	0	6	22	0	3	28	3	61	15	8	0	87	0	1	8	30	1	39	0	2	0	0	0	2	156
Approach %	0.0	21.4	78.6	0.0	-	-	3.4	70.1	17.2	9.2	-	-	0.0	2.6	20.5	76.9	-	-	0.0	100.0	0.0	0.0	-	-	-
Total %	0.0	3.8	14.1	0.0	-	17.9	1.9	39.1	9.6	5.1	-	55.8	0.0	0.6	5.1	19.2	-	25.0	0.0	1.3	0.0	0.0	-	1.3	-
PHF	0.000	0.375	0.500	0.000	-	0.538	0.375	0.803	0.536	0.286	-	0.702	0.000	0.250	0.400	0.750	-	0.609	0.000	0.500	0.000	0.000	-	0.500	0.684
Lights	0	6	22	0	-	28	3	61	15	8	-	87	0	1	8	30	-	39	0	2	0	0	-	2	156
% Lights	-	100.0	100.0	-	-	100.0	100.0	100.0	100.0	100.0	-	100.0	-	100.0	100.0	100.0	-	100.0	-	100.0	-	-	-	100.0	100.0
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
Single-Unit Trucks	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	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
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	-	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	-	-	-	0.0	0.0
Pedestrians	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-



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Site Code:
Start Date: 07/11/2024
Page No: 4

Turning Movement Peak Hour Data (4:30 PM)

Start Time	142nd Street Eastbound						142nd Street Westbound						Jefferson Avenue Northbound						Jefferson 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	13	2	0	15	0	9	2	0	0	11	0	0	1	16	1	17	0	9	5	1	1	15	58
4:45 PM	0	1	5	2	0	8	1	6	5	0	0	12	0	0	0	15	0	15	0	0	1	0	0	1	36
5:00 PM	0	0	6	0	0	6	0	12	4	0	0	16	0	0	0	15	0	15	0	0	0	0	0	0	37
5:15 PM	0	0	7	0	0	7	1	13	3	0	0	17	0	1	1	12	0	14	0	14	6	0	0	20	58
Total	0	1	31	4	0	36	2	40	14	0	0	56	0	1	2	58	1	61	0	23	12	1	1	36	189
Approach %	0.0	2.8	86.1	11.1	-	-	3.6	71.4	25.0	0.0	-	-	0.0	1.6	3.3	95.1	-	-	0.0	63.9	33.3	2.8	-	-	-
Total %	0.0	0.5	16.4	2.1	-	19.0	1.1	21.2	7.4	0.0	-	29.6	0.0	0.5	1.1	30.7	-	32.3	0.0	12.2	6.3	0.5	-	19.0	-
PHF	0.000	0.250	0.596	0.500	-	0.600	0.500	0.769	0.700	0.000	-	0.824	0.000	0.250	0.500	0.906	-	0.897	0.000	0.411	0.500	0.250	-	0.450	0.815
Lights	0	1	31	4	-	36	2	40	14	0	-	56	0	1	2	58	-	61	0	23	12	1	-	36	189
% Lights	-	100.0	100.0	100.0	-	100.0	100.0	100.0	100.0	-	-	100.0	-	100.0	100.0	100.0	-	100.0	-	100.0	100.0	100.0	-	100.0	100.0
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	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	0.0	0.0	-	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	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
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	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

[illegible]



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Count Name: 143rd+Street+with+Main+Street
TMC
Site Code:
Start Date: 07/11/2024
Page No: 1

Turning Movement Data

Start Time	143rd Street Eastbound					143rd Street Westbound					Main Street Southbound					Int. Total
	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:00 AM	0	0	93	0	93	0	67	3	0	70	0	0	4	0	4	167
7:15 AM	0	0	82	0	82	0	67	2	0	69	0	0	2	0	2	153
7:30 AM	0	0	119	0	119	0	79	2	0	81	0	0	1	0	1	201
7:45 AM	0	0	112	0	112	0	84	3	0	87	0	0	0	0	0	199
Hourly Total	0	0	406	0	406	0	297	10	0	307	0	0	7	0	7	720
8:00 AM	0	0	124	0	124	0	92	0	0	92	0	0	2	0	2	218
8:15 AM	0	0	125	0	125	0	110	1	0	111	0	0	4	1	4	240
8:30 AM	0	0	111	0	111	0	99	1	0	100	0	0	0	0	0	211
8:45 AM	0	0	143	0	143	0	103	3	0	106	0	0	2	2	2	251
Hourly Total	0	0	503	0	503	0	404	5	0	409	0	0	8	3	8	920
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	149	0	149	0	122	1	0	123	0	0	1	1	1	273
4:15 PM	0	0	203	0	203	0	141	2	0	143	0	0	3	0	3	349
4:30 PM	0	0	160	0	160	0	138	3	0	141	0	0	5	0	5	306
4:45 PM	0	0	172	0	172	0	141	4	0	145	0	0	4	0	4	321
Hourly Total	0	0	684	0	684	0	542	10	0	552	0	0	13	1	13	1249
5:00 PM	0	0	161	0	161	0	139	5	0	144	0	0	2	0	2	307
5:15 PM	0	0	171	0	171	0	148	2	0	150	0	0	9	0	9	330
5:30 PM	0	0	163	0	163	0	136	3	0	139	0	0	7	0	7	309
5:45 PM	0	0	171	0	171	0	131	2	0	133	0	0	4	0	4	308
Hourly Total	0	0	666	0	666	0	554	12	0	566	0	0	22	0	22	1254
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	0	154	0	154	0	103	2	0	105	0	0	3	2	3	262
11:45 AM	0	0	163	0	163	0	132	4	0	136	0	0	2	0	2	301
Hourly Total	0	0	317	0	317	0	235	6	0	241	0	0	5	2	5	563
12:00 PM	0	0	166	0	166	0	129	1	0	130	0	0	6	0	6	302
12:15 PM	0	0	141	0	141	0	100	2	0	102	0	0	0	0	0	243
12:30 PM	0	0	165	0	165	0	125	3	0	128	0	0	4	0	4	297
12:45 PM	0	0	155	0	155	0	147	2	0	149	0	0	0	0	0	304
Hourly Total	0	0	627	0	627	0	501	8	0	509	0	0	10	0	10	1146
1:00 PM	0	0	154	0	154	0	120	1	0	121	0	0	6	0	6	281
1:15 PM	0	0	156	0	156	0	118	1	0	119	0	0	1	0	1	276
Grand Total	0	0	3513	0	3513	0	2771	53	0	2824	0	0	72	6	72	6409
Approach %	0.0	0.0	100.0	-	-	0.0	98.1	1.9	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	0.0	54.8	-	54.8	0.0	43.2	0.8	-	44.1	0.0	0.0	1.1	-	1.1	-
Lights	0	0	3473	-	3473	0	2729	52	-	2781	0	0	71	-	71	6325

% Lights	-	-	98.9	-	98.9	-	98.5	98.1	-	98.5	-	-	98.6	-	98.6	98.7
Buses	0	0	7	-	7	0	4	0	-	4	0	0	0	-	0	11
% Buses	-	-	0.2	-	0.2	-	0.1	0.0	-	0.1	-	-	0.0	-	0.0	0.2
Single-Unit Trucks	0	0	31	-	31	0	29	0	-	29	0	0	1	-	1	61
% Single-Unit Trucks	-	-	0.9	-	0.9	-	1.0	0.0	-	1.0	-	-	1.4	-	1.4	1.0
Articulated Trucks	0	0	2	-	2	0	9	0	-	9	0	0	0	-	0	11
% Articulated Trucks	-	-	0.1	-	0.1	-	0.3	0.0	-	0.3	-	-	0.0	-	0.0	0.2
Bicycles on Road	0	0	0	-	0	0	0	1	-	1	0	0	0	-	0	1
% Bicycles on Road	-	-	0.0	-	0.0	-	0.0	1.9	-	0.0	-	-	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Count Name: 143rd+Street+with+Main+Street
TMC
Site Code:
Start Date: 07/11/2024
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	143rd Street Eastbound					143rd Street Westbound					Main Street Southbound					Int. Total
	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:30 AM	0	0	119	0	119	0	79	2	0	81	0	0	1	0	1	201
7:45 AM	0	0	112	0	112	0	84	3	0	87	0	0	0	0	0	199
8:00 AM	0	0	124	0	124	0	92	0	0	92	0	0	2	0	2	218
8:15 AM	0	0	125	0	125	0	110	1	0	111	0	0	4	1	4	240
Total	0	0	480	0	480	0	365	6	0	371	0	0	7	1	7	858
Approach %	0.0	0.0	100.0	-	-	0.0	98.4	1.6	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	0.0	55.9	-	55.9	0.0	42.5	0.7	-	43.2	0.0	0.0	0.8	-	0.8	-
PHF	0.000	0.000	0.960	-	0.960	0.000	0.830	0.500	-	0.836	0.000	0.000	0.438	-	0.438	0.894
Lights	0	0	470	-	470	0	355	6	-	361	0	0	7	-	7	838
% Lights	-	-	97.9	-	97.9	-	97.3	100.0	-	97.3	-	-	100.0	-	100.0	97.7
Buses	0	0	2	-	2	0	1	0	-	1	0	0	0	-	0	3
% Buses	-	-	0.4	-	0.4	-	0.3	0.0	-	0.3	-	-	0.0	-	0.0	0.3
Single-Unit Trucks	0	0	8	-	8	0	6	0	-	6	0	0	0	-	0	14
% Single-Unit Trucks	-	-	1.7	-	1.7	-	1.6	0.0	-	1.6	-	-	0.0	-	0.0	1.6
Articulated Trucks	0	0	0	-	0	0	3	0	-	3	0	0	0	-	0	3
% Articulated Trucks	-	-	0.0	-	0.0	-	0.8	0.0	-	0.8	-	-	0.0	-	0.0	0.3
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
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

[illegible]

[illegible]



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Count Name:
143rd+Street+with+Ravinia+Avenue TMC
Site Code:
Start Date: 07/11/2024
Page No: 1

Turning Movement Data

Start Time	143rd Street Eastbound						143rd Street Westbound						Ravinia Avenue Northbound						Ravinia 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	14	80	7	0	101	1	8	65	3	0	77	0	6	4	7	0	17	0	1	0	2	1	3	198
7:15 AM	0	8	61	11	0	80	1	12	60	2	0	75	0	2	1	11	0	14	0	8	0	4	0	12	181
7:30 AM	2	20	90	10	1	122	1	16	72	7	0	96	0	5	5	18	0	28	0	2	4	2	0	8	254
7:45 AM	0	14	98	9	0	121	1	16	73	1	0	91	0	5	6	11	0	22	0	8	5	1	0	14	248
Hourly Total	2	56	329	37	1	424	4	52	270	13	0	339	0	18	16	47	0	81	0	19	9	9	1	37	881
8:00 AM	1	10	96	15	0	122	1	16	88	1	1	106	0	6	3	19	0	28	0	4	3	1	0	8	264
8:15 AM	1	8	110	9	0	128	2	20	96	2	0	120	0	9	3	19	0	31	0	7	2	4	0	13	292
8:30 AM	0	7	97	13	0	117	2	23	85	1	0	111	0	8	2	24	0	34	0	5	3	3	0	11	273
8:45 AM	0	10	109	26	0	145	1	28	93	4	3	126	0	9	2	20	0	31	0	8	2	1	1	11	313
Hourly Total	2	35	412	63	0	512	6	87	362	8	4	463	0	32	10	82	0	124	0	24	10	9	1	43	1142
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	2	135	22	0	159	10	42	100	1	1	153	0	20	5	38	0	63	0	6	6	1	0	13	388
4:15 PM	0	5	164	30	0	199	4	38	124	5	5	171	0	24	4	39	1	67	0	5	2	3	0	10	447
4:30 PM	0	7	135	17	0	159	6	34	123	3	3	166	0	17	3	45	0	65	0	14	3	2	0	19	409
4:45 PM	1	6	145	20	1	172	5	33	121	9	2	168	0	14	4	42	0	60	0	10	3	4	1	17	417
Hourly Total	1	20	579	89	1	689	25	147	468	18	11	658	0	75	16	164	1	255	0	35	14	10	1	59	1661
5:00 PM	0	3	142	15	2	160	2	38	120	9	0	169	0	26	3	46	0	75	0	13	3	3	0	19	423
5:15 PM	0	6	155	12	2	173	7	44	137	6	1	194	0	16	5	37	0	58	0	18	3	3	0	24	449
5:30 PM	2	3	134	21	0	160	1	43	120	12	0	176	0	13	4	34	0	51	0	7	4	2	0	13	400
5:45 PM	0	6	144	29	2	179	0	25	116	4	0	145	0	18	6	30	0	54	0	1	1	0	0	2	380
Hourly Total	2	18	575	77	6	672	10	150	493	31	1	684	0	73	18	147	0	238	0	39	11	8	0	58	1652
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	1	2	129	25	0	157	0	22	95	3	4	120	0	15	3	21	0	39	0	1	1	1	7	3	319
11:45 AM	0	7	136	24	0	167	3	25	113	1	2	142	0	17	2	24	0	43	0	0	1	2	2	3	355
Hourly Total	1	9	265	49	0	324	3	47	208	4	6	262	0	32	5	45	0	82	0	1	2	3	9	6	674
12:00 PM	0	0	139	29	0	168	5	21	104	4	0	134	0	25	4	24	0	53	0	4	2	2	5	8	363
12:15 PM	0	3	114	26	0	143	1	19	81	2	0	103	0	22	3	29	0	54	0	0	0	2	5	2	302
12:30 PM	1	1	145	19	0	166	2	19	109	0	0	130	0	24	1	23	0	48	0	5	1	0	4	6	350
12:45 PM	0	1	127	28	0	156	2	22	117	3	0	144	0	22	2	33	0	57	0	1	0	0	1	1	358
Hourly Total	1	5	525	102	0	633	10	81	411	9	0	511	0	93	10	109	0	212	0	10	3	4	15	17	1373
1:00 PM	1	1	135	20	0	157	3	29	91	3	0	126	0	19	3	27	0	49	0	8	1	1	0	10	342
1:15 PM	0	1	149	11	0	161	0	23	109	0	1	132	0	20	1	21	0	42	0	4	1	0	6	5	340
Grand Total	10	145	2969	448	8	3572	61	616	2412	86	23	3175	0	362	79	642	1	1083	0	140	51	44	33	235	8065
Approach %	0.3	4.1	83.1	12.5	-	-	1.9	19.4	76.0	2.7	-	-	0.0	33.4	7.3	59.3	-	-	0.0	59.6	21.7	18.7	-	-	-
Total %	0.1	1.8	36.8	5.6	-	44.3	0.8	7.6	29.9	1.1	-	39.4	0.0	4.5	1.0	8.0	-	13.4	0.0	1.7	0.6	0.5	-	2.9	-

Lights	10	142	2942	447	-	3541	61	612	2375	85	-	3133	0	361	77	637	-	1075	0	139	48	42	-	229	7978
% Lights	100.0	97.9	99.1	99.8	-	99.1	100.0	99.4	98.5	98.8	-	98.7	-	99.7	97.5	99.2	-	99.3	-	99.3	94.1	95.5	-	97.4	98.9
Buses	0	0	4	0	-	4	0	1	4	0	-	5	0	0	0	0	-	0	0	1	0	0	-	1	10
% Buses	0.0	0.0	0.1	0.0	-	0.1	0.0	0.2	0.2	0.0	-	0.2	-	0.0	0.0	0.0	-	0.0	-	0.7	0.0	0.0	-	0.4	0.1
Single-Unit Trucks	0	3	22	1	-	26	0	3	24	1	-	28	0	1	0	4	-	5	0	0	1	0	-	1	60
% Single-Unit Trucks	0.0	2.1	0.7	0.2	-	0.7	0.0	0.5	1.0	1.2	-	0.9	-	0.3	0.0	0.6	-	0.5	-	0.0	2.0	0.0	-	0.4	0.7
Articulated Trucks	0	0	1	0	-	1	0	0	8	0	-	8	0	0	0	1	-	1	0	0	0	0	-	0	10
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.3	0.0	-	0.3	-	0.0	0.0	0.2	-	0.1	-	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	1	0	-	1	0	0	2	0	-	2	0	0	2	2	-	4	7
% 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	2.5	0.0	-	0.2	-	0.0	3.9	4.5	-	1.7	0.1
Pedestrians	-	-	-	-	8	-	-	-	-	-	23	-	-	-	-	-	1	-	-	-	-	-	33	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Start Time	143rd Street Eastbound						143rd Street Westbound						Ravinia Avenue Northbound						Ravinia 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	
7:30 AM	2	20	90	10	1	122	1	16	72	7	0	96	0	5	5	18	0	28	0	2	4	2	0	8	254
7:45 AM	0	14	98	9	0	121	1	16	73	1	0	91	0	5	6	11	0	22	0	8	5	1	0	14	248
8:00 AM	1	10	96	15	0	122	1	16	88	1	1	106	0	6	3	19	0	28	0	4	3	1	0	8	264
8:15 AM	1	8	110	9	0	128	2	20	96	2	0	120	0	9	3	19	0	31	0	7	2	4	0	13	292
Total	4	52	394	43	1	493	5	68	329	11	1	413	0	25	17	67	0	109	0	21	14	8	0	43	1058
Approach %	0.8	10.5	79.9	8.7	-	-	1.2	16.5	79.7	2.7	-	-	0.0	22.9	15.6	61.5	-	-	0.0	48.8	32.6	18.6	-	-	-
Total %	0.4	4.9	37.2	4.1	-	46.6	0.5	6.4	31.1	1.0	-	39.0	0.0	2.4	1.6	6.3	-	10.3	0.0	2.0	1.3	0.8	-	4.1	-
PHF	0.500	0.650	0.895	0.717	-	0.963	0.625	0.850	0.857	0.393	-	0.860	0.000	0.694	0.708	0.882	-	0.879	0.000	0.656	0.700	0.500	-	0.768	0.906
Lights	4	51	386	43	-	484	5	68	318	11	-	402	0	24	17	67	-	108	0	21	13	8	-	42	1036
% Lights	100.0	98.1	98.0	100.0	-	98.2	100.0	100.0	96.7	100.0	-	97.3	-	96.0	100.0	100.0	-	99.1	-	100.0	92.9	100.0	-	97.7	97.9
Buses	0	0	2	0	-	2	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	3
% Buses	0.0	0.0	0.5	0.0	-	0.4	0.0	0.0	0.3	0.0	-	0.2	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.3
Single-Unit Trucks	0	1	6	0	-	7	0	0	5	0	-	5	0	1	0	0	-	1	0	0	0	0	-	0	13
% Single-Unit Trucks	0.0	1.9	1.5	0.0	-	1.4	0.0	0.0	1.5	0.0	-	1.2	-	4.0	0.0	0.0	-	0.9	-	0.0	0.0	0.0	-	0.0	1.2
Articulated Trucks	0	0	0	0	-	0	0	0	4	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	4
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	1.2	0.0	-	1.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	2
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.3	0.0	-	0.2	-	0.0	0.0	0.0	-	0.0	-	0.0	7.1	0.0	-	2.3	0.2
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Count Name:
143rd+Street+with+Ravinia+Avenue TMC
Site Code:
Start Date: 07/11/2024
Page No: 4

Turning Movement Peak Hour Data (4:30 PM)

Start Time	143rd Street Eastbound						143rd Street Westbound						Ravinia Avenue Northbound						Ravinia 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	7	135	17	0	159	6	34	123	3	3	166	0	17	3	45	0	65	0	14	3	2	0	19	409
4:45 PM	1	6	145	20	1	172	5	33	121	9	2	168	0	14	4	42	0	60	0	10	3	4	1	17	417
5:00 PM	0	3	142	15	2	160	2	38	120	9	0	169	0	26	3	46	0	75	0	13	3	3	0	19	423
5:15 PM	0	6	155	12	2	173	7	44	137	6	1	194	0	16	5	37	0	58	0	18	3	3	0	24	449
Total	1	22	577	64	5	664	20	149	501	27	6	697	0	73	15	170	0	258	0	55	12	12	1	79	1698
Approach %	0.2	3.3	86.9	9.6	-	-	2.9	21.4	71.9	3.9	-	-	0.0	28.3	5.8	65.9	-	-	0.0	69.6	15.2	15.2	-	-	-
Total %	0.1	1.3	34.0	3.8	-	39.1	1.2	8.8	29.5	1.6	-	41.0	0.0	4.3	0.9	10.0	-	15.2	0.0	3.2	0.7	0.7	-	4.7	-
PHF	0.250	0.786	0.931	0.800	-	0.960	0.714	0.847	0.914	0.750	-	0.898	0.000	0.702	0.750	0.924	-	0.860	0.000	0.764	1.000	0.750	-	0.823	0.945
Lights	1	21	574	64	-	660	20	149	497	27	-	693	0	73	15	169	-	257	0	55	12	11	-	78	1688
% Lights	100.0	95.5	99.5	100.0	-	99.4	100.0	100.0	99.2	100.0	-	99.4	-	100.0	100.0	99.4	-	99.6	-	100.0	100.0	91.7	-	98.7	99.4
Buses	0	0	1	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Buses	0.0	0.0	0.2	0.0	-	0.2	0.0	0.0	0.2	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Single-Unit Trucks	0	1	1	0	-	2	0	0	3	0	-	3	0	0	0	1	-	1	0	0	0	0	-	0	6
% Single-Unit Trucks	0.0	4.5	0.2	0.0	-	0.3	0.0	0.0	0.6	0.0	-	0.4	-	0.0	0.0	0.6	-	0.4	-	0.0	0.0	0.0	-	0.0	0.4
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.2	0.0	-	0.2	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	1	-	1	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	0.0	0.0	-	0.0	-	0.0	0.0	8.3	-	1.3	0.1
Pedestrians	-	-	-	-	5	-	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Start Time	143rd Street Eastbound						143rd Street Westbound						Ravinia Avenue Northbound						Ravinia 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	
12:30 PM	1	1	145	19	0	166	2	19	109	0	0	130	0	24	1	23	0	48	0	5	1	0	4	6	350
12:45 PM	0	1	127	28	0	156	2	22	117	3	0	144	0	22	2	33	0	57	0	1	0	0	1	1	358
1:00 PM	1	1	135	20	0	157	3	29	91	3	0	126	0	19	3	27	0	49	0	8	1	1	0	10	342
1:15 PM	0	1	149	11	0	161	0	23	109	0	1	132	0	20	1	21	0	42	0	4	1	0	6	5	340
Total	2	4	556	78	0	640	7	93	426	6	1	532	0	85	7	104	0	196	0	18	3	1	11	22	1390
Approach %	0.3	0.6	86.9	12.2	-	-	1.3	17.5	80.1	1.1	-	-	0.0	43.4	3.6	53.1	-	-	0.0	81.8	13.6	4.5	-	-	-
Total %	0.1	0.3	40.0	5.6	-	46.0	0.5	6.7	30.6	0.4	-	38.3	0.0	6.1	0.5	7.5	-	14.1	0.0	1.3	0.2	0.1	-	1.6	-
PHF	0.500	1.000	0.933	0.696	-	0.964	0.583	0.802	0.910	0.500	-	0.924	0.000	0.885	0.583	0.788	-	0.860	0.000	0.563	0.750	0.250	-	0.550	0.971
Lights	2	4	551	77	-	634	7	93	425	6	-	531	0	85	5	104	-	194	0	18	3	1	-	22	1381
% Lights	100.0	100.0	99.1	98.7	-	99.1	100.0	100.0	99.8	100.0	-	99.8	-	100.0	71.4	100.0	-	99.0	-	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	0.0
Single-Unit Trucks	0	0	5	1	-	6	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	6
% Single-Unit Trucks	0.0	0.0	0.9	1.3	-	0.9	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	0.4
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.2	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	2	0	-	2	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	28.6	0.0	-	1.0	-	0.0	0.0	0.0	-	0.0	0.1
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	11	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Count Name: LaGrange Road with 143rd Street
TMC
Site Code:
Start Date: 07/11/2024
Page No: 1

Turning Movement Data

Start Time	143rd Street Eastbound						143rd Street Westbound						LaGrange Road Northbound						LaGrange Road Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	22	55	14	0	91	0	26	51	52	0	129	0	28	248	23	0	299	0	12	177	11	1	200	719
7:15 AM	0	25	42	18	0	85	0	38	68	55	0	161	0	8	231	18	0	257	0	12	243	16	0	271	774
7:30 AM	0	31	70	15	1	116	0	41	88	90	0	219	0	19	280	17	0	316	0	31	263	14	1	308	959
7:45 AM	0	25	60	21	0	106	0	33	89	87	0	209	2	21	253	23	0	299	0	33	315	25	0	373	987
Hourly Total	0	103	227	68	1	398	0	138	296	284	0	718	2	76	1012	81	0	1171	0	88	998	66	2	1152	3439
8:00 AM	0	24	77	29	0	130	0	53	56	72	0	181	2	29	252	27	0	310	0	36	228	29	0	293	914
8:15 AM	0	34	81	13	0	128	1	47	100	76	0	224	1	19	234	28	0	282	0	49	256	24	0	329	963
8:30 AM	0	26	84	27	0	137	0	61	81	63	0	205	2	22	243	32	0	299	0	29	238	16	0	283	924
8:45 AM	0	29	76	27	0	132	0	40	75	43	0	158	4	31	232	48	1	315	0	46	274	22	1	342	947
Hourly Total	0	113	318	96	0	527	1	201	312	254	0	768	9	101	961	135	1	1206	0	160	996	91	1	1247	3748
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	45	96	49	0	190	0	40	54	66	0	160	1	21	355	47	0	424	1	62	340	34	0	437	1211
4:15 PM	0	53	119	46	0	218	0	64	102	52	0	218	3	22	379	60	0	464	0	74	386	18	0	478	1378
4:30 PM	0	57	106	32	0	195	0	73	96	60	0	229	0	21	373	39	0	433	0	61	351	29	0	441	1298
4:45 PM	0	47	117	37	0	201	0	70	83	63	0	216	1	11	351	38	2	401	0	60	361	40	1	461	1279
Hourly Total	0	202	438	164	0	804	0	247	335	241	0	823	5	75	1458	184	2	1722	1	257	1438	121	1	1817	5166
5:00 PM	0	37	128	43	0	208	0	57	105	55	0	217	3	28	367	38	0	436	0	66	365	26	0	457	1318
5:15 PM	0	55	132	29	0	216	1	83	113	59	1	256	2	22	384	60	0	468	0	80	343	38	0	461	1401
5:30 PM	0	40	116	38	0	194	0	52	106	34	0	192	1	29	329	50	0	409	0	67	360	32	0	459	1254
5:45 PM	0	36	91	41	0	168	0	72	87	45	0	204	3	26	341	47	0	417	0	57	356	37	0	450	1239
Hourly Total	0	168	467	151	0	786	1	264	411	193	1	869	9	105	1421	195	0	1730	0	270	1424	133	0	1827	5212
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	42	79	33	1	154	0	63	68	48	0	179	8	21	292	48	1	369	0	33	345	29	0	407	1109
11:45 AM	1	29	85	49	0	164	0	74	80	43	1	197	6	25	324	58	0	413	1	32	324	27	2	384	1158
Hourly Total	1	71	164	82	1	318	0	137	148	91	1	376	14	46	616	106	1	782	1	65	669	56	2	791	2267
12:00 PM	0	48	82	41	0	171	0	66	79	52	0	197	7	29	263	58	0	357	0	43	343	22	0	408	1133
12:15 PM	0	32	79	43	0	154	0	72	57	60	1	189	5	13	338	49	0	405	0	35	301	22	2	358	1106
12:30 PM	0	47	78	49	0	174	0	60	80	37	0	177	12	37	315	45	0	409	0	34	335	20	0	389	1149
12:45 PM	1	30	84	50	0	165	0	78	85	48	0	211	6	33	328	58	0	425	0	45	353	29	0	427	1228
Hourly Total	1	157	323	183	0	664	0	276	301	197	1	774	30	112	1244	210	0	1596	0	157	1332	93	2	1582	4616
1:00 PM	0	42	82	59	0	183	1	58	76	48	0	183	8	27	335	49	0	419	0	32	316	30	0	378	1163
1:15 PM	1	30	89	48	0	168	1	58	85	31	0	175	6	28	391	53	0	478	0	44	330	26	0	400	1221
Grand Total	3	886	2108	851	2	3848	4	1379	1964	1339	3	4686	83	570	7438	1013	4	9104	2	1073	7503	616	8	9194	26832
Approach %	0.1	23.0	54.8	22.1	-	-	0.1	29.4	41.9	28.6	-	-	0.9	6.3	81.7	11.1	-	-	0.0	11.7	81.6	6.7	-	-	-
Total %	0.0	3.3	7.9	3.2	-	14.3	0.0	5.1	7.3	5.0	-	17.5	0.3	2.1	27.7	3.8	-	33.9	0.0	4.0	28.0	2.3	-	34.3	-

Lights	3	881	2086	841	-	3811	4	1360	1947	1327	-	4638	83	565	7273	997	-	8918	2	1059	7344	610	-	9015	26382
% Lights	100.0	99.4	99.0	98.8	-	99.0	100.0	98.6	99.1	99.1	-	99.0	100.0	99.1	97.8	98.4	-	98.0	100.0	98.7	97.9	99.0	-	98.1	98.3
Buses	0	0	6	1	-	7	0	4	4	4	-	12	0	1	13	0	-	14	0	1	14	0	-	15	48
% Buses	0.0	0.0	0.3	0.1	-	0.2	0.0	0.3	0.2	0.3	-	0.3	0.0	0.2	0.2	0.0	-	0.2	0.0	0.1	0.2	0.0	-	0.2	0.2
Single-Unit Trucks	0	3	13	9	-	25	0	12	11	6	-	29	0	2	97	14	-	113	0	11	78	4	-	93	260
% Single-Unit Trucks	0.0	0.3	0.6	1.1	-	0.6	0.0	0.9	0.6	0.4	-	0.6	0.0	0.4	1.3	1.4	-	1.2	0.0	1.0	1.0	0.6	-	1.0	1.0
Articulated Trucks	0	2	3	0	-	5	0	3	2	2	-	7	0	2	54	2	-	58	0	2	67	2	-	71	141
% Articulated Trucks	0.0	0.2	0.1	0.0	-	0.1	0.0	0.2	0.1	0.1	-	0.1	0.0	0.4	0.7	0.2	-	0.6	0.0	0.2	0.9	0.3	-	0.8	0.5
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	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	4	-	-	-	-	-	8	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: LaGrange Road with 143rd Street
TMC
Site Code:
Start Date: 07/11/2024
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	143rd Street Eastbound						143rd Street Westbound						LaGrange Road Northbound						LaGrange Road Southbound						Int. Total	
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total		
7:30 AM	0	31	70	15	1	116	0	41	88	90	0	219	0	19	280	17	0	316	0	31	263	14	1	308	959	
7:45 AM	0	25	60	21	0	106	0	33	89	87	0	209	2	21	253	23	0	299	0	33	315	25	0	373	987	
8:00 AM	0	24	77	29	0	130	0	53	56	72	0	181	2	29	252	27	0	310	0	36	228	29	0	293	914	
8:15 AM	0	34	81	13	0	128	1	47	100	76	0	224	1	19	234	28	0	282	0	49	256	24	0	329	963	
Total	0	114	288	78	1	480	1	174	333	325	0	833	5	88	1019	95	0	1207	0	149	1062	92	1	1303	3823	
Approach %	0.0	23.8	60.0	16.3	-	-	0.1	20.9	40.0	39.0	-	-	0.4	7.3	84.4	7.9	-	-	0.0	11.4	81.5	7.1	-	-	-	
Total %	0.0	3.0	7.5	2.0	-	12.6	0.0	4.6	8.7	8.5	-	21.8	0.1	2.3	26.7	2.5	-	31.6	0.0	3.9	27.8	2.4	-	34.1	-	
PHF	0.000	0.838	0.889	0.672	-	0.923	0.250	0.821	0.833	0.903	-	0.930	0.625	0.759	0.910	0.848	-	0.955	0.000	0.760	0.843	0.793	-	0.873	0.968	
Lights	0	113	283	76	-	472	1	169	330	321	-	821	5	87	972	91	-	1155	0	145	1022	89	-	1256	3704	
% Lights	-	99.1	98.3	97.4	-	98.3	100.0	97.1	99.1	98.8	-	98.6	100.0	98.9	95.4	95.8	-	95.7	-	97.3	96.2	96.7	-	-	96.4	96.9
Buses	0	0	2	0	-	2	0	1	1	2	-	4	0	0	2	0	-	2	0	1	3	0	-	4	12	
% Buses	-	0.0	0.7	0.0	-	0.4	0.0	0.6	0.3	0.6	-	0.5	0.0	0.0	0.2	0.0	-	0.2	-	0.7	0.3	0.0	-	0.3	0.3	
Single-Unit Trucks	0	1	3	2	-	6	0	2	2	1	-	5	0	0	26	4	-	30	0	2	24	2	-	28	69	
% Single-Unit Trucks	-	0.9	1.0	2.6	-	1.3	0.0	1.1	0.6	0.3	-	0.6	0.0	0.0	2.6	4.2	-	2.5	-	1.3	2.3	2.2	-	2.1	1.8	
Articulated Trucks	0	0	0	0	-	0	0	2	0	1	-	3	0	1	19	0	-	20	0	1	13	1	-	15	38	
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	0.0	1.1	0.0	0.3	-	0.4	0.0	1.1	1.9	0.0	-	1.7	-	0.7	1.2	1.1	-	1.2	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	0.0	
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	



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Count Name: LaGrange Road with 143rd Street
TMC
Site Code:
Start Date: 07/11/2024
Page No: 4

Turning Movement Peak Hour Data (4:30 PM)

Start Time	143rd Street Eastbound						143rd Street Westbound						LaGrange Road Northbound						LaGrange Road Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:30 PM	0	57	106	32	0	195	0	73	96	60	0	229	0	21	373	39	0	433	0	61	351	29	0	441	1298
4:45 PM	0	47	117	37	0	201	0	70	83	63	0	216	1	11	351	38	2	401	0	60	361	40	1	461	1279
5:00 PM	0	37	128	43	0	208	0	57	105	55	0	217	3	28	367	38	0	436	0	66	365	26	0	457	1318
5:15 PM	0	55	132	29	0	216	1	83	113	59	1	256	2	22	384	60	0	468	0	80	343	38	0	461	1401
Total	0	196	483	141	0	820	1	283	397	237	1	918	6	82	1475	175	2	1738	0	267	1420	133	1	1820	5296
Approach %	0.0	23.9	58.9	17.2	-	-	0.1	30.8	43.2	25.8	-	-	0.3	4.7	84.9	10.1	-	-	0.0	14.7	78.0	7.3	-	-	-
Total %	0.0	3.7	9.1	2.7	-	15.5	0.0	5.3	7.5	4.5	-	17.3	0.1	1.5	27.9	3.3	-	32.8	0.0	5.0	26.8	2.5	-	34.4	-
PHF	0.000	0.860	0.915	0.820	-	0.949	0.250	0.852	0.878	0.940	-	0.896	0.500	0.732	0.960	0.729	-	0.928	0.000	0.834	0.973	0.831	-	0.987	0.945
Lights	0	194	480	141	-	815	1	281	395	234	-	911	6	82	1454	174	-	1716	0	266	1406	133	-	1805	5247
% Lights	-	99.0	99.4	100.0	-	99.4	100.0	99.3	99.5	98.7	-	99.2	100.0	100.0	98.6	99.4	-	98.7	-	99.6	99.0	100.0	-	99.2	99.1
Buses	0	0	1	0	-	1	0	0	1	0	-	1	0	0	2	0	-	2	0	0	1	0	-	1	5
% Buses	-	0.0	0.2	0.0	-	0.1	0.0	0.0	0.3	0.0	-	0.1	0.0	0.0	0.1	0.0	-	0.1	-	0.0	0.1	0.0	-	0.1	0.1
Single-Unit Trucks	0	1	2	0	-	3	0	2	1	3	-	6	0	0	12	1	-	13	0	1	1	0	-	2	24
% Single-Unit Trucks	-	0.5	0.4	0.0	-	0.4	0.0	0.7	0.3	1.3	-	0.7	0.0	0.0	0.8	0.6	-	0.7	-	0.4	0.1	0.0	-	0.1	0.5
Articulated Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	6	0	-	6	0	0	12	0	-	12	19
% Articulated Trucks	-	0.5	0.0	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.4	0.0	-	0.3	-	0.0	0.8	0.0	-	0.7	0.4
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	0.0	0.1	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Start Time	143rd Street Eastbound						143rd Street Westbound						LaGrange Road Northbound						LaGrange Road Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
12:30 PM	0	47	78	49	0	174	0	60	80	37	0	177	12	37	315	45	0	409	0	34	335	20	0	389	1149
12:45 PM	1	30	84	50	0	165	0	78	85	48	0	211	6	33	328	58	0	425	0	45	353	29	0	427	1228
1:00 PM	0	42	82	59	0	183	1	58	76	48	0	183	8	27	335	49	0	419	0	32	316	30	0	378	1163
1:15 PM	1	30	89	48	0	168	1	58	85	31	0	175	6	28	391	53	0	478	0	44	330	26	0	400	1221
Total	2	149	333	206	0	690	2	254	326	164	0	746	32	125	1369	205	0	1731	0	155	1334	105	0	1594	4761
Approach %	0.3	21.6	48.3	29.9	-	-	0.3	34.0	43.7	22.0	-	-	1.8	7.2	79.1	11.8	-	-	0.0	9.7	83.7	6.6	-	-	-
Total %	0.0	3.1	7.0	4.3	-	14.5	0.0	5.3	6.8	3.4	-	15.7	0.7	2.6	28.8	4.3	-	36.4	0.0	3.3	28.0	2.2	-	33.5	-
PHF	0.500	0.793	0.935	0.873	-	0.943	0.500	0.814	0.959	0.854	-	0.884	0.667	0.845	0.875	0.884	-	0.905	0.000	0.861	0.945	0.875	-	0.933	0.969
Lights	2	149	329	205	-	685	2	252	326	163	-	743	32	125	1362	204	-	1723	0	154	1315	105	-	1574	4725
% Lights	100.0	100.0	98.8	99.5	-	99.3	100.0	99.2	100.0	99.4	-	99.6	100.0	100.0	99.5	99.5	-	99.5	-	99.4	98.6	100.0	-	98.7	99.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	3	0	-	3	4
% 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	0.1	0.0	-	0.1	-	0.0	0.2	0.0	-	0.2	0.1
Single-Unit Trucks	0	0	2	1	-	3	0	2	0	1	-	3	0	0	3	1	-	4	0	1	7	0	-	8	18
% Single-Unit Trucks	0.0	0.0	0.6	0.5	-	0.4	0.0	0.8	0.0	0.6	-	0.4	0.0	0.0	0.2	0.5	-	0.2	-	0.6	0.5	0.0	-	0.5	0.4
Articulated Trucks	0	0	2	0	-	2	0	0	0	0	-	0	0	0	3	0	-	3	0	0	9	0	-	9	14
% Articulated Trucks	0.0	0.0	0.6	0.0	-	0.3	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.2	0.0	-	0.2	-	0.0	0.7	0.0	-	0.6	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	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Count Name:
LaGrange+Road+with+142nd+Street TMC
Site Code:
Start Date: 07/11/2024
Page No: 1

