



# ***TRAFFIC IMPACT STUDY***

## ***PROPOSED MIXED-USE DEVELOPMENT***

### ***PLAINFIELD, INDIANA***

---

***PREPARED FOR***



**Hendricks**  
Regional Health

---

***FEBRUARY 2022***

## COPYRIGHT

This analysis and the ideas, designs, concepts, and data contained herein are the exclusive intellectual property of A&F Engineering Co., LLC and are not to be used or reproduced in whole or in part, without the written consent of A&F Engineering Co., LLC.

©2022, A&F Engineering Co., LLC

DRAFT

**TABLE OF CONTENTS**

TABLE OF CONTENTS ..... II

LIST OF FIGURES ..... II

CERTIFICATION ..... III

INTRODUCTION ..... 1

PURPOSE ..... 1

SCOPE OF WORK ..... 1

DESCRIPTION OF THE PROPOSED DEVELOPMENT ..... 2

STUDY AREA ..... 2

DESCRIPTION OF ABUTTING STREET SYSTEM ..... 5

    TABLE 1 – DESCRIPTION OF THE ABUTTING STREET SYSTEM ..... 5

EXISTING TRAFFIC VOLUMES & PEAK HOURS ..... 5

YEAR 2027 BACKGROUND TRAFFIC VOLUMES ..... 5

GENERATED TRAFFIC VOLUMES FOR PROPOSED DEVELOPMENT ..... 8

    TABLE 2 – TOTAL GENERATED TRIPS FOR PROPOSED DEVELOPMENT ..... 8

PASS-BY & INTERNAL TRIPS ..... 8

    TABLE 3 – PASS-BY TRIP REDUCTIONS FOR PROPOSED DEVELOPMENT ..... 9

ASSIGNMENT AND DISTRIBUTION OF GENERATED TRIPS ..... 9

GENERATED TRIPS ADDED TO THE STREET SYSTEM ..... 10

TURN LANE ANALYSIS ..... 10

    TABLE 4 – TURN LANE WARRANT RESULTS ..... 10

CAPACITY ANALYSIS ..... 15

CAPACITY ANALYSIS SCENARIOS ..... 15

    TABLE 5 – LEVEL OF SERVICE SUMMARY: US 40 & SARATOGA PARKWAY ..... 16

    TABLE 6 – LEVEL OF SERVICE SUMMARY: SARATOGA PARKWAY & CVS ACCESS DRIVE ..... 16

    TABLE 7 – LEVEL OF SERVICE SUMMARY: SARATOGA PARKWAY & CONCORD ROAD ..... 16

    TABLE 8 – LEVEL OF SERVICE SUMMARY: CONCORD ROAD & NORTH/SOUTH ACCESS DRIVE CONNECTION ..... 16

    TABLE 9 – LEVEL OF SERVICE SUMMARY: US 40 & PROPOSED LI/RI/RO ACCESS DRIVE ..... 17

CONCLUSIONS & RECOMMENDATIONS ..... 17

**LIST OF FIGURES**

FIGURE 1: AREA MAP ..... 3

FIGURE 2: EXISTING INTERSECTION GEOMETRICS ..... 4

FIGURE 3: EXISTING TRAFFIC VOLUMES ..... 6

FIGURE 4: YEAR 2027 BACKGROUND TRAFFIC VOLUMES ..... 7

FIGURE 5A: ASSIGNMENT AND DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT  
 (NON-PASS-BY TRIPS) ..... 11

FIGURE 5B: ASSIGNMENT AND DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT  
 (PASS-BY TRIPS) ..... 12

FIGURE 6: GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT ..... 13

FIGURE 7: SUM OF YEAR 2027 BACKGROUND TRAFFIC VOLUMES AND GENERATED TRAFFIC VOLUMES FROM  
 PROPOSED DEVELOPMENT ..... 14

**CERTIFICATION**

I certify that this **TRAFFIC IMPACT STUDY** has been prepared by me and under my immediate supervision and that I have experience and training in the field of traffic and transportation engineering.

