Traffic Impact Study
Proposed Residential Development
Orland Park, Illinois

Prepared For:

PULTE GROUP

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

August 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 a proposed residential development to be located in Orland Park, Illinois. The site, which is currently vacant, is located south of 159th Street at the southern terminus of Ravinia Avenue in Orland Park, Illinois. As proposed, the site will be developed with a residential development consisting of 132 single-family homes. Access to the development will be provided via proposed connections to Ravinia Avenue and 165th Street.

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 additional roadway or access improvements are necessary to accommodate 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.

The sections of this report present the following:

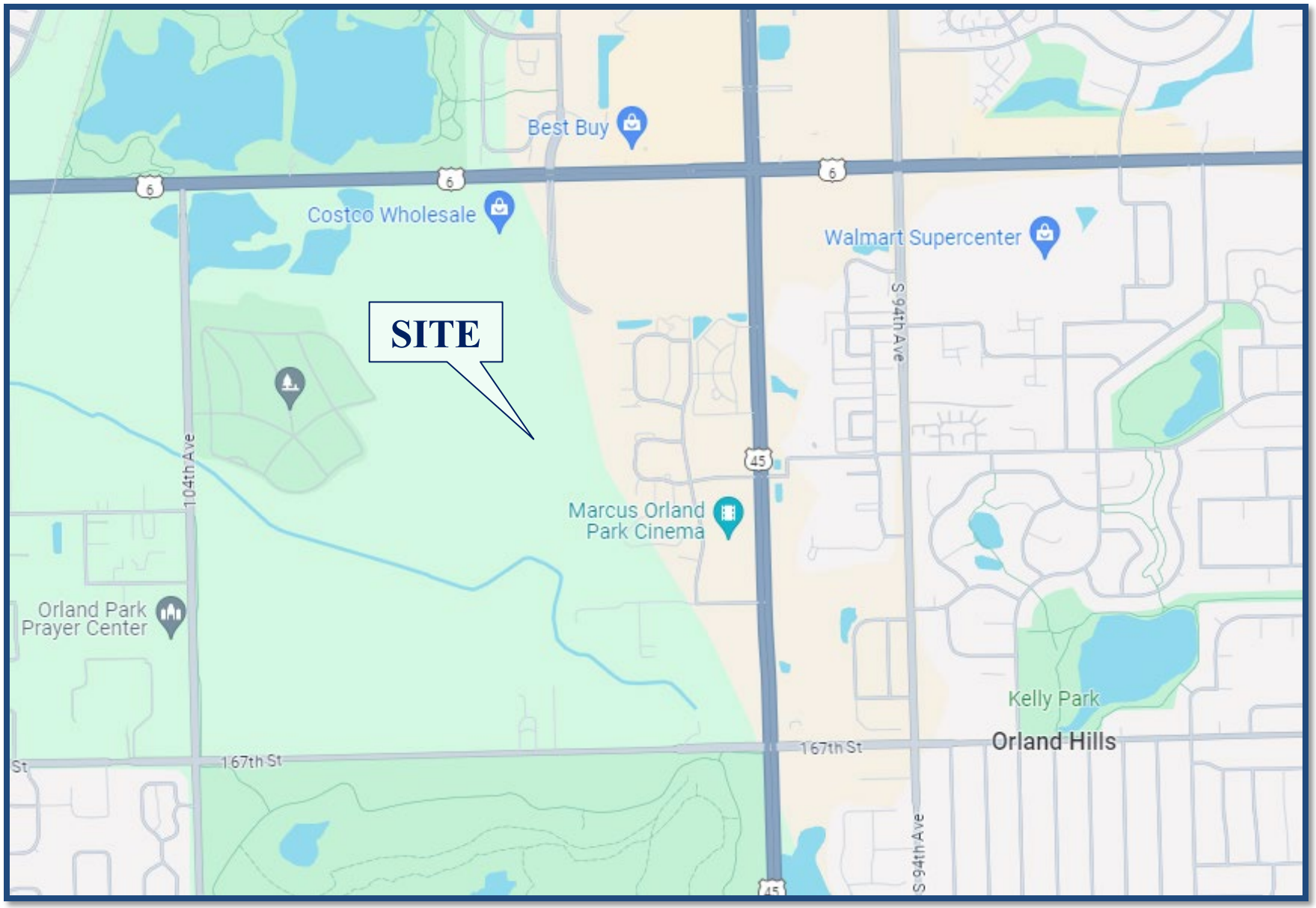
- Existing roadway conditions
- A description of the proposed development
- Directional distribution of the development traffic
- Vehicle trip generation for the development
- Future traffic conditions including access to the development
- Traffic analyses for the weekday morning, weekday evening, and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

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

1. Existing Traffic Conditions – Analyzes the capacity of the existing roadway system using peak hour traffic volumes form traffic counts conducted in 2024.

2. Year 2030 No-Build Conditions – Analyzes the capacity of the existing roadway system using existing traffic volumes increased by an ambient area growth factor not attributable to any particular development.

3. Year 2030 Total Projected Conditions – Analyzes the capacity of the future roadway system using the projected traffic volumes that include the Year 2030 no-build volumes and the traffic estimated to be generated by the proposed development.



Site Location **Figure 1**

Proposed Residential Development
Orland Park, Illinois

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Aerial View of Site **Figure 2**

2. Existing Conditions

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

Site Location

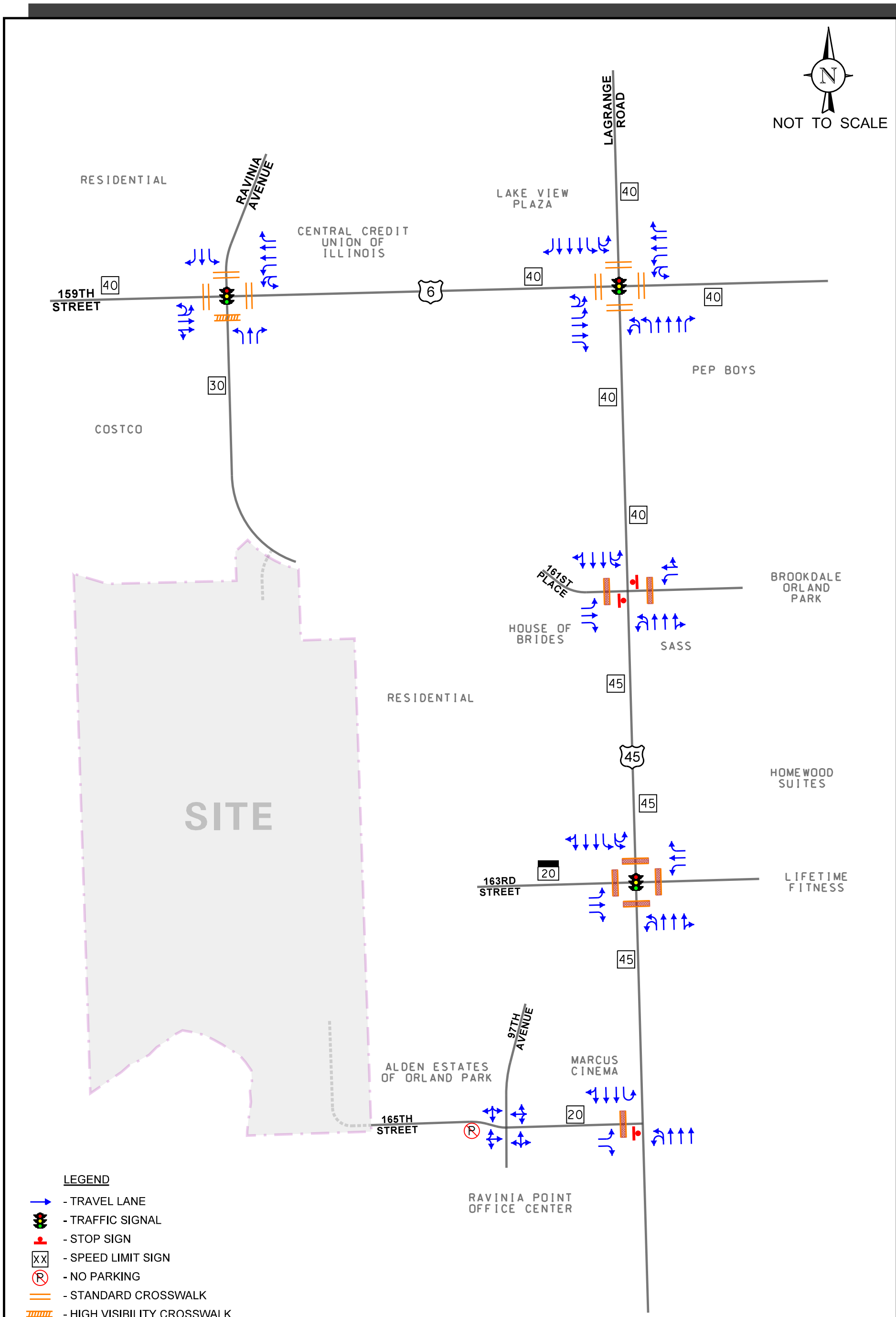
The site, which is currently vacant, is bounded by residential uses to the east, vacant land to the west and Costco Wholesale to the north.

Existing Roadway System Characteristics

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

159th Street is an east-west other principal arterial roadway that in the vicinity of the site provides two travel lanes in each direction. At its signalized intersection with LaGrange Road, 159th Street provides two exclusive left-turn lanes, two through lanes, and an exclusive right-turn lane on the eastbound and westbound approaches. Standard crosswalks are provided on both legs of the intersection. At its signalized intersection with Ravinia Avenue, 159th Street provides an exclusive left-turn lane, a through lane, and a shared through/right-turn lane on the eastbound approach and two exclusive left-turn lanes, two through lanes, and an exclusive right-turn lane on the westbound approach. Standard crosswalks are provided on both legs of the crosswalks. 159th Street is under the jurisdiction of IDOT, carries an Annual Average Daily Traffic (AADT) volume of 24,200 vehicles (IDOT 2023) west of LaGrange Road and an AADT of 35,000 vehicles (IDOT 2023) east of LaGrange Road, and has a posted speed limit of 40 miles per hour. 159th Street is classified as a Strategic Regional Arterial (SRA) by IDOT.

Ravinia Avenue is a north-south major collector roadway north of 159th Street and a local roadway south of 159th Street that in the vicinity of the site provides one travel lane in each direction north of 159th Street and two travel lanes in each direction south of 159th Street. At its signalized intersection with 159th Street, Ravinia Avenue provides an exclusive left-turn/through/right-turn lane on the northbound and southbound approaches. A standard crosswalk is provided on the northern leg of the intersection and a high-visibility crosswalk is provided on the southern leg of the intersection. Ravinia Avenue is under the jurisdiction of the Village of Orland Park, carries an AADT of 5,600 vehicles (IDOT 2023), and has a posted speed limit of 30 miles per hour.



ESTATES AT
RAVINIA MEADOW
ORLAND PARK, ILLINOIS

EXISTING ROADWAY CHARACTERISTICS

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Job No: 24-194 Figure: 3

LaGrange Road (US 45) is a north-south other principal arterial roadway that in the vicinity of the site provides three travel lanes in each direction. At its signalized intersection with 159th Street, LaGrange Road provides two exclusive left-turn lanes, three through lanes, and an exclusive right-turn lane on the northbound and southbound approaches and provide standard crosswalks. At its unsignalized intersection with the strip mall access drive, LaGrange Road provides a shared U-turn/left-turn lane, two through lanes, and a shared through/right-turn lane on the northbound and southbound approaches. At its signalized intersection with 163rd Street, LaGrange Road provides a shared U-turn/left-turn lane, three through lanes, and an exclusive right-turn lane on the northbound approach and a shared U-turn/left-turn lane, an exclusive left-turn lane, two through lanes, and a shared through/right-turn lane on the southbound approach. Standard crosswalks are provided on both legs of the intersection. At its unsignalized intersection with 165th Street, LaGrange Road provides a shared U-turn/left-turn lane and three through lanes on the northbound approach an exclusive U-turn lane, two through lanes, and a shared through/right-turn lane on the southbound approach. LaGrange Road is under the jurisdiction of the Illinois Department of Transportation (IDOT), carries an AADT of 33,500 vehicles (IDOT 2023), and has a posted speed limit of 45 miles per hour. LaGrange Road is classified by IDOT as an SRA.

163rd Street is an east-west local roadway that in the vicinity of the site provides one travel lane in each direction. At its signalized intersection with LaGrange Road, 163rd Street provides an exclusive left-turn lane, a through lane, and an exclusive right-turn lane on the eastbound and westbound approaches. Standard crosswalks are provided on both legs of the intersection. 163rd Street is under the jurisdiction of the Village of Orland Park and has a posted speed limit of 20 miles per hour.

97th Avenue is a north-south local roadway that in the vicinity of the site provides one travel lane in each direction. At its unsignalized intersection with 165th Street, 97th Avenue provides a shared left-turn/through/right-turn lane on the northbound and southbound approaches. 97th Avenue is under the jurisdiction of the Village of Orland Park and has a posted speed limit of 20 miles per hour.

Strip Mall Access Drive is an east-west local roadway that in the vicinity of the site provides one travel lane in each direction. At its unsignalized intersection with LaGrange Road, the strip mall access drive provides an exclusive left-turn lane, a through lane, and an exclusive right-turn lane on the eastbound approach and an exclusive left-turn lane and a shared through/right-turn lane on the westbound approach. Both legs of the intersection are under stop sign control and provide standard crosswalks. The strip mall access drive is under the jurisdiction of the Village of Orland Park.

Existing Traffic Volumes

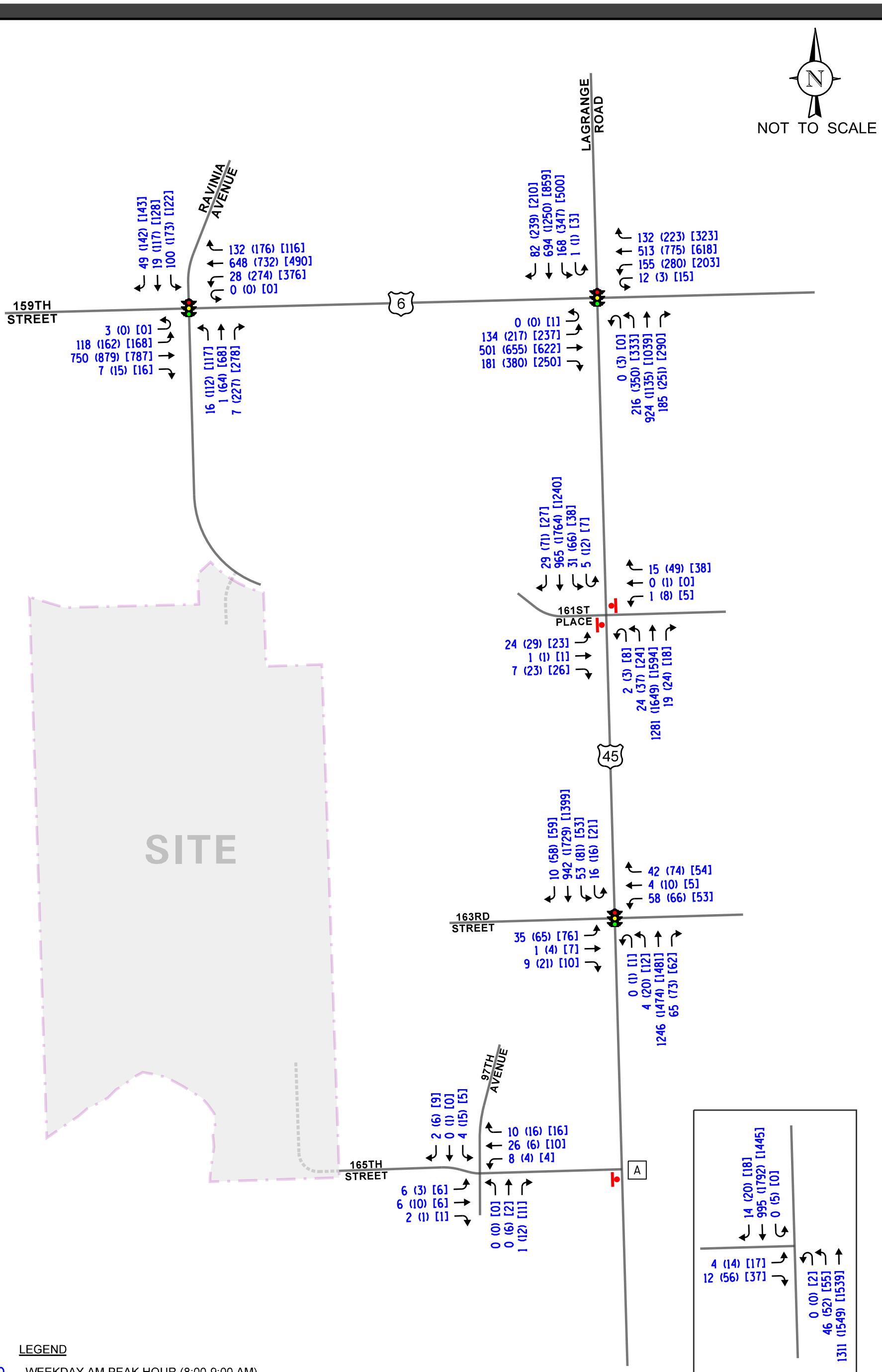
In order to determine current traffic conditions within the study area, KLOA, Inc. conducted peak period traffic counts utilizing Miovision Scout Collection Units at the following intersections:

- 159th Street with Ravinia Avenue
- 159th Street with LaGrange Road
- 161st Street/Strip mall access drive with LaGrange Road
- 163rd Street with LaGrange Road
- 165th Street with LaGrange Road
- 165th Street with 97th Avenue

The traffic counts were conducted in August 2024 during the weekday morning (7:00 A.M. to 9:00 A.M.), weekday evening (4:00 P.M. to 6:00 P.M.), and Saturday midday (11:00 A.M. to 2:00 P.M.) peak periods.

The results of the traffic counts show that the peak hours of traffic generally occur between 8:00 A.M. and 9:00 A.M. during the weekday morning peak period, between 4:30 P.M. and 5:30 P.M. during the weekday evening peak period, and between 1:00 P.M. and 2:00 P.M. during the Saturday midday peak period.

Copies of the traffic count summary sheets are included in the Appendix. The existing traffic volumes are illustrated in **Figure 4**.



LEGEND

00 - WEEKDAY AM PEAK HOUR (8:00-9:00 AM)

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

[00] - SATURDAY AFTERNOON PEAK HOUR (1:00-2:00 PM)

ESTATES AT
RAVINIA MEADOW
ORLAND PARK, ILLINOIS

EXISTING TRAFFIC VOLUMES

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Job No: 24-194 Figure: 4

Crash Data Summary

KLOA, Inc. obtained crash data[1] for the most recent available past five years (2019 to 2022) for the intersections included in the study area. The crash data for the intersections is summarized in **Tables 1** through **5**. No crashes were reported at the intersection of 165th Street with 97th Avenue during the study period. A review of the crash data indicated that no fatalities were reported at the intersections during the review period.

Table 1
159TH STREET WITH LAGRANGE ROAD – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2019	1	0	0	8	3	4	0	16
2020	0	1	1	8	0	5	3	18
2021	0	0	2	11	2	7	0	22
2022	1	1	0	16	1	5	0	24
2023	1	0	0	13	0	4	1	19
Total	**3**	**2**	**3**	**56**	**6**	**25**	**4**	**99**
Average	**<1.0**	**<1.0**	**<1.0**	**11.2**	**1.2**	**5.0**	**<1.0**	**19.8**

Table 2
159TH STREET WITH RAVINIA AVENUE – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2019	0	0	0	8	0	3	0	11
2020	0	0	0	4	0	0	0	4
2021	0	0	1	3	0	1	0	5
2022	0	0	2	3	0	0	0	5
2023	1	0	2	5	0	4	0	12
Total	**1**	**0**	**5**	**23**	**0**	**8**	**0**	**37**
Average	**<1.0**	**0.0**	**1.0**	**4.6**	**0.0**	**1.6**	**0.0**	**7.4**

[1] IDOT DISCLAIMER: The motor vehicle crash data referenced herein was provided by the Illinois Department of Transportation. Any conclusions drawn from analysis of the aforementioned data are the sole responsibility of the data recipient(s).

Table 3
LAGRANGE ROAD WITH 163RD STREET – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2019	0	0	0	1	0	3	0	4
2020	0	0	0	2	0	1	0	3
2021	0	0	0	7	0	1	0	8
2022	0	0	0	1	0	2	0	3
2023	0	0	0	2	0	5	0	7
Total	**0**	**0**	**0**	**13**	**0**	**12**	**0**	**25**
Average	**0.0**	**0.0**	**0.0**	**2.6**	**0.0**	**2.4**	**0.0**	**5.0**

Table 4
LAGRANGE ROAD WITH 161ST STREET – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2019	0	0	0	0	0	1	0	1
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	2	0	2
2022	1	0	0	0	0	2	0	3
2023	0	0	0	0	0	3	0	3
Total	**1**	**0**	**0**	**0**	**0**	**8**	**0**	**9**
Average	**<1.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.6**	**0.0**	**1.8**

Table 5
LAGRANGE ROAD WITH 165TH STREET – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	1	0	1
2023	0	0	0	0	0	4	0	4
Total	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**5**
Average	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.0**	**0.0**	**1.0**

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 development, including the directional distribution and volumes of traffic that it will generate.

Proposed Site and Development Plan

As proposed, the site will be developed with a residential development consisting of 132 single-family homes. Access to the site will be provided via proposed connections to Ravinia Avenue and 165th Street. A copy of the preliminary site plan is included in the Appendix.

Future Extension of Ravinia Avenue to 161st Street

With the development of the commercial parcel to the east, Ravinia Avenue will be extended east to connect with 161st Street, providing additional access for the site and Costco to LaGrange Road. This extension of Ravinia Avenue would have the same cross-section as the existing roadway which will allow for the provision of a westbound left-turn lane into the proposed development.

Directional Distribution

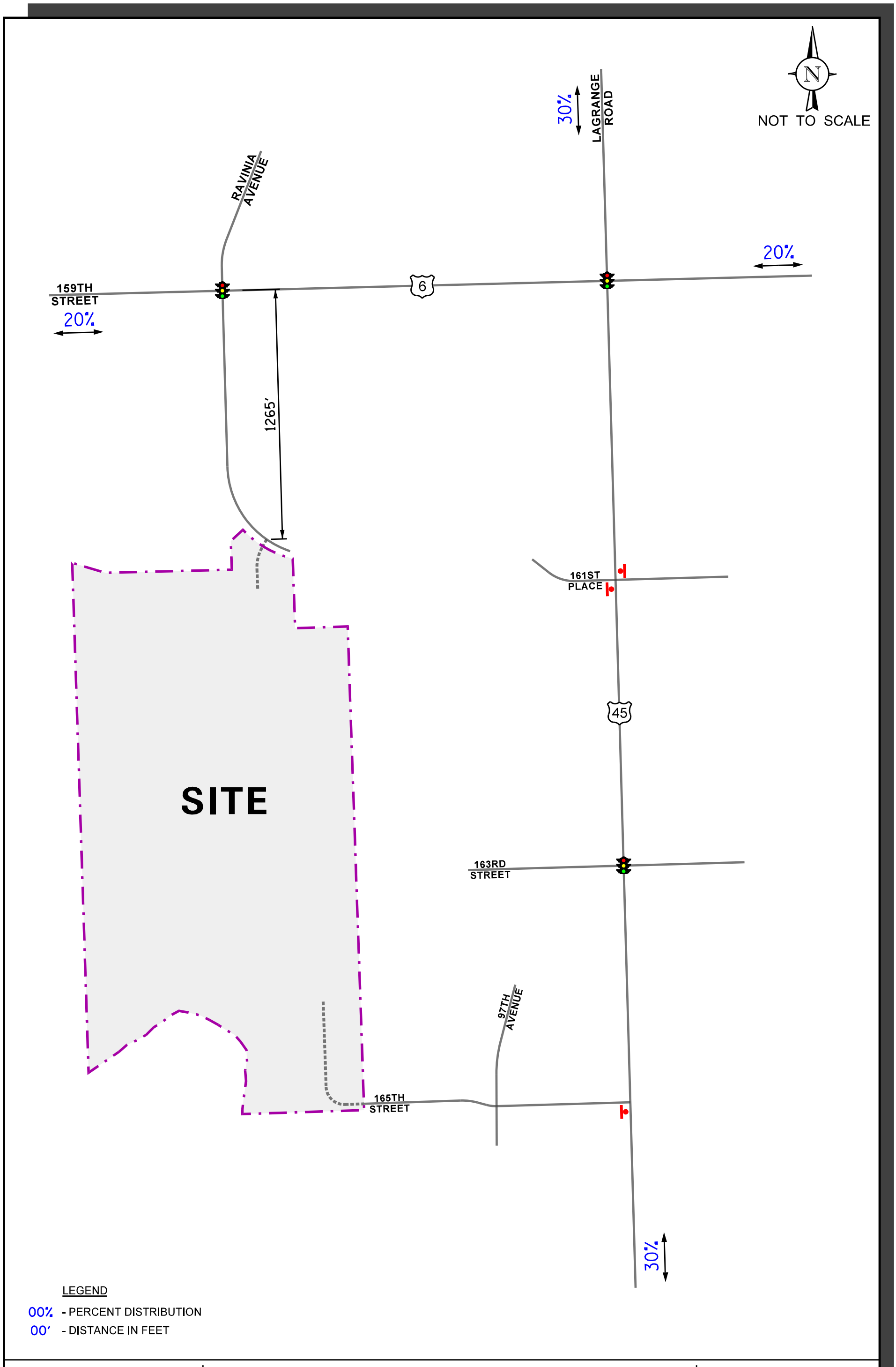
The directions from which residents will approach and depart the site were estimated based on existing travel patterns, as determined from the traffic counts. **Figure 5** illustrates the directional distribution of the development-generated traffic. Figure 5 also shows the distance, in feet, between the existing and proposed access intersections.

Peak Hour Traffic Volumes

The number of peak hour trips estimated to be generated by the proposed residential development was based on vehicle trip generation rates contained in *Trip Generation Manual*, 11th Edition, published by the Institute of Transportation Engineers (ITE). The "Single-Family Detached Housing" (Land-Use Code 210) rates were used to determine the traffic to be generated by the development. **Table 6** shows the weekday morning, weekday evening, and Saturday midday peak hour traffic to be generated by the proposed residential development.

Table 6
PROJECTED DEVELOPMENT-GENERATED TRAFFIC VOLUMES

ITE Land-Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
210	Single-Family Detached Housing (132 Units)	24	72	96	81	48	129	45	56	101



ESTATES AT
RAVINIA MEADOW
ORLAND PARK, ILLINOIS

DIRECTIONAL DISTRIBUTION

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Job No: 24-194 Figure: 5

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 subject development.

Development Traffic Assignment

The estimated weekday morning, weekday evening, and Saturday midday peak hour traffic volumes that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution (Figure 5). The traffic assignment for the development is illustrated in **Figure 6A**. The traffic assignment for the development with the extension of Ravinia Avenue is illustrated in **Figure 6B**.

Background (No-Build) Traffic Conditions

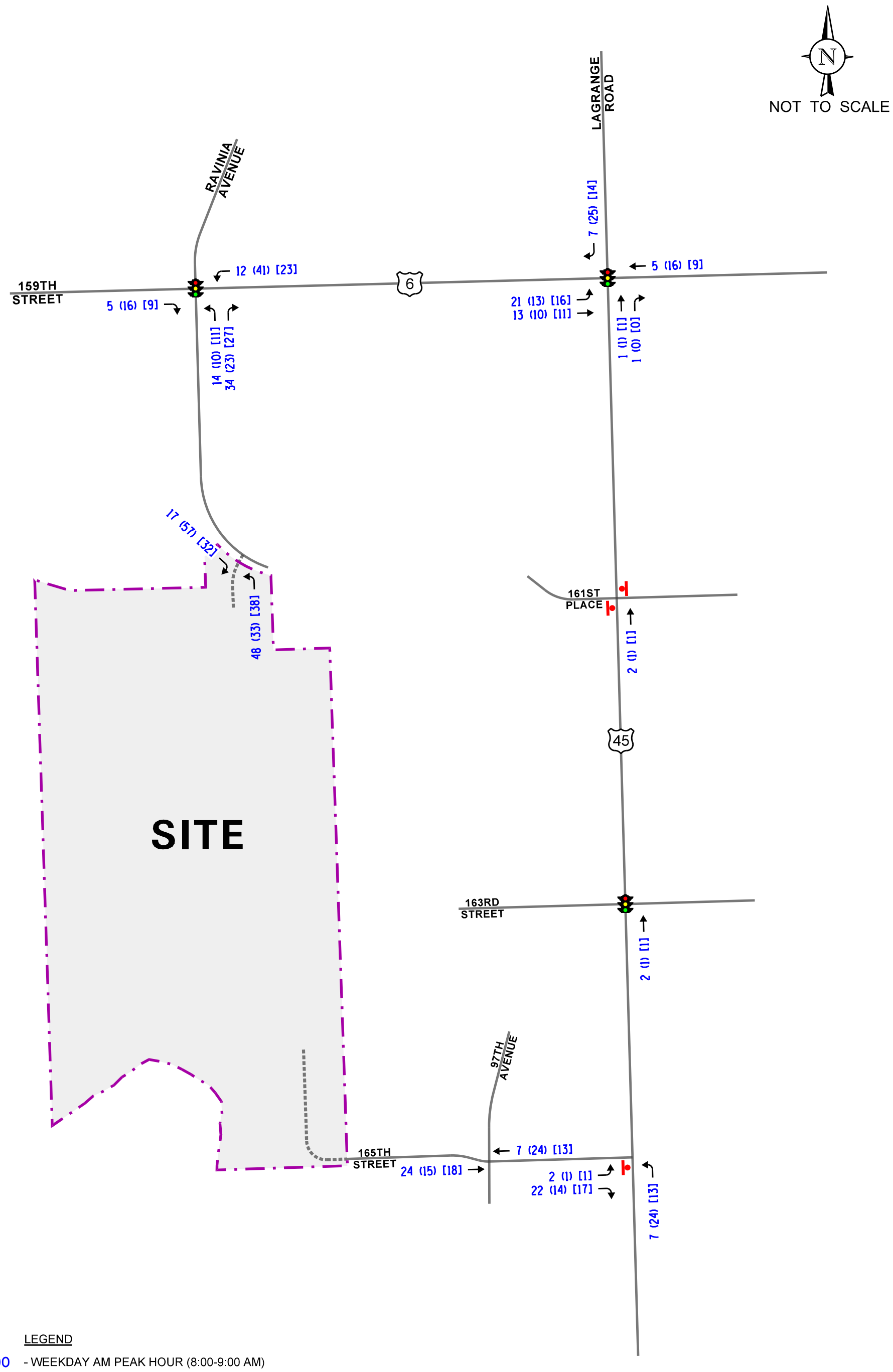
The existing traffic volumes (Figure 4) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any particular planned development). Based on Annual Average Daily Traffic (AADT) projections provided by the Chicago Metropolitan Agency for Planning (CMAP) in a letter dated August 7, 2024, the existing traffic volumes were increased by an annually compounded growth rate of approximately 0.6 percent per year for six years (buildout year plus five years) for a total of approximately 3.0 percent to project Year 2030 background conditions.

Also included in the no-build traffic volumes are the trips estimated to be generated by a proposed mixed-use development to be located in the southeast corner of LaGrange Road with 159th Street. **Figure 7** illustrates the Year 2030 no-build conditions. A copy of the CMAP 2050 projections letter is included in the Appendix.

Total Projected Traffic Volumes

The development-generated traffic (Figure 6A) was added to the Year 2030 no-build traffic volumes (Figure 7) to determine the Year 2030 total projected traffic volumes, as shown in **Figure 8A**.

The development-generated traffic considering the extension of Ravinia Avenue (Figure 6B) was added to the Year 2030 no-build traffic volumes (Figure 7) to determine the Year 2030 total projected traffic volumes, as shown in **Figure 8B**. Also included in these projected traffic volumes is existing Costco traffic that would utilize the extension of Ravinia Avenue to access LaGrange Road.



LEGEND

00 - WEEKDAY AM PEAK HOUR (8:00-9:00 AM)

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

[00] - SATURDAY AFTERNOON PEAK HOUR (1:00-2:00 PM)

ESTATES AT
RAVINIA MEADOW
ORLAND PARK, ILLINOIS

SITE-GENERATED TRAFFIC VOLUMES

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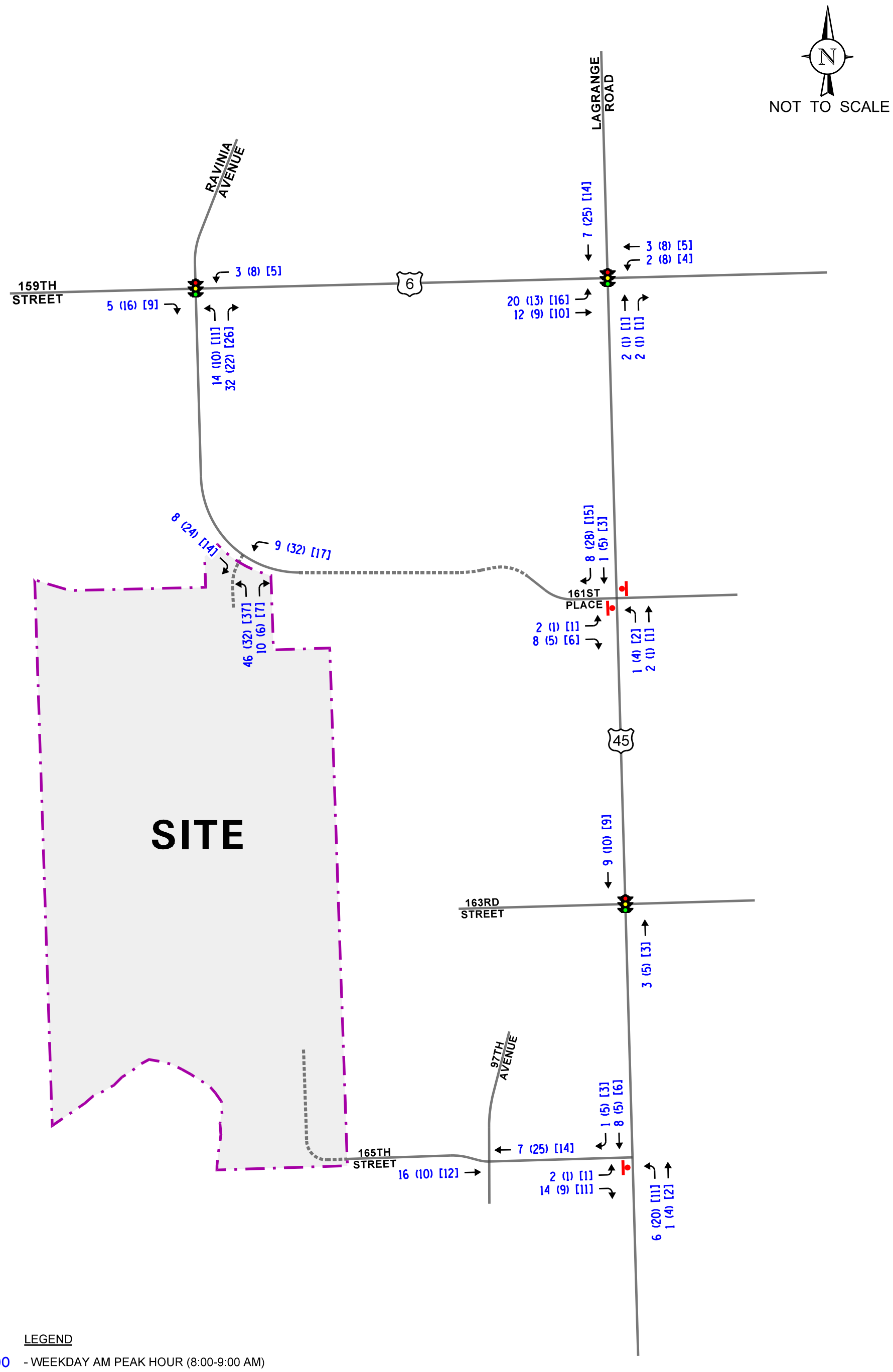

LEGEND

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[00] - SATURDAY AFTERNOON PEAK HOUR (1:00-2:00 PM)

ESTATES AT
RAVINIA MEADOW
ORLAND PARK, ILLINOIS

SITE-GENERATED TRAFFIC VOLUMES
WITH RAVINIA EXTENSION

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Job No: 24-194 Figure: 6B

NOT TO SCALE

SITE

RAVINIA AVENUE

LAGRANGE ROAD

159TH STREET

161ST PLACE

163RD STREET

165TH STREET

97TH AVENUE

6

45

A

LEGEND

00 - WEEKDAY AM PEAK HOUR (8:00-9:00 AM)

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

[00] - SATURDAY AFTERNOON PEAK HOUR (1:00-2:00 PM)

A LAGRANGE ROAD @ 165TH STREET

ESTATES AT
RAVINIA MEADOW
ORLAND PARK, ILLINOIS

YEAR 2030 NO-BUILD TRAFFIC VOLUMES

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

Job No: 24-194 Figure: 7

NOT TO SCALE

N

LAGRANGE ROAD

RAVINIA AVENUE

159TH STREET

6

161ST PLACE

45

163RD STREET

97TH AVENUE

165TH STREET

A

SITE

50 (146) [147]
20 (121) [132]
103 (178) [126]

136 (181) [119]
692 (772) [533]
41 (323) [410]
0 (0) [0]

3 (0) [0]
122 (167) [173]
796 (928) [841]
12 (31) [25]

30 (125) [132]
1 (66) [70]
41 (257) [313]

91 (271) [230]
744 (1320) [923]
203 (389) [554]
1 (1) [3]

136 (230) [333]
533 (814) [646]
188 (315) [245]
54 (43) [69]

1 (0) [0]
159 (237) [260]
543 (699) [670]
195 (400) [270]

0 (3) [0]
247 (379) [371]
1015 (1216) [1142]
224 (283) [336]

17 (57) [32]

48 (33) [38]

29 (71) [27]
996 (1821) [1280]
31 (66) [38]
5 (12) [7]

15 (49) [38]
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1 (8) [5]

24 (29) [23]
1 (1) [1]
7 (23) [26]

2 (3) [8]
24 (37) [24]
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58 (66) [53]

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4 (20) [12]
1343 (1575) [1548]
65 (73) [62]

2 (6) [9]
0 (1) [0]
4 (15) [5]

10 (16) [16]
33 (30) [23]
8 (4) [4]

6 (3) [6]
30 (25) [24]
2 (1) [1]

0 (0) [0]
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1 (12) [11]

14 (20) [18]
1023 (1844) [1487]
0 (5) [0]

6 (15) [18]
34 (70) [54]

0 (0) [2]
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1406 (1649) [1655]

A LAGRANGE ROAD @ 165TH STREET

LEGEND

00 - WEEKDAY AM PEAK HOUR (8:00-9:00 AM)
(00) - WEEKDAY PM PEAK HOUR (4:30-5:30 PM)
[00] - SATURDAY AFTERNOON PEAK HOUR (1:00-2:00 PM)

ESTATES AT
RAVINIA MEADOW
ORLAND PARK, ILLINOIS

YEAR 2030 TOTAL TRAFFIC VOLUMES

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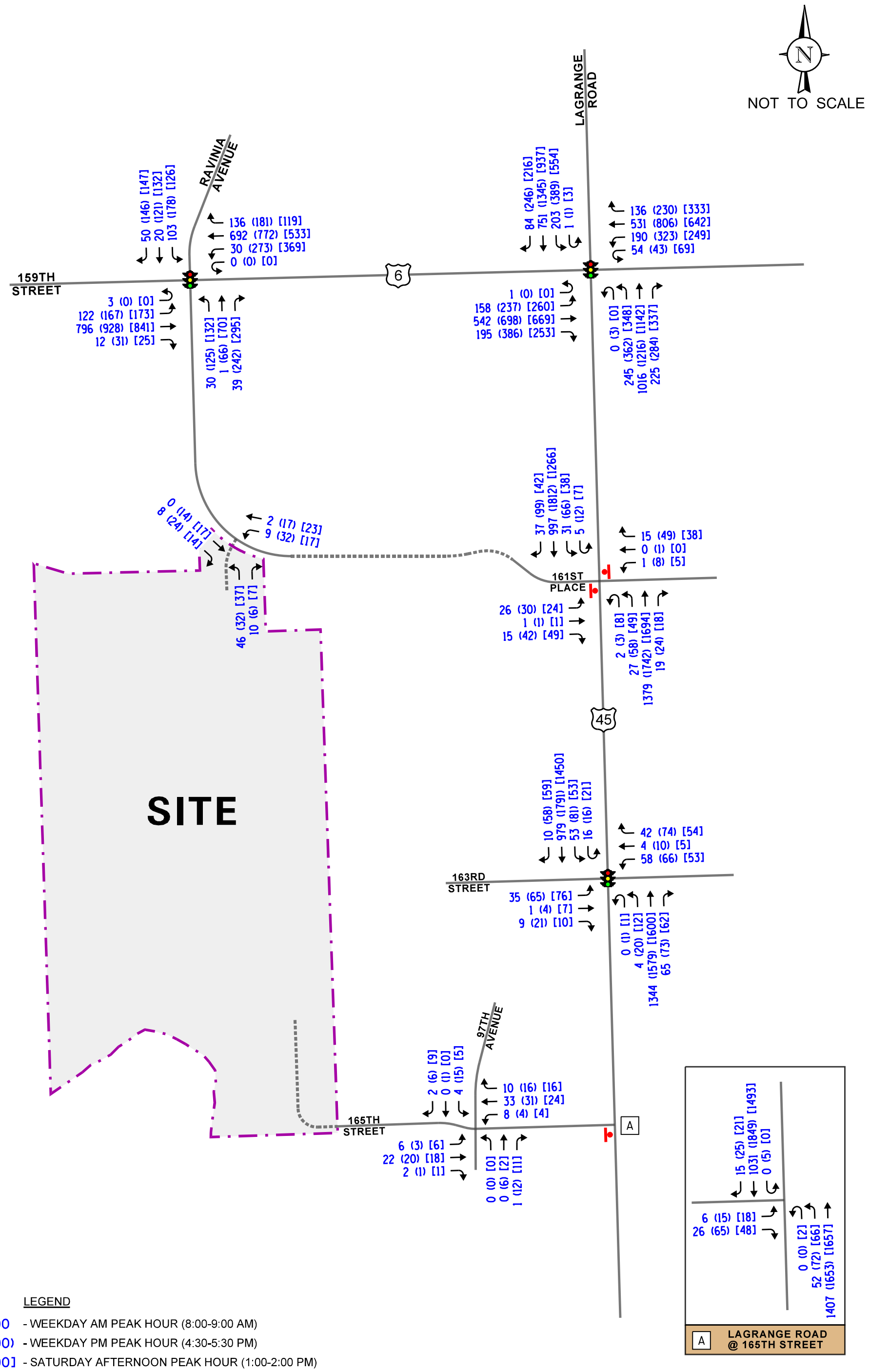
Job No: 24-194 Figure: 8A



LEGEND

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

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ESTATES AT
RAVINIA MEADOW
ORLAND PARK, ILLINOIS

YEAR 2030 TOTAL TRAFFIC VOLUMES
WITH RAVINIA EXTENSION

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Job No: 24-194 Figure: 8B

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 total 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 analysis for the traffic-signal controlled intersections were accomplished using field-measured cycle lengths and phasings to determine the average overall vehicle delay and levels of service.