Turning Movement Data

Start Time	142nd Street Eastbound						142nd Street Westbound						LaGrange Road Northbound						LaGrange Road Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	6	0	6	0	12	0	1	0	2	0	3	0	5	310	4	1	319	0	3	207	8	0	218	552
7:15 AM	0	2	1	2	0	5	0	8	0	2	0	10	0	4	312	10	0	326	0	5	248	18	0	271	612
7:30 AM	0	9	3	9	1	21	0	16	0	3	0	19	0	20	358	14	1	392	1	7	294	15	0	317	749
7:45 AM	0	8	1	9	0	18	0	3	2	8	0	13	0	6	345	15	0	366	0	8	381	22	0	411	808
Hourly Total	0	25	5	26	1	56	0	28	2	15	0	45	0	35	1325	43	2	1403	1	23	1130	63	0	1217	2721
8:00 AM	0	4	1	3	0	8	0	14	2	4	0	20	0	3	331	15	0	349	0	8	258	4	0	270	647
8:15 AM	0	5	0	6	0	11	0	8	4	4	0	16	0	3	311	18	0	332	0	6	275	8	0	289	648
8:30 AM	0	4	2	7	0	13	0	8	0	2	0	10	0	3	295	16	0	314	0	18	281	13	0	312	649
8:45 AM	0	4	2	13	0	19	0	15	1	7	0	23	0	9	305	11	0	325	0	15	278	13	0	306	673
Hourly Total	0	17	5	29	0	51	0	45	7	17	0	69	0	18	1242	60	0	1320	0	47	1092	38	0	1177	2617
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	15	1	12	1	28	0	22	4	15	0	41	0	4	414	30	0	448	2	10	383	11	1	406	923
4:15 PM	0	7	4	8	0	19	0	11	2	13	0	26	0	4	466	25	2	495	0	18	486	8	2	512	1052
4:30 PM	0	14	2	19	0	35	0	19	1	14	0	34	0	4	441	26	1	471	1	23	416	7	1	447	987
4:45 PM	0	6	2	14	0	22	0	32	3	16	0	51	1	3	425	28	1	457	2	21	426	4	0	453	983
Hourly Total	0	42	9	53	1	104	0	84	10	58	0	152	1	15	1746	109	4	1871	5	72	1711	30	4	1818	3945
5:00 PM	0	8	1	19	0	28	0	19	3	22	0	44	0	4	425	26	1	455	0	20	392	7	0	419	946
5:15 PM	0	13	5	10	0	28	0	25	5	16	1	46	1	3	459	30	0	493	0	18	461	11	1	490	1057
5:30 PM	0	10	3	14	0	27	0	26	4	17	0	47	0	2	379	25	0	406	2	15	409	9	0	435	915
5:45 PM	0	8	1	5	0	14	0	17	0	11	0	28	1	1	393	30	0	425	2	19	406	10	0	437	904
Hourly Total	0	39	10	48	0	97	0	87	12	66	1	165	2	10	1656	111	1	1779	4	72	1668	37	1	1781	3822
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	5	2	3	0	10	0	31	1	15	0	47	1	1	376	34	0	412	1	26	368	3	1	398	867
11:45 AM	0	6	1	5	0	12	0	19	3	12	0	34	1	2	378	31	0	412	0	27	336	5	0	368	826
Hourly Total	0	11	3	8	0	22	0	50	4	27	0	81	2	3	754	65	0	824	1	53	704	8	1	766	1693
12:00 PM	0	3	1	11	0	15	0	23	4	21	0	48	1	4	350	23	0	378	1	20	372	6	0	399	840
12:15 PM	0	2	3	5	0	10	0	20	0	13	0	33	0	5	398	44	0	447	0	10	336	2	0	348	838
12:30 PM	0	4	2	5	0	11	0	33	3	13	0	49	0	2	335	44	0	381	0	22	374	8	1	404	845
12:45 PM	0	2	1	0	0	3	0	26	0	18	0	44	0	3	354	34	0	391	0	22	390	3	0	415	853
Hourly Total	0	11	7	21	0	39	0	102	7	65	0	174	1	14	1437	145	0	1597	1	74	1472	19	1	1566	3376
1:00 PM	0	3	2	4	0	9	0	29	3	21	0	53	1	2	376	37	0	416	1	15	360	4	0	380	858
1:15 PM	0	1	1	5	0	7	0	29	2	16	0	47	1	1	390	31	0	423	1	22	358	2	0	383	860
Grand Total	0	149	42	194	2	385	0	454	47	285	1	786	8	98	8926	601	7	9633	14	378	8495	201	7	9088	19892
Approach %	0.0	38.7	10.9	50.4	-	-	0.0	57.8	6.0	36.3	-	-	0.1	1.0	92.7	6.2	-	-	0.2	4.2	93.5	2.2	-	-	-
Total %	0.0	0.7	0.2	1.0	-	1.9	0.0	2.3	0.2	1.4	-	4.0	0.0	0.5	44.9	3.0	-	48.4	0.1	1.9	42.7	1.0	-	45.7	-

Lights	0	148	42	194	-	384	0	451	47	283	-	781	8	98	8748	597	-	9451	14	374	8316	199	-	8903	19519
% Lights	-	99.3	100.0	100.0	-	99.7	-	99.3	100.0	99.3	-	99.4	100.0	100.0	98.0	99.3	-	98.1	100.0	98.9	97.9	99.0	-	98.0	98.1
Buses	0	1	0	0	-	1	0	0	0	0	-	0	0	0	17	0	-	17	0	0	17	1	-	18	36
% Buses	-	0.7	0.0	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.2	0.0	-	0.2	0.0	0.0	0.2	0.5	-	0.2	0.2
Single-Unit Trucks	0	0	0	0	-	0	0	3	0	2	-	5	0	0	101	3	-	104	0	4	85	1	-	90	199
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	0.7	0.0	0.7	-	0.6	0.0	0.0	1.1	0.5	-	1.1	0.0	1.1	1.0	0.5	-	1.0	1.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	58	1	-	59	0	0	77	0	-	77	136
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.6	0.2	-	0.6	0.0	0.0	0.9	0.0	-	0.8	0.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	0	0	0	0	-	0	2
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	7	-	-	-	-	-	7	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name:
LaGrange+Road+with+142nd+Street TMC
Site Code:
Start Date: 07/11/2024
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	142nd Street Eastbound						142nd Street Westbound						LaGrange Road Northbound						LaGrange Road Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	9	3	9	1	21	0	16	0	3	0	19	0	20	358	14	1	392	1	7	294	15	0	317	749
7:45 AM	0	8	1	9	0	18	0	3	2	8	0	13	0	6	345	15	0	366	0	8	381	22	0	411	808
8:00 AM	0	4	1	3	0	8	0	14	2	4	0	20	0	3	331	15	0	349	0	8	258	4	0	270	647
8:15 AM	0	5	0	6	0	11	0	8	4	4	0	16	0	3	311	18	0	332	0	6	275	8	0	289	648
Total	0	26	5	27	1	58	0	41	8	19	0	68	0	32	1345	62	1	1439	1	29	1208	49	0	1287	2852
Approach %	0.0	44.8	8.6	46.6	-	-	0.0	60.3	11.8	27.9	-	-	0.0	2.2	93.5	4.3	-	-	0.1	2.3	93.9	3.8	-	-	-
Total %	0.0	0.9	0.2	0.9	-	2.0	0.0	1.4	0.3	0.7	-	2.4	0.0	1.1	47.2	2.2	-	50.5	0.0	1.0	42.4	1.7	-	45.1	-
PHF	0.000	0.722	0.417	0.750	-	0.690	0.000	0.641	0.500	0.594	-	0.850	0.000	0.400	0.939	0.861	-	0.918	0.250	0.906	0.793	0.557	-	0.783	0.882
Lights	0	26	5	27	-	58	0	39	8	19	-	66	0	32	1292	62	-	1386	1	28	1162	49	-	1240	2750
% Lights	-	100.0	100.0	100.0	-	100.0	-	95.1	100.0	100.0	-	97.1	-	100.0	96.1	100.0	-	96.3	100.0	96.6	96.2	100.0	-	96.3	96.4
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	5	0	-	5	0	0	5	0	-	5	10
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.4	0.0	-	0.3	0.0	0.0	0.4	0.0	-	0.4	0.4
Single-Unit Trucks	0	0	0	0	-	0	0	2	0	0	-	2	0	0	28	0	-	28	0	1	22	0	-	23	53
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	4.9	0.0	0.0	-	2.9	-	0.0	2.1	0.0	-	1.9	0.0	3.4	1.8	0.0	-	1.8	1.9
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	20	0	-	20	0	0	19	0	-	19	39
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	1.5	0.0	-	1.4	0.0	0.0	1.6	0.0	-	1.5	1.4
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	0.0
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-



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Count Name:
LaGrange+Road+with+142nd+Street TMC
Site Code:
Start Date: 07/11/2024
Page No: 4

Turning Movement Peak Hour Data (4:30 PM)

Start Time	142nd Street Eastbound						142nd Street Westbound						LaGrange Road Northbound						LaGrange Road Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:30 PM	0	14	2	19	0	35	0	19	1	14	0	34	0	4	441	26	1	471	1	23	416	7	1	447	987
4:45 PM	0	6	2	14	0	22	0	32	3	16	0	51	1	3	425	28	1	457	2	21	426	4	0	453	983
5:00 PM	0	8	1	19	0	28	0	19	3	22	0	44	0	4	425	26	1	455	0	20	392	7	0	419	946
5:15 PM	0	13	5	10	0	28	0	25	5	16	1	46	1	3	459	30	0	493	0	18	461	11	1	490	1057
Total	0	41	10	62	0	113	0	95	12	68	1	175	2	14	1750	110	3	1876	3	82	1695	29	2	1809	3973
Approach %	0.0	36.3	8.8	54.9	-	-	0.0	54.3	6.9	38.9	-	-	0.1	0.7	93.3	5.9	-	-	0.2	4.5	93.7	1.6	-	-	-
Total %	0.0	1.0	0.3	1.6	-	2.8	0.0	2.4	0.3	1.7	-	4.4	0.1	0.4	44.0	2.8	-	47.2	0.1	2.1	42.7	0.7	-	45.5	-
PHF	0.000	0.732	0.500	0.816	-	0.807	0.000	0.742	0.600	0.773	-	0.858	0.500	0.875	0.953	0.917	-	0.951	0.375	0.891	0.919	0.659	-	0.923	0.940
Lights	0	41	10	62	-	113	0	95	12	68	-	175	2	14	1723	109	-	1848	3	82	1679	29	-	1793	3929
% Lights	-	100.0	100.0	100.0	-	100.0	-	100.0	100.0	100.0	-	100.0	100.0	100.0	98.5	99.1	-	98.5	100.0	100.0	99.1	100.0	-	99.1	98.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	0	0	1	0	-	1	3
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.1	0.0	-	0.1	0.0	0.0	0.1	0.0	-	0.1	0.1
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	17	0	-	17	0	0	3	0	-	3	20
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	1.0	0.0	-	0.9	0.0	0.0	0.2	0.0	-	0.2	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	7	1	-	8	0	0	12	0	-	12	20
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.4	0.9	-	0.4	0.0	0.0	0.7	0.0	-	0.7	0.5
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	0.1	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name:
LaGrange+Road+with+142nd+Street TMC
Site Code:
Start Date: 07/11/2024
Page No: 5

Turning Movement Peak Hour Data (12:30 PM)

Start Time	142nd Street Eastbound						142nd Street Westbound						LaGrange Road Northbound						LaGrange Road Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
12:30 PM	0	4	2	5	0	11	0	33	3	13	0	49	0	2	335	44	0	381	0	22	374	8	1	404	845
12:45 PM	0	2	1	0	0	3	0	26	0	18	0	44	0	3	354	34	0	391	0	22	390	3	0	415	853
1:00 PM	0	3	2	4	0	9	0	29	3	21	0	53	1	2	376	37	0	416	1	15	360	4	0	380	858
1:15 PM	0	1	1	5	0	7	0	29	2	16	0	47	1	1	390	31	0	423	1	22	358	2	0	383	860
Total	0	10	6	14	0	30	0	117	8	68	0	193	2	8	1455	146	0	1611	2	81	1482	17	1	1582	3416
Approach %	0.0	33.3	20.0	46.7	-	-	0.0	60.6	4.1	35.2	-	-	0.1	0.5	90.3	9.1	-	-	0.1	5.1	93.7	1.1	-	-	-
Total %	0.0	0.3	0.2	0.4	-	0.9	0.0	3.4	0.2	2.0	-	5.6	0.1	0.2	42.6	4.3	-	47.2	0.1	2.4	43.4	0.5	-	46.3	-
PHF	0.000	0.625	0.750	0.700	-	0.682	0.000	0.886	0.667	0.810	-	0.910	0.500	0.667	0.933	0.830	-	0.952	0.500	0.920	0.950	0.531	-	0.953	0.993
Lights	0	10	6	14	-	30	0	117	8	68	-	193	2	8	1447	146	-	1603	2	81	1463	17	-	1563	3389
% Lights	-	100.0	100.0	100.0	-	100.0	-	100.0	100.0	100.0	-	100.0	100.0	100.0	99.5	100.0	-	99.5	100.0	100.0	98.7	100.0	-	98.8	99.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	4	0	-	4	5
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.1	0.0	-	0.1	0.0	0.0	0.3	0.0	-	0.3	0.1
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	4	0	-	4	0	0	7	0	-	7	11
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.3	0.0	-	0.2	0.0	0.0	0.5	0.0	-	0.4	0.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	3	0	-	3	0	0	8	0	-	8	11
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.2	0.0	-	0.2	0.0	0.0	0.5	0.0	-	0.5	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	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-



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Count Name: Ravinia Avenue with Crescent
Park Circle TMC
Site Code:
Start Date: 07/11/2024
Page No: 1

Turning Movement Data

Start Time	Crescent Park Circle Eastbound					Crescent Park Circle Westbound					Ravinia Avenue Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:00 AM	0	5	0	0	5	0	0	0	1	0	0	0	16	0	16	21
7:15 AM	0	1	2	0	3	0	0	0	0	0	0	0	4	2	4	7
7:30 AM	0	5	3	0	8	0	0	0	0	0	0	0	20	0	20	28
7:45 AM	0	7	3	0	10	0	0	0	0	0	0	0	6	1	6	16
Hourly Total	0	18	8	0	26	0	0	0	1	0	0	0	46	3	46	72
8:00 AM	0	0	5	3	5	0	0	0	0	0	0	0	3	1	3	8
8:15 AM	0	1	1	0	2	0	0	0	0	0	0	0	1	0	1	3
8:30 AM	0	1	2	1	3	0	1	0	0	1	0	0	4	0	4	8
8:45 AM	0	1	5	1	6	0	0	0	0	0	0	0	8	0	8	14
Hourly Total	0	3	13	5	16	0	1	0	0	1	0	0	16	1	16	33
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	1	3	1	4	0	0	0	0	0	0	0	4	0	4	8
4:15 PM	0	3	3	0	6	0	0	0	0	0	0	0	10	4	10	16
4:30 PM	0	9	11	0	20	0	0	0	0	0	0	0	8	5	8	28
4:45 PM	0	4	1	0	5	0	0	0	0	0	0	0	8	0	8	13
Hourly Total	0	17	18	1	35	0	0	0	0	0	0	0	30	9	30	65
5:00 PM	0	7	6	0	13	0	0	0	0	0	0	0	8	1	8	21
5:15 PM	0	5	13	0	18	0	0	0	0	0	0	0	6	3	6	24
5:30 PM	0	5	4	0	9	0	0	0	0	0	0	0	8	0	8	17
5:45 PM	0	3	4	2	7	0	0	0	0	0	0	0	10	1	10	17
Hourly Total	0	20	27	2	47	0	0	0	0	0	0	0	32	5	32	79
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	1	2	1	3	0	0	0	0	0	0	0	6	2	6	9
11:45 AM	0	1	3	0	4	0	0	0	0	0	0	0	2	2	2	6
Hourly Total	0	2	5	1	7	0	0	0	0	0	0	0	8	4	8	15
12:00 PM	0	7	2	0	9	0	0	0	0	0	0	0	4	0	4	13
12:15 PM	0	3	2	1	5	0	0	0	0	0	0	0	4	2	4	9
12:30 PM	0	4	2	0	6	0	0	0	0	0	0	0	3	0	3	9
12:45 PM	0	1	1	0	2	0	0	0	0	0	0	1	3	1	4	6
Hourly Total	0	15	7	1	22	0	0	0	0	0	0	1	14	3	15	37
1:00 PM	0	0	7	0	7	0	0	0	0	0	0	0	2	3	2	9
1:15 PM	0	4	1	0	5	0	0	0	0	0	0	0	6	1	6	11
Grand Total	0	79	86	10	165	0	1	0	1	1	0	1	154	29	155	321
Approach %	0.0	47.9	52.1	-	-	0.0	100.0	0.0	-	-	0.0	0.6	99.4	-	-	-
Total %	0.0	24.6	26.8	-	51.4	0.0	0.3	0.0	-	0.3	0.0	0.3	48.0	-	48.3	-
Lights	0	75	81	-	156	0	0	0	-	0	0	0	150	-	150	306

% Lights	-	94.9	94.2	-	94.5	-	0.0	-	-	0.0	-	0.0	97.4	-	96.8	95.3
Buses	0	1	1	-	2	0	0	0	-	0	0	0	0	-	0	2
% Buses	-	1.3	1.2	-	1.2	-	0.0	-	-	0.0	-	0.0	0.0	-	0.0	0.6
Single-Unit Trucks	0	2	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Single-Unit Trucks	-	2.5	0.0	-	1.2	-	0.0	-	-	0.0	-	0.0	0.0	-	0.0	0.6
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
Bicycles on Road	0	1	4	-	5	0	1	0	-	1	0	1	4	-	5	11
% Bicycles on Road	-	1.3	4.7	-	3.0	-	100.0	-	-	100.0	-	100.0	2.6	-	3.2	3.4
Pedestrians	-	-	-	10	-	-	-	-	1	-	-	-	-	29	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



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Count Name: Ravinia Avenue with Crescent
Park Circle TMC
Site Code:
Start Date: 07/11/2024
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Crescent Park Circle Eastbound					Crescent Park Circle Westbound					Ravinia Avenue Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:30 AM	0	5	3	0	8	0	0	0	0	0	0	0	20	0	20	28
7:45 AM	0	7	3	0	10	0	0	0	0	0	0	0	6	1	6	16
8:00 AM	0	0	5	3	5	0	0	0	0	0	0	0	3	1	3	8
8:15 AM	0	1	1	0	2	0	0	0	0	0	0	0	1	0	1	3
Total	0	13	12	3	25	0	0	0	0	0	0	0	30	2	30	55
Approach %	0.0	52.0	48.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	23.6	21.8	-	45.5	0.0	0.0	0.0	-	0.0	0.0	0.0	54.5	-	54.5	-
PHF	0.000	0.464	0.600	-	0.625	0.000	0.000	0.000	-	0.000	0.000	0.000	0.375	-	0.375	0.491
Lights	0	13	12	-	25	0	0	0	-	0	0	0	30	-	30	55
% Lights	-	100.0	100.0	-	100.0	-	-	-	-	-	-	-	100.0	-	100.0	100.0
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
Single-Unit Trucks	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	0.0
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
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
Pedestrians	-	-	-	3	-	-	-	-	0	-	-	-	-	2	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-



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Count Name: Ravinia Avenue with Crescent
Park Circle TMC
Site Code:
Start Date: 07/11/2024
Page No: 4

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Crescent Park Circle Eastbound					Crescent Park Circle Westbound					Ravinia Avenue Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:30 PM	0	9	11	0	20	0	0	0	0	0	0	0	8	5	8	28
4:45 PM	0	4	1	0	5	0	0	0	0	0	0	0	8	0	8	13
5:00 PM	0	7	6	0	13	0	0	0	0	0	0	0	8	1	8	21
5:15 PM	0	5	13	0	18	0	0	0	0	0	0	0	6	3	6	24
Total	0	25	31	0	56	0	0	0	0	0	0	0	30	9	30	86
Approach %	0.0	44.6	55.4	-	-	0.0	0.0	0.0	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	29.1	36.0	-	65.1	0.0	0.0	0.0	-	0.0	0.0	0.0	34.9	-	34.9	-
PHF	0.000	0.694	0.596	-	0.700	0.000	0.000	0.000	-	0.000	0.000	0.000	0.938	-	0.938	0.768
Lights	0	25	30	-	55	0	0	0	-	0	0	0	30	-	30	85
% Lights	-	100.0	96.8	-	98.2	-	-	-	-	-	-	-	100.0	-	100.0	98.8
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
Single-Unit Trucks	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	0.0
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
Bicycles on Road	0	0	1	-	1	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	-	0.0	3.2	-	1.8	-	-	-	-	-	-	-	0.0	-	0.0	1.2
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	9	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Count Name: Ravinia Avenue with Crescent
Park Circle TMC
Site Code:
Start Date: 07/11/2024
Page No: 5

Turning Movement Peak Hour Data (12:30 PM)

Start Time	Crescent Park Circle Eastbound					Crescent Park Circle Westbound					Ravinia Avenue Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
12:30 PM	0	4	2	0	6	0	0	0	0	0	0	0	3	0	3	9
12:45 PM	0	1	1	0	2	0	0	0	0	0	0	1	3	1	4	6
1:00 PM	0	0	7	0	7	0	0	0	0	0	0	0	2	3	2	9
1:15 PM	0	4	1	0	5	0	0	0	0	0	0	0	6	1	6	11
Total	0	9	11	0	20	0	0	0	0	0	0	1	14	5	15	35
Approach %	0.0	45.0	55.0	-	-	0.0	0.0	0.0	-	-	0.0	6.7	93.3	-	-	-
Total %	0.0	25.7	31.4	-	57.1	0.0	0.0	0.0	-	0.0	0.0	2.9	40.0	-	42.9	-
PHF	0.000	0.563	0.393	-	0.714	0.000	0.000	0.000	-	0.000	0.000	0.250	0.583	-	0.625	0.795
Lights	0	7	11	-	18	0	0	0	-	0	0	0	11	-	11	29
% Lights	-	77.8	100.0	-	90.0	-	-	-	-	-	-	0.0	78.6	-	73.3	82.9
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
Single-Unit Trucks	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Single-Unit Trucks	-	11.1	0.0	-	5.0	-	-	-	-	-	-	0.0	0.0	-	0.0	2.9
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
Bicycles on Road	0	1	0	-	1	0	0	0	-	0	0	1	3	-	4	5
% Bicycles on Road	-	11.1	0.0	-	5.0	-	-	-	-	-	-	100.0	21.4	-	26.7	14.3
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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

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

Count Name:
Ravinia+Avenue+with+Parking+Access TMC
Site Code:
Start Date: 07/11/2024
Page No: 1

Turning Movement Data

Start Time	Access Drive Eastbound						Access Drive Westbound						Ravinia Avenue Northbound						Ravinia 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	1	2	4	3	7	0	0	0	0	0	0	0	1	15	7	0	23	0	0	0	0	0	0	30
7:15 AM	0	1	1	9	0	11	0	0	1	0	0	1	1	1	3	5	0	10	0	0	2	0	0	2	24
7:30 AM	0	1	2	6	3	9	0	0	0	0	0	0	1	1	21	9	0	32	0	0	4	0	0	4	45
7:45 AM	0	1	3	6	1	10	0	1	1	0	0	2	0	2	3	17	0	22	0	0	2	0	2	2	36
Hourly Total	0	4	8	25	7	37	0	1	2	0	0	3	2	5	42	38	0	87	0	0	8	0	2	8	135
8:00 AM	0	1	3	8	4	12	0	0	1	0	0	1	0	2	2	8	0	12	0	0	4	0	4	4	29
8:15 AM	0	1	0	10	1	11	0	0	0	0	0	0	0	4	1	8	0	13	0	0	1	0	0	1	25
8:30 AM	0	1	1	7	0	9	0	0	1	0	0	1	0	3	2	5	0	10	0	0	4	0	0	4	24
8:45 AM	0	1	1	4	1	6	0	2	1	0	0	3	0	1	7	8	0	16	0	0	7	0	0	7	32
Hourly Total	0	4	5	29	6	38	0	2	3	0	0	5	0	10	12	29	0	51	0	0	16	0	4	16	110
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	1	0	3	1	4	0	6	5	0	0	11	0	2	2	4	0	8	0	0	2	1	4	3	26
4:15 PM	0	0	1	7	0	8	0	3	3	0	0	6	0	2	11	3	0	16	0	0	2	0	1	2	32
4:30 PM	0	1	0	4	1	5	0	3	1	1	0	5	1	3	6	3	0	13	0	0	10	1	1	11	34
4:45 PM	0	0	0	10	2	10	0	6	1	0	0	7	2	2	7	5	1	16	0	0	1	0	1	1	34
Hourly Total	0	2	1	24	4	27	0	18	10	1	0	29	3	9	26	15	1	53	0	0	15	2	7	17	126
5:00 PM	0	1	0	7	1	8	0	5	3	0	0	8	1	7	6	1	0	15	0	0	9	0	4	9	40
5:15 PM	0	0	0	4	3	4	0	8	3	0	0	11	1	9	7	1	0	18	0	0	11	0	1	11	44
5:30 PM	0	0	1	1	2	2	0	2	3	0	0	5	1	7	9	1	0	18	0	0	4	0	3	4	29
5:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	5	9	1	0	15	0	1	2	0	2	3	19
Hourly Total	0	2	1	12	6	15	0	15	9	0	0	24	3	28	31	4	0	66	0	1	26	0	10	27	132
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	0	0	1	5	1	0	1	0	0	0	1	0	0	5	2	0	7	0	0	2	0	2	2	11
11:45 AM	0	0	2	0	2	2	0	0	0	0	0	0	2	1	2	6	0	11	1	0	0	2	2	3	16
Hourly Total	0	0	2	1	7	3	0	1	0	0	0	1	2	1	7	8	0	18	1	0	2	2	4	5	27
12:00 PM	0	0	0	0	2	0	0	5	0	0	0	5	1	1	3	5	2	10	0	0	2	0	0	2	17
12:15 PM	0	1	0	0	2	1	0	1	0	0	0	1	1	0	3	1	1	5	0	1	2	0	0	3	10
12:30 PM	0	0	0	1	0	1	0	5	0	1	1	6	0	0	2	0	0	2	0	0	0	1	1	1	10
12:45 PM	0	0	1	1	1	2	0	1	0	0	1	1	1	1	4	1	0	7	0	0	2	0	2	2	12
Hourly Total	0	1	1	2	5	4	0	12	0	1	2	13	3	2	12	7	3	24	0	1	6	1	3	8	49
1:00 PM	0	0	1	0	0	1	0	1	1	0	0	2	0	1	3	3	0	7	0	0	6	1	2	7	17
1:15 PM	0	0	0	1	2	1	0	4	0	4	0	8	1	0	1	0	0	2	0	0	1	0	5	1	12
Grand Total	0	13	19	94	37	126	0	54	25	6	2	85	14	56	134	104	4	308	1	2	80	6	37	89	608
Approach %	0.0	10.3	15.1	74.6	-	-	0.0	63.5	29.4	7.1	-	-	4.5	18.2	43.5	33.8	-	-	1.1	2.2	89.9	6.7	-	-	-
Total %	0.0	2.1	3.1	15.5	-	20.7	0.0	8.9	4.1	1.0	-	14.0	2.3	9.2	22.0	17.1	-	50.7	0.2	0.3	13.2	1.0	-	14.6	-

Lights	0	13	19	94	-	126	0	53	25	4	-	82	13	56	131	101	-	301	1	2	73	4	-	80	589
% Lights	-	100.0	100.0	100.0	-	100.0	-	98.1	100.0	66.7	-	96.5	92.9	100.0	97.8	97.1	-	97.7	100.0	100.0	91.3	66.7	-	89.9	96.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1
% 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	1.3	0.0	-	1.1	0.2
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	3	-	4	0	0	1	0	-	1	5
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	7.1	0.0	0.0	2.9	-	1.3	0.0	0.0	1.3	0.0	-	1.1	0.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	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	1	0	2	-	3	0	0	3	0	-	3	0	0	5	2	-	7	13
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	1.9	0.0	33.3	-	3.5	0.0	0.0	2.2	0.0	-	1.0	0.0	0.0	6.3	33.3	-	7.9	2.1
Pedestrians	-	-	-	-	37	-	-	-	-	-	2	-	-	-	-	-	4	-	-	-	-	-	37	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

[illegible]



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

Count Name:
Ravinia+Avenue+with+Parking+Access TMC
Site Code:
Start Date: 07/11/2024
Page No: 4

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Access Drive Eastbound						Access Drive Westbound						Ravinia Avenue Northbound						Ravinia 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	1	0	4	1	5	0	3	1	1	0	5	1	3	6	3	0	13	0	0	10	1	1	11	34
4:45 PM	0	0	0	10	2	10	0	6	1	0	0	7	2	2	7	5	1	16	0	0	1	0	1	1	34
5:00 PM	0	1	0	7	1	8	0	5	3	0	0	8	1	7	6	1	0	15	0	0	9	0	4	9	40
5:15 PM	0	0	0	4	3	4	0	8	3	0	0	11	1	9	7	1	0	18	0	0	11	0	1	11	44
Total	0	2	0	25	7	27	0	22	8	1	0	31	5	21	26	10	1	62	0	0	31	1	7	32	152
Approach %	0.0	7.4	0.0	92.6	-	-	0.0	71.0	25.8	3.2	-	-	8.1	33.9	41.9	16.1	-	-	0.0	0.0	96.9	3.1	-	-	-
Total %	0.0	1.3	0.0	16.4	-	17.8	0.0	14.5	5.3	0.7	-	20.4	3.3	13.8	17.1	6.6	-	40.8	0.0	0.0	20.4	0.7	-	21.1	-
PHF	0.000	0.500	0.000	0.625	-	0.675	0.000	0.688	0.667	0.250	-	0.705	0.625	0.583	0.929	0.500	-	0.861	0.000	0.000	0.705	0.250	-	0.727	0.864
Lights	0	2	0	25	-	27	0	22	8	1	-	31	5	21	26	9	-	61	0	0	29	1	-	30	149
% Lights	-	100.0	-	100.0	-	100.0	-	100.0	100.0	100.0	-	100.0	100.0	100.0	100.0	90.0	-	98.4	-	-	93.5	100.0	-	93.8	98.0
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
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	1	-	1	0	0	0	0	-	0	1
% Single-Unit Trucks	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	10.0	-	1.6	-	-	0.0	0.0	-	0.0	0.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	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	2	0	-	2	2
% Bicycles on Road	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	-	6.5	0.0	-	6.3	1.3
Pedestrians	-	-	-	-	7	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	7	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Rosemont, Illinois, United States 60018
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Count Name:
Ravinia+Avenue+with+Parking+Access TMC
Site Code:
Start Date: 07/11/2024
Page No: 5

Turning Movement Peak Hour Data (12:30 PM)

Start Time	Access Drive Eastbound						Access Drive Westbound						Ravinia Avenue Northbound						Ravinia 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	
12:30 PM	0	0	0	1	0	1	0	5	0	1	1	6	0	0	2	0	0	2	0	0	0	1	1	1	10
12:45 PM	0	0	1	1	1	2	0	1	0	0	1	1	1	1	4	1	0	7	0	0	2	0	2	2	12
1:00 PM	0	0	1	0	0	1	0	1	1	0	0	2	0	1	3	3	0	7	0	0	6	1	2	7	17
1:15 PM	0	0	0	1	2	1	0	4	0	4	0	8	1	0	1	0	0	2	0	0	1	0	5	1	12
Total	0	0	2	3	3	5	0	11	1	5	2	17	2	2	10	4	0	18	0	0	9	2	10	11	51
Approach %	0.0	0.0	40.0	60.0	-	-	0.0	64.7	5.9	29.4	-	-	11.1	11.1	55.6	22.2	-	-	0.0	0.0	81.8	18.2	-	-	-
Total %	0.0	0.0	3.9	5.9	-	9.8	0.0	21.6	2.0	9.8	-	33.3	3.9	3.9	19.6	7.8	-	35.3	0.0	0.0	17.6	3.9	-	21.6	-
PHF	0.000	0.000	0.500	0.750	-	0.625	0.000	0.550	0.250	0.313	-	0.531	0.500	0.500	0.625	0.333	-	0.643	0.000	0.000	0.375	0.500	-	0.393	0.750
Lights	0	0	2	3	-	5	0	11	1	3	-	15	2	2	8	4	-	16	0	0	8	2	-	10	46
% Lights	-	-	100.0	100.0	-	100.0	-	100.0	100.0	60.0	-	88.2	100.0	100.0	80.0	100.0	-	88.9	-	-	88.9	100.0	-	90.9	90.2
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
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1
% Single-Unit Trucks	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	-	11.1	0.0	-	9.1	2.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	2	-	2	0	0	2	0	-	2	0	0	0	0	-	0	4
% Bicycles on Road	-	-	0.0	0.0	-	0.0	-	0.0	0.0	40.0	-	11.8	0.0	0.0	20.0	0.0	-	11.1	-	-	0.0	0.0	-	0.0	7.8
Pedestrians	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

IL 7 and 143rd - TMC

Tue Mar 7, 2017

Full Length (7 AM-9 AM, 3 PM-6 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 388922, Location: 41.630374, -87.860324



Provided by: Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400, Rosemont, IL, 60018, US

Leg Direction	143rd Street Eastbound						143rd Street Westbound						Parking Lot Northbound						IL 7 Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2017-03-07 7:00AM	116	103	0	0	219	0	0	84	15	0	99	0	0	0	0	0	0	0	13	0	54	0	67	0	385
7:15AM	85	96	0	0	181	0	0	78	16	0	94	0	0	0	0	0	0	0	18	0	69	0	87	1	362
7:30AM	83	92	0	0	175	0	0	97	24	0	121	0	0	0	0	0	0	0	21	1	81	0	103	0	399
7:45AM	77	89	0	0	166	0	0	119	26	0	145	0	0	1	1	0	2	0	27	0	77	0	104	0	417
Hourly Total	361	380	0	0	741	0	0	378	81	0	459	0	0	1	1	0	2	0	79	1	281	0	361	1	1563
8:00AM	60	95	0	0	155	0	0	88	15	0	103	0	0	0	1	0	1	1	19	0	88	0	107	0	366
8:15AM	76	115	0	0	191	0	0	85	12	0	97	0	0	0	1	0	1	0	21	0	70	0	91	0	380
8:30AM	69	98	1	0	168	0	0	77	13	0	90	0	0	0	0	0	0	1	31	0	81	0	112	0	370
8:45AM	78	131	0	0	209	0	0	86	10	0	96	0	0	0	1	0	1	0	36	0	69	0	105	0	411
Hourly Total	283	439	1	0	723	0	0	336	50	0	386	0	0	0	3	0	3	2	107	0	308	0	415	0	1527
3:00PM	53	109	0	0	162	0	1	119	28	0	148	0	0	0	1	0	1	0	34	1	74	0	109	0	420
3:15PM	57	132	0	0	189	0	0	112	20	0	132	0	0	1	1	0	2	0	41	0	73	0	114	0	437
3:30PM	56	118	1	0	175	0	3	95	15	0	113	0	0	0	0	0	0	0	52	0	118	0	170	0	458
3:45PM	76	142	2	0	220	0	1	135	25	0	161	0	0	0	1	0	1	0	51	0	89	0	140	0	522
Hourly Total	242	501	3	0	746	0	5	461	88	0	554	0	0	1	3	0	4	0	178	1	354	0	533	0	1837
4:00PM	67	124	0	0	191	0	3	115	23	0	141	0	0	0	4	0	4	1	43	0	107	0	150	0	486
4:15PM	61	125	1	0	187	0	2	104	14	0	120	0	0	0	1	0	1	1	60	0	104	0	164	0	472
4:30PM	65	139	1	0	205	0	1	101	19	0	121	0	0	0	2	0	2	1	62	0	90	0	152	0	480
4:45PM	60	135	2	0	197	0	1	111	13	0	125	0	0	0	3	0	3	5	52	0	95	0	147	0	472
Hourly Total	253	523	4	0	780	0	7	431	69	0	507	0	0	0	10	0	10	8	217	0	396	0	613	0	1910
5:00PM	87	149	2	0	238	1	5	124	15	0	144	0	0	1	2	0	3	0	43	0	78	0	121	0	506
5:15PM	57	106	1	0	164	0	1	106	14	0	121	0	0	2	1	0	3	0	34	0	101	0	135	0	423
5:30PM	71	129	0	0	200	0	0	131	26	0	157	0	0	1	0	0	1	0	50	0	98	0	148	0	506
5:45PM	55	128	1	0	184	0	1	110	15	0	126	0	0	0	2	0	2	0	45	1	107	0	153	0	465
Hourly Total	270	512	4	0	786	1	7	471	70	0	548	0	0	4	5	0	9	0	172	1	384	0	557	0	1900
Total	1409	2355	12	0	3776	1	19	2077	358	0	2454	0	0	6	22	0	28	10	753	3	1723	0	2479	1	8737
% Approach	37.3%	62.4%	0.3%	0%	-	-	0.8%	84.6%	14.6%	0%	-	-	0%	21.4%	78.6%	0%	-	-	30.4%	0.1%	69.5%	0%	-	-	-
% Total	16.1%	27.0%	0.1%	0%	43.2%	-	0.2%	23.8%	4.1%	0%	28.1%	-	0%	0.1%	0.3%	0%	0.3%	-	8.6%	0%	19.7%	0%	28.4%	-	-
Lights	1384	2288	12	0	3684	-	19	2021	354	0	2394	-	0	6	21	0	27	-	752	3	1675	0	2430	-	8535
% Lights	98.2%	97.2%	100%	0%	97.6%	-	100%	97.3%	98.9%	0%	97.6%	-	0%	100%	95.5%	0%	96.4%	-	99.9%	100%	97.2%	0%	98.0%	-	97.7%
Single-Unit Trucks	13	23	0	0	36	-	0	16	1	0	17	-	0	0	1	0	1	-	0	0	32	0	32	-	86
% Single-Unit Trucks	0.9%	1.0%	0%	0%	1.0%	-	0%	0.8%	0.3%	0%	0.7%	-	0%	0%	4.5%	0%	3.6%	-	0%	0%	1.9%	0%	1.3%	-	1.0%
Articulated Trucks	0	7	0	0	7	-	0	6	0	0	6	-	0	0	0	0	0	-	0	0	0	0	0	-	13
% Articulated Trucks	0%	0.3%	0%	0%	0.2%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Buses	12	37	0	0	49	-	0	34	3	0	37	-	0	0	0	0	0	-	1	0	16	0	17	-	103
% Buses	0.9%	1.6%	0%	0%	1.3%	-	0%	1.6%	0.8%	0%	1.5%	-	0%	0%	0%	0%	0%	-	0.1%	0%	0.9%	0%	0.7%	-	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%

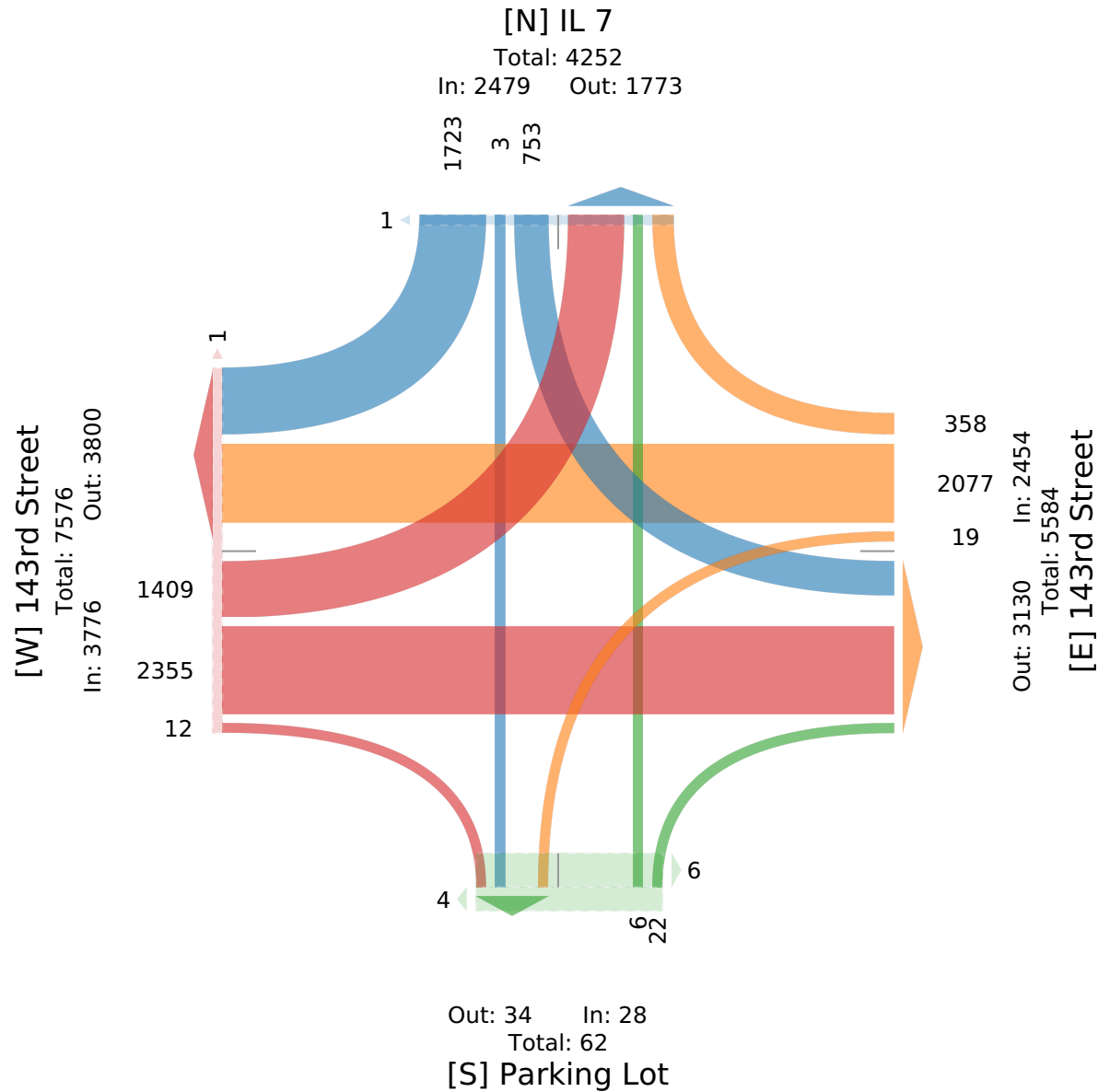
Leg Direction	143rd Street Eastbound						143rd Street Westbound						Parking Lot Northbound						IL 7 Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	10	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