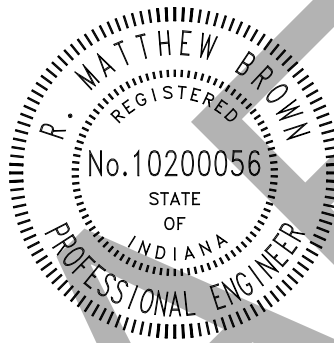
A&F ENGINEERING Co., LLC



R. Matt Brown, P.E.



Trevor Reich, E.I.



## **INTRODUCTION**

This **TRAFFIC IMPACT STUDY**, prepared at the request of the Town of Plainfield and INDOT on behalf of Hendricks Regional Health, is for a proposed mixed-use development that will be located along US 40, west of Saratoga Parkway in Plainfield, Indiana.

## **PURPOSE**

The purpose of this analysis is to determine what impact the traffic generated by the proposed development will have on the existing adjacent roadway system. This analysis will identify any existing roadway deficiencies or ones that may occur when this site is developed.

Conclusions will be reached that will determine if the roadway system can accommodate the anticipated traffic volumes or will determine the modifications that will be required to the system if there are identified deficiencies.

Recommendations will be made that will address the conclusions resulting from this analysis. These recommendations will address feasible roadway system improvements to provide safe ingress and egress, to and from the proposed development, with minimal interference to traffic on the public street system.

## **SCOPE OF WORK**

The scope of work for this analysis is as follows:

First, obtain turning movement traffic volume counts between the hours of 6:30 AM to 8:30 AM and 4:30 PM to 6:30 PM during a typical weekday in January 2022 at the following existing study intersections:

- US 40 & Saratoga Parkway
- Saratoga Parkway & CVS Access Drive
- Saratoga Parkway & Concord Road

Second, estimate year 2027 background traffic volumes at the study intersections by applying an annual growth rate to the existing counts and adding generated traffic from a previously completed traffic study for a future near-by townhome development that will be located in the northeast quadrant of Saratoga Parkway and Concord Road.

Third, estimate the number of peak hour trips that will be generated by the proposed development.

Fourth, assign and distribute the generated traffic from the proposed development to the study intersections.

Fifth, prepare a capacity analysis, level of service analysis, and turn lane analysis at the study intersections for each of the following scenarios:

*Scenario 1: Existing Traffic Volumes* – Based on existing peak hour traffic volumes.

*Scenario 2: Year 2027 Background Traffic Volumes* – Based on applying a 2% annual growth rate to the existing traffic volumes and adding generated traffic from a future near-by townhome development.

*Scenario 3: Year 2027 Proposed Development Traffic Volumes* – Based on the sum of year 2027 background traffic volumes and generated traffic volumes from the proposed development.

Sixth, prepare recommendations for the roadway geometrics that will be needed to accommodate the total traffic volumes once the proposed development is constructed.

Finally, prepare a **TRAFFIC IMPACT STUDY** report documenting all data, analyses, conclusions, and recommendations to provide for the safe and efficient movement of traffic through the study area.