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

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay 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 7** through **13**. A discussion of each intersection follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 7
LAGRANGE ROAD WITH 159TH STREET – SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		U/L	T	R	U/L	T	R	U/L	T	R	U/L	T	R	
Existing Conditions	Weekday Morning	F 89.3	C 30.0	B 12.4	E 57.7	D 47.8	C 25.9	E 58.0	C 27.7	B 14.9	E 58.0	C 26.9	B 15.6	D 35.3
		D – 35.9			D – 46.3			C – 30.8			C – 31.5			
	Weekday Evening	F 88.0	D 43.6	C 28.3	E 63.5	E 58.9	C 26.2	F 81.6	C 32.3	B 15.6	E 65.2	C 34.5	B 19.1	D 43.8
		D – 46.7			D – 54.2			D – 39.9			D – 38.3			
	Saturday Midday	F 87.3	D 37.9	B 19.9	E 62.3	D 51.9	C 26.8	E 70.9	C 32.9	B 19.3	E 65.9	C 32.2	B 19.5	D 42.1
		D – 44.4			D – 46.8			D – 38.2			D – 41.2			
No-Build Conditions	Weekday Morning	F 88.1	C 33.6	B 13.4	E 58.2	D 45.5	C 24.1	E 58.8	C 31.0	B 15.5	E 58.4	C 29.3	B 16.6	D 37.0
		D – 37.8			D – 45.7			C – 33.3			C – 34.0			
	Weekday Evening	F 87.8	D 52.6	C 29.6	E 67.9	E 60.3	C 25.8	F 89.0	C 34.7	B 16.0	E 68.2	D 35.9	B 19.4	D 46.8
		D – 51.6			E – 56.5			D – 42.9			D – 40.3			
	Saturday Midday	F 87.0	D 44.6	C 20.7	E 63.5	D 50.1	C 25.8	E 73.7	D 35.7	B 19.2	E 72.6	C 34.4	C 20.6	D 44.6
		D – 47.9			D – 47.1			D – 40.3			D – 45.2			
Projected Conditions	Weekday Morning	F 90.9	C 34.5	B 14.2	E 58.2	D 46.0	C 24.2	E 58.8	C 31.1	B 15.6	E 58.4	C 29.4	B 16.5	D 37.6
		D – 40.1			D – 46.0			C – 33.4			C – 34.1			
	Weekday Evening	F 87.4	D 53.9	C 29.6	E 67.9	E 61.7	C 25.8	F 92.5	C 34.9	B 16.1	E 68.2	D 35.9	B 19.9	D 47.3
		D – 52.6			E – 57.4			D – 43.8			D – 40.1			
	Saturday Midday	F 86.8	D 45.9	C 21.1	E 63.5	D 50.6	C 25.9	E 73.7	D 35.9	B 19.2	E 72.6	C 34.5	C 20.8	D 45.0
		D – 49.2			D – 47.4			D – 40.4			D – 45.0			
Projected Conditions with Ravinia Extension	Weekday Morning	F 90.5	C 34.6	B 14.4	E 58.3	D 45.9	C 24.2	E 58.7	C 31.1	B 15.6	E 58.4	C 29.5	B 16.5	D 37.6
		D – 40.2			D – 46.0			C – 33.3			C – 34.1			
	Weekday Evening	F 88.8	D 53.9	C 29.2	E 68.7	E 60.8	C 25.8	F 84.1	C 34.9	B 16.1	E 68.2	D 36.2	B 19.4	D 46.9
		D – 52.9			E – 57.1			D – 41.7			D – 40.4			
	Saturday Midday	F 88.2	D 45.7	C 20.9	E 63.7	D 50.5	C 25.9	E 72.2	D 35.8	B 19.2	E 72.6	C 34.2	C 20.3	D 44.8
		D – 49.7			D – 47.4			D – 39.7			D – 45.0			

Letter denotes Level of Service L – Left Turn R – Right Turn
Delay is measured in seconds. T – Through

Table 8
159TH STREET WITH RAVINIA AVENUE – SIGNALIZED

	Peak Hour	Eastbound		Westbound			Northbound			Southbound			Overall
		U/L	T/R	U/L	T	R	L	T	R	L	T	R	
Existing Conditions	Weekday Morning	F 86.8	C 26.3	D 37.9	D 50.3	D 44.0	C 22.1	C 33.0	C 25.1	C 22.6	C 27.3	B 16.1	D 39.4
		C – 34.6		D – 48.9			C – 23.5			C – 21.2			
	Weekday Evening	F 91.4	C 33.5	D 49.8	D 51.6	D 46.3	C 30.3	D 44.5	C 32.2	C 31.4	D 41.5	C 26.2	D 42.9
		D – 42.4		D – 50.4			C – 33.6			C – 32.4			
	Saturday Midday	F 85.2	D 37.1	D 54.0	D 46.4	D 43.4	C 28.7	D 39.7	C 26.3	C 28.7	D 40.3	C 23.9	D 41.9
		D – 45.4		D – 49.0			C – 28.9			C – 30.7			
No-Build Conditions	Weekday Morning	F 87.2	C 25.9	D 38.7	D 49.3	D 42.5	C 23.6	C 35.0	C 27.0	C 23.6	C 28.7	B 17.0	D 38.9
		C – 34.2		D – 47.8			C – 25.1			C – 22.3			
	Weekday Evening	F 92.1	C 33.2	D 49.6	D 51.7	D 46.0	C 31.5	D 46.3	C 33.9	C 32.7	D 43.2	C 27.4	D 43.3
		D – 42.1		D – 50.4			D – 35.2			C – 33.8			
	Saturday Midday	F 85.8	D 36.4	D 54.0	D 45.7	D 42.2	C 30.2	D 41.4	C 28.0	C 30.1	D 42.3	C 25.3	D 42.0
		D – 44.7		D – 48.4			C – 30.5			C – 32.3			
Projected Conditions	Weekday Morning	F 87.2	C 27.2	D 38.7	D 49.0	D 42.3	C 23.7	D 36.0	C 26.2	C 23.9	C 30.6	B 18.5	D 39.1
		D – 35.3		D – 47.5			C – 25.3			C – 23.1			
	Weekday Evening	F 92.1	C 33.6	D 51.6	D 50.8	D 45.2	C 32.5	D 47.3	C 34.9	C 33.6	D 44.8	C 28.6	D 43.5
		D – 42.3		D – 50.2			D – 36.1			C – 35.0			
	Saturday Midday	F 85.8	D 36.5	E 55.5	D 45.0	D 41.6	C 31.1	D 42.1	C 29.1	C 30.7	D 43.6	C 26.3	D 42.3
		D – 44.7		D – 48.7			C – 31.3			C – 33.3			
Projected Conditions with Ravinia Extension	Weekday Morning	F 87.2	C 27.0	D 38.3	D 49.1	D 42.4	C 23.6	C 35.0	C 26.5	C 23.8	C 30.4	B 18.3	D 39.0
		D – 35.0		D – 47.6			C – 25.4			C – 23.0			
	Weekday Evening	F 92.1	C 32.7	D 49.8	D 51.8	D 46.1	C 31.8	D 46.5	C 34.8	C 33.2	D 44.3	C 28.3	D 43.2
		D – 41.5		D – 50.5			D – 35.7			C – 34.6			
	Saturday Midday	F 85.8	D 35.8	D 53.8	D 46.0	D 42.6	C 30.4	D 41.5	C 29.0	C 30.3	D 43.2	C 26.0	D 41.9
		D – 44.1		D – 48.4			C – 31.1			C – 32.9			

Letter denotes Level of Service L – Left Turn R – Right Turn
Delay is measured in seconds. T – Through

Table 9
LAGRANGE ROAD WITH 163RD STREET – SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound		Overall
		L	T	R	L	T	R	U/L	T	R	U/L	T/R	
Existing Conditions	Weekday Morning	D 47.5	D 43.0	D 46.7	D 43.6	D 45.8	E 63.2	D 52.0	A 4.2	A 4.0	A 6.1	A 4.9	A 7.4
		D – 47.2			D – 51.6			A – 4.3			A – 5.0		
	Weekday Evening	D 50.4	D 53.2	E 57.9	D 49.4	E 55.1	F 85.0	E 68.3	A 6.0	A 5.1	A 9.6	A 8.6	B 11.3
		D – 52.3			E – 67.3			A – 6.8			A – 8.6		
	Saturday Midday	E 57.5	D 54.0	E 55.5	D 49.4	E 56.6	F 84.3	E 66.1	A 5.3	A 4.7	B 12.9	B 10.5	B 11.5
		E – 57.0			E – 66.5			A – 5.8			B – 10.6		
No-Build Conditions	Weekday Morning	D 49.0	D 46.0	D 49.0	D 41.7	D 45.8	E 63.2	D 52.0	A 4.3	A 4.0	A 6.3	A 4.9	A 7.3
		D – 48.9			D – 50.6			A – 4.4			A – 5.0		
	Weekday Evening	D 51.3	D 54.5	E 59.2	D 50.4	E 56.3	F 90.5	E 68.3	A 6.0	A 4.8	A 9.2	A 7.9	B 10.9
		D – 53.3			E – 70.6			A – 6.7			A – 8.0		
	Saturday Midday	E 57.4	D 53.9	E 55.2	D 49.7	E 56.6	F 84.3	E 66.1	A 5.5	A 4.7	B 15.3	B 12.0	B 12.1
		E – 56.9			E – 66.7			A – 5.9			B – 12.2		
Projected Conditions	Weekday Morning	D 49.0	D 46.0	D 49.1	D 41.7	D 45.8	E 63.2	D 52.0	A 4.3	A 4.0	A 6.3	A 4.9	A 7.3
		D – 49.0			D – 50.5			A – 4.4			A – 5.0		
	Weekday Evening	D 51.3	D 54.5	E 59.2	D 50.4	E 56.3	F 90.5	E 68.3	A 6.0	A 4.8	A 9.2	A 7.9	B 10.9
		D – 53.3			E – 70.6			A – 6.7			A – 8.0		
	Saturday Midday	E 57.4	D 53.9	E 55.2	D 49.7	E 56.6	F 84.3	E 66.1	A 5.5	A 4.7	B 15.4	B 12.2	B 12.2
		E – 56.9			E – 66.7			A – 5.9			B – 12.4		
Projected Conditions with Ravinia Extension	Weekday Morning	D 49.0	D 46.0	D 49.1	D 41.7	D 45.8	E 63.2	D 52.0	A 4.3	A 4.0	A 6.3	A 4.9	A 7.3
		D – 49.0			D – 50.5			A – 4.4			A – 5.0		
	Weekday Evening	D 51.4	D 54.8	E 59.3	D 50.5	E 56.4	F 91.4	E 68.3	A 5.9	A 4.8	A 9.4	A 8.1	B 11.0
		D – 53.4			E – 71.1			A – 6.7			A – 8.1		
	Saturday Midday	E 57.4	D 53.9	E 55.2	D 49.7	E 56.6	F 84.3	E 66.1	A 5.5	A 4.7	B 15.8	B 12.5	B 12.3
		E – 56.9			E – 66.7			A – 5.9			B – 12.6		

Letter denotes Level of Service L – Left Turn R – Right Turn
Delay is measured in seconds. T – Through

Table 10
UNSIGNALIZED – EXISTING CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
LaGrange Road with 161st Street[1]						
• Eastbound Approach	B	13.8	C	17.5	B	12.7
• Westbound Approach	B	11.2	B	13.3	B	12.2
• Northbound Left Turn	A	9.2	B	10.8	A	9.5
• Southbound Left Turn	A	9.7	B	10.9	B	10.4
LaGrange Road with 165th Street[1]						
• Eastbound Approach	B	11.2	B	13.9	B	13.1
• Northbound Left Turn	A	9.4	B	11.1	B	10.2
• Southbound U-Turn	A	0.0	C	16.0	A	0.0
165th Street with 97th Avenue/Ravinia Point Access Drive[1]						
• Northbound Approach	A	8.3	A	8.8	A	8.6
• Southbound Approach	A	9.0	A	8.9	A	8.7
• Eastbound Left Turn	A	7.5	A	7.3	A	7.3
• Westbound Left Turn	A	7.2	A	7.2	A	7.2

LOS = Level of Service
Delay is measured in seconds.
1 – Two-way stop control

Table 11
UNSIGNALIZED – YEAR 2030 NO-BUILD CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
LaGrange Road with 161st Street[1]						
• Eastbound Approach	B	14.3	C	17.7	B	13.1
• Westbound Approach	B	11.4	B	13.7	B	12.6
• Northbound Left Turn	A	9.4	B	11.1	A	9.5
• Southbound Left Turn	A	10.0	B	11.2	B	10.6
LaGrange Road with 165th Street[1]						
• Eastbound Approach	B	11.3	B	14.4	B	13.4
• Northbound Left Turn	A	9.4	B	11.3	B	10.4
• Southbound U-Turn	A	0.0	C	17.1	A	0.0
165th Street with 97th Avenue/Ravinia Point Access Drive[1]						
• Northbound Approach	A	8.3	A	8.8	A	8.6
• Southbound Approach	A	9.0	A	8.9	A	8.7
• Eastbound Left Turn	A	7.5	A	7.3	A	7.3
• Westbound Left Turn	A	7.2	A	7.2	A	7.2

LOS = Level of Service
Delay is measured in seconds.
1 – Two-way stop control

Table 12
UNSIGNALIZED – YEAR 2030 TOTAL CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
LaGrange Road with 161st Street[1]						
• Eastbound Approach	B	14.3	C	17.7	B	13.1
• Westbound Approach	B	11.4	B	13.7	B	12.6
• Northbound Left Turn	A	9.4	B	11.1	A	9.5
• Southbound Left Turn	A	10.0	B	11.2	B	10.6
LaGrange Road with 165th Street[1]						
• Eastbound Approach	B	11.1	B	14.6	B	13.4
• Northbound Left Turn	A	9.4	B	11.6	B	10.5
• Southbound U-Turn	A	0.0	C	17.1	A	0.0
165th Street with 97th Avenue/Ravinia Point Access Drive[1]						
• Northbound Approach	A	8.5	A	8.9	A	8.7
• Southbound Approach	A	9.2	A	9.2	A	8.8
• Eastbound Left Turn	A	7.5	A	7.3	A	7.3
• Westbound Left Turn	A	7.3	A	7.3	A	7.3
Proposed Site Roadway with Ravinia Avenue[1]						
• Northbound Approach	A	9.1	A	9.1	A	9.1

LOS = Level of Service
Delay is measured in seconds.
1 – Two-way stop control

Table 13
UNSIGNALIZED – YEAR 2030 TOTAL CONDITIONS WITH RAVINIA EXTENSION

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
LaGrange Road with 161st Street[1]						
• Eastbound Approach	B	13.8	C	17.4	B	12.7
• Westbound Approach	B	11.4	B	13.9	B	12.7
• Northbound Left Turn	A	9.5	B	11.4	A	9.8
• Southbound Left Turn	A	10.0	B	11.2	B	10.6
LaGrange Road with 165th Street[1]						
• Eastbound Approach	B	11.2	B	14.6	B	13.4
• Northbound Left Turn	A	9.4	B	11.6	B	10.5
• Southbound U-Turn	A	0.0	C	17.2	A	0.0
165th Street with 97th Avenue/Ravinia Point Access Drive[1]						
• Northbound Approach	A	8.4	A	8.9	A	8.7
• Southbound Approach	A	9.1	A	9.2	A	8.8
• Eastbound Left Turn	A	7.5	A	7.3	A	7.3
• Westbound Left Turn	A	7.3	A	7.3	A	7.3
Proposed Site Roadway with Ravinia Avenue[1]						
• Northbound Approach	A	9.1	A	9.3	A	9.2
• Westbound Left Turn	A	7.2	A	7.3	A	7.3

LOS = Level of Service
Delay is measured in seconds.
1 – 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 159th Street

The results of the capacity analysis indicate that the intersection currently operates overall at LOS D during the weekday morning, weekday evening, and Saturday midday peak hours. Under Year 2030 total projected conditions, the intersection is projected to operate as follows:

- The intersection is projected to continue operating at LOS D during all three peak hours.
- All four approaches are projected to operate at LOS E, LOS D, or LOS C during the peak hours, which is consistent with the no-build and existing conditions.
- Due to LaGrange Road and 159th Street being classified as SRAs, the through movements are allocated the majority of the green time, resulting in lower levels of service for left-turn movements, which operate under a protected phase only.
- However, overall during all three peak hours, the projected 95th percentile queues for the left-turn movements will be able to be accommodated by the existing turn-lane storage. This was confirmed by a review of the traffic simulation which showed that the queues cleared within one cycle length.
- With the future extension of Ravinia Avenue to 161st Street, traffic traversing this intersection will be reduced and the intersection is projected overall to operate similar to the no-build and existing conditions.

As such, this intersection has adequate capacity to accommodate the traffic estimated to be generated by the proposed development and no additional roadway or traffic signal modifications are required.

159th Street with Ravinia Avenue

The results of the capacity analysis indicate that the intersection currently operates overall at LOS D during the weekday morning, weekday evening, and Saturday midday peak hours. Under Year 2030 total projected conditions, the intersection is projected to operate as follows:

- The intersection is projected to continue operating at LOS D during all three peak hours.
- The eastbound and westbound approaches on the coordinated roadway, 159th Street, are projected to operate at LOS B or LOS D during the peak hours.
- The northbound and southbound approaches are projected to operate at LOS D during the peak hours.

- Due to 159th Street being classified as an SRA, the through movements are allocated the majority of the green time, resulting in lower levels of service for left-turn movements, which operate under a protected phase only.

- However, overall during all three peak hours, the projected 95th percentile queues for the left-turn movements will be able to be accommodated by the existing turn-lane storage. This was confirmed by a review of the traffic simulation which showed that the queues cleared within one cycle length.

- With the future extension of Ravinia Avenue to 161st Street, traffic traversing this intersection will be reduced and the intersection is projected overall to operate similar to the no-build and existing conditions.

As such, this intersection has adequate capacity to accommodate the traffic estimated to be generated by the proposed development and no additional roadway or traffic signal modifications are required.

LaGrange Road with 163rd Street

The results of the capacity analysis indicate that the intersection currently operates overall at LOS B or better during the weekday morning, weekday evening, and Saturday midday peak hours. Under Year 2030 total projected conditions, the intersection is projected to operate as follows:

- The intersection is projected to continue operating at LOS B or better during all three peak hours.

- The northbound and southbound approaches on the coordinated roadway, LaGrange Road, are projected to operate at LOS B or LOS D during the peak hours.

- The northbound and southbound approaches are projected to operate at LOS A or LOS B during the peak hours.

- Due to LaGrange Road being classified as an SRA, the through movements are allocated the majority of the green time, resulting in lower levels of service for the eastbound and westbound approaches.

- However, overall during all three peak hours, the projected 95th percentile queues for the left-turn movements will be able to be accommodated by the existing turn-lane storage. This was confirmed by a review of the traffic simulation which showed that the queues cleared within one cycle length.

As such, this intersection has adequate capacity to accommodate the traffic estimated to be generated by the proposed development and no additional roadway or traffic signal modifications are required.

LaGrange Road with 161st Street

The results of the capacity analysis indicate that all critical movements currently operate at LOS C or better during the weekday morning, weekday evening, and Saturday midday peak hours. Under Year 2030 total projected conditions, the intersection is projected to operate as follows:

- The eastbound and westbound approaches are projected to operate at LOS B or LOS C during all three peak hours, with 95th percentile queues of one to two vehicles and minimal delay.

- The northbound and southbound left-turn movements from LaGrange Road are projected to operate at LOS B or better during the peak hours. 95th percentile queues are projected to be approximately one to two vehicles during the peak hours, which can be accommodated by the available left-turn lane storage.

- With the future extension of Ravinia Avenue to 161st Street, traffic traversing this intersection will be increased. The eastbound and westbound approaches are projected to operate at LOS C or better during the peak hours. The northbound and southbound left-turn movements are projected to operate at LOS B or better during the peak hours and 95th percentile queues are projected to be accommodated by the existing turn-lane storage.

As such, this intersection has adequate capacity to accommodate the traffic estimated to be generated by the proposed development and no additional roadway or traffic control modifications are required.

LaGrange Road with 165th Street

The results of the capacity analysis indicate that all critical movements currently operate at LOS C or better during the weekday morning, weekday evening, and Saturday midday peak hours. Under Year 2030 total projected conditions, the intersection is projected to operate as follows:

- The eastbound approach is projected to operate at LOS B during all three peak hours, with 95th percentile queues of one to two vehicles and minimal delay.

- The northbound left-turn movement from LaGrange Road is projected to operate at LOS B or better during the peak hours. 95th percentile queues are projected to be approximately one to two vehicles during the peak hours, which can be accommodated by the available left-turn lane storage.

- With the future extension of Ravinia Avenue to 161st Street, traffic traversing this intersection will be reduced. The eastbound approach and northbound left-turn movement are projected to operate at LOS B or better during the peak hours. 95th percentile queues are projected to be accommodated by the existing turn-lane storage.

As such, this intersection has adequate capacity to accommodate the traffic estimated to be generated by the proposed development and no additional roadway or traffic control modifications are required.

165th Street with 97th Avenue

The results of the capacity analysis indicate that all critical movements currently operate at LOS A during the weekday morning, weekday evening, and Saturday midday peak hours. Under Year 2030 total projected conditions, the intersection is projected to operate as follows:

- The northbound and southbound approaches are projected to operate at LOS A during all three peak hours, with 95th percentile queues of one to two vehicles and minimal delay.
- The eastbound and westbound left-turn movements from 165th Street are projected to operate at LOS A during the peak hours.
- With the future extension of Ravinia Avenue to 161st Street, traffic traversing this intersection will be reduced. The critical approaches and movements are projected to operate at LOS A during the peak hours.

As such, this intersection has adequate capacity to accommodate the traffic estimated to be generated by the proposed development and no additional roadway or traffic control modifications are required.

Ravinia Avenue with Proposed Site Roadway

The results of the capacity analysis indicate that under Year 2030 total projected conditions, the intersection is projected to operate as follows:

- The northbound approach is projected to operate at LOS A during all three peak hours. 95th percentile queues are projected to be one to two vehicles with minimal delay.
- When the projected volumes are compared with the right-turn lane warrant found in Chapter 36 of the IDOT *Bureau of Design and Environment* (BDE) Manual, an eastbound right-turn lane is not warranted at this intersection. A copy of the turn-lane warrant is included in the Appendix.
- With the future extension of Ravinia Avenue to 161st Street, traffic traversing this intersection will be increased over the total projected conditions without the extension. The northbound approach is projected to operate at LOS A during the peak hours, while the westbound left-turn movement is also projected to operate at LOS A during the peak hours.

As such, this roadway will provide adequate capacity to the development and no additional roadway or traffic control is required.

6. Conclusion

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

- As proposed, the site will be developed with a residential development consisting of 132 single-family homes.

- The future extension of Ravinia Avenue to 161st Street will provide the projected traffic estimated to be generated by the proposed development and existing Costco traffic with additional access to LaGrange Road.

- Access to the development will be provided via proposed connections to Ravinia Avenue and 165th Street.

- The area roadway system generally has sufficient reserve capacity to accommodate the traffic to be generated by the proposed development and no roadway improvements or traffic control modifications are required.

- With the extension of Ravinia Avenue, a westbound left-turn lane can be accommodated with the five-lane cross-section. An eastbound right-turn lane on Ravinia Avenue will not be warranted.

- A future possible extension of Ravinia Avenue was also analyzed. It was determined that the extension would not significantly impact existing intersections included in the study area.

Appendix

Traffic Count Summary Sheets
Site Plan
ITE Trip Generation Sheets
CMAP 2050 Projections Letter
Level of Service Criteria
Capacity Analysis Summary Sheets
Turn Lane Warrant

Traffic Count Summary Sheets

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

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

Count Name: 1596th Street with LaGrange Road
TMC - Weekday
Site Code:
Start Date: 08/01/2024

Turning Movement Data

Start Time	159th Street Eastbound						159th 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	14	84	39	0	137	1	25	82	30	0	138	0	32	180	26	0	238	1	26	167	13	0	207	720
7:15 AM	0	35	98	32	0	165	0	22	138	32	0	192	0	48	180	48	0	276	1	30	170	11	0	212	845
7:30 AM	0	22	124	46	0	192	0	29	142	29	0	200	1	43	216	34	0	294	3	52	187	16	0	258	944
7:45 AM	0	32	143	48	0	223	0	37	144	31	0	212	1	67	237	56	0	361	1	39	200	24	0	264	1060
Hourly Total	0	103	449	165	0	717	1	113	506	122	0	742	2	190	813	164	0	1169	6	147	724	64	0	941	3569
8:00 AM	0	28	123	39	0	190	2	33	146	27	0	208	0	48	206	31	0	285	1	47	148	18	0	214	897
8:15 AM	0	31	106	34	0	171	3	39	118	37	0	197	0	59	267	43	0	369	0	38	174	27	0	239	976
8:30 AM	0	31	124	47	0	202	3	43	125	22	0	193	0	53	217	53	0	323	0	35	181	18	0	234	952
8:45 AM	1	44	148	61	0	254	4	40	124	46	0	214	0	56	234	58	0	348	0	48	191	19	0	258	1074
Hourly Total	1	134	501	181	0	817	12	155	513	132	0	812	0	216	924	185	0	1325	1	168	694	82	0	945	3899
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	43	170	88	1	301	1	68	188	52	0	309	1	97	252	80	0	430	0	91	315	63	0	469	1509
4:15 PM	0	59	158	77	0	294	0	76	189	61	0	326	0	79	247	78	0	404	0	83	276	51	0	410	1434
4:30 PM	0	41	157	87	2	285	0	75	190	57	0	322	0	99	291	72	0	462	0	84	307	69	1	460	1529
4:45 PM	0	60	164	92	0	316	1	80	199	54	0	334	1	79	276	69	0	425	0	81	327	57	0	465	1540
Hourly Total	0	203	649	344	3	1196	2	299	766	224	0	1291	2	354	1066	299	0	1721	0	339	1225	240	1	1804	6012
5:00 PM	0	60	152	102	0	314	2	74	203	50	1	329	1	74	278	52	0	405	1	90	274	54	0	419	1467
5:15 PM	0	56	182	99	0	337	0	51	183	62	0	296	1	98	290	58	0	447	0	92	342	59	0	493	1573
5:30 PM	0	52	180	87	0	319	3	40	202	76	0	321	0	83	265	70	0	418	1	85	321	54	0	461	1519
5:45 PM	0	50	155	70	0	275	0	49	182	73	0	304	1	68	262	56	0	387	0	84	321	62	0	467	1433
Hourly Total	0	218	669	358	0	1245	5	214	770	261	1	1250	3	323	1095	236	0	1657	2	351	1258	229	0	1840	5992
Grand Total	1	658	2268	1048	3	3975	20	781	2555	739	1	4095	7	1083	3898	884	0	5872	9	1005	3901	615	1	5530	19472
Approach %	0.0	16.6	57.1	26.4	-	-	0.5	19.1	62.4	18.0	-	-	0.1	18.4	66.4	15.1	-	-	0.2	18.2	70.5	11.1	-	-	-
Total %	0.0	3.4	11.6	5.4	-	20.4	0.1	4.0	13.1	3.8	-	21.0	0.0	5.6	20.0	4.5	-	30.2	0.0	5.2	20.0	3.2	-	28.4	-
Lights	1	639	2221	1016	-	3877	19	761	2465	717	-	3962	7	1055	3741	869	-	5672	9	975	3738	601	-	5323	18834
% Lights	100.0	97.1	97.9	96.9	-	97.5	95.0	97.4	96.5	97.0	-	96.8	100.0	97.4	96.0	98.3	-	96.6	100.0	97.0	95.8	97.7	-	96.3	96.7
Buses	0	1	0	1	-	2	0	0	2	0	-	2	0	0	2	0	-	2	0	0	2	0	-	2	8
% Buses	0.0	0.2	0.0	0.1	-	0.1	0.0	0.0	0.1	0.0	-	0.0	0.0	0.0	0.1	0.0	-	0.0	0.0	0.0	0.1	0.0	-	0.0	0.0
Single-Unit Trucks	0	14	20	8	-	42	1	10	54	14	-	79	0	11	56	9	-	76	0	20	57	8	-	85	282
% Single-Unit Trucks	0.0	2.1	0.9	0.8	-	1.1	5.0	1.3	2.1	1.9	-	1.9	0.0	1.0	1.4	1.0	-	1.3	0.0	2.0	1.5	1.3	-	1.5	1.4
Articulated Trucks	0	4	27	23	-	54	0	10	34	8	-	52	0	17	98	6	-	121	0	10	104	6	-	120	347
% Articulated Trucks	0.0	0.6	1.2	2.2	-	1.4	0.0	1.3	1.3	1.1	-	1.3	0.0	1.6	2.5	0.7	-	2.1	0.0	1.0	2.7	1.0	-	2.2	1.8
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	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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

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

Count Name: 1596th Street with LaGrange Road
TMC - Weekday
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (8:00 AM)

Start Time	159th Street Eastbound						159th 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	
8:00 AM	0	28	123	39	0	190	2	33	146	27	0	208	0	48	206	31	0	285	1	47	148	18	0	214	897
8:15 AM	0	31	106	34	0	171	3	39	118	37	0	197	0	59	267	43	0	369	0	38	174	27	0	239	976
8:30 AM	0	31	124	47	0	202	3	43	125	22	0	193	0	53	217	53	0	323	0	35	181	18	0	234	952
8:45 AM	1	44	148	61	0	254	4	40	124	46	0	214	0	56	234	58	0	348	0	48	191	19	0	258	1074
Total	1	134	501	181	0	817	12	155	513	132	0	812	0	216	924	185	0	1325	1	168	694	82	0	945	3899
Approach %	0.1	16.4	61.3	22.2	-	-	1.5	19.1	63.2	16.3	-	-	0.0	16.3	69.7	14.0	-	-	0.1	17.8	73.4	8.7	-	-	-
Total %	0.0	3.4	12.8	4.6	-	21.0	0.3	4.0	13.2	3.4	-	20.8	0.0	5.5	23.7	4.7	-	34.0	0.0	4.3	17.8	2.1	-	24.2	-
PHF	0.250	0.761	0.846	0.742	-	0.804	0.750	0.901	0.878	0.717	-	0.949	0.000	0.915	0.865	0.797	-	0.898	0.250	0.875	0.908	0.759	-	0.916	0.908
Lights	1	128	484	172	-	785	11	149	480	121	-	761	0	210	865	181	-	1256	1	153	630	77	-	861	3663
% Lights	100.0	95.5	96.6	95.0	-	96.1	91.7	96.1	93.6	91.7	-	93.7	-	97.2	93.6	97.8	-	94.8	100.0	91.1	90.8	93.9	-	91.1	93.9
Buses	0	1	0	1	-	2	0	0	2	0	-	2	0	0	2	0	-	2	0	0	2	0	-	2	8
% Buses	0.0	0.7	0.0	0.6	-	0.2	0.0	0.0	0.4	0.0	-	0.2	-	0.0	0.2	0.0	-	0.2	0.0	0.0	0.3	0.0	-	0.2	0.2
Single-Unit Trucks	0	3	6	4	-	13	1	2	20	7	-	30	0	5	21	2	-	28	0	12	17	3	-	32	103
% Single-Unit Trucks	0.0	2.2	1.2	2.2	-	1.6	8.3	1.3	3.9	5.3	-	3.7	-	2.3	2.3	1.1	-	2.1	0.0	7.1	2.4	3.7	-	3.4	2.6
Articulated Trucks	0	2	11	4	-	17	0	4	11	4	-	19	0	1	36	2	-	39	0	3	45	2	-	50	125
% Articulated Trucks	0.0	1.5	2.2	2.2	-	2.1	0.0	2.6	2.1	3.0	-	2.3	-	0.5	3.9	1.1	-	2.9	0.0	1.8	6.5	2.4	-	5.3	3.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

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

Count Name: 1596th Street with LaGrange Road
TMC - Weekday
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (4:30 PM)

Start Time	159th Street Eastbound						159th 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	41	157	87	2	285	0	75	190	57	0	322	0	99	291	72	0	462	0	84	307	69	1	460	1529
4:45 PM	0	60	164	92	0	316	1	80	199	54	0	334	1	79	276	69	0	425	0	81	327	57	0	465	1540
5:00 PM	0	60	152	102	0	314	2	74	203	50	1	329	1	74	278	52	0	405	1	90	274	54	0	419	1467
5:15 PM	0	56	182	99	0	337	0	51	183	62	0	296	1	98	290	58	0	447	0	92	342	59	0	493	1573
Total	0	217	655	380	2	1252	3	280	775	223	1	1281	3	350	1135	251	0	1739	1	347	1250	239	1	1837	6109
Approach %	0.0	17.3	52.3	30.4	-	-	0.2	21.9	60.5	17.4	-	-	0.2	20.1	65.3	14.4	-	-	0.1	18.9	68.0	13.0	-	-	-
Total %	0.0	3.6	10.7	6.2	-	20.5	0.0	4.6	12.7	3.7	-	21.0	0.0	5.7	18.6	4.1	-	28.5	0.0	5.7	20.5	3.9	-	30.1	-
PHF	0.000	0.904	0.900	0.931	-	0.929	0.375	0.875	0.954	0.899	-	0.959	0.750	0.884	0.975	0.872	-	0.941	0.250	0.943	0.914	0.866	-	0.932	0.971
Lights	0	214	647	378	-	1239	3	277	758	220	-	1258	3	343	1110	248	-	1704	1	344	1230	233	-	1808	6009
% Lights	-	98.6	98.8	99.5	-	99.0	100.0	98.9	97.8	98.7	-	98.2	100.0	98.0	97.8	98.8	-	98.0	100.0	99.1	98.4	97.5	-	98.4	98.4
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	0.0
Single-Unit Trucks	0	3	3	1	-	7	0	1	10	2	-	13	0	1	13	1	-	15	0	1	11	4	-	16	51
% Single-Unit Trucks	-	1.4	0.5	0.3	-	0.6	0.0	0.4	1.3	0.9	-	1.0	0.0	0.3	1.1	0.4	-	0.9	0.0	0.3	0.9	1.7	-	0.9	0.8
Articulated Trucks	0	0	5	1	-	6	0	2	7	1	-	10	0	6	12	2	-	20	0	2	9	2	-	13	49
% Articulated Trucks	-	0.0	0.8	0.3	-	0.5	0.0	0.7	0.9	0.4	-	0.8	0.0	1.7	1.1	0.8	-	1.2	0.0	0.6	0.7	0.8	-	0.7	0.8
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	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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

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

Count Name: 159th Street with LaGrange Road
TMC - Saturday
Site Code:
Start Date: 08/03/2024

Turning Movement Data

Start Time	159th Street Eastbound						159th 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	
11:00 AM	0	53	125	57	0	235	3	48	177	84	1	312	0	81	276	43	0	400	0	76	175	39	0	290	1237
11:15 AM	0	67	141	71	0	279	3	34	149	91	1	277	0	79	324	49	0	452	0	92	197	37	0	326	1334
11:30 AM	0	55	179	57	0	291	2	31	194	75	0	302	0	54	306	60	0	420	1	88	188	35	0	312	1325
11:45 AM	0	71	129	59	0	259	3	47	154	106	1	310	0	88	284	52	1	424	1	83	215	14	0	313	1306
Hourly Total	0	246	574	244	0	1064	11	160	674	356	3	1201	0	302	1190	204	1	1696	2	339	775	125	0	1241	5202
12:00 PM	0	45	148	76	0	269	5	46	173	22	0	246	0	107	259	71	0	437	0	91	217	48	0	356	1308
12:15 PM	0	72	136	58	0	266	2	51	165	46	0	264	0	111	305	73	0	489	0	90	220	41	0	351	1370
12:30 PM	0	41	147	82	0	270	4	33	175	53	0	265	0	104	292	61	0	457	0	98	226	57	0	381	1373
12:45 PM	0	72	141	56	0	269	5	46	150	74	0	275	0	100	285	60	0	445	0	88	227	35	0	350	1339
Hourly Total	0	230	572	272	0	1074	16	176	663	195	0	1050	0	422	1141	265	0	1828	0	367	890	181	0	1438	5390
1:00 PM	0	48	168	65	0	281	5	65	159	68	2	297	0	76	258	66	0	400	1	137	230	59	1	427	1405
1:15 PM	0	58	155	55	0	268	5	49	151	92	0	297	0	83	229	61	0	373	2	125	209	61	0	397	1335
1:30 PM	0	55	151	76	0	282	2	50	158	80	0	290	0	80	277	85	0	442	0	110	206	43	0	359	1373
1:45 PM	0	76	148	54	0	278	3	39	150	83	3	275	0	94	275	78	0	447	0	128	214	47	0	389	1389
Hourly Total	0	237	622	250	0	1109	15	203	618	323	5	1159	0	333	1039	290	0	1662	3	500	859	210	1	1572	5502
Grand Total	0	713	1768	766	0	3247	42	539	1955	874	8	3410	0	1057	3370	759	1	5186	5	1206	2524	516	1	4251	16094
Approach %	0.0	22.0	54.5	23.6	-	-	1.2	15.8	57.3	25.6	-	-	0.0	20.4	65.0	14.6	-	-	0.1	28.4	59.4	12.1	-	-	-
Total %	0.0	4.4	11.0	4.8	-	20.2	0.3	3.3	12.1	5.4	-	21.2	0.0	6.6	20.9	4.7	-	32.2	0.0	7.5	15.7	3.2	-	26.4	-
Lights	0	710	1753	763	-	3226	42	526	1936	869	-	3373	0	1042	3337	751	-	5130	5	1204	2488	512	-	4209	15938
% Lights	-	99.6	99.2	99.6	-	99.4	100.0	97.6	99.0	99.4	-	98.9	-	98.6	99.0	98.9	-	98.9	100.0	99.8	98.6	99.2	-	99.0	99.0
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	-	0.0	0.0	0.0	-	0.0	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
Single-Unit Trucks	0	1	12	0	-	13	0	10	13	4	-	27	0	9	15	6	-	30	0	2	23	3	-	28	98
% Single-Unit Trucks	-	0.1	0.7	0.0	-	0.4	0.0	1.9	0.7	0.5	-	0.8	-	0.9	0.4	0.8	-	0.6	0.0	0.2	0.9	0.6	-	0.7	0.6
Articulated Trucks	0	2	3	3	-	8	0	2	6	1	-	9	0	6	16	2	-	24	0	0	13	1	-	14	55
% Articulated Trucks	-	0.3	0.2	0.4	-	0.2	0.0	0.4	0.3	0.1	-	0.3	-	0.6	0.5	0.3	-	0.5	0.0	0.0	0.5	0.2	-	0.3	0.3
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	0.1	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	1	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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

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

Count Name: 159th Street with LaGrange Road
TMC - Saturday
Site Code:
Start Date: 08/03/2024

Turning Movement Peak Hour Data (1:00 PM)

Start Time	159th Street Eastbound						159th 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	
1:00 PM	0	48	168	65	0	281	5	65	159	68	2	297	0	76	258	66	0	400	1	137	230	59	1	427	1405
1:15 PM	0	58	155	55	0	268	5	49	151	92	0	297	0	83	229	61	0	373	2	125	209	61	0	397	1335
1:30 PM	0	55	151	76	0	282	2	50	158	80	0	290	0	80	277	85	0	442	0	110	206	43	0	359	1373
1:45 PM	0	76	148	54	0	278	3	39	150	83	3	275	0	94	275	78	0	447	0	128	214	47	0	389	1389
Total	0	237	622	250	0	1109	15	203	618	323	5	1159	0	333	1039	290	0	1662	3	500	859	210	1	1572	5502
Approach %	0.0	21.4	56.1	22.5	-	-	1.3	17.5	53.3	27.9	-	-	0.0	20.0	62.5	17.4	-	-	0.2	31.8	54.6	13.4	-	-	-
Total %	0.0	4.3	11.3	4.5	-	20.2	0.3	3.7	11.2	5.9	-	21.1	0.0	6.1	18.9	5.3	-	30.2	0.1	9.1	15.6	3.8	-	28.6	-
PHF	0.000	0.780	0.926	0.822	-	0.983	0.750	0.781	0.972	0.878	-	0.976	0.000	0.886	0.938	0.853	-	0.930	0.375	0.912	0.934	0.861	-	0.920	0.979
Lights	0	236	619	249	-	1104	15	197	610	320	-	1142	0	327	1025	286	-	1638	3	499	851	210	-	1563	5447
% Lights	-	99.6	99.5	99.6	-	99.5	100.0	97.0	98.7	99.1	-	98.5	-	98.2	98.7	98.6	-	98.6	100.0	99.8	99.1	100.0	-	99.4	99.0
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	-	0.0	0.0
Single-Unit Trucks	0	0	3	0	-	3	0	6	6	2	-	14	0	4	5	3	-	12	0	1	5	0	-	6	35
% Single-Unit Trucks	-	0.0	0.5	0.0	-	0.3	0.0	3.0	1.0	0.6	-	1.2	-	1.2	0.5	1.0	-	0.7	0.0	0.2	0.6	0.0	-	0.4	0.6
Articulated Trucks	0	1	0	1	-	2	0	0	2	1	-	3	0	2	8	1	-	11	0	0	3	0	-	3	19
% Articulated Trucks	-	0.4	0.0	0.4	-	0.2	0.0	0.0	0.3	0.3	-	0.3	-	0.6	0.8	0.3	-	0.7	0.0	0.0	0.3	0.0	-	0.2	0.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.1	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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

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

Count Name: 159th Street with Ravinia Avenue
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Data

Start Time	159th Street Eastbound						159th 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	10	128	1	0	139	0	5	101	15	0	121	0	3	0	2	0	5	0	18	2	13	0	33	298
7:15 AM	0	19	137	0	0	156	1	5	165	35	0	206	0	1	0	1	0	2	0	20	5	5	0	30	394
7:30 AM	0	22	162	1	0	185	1	7	146	26	0	180	0	0	0	1	0	1	0	22	2	9	0	33	399
7:45 AM	0	40	195	0	0	235	0	9	156	56	0	221	0	3	0	2	0	5	0	30	5	19	0	54	515
Hourly Total	0	91	622	2	0	715	2	26	568	132	0	728	0	7	0	6	0	13	0	90	14	46	0	150	1606
8:00 AM	1	27	181	1	0	210	0	5	175	33	0	213	0	1	0	2	0	3	0	14	3	12	0	29	455
8:15 AM	0	31	153	3	0	187	0	7	168	43	0	218	0	4	0	1	0	5	0	26	4	13	0	43	453
8:30 AM	2	23	199	2	0	226	0	4	161	26	0	191	0	4	1	3	0	8	0	23	5	11	0	39	464
8:45 AM	0	37	217	1	0	255	0	12	144	30	0	186	0	7	0	1	0	8	0	37	7	13	0	57	506
Hourly Total	3	118	750	7	0	878	0	28	648	132	0	808	0	16	1	7	0	24	0	100	19	49	0	168	1878
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	46	193	3	1	242	0	83	181	44	0	308	0	36	30	57	0	123	0	44	24	32	1	100	773
4:15 PM	0	50	205	5	0	260	0	65	199	41	0	305	0	27	19	65	0	111	0	34	41	35	0	110	786
4:30 PM	0	41	212	4	1	257	0	66	212	40	0	318	0	39	16	52	3	107	0	48	19	36	0	103	785
4:45 PM	0	36	216	6	2	258	0	76	166	41	0	283	0	24	18	59	0	101	0	38	35	36	1	109	751
Hourly Total	0	173	826	18	4	1017	0	290	758	166	0	1214	0	126	83	233	3	442	0	164	119	139	2	422	3095
5:00 PM	0	48	201	2	0	251	0	75	196	51	0	322	0	27	15	58	0	100	0	50	35	42	0	127	800
5:15 PM	0	37	250	3	0	290	0	57	158	44	0	259	0	22	15	58	0	95	0	37	28	28	0	93	737
5:30 PM	0	38	229	0	0	267	0	74	171	45	0	290	0	27	19	37	0	83	0	43	29	36	0	108	748
5:45 PM	3	28	220	6	0	257	0	72	158	42	0	272	0	29	24	52	0	105	0	39	24	41	0	104	738
Hourly Total	3	151	900	11	0	1065	0	278	683	182	0	1143	0	105	73	205	0	383	0	169	116	147	0	432	3023
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	37	179	4	0	220	0	114	119	30	0	263	0	36	16	63	0	115	0	32	40	25	0	97	695
11:15 AM	0	34	217	5	0	256	0	110	110	31	0	251	0	29	26	74	0	129	0	23	36	27	0	86	722
11:30 AM	0	33	204	3	0	240	0	88	128	32	0	248	0	37	19	71	0	127	0	38	37	18	0	93	708
11:45 AM	0	52	206	6	0	264	0	106	109	40	0	255	0	33	30	74	0	137	0	37	37	23	0	97	753
Hourly Total	0	156	806	18	0	980	0	418	466	133	0	1017	0	135	91	282	0	508	0	130	150	93	0	373	2878
12:00 PM	0	46	205	4	0	255	0	96	144	37	0	277	0	35	31	75	0	141	0	40	41	33	0	114	787
12:15 PM	0	41	225	2	0	268	0	112	150	31	0	293	0	27	21	34	0	82	0	12	38	30	0	80	723
12:30 PM	0	10	198	1	0	209	0	86	130	22	0	238	0	33	10	43	0	86	0	10	43	34	0	87	620
12:45 PM	0	39	193	7	0	239	0	111	138	29	0	278	0	30	24	50	0	104	0	34	30	35	0	99	720
Hourly Total	0	136	821	14	0	971	0	405	562	119	0	1086	0	125	86	202	0	413	0	96	152	132	0	380	2850
1:00 PM	0	29	204	5	0	238	0	93	146	22	1	261	0	44	12	70	0	126	0	36	37	28	0	101	726
1:15 PM	0	43	183	3	0	229	0	86	114	17	0	217	0	22	19	74	0	115	0	23	24	39	0	86	647
1:30 PM	0	53	203	4	0	260	0	78	115	41	0	234	0	18	19	70	0	107	0	39	36	36	0	111	712

1:45 PM	0	43	197	4	0	244	0	119	115	36	0	270	0	33	18	64	0	115	0	24	31	40	0	95	724
Hourly Total	0	168	787	16	0	971	0	376	490	116	1	982	0	117	68	278	0	463	0	122	128	143	0	393	2809
Grand Total	6	993	5512	86	4	6597	2	1821	4175	980	1	6978	0	631	402	1213	3	2246	0	871	698	749	2	2318	18139
Approach %	0.1	15.1	83.6	1.3	-	-	0.0	26.1	59.8	14.0	-	-	0.0	28.1	17.9	54.0	-	-	0.0	37.6	30.1	32.3	-	-	-
Total %	0.0	5.5	30.4	0.5	-	36.4	0.0	10.0	23.0	5.4	-	38.5	0.0	3.5	2.2	6.7	-	12.4	0.0	4.8	3.8	4.1	-	12.8	-
Lights	6	992	5418	82	-	6498	2	1812	4052	975	-	6841	0	627	401	1210	-	2238	0	866	696	746	-	2308	17885
% Lights	100.0	99.9	98.3	95.3	-	98.5	100.0	99.5	97.1	99.5	-	98.0	-	99.4	99.8	99.8	-	99.6	-	99.4	99.7	99.6	-	99.6	98.6
Buses	0	1	2	0	-	3	0	0	6	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	9
% Buses	0.0	0.1	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	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	45	0	-	45	0	4	63	5	-	72	0	2	1	2	-	5	0	5	2	2	-	9	131
% Single-Unit Trucks	0.0	0.0	0.8	0.0	-	0.7	0.0	0.2	1.5	0.5	-	1.0	-	0.3	0.2	0.2	-	0.2	-	0.6	0.3	0.3	-	0.4	0.7
Articulated Trucks	0	0	45	4	-	49	0	5	54	0	-	59	0	2	0	1	-	3	0	0	0	1	-	1	112
% Articulated Trucks	0.0	0.0	0.8	4.7	-	0.7	0.0	0.3	1.3	0.0	-	0.8	-	0.3	0.0	0.1	-	0.1	-	0.0	0.0	0.1	-	0.0	0.6
Bicycles on Road	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	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	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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9575 W. Higgins Rd., Suite 400

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

Count Name: 159th Street with Ravinia Avenue
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (8:00 AM)

Start Time	159th Street Eastbound						159th 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	
8:00 AM	1	27	181	1	0	210	0	5	175	33	0	213	0	1	0	2	0	3	0	14	3	12	0	29	455
8:15 AM	0	31	153	3	0	187	0	7	168	43	0	218	0	4	0	1	0	5	0	26	4	13	0	43	453
8:30 AM	2	23	199	2	0	226	0	4	161	26	0	191	0	4	1	3	0	8	0	23	5	11	0	39	464
8:45 AM	0	37	217	1	0	255	0	12	144	30	0	186	0	7	0	1	0	8	0	37	7	13	0	57	506
Total	3	118	750	7	0	878	0	28	648	132	0	808	0	16	1	7	0	24	0	100	19	49	0	168	1878
Approach %	0.3	13.4	85.4	0.8	-	-	0.0	3.5	80.2	16.3	-	-	0.0	66.7	4.2	29.2	-	-	0.0	59.5	11.3	29.2	-	-	-
Total %	0.2	6.3	39.9	0.4	-	46.8	0.0	1.5	34.5	7.0	-	43.0	0.0	0.9	0.1	0.4	-	1.3	0.0	5.3	1.0	2.6	-	8.9	-
PHF	0.375	0.797	0.864	0.583	-	0.861	0.000	0.583	0.926	0.767	-	0.927	0.000	0.571	0.250	0.583	-	0.750	0.000	0.676	0.679	0.942	-	0.737	0.928
Lights	3	118	723	6	-	850	0	27	619	131	-	777	0	13	1	7	-	21	0	99	19	48	-	166	1814
% Lights	100.0	100.0	96.4	85.7	-	96.8	-	96.4	95.5	99.2	-	96.2	-	81.3	100.0	100.0	-	87.5	-	99.0	100.0	98.0	-	98.8	96.6
Buses	0	0	2	0	-	2	0	0	3	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	5
% Buses	0.0	0.0	0.3	0.0	-	0.2	-	0.0	0.5	0.0	-	0.4	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.3
Single-Unit Trucks	0	0	12	0	-	12	0	1	14	1	-	16	0	2	0	0	-	2	0	1	0	0	-	1	31
% Single-Unit Trucks	0.0	0.0	1.6	0.0	-	1.4	-	3.6	2.2	0.8	-	2.0	-	12.5	0.0	0.0	-	8.3	-	1.0	0.0	0.0	-	0.6	1.7
Articulated Trucks	0	0	13	1	-	14	0	0	12	0	-	12	0	1	0	0	-	1	0	0	0	1	-	1	28
% Articulated Trucks	0.0	0.0	1.7	14.3	-	1.6	-	0.0	1.9	0.0	-	1.5	-	6.3	0.0	0.0	-	4.2	-	0.0	0.0	2.0	-	0.6	1.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: 159th Street with Ravinia Avenue
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (4:30 PM)

Start Time	159th Street Eastbound						159th 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	41	212	4	1	257	0	66	212	40	0	318	0	39	16	52	3	107	0	48	19	36	0	103	785
4:45 PM	0	36	216	6	2	258	0	76	166	41	0	283	0	24	18	59	0	101	0	38	35	36	1	109	751
5:00 PM	0	48	201	2	0	251	0	75	196	51	0	322	0	27	15	58	0	100	0	50	35	42	0	127	800
5:15 PM	0	37	250	3	0	290	0	57	158	44	0	259	0	22	15	58	0	95	0	37	28	28	0	93	737
Total	0	162	879	15	3	1056	0	274	732	176	0	1182	0	112	64	227	3	403	0	173	117	142	1	432	3073
Approach %	0.0	15.3	83.2	1.4	-	-	0.0	23.2	61.9	14.9	-	-	0.0	27.8	15.9	56.3	-	-	0.0	40.0	27.1	32.9	-	-	-
Total %	0.0	5.3	28.6	0.5	-	34.4	0.0	8.9	23.8	5.7	-	38.5	0.0	3.6	2.1	7.4	-	13.1	0.0	5.6	3.8	4.6	-	14.1	-
PHF	0.000	0.844	0.879	0.625	-	0.910	0.000	0.901	0.863	0.863	-	0.918	0.000	0.718	0.889	0.962	-	0.942	0.000	0.865	0.836	0.845	-	0.850	0.960
Lights	0	162	872	14	-	1048	0	273	704	175	-	1152	0	111	64	226	-	401	0	172	117	141	-	430	3031
% Lights	-	100.0	99.2	93.3	-	99.2	-	99.6	96.2	99.4	-	97.5	-	99.1	100.0	99.6	-	99.5	-	99.4	100.0	99.3	-	99.5	98.6
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	2	0	-	2	0	0	15	1	-	16	0	0	0	1	-	1	0	1	0	1	-	2	21
% Single-Unit Trucks	-	0.0	0.2	0.0	-	0.2	-	0.0	2.0	0.6	-	1.4	-	0.0	0.0	0.4	-	0.2	-	0.6	0.0	0.7	-	0.5	0.7
Articulated Trucks	0	0	5	1	-	6	0	1	13	0	-	14	0	1	0	0	-	1	0	0	0	0	-	0	21
% Articulated Trucks	-	0.0	0.6	6.7	-	0.6	-	0.4	1.8	0.0	-	1.2	-	0.9	0.0	0.0	-	0.2	-	0.0	0.0	0.0	-	0.0	0.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% 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	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Count Name: 159th Street with Ravinia Avenue
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (1:00 PM)

Start Time	159th Street Eastbound						159th 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	
1:00 PM	0	29	204	5	0	238	0	93	146	22	1	261	0	44	12	70	0	126	0	36	37	28	0	101	726
1:15 PM	0	43	183	3	0	229	0	86	114	17	0	217	0	22	19	74	0	115	0	23	24	39	0	86	647
1:30 PM	0	53	203	4	0	260	0	78	115	41	0	234	0	18	19	70	0	107	0	39	36	36	0	111	712
1:45 PM	0	43	197	4	0	244	0	119	115	36	0	270	0	33	18	64	0	115	0	24	31	40	0	95	724
Total	0	168	787	16	0	971	0	376	490	116	1	982	0	117	68	278	0	463	0	122	128	143	0	393	2809
Approach %	0.0	17.3	81.1	1.6	-	-	0.0	38.3	49.9	11.8	-	-	0.0	25.3	14.7	60.0	-	-	0.0	31.0	32.6	36.4	-	-	-
Total %	0.0	6.0	28.0	0.6	-	34.6	0.0	13.4	17.4	4.1	-	35.0	0.0	4.2	2.4	9.9	-	16.5	0.0	4.3	4.6	5.1	-	14.0	-
PHF	0.000	0.792	0.964	0.800	-	0.934	0.000	0.790	0.839	0.707	-	0.909	0.000	0.665	0.895	0.939	-	0.919	0.000	0.782	0.865	0.894	-	0.885	0.967
Lights	0	167	781	15	-	963	0	373	484	115	-	972	0	117	68	277	-	462	0	122	127	143	-	392	2789
% Lights	-	99.4	99.2	93.8	-	99.2	-	99.2	98.8	99.1	-	99.0	-	100.0	100.0	99.6	-	99.8	-	100.0	99.2	100.0	-	99.7	99.3
Buses	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	-	0.6	0.0	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	3	0	-	3	0	1	4	1	-	6	0	0	0	1	-	1	0	0	1	0	-	1	11
% Single-Unit Trucks	-	0.0	0.4	0.0	-	0.3	-	0.3	0.8	0.9	-	0.6	-	0.0	0.0	0.4	-	0.2	-	0.0	0.8	0.0	-	0.3	0.4
Articulated Trucks	0	0	1	1	-	2	0	2	2	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	6
% Articulated Trucks	-	0.0	0.1	6.3	-	0.2	-	0.5	0.4	0.0	-	0.4	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.2
Bicycles on Road	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	-	0.0	0.3	0.0	-	0.2	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: LaGrange Road with 163rd Street
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Data