IL 7 and 143rd - TMC
Tue Mar 7, 2017
Full Length (7 AM-9 AM, 3 PM-6 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)
All Movements
ID: 388922, Location: 41.630374, -87.860324



Provided by: Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400, Rosemont, IL, 60018, US



IL 7 and 143rd - TMC

Tue Mar 7, 2017

AM Peak (7 AM - 8 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 388922, Location: 41.630374, -87.860324



Provided by: Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400, Rosemont, IL, 60018, US

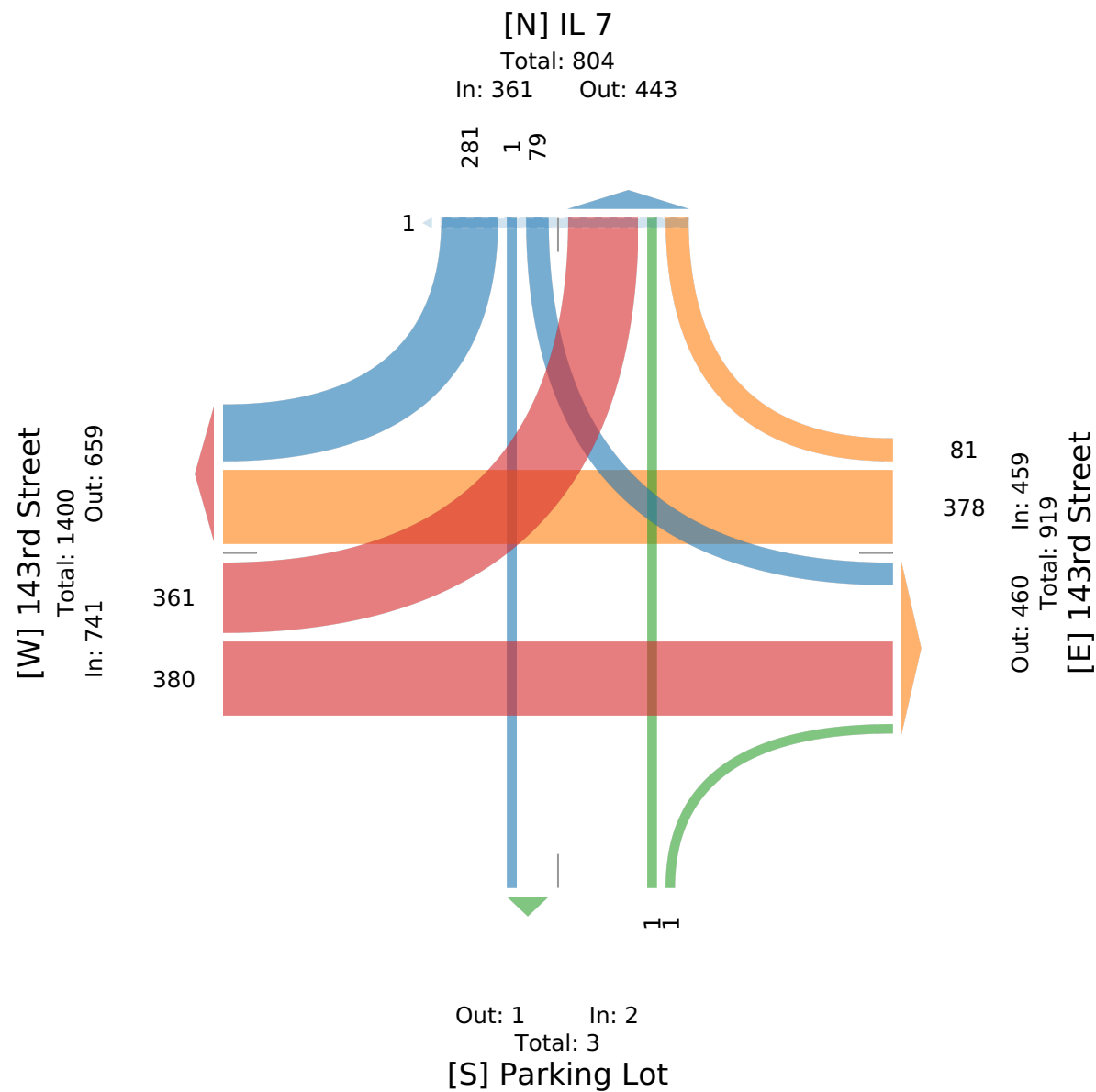
Leg Direction	143rd Street Eastbound						143rd Street Westbound						Parking Lot Northbound						IL 7 Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2017-03-07 7:00AM	116	103	0	0	219	0	0	84	15	0	99	0	0	0	0	0	0	0	13	0	54	0	67	0	385
7:15AM	85	96	0	0	181	0	0	78	16	0	94	0	0	0	0	0	0	0	18	0	69	0	87	1	362
7:30AM	83	92	0	0	175	0	0	97	24	0	121	0	0	0	0	0	0	0	21	1	81	0	103	0	399
7:45AM	77	89	0	0	166	0	0	119	26	0	145	0	0	1	1	0	2	0	27	0	77	0	104	0	417
Total	361	380	0	0	741	0	0	378	81	0	459	0	0	1	1	0	2	0	79	1	281	0	361	1	1563
% Approach	48.7%	51.3%	0%	0%	-	-	0%	82.4%	17.6%	0%	-	-	0%	50.0%	50.0%	0%	-	-	21.9%	0.3%	77.8%	0%	-	-	-
% Total	23.1%	24.3%	0%	0%	47.4%	-	0%	24.2%	5.2%	0%	29.4%	-	0%	0.1%	0.1%	0%	0.1%	-	5.1%	0.1%	18.0%	0%	23.1%	-	-
PHF	0.778	0.922	-	-	0.846	-	-	0.794	0.779	-	0.791	-	-	0.250	0.250	-	0.250	-	0.731	0.250	0.867	-	0.868	-	0.937
Lights	354	362	0	0	716	-	0	354	81	0	435	-	0	1	1	0	2	-	79	1	265	0	345	-	1498
% Lights	98.1%	95.3%	0%	0%	96.6%	-	0%	93.7%	100%	0%	94.8%	-	0%	100%	100%	0%	100%	-	100%	100%	94.3%	0%	95.6%	-	95.8%
Single-Unit Trucks	2	6	0	0	8	-	0	5	0	0	5	-	0	0	0	0	0	-	0	0	12	0	12	-	25
% Single-Unit Trucks	0.6%	1.6%	0%	0%	1.1%	-	0%	1.3%	0%	0%	1.1%	-	0%	0%	0%	0%	0%	-	0%	0%	4.3%	0%	3.3%	-	1.6%
Articulated Trucks	0	1	0	0	1	-	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	2
% Articulated Trucks	0%	0.3%	0%	0%	0.1%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Buses	5	11	0	0	16	-	0	18	0	0	18	-	0	0	0	0	0	-	0	0	4	0	4	-	38
% Buses	1.4%	2.9%	0%	0%	2.2%	-	0%	4.8%	0%	0%	3.9%	-	0%	0%	0%	0%	0%	-	0%	0%	1.4%	0%	1.1%	-	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%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

IL 7 and 143rd - TMC
Tue Mar 7, 2017
AM Peak (7 AM - 8 AM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)
All Movements
ID: 388922, Location: 41.630374, -87.860324



Provided by: Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400, Rosemont, IL, 60018, US



IL 7 and 143rd - TMC

Tue Mar 7, 2017

PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 388922, Location: 41.630374, -87.860324



Provided by: Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400, Rosemont, IL, 60018, US

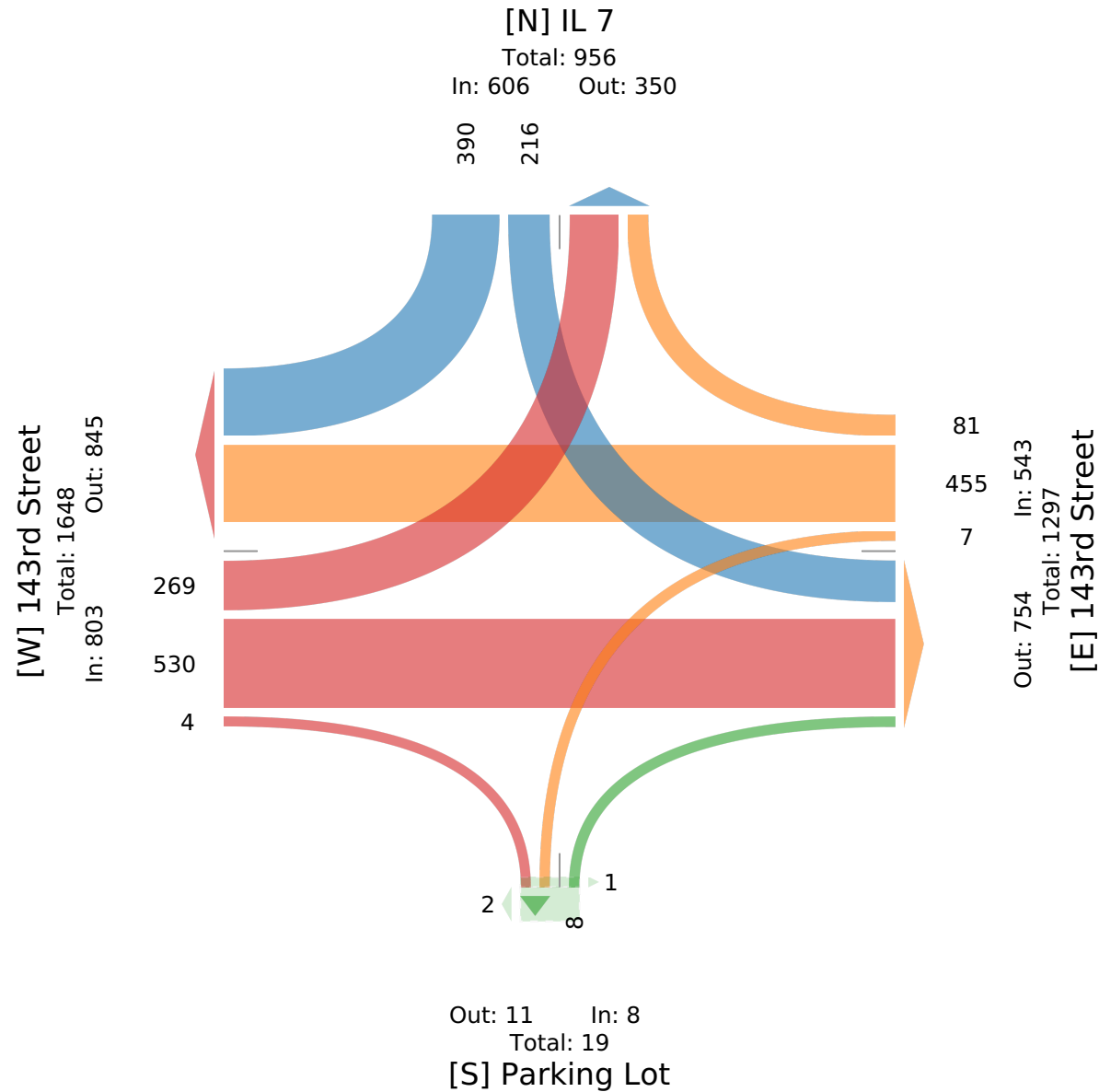
Leg Direction	143rd Street Eastbound						143rd Street Westbound						Parking Lot Northbound						IL 7 Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2017-03-07 3:45PM	76	142	2	0	220	0	1	135	25	0	161	0	0	0	1	0	1	0	51	0	89	0	140	0	522
4:00PM	67	124	0	0	191	0	3	115	23	0	141	0	0	0	4	0	4	1	43	0	107	0	150	0	486
4:15PM	61	125	1	0	187	0	2	104	14	0	120	0	0	0	1	0	1	1	60	0	104	0	164	0	472
4:30PM	65	139	1	0	205	0	1	101	19	0	121	0	0	0	2	0	2	1	62	0	90	0	152	0	480
Total	269	530	4	0	803	0	7	455	81	0	543	0	0	0	8	0	8	3	216	0	390	0	606	0	1960
% Approach	33.5%	66.0%	0.5%	0%	-	-	1.3%	83.8%	14.9%	0%	-	-	0%	0%	100%	0%	-	-	35.6%	0%	64.4%	0%	-	-	-
% Total	13.7%	27.0%	0.2%	0%	41.0%	-	0.4%	23.2%	4.1%	0%	27.7%	-	0%	0%	0.4%	0%	0.4%	-	11.0%	0%	19.9%	0%	30.9%	-	-
PHF	0.885	0.933	0.500	-	0.913	-	0.583	0.843	0.810	-	0.843	-	-	-	0.500	-	0.500	-	0.871	-	0.911	-	0.924	-	0.939
Lights	263	517	4	0	784	-	7	450	79	0	536	-	0	0	8	0	8	-	216	0	388	0	604	-	1932
% Lights	97.8%	97.5%	100%	0%	97.6%	-	100%	98.9%	97.5%	0%	98.7%	-	0%	0%	100%	0%	100%	-	100%	0%	99.5%	0%	99.7%	-	98.6%
Single-Unit Trucks	5	5	0	0	10	-	0	3	1	0	4	-	0	0	0	0	0	-	0	0	2	0	2	-	16
% Single-Unit Trucks	1.9%	0.9%	0%	0%	1.2%	-	0%	0.7%	1.2%	0%	0.7%	-	0%	0%	0%	0%	0%	-	0%	0%	0.5%	0%	0.3%	-	0.8%
Articulated Trucks	0	2	0	0	2	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	2
% Articulated Trucks	0%	0.4%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Buses	1	6	0	0	7	-	0	2	1	0	3	-	0	0	0	0	0	-	0	0	0	0	0	-	10
% Buses	0.4%	1.1%	0%	0%	0.9%	-	0%	0.4%	1.2%	0%	0.6%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.5%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

IL 7 and 143rd - TMC
Tue Mar 7, 2017
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)
All Movements
ID: 388922, Location: 41.630374, -87.860324



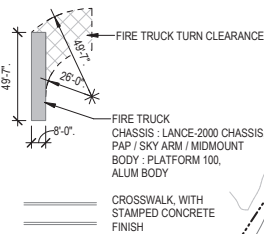
Provided by: Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400, Rosemont, IL, 60018, US



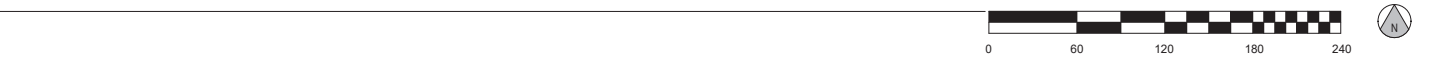
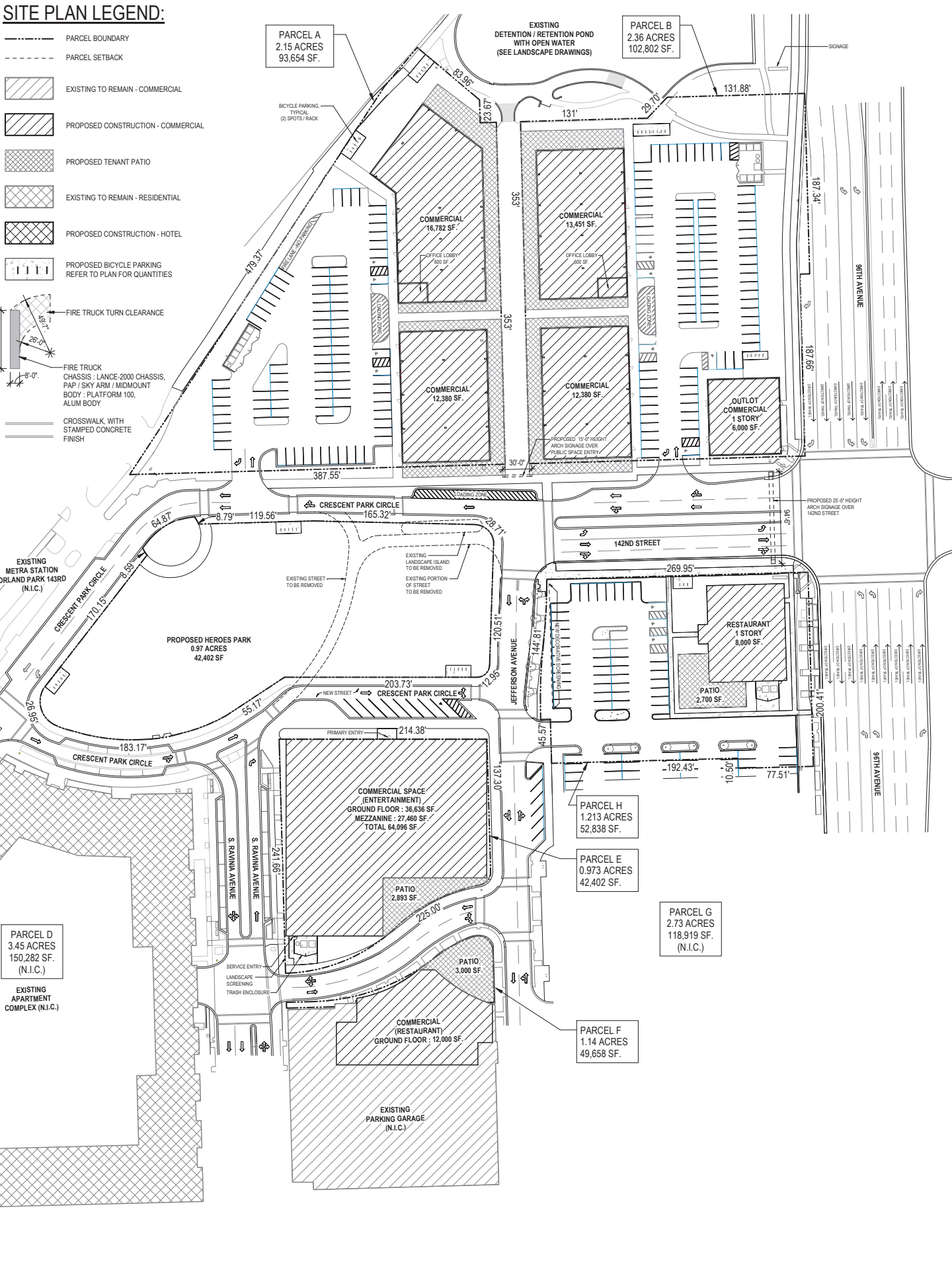
Preliminary Site Plan

SITE PLAN LEGEND:

- PARCEL BOUNDARY
- - - - - PARCEL SETBACK
- [Pattern] EXISTING TO REMAIN - COMMERCIAL
[Pattern] PROPOSED CONSTRUCTION - COMMERCIAL
[Pattern] PROPOSED TENANT PATIO
[Pattern] EXISTING TO REMAIN - RESIDENTIAL
[Pattern] PROPOSED CONSTRUCTION - HOTEL
[Pattern] PROPOSED BICYCLE PARKING
REFER TO PLAN FOR QUANTITIES



REFER TO WALKER CONSULTANT'S PARKING REPORT WHICH CONFIRMS THAT THE ENTIRE DEVELOPMENT COMPLIES WITH THE REQUIRED PARKING COUNT. THE SHARED PARKING METHODOLOGY UTILIZED IN WALKER CONSULTANT'S REPORT CONSIDERS THE DEVELOPMENT AS A WHOLE, ASSUMING ALL PARCELS ARE ADJACENT TO ONE ANOTHER. THIS APPROACH TREATS THE DEVELOPMENT AS A SINGLE ENTITY RATHER THAN SEVEN SEPARATE PARCELS.



PARCEL	LAND USE	SF	PARKING RATIO	SPACES REQUIRED	PARCEL	LAND USE	SF	PARKING RATIO	SPACES REQUIRED
A OPTION 1	RETAIL	11,650	1 PER 250 SF	47	A OPTION 2	RETAIL	11,650	1 PER 250 SF	47
A OPTION 1	OFFICE	20,600	1 PER 200 SF	103	A OPTION 2	OFFICE	3,624	1 PER 200 SF	18
A OPTION 1	RESTAURANT	22,500	1 PER 100 SF	225	A OPTION 2	RESTAURANT	13,645	1 PER 100 SF	136
				TOTAL REQUIRED					TOTAL REQUIRED
				375					321
				PROVIDED					PROVIDED
				92 (INCLUDES 4 ADA)					92 (INCLUDES 4 ADA)
				SHORTAGE					SHORTAGE
				283					229

PARCEL	LAND USE	SF	PARKING RATIO	SPACES REQUIRED
B OPTION 1	OFFICE	20,600	1 PER 200 SF	103
B OPTION 1	RETAIL	10,400	1 PER 250 SF	42
B OPTION 1	RESTAURANT	20,495	1 PER 100 SF	205
B OPTION 1	COMMERCIAL OUTLOT	6,000	1 PER 250 SF	24
				TOTAL REQUIRED
				374
				PROVIDED
				93 (INCLUDES 5 ADA)
				SHORTAGE
				281

PARCEL	LAND USE	SF	PARKING RATIO	SPACES REQUIRED	PARCEL	LAND USE	SF	PARKING RATIO	SPACES REQUIRED
H OPTION 1	RESTAURANT	8,000	1 PER 100 SF	80	H OPTION 2	MEDICAL OFFICE	12,000	1 PER 300 SF	40
				TOTAL REQUIRED					TOTAL REQUIRED
				80					40
				PROVIDED					PROVIDED
				57 (INCLUDES 3 ADA)					57 (INCLUDES 3 ADA)
				SHORTAGE					SHORTAGE
				23					+17

PARCEL	LAND USE	SF	PARKING RATIO	SPACES REQUIRED
C	DAYCARE	11,875	1 PER 300 SF	40
				TOTAL REQUIRED
				40
				PROVIDED
				40 (INCLUDES 2 ADA)
				SHORTAGE
				0

PARCEL	LAND USE	SF	PARKING RATIO	SPACES REQUIRED
HEROES	PARK	74,625	10 PER ACRE	17
				TOTAL REQUIRED
				17
				PROVIDED
				15
				SHORTAGE
				2

PARCEL	LAND USE	SF	PARKING RATIO	SPACES REQUIRED
E	ENTERTAINMENT	42,402	1 PER 200 SF	212
				TOTAL REQUIRED
				212
				PROVIDED
				15
				SHORTAGE
				197

PARCEL	LAND USE	SF	PARKING RATIO	SPACES REQUIRED
F	RESTAURANT	12,000	1 PER 100 SF	120
				TOTAL REQUIRED
				120
				PROVIDED
				545

PARCEL	NOTES	SPACES PROVIDED
METRA (WEST) - N.I.C.	NOT SHOWN ON SITE PLAN	262
METRA (EAST) - N.I.C.	DOES NOT INCLUDED ADA SPACES	65

PARCEL	NOTES	SPACES PROVIDED
U of C - N.I.C.	SURFACE LOT - NOT SHOWN ON SITE PLAN	224

TOTAL PARKING REQUIRED	1,316
50% REDUCTION	658
TOTAL PARKING PROVIDED	857

REFLECTIVE OF OPTION 1

BIKE PARKING REQUIRED	86
BIKE PARKING PROVIDED	88

10% TOTAL, INCLUDES ON-STREET PARKING

1 OVERALL SITE PLAN
1" = 60'-0"

DESIGN ARCHITECT

DUNNE | KOZLOWSKI

3215 W. DIVISION ST. CHICAGO, IL 60651
312.573.2490 | www.dk-arch.com

CLIENT

EDWARDS REALTY COMPANY
14400 SOUTH JOHN HUMPHREY DRIVE
SUITE 200
ORLAND PARK, IL 60462

PROJECT NAME

ORLAND PARK
DEVELOPMENT

LOCATION

DOWNTOWN ORLAND PARK
ORLAND PARK, IL

ISSUE #	ISSUED FOR:	DATE
1	SITE PLAN	2024-02-29
2	ENG. BACKGROUNDS	2024-05-14
3	DOWNTOWN PLANNING REVIEW REVISION 1	2024-05-16
4	ENG. BACKGROUNDS	2024-06-14
5	DOWNTOWN PLANNING REVIEW REVISION 2	2024-06-24

SEAL

CLIENT APPROVAL:

DATE:

TITLE

OVERALL SITE PLAN

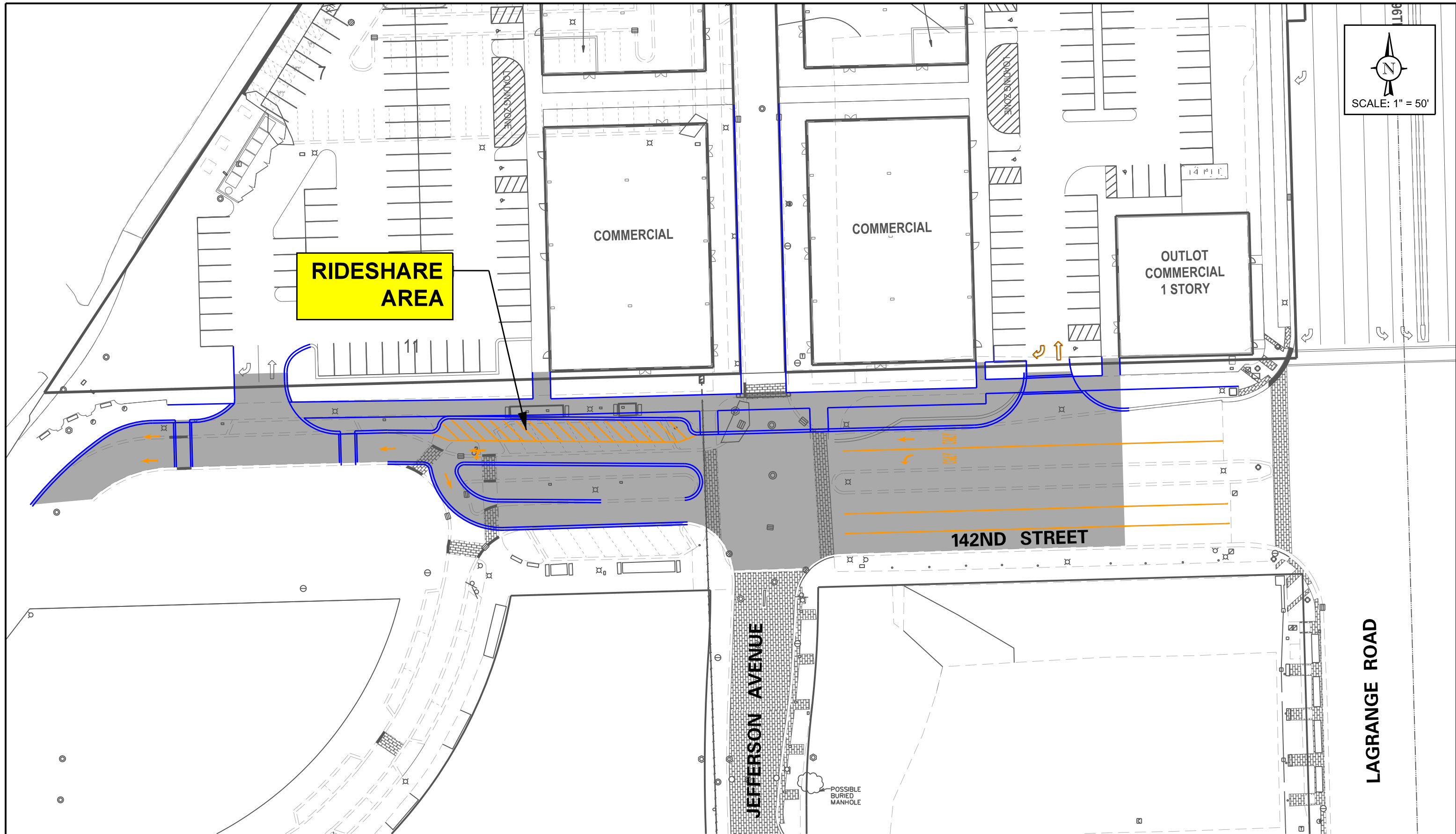
PROJECT

2104

SHEET

A-100

Preliminary Geometric Plan (Exhibit A)



DOWNTOWN ORLAND PARK
DEVELOPMENT
ORLAND PARK, ILLINOIS

PRELIMINARY GEOMETRICS
142ND STREET

DRAWN: DS/MD CHECKED: LA
DATE: 06-17-24 REV: 07-22-24
PROJECT #: 24-170
EXHIBIT: A



ITE Trip Generation Worksheets

Multipurpose Recreational Facility (435)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 3

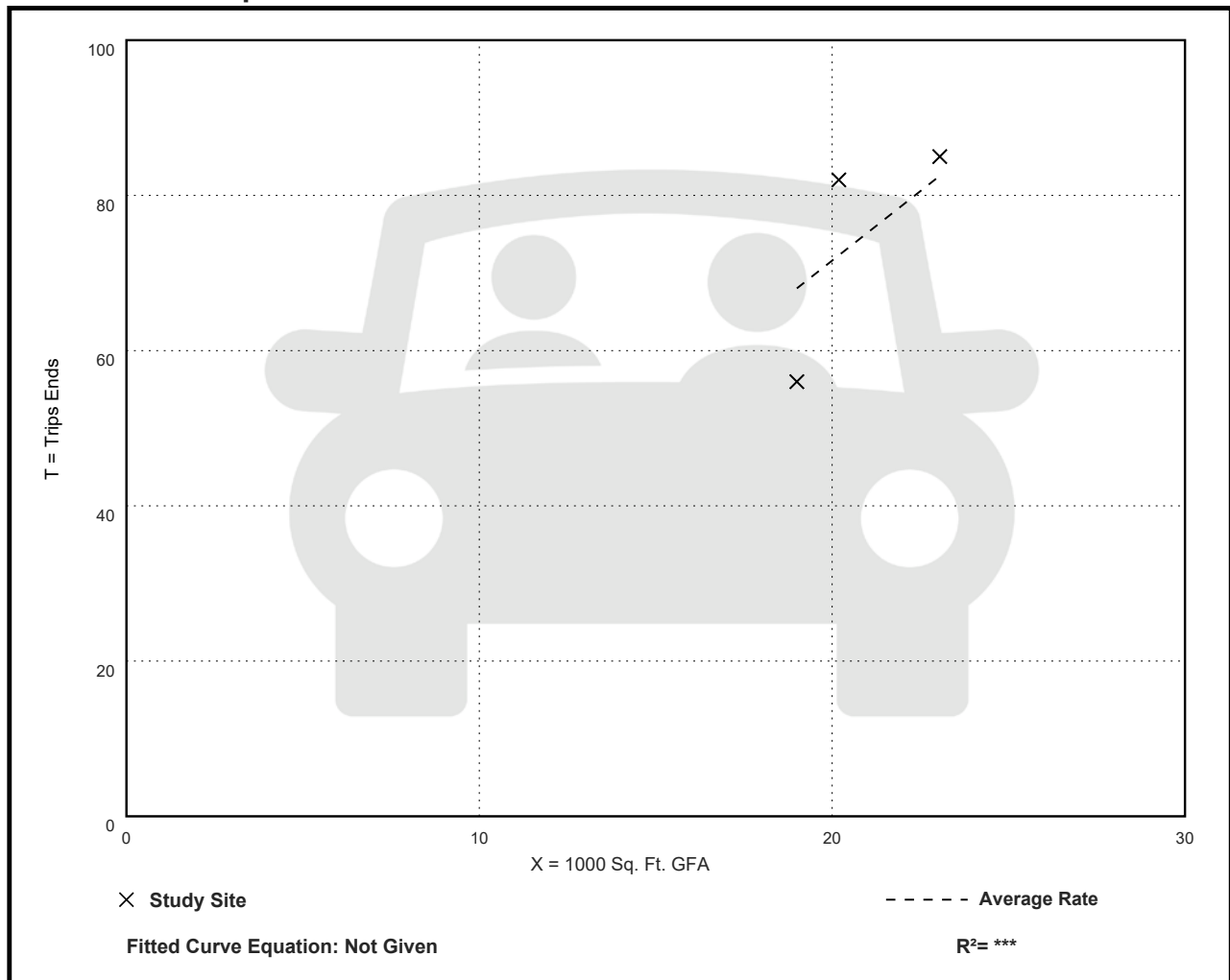
Avg. 1000 Sq. Ft. GFA: 21

Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.58	2.95 - 4.06	0.55

Data Plot and Equation



Day Care Center (565)

Vehicle Trip Ends vs: Students
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 14

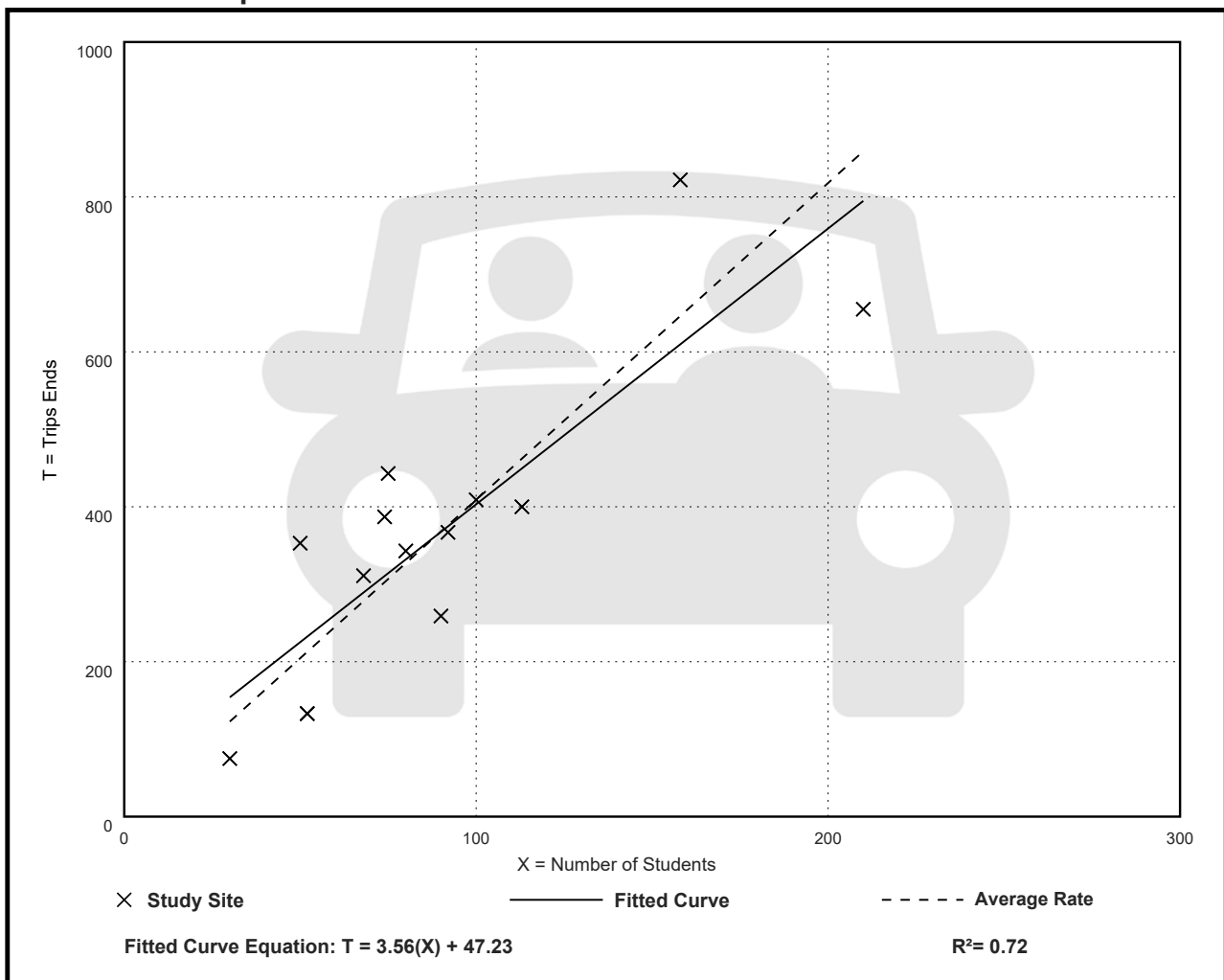
Avg. Num. of Students: 89

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
4.09	2.50 - 7.06	1.21

Data Plot and Equation



Day Care Center (565)

Vehicle Trip Ends vs: Students

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 75

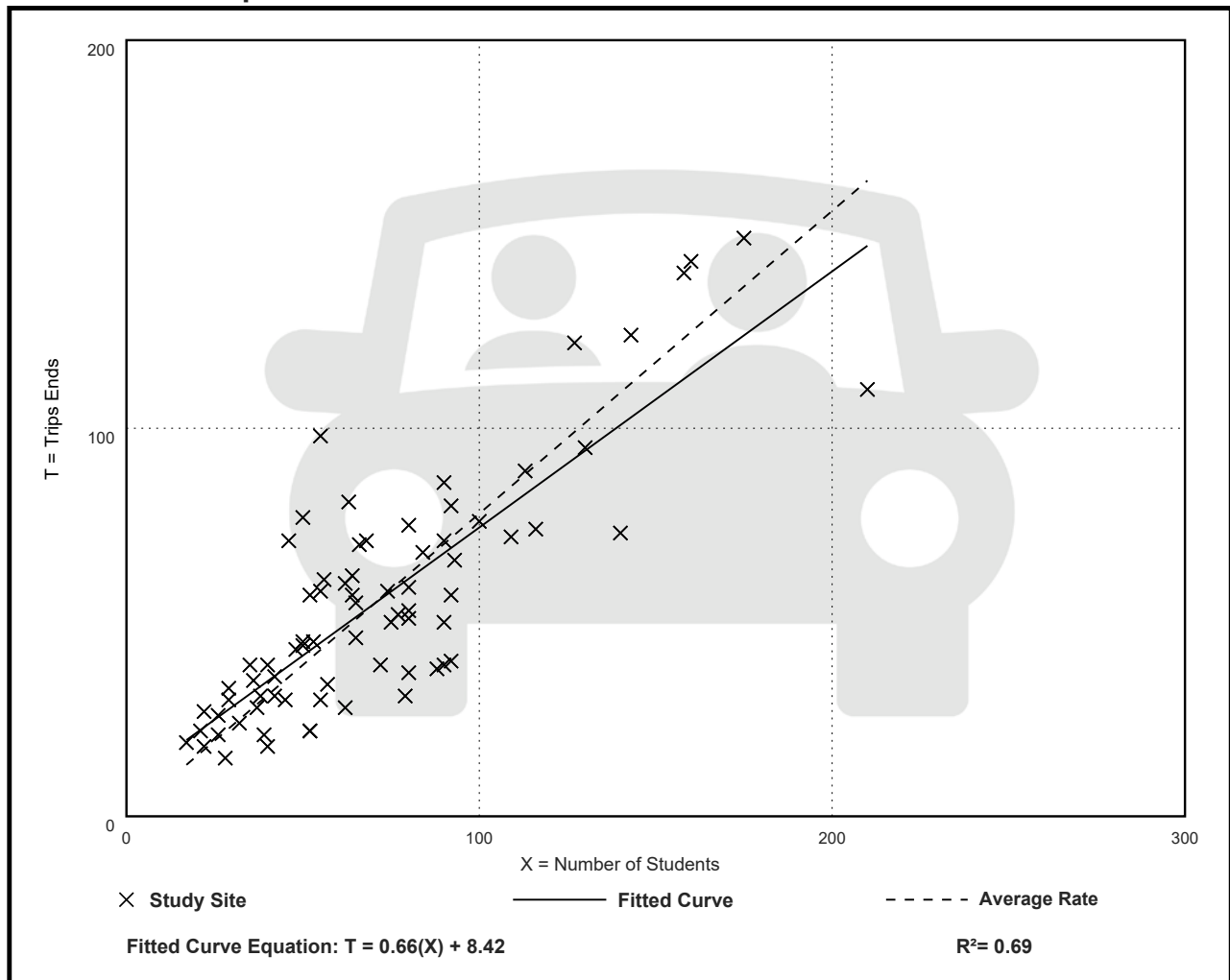
Avg. Num. of Students: 71

Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.78	0.39 - 1.78	0.25

Data Plot and Equation



Day Care Center (565)