### ***DESCRIPTION OF THE PROPOSED DEVELOPMENT***

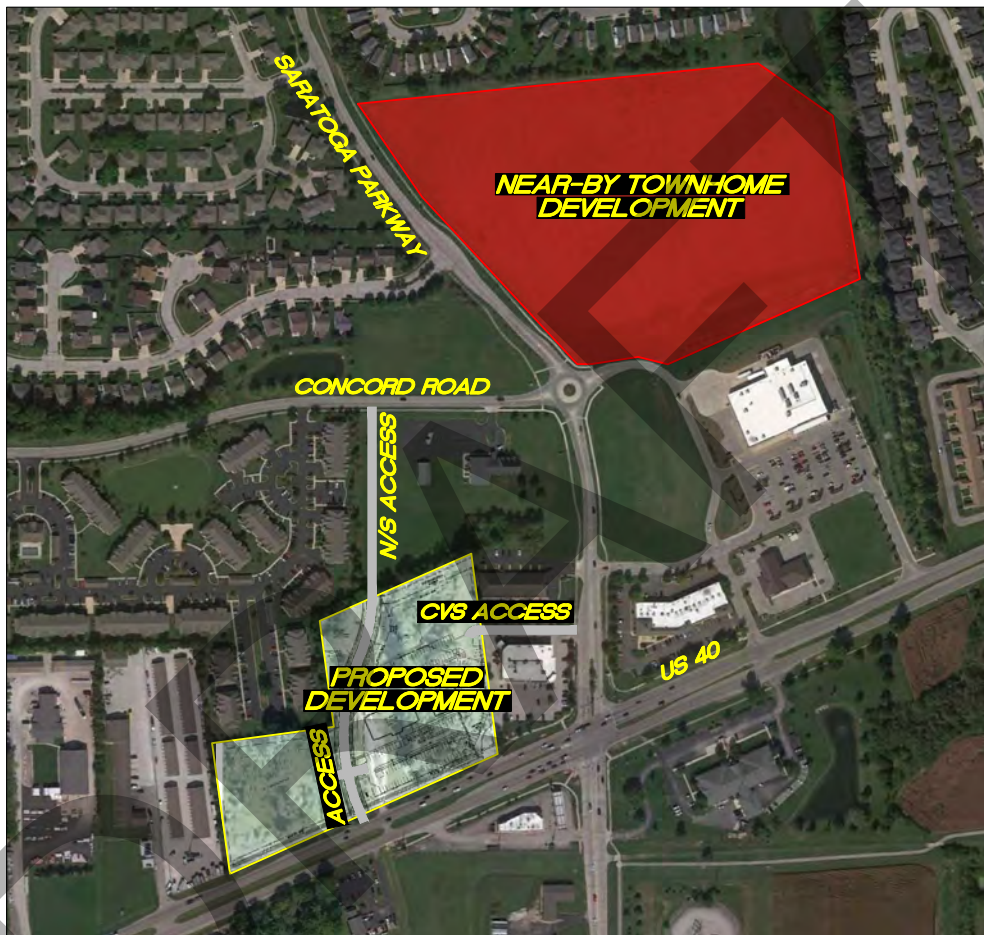
The subject site is located along US 40, west of Saratoga Parkway in Plainfield, Indiana. The proposed development will consist of approximately 30,000 square feet of medical office, 10,000 square feet of general office, and 10,000 square feet of general retail land uses. As proposed, the site will be served by a full access drive along Concord Road, a connection to the CVS full access drive along Saratoga Parkway, and a left-in/right-in/right-out access drive along US 40 that will align with the existing Excel Motors access drive. **Figure 1** is an area map showing the location and general layout of the site.

### ***STUDY AREA***

The study area for this analysis has been defined to include the following intersections:

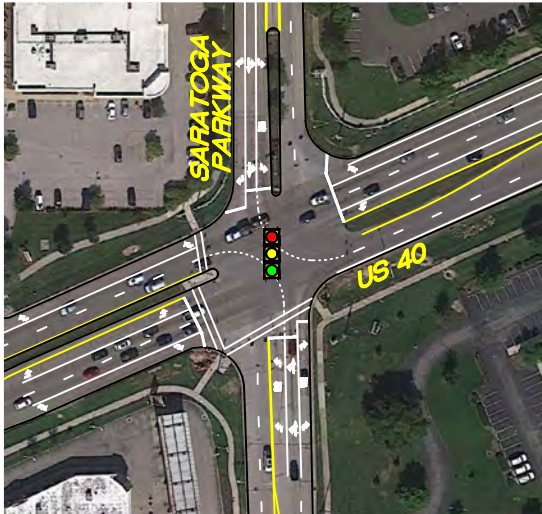
- US 40 & Saratoga Parkway
- Saratoga Parkway & CVS Access Drive
- Saratoga Parkway & Concord Road
- Concord Road & North/South Access Drive Connection
- US 40 & Proposed Left-In/Right-In/Right-Out Access Drive