Start Time	163rd Street Eastbound						163rd 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	5	1	2	0	8	0	4	0	21	0	25	0	2	192	15	0	209	1	5	205	1	0	212	454
7:15 AM	0	8	0	1	0	9	0	18	2	11	0	31	0	1	233	9	0	243	0	9	185	1	0	195	478
7:30 AM	0	7	1	2	0	10	0	15	1	10	0	26	0	1	232	12	0	245	2	7	242	5	0	256	537
7:45 AM	0	8	0	1	0	9	0	13	1	17	0	31	0	1	269	12	0	282	3	13	218	6	0	240	562
Hourly Total	0	28	2	6	0	36	0	50	4	59	0	113	0	5	926	48	0	979	6	34	850	13	0	903	2031
8:00 AM	0	8	0	1	0	9	0	17	0	8	0	25	0	1	291	13	0	305	3	15	222	3	0	243	582
8:15 AM	0	9	0	2	0	11	0	19	0	14	0	33	0	2	334	21	0	357	3	13	216	2	0	234	635
8:30 AM	0	9	0	3	0	12	0	15	2	12	1	29	0	0	312	15	0	327	5	14	271	3	0	293	661
8:45 AM	0	9	1	3	0	13	0	7	2	8	0	17	0	1	309	16	0	326	5	11	233	2	0	251	607
Hourly Total	0	35	1	9	0	45	0	58	4	42	1	104	0	4	1246	65	0	1315	16	53	942	10	0	1021	2485
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	20	0	5	0	25	0	15	4	24	1	43	0	4	316	17	0	337	6	12	455	6	0	479	884
4:15 PM	0	22	0	5	0	27	0	9	1	23	0	33	0	10	312	18	0	340	4	27	414	21	0	466	866
4:30 PM	0	15	0	4	0	19	0	15	3	20	0	38	0	7	398	11	0	416	7	14	452	14	0	487	960
4:45 PM	0	12	1	2	0	15	0	15	1	18	0	34	0	2	366	21	0	389	1	22	452	14	0	489	927
Hourly Total	0	69	1	16	0	86	0	54	9	85	1	148	0	23	1392	67	0	1482	18	75	1773	55	0	1921	3637
5:00 PM	0	29	2	10	0	41	0	14	3	15	0	32	0	6	352	20	0	378	3	23	406	10	0	442	893
5:15 PM	0	9	1	5	0	15	0	22	3	21	0	46	1	5	358	21	0	385	5	22	419	20	0	466	912
5:30 PM	0	22	0	7	0	29	0	18	2	8	0	28	0	5	355	18	0	378	1	10	404	15	0	430	865
5:45 PM	0	18	0	6	0	24	0	13	2	23	0	38	1	3	337	22	0	363	6	19	373	20	0	418	843
Hourly Total	0	78	3	28	0	109	0	67	10	67	0	144	2	19	1402	81	0	1504	15	74	1602	65	0	1756	3513
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	6	1	1	0	8	0	9	1	13	0	23	0	2	407	18	0	427	2	7	297	11	0	317	775
11:15 AM	0	9	0	1	0	10	0	17	1	17	0	35	0	1	274	17	0	292	1	10	284	6	0	301	638
11:30 AM	0	10	1	3	0	14	0	12	0	14	0	26	0	2	439	19	1	460	8	16	321	14	0	359	859
11:45 AM	0	13	2	4	0	19	0	21	0	22	0	43	0	4	350	17	0	371	3	19	339	19	0	380	813
Hourly Total	0	38	4	9	0	51	0	59	2	66	0	127	0	9	1470	71	1	1550	14	52	1241	50	0	1357	3085
12:00 PM	0	22	1	1	0	24	0	14	1	20	0	35	0	2	415	13	0	430	3	16	347	11	0	377	866
12:15 PM	0	12	3	1	0	16	0	13	3	15	0	31	0	3	448	19	0	470	5	9	347	18	0	379	896
12:30 PM	0	18	0	3	0	21	0	10	1	14	0	25	1	3	385	15	0	404	5	7	370	20	0	402	852
12:45 PM	0	13	1	6	0	20	0	14	1	14	0	29	1	5	381	12	0	399	7	13	358	16	0	394	842
Hourly Total	0	65	5	11	0	81	0	51	6	63	0	120	2	13	1629	59	0	1703	20	45	1422	65	0	1552	3456
1:00 PM	0	20	4	4	0	28	0	14	2	13	0	29	0	3	349	8	2	360	6	11	377	22	3	416	833
1:15 PM	0	13	1	2	0	16	0	8	1	11	0	20	1	2	380	18	0	401	5	12	326	15	0	358	795
1:30 PM	0	21	1	3	0	25	0	17	1	20	0	38	0	3	358	20	0	381	7	11	350	14	0	382	826

1:45 PM	0	22	1	1	0	24	0	14	1	10	0	25	0	4	394	16	0	414	3	19	346	8	1	376	839
Hourly Total	0	76	7	10	0	93	0	53	5	54	0	112	1	12	1481	62	2	1556	21	53	1399	59	4	1532	3293
Grand Total	0	389	23	89	0	501	0	392	40	436	2	868	5	85	9546	453	3	10089	110	386	9229	317	4	10042	21500
Approach %	0.0	77.6	4.6	17.8	-	-	0.0	45.2	4.6	50.2	-	-	0.0	0.8	94.6	4.5	-	-	1.1	3.8	91.9	3.2	-	-	-
Total %	0.0	1.8	0.1	0.4	-	2.3	0.0	1.8	0.2	2.0	-	4.0	0.0	0.4	44.4	2.1	-	46.9	0.5	1.8	42.9	1.5	-	46.7	-
Lights	0	388	23	88	-	499	0	389	40	435	-	864	5	83	9300	452	-	9840	108	383	8967	315	-	9773	20976
% Lights	-	99.7	100.0	98.9	-	99.6	-	99.2	100.0	99.8	-	99.5	100.0	97.6	97.4	99.8	-	97.5	98.2	99.2	97.2	99.4	-	97.3	97.6
Buses	0	0	0	0	-	0	0	1	0	1	-	2	0	0	3	0	-	3	0	0	2	0	-	2	7
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.3	0.0	0.2	-	0.2	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	1	0	1	-	2	0	2	0	0	-	2	0	2	112	1	-	115	2	3	125	1	-	131	250
% Single-Unit Trucks	-	0.3	0.0	1.1	-	0.4	-	0.5	0.0	0.0	-	0.2	0.0	2.4	1.2	0.2	-	1.1	1.8	0.8	1.4	0.3	-	1.3	1.2
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	131	0	-	131	0	0	135	1	-	136	267
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	1.4	0.0	-	1.3	0.0	0.0	1.5	0.3	-	1.4	1.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Count Name: LaGrange Road with 163rd Street
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (8:00 AM)

Start Time	163rd Street Eastbound						163rd 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	
8:00 AM	0	8	0	1	0	9	0	17	0	8	0	25	0	1	291	13	0	305	3	15	222	3	0	243	582
8:15 AM	0	9	0	2	0	11	0	19	0	14	0	33	0	2	334	21	0	357	3	13	216	2	0	234	635
8:30 AM	0	9	0	3	0	12	0	15	2	12	1	29	0	0	312	15	0	327	5	14	271	3	0	293	661
8:45 AM	0	9	1	3	0	13	0	7	2	8	0	17	0	1	309	16	0	326	5	11	233	2	0	251	607
Total	0	35	1	9	0	45	0	58	4	42	1	104	0	4	1246	65	0	1315	16	53	942	10	0	1021	2485
Approach %	0.0	77.8	2.2	20.0	-	-	0.0	55.8	3.8	40.4	-	-	0.0	0.3	94.8	4.9	-	-	1.6	5.2	92.3	1.0	-	-	-
Total %	0.0	1.4	0.0	0.4	-	1.8	0.0	2.3	0.2	1.7	-	4.2	0.0	0.2	50.1	2.6	-	52.9	0.6	2.1	37.9	0.4	-	41.1	-
PHF	0.000	0.972	0.250	0.750	-	0.865	0.000	0.763	0.500	0.750	-	0.788	0.000	0.500	0.933	0.774	-	0.921	0.800	0.883	0.869	0.833	-	0.871	0.940
Lights	0	34	1	9	-	44	0	56	4	42	-	102	0	4	1186	65	-	1255	16	53	865	10	-	944	2345
% Lights	-	97.1	100.0	100.0	-	97.8	-	96.6	100.0	100.0	-	98.1	-	100.0	95.2	100.0	-	95.4	100.0	100.0	91.8	100.0	-	92.5	94.4
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	2	0	-	2	0	0	2	0	-	2	5
% Buses	-	0.0	0.0	0.0	-	0.0	-	1.7	0.0	0.0	-	1.0	-	0.0	0.2	0.0	-	0.2	0.0	0.0	0.2	0.0	-	0.2	0.2
Single-Unit Trucks	0	1	0	0	-	1	0	1	0	0	-	1	0	0	33	0	-	33	0	0	16	0	-	16	51
% Single-Unit Trucks	-	2.9	0.0	0.0	-	2.2	-	1.7	0.0	0.0	-	1.0	-	0.0	2.6	0.0	-	2.5	0.0	0.0	1.7	0.0	-	1.6	2.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	25	0	-	25	0	0	59	0	-	59	84
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	2.0	0.0	-	1.9	0.0	0.0	6.3	0.0	-	5.8	3.4
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	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: LaGrange Road with 163rd Street
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (4:30 PM)

Start Time	163rd Street Eastbound						163rd 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	15	0	4	0	19	0	15	3	20	0	38	0	7	398	11	0	416	7	14	452	14	0	487	960
4:45 PM	0	12	1	2	0	15	0	15	1	18	0	34	0	2	366	21	0	389	1	22	452	14	0	489	927
5:00 PM	0	29	2	10	0	41	0	14	3	15	0	32	0	6	352	20	0	378	3	23	406	10	0	442	893
5:15 PM	0	9	1	5	0	15	0	22	3	21	0	46	1	5	358	21	0	385	5	22	419	20	0	466	912
Total	0	65	4	21	0	90	0	66	10	74	0	150	1	20	1474	73	0	1568	16	81	1729	58	0	1884	3692
Approach %	0.0	72.2	4.4	23.3	-	-	0.0	44.0	6.7	49.3	-	-	0.1	1.3	94.0	4.7	-	-	0.8	4.3	91.8	3.1	-	-	-
Total %	0.0	1.8	0.1	0.6	-	2.4	0.0	1.8	0.3	2.0	-	4.1	0.0	0.5	39.9	2.0	-	42.5	0.4	2.2	46.8	1.6	-	51.0	-
PHF	0.000	0.560	0.500	0.525	-	0.549	0.000	0.750	0.833	0.881	-	0.815	0.250	0.714	0.926	0.869	-	0.942	0.571	0.880	0.956	0.725	-	0.963	0.961
Lights	0	65	4	21	-	90	0	66	10	74	-	150	1	20	1441	73	-	1535	16	81	1704	57	-	1858	3633
% Lights	-	100.0	100.0	100.0	-	100.0	-	100.0	100.0	100.0	-	100.0	100.0	100.0	97.8	100.0	-	97.9	100.0	100.0	98.6	98.3	-	98.6	98.4
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	0	0	-	0	0	0	0	0	-	0	0	0	10	0	-	10	0	0	18	1	-	19	29
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.7	0.0	-	0.6	0.0	0.0	1.0	1.7	-	1.0	0.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	23	0	-	23	0	0	7	0	-	7	30
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	1.6	0.0	-	1.5	0.0	0.0	0.4	0.0	-	0.4	0.8
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	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

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

Count Name: LaGrange Road with 163rd Street
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (1:00 PM)

Start Time	163rd Street Eastbound						163rd Street Westbound						LaGrange Road Northbound						LaGrange Road Southbound						
	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	Int. Total
1:00 PM	0	20	4	4	0	28	0	14	2	13	0	29	0	3	349	8	2	360	6	11	377	22	3	416	833
1:15 PM	0	13	1	2	0	16	0	8	1	11	0	20	1	2	380	18	0	401	5	12	326	15	0	358	795
1:30 PM	0	21	1	3	0	25	0	17	1	20	0	38	0	3	358	20	0	381	7	11	350	14	0	382	826
1:45 PM	0	22	1	1	0	24	0	14	1	10	0	25	0	4	394	16	0	414	3	19	346	8	1	376	839
Total	0	76	7	10	0	93	0	53	5	54	0	112	1	12	1481	62	2	1556	21	53	1399	59	4	1532	3293
Approach %	0.0	81.7	7.5	10.8	-	-	0.0	47.3	4.5	48.2	-	-	0.1	0.8	95.2	4.0	-	-	1.4	3.5	91.3	3.9	-	-	-
Total %	0.0	2.3	0.2	0.3	-	2.8	0.0	1.6	0.2	1.6	-	3.4	0.0	0.4	45.0	1.9	-	47.3	0.6	1.6	42.5	1.8	-	46.5	-
PHF	0.000	0.864	0.438	0.625	-	0.830	0.000	0.779	0.625	0.675	-	0.737	0.250	0.750	0.940	0.775	-	0.940	0.750	0.697	0.928	0.670	-	0.921	0.981
Lights	0	76	7	10	-	93	0	53	5	54	-	112	1	12	1460	62	-	1535	21	52	1386	59	-	1518	3258
% Lights	-	100.0	100.0	100.0	-	100.0	-	100.0	100.0	100.0	-	100.0	100.0	100.0	98.6	100.0	-	98.7	100.0	98.1	99.1	100.0	-	99.1	98.9
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	0	0	-	0	0	0	0	0	-	0	0	0	8	0	-	8	0	1	8	0	-	9	17
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.5	0.0	-	0.5	0.0	1.9	0.6	0.0	-	0.6	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	13	0	-	13	0	0	5	0	-	5	18
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.9	0.0	-	0.8	0.0	0.0	0.4	0.0	-	0.3	0.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Count Name: LaGrange Road with 161st Street
TMC
Site Code:
Start Date: 08/08/2024

Turning Movement Data

Start Time	Big River Access Drive Eastbound						Access Drive 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	4	0	1	0	5	0	0	0	2	0	2	1	4	220	1	0	226	0	2	201	4	0	207	440
7:15 AM	0	9	0	0	0	9	0	1	0	0	0	1	0	3	300	4	0	307	0	6	204	2	0	212	529
7:30 AM	0	6	0	0	0	6	0	0	0	1	1	1	1	10	275	2	0	288	0	7	282	10	0	299	594
7:45 AM	0	6	0	3	0	9	0	1	0	3	0	4	1	3	284	4	0	292	0	8	252	6	0	266	571
Hourly Total	0	25	0	4	0	29	0	2	0	6	1	8	3	20	1079	11	0	1113	0	23	939	22	0	984	2134
8:00 AM	0	6	0	0	0	6	0	0	0	3	1	3	1	4	329	1	0	335	0	6	260	5	0	271	615
8:15 AM	0	10	0	1	0	11	0	0	0	6	0	6	1	8	350	4	0	363	1	5	224	11	0	241	621
8:30 AM	0	4	1	4	0	9	0	1	0	3	0	4	0	6	323	5	0	334	3	7	297	12	0	319	666
8:45 AM	0	4	0	2	0	6	0	0	0	3	0	3	0	6	405	9	0	420	1	13	279	1	0	294	723
Hourly Total	0	24	1	7	0	32	0	1	0	15	1	16	2	24	1407	19	0	1452	5	31	1060	29	0	1125	2625
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	8	0	7	2	15	0	6	0	9	0	15	2	11	349	3	0	365	1	14	471	16	0	502	897
4:15 PM	0	3	0	2	0	5	0	4	0	6	0	10	1	8	369	4	0	382	3	18	481	8	0	510	907
4:30 PM	0	7	0	3	0	10	0	5	1	7	0	13	1	8	372	7	0	388	4	16	427	23	0	470	881
4:45 PM	0	9	0	6	0	15	0	0	0	18	0	18	0	6	353	5	0	364	4	13	423	17	0	457	854
Hourly Total	0	27	0	18	2	45	0	15	1	40	0	56	4	33	1443	19	0	1499	12	61	1802	64	0	1939	3539
5:00 PM	1	7	0	3	1	11	0	0	0	12	0	12	1	10	436	3	0	450	3	12	480	17	0	512	985
5:15 PM	0	5	1	11	0	17	0	3	0	12	0	15	1	13	428	9	0	451	1	25	472	14	0	512	995
5:30 PM	0	8	0	11	0	19	0	3	0	12	0	15	1	19	385	9	0	414	1	22	472	12	0	507	955
5:45 PM	0	7	0	7	0	14	0	5	0	16	0	21	0	11	341	10	0	362	3	16	453	11	0	483	880
Hourly Total	1	27	1	32	1	61	0	11	0	52	0	63	3	53	1590	31	0	1677	8	75	1877	54	0	2014	3815
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	11	0	4	0	15	0	0	0	5	2	5	2	3	359	3	0	367	1	7	299	7	1	314	701
11:15 AM	1	8	0	4	1	13	0	1	0	20	0	21	1	8	452	3	0	464	2	11	319	10	0	342	840
11:30 AM	0	5	0	6	0	11	0	2	0	6	1	8	1	10	448	2	0	461	3	10	325	7	0	345	825
11:45 AM	0	9	0	4	0	13	0	1	0	11	0	12	5	9	413	4	0	431	0	9	356	6	0	371	827
Hourly Total	1	33	0	18	1	52	0	4	0	42	3	46	9	30	1672	12	0	1723	6	37	1299	30	1	1372	3193
12:00 PM	0	6	0	4	0	10	0	1	0	13	0	14	1	4	406	5	0	416	7	4	399	9	0	419	859
12:15 PM	0	16	0	1	0	17	0	1	0	7	0	8	0	6	373	1	0	380	2	5	340	9	0	356	761
12:30 PM	0	13	1	4	1	18	0	3	0	17	0	20	0	8	423	4	0	435	4	8	355	4	0	371	844
12:45 PM	0	5	0	4	0	9	0	2	0	17	0	19	0	10	427	4	0	441	4	7	391	9	0	411	880
Hourly Total	0	40	1	13	1	54	0	7	0	54	0	61	1	28	1629	14	0	1672	17	24	1485	31	0	1557	3344
1:00 PM	0	2	0	7	0	9	0	2	0	9	0	11	2	6	416	2	0	426	1	16	384	10	0	411	857
1:15 PM	0	7	0	6	0	13	0	1	0	8	0	9	3	6	423	8	0	440	1	7	415	8	0	431	893
1:30 PM	0	6	1	8	0	15	0	0	0	11	0	11	1	9	422	5	0	437	2	8	380	6	0	396	859

1:45 PM	0	8	0	5	0	13	0	2	0	10	0	12	2	3	447	3	0	455	3	7	419	3	0	432	912
Hourly Total	0	23	1	26	0	50	0	5	0	38	0	43	8	24	1708	18	0	1758	7	38	1598	27	0	1670	3521
Grand Total	2	199	4	118	5	323	0	45	1	247	5	293	30	212	10528	124	0	10894	55	289	10060	257	1	10661	22171
Approach %	0.6	61.6	1.2	36.5	-	-	0.0	15.4	0.3	84.3	-	-	0.3	1.9	96.6	1.1	-	-	0.5	2.7	94.4	2.4	-	-	-
Total %	0.0	0.9	0.0	0.5	-	1.5	0.0	0.2	0.0	1.1	-	1.3	0.1	1.0	47.5	0.6	-	49.1	0.2	1.3	45.4	1.2	-	48.1	-
Lights	2	197	3	118	-	320	0	45	1	245	-	291	30	210	10305	123	-	10668	55	282	9862	256	-	10455	21734
% Lights	100.0	99.0	75.0	100.0	-	99.1	-	100.0	100.0	99.2	-	99.3	100.0	99.1	97.9	99.2	-	97.9	100.0	97.6	98.0	99.6	-	98.1	98.0
Buses	0	2	0	0	-	2	0	0	0	1	-	1	0	0	9	0	-	9	0	1	5	1	-	7	19
% Buses	0.0	1.0	0.0	0.0	-	0.6	-	0.0	0.0	0.4	-	0.3	0.0	0.0	0.1	0.0	-	0.1	0.0	0.3	0.0	0.4	-	0.1	0.1
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	1	-	1	0	2	110	1	-	113	0	6	78	0	-	84	198
% Single-Unit Trucks	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.4	-	0.3	0.0	0.9	1.0	0.8	-	1.0	0.0	2.1	0.8	0.0	-	0.8	0.9
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	103	0	-	103	0	0	115	0	-	115	218
% Articulated Trucks	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	-	0.9	0.0	0.0	1.1	0.0	-	1.1	1.0
Bicycles on Road	0	0	1	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	25.0	0.0	-	0.3	-	0.0	0.0	0.0	-	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	-	-	-	-	5	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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9575 W. Higgins Rd., Suite 400

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

Count Name: LaGrange Road with 161st Street
TMC
Site Code:
Start Date: 08/08/2024

Turning Movement Peak Hour Data (8:00 AM)

Start Time	Big River Access Drive Eastbound						Access Drive Westbound						LaGrange Road Northbound						LaGrange Road Southbound						
	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	Int. Total
8:00 AM	0	6	0	0	0	6	0	0	0	3	1	3	1	4	329	1	0	335	0	6	260	5	0	271	615
8:15 AM	0	10	0	1	0	11	0	0	0	6	0	6	1	8	350	4	0	363	1	5	224	11	0	241	621
8:30 AM	0	4	1	4	0	9	0	1	0	3	0	4	0	6	323	5	0	334	3	7	297	12	0	319	666
8:45 AM	0	4	0	2	0	6	0	0	0	3	0	3	0	6	405	9	0	420	1	13	279	1	0	294	723
Total	0	24	1	7	0	32	0	1	0	15	1	16	2	24	1407	19	0	1452	5	31	1060	29	0	1125	2625
Approach %	0.0	75.0	3.1	21.9	-	-	0.0	6.3	0.0	93.8	-	-	0.1	1.7	96.9	1.3	-	-	0.4	2.8	94.2	2.6	-	-	-
Total %	0.0	0.9	0.0	0.3	-	1.2	0.0	0.0	0.0	0.6	-	0.6	0.1	0.9	53.6	0.7	-	55.3	0.2	1.2	40.4	1.1	-	42.9	-
PHF	0.000	0.600	0.250	0.438	-	0.727	0.000	0.250	0.000	0.625	-	0.667	0.500	0.750	0.869	0.528	-	0.864	0.417	0.596	0.892	0.604	-	0.882	0.908
Lights	0	24	1	7	-	32	0	1	0	15	-	16	2	24	1341	19	-	1386	5	30	994	29	-	1058	2492
% Lights	-	100.0	100.0	100.0	-	100.0	-	100.0	-	100.0	-	100.0	100.0	100.0	95.3	100.0	-	95.5	100.0	96.8	93.8	100.0	-	94.0	94.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	5	0	-	5	0	0	3	0	-	3	8
% 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	0.3	0.0	-	0.3	0.3
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	35	0	-	35	0	1	20	0	-	21	56
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	2.5	0.0	-	2.4	0.0	3.2	1.9	0.0	-	1.9	2.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	26	0	-	26	0	0	43	0	-	43	69
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	1.8	0.0	-	1.8	0.0	0.0	4.1	0.0	-	3.8	2.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: LaGrange Road with 161st Street
TMC
Site Code:
Start Date: 08/08/2024

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Big River Access Drive Eastbound						Access Drive Westbound						LaGrange Road Northbound						LaGrange Road Southbound						
	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	Int. Total
4:30 PM	0	7	0	3	0	10	0	5	1	7	0	13	1	8	372	7	0	388	4	16	427	23	0	470	881
4:45 PM	0	9	0	6	0	15	0	0	0	18	0	18	0	6	353	5	0	364	4	13	423	17	0	457	854
5:00 PM	1	7	0	3	1	11	0	0	0	12	0	12	1	10	436	3	0	450	3	12	480	17	0	512	985
5:15 PM	0	5	1	11	0	17	0	3	0	12	0	15	1	13	428	9	0	451	1	25	472	14	0	512	995
Total	1	28	1	23	1	53	0	8	1	49	0	58	3	37	1589	24	0	1653	12	66	1802	71	0	1951	3715
Approach %	1.9	52.8	1.9	43.4	-	-	0.0	13.8	1.7	84.5	-	-	0.2	2.2	96.1	1.5	-	-	0.6	3.4	92.4	3.6	-	-	-
Total %	0.0	0.8	0.0	0.6	-	1.4	0.0	0.2	0.0	1.3	-	1.6	0.1	1.0	42.8	0.6	-	44.5	0.3	1.8	48.5	1.9	-	52.5	-
PHF	0.250	0.778	0.250	0.523	-	0.779	0.000	0.400	0.250	0.681	-	0.806	0.750	0.712	0.911	0.667	-	0.916	0.750	0.660	0.939	0.772	-	0.953	0.933
Lights	1	28	1	23	-	53	0	8	1	49	-	58	3	37	1568	24	-	1632	12	66	1784	71	-	1933	3676
% Lights	100.0	100.0	100.0	100.0	-	100.0	-	100.0	100.0	100.0	-	100.0	100.0	100.0	98.7	100.0	-	98.7	100.0	100.0	99.0	100.0	-	99.1	99.0
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	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	11	0	-	11	0	0	7	0	-	7	18
% 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	0.7	0.0	-	0.7	0.0	0.0	0.4	0.0	-	0.4	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	10	0	-	10	0	0	11	0	-	11	21
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.6	0.0	-	0.6	0.0	0.0	0.6	0.0	-	0.6	0.6
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	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

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

Count Name: LaGrange Road with 161st Street
TMC
Site Code:
Start Date: 08/08/2024

Turning Movement Peak Hour Data (1:00 PM)

Start Time	Big River Access Drive Eastbound						Access Drive Westbound						LaGrange Road Northbound						LaGrange Road Southbound						
	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	Int. Total
1:00 PM	0	2	0	7	0	9	0	2	0	9	0	11	2	6	416	2	0	426	1	16	384	10	0	411	857
1:15 PM	0	7	0	6	0	13	0	1	0	8	0	9	3	6	423	8	0	440	1	7	415	8	0	431	893
1:30 PM	0	6	1	8	0	15	0	0	0	11	0	11	1	9	422	5	0	437	2	8	380	6	0	396	859
1:45 PM	0	8	0	5	0	13	0	2	0	10	0	12	2	3	447	3	0	455	3	7	419	3	0	432	912
Total	0	23	1	26	0	50	0	5	0	38	0	43	8	24	1708	18	0	1758	7	38	1598	27	0	1670	3521
Approach %	0.0	46.0	2.0	52.0	-	-	0.0	11.6	0.0	88.4	-	-	0.5	1.4	97.2	1.0	-	-	0.4	2.3	95.7	1.6	-	-	-
Total %	0.0	0.7	0.0	0.7	-	1.4	0.0	0.1	0.0	1.1	-	1.2	0.2	0.7	48.5	0.5	-	49.9	0.2	1.1	45.4	0.8	-	47.4	-
PHF	0.000	0.719	0.250	0.813	-	0.833	0.000	0.625	0.000	0.864	-	0.896	0.667	0.667	0.955	0.563	-	0.966	0.583	0.594	0.953	0.675	-	0.966	0.965
Lights	0	21	1	26	-	48	0	5	0	37	-	42	8	23	1693	18	-	1742	7	37	1583	26	-	1653	3485
% Lights	-	91.3	100.0	100.0	-	96.0	-	100.0	-	97.4	-	97.7	100.0	95.8	99.1	100.0	-	99.1	100.0	97.4	99.1	96.3	-	99.0	99.0
Buses	0	2	0	0	-	2	0	0	0	0	-	0	0	0	1	0	-	1	0	0	1	1	-	2	5
% Buses	-	8.7	0.0	0.0	-	4.0	-	0.0	-	0.0	-	0.0	0.0	0.0	0.1	0.0	-	0.1	0.0	0.0	0.1	3.7	-	0.1	0.1
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	1	-	1	0	1	4	0	-	5	0	1	8	0	-	9	15
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	-	2.6	-	2.3	0.0	4.2	0.2	0.0	-	0.3	0.0	2.6	0.5	0.0	-	0.5	0.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	9	0	-	9	0	0	6	0	-	6	15
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	0.5	0.0	-	0.5	0.0	0.0	0.4	0.0	-	0.4	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	0.1	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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9575 W. Higgins Rd., Suite 400

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

Count Name: LaGrange Road with 165th Street
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Data

Start Time	165th Street Eastbound					LaGrange Road Northbound					LaGrange Road Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	0	1	0	0	1	0	3	210	0	213	0	210	3	0	213	427
7:15 AM	0	0	2	0	2	0	9	264	0	273	0	208	3	0	211	486
7:30 AM	0	2	7	0	9	0	11	275	0	286	0	273	7	0	280	575
7:45 AM	0	2	1	0	3	0	12	327	0	339	0	245	8	0	253	595
Hourly Total	0	5	10	0	15	0	35	1076	0	1111	0	936	21	0	957	2083
8:00 AM	0	0	2	0	2	0	4	368	0	372	0	235	3	0	238	612
8:15 AM	0	1	4	0	5	0	11	401	0	412	0	244	3	0	247	664
8:30 AM	0	2	5	1	7	0	16	367	0	383	0	264	3	0	267	657
8:45 AM	0	1	1	0	2	0	15	401	0	416	0	255	5	0	260	678
Hourly Total	0	4	12	1	16	0	46	1537	0	1583	0	998	14	0	1012	2611
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	5	25	0	30	1	18	363	0	382	0	421	5	0	426	838
4:15 PM	0	3	9	0	12	1	13	365	0	379	0	391	5	0	396	787
4:30 PM	0	3	10	0	13	0	15	424	0	439	0	401	5	0	406	858
4:45 PM	0	1	11	0	12	0	18	414	0	432	1	431	8	0	440	884
Hourly Total	0	12	55	0	67	2	64	1566	0	1632	1	1644	23	0	1668	3367
5:00 PM	0	5	26	0	31	0	10	416	0	426	1	410	3	0	414	871
5:15 PM	0	5	9	0	14	0	9	471	0	480	3	469	4	0	476	970
5:30 PM	0	5	11	0	16	0	11	464	0	475	0	411	2	0	413	904
5:45 PM	0	4	9	0	13	0	13	403	0	416	0	391	8	0	399	828
Hourly Total	0	19	55	0	74	0	43	1754	0	1797	4	1681	17	0	1702	3573
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	2	8	0	10	1	7	423	0	431	0	302	3	0	305	746
11:15 AM	0	0	3	0	3	2	8	427	0	437	1	285	2	0	288	728
11:30 AM	0	1	5	0	6	3	8	420	0	431	0	308	8	0	316	753
11:45 AM	0	3	6	0	9	0	18	367	0	385	2	281	3	0	286	680
Hourly Total	0	6	22	0	28	6	41	1637	0	1684	3	1176	16	0	1195	2907
12:00 PM	0	2	17	0	19	1	13	441	0	455	1	363	6	0	370	844
12:15 PM	0	5	7	0	12	0	10	435	0	445	0	339	4	0	343	800
12:30 PM	0	2	8	0	10	1	17	398	0	416	0	382	6	0	388	814
12:45 PM	0	2	6	0	8	2	17	398	0	417	1	385	1	0	387	812
Hourly Total	0	11	38	0	49	4	57	1672	0	1733	2	1469	17	0	1488	3270
1:00 PM	0	3	4	0	7	2	13	369	0	384	0	354	6	0	360	751
1:15 PM	0	5	13	0	18	0	15	364	0	379	0	319	7	0	326	723
1:30 PM	0	3	13	0	16	0	12	399	0	411	0	375	3	0	378	805
1:45 PM	0	6	7	0	13	0	15	406	0	421	0	347	2	0	349	783

Hourly Total	0	17	37	0	54	2	55	1538	0	1595	0	1395	18	0	1413	3062
Grand Total	0	74	229	1	303	14	341	10780	0	11135	10	9299	126	0	9435	20873
Approach %	0.0	24.4	75.6	-	-	0.1	3.1	96.8	-	-	0.1	98.6	1.3	-	-	-
Total %	0.0	0.4	1.1	-	1.5	0.1	1.6	51.6	-	53.3	0.0	44.6	0.6	-	45.2	-
Lights	0	74	229	-	303	14	341	10543	-	10898	10	9037	125	-	9172	20373
% Lights	-	100.0	100.0	-	100.0	100.0	100.0	97.8	-	97.9	100.0	97.2	99.2	-	97.2	97.6
Buses	0	0	0	-	0	0	0	4	-	4	0	4	0	-	4	8
% 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
Single-Unit Trucks	0	0	0	-	0	0	0	116	-	116	0	116	1	-	117	233
% Single-Unit Trucks	-	0.0	0.0	-	0.0	0.0	0.0	1.1	-	1.0	0.0	1.2	0.8	-	1.2	1.1
Articulated Trucks	0	0	0	-	0	0	0	117	-	117	0	142	0	-	142	259
% Articulated Trucks	-	0.0	0.0	-	0.0	0.0	0.0	1.1	-	1.1	0.0	1.5	0.0	-	1.5	1.2
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

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

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

Count Name: LaGrange Road with 165th Street
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (8:00 AM)

Start Time	165th Street Eastbound					LaGrange Road Northbound					LaGrange Road Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	Int. Total
8:00 AM	0	0	2	0	2	0	4	368	0	372	0	235	3	0	238	612
8:15 AM	0	1	4	0	5	0	11	401	0	412	0	244	3	0	247	664
8:30 AM	0	2	5	1	7	0	16	367	0	383	0	264	3	0	267	657
8:45 AM	0	1	1	0	2	0	15	401	0	416	0	255	5	0	260	678
Total	0	4	12	1	16	0	46	1537	0	1583	0	998	14	0	1012	2611
Approach %	0.0	25.0	75.0	-	-	0.0	2.9	97.1	-	-	0.0	98.6	1.4	-	-	-
Total %	0.0	0.2	0.5	-	0.6	0.0	1.8	58.9	-	60.6	0.0	38.2	0.5	-	38.8	-
PHF	0.000	0.500	0.600	-	0.571	0.000	0.719	0.958	-	0.951	0.000	0.945	0.700	-	0.948	0.963
Lights	0	4	12	-	16	0	46	1476	-	1522	0	919	14	-	933	2471
% Lights	-	100.0	100.0	-	100.0	-	100.0	96.0	-	96.1	-	92.1	100.0	-	92.2	94.6
Buses	0	0	0	-	0	0	0	2	-	2	0	3	0	-	3	5
% Buses	-	0.0	0.0	-	0.0	-	0.0	0.1	-	0.1	-	0.3	0.0	-	0.3	0.2
Single-Unit Trucks	0	0	0	-	0	0	0	21	-	21	0	18	0	-	18	39
% Single-Unit Trucks	-	0.0	0.0	-	0.0	-	0.0	1.4	-	1.3	-	1.8	0.0	-	1.8	1.5
Articulated Trucks	0	0	0	-	0	0	0	38	-	38	0	58	0	-	58	96
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	2.5	-	2.4	-	5.8	0.0	-	5.7	3.7
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: LaGrange Road with 165th Street
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (4:30 PM)

Start Time	165th Street Eastbound					LaGrange Road Northbound					LaGrange Road Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	Int. Total
4:30 PM	0	3	10	0	13	0	15	424	0	439	0	401	5	0	406	858
4:45 PM	0	1	11	0	12	0	18	414	0	432	1	431	8	0	440	884
5:00 PM	0	5	26	0	31	0	10	416	0	426	1	410	3	0	414	871
5:15 PM	0	5	9	0	14	0	9	471	0	480	3	469	4	0	476	970
Total	0	14	56	0	70	0	52	1725	0	1777	5	1711	20	0	1736	3583
Approach %	0.0	20.0	80.0	-	-	0.0	2.9	97.1	-	-	0.3	98.6	1.2	-	-	-
Total %	0.0	0.4	1.6	-	2.0	0.0	1.5	48.1	-	49.6	0.1	47.8	0.6	-	48.5	-
PHF	0.000	0.700	0.538	-	0.565	0.000	0.722	0.916	-	0.926	0.417	0.912	0.625	-	0.912	0.923
Lights	0	14	56	-	70	0	52	1690	-	1742	5	1688	20	-	1713	3525
% Lights	-	100.0	100.0	-	100.0	-	100.0	98.0	-	98.0	100.0	98.7	100.0	-	98.7	98.4
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	14	-	14	0	14	0	-	14	28
% Single-Unit Trucks	-	0.0	0.0	-	0.0	-	0.0	0.8	-	0.8	0.0	0.8	0.0	-	0.8	0.8
Articulated Trucks	0	0	0	-	0	0	0	21	-	21	0	9	0	-	9	30
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	1.2	-	1.2	0.0	0.5	0.0	-	0.5	0.8
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Rosemont, Illinois, United States 60018
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Count Name: LaGrange Road with 165th Street
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (1:00 PM)

Start Time	165th Street Eastbound					LaGrange Road Northbound					LaGrange Road Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	Int. Total
1:00 PM	0	3	4	0	7	2	13	369	0	384	0	354	6	0	360	751
1:15 PM	0	5	13	0	18	0	15	364	0	379	0	319	7	0	326	723
1:30 PM	0	3	13	0	16	0	12	399	0	411	0	375	3	0	378	805
1:45 PM	0	6	7	0	13	0	15	406	0	421	0	347	2	0	349	783
Total	0	17	37	0	54	2	55	1538	0	1595	0	1395	18	0	1413	3062
Approach %	0.0	31.5	68.5	-	-	0.1	3.4	96.4	-	-	0.0	98.7	1.3	-	-	-
Total %	0.0	0.6	1.2	-	1.8	0.1	1.8	50.2	-	52.1	0.0	45.6	0.6	-	46.1	-
PHF	0.000	0.708	0.712	-	0.750	0.250	0.917	0.947	-	0.947	0.000	0.930	0.643	-	0.935	0.951
Lights	0	17	37	-	54	2	55	1518	-	1575	0	1384	18	-	1402	3031
% Lights	-	100.0	100.0	-	100.0	100.0	100.0	98.7	-	98.7	-	99.2	100.0	-	99.2	99.0
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	-	0.0	-	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	9	-	9	0	8	0	-	8	17
% Single-Unit Trucks	-	0.0	0.0	-	0.0	0.0	0.0	0.6	-	0.6	-	0.6	0.0	-	0.6	0.6
Articulated Trucks	0	0	0	-	0	0	0	11	-	11	0	3	0	-	3	14
% Articulated Trucks	-	0.0	0.0	-	0.0	0.0	0.0	0.7	-	0.7	-	0.2	0.0	-	0.2	0.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

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

Count Name: 165th Street with 97th Avenue
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Data

Start Time	165th Street Eastbound						165th Street Westbound						97th Avenue Northbound						97th Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	0	2	0	0	2	0	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	7
7:15 AM	0	1	2	0	0	3	3	0	7	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	13
7:30 AM	0	0	5	0	0	5	3	3	3	2	0	11	0	0	0	0	0	0	0	3	0	0	0	3	19
7:45 AM	0	1	2	0	0	3	0	2	5	0	0	7	0	0	1	0	0	1	0	1	1	1	0	3	14
Hourly Total	0	2	11	0	0	13	6	6	19	2	0	33	0	0	1	0	0	1	0	4	1	1	0	6	53
8:00 AM	0	0	1	0	1	1	0	0	4	2	0	6	0	0	0	1	0	1	0	1	0	0	0	1	9
8:15 AM	0	0	4	0	0	4	0	4	6	4	0	14	0	0	0	0	0	0	0	0	0	1	0	1	19
8:30 AM	0	3	1	0	0	4	0	1	7	2	0	10	0	0	0	0	0	0	0	2	0	1	0	3	17
8:45 AM	0	3	0	2	0	5	0	3	9	2	0	14	0	0	0	0	1	0	0	1	0	0	0	1	20
Hourly Total	0	6	6	2	1	14	0	8	26	10	0	44	0	0	0	1	1	1	0	4	0	2	0	6	65
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	5	1	0	6	0	2	5	5	0	12	0	0	1	8	0	9	0	5	0	0	0	5	32
4:15 PM	0	1	3	0	0	4	0	1	1	2	0	4	0	0	0	0	0	0	0	3	0	0	0	3	11
4:30 PM	0	1	3	0	0	4	0	2	1	3	0	6	0	0	1	2	1	3	0	2	0	1	0	3	16
4:45 PM	0	1	2	0	1	3	0	1	1	6	0	8	0	0	4	4	0	8	0	3	0	0	0	3	22
Hourly Total	0	3	13	1	1	17	0	6	8	16	0	30	0	0	6	14	1	20	0	13	0	1	0	14	81
5:00 PM	0	1	5	1	0	7	0	1	1	4	0	6	0	0	1	5	0	6	0	4	1	2	0	7	26
5:15 PM	0	0	0	0	0	0	0	0	3	3	0	6	0	0	0	1	0	1	0	6	0	3	0	9	16
5:30 PM	0	0	4	0	0	4	0	0	0	5	0	5	0	0	0	1	0	1	0	5	0	0	0	5	15
5:45 PM	0	0	2	0	0	2	0	3	0	2	0	5	0	0	1	1	0	2	0	4	0	1	0	5	14
Hourly Total	0	1	11	1	0	13	0	4	4	14	0	22	0	0	2	8	0	10	0	19	1	6	0	26	71
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	1	3	0	0	4	0	1	1	5	0	7	0	0	0	1	0	1	0	2	0	0	0	2	14
11:15 AM	0	2	1	0	0	3	0	0	2	3	0	5	0	0	0	0	0	0	0	1	0	1	0	2	10
11:30 AM	0	2	1	0	4	3	0	1	2	6	0	9	0	0	0	1	0	1	0	0	0	1	0	1	14
11:45 AM	0	0	2	1	2	3	0	0	1	1	0	2	0	0	0	0	0	0	0	2	0	2	2	4	9
Hourly Total	0	5	7	1	6	13	0	2	6	15	0	23	0	0	0	2	0	2	0	5	0	4	2	9	47
12:00 PM	0	1	3	1	0	5	0	1	2	6	0	9	0	0	0	1	0	1	0	6	0	3	0	9	24
12:15 PM	0	0	2	0	0	2	0	1	3	3	0	7	0	0	0	1	0	1	0	3	0	2	0	5	15
12:30 PM	0	0	1	0	0	1	0	0	2	3	0	5	0	0	0	2	0	2	0	2	1	0	0	3	11
12:45 PM	0	0	1	0	0	1	0	0	0	2	0	2	0	0	1	0	0	1	0	2	0	0	0	2	6
Hourly Total	0	1	7	1	0	9	0	2	7	14	0	23	0	0	1	4	0	5	0	13	1	5	0	19	56
1:00 PM	0	1	2	1	0	4	0	1	3	4	0	8	0	0	0	1	0	1	0	0	0	0	0	0	13
1:15 PM	0	0	2	0	0	2	0	1	2	8	0	11	0	0	0	5	2	5	0	3	0	2	0	5	23
1:30 PM	0	2	1	0	0	3	0	1	2	2	0	5	0	0	2	4	0	6	0	2	0	3	0	5	19

1:45 PM	0	3	1	0	0	4	0	1	3	2	0	6	0	0	0	1	0	1	0	0	0	4	0	4	15
Hourly Total	0	6	6	1	0	13	0	4	10	16	0	30	0	0	2	11	2	13	0	5	0	9	0	14	70
Grand Total	0	24	61	7	8	92	6	32	80	87	0	205	0	0	12	40	4	52	0	63	3	28	2	94	443
Approach %	0.0	26.1	66.3	7.6	-	-	2.9	15.6	39.0	42.4	-	-	0.0	0.0	23.1	76.9	-	-	0.0	67.0	3.2	29.8	-	-	-
Total %	0.0	5.4	13.8	1.6	-	20.8	1.4	7.2	18.1	19.6	-	46.3	0.0	0.0	2.7	9.0	-	11.7	0.0	14.2	0.7	6.3	-	21.2	-
Lights	0	21	61	6	-	88	6	32	80	87	-	205	0	0	12	40	-	52	0	63	3	25	-	91	436
% Lights	-	87.5	100.0	85.7	-	95.7	100.0	100.0	100.0	100.0	-	100.0	-	-	100.0	100.0	-	100.0	-	100.0	100.0	89.3	-	96.8	98.4
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
Single-Unit Trucks	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	2	-	2	5
% Single-Unit Trucks	-	12.5	0.0	0.0	-	3.3	0.0	0.0	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	7.1	-	2.1	1.1
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
Bicycles on Road	0	0	0	1	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	1	-	1	2
% Bicycles on Road	-	0.0	0.0	14.3	-	1.1	0.0	0.0	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	3.6	-	1.1	0.5
Pedestrians	-	-	-	-	8	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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

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

Count Name: 165th Street with 97th Avenue
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (8:00 AM)

Start Time	165th Street Eastbound						165th Street Westbound						97th Avenue Northbound						97th 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	
8:00 AM	0	0	1	0	1	1	0	0	4	2	0	6	0	0	0	1	0	1	0	1	0	0	0	1	9
8:15 AM	0	0	4	0	0	4	0	4	6	4	0	14	0	0	0	0	0	0	0	0	0	1	0	1	19
8:30 AM	0	3	1	0	0	4	0	1	7	2	0	10	0	0	0	0	0	0	0	2	0	1	0	3	17
8:45 AM	0	3	0	2	0	5	0	3	9	2	0	14	0	0	0	0	1	0	0	1	0	0	0	1	20
Total	0	6	6	2	1	14	0	8	26	10	0	44	0	0	0	1	1	1	0	4	0	2	0	6	65
Approach %	0.0	42.9	42.9	14.3	-	-	0.0	18.2	59.1	22.7	-	-	0.0	0.0	0.0	100.0	-	-	0.0	66.7	0.0	33.3	-	-	-
Total %	0.0	9.2	9.2	3.1	-	21.5	0.0	12.3	40.0	15.4	-	67.7	0.0	0.0	0.0	1.5	-	1.5	0.0	6.2	0.0	3.1	-	9.2	-
PHF	0.000	0.500	0.375	0.250	-	0.700	0.000	0.500	0.722	0.625	-	0.786	0.000	0.000	0.000	0.250	-	0.250	0.000	0.500	0.000	0.500	-	0.500	0.813
Lights	0	5	6	2	-	13	0	8	26	10	-	44	0	0	0	1	-	1	0	4	0	1	-	5	63
% Lights	-	83.3	100.0	100.0	-	92.9	-	100.0	100.0	100.0	-	100.0	-	-	-	100.0	-	100.0	-	100.0	-	50.0	-	83.3	96.9
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
Single-Unit Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	1	-	1	2
% Single-Unit Trucks	-	16.7	0.0	0.0	-	7.1	-	0.0	0.0	0.0	-	0.0	-	-	-	0.0	-	0.0	-	0.0	-	50.0	-	16.7	3.1
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
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
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

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Count Name: 165th Street with 97th Avenue
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (4:30 PM)

Start Time	165th Street Eastbound						165th Street Westbound						97th Avenue Northbound						97th 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	3	0	0	4	0	2	1	3	0	6	0	0	1	2	1	3	0	2	0	1	0	3	16
4:45 PM	0	1	2	0	1	3	0	1	1	6	0	8	0	0	4	4	0	8	0	3	0	0	0	3	22
5:00 PM	0	1	5	1	0	7	0	1	1	4	0	6	0	0	1	5	0	6	0	4	1	2	0	7	26
5:15 PM	0	0	0	0	0	0	0	0	3	3	0	6	0	0	0	1	0	1	0	6	0	3	0	9	16
Total	0	3	10	1	1	14	0	4	6	16	0	26	0	0	6	12	1	18	0	15	1	6	0	22	80
Approach %	0.0	21.4	71.4	7.1	-	-	0.0	15.4	23.1	61.5	-	-	0.0	0.0	33.3	66.7	-	-	0.0	68.2	4.5	27.3	-	-	-
Total %	0.0	3.8	12.5	1.3	-	17.5	0.0	5.0	7.5	20.0	-	32.5	0.0	0.0	7.5	15.0	-	22.5	0.0	18.8	1.3	7.5	-	27.5	-
PHF	0.000	0.750	0.500	0.250	-	0.500	0.000	0.500	0.500	0.667	-	0.813	0.000	0.000	0.375	0.600	-	0.563	0.000	0.625	0.250	0.500	-	0.611	0.769
Lights	0	3	10	1	-	14	0	4	6	16	-	26	0	0	6	12	-	18	0	15	1	6	-	22	80
% 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
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	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
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	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
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

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Count Name: 165th Street with 97th Avenue
TMC
Site Code:
Start Date: 08/01/2024

Turning Movement Peak Hour Data (1:00 PM)

Start Time	165th Street Eastbound						165th Street Westbound						97th Avenue Northbound						97th 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	
1:00 PM	0	1	2	1	0	4	0	1	3	4	0	8	0	0	0	1	0	1	0	0	0	0	0	0	13
1:15 PM	0	0	2	0	0	2	0	1	2	8	0	11	0	0	0	5	2	5	0	3	0	2	0	5	23
1:30 PM	0	2	1	0	0	3	0	1	2	2	0	5	0	0	2	4	0	6	0	2	0	3	0	5	19
1:45 PM	0	3	1	0	0	4	0	1	3	2	0	6	0	0	0	1	0	1	0	0	0	4	0	4	15
Total	0	6	6	1	0	13	0	4	10	16	0	30	0	0	2	11	2	13	0	5	0	9	0	14	70
Approach %	0.0	46.2	46.2	7.7	-	-	0.0	13.3	33.3	53.3	-	-	0.0	0.0	15.4	84.6	-	-	0.0	35.7	0.0	64.3	-	-	-
Total %	0.0	8.6	8.6	1.4	-	18.6	0.0	5.7	14.3	22.9	-	42.9	0.0	0.0	2.9	15.7	-	18.6	0.0	7.1	0.0	12.9	-	20.0	-
PHF	0.000	0.500	0.750	0.250	-	0.813	0.000	1.000	0.833	0.500	-	0.682	0.000	0.000	0.250	0.550	-	0.542	0.000	0.417	0.000	0.563	-	0.700	0.761
Lights	0	6	6	1	-	13	0	4	10	16	-	30	0	0	2	11	-	13	0	5	0	9	-	14	70
% 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	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Site Plan

SITE PLAN
FOR
ESTATES AT RAVINIA MEADOW

ORLAND PARK, ILLINOIS
TOWNSHIP 36 NORTH, RANGE 12E

PARCEL INDEX NUMBER
27-21-200-010
ORLAND PARK, ILLINOIS

LOCATION MAP

COSTCO-ORLAND PARK, IL
PER DOC. 0529903097
(ZONED COR - MIXED USE)

S. RAVINIA AVE.

L=282.41'
R=480.00'
Chd. Brg. =
S 60°03'34" E

FENCE
(SEE LANDSCAPE PLANS FOR DETAILS)

RETAINING WALL

(ZONED E1 - ESTATE RESIDENTIAL)

(ZONED COR - MIXED USE)

UNSUBDIVIDED
(ZONED OL - OPEN LAND)

ROAD A
ROAD B
ROAD C
ROAD D
ROAD E

OUTLOT A 0.12 Ac.
OUTLOT B 0.52 Ac.
OUTLOT C 3.92 acres
OUTLOT D 19.04 acres
OUTLOT E 1.02 acres

PARK 0.70 acres

STORMWATER MANAGEMENT FACILITY

LOCATION OF WETLAND LIMITS AS PROVIDED BY OTHERS (TYP.)