Vehicle Trip Ends vs: Students

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 75

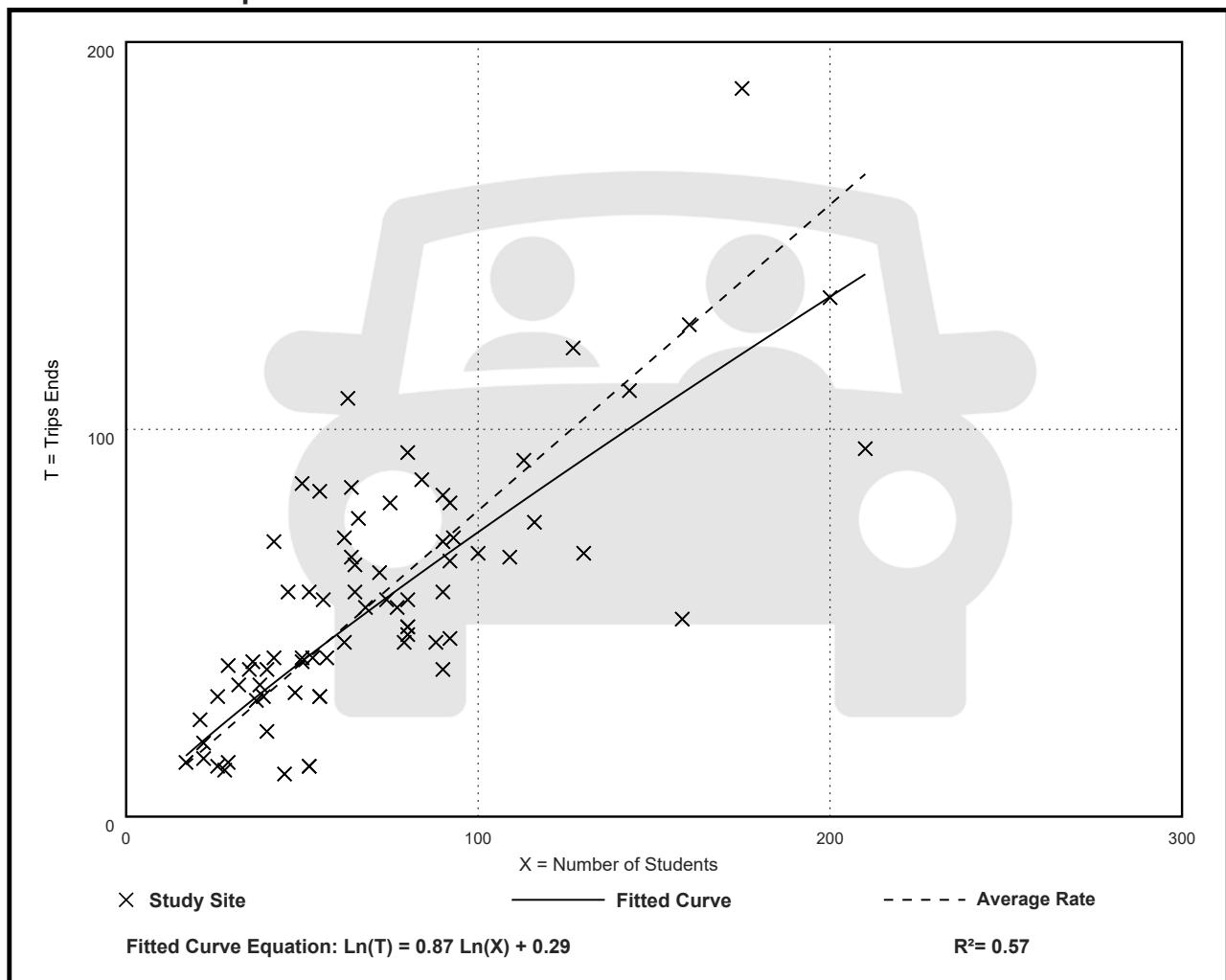
Avg. Num. of Students: 72

Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.79	0.24 - 1.72	0.30

Data Plot and Equation



Day Care Center (565)

Vehicle Trip Ends vs: Students

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 5

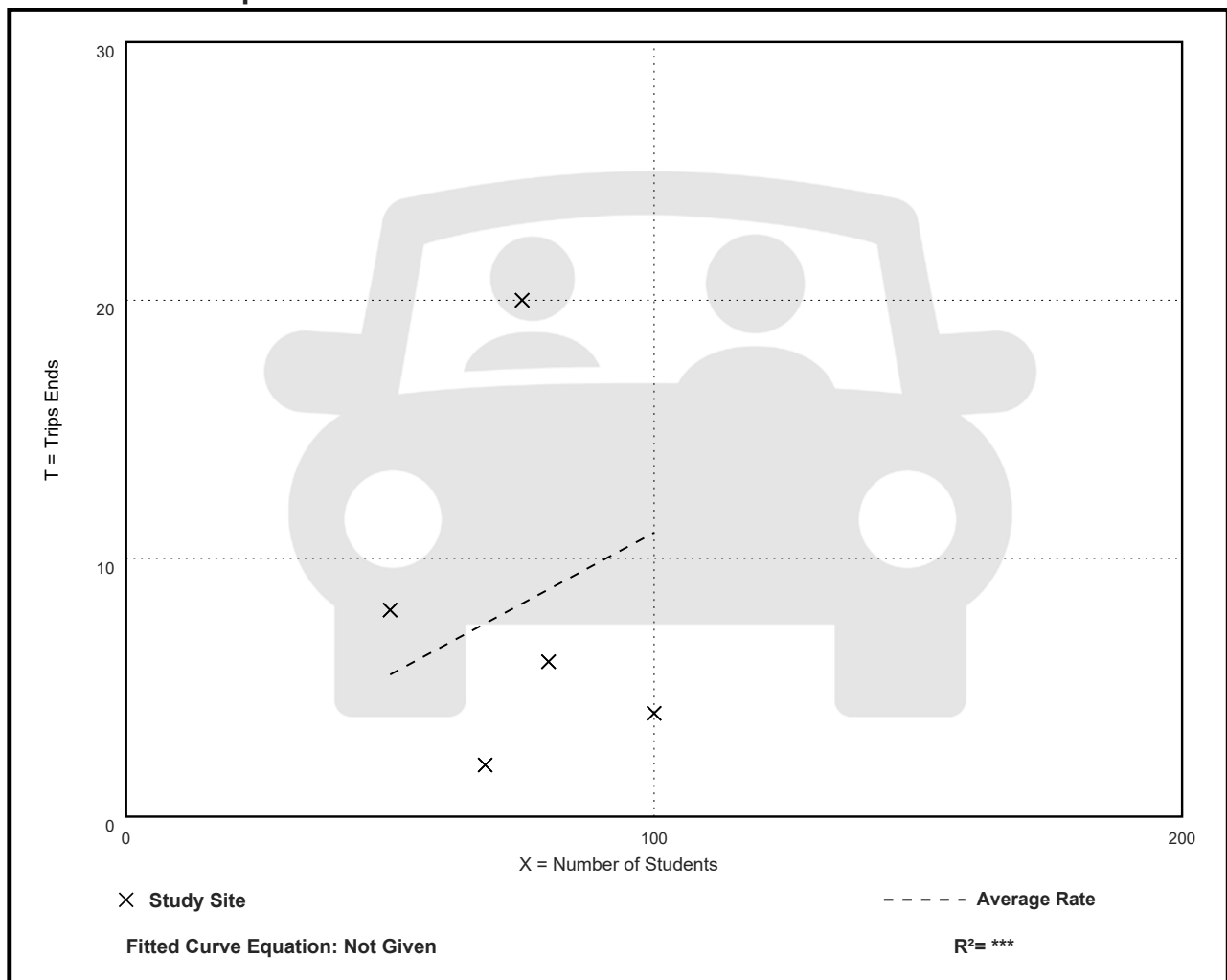
Avg. Num. of Students: 75

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.11	0.03 - 0.27	0.10

Data Plot and Equation



General Office Building (710)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 59

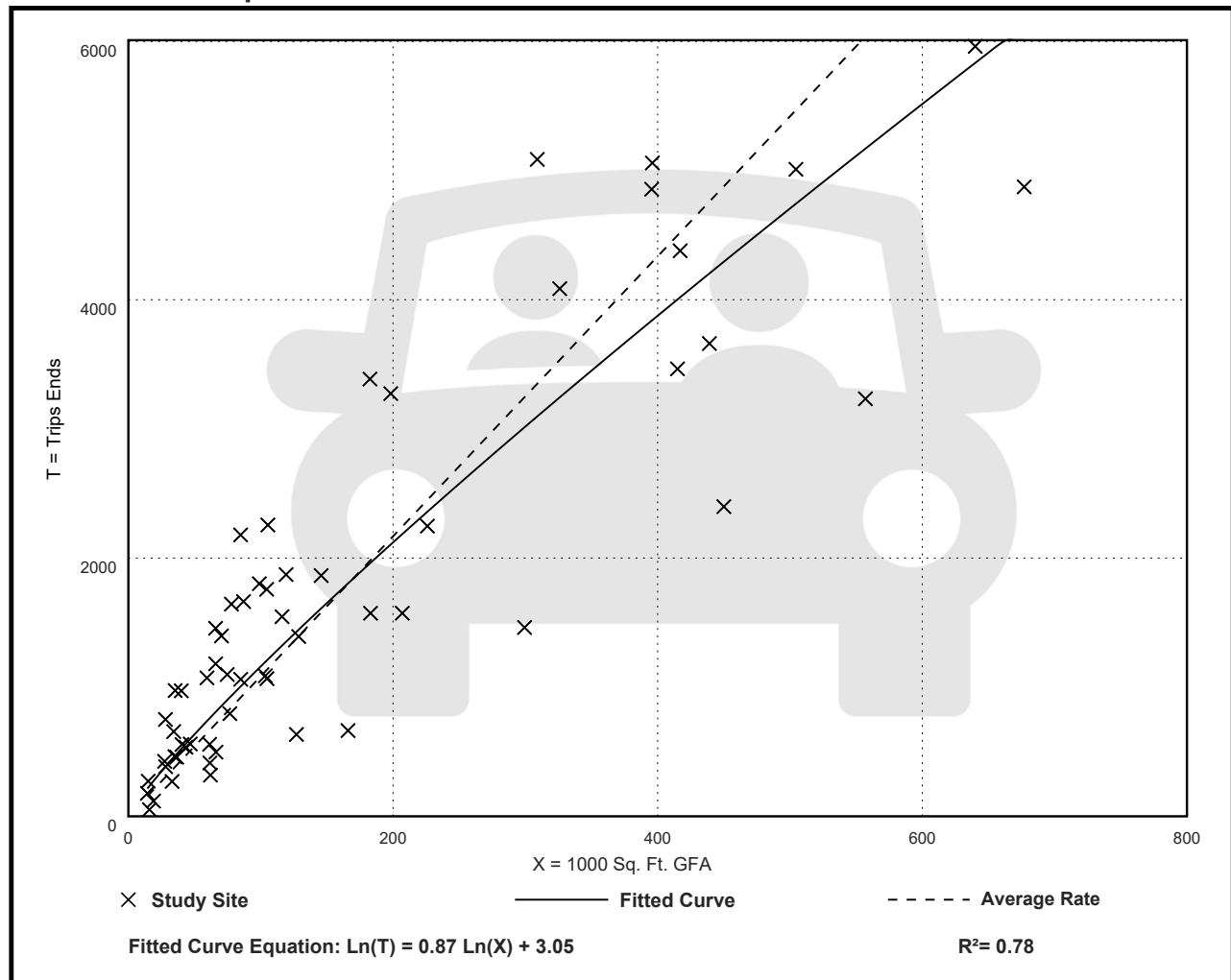
Avg. 1000 Sq. Ft. GFA: 163

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
10.84	3.27 - 27.56	4.76

Data Plot and Equation



General Office Building (710)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 221

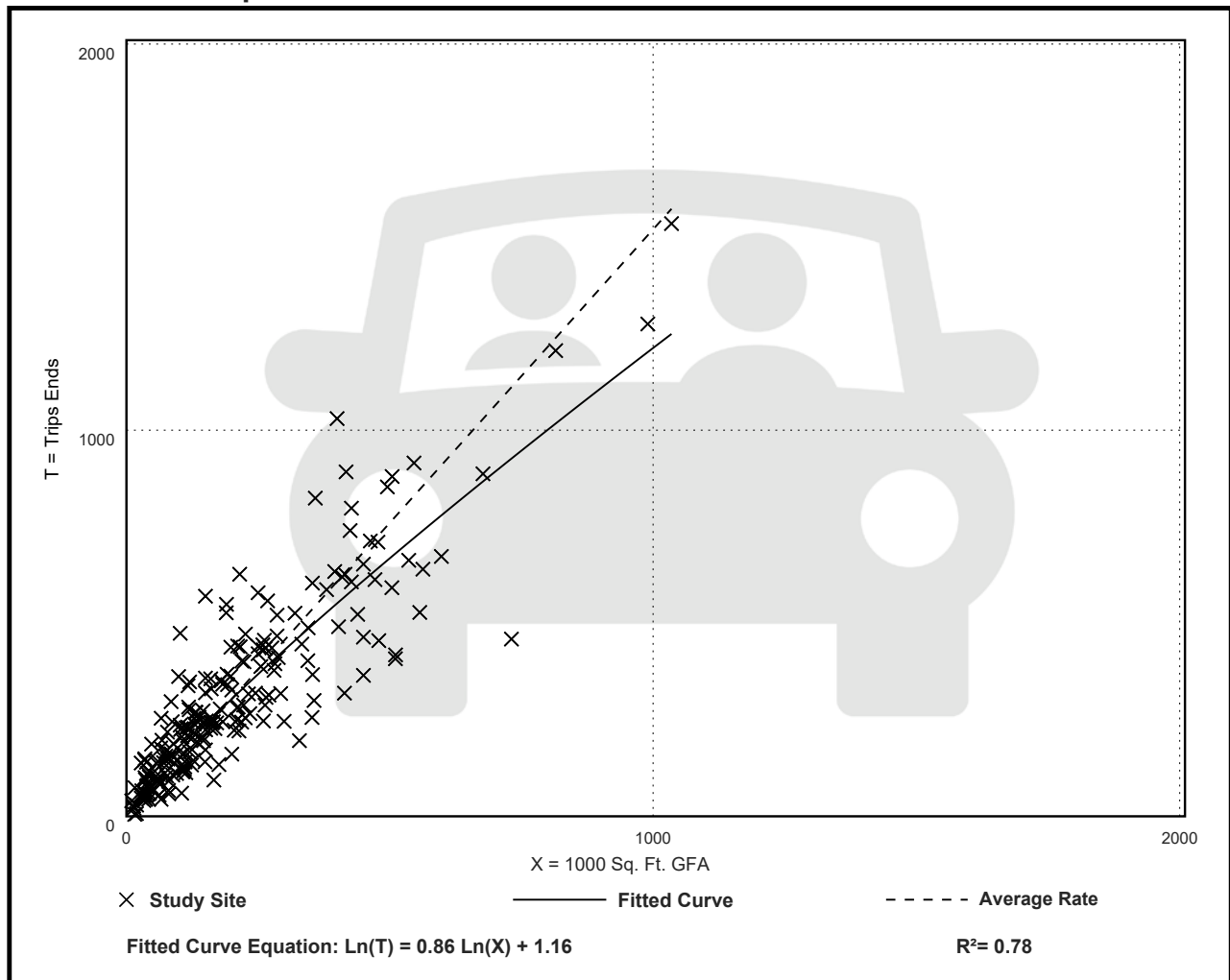
Avg. 1000 Sq. Ft. GFA: 201

Directional Distribution: 88% entering, 12% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.52	0.32 - 4.93	0.58

Data Plot and Equation



General Office Building (710)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 232

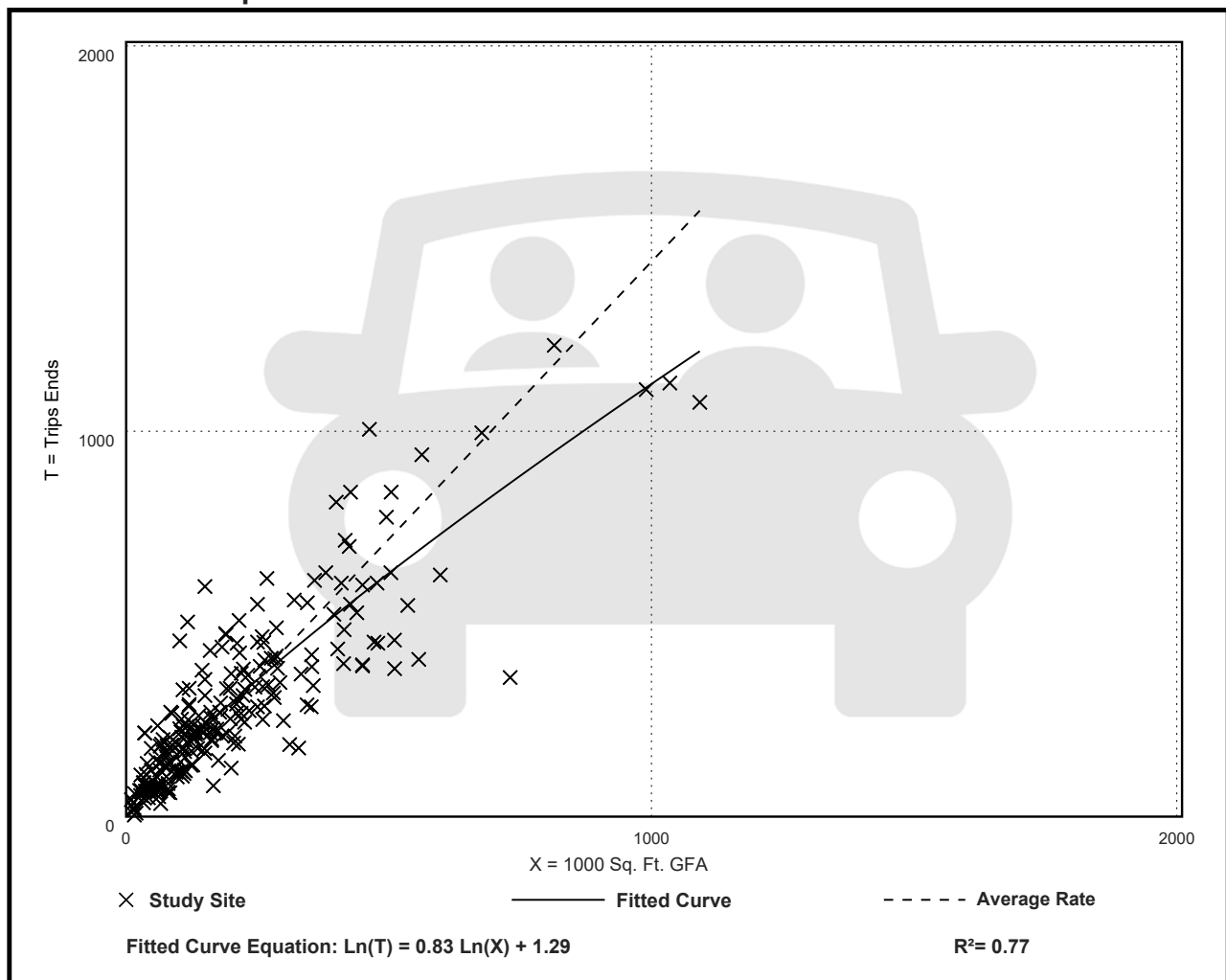
Avg. 1000 Sq. Ft. GFA: 199

Directional Distribution: 17% entering, 83% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.44	0.26 - 6.20	0.60

Data Plot and Equation



General Office Building (710)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 3

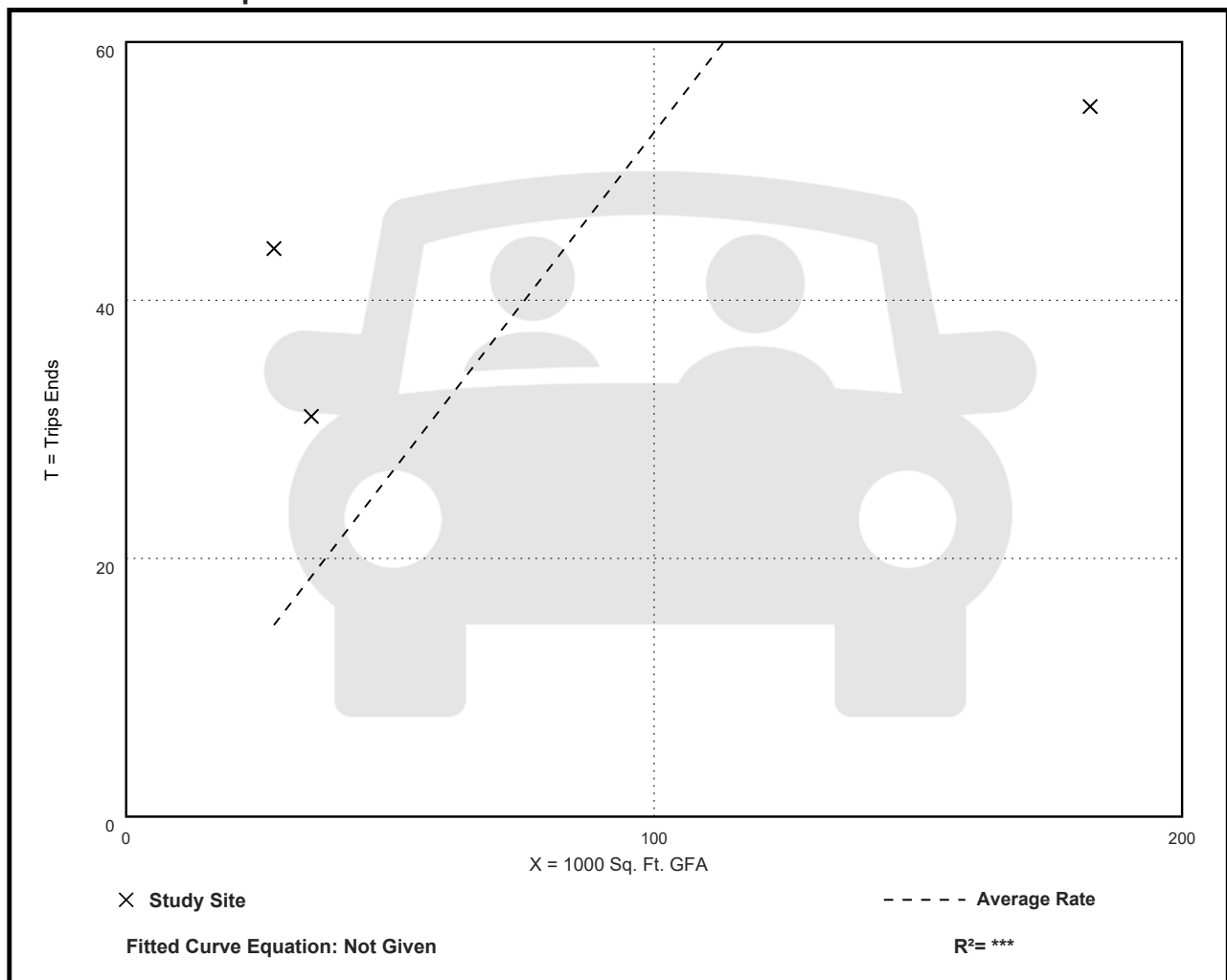
Avg. 1000 Sq. Ft. GFA: 82

Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.53	0.30 - 1.57	0.52

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 4

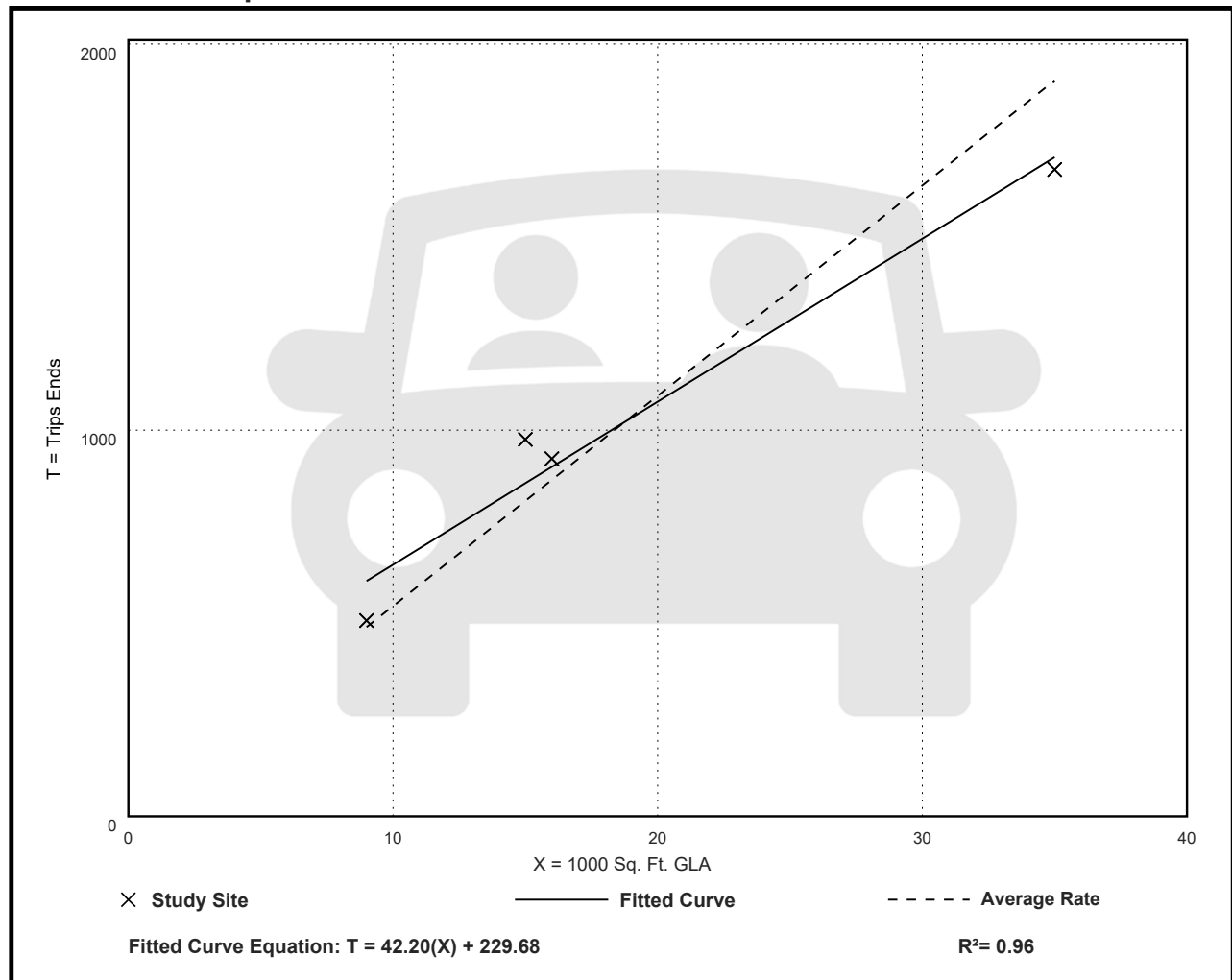
Avg. 1000 Sq. Ft. GLA: 19

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
54.45	47.86 - 65.07	7.81

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 5

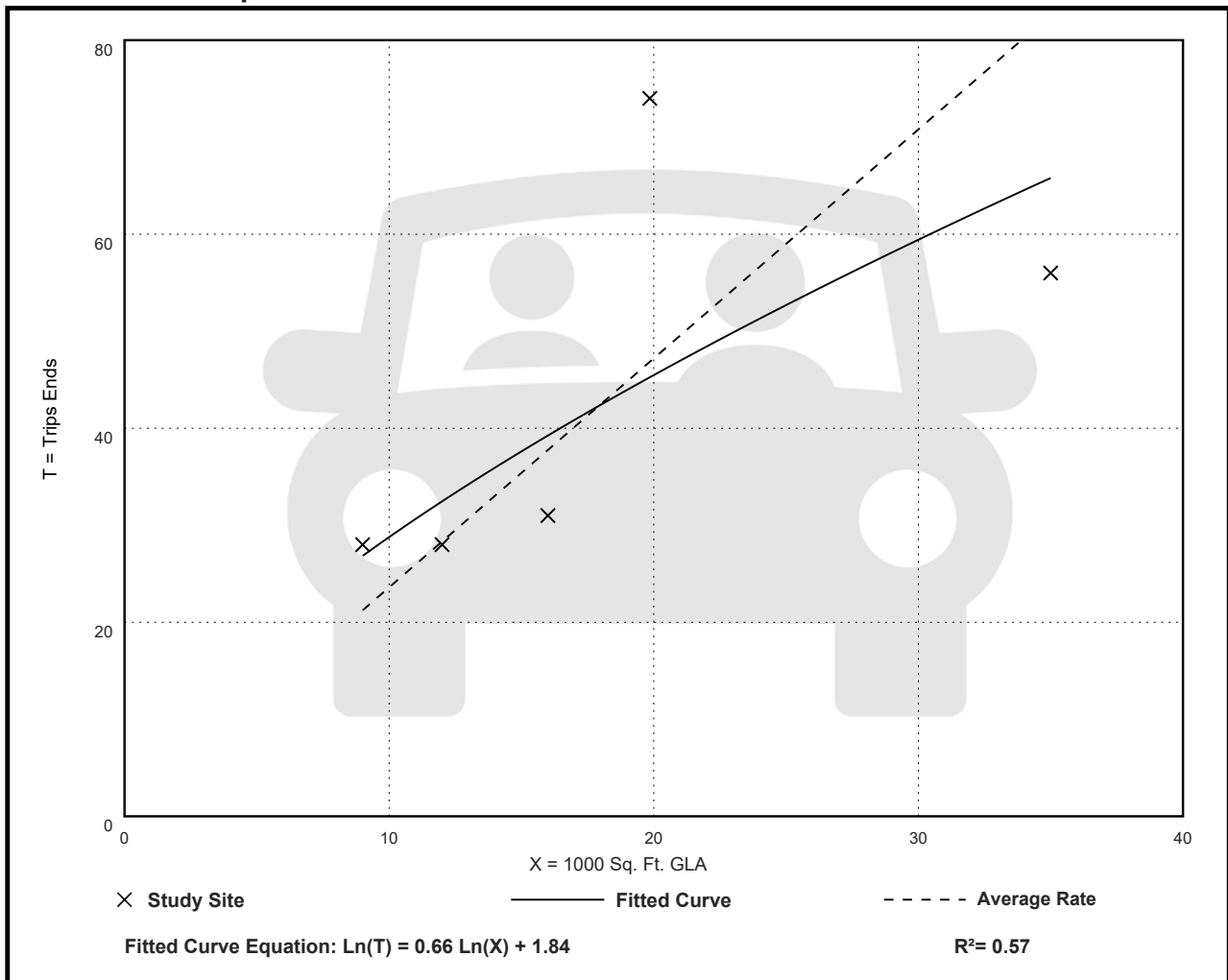
Avg. 1000 Sq. Ft. GLA: 18

Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 25

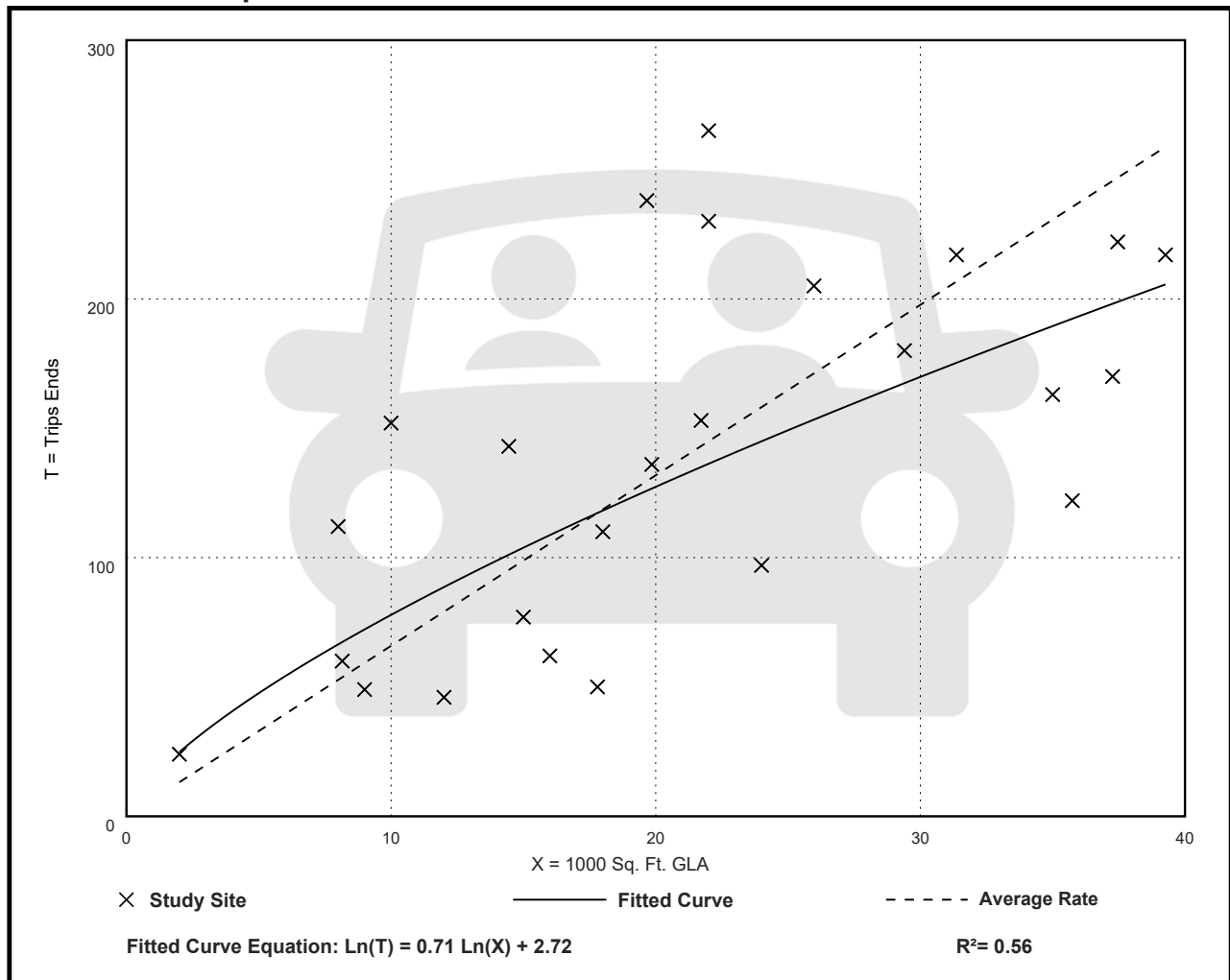
Avg. 1000 Sq. Ft. GLA: 21

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 12

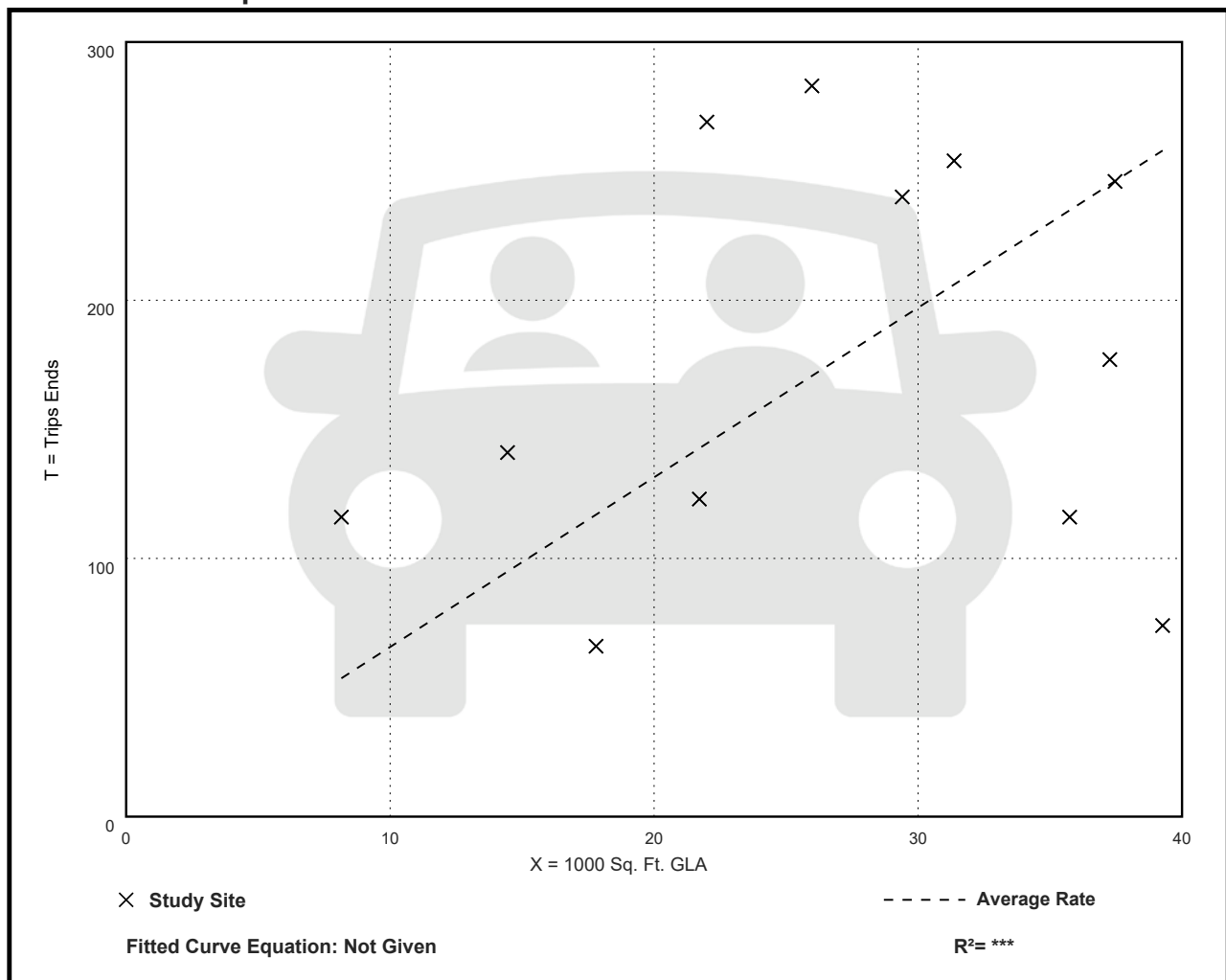
Avg. 1000 Sq. Ft. GLA: 27

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.57	1.88 - 14.23	3.45

Data Plot and Equation



High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 50

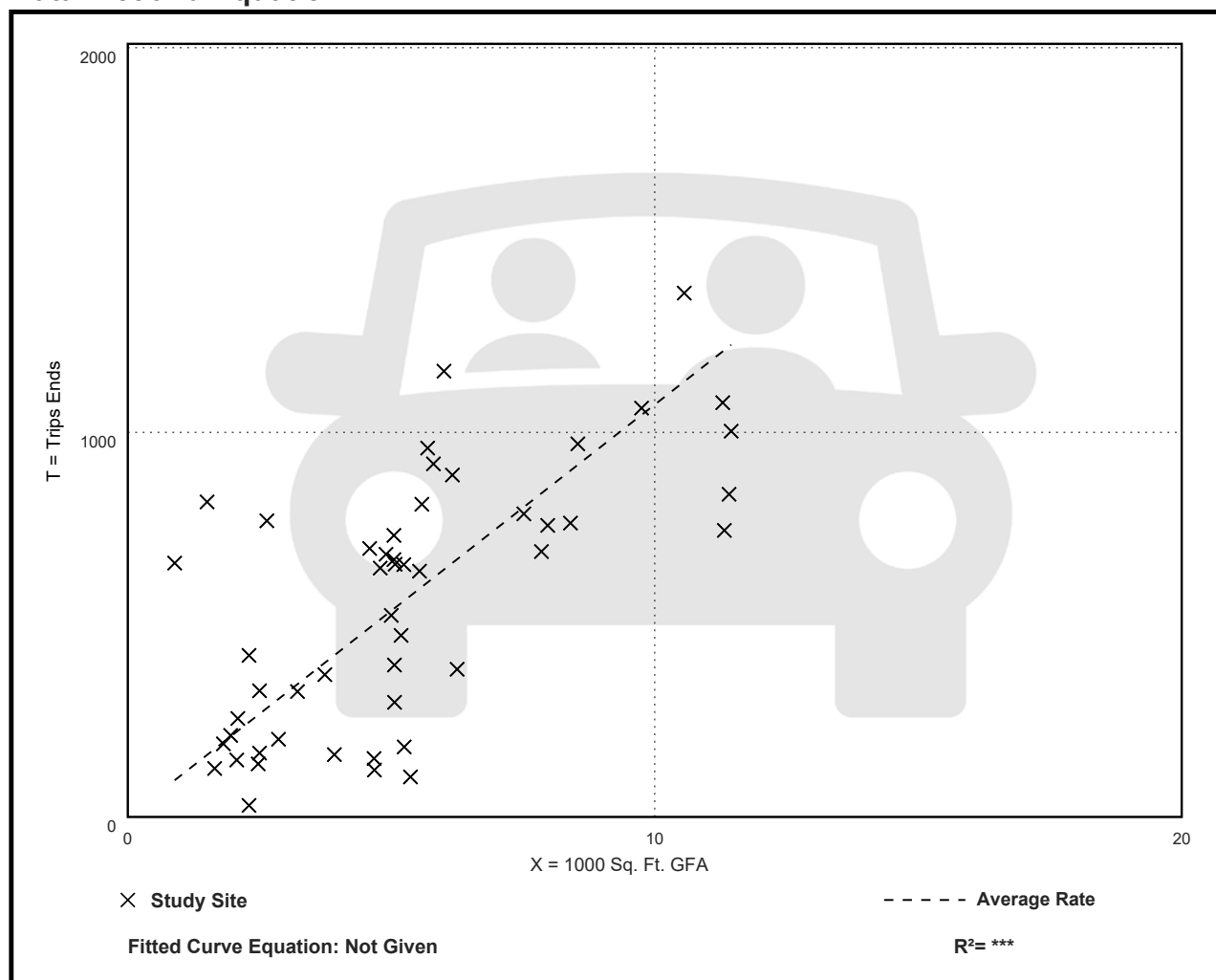
Avg. 1000 Sq. Ft. GFA: 5

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
107.20	13.04 - 742.41	66.72