**Figures 2** shows the existing intersection geometrics at each of the existing study intersections.

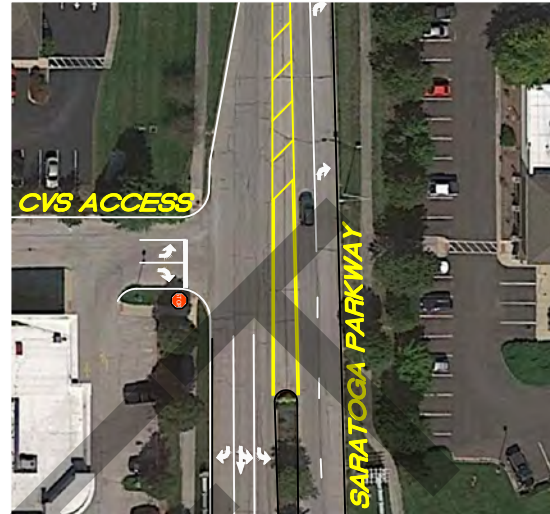


**FIGURE 1**  
**AREA MAP**

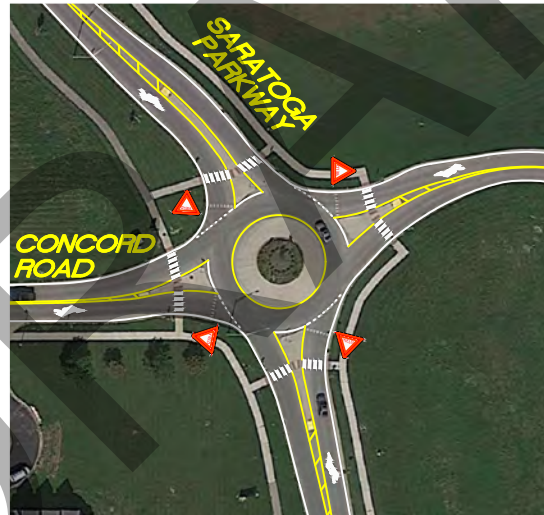
**TRAFFIC IMPACT STUDY**  
**HENDRICKS REGIONAL HEALTH**  
**PLAINFIELD, INDIANA**



**US 40 & SARATOGA PARKWAY**



**SARATOGA PARKWAY & CVS ACCESS DRIVE**



**SARATOGA PARKWAY & CONCORD ROAD**

**FIGURE 2**

**EXISTING INTERSECTION GEOMETRICS**

**TRAFFIC IMPACT STUDY  
 HENDRICKS REGIONAL HEALTH  
 PLAINFIELD, INDIANA**

***DESCRIPTION OF ABUTTING STREET SYSTEM***

The proposed development will be primarily served by the public roadway system that includes US 40, Saratoga Parkway, and Concord Road.