UNSUBDIVIDED
(ZONED R4 - MULTIPLE FAMILY)
(ORLAND HILLS)

LIBERTY SQUARE P.U.D.
PER DOC. 0420439064
(ZONED PARKS/OPEN SPACE)
(ORLAND HILLS)

SOUTH HILL P.U.D.
PER DOC. 0536318064
(ZONED R4 - MULTIPLE FAMILY)
(ORLAND HILLS)

MISTER RIDGE SUBDIVISION
PER DOC. 0319032089
(ZONED COR - MIXED USE)

SARATOGA PLACE - PHASE 1
PER DOC. 04082555
(ZONED COR - MIXED USE)

SARATOGA PLACE - PHASE 4
PER DOC. 97963719
(ZONED COR - MIXED USE)

SARATOGA LAKES SUBDIVISION
PER DOC. 96083521
(ZONED COR - MIXED USE)

RETAINING WALL (TYP.)

S 01°57'26" E 1006.73'

S 01°57'36" E 337.38'

N 88°04'06" E 255.00'

S 01°57'26" E 337.81'

N 88°38'00" E 613.47'

S 73°18'14" E 167.30'

N 46°47'53" E 80.12'

S 01°22'00" E 138.73'

N 01°50'39" W 2470.39'

N 88°09'45" E 590.75'

165TH 65TH S

APPROXIMATE LIMITS OF A SPECIAL ZONE AE SCALED FROM F.I.R.M. PANEL 17031C0703K

APPROXIMATE LIMITS OF FLOODWAY SCALED FROM F.I.R.M. PANEL 17031C0703K

RETAINING WALL

PROPOSED CONNECTION FOR EXISTING DRIVEWAY

N

100 50 0 100
SCALE: 1 INCH = 100 FEET

SITE DATA

A. TOTAL GROSS AREA	72.56 AC.±
B. PROPOSED ZONING	R3
C. INTERNAL R.O.W.	10.82 AC.±
D. OPEN SPACE	
PARK	0.70 AC.
STORMWATER/COMMON AREA	24.62 AC.
TOTAL	25.32 AC. OR 34.9%
E. NET BUILDABLE AREA	60.46 AC.
F. ALLOWABLE DENSITY (2.5 UNITS X 60.46 AC.)	151 UNITS
G. PROPOSED UNITS	132
H. GROSS DENSITY	1.82 DU/AC.
I. NET DENSITY	2.18 DU/AC.
J. MIN. LOT WIDTH	75 FT.
K. MIN. LOT SIZE	10,004 S.F.
L. AVE. LOT SIZE	12,019 S.F.
M. MAX. LOT SIZE	26,268 S.F.
N. SETBACKS	
FRONT YARD	25 FT.
CORNER SIDE YARD	25 FT.
INTERIOR SIDE YARD	8 FT.
REAR YARD	30 FT.
O. MAXIMUM LOT COVERAGE	47.8%
P. GROSS IMPERVIOUS AREA	1,996,611 S.F. OR 63.2%

PREPARED FOR:
PULTE HOME COMPANY, LLC
1900 E. GOLF ROAD, SUITE 300
SCHAUMBURG, IL 60173
(847) 230-5400

PREPARED BY:
CEMCON, Ltd.
Consulting Engineers, Land Surveyors & Planners
2280 White Oak Circle, Suite 100
Aurora, Illinois 60502-9675
PH: 630.862.2100 FAX: 630.862.2199
E-Mail: info@cemcon.com Website: www.cemcon.com

DISC NO.: 402.170 FILE NAME: SITE PLAN
DRAWN BY: PRP/DDD FLD. BK. / PG. NO.: BK./PG.
COMPLETION DATE: 08-23-2024 JOB NO.: 402.170
XREF : PROJECT MANAGER CRM

SITE

PLOT FILE CREATED: 8/19/2024 BY: LESLIE LUNDBERG DRAWING PATH: P:\402170\DWG\ENG\DRAWINGS\EXHIBITS\SITE PLAN.DWG

ITE Trip Generation Sheets

Single-Family Detached Housing
(210)

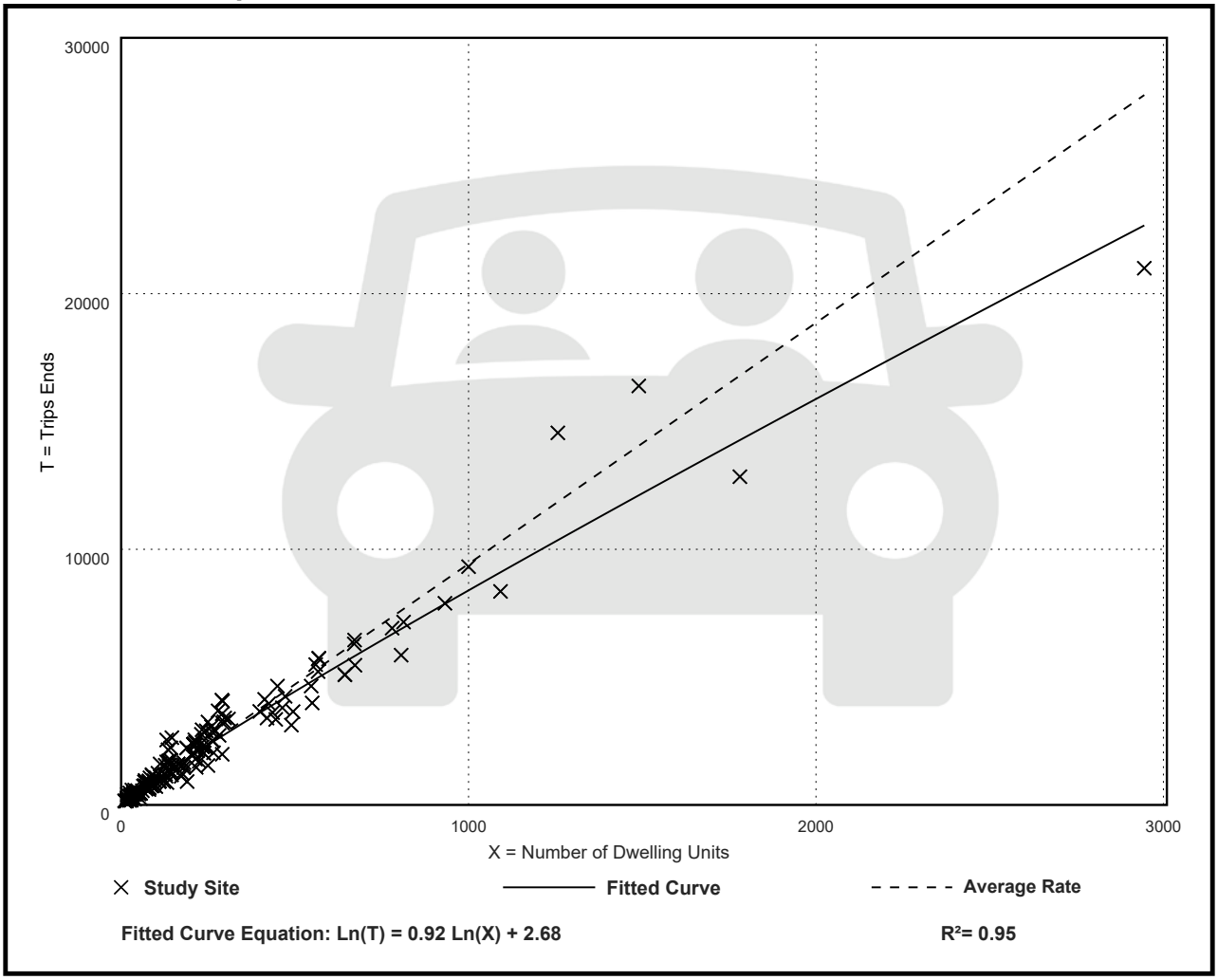
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.92 Ln(X) + 2.68

R^2= 0.95

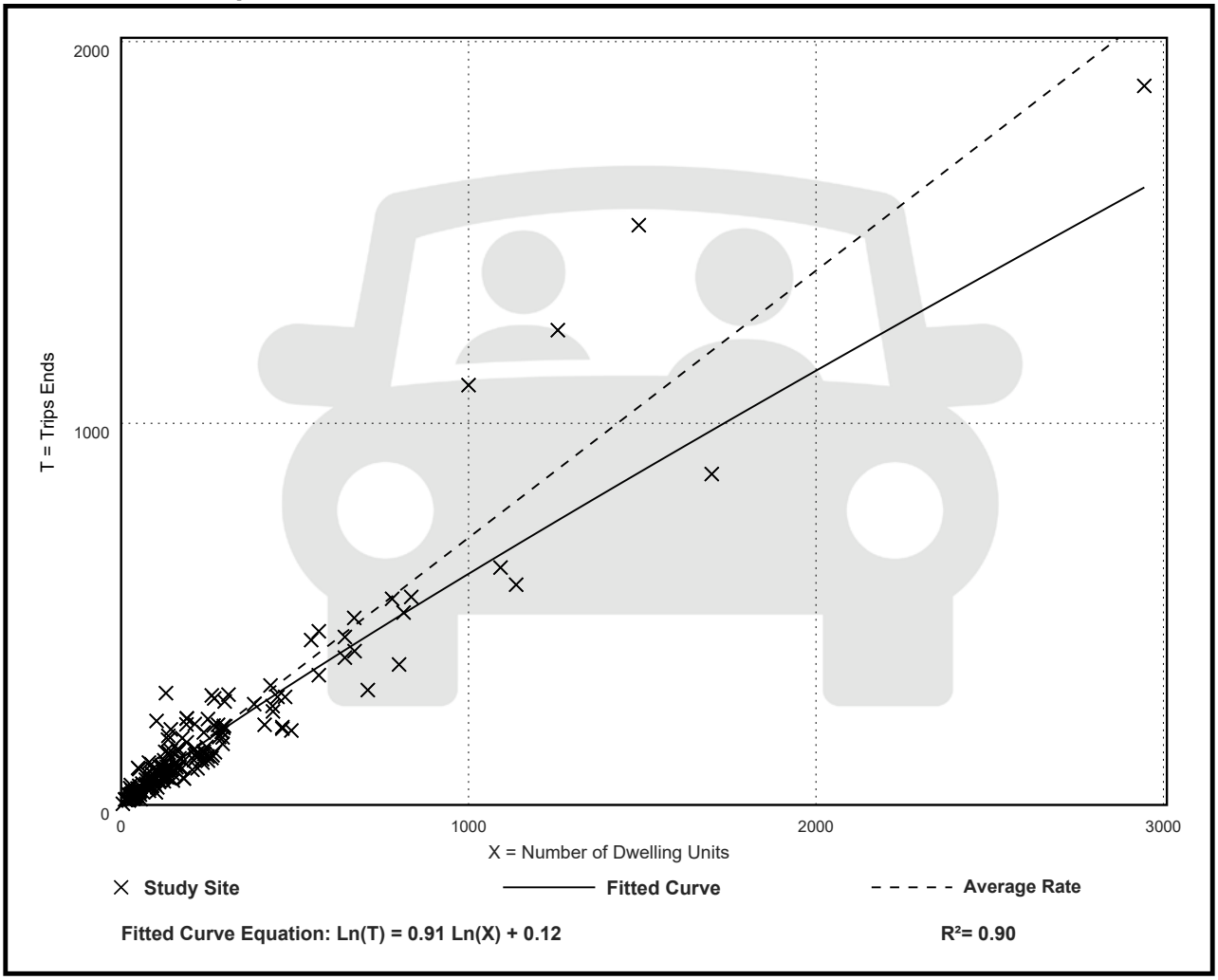
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: Dwelling Units
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: 192
Avg. Num. of Dwelling Units: 226
Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



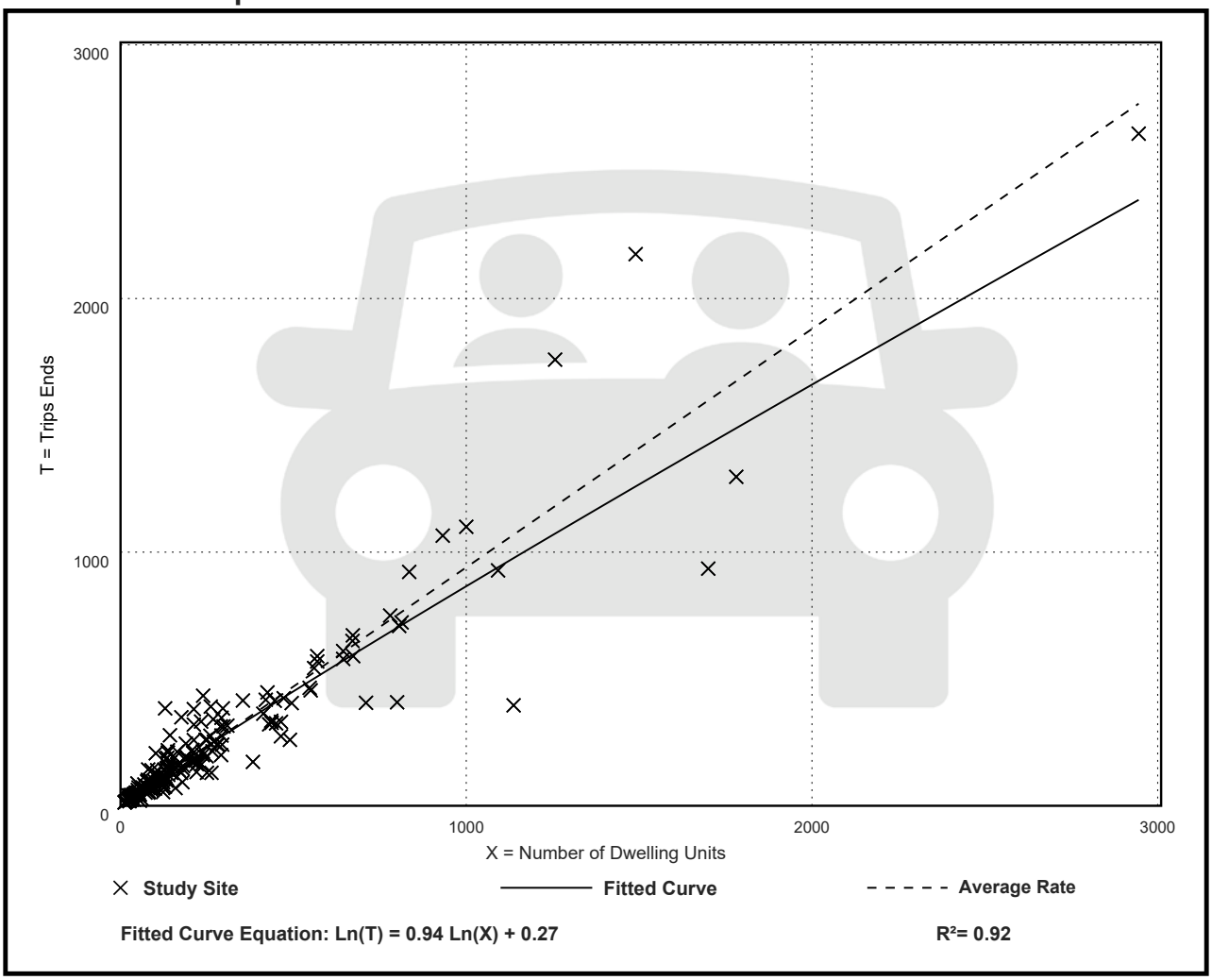
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: Dwelling Units
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: 208
Avg. Num. of Dwelling Units: 248
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

Data Plot and Equation



Single-Family Detached Housing
(210)

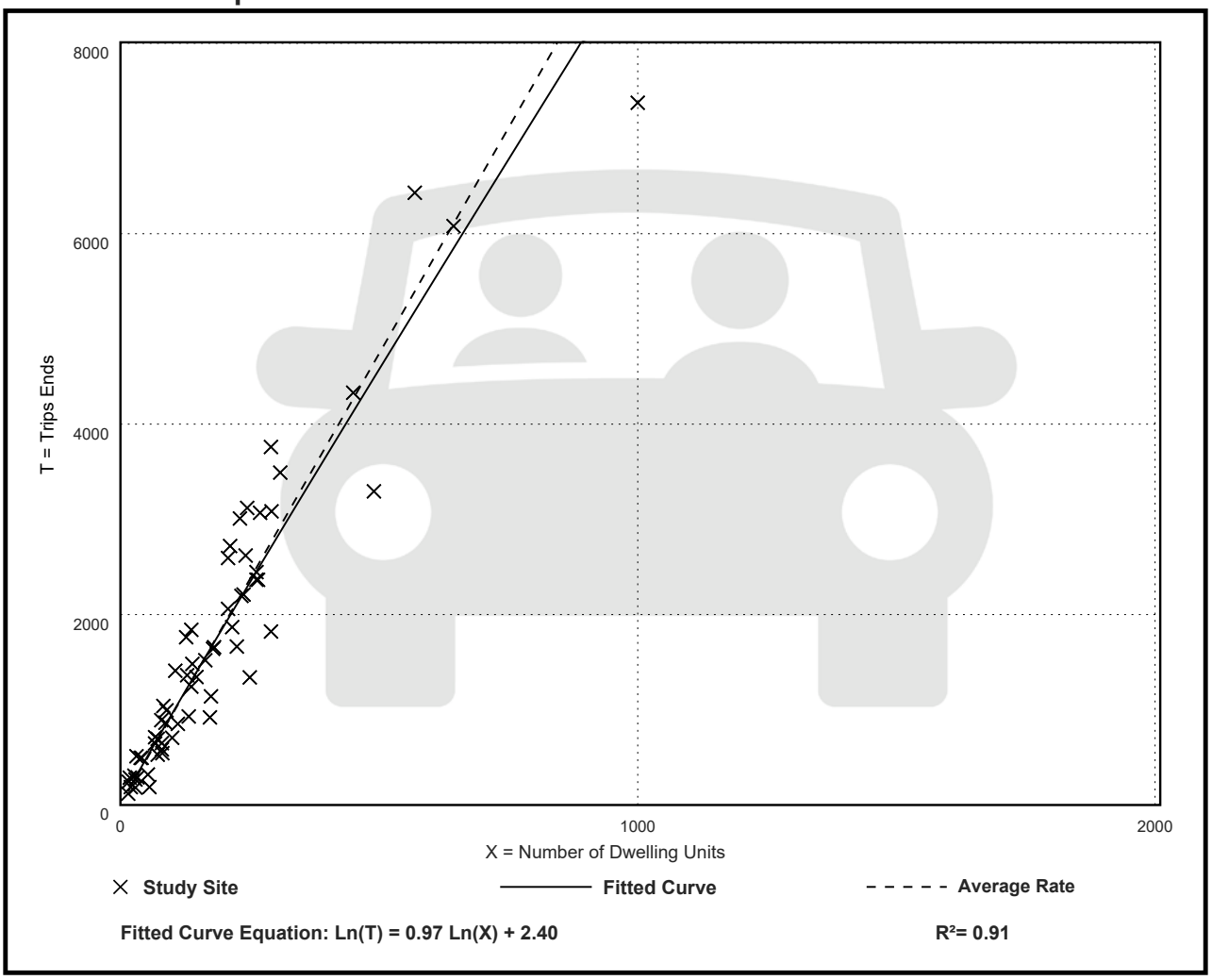
Vehicle Trip Ends vs: Dwelling Units
On a: Saturday

Setting/Location: General Urban/Suburban
Number of Studies: 63
Avg. Num. of Dwelling Units: 179
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.48	3.36 - 16.52	2.26

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.97 Ln(X) + 2.40

R^2= 0.91

CMAP 2050 Projections Letter

Chicago Metropolitan Agency for Planning

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

August 7, 2024

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

Subject: 159th St, Ravinia Ave, LaGrange Rd
IDOT

Dear Ms. May:

In response to a request made on your behalf and dated August 2, 2024, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current ADT	Year 2050 ADT
LaGrange Road north of 159th Street	33,600	40,000
LaGrange Road south of 159th Street	33,500	38,900
159th Street east of LaGrange Road	35,000	38,500
159th Street west of LaGrange Road	24,200	28,700
Ravinia Avenue at 159th Street	5,600	6,700

Traffic projections are developed using existing ADT data provided in the request letter and the results from the June 2024 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-92-24\ck-92-24.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

Unsignalized Intersections	
Level of Service	**Average Total Delay (sec/veh)**
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Source: *Highway Capacity Manual*, 6th Edition.

Capacity Analysis Summary Sheets

Existing Weekday Morning Peak Hour

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	1	134	501	181	12	155	513	132	216	924	185	1
Future Volume (vph)	1	134	501	181	12	155	513	132	216	924	185	1
Ideal Flow (vphpl)	1900	1900	2000	1900	1900	1900	2000	1900	1900	2000	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%				0%			0%		
Storage Length (ft)		155		400		180		420	310		170	
Storage Lanes		2		1		2		1	2		1	
Taper Length (ft)		245				290			300			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.91	1.00	0.91
Ped Bike Factor												
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3368	3689	1538	0	3358	3585	1495	3400	5151	1583	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3368	3689	1538	0	3358	3585	1495	3400	5151	1583	0
Right Turn on Red				No				No			No	
Satd. Flow (RTOR)												
Link Speed (mph)			40				40			40		
Link Distance (ft)			1885				944			1415		
Travel Time (s)			32.1				16.1			24.1		
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	3%	5%	8%	4%	6%	8%	3%	6%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%				0%			0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	148	551	199	0	183	564	145	237	1015	203	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot
Protected Phases	7!	7	4	5!	3!	3	8	1!	5	2	3!	1!
Permitted Phases				4				8			2	
Detector Phase	7	7	4	5	3	3	8	1	5	2	3	1
Switch Phase												
Minimum Initial (s)	3.0	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0
Minimum Split (s)	7.5	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5	21.0	7.5	7.5
Total Split (s)	16.0	16.0	30.0	21.0	22.0	22.0	36.0	21.0	21.0	47.0	22.0	21.0
Total Split (%)	13.3%	13.3%	25.0%	17.5%	18.3%	18.3%	30.0%	17.5%	17.5%	39.2%	18.3%	17.5%
Yellow Time (s)	3.5	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5
All-Red Time (s)	1.0	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.5	6.0	4.5		4.5	6.0	4.5	4.5	6.0	4.5	
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	None	None	None	Min	None	None	C-Min	None	None
Act Effct Green (s)		10.1	25.1	44.5		11.8	26.8	45.0	13.4	49.9	67.7	
Actuated g/C Ratio		0.08	0.21	0.37		0.10	0.22	0.38	0.11	0.42	0.56	

Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	168	694	82
Future Volume (vph)	168	694	82
Ideal Flow (vphpl)	1900	2000	1900
Lane Width (ft)	12	12	12
Grade (%)		0%	
Storage Length (ft)	190		135
Storage Lanes	2		1
Taper Length (ft)	280		
Lane Util. Factor	0.97	0.91	1.00
Ped Bike Factor			
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3214	5009	1524
Flt Permitted	0.950		
Satd. Flow (perm)	3214	5009	1524
Right Turn on Red			No
Satd. Flow (RTOR)			
Link Speed (mph)		40	
Link Distance (ft)		839	
Travel Time (s)		14.3	
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor	0.91	0.91	0.91
Growth Factor	100%	100%	100%
Heavy Vehicles (%)	9%	9%	6%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Mid-Block Traffic (%)		0%	
Shared Lane Traffic (%)			
Lane Group Flow (vph)	186	763	90
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7!
Permitted Phases			6
Detector Phase	1	6	7
Switch Phase			
Minimum Initial (s)	3.0	15.0	3.0
Minimum Split (s)	7.5	21.0	7.5
Total Split (s)	21.0	47.0	16.0
Total Split (%)	17.5%	39.2%	13.3%
Yellow Time (s)	3.5	4.0	3.5
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Recall Mode	None	C-Min	None
Act Effct Green (s)	12.2	48.7	64.8
Actuated g/C Ratio	0.10	0.41	0.54

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
v/c Ratio		0.52	0.72	0.35		0.55	0.70	0.26	0.62	0.47	0.23	
Control Delay		89.3	30.0	12.4		57.7	47.8	25.9	58.0	27.7	14.9	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		89.3	30.0	12.4		57.7	47.8	25.9	58.0	27.7	14.9	
LOS		F	C	B		E	D	C	E	C	B	
Approach Delay			35.9				46.3			30.8		
Approach LOS			D				D			C		
Queue Length 50th (ft)		62	120	36		70	210	76	91	211	78	
Queue Length 95th (ft)		0	230	100		106	267	116	130	278	130	
Internal Link Dist (ft)			1805				864			1335		
Turn Bay Length (ft)		155		400		180		420	310		170	
Base Capacity (vph)		322	797	609		489	896	614	467	2141	967	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.46	0.69	0.33		0.37	0.63	0.24	0.51	0.47	0.21	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 35.3 Intersection LOS: D
Intersection Capacity Utilization 57.2% ICU Level of Service B
Analysis Period (min) 15
! Phase conflict between lane groups.

Splits and Phases: 1: LaGrange Road & 159th Street

Lane Group	SBL	SBT	SBR
v/c Ratio	0.57	0.38	0.11
Control Delay	58.0	26.9	15.6
Queue Delay	0.0	0.0	0.0
Total Delay	58.0	26.9	15.6
LOS	E	C	B
Approach Delay		31.5	
Approach LOS		C	
Queue Length 50th (ft)	72	153	34
Queue Length 95th (ft)	107	206	68
Internal Link Dist (ft)		759	
Turn Bay Length (ft)	190		135
Base Capacity (vph)	441	2031	840
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.42	0.38	0.11

Intersection Summary

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	118	750	7	28	648	132	16	1	7	100	19
Future Volume (vph)	3	118	750	7	28	648	132	16	1	7	100	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%			0%			0%			0%
Storage Length (ft)		275		0	400		195	290		0	160	
Storage Lanes		1		0	2		1	1		1	1	
Taper Length (ft)		165			280			95			100	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.999				0.850			0.850		
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1805	3464	0	3367	3654	1599	1517	2000	1615	1787	2000
Flt Permitted		0.950			0.950			0.744			0.699	
Satd. Flow (perm)	0	1805	3464	0	3367	3654	1599	1188	2000	1615	1315	2000
Right Turn on Red				No			No			No		
Satd. Flow (RTOR)												
Link Speed (mph)			40			40			30			30
Link Distance (ft)			926			1885			890			503
Travel Time (s)			15.8			32.1			20.2			11.4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	14%	4%	4%	1%	19%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%			0%			0%			0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	814	0	30	697	142	17	1	8	108	20
Turn Type	Prot	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5!	5	2		1	6		7	4	1	3	8
Permitted Phases							6	4		4	8	
Detector Phase	5	5	2		1	6	6	7	4	1	3	8
Switch Phase												
Minimum Initial (s)	3.0	3.0	8.0		3.0	8.0	8.0	3.0	5.0	3.0	3.0	5.0
Minimum Split (s)	9.5	9.5	22.5		9.5	22.5	22.5	9.5	18.0	9.5	9.5	18.0
Total Split (s)	18.0	18.0	66.0		18.0	66.0	66.0	18.0	18.0	18.0	18.0	18.0
Total Split (%)	15.0%	15.0%	55.0%		15.0%	55.0%	55.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Yellow Time (s)	3.5	3.5	4.5		3.5	4.5	4.5	3.5	4.0	3.5	3.5	4.0
All-Red Time (s)	1.0	1.0	1.5		1.0	1.5	1.5	0.0	2.0	1.0	0.0	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)		4.5	6.0		4.5	6.0	6.0	3.5	6.0	4.5	3.5	6.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Min		None	C-Min	C-Min	None	Max	None	None	Max
Act Effct Green (s)		10.7	52.7		3.8	42.8	42.8	45.9	39.7	49.5	52.5	46.8
Actuated g/C Ratio		0.09	0.44		0.03	0.36	0.36	0.38	0.33	0.41	0.44	0.39

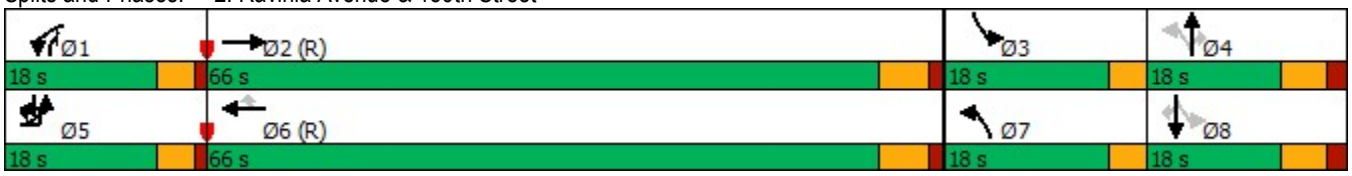
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	49
Future Volume (vph)	49
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	165
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.93
Growth Factor	100%
Heavy Vehicles (%)	2%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	53
Turn Type	pm+ov
Protected Phases	5!
Permitted Phases	8
Detector Phase	5
Switch Phase	
Minimum Initial (s)	3.0
Minimum Split (s)	9.5
Total Split (s)	18.0
Total Split (%)	15.0%
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	63.5
Actuated g/C Ratio	0.53

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
v/c Ratio		0.81	0.54		0.28	0.53	0.25	0.04	0.00	0.01	0.18	0.03
Control Delay		86.8	26.3		37.9	50.3	44.0	22.1	33.0	25.1	22.6	27.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		86.8	26.3		37.9	50.3	44.0	22.1	33.0	25.1	22.6	27.3
LOS		F	C		D	D	D	C	C	C	C	C
Approach Delay			34.6			48.9			23.5			21.2
Approach LOS			C			D			C			C
Queue Length 50th (ft)		100	265		10	300	115	7	1	3	46	8
Queue Length 95th (ft)		#175	279		m18	361	182	25	5	16	98	31
Internal Link Dist (ft)			846			1805			810			423
Turn Bay Length (ft)		275			400		195	290			160	
Base Capacity (vph)		203	1732		378	1827	799	558	661	796	632	779
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		0.64	0.47		0.08	0.38	0.18	0.03	0.00	0.01	0.17	0.03

Intersection Summary

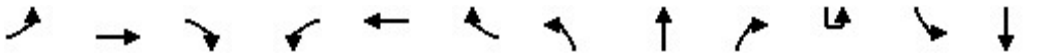
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 35 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 39.4 Intersection LOS: D
Intersection Capacity Utilization 50.2% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
! Phase conflict between lane groups.

Splits and Phases: 2: Ravinia Avenue & 159th Street



Lane Group	SBR
v/c Ratio	0.06
Control Delay	16.1
Queue Delay	0.0
Total Delay	16.1
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	16
Queue Length 95th (ft)	49
Internal Link Dist (ft)	
Turn Bay Length (ft)	165
Base Capacity (vph)	873
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.06

Intersection Summary



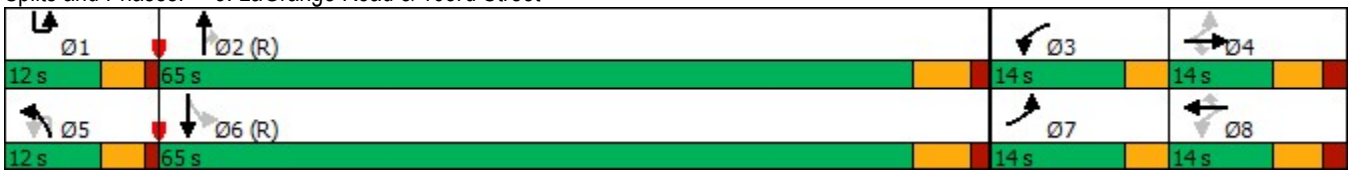
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	35	1	9	58	4	42	4	1246	65	16	53	942
Future Volume (vph)	35	1	9	58	4	42	4	1246	65	16	53	942
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	125		0	0		0	195		195		250	
Storage Lanes	1		1	1		1	1		1		2	
Taper Length (ft)	90			25			195				300	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.97	0.91
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.998
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1752	2000	1615	1752	2000	1615	1805	5200	1615	0	3502	4797
Flt Permitted				0.667			0.950				0.195	
Satd. Flow (perm)	1845	2000	1615	1230	2000	1615	1805	5200	1615	0	719	4797
Right Turn on Red			No			No			No			
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			45				45
Link Distance (ft)		562			628			1162				1404
Travel Time (s)		19.2			21.4			17.6				21.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	0%	3%	0%	0%	0%	5%	0%	0%	0%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	1	10	62	4	45	4	1326	69	0	73	1013
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	Perm	NA
Protected Phases	7	4		3	8		5	2		1		6
Permitted Phases	4		4	8		8			2		6	
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	15.0	15.0	3.0	15.0	15.0
Minimum Split (s)	9.5	14.0	14.0	9.5	14.0	14.0	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	14.0	14.0	14.0	14.0	14.0	14.0	12.0	65.0	65.0	12.0	65.0	65.0
Total Split (%)	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	11.4%	61.9%	61.9%	11.4%	61.9%	61.9%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0	4.5	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
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	C-Min	None	C-Min	C-Min
Act Effct Green (s)	7.9	6.5	6.5	12.1	6.3	6.3	3.2	84.4	84.4		82.8	82.8
Actuated g/C Ratio	0.08	0.06	0.06	0.12	0.06	0.06	0.03	0.80	0.80		0.79	0.79

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	0.91
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.94
Growth Factor	100%
Heavy Vehicles (%)	0%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
v/c Ratio	0.28	0.01	0.10	0.32	0.03	0.47	0.07	0.32	0.05		0.13	0.27
Control Delay	47.5	43.0	46.7	43.6	45.8	63.2	52.0	4.2	4.0		6.1	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	47.5	43.0	46.7	43.6	45.8	63.2	52.0	4.2	4.0		6.1	4.9
LOS	D	D	D	D	D	E	D	A	A		A	A
Approach Delay		47.2			51.6			4.3				5.0
Approach LOS		D			D			A				A
Queue Length 50th (ft)	25	1	7	37	3	30	3	90	10		5	65
Queue Length 95th (ft)	48	6	22	71	13	66	14	138	26		21	135
Internal Link Dist (ft)		482			548			1082				1324
Turn Bay Length (ft)	125						195		195		250	
Base Capacity (vph)	216	169	137	249	155	125	128	4181	1298		566	3781
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.17	0.01	0.07	0.25	0.03	0.36	0.03	0.32	0.05		0.13	0.27

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 64 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 7.4		Intersection LOS: A	
Intersection Capacity Utilization 50.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: LaGrange Road & 163rd Street



Lane Group	SBR
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	24	1	7	1	0	15	2	24	1281	19	5	31	965	29
Future Vol, veh/h	24	1	7	1	0	15	2	24	1281	19	5	31	965	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	0	0	-	-	-	190	-	-	-	265	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	5	0	0	3	6	0
Mvmt Flow	26	1	8	1	0	16	2	26	1408	21	5	34	1060	32

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1773	2639	546	1978	2645	715	797	1092	0	0	1043	1429	0	0
Stage 1	1154	1154	-	1475	1475	-	-	-	-	-	-	-	-	-
Stage 2	619	1485	-	503	1170	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.6	5.3	-	-	5.6	5.36	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	2.3	3.1	-	-	2.3	3.13	-	-
Pot Cap-1 Maneuver	*90	24	*700	*67	*24	*619	*1187	871	-	-	*1049	*771	-	-
Stage 1	*625	623	-	*635	*604	-	-	-	-	-	-	-	-	-
Stage 2	*635	599	-	*718	*611	-	-	-	-	-	-	-	-	-
Platoon blocked, %			1			1	1	1	-	-	1	1	-	-
Mov Cap-1 Maneuver	*82	22	*700	*62	*22	*619	*889	889	-	-	*798	*798	-	-
Mov Cap-2 Maneuver	*393	364	-	*418	*366	-	-	-	-	-	-	-	-	-
Stage 1	*604	592	-	*614	*584	-	-	-	-	-	-	-	-	-
Stage 2	*598	579	-	*674	*580	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.8	11.2	0.2	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	889	-	-	393	364	700	418	619	* 798	-	-
HCM Lane V/C Ratio	0.032	-	-	0.067	0.003	0.011	0.003	0.027	0.05	-	-
HCM Control Delay (s)	9.2	-	-	14.8	14.9	10.2	13.6	11	9.7	-	-
HCM Lane LOS	A	-	-	B	B	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	0	0.1	0.2	-	-

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

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	4	12	46	1311	0	995	14
Future Vol, veh/h	4	12	46	1311	0	995	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	50	0	205	-	200	-	-
Veh in Median Storage, #	2	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	4	0	8	0
Mvmt Flow	4	13	48	1366	0	1036	15

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1686	526	1051	0	997	-	0
Stage 1	1044	-	-	-	-	-	-
Stage 2	642	-	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.3	-	5.6	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	3.1	-	2.3	-	-
Pot Cap-1 Maneuver	*311	*694	*873	-	449	-	-
Stage 1	*712	-	-	-	-	-	-
Stage 2	*447	-	-	-	-	-	-
Platoon blocked, %	1	1	1	-		-	-
Mov Cap-1 Maneuver	*294	*694	*873	-	449	-	-
Mov Cap-2 Maneuver	*409	-	-	-	-	-	-
Stage 1	*672	-	-	-	-	-	-
Stage 2	*447	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	* 873	-	409	694	449	-	-
HCM Lane V/C Ratio	0.055	-	0.01	0.018	-	-	-
HCM Control Delay (s)	9.4	-	13.9	10.3	0	-	-
HCM Lane LOS	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0	0.1	0	-	-

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	6	6	2	8	26	10	0	0	1	4	0	2
Future Vol, veh/h	6	6	2	8	26	10	0	0	1	4	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	17	0	0	0	0	0	0	0	0	0	0	50
Mvmt Flow	7	7	2	10	32	12	0	0	1	5	0	2

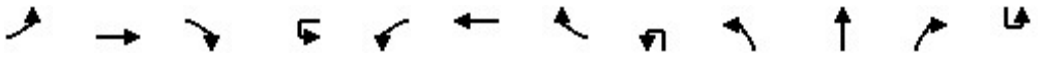
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	44	0	0	9	0	0	81	86	8	81	81	38
Stage 1	-	-	-	-	-	-	22	22	-	58	58	-
Stage 2	-	-	-	-	-	-	59	64	-	23	23	-
Critical Hdwy	4.27	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.353	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.75
Pot Cap-1 Maneuver	1473	-	-	1624	-	-	912	808	1080	912	813	912
Stage 1	-	-	-	-	-	-	1002	881	-	959	851	-
Stage 2	-	-	-	-	-	-	958	846	-	1000	880	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1473	-	-	1624	-	-	902	799	1080	903	804	912
Mov Cap-2 Maneuver	-	-	-	-	-	-	902	799	-	903	804	-
Stage 1	-	-	-	-	-	-	997	877	-	954	846	-
Stage 2	-	-	-	-	-	-	950	841	-	994	876	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	1.3	8.3	9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1080	1473	-	-	1624	-	-	906
HCM Lane V/C Ratio	0.001	0.005	-	-	0.006	-	-	0.008
HCM Control Delay (s)	8.3	7.5	0	-	7.2	0	-	9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Capacity Analysis Summary Sheets

Existing Weekday Evening Peak Hour



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	217	655	380	3	280	775	223	3	350	1135	251	1
Future Volume (vph)	217	655	380	3	280	775	223	3	350	1135	251	1
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	2000	1900	1900	1900	2000	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%				0%				0%		
Storage Length (ft)	155		400		180		420		310		170	
Storage Lanes	2		1		2		1		2		1	
Taper Length (ft)	245				290				300			
Lane Util. Factor	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.91	0.97	0.91	1.00	0.91
Ped Bike Factor												
Frt			0.850				0.850				0.850	
Flt Protected	0.950				0.950				0.950			
Satd. Flow (prot)	3467	3762	1599	0	3467	3725	1599	0	3434	5353	1599	0
Flt Permitted	0.950				0.950				0.950			
Satd. Flow (perm)	3467	3762	1599	0	3467	3725	1599	0	3434	5353	1599	0
Right Turn on Red			No				No				No	
Satd. Flow (RTOR)												
Link Speed (mph)		40				40				40		
Link Distance (ft)		1885				944				1415		
Travel Time (s)		32.1				16.1				24.1		
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	0%	1%	2%	1%	0%	2%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%				0%				0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	675	392	0	292	799	230	0	364	1170	259	0
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot
Protected Phases	7	4	5!	3!	3	8	1!	5!	5	2	3!	1!
Permitted Phases			4				8				2	
Detector Phase	7	4	5	3	3	8	1	5	5	2	3	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0
Minimum Split (s)	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5
Total Split (s)	17.0	32.0	20.0	23.0	23.0	38.0	24.0	20.0	20.0	51.0	23.0	24.0
Total Split (%)	13.1%	24.6%	15.4%	17.7%	17.7%	29.2%	18.5%	15.4%	15.4%	39.2%	17.7%	18.5%
Yellow Time (s)	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5
All-Red Time (s)	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5	6.0	4.5		4.5	6.0	4.5		4.5	6.0	4.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	None	Min	None	None	None	C-Min	None	None
Act Effct Green (s)	11.9	28.0	49.5		15.8	31.9	55.5		15.5	47.5	69.4	
Actuated g/C Ratio	0.09	0.22	0.38		0.12	0.25	0.43		0.12	0.37	0.53	

Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	347	1250	239
Future Volume (vph)	347	1250	239
Ideal Flow (vphpl)	1900	2000	1900
Lane Width (ft)	12	12	12
Grade (%)		0%	
Storage Length (ft)	190		135
Storage Lanes	2		1
Taper Length (ft)	280		
Lane Util. Factor	0.97	0.91	1.00
Ped Bike Factor			
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3467	5353	1568
Flt Permitted	0.950		
Satd. Flow (perm)	3467	5353	1568
Right Turn on Red			No
Satd. Flow (RTOR)			
Link Speed (mph)		40	
Link Distance (ft)		839	
Travel Time (s)		14.3	
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor	0.97	0.97	0.97
Growth Factor	100%	100%	100%
Heavy Vehicles (%)	1%	2%	3%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Mid-Block Traffic (%)		0%	
Shared Lane Traffic (%)			
Lane Group Flow (vph)	359	1289	246
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7!
Permitted Phases			6
Detector Phase	1	6	7
Switch Phase			
Minimum Initial (s)	3.0	15.0	3.0
Minimum Split (s)	7.5	21.0	7.5
Total Split (s)	24.0	55.0	17.0
Total Split (%)	18.5%	42.3%	13.1%
Yellow Time (s)	3.5	4.0	3.5
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Recall Mode	None	C-Min	None
Act Effct Green (s)	17.6	49.7	67.7
Actuated g/C Ratio	0.14	0.38	0.52

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
v/c Ratio	0.70	0.83	0.64		0.69	0.88	0.34		0.89	0.60	0.30	
Control Delay	88.0	43.6	28.3		63.5	58.9	26.2		81.6	32.3	15.6	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	88.0	43.6	28.3		63.5	58.9	26.2		81.6	32.3	15.6	
LOS	F	D	C		E	E	C		F	C	B	
Approach Delay		46.7				54.2				39.9		
Approach LOS		D				D				D		
Queue Length 50th (ft)	103	220	249		123	342	126		159	242	100	
Queue Length 95th (ft)	146	#387	406		168	#443	188		#246	297	133	
Internal Link Dist (ft)		1805				864				1335		
Turn Bay Length (ft)	155		400		180		420		310		170	
Base Capacity (vph)	333	810	608		493	918	705		409	1957	885	
Starvation Cap Reductn	0	0	0		0	0	0		0	0	0	
Spillback Cap Reductn	0	0	0		0	0	0		0	0	0	
Storage Cap Reductn	0	0	0		0	0	0		0	0	0	
Reduced v/c Ratio	0.67	0.83	0.64		0.59	0.87	0.33		0.89	0.60	0.29	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 43.8 Intersection LOS: D
Intersection Capacity Utilization 80.9% 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.
! Phase conflict between lane groups.