Data Plot and Equation



High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 37

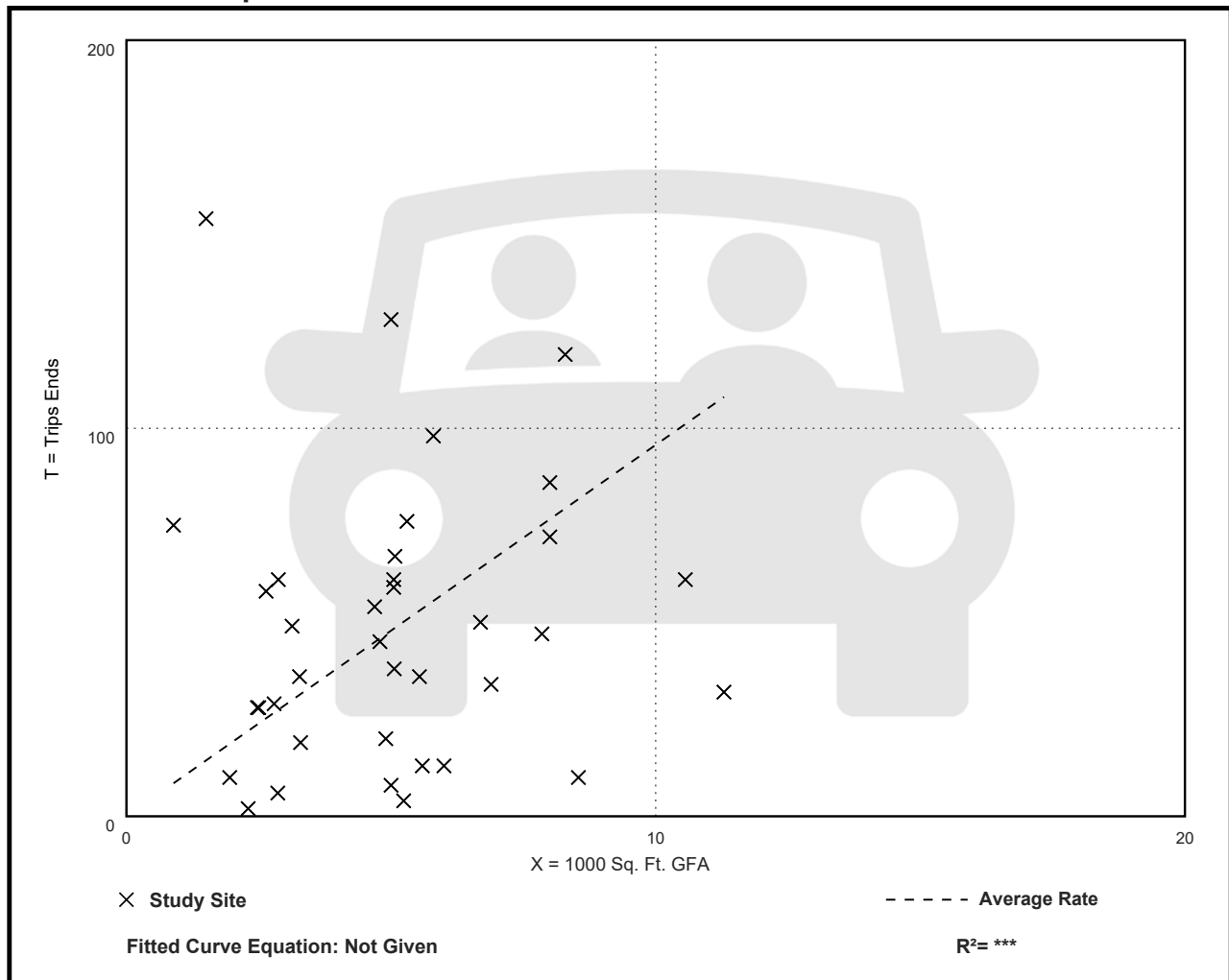
Avg. 1000 Sq. Ft. GFA: 5

Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.57	0.76 - 102.39	11.61

Data Plot and Equation



High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 104

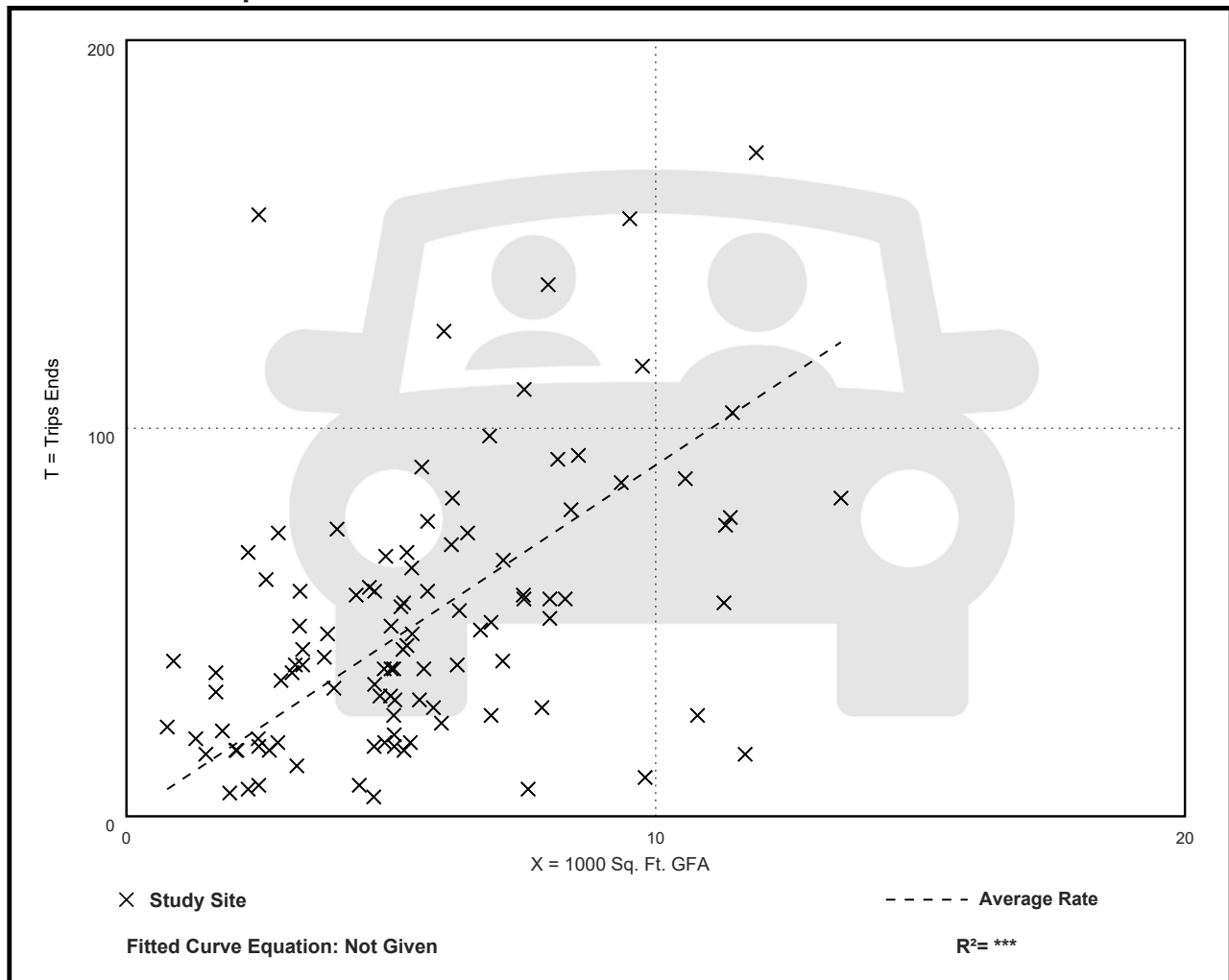
Avg. 1000 Sq. Ft. GFA: 6

Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.05	0.92 - 62.00	6.18

Data Plot and Equation



High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 22

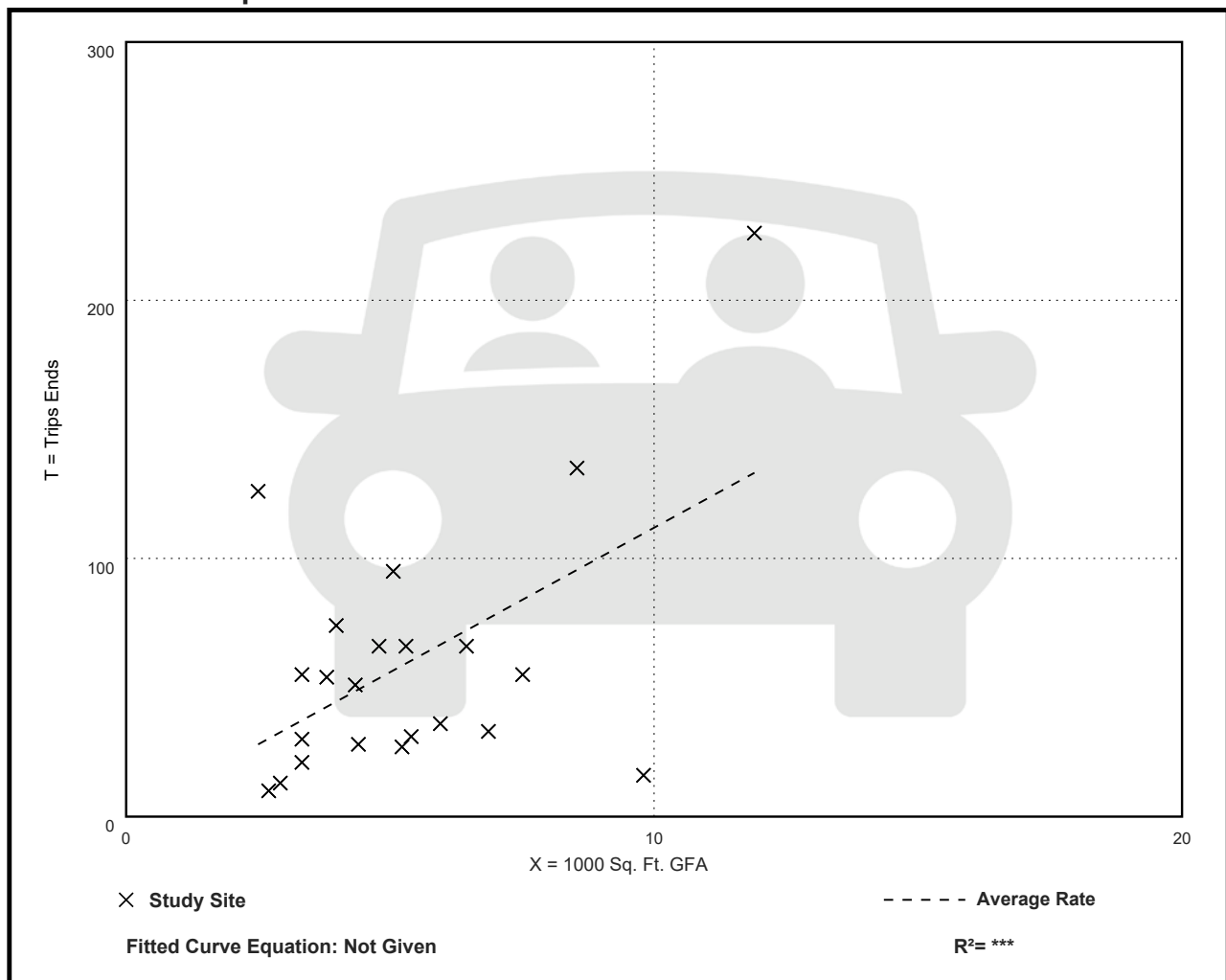
Avg. 1000 Sq. Ft. GFA: 5

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.19	1.63 - 50.40	8.30

Data Plot and Equation



CMAP Projections Letter



Chicago Metropolitan
Agency for Planning

433 West Van Buren Street, Suite 450
Chicago, IL 60607
cmap.illinois.gov | 312-454-0400

July 21, 2024

Ryan May
Project Coordinator
Kenig, Lindgren, O'Hara and Aboona, Inc.
9575 West Higgins Road
Suite 400
Rosemont, IL 60018

Subject: LaGrange Road - 142nd Street - 143rd Street -Ravinia Avenue
IDOT

Dear Ms. May:

In response to a request made on your behalf and dated July 20, 2024, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current ADT	Year 2050 ADT
LaGrange Rd north of 142nd St	35,700	41,400
LaGrange Rd south of 142nd St	38,600	44,700
143rd St, at LaGrange Rd	14,100	21,000
Ravinia Ave, at 143rd St	3,950	4,850

Traffic projections are developed using existing ADT data provided in the request letter and the results from the December 2023 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 or email me at jrodriguez@cmap.illinois.gov

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

cc: Rios (IDOT)
2024_TrafficForecasts\OrlandPark\ck-75-24\ck-75-24.docx

Level of Service Criteria

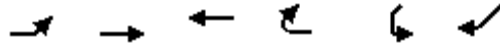
LEVEL OF SERVICE CRITERIA

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: <i>Highway Capacity Manual</i> , 6 th Edition.		

Capacity Analysis Summary Sheets

Existing Weekday Morning Peak Hour Conditions

Lanes, Volumes, Timings
2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Lane Configurations									
Traffic Volume (vph)	362	381	378	81	79	282			
Future Volume (vph)	362	381	378	81	79	282			
Ideal Flow (vphpl)	1900	2000	2000	1900	1900	1900			
Storage Length (ft)	0			0	250	0			
Storage Lanes	1			1	1	1			
Taper Length (ft)	170				185				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt				0.850		0.850			
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1905	1887	1615	1805	1524			
Flt Permitted	0.363				0.950				
Satd. Flow (perm)	676	1905	1887	1615	1805	1524			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				86		300			
Link Speed (mph)		30	30		35				
Link Distance (ft)		121	705		549				
Travel Time (s)		2.8	16.0		10.7				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Heavy Vehicles (%)	2%	5%	6%	0%	0%	6%			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	385	405	402	86	84	300			
Turn Type	custom	NA	NA	pm+ov	Prot	Prot			
Protected Phases	4 5	2 4	6	10	10	10	2	4	5
Permitted Phases	2			6					
Detector Phase	4 5	2 4	6	10	10	10			
Switch Phase									
Minimum Initial (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			22.0	22.0	22.0	22.0	22.0	22.0	12.0
Total Split (s)			60.0	36.0	36.0	36.0	72.0	22.0	12.0
Total Split (%)			46.2%	27.7%	27.7%	27.7%	55%	17%	9%
Yellow Time (s)			4.5	4.5	4.5	4.5	4.5	4.5	3.5
All-Red Time (s)			1.5	1.5	1.5	1.5	1.5	1.5	0.0
Lost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			6.0	6.0	6.0	6.0			
Lead/Lag			Lag						Lead
Lead-Lag Optimize?			Yes						Yes
Recall Mode			None	None	None	None	None	None	None
Act Effect Green (s)	79.8	79.8	47.0	71.6	18.4	18.4			
Actuated g/C Ratio	0.72	0.72	0.42	0.65	0.17	0.17			
v/c Ratio	0.51	0.29	0.50	0.08	0.28	0.60			
Control Delay	16.0	1.3	26.4	1.5	44.6	9.9			
Queue Delay	6.7	0.4	0.0	0.0	0.0	0.5			
Total Delay	22.7	1.7	26.4	1.5	44.6	10.5			
LOS	C	A	C	A	D	B			
Approach Delay		11.9	22.0		17.9				
Approach LOS		B	C		B				
Queue Length 50th (ft)	78	9	199	0	57	0			
Queue Length 95th (ft)	169	11	347	16	105	76			

Lanes, Volumes, Timings

2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Internal Link Dist (ft)		41	625		469				
Turn Bay Length (ft)					250				
Base Capacity (vph)	751	1512	949	1247	502	640			
Starvation Cap Reductn	310	627	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0	101			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	0.87	0.46	0.42	0.07	0.17	0.56			

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 110.6

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 16.3

Intersection LOS: B

Intersection Capacity Utilization 58.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: 143rd St & Southwest Hwy (IL 7)

#1 #2 → Ø2	#1 #2 ↙ ↘ Ø10	#1 #2 ↙ ↘ Ø4
72 s	36 s	22 s
#1 #2 ↙ ↘ Ø5		
12 s	60 s	

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	5	27	41	8	19	32	1364	62	30	1235	49
Future Volume (vph)	26	5	27	41	8	19	32	1364	62	30	1235	49
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	0		0	0		0	160		155	300		300
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	0			25			240			150		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor			0.99	1.00			1.00					0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	2000	1615	1719	2000	1615	3502	5250	1615	3400	5250	1615
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	1900	2000	1594	1808	2000	1615	3499	5250	1615	3400	5250	1595
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			59			59			77			77
Link Speed (mph)		20			20			35			35	
Link Distance (ft)		360			632			755			800	
Travel Time (s)		12.3			21.5			14.7			15.6	
Confl. Peds. (#/hr)			1	1			1					1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%	0%	4%	0%	3%	4%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	6	31	47	9	22	36	1550	70	34	1403	56
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	8.5	16.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5
Total Split (s)	13.0	42.0	16.0	14.0	43.0	16.0	16.0	48.0	14.0	16.0	48.0	13.0
Total Split (%)	10.8%	35.0%	13.3%	11.7%	35.8%	13.3%	13.3%	40.0%	11.7%	13.3%	40.0%	10.8%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
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	0.0
Total Lost Time (s)	3.5	6.0	5.5	3.5	6.0	5.5	5.5	6.0	3.5	5.5	6.0	3.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	10.6	10.0	8.8	11.2	10.3	10.1	6.7	91.9	104.0	6.7	91.9	100.2
Actuated g/C Ratio	0.09	0.08	0.07	0.09	0.09	0.08	0.06	0.77	0.87	0.06	0.77	0.84
v/c Ratio	0.19	0.04	0.18	0.29	0.05	0.12	0.18	0.39	0.05	0.18	0.35	0.04
Control Delay	48.6	51.2	4.9	51.6	50.9	1.2	54.2	4.5	0.4	55.9	7.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	51.2	4.9	51.6	50.9	1.2	54.2	4.5	0.4	55.9	7.0	0.7
LOS	D	D	A	D	D	A	D	A	A	E	A	A
Approach Delay		28.6			37.3			5.4			7.9	
Approach LOS		C			D			A			A	

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	22	4	0	35	7	0	14	91	0	13	118	0
Queue Length 95th (ft)	44	18	8	62	23	0	m28	154	m1	29	239	6
Internal Link Dist (ft)	280			552			675			720		
Turn Bay Length (ft)							160	155		300	300	
Base Capacity (vph)	183	600	222	192	616	240	306	4021	1424	297	4019	1354
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.01	0.14	0.24	0.01	0.09	0.12	0.39	0.05	0.11	0.35	0.04

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 105 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.39

Intersection Signal Delay: 7.7

Intersection LOS: A

Intersection Capacity Utilization 44.6%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 3: La Grange Road & 142nd St/Mall Access

				
Ø1	Ø2 (R)	Ø3	Ø4	
16 s	48 s	14 s	42 s	
				
Ø5	Ø6 (R)	Ø7	Ø8	
16 s	48 s	13 s	43 s	

Lanes, Volumes, Timings
4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	288	78	175	333	325	93	1019	95	149	1062	92
Future Volume (vph)	114	288	78	175	333	325	93	1019	95	149	1062	92
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		390	255		425	170		0	190		0
Storage Lanes	1		1	2		1	2		0	2		0
Taper Length (ft)	90			210			295			230		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00					0.99	1.00				1.00	
Frt			0.850			0.850		0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3725	1568	3400	3762	1599	3467	4880	0	3400	4926	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3460	3725	1568	3400	3762	1578	3465	4880	0	3400	4926	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			82		15			15	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		650			1235			855			755	
Travel Time (s)		12.7			24.1			16.7			14.7	
Confl. Peds. (#/hr)	1					1	1					1
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%	2%	3%	3%	1%	1%	1%	5%	4%	3%	4%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	297	80	180	343	335	96	1149	0	154	1190	0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Detector Phase	7	4	5	3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	12.0	3.0	3.0	12.0	3.0	3.0	15.0		3.0	15.0	
Minimum Split (s)	8.5	18.5	8.5	8.5	18.5	8.5	8.5	21.5		8.5	21.5	
Total Split (s)	17.0	29.0	16.0	17.0	29.0	19.0	16.0	55.0		19.0	58.0	
Total Split (%)	14.2%	24.2%	13.3%	14.2%	24.2%	15.8%	13.3%	45.8%		15.8%	48.3%	
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5	5.5	5.5	6.5	5.5	5.5	6.5		5.5	6.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effect Green (s)	9.3	17.8	32.9	10.6	19.1	30.8	8.6	56.9		10.7	59.0	
Actuated g/C Ratio	0.08	0.15	0.27	0.09	0.16	0.26	0.07	0.47		0.09	0.49	
v/c Ratio	0.44	0.54	0.16	0.60	0.57	0.72	0.39	0.50		0.51	0.49	
Control Delay	48.8	47.1	9.8	61.1	50.3	35.5	57.4	23.3		62.3	16.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	48.8	47.1	9.8	61.1	50.3	35.5	57.4	23.3		62.3	16.3	
LOS	D	D	A	E	D	D	E	C		E	B	
Approach Delay		41.5			46.8			26.0			21.6	
Approach LOS		D			D			C			C	

Lanes, Volumes, Timings
4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	46	117	5	69	130	167	37	218		46	226	
Queue Length 95th (ft)	53	158	50	108	174	250	64	294		94	298	
Internal Link Dist (ft)		570			1155			775			675	
Turn Bay Length (ft)	225		390	255		425	170			190		
Base Capacity (vph)	332	698	512	325	705	502	303	2320		382	2429	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.36	0.43	0.16	0.55	0.49	0.67	0.32	0.50		0.40	0.49	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 100 (83%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 31.0

Intersection LOS: C

Intersection Capacity Utilization 61.0%

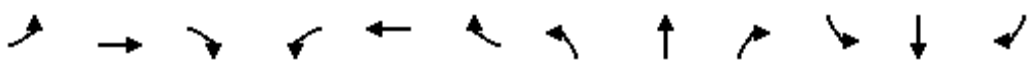
ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: 143rd St & La Grange Road

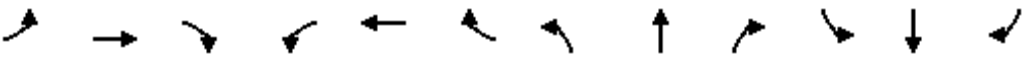
 Ø1	 Ø2 (R)	 Ø3	 Ø4
19 s	55 s	17 s	29 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
16 s	58 s	17 s	29 s

Lanes, Volumes, Timings
5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	394	43	73	338	11	25	17	67	22	13	8
Future Volume (vph)	56	394	43	73	338	11	25	17	67	22	13	8
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	170		0	185		0	85		0	0		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	125			70			130			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00					0.99
Frt		0.985				0.850		0.881				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3493	0	1805	3689	1615	1736	1674	0	1805	2000	1615
Flt Permitted	0.531			0.469			0.748			0.697		
Satd. Flow (perm)	989	3493	0	891	3689	1615	1365	1674	0	1324	2000	1593
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		12				123						
Link Speed (mph)		35			35			20			20	
Link Distance (ft)		445			650			420			281	
Travel Time (s)		8.7			12.7			14.3			9.6	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	0%	0%	3%	0%	4%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	480	0	80	371	12	27	93	0	24	14	9
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0	15.0	3.0	8.0		3.0	8.0	8.0
Minimum Split (s)	6.5	21.0		6.5	21.0	21.0	6.5	21.0		6.5	14.0	14.0
Total Split (s)	13.0	59.0		18.0	64.0	64.0	18.0	30.0		13.0	25.0	25.0
Total Split (%)	10.8%	49.2%		15.0%	53.3%	53.3%	15.0%	25.0%		10.8%	20.8%	20.8%
Yellow Time (s)	3.5	4.0		3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	0.0	2.0		0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	6.0	3.5	6.0		3.5	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	86.8	78.7		87.4	79.0	79.0	21.0	13.9		20.9	13.8	13.8
Actuated g/C Ratio	0.72	0.66		0.73	0.66	0.66	0.18	0.12		0.17	0.12	0.12
v/c Ratio	0.08	0.21		0.11	0.15	0.01	0.10	0.48		0.09	0.06	0.05
Control Delay	5.8	10.1		5.4	10.6	0.0	36.1	57.2		35.8	45.7	45.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	5.8	10.1		5.4	10.6	0.0	36.1	57.2		35.8	45.7	45.5
LOS	A	B		A	B	A	D	E		D	D	D
Approach Delay		9.6			9.4			52.5			40.6	
Approach LOS		A			A			D			D	

Lanes, Volumes, Timings

5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	12	80		15	60	0	17	68		15	10	6
Queue Length 95th (ft)	31	129		31	73	m0	39	119		35	29	22
Internal Link Dist (ft)		365			570			340			201	
Turn Bay Length (ft)	170			185			85					
Base Capacity (vph)	793	2295		778	2428	1105	313	334		280	316	252
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.08	0.21		0.10	0.15	0.01	0.09	0.28		0.09	0.04	0.04

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 49 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 15.2

Intersection LOS: B

Intersection Capacity Utilization 37.9%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 5: Ravina Ave /Ravina Ave & 143rd St

			
18 s	59 s	18 s	25 s
			
13 s	64 s	13 s	30 s

HCM 6th TWSC
6: 143rd St & Main St

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	493	365	6	0	7
Future Vol, veh/h	0	493	365	6	0	7
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	100	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	2	3	0	0	0
Mvmt Flow	0	554	410	7	0	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 206
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.9
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.3
Pot Cap-1 Maneuver	0	-	- - 0 807
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 806
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	806
HCM Lane V/C Ratio	-	-	-	0.01
HCM Control Delay (s)	-	-	-	9.5
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC
7: Jefferson Ave & 142nd St

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	26	0	64	17	8	1	8	30	2	0	0
Future Vol, veh/h	6	26	0	64	17	8	1	8	30	2	0	0
Conflicting Peds, #/hr	6	0	3	3	0	6	5	0	0	0	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	38	0	94	25	12	1	12	44	3	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	43	0	0	41	0	0	283	290	41	303	278	36
Stage 1	-	-	-	-	-	-	59	59	-	219	219	-
Stage 2	-	-	-	-	-	-	224	231	-	84	59	-
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	1579	-	-	1581	-	-	673	624	1036	653	633	1042
Stage 1	-	-	-	-	-	-	958	850	-	788	726	-
Stage 2	-	-	-	-	-	-	783	717	-	929	850	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1570	-	-	1576	-	-	634	577	1033	581	586	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	634	577	-	581	586	-
Stage 1	-	-	-	-	-	-	949	842	-	779	677	-
Stage 2	-	-	-	-	-	-	732	669	-	872	842	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			5.3			9.4			11.2		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	877	1570	-	-	1576	-	-	581				
HCM Lane V/C Ratio	0.065	0.006	-	-	0.06	-	-	0.005				
HCM Control Delay (s)	9.4	7.3	0	-	7.4	0	-	11.2				
HCM Lane LOS	A	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.2	-	-	0				

HCM 6th TWSC
9: Ravina Ave & Crescent Park Cr

Intersection						
Int Delay, s/veh	4.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	13	12	0	0	0	31
Future Vol, veh/h	13	12	0	0	0	31
Conflicting Peds, #/hr	0	2	2	0	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	49	49	49	49	49	49
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	27	24	0	0	0	63
Major/Minor	Major1		Minor1			
Conflicting Flow All	0	0			-	41
Stage 1	-	-			-	-
Stage 2	-	-			-	-
Critical Hdwy	-	-			-	6.2
Critical Hdwy Stg 1	-	-			-	-
Critical Hdwy Stg 2	-	-			-	-
Follow-up Hdwy	-	-			-	3.3
Pot Cap-1 Maneuver	-	-			0	1036
Stage 1	-	-			0	-
Stage 2	-	-			0	-
Platoon blocked, %	-	-				
Mov Cap-1 Maneuver	-	-			-	1034
Mov Cap-2 Maneuver	-	-			-	-
Stage 1	-	-			-	-
Stage 2	-	-			-	-
Approach	EB		NB			
HCM Control Delay, s	0		8.7			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR			
Capacity (veh/h)	1034	-	-			
HCM Lane V/C Ratio	0.061	-	-			
HCM Control Delay (s)	8.7	-	-			
HCM Lane LOS	A	-	-			
HCM 95th %tile Q(veh)	0.2	-	-			

HCM 6th TWSC
10: Ravina Ave & Parking Access/B St

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	8	30	1	2	0	11	27	46	0	12	0
Future Vol, veh/h	4	8	30	1	2	0	11	27	46	0	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	7	0	0	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	2	0	0	0
Mvmt Flow	5	11	40	1	3	0	15	36	61	0	16	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	121	150	23	139	120	67	23	0	0	97	0	0
Stage 1	23	23	-	97	97	-	-	-	-	-	-	-
Stage 2	98	127	-	42	23	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	859	745	1060	836	774	1002	1605	-	-	1509	-	-
Stage 1	1000	880	-	914	819	-	-	-	-	-	-	-
Stage 2	913	795	-	978	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	844	732	1053	789	761	1002	1594	-	-	1509	-	-
Mov Cap-2 Maneuver	844	732	-	789	761	-	-	-	-	-	-	-
Stage 1	983	874	-	905	811	-	-	-	-	-	-	-
Stage 2	901	787	-	929	874	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9		9.7		1		0					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1594	-	-	951	770	1509	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.059	0.005	-	-	-				
HCM Control Delay (s)	7.3	0	-	9	9.7	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-				

Capacity Analysis Summary Sheets

Existing Weekday Evening Peak Hour Conditions

Lanes, Volumes, Timings

2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Lane Configurations									
Traffic Volume (vph)	269	538	462	81	216	390			
Future Volume (vph)	269	538	462	81	216	390			
Ideal Flow (vphpl)	1900	2000	2000	1900	1900	1900			
Storage Length (ft)	0			0	250	0			
Storage Lanes	1			1	1	1			
Taper Length (ft)	170				185				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt				0.850		0.850			
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1961	1980	1583	1805	1599			
Flt Permitted	0.328				0.950				
Satd. Flow (perm)	611	1961	1980	1583	1805	1599			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				86		415			
Link Speed (mph)		30	30		35				
Link Distance (ft)		121	705		549				
Travel Time (s)		2.8	16.0		10.7				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Heavy Vehicles (%)	2%	2%	1%	2%	0%	1%			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	286	572	491	86	230	415			
Turn Type	custom	NA	NA	pm+ov	Prot	Prot			
Protected Phases	4.5	2.4	6	10	10	10	2	4	5
Permitted Phases	2			6					
Detector Phase	4.5	2.4	6	10	10	10			
Switch Phase									
Minimum Initial (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			22.0	22.0	22.0	22.0	22.0	22.0	12.0
Total Split (s)			83.0	33.0	33.0	33.0	95.0	22.0	12.0
Total Split (%)			55.3%	22.0%	22.0%	22.0%	63%	15%	8%
Yellow Time (s)			4.5	4.5	4.5	4.5	4.5	4.5	3.5
All-Red Time (s)			1.5	1.5	1.5	1.5	1.5	1.5	0.0
Lost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			6.0	6.0	6.0	6.0			
Lead/Lag			Lag						Lead
Lead-Lag Optimize?			Yes						Yes
Recall Mode			None	None	None	None	None	None	None
Act Effct Green (s)	102.5	102.5	70.0	101.6	25.6	25.6			
Actuated g/C Ratio	0.73	0.73	0.50	0.72	0.18	0.18			
v/c Ratio	0.43	0.40	0.50	0.07	0.70	0.66			
Control Delay	11.1	2.6	25.1	1.1	67.9	10.2			
Queue Delay	2.6	0.2	0.0	0.0	0.0	1.4			
Total Delay	13.7	2.8	25.1	1.1	67.9	11.6			
LOS	B	A	C	A	E	B			
Approach Delay		6.4	21.5		31.7				
Approach LOS		A	C		C				
Queue Length 50th (ft)	67	12	295	0	211	0			
Queue Length 95th (ft)	117	15	396	14	313	102			

Lanes, Volumes, Timings

2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Internal Link Dist (ft)		41	625		469				
Turn Bay Length (ft)					250				
Base Capacity (vph)	681	1572	1109	1190	352	646			
Starvation Cap Reductn	278	312	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0	95			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	0.71	0.45	0.44	0.07	0.65	0.75			

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 140.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 18.5

Intersection LOS: B

Intersection Capacity Utilization 65.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: 143rd St & Southwest Hwy (IL 7)

#1 #2 → Ø2	#1 #2 ↙ ↘ Ø10	#1 #2 ↙ ↘ Ø4
95 s	33 s	22 s
#1 #2 ↙ ↘ Ø6		
12 s 83 s		

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	10	62	95	12	68	16	1781	110	85	1695	29
Future Volume (vph)	41	10	62	95	12	68	16	1781	110	85	1695	29
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	0		0	0		0	160		155	300		300
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	0			25			240			150		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99			0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	2000	1615	1805	2000	1615	3502	5353	1599	3502	5406	1615
Flt Permitted				0.727			0.950			0.950		
Satd. Flow (perm)	1895	2000	1589	1376	2000	1591	3502	5353	1579	3500	5406	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66			72			95			71
Link Speed (mph)		20			20			35			35	
Link Distance (ft)		360			632			755			800	
Travel Time (s)		12.3			21.5			14.7			15.6	
Confl. Peds. (#/hr)	2		3	3		2			1	1		
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	1%	0%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	11	66	101	13	72	17	1895	117	90	1803	31
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	8.5	16.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5
Total Split (s)	16.0	22.0	17.0	16.0	22.0	17.0	17.0	75.0	16.0	17.0	75.0	16.0
Total Split (%)	12.3%	16.9%	13.1%	12.3%	16.9%	13.1%	13.1%	57.7%	12.3%	13.1%	57.7%	12.3%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
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	0.0
Total Lost Time (s)	3.5	6.0	5.5	3.5	6.0	5.5	5.5	6.0	3.5	5.5	6.0	3.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effect Green (s)	12.3	10.0	8.4	17.7	10.4	15.4	6.3	88.3	105.6	8.7	92.9	108.7
Actuated g/C Ratio	0.09	0.08	0.06	0.14	0.08	0.12	0.05	0.68	0.81	0.07	0.71	0.84
v/c Ratio	0.25	0.07	0.40	0.43	0.08	0.28	0.10	0.52	0.09	0.38	0.47	0.02
Control Delay	53.8	57.0	18.6	54.8	56.3	12.0	80.0	3.4	0.1	62.4	9.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	53.8	57.0	18.6	54.8	56.3	12.0	80.0	3.6	0.1	62.4	9.8	0.0
LOS	D	E	B	D	E	B	E	A	A	E	A	A
Approach Delay		34.9			38.3			4.1			12.1	

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			D			A			B		
Queue Length 50th (ft)	35	9	0	83	10	0	7	47	0	38	190	0
Queue Length 95th (ft)	63	29	41	124	32	41	m10	77	m0	65	347	0
Internal Link Dist (ft)	280			552			675			720		
Turn Bay Length (ft)							160	155			300	300
Base Capacity (vph)	209	246	228	240	246	286	309	3635	1306	309	3861	1401
Starvation Cap Reductn	0	0	0	0	0	0	0	771	0	0	0	0
Spillback Cap Reductn	0	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	0
Reduced v/c Ratio	0.21	0.04	0.29	0.42	0.05	0.25	0.06	0.66	0.09	0.29	0.47	0.02

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 44 (34%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 10.1

Intersection LOS: B

Intersection Capacity Utilization 58.3%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 3: La Grange Road & 142nd St/Mall Access

														
Ø1	Ø2 (R)	Ø3	Ø4	Ø5	Ø6 (R)	Ø7	Ø8							
17 s	75 s	16 s	22 s	17 s	75 s	16 s	22 s							

Lanes, Volumes, Timings
4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (vph)	196	483	141	284	397	237	88	1474	175	267	1452	133
Future Volume (vph)	196	483	141	284	397	237	88	1474	175	267	1452	133
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		390	255		425	170		0	190		0
Storage Lanes	1		1	2		1	2		0	2		0
Taper Length (ft)	90			210			295			230		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00		0.99	1.00		0.99		1.00		1.00		
Frt			0.850			0.850		0.984			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3762	1615	3467	3762	1599	3502	5046	0	3502	5073	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3461	3762	1593	3457	3762	1578	3502	5046	0	3501	5073	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			76			18			14
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		650			1235			855			755	
Travel Time (s)		12.7			24.1			16.7			14.7	
Confl. Peds. (#/hr)	1		2	2		1			1	1		
Confl. Bikes (#/hr)									1			
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 (%)	1%	1%	0%	1%	1%	1%	0%	1%	1%	0%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	206	508	148	299	418	249	93	1736	0	281	1668	0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Detector Phase	7	4	5	3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	12.0	3.0	3.0	12.0	3.0	3.0	15.0		3.0	15.0	
Minimum Split (s)	8.5	18.5	8.5	8.5	18.5	8.5	8.5	21.5		8.5	21.5	
Total Split (s)	19.0	33.0	19.0	19.0	33.0	23.0	19.0	55.0		23.0	59.0	
Total Split (%)	14.6%	25.4%	14.6%	14.6%	25.4%	17.7%	14.6%	42.3%		17.7%	45.4%	
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5	5.5	5.5	6.5	5.5	5.5	6.5		5.5	6.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effect Green (s)	12.2	25.1	34.9	13.3	26.3	42.5	8.8	52.3		15.2	58.7	
Actuated g/C Ratio	0.09	0.19	0.27	0.10	0.20	0.33	0.07	0.40		0.12	0.45	
v/c Ratio	0.64	0.70	0.31	0.84	0.55	0.44	0.39	0.85		0.69	0.73	
Control Delay	66.7	58.0	23.2	78.1	49.6	22.8	62.4	40.5		66.7	27.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	66.7	58.0	23.2	78.1	49.6	22.8	62.4	40.5		66.7	27.7	
LOS	E	E	C	E	D	C	E	D		E	C	
Approach Delay		54.1			51.5			41.6			33.3	