TABLE 1 – DESCRIPTION OF THE ABUTTING STREET SYSTEM

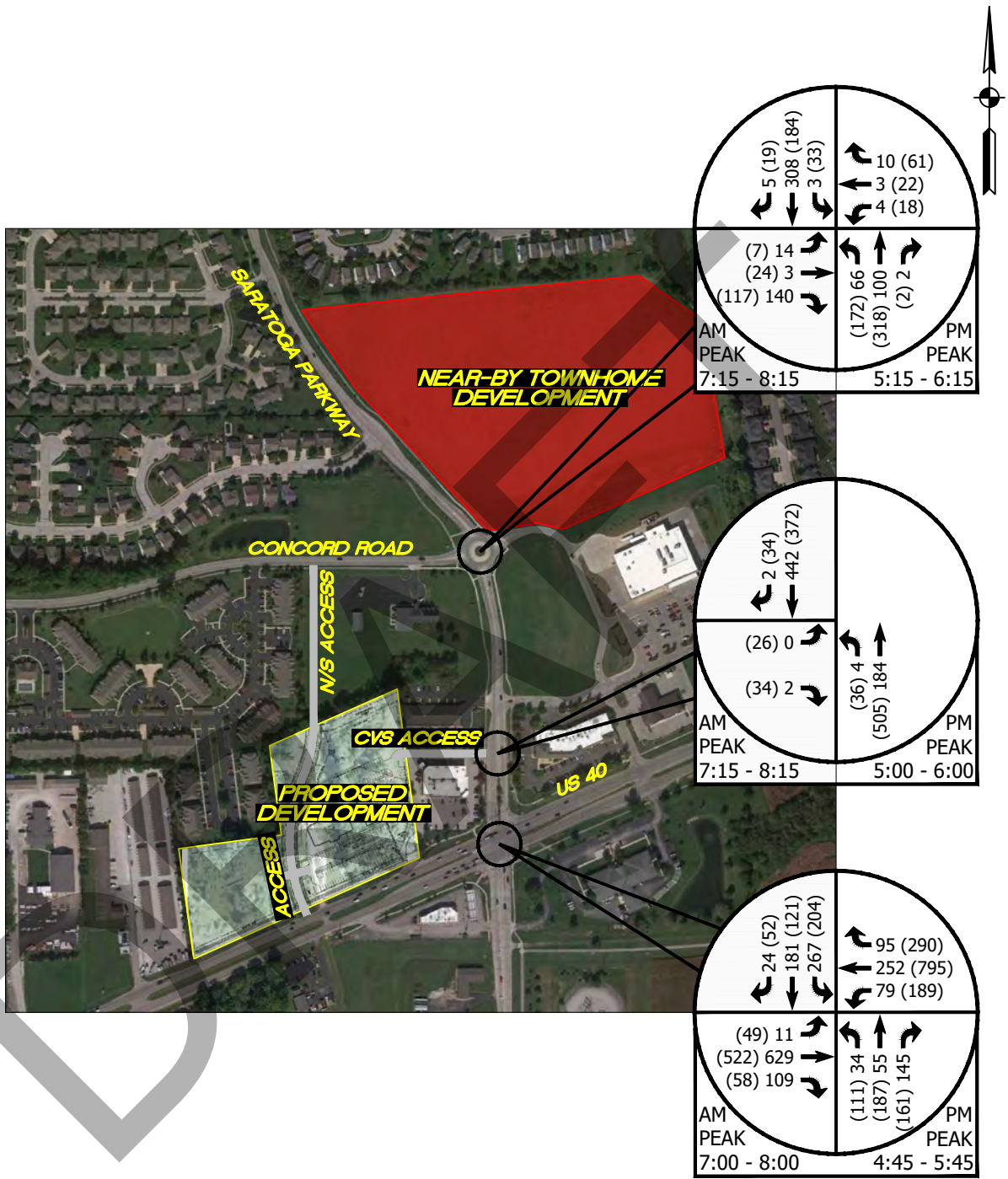
STREET NAME	NUMBER OF LANES	SPEED LIMIT (MPH)	FUNCTIONAL CLASSIFICATION
US 40	4	40	Principal Arterial
Saratoga Parkway	2	35	Major Collector
Concord Road	2	30	Local Road

***EXISTING TRAFFIC VOLUMES & PEAK HOURS***

Turning movement traffic volume counts were collected by A&F Engineering at the study intersections between the hours of 6:30 AM to 8:30 AM and 4:30 PM to 6:30 PM during a typical weekday in January 2022 under good weather conditions. According to the turning movement counts, the AM and PM peak hours vary slightly at each study intersection. Hence, the actual peak hours were used at each study intersection to create a “worse-case” scenario. These traffic volumes are shown on **Figure 3** and the intersection count output summary sheets are included in the **Appendix**.