Splits and Phases: 1: LaGrange Road & 159th Street

Lane Group	SBL	SBT	SBR
v/c Ratio	0.76	0.63	0.30
Control Delay	65.2	34.5	19.1
Queue Delay	0.0	0.0	0.0
Total Delay	65.2	34.5	19.1
LOS	E	C	B
Approach Delay		38.3	
Approach LOS		D	
Queue Length 50th (ft)	151	323	115
Queue Length 95th (ft)	204	376	173
Internal Link Dist (ft)		759	
Turn Bay Length (ft)	190		135
Base Capacity (vph)	520	2047	823
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.69	0.63	0.30

Intersection Summary

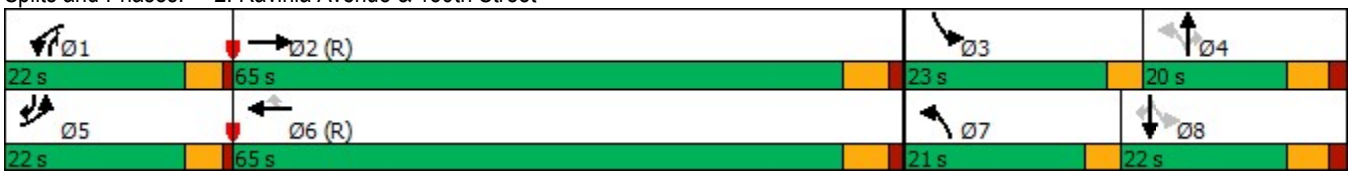
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	879	15	274	732	176	112	64	227	173	117	142
Future Volume (vph)	162	879	15	274	732	176	112	64	227	173	117	142
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	275		0	400		195	290		0	160		165
Storage Lanes	1		0	2		1	1		1	1		1
Taper Length (ft)	165			280			95			100		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3560	0	3502	3654	1599	1787	2000	1615	1787	2000	1599
Flt Permitted	0.950			0.950			0.679			0.644		
Satd. Flow (perm)	1805	3560	0	3502	3654	1599	1277	2000	1615	1211	2000	1599
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		926			1885			890			503	
Travel Time (s)		15.8			32.1			20.2			11.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	7%	0%	4%	1%	1%	0%	0%	1%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	169	932	0	285	763	183	117	67	236	180	122	148
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		7	4	1	3	8	5
Permitted Phases						6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	5.0	3.0	3.0	5.0	3.0
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	18.0	9.5	9.5	18.0	9.5
Total Split (s)	22.0	65.0		22.0	65.0	65.0	21.0	20.0	22.0	23.0	22.0	22.0
Total Split (%)	16.9%	50.0%		16.9%	50.0%	50.0%	16.2%	15.4%	16.9%	17.7%	16.9%	16.9%
Yellow Time (s)	3.5	4.5		3.5	4.5	4.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	0.0	2.0	1.0	0.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0		4.5	6.0	6.0	3.5	6.0	4.5	3.5	6.0	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	Max	None	None	Max	None
Act Effct Green (s)	14.3	52.3		13.3	51.3	51.3	43.5	32.4	51.7	49.9	35.9	56.2
Actuated g/C Ratio	0.11	0.40		0.10	0.39	0.39	0.33	0.25	0.40	0.38	0.28	0.43

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.85	0.65		0.80	0.53	0.29	0.25	0.13	0.37	0.35	0.22	0.21
Control Delay	91.4	33.5		49.8	51.6	46.3	30.3	44.5	32.2	31.4	41.5	26.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.4	33.5		49.8	51.6	46.3	30.3	44.5	32.2	31.4	41.5	26.2
LOS	F	C		D	D	D	C	D	C	C	D	C
Approach Delay		42.4			50.4			33.6			32.4	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	141	331		127	348	156	64	44	138	102	79	76
Queue Length 95th (ft)	#232	370		m148	m400	m187	124	100	247	182	156	147
Internal Link Dist (ft)		846			1805			810			423	
Turn Bay Length (ft)	275			400		195	290			160		165
Base Capacity (vph)	242	1615		471	1658	725	554	499	694	555	552	730
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.58		0.61	0.46	0.25	0.21	0.13	0.34	0.32	0.22	0.20

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 41 (32%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 42.9 Intersection LOS: D
Intersection Capacity Utilization 62.6% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Ravinia Avenue & 159th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	65	4	21	66	10	74	1	20	1474	73	16	81
Future Volume (vph)	65	4	21	66	10	74	1	20	1474	73	16	81
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	2000	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%				0%			
Storage Length (ft)	125		0	0		0		195		195		250
Storage Lanes	1		1	1		1		1		1		2
Taper Length (ft)	90			25				195				300
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	1.00	0.91	0.97
Ped Bike Factor												
Frt			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	0	1805	5353	1615	0	3502
Flt Permitted	0.751			0.626				0.833				0.156
Satd. Flow (perm)	1427	2000	1615	1189	2000	1615	0	1583	5353	1615	0	575
Right Turn on Red			No			No				No		
Satd. Flow (RTOR)												
Link Speed (mph)		20			20				45			
Link Distance (ft)		562			628				1162			
Travel Time (s)		19.2			21.4				17.6			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	4	22	69	10	77	0	22	1535	76	0	101
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	custom	Prot	NA	Perm	Prot	Perm
Protected Phases	7	4		3	8			5	2		1	
Permitted Phases	4		4	8		8	5			2		6
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	15.0	15.0	3.0	15.0
Minimum Split (s)	9.5	14.0	14.0	9.5	14.0	14.0	9.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	15.0	15.0	15.0	15.0	15.0	15.0	13.0	13.0	87.0	87.0	13.0	87.0
Total Split (%)	11.5%	11.5%	11.5%	11.5%	11.5%	11.5%	10.0%	10.0%	66.9%	66.9%	10.0%	66.9%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	4.5	4.5	3.5	4.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	1.0	1.0	1.5	1.5	1.0	1.5
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	6.0	3.5	6.0	6.0		4.5	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	17.0	9.7	9.7	18.0	9.3	9.3		6.2	99.5	99.5		92.0
Actuated g/C Ratio	0.13	0.07	0.07	0.14	0.07	0.07		0.05	0.77	0.77		0.71

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1729	58
Future Volume (vph)	1729	58
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor		
Frt	0.995	
Flt Protected		
Satd. Flow (prot)	5108	0
Flt Permitted		
Satd. Flow (perm)	5108	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	45	
Link Distance (ft)	1404	
Travel Time (s)	21.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.96	0.96
Growth Factor	100%	100%
Heavy Vehicles (%)	1%	2%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1861	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	22.5	
Total Split (s)	87.0	
Total Split (%)	66.9%	
Yellow Time (s)	4.5	
All-Red Time (s)	1.5	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	C-Min	
Act Effct Green (s)	92.0	
Actuated g/C Ratio	0.71	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
v/c Ratio	0.33	0.03	0.18	0.33	0.07	0.67		0.30	0.37	0.06		0.25
Control Delay	50.4	53.2	57.9	49.4	55.1	85.0		68.3	6.0	5.1		9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	50.4	53.2	57.9	49.4	55.1	85.0		68.3	6.0	5.1		9.6
LOS	D	D	E	D	E	F		E	A	A		A
Approach Delay		52.3			67.3				6.8			
Approach LOS		D			E				A			
Queue Length 50th (ft)	50	3	17	51	8	64		18	142	14		10
Queue Length 95th (ft)	88	15	45	89	26	116		47	209	35		m23
Internal Link Dist (ft)		482			548				1082			
Turn Bay Length (ft)	125							195		195		250
Base Capacity (vph)	249	174	140	255	160	129		107	4096	1235		411
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	0.27	0.02	0.16	0.27	0.06	0.60		0.21	0.37	0.06		0.25

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 11.3 Intersection LOS: B
Intersection Capacity Utilization 63.0% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: LaGrange Road & 163rd Street

Lane Group	SBT	SBR
v/c Ratio	0.51	
Control Delay	8.6	
Queue Delay	0.0	
Total Delay	8.6	
LOS	A	
Approach Delay	8.6	
Approach LOS	A	
Queue Length 50th (ft)	178	
Queue Length 95th (ft)	223	
Internal Link Dist (ft)	1324	
Turn Bay Length (ft)		
Base Capacity (vph)	3657	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.51	

Intersection Summary

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	29	1	23	8	1	49	3	37	1649	24	12	66	1764	71
Future Vol, veh/h	29	1	23	8	1	49	3	37	1649	24	12	66	1764	71
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	0	0	-	-	-	190	-	-	-	265	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Mvmt Flow	31	1	25	9	1	53	3	40	1773	26	13	71	1897	76

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	2899	3988	987	2799	4013	900	1440	1973	0	0	1313	1799	0	0
Stage 1	2103	2103	-	1872	1872	-	-	-	-	-	-	-	-	-
Stage 2	796	1885	-	927	2141	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.6	5.3	-	-	5.6	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	2.3	3.1	-	-	2.3	3.1	-	-
Pot Cap-1 Maneuver	*72	3	*517	*94	*3	*537	*876	*650	-	-	*910	*675	-	-
Stage 1	*378	405	-	*551	*523	-	-	-	-	-	-	-	-	-
Stage 2	*551	519	-	*530	*378	-	-	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	1	-	-	1	1	-	-
Mov Cap-1 Maneuver	*56	3	*517	*77	*3	*537	*661	*661	-	-	*695	*695	-	-
Mov Cap-2 Maneuver	*249	240	-	*307	*226	-	-	-	-	-	-	-	-	-
Stage 1	*354	356	-	*515	*489	-	-	-	-	-	-	-	-	-
Stage 2	*463	486	-	*443	*333	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.5	13.3	0.3	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 661	-	-	249	240	517	307	523	* 695	-	-
HCM Lane V/C Ratio	0.065	-	-	0.125	0.004	0.048	0.028	0.103	0.121	-	-
HCM Control Delay (s)	10.8	-	-	21.5	20.1	12.3	17.1	12.7	10.9	-	-
HCM Lane LOS	B	-	-	C	C	B	C	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0	0.1	0.1	0.3	0.4	-	-

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

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	14	56	52	1549	5	1792	20
Future Vol, veh/h	14	56	52	1549	5	1792	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	50	0	205	-	200	-	-
Veh in Median Storage, #	2	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	0	1	0
Mvmt Flow	15	61	57	1684	5	1948	22

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	2757	985	1970	0	1229	-	0
Stage 1	1969	-	-	-	-	-	-
Stage 2	788	-	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.3	-	5.6	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	3.1	-	2.3	-	-
Pot Cap-1 Maneuver	*112	*517	*650	-	334	-	-
Stage 1	*530	-	-	-	-	-	-
Stage 2	*375	-	-	-	-	-	-
Platoon blocked, %	1	1	1	-		-	-
Mov Cap-1 Maneuver	*101	*517	*650	-	334	-	-
Mov Cap-2 Maneuver	*291	-	-	-	-	-	-
Stage 1	*484	-	-	-	-	-	-
Stage 2	*369	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.9	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	* 650	-	291	517	334	-	-
HCM Lane V/C Ratio	0.087	-	0.052	0.118	0.016	-	-
HCM Control Delay (s)	11.1	-	18.1	12.9	16	-	-
HCM Lane LOS	B	-	C	B	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	0.4	0.1	-	-

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

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	10	1	4	6	16	0	6	12	15	1	6
Future Vol, veh/h	3	10	1	4	6	16	0	6	12	15	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	13	1	5	8	21	0	8	16	19	1	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	29	0	0	14	0	0	55	61	14	63	51	19
Stage 1	-	-	-	-	-	-	22	22	-	29	29	-
Stage 2	-	-	-	-	-	-	33	39	-	34	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	1597	-	-	1617	-	-	948	834	1072	936	844	1065
Stage 1	-	-	-	-	-	-	1002	881	-	993	875	-
Stage 2	-	-	-	-	-	-	988	866	-	987	881	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1597	-	-	1617	-	-	936	829	1072	912	839	1065
Mov Cap-2 Maneuver	-	-	-	-	-	-	936	829	-	912	839	-
Stage 1	-	-	-	-	-	-	999	878	-	990	872	-
Stage 2	-	-	-	-	-	-	976	863	-	961	878	-

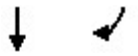
Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	1.1	8.8	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	977	1597	-	-	1617	-	-	945
HCM Lane V/C Ratio	0.024	0.002	-	-	0.003	-	-	0.03
HCM Control Delay (s)	8.8	7.3	0	-	7.2	0	-	8.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Capacity Analysis Summary Sheets

Existing Saturday Midday Peak Hour

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	237	622	250	15	203	618	323	333	1039	290	3	500
Future Volume (vph)	237	622	250	15	203	618	323	333	1039	290	3	500
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	2000	1900	1900	2000	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%				0%			0%			
Storage Length (ft)	155		400		180		420	310		170		190
Storage Lanes	2		1		2		1	2		1		2
Taper Length (ft)	245				290			300				280
Lane Util. Factor	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.91	1.00	0.91	0.97
Ped Bike Factor												
Frt			0.850				0.850			0.850		
Flt Protected	0.950				0.950			0.950				0.950
Satd. Flow (prot)	3502	3800	1615	0	3406	3762	1599	3433	5406	1599	0	3502
Flt Permitted	0.950				0.950			0.950				0.950
Satd. Flow (perm)	3502	3800	1615	0	3406	3762	1599	3433	5406	1599	0	3502
Right Turn on Red			No				No			No		
Satd. Flow (RTOR)												
Link Speed (mph)		40				40			40			
Link Distance (ft)		1885				944			1415			
Travel Time (s)		32.1				16.1			24.1			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	3%	1%	1%	2%	1%	1%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%				0%			0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	242	635	255	0	222	631	330	340	1060	296	0	513
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	Prot
Protected Phases	7	4	5!	3!	3	8	1!	5	2	3!	1!	1
Permitted Phases			4				8			2		
Detector Phase	7	4	5	3	3	8	1	5	2	3	1	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	3.0
Minimum Split (s)	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5	21.0	7.5	7.5	7.5
Total Split (s)	18.0	32.0	25.0	24.0	24.0	38.0	28.0	25.0	46.0	24.0	28.0	28.0
Total Split (%)	13.8%	24.6%	19.2%	18.5%	18.5%	29.2%	21.5%	19.2%	35.4%	18.5%	21.5%	21.5%
Yellow Time (s)	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5	3.5
All-Red Time (s)	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	6.0	4.5		4.5	6.0	4.5	4.5	6.0	4.5		4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	None	Min	None	None	C-Min	None	None	None
Act Effct Green (s)	12.7	28.5	52.2		13.9	29.7	58.2	17.8	44.1	64.0		22.5
Actuated g/C Ratio	0.10	0.22	0.40		0.11	0.23	0.45	0.14	0.34	0.49		0.17



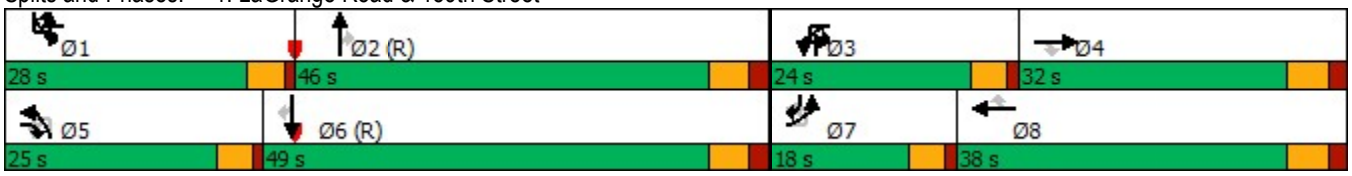
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	859	210
Future Volume (vph)	859	210
Ideal Flow (vphpl)	2000	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		135
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.91	1.00
Ped Bike Factor		
Frt		0.850
Flt Protected		
Satd. Flow (prot)	5406	1615
Flt Permitted		
Satd. Flow (perm)	5406	1615
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	40	
Link Distance (ft)	839	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.98	0.98
Growth Factor	100%	100%
Heavy Vehicles (%)	1%	0%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	877	214
Turn Type	NA	pm+ov
Protected Phases	6	7!
Permitted Phases		6
Detector Phase	6	7
Switch Phase		
Minimum Initial (s)	15.0	3.0
Minimum Split (s)	21.0	7.5
Total Split (s)	49.0	18.0
Total Split (%)	37.7%	13.8%
Yellow Time (s)	4.0	3.5
All-Red Time (s)	2.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	4.5
Lead/Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	C-Min	None
Act Effct Green (s)	48.8	67.5
Actuated g/C Ratio	0.38	0.52

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
v/c Ratio	0.71	0.76	0.39		0.61	0.73	0.46	0.73	0.58	0.38		0.85
Control Delay	87.3	37.9	19.9		62.3	51.9	26.8	70.9	32.9	19.3		65.9
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	87.3	37.9	19.9		62.3	51.9	26.8	70.9	32.9	19.3		65.9
LOS	F	D	B		E	D	C	E	C	B		E
Approach Delay		44.4				46.8			38.2			
Approach LOS		D				D			D			
Queue Length 50th (ft)	110	146	73		93	254	181	150	219	125		216
Queue Length 95th (ft)	155	281	137		131	322	262	205	337	234		#283
Internal Link Dist (ft)		1805				864			1335			
Turn Bay Length (ft)	155		400		180		420	310		170		190
Base Capacity (vph)	363	843	682		510	926	728	541	1833	856		633
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	0.75	0.37		0.44	0.68	0.45	0.63	0.58	0.35		0.81

Intersection Summary

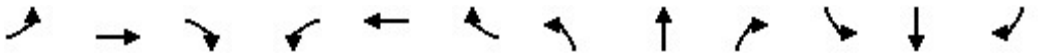
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 42.1 Intersection LOS: D
Intersection Capacity Utilization 76.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
! Phase conflict between lane groups.

Splits and Phases: 1: LaGrange Road & 159th Street



Lane Group	SBT	SBR
v/c Ratio	0.43	0.26
Control Delay	32.2	19.5
Queue Delay	0.0	0.0
Total Delay	32.2	19.5
LOS	C	B
Approach Delay	41.2	
Approach LOS	D	
Queue Length 50th (ft)	209	101
Queue Length 95th (ft)	258	162
Internal Link Dist (ft)	759	
Turn Bay Length (ft)		135
Base Capacity (vph)	2030	848
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.43	0.25

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	787	16	376	490	116	117	68	278	122	128	143
Future Volume (vph)	168	787	16	376	490	116	117	68	278	122	128	143
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	275		0	400		195	290		0	160		165
Storage Lanes	1		0	2		1	1		1	1		1
Taper Length (ft)	165			280			95			100		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3560	0	3467	3762	1599	1805	2000	1615	1805	1980	1615
Flt Permitted	0.950			0.950			0.654			0.706		
Satd. Flow (perm)	1787	3560	0	3467	3762	1599	1243	2000	1615	1341	1980	1615
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		926			1885			890			503	
Travel Time (s)		15.8			32.1			20.2			11.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	6%	1%	1%	1%	0%	0%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	827	0	388	505	120	121	70	287	126	132	147
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		7	4	1	3	8	5
Permitted Phases						6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	5.0	3.0	3.0	5.0	3.0
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	18.0	9.5	9.5	18.0	9.5
Total Split (s)	26.0	59.0		26.0	59.0	59.0	18.0	27.0	26.0	18.0	27.0	26.0
Total Split (%)	20.0%	45.4%		20.0%	45.4%	45.4%	13.8%	20.8%	20.0%	13.8%	20.8%	20.0%
Yellow Time (s)	3.5	4.5		3.5	4.5	4.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	0.0	2.0	1.0	0.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0		4.5	6.0	6.0	3.5	6.0	4.5	3.5	6.0	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	Max	None	None	Max	None
Act Effct Green (s)	15.2	46.7		17.1	48.5	48.5	48.4	37.4	60.5	49.1	37.7	59.0
Actuated g/C Ratio	0.12	0.36		0.13	0.37	0.37	0.37	0.29	0.47	0.38	0.29	0.45

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.83	0.65		0.85	0.36	0.20	0.24	0.12	0.38	0.23	0.23	0.20
Control Delay	85.2	37.1		54.0	46.4	43.4	28.7	39.7	26.3	28.7	40.3	23.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.2	37.1		54.0	46.4	43.4	28.7	39.7	26.3	28.7	40.3	23.9
LOS	F	D		D	D	D	C	D	C	C	D	C
Approach Delay		45.4			49.0			28.9			30.7	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	145	306		175	227	100	65	43	152	67	84	72
Queue Length 95th (ft)	215	346		226	283	m156	124	97	267	129	164	136
Internal Link Dist (ft)		846			1805			810			423	
Turn Bay Length (ft)	275			400		195	290			160		165
Base Capacity (vph)	295	1451		573	1533	651	556	575	806	585	574	810
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.57		0.68	0.33	0.18	0.22	0.12	0.36	0.22	0.23	0.18

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 38 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 41.9 Intersection LOS: D
Intersection Capacity Utilization 63.0% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Ravinia Avenue & 159th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	76	7	10	53	5	54	1	12	1481	62	21	53
Future Volume (vph)	76	7	10	53	5	54	1	12	1481	62	21	53
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	2000	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%				0%			
Storage Length (ft)	125		0	0		0		195		195		250
Storage Lanes	1		1	1		1		1		1		2
Taper Length (ft)	90			25				195				300
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	1.00	0.91	0.97
Ped Bike Factor												
Frt			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	0	1805	5406	1615	0	3452
Flt Permitted	0.754			0.491								0.159
Satd. Flow (perm)	1433	2000	1615	933	2000	1615	0	1900	5406	1615	0	578
Right Turn on Red			No			No				No		
Satd. Flow (RTOR)												
Link Speed (mph)		20			20				45			
Link Distance (ft)		562			628				1162			
Travel Time (s)		19.2			21.4				17.6			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	7	10	54	5	55	0	13	1511	63	0	75
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	custom	Prot	NA	Perm	Prot	Perm
Protected Phases	7	4		3	8			5	2		1	
Permitted Phases	4		4	8		8	5			2		6
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	15.0	15.0	3.0	15.0
Minimum Split (s)	9.5	14.0	14.0	9.5	14.0	14.0	9.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	16.0	15.0	15.0	16.0	15.0	15.0	12.0	12.0	87.0	87.0	12.0	87.0
Total Split (%)	12.3%	11.5%	11.5%	12.3%	11.5%	11.5%	9.2%	9.2%	66.9%	66.9%	9.2%	66.9%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	4.5	4.5	3.5	4.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	1.0	1.0	1.5	1.5	1.0	1.5
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	6.0	3.5	6.0	6.0		4.5	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	14.3	8.8	8.8	16.0	7.5	7.5		4.7	103.8	103.8		99.4
Actuated g/C Ratio	0.11	0.07	0.07	0.12	0.06	0.06		0.04	0.80	0.80		0.76

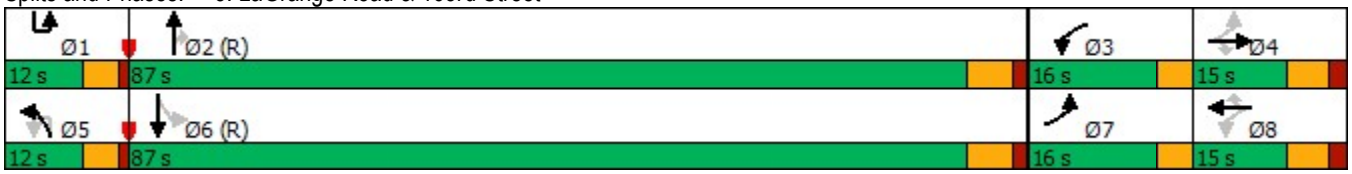
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1399	59
Future Volume (vph)	1399	59
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor		
Frt	0.994	
Flt Protected		
Satd. Flow (prot)	5107	0
Flt Permitted		
Satd. Flow (perm)	5107	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	45	
Link Distance (ft)	1404	
Travel Time (s)	21.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.98	0.98
Growth Factor	100%	100%
Heavy Vehicles (%)	1%	0%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1488	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	22.5	
Total Split (s)	87.0	
Total Split (%)	66.9%	
Yellow Time (s)	4.5	
All-Red Time (s)	1.5	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	C-Min	
Act Effct Green (s)	99.4	
Actuated g/C Ratio	0.76	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
v/c Ratio	0.43	0.05	0.09	0.29	0.04	0.59		0.19	0.35	0.05		0.17
Control Delay	57.5	54.0	55.5	49.4	56.6	84.3		66.1	5.3	4.7		12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	57.5	54.0	55.5	49.4	56.6	84.3		66.1	5.3	4.7		12.9
LOS	E	D	E	D	E	F		E	A	A		B
Approach Delay		57.0			66.5				5.8			
Approach LOS		E			E				A			
Queue Length 50th (ft)	65	6	8	40	4	46		11	133	11		7
Queue Length 95th (ft)	100	21	26	74	17	90		33	198	29		47
Internal Link Dist (ft)		482			548				1082			
Turn Bay Length (ft)	125							195		195		250
Base Capacity (vph)	235	171	138	249	144	116		109	4318	1290		443
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	0.33	0.04	0.07	0.22	0.03	0.47		0.12	0.35	0.05		0.17

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 119 (92%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 11.5 Intersection LOS: B
Intersection Capacity Utilization 53.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: LaGrange Road & 163rd Street



Lane Group	SBT	SBR
v/c Ratio	0.38	
Control Delay	10.5	
Queue Delay	0.0	
Total Delay	10.5	
LOS	B	
Approach Delay	10.6	
Approach LOS	B	
Queue Length 50th (ft)	116	
Queue Length 95th (ft)	417	
Internal Link Dist (ft)	1324	
Turn Bay Length (ft)		
Base Capacity (vph)	3916	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.38	

Intersection Summary

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	23	1	26	5	0	38	8	24	1594	18	7	38	1240	27
Future Vol, veh/h	23	1	26	5	0	38	8	24	1594	18	7	38	1240	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	0	0	-	-	-	190	-	-	-	265	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	9	0	0	0	0	3	0	4	1	0	0	3	1	0
Mvmt Flow	24	1	27	5	0	40	8	25	1660	19	7	40	1292	28

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	2130	3145	660	2347	3150	840	963	1320	0	0	1226	1679	0	0
Stage 1	1400	1400	-	1736	1736	-	-	-	-	-	-	-	-	-
Stage 2	730	1745	-	611	1414	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.58	6.5	7.1	6.4	6.5	7.16	5.6	5.38	-	-	5.6	5.36	-	-
Critical Hdwy Stg 1	7.48	5.5	-	7.3	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.88	5.5	-	6.7	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.89	4	3.9	3.8	4	3.93	2.3	3.14	-	-	2.3	3.13	-	-
Pot Cap-1 Maneuver	*327	*28	*637	*207	*28	*553	*1080	*791	-	-	*944	*694	-	-
Stage 1	*626	*614	-	*571	*543	-	-	-	-	-	-	-	-	-
Stage 2	*558	*543	-	*654	*602	-	-	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	1	-	-	1	1	-	-
Mov Cap-1 Maneuver	*280	*25	*637	*183	*25	*553	*841	*841	-	-	*717	*717	-	-
Mov Cap-2 Maneuver	*403	*335	-	*406	*340	-	-	-	-	-	-	-	-	-
Stage 1	*602	*573	-	*549	*522	-	-	-	-	-	-	-	-	-
Stage 2	*498	*522	-	*584	*562	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.7	12.2	0.2	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 841	-	-	403	335	637	406	553	* 717	-	-
HCM Lane V/C Ratio	0.04	-	-	0.059	0.003	0.043	0.013	0.072	0.065	-	-
HCM Control Delay (s)	9.5	-	-	14.5	15.8	10.9	14	12	10.4	-	-
HCM Lane LOS	A	-	-	B	C	B	B	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0.1	0	0.2	0.2	-	-

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

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	17	37	2	55	1539	0	1445	18
Future Vol, veh/h	17	37	2	55	1539	0	1445	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	50	0	-	205	-	200	-	-
Veh in Median Storage, #	2	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	1	0	1	0
Mvmt Flow	18	39	2	58	1620	0	1521	19

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	2299	770	1124	1540	0	1183	-	0
Stage 1	1531	-	-	-	-	-	-	-
Stage 2	768	-	-	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.6	5.3	-	5.6	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	2.3	3.1	-	2.3	-	-
Pot Cap-1 Maneuver	*181	*597	*1012	*751	-	354	-	-
Stage 1	*613	-	-	-	-	-	-	-
Stage 2	*384	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	-		-	-
Mov Cap-1 Maneuver	*167	*597	*757	*757	-	354	-	-
Mov Cap-2 Maneuver	*331	-	-	-	-	-	-	-
Stage 1	*564	-	-	-	-	-	-	-
Stage 2	*384	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	* 757	-	331	597	354	-	-
HCM Lane V/C Ratio	0.079	-	0.054	0.065	-	-	-
HCM Control Delay (s)	10.2	-	16.5	11.5	0	-	-
HCM Lane LOS	B	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	0.2	0	-	-

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

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	6	6	1	4	10	16	0	2	11	5	0	9
Future Vol, veh/h	6	6	1	4	10	16	0	2	11	5	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	8	8	1	5	13	21	0	3	14	7	0	12

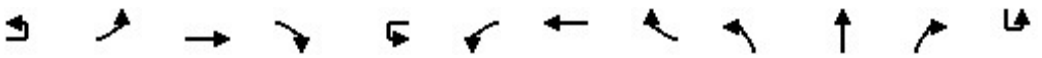
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	34	0	0	9	0	0	65	69	9	67	59	24
Stage 1	-	-	-	-	-	-	25	25	-	34	34	-
Stage 2	-	-	-	-	-	-	40	44	-	33	25	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	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	1591	-	-	1624	-	-	934	825	1079	931	836	1058
Stage 1	-	-	-	-	-	-	998	878	-	987	871	-
Stage 2	-	-	-	-	-	-	980	862	-	988	878	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1591	-	-	1624	-	-	918	818	1079	911	829	1058
Mov Cap-2 Maneuver	-	-	-	-	-	-	918	818	-	911	829	-
Stage 1	-	-	-	-	-	-	993	874	-	982	868	-
Stage 2	-	-	-	-	-	-	966	859	-	967	874	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.4	1	8.6	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1029	1591	-	-	1624	-	-	1000
HCM Lane V/C Ratio	0.017	0.005	-	-	0.003	-	-	0.018
HCM Control Delay (s)	8.6	7.3	0	-	7.2	0	-	8.7
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Capacity Analysis Summary Sheets

Year 2030 No-Build Weekday Morning Peak Hour



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	1	138	530	195	54	188	528	136	247	1014	223	1
Future Volume (vph)	1	138	530	195	54	188	528	136	247	1014	223	1
Ideal Flow (vphpl)	1900	1900	2000	1900	1900	1900	2000	1900	1900	2000	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%				0%			0%		
Storage Length (ft)		155		400		180		420	310		170	
Storage Lanes		2		1		2		1	2		1	
Taper Length (ft)		245				290			300			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.91	1.00	0.91
Ped Bike Factor												
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3368	3689	1538	0	3339	3585	1495	3400	5151	1583	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3368	3689	1538	0	3339	3585	1495	3400	5151	1583	0
Right Turn on Red				No				No			No	
Satd. Flow (RTOR)												
Link Speed (mph)			40				40			40		
Link Distance (ft)			1885				944			1415		
Travel Time (s)			32.1				16.1			24.1		
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	3%	5%	8%	4%	6%	8%	3%	6%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%				0%			0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	153	582	214	0	266	580	149	271	1114	245	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot
Protected Phases	7!	7	4	5!	3!	3	8	1!	5	2	3!	1!
Permitted Phases				4				8			2	
Detector Phase	7	7	4	5	3	3	8	1	5	2	3	1
Switch Phase												
Minimum Initial (s)	3.0	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0
Minimum Split (s)	7.5	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5	21.0	7.5	7.5
Total Split (s)	16.0	16.0	30.0	21.0	22.0	22.0	36.0	21.0	21.0	47.0	22.0	21.0
Total Split (%)	13.3%	13.3%	25.0%	17.5%	18.3%	18.3%	30.0%	17.5%	17.5%	39.2%	18.3%	17.5%
Yellow Time (s)	3.5	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5
All-Red Time (s)	1.0	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.5	6.0	4.5		4.5	6.0	4.5	4.5	6.0	4.5	
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	None	None	None	Min	None	None	C-Min	None	None
Act Effct Green (s)		10.2	24.5	44.8		14.5	28.8	48.3	14.3	46.5	67.1	
Actuated g/C Ratio		0.08	0.20	0.37		0.12	0.24	0.40	0.12	0.39	0.56	

Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	203	744	84
Future Volume (vph)	203	744	84
Ideal Flow (vphpl)	1900	2000	1900
Lane Width (ft)	12	12	12
Grade (%)		0%	
Storage Length (ft)	190		135
Storage Lanes	2		1
Taper Length (ft)	280		
Lane Util. Factor	0.97	0.91	1.00
Ped Bike Factor			
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3214	5009	1524
Flt Permitted	0.950		
Satd. Flow (perm)	3214	5009	1524
Right Turn on Red			No
Satd. Flow (RTOR)			
Link Speed (mph)		40	
Link Distance (ft)		839	
Travel Time (s)		14.3	
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor	0.91	0.91	0.91
Growth Factor	100%	100%	100%
Heavy Vehicles (%)	9%	9%	6%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Mid-Block Traffic (%)		0%	
Shared Lane Traffic (%)			
Lane Group Flow (vph)	224	818	92
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7!
Permitted Phases			6
Detector Phase	1	6	7
Switch Phase			
Minimum Initial (s)	3.0	15.0	3.0
Minimum Split (s)	7.5	21.0	7.5
Total Split (s)	21.0	47.0	16.0
Total Split (%)	17.5%	39.2%	13.3%
Yellow Time (s)	3.5	4.0	3.5
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Recall Mode	None	C-Min	None
Act Effct Green (s)	13.4	45.6	61.8
Actuated g/C Ratio	0.11	0.38	0.52

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
v/c Ratio		0.53	0.77	0.37		0.66	0.67	0.25	0.67	0.56	0.28	
Control Delay		88.1	33.6	13.4		58.2	45.5	24.1	58.8	31.0	15.5	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		88.1	33.6	13.4		58.2	45.5	24.1	58.8	31.0	15.5	
LOS		F	C	B		E	D	C	E	C	B	
Approach Delay			37.8				45.7			33.3		
Approach LOS			D				D			C		
Queue Length 50th (ft)		64	168	56		102	211	73	104	253	99	
Queue Length 95th (ft)		0	285	145		144	275	118	147	314	153	
Internal Link Dist (ft)			1805				864			1335		
Turn Bay Length (ft)		155		400		180		420	310		170	
Base Capacity (vph)		322	768	602		486	900	639	467	1996	923	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.48	0.76	0.36		0.55	0.64	0.23	0.58	0.56	0.27	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 37.0 Intersection LOS: D
Intersection Capacity Utilization 62.8% ICU Level of Service B
Analysis Period (min) 15
! Phase conflict between lane groups.

Splits and Phases: 1: LaGrange Road & 159th Street

Lane Group	SBL	SBT	SBR
v/c Ratio	0.62	0.43	0.12
Control Delay	58.4	29.3	16.6
Queue Delay	0.0	0.0	0.0
Total Delay	58.4	29.3	16.6
LOS	E	C	B
Approach Delay		34.0	
Approach LOS		C	
Queue Length 50th (ft)	86	177	37
Queue Length 95th (ft)	125	223	69
Internal Link Dist (ft)		759	
Turn Bay Length (ft)	190		135
Base Capacity (vph)	441	1904	801
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.51	0.43	0.11

Intersection Summary

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	122	796	7	29	692	136	16	1	7	103	20
Future Volume (vph)	3	122	796	7	29	692	136	16	1	7	103	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%			0%			0%			0%
Storage Length (ft)		275		0	400		195	290		0	160	
Storage Lanes		1		0	2		1	1		1	1	
Taper Length (ft)		165			280			95			100	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.999				0.850			0.850		
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1805	3465	0	3367	3654	1599	1517	2000	1615	1787	2000
Flt Permitted		0.950			0.950			0.743			0.697	
Satd. Flow (perm)	0	1805	3465	0	3367	3654	1599	1186	2000	1615	1311	2000
Right Turn on Red				No			No			No		
Satd. Flow (RTOR)												
Link Speed (mph)			40			40			30			30
Link Distance (ft)			926			1885			890			503
Travel Time (s)			15.8			32.1			20.2			11.4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	14%	4%	4%	1%	19%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%			0%			0%			0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	134	864	0	31	744	146	17	1	8	111	22
Turn Type	Prot	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5!	5	2		1	6		7	4	1	3	8
Permitted Phases							6	4		4	8	
Detector Phase	5	5	2		1	6	6	7	4	1	3	8
Switch Phase												
Minimum Initial (s)	3.0	3.0	8.0		3.0	8.0	8.0	3.0	5.0	3.0	3.0	5.0
Minimum Split (s)	9.5	9.5	22.5		9.5	22.5	22.5	9.5	18.0	9.5	9.5	18.0
Total Split (s)	18.0	18.0	66.0		18.0	66.0	66.0	18.0	18.0	18.0	18.0	18.0
Total Split (%)	15.0%	15.0%	55.0%		15.0%	55.0%	55.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Yellow Time (s)	3.5	3.5	4.5		3.5	4.5	4.5	3.5	4.0	3.5	3.5	4.0
All-Red Time (s)	1.0	1.0	1.5		1.0	1.5	1.5	0.0	2.0	1.0	0.0	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)		4.5	6.0		4.5	6.0	6.0	3.5	6.0	4.5	3.5	6.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Min		None	C-Min	C-Min	None	Max	None	None	Max
Act Effct Green (s)		11.0	53.8		3.9	43.7	43.7	44.4	38.1	48.0	51.4	45.6
Actuated g/C Ratio		0.09	0.45		0.03	0.36	0.36	0.37	0.32	0.40	0.43	0.38

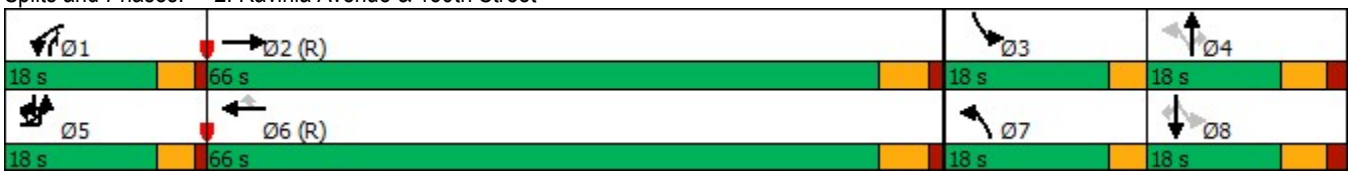
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	50
Future Volume (vph)	50
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	165
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.93
Growth Factor	100%
Heavy Vehicles (%)	2%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	54
Turn Type	pm+ov
Protected Phases	5!
Permitted Phases	8
Detector Phase	5
Switch Phase	
Minimum Initial (s)	3.0
Minimum Split (s)	9.5
Total Split (s)	18.0
Total Split (%)	15.0%
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	62.6
Actuated g/C Ratio	0.52

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
v/c Ratio		0.81	0.56		0.29	0.56	0.25	0.04	0.00	0.01	0.19	0.03
Control Delay		87.2	25.9		38.7	49.3	42.5	23.6	35.0	27.0	23.6	28.7
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		87.2	25.9		38.7	49.3	42.5	23.6	35.0	27.0	23.6	28.7
LOS		F	C		D	D	D	C	C	C	C	C
Approach Delay			34.2			47.8			25.1			22.3
Approach LOS			C			D			C			C
Queue Length 50th (ft)		103	281		9	321	118	7	1	4	49	10
Queue Length 95th (ft)		#181	290		m17	382	m183	25	6	17	103	34
Internal Link Dist (ft)			846			1805			810			423
Turn Bay Length (ft)		275			400		195	290			160	
Base Capacity (vph)		203	1732		378	1827	799	546	636	775	618	760
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		0.66	0.50		0.08	0.41	0.18	0.03	0.00	0.01	0.18	0.03

Intersection Summary

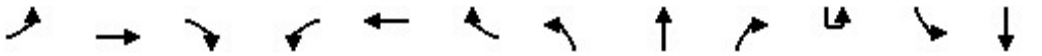
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 35 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 38.9 Intersection LOS: D
Intersection Capacity Utilization 51.7% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
! Phase conflict between lane groups.

Splits and Phases: 2: Ravinia Avenue & 159th Street



Lane Group	SBR
v/c Ratio	0.07
Control Delay	17.0
Queue Delay	0.0
Total Delay	17.0
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	17
Queue Length 95th (ft)	51
Internal Link Dist (ft)	
Turn Bay Length (ft)	165
Base Capacity (vph)	859
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.06

Intersection Summary



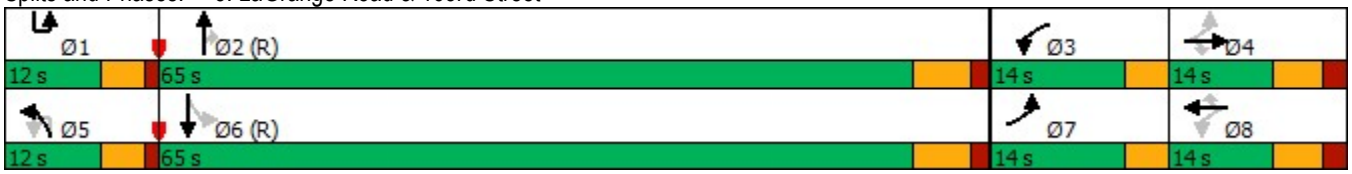
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	35	1	9	58	4	42	4	1341	65	16	53	970
Future Volume (vph)	35	1	9	58	4	42	4	1341	65	16	53	970
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	125		0	0		0	195		195		250	
Storage Lanes	1		1	1		1	1		1		2	
Taper Length (ft)	90			25			195				300	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.97	0.91
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.998
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1752	2000	1615	1752	2000	1615	1805	5200	1615	0	3502	4797
Flt Permitted				0.755			0.950				0.175	
Satd. Flow (perm)	1845	2000	1615	1393	2000	1615	1805	5200	1615	0	645	4797
Right Turn on Red			No			No			No			
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			45				45
Link Distance (ft)		562			628			1162				1404
Travel Time (s)		19.2			21.4			17.6				21.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	0%	3%	0%	0%	0%	5%	0%	0%	0%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	1	10	62	4	45	4	1427	69	0	73	1043
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	Perm	NA
Protected Phases	7	4		3	8		5	2		1		6
Permitted Phases	4		4	8		8			2		6	
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	15.0	15.0	3.0	15.0	15.0
Minimum Split (s)	9.5	14.0	14.0	9.5	14.0	14.0	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	14.0	14.0	14.0	14.0	14.0	14.0	12.0	65.0	65.0	12.0	65.0	65.0
Total Split (%)	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	11.4%	61.9%	61.9%	11.4%	61.9%	61.9%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0	4.5	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
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	C-Min	None	C-Min	C-Min
Act Effct Green (s)	7.2	5.8	5.8	12.8	6.3	6.3	3.2	84.5	84.5		82.8	82.8
Actuated g/C Ratio	0.07	0.06	0.06	0.12	0.06	0.06	0.03	0.80	0.80		0.79	0.79

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	0.91
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.94
Growth Factor	100%
Heavy Vehicles (%)	0%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
v/c Ratio	0.31	0.01	0.11	0.30	0.03	0.47	0.07	0.34	0.05		0.14	0.28
Control Delay	49.0	46.0	49.0	41.7	45.8	63.2	52.0	4.3	4.0		6.3	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	49.0	46.0	49.0	41.7	45.8	63.2	52.0	4.3	4.0		6.3	4.9
LOS	D	D	D	D	D	E	D	A	A		A	A
Approach Delay		48.9			50.6			4.4				5.0
Approach LOS		D			D			A				A
Queue Length 50th (ft)	25	1	7	37	3	30	3	100	10		5	68
Queue Length 95th (ft)	48	6	23	72	13	66	14	150	26		21	139
Internal Link Dist (ft)		482			548			1082				1324
Turn Bay Length (ft)	125						195		195		250	
Base Capacity (vph)	215	155	125	253	155	125	128	4182	1299		508	3782
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.17	0.01	0.08	0.25	0.03	0.36	0.03	0.34	0.05		0.14	0.28

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 64 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 50.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: LaGrange Road & 163rd Street



Lane Group	SBR
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	24	1	7	1	0	15	2	24	1379	19	5	31	996	29
Future Vol, veh/h	24	1	7	1	0	15	2	24	1379	19	5	31	996	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	0	0	-	-	-	190	-	-	-	265	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	5	0	0	3	6	0
Mvmt Flow	26	1	8	1	0	16	2	26	1515	21	5	34	1095	32

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1851	2781	564	2099	2787	768	822	1127	0	0	1121	1536	0	0
Stage 1	1189	1189	-	1582	1582	-	-	-	-	-	-	-	-	-
Stage 2	662	1592	-	517	1205	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.6	5.3	-	-	5.6	5.36	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	2.3	3.1	-	-	2.3	3.13	-	-
Pot Cap-1 Maneuver	*80	*19	*700	*56	*19	*594	*1187	830	-	-	*1007	*740	-	-
Stage 1	*582	*596	-	*610	*579	-	-	-	-	-	-	-	-	-
Stage 2	*610	*579	-	*718	*584	-	-	-	-	-	-	-	-	-
Platoon blocked, %			1			1	1	1	-	-	1	1	-	-
Mov Cap-1 Maneuver	*73	*17	*700	*52	*17	*594	*849	849	-	-	*766	*766	-	-
Mov Cap-2 Maneuver	*369	*348	-	*405	*348	-	-	-	-	-	-	-	-	-
Stage 1	*563	*565	-	*589	*560	-	-	-	-	-	-	-	-	-
Stage 2	*573	*560	-	*672	*554	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.3	11.4	0.2	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	849	-	-	369	348	700	405	594	* 766	-	-
HCM Lane V/C Ratio	0.034	-	-	0.071	0.003	0.011	0.003	0.028	0.052	-	-
HCM Control Delay (s)	9.4	-	-	15.5	15.4	10.2	13.9	11.2	10	-	-
HCM Lane LOS	A	-	-	C	C	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	0	0.1	0.2	-	-

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

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	4	12	46	1406	0	1023	14
Future Vol, veh/h	4	12	46	1406	0	1023	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	50	0	205	-	200	-	-
Veh in Median Storage, #	2	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	4	0	8	0
Mvmt Flow	4	13	48	1465	0	1066	15

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1756	541	1081	0	1069	-	0
Stage 1	1074	-	-	-	-	-	-
Stage 2	682	-	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.3	-	5.6	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	3.1	-	2.3	-	-
Pot Cap-1 Maneuver	*281	*694	*873	-	410	-	-
Stage 1	*712	-	-	-	-	-	-
Stage 2	*426	-	-	-	-	-	-
Platoon blocked, %	1	1	1	-		-	-
Mov Cap-1 Maneuver	*265	*694	*873	-	410	-	-
Mov Cap-2 Maneuver	*389	-	-	-	-	-	-
Stage 1	*672	-	-	-	-	-	-
Stage 2	*426	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	* 873	-	389	694	410	-	-
HCM Lane V/C Ratio	0.055	-	0.011	0.018	-	-	-
HCM Control Delay (s)	9.4	-	14.4	10.3	0	-	-
HCM Lane LOS	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0	0.1	0	-	-

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	6	6	2	8	26	10	0	0	1	4	0	2
Future Vol, veh/h	6	6	2	8	26	10	0	0	1	4	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	17	0	0	0	0	0	0	0	0	0	0	50
Mvmt Flow	7	7	2	10	32	12	0	0	1	5	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	44	0	0	9	0	0	81	86	8	81	81	38
Stage 1	-	-	-	-	-	-	22	22	-	58	58	-
Stage 2	-	-	-	-	-	-	59	64	-	23	23	-
Critical Hdwy	4.27	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.7
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	2.353	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.75
Pot Cap-1 Maneuver	1473	-	-	1624	-	-	912	808	1080	912	813	912
Stage 1	-	-	-	-	-	-	1002	881	-	959	851	-
Stage 2	-	-	-	-	-	-	958	846	-	1000	880	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1473	-	-	1624	-	-	902	799	1080	903	804	912
Mov Cap-2 Maneuver	-	-	-	-	-	-	902	799	-	903	804	-
Stage 1	-	-	-	-	-	-	997	877	-	954	846	-
Stage 2	-	-	-	-	-	-	950	841	-	994	876	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	1.3	8.3	9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1080	1473	-	-	1624	-	-	906
HCM Lane V/C Ratio	0.001	0.005	-	-	0.006	-	-	0.008
HCM Control Delay (s)	8.3	7.5	0	-	7.2	0	-	9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Capacity Analysis Summary Sheets

Year 2030 No-Build Weekday Evening Peak Hour

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	224	689	400	43	315	798	230	3	379	1215	283	1
Future Volume (vph)	224	689	400	43	315	798	230	3	379	1215	283	1
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	2000	1900	1900	1900	2000	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%				0%				0%		
Storage Length (ft)	155		400		180		420		310		170	
Storage Lanes	2		1		2		1		2		1	
Taper Length (ft)	245				290				300			
Lane Util. Factor	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.91	0.97	0.91	1.00	0.91
Ped Bike Factor												
Frt			0.850				0.850				0.850	
Flt Protected	0.950				0.950				0.950			
Satd. Flow (prot)	3467	3762	1599	0	3471	3725	1599	0	3434	5353	1599	0
Flt Permitted	0.950				0.950				0.950			
Satd. Flow (perm)	3467	3762	1599	0	3471	3725	1599	0	3434	5353	1599	0
Right Turn on Red			No				No				No	
Satd. Flow (RTOR)												
Link Speed (mph)		40				40				40		
Link Distance (ft)		1885				944				1415		
Travel Time (s)		32.1				16.1				24.1		
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	0%	1%	2%	1%	0%	2%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%				0%				0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	231	710	412	0	369	823	237	0	394	1253	292	0
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot
Protected Phases	7	4	5!	3!	3	8	1!	5!	5	2	3!	1!
Permitted Phases			4				8				2	
Detector Phase	7	4	5	3	3	8	1	5	5	2	3	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0
Minimum Split (s)	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5
Total Split (s)	17.0	32.0	20.0	23.0	23.0	38.0	24.0	20.0	20.0	51.0	23.0	24.0
Total Split (%)	13.1%	24.6%	15.4%	17.7%	17.7%	29.2%	18.5%	15.4%	15.4%	39.2%	17.7%	18.5%
Yellow Time (s)	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5
All-Red Time (s)	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5	6.0	4.5		4.5	6.0	4.5		4.5	6.0	4.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	None	Min	None	None	None	C-Min	None	None
Act Effct Green (s)	12.0	26.9	48.6		17.4	32.2	56.7		15.8	46.3	69.7	
Actuated g/C Ratio	0.09	0.21	0.37		0.13	0.25	0.44		0.12	0.36	0.54	

Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	389	1320	246
Future Volume (vph)	389	1320	246
Ideal Flow (vphpl)	1900	2000	1900
Lane Width (ft)	12	12	12
Grade (%)		0%	
Storage Length (ft)	190		135
Storage Lanes	2		1
Taper Length (ft)	280		
Lane Util. Factor	0.97	0.91	1.00
Ped Bike Factor			
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3467	5353	1568
Flt Permitted	0.950		
Satd. Flow (perm)	3467	5353	1568
Right Turn on Red			No
Satd. Flow (RTOR)			
Link Speed (mph)		40	
Link Distance (ft)		839	
Travel Time (s)		14.3	
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor	0.97	0.97	0.97
Growth Factor	100%	100%	100%
Heavy Vehicles (%)	1%	2%	3%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Mid-Block Traffic (%)		0%	
Shared Lane Traffic (%)			
Lane Group Flow (vph)	402	1361	254
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7!
Permitted Phases			6
Detector Phase	1	6	7
Switch Phase			
Minimum Initial (s)	3.0	15.0	3.0
Minimum Split (s)	7.5	21.0	7.5
Total Split (s)	24.0	55.0	17.0
Total Split (%)	18.5%	42.3%	13.1%
Yellow Time (s)	3.5	4.0	3.5
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Recall Mode	None	C-Min	None
Act Effct Green (s)	18.4	49.0	67.0
Actuated g/C Ratio	0.14	0.38	0.52

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
v/c Ratio	0.72	0.91	0.69		0.80	0.89	0.34		0.95	0.66	0.34	
Control Delay	87.8	52.6	29.6		67.9	60.3	25.8		89.0	34.7	16.0	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	87.8	52.6	29.6		67.9	60.3	25.8		89.0	34.7	16.0	
LOS	F	D	C		E	E	C		F	C	B	
Approach Delay		51.6				56.5				42.9		
Approach LOS		D				E				D		
Queue Length 50th (ft)	106	262	311		156	355	129		174	261	113	
Queue Length 95th (ft)	151	#423	426		211	#465	194		#276	338	157	
Internal Link Dist (ft)		1805				864				1335		
Turn Bay Length (ft)	155		400		180		420		310		170	
Base Capacity (vph)	333	777	598		493	922	710		416	1907	870	
Starvation Cap Reductn	0	0	0		0	0	0		0	0	0	
Spillback Cap Reductn	0	0	0		0	0	0		0	0	0	
Storage Cap Reductn	0	0	0		0	0	0		0	0	0	
Reduced v/c Ratio	0.69	0.91	0.69		0.75	0.89	0.33		0.95	0.66	0.34	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 46.8 Intersection LOS: D
Intersection Capacity Utilization 86.4% 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.
! Phase conflict between lane groups.