Lanes, Volumes, Timings 4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	D			D			D			C		
Queue Length 50th (ft)	81	235	24	129	166	103	39	490		123	260	
Queue Length 95th (ft)	134	261	119	#202	222	173	67	572		172	352	
Internal Link Dist (ft)	570			1155			775			675		
Turn Bay Length (ft)	225		390	255		425	170			190		
Base Capacity (vph)	360	766	540	360	771	596	363	2041		471	2299	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.57	0.66	0.27	0.83	0.54	0.42	0.26	0.85		0.60	0.73	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 22 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 42.4

Intersection LOS: D

Intersection Capacity Utilization 80.8%

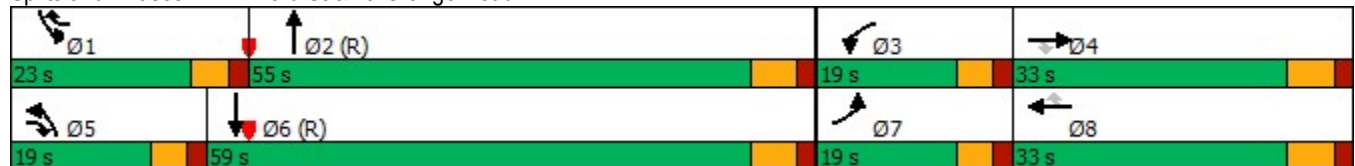
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: 143rd St & La Grange Road



Lanes, Volumes, Timings
5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	577	64	169	501	27	73	15	170	55	12	11
Future Volume (vph)	23	577	64	169	501	27	73	15	170	55	12	11
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	170		0	185		0	85		0	0		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	125			70			130			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00					0.99
Frt		0.985				0.850		0.862				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3524	0	1805	3762	1615	1805	1623	0	1805	2000	1615
Flt Permitted	0.456			0.330			0.623			0.587		
Satd. Flow (perm)	833	3524	0	627	3762	1615	1183	1623	0	1115	2000	1593
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		12				84						
Link Speed (mph)		35			35			20			20	
Link Distance (ft)		445			650			420			281	
Travel Time (s)		8.7			12.7			14.3			9.6	
Confl. Peds. (#/hr)							1					1
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 (%)	4%	1%	0%	0%	1%	0%	0%	0%	1%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	674	0	178	527	28	77	195	0	58	13	12
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0	15.0	3.0	8.0		3.0	8.0	8.0
Minimum Split (s)	6.5	21.0		6.5	21.0	21.0	6.5	21.0		6.5	14.0	14.0
Total Split (s)	13.0	65.0		20.0	72.0	72.0	15.0	32.0		13.0	30.0	30.0
Total Split (%)	10.0%	50.0%		15.4%	55.4%	55.4%	11.5%	24.6%		10.0%	23.1%	23.1%
Yellow Time (s)	3.5	4.0		3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	0.0	2.0		0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	6.0	3.5	6.0		3.5	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	80.6	71.9		88.3	79.8	79.8	33.1	21.8		26.9	18.9	18.9
Actuated g/C Ratio	0.62	0.55		0.68	0.61	0.61	0.25	0.17		0.21	0.15	0.15
v/c Ratio	0.04	0.34		0.34	0.23	0.03	0.21	0.72		0.21	0.04	0.05
Control Delay	9.5	18.1		7.3	9.4	2.7	35.0	65.9		37.5	44.6	44.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	9.5	18.1		7.3	9.4	2.7	35.0	65.9		37.5	44.6	44.7
LOS	A	B		A	A	A	D	E		D	D	D
Approach Delay		17.8			8.7			57.2			39.6	
Approach LOS		B			A			E			D	

Lanes, Volumes, Timings

5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	7	163		18	34	0	48	156		36	9	9
Queue Length 95th (ft)	19	240		m147	212	m11	84	234		67	28	27
Internal Link Dist (ft)		365			570			340			201	
Turn Bay Length (ft)	170			185			85					
Base Capacity (vph)	603	1955		575	2309	1023	384	324		286	373	297
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.04	0.34		0.31	0.23	0.03	0.20	0.60		0.20	0.03	0.04

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 21.1

Intersection LOS: C

Intersection Capacity Utilization 58.6%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 5: Ravina Ave /Ravina Ave & 143rd St

				
Ø1	Ø2 (R)		Ø3	Ø4
20 s	65 s		15 s	30 s
				
Ø5	Ø6 (R)		Ø7	Ø8
13 s	72 s		13 s	32 s

HCM 6th TWSC
6: 143rd St & Main St

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	664	572	13	0	20
Future Vol, veh/h	0	664	572	13	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	100	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	0	692	596	14	0	21

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 298
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.9
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.3
Pot Cap-1 Maneuver	0	-	- - 0 704
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 704
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	704
HCM Lane V/C Ratio	-	-	-	0.03
HCM Control Delay (s)	-	-	-	10.3
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

HCM 6th TWSC
7: Jefferson Ave & 142nd St

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	32	4	42	15	0	1	2	58	23	12	1
Future Vol, veh/h	1	32	4	42	15	0	1	2	58	23	12	1
Conflicting Peds, #/hr	1	0	1	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	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	40	5	52	19	0	1	2	72	28	15	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	20	0	0	46	0	0	177	170	44	206	172	20
Stage 1	-	-	-	-	-	-	46	46	-	124	124	-
Stage 2	-	-	-	-	-	-	131	124	-	82	48	-
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	1609	-	-	1575	-	-	790	727	1032	756	725	1064
Stage 1	-	-	-	-	-	-	973	861	-	885	797	-
Stage 2	-	-	-	-	-	-	877	797	-	931	859	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1607	-	-	1574	-	-	755	701	1031	683	699	1063
Mov Cap-2 Maneuver	-	-	-	-	-	-	755	701	-	683	699	-
Stage 1	-	-	-	-	-	-	971	859	-	883	770	-
Stage 2	-	-	-	-	-	-	831	770	-	863	857	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			5.4			8.9			10.5		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1009	1607	-	-	1574	-	-	695
HCM Lane V/C Ratio	0.075	0.001	-	-	0.033	-	-	0.064
HCM Control Delay (s)	8.9	7.2	0	-	7.4	0	-	10.5
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.2

HCM 6th TWSC
9: Ravina Ave & Crescent Park Cr

Intersection

Int Delay, s/veh 3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	25	30	0	0	0	30
Future Vol, veh/h	25	30	0	0	0	30
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	32	39	0	0	0	39

Major/Minor	Major1	Minor1
Conflicting Flow All	0	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	-
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	-
Pot Cap-1 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	-
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	EB	NB
HCM Control Delay, s	0	8.7
HCM LOS		A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	1001	-	-
HCM Lane V/C Ratio	0.039	-	-
HCM Control Delay (s)	8.7	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-

HCM 6th TWSC
10: Ravina Ave & Parking Access/B St

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	2	0	26	23	8	1	28	27	10	0	29	1
Future Vol, veh/h	2	0	26	23	8	1	28	27	10	0	29	1
Conflicting Peds, #/hr	7	0	1	1	0	7	7	0	0	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	10	0	0	0
Mvmt Flow	2	0	30	27	9	1	33	31	12	0	34	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	157	151	43	154	145	44	42	0	0	43	0	0
Stage 1	42	42	-	103	103	-	-	-	-	-	-	-
Stage 2	115	109	-	51	42	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	814	744	1033	817	750	1032	1580	-	-	1579	-	-
Stage 1	978	864	-	908	814	-	-	-	-	-	-	-
Stage 2	895	809	-	967	864	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	781	722	1025	779	728	1025	1569	-	-	1579	-	-
Mov Cap-2 Maneuver	781	722	-	779	728	-	-	-	-	-	-	-
Stage 1	950	858	-	888	796	-	-	-	-	-	-	-
Stage 2	858	791	-	938	858	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	8.7		9.9		3.2		0					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1569	-	-	1003	771	1579	-	-				
HCM Lane V/C Ratio	0.021	-	-	0.032	0.048	-	-	-				
HCM Control Delay (s)	7.3	0	-	8.7	9.9	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0	-	-				

Capacity Analysis Summary Sheets

Existing Saturday Midday Peak Hour Conditions

Lanes, Volumes, Timings
2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Lane Configurations									
Traffic Volume (vph)	361	374	378	81	79	281			
Future Volume (vph)	361	374	378	81	79	281			
Ideal Flow (vphpl)	1900	2000	2000	1900	1900	1900			
Storage Length (ft)	0			0	250	0			
Storage Lanes	1			1	1	1			
Taper Length (ft)	170				185				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt				0.850		0.850			
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1905	1887	1615	1805	1524			
Flt Permitted	0.364				0.950				
Satd. Flow (perm)	678	1905	1887	1615	1805	1524			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				86		299			
Link Speed (mph)		30	30		35				
Link Distance (ft)		121	705		549				
Travel Time (s)		2.8	16.0		10.7				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Heavy Vehicles (%)	2%	5%	6%	0%	0%	6%			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	384	398	402	86	84	299			
Turn Type	custom	NA	NA	pm+ov	Prot	Prot			
Protected Phases	4.5	2.4	6	10	10	10	2	4	5
Permitted Phases	2			6					
Detector Phase	4.5	2.4	6	10	10	10			
Switch Phase									
Minimum Initial (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			22.0	22.0	22.0	22.0	22.0	22.0	12.0
Total Split (s)			60.0	36.0	36.0	36.0	72.0	22.0	12.0
Total Split (%)			46.2%	27.7%	27.7%	27.7%	55%	17%	9%
Yellow Time (s)			4.5	4.5	4.5	4.5	4.5	4.5	3.5
All-Red Time (s)			1.5	1.5	1.5	1.5	1.5	1.5	0.0
Lost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			6.0	6.0	6.0	6.0			
Lead/Lag			Lag						Lead
Lead-Lag Optimize?			Yes						Yes
Recall Mode			None	None	None	None	None	None	None
Act Effct Green (s)	79.8	79.8	47.0	71.5	18.4	18.4			
Actuated g/C Ratio	0.72	0.72	0.43	0.65	0.17	0.17			
v/c Ratio	0.51	0.29	0.50	0.08	0.28	0.60			
Control Delay	15.8	1.3	26.4	1.5	44.6	10.0			
Queue Delay	6.3	0.4	0.0	0.0	0.0	0.5			
Total Delay	22.2	1.7	26.4	1.5	44.6	10.5			
LOS	C	A	C	A	D	B			
Approach Delay		11.7	22.0		17.9				
Approach LOS		B	C		B				
Queue Length 50th (ft)	78	9	199	0	57	0			
Queue Length 95th (ft)	168	11	347	16	105	76			

Lanes, Volumes, Timings

2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Internal Link Dist (ft)		41	625		469				
Turn Bay Length (ft)					250				
Base Capacity (vph)	752	1512	950	1247	503	640			
Starvation Cap Reductn	309	632	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0	100			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	0.87	0.45	0.42	0.07	0.17	0.55			

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 110.5

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 16.2

Intersection LOS: B

Intersection Capacity Utilization 58.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: 143rd St & Southwest Hwy (IL 7)

72 s		36 s		22 s	
12 s		60 s			

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	6	14	117	8	68	10	1528	146	83	1482	17
Future Volume (vph)	10	6	14	117	8	68	10	1528	146	83	1482	17
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	0		0	0		0	160		155	300		300
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	0			25			240			150		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00					0.99						
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	2000	1615	1805	2000	1615	3502	5406	1615	3502	5406	1615
Flt Permitted				0.727			0.950			0.950		
Satd. Flow (perm)	1897	2000	1615	1381	2000	1594	3502	5406	1615	3502	5406	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			84			69			147			101
Link Speed (mph)		20			20			35				35
Link Distance (ft)		360			632			755				800
Travel Time (s)		12.3			21.5			14.7				15.6
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	6	14	118	8	69	10	1543	147	84	1497	17
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	8.5	16.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5
Total Split (s)	14.0	23.0	18.0	19.0	28.0	18.0	18.0	70.0	19.0	18.0	70.0	14.0
Total Split (%)	10.8%	17.7%	13.8%	14.6%	21.5%	13.8%	13.8%	53.8%	14.6%	13.8%	53.8%	10.8%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
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	0.0
Total Lost Time (s)	3.5	6.0	5.5	3.5	6.0	5.5	5.5	6.0	3.5	5.5	6.0	3.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	12.0	10.0	9.1	17.2	11.7	16.4	5.9	89.3	109.3	8.5	96.3	111.8
Actuated g/C Ratio	0.09	0.08	0.07	0.13	0.09	0.13	0.05	0.69	0.84	0.07	0.74	0.86
v/c Ratio	0.06	0.04	0.07	0.52	0.04	0.26	0.06	0.42	0.11	0.37	0.37	0.01
Control Delay	45.6	56.3	0.7	59.1	52.5	12.1	60.4	4.7	0.1	62.3	7.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	56.3	0.7	59.1	52.5	12.1	60.4	4.7	0.1	62.3	7.7	0.0
LOS	D	E	A	E	D	B	E	A	A	E	A	A
Approach Delay		26.8			42.2			4.6			10.5	
Approach LOS		C			D			A			B	

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	8	5	0	97	6	0	4	75	0	35	150	0
Queue Length 95th (ft)	22	19	0	137	22	37	m7	94	m0	62	284	0
Internal Link Dist (ft)	280			552			675			720		
Turn Bay Length (ft)							160	155			300	300
Base Capacity (vph)	205	261	269	249	338	310	336	3715	1398	336	4005	1434
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.02	0.05	0.47	0.02	0.22	0.03	0.42	0.11	0.25	0.37	0.01

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 63 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 9.6

Intersection LOS: A

Intersection Capacity Utilization 58.7%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 3: La Grange Road & 142nd St/Mall Access

				
Ø1	Ø2 (R)		Ø3	Ø4
18 s	70 s		19 s	23 s
				
Ø5	Ø6 (R)		Ø7	Ø8
18 s	70 s		14 s	28 s

Lanes, Volumes, Timings
4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (vph)	151	333	206	256	326	164	157	1369	205	155	1353	105
Future Volume (vph)	151	333	206	256	326	164	157	1369	205	155	1353	105
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		390	255		425	170		0	190		0
Storage Lanes	1		1	2		1	2		0	2		0
Taper Length (ft)	90			210			295			230		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Frt			0.850			0.850		0.980			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	3762	1615	3467	3800	1599	3502	5039	0	3467	5083	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3502	3762	1615	3467	3800	1599	3502	5039	0	3467	5083	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			76		25			11	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		650			1235			855			755	
Travel Time (s)		12.7			24.1			16.7			14.7	
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 (%)	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	343	212	264	336	169	162	1622	0	160	1503	0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Detector Phase	7	4	5	3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	12.0	3.0	3.0	12.0	3.0	3.0	15.0		3.0	15.0	
Minimum Split (s)	8.5	18.5	8.5	8.5	18.5	8.5	8.5	21.5		8.5	21.5	
Total Split (s)	21.0	32.0	20.0	21.0	32.0	20.0	20.0	57.0		20.0	57.0	
Total Split (%)	16.2%	24.6%	15.4%	16.2%	24.6%	15.4%	15.4%	43.8%		15.4%	43.8%	
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5	5.5	5.5	6.5	5.5	5.5	6.5		5.5	6.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	11.1	20.3	38.1	14.1	23.3	41.1	11.3	60.3		11.3	60.2	
Actuated g/C Ratio	0.09	0.16	0.29	0.11	0.18	0.32	0.09	0.46		0.09	0.46	
v/c Ratio	0.52	0.59	0.40	0.70	0.49	0.30	0.53	0.69		0.53	0.64	
Control Delay	62.9	54.6	24.2	66.2	50.2	18.3	62.9	30.2		78.9	23.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	62.9	54.6	24.2	66.2	50.2	18.3	62.9	30.2		78.9	23.7	
LOS	E	D	C	E	D	B	E	C		E	C	
Approach Delay		47.4			48.7			33.2			29.0	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	65	142	89	111	133	56	68	389		73	364	
Queue Length 95th (ft)	100	185	147	158	179	108	103	503		111	465	

Lanes, Volumes, Timings 4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)	570			1155			775			675		
Turn Bay Length (ft)	225		390	255		425	170			190		
Base Capacity (vph)	417	737	564	413	753	594	390	2349		386	2361	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.37	0.47	0.38	0.64	0.45	0.28	0.42	0.69		0.41	0.64	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 61 (47%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 36.2

Intersection LOS: D

Intersection Capacity Utilization 72.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: 143rd St & La Grange Road

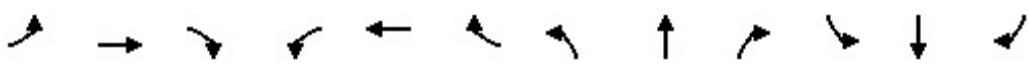
 Ø1	 Ø2 (R)	 Ø3	 Ø4
20 s	57 s	21 s	32 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
20 s	57 s	21 s	32 s

Lanes, Volumes, Timings
5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	556	78	100	431	6	85	5	104	19	3	1
Future Volume (vph)	6	556	78	100	431	6	85	5	104	19	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	170		0	185		0	85		0	0		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	125			70			130			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.97		0.99		1.00		
Frt		0.982				0.850		0.857				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3510	0	1805	3800	1615	1805	1604	0	1805	2000	1615
Flt Permitted	0.495			0.357			0.606					
Satd. Flow (perm)	935	3510	0	678	3800	1565	1151	1604	0	1898	2000	1615
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		16				123						
Link Speed (mph)		35			35			20			20	
Link Distance (ft)		445			650			420			281	
Travel Time (s)		8.7			12.7			14.3			9.6	
Confl. Peds. (#/hr)	11					11			1	1		
Confl. Bikes (#/hr)									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 (%)	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	653	0	103	444	6	88	112	0	20	3	1
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0	15.0	3.0	8.0		3.0	8.0	8.0
Minimum Split (s)	6.5	21.0		6.5	21.0	21.0	6.5	21.0		6.5	14.0	14.0
Total Split (s)	13.0	59.0		18.0	64.0	64.0	18.0	30.0		13.0	25.0	25.0
Total Split (%)	10.8%	49.2%		15.0%	53.3%	53.3%	15.0%	25.0%		10.8%	20.8%	20.8%
Yellow Time (s)	3.5	4.0		3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	0.0	2.0		0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	6.0	3.5	6.0		3.5	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effect Green (s)	85.1	76.9		90.4	86.0	86.0	22.6	15.5		10.4	9.5	9.5
Actuated g/C Ratio	0.71	0.64		0.75	0.72	0.72	0.19	0.13		0.09	0.08	0.08
v/c Ratio	0.01	0.29		0.18	0.16	0.01	0.28	0.54		0.13	0.02	0.01
Control Delay	6.5	11.2		6.1	7.3	0.0	40.9	57.9		45.1	49.0	48.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	6.5	11.2		6.1	7.3	0.0	40.9	57.9		45.1	49.0	48.0
LOS	A	B		A	A	A	D	E		D	D	D
Approach Delay		11.2			7.0			50.4			45.7	

Lanes, Volumes, Timings

5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	B			A			D			D		
Queue Length 50th (ft)	1	91		14	39	0	62	82		15	2	1
Queue Length 95th (ft)	6	190		48	117	0	94	136		31	12	6
Internal Link Dist (ft)	365			570			340			201		
Turn Bay Length (ft)	170			185			85					
Base Capacity (vph)	761	2255		646	2724	1156	322	320		199	316	255
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.01	0.29		0.16	0.16	0.01	0.27	0.35		0.10	0.01	0.00

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 49 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 15.6

Intersection LOS: B

Intersection Capacity Utilization 48.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Ravina Ave /Ravina Ave & 143rd St



HCM 6th TWSC
6: 143rd St & Main St

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	640	510	7	0	11
Future Vol, veh/h	0	640	510	7	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	100	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	1	0	0	0	9
Mvmt Flow	0	674	537	7	0	12

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 269
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 7.08
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.39
Pot Cap-1 Maneuver	0	-	- - 0 708
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 708
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	708
HCM Lane V/C Ratio	-	-	-	0.016
HCM Control Delay (s)	-	-	-	10.2
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

HCM 6th TWSC
7: Jefferson Ave & 142nd St

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	13	2	21	14	0	1	0	17	0	1	0
Future Vol, veh/h	0	13	2	21	14	0	1	0	17	0	1	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	19	3	30	20	0	1	0	25	0	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	21	0	0	22	0	0	105	102	21	114	103	24
Stage 1	-	-	-	-	-	-	21	21	-	81	81	-
Stage 2	-	-	-	-	-	-	84	81	-	33	22	-
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	1608	-	-	1607	-	-	880	792	1062	868	791	1058
Stage 1	-	-	-	-	-	-	1003	882	-	932	832	-
Stage 2	-	-	-	-	-	-	929	832	-	988	881	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1606	-	-	1607	-	-	863	776	1062	835	775	1054
Mov Cap-2 Maneuver	-	-	-	-	-	-	863	776	-	835	775	-
Stage 1	-	-	-	-	-	-	1003	882	-	931	815	-
Stage 2	-	-	-	-	-	-	907	815	-	965	881	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	4.4	8.5	9.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1049	1606	-	-	1607	-	-	775
HCM Lane V/C Ratio	0.025	-	-	-	0.019	-	-	0.002
HCM Control Delay (s)	8.5	0	-	-	7.3	0	-	9.7
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

HCM 6th TWSC
9: Ravina Ave & Crescent Park Cr

Intersection

Int Delay, s/veh 3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	8	11	0	0	0	11
Future Vol, veh/h	8	11	0	0	0	11
Conflicting Peds, #/hr	0	5	5	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	13	0	0	0	0	0
Mvmt Flow	10	14	0	0	0	14

Major/Minor	Major1	Minor1
Conflicting Flow All	0	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	-
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	-
Pot Cap-1 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	-
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	EB	NB
HCM Control Delay, s	0	8.5
HCM LOS		A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	1056	-	-
HCM Lane V/C Ratio	0.013	-	-
HCM Control Delay (s)	8.5	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0	-	-

HCM 6th TWSC
10: Ravina Ave & Parking Access/B St

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	3	11	1	3	5	8	4	0	9	2
Future Vol, veh/h	0	2	3	11	1	3	5	8	4	0	9	2
Conflicting Peds, #/hr	10	0	0	0	0	10	3	0	2	2	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	11	0
Mvmt Flow	0	3	4	15	1	4	7	11	5	0	12	3
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	57	49	17	47	48	26	18	0	0	18	0	0
Stage 1	17	17	-	30	30	-	-	-	-	-	-	-
Stage 2	40	32	-	17	18	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	945	846	1068	959	847	1056	1612	-	-	1612	-	-
Stage 1	1008	885	-	992	874	-	-	-	-	-	-	-
Stage 2	980	872	-	1008	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	926	838	1065	948	839	1044	1607	-	-	1609	-	-
Mov Cap-2 Maneuver	926	838	-	948	839	-	-	-	-	-	-	-
Stage 1	1001	882	-	986	869	-	-	-	-	-	-	-
Stage 2	962	867	-	1001	881	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.8		8.8			2.1			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1607	-	-	961 957	1609	-	-					
HCM Lane V/C Ratio	0.004	-	-	0.007 0.021	-	-	-					
HCM Control Delay (s)	7.2	0	-	8.8 8.8	0	-	-					
HCM Lane LOS	A	A	-	A A	A	-	-					
HCM 95th %tile Q(veh)	0	-	-	0 0.1	0	-	-					

Capacity Analysis Summary Sheets

No Build Weekday Morning Peak Hour Conditions

Lanes, Volumes, Timings

2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Lane Configurations									
Traffic Volume (vph)	395	415	412	88	86	307			
Future Volume (vph)	395	415	412	88	86	307			
Ideal Flow (vphpl)	1900	2000	2000	1900	1900	1900			
Storage Length (ft)	0			0	250	0			
Storage Lanes	1			1	1	1			
Taper Length (ft)	170				185				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt				0.850		0.850			
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1905	1887	1615	1805	1524			
Flt Permitted	0.336				0.950				
Satd. Flow (perm)	626	1905	1887	1615	1805	1524			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				94		327			
Link Speed (mph)		30	30		35				
Link Distance (ft)		121	705		549				
Travel Time (s)		2.8	16.0		10.7				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Heavy Vehicles (%)	2%	5%	6%	0%	0%	6%			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	420	441	438	94	91	327			
Turn Type	custom	NA	NA	pm+ov	Prot	Prot			
Protected Phases	4.5	2.4	6	10	10	10	2	4	5
Permitted Phases	2			6					
Detector Phase	4.5	2.4	6	10	10	10			
Switch Phase									
Minimum Initial (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			22.0	22.0	22.0	22.0	22.0	22.0	12.0
Total Split (s)			60.0	36.0	36.0	36.0	72.0	22.0	12.0
Total Split (%)			46.2%	27.7%	27.7%	27.7%	55%	17%	9%
Yellow Time (s)			4.5	4.5	4.5	4.5	4.5	4.5	3.5
All-Red Time (s)			1.5	1.5	1.5	1.5	1.5	1.5	0.0
Lost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			6.0	6.0	6.0	6.0			
Lead/Lag			Lag						Lead
Lead-Lag Optimize?			Yes						Yes
Recall Mode			None	None	None	None	None	None	None
Act Effct Green (s)	83.6	83.6	50.5	76.4	19.8	19.8			
Actuated g/C Ratio	0.72	0.72	0.44	0.66	0.17	0.17			
v/c Ratio	0.58	0.32	0.53	0.09	0.29	0.61			
Control Delay	22.9	1.3	27.6	1.4	45.1	9.8			
Queue Delay	29.6	0.6	0.0	0.0	0.0	0.7			
Total Delay	52.6	1.9	27.6	1.4	45.1	10.5			
LOS	D	A	C	A	D	B			
Approach Delay		26.6	23.0		18.0				
Approach LOS		C	C		B				
Queue Length 50th (ft)	108	10	233	0	63	0			
Queue Length 95th (ft)	219	12	384	16	112	81			

Lanes, Volumes, Timings

2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Internal Link Dist (ft)		41	625		469				
Turn Bay Length (ft)					250				
Base Capacity (vph)	712	1448	901	1239	475	642			
Starvation Cap Reductn	302	619	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0	103			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	1.02	0.53	0.49	0.08	0.19	0.61			

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 115.6

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 23.6

Intersection LOS: C

Intersection Capacity Utilization 62.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: 143rd St & Southwest Hwy (IL 7)

72 s		36 s		22 s	
12 s		60 s			

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	5	27	41	8	19	32	1495	62	30	1352	49
Future Volume (vph)	26	5	27	41	8	19	32	1495	62	30	1352	49
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	0		0	0		0	160		155	300		300
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	0			25			240			150		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor			0.99	1.00			1.00					0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	2000	1615	1719	2000	1615	3502	5250	1615	3400	5250	1615
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	1900	2000	1594	1808	2000	1615	3499	5250	1615	3400	5250	1595
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			59			59			77			77
Link Speed (mph)		20			20			35			35	
Link Distance (ft)		360			632			755			800	
Travel Time (s)		12.3			21.5			14.7			15.6	
Confl. Peds. (#/hr)			1	1			1					1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%	0%	4%	0%	3%	4%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	6	31	47	9	22	36	1699	70	34	1536	56
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	8.5	16.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5
Total Split (s)	13.0	42.0	16.0	14.0	43.0	16.0	16.0	48.0	14.0	16.0	48.0	13.0
Total Split (%)	10.8%	35.0%	13.3%	11.7%	35.8%	13.3%	13.3%	40.0%	11.7%	13.3%	40.0%	10.8%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
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	0.0
Total Lost Time (s)	3.5	6.0	5.5	3.5	6.0	5.5	5.5	6.0	3.5	5.5	6.0	3.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	10.6	10.0	8.8	11.2	10.3	10.1	6.7	91.9	104.0	6.7	91.9	100.2
Actuated g/C Ratio	0.09	0.08	0.07	0.09	0.09	0.08	0.06	0.77	0.87	0.06	0.77	0.84
v/c Ratio	0.19	0.04	0.18	0.29	0.05	0.12	0.18	0.42	0.05	0.18	0.38	0.04
Control Delay	48.6	51.2	4.9	51.6	50.9	1.2	53.2	4.5	0.3	55.9	7.3	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	51.2	4.9	51.6	50.9	1.2	53.2	4.5	0.3	55.9	7.3	0.7
LOS	D	D	A	D	D	A	D	A	A	E	A	A
Approach Delay		28.6			37.3			5.3			8.1	
Approach LOS		C			D			A			A	

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	22	4	0	35	7	0	14	100	0	13	135	0
Queue Length 95th (ft)	44	18	8	62	23	0	m26	167	m1	29	269	6
Internal Link Dist (ft)	280			552			675			720		
Turn Bay Length (ft)							160	155			300	300
Base Capacity (vph)	183	600	222	192	616	240	306	4021	1424	297	4019	1354
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.01	0.14	0.24	0.01	0.09	0.12	0.42	0.05	0.11	0.38	0.04

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 105 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.42

Intersection Signal Delay: 7.7

Intersection LOS: A

Intersection Capacity Utilization 47.0%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 3: La Grange Road & 142nd St/Mall Access

				
Ø1	Ø2 (R)	Ø3	Ø4	
16 s	48 s	14 s	42 s	
				
Ø5	Ø6 (R)	Ø7	Ø8	
16 s	48 s	13 s	43 s	

Lanes, Volumes, Timings
4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (vph)	124	314	85	191	363	354	101	1111	104	162	1158	100
Future Volume (vph)	124	314	85	191	363	354	101	1111	104	162	1158	100
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		390	255		425	170		0	190		0
Storage Lanes	1		1	2		1	2		0	2		0
Taper Length (ft)	90			210			295			230		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00					0.99	1.00				1.00	
Frt			0.850			0.850		0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3725	1568	3400	3762	1599	3467	4880	0	3400	4926	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3461	3725	1568	3400	3762	1578	3465	4880	0	3400	4926	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			82		15			15	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		650			1235			855			755	
Travel Time (s)		12.7			24.1			16.7			14.7	
Confl. Peds. (#/hr)	1					1	1					1
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%	2%	3%	3%	1%	1%	1%	5%	4%	3%	4%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	324	88	197	374	365	104	1252	0	167	1297	0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Detector Phase	7	4	5	3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	12.0	3.0	3.0	12.0	3.0	3.0	15.0		3.0	15.0	
Minimum Split (s)	8.5	18.5	8.5	8.5	18.5	8.5	8.5	21.5		8.5	21.5	
Total Split (s)	17.0	29.0	16.0	17.0	29.0	19.0	16.0	55.0		19.0	58.0	
Total Split (%)	14.2%	24.2%	13.3%	14.2%	24.2%	15.8%	13.3%	45.8%		15.8%	48.3%	
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5	5.5	5.5	6.5	5.5	5.5	6.5		5.5	6.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	9.6	18.9	34.2	10.8	20.1	32.2	8.8	55.2		11.0	57.5	
Actuated g/C Ratio	0.08	0.16	0.28	0.09	0.17	0.27	0.07	0.46		0.09	0.48	
v/c Ratio	0.46	0.55	0.17	0.64	0.59	0.75	0.41	0.56		0.54	0.55	
Control Delay	48.8	45.9	9.6	62.7	49.9	37.5	57.7	25.3		62.5	17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	48.8	45.9	9.6	62.7	49.9	37.5	57.7	25.3		62.5	17.9	
LOS	D	D	A	E	D	D	E	C		E	B	
Approach Delay		40.6			47.8			27.8			22.9	
Approach LOS		D			D			C			C	

Lanes, Volumes, Timings 4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	50	127	8	76	141	188	40	252		52	260	
Queue Length 95th (ft)	47	170	54	116	190	281	68	327		101	331	
Internal Link Dist (ft)		570			1155			775			675	
Turn Bay Length (ft)	225		390	255		425	170			190		
Base Capacity (vph)	332	698	526	325	709	515	303	2254		382	2368	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.39	0.46	0.17	0.61	0.53	0.71	0.34	0.56		0.44	0.55	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 100 (83%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 32.1

Intersection LOS: C

Intersection Capacity Utilization 63.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: 143rd St & La Grange Road

 Ø1	 Ø2 (R)	 Ø3	 Ø4
19 s	55 s	17 s	29 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
16 s	58 s	17 s	29 s

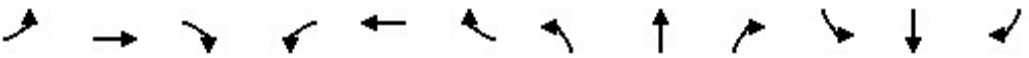
Lanes, Volumes, Timings

5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	429	43	73	368	11	25	17	67	22	13	8
Future Volume (vph)	56	429	43	73	368	11	25	17	67	22	13	8
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	170		0	185		0	85		0	0		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	125			70			130			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00					0.99
Frt		0.986				0.850		0.881				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3496	0	1805	3689	1615	1736	1674	0	1805	2000	1615
Flt Permitted	0.514			0.448			0.748			0.697		
Satd. Flow (perm)	957	3496	0	851	3689	1615	1365	1674	0	1324	2000	1593
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		11				123						
Link Speed (mph)		35			35			20			20	
Link Distance (ft)		445			650			420			281	
Travel Time (s)		8.7			12.7			14.3			9.6	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	0%	0%	3%	0%	4%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	518	0	80	404	12	27	93	0	24	14	9
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0	15.0	3.0	8.0		3.0	8.0	8.0
Minimum Split (s)	6.5	21.0		6.5	21.0	21.0	6.5	21.0		6.5	14.0	14.0
Total Split (s)	13.0	59.0		18.0	64.0	64.0	18.0	30.0		13.0	25.0	25.0
Total Split (%)	10.8%	49.2%		15.0%	53.3%	53.3%	15.0%	25.0%		10.8%	20.8%	20.8%
Yellow Time (s)	3.5	4.0		3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	0.0	2.0		0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	6.0	3.5	6.0		3.5	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	86.8	78.7		87.4	79.0	79.0	21.0	13.9		20.9	13.8	13.8
Actuated g/C Ratio	0.72	0.66		0.73	0.66	0.66	0.18	0.12		0.17	0.12	0.12
v/c Ratio	0.08	0.23		0.12	0.17	0.01	0.10	0.48		0.09	0.06	0.05
Control Delay	5.9	10.3		5.4	10.1	0.0	36.1	57.2		35.8	45.6	45.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	5.9	10.3		5.4	10.1	0.0	36.1	57.2		35.8	45.6	45.4
LOS	A	B		A	B	A	D	E		D	D	D
Approach Delay		9.8			9.1			52.5			40.6	
Approach LOS		A			A			D			D	

Lanes, Volumes, Timings

5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	12	88		15	59	0	17	68		15	10	6
Queue Length 95th (ft)	31	140		30	76	m0	39	119		35	29	22
Internal Link Dist (ft)		365			570			340			201	
Turn Bay Length (ft)	170			185			85					
Base Capacity (vph)	772	2296		753	2428	1105	313	334		281	316	252
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.08	0.23		0.11	0.17	0.01	0.09	0.28		0.09	0.04	0.04

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 49 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 14.8

Intersection LOS: B

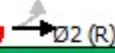
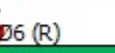
Intersection Capacity Utilization 38.7%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 5: Ravina Ave /Ravina Ave & 143rd St

							
18 s		59 s		18 s		25 s	
							
13 s		64 s		13 s		30 s	

HCM 6th TWSC
6: 143rd St & Main St

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	528	395	6	0	7
Future Vol, veh/h	0	528	395	6	0	7
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	100	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	2	3	0	0	0
Mvmt Flow	0	593	444	7	0	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 223
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.9
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.3
Pot Cap-1 Maneuver	0	-	- - 0 787
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 786
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	786
HCM Lane V/C Ratio	-	-	-	0.01
HCM Control Delay (s)	-	-	-	9.6
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC
7: Jefferson Ave & 142nd St

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	26	0	64	17	8	1	8	30	2	0	0
Future Vol, veh/h	6	26	0	64	17	8	1	8	30	2	0	0
Conflicting Peds, #/hr	6	0	3	3	0	6	5	0	0	0	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	38	0	94	25	12	1	12	44	3	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	43	0	0	41	0	0	283	290	41	303	278	36
Stage 1	-	-	-	-	-	-	59	59	-	219	219	-
Stage 2	-	-	-	-	-	-	224	231	-	84	59	-
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	1579	-	-	1581	-	-	673	624	1036	653	633	1042
Stage 1	-	-	-	-	-	-	958	850	-	788	726	-
Stage 2	-	-	-	-	-	-	783	717	-	929	850	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1570	-	-	1576	-	-	634	577	1033	581	586	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	634	577	-	581	586	-
Stage 1	-	-	-	-	-	-	949	842	-	779	677	-
Stage 2	-	-	-	-	-	-	732	669	-	872	842	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			5.3			9.4			11.2		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	877	1570	-	-	1576	-	-	581				
HCM Lane V/C Ratio	0.065	0.006	-	-	0.06	-	-	0.005				
HCM Control Delay (s)	9.4	7.3	0	-	7.4	0	-	11.2				
HCM Lane LOS	A	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.2	-	-	0				

HCM 6th TWSC
9: Ravina Ave & Crescent Park Cr

Intersection						
Int Delay, s/veh	4.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	🔴➡					🔴➡
Traffic Vol, veh/h	13	12	0	0	0	31
Future Vol, veh/h	13	12	0	0	0	31
Conflicting Peds, #/hr	0	2	2	0	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	49	49	49	49	49	49
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	27	24	0	0	0	63
Major/Minor	Major1		Minor1			
Conflicting Flow All	0	0			-	41
Stage 1	-	-			-	-
Stage 2	-	-			-	-
Critical Hdwy	-	-			-	6.2
Critical Hdwy Stg 1	-	-			-	-
Critical Hdwy Stg 2	-	-			-	-
Follow-up Hdwy	-	-			-	3.3
Pot Cap-1 Maneuver	-	-			0	1036
Stage 1	-	-			0	-
Stage 2	-	-			0	-
Platoon blocked, %	-	-				
Mov Cap-1 Maneuver	-	-			-	1034
Mov Cap-2 Maneuver	-	-			-	-
Stage 1	-	-			-	-
Stage 2	-	-			-	-
Approach	EB		NB			
HCM Control Delay, s	0		8.7			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR			
Capacity (veh/h)	1034	-	-			
HCM Lane V/C Ratio	0.061	-	-			
HCM Control Delay (s)	8.7	-	-			
HCM Lane LOS	A	-	-			
HCM 95th %tile Q(veh)	0.2	-	-			

HCM 6th TWSC
10: Ravina Ave & Parking Access/B St

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	8	30	1	2	0	11	27	46	0	12	0
Future Vol, veh/h	4	8	30	1	2	0	11	27	46	0	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	7	0	0	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	2	0	0	0
Mvmt Flow	5	11	40	1	3	0	15	36	61	0	16	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	121	150	23	139	120	67	23	0	0	97	0	0
Stage 1	23	23	-	97	97	-	-	-	-	-	-	-
Stage 2	98	127	-	42	23	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	859	745	1060	836	774	1002	1605	-	-	1509	-	-
Stage 1	1000	880	-	914	819	-	-	-	-	-	-	-
Stage 2	913	795	-	978	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	844	732	1053	789	761	1002	1594	-	-	1509	-	-
Mov Cap-2 Maneuver	844	732	-	789	761	-	-	-	-	-	-	-
Stage 1	983	874	-	905	811	-	-	-	-	-	-	-
Stage 2	901	787	-	929	874	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9		9.7			1			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1594	-	-	951	770	1509	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.059	0.005	-	-	-				
HCM Control Delay (s)	7.3	0	-	9	9.7	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-				