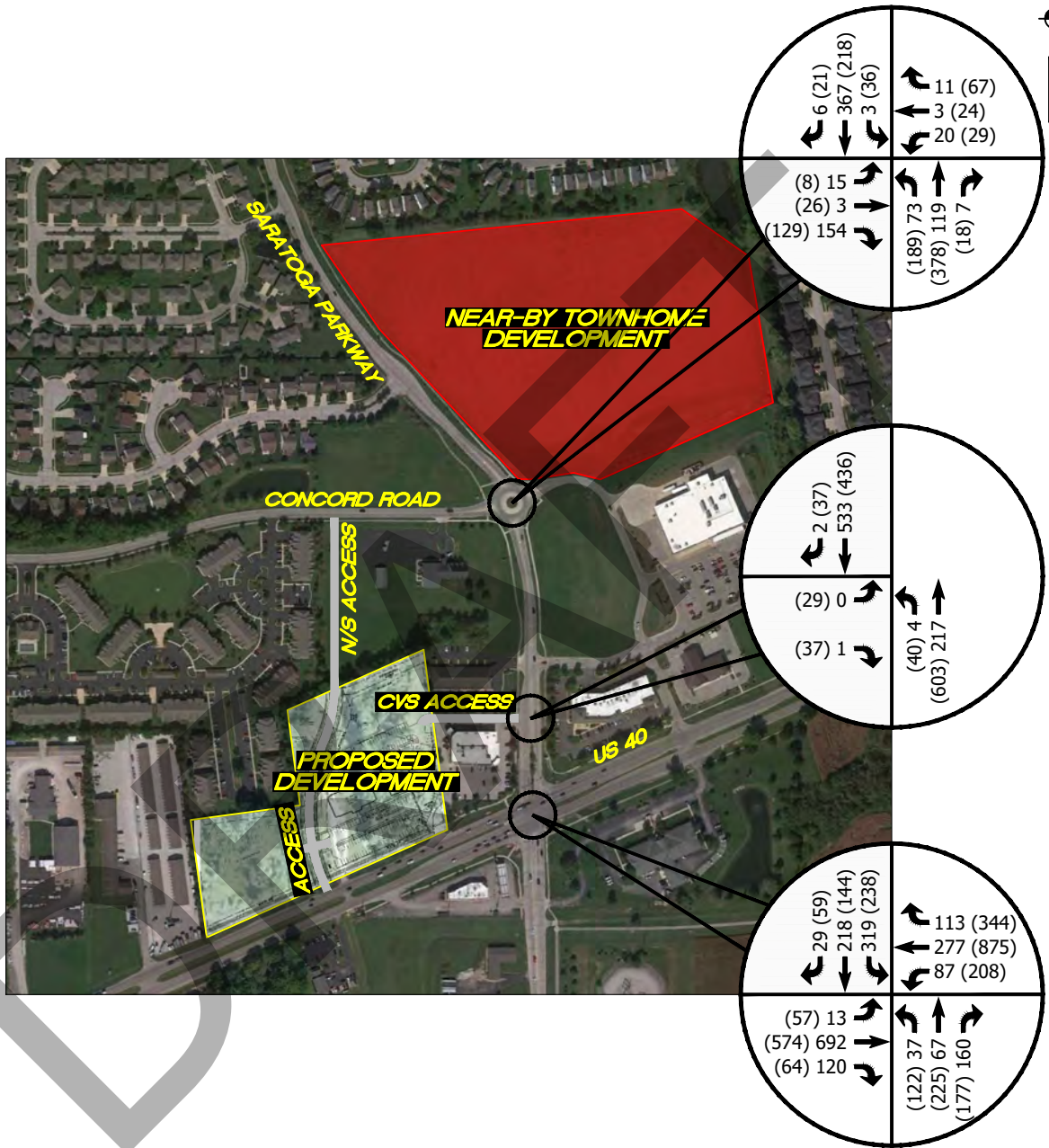
***YEAR 2027 BACKGROUND TRAFFIC VOLUMES***

In order to account for the annual growth in traffic that would occur due to future development outside of the study area, an annual growth rate of 2% per year was applied to the existing traffic volumes. Therefore, a growth rate factor of 1.10 was applied to the existing traffic volumes. Additionally, generated trips from a previously completed traffic study for a future near-by townhome development located in the northeast quadrant of the intersection of Saratoga Parkway & Concord Road were added to the grown traffic volumes to obtain the total year 2027 background traffic volumes shown in **Figure 4**.



**FIGURE 3**  
**EXISTING TRAFFIC VOLUMES**

**TRAFFIC IMPACT STUDY**  
**HENDRICKS REGIONAL HEALTH**  
**PLAINFIELD, INDIANA**



**LEGEND**  
 XX = A.M. PEAK HOUR  
 (XX) = P.M. PEAK HOUR  
 \* = NEGLIGIBLE

**FIGURE 4**  
**YEAR 2027 BACKGROUND**  
**TRAFFIC VOLUMES**

**TRAFFIC IMPACT STUDY**  
**HENDRICKS REGIONAL HEALTH**  
**PLAINFIELD, INDIANA**

## **GENERATED TRAFFIC VOLUMES FOR PROPOSED DEVELOPMENT**

The estimate of newly generated traffic is a function of the development size and of the character of the land use. The *ITE Trip Generation Manual*<sup>1</sup> was used to calculate the number of trips that will be generated by the proposed development. This report is a compilation of trip data for various land uses as collected by transportation professionals throughout the United States in order to establish the average number of trips generated by those land uses. **Table 2** is a summary of the total trips that will be generated by the proposed development.