Splits and Phases: 1: LaGrange Road & 159th Street

Lane Group	SBL	SBT	SBR
v/c Ratio	0.82	0.67	0.31
Control Delay	68.2	35.9	19.4
Queue Delay	0.0	0.0	0.0
Total Delay	68.2	35.9	19.4
LOS	E	D	B
Approach Delay		40.3	
Approach LOS		D	
Queue Length 50th (ft)	170	348	119
Queue Length 95th (ft)	227	402	179
Internal Link Dist (ft)		759	
Turn Bay Length (ft)	190		135
Base Capacity (vph)	520	2017	814
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.77	0.67	0.31

Intersection Summary

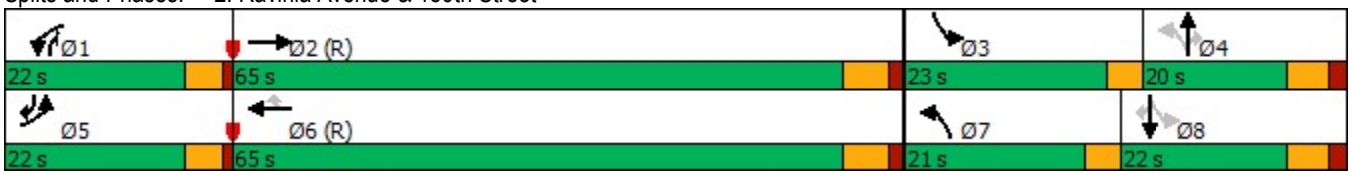
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	928	15	282	772	181	115	66	234	178	121	146
Future Volume (vph)	167	928	15	282	772	181	115	66	234	178	121	146
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	275		0	400		195	290		0	160		165
Storage Lanes	1		0	2		1	1		1	1		1
Taper Length (ft)	165			280			95			100		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3564	0	3502	3654	1599	1787	2000	1615	1787	2000	1599
Flt Permitted	0.950			0.950			0.676			0.639		
Satd. Flow (perm)	1805	3564	0	3502	3654	1599	1272	2000	1615	1202	2000	1599
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		926			1885			890			503	
Travel Time (s)		15.8			32.1			20.2			11.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	7%	0%	4%	1%	1%	0%	0%	1%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	983	0	294	804	189	120	69	244	185	126	152
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		7	4	1	3	8	5
Permitted Phases						6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	5.0	3.0	3.0	5.0	3.0
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	18.0	9.5	9.5	18.0	9.5
Total Split (s)	22.0	65.0		22.0	65.0	65.0	21.0	20.0	22.0	23.0	22.0	22.0
Total Split (%)	16.9%	50.0%		16.9%	50.0%	50.0%	16.2%	15.4%	16.9%	17.7%	16.9%	16.9%
Yellow Time (s)	3.5	4.5		3.5	4.5	4.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	0.0	2.0	1.0	0.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0		4.5	6.0	6.0	3.5	6.0	4.5	3.5	6.0	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	Max	None	None	Max	None
Act Effct Green (s)	14.6	53.5		13.5	52.5	52.5	41.8	30.5	50.0	48.6	34.2	54.8
Actuated g/C Ratio	0.11	0.41		0.10	0.40	0.40	0.32	0.23	0.38	0.37	0.26	0.42

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.87	0.67		0.81	0.55	0.29	0.27	0.15	0.39	0.37	0.24	0.23
Control Delay	92.1	33.2		49.6	51.7	46.0	31.5	46.3	33.9	32.7	43.2	27.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.1	33.2		49.6	51.7	46.0	31.5	46.3	33.9	32.7	43.2	27.4
LOS	F	C		D	D	D	C	D	C	C	D	C
Approach Delay		42.1			50.4			35.2			33.8	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	145	346		131	366	161	68	47	148	108	84	80
Queue Length 95th (ft)	#241	393		m149	m408	m187	128	103	259	189	162	153
Internal Link Dist (ft)		846			1805			810			423	
Turn Bay Length (ft)	275			400		195	290			160		165
Base Capacity (vph)	242	1617		471	1658	725	536	469	670	540	526	709
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.61		0.62	0.48	0.26	0.22	0.15	0.36	0.34	0.24	0.21

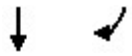
Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 41 (32%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 43.3 Intersection LOS: D
Intersection Capacity Utilization 65.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Ravinia Avenue & 159th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	65	4	21	66	10	74	1	20	1574	73	16	81
Future Volume (vph)	65	4	21	66	10	74	1	20	1574	73	16	81
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	2000	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%				0%			
Storage Length (ft)	125		0	0		0		195		195		250
Storage Lanes	1		1	1		1		1		1		2
Taper Length (ft)	90			25				195				300
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	1.00	0.91	0.97
Ped Bike Factor												
Frt			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	0	1805	5353	1615	0	3502
Flt Permitted	0.751			0.621				0.909				0.138
Satd. Flow (perm)	1427	2000	1615	1180	2000	1615	0	1727	5353	1615	0	509
Right Turn on Red			No			No				No		
Satd. Flow (RTOR)												
Link Speed (mph)		20			20				45			
Link Distance (ft)		562			628				1162			
Travel Time (s)		19.2			21.4				17.6			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	4	22	69	10	77	0	22	1640	76	0	101
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	custom	Prot	NA	Perm	Prot	Perm
Protected Phases	7	4		3	8			5	2		1	
Permitted Phases	4		4	8		8	5			2		6
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	15.0	15.0	3.0	15.0
Minimum Split (s)	9.5	14.0	14.0	9.5	14.0	14.0	9.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	15.0	15.0	15.0	15.0	15.0	15.0	13.0	13.0	87.0	87.0	13.0	87.0
Total Split (%)	11.5%	11.5%	11.5%	11.5%	11.5%	11.5%	10.0%	10.0%	66.9%	66.9%	10.0%	66.9%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	4.5	4.5	3.5	4.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	1.0	1.0	1.5	1.5	1.0	1.5
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	6.0	3.5	6.0	6.0		4.5	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	16.6	9.3	9.3	17.5	8.8	8.8		5.8	99.9	99.9		92.8
Actuated g/C Ratio	0.13	0.07	0.07	0.13	0.07	0.07		0.04	0.77	0.77		0.71



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1781	58
Future Volume (vph)	1781	58
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor		
Frt	0.995	
Flt Protected		
Satd. Flow (prot)	5108	0
Flt Permitted		
Satd. Flow (perm)	5108	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	45	
Link Distance (ft)	1404	
Travel Time (s)	21.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.96	0.96
Growth Factor	100%	100%
Heavy Vehicles (%)	1%	2%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1915	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	22.5	
Total Split (s)	87.0	
Total Split (%)	66.9%	
Yellow Time (s)	4.5	
All-Red Time (s)	1.5	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	C-Min	
Act Effct Green (s)	92.8	
Actuated g/C Ratio	0.71	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
v/c Ratio	0.34	0.03	0.19	0.34	0.07	0.71		0.29	0.40	0.06		0.28
Control Delay	51.3	54.5	59.2	50.4	56.3	90.5		68.3	6.0	4.8		9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	51.3	54.5	59.2	50.4	56.3	90.5		68.3	6.0	4.8		9.2
LOS	D	D	E	D	E	F		E	A	A		A
Approach Delay		53.3			70.6				6.7			
Approach LOS		D			E				A			
Queue Length 50th (ft)	50	3	17	51	8	64		18	156	14		10
Queue Length 95th (ft)	90	15	46	91	26	118		47	213	32		m19
Internal Link Dist (ft)		482			548				1082			
Turn Bay Length (ft)	125							195		195		250
Base Capacity (vph)	245	167	135	251	153	123		112	4115	1241		364
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	0.28	0.02	0.16	0.27	0.07	0.63		0.20	0.40	0.06		0.28

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 10.9 Intersection LOS: B
Intersection Capacity Utilization 63.0% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: LaGrange Road & 163rd Street

Lane Group	SBT	SBR
v/c Ratio	0.53	
Control Delay	7.9	
Queue Delay	0.0	
Total Delay	7.9	
LOS	A	
Approach Delay	8.0	
Approach LOS	A	
Queue Length 50th (ft)	172	
Queue Length 95th (ft)	208	
Internal Link Dist (ft)	1324	
Turn Bay Length (ft)		
Base Capacity (vph)	3657	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.52	

Intersection Summary

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	29	1	23	8	1	49	3	37	1758	24	12	66	1821	71
Future Vol, veh/h	29	1	23	8	1	49	3	37	1758	24	12	66	1821	71
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	0	0	-	-	-	190	-	-	-	265	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Mvmt Flow	31	1	25	9	1	53	3	40	1890	26	13	71	1958	76

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	3007	4166	1017	2941	4191	958	1485	2034	0	0	1399	1916	0	0
Stage 1	2164	2164	-	1989	1989	-	-	-	-	-	-	-	-	-
Stage 2	843	2002	-	952	2202	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.6	5.3	-	-	5.6	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	2.3	3.1	-	-	2.3	3.1	-	-
Pot Cap-1 Maneuver	*62	2	*497	*74	2	*517	*842	*625	-	-	*876	*650	-	-
Stage 1	*398	413	-	*515	495	-	-	-	-	-	-	-	-	-
Stage 2	*530	484	-	*510	385	-	-	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	1	-	-	1	1	-	-
Mov Cap-1 Maneuver	*47	2	*497	*60	2	*517	*636	*636	-	-	*669	*669	-	-
Mov Cap-2 Maneuver	*246	231	-	*285	224	-	-	-	-	-	-	-	-	-
Stage 1	*371	361	-	*480	461	-	-	-	-	-	-	-	-	-
Stage 2	*443	451	-	*422	336	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.7	13.7	0.2	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 636	-	-	246	231	497	285	504	* 669	-	-
HCM Lane V/C Ratio	0.068	-	-	0.127	0.005	0.05	0.03	0.107	0.125	-	-
HCM Control Delay (s)	11.1	-	-	21.7	20.7	12.6	18	13	11.2	-	-
HCM Lane LOS	B	-	-	C	C	B	C	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0	0.2	0.1	0.4	0.4	-	-

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

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	14	56	52	1649	5	1844	20
Future Vol, veh/h	14	56	52	1649	5	1844	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	50	0	205	-	200	-	-
Veh in Median Storage, #	2	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	0	1	0
Mvmt Flow	15	61	57	1792	5	2004	22

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	2856	1013	2026	0	1308	-	0
Stage 1	2025	-	-	-	-	-	-
Stage 2	831	-	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.3	-	5.6	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	3.1	-	2.3	-	-
Pot Cap-1 Maneuver	*101	*497	*625	-	302	-	-
Stage 1	*510	-	-	-	-	-	-
Stage 2	*356	-	-	-	-	-	-
Platoon blocked, %	1	1	1	-		-	-
Mov Cap-1 Maneuver	*90	*497	*625	-	302	-	-
Mov Cap-2 Maneuver	*275	-	-	-	-	-	-
Stage 1	*463	-	-	-	-	-	-
Stage 2	*350	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.4	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	* 625	-	275	497	302	-	-
HCM Lane V/C Ratio	0.09	-	0.055	0.122	0.018	-	-
HCM Control Delay (s)	11.3	-	18.9	13.3	17.1	-	-
HCM Lane LOS	B	-	C	B	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	0.4	0.1	-	-

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

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	10	1	4	6	16	0	6	12	15	1	6
Future Vol, veh/h	3	10	1	4	6	16	0	6	12	15	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	13	1	5	8	21	0	8	16	19	1	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	29	0	0	14	0	0	55	61	14	63	51	19
Stage 1	-	-	-	-	-	-	22	22	-	29	29	-
Stage 2	-	-	-	-	-	-	33	39	-	34	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	1597	-	-	1617	-	-	948	834	1072	936	844	1065
Stage 1	-	-	-	-	-	-	1002	881	-	993	875	-
Stage 2	-	-	-	-	-	-	988	866	-	987	881	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1597	-	-	1617	-	-	936	829	1072	912	839	1065
Mov Cap-2 Maneuver	-	-	-	-	-	-	936	829	-	912	839	-
Stage 1	-	-	-	-	-	-	999	878	-	990	872	-
Stage 2	-	-	-	-	-	-	976	863	-	961	878	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	1.1	8.8	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	977	1597	-	-	1617	-	-	945
HCM Lane V/C Ratio	0.024	0.002	-	-	0.003	-	-	0.03
HCM Control Delay (s)	8.8	7.3	0	-	7.2	0	-	8.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Capacity Analysis Summary Sheets

Year 2030 No-Build Saturday Midday Peak Hour

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	244	659	270	69	245	637	333	371	1141	336	3	554
Future Volume (vph)	244	659	270	69	245	637	333	371	1141	336	3	554
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	2000	1900	1900	2000	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%				0%			0%			
Storage Length (ft)	155		400		180		420	310		170		190
Storage Lanes	2		1		2		1	2		1		2
Taper Length (ft)	245				290			300				280
Lane Util. Factor	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.91	1.00	0.91	0.97
Ped Bike Factor												
Frt			0.850				0.850			0.850		
Flt Protected	0.950				0.950			0.950				0.950
Satd. Flow (prot)	3502	3800	1615	0	3422	3762	1599	3433	5406	1599	0	3502
Flt Permitted	0.950				0.950			0.950				0.950
Satd. Flow (perm)	3502	3800	1615	0	3422	3762	1599	3433	5406	1599	0	3502
Right Turn on Red			No				No			No		
Satd. Flow (RTOR)												
Link Speed (mph)		40				40			40			
Link Distance (ft)		1885				944			1415			
Travel Time (s)		32.1				16.1			24.1			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	3%	1%	1%	2%	1%	1%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%				0%			0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	249	672	276	0	320	650	340	379	1164	343	0	568
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	Prot
Protected Phases	7	4	5!	3!	3	8	1!	5	2	3!	1!	1
Permitted Phases			4				8			2		
Detector Phase	7	4	5	3	3	8	1	5	2	3	1	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	3.0
Minimum Split (s)	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5	21.0	7.5	7.5	7.5
Total Split (s)	18.0	32.0	25.0	24.0	24.0	38.0	28.0	25.0	46.0	24.0	28.0	28.0
Total Split (%)	13.8%	24.6%	19.2%	18.5%	18.5%	29.2%	21.5%	19.2%	35.4%	18.5%	21.5%	21.5%
Yellow Time (s)	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5	3.5
All-Red Time (s)	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	6.0	4.5		4.5	6.0	4.5	4.5	6.0	4.5		4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	None	Min	None	None	C-Min	None	None	None
Act Effct Green (s)	12.8	27.3	51.8		17.0	31.4	60.5	18.5	41.7	64.6		23.1
Actuated g/C Ratio	0.10	0.21	0.40		0.13	0.24	0.47	0.14	0.32	0.50		0.18

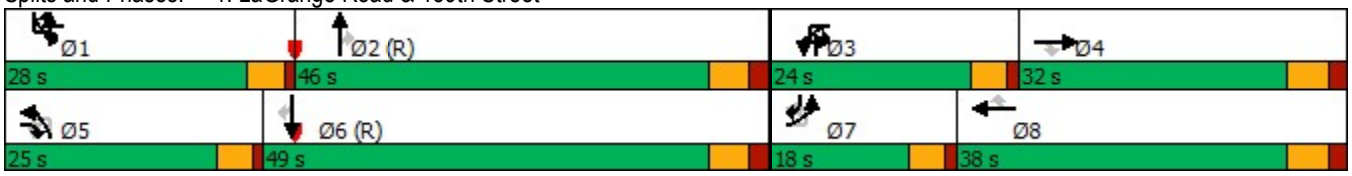
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	923	216
Future Volume (vph)	923	216
Ideal Flow (vphpl)	2000	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		135
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.91	1.00
Ped Bike Factor		
Frt		0.850
Flt Protected		
Satd. Flow (prot)	5406	1615
Flt Permitted		
Satd. Flow (perm)	5406	1615
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	40	
Link Distance (ft)	839	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.98	0.98
Growth Factor	100%	100%
Heavy Vehicles (%)	1%	0%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	942	220
Turn Type	NA	pm+ov
Protected Phases	6	7!
Permitted Phases		6
Detector Phase	6	7
Switch Phase		
Minimum Initial (s)	15.0	3.0
Minimum Split (s)	21.0	7.5
Total Split (s)	49.0	18.0
Total Split (%)	37.7%	13.8%
Yellow Time (s)	4.0	3.5
All-Red Time (s)	2.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	4.5
Lead/Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	C-Min	None
Act Effct Green (s)	46.2	65.0
Actuated g/C Ratio	0.36	0.50

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
v/c Ratio	0.72	0.84	0.43		0.72	0.71	0.46	0.78	0.67	0.43		0.91
Control Delay	87.0	44.6	20.7		63.5	50.1	25.8	73.7	35.7	19.2		72.6
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	87.0	44.6	20.7		63.5	50.1	25.8	73.7	35.7	19.2		72.6
LOS	F	D	C		E	D	C	E	D	B		E
Approach Delay		47.9				47.1			40.3			
Approach LOS		D				D			D			
Queue Length 50th (ft)	113	204	107		134	264	187	168	241	140		243
Queue Length 95th (ft)	159	#379	163		182	332	272	227	375	270		#343
Internal Link Dist (ft)		1805				864			1335			
Turn Bay Length (ft)	155		400		180		420	310		170		190
Base Capacity (vph)	363	797	668		513	929	749	541	1732	825		633
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	0.69	0.84	0.41		0.62	0.70	0.45	0.70	0.67	0.42		0.90

Intersection Summary

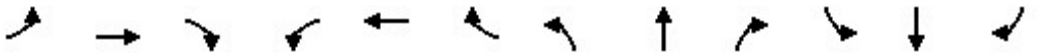
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 44.6 Intersection LOS: D
Intersection Capacity Utilization 80.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
! Phase conflict between lane groups.

Splits and Phases: 1: LaGrange Road & 159th Street



Lane Group	SBT	SBR
v/c Ratio	0.49	0.27
Control Delay	34.4	20.6
Queue Delay	0.0	0.0
Total Delay	34.4	20.6
LOS	C	C
Approach Delay	45.2	
Approach LOS	D	
Queue Length 50th (ft)	232	107
Queue Length 95th (ft)	280	166
Internal Link Dist (ft)	759	
Turn Bay Length (ft)		135
Base Capacity (vph)	1922	816
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.49	0.27

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	841	16	387	533	119	121	70	286	126	132	147
Future Volume (vph)	173	841	16	387	533	119	121	70	286	126	132	147
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	275		0	400		195	290		0	160		165
Storage Lanes	1		0	2		1	1		1	1		1
Taper Length (ft)	165			280			95			100		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3560	0	3467	3762	1599	1805	2000	1615	1805	1980	1615
Flt Permitted	0.950			0.950			0.642			0.704		
Satd. Flow (perm)	1787	3560	0	3467	3762	1599	1220	2000	1615	1338	1980	1615
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		926			1885			890			503	
Travel Time (s)		15.8			32.1			20.2			11.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	6%	1%	1%	1%	0%	0%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	883	0	399	549	123	125	72	295	130	136	152
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		7	4	1	3	8	5
Permitted Phases						6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	5.0	3.0	3.0	5.0	3.0
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	18.0	9.5	9.5	18.0	9.5
Total Split (s)	26.0	59.0		26.0	59.0	59.0	18.0	27.0	26.0	18.0	27.0	26.0
Total Split (%)	20.0%	45.4%		20.0%	45.4%	45.4%	13.8%	20.8%	20.0%	13.8%	20.8%	20.0%
Yellow Time (s)	3.5	4.5		3.5	4.5	4.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	0.0	2.0	1.0	0.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0		4.5	6.0	6.0	3.5	6.0	4.5	3.5	6.0	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	Max	None	None	Max	None
Act Effct Green (s)	15.5	48.6		17.4	50.5	50.5	46.3	34.9	58.3	46.8	35.1	56.6
Actuated g/C Ratio	0.12	0.37		0.13	0.39	0.39	0.36	0.27	0.45	0.36	0.27	0.44

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.84	0.66		0.86	0.38	0.20	0.26	0.13	0.41	0.25	0.25	0.22
Control Delay	85.8	36.4		54.0	45.7	42.2	30.2	41.4	28.0	30.1	42.3	25.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.8	36.4		54.0	45.7	42.2	30.2	41.4	28.0	30.1	42.3	25.3
LOS	F	D		D	D	D	C	D	C	C	D	C
Approach Delay		44.7			48.4			30.5			32.3	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	149	324		182	247	101	69	46	164	72	90	78
Queue Length 95th (ft)	221	374		232	305	m153	129	100	277	133	169	141
Internal Link Dist (ft)		846			1805			810			423	
Turn Bay Length (ft)	275			400		195	290			160		165
Base Capacity (vph)	295	1451		573	1533	651	528	536	774	561	534	778
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.61		0.70	0.36	0.19	0.24	0.13	0.38	0.23	0.25	0.20

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 38 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 42.0 Intersection LOS: D
Intersection Capacity Utilization 65.2% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Ravinia Avenue & 159th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	76	7	10	53	5	54	1	12	1597	62	21	53
Future Volume (vph)	76	7	10	53	5	54	1	12	1597	62	21	53
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	2000	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%				0%			
Storage Length (ft)	125		0	0		0		195		195		250
Storage Lanes	1		1	1		1		1		1		2
Taper Length (ft)	90			25				195				300
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	1.00	0.91	0.97
Ped Bike Factor												
Frt			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	0	1805	5406	1615	0	3452
Flt Permitted	0.754			0.499								0.137
Satd. Flow (perm)	1433	2000	1615	948	2000	1615	0	1900	5406	1615	0	498
Right Turn on Red			No			No				No		
Satd. Flow (RTOR)												
Link Speed (mph)		20			20				45			
Link Distance (ft)		562			628				1162			
Travel Time (s)		19.2			21.4				17.6			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	7	10	54	5	55	0	13	1630	63	0	75
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	custom	Prot	NA	Perm	Prot	Perm
Protected Phases	7	4		3	8			5	2		1	
Permitted Phases	4		4	8		8	5			2		6
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	15.0	15.0	3.0	15.0
Minimum Split (s)	9.5	14.0	14.0	9.5	14.0	14.0	9.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	16.0	15.0	15.0	16.0	15.0	15.0	12.0	12.0	87.0	87.0	12.0	87.0
Total Split (%)	12.3%	11.5%	11.5%	12.3%	11.5%	11.5%	9.2%	9.2%	66.9%	66.9%	9.2%	66.9%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	4.5	4.5	3.5	4.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	1.0	1.0	1.5	1.5	1.0	1.5
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	6.0	3.5	6.0	6.0		4.5	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	14.3	8.9	8.9	15.8	7.5	7.5		4.7	103.8	103.8		99.4
Actuated g/C Ratio	0.11	0.07	0.07	0.12	0.06	0.06		0.04	0.80	0.80		0.76

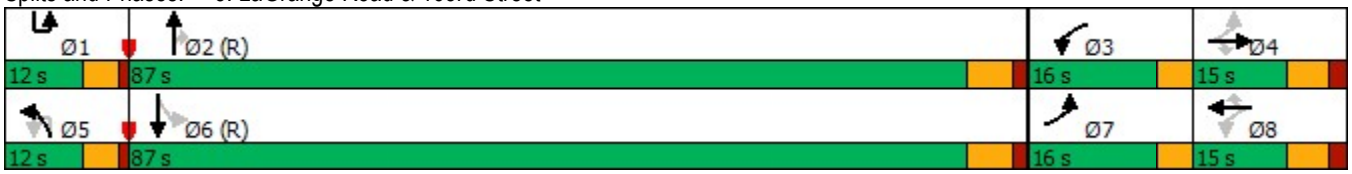
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1441	59
Future Volume (vph)	1441	59
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor		
Frt	0.994	
Flt Protected		
Satd. Flow (prot)	5107	0
Flt Permitted		
Satd. Flow (perm)	5107	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	45	
Link Distance (ft)	1404	
Travel Time (s)	21.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.98	0.98
Growth Factor	100%	100%
Heavy Vehicles (%)	1%	0%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1530	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	22.5	
Total Split (s)	87.0	
Total Split (%)	66.9%	
Yellow Time (s)	4.5	
All-Red Time (s)	1.5	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	C-Min	
Act Effct Green (s)	99.4	
Actuated g/C Ratio	0.76	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
v/c Ratio	0.43	0.05	0.09	0.29	0.04	0.59		0.19	0.38	0.05		0.20
Control Delay	57.4	53.9	55.2	49.7	56.6	84.3		66.1	5.5	4.7		15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	57.4	53.9	55.2	49.7	56.6	84.3		66.1	5.5	4.7		15.3
LOS	E	D	E	D	E	F		E	A	A		B
Approach Delay		56.9			66.7				5.9			
Approach LOS		E			E				A			
Queue Length 50th (ft)	65	6	8	40	4	46		11	148	11		6
Queue Length 95th (ft)	100	21	26	74	17	90		33	219	29		m47
Internal Link Dist (ft)		482			548				1082			
Turn Bay Length (ft)	125							195		195		250
Base Capacity (vph)	235	173	140	250	144	116		109	4318	1290		382
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	0.33	0.04	0.07	0.22	0.03	0.47		0.12	0.38	0.05		0.20

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 119 (92%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 12.1 Intersection LOS: B
Intersection Capacity Utilization 53.4% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: LaGrange Road & 163rd Street



Lane Group	SBT	SBR
v/c Ratio	0.39	
Control Delay	12.0	
Queue Delay	0.0	
Total Delay	12.0	
LOS	B	
Approach Delay	12.2	
Approach LOS	B	
Queue Length 50th (ft)	124	
Queue Length 95th (ft)	442	
Internal Link Dist (ft)	1324	
Turn Bay Length (ft)		
Base Capacity (vph)	3916	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.39	

Intersection Summary

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	23	1	26	5	0	38	8	24	1716	18	7	38	1280	27
Future Vol, veh/h	23	1	26	5	0	38	8	24	1716	18	7	38	1280	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	0	0	-	-	-	190	-	-	-	265	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	9	0	0	0	0	3	0	4	1	0	0	3	1	0
Mvmt Flow	24	1	27	5	0	40	8	25	1788	19	7	40	1333	28

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	2222	3314	681	2492	3319	904	994	1361	0	0	1319	1807	0	0
Stage 1	1441	1441	-	1864	1864	-	-	-	-	-	-	-	-	-
Stage 2	781	1873	-	628	1455	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.58	6.5	7.1	6.4	6.5	7.16	5.6	5.38	-	-	5.6	5.36	-	-
Critical Hdwy Stg 1	7.48	5.5	-	7.3	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.88	5.5	-	6.7	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.89	4	3.9	3.8	4	3.93	2.3	3.14	-	-	2.3	3.13	-	-
Pot Cap-1 Maneuver	*264	*18	*637	*148	*18	*533	*1080	*791	-	-	*910	*669	-	-
Stage 1	*571	*579	-	*551	*523	-	-	-	-	-	-	-	-	-
Stage 2	*538	*523	-	*654	*568	-	-	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	1	-	-	1	1	-	-
Mov Cap-1 Maneuver	*225	*16	*637	*130	*16	*533	*841	*841	-	-	*691	*691	-	-
Mov Cap-2 Maneuver	*371	*317	-	*382	*321	-	-	-	-	-	-	-	-	-
Stage 1	*549	*540	-	*529	*503	-	-	-	-	-	-	-	-	-
Stage 2	*479	*503	-	*582	*529	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	12.6	0.2	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 841	-	-	371	317	637	382	533	* 691	-	-
HCM Lane V/C Ratio	0.04	-	-	0.065	0.003	0.043	0.014	0.074	0.068	-	-
HCM Control Delay (s)	9.5	-	-	15.4	16.4	10.9	14.6	12.3	10.6	-	-
HCM Lane LOS	A	-	-	C	C	B	B	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0.1	0	0.2	0.2	-	-

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

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	17	37	2	55	1655	0	1487	18
Future Vol, veh/h	17	37	2	55	1655	0	1487	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	50	0	-	205	-	200	-	-
Veh in Median Storage, #	2	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	1	0	1	0
Mvmt Flow	18	39	2	58	1742	0	1565	19

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	2392	792	1156	1584	0	1272	-	0
Stage 1	1575	-	-	-	-	-	-	-
Stage 2	817	-	-	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.6	5.3	-	5.6	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	2.3	3.1	-	2.3	-	-
Pot Cap-1 Maneuver	*170	*577	*978	*726	-	316	-	-
Stage 1	*592	-	-	-	-	-	-	-
Stage 2	*362	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	-		-	-
Mov Cap-1 Maneuver	*156	*577	*731	*731	-	316	-	-
Mov Cap-2 Maneuver	*313	-	-	-	-	-	-	-
Stage 1	*543	-	-	-	-	-	-	-
Stage 2	*362	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	* 731	-	313	577	316	-	-
HCM Lane V/C Ratio	0.082	-	0.057	0.067	-	-	-
HCM Control Delay (s)	10.4	-	17.2	11.7	0	-	-
HCM Lane LOS	B	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	0.2	0	-	-

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

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	6	6	1	4	10	16	0	2	11	5	0	9
Future Vol, veh/h	6	6	1	4	10	16	0	2	11	5	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	8	8	1	5	13	21	0	3	14	7	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	34	0	0	9	0	0	65	69	9	67	59	24
Stage 1	-	-	-	-	-	-	25	25	-	34	34	-
Stage 2	-	-	-	-	-	-	40	44	-	33	25	-
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	1591	-	-	1624	-	-	934	825	1079	931	836	1058
Stage 1	-	-	-	-	-	-	998	878	-	987	871	-
Stage 2	-	-	-	-	-	-	980	862	-	988	878	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1591	-	-	1624	-	-	918	818	1079	911	829	1058
Mov Cap-2 Maneuver	-	-	-	-	-	-	918	818	-	911	829	-
Stage 1	-	-	-	-	-	-	993	874	-	982	868	-
Stage 2	-	-	-	-	-	-	966	859	-	967	874	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.4	1	8.6	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1029	1591	-	-	1624	-	-	1000
HCM Lane V/C Ratio	0.017	0.005	-	-	0.003	-	-	0.018
HCM Control Delay (s)	8.6	7.3	0	-	7.2	0	-	8.7
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Capacity Analysis Summary Sheets

Year 2030 Total Projected Weekday Morning Peak Hour

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	1	159	543	195	54	188	533	136	247	1015	224	1
Future Volume (vph)	1	159	543	195	54	188	533	136	247	1015	224	1
Ideal Flow (vphpl)	1900	1900	2000	1900	1900	1900	2000	1900	1900	2000	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%				0%			0%		
Storage Length (ft)		155		400		180		420	310		170	
Storage Lanes		2		1		2		1	2		1	
Taper Length (ft)		245				290			300			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.91	1.00	0.91
Ped Bike Factor												
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3368	3689	1538	0	3339	3585	1495	3400	5151	1583	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3368	3689	1538	0	3339	3585	1495	3400	5151	1583	0
Right Turn on Red				No				No			No	
Satd. Flow (RTOR)												
Link Speed (mph)			40				40			40		
Link Distance (ft)			1885				944			1415		
Travel Time (s)			32.1				16.1			24.1		
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	3%	5%	8%	4%	6%	8%	3%	6%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%				0%			0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	176	597	214	0	266	586	149	271	1115	246	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot
Protected Phases	7!	7	4	5!	3!	3	8	1!	5	2	3!	1!
Permitted Phases				4				8			2	
Detector Phase	7	7	4	5	3	3	8	1	5	2	3	1
Switch Phase												
Minimum Initial (s)	3.0	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0
Minimum Split (s)	7.5	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5	21.0	7.5	7.5
Total Split (s)	16.0	16.0	30.0	21.0	22.0	22.0	36.0	21.0	21.0	47.0	22.0	21.0
Total Split (%)	13.3%	13.3%	25.0%	17.5%	18.3%	18.3%	30.0%	17.5%	17.5%	39.2%	18.3%	17.5%
Yellow Time (s)	3.5	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5
All-Red Time (s)	1.0	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.5	6.0	4.5		4.5	6.0	4.5	4.5	6.0	4.5	
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	None	None	None	Min	None	None	C-Min	None	None
Act Effct Green (s)		10.6	24.7	45.0		14.5	28.6	48.1	14.3	46.3	66.9	
Actuated g/C Ratio		0.09	0.21	0.38		0.12	0.24	0.40	0.12	0.39	0.56	

Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	203	744	84
Future Volume (vph)	203	744	84
Ideal Flow (vphpl)	1900	2000	1900
Lane Width (ft)	12	12	12
Grade (%)		0%	
Storage Length (ft)	190		135
Storage Lanes	2		1
Taper Length (ft)	280		
Lane Util. Factor	0.97	0.91	1.00
Ped Bike Factor			
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3214	5009	1524
Flt Permitted	0.950		
Satd. Flow (perm)	3214	5009	1524
Right Turn on Red			No
Satd. Flow (RTOR)			
Link Speed (mph)		40	
Link Distance (ft)		839	
Travel Time (s)		14.3	
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor	0.91	0.91	0.91
Growth Factor	100%	100%	100%
Heavy Vehicles (%)	9%	9%	6%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Mid-Block Traffic (%)		0%	
Shared Lane Traffic (%)			
Lane Group Flow (vph)	224	818	92
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7!
Permitted Phases			6
Detector Phase	1	6	7
Switch Phase			
Minimum Initial (s)	3.0	15.0	3.0
Minimum Split (s)	7.5	21.0	7.5
Total Split (s)	21.0	47.0	16.0
Total Split (%)	17.5%	39.2%	13.3%
Yellow Time (s)	3.5	4.0	3.5
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Recall Mode	None	C-Min	None
Act Effct Green (s)	13.4	45.4	62.0
Actuated g/C Ratio	0.11	0.38	0.52

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
v/c Ratio		0.59	0.79	0.37		0.66	0.69	0.25	0.67	0.56	0.28	
Control Delay		90.9	34.5	14.2		58.2	46.0	24.2	58.8	31.1	15.6	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		90.9	34.5	14.2		58.2	46.0	24.2	58.8	31.1	15.6	
LOS		F	C	B		E	D	C	E	C	B	
Approach Delay			40.1				46.0			33.4		
Approach LOS			D				D			C		
Queue Length 50th (ft)		74	179	62		102	214	74	104	253	100	
Queue Length 95th (ft)		114	289	145		144	278	118	147	314	153	
Internal Link Dist (ft)			1805				864			1335		
Turn Bay Length (ft)		155		400		180		420	310		170	
Base Capacity (vph)		322	772	605		486	896	637	467	1988	921	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.55	0.77	0.35		0.55	0.65	0.23	0.58	0.56	0.27	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 37.6 Intersection LOS: D
Intersection Capacity Utilization 63.1% ICU Level of Service B
Analysis Period (min) 15
! Phase conflict between lane groups.

Splits and Phases: 1: LaGrange Road & 159th Street

Lane Group	SBL	SBT	SBR
v/c Ratio	0.62	0.43	0.12
Control Delay	58.4	29.4	16.5
Queue Delay	0.0	0.0	0.0
Total Delay	58.4	29.4	16.5
LOS	E	C	B
Approach Delay		34.1	
Approach LOS		C	
Queue Length 50th (ft)	86	177	37
Queue Length 95th (ft)	125	223	69
Internal Link Dist (ft)		759	
Turn Bay Length (ft)	190		135
Base Capacity (vph)	441	1895	799
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.51	0.43	0.12

Intersection Summary

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	122	796	12	41	692	136	30	1	41	103	20
Future Volume (vph)	3	122	796	12	41	692	136	30	1	41	103	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%			0%			0%			0%
Storage Length (ft)		275		0	400		195	290		0	160	
Storage Lanes		1		0	2		1	1		1	1	
Taper Length (ft)		165			280			95			100	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.998				0.850			0.850		
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1805	3459	0	3367	3654	1599	1517	2000	1615	1787	2000
Flt Permitted		0.950			0.950			0.743			0.695	
Satd. Flow (perm)	0	1805	3459	0	3367	3654	1599	1186	2000	1615	1307	2000
Right Turn on Red				No			No			No		
Satd. Flow (RTOR)												
Link Speed (mph)			40			40			30			30
Link Distance (ft)			926			1885			890			503
Travel Time (s)			15.8			32.1			20.2			11.4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	14%	4%	4%	1%	19%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%			0%			0%			0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	134	869	0	44	744	146	32	1	44	111	22
Turn Type	Prot	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5!	5	2		1	6		7	4	1	3	8
Permitted Phases							6	4		4	8	
Detector Phase	5	5	2		1	6	6	7	4	1	3	8
Switch Phase												
Minimum Initial (s)	3.0	3.0	8.0		3.0	8.0	8.0	3.0	5.0	3.0	3.0	5.0
Minimum Split (s)	9.5	9.5	22.5		9.5	22.5	22.5	9.5	18.0	9.5	9.5	18.0
Total Split (s)	18.0	18.0	66.0		18.0	66.0	66.0	18.0	18.0	18.0	18.0	18.0
Total Split (%)	15.0%	15.0%	55.0%		15.0%	55.0%	55.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Yellow Time (s)	3.5	3.5	4.5		3.5	4.5	4.5	3.5	4.0	3.5	3.5	4.0
All-Red Time (s)	1.0	1.0	1.5		1.0	1.5	1.5	0.0	2.0	1.0	0.0	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)		4.5	6.0		4.5	6.0	6.0	3.5	6.0	4.5	3.5	6.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Min		None	C-Min	C-Min	None	Max	None	None	Max
Act Effct Green (s)		11.0	52.2		4.3	44.1	44.1	44.6	37.7	48.0	50.8	43.2
Actuated g/C Ratio		0.09	0.44		0.04	0.37	0.37	0.37	0.31	0.40	0.42	0.36

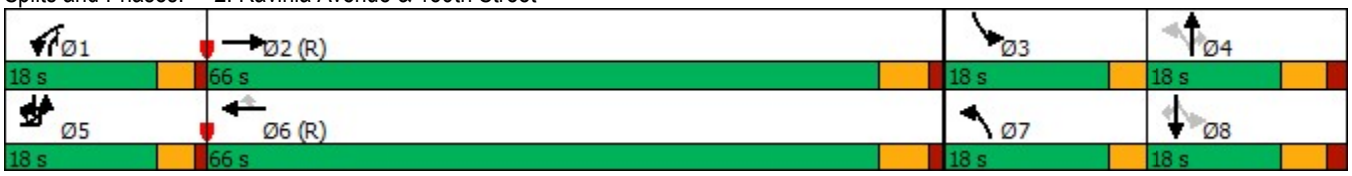
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	50
Future Volume (vph)	50
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	165
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.93
Growth Factor	100%
Heavy Vehicles (%)	2%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	54
Turn Type	pm+ov
Protected Phases	5!
Permitted Phases	8
Detector Phase	5
Switch Phase	
Minimum Initial (s)	3.0
Minimum Split (s)	9.5
Total Split (s)	18.0
Total Split (%)	15.0%
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	60.2
Actuated g/C Ratio	0.50

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
v/c Ratio		0.81	0.58		0.37	0.55	0.25	0.07	0.00	0.07	0.19	0.03
Control Delay		87.2	27.2		38.7	49.0	42.3	23.7	36.0	26.2	23.9	30.6
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		87.2	27.2		38.7	49.0	42.3	23.7	36.0	26.2	23.9	30.6
LOS		F	C		D	D	D	C	D	C	C	C
Approach Delay			35.3			47.5			25.3			23.1
Approach LOS			D			D			C			C
Queue Length 50th (ft)		103	283		14	321	118	13	1	20	49	11
Queue Length 95th (ft)		#181	294		m24	382	m182	40	6	54	104	35
Internal Link Dist (ft)			846			1805			810			423
Turn Bay Length (ft)		275			400		195	290			160	
Base Capacity (vph)		203	1729		378	1827	799	542	628	769	612	720
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		0.66	0.50		0.12	0.41	0.18	0.06	0.00	0.06	0.18	0.03

Intersection Summary

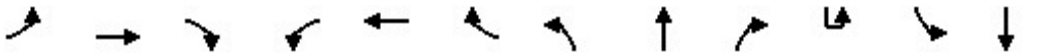
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 35 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 39.1 Intersection LOS: D
Intersection Capacity Utilization 51.8% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
! Phase conflict between lane groups.