Capacity Analysis Summary Sheets

No Build Weekday Evening Peak Hour Conditions

Lanes, Volumes, Timings
2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Lane Configurations									
Traffic Volume (vph)	293	586	504	88	235	425			
Future Volume (vph)	293	586	504	88	235	425			
Ideal Flow (vphpl)	1900	2000	2000	1900	1900	1900			
Storage Length (ft)	0			0	250	0			
Storage Lanes	1			1	1	1			
Taper Length (ft)	170				185				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt				0.850		0.850			
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1961	1980	1583	1805	1599			
Flt Permitted	0.301				0.950				
Satd. Flow (perm)	561	1961	1980	1583	1805	1599			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				94		452			
Link Speed (mph)		30	30		35				
Link Distance (ft)		121	705		549				
Travel Time (s)		2.8	16.0		10.7				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Heavy Vehicles (%)	2%	2%	1%	2%	0%	1%			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	312	623	536	94	250	452			
Turn Type	custom	NA	NA	pm+ov	Prot	Prot			
Protected Phases	4.5	2.4	6	10	10	10	2	4	5
Permitted Phases	2			6					
Detector Phase	4.5	2.4	6	10	10	10			
Switch Phase									
Minimum Initial (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			22.0	22.0	22.0	22.0	22.0	22.0	12.0
Total Split (s)			83.0	33.0	33.0	33.0	95.0	22.0	12.0
Total Split (%)			55.3%	22.0%	22.0%	22.0%	63%	15%	8%
Yellow Time (s)			4.5	4.5	4.5	4.5	4.5	4.5	3.5
All-Red Time (s)			1.5	1.5	1.5	1.5	1.5	1.5	0.0
Lost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			6.0	6.0	6.0	6.0			
Lead/Lag			Lag						Lead
Lead-Lag Optimize?			Yes						Yes
Recall Mode			None	None	None	None	None	None	None
Act Effct Green (s)	107.0	107.0	74.6	107.1	26.4	26.4			
Actuated g/C Ratio	0.74	0.74	0.51	0.74	0.18	0.18			
v/c Ratio	0.49	0.43	0.53	0.08	0.76	0.68			
Control Delay	17.6	2.8	25.8	1.1	73.5	10.4			
Queue Delay	6.2	0.2	0.0	0.0	0.0	2.4			
Total Delay	23.8	3.1	25.8	1.1	73.5	12.8			
LOS	C	A	C	A	E	B			
Approach Delay		10.0	22.1		34.4				
Approach LOS		A	C		C				
Queue Length 50th (ft)	88	13	333	0	236	0			
Queue Length 95th (ft)	147	16	443	14	#358	108			

Lanes, Volumes, Timings

2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Internal Link Dist (ft)		41	625		469				
Turn Bay Length (ft)					250				
Base Capacity (vph)	646	1501	1064	1197	336	665			
Starvation Cap Reductn	275	300	0	0	0	0			
Spillback Cap Reductn	0	0	3	0	0	110			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	0.84	0.52	0.51	0.08	0.74	0.81			

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 145.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 20.9

Intersection LOS: C

Intersection Capacity Utilization 69.5%

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: 2: 143rd St & Southwest Hwy (IL 7)

95 s		33 s		22 s	
12 s		83 s			

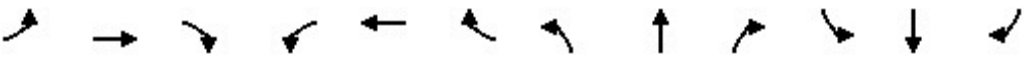
Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	10	62	95	12	68	16	1953	110	85	1862	29
Future Volume (vph)	41	10	62	95	12	68	16	1953	110	85	1862	29
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	0		0	0		0	160		155	300		300
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	0			25			240			150		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99			0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	2000	1615	1805	2000	1615	3502	5353	1599	3502	5406	1615
Flt Permitted				0.727			0.950			0.950		
Satd. Flow (perm)	1895	2000	1589	1376	2000	1591	3502	5353	1579	3501	5406	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66			72			87			71
Link Speed (mph)		20			20			35			35	
Link Distance (ft)		360			632			755			800	
Travel Time (s)		12.3			21.5			14.7			15.6	
Confl. Peds. (#/hr)	2		3	3		2			1	1		
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	1%	0%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	11	66	101	13	72	17	2078	117	90	1981	31
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	8.5	16.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5
Total Split (s)	16.0	22.0	17.0	16.0	22.0	17.0	17.0	75.0	16.0	17.0	75.0	16.0
Total Split (%)	12.3%	16.9%	13.1%	12.3%	16.9%	13.1%	13.1%	57.7%	12.3%	13.1%	57.7%	12.3%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
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	0.0
Total Lost Time (s)	3.5	6.0	5.5	3.5	6.0	5.5	5.5	6.0	3.5	5.5	6.0	3.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effect Green (s)	12.3	10.0	8.4	17.7	10.4	15.4	6.3	88.3	105.6	8.7	92.9	108.7
Actuated g/C Ratio	0.09	0.08	0.06	0.14	0.08	0.12	0.05	0.68	0.81	0.07	0.71	0.84
v/c Ratio	0.25	0.07	0.40	0.43	0.08	0.28	0.10	0.57	0.09	0.38	0.51	0.02
Control Delay	53.8	57.0	18.6	54.8	56.3	12.0	78.5	4.0	0.1	62.4	10.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	53.8	57.0	18.6	54.8	56.3	12.0	78.5	4.3	0.1	62.4	10.4	0.0
LOS	D	E	B	D	E	B	E	A	A	E	B	A
Approach Delay		34.9			38.3			4.6			12.5	

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			D			A			B		
Queue Length 50th (ft)	35	9	0	83	10	0	7	56	0	38	219	0
Queue Length 95th (ft)	63	29	41	124	32	41	m10	m127	m0	65	398	0
Internal Link Dist (ft)	280			552			675			720		
Turn Bay Length (ft)							160	155			300	300
Base Capacity (vph)	209	246	228	240	246	286	309	3635	1305	309	3861	1401
Starvation Cap Reductn	0	0	0	0	0	0	0	758	0	0	0	0
Spillback Cap Reductn	0	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	0
Reduced v/c Ratio	0.21	0.04	0.29	0.42	0.05	0.25	0.06	0.72	0.09	0.29	0.51	0.02

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 44 (34%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 10.4

Intersection LOS: B

Intersection Capacity Utilization 58.3%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 3: La Grange Road & 142nd St/Mall Access

 Ø1		 Ø2 (R)		 Ø3		 Ø4	
17 s		75 s		16 s		22 s	
 Ø5		 Ø6 (R)		 Ø7		 Ø8	
17 s		75 s		16 s		22 s	

Lanes, Volumes, Timings
4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	214	526	154	310	433	258	96	1607	191	291	1583	145
Future Volume (vph)	214	526	154	310	433	258	96	1607	191	291	1583	145
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		390	255		425	170		0	190		0
Storage Lanes	1		1	2		1	2		0	2		0
Taper Length (ft)	90			210			295			230		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00		0.99	1.00		0.99		1.00		1.00		
Frt			0.850			0.850		0.984			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3762	1615	3467	3762	1599	3502	5046	0	3502	5073	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3462	3762	1593	3458	3762	1578	3502	5046	0	3501	5073	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			76			18			14
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		650			1235			855			755	
Travel Time (s)		12.7			24.1			16.7			14.7	
Confl. Peds. (#/hr)	1		2	2		1			1	1		
Confl. Bikes (#/hr)									1			
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 (%)	1%	1%	0%	1%	1%	1%	0%	1%	1%	0%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	225	554	162	326	456	272	101	1893	0	306	1819	0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Detector Phase	7	4	5	3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	12.0	3.0	3.0	12.0	3.0	3.0	15.0		3.0	15.0	
Minimum Split (s)	8.5	18.5	8.5	8.5	18.5	8.5	8.5	21.5		8.5	21.5	
Total Split (s)	19.0	33.0	19.0	19.0	33.0	23.0	19.0	55.0		23.0	59.0	
Total Split (%)	14.6%	25.4%	14.6%	14.6%	25.4%	17.7%	14.6%	42.3%		17.7%	45.4%	
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5	5.5	5.5	6.5	5.5	5.5	6.5		5.5	6.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effect Green (s)	12.5	25.7	35.8	13.5	26.6	43.4	9.1	51.1		15.7	57.7	
Actuated g/C Ratio	0.10	0.20	0.28	0.10	0.20	0.33	0.07	0.39		0.12	0.44	
v/c Ratio	0.67	0.75	0.33	0.91	0.59	0.47	0.41	0.95		0.72	0.80	
Control Delay	68.5	60.0	26.7	86.2	50.4	23.9	62.5	49.7		67.7	31.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	68.5	60.0	26.7	86.2	50.4	23.9	62.5	49.7		67.7	31.8	
LOS	E	E	C	F	D	C	E	D		E	C	
Approach Delay		56.3			54.7			50.4			37.0	

Lanes, Volumes, Timings 4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	E			D			D			D		
Queue Length 50th (ft)	95	262	42	142	184	118	42	569		135	282	
Queue Length 95th (ft)	146	290	128	#229	242	195	71	#700		186	402	
Internal Link Dist (ft)	570			1155			775			675		
Turn Bay Length (ft)	225		390	255		425	170			190		
Base Capacity (vph)	360	766	546	360	774	600	363	1993		471	2260	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.63	0.72	0.30	0.91	0.59	0.45	0.28	0.95		0.65	0.80	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 22 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 47.4

Intersection LOS: D

Intersection Capacity Utilization 86.3%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: 143rd St & La Grange Road

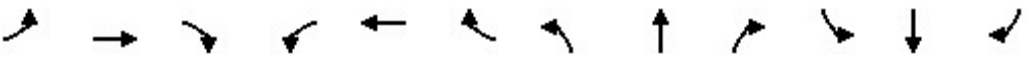
				
Ø1	Ø2 (R)	Ø3	Ø4	
23 s	55 s	19 s	33 s	
				
Ø5	Ø6 (R)	Ø7	Ø8	
19 s	59 s	19 s	33 s	

Lanes, Volumes, Timings
5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	629	64	169	546	27	73	15	170	55	12	11
Future Volume (vph)	23	629	64	169	546	27	73	15	170	55	12	11
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	170		0	185		0	85		0	0		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	125			70			130			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00					0.99
Frt		0.986				0.850		0.862				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3527	0	1805	3762	1615	1805	1623	0	1805	2000	1615
Flt Permitted	0.436			0.305			0.623			0.583		
Satd. Flow (perm)	797	3527	0	580	3762	1615	1183	1623	0	1108	2000	1593
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		11				84						
Link Speed (mph)		35			35			20			20	
Link Distance (ft)		445			650			420			281	
Travel Time (s)		8.7			12.7			14.3			9.6	
Confl. Peds. (#/hr)							1					1
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 (%)	4%	1%	0%	0%	1%	0%	0%	0%	1%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	729	0	178	575	28	77	195	0	58	13	12
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0	15.0	3.0	8.0		3.0	8.0	8.0
Minimum Split (s)	6.5	21.0		6.5	21.0	21.0	6.5	21.0		6.5	14.0	14.0
Total Split (s)	13.0	65.0		20.0	72.0	72.0	15.0	32.0		13.0	30.0	30.0
Total Split (%)	10.0%	50.0%		15.4%	55.4%	55.4%	11.5%	24.6%		10.0%	23.1%	23.1%
Yellow Time (s)	3.5	4.0		3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	0.0	2.0		0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	6.0	3.5	6.0		3.5	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	80.9	72.2		88.6	80.0	80.0	32.9	21.8		26.6	18.9	18.9
Actuated g/C Ratio	0.62	0.56		0.68	0.62	0.62	0.25	0.17		0.20	0.15	0.15
v/c Ratio	0.04	0.37		0.36	0.25	0.03	0.21	0.72		0.21	0.04	0.05
Control Delay	9.3	18.3		7.2	10.0	2.9	35.4	65.9		37.8	44.7	44.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	9.3	18.3		7.2	10.0	2.9	35.4	65.9		37.8	44.7	44.7
LOS	A	B		A	A	A	D	E		D	D	D
Approach Delay		18.0			9.1			57.3			39.9	
Approach LOS		B			A			E			D	

Lanes, Volumes, Timings

5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	7	181		17	33	0	48	156		36	9	9
Queue Length 95th (ft)	18	258		m120	234	m11	86	234		68	28	27
Internal Link Dist (ft)		365			570			340			201	
Turn Bay Length (ft)	170			185			85					
Base Capacity (vph)	584	1964		550	2316	1026	381	324		281	372	297
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.04	0.37		0.32	0.25	0.03	0.20	0.60		0.21	0.03	0.04

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 20.9

Intersection LOS: C

Intersection Capacity Utilization 60.1%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 5: Ravina Ave /Ravina Ave & 143rd St

 Ø1		 Ø2 (R)		 Ø3		 Ø4	
20 s		65 s		15 s		30 s	
 Ø5		 Ø6 (R)		 Ø7		 Ø8	
13 s		72 s		13 s		32 s	

HCM 6th TWSC
6: 143rd St & Main St

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	716	617	13	0	20
Future Vol, veh/h	0	716	617	13	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	100	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	0	746	643	14	0	21

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	-	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	680
HCM Lane V/C Ratio	-	-	-	0.031
HCM Control Delay (s)	-	-	-	10.5
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

HCM 6th TWSC
7: Jefferson Ave & 142nd St

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	32	4	42	15	0	1	2	58	23	12	1
Future Vol, veh/h	1	32	4	42	15	0	1	2	58	23	12	1
Conflicting Peds, #/hr	1	0	1	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	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	40	5	52	19	0	1	2	72	28	15	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	20	0	0	46	0	0	177	170	44	206	172	20
Stage 1	-	-	-	-	-	-	46	46	-	124	124	-
Stage 2	-	-	-	-	-	-	131	124	-	82	48	-
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	1609	-	-	1575	-	-	790	727	1032	756	725	1064
Stage 1	-	-	-	-	-	-	973	861	-	885	797	-
Stage 2	-	-	-	-	-	-	877	797	-	931	859	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1607	-	-	1574	-	-	755	701	1031	683	699	1063
Mov Cap-2 Maneuver	-	-	-	-	-	-	755	701	-	683	699	-
Stage 1	-	-	-	-	-	-	971	859	-	883	770	-
Stage 2	-	-	-	-	-	-	831	770	-	863	857	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			5.4			8.9			10.5		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	1009	1607	-	-	1574	-	-	695				
HCM Lane V/C Ratio	0.075	0.001	-	-	0.033	-	-	0.064				
HCM Control Delay (s)	8.9	7.2	0	-	7.4	0	-	10.5				
HCM Lane LOS	A	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.2				

HCM 6th TWSC
9: Ravina Ave & Crescent Park Cr

Intersection

Int Delay, s/veh 3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	25	30	0	0	0	30
Future Vol, veh/h	25	30	0	0	0	30
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	32	39	0	0	0	39

Major/Minor	Major1	Minor1
Conflicting Flow All	0	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	-
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	-
Pot Cap-1 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	-
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	EB	NB
HCM Control Delay, s	0	8.7
HCM LOS		A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	1001	-	-
HCM Lane V/C Ratio	0.039	-	-
HCM Control Delay (s)	8.7	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-

HCM 6th TWSC
10: Ravina Ave & Parking Access/B St

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	2	0	26	23	8	1	28	27	10	0	29	1
Future Vol, veh/h	2	0	26	23	8	1	28	27	10	0	29	1
Conflicting Peds, #/hr	7	0	1	1	0	7	7	0	0	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	10	0	0	0
Mvmt Flow	2	0	30	27	9	1	33	31	12	0	34	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	157	151	43	154	145	44	42	0	0	43	0	0
Stage 1	42	42	-	103	103	-	-	-	-	-	-	-
Stage 2	115	109	-	51	42	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	814	744	1033	817	750	1032	1580	-	-	1579	-	-
Stage 1	978	864	-	908	814	-	-	-	-	-	-	-
Stage 2	895	809	-	967	864	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	781	722	1025	779	728	1025	1569	-	-	1579	-	-
Mov Cap-2 Maneuver	781	722	-	779	728	-	-	-	-	-	-	-
Stage 1	950	858	-	888	796	-	-	-	-	-	-	-
Stage 2	858	791	-	938	858	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	8.7		9.9		3.2		0					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1569	-	-	1003	771	1579	-	-				
HCM Lane V/C Ratio	0.021	-	-	0.032	0.048	-	-	-				
HCM Control Delay (s)	7.3	0	-	8.7	9.9	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0	-	-				

Capacity Analysis Summary Sheets

No Build Saturday Midday Peak Hour Conditions

Lanes, Volumes, Timings

2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Lane Configurations									
Traffic Volume (vph)	361	374	378	81	79	281			
Future Volume (vph)	361	374	378	81	79	281			
Ideal Flow (vphpl)	1900	2000	2000	1900	1900	1900			
Storage Length (ft)	0			0	250	0			
Storage Lanes	1			1	1	1			
Taper Length (ft)	170				185				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt				0.850		0.850			
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1905	1887	1615	1805	1524			
Flt Permitted	0.364				0.950				
Satd. Flow (perm)	678	1905	1887	1615	1805	1524			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				86		299			
Link Speed (mph)		30	30		35				
Link Distance (ft)		121	705		549				
Travel Time (s)		2.8	16.0		10.7				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Heavy Vehicles (%)	2%	5%	6%	0%	0%	6%			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	384	398	402	86	84	299			
Turn Type	custom	NA	NA	pm+ov	Prot	Prot			
Protected Phases	4.5	2.4	6	10	10	10	2	4	5
Permitted Phases	2			6					
Detector Phase	4.5	2.4	6	10	10	10			
Switch Phase									
Minimum Initial (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			22.0	22.0	22.0	22.0	22.0	22.0	12.0
Total Split (s)			60.0	36.0	36.0	36.0	72.0	22.0	12.0
Total Split (%)			46.2%	27.7%	27.7%	27.7%	55%	17%	9%
Yellow Time (s)			4.5	4.5	4.5	4.5	4.5	4.5	3.5
All-Red Time (s)			1.5	1.5	1.5	1.5	1.5	1.5	0.0
Lost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			6.0	6.0	6.0	6.0			
Lead/Lag			Lag						Lead
Lead-Lag Optimize?			Yes						Yes
Recall Mode			None	None	None	None	None	None	None
Act Effct Green (s)	79.8	79.8	47.0	71.5	18.4	18.4			
Actuated g/C Ratio	0.72	0.72	0.43	0.65	0.17	0.17			
v/c Ratio	0.51	0.29	0.50	0.08	0.28	0.60			
Control Delay	15.8	1.3	26.4	1.5	44.6	10.0			
Queue Delay	6.3	0.4	0.0	0.0	0.0	0.5			
Total Delay	22.2	1.7	26.4	1.5	44.6	10.5			
LOS	C	A	C	A	D	B			
Approach Delay		11.7	22.0		17.9				
Approach LOS		B	C		B				
Queue Length 50th (ft)	78	9	199	0	57	0			
Queue Length 95th (ft)	168	11	347	16	105	76			

Lanes, Volumes, Timings

2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Internal Link Dist (ft)		41	625		469				
Turn Bay Length (ft)					250				
Base Capacity (vph)	752	1512	950	1247	503	640			
Starvation Cap Reductn	309	632	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0	100			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	0.87	0.45	0.42	0.07	0.17	0.55			

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 110.5

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 16.2

Intersection LOS: B

Intersection Capacity Utilization 58.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: 143rd St & Southwest Hwy (IL 7)

72 s		36 s		22 s	
12 s		60 s			

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	6	14	117	8	68	10	1680	146	83	1627	17
Future Volume (vph)	10	6	14	117	8	68	10	1680	146	83	1627	17
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	0		0	0		0	160		155	300		300
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	0			25			240			150		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00					0.99						
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	2000	1615	1805	2000	1615	3502	5406	1615	3502	5406	1615
Flt Permitted				0.727			0.950			0.950		
Satd. Flow (perm)	1897	2000	1615	1381	2000	1594	3502	5406	1615	3502	5406	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			84			69			138			101
Link Speed (mph)		20			20			35			35	
Link Distance (ft)		360			632			755			800	
Travel Time (s)		12.3			21.5			14.7			15.6	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	6	14	118	8	69	10	1697	147	84	1643	17
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	8.5	16.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5
Total Split (s)	14.0	23.0	18.0	19.0	28.0	18.0	18.0	70.0	19.0	18.0	70.0	14.0
Total Split (%)	10.8%	17.7%	13.8%	14.6%	21.5%	13.8%	13.8%	53.8%	14.6%	13.8%	53.8%	10.8%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
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	0.0
Total Lost Time (s)	3.5	6.0	5.5	3.5	6.0	5.5	5.5	6.0	3.5	5.5	6.0	3.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	12.0	10.0	9.1	17.2	11.7	16.4	5.9	89.3	109.3	8.5	96.3	111.8
Actuated g/C Ratio	0.09	0.08	0.07	0.13	0.09	0.13	0.05	0.69	0.84	0.07	0.74	0.86
v/c Ratio	0.06	0.04	0.07	0.52	0.04	0.26	0.06	0.46	0.11	0.37	0.41	0.01
Control Delay	45.6	56.3	0.7	59.1	52.5	12.1	59.3	4.7	0.1	62.3	8.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	56.3	0.7	59.1	52.5	12.1	59.3	4.7	0.1	62.3	8.1	0.0
LOS	D	E	A	E	D	B	E	A	A	E	A	A
Approach Delay		26.8			42.2			4.6			10.6	
Approach LOS		C			D			A			B	

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	8	5	0	97	6	0	4	84	0	35	172	0
Queue Length 95th (ft)	22	19	0	137	22	37	m6	103	m0	62	321	0
Internal Link Dist (ft)	280			552			675			720		
Turn Bay Length (ft)							160	155			300	300
Base Capacity (vph)	205	261	269	249	338	310	336	3715	1397	336	4005	1434
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.02	0.05	0.47	0.02	0.22	0.03	0.46	0.11	0.25	0.41	0.01

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 63 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 9.4

Intersection LOS: A

Intersection Capacity Utilization 58.7%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 3: La Grange Road & 142nd St/Mall Access

					
Ø1	Ø2 (R)	Ø3	Ø4	Ø5	Ø6 (R)
18 s	70 s	19 s	23 s	18 s	70 s
					
Ø5	Ø6 (R)	Ø7	Ø8		
18 s	70 s	14 s	28 s		

Lanes, Volumes, Timings
4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	363	225	279	355	179	171	1492	223	169	1475	114
Future Volume (vph)	165	363	225	279	355	179	171	1492	223	169	1475	114
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		390	255		425	170		0	190		0
Storage Lanes	1		1	2		1	2		0	2		0
Taper Length (ft)	90			210			295			230		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Frt			0.850			0.850		0.980			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	3762	1615	3467	3800	1599	3502	5039	0	3467	5083	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3502	3762	1615	3467	3800	1599	3502	5039	0	3467	5083	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			76		25			11	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		650			1235			855			755	
Travel Time (s)		12.7			24.1			16.7			14.7	
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 (%)	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	374	232	288	366	185	176	1768	0	174	1639	0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Detector Phase	7	4	5	3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	12.0	3.0	3.0	12.0	3.0	3.0	15.0		3.0	15.0	
Minimum Split (s)	8.5	18.5	8.5	8.5	18.5	8.5	8.5	21.5		8.5	21.5	
Total Split (s)	21.0	32.0	20.0	21.0	32.0	20.0	20.0	57.0		20.0	57.0	
Total Split (%)	16.2%	24.6%	15.4%	16.2%	24.6%	15.4%	15.4%	43.8%		15.4%	43.8%	
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5	5.5	5.5	6.5	5.5	5.5	6.5		5.5	6.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	11.6	21.2	39.5	14.5	24.2	42.4	11.7	58.5		11.7	58.5	
Actuated g/C Ratio	0.09	0.16	0.30	0.11	0.19	0.33	0.09	0.45		0.09	0.45	
v/c Ratio	0.54	0.61	0.43	0.74	0.52	0.32	0.56	0.77		0.56	0.71	
Control Delay	63.0	54.5	25.3	68.2	50.1	19.6	63.3	33.8		77.1	26.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	63.0	54.5	25.3	68.2	50.1	19.6	63.3	33.8		77.1	26.3	
LOS	E	D	C	E	D	B	E	C		E	C	
Approach Delay		47.6			49.6			36.4			31.2	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	72	155	103	122	145	65	74	457		76	421	
Queue Length 95th (ft)	107	201	166	171	195	123	110	571		120	520	

Lanes, Volumes, Timings 4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)	570			1155			775			675		
Turn Bay Length (ft)	225		390	255		425	170			190		
Base Capacity (vph)	417	737	576	413	758	604	390	2282		386	2294	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.41	0.51	0.40	0.70	0.48	0.31	0.45	0.77		0.45	0.71	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 61 (47%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 38.4

Intersection LOS: D

Intersection Capacity Utilization 76.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 4: 143rd St & La Grange Road

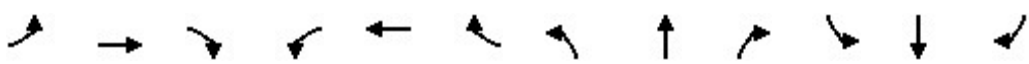


Lanes, Volumes, Timings
5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	606	78	100	470	6	85	5	104	19	3	1
Future Volume (vph)	6	606	78	100	470	6	85	5	104	19	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	170		0	185		0	85		0	0		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	125			70			130			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.97		0.99		1.00		
Frt		0.983				0.850		0.857				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3513	0	1805	3800	1615	1805	1604	0	1805	2000	1615
Flt Permitted	0.476			0.333			0.606					
Satd. Flow (perm)	900	3513	0	633	3800	1565	1151	1604	0	1898	2000	1615
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		15				123						
Link Speed (mph)		35			35			20			20	
Link Distance (ft)		445			650			420			281	
Travel Time (s)		8.7			12.7			14.3			9.6	
Confl. Peds. (#/hr)	11					11			1	1		
Confl. Bikes (#/hr)									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 (%)	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	705	0	103	485	6	88	112	0	20	3	1
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0	15.0	3.0	8.0		3.0	8.0	8.0
Minimum Split (s)	6.5	21.0		6.5	21.0	21.0	6.5	21.0		6.5	14.0	14.0
Total Split (s)	13.0	59.0		18.0	64.0	64.0	18.0	30.0		13.0	25.0	25.0
Total Split (%)	10.8%	49.2%		15.0%	53.3%	53.3%	15.0%	25.0%		10.8%	20.8%	20.8%
Yellow Time (s)	3.5	4.0		3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	0.0	2.0		0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	6.0	3.5	6.0		3.5	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effect Green (s)	85.1	76.9		90.4	86.0	86.0	22.6	15.5		10.4	9.5	9.5
Actuated g/C Ratio	0.71	0.64		0.75	0.72	0.72	0.19	0.13		0.09	0.08	0.08
v/c Ratio	0.01	0.31		0.19	0.18	0.01	0.28	0.54		0.13	0.02	0.01
Control Delay	6.5	11.5		6.2	7.4	0.0	40.9	57.9		45.2	49.0	48.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	6.5	11.5		6.2	7.4	0.0	40.9	57.9		45.2	49.0	48.0
LOS	A	B		A	A	A	D	E		D	D	D
Approach Delay		11.4			7.1			50.4			45.8	

Lanes, Volumes, Timings

5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	B			A			D			D		
Queue Length 50th (ft)	1	100		14	43	0	62	82		15	2	1
Queue Length 95th (ft)	6	208		48	128	0	94	136		31	12	6
Internal Link Dist (ft)	365			570			340			201		
Turn Bay Length (ft)	170			185			85					
Base Capacity (vph)	738	2257		618	2724	1156	322	320		199	316	255
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.01	0.31		0.17	0.18	0.01	0.27	0.35		0.10	0.01	0.00

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 49 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 15.4

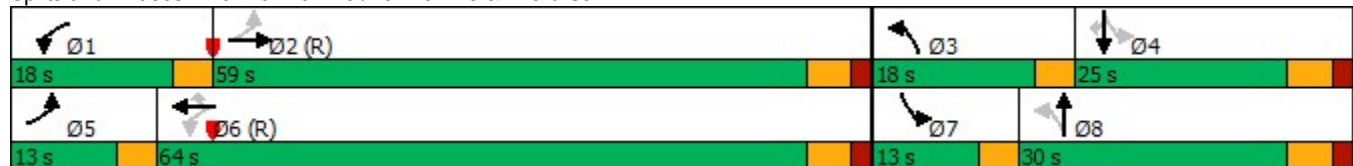
Intersection LOS: B

Intersection Capacity Utilization 49.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Ravina Ave /Ravina Ave & 143rd St



HCM 6th TWSC
6: 143rd St & Main St

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	690	549	7	0	11
Future Vol, veh/h	0	690	549	7	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	100	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	1	0	0	0	9
Mvmt Flow	0	726	578	7	0	12

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 289
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 7.08
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.39
Pot Cap-1 Maneuver	0	-	- - 0 687
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 687
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	687
HCM Lane V/C Ratio	-	-	-	0.017
HCM Control Delay (s)	-	-	-	10.3
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

HCM 6th TWSC
7: Jefferson Ave & 142nd St

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	13	2	21	14	0	1	0	17	0	1	0
Future Vol, veh/h	0	13	2	21	14	0	1	0	17	0	1	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	19	3	30	20	0	1	0	25	0	1	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	21	0	0	22	0	0	105	102	21	114	103	24
Stage 1	-	-	-	-	-	-	21	21	-	81	81	-
Stage 2	-	-	-	-	-	-	84	81	-	33	22	-
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	1608	-	-	1607	-	-	880	792	1062	868	791	1058
Stage 1	-	-	-	-	-	-	1003	882	-	932	832	-
Stage 2	-	-	-	-	-	-	929	832	-	988	881	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1606	-	-	1607	-	-	863	776	1062	835	775	1054
Mov Cap-2 Maneuver	-	-	-	-	-	-	863	776	-	835	775	-
Stage 1	-	-	-	-	-	-	1003	882	-	931	815	-
Stage 2	-	-	-	-	-	-	907	815	-	965	881	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			4.4			8.5			9.7		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	1049	1606	-	-	1607	-	-	775				
HCM Lane V/C Ratio	0.025	-	-	-	0.019	-	-	0.002				
HCM Control Delay (s)	8.5	0	-	-	7.3	0	-	9.7				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0				

HCM 6th TWSC
9: Ravina Ave & Crescent Park Cr

Intersection

Int Delay, s/veh 3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	8	11	0	0	0	11
Future Vol, veh/h	8	11	0	0	0	11
Conflicting Peds, #/hr	0	5	5	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	13	0	0	0	0	0
Mvmt Flow	10	14	0	0	0	14

Major/Minor	Major1	Minor1
Conflicting Flow All	0	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	-
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	-
Pot Cap-1 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	-
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	EB	NB
HCM Control Delay, s	0	8.5
HCM LOS		A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	1056	-	-
HCM Lane V/C Ratio	0.013	-	-
HCM Control Delay (s)	8.5	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0	-	-

HCM 6th TWSC
10: Ravina Ave & Parking Access/B St

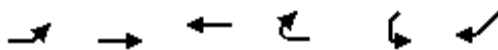
Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	3	11	1	3	5	8	4	0	9	2
Future Vol, veh/h	0	2	3	11	1	3	5	8	4	0	9	2
Conflicting Peds, #/hr	10	0	0	0	0	10	3	0	2	2	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	11	0
Mvmt Flow	0	3	4	15	1	4	7	11	5	0	12	3
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	57	49	17	47	48	26	18	0	0	18	0	0
Stage 1	17	17	-	30	30	-	-	-	-	-	-	-
Stage 2	40	32	-	17	18	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	945	846	1068	959	847	1056	1612	-	-	1612	-	-
Stage 1	1008	885	-	992	874	-	-	-	-	-	-	-
Stage 2	980	872	-	1008	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	926	838	1065	948	839	1044	1607	-	-	1609	-	-
Mov Cap-2 Maneuver	926	838	-	948	839	-	-	-	-	-	-	-
Stage 1	1001	882	-	986	869	-	-	-	-	-	-	-
Stage 2	962	867	-	1001	881	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	8.8			8.8			2.1			0		
HCM LOS	A			A								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1607	-	-	961	957	1609	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.007	0.021	-	-	-				
HCM Control Delay (s)	7.2	0	-	8.8	8.8	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-				

Capacity Analysis Summary Sheets

Projected Weekday Morning Peak Hour Conditions

Lanes, Volumes, Timings

2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Lane Configurations									
Traffic Volume (vph)	395	453	441	119	90	307			
Future Volume (vph)	395	453	441	119	90	307			
Ideal Flow (vphpl)	1900	2000	2000	1900	1900	1900			
Storage Length (ft)	0			0	250	0			
Storage Lanes	1			1	1	1			
Taper Length (ft)	170				185				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt				0.850		0.850			
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1905	1887	1615	1805	1524			
Flt Permitted	0.308				0.950				
Satd. Flow (perm)	574	1905	1887	1615	1805	1524			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				127		327			
Link Speed (mph)		30	30		35				
Link Distance (ft)		121	705		549				
Travel Time (s)		2.8	16.0		10.7				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Heavy Vehicles (%)	2%	5%	6%	0%	0%	6%			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	420	482	469	127	96	327			
Turn Type	custom	NA	NA	pm+ov	Prot	Prot			
Protected Phases	4 5	2 4	6	10	10	10	2	4	5
Permitted Phases	2			6					
Detector Phase	4 5	2 4	6	10	10	10			
Switch Phase									
Minimum Initial (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			22.0	22.0	22.0	22.0	22.0	22.0	12.0
Total Split (s)			60.0	36.0	36.0	36.0	72.0	22.0	12.0
Total Split (%)			46.2%	27.7%	27.7%	27.7%	55%	17%	9%
Yellow Time (s)			4.5	4.5	4.5	4.5	4.5	4.5	3.5
All-Red Time (s)			1.5	1.5	1.5	1.5	1.5	1.5	0.0
Lost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			6.0	6.0	6.0	6.0			
Lead/Lag			Lag						Lead
Lead-Lag Optimize?			Yes						Yes
Recall Mode			None	None	None	None	None	None	None
Act Effect Green (s)	84.9	84.9	51.7	79.0	21.2	21.2			
Actuated g/C Ratio	0.72	0.72	0.44	0.67	0.18	0.18			
v/c Ratio	0.61	0.35	0.57	0.11	0.30	0.60			
Control Delay	27.3	1.4	29.0	1.3	44.9	9.5			
Queue Delay	56.1	0.7	0.0	0.0	0.0	0.6			
Total Delay	83.5	2.1	29.0	1.3	44.9	10.1			
LOS	F	A	C	A	D	B			
Approach Delay		40.0	23.1		18.0				
Approach LOS		D	C		B				
Queue Length 50th (ft)	121	11	260	0	66	0			
Queue Length 95th (ft)	240	13	417	19	117	81			

Lanes, Volumes, Timings

2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Internal Link Dist (ft)		41	625		469				
Turn Bay Length (ft)					250				
Base Capacity (vph)	677	1411	882	1236	463	634			
Starvation Cap Reductn	302	585	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0	92			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	1.12	0.58	0.53	0.10	0.21	0.60			

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 118.2

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 29.9

Intersection LOS: C

Intersection Capacity Utilization 63.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: 143rd St & Southwest Hwy (IL 7)

72 s		36 s		22 s	
12 s		60 s			

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	5	55	41	8	19	119	1495	62	30	1367	125
Future Volume (vph)	64	5	55	41	8	19	119	1495	62	30	1367	125
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	0		0	0		0	160		155	300		300
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	0			25			240			150		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor			0.99	1.00			1.00					0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	2000	1615	1719	2000	1615	3502	5250	1615	3400	5250	1615
Flt Permitted	0.889						0.950			0.950		
Satd. Flow (perm)	1689	2000	1594	1808	2000	1615	3499	5250	1615	3400	5250	1595
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			63			59			77			142
Link Speed (mph)		20			20			35			35	
Link Distance (ft)		224			632			755			800	
Travel Time (s)		7.6			21.5			14.7			15.6	
Confl. Peds. (#/hr)			1	1			1					1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%	0%	4%	0%	3%	4%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	6	63	47	9	22	135	1699	70	34	1553	142
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	8.5	16.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5
Total Split (s)	13.0	42.0	16.0	14.0	43.0	16.0	16.0	48.0	14.0	16.0	48.0	13.0
Total Split (%)	10.8%	35.0%	13.3%	11.7%	35.8%	13.3%	13.3%	40.0%	11.7%	13.3%	40.0%	10.8%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
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	0.0
Total Lost Time (s)	3.5	6.0	5.5	3.5	6.0	5.5	5.5	6.0	3.5	5.5	6.0	3.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	12.5	10.0	14.2	11.5	10.2	10.1	10.0	87.1	101.9	6.7	81.6	94.1
Actuated g/C Ratio	0.10	0.08	0.12	0.10	0.08	0.08	0.08	0.73	0.85	0.06	0.68	0.78
v/c Ratio	0.39	0.04	0.26	0.28	0.05	0.12	0.46	0.45	0.05	0.18	0.44	0.11
Control Delay	54.1	51.2	12.6	51.0	51.1	1.3	53.3	5.1	0.4	55.9	10.1	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.1	51.2	12.6	51.0	51.1	1.3	53.3	5.1	0.4	55.9	10.1	1.0
LOS	D	D	B	D	D	A	D	A	A	E	B	A
Approach Delay		35.6			37.0			8.4			10.3	
Approach LOS		D			D			A			B	

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	55	4	0	35	7	0	52	103	0	13	159	0
Queue Length 95th (ft)	86	18	34	62	23	0	m83	173	m1	29	302	18
Internal Link Dist (ft)		144			552			675			720	
Turn Bay Length (ft)							160		155	300		300
Base Capacity (vph)	188	600	259	191	616	239	322	3811	1405	297	3569	1285
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.01	0.24	0.25	0.01	0.09	0.42	0.45	0.05	0.11	0.44	0.11

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 105 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 10.8

Intersection LOS: B

Intersection Capacity Utilization 55.6%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 3: La Grange Road & 142nd St/Mall Access

				
Ø1	Ø2 (R)		Ø3	Ø4
16 s	48 s		14 s	42 s
				
Ø5	Ø6 (R)		Ø7	Ø8
16 s	48 s		13 s	43 s

Lanes, Volumes, Timings
4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (vph)	140	340	119	191	384	373	131	1163	104	165	1183	115
Future Volume (vph)	140	340	119	191	384	373	131	1163	104	165	1183	115
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		390	255		425	170		0	190		0
Storage Lanes	1		1	2		1	2		0	2		0
Taper Length (ft)	90			210			295			230		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00					0.99	1.00				1.00	
Frt			0.850			0.850		0.988			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3725	1568	3400	3762	1599	3467	4885	0	3400	4921	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3461	3725	1568	3400	3762	1578	3465	4885	0	3400	4921	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			82		15			17	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		650			1235			855			755	
Travel Time (s)		12.7			24.1			16.7			14.7	
Confl. Peds. (#/hr)	1					1	1					1
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%	2%	3%	3%	1%	1%	1%	5%	4%	3%	4%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	144	351	123	197	396	385	135	1306	0	170	1339	0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Detector Phase	7	4	5	3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	12.0	3.0	3.0	12.0	3.0	3.0	15.0		3.0	15.0	
Minimum Split (s)	8.5	18.5	8.5	8.5	18.5	8.5	8.5	21.5		8.5	21.5	
Total Split (s)	17.0	29.0	16.0	17.0	29.0	19.0	16.0	55.0		19.0	58.0	
Total Split (%)	14.2%	24.2%	13.3%	14.2%	24.2%	15.8%	13.3%	45.8%		15.8%	48.3%	
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5	5.5	5.5	6.5	5.5	5.5	6.5		5.5	6.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effect Green (s)	10.0	19.6	35.5	10.8	20.5	32.6	9.4	54.5		11.1	56.1	
Actuated g/C Ratio	0.08	0.16	0.30	0.09	0.17	0.27	0.08	0.45		0.09	0.47	
v/c Ratio	0.50	0.58	0.24	0.64	0.62	0.79	0.50	0.59		0.54	0.58	
Control Delay	58.3	45.3	11.6	62.7	50.4	40.0	59.3	26.3		65.9	16.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	58.3	45.3	11.6	62.7	50.4	40.0	59.3	26.3		65.9	16.8	
LOS	E	D	B	E	D	D	E	C		E	B	
Approach Delay		41.6			48.8			29.4			22.3	
Approach LOS		D			D			C			C	

Lanes, Volumes, Timings
4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	57	138	35	76	150	203	52	272		46	280	
Queue Length 95th (ft)	89	186	33	116	200	303	85	346		110	118	
Internal Link Dist (ft)		570			1155			775			675	
Turn Bay Length (ft)	225		390	255		425	170			190		
Base Capacity (vph)	332	698	535	325	705	520	303	2225		382	2311	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.43	0.50	0.23	0.61	0.56	0.74	0.45	0.59		0.45	0.58	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 100 (83%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 32.9