Splits and Phases: 2: Ravinia Avenue & 159th Street



Lane Group	SBR
v/c Ratio	0.07
Control Delay	18.5
Queue Delay	0.0
Total Delay	18.5
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	20
Queue Length 95th (ft)	53
Internal Link Dist (ft)	
Turn Bay Length (ft)	165
Base Capacity (vph)	827
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.07

Intersection Summary



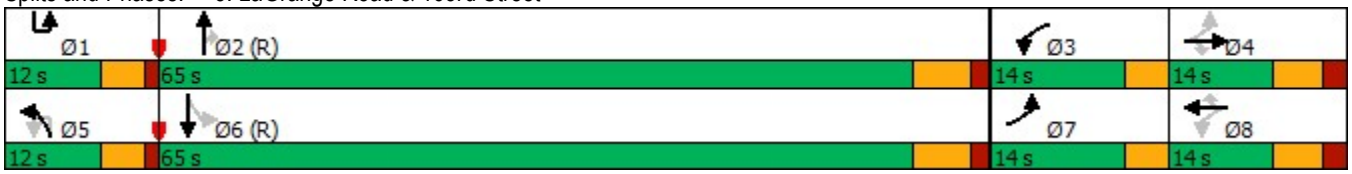
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	35	1	9	58	4	42	4	1343	65	16	53	970
Future Volume (vph)	35	1	9	58	4	42	4	1343	65	16	53	970
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	125		0	0		0	195		195		250	
Storage Lanes	1		1	1		1	1		1		2	
Taper Length (ft)	90			25			195				300	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.97	0.91
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.998
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1752	2000	1615	1752	2000	1615	1805	5200	1615	0	3502	4797
Flt Permitted				0.769			0.950				0.175	
Satd. Flow (perm)	1845	2000	1615	1419	2000	1615	1805	5200	1615	0	645	4797
Right Turn on Red			No			No			No			
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			45				45
Link Distance (ft)		562			628			1162				1404
Travel Time (s)		19.2			21.4			17.6				21.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	0%	3%	0%	0%	0%	5%	0%	0%	0%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	1	10	62	4	45	4	1429	69	0	73	1043
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	Perm	NA
Protected Phases	7	4		3	8		5	2		1		6
Permitted Phases	4		4	8		8			2		6	
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	15.0	15.0	3.0	15.0	15.0
Minimum Split (s)	9.5	14.0	14.0	9.5	14.0	14.0	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	14.0	14.0	14.0	14.0	14.0	14.0	12.0	65.0	65.0	12.0	65.0	65.0
Total Split (%)	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	11.4%	61.9%	61.9%	11.4%	61.9%	61.9%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0	4.5	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
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	C-Min	None	C-Min	C-Min
Act Effct Green (s)	7.2	5.7	5.7	12.9	6.3	6.3	3.2	84.5	84.5		82.8	82.8
Actuated g/C Ratio	0.07	0.05	0.05	0.12	0.06	0.06	0.03	0.80	0.80		0.79	0.79

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	0.91
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.94
Growth Factor	100%
Heavy Vehicles (%)	0%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
v/c Ratio	0.31	0.01	0.11	0.30	0.03	0.47	0.07	0.34	0.05		0.14	0.28
Control Delay	49.0	46.0	49.1	41.7	45.8	63.2	52.0	4.3	4.0		6.3	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	49.0	46.0	49.1	41.7	45.8	63.2	52.0	4.3	4.0		6.3	4.9
LOS	D	D	D	D	D	E	D	A	A		A	A
Approach Delay		49.0			50.5			4.4				5.0
Approach LOS		D			D			A				A
Queue Length 50th (ft)	25	1	7	37	3	30	3	100	10		5	68
Queue Length 95th (ft)	48	6	23	72	13	66	14	150	26		21	139
Internal Link Dist (ft)		482			548			1082				1324
Turn Bay Length (ft)	125						195		195		250	
Base Capacity (vph)	214	155	125	253	155	125	128	4182	1299		508	3782
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.17	0.01	0.08	0.25	0.03	0.36	0.03	0.34	0.05		0.14	0.28

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 64 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 50.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: LaGrange Road & 163rd Street



Lane Group	SBR
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	24	1	7	1	0	15	2	24	1381	19	5	31	996	29
Future Vol, veh/h	24	1	7	1	0	15	2	24	1381	19	5	31	996	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	0	0	-	-	-	190	-	-	-	265	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	5	0	0	3	6	0
Mvmt Flow	26	1	8	1	0	16	2	26	1518	21	5	34	1095	32

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1852	2784	564	2102	2790	770	822	1127	0	0	1123	1539	0	0
Stage 1	1189	1189	-	1585	1585	-	-	-	-	-	-	-	-	-
Stage 2	663	1595	-	517	1205	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.6	5.3	-	-	5.6	5.36	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	2.3	3.1	-	-	2.3	3.13	-	-
Pot Cap-1 Maneuver	*80	*19	*700	*56	*19	*594	*1187	830	-	-	*1007	*740	-	-
Stage 1	*582	*596	-	*610	*579	-	-	-	-	-	-	-	-	-
Stage 2	*610	*579	-	*718	*584	-	-	-	-	-	-	-	-	-
Platoon blocked, %			1			1	1	1	-	-	1	1	-	-
Mov Cap-1 Maneuver	*73	*17	*700	*52	*17	*594	*849	849	-	-	*766	*766	-	-
Mov Cap-2 Maneuver	*369	*348	-	*405	*348	-	-	-	-	-	-	-	-	-
Stage 1	*563	*565	-	*589	*560	-	-	-	-	-	-	-	-	-
Stage 2	*573	*560	-	*672	*554	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.3	11.4	0.2	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	849	-	-	369	348	700	405	594	* 766	-	-
HCM Lane V/C Ratio	0.034	-	-	0.071	0.003	0.011	0.003	0.028	0.052	-	-
HCM Control Delay (s)	9.4	-	-	15.5	15.4	10.2	13.9	11.2	10	-	-
HCM Lane LOS	A	-	-	C	C	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	0	0.1	0.2	-	-

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	6	34	53	1406	0	1023	14
Future Vol, veh/h	6	34	53	1406	0	1023	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	50	0	205	-	200	-	-
Veh in Median Storage, #	2	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	4	0	8	0
Mvmt Flow	6	35	55	1465	0	1066	15

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1770	541	1081	0	1069	-	0
Stage 1	1074	-	-	-	-	-	-
Stage 2	696	-	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.3	-	5.6	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	3.1	-	2.3	-	-
Pot Cap-1 Maneuver	*275	*694	*873	-	410	-	-
Stage 1	*712	-	-	-	-	-	-
Stage 2	*419	-	-	-	-	-	-
Platoon blocked, %	1	1	1	-		-	-
Mov Cap-1 Maneuver	*257	*694	*873	-	410	-	-
Mov Cap-2 Maneuver	*382	-	-	-	-	-	-
Stage 1	*667	-	-	-	-	-	-
Stage 2	*419	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	* 873	-	382	694	410	-	-
HCM Lane V/C Ratio	0.063	-	0.016	0.051	-	-	-
HCM Control Delay (s)	9.4	-	14.6	10.5	0	-	-
HCM Lane LOS	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	0.2	0	-	-

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

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	6	30	2	8	33	10	0	0	1	4	0	2
Future Vol, veh/h	6	30	2	8	33	10	0	0	1	4	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	17	0	0	0	0	0	0	0	0	0	0	50
Mvmt Flow	7	37	2	10	41	12	0	0	1	5	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	53	0	0	39	0	0	120	125	38	120	120	47
Stage 1	-	-	-	-	-	-	52	52	-	67	67	-
Stage 2	-	-	-	-	-	-	68	73	-	53	53	-
Critical Hdwy	4.27	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.7
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	2.353	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.75
Pot Cap-1 Maneuver	1462	-	-	1584	-	-	860	769	1040	860	774	901
Stage 1	-	-	-	-	-	-	966	856	-	948	843	-
Stage 2	-	-	-	-	-	-	947	838	-	965	855	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1462	-	-	1584	-	-	850	760	1040	851	765	901
Mov Cap-2 Maneuver	-	-	-	-	-	-	850	760	-	851	765	-
Stage 1	-	-	-	-	-	-	961	852	-	943	837	-
Stage 2	-	-	-	-	-	-	938	832	-	959	851	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	1.1	8.5	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1040	1462	-	-	1584	-	-	867
HCM Lane V/C Ratio	0.001	0.005	-	-	0.006	-	-	0.009
HCM Control Delay (s)	8.5	7.5	0	-	7.3	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	6.6

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	0	17	0	0	48	0
Future Vol, veh/h	0	17	0	0	48	0
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	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	18	0	0	51	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	18	0	10	9
Stage 1	-	-	-	-	9	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1612	-	1014	1077
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	1027	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1612	-	1014	1077
Mov Cap-2 Maneuver	-	-	-	-	928	-
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	1027	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	928	-	-	-	1612	-
HCM Lane V/C Ratio	0.054	-	-	-	-	-
HCM Control Delay (s)	9.1	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	-	0	-

Capacity Analysis Summary Sheets

Year 2030 Total Projected Weekday Evening Peak Hour

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	237	699	400	43	315	814	230	3	379	1216	283	1
Future Volume (vph)	237	699	400	43	315	814	230	3	379	1216	283	1
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	2000	1900	1900	1900	2000	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%				0%				0%		
Storage Length (ft)	155		400		180		420		310		170	
Storage Lanes	2		1		2		1		2		1	
Taper Length (ft)	245				290				300			
Lane Util. Factor	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.91	0.97	0.91	1.00	0.91
Ped Bike Factor												
Frt			0.850				0.850				0.850	
Flt Protected	0.950				0.950				0.950			
Satd. Flow (prot)	3467	3762	1599	0	3471	3725	1599	0	3434	5353	1599	0
Flt Permitted	0.950				0.950				0.950			
Satd. Flow (perm)	3467	3762	1599	0	3471	3725	1599	0	3434	5353	1599	0
Right Turn on Red			No				No				No	
Satd. Flow (RTOR)												
Link Speed (mph)		40				40				40		
Link Distance (ft)		1885				944				1415		
Travel Time (s)		32.1				16.1				24.1		
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	0%	1%	2%	1%	0%	2%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%				0%				0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	244	721	412	0	369	839	237	0	394	1254	292	0
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot
Protected Phases	7	4	5!	3!	3	8	1!	5!	5	2	3!	1!
Permitted Phases			4				8				2	
Detector Phase	7	4	5	3	3	8	1	5	5	2	3	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0
Minimum Split (s)	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5
Total Split (s)	17.0	32.0	20.0	23.0	23.0	38.0	24.0	20.0	20.0	51.0	23.0	24.0
Total Split (%)	13.1%	24.6%	15.4%	17.7%	17.7%	29.2%	18.5%	15.4%	15.4%	39.2%	17.7%	18.5%
Yellow Time (s)	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5
All-Red Time (s)	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5	6.0	4.5		4.5	6.0	4.5		4.5	6.0	4.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	None	Min	None	None	None	C-Min	None	None
Act Effct Green (s)	12.1	27.1	48.6		17.4	32.4	56.8		15.5	46.1	69.4	
Actuated g/C Ratio	0.09	0.21	0.37		0.13	0.25	0.44		0.12	0.35	0.53	

Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	389	1320	271
Future Volume (vph)	389	1320	271
Ideal Flow (vphpl)	1900	2000	1900
Lane Width (ft)	12	12	12
Grade (%)		0%	
Storage Length (ft)	190		135
Storage Lanes	2		1
Taper Length (ft)	280		
Lane Util. Factor	0.97	0.91	1.00
Ped Bike Factor			
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3467	5353	1568
Flt Permitted	0.950		
Satd. Flow (perm)	3467	5353	1568
Right Turn on Red			No
Satd. Flow (RTOR)			
Link Speed (mph)		40	
Link Distance (ft)		839	
Travel Time (s)		14.3	
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor	0.97	0.97	0.97
Growth Factor	100%	100%	100%
Heavy Vehicles (%)	1%	2%	3%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Mid-Block Traffic (%)		0%	
Shared Lane Traffic (%)			
Lane Group Flow (vph)	402	1361	279
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7!
Permitted Phases			6
Detector Phase	1	6	7
Switch Phase			
Minimum Initial (s)	3.0	15.0	3.0
Minimum Split (s)	7.5	21.0	7.5
Total Split (s)	24.0	55.0	17.0
Total Split (%)	18.5%	42.3%	13.1%
Yellow Time (s)	3.5	4.0	3.5
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Recall Mode	None	C-Min	None
Act Effct Green (s)	18.4	49.0	67.1
Actuated g/C Ratio	0.14	0.38	0.52

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
v/c Ratio	0.76	0.92	0.69		0.80	0.91	0.34		0.96	0.66	0.34	
Control Delay	87.4	53.9	29.6		67.9	61.7	25.8		92.5	34.9	16.1	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	87.4	53.9	29.6		67.9	61.7	25.8		92.5	34.9	16.1	
LOS	F	D	C		E	E	C		F	C	B	
Approach Delay		52.6				57.4				43.8		
Approach LOS		D				E				D		
Queue Length 50th (ft)	111	258	282		156	364	129		174	261	113	
Queue Length 95th (ft)	#160	#434	418		211	#481	194		#277	339	157	
Internal Link Dist (ft)		1805				864				1335		
Turn Bay Length (ft)	155		400		180		420		310		170	
Base Capacity (vph)	333	784	598		493	926	711		409	1896	867	
Starvation Cap Reductn	0	0	0		0	0	0		0	0	0	
Spillback Cap Reductn	0	0	0		0	0	0		0	0	0	
Storage Cap Reductn	0	0	0		0	0	0		0	0	0	
Reduced v/c Ratio	0.73	0.92	0.69		0.75	0.91	0.33		0.96	0.66	0.34	

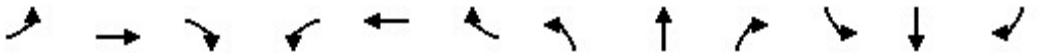
Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 47.3 Intersection LOS: D
Intersection Capacity Utilization 86.4% 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.
! Phase conflict between lane groups.

Splits and Phases: 1: LaGrange Road & 159th Street

Lane Group	SBL	SBT	SBR
v/c Ratio	0.82	0.67	0.34
Control Delay	68.2	35.9	19.9
Queue Delay	0.0	0.0	0.0
Total Delay	68.2	35.9	19.9
LOS	E	D	B
Approach Delay		40.1	
Approach LOS		D	
Queue Length 50th (ft)	170	348	133
Queue Length 95th (ft)	227	402	198
Internal Link Dist (ft)		759	
Turn Bay Length (ft)	190		135
Base Capacity (vph)	520	2017	814
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.77	0.67	0.34

Intersection Summary



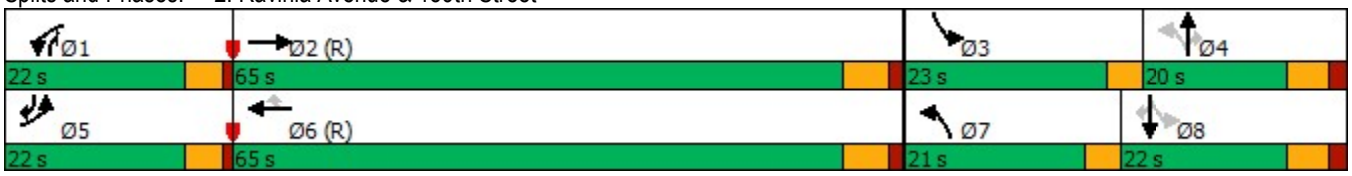
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	928	31	323	772	181	125	66	257	178	121	146
Future Volume (vph)	167	928	31	323	772	181	125	66	257	178	121	146
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	275		0	400		195	290		0	160		165
Storage Lanes	1		0	2		1	1		1	1		1
Taper Length (ft)	165			280			95			100		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3550	0	3502	3654	1599	1787	2000	1615	1787	2000	1599
Flt Permitted	0.950			0.950			0.676			0.642		
Satd. Flow (perm)	1805	3550	0	3502	3654	1599	1272	2000	1615	1208	2000	1599
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		926			1885			890			503	
Travel Time (s)		15.8			32.1			20.2			11.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	7%	0%	4%	1%	1%	0%	0%	1%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	999	0	336	804	189	130	69	268	185	126	152
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		7	4	1	3	8	5
Permitted Phases						6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	5.0	3.0	3.0	5.0	3.0
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	18.0	9.5	9.5	18.0	9.5
Total Split (s)	22.0	65.0		22.0	65.0	65.0	21.0	20.0	22.0	23.0	22.0	22.0
Total Split (%)	16.9%	50.0%		16.9%	50.0%	50.0%	16.2%	15.4%	16.9%	17.7%	16.9%	16.9%
Yellow Time (s)	3.5	4.5		3.5	4.5	4.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	0.0	2.0	1.0	0.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0		4.5	6.0	6.0	3.5	6.0	4.5	3.5	6.0	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	Max	None	None	Max	None
Act Effct Green (s)	14.6	53.6		14.7	53.7	53.7	41.1	29.2	49.8	47.1	32.3	52.9
Actuated g/C Ratio	0.11	0.41		0.11	0.41	0.41	0.32	0.22	0.38	0.36	0.25	0.41

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.87	0.68		0.85	0.53	0.29	0.30	0.15	0.43	0.37	0.25	0.23
Control Delay	92.1	33.6		51.6	50.8	45.2	32.5	47.3	34.9	33.6	44.8	28.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.1	33.6		51.6	50.8	45.2	32.5	47.3	34.9	33.6	44.8	28.6
LOS	F	C		D	D	D	C	D	C	C	D	C
Approach Delay		42.3			50.2			36.1			35.0	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	145	356		148	364	160	75	47	165	110	86	82
Queue Length 95th (ft)	#241	402		m167	m402	m185	137	103	287	189	163	154
Internal Link Dist (ft)		846			1805			810			423	
Turn Bay Length (ft)	275			400		195	290			160		165
Base Capacity (vph)	242	1611		471	1658	725	523	448	654	530	497	686
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.62		0.71	0.48	0.26	0.25	0.15	0.41	0.35	0.25	0.22

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 41 (32%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 43.5 Intersection LOS: D
Intersection Capacity Utilization 67.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Ravinia Avenue & 159th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	65	4	21	66	10	74	1	20	1575	73	16	81
Future Volume (vph)	65	4	21	66	10	74	1	20	1575	73	16	81
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	2000	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%				0%			
Storage Length (ft)	125		0	0		0		195		195		250
Storage Lanes	1		1	1		1		1		1		2
Taper Length (ft)	90			25				195				300
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	1.00	0.91	0.97
Ped Bike Factor												
Frt			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	0	1805	5353	1615	0	3502
Flt Permitted	0.751			0.621				0.909				0.138
Satd. Flow (perm)	1427	2000	1615	1180	2000	1615	0	1727	5353	1615	0	509
Right Turn on Red			No			No				No		
Satd. Flow (RTOR)												
Link Speed (mph)		20			20				45			
Link Distance (ft)		562			628				1162			
Travel Time (s)		19.2			21.4				17.6			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	4	22	69	10	77	0	22	1641	76	0	101
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	custom	Prot	NA	Perm	Prot	Perm
Protected Phases	7	4		3	8			5	2		1	
Permitted Phases	4		4	8		8	5			2		6
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	15.0	15.0	3.0	15.0
Minimum Split (s)	9.5	14.0	14.0	9.5	14.0	14.0	9.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	15.0	15.0	15.0	15.0	15.0	15.0	13.0	13.0	87.0	87.0	13.0	87.0
Total Split (%)	11.5%	11.5%	11.5%	11.5%	11.5%	11.5%	10.0%	10.0%	66.9%	66.9%	10.0%	66.9%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	4.5	4.5	3.5	4.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	1.0	1.0	1.5	1.5	1.0	1.5
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	6.0	3.5	6.0	6.0		4.5	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	16.6	9.3	9.3	17.5	8.8	8.8		5.8	99.9	99.9		92.8
Actuated g/C Ratio	0.13	0.07	0.07	0.13	0.07	0.07		0.04	0.77	0.77		0.71

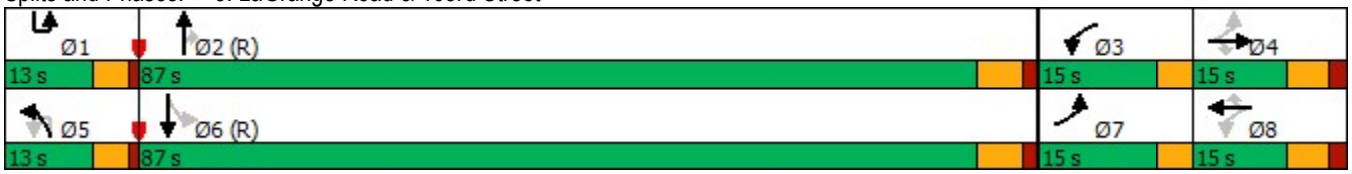
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1781	58
Future Volume (vph)	1781	58
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor		
Frt	0.995	
Flt Protected		
Satd. Flow (prot)	5108	0
Flt Permitted		
Satd. Flow (perm)	5108	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	45	
Link Distance (ft)	1404	
Travel Time (s)	21.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.96	0.96
Growth Factor	100%	100%
Heavy Vehicles (%)	1%	2%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1915	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	22.5	
Total Split (s)	87.0	
Total Split (%)	66.9%	
Yellow Time (s)	4.5	
All-Red Time (s)	1.5	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	C-Min	
Act Effct Green (s)	92.8	
Actuated g/C Ratio	0.71	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
v/c Ratio	0.34	0.03	0.19	0.34	0.07	0.71		0.29	0.40	0.06		0.28
Control Delay	51.3	54.5	59.2	50.4	56.3	90.5		68.3	6.0	4.8		9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	51.3	54.5	59.2	50.4	56.3	90.5		68.3	6.0	4.8		9.2
LOS	D	D	E	D	E	F		E	A	A		A
Approach Delay		53.3			70.6				6.7			
Approach LOS		D			E				A			
Queue Length 50th (ft)	50	3	17	51	8	64		18	156	14		10
Queue Length 95th (ft)	90	15	46	91	26	118		47	214	32		m19
Internal Link Dist (ft)		482			548				1082			
Turn Bay Length (ft)	125							195		195		250
Base Capacity (vph)	245	167	135	251	153	123		112	4115	1241		364
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	0.28	0.02	0.16	0.27	0.07	0.63		0.20	0.40	0.06		0.28

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 10.9 Intersection LOS: B
Intersection Capacity Utilization 63.0% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: LaGrange Road & 163rd Street



Lane Group	SBT	SBR
v/c Ratio	0.53	
Control Delay	7.9	
Queue Delay	0.0	
Total Delay	7.9	
LOS	A	
Approach Delay	8.0	
Approach LOS	A	
Queue Length 50th (ft)	172	
Queue Length 95th (ft)	208	
Internal Link Dist (ft)	1324	
Turn Bay Length (ft)		
Base Capacity (vph)	3657	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.52	

Intersection Summary

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	29	1	23	8	1	49	3	37	1759	24	12	66	1821	71
Future Vol, veh/h	29	1	23	8	1	49	3	37	1759	24	12	66	1821	71
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	0	0	-	-	-	190	-	-	-	265	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Mvmt Flow	31	1	25	9	1	53	3	40	1891	26	13	71	1958	76

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	3007	4167	1017	2942	4192	959	1485	2034	0	0	1400	1917	0	0
Stage 1	2164	2164	-	1990	1990	-	-	-	-	-	-	-	-	-
Stage 2	843	2003	-	952	2202	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.6	5.3	-	-	5.6	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	2.3	3.1	-	-	2.3	3.1	-	-
Pot Cap-1 Maneuver	*62	2	*497	*73	2	*517	*842	*625	-	-	*876	*650	-	-
Stage 1	*398	413	-	*514	494	-	-	-	-	-	-	-	-	-
Stage 2	*530	483	-	*510	385	-	-	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	1	-	-	1	1	-	-
Mov Cap-1 Maneuver	*47	2	*497	*60	~ 1	*517	*636	*636	-	-	*669	*669	-	-
Mov Cap-2 Maneuver	*246	231	-	*285	223	-	-	-	-	-	-	-	-	-
Stage 1	*371	361	-	*479	460	-	-	-	-	-	-	-	-	-
Stage 2	*443	450	-	*422	336	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.7	13.7	0.2	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 636	-	-	246	231	497	285	504	* 669	-	-
HCM Lane V/C Ratio	0.068	-	-	0.127	0.005	0.05	0.03	0.107	0.125	-	-
HCM Control Delay (s)	11.1	-	-	21.7	20.7	12.6	18	13	11.2	-	-
HCM Lane LOS	B	-	-	C	C	B	C	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0	0.2	0.1	0.4	0.4	-	-

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

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	15	70	76	1649	5	1844	20
Future Vol, veh/h	15	70	76	1649	5	1844	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	50	0	205	-	200	-	-
Veh in Median Storage, #	2	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	0	1	0
Mvmt Flow	16	76	83	1792	5	2004	22

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	2908	1013	2026	0	1308	-	0
Stage 1	2025	-	-	-	-	-	-
Stage 2	883	-	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.3	-	5.6	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	3.1	-	2.3	-	-
Pot Cap-1 Maneuver	*89	*497	*625	-	302	-	-
Stage 1	*510	-	-	-	-	-	-
Stage 2	*334	-	-	-	-	-	-
Platoon blocked, %	1	1	1	-		-	-
Mov Cap-1 Maneuver	*76	*497	*625	-	302	-	-
Mov Cap-2 Maneuver	*256	-	-	-	-	-	-
Stage 1	*442	-	-	-	-	-	-
Stage 2	*328	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	* 625	-	256	497	302	-	-
HCM Lane V/C Ratio	0.132	-	0.064	0.153	0.018	-	-
HCM Control Delay (s)	11.6	-	20	13.5	17.1	-	-
HCM Lane LOS	B	-	C	B	C	-	-
HCM 95th %tile Q(veh)	0.5	-	0.2	0.5	0.1	-	-

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

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	3	25	1	4	30	16	0	6	12	15	1	6
Future Vol, veh/h	3	25	1	4	30	16	0	6	12	15	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	32	1	5	39	21	0	8	16	19	1	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	60	0	0	33	0	0	105	111	33	113	101	50
Stage 1	-	-	-	-	-	-	41	41	-	60	60	-
Stage 2	-	-	-	-	-	-	64	70	-	53	41	-
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	1556	-	-	1592	-	-	880	783	1046	869	793	1024
Stage 1	-	-	-	-	-	-	979	865	-	957	849	-
Stage 2	-	-	-	-	-	-	952	841	-	965	865	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1556	-	-	1592	-	-	869	778	1046	846	788	1024
Mov Cap-2 Maneuver	-	-	-	-	-	-	869	778	-	846	788	-
Stage 1	-	-	-	-	-	-	976	862	-	954	846	-
Stage 2	-	-	-	-	-	-	940	838	-	939	862	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.6	8.9	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	938	1556	-	-	1592	-	-	885
HCM Lane V/C Ratio	0.025	0.003	-	-	0.003	-	-	0.032
HCM Control Delay (s)	8.9	7.3	0	-	7.3	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	0	57	0	0	33	0
Future Vol, veh/h	0	57	0	0	33	0
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	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	60	0	0	35	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	60	0	31	30
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1556	-	985	1044
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	1027	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1556	-	985	1044
Mov Cap-2 Maneuver	-	-	-	-	906	-
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	1027	-

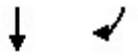
Approach	EB	WB	NE
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	906	-	-	-	1556	-
HCM Lane V/C Ratio	0.038	-	-	-	-	-
HCM Control Delay (s)	9.1	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0	-

Capacity Analysis Summary Sheets

Year 2030 Total Projected Saturday Midday Peak Hour

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	260	670	270	69	245	646	333	371	1142	336	3	554
Future Volume (vph)	260	670	270	69	245	646	333	371	1142	336	3	554
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	2000	1900	1900	2000	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%				0%			0%			
Storage Length (ft)	155		400		180		420	310		170		190
Storage Lanes	2		1		2		1	2		1		2
Taper Length (ft)	245				290			300				280
Lane Util. Factor	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.91	1.00	0.91	0.97
Ped Bike Factor												
Frt			0.850				0.850			0.850		
Flt Protected	0.950				0.950			0.950				0.950
Satd. Flow (prot)	3502	3800	1615	0	3422	3762	1599	3433	5406	1599	0	3502
Flt Permitted	0.950				0.950			0.950				0.950
Satd. Flow (perm)	3502	3800	1615	0	3422	3762	1599	3433	5406	1599	0	3502
Right Turn on Red			No				No			No		
Satd. Flow (RTOR)												
Link Speed (mph)		40				40			40			
Link Distance (ft)		1885				944			1415			
Travel Time (s)		32.1				16.1			24.1			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	3%	1%	1%	2%	1%	1%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%				0%			0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	265	684	276	0	320	659	340	379	1165	343	0	568
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	Prot
Protected Phases	7	4	5!	3!	3	8	1!	5	2	3!	1!	1
Permitted Phases			4				8			2		
Detector Phase	7	4	5	3	3	8	1	5	2	3	1	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	3.0
Minimum Split (s)	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5	21.0	7.5	7.5	7.5
Total Split (s)	18.0	32.0	25.0	24.0	24.0	38.0	28.0	25.0	46.0	24.0	28.0	28.0
Total Split (%)	13.8%	24.6%	19.2%	18.5%	18.5%	29.2%	21.5%	19.2%	35.4%	18.5%	21.5%	21.5%
Yellow Time (s)	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5	3.5
All-Red Time (s)	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	6.0	4.5		4.5	6.0	4.5	4.5	6.0	4.5		4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	None	Min	None	None	C-Min	None	None	None
Act Effct Green (s)	13.0	27.4	52.0		17.0	31.3	60.4	18.5	41.5	64.5		23.1
Actuated g/C Ratio	0.10	0.21	0.40		0.13	0.24	0.46	0.14	0.32	0.50		0.18



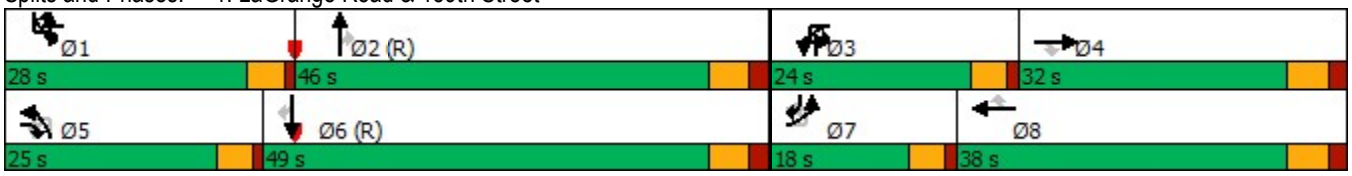
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	923	230
Future Volume (vph)	923	230
Ideal Flow (vphpl)	2000	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		135
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.91	1.00
Ped Bike Factor		
Frt		0.850
Flt Protected		
Satd. Flow (prot)	5406	1615
Flt Permitted		
Satd. Flow (perm)	5406	1615
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	40	
Link Distance (ft)	839	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.98	0.98
Growth Factor	100%	100%
Heavy Vehicles (%)	1%	0%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	942	235
Turn Type	NA	pm+ov
Protected Phases	6	7!
Permitted Phases		6
Detector Phase	6	7
Switch Phase		
Minimum Initial (s)	15.0	3.0
Minimum Split (s)	21.0	7.5
Total Split (s)	49.0	18.0
Total Split (%)	37.7%	13.8%
Yellow Time (s)	4.0	3.5
All-Red Time (s)	2.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	4.5
Lead/Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	C-Min	None
Act Effct Green (s)	46.1	65.1
Actuated g/C Ratio	0.35	0.50

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
v/c Ratio	0.75	0.85	0.43		0.72	0.73	0.46	0.78	0.67	0.43		0.91
Control Delay	86.8	45.9	21.1		63.5	50.6	25.9	73.7	35.9	19.2		72.6
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	86.8	45.9	21.1		63.5	50.6	25.9	73.7	35.9	19.2		72.6
LOS	F	D	C		E	D	C	E	D	B		E
Approach Delay		49.2				47.4			40.4			
Approach LOS		D				D			D			
Queue Length 50th (ft)	121	210	108		134	268	187	168	241	140		243
Queue Length 95th (ft)	#169	#392	167		182	337	272	227	375	271		#343
Internal Link Dist (ft)		1805				864			1335			
Turn Bay Length (ft)	155		400		180		420	310		170		190
Base Capacity (vph)	363	801	669		513	926	748	541	1726	824		633
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	0.73	0.85	0.41		0.62	0.71	0.45	0.70	0.67	0.42		0.90

Intersection Summary

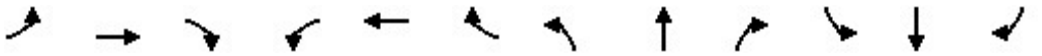
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 45.0 Intersection LOS: D
Intersection Capacity Utilization 81.1% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
! Phase conflict between lane groups.

Splits and Phases: 1: LaGrange Road & 159th Street



Lane Group	SBT	SBR
v/c Ratio	0.49	0.29
Control Delay	34.5	20.8
Queue Delay	0.0	0.0
Total Delay	34.5	20.8
LOS	C	C
Approach Delay	45.0	
Approach LOS	D	
Queue Length 50th (ft)	232	116
Queue Length 95th (ft)	280	178
Internal Link Dist (ft)	759	
Turn Bay Length (ft)		135
Base Capacity (vph)	1916	814
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.49	0.29

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	841	25	410	533	119	132	70	313	126	132	147
Future Volume (vph)	173	841	25	410	533	119	132	70	313	126	132	147
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	275		0	400		195	290		0	160		165
Storage Lanes	1		0	2		1	1		1	1		1
Taper Length (ft)	165			280			95			100		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3555	0	3467	3762	1599	1805	2000	1615	1805	1980	1615
Flt Permitted	0.950			0.950			0.627			0.710		
Satd. Flow (perm)	1787	3555	0	3467	3762	1599	1191	2000	1615	1349	1980	1615
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		926			1885			890			503	
Travel Time (s)		15.8			32.1			20.2			11.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	6%	1%	1%	1%	0%	0%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	893	0	423	549	123	136	72	323	130	136	152
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		7	4	1	3	8	5
Permitted Phases						6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	5.0	3.0	3.0	5.0	3.0
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	18.0	9.5	9.5	18.0	9.5
Total Split (s)	26.0	59.0		26.0	59.0	59.0	18.0	27.0	26.0	18.0	27.0	26.0
Total Split (%)	20.0%	45.4%		20.0%	45.4%	45.4%	13.8%	20.8%	20.0%	13.8%	20.8%	20.0%
Yellow Time (s)	3.5	4.5		3.5	4.5	4.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	0.0	2.0	1.0	0.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0		4.5	6.0	6.0	3.5	6.0	4.5	3.5	6.0	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	Max	None	None	Max	None
Act Effct Green (s)	15.5	48.7		18.1	51.2	51.2	46.1	34.0	58.1	45.4	33.7	55.2
Actuated g/C Ratio	0.12	0.37		0.14	0.39	0.39	0.35	0.26	0.45	0.35	0.26	0.42

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.84	0.67		0.88	0.37	0.20	0.29	0.14	0.45	0.26	0.27	0.22
Control Delay	85.8	36.5		55.5	45.0	41.6	31.1	42.1	29.1	30.7	43.6	26.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.8	36.5		55.5	45.0	41.6	31.1	42.1	29.1	30.7	43.6	26.3
LOS	F	D		E	D	D	C	D	C	C	D	C
Approach Delay		44.7			48.7			31.3			33.3	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	149	326		192	246	100	77	47	185	74	92	81
Queue Length 95th (ft)	221	380		244	305	m149	138	100	307	133	171	143
Internal Link Dist (ft)		846			1805			810			423	
Turn Bay Length (ft)	275			400		195	290			160		165
Base Capacity (vph)	295	1449		573	1537	653	513	523	764	553	513	760
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.62		0.74	0.36	0.19	0.27	0.14	0.42	0.24	0.27	0.20

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 38 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 42.3 Intersection LOS: D
Intersection Capacity Utilization 66.7% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Ravinia Avenue & 159th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	76	7	10	53	5	54	1	12	1598	62	21	53
Future Volume (vph)	76	7	10	53	5	54	1	12	1598	62	21	53
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	2000	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%				0%			
Storage Length (ft)	125		0	0		0		195		195		250
Storage Lanes	1		1	1		1		1		1		2
Taper Length (ft)	90			25				195				300
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	1.00	0.91	0.97
Ped Bike Factor												
Frt			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	0	1805	5406	1615	0	3452
Flt Permitted	0.754			0.499								0.137
Satd. Flow (perm)	1433	2000	1615	948	2000	1615	0	1900	5406	1615	0	498
Right Turn on Red			No			No				No		
Satd. Flow (RTOR)												
Link Speed (mph)		20			20				45			
Link Distance (ft)		562			628				1162			
Travel Time (s)		19.2			21.4				17.6			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	7	10	54	5	55	0	13	1631	63	0	75
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	custom	Prot	NA	Perm	Prot	Perm
Protected Phases	7	4		3	8			5	2		1	
Permitted Phases	4		4	8		8	5			2		6
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	15.0	15.0	3.0	15.0
Minimum Split (s)	9.5	14.0	14.0	9.5	14.0	14.0	9.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	16.0	15.0	15.0	16.0	15.0	15.0	12.0	12.0	87.0	87.0	12.0	87.0
Total Split (%)	12.3%	11.5%	11.5%	12.3%	11.5%	11.5%	9.2%	9.2%	66.9%	66.9%	9.2%	66.9%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	4.5	4.5	3.5	4.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	1.0	1.0	1.5	1.5	1.0	1.5
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	6.0	3.5	6.0	6.0		4.5	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	14.3	8.9	8.9	15.8	7.5	7.5		4.7	103.8	103.8		99.4
Actuated g/C Ratio	0.11	0.07	0.07	0.12	0.06	0.06		0.04	0.80	0.80		0.76

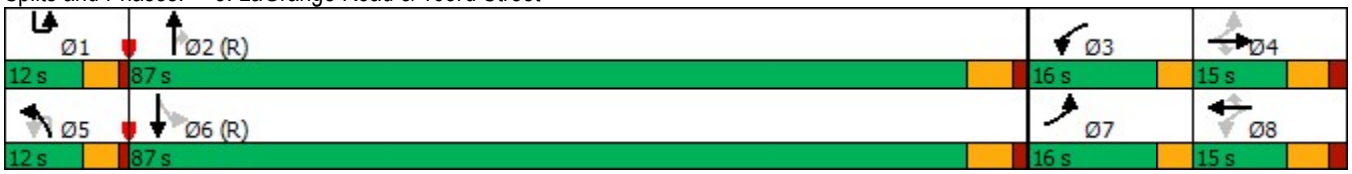
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1441	59
Future Volume (vph)	1441	59
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor		
Frt	0.994	
Flt Protected		
Satd. Flow (prot)	5107	0
Flt Permitted		
Satd. Flow (perm)	5107	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	45	
Link Distance (ft)	1404	
Travel Time (s)	21.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.98	0.98
Growth Factor	100%	100%
Heavy Vehicles (%)	1%	0%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1530	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	22.5	
Total Split (s)	87.0	
Total Split (%)	66.9%	
Yellow Time (s)	4.5	
All-Red Time (s)	1.5	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	C-Min	
Act Effct Green (s)	99.4	
Actuated g/C Ratio	0.76	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
v/c Ratio	0.43	0.05	0.09	0.29	0.04	0.59		0.19	0.38	0.05		0.20
Control Delay	57.4	53.9	55.2	49.7	56.6	84.3		66.1	5.5	4.7		15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	57.4	53.9	55.2	49.7	56.6	84.3		66.1	5.5	4.7		15.4
LOS	E	D	E	D	E	F		E	A	A		B
Approach Delay		56.9			66.7				5.9			
Approach LOS		E			E				A			
Queue Length 50th (ft)	65	6	8	40	4	46		11	148	11		6
Queue Length 95th (ft)	100	21	26	74	17	90		33	219	29		m47
Internal Link Dist (ft)		482			548				1082			
Turn Bay Length (ft)	125							195		195		250
Base Capacity (vph)	235	173	140	250	144	116		109	4318	1290		382
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	0.33	0.04	0.07	0.22	0.03	0.47		0.12	0.38	0.05		0.20

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 119 (92%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 12.2 Intersection LOS: B
Intersection Capacity Utilization 53.4% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: LaGrange Road & 163rd Street



Lane Group	SBT	SBR
v/c Ratio	0.39	
Control Delay	12.2	
Queue Delay	0.0	
Total Delay	12.2	
LOS	B	
Approach Delay	12.4	
Approach LOS	B	
Queue Length 50th (ft)	124	
Queue Length 95th (ft)	442	
Internal Link Dist (ft)	1324	
Turn Bay Length (ft)		
Base Capacity (vph)	3916	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.39	

Intersection Summary

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	23	1	26	5	0	38	8	24	1717	18	7	38	1280	27
Future Vol, veh/h	23	1	26	5	0	38	8	24	1717	18	7	38	1280	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	0	0	-	-	-	190	-	-	-	265	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	9	0	0	0	0	3	0	4	1	0	0	3	1	0
Mvmt Flow	24	1	27	5	0	40	8	25	1789	19	7	40	1333	28

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	2223	3315	681	2493	3320	904	994	1361	0	0	1319	1808	0	0
Stage 1	1441	1441	-	1865	1865	-	-	-	-	-	-	-	-	-
Stage 2	782	1874	-	628	1455	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.58	6.5	7.1	6.4	6.5	7.16	5.6	5.38	-	-	5.6	5.36	-	-
Critical Hdwy Stg 1	7.48	5.5	-	7.3	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.88	5.5	-	6.7	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.89	4	3.9	3.8	4	3.93	2.3	3.14	-	-	2.3	3.13	-	-
Pot Cap-1 Maneuver	*264	*18	*637	*148	*18	*533	*1080	*791	-	-	*910	*669	-	-
Stage 1	*571	*579	-	*551	*523	-	-	-	-	-	-	-	-	-
Stage 2	*538	*523	-	*654	*568	-	-	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	1	-	-	1	1	-	-
Mov Cap-1 Maneuver	*225	*16	*637	*130	*16	*533	*841	*841	-	-	*691	*691	-	-
Mov Cap-2 Maneuver	*371	*317	-	*382	*321	-	-	-	-	-	-	-	-	-
Stage 1	*549	*540	-	*529	*503	-	-	-	-	-	-	-	-	-
Stage 2	*479	*503	-	*582	*529	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	12.6	0.2	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 841	-	-	371	317	637	382	533	* 691	-	-
HCM Lane V/C Ratio	0.04	-	-	0.065	0.003	0.043	0.014	0.074	0.068	-	-
HCM Control Delay (s)	9.5	-	-	15.4	16.4	10.9	14.6	12.3	10.6	-	-
HCM Lane LOS	A	-	-	C	C	B	B	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0.1	0	0.2	0.2	-	-

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

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	18	54	2	68	1655	0	1487	18
Future Vol, veh/h	18	54	2	68	1655	0	1487	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	50	0	-	205	-	200	-	-
Veh in Median Storage, #	2	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	1	0	1	0
Mvmt Flow	19	57	2	72	1742	0	1565	19

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	2420	792	1156	1584	0	1272	-	0
Stage 1	1575	-	-	-	-	-	-	-
Stage 2	845	-	-	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.6	5.3	-	5.6	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	2.3	3.1	-	2.3	-	-
Pot Cap-1 Maneuver	*161	*577	*978	*726	-	316	-	-
Stage 1	*592	-	-	-	-	-	-	-
Stage 2	*350	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	-		-	-
Mov Cap-1 Maneuver	*145	*577	*730	*730	-	316	-	-
Mov Cap-2 Maneuver	*302	-	-	-	-	-	-	-
Stage 1	*532	-	-	-	-	-	-	-
Stage 2	*350	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	* 730	-	302	577	316	-	-
HCM Lane V/C Ratio	0.101	-	0.063	0.099	-	-	-
HCM Control Delay (s)	10.5	-	17.7	11.9	0	-	-
HCM Lane LOS	B	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	0.3	0	-	-

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

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	6	24	1	4	23	16	0	2	11	5	0	9
Future Vol, veh/h	6	24	1	4	23	16	0	2	11	5	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	8	32	1	5	30	21	0	3	14	7	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	51	0	0	33	0	0	106	110	33	108	100	41
Stage 1	-	-	-	-	-	-	49	49	-	51	51	-
Stage 2	-	-	-	-	-	-	57	61	-	57	49	-
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	1568	-	-	1592	-	-	878	784	1046	876	794	1036
Stage 1	-	-	-	-	-	-	969	858	-	967	856	-
Stage 2	-	-	-	-	-	-	960	848	-	960	858	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1568	-	-	1592	-	-	863	778	1046	857	788	1036
Mov Cap-2 Maneuver	-	-	-	-	-	-	863	778	-	857	788	-
Stage 1	-	-	-	-	-	-	964	854	-	962	853	-
Stage 2	-	-	-	-	-	-	946	845	-	939	854	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.7	8.7	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	993	1568	-	-	1592	-	-	964
HCM Lane V/C Ratio	0.017	0.005	-	-	0.003	-	-	0.019
HCM Control Delay (s)	8.7	7.3	0	-	7.3	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	4.9

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	0	32	0	0	38	0
Future Vol, veh/h	0	32	0	0	38	0
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	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	34	0	0	40	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	34	0	18	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1591	-	1003	1064
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1027	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1591	-	1003	1064
Mov Cap-2 Maneuver	-	-	-	-	920	-
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1027	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	920	-	-	-	1591	-
HCM Lane V/C Ratio	0.043	-	-	-	-	-
HCM Control Delay (s)	9.1	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0	-

Capacity Analysis Summary Sheets

Year 2030 Total Projected Weekday Morning Peak Hour
with Ravinia Extension

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	1	158	542	195	54	190	531	136	245	1016	225	1
Future Volume (vph)	1	158	542	195	54	190	531	136	245	1016	225	1
Ideal Flow (vphpl)	1900	1900	2000	1900	1900	1900	2000	1900	1900	2000	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%				0%			0%		
Storage Length (ft)		155		400		180		420	310		170	
Storage Lanes		2		1		2		1	2		1	
Taper Length (ft)		245				290			300			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.91	1.00	0.91
Ped Bike Factor												
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3368	3689	1538	0	3339	3585	1495	3400	5151	1583	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3368	3689	1538	0	3339	3585	1495	3400	5151	1583	0
Right Turn on Red				No				No			No	
Satd. Flow (RTOR)												
Link Speed (mph)			40				40			40		
Link Distance (ft)			1885				944			1415		
Travel Time (s)			32.1				16.1			24.1		
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	3%	5%	8%	4%	6%	8%	3%	6%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%				0%			0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	175	596	214	0	268	584	149	269	1116	247	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot
Protected Phases	7!	7	4	5!	3!	3	8	1!	5	2	3!	1!
Permitted Phases				4				8			2	
Detector Phase	7	7	4	5	3	3	8	1	5	2	3	1
Switch Phase												
Minimum Initial (s)	3.0	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0
Minimum Split (s)	7.5	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5	21.0	7.5	7.5
Total Split (s)	16.0	16.0	30.0	21.0	22.0	22.0	36.0	21.0	21.0	47.0	22.0	21.0
Total Split (%)	13.3%	13.3%	25.0%	17.5%	18.3%	18.3%	30.0%	17.5%	17.5%	39.2%	18.3%	17.5%
Yellow Time (s)	3.5	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5
All-Red Time (s)	1.0	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.5	6.0	4.5		4.5	6.0	4.5	4.5	6.0	4.5	
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	None	None	None	Min	None	None	C-Min	None	None
Act Effct Green (s)		10.6	24.7	44.9		14.6	28.6	48.1	14.3	46.3	66.9	
Actuated g/C Ratio		0.09	0.21	0.37		0.12	0.24	0.40	0.12	0.39	0.56	

Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	203	751	84
Future Volume (vph)	203	751	84
Ideal Flow (vphpl)	1900	2000	1900
Lane Width (ft)	12	12	12
Grade (%)		0%	
Storage Length (ft)	190		135
Storage Lanes	2		1
Taper Length (ft)	280		
Lane Util. Factor	0.97	0.91	1.00
Ped Bike Factor			
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3214	5009	1524
Flt Permitted	0.950		
Satd. Flow (perm)	3214	5009	1524
Right Turn on Red			No
Satd. Flow (RTOR)			
Link Speed (mph)		40	
Link Distance (ft)		839	
Travel Time (s)		14.3	
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor	0.91	0.91	0.91
Growth Factor	100%	100%	100%
Heavy Vehicles (%)	9%	9%	6%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Mid-Block Traffic (%)		0%	
Shared Lane Traffic (%)			
Lane Group Flow (vph)	224	825	92
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7!
Permitted Phases			6
Detector Phase	1	6	7
Switch Phase			
Minimum Initial (s)	3.0	15.0	3.0
Minimum Split (s)	7.5	21.0	7.5
Total Split (s)	21.0	47.0	16.0
Total Split (%)	17.5%	39.2%	13.3%
Yellow Time (s)	3.5	4.0	3.5
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Recall Mode	None	C-Min	None
Act Effct Green (s)	13.4	45.5	62.1
Actuated g/C Ratio	0.11	0.38	0.52

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
v/c Ratio		0.59	0.79	0.37		0.66	0.68	0.25	0.67	0.56	0.28	
Control Delay		90.5	34.6	14.4		58.3	45.9	24.2	58.7	31.1	15.6	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		90.5	34.6	14.4		58.3	45.9	24.2	58.7	31.1	15.6	
LOS		F	C	B		E	D	C	E	C	B	
Approach Delay			40.2				46.0			33.3		
Approach LOS			D				D			C		
Queue Length 50th (ft)		72	185	66		103	214	74	104	254	100	
Queue Length 95th (ft)		113	298	152		145	277	118	147	314	155	
Internal Link Dist (ft)			1805				864			1335		
Turn Bay Length (ft)		155		400		180		420	310		170	
Base Capacity (vph)		322	770	604		486	896	637	467	1988	921	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.54	0.77	0.35		0.55	0.65	0.23	0.58	0.56	0.27	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 37.6 Intersection LOS: D
Intersection Capacity Utilization 63.2% ICU Level of Service B
Analysis Period (min) 15
! Phase conflict between lane groups.

Splits and Phases: 1: LaGrange Road & 159th Street

Lane Group	SBL	SBT	SBR
v/c Ratio	0.62	0.43	0.12
Control Delay	58.4	29.5	16.5
Queue Delay	0.0	0.0	0.0
Total Delay	58.4	29.5	16.5
LOS	E	C	B
Approach Delay		34.1	
Approach LOS		C	
Queue Length 50th (ft)	86	178	37
Queue Length 95th (ft)	125	225	69
Internal Link Dist (ft)		759	
Turn Bay Length (ft)	190		135
Base Capacity (vph)	441	1898	799
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.51	0.43	0.12

Intersection Summary

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	122	796	12	30	692	136	30	1	39	103	20
Future Volume (vph)	3	122	796	12	30	692	136	30	1	39	103	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%			0%			0%			0%
Storage Length (ft)		275		0	400		195	290		0	160	
Storage Lanes		1		0	2		1	1		1	1	
Taper Length (ft)		165			280			95			100	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.998				0.850			0.850		
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1805	3459	0	3367	3654	1599	1517	2000	1615	1787	2000
Flt Permitted		0.950			0.950			0.743			0.695	
Satd. Flow (perm)	0	1805	3459	0	3367	3654	1599	1186	2000	1615	1307	2000
Right Turn on Red				No			No			No		
Satd. Flow (RTOR)												
Link Speed (mph)			40			40			30			30
Link Distance (ft)			926			1885			890			503
Travel Time (s)			15.8			32.1			20.2			11.4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	14%	4%	4%	1%	19%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%			0%			0%			0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	134	869	0	32	744	146	32	1	42	111	22
Turn Type	Prot	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5!	5	2		1	6		7	4	1	3	8
Permitted Phases							6	4		4	8	
Detector Phase	5	5	2		1	6	6	7	4	1	3	8
Switch Phase												
Minimum Initial (s)	3.0	3.0	8.0		3.0	8.0	8.0	3.0	5.0	3.0	3.0	5.0
Minimum Split (s)	9.5	9.5	22.5		9.5	22.5	22.5	9.5	18.0	9.5	9.5	18.0
Total Split (s)	18.0	18.0	66.0		18.0	66.0	66.0	18.0	18.0	18.0	18.0	18.0
Total Split (%)	15.0%	15.0%	55.0%		15.0%	55.0%	55.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Yellow Time (s)	3.5	3.5	4.5		3.5	4.5	4.5	3.5	4.0	3.5	3.5	4.0
All-Red Time (s)	1.0	1.0	1.5		1.0	1.5	1.5	0.0	2.0	1.0	0.0	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)		4.5	6.0		4.5	6.0	6.0	3.5	6.0	4.5	3.5	6.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Min		None	C-Min	C-Min	None	Max	None	None	Max
Act Effct Green (s)		11.0	52.5		3.9	44.0	44.0	44.7	37.8	47.7	51.0	43.4
Actuated g/C Ratio		0.09	0.44		0.03	0.37	0.37	0.37	0.32	0.40	0.42	0.36

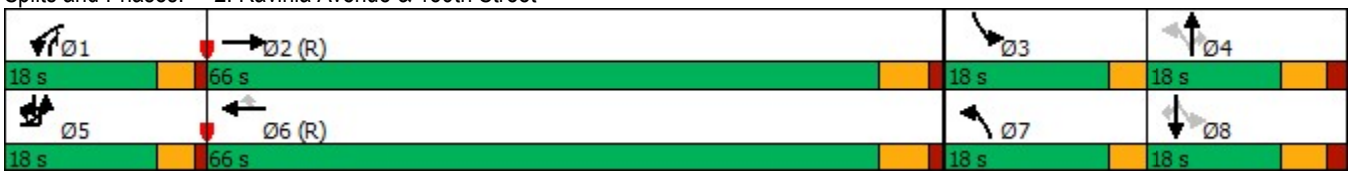
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	50
Future Volume (vph)	50
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	165
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.93
Growth Factor	100%
Heavy Vehicles (%)	2%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	54
Turn Type	pm+ov
Protected Phases	5!
Permitted Phases	8
Detector Phase	5
Switch Phase	
Minimum Initial (s)	3.0
Minimum Split (s)	9.5
Total Split (s)	18.0
Total Split (%)	15.0%
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	60.3
Actuated g/C Ratio	0.50

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
v/c Ratio		0.81	0.57		0.29	0.56	0.25	0.07	0.00	0.07	0.19	0.03
Control Delay		87.2	27.0		38.3	49.1	42.4	23.6	35.0	26.5	23.8	30.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		87.2	27.0		38.3	49.1	42.4	23.6	35.0	26.5	23.8	30.4
LOS		F	C		D	D	D	C	C	C	C	C
Approach Delay			35.0			47.6			25.4			23.0
Approach LOS			D			D			C			C
Queue Length 50th (ft)		103	282		10	321	118	13	1	19	49	11
Queue Length 95th (ft)		#181	292		m18	382	m181	m39	m6	52	103	35
Internal Link Dist (ft)			846			1805			810			423
Turn Bay Length (ft)		275			400		195	290			160	
Base Capacity (vph)		203	1729		378	1827	799	543	630	771	614	722
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		0.66	0.50		0.08	0.41	0.18	0.06	0.00	0.05	0.18	0.03

Intersection Summary

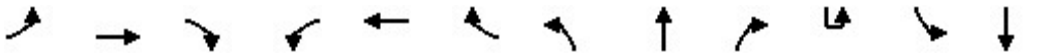
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 35 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 39.0 Intersection LOS: D
Intersection Capacity Utilization 51.8% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
! Phase conflict between lane groups.

Splits and Phases: 2: Ravinia Avenue & 159th Street



Lane Group	SBR
v/c Ratio	0.07
Control Delay	18.3
Queue Delay	0.0
Total Delay	18.3
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	20
Queue Length 95th (ft)	52
Internal Link Dist (ft)	
Turn Bay Length (ft)	165
Base Capacity (vph)	829
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.07

Intersection Summary



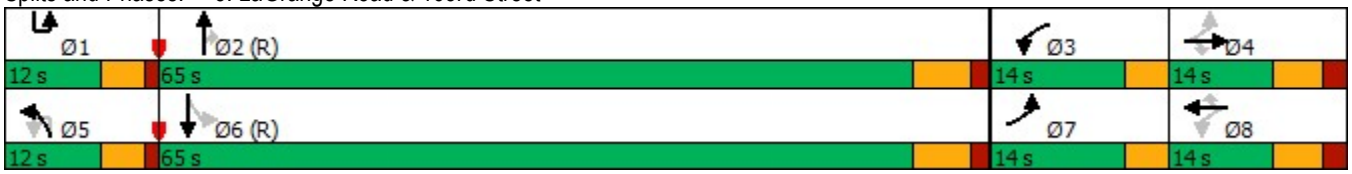
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	35	1	9	58	4	42	4	1344	65	16	53	979
Future Volume (vph)	35	1	9	58	4	42	4	1344	65	16	53	979
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	125		0	0		0	195		195		250	
Storage Lanes	1		1	1		1	1		1		2	
Taper Length (ft)	90			25			195				300	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.97	0.91
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.998
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1752	2000	1615	1752	2000	1615	1805	5200	1615	0	3502	4797
Flt Permitted				0.769			0.950				0.175	
Satd. Flow (perm)	1845	2000	1615	1419	2000	1615	1805	5200	1615	0	645	4797
Right Turn on Red			No			No			No			
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			45				45
Link Distance (ft)		562			628			1162				1404
Travel Time (s)		19.2			21.4			17.6				21.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	0%	3%	0%	0%	0%	5%	0%	0%	0%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	1	10	62	4	45	4	1430	69	0	73	1052
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	Perm	NA
Protected Phases	7	4		3	8		5	2		1		6
Permitted Phases	4		4	8		8			2		6	
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	15.0	15.0	3.0	15.0	15.0
Minimum Split (s)	9.5	14.0	14.0	9.5	14.0	14.0	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	14.0	14.0	14.0	14.0	14.0	14.0	12.0	65.0	65.0	12.0	65.0	65.0
Total Split (%)	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	11.4%	61.9%	61.9%	11.4%	61.9%	61.9%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0	4.5	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
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	C-Min	None	C-Min	C-Min
Act Effct Green (s)	7.2	5.7	5.7	12.9	6.3	6.3	3.2	84.5	84.5		82.8	82.8
Actuated g/C Ratio	0.07	0.05	0.05	0.12	0.06	0.06	0.03	0.80	0.80		0.79	0.79

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	0.91
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.94
Growth Factor	100%
Heavy Vehicles (%)	0%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
v/c Ratio	0.31	0.01	0.11	0.30	0.03	0.47	0.07	0.34	0.05		0.14	0.28
Control Delay	49.0	46.0	49.1	41.7	45.8	63.2	52.0	4.3	4.0		6.3	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	49.0	46.0	49.1	41.7	45.8	63.2	52.0	4.3	4.0		6.3	4.9
LOS	D	D	D	D	D	E	D	A	A		A	A
Approach Delay		49.0			50.5			4.4				5.0
Approach LOS		D			D			A				A
Queue Length 50th (ft)	25	1	7	37	3	30	3	100	10		5	68
Queue Length 95th (ft)	48	6	23	72	13	66	14	150	26		21	141
Internal Link Dist (ft)		482			548			1082				1324
Turn Bay Length (ft)	125						195		195		250	
Base Capacity (vph)	214	155	125	253	155	125	128	4182	1299		508	3782
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.17	0.01	0.08	0.25	0.03	0.36	0.03	0.34	0.05		0.14	0.28

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 64 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 50.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: LaGrange Road & 163rd Street



Lane Group	SBR
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	26	1	15	1	0	15	2	27	1379	19	5	31	997	37
Future Vol, veh/h	26	1	15	1	0	15	2	27	1379	19	5	31	997	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	0	0	-	-	-	190	-	-	-	265	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	5	0	0	3	6	0
Mvmt Flow	29	1	16	1	0	16	2	30	1515	21	5	34	1096	41

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1865	2795	569	2107	2805	768	829	1137	0	0	1121	1536	0	0
Stage 1	1195	1195	-	1590	1590	-	-	-	-	-	-	-	-	-
Stage 2	670	1600	-	517	1215	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.6	5.3	-	-	5.6	5.36	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	2.3	3.1	-	-	2.3	3.13	-	-
Pot Cap-1 Maneuver	*79	19	*700	*56	*19	*594	*1187	819	-	-	*1007	*740	-	-
Stage 1	*576	592	-	*610	*579	-	-	-	-	-	-	-	-	-
Stage 2	*610	580	-	*718	*576	-	-	-	-	-	-	-	-	-
Platoon blocked, %			1			1	1	1	-	-	1	1	-	-
Mov Cap-1 Maneuver	*72	17	*700	*51	*17	*594	*836	836	-	-	*766	*766	-	-
Mov Cap-2 Maneuver	*365	346	-	*401	*343	-	-	-	-	-	-	-	-	-
Stage 1	*554	561	-	*586	*557	-	-	-	-	-	-	-	-	-
Stage 2	*570	558	-	*664	*546	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.8	11.4	0.2	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	836	-	-	365	346	700	401	594	* 766	-	-
HCM Lane V/C Ratio	0.038	-	-	0.078	0.003	0.024	0.003	0.028	0.052	-	-
HCM Control Delay (s)	9.5	-	-	15.7	15.4	10.3	14	11.2	10	-	-
HCM Lane LOS	A	-	-	C	C	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0	0.1	0	0.1	0.2	-	-

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	6	26	52	1407	0	1031	15
Future Vol, veh/h	6	26	52	1407	0	1031	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	50	0	205	-	200	-	-
Veh in Median Storage, #	2	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	4	0	8	0
Mvmt Flow	6	27	54	1466	0	1074	16

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1776	545	1090	0	1070	-	0
Stage 1	1082	-	-	-	-	-	-
Stage 2	694	-	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.3	-	5.6	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	3.1	-	2.3	-	-
Pot Cap-1 Maneuver	*272	*694	*873	-	409	-	-
Stage 1	*712	-	-	-	-	-	-
Stage 2	*420	-	-	-	-	-	-
Platoon blocked, %	1	1	1	-		-	-
Mov Cap-1 Maneuver	*255	*694	*873	-	409	-	-
Mov Cap-2 Maneuver	*383	-	-	-	-	-	-
Stage 1	*667	-	-	-	-	-	-
Stage 2	*420	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	* 873	-	383	694	409	-	-
HCM Lane V/C Ratio	0.062	-	0.016	0.039	-	-	-
HCM Control Delay (s)	9.4	-	14.6	10.4	0	-	-
HCM Lane LOS	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	0.1	0	-	-

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

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	22	2	8	33	10	0	0	1	4	0	2
Future Vol, veh/h	6	22	2	8	33	10	0	0	1	4	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	17	0	0	0	0	0	0	0	0	0	0	50
Mvmt Flow	7	27	2	10	41	12	0	0	1	5	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	53	0	0	29	0	0	110	115	28	110	110	47
Stage 1	-	-	-	-	-	-	42	42	-	67	67	-
Stage 2	-	-	-	-	-	-	68	73	-	43	43	-
Critical Hdwy	4.27	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.7
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	2.353	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.75
Pot Cap-1 Maneuver	1462	-	-	1597	-	-	873	779	1053	873	784	901
Stage 1	-	-	-	-	-	-	978	864	-	948	843	-
Stage 2	-	-	-	-	-	-	947	838	-	976	863	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1462	-	-	1597	-	-	863	770	1053	864	775	901
Mov Cap-2 Maneuver	-	-	-	-	-	-	863	770	-	864	775	-
Stage 1	-	-	-	-	-	-	973	860	-	943	838	-
Stage 2	-	-	-	-	-	-	939	833	-	970	859	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	1.1	8.4	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1053	1462	-	-	1597	-	-	876
HCM Lane V/C Ratio	0.001	0.005	-	-	0.006	-	-	0.008
HCM Control Delay (s)	8.4	7.5	0	-	7.3	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	7.7

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	0	8	9	2	46	10
Future Vol, veh/h	0	8	9	2	46	10
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	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	8	9	2	48	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	8	0	23	4
Stage 1	-	-	-	-	4	-
Stage 2	-	-	-	-	19	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1625	-	996	1085
Stage 1	-	-	-	-	1024	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1625	-	990	1085
Mov Cap-2 Maneuver	-	-	-	-	911	-
Stage 1	-	-	-	-	1024	-
Stage 2	-	-	-	-	1001	-

Approach	EB	WB	NE
HCM Control Delay, s	0	5.9	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	911	1085	-	-	1625	-
HCM Lane V/C Ratio	0.053	0.01	-	-	0.006	-
HCM Control Delay (s)	9.2	8.4	-	-	7.2	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-

Capacity Analysis Summary Sheets

Year 2030 Total Projected Weekday Evening Peak Hour
with Ravinia Extension

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	237	698	386	43	323	806	230	3	362	1216	284	1
Future Volume (vph)	237	698	386	43	323	806	230	3	362	1216	284	1
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	2000	1900	1900	1900	2000	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%				0%				0%		
Storage Length (ft)	155		400		180		420		310		170	
Storage Lanes	2		1		2		1		2		1	
Taper Length (ft)	245				290				300			
Lane Util. Factor	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.91	0.97	0.91	1.00	0.91
Ped Bike Factor												
Frt			0.850				0.850				0.850	
Flt Protected	0.950				0.950				0.950			
Satd. Flow (prot)	3467	3762	1599	0	3471	3725	1599	0	3434	5353	1599	0
Flt Permitted	0.950				0.950				0.950			
Satd. Flow (perm)	3467	3762	1599	0	3471	3725	1599	0	3434	5353	1599	0
Right Turn on Red			No				No				No	
Satd. Flow (RTOR)												
Link Speed (mph)		40				40				40		
Link Distance (ft)		1885				944				1415		
Travel Time (s)		32.1				16.1				24.1		
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	0%	1%	2%	1%	0%	2%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%				0%				0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	244	720	398	0	377	831	237	0	376	1254	293	0
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot
Protected Phases	7	4	5!	3!	3	8	1!	5!	5	2	3!	1!
Permitted Phases			4				8				2	
Detector Phase	7	4	5	3	3	8	1	5	5	2	3	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0
Minimum Split (s)	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5
Total Split (s)	17.0	32.0	20.0	23.0	23.0	38.0	24.0	20.0	20.0	51.0	23.0	24.0
Total Split (%)	13.1%	24.6%	15.4%	17.7%	17.7%	29.2%	18.5%	15.4%	15.4%	39.2%	17.7%	18.5%
Yellow Time (s)	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5
All-Red Time (s)	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5	6.0	4.5		4.5	6.0	4.5		4.5	6.0	4.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	None	Min	None	None	None	C-Min	None	None
Act Effct Green (s)	12.1	27.0	48.5		17.5	32.3	56.8		15.5	46.1	69.6	
Actuated g/C Ratio	0.09	0.21	0.37		0.13	0.25	0.44		0.12	0.35	0.54	

Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	389	1345	246
Future Volume (vph)	389	1345	246
Ideal Flow (vphpl)	1900	2000	1900
Lane Width (ft)	12	12	12
Grade (%)		0%	
Storage Length (ft)	190		135
Storage Lanes	2		1
Taper Length (ft)	280		
Lane Util. Factor	0.97	0.91	1.00
Ped Bike Factor			
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3467	5353	1568
Flt Permitted	0.950		
Satd. Flow (perm)	3467	5353	1568
Right Turn on Red			No
Satd. Flow (RTOR)			
Link Speed (mph)		40	
Link Distance (ft)		839	
Travel Time (s)		14.3	
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor	0.97	0.97	0.97
Growth Factor	100%	100%	100%
Heavy Vehicles (%)	1%	2%	3%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Mid-Block Traffic (%)		0%	
Shared Lane Traffic (%)			
Lane Group Flow (vph)	402	1387	254
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7!
Permitted Phases			6
Detector Phase	1	6	7
Switch Phase			
Minimum Initial (s)	3.0	15.0	3.0
Minimum Split (s)	7.5	21.0	7.5
Total Split (s)	24.0	55.0	17.0
Total Split (%)	18.5%	42.3%	13.1%
Yellow Time (s)	3.5	4.0	3.5
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Recall Mode	None	C-Min	None
Act Effct Green (s)	18.4	49.0	67.1
Actuated g/C Ratio	0.14	0.38	0.52

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
v/c Ratio	0.76	0.92	0.67		0.81	0.90	0.34		0.92	0.66	0.34	
Control Delay	88.8	53.9	29.2		68.7	60.8	25.8		84.1	34.9	16.1	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	88.8	53.9	29.2		68.7	60.8	25.8		84.1	34.9	16.1	
LOS	F	D	C		E	E	C		F	C	B	
Approach Delay		52.9				57.1				41.7		
Approach LOS		D				E				D		
Queue Length 50th (ft)	112	272	284		159	360	129		164	261	113	
Queue Length 95th (ft)	#161	#432	385		215	#474	194		#259	339	157	
Internal Link Dist (ft)		1805				864				1335		
Turn Bay Length (ft)	155		400		180		420		310		170	
Base Capacity (vph)	333	780	596		493	926	711		410	1897	867	
Starvation Cap Reductn	0	0	0		0	0	0		0	0	0	
Spillback Cap Reductn	0	0	0		0	0	0		0	0	0	
Storage Cap Reductn	0	0	0		0	0	0		0	0	0	
Reduced v/c Ratio	0.73	0.92	0.67		0.76	0.90	0.33		0.92	0.66	0.34	

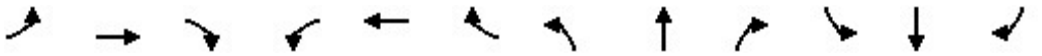
Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 46.9 Intersection LOS: D
Intersection Capacity Utilization 85.7% 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.
! Phase conflict between lane groups.

Splits and Phases: 1: LaGrange Road & 159th Street

Lane Group	SBL	SBT	SBR
v/c Ratio	0.82	0.69	0.31
Control Delay	68.2	36.2	19.4
Queue Delay	0.0	0.0	0.0
Total Delay	68.2	36.2	19.4
LOS	E	D	B
Approach Delay		40.4	
Approach LOS		D	
Queue Length 50th (ft)	170	357	119
Queue Length 95th (ft)	227	411	179
Internal Link Dist (ft)		759	
Turn Bay Length (ft)	190		135
Base Capacity (vph)	520	2017	814
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.77	0.69	0.31

Intersection Summary



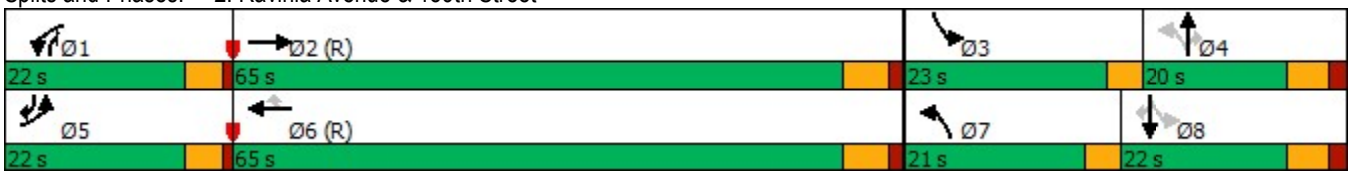
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	928	31	273	772	181	125	66	242	178	121	146
Future Volume (vph)	167	928	31	273	772	181	125	66	242	178	121	146
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	275		0	400		195	290		0	160		165
Storage Lanes	1		0	2		1	1		1	1		1
Taper Length (ft)	165			280			95			100		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3550	0	3502	3654	1599	1787	2000	1615	1787	2000	1599
Flt Permitted	0.950			0.950			0.676			0.645		
Satd. Flow (perm)	1805	3550	0	3502	3654	1599	1272	2000	1615	1213	2000	1599
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		926			1885			890			503	
Travel Time (s)		15.8			32.1			20.2			11.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	7%	0%	4%	1%	1%	0%	0%	1%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	999	0	284	804	189	130	69	252	185	126	152
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		7	4	1	3	8	5
Permitted Phases						6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	5.0	3.0	3.0	5.0	3.0
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	18.0	9.5	9.5	18.0	9.5
Total Split (s)	22.0	65.0		22.0	65.0	65.0	21.0	20.0	22.0	23.0	22.0	22.0
Total Split (%)	16.9%	50.0%		16.9%	50.0%	50.0%	16.2%	15.4%	16.9%	17.7%	16.9%	16.9%
Yellow Time (s)	3.5	4.5		3.5	4.5	4.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	0.0	2.0	1.0	0.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0		4.5	6.0	6.0	3.5	6.0	4.5	3.5	6.0	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	Max	None	None	Max	None
Act Effct Green (s)	14.6	54.5		13.2	53.1	53.1	41.6	29.8	49.0	47.6	32.9	53.5
Actuated g/C Ratio	0.11	0.42		0.10	0.41	0.41	0.32	0.23	0.38	0.37	0.25	0.41

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.87	0.67		0.80	0.54	0.29	0.29	0.15	0.41	0.37	0.25	0.23
Control Delay	92.1	32.7		49.8	51.8	46.1	31.8	46.5	34.8	33.2	44.3	28.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.1	32.7		49.8	51.8	46.1	31.8	46.5	34.8	33.2	44.3	28.3
LOS	F	C		D	D	D	C	D	C	C	D	C
Approach Delay		41.5			50.5			35.7			34.6	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	145	351		127	366	161	73	47	157	109	85	81
Queue Length 95th (ft)	#241	401		m144	m411	m188	m136	m103	269	189	163	154
Internal Link Dist (ft)		846			1805			810			423	
Turn Bay Length (ft)	275			400		195	290			160		165
Base Capacity (vph)	242	1611		471	1658	725	529	457	661	536	506	693
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.62		0.60	0.48	0.26	0.25	0.15	0.38	0.35	0.25	0.22

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 41 (32%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 43.2 Intersection LOS: D
Intersection Capacity Utilization 65.5% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Ravinia Avenue & 159th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	65	4	21	66	10	74	1	20	1579	73	16	81
Future Volume (vph)	65	4	21	66	10	74	1	20	1579	73	16	81
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	2000	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%				0%			
Storage Length (ft)	125		0	0		0		195		195		250
Storage Lanes	1		1	1		1		1		1		2
Taper Length (ft)	90			25				195				300
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	1.00	0.91	0.97
Ped Bike Factor												
Frt			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	0	1805	5353	1615	0	3502
Flt Permitted	0.751			0.619				0.909				0.137
Satd. Flow (perm)	1427	2000	1615	1176	2000	1615	0	1727	5353	1615	0	505
Right Turn on Red			No			No				No		
Satd. Flow (RTOR)												
Link Speed (mph)		20			20				45			
Link Distance (ft)		562			628				1162			
Travel Time (s)		19.2			21.4				17.6			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	4	22	69	10	77	0	22	1645	76	0	101
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	custom	Prot	NA	Perm	Prot	Perm
Protected Phases	7	4		3	8			5	2		1	
Permitted Phases	4		4	8		8	5			2		6
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	15.0	15.0	3.0	15.0
Minimum Split (s)	9.5	14.0	14.0	9.5	14.0	14.0	9.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	15.0	15.0	15.0	15.0	15.0	15.0	13.0	13.0	87.0	87.0	13.0	87.0
Total Split (%)	11.5%	11.5%	11.5%	11.5%	11.5%	11.5%	10.0%	10.0%	66.9%	66.9%	10.0%	66.9%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	4.5	4.5	3.5	4.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	1.0	1.0	1.5	1.5	1.0	1.5
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	6.0	3.5	6.0	6.0		4.5	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	16.5	9.2	9.2	17.5	8.8	8.8		5.8	100.0	100.0		92.9
Actuated g/C Ratio	0.13	0.07	0.07	0.13	0.07	0.07		0.04	0.77	0.77		0.71

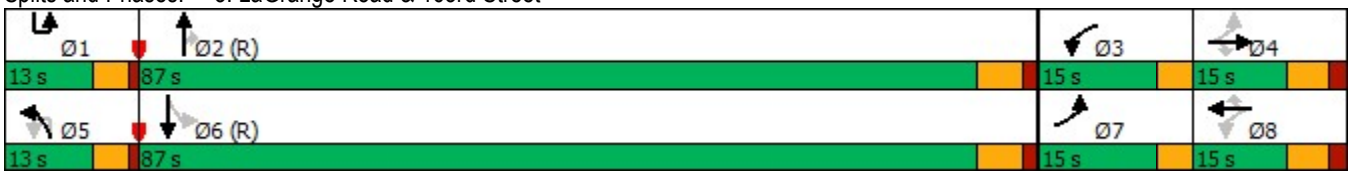
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1791	58
Future Volume (vph)	1791	58
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor		
Frt	0.995	
Flt Protected		
Satd. Flow (prot)	5108	0
Flt Permitted		
Satd. Flow (perm)	5108	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	45	
Link Distance (ft)	1404	
Travel Time (s)	21.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.96	0.96
Growth Factor	100%	100%
Heavy Vehicles (%)	1%	2%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1926	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	22.5	
Total Split (s)	87.0	
Total Split (%)	66.9%	
Yellow Time (s)	4.5	
All-Red Time (s)	1.5	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	C-Min	
Act Effct Green (s)	92.9	
Actuated g/C Ratio	0.71	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
v/c Ratio	0.34	0.03	0.19	0.34	0.07	0.71		0.29	0.40	0.06		0.28
Control Delay	51.4	54.8	59.3	50.5	56.4	91.4		68.3	5.9	4.8		9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	51.4	54.8	59.3	50.5	56.4	91.4		68.3	5.9	4.8		9.4
LOS	D	D	E	D	E	F		E	A	A		A
Approach Delay		53.4			71.1				6.7			
Approach LOS		D			E				A			
Queue Length 50th (ft)	50	3	17	51	8	64		18	157	14		10
Queue Length 95th (ft)	90	15	46	92	26	#123		47	212	32		m19
Internal Link Dist (ft)		482			548				1082			
Turn Bay Length (ft)	125							195		195		250
Base Capacity (vph)	244	166	134	250	152	122		112	4117	1242		361
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	0.28	0.02	0.16	0.28	0.07	0.63		0.20	0.40	0.06		0.28

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 63.0% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: LaGrange Road & 163rd Street



Lane Group	SBT	SBR
v/c Ratio	0.53	
Control Delay	8.1	
Queue Delay	0.0	
Total Delay	8.1	
LOS	A	
Approach Delay	8.1	
Approach LOS	A	
Queue Length 50th (ft)	176	
Queue Length 95th (ft)	211	
Internal Link Dist (ft)	1324	
Turn Bay Length (ft)		
Base Capacity (vph)	3657	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.53	

Intersection Summary

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	30	1	42	8	1	49	3	58	1742	24	12	66	1821	99
Future Vol, veh/h	30	1	42	8	1	49	3	58	1742	24	12	66	1821	99
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	0	0	-	-	-	190	-	-	-	265	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Mvmt Flow	32	1	45	9	1	53	3	62	1873	26	13	71	1958	106

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	3059	4208	1032	2968	4248	950	1507	2064	0	0	1386	1899	0	0
Stage 1	2179	2179	-	2016	2016	-	-	-	-	-	-	-	-	-
Stage 2	880	2029	-	952	2232	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.6	5.3	-	-	5.6	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	2.3	3.1	-	-	2.3	3.1	-	-
Pot Cap-1 Maneuver	*54	2	*497	*68	2	*517	*842	*625	-	-	*876	*650	-	-
Stage 1	*382	401	-	*479	472	-	-	-	-	-	-	-	-	-
Stage 2	*530	461	-	*510	364	-	-	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	1	-	-	1	1	-	-
Mov Cap-1 Maneuver	*40	~ 1	*497	*52	~ 1	*517	*631	*631	-	-	*669	*669	-	-
Mov Cap-2 Maneuver	*228	215	-	*254	196	-	-	-	-	-	-	-	-	-
Stage 1	*341	351	-	*429	422	-	-	-	-	-	-	-	-	-
Stage 2	*425	413	-	*404	318	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.4	13.9	0.4	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 631	-	-	228	215	497	254	501	* 669	-	-
HCM Lane V/C Ratio	0.104	-	-	0.141	0.005	0.091	0.034	0.107	0.125	-	-
HCM Control Delay (s)	11.4	-	-	23.4	21.8	13	19.7	13	11.2	-	-
HCM Lane LOS	B	-	-	C	C	B	C	B	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.5	0	0.3	0.1	0.4	0.4	-	-

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

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	15	65	72	1653	5	1849	25
Future Vol, veh/h	15	65	72	1653	5	1849	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	50	0	205	-	200	-	-
Veh in Median Storage, #	2	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	0	1	0
Mvmt Flow	16	71	78	1797	5	2010	27

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	2909	1019	2037	0	1312	-	0
Stage 1	2034	-	-	-	-	-	-
Stage 2	875	-	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.3	-	5.6	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	3.1	-	2.3	-	-
Pot Cap-1 Maneuver	*89	*497	*625	-	300	-	-
Stage 1	*510	-	-	-	-	-	-
Stage 2	*338	-	-	-	-	-	-
Platoon blocked, %	1	1	1	-		-	-
Mov Cap-1 Maneuver	*77	*497	*625	-	300	-	-
Mov Cap-2 Maneuver	*259	-	-	-	-	-	-
Stage 1	*446	-	-	-	-	-	-
Stage 2	*332	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	* 625	-	259	497	300	-	-
HCM Lane V/C Ratio	0.125	-	0.063	0.142	0.018	-	-
HCM Control Delay (s)	11.6	-	19.8	13.4	17.2	-	-
HCM Lane LOS	B	-	C	B	C	-	-
HCM 95th %tile Q(veh)	0.4	-	0.2	0.5	0.1	-	-

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

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	20	1	4	31	16	0	6	12	15	1	6
Future Vol, veh/h	3	20	1	4	31	16	0	6	12	15	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	26	1	5	40	21	0	8	16	19	1	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	61	0	0	27	0	0	100	106	27	108	96	51
Stage 1	-	-	-	-	-	-	35	35	-	61	61	-
Stage 2	-	-	-	-	-	-	65	71	-	47	35	-
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	1555	-	-	1600	-	-	886	788	1054	876	798	1023
Stage 1	-	-	-	-	-	-	986	870	-	955	848	-
Stage 2	-	-	-	-	-	-	951	840	-	972	870	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1555	-	-	1600	-	-	874	783	1054	852	793	1023
Mov Cap-2 Maneuver	-	-	-	-	-	-	874	783	-	852	793	-
Stage 1	-	-	-	-	-	-	983	867	-	952	845	-
Stage 2	-	-	-	-	-	-	939	837	-	946	867	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.6	8.9	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	945	1555	-	-	1600	-	-	890
HCM Lane V/C Ratio	0.025	0.003	-	-	0.003	-	-	0.032
HCM Control Delay (s)	8.9	7.3	0	-	7.3	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	4.7

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	14	24	32	17	32	6
Future Vol, veh/h	14	24	32	17	32	6
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	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	15	25	34	18	34	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	40	0	105	20
Stage 1	-	-	-	-	28	-
Stage 2	-	-	-	-	77	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1583	-	887	1060
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1583	-	867	1060
Mov Cap-2 Maneuver	-	-	-	-	827	-
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	922	-

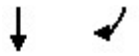
Approach	EB	WB	NE
HCM Control Delay, s	0	4.8	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	827	1060	-	-	1583	-
HCM Lane V/C Ratio	0.041	0.006	-	-	0.021	-
HCM Control Delay (s)	9.5	8.4	-	-	7.3	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-

Capacity Analysis Summary Sheets

Year 2030 Total Projected Saturday Midday Peak Hour
with Ravinia Extension

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	260	669	253	69	249	642	333	348	1142	337	3	554
Future Volume (vph)	260	669	253	69	249	642	333	348	1142	337	3	554
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	2000	1900	1900	2000	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%				0%			0%			
Storage Length (ft)	155		400		180		420	310		170		190
Storage Lanes	2		1		2		1	2		1		2
Taper Length (ft)	245				290			300				280
Lane Util. Factor	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.91	1.00	0.91	0.97
Ped Bike Factor												
Frt			0.850				0.850			0.850		
Flt Protected	0.950				0.950			0.950				0.950
Satd. Flow (prot)	3502	3800	1615	0	3421	3762	1599	3433	5406	1599	0	3502
Flt Permitted	0.950				0.950			0.950				0.950
Satd. Flow (perm)	3502	3800	1615	0	3421	3762	1599	3433	5406	1599	0	3502
Right Turn on Red			No				No			No		
Satd. Flow (RTOR)												
Link Speed (mph)		40				40			40			
Link Distance (ft)		1885				944			1415			
Travel Time (s)		32.1				16.1			24.1			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	3%	1%	1%	2%	1%	1%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%				0%			0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	265	683	258	0	324	655	340	355	1165	344	0	568
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	Prot
Protected Phases	7	4	5!	3!	3	8	1!	5	2	3!	1!	1
Permitted Phases			4				8			2		
Detector Phase	7	4	5	3	3	8	1	5	2	3	1	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	3.0
Minimum Split (s)	7.5	21.0	7.5	7.5	7.5	21.0	7.5	7.5	21.0	7.5	7.5	7.5
Total Split (s)	18.0	32.0	25.0	24.0	24.0	38.0	28.0	25.0	46.0	24.0	28.0	28.0
Total Split (%)	13.8%	24.6%	19.2%	18.5%	18.5%	29.2%	21.5%	19.2%	35.4%	18.5%	21.5%	21.5%
Yellow Time (s)	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5	3.5
All-Red Time (s)	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	6.0	4.5		4.5	6.0	4.5	4.5	6.0	4.5		4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	None	Min	None	None	C-Min	None	None	None
Act Effct Green (s)	13.0	27.3	51.4		17.0	31.3	60.4	18.0	41.5	64.6		23.1
Actuated g/C Ratio	0.10	0.21	0.40		0.13	0.24	0.46	0.14	0.32	0.50		0.18



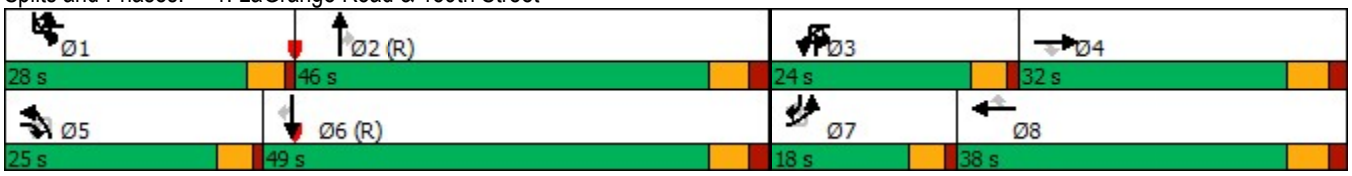
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	937	216
Future Volume (vph)	937	216
Ideal Flow (vphpl)	2000	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		135
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.91	1.00
Ped Bike Factor		
Frt		0.850
Flt Protected		
Satd. Flow (prot)	5406	1615
Flt Permitted		
Satd. Flow (perm)	5406	1615
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	40	
Link Distance (ft)	839	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.98	0.98
Growth Factor	100%	100%
Heavy Vehicles (%)	1%	0%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	956	220
Turn Type	NA	pm+ov
Protected Phases	6	7!
Permitted Phases		6
Detector Phase	6	7
Switch Phase		
Minimum Initial (s)	15.0	3.0
Minimum Split (s)	21.0	7.5
Total Split (s)	49.0	18.0
Total Split (%)	37.7%	13.8%
Yellow Time (s)	4.0	3.5
All-Red Time (s)	2.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	4.5
Lead/Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	C-Min	None
Act Effct Green (s)	46.6	65.6
Actuated g/C Ratio	0.36	0.50

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
v/c Ratio	0.75	0.85	0.40		0.72	0.72	0.46	0.75	0.67	0.43		0.91
Control Delay	88.2	45.7	20.9		63.7	50.5	25.9	72.2	35.8	19.2		72.6
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	88.2	45.7	20.9		63.7	50.5	25.9	72.2	35.8	19.2		72.6
LOS	F	D	C		E	D	C	E	D	B		E
Approach Delay		49.7				47.4			39.7			
Approach LOS		D				D			D			
Queue Length 50th (ft)	121	225	106		136	266	187	157	241	139		243
Queue Length 95th (ft)	#168	#391	147		185	335	272	213	375	271		#343
Internal Link Dist (ft)		1805				864			1335			
Turn Bay Length (ft)	155		400		180		420	310		170		190
Base Capacity (vph)	363	799	669		513	926	748	541	1726	824		633
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	0.73	0.85	0.39		0.63	0.71	0.45	0.66	0.67	0.42		0.90

Intersection Summary

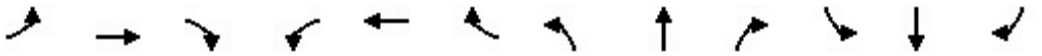
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 44.8 Intersection LOS: D
Intersection Capacity Utilization 81.1% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
! Phase conflict between lane groups.

Splits and Phases: 1: LaGrange Road & 159th Street



Lane Group	SBT	SBR
v/c Ratio	0.49	0.27
Control Delay	34.2	20.3
Queue Delay	0.0	0.0
Total Delay	34.2	20.3
LOS	C	C
Approach Delay	45.0	
Approach LOS	D	
Queue Length 50th (ft)	233	106
Queue Length 95th (ft)	285	166
Internal Link Dist (ft)	759	
Turn Bay Length (ft)		135
Base Capacity (vph)	1937	821
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.49	0.27

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	841	25	369	533	119	132	70	295	126	132	147
Future Volume (vph)	173	841	25	369	533	119	132	70	295	126	132	147
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	275		0	400		195	290		0	160		165
Storage Lanes	1		0	2		1	1		1	1		1
Taper Length (ft)	165			280			95			100		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3555	0	3467	3762	1599	1805	2000	1615	1805	1980	1615
Flt Permitted	0.950			0.950			0.629			0.710		
Satd. Flow (perm)	1787	3555	0	3467	3762	1599	1195	2000	1615	1349	1980	1615
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		926			1885			890			503	
Travel Time (s)		15.8			32.1			20.2			11.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	6%	1%	1%	1%	0%	0%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	893	0	380	549	123	136	72	304	130	136	152
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		7	4	1	3	8	5
Permitted Phases						6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	5.0	3.0	3.0	5.0	3.0
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	18.0	9.5	9.5	18.0	9.5
Total Split (s)	26.0	59.0		26.0	59.0	59.0	18.0	27.0	26.0	18.0	27.0	26.0
Total Split (%)	20.0%	45.4%		20.0%	45.4%	45.4%	13.8%	20.8%	20.0%	13.8%	20.8%	20.0%
Yellow Time (s)	3.5	4.5		3.5	4.5	4.5	3.5	4.0	3.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	0.0	2.0	1.0	0.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0		4.5	6.0	6.0	3.5	6.0	4.5	3.5	6.0	4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	Max	None	None	Max	None
Act Effct Green (s)	15.5	49.4		16.9	50.8	50.8	46.5	34.5	57.4	45.9	34.2	55.7
Actuated g/C Ratio	0.12	0.38		0.13	0.39	0.39	0.36	0.27	0.44	0.35	0.26	0.43

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.84	0.66		0.84	0.37	0.20	0.29	0.14	0.43	0.26	0.26	0.22
Control Delay	85.8	35.8		53.8	46.0	42.6	30.4	41.5	29.0	30.3	43.2	26.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.8	35.8		53.8	46.0	42.6	30.4	41.5	29.0	30.3	43.2	26.0
LOS	F	D		D	D	D	C	D	C	C	D	C
Approach Delay		44.1			48.4			31.1			32.9	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	149	323		173	246	102	76	46	175	73	91	80
Queue Length 95th (ft)	221	380		223	305	m154	138	100	291	133	171	143
Internal Link Dist (ft)		846			1805			810			423	
Turn Bay Length (ft)	275			400		195	290			160		165
Base Capacity (vph)	295	1449		573	1533	651	519	530	770	558	520	766
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.62		0.66	0.36	0.19	0.26	0.14	0.39	0.23	0.26	0.20

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 38 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 41.9 Intersection LOS: D
Intersection Capacity Utilization 65.6% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Ravinia Avenue & 159th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	76	7	10	53	5	54	1	12	1600	62	21	53
Future Volume (vph)	76	7	10	53	5	54	1	12	1600	62	21	53
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	2000	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%				0%			
Storage Length (ft)	125		0	0		0		195		195		250
Storage Lanes	1		1	1		1		1		1		2
Taper Length (ft)	90			25				195				300
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	1.00	0.91	0.97
Ped Bike Factor												
Frt			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	0	1805	5406	1615	0	3452
Flt Permitted	0.754			0.499								0.137
Satd. Flow (perm)	1433	2000	1615	948	2000	1615	0	1900	5406	1615	0	498
Right Turn on Red			No			No				No		
Satd. Flow (RTOR)												
Link Speed (mph)		20			20				45			
Link Distance (ft)		562			628				1162			
Travel Time (s)		19.2			21.4				17.6			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	7	10	54	5	55	0	13	1633	63	0	75
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	custom	Prot	NA	Perm	Prot	Perm
Protected Phases	7	4		3	8			5	2		1	
Permitted Phases	4		4	8		8	5			2		6
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	15.0	15.0	3.0	15.0
Minimum Split (s)	9.5	14.0	14.0	9.5	14.0	14.0	9.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	16.0	15.0	15.0	16.0	15.0	15.0	12.0	12.0	87.0	87.0	12.0	87.0
Total Split (%)	12.3%	11.5%	11.5%	12.3%	11.5%	11.5%	9.2%	9.2%	66.9%	66.9%	9.2%	66.9%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	4.5	4.5	3.5	4.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	1.0	1.0	1.5	1.5	1.0	1.5
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	6.0	3.5	6.0	6.0		4.5	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	14.3	8.9	8.9	15.8	7.5	7.5		4.7	103.8	103.8		99.4
Actuated g/C Ratio	0.11	0.07	0.07	0.12	0.06	0.06		0.04	0.80	0.80		0.76

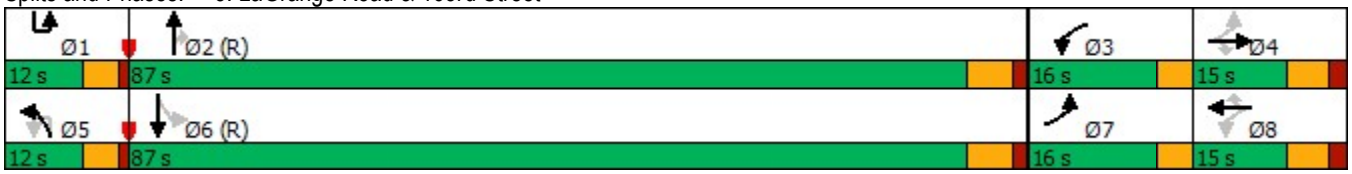
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1450	59
Future Volume (vph)	1450	59
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.91	0.91
Ped Bike Factor		
Frt	0.994	
Flt Protected		
Satd. Flow (prot)	5107	0
Flt Permitted		
Satd. Flow (perm)	5107	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	45	
Link Distance (ft)	1404	
Travel Time (s)	21.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.98	0.98
Growth Factor	100%	100%
Heavy Vehicles (%)	1%	0%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1540	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	22.5	
Total Split (s)	87.0	
Total Split (%)	66.9%	
Yellow Time (s)	4.5	
All-Red Time (s)	1.5	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	C-Min	
Act Effct Green (s)	99.4	
Actuated g/C Ratio	0.76	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
v/c Ratio	0.43	0.05	0.09	0.29	0.04	0.59		0.19	0.38	0.05		0.20
Control Delay	57.4	53.9	55.2	49.7	56.6	84.3		66.1	5.5	4.7		15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	57.4	53.9	55.2	49.7	56.6	84.3		66.1	5.5	4.7		15.8
LOS	E	D	E	D	E	F		E	A	A		B
Approach Delay		56.9			66.7				5.9			
Approach LOS		E			E				A			
Queue Length 50th (ft)	65	6	8	40	4	46		11	149	11		6
Queue Length 95th (ft)	100	21	26	74	17	90		33	220	29		m47
Internal Link Dist (ft)		482			548				1082			
Turn Bay Length (ft)	125							195		195		250
Base Capacity (vph)	235	173	140	250	144	116		109	4318	1290		382
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	0.33	0.04	0.07	0.22	0.03	0.47		0.12	0.38	0.05		0.20

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 119 (92%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 12.3 Intersection LOS: B
Intersection Capacity Utilization 53.4% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: LaGrange Road & 163rd Street



Lane Group	SBT	SBR
v/c Ratio	0.39	
Control Delay	12.5	
Queue Delay	0.0	
Total Delay	12.5	
LOS	B	
Approach Delay	12.6	
Approach LOS	B	
Queue Length 50th (ft)	127	
Queue Length 95th (ft)	451	
Internal Link Dist (ft)	1324	
Turn Bay Length (ft)		
Base Capacity (vph)	3916	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.39	

Intersection Summary

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	24	1	49	5	0	38	8	49	1694	18	7	38	1266	42
Future Vol, veh/h	24	1	49	5	0	38	8	49	1694	18	7	38	1266	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	0	0	-	-	-	190	-	-	-	265	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	9	0	0	0	0	3	0	4	1	0	0	3	1	0
Mvmt Flow	25	1	51	5	0	40	8	51	1765	19	7	40	1319	44

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	2259	3337	682	2515	3350	892	995	1363	0	0	1302	1784	0	0
Stage 1	1435	1435	-	1893	1893	-	-	-	-	-	-	-	-	-
Stage 2	824	1902	-	622	1457	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.58	6.5	7.1	6.4	6.5	7.16	5.6	5.38	-	-	5.6	5.36	-	-
Critical Hdwy Stg 1	7.48	5.5	-	7.3	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.88	5.5	-	6.7	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.89	4	3.9	3.8	4	3.93	2.3	3.14	-	-	2.3	3.13	-	-
Pot Cap-1 Maneuver	*242	17	*637	*141	17	*533	*1080	*791	-	-	*910	*669	-	-
Stage 1	*579	584	-	*533	512	-	-	-	-	-	-	-	-	-
Stage 2	*538	505	-	*654	566	-	-	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	1	-	-	1	1	-	-
Mov Cap-1 Maneuver	*201	15	*637	*116	14	*533	*815	*815	-	-	*691	*691	-	-
Mov Cap-2 Maneuver	*354	303	-	*351	303	-	-	-	-	-	-	-	-	-
Stage 1	*537	544	-	*495	476	-	-	-	-	-	-	-	-	-
Stage 2	*462	468	-	*559	527	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.7	12.7	0.3	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 815	-	-	354	303	637	351	533	* 691	-	-
HCM Lane V/C Ratio	0.073	-	-	0.071	0.003	0.08	0.015	0.074	0.068	-	-
HCM Control Delay (s)	9.8	-	-	15.9	16.9	11.1	15.4	12.3	10.6	-	-
HCM Lane LOS	A	-	-	C	C	B	C	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0	0.3	0	0.2	0.2	-	-

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

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	18	48	2	66	1657	0	1493	21
Future Vol, veh/h	18	48	2	66	1657	0	1493	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	50	0	-	205	-	200	-	-
Veh in Median Storage, #	2	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	1	0	1	0
Mvmt Flow	19	51	2	69	1744	0	1572	22

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	2423	797	1163	1594	0	1273	-	0
Stage 1	1583	-	-	-	-	-	-	-
Stage 2	840	-	-	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.6	5.3	-	5.6	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	2.3	3.1	-	2.3	-	-
Pot Cap-1 Maneuver	*160	*577	*978	*726	-	316	-	-
Stage 1	*592	-	-	-	-	-	-	-
Stage 2	*352	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	-		-	-
Mov Cap-1 Maneuver	*144	*577	*730	*730	-	316	-	-
Mov Cap-2 Maneuver	*303	-	-	-	-	-	-	-
Stage 1	*533	-	-	-	-	-	-	-
Stage 2	*352	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	* 730	-	303	577	316	-	-
HCM Lane V/C Ratio	0.098	-	0.063	0.088	-	-	-
HCM Control Delay (s)	10.5	-	17.7	11.8	0	-	-
HCM Lane LOS	B	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	0.3	0	-	-

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

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	18	1	4	24	16	0	2	11	5	0	9
Future Vol, veh/h	6	18	1	4	24	16	0	2	11	5	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	8	24	1	5	32	21	0	3	14	7	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	53	0	0	25	0	0	100	104	25	102	94	43
Stage 1	-	-	-	-	-	-	41	41	-	53	53	-
Stage 2	-	-	-	-	-	-	59	63	-	49	41	-
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	1566	-	-	1603	-	-	886	790	1057	884	800	1033
Stage 1	-	-	-	-	-	-	979	865	-	965	855	-
Stage 2	-	-	-	-	-	-	958	846	-	969	865	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1566	-	-	1603	-	-	871	784	1057	865	794	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	871	784	-	865	794	-
Stage 1	-	-	-	-	-	-	974	861	-	960	852	-
Stage 2	-	-	-	-	-	-	944	843	-	948	861	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.7	8.7	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1003	1566	-	-	1603	-	-	966
HCM Lane V/C Ratio	0.017	0.005	-	-	0.003	-	-	0.019
HCM Control Delay (s)	8.7	7.3	0	-	7.3	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	4.6

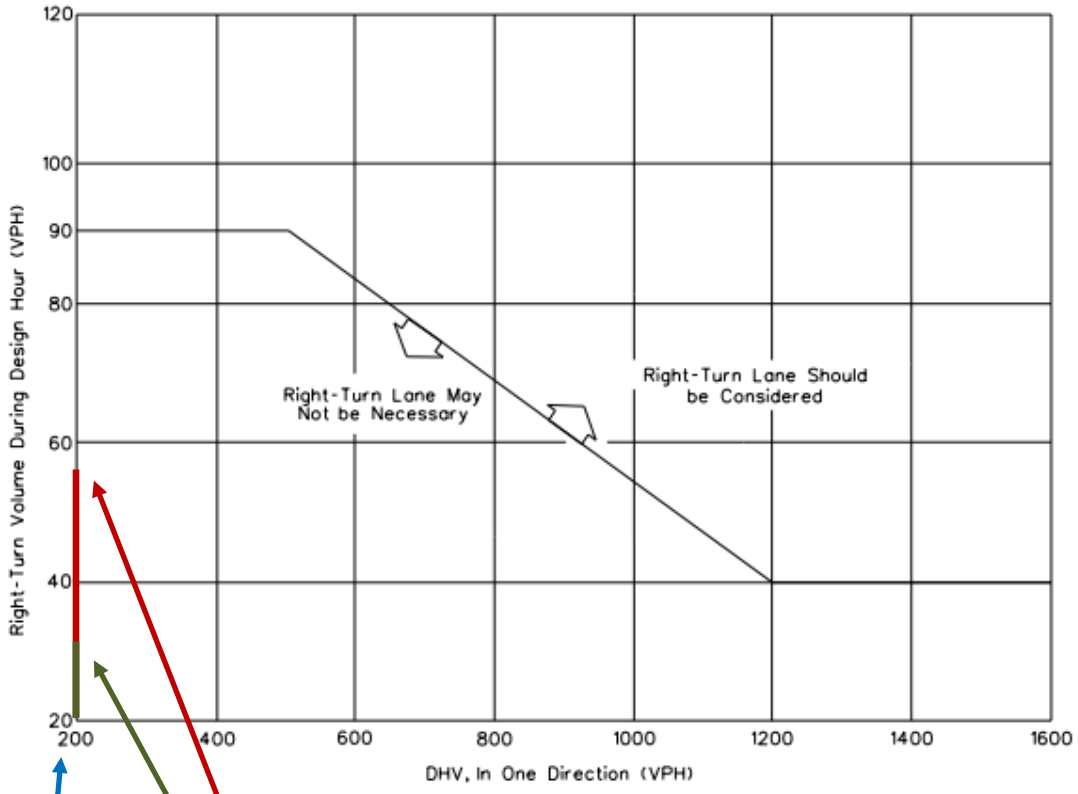
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	17	14	17	23	37	7
Future Vol, veh/h	17	14	17	23	37	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	18	15	18	24	39	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	33	0	74	17
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	48	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1592	-	927	1064
Stage 1	-	-	-	-	999	-
Stage 2	-	-	-	-	974	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1592	-	917	1064
Mov Cap-2 Maneuver	-	-	-	-	864	-
Stage 1	-	-	-	-	999	-
Stage 2	-	-	-	-	963	-

Approach	EB	WB	NE
HCM Control Delay, s	0	3.1	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	864	1064	-	-	1592	-
HCM Lane V/C Ratio	0.045	0.007	-	-	0.011	-
HCM Control Delay (s)	9.4	8.4	-	-	7.3	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Turn Lane Warrant



Note: For speeds less than 50 mph (80 km/hr), see Section 36-3.01(a).

AM Peak Hour (17, 17)

PM Peak Hour (57, 57)

SAT Peak Hour (32, 32)

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTION ON FOUR-LANE HIGHWAYS
(Design Speed of 50 mph (80 km/hr) or Greater)

Figure 36-3.B