Intersection LOS: C

Intersection Capacity Utilization 66.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: 143rd St & La Grange Road

 Ø1	 Ø2 (R)	 Ø3	 Ø4
19 s	55 s	17 s	29 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
16 s	58 s	17 s	29 s

Lanes, Volumes, Timings
5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	441	43	73	423	11	25	27	71	82	23	11
Future Volume (vph)	86	441	43	73	423	11	25	27	71	82	23	11
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	170		0	185		0	85		0	0		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	125			70			130			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00					0.99
Frt		0.987				0.850		0.892				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3499	0	1805	3689	1615	1736	1695	0	1805	2000	1615
Flt Permitted	0.456			0.440			0.741			0.543		
Satd. Flow (perm)	849	3499	0	836	3689	1615	1353	1695	0	1032	2000	1593
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		11				123						
Link Speed (mph)		35			35			20			20	
Link Distance (ft)		445			650			420			281	
Travel Time (s)		8.7			12.7			14.3			9.6	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	0%	0%	3%	0%	4%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	532	0	80	465	12	27	108	0	90	25	12
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0	15.0	3.0	8.0		3.0	8.0	8.0
Minimum Split (s)	6.5	21.0		6.5	21.0	21.0	6.5	21.0		6.5	14.0	14.0
Total Split (s)	13.0	59.0		18.0	64.0	64.0	18.0	30.0		13.0	25.0	25.0
Total Split (%)	10.8%	49.2%		15.0%	53.3%	53.3%	15.0%	25.0%		10.8%	20.8%	20.8%
Yellow Time (s)	3.5	4.0		3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	0.0	2.0		0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	6.0	3.5	6.0		3.5	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effect Green (s)	79.0	69.8		77.5	67.6	67.6	24.2	14.8		31.6	22.4	22.4
Actuated g/C Ratio	0.66	0.58		0.65	0.56	0.56	0.20	0.12		0.26	0.19	0.19
v/c Ratio	0.15	0.26		0.13	0.22	0.01	0.09	0.52		0.26	0.07	0.04
Control Delay	8.4	14.1		8.7	14.5	0.0	31.1	57.3		34.3	40.3	39.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	8.4	14.1		8.7	14.5	0.0	31.1	57.3		34.3	40.3	39.9
LOS	A	B		A	B	A	C	E		C	D	D
Approach Delay		13.3			13.3			52.1			36.0	
Approach LOS		B			B			D			D	

Lanes, Volumes, Timings

5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	23	102		18	75	0	16	79		54	17	8
Queue Length 95th (ft)	52	167		m39	98	m0	36	133		89	40	25
Internal Link Dist (ft)		365			570			340			201	
Turn Bay Length (ft)	170			185			85					
Base Capacity (vph)	640	2041		684	2086	967	392	339		344	375	298
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.15	0.26		0.12	0.22	0.01	0.07	0.32		0.26	0.07	0.04

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 49 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 18.9

Intersection LOS: B

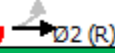
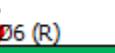
Intersection Capacity Utilization 42.1%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 5: Ravina Ave /Ravina Ave & 143rd St

 Ø1		 Ø2 (R)		 Ø3		 Ø4	
18 s		59 s		18 s		25 s	
 Ø5		 Ø6 (R)		 Ø7		 Ø8	
13 s		64 s		13 s		30 s	

HCM 6th TWSC
6: 143rd St & Main St

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	570	409	50	0	51
Future Vol, veh/h	0	570	409	50	0	51
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	100	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	2	3	0	0	0
Mvmt Flow	0	640	460	56	0	57

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 231
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.9
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.3
Pot Cap-1 Maneuver	0	-	- - 0 777
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 776
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	776
HCM Lane V/C Ratio	-	-	-	0.074
HCM Control Delay (s)	-	-	-	10
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2

HCM 6th TWSC
7: Jefferson Ave & 142nd St

Intersection

Int Delay, s/veh 6.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	14	1	81	134	54	110
Future Vol, veh/h	14	1	81	134	54	110
Conflicting Peds, #/hr	0	10	10	0	60	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	21	1	119	197	79	162

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	32
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1593
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1578
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.8	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	718	-	-	1578	-
HCM Lane V/C Ratio	0.336	-	-	0.075	-
HCM Control Delay (s)	12.5	-	-	7.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.5	-	-	0.2	-

HCM 6th TWSC
9: Ravina Ave & Crescent Park Cr

Intersection

Int Delay, s/veh 3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	71	0	0	0	58
Future Vol, veh/h	55	71	0	0	0	58
Conflicting Peds, #/hr	0	2	2	0	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	49	49	49	49	49	49
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	112	145	0	0	0	118

Major/Minor	Major1	Minor1
Conflicting Flow All	0	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	-
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	-
Pot Cap-1 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	-
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	EB	NB
HCM Control Delay, s	0	9.9
HCM LOS		A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	858	-	-
HCM Lane V/C Ratio	0.138	-	-
HCM Control Delay (s)	9.9	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-

HCM 6th TWSC
10: Ravina Ave & Parking Access/B St

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	8	30	15	2	0	11	54	59	0	71	0
Future Vol, veh/h	4	8	30	15	2	0	11	54	59	0	71	0
Conflicting Peds, #/hr	0	0	0	0	0	0	7	0	20	20	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	2	0	0	0
Mvmt Flow	5	11	40	20	3	0	15	72	79	0	95	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	245	303	102	283	264	132	102	0	0	171	0	0
Stage 1	102	102	-	162	162	-	-	-	-	-	-	-
Stage 2	143	201	-	121	102	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	713	613	959	673	645	923	1503	-	-	1418	-	-
Stage 1	909	815	-	845	768	-	-	-	-	-	-	-
Stage 2	865	739	-	888	815	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	700	590	953	618	621	905	1493	-	-	1391	-	-
Mov Cap-2 Maneuver	700	590	-	618	621	-	-	-	-	-	-	-
Stage 1	893	809	-	820	745	-	-	-	-	-	-	-
Stage 2	852	717	-	840	809	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.7		11		0.7		0					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1493	-	-	828	618	1391	-	-				
HCM Lane V/C Ratio	0.01	-	-	0.068	0.037	-	-	-				
HCM Control Delay (s)	7.4	0	-	9.7	11	0	-	-				
HCM Lane LOS	A	A	-	A	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-				

HCM 6th TWSC
11: 142nd St & Parcel B Access

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	124	173	79	0	42
Future Vol, veh/h	0	124	173	79	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	131	182	83	0	44

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 133
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.9
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.3
Pot Cap-1 Maneuver	0	-	- 0 898
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 898
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	898
HCM Lane V/C Ratio	-	-	-	0.049
HCM Control Delay (s)	-	-	-	9.2
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.2

HCM 6th TWSC 12: Crescent Park Cr & Parcel A Access

Intersection

Int Delay, s/veh 1.8

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations						
Traffic Vol, veh/h	0	0	96	77	0	42
Future Vol, veh/h	0	0	96	77	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	1	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	101	81	0	44

Major/Minor Major2 Minor2

Conflicting Flow All	-	0	-	142
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.3
Pot Cap-1 Maneuver	-	-	0	911
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	911
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach WB SB

HCM Control Delay, s	0	9.2
HCM LOS		A

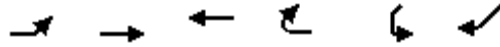
Minor Lane/Major Mvmt WBT WBR SBLn1

Capacity (veh/h)	-	-	911
HCM Lane V/C Ratio	-	-	0.049
HCM Control Delay (s)	-	-	9.2
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.2

Capacity Analysis Summary Sheets

Projected Weekday Evening Peak Hour Conditions

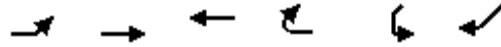
Lanes, Volumes, Timings
2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Lane Configurations									
Traffic Volume (vph)	293	648	564	139	249	425			
Future Volume (vph)	293	648	564	139	249	425			
Ideal Flow (vphpl)	1900	2000	2000	1900	1900	1900			
Storage Length (ft)	0			0	250	0			
Storage Lanes	1			1	1	1			
Taper Length (ft)	170				185				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt				0.850		0.850			
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1961	1980	1583	1805	1599			
Flt Permitted	0.260				0.950				
Satd. Flow (perm)	484	1961	1980	1583	1805	1599			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				148		443			
Link Speed (mph)		30	30		35				
Link Distance (ft)		121	705		549				
Travel Time (s)		2.8	16.0		10.7				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Heavy Vehicles (%)	2%	2%	1%	2%	0%	1%			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	312	689	600	148	265	452			
Turn Type	custom	NA	NA	pm+ov	Prot	Prot			
Protected Phases	4 5	2 4	6	10	10	10	2	4	5
Permitted Phases	2			6					
Detector Phase	4 5	2 4	6	10	10	10			
Switch Phase									
Minimum Initial (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			22.0	22.0	22.0	22.0	22.0	22.0	12.0
Total Split (s)			83.0	33.0	33.0	33.0	95.0	22.0	12.0
Total Split (%)			55.3%	22.0%	22.0%	22.0%	63%	15%	8%
Yellow Time (s)			4.5	4.5	4.5	4.5	4.5	4.5	3.5
All-Red Time (s)			1.5	1.5	1.5	1.5	1.5	1.5	0.0
Lost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			6.0	6.0	6.0	6.0			
Lead/Lag			Lag						Lead
Lead-Lag Optimize?			Yes						Yes
Recall Mode			None	None	None	None	None	None	None
Act Effect Green (s)	110.3	110.3	78.0	111.1	27.0	27.0			
Actuated g/C Ratio	0.74	0.74	0.52	0.74	0.18	0.18			
v/c Ratio	0.54	0.48	0.58	0.12	0.81	0.69			
Control Delay	25.3	3.5	27.2	1.0	78.7	11.3			
Queue Delay	18.8	0.4	0.0	0.0	0.0	2.9			
Total Delay	44.1	3.8	27.3	1.0	78.7	14.2			
LOS	D	A	C	A	E	B			
Approach Delay		16.4	22.1		38.0				
Approach LOS		B	C		D				
Queue Length 50th (ft)	100	14	390	0	252	7			
Queue Length 95th (ft)	166	17	514	17	#393	119			

Lanes, Volumes, Timings

2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Internal Link Dist (ft)		41	625		469				
Turn Bay Length (ft)					250				
Base Capacity (vph)	599	1458	1038	1215	326	652			
Starvation Cap Reductn	275	300	0	0	0	0			
Spillback Cap Reductn	0	0	9	0	0	110			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	0.96	0.59	0.58	0.12	0.81	0.83			

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 149.3

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 24.4

Intersection LOS: C

Intersection Capacity Utilization 73.2%

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: 2: 143rd St & Southwest Hwy (IL 7)

95 s		33 s		22 s	
12 s		83 s			

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	10	126	95	12	68	117	1953	110	85	1879	144
Future Volume (vph)	116	10	126	95	12	68	117	1953	110	85	1879	144
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	0		0	0		0	160		155	300		300
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	0			25			240			150		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99			0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	2000	1615	1805	2000	1615	3502	5353	1599	3502	5406	1615
Flt Permitted				0.769			0.950			0.950		
Satd. Flow (perm)	1895	2000	1589	1455	2000	1591	3502	5353	1579	3501	5406	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95			72			87			153
Link Speed (mph)		20			20			35			35	
Link Distance (ft)		224			632			755			800	
Travel Time (s)		7.6			21.5			14.7			15.6	
Confl. Peds. (#/hr)	2		3	3		2			1	1		
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	1%	0%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	11	134	101	13	72	124	2078	117	90	1999	153
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	8.5	16.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5
Total Split (s)	16.0	22.0	17.0	16.0	22.0	17.0	17.0	75.0	16.0	17.0	75.0	16.0
Total Split (%)	12.3%	16.9%	13.1%	12.3%	16.9%	13.1%	13.1%	57.7%	12.3%	13.1%	57.7%	12.3%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
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	0.0
Total Lost Time (s)	3.5	6.0	5.5	3.5	6.0	5.5	5.5	6.0	3.5	5.5	6.0	3.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effect Green (s)	14.2	10.0	12.1	17.4	10.0	12.9	10.0	88.2	105.6	8.7	86.9	104.6
Actuated g/C Ratio	0.11	0.08	0.09	0.13	0.08	0.10	0.08	0.68	0.81	0.07	0.67	0.80
v/c Ratio	0.62	0.07	0.57	0.43	0.08	0.32	0.46	0.57	0.09	0.38	0.55	0.12
Control Delay	67.1	57.0	27.0	54.3	57.2	13.2	78.6	4.5	0.1	62.4	13.6	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	67.1	57.0	27.0	54.3	57.2	13.2	78.6	4.8	0.1	62.4	13.6	1.0
LOS	E	E	C	D	E	B	E	A	A	E	B	A
Approach Delay		46.6			38.6			8.5			14.7	

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	D			D			A			B		
Queue Length 50th (ft)	102	9	32	83	10	0	57	59	0	38	254	0
Queue Length 95th (ft)	146	29	84	124	32	41	m64	m118	m0	65	455	19
Internal Link Dist (ft)	144			552			675			720		
Turn Bay Length (ft)							160			155		
Base Capacity (vph)	209	246	256	245	246	257	316	3632	1310	309	3614	1338
Starvation Cap Reductn	0	0	0	0	0	0	0	781	0	0	0	0
Spillback Cap Reductn	0	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	0
Reduced v/c Ratio	0.59	0.04	0.52	0.41	0.05	0.28	0.39	0.73	0.09	0.29	0.55	0.11

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 44 (34%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 14.4

Intersection LOS: B

Intersection Capacity Utilization 66.9%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 3: La Grange Road & 142nd St/Mall Access

														
Ø1	Ø2 (R)	Ø3	Ø4	Ø5	Ø6 (R)	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø13	Ø14	Ø15
17 s	75 s	16 s	22 s	17 s	75 s	16 s	22 s	16 s	22 s	16 s	22 s	16 s	22 s	16 s

Lanes, Volumes, Timings
4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	572	207	310	474	280	159	1671	191	299	1639	162
Future Volume (vph)	229	572	207	310	474	280	159	1671	191	299	1639	162
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		390	255		425	170		0	190		0
Storage Lanes	1		1	2		1	2		0	2		0
Taper Length (ft)	90			210			295			230		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00		0.99	1.00		0.99		1.00		1.00		
Frt			0.850			0.850		0.985			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3762	1615	3467	3762	1599	3502	5052	0	3502	5068	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3462	3762	1593	3458	3762	1578	3502	5052	0	3501	5068	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			76		17			15	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		650			1235			855			755	
Travel Time (s)		12.7			24.1			16.7			14.7	
Confl. Peds. (#/hr)	1		2	2		1			1	1		
Confl. Bikes (#/hr)									1			
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 (%)	1%	1%	0%	1%	1%	1%	0%	1%	1%	0%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	241	602	218	326	499	295	167	1960	0	315	1896	0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Detector Phase	7	4	5	3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	12.0	3.0	3.0	12.0	3.0	3.0	15.0		3.0	15.0	
Minimum Split (s)	8.5	18.5	8.5	8.5	18.5	8.5	8.5	21.5		8.5	21.5	
Total Split (s)	19.0	33.0	19.0	19.0	33.0	23.0	19.0	55.0		23.0	59.0	
Total Split (%)	14.6%	25.4%	14.6%	14.6%	25.4%	17.7%	14.6%	42.3%		17.7%	45.4%	
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5	5.5	5.5	6.5	5.5	5.5	6.5		5.5	6.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effect Green (s)	12.7	26.1	38.4	13.5	26.9	43.8	11.3	50.5		15.9	55.1	
Actuated g/C Ratio	0.10	0.20	0.30	0.10	0.21	0.34	0.09	0.39		0.12	0.42	
v/c Ratio	0.71	0.80	0.41	0.91	0.64	0.51	0.55	0.99		0.74	0.88	
Control Delay	69.5	59.1	30.5	86.2	51.6	25.2	63.7	58.3		66.1	39.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	69.5	59.1	30.5	86.2	51.6	25.2	63.7	58.3		66.1	39.4	
LOS	E	E	C	F	D	C	E	E		E	D	
Approach Delay		55.6			54.7			58.8			43.2	

Lanes, Volumes, Timings 4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	E			D			E			D		
Queue Length 50th (ft)	104	273	120	142	205	134	70	~638		140	302	
Queue Length 95th (ft)	154	314	153	#229	266	216	106	#743		191	489	
Internal Link Dist (ft)	570			1155			775			675		
Turn Bay Length (ft)	225		390	255		425	170			190		
Base Capacity (vph)	360	766	552	360	778	603	363	1972		471	2156	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.67	0.79	0.39	0.91	0.64	0.49	0.46	0.99		0.67	0.88	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 22 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 52.3

Intersection LOS: D

Intersection Capacity Utilization 88.9%

ICU Level of Service E

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.

Splits and Phases: 4: 143rd St & La Grange Road

				
Ø1	Ø2 (R)	Ø3	Ø4	
23 s	55 s	19 s	33 s	
				
Ø5	Ø6 (R)	Ø7	Ø8	
19 s	59 s	19 s	33 s	

Lanes, Volumes, Timings
5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	640	64	170	617	27	73	33	174	166	32	23
Future Volume (vph)	88	640	64	170	617	27	73	33	174	166	32	23
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	170		0	185		0	85		0	0		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	125			70			130			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00					0.99
Frt		0.986				0.850		0.874				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3527	0	1805	3762	1615	1805	1647	0	1805	2000	1615
Flt Permitted	0.366			0.285			0.735			0.340		
Satd. Flow (perm)	669	3527	0	542	3762	1615	1395	1647	0	646	2000	1593
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		11				84						
Link Speed (mph)		35			35			20			20	
Link Distance (ft)		445			650			420			281	
Travel Time (s)		8.7			12.7			14.3			9.6	
Confl. Peds. (#/hr)							1					1
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 (%)	4%	1%	0%	0%	1%	0%	0%	0%	1%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	741	0	179	649	28	77	218	0	175	34	24
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0	15.0	3.0	8.0		3.0	8.0	8.0
Minimum Split (s)	6.5	21.0		6.5	21.0	21.0	6.5	21.0		6.5	14.0	14.0
Total Split (s)	13.0	65.0		20.0	72.0	72.0	15.0	32.0		13.0	30.0	30.0
Total Split (%)	10.0%	50.0%		15.4%	55.4%	55.4%	11.5%	24.6%		10.0%	23.1%	23.1%
Yellow Time (s)	3.5	4.0		3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	0.0	2.0		0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	6.0	3.5	6.0		3.5	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	74.6	64.0		80.2	66.8	66.8	34.4	22.7		40.9	28.8	28.8
Actuated g/C Ratio	0.57	0.49		0.62	0.51	0.51	0.26	0.17		0.31	0.22	0.22
v/c Ratio	0.21	0.43		0.41	0.34	0.03	0.19	0.76		0.55	0.08	0.07
Control Delay	11.7	22.6		8.2	14.5	3.9	31.8	67.8		40.7	42.0	42.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	11.7	22.6		8.2	14.5	3.9	31.8	67.8		40.7	42.0	42.0
LOS	B	C		A	B	A	C	E		D	D	D
Approach Delay		21.4			12.8			58.4			41.0	
Approach LOS		C			B			E			D	

Lanes, Volumes, Timings

5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	33	220		14	208	3	43	174		104	22	16
Queue Length 95th (ft)	51	263		m93	m300	m7	86	261		175	55	43
Internal Link Dist (ft)		365			570			340			201	
Turn Bay Length (ft)	170			185			85					
Base Capacity (vph)	468	1746		497	1984	892	430	329		321	443	353
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.20	0.42		0.36	0.33	0.03	0.18	0.66		0.55	0.08	0.07

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 25.1

Intersection LOS: C

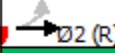
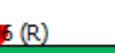
Intersection Capacity Utilization 67.5%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 5: Ravina Ave /Ravina Ave & 143rd St

 Ø1		 Ø2 (R)		 Ø3		 Ø4	
20 s		65 s		15 s		30 s	
 Ø5		 Ø6 (R)		 Ø7		 Ø8	
13 s		72 s		13 s		32 s	

HCM 6th TWSC
6: 143rd St & Main St

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	792	661	52	0	87
Future Vol, veh/h	0	792	661	52	0	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	100	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	0	825	689	54	0	91

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 345
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.9
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.3
Pot Cap-1 Maneuver	0	-	- 0 657
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 657
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	657
HCM Lane V/C Ratio	-	-	-	0.138
HCM Control Delay (s)	-	-	-	11.4
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.5

HCM 6th TWSC
7: Jefferson Ave & 142nd St

Intersection

Int Delay, s/veh 7.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	36	3	90	177	65	216
Future Vol, veh/h	36	3	90	177	65	216
Conflicting Peds, #/hr	0	10	10	0	100	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	44	4	111	219	80	267

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	58
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1559
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1544
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	737	-	-	1544	-
HCM Lane V/C Ratio	0.471	-	-	0.072	-
HCM Control Delay (s)	14.2	-	-	7.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	2.5	-	-	0.2	-

HCM 6th TWSC
9: Ravina Ave & Crescent Park Cr

Intersection

Int Delay, s/veh 2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	81	115	0	0	0	67
Future Vol, veh/h	81	115	0	0	0	67
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	105	149	0	0	0	87

Major/Minor	Major1	Minor1
Conflicting Flow All	0	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	-
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	-
Pot Cap-1 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	-
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	EB	NB
HCM Control Delay, s	0	9.7
HCM LOS		A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	851	-	-
HCM Lane V/C Ratio	0.102	-	-
HCM Control Delay (s)	9.7	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-

HCM 6th TWSC
10: Ravina Ave & Parking Access/B St

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	26	81	8	1	28	64	56	0	114	1
Future Vol, veh/h	2	0	26	81	8	1	28	64	56	0	114	1
Conflicting Peds, #/hr	7	0	1	1	0	7	7	0	75	75	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	10	0	0	0
Mvmt Flow	2	0	30	94	9	1	33	74	65	0	133	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	326	421	142	398	389	189	141	0	0	214	0	0
Stage 1	141	141	-	248	248	-	-	-	-	-	-	-
Stage 2	185	280	-	150	141	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	631	527	911	566	549	858	1455	-	-	1368	-	-
Stage 1	867	784	-	760	705	-	-	-	-	-	-	-
Stage 2	821	683	-	857	784	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	601	474	904	498	494	791	1445	-	-	1270	-	-
Mov Cap-2 Maneuver	601	474	-	498	494	-	-	-	-	-	-	-
Stage 1	839	779	-	688	639	-	-	-	-	-	-	-
Stage 2	782	619	-	828	779	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.3		14.1		1.4		0					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1445	-	-	873	500	1270	-	-				
HCM Lane V/C Ratio	0.023	-	-	0.037	0.209	-	-	-				
HCM Control Delay (s)	7.5	0	-	9.3	14.1	0	-	-				
HCM Lane LOS	A	A	-	A	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.8	0	-	-				

HCM 6th TWSC
11: 142nd St & Parcel B Access

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	252	198	75	0	69
Future Vol, veh/h	0	252	198	75	0	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	265	208	79	0	73

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 144
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.9
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.3
Pot Cap-1 Maneuver	0	-	- 0 884
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 884
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	884
HCM Lane V/C Ratio	-	-	-	0.082
HCM Control Delay (s)	-	-	-	9.4
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.3

HCM 6th TWSC 12: Crescent Park Cr & Parcel A Access

Intersection

Int Delay, s/veh 2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	129	74	0	67
Future Vol, veh/h	0	0	129	74	0	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	1	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	136	78	0	71

Major/Minor	Major2	Minor2
Conflicting Flow All	-	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	-
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	-
Pot Cap-1 Maneuver	-	0
Stage 1	-	0
Stage 2	-	0
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	-
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

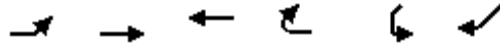
Approach	WB	SB
HCM Control Delay, s	0	9.5
HCM LOS		A

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	874
HCM Lane V/C Ratio	-	-	0.081
HCM Control Delay (s)	-	-	9.5
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.3

Capacity Analysis Summary Sheets

Projected Saturday Midday Peak Hour Conditions

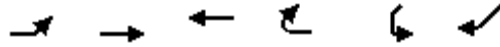
Lanes, Volumes, Timings
2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Lane Configurations									
Traffic Volume (vph)	361	374	378	81	79	281			
Future Volume (vph)	361	374	378	81	79	281			
Ideal Flow (vphpl)	1900	2000	2000	1900	1900	1900			
Storage Length (ft)	0			0	250	0			
Storage Lanes	1			1	1	1			
Taper Length (ft)	170				185				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt				0.850		0.850			
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1905	1887	1615	1805	1524			
Flt Permitted	0.364				0.950				
Satd. Flow (perm)	678	1905	1887	1615	1805	1524			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				86		299			
Link Speed (mph)		30	30		35				
Link Distance (ft)		121	705		549				
Travel Time (s)		2.8	16.0		10.7				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Heavy Vehicles (%)	2%	5%	6%	0%	0%	6%			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	384	398	402	86	84	299			
Turn Type	custom	NA	NA	pm+ov	Prot	Prot			
Protected Phases	4 5	2 4	6	10	10	10	2	4	5
Permitted Phases	2			6					
Detector Phase	4 5	2 4	6	10	10	10			
Switch Phase									
Minimum Initial (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			22.0	22.0	22.0	22.0	22.0	22.0	12.0
Total Split (s)			60.0	36.0	36.0	36.0	72.0	22.0	12.0
Total Split (%)			46.2%	27.7%	27.7%	27.7%	55%	17%	9%
Yellow Time (s)			4.5	4.5	4.5	4.5	4.5	4.5	3.5
All-Red Time (s)			1.5	1.5	1.5	1.5	1.5	1.5	0.0
Lost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			6.0	6.0	6.0	6.0			
Lead/Lag			Lag						Lead
Lead-Lag Optimize?			Yes						Yes
Recall Mode			None	None	None	None	None	None	None
Act Effect Green (s)	79.8	79.8	47.0	71.5	18.4	18.4			
Actuated g/C Ratio	0.72	0.72	0.43	0.65	0.17	0.17			
v/c Ratio	0.51	0.29	0.50	0.08	0.28	0.60			
Control Delay	15.8	1.3	26.4	1.5	44.6	10.0			
Queue Delay	6.3	0.4	0.0	0.0	0.0	0.5			
Total Delay	22.2	1.7	26.4	1.5	44.6	10.5			
LOS	C	A	C	A	D	B			
Approach Delay		11.7	22.0		17.9				
Approach LOS		B	C		B				
Queue Length 50th (ft)	78	9	199	0	57	0			
Queue Length 95th (ft)	168	11	347	16	105	76			

Lanes, Volumes, Timings

2: 143rd St & Southwest Hwy (IL 7)



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR	Ø2	Ø4	Ø5
Internal Link Dist (ft)		41	625		469				
Turn Bay Length (ft)					250				
Base Capacity (vph)	752	1512	950	1247	503	640			
Starvation Cap Reductn	309	632	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0	100			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	0.87	0.45	0.42	0.07	0.17	0.55			

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 110.5

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 16.2

Intersection LOS: B

Intersection Capacity Utilization 58.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: 143rd St & Southwest Hwy (IL 7)

72 s		36 s		22 s	
12 s		60 s			

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	6	83	117	8	68	111	1680	146	83	1634	128
Future Volume (vph)	85	6	83	117	8	68	111	1680	146	83	1634	128
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	0		0	0		0	160		155	300		300
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	0			25			240			150		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00					0.99						
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	2000	1615	1805	2000	1615	3502	5406	1615	3502	5406	1615
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	1897	2000	1615	1900	2000	1594	3502	5406	1615	3502	5406	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			84			69			138			129
Link Speed (mph)		20			20			35				35
Link Distance (ft)		224			632			755				800
Travel Time (s)		7.6			21.5			14.7				15.6
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	6	84	118	8	69	112	1697	147	84	1651	129
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	8.5	16.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5	8.5	21.0	8.5
Total Split (s)	14.0	23.0	18.0	19.0	28.0	18.0	18.0	70.0	19.0	18.0	70.0	14.0
Total Split (%)	10.8%	17.7%	13.8%	14.6%	21.5%	13.8%	13.8%	53.8%	14.6%	13.8%	53.8%	10.8%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
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	0.0
Total Lost Time (s)	3.5	6.0	5.5	3.5	6.0	5.5	5.5	6.0	3.5	5.5	6.0	3.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effect Green (s)	14.5	10.0	12.7	16.2	11.0	11.6	9.5	90.3	109.3	8.5	89.2	107.3
Actuated g/C Ratio	0.11	0.08	0.10	0.12	0.08	0.09	0.07	0.69	0.84	0.07	0.69	0.83
v/c Ratio	0.42	0.04	0.36	0.52	0.05	0.33	0.44	0.45	0.11	0.37	0.44	0.10
Control Delay	56.2	56.3	13.7	59.4	54.0	14.4	59.2	4.7	0.1	62.3	10.9	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	56.3	13.7	59.4	54.0	14.4	59.2	4.7	0.1	62.3	10.9	1.1
LOS	E	E	B	E	D	B	E	A	A	E	B	A
Approach Delay		36.0			43.3			7.5			12.5	
Approach LOS		D			D			A			B	

Lanes, Volumes, Timings

3: La Grange Road & 142nd St/Mall Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	69	5	0	97	6	0	49	88	0	35	195	0
Queue Length 95th (ft)	104	19	44	136	22	39	m66	109	m0	62	362	20
Internal Link Dist (ft)		144			552			675			720	
Turn Bay Length (ft)							160		155	300		300
Base Capacity (vph)	208	261	269	262	338	253	336	3754	1407	336	3711	1359
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.02	0.31	0.45	0.02	0.27	0.33	0.45	0.10	0.25	0.44	0.09

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 63 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 12.6

Intersection LOS: B

Intersection Capacity Utilization 61.9%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 3: La Grange Road & 142nd St/Mall Access

							
Ø1	Ø2 (R)		Ø3		Ø4		
18 s	70 s		19 s		23 s		
							
Ø5	Ø6 (R)		Ø7		Ø8		
18 s	70 s		14 s		28 s		

Lanes, Volumes, Timings
4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (vph)	180	406	267	279	388	201	220	1556	223	177	1536	121
Future Volume (vph)	180	406	267	279	388	201	220	1556	223	177	1536	121
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		390	255		425	170		0	190		0
Storage Lanes	1		1	2		1	2		0	2		0
Taper Length (ft)	90			210			295			230		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Frt			0.850			0.850		0.981			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	3762	1615	3467	3800	1599	3502	5044	0	3467	5083	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3502	3762	1615	3467	3800	1599	3502	5044	0	3467	5083	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			76		24			11	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		650			1235			855			755	
Travel Time (s)		12.7			24.1			16.7			14.7	
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 (%)	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	419	275	288	400	207	227	1834	0	182	1709	0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Detector Phase	7	4	5	3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	12.0	3.0	3.0	12.0	3.0	3.0	15.0		3.0	15.0	
Minimum Split (s)	8.5	18.5	8.5	8.5	18.5	8.5	8.5	21.5		8.5	21.5	
Total Split (s)	21.0	32.0	20.0	21.0	32.0	20.0	20.0	57.0		20.0	57.0	
Total Split (%)	16.2%	24.6%	15.4%	16.2%	24.6%	15.4%	15.4%	43.8%		15.4%	43.8%	
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5	5.5	5.5	6.5	5.5	5.5	6.5		5.5	6.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effect Green (s)	12.2	22.8	42.3	14.5	25.2	43.6	13.0	56.7		11.9	55.7	
Actuated g/C Ratio	0.09	0.18	0.33	0.11	0.19	0.34	0.10	0.44		0.09	0.43	
v/c Ratio	0.57	0.63	0.48	0.74	0.54	0.35	0.65	0.83		0.57	0.78	
Control Delay	62.9	54.0	27.0	68.2	50.1	21.2	65.3	36.9		83.0	28.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	62.9	54.0	27.0	68.2	50.1	21.2	65.3	36.9		83.0	28.0	
LOS	E	D	C	E	D	C	E	D		F	C	
Approach Delay		47.5			49.2			40.0			33.3	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	78	172	129	122	157	78	95	503		81	472	
Queue Length 95th (ft)	115	225	207	171	215	144	138	#610		124	191	

Lanes, Volumes, Timings 4: 143rd St & La Grange Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)	570			1155			775			675		
Turn Bay Length (ft)	225		390	255		425	170			190		
Base Capacity (vph)	417	737	594	413	767	616	390	2213		386	2182	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.45	0.57	0.46	0.70	0.52	0.34	0.58	0.83		0.47	0.78	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 61 (47%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 40.4

Intersection LOS: D

Intersection Capacity Utilization 78.7%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: 143rd St & La Grange Road

 Ø1	 Ø2 (R)	 Ø3	 Ø4
20 s	57 s	21 s	32 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
20 s	57 s	21 s	32 s

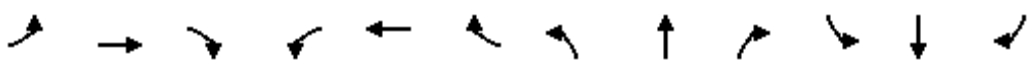
Lanes, Volumes, Timings

5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	617	78	101	511	6	85	21	108	105	20	12
Future Volume (vph)	62	617	78	101	511	6	85	21	108	105	20	12
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	170		0	185		0	85		0	0		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	125			70			130			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.97		0.99		1.00		
Frt		0.983				0.850		0.875				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3513	0	1805	3800	1615	1805	1641	0	1805	2000	1615
Flt Permitted	0.444			0.314			0.574			0.672		
Satd. Flow (perm)	839	3513	0	597	3800	1565	1091	1641	0	1275	2000	1615
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		14				123						
Link Speed (mph)		35			35			20			20	
Link Distance (ft)		445			650			420			281	
Travel Time (s)		8.7			12.7			14.3			9.6	
Confl. Peds. (#/hr)	11					11			1	1		
Confl. Bikes (#/hr)									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 (%)	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	716	0	104	527	6	88	133	0	108	21	12
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0	15.0	3.0	8.0		3.0	8.0	8.0
Minimum Split (s)	6.5	21.0		6.5	21.0	21.0	6.5	21.0		6.5	14.0	14.0
Total Split (s)	13.0	59.0		18.0	64.0	64.0	18.0	30.0		13.0	25.0	25.0
Total Split (%)	10.8%	49.2%		15.0%	53.3%	53.3%	15.0%	25.0%		10.8%	20.8%	20.8%
Yellow Time (s)	3.5	4.0		3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	0.0	2.0		0.0	2.0	2.0	0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	6.0	3.5	6.0		3.5	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effect Green (s)	75.1	65.6		77.8	68.4	68.4	31.1	16.8		23.8	15.0	15.0
Actuated g/C Ratio	0.63	0.55		0.65	0.57	0.57	0.26	0.14		0.20	0.12	0.12
v/c Ratio	0.11	0.37		0.22	0.24	0.01	0.23	0.58		0.36	0.08	0.06
Control Delay	8.7	16.8		9.3	14.6	0.0	32.9	57.7		39.1	44.2	43.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	8.7	16.8		9.3	14.6	0.0	32.9	57.7		39.1	44.2	43.6
LOS	A	B		A	B	A	C	E		D	D	D
Approach Delay		16.2			13.6			47.9			40.2	

Lanes, Volumes, Timings

5: Ravina Ave /Ravina Ave & 143rd St

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	B			B			D			D		
Queue Length 50th (ft)	16	158		27	107	0	51	98		64	14	8
Queue Length 95th (ft)	35	226		53	157	0	90	156		107	38	26
Internal Link Dist (ft)	365			570			340			201		
Turn Bay Length (ft)	170			185			85					
Base Capacity (vph)	618	1926		542	2167	945	416	328		304	324	262
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.10	0.37		0.19	0.24	0.01	0.21	0.41		0.36	0.06	0.05

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 49 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 21.1

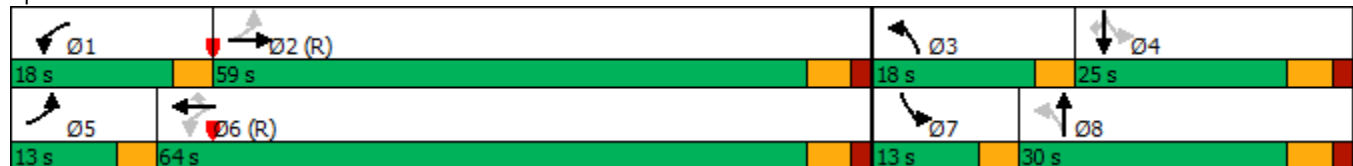
Intersection LOS: C

Intersection Capacity Utilization 55.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Ravina Ave /Ravina Ave & 143rd St



HCM 6th TWSC
6: 143rd St & Main St

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	757	593	15	0	60
Future Vol, veh/h	0	757	593	15	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	100	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	1	0	0	0	9
Mvmt Flow	0	797	624	16	0	63

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 312
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 7.08
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.39
Pot Cap-1 Maneuver	0	-	- - 0 664
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 664
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	664
HCM Lane V/C Ratio	-	-	-	0.095
HCM Control Delay (s)	-	-	-	11
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.3

HCM 6th TWSC
7: Jefferson Ave & 142nd St

Intersection

Int Delay, s/veh 6.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	38	3	72	170	42	136
Future Vol, veh/h	38	3	72	170	42	136
Conflicting Peds, #/hr	0	10	10	0	100	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	55	4	104	246	61	197

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	69
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1545
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1530
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	718	-	-	1530	-
HCM Lane V/C Ratio	0.359	-	-	0.068	-
HCM Control Delay (s)	12.8	-	-	7.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.6	-	-	0.2	-

HCM 6th TWSC
9: Ravina Ave & Crescent Park Cr

Intersection

Int Delay, s/veh 2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	50	71	0	0	0	40
Future Vol, veh/h	50	71	0	0	0	40
Conflicting Peds, #/hr	0	5	5	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	13	0	0	0	0	0
Mvmt Flow	63	89	0	0	0	50

Major/Minor	Major1	Minor1
Conflicting Flow All	0	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	-
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	-
Pot Cap-1 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	-
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	EB	NB
HCM Control Delay, s	0	9
HCM LOS		A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	941	-	-
HCM Lane V/C Ratio	0.053	-	-
HCM Control Delay (s)	9	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-

HCM 6th TWSC
10: Ravina Ave & Parking Access/B St

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	3	65	1	3	5	37	47	0	69	2
Future Vol, veh/h	0	2	3	65	1	3	5	37	47	0	69	2
Conflicting Peds, #/hr	10	0	0	0	0	10	3	0	75	75	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	11	0
Mvmt Flow	0	3	4	87	1	4	7	49	63	0	92	3
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	204	298	97	267	268	166	98	0	0	187	0	0
Stage 1	97	97	-	170	170	-	-	-	-	-	-	-
Stage 2	107	201	-	97	98	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	758	617	965	690	641	884	1508	-	-	1399	-	-
Stage 1	914	819	-	837	762	-	-	-	-	-	-	-
Stage 2	903	739	-	914	818	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	741	569	962	633	591	813	1504	-	-	1299	-	-
Mov Cap-2 Maneuver	741	569	-	633	591	-	-	-	-	-	-	-
Stage 1	907	817	-	773	704	-	-	-	-	-	-	-
Stage 2	884	683	-	907	816	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.8		11.6		0.4		0					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1504	-	-	754	638	1299	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.009	0.144	-	-	-				
HCM Control Delay (s)	7.4	0	-	9.8	11.6	0	-	-				
HCM Lane LOS	A	A	-	A	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0	-	-				

HCM 6th TWSC
11: 142nd St & Parcel B Access

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	174	171	76	0	71
Future Vol, veh/h	0	174	171	76	0	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	183	180	80	0	75

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 130
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.9
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.3
Pot Cap-1 Maneuver	0	-	- 0 902
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 902
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	902
HCM Lane V/C Ratio	-	-	-	0.083
HCM Control Delay (s)	-	-	-	9.4
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.3

HCM 6th TWSC 12: Crescent Park Cr & Parcel A Access

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	98	73	0	70
Future Vol, veh/h	0	0	98	73	0	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	1	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	103	77	0	74

Major/Minor	Major2	Minor2
Conflicting Flow All	-	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	6.2
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	3.3
Pot Cap-1 Maneuver	-	0
Stage 1	-	0
Stage 2	-	0
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	911
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

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

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	911
HCM Lane V/C Ratio	-	-	0.081
HCM Control Delay (s)	-	-	9.3
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.3