TABLE 2 – TOTAL GENERATED TRIPS FOR PROPOSED DEVELOPMENT

DEVELOPMENT INFORMATION			GENERATED TRIPS			
LAND USE	ITE CODE	SIZE	AM PEAK HOUR		PM PEAK HOUR	
			ENTER	EXIT	ENTER	EXIT
Medical Office	720	30k SF	65	17	36	83
General Office	710	10k SF	20	3	4	21
General Retail	820	10k SF	14	10	39	39
<b>TOTAL</b>			<b>99</b>	<b>30</b>	<b>79</b>	<b>143</b>

### **PASS-BY & INTERNAL TRIPS**

Pass-by trips are trips that are already in the existing traffic stream along the adjacent public roadway system that enter a site, utilize the site, and then return back to the existing traffic stream. A significant number of the generated trips from the retail portion of the proposed development will be pass-by trips. Therefore, the pass-by trip procedures outlined within the *ITE Trip Generation Handbook*<sup>2</sup> were used to estimate the pass-by trips. A summary of pass-by trip reductions for the proposed development is shown in **Table 3**.

An internal trip results when a trip is made between two or more land uses without traversing the external public roadway system. Internal trips have been considered negligible for this analysis in order to create a “worst-case” traffic scenario.

<sup>1</sup> *Trip Generation Manual*, Institute of Transportation Engineers, Eleventh Edition, 2021.

<sup>2</sup> *Trip Generation Handbook*, Institute of Transportation Engineers, 2004.

TABLE 3 – PASS-BY TRIP REDUCTIONS FOR PROPOSED DEVELOPMENT

DEVELOPMENT INFORMATION			GENERATED TRIPS			
LAND USE	ITE CODE	SIZE	AM PEAK		PM PEAK	
			IN	OUT	IN	OUT
<b>Medical Office</b>	<b>720</b>	<b>30k SF</b>	<b>65</b>	<b>17</b>	<b>36</b>	<b>83</b>
<b>General Office</b>	<b>710</b>	<b>10k SF</b>	<b>20</b>	<b>3</b>	<b>4</b>	<b>21</b>
<b>General Retail</b>	<b>820</b>	<b>10k SF</b>	<b>14</b>	<b>10</b>	<b>39</b>	<b>39</b>
External Pass-By Trips			4	4	15	15
External Non-Pass-By Trips			10	6	24	24
<b>TOTAL TRIPS</b>			<b>99</b>	<b>30</b>	<b>79</b>	<b>143</b>
<b>EXTERNAL PASS-BY TRIPS</b>			<b>4</b>	<b>4</b>	<b>15</b>	<b>15</b>
<b>EXTERNAL NON-PASS-BY TRIPS</b>			<b>95</b>	<b>26</b>	<b>64</b>	<b>128</b>

***ASSIGNMENT AND DISTRIBUTION OF GENERATED TRIPS***

The study methodology used to determine the traffic volumes from the site that will be added to the street system is defined as follows:

1. The volume of traffic that will enter and exit the proposed development must be assigned to the access points and to the public street system. Using the traffic volume data collected for this analysis, traffic to and from the site development has been assigned to the proposed driveways and to the public street system that will be serving the site.
2. To determine the volumes of traffic that will be added to the public roadway system, the generated traffic must be distributed by direction to the public roadways at their intersection with the driveways. For the proposed development, the trip distribution was based on the location of the development, the existing traffic patterns, and the assignment of generated traffic.

**Figure 5A** and **Figure 5B** illustrate the assignment and distribution of generated traffic volumes for the proposed development.

### **GENERATED TRIPS ADDED TO THE STREET SYSTEM**

The generated traffic volumes that can be expected from the proposed development have been assigned to each of the study intersections. These volumes were determined based on the previously discussed trip generation data, assignment of generated traffic and distribution of generated traffic. The total peak hour generated traffic volumes from the proposed development are shown in **Figure 6** and **Figure 7** shows the sum of year 2027 background traffic volumes and generated traffic volumes from the proposed development.

### **TURN LANE ANALYSIS**

The generated peak hour traffic volumes were combined with year 2027 background traffic volumes to determine if turn lanes would be required along Saratoga Parkway, Concord Road, and US 40 at the access drive locations. This analysis was done in accordance with the INDOT *Driveway Permit Manual*<sup>3</sup>. The results are summarized in the following table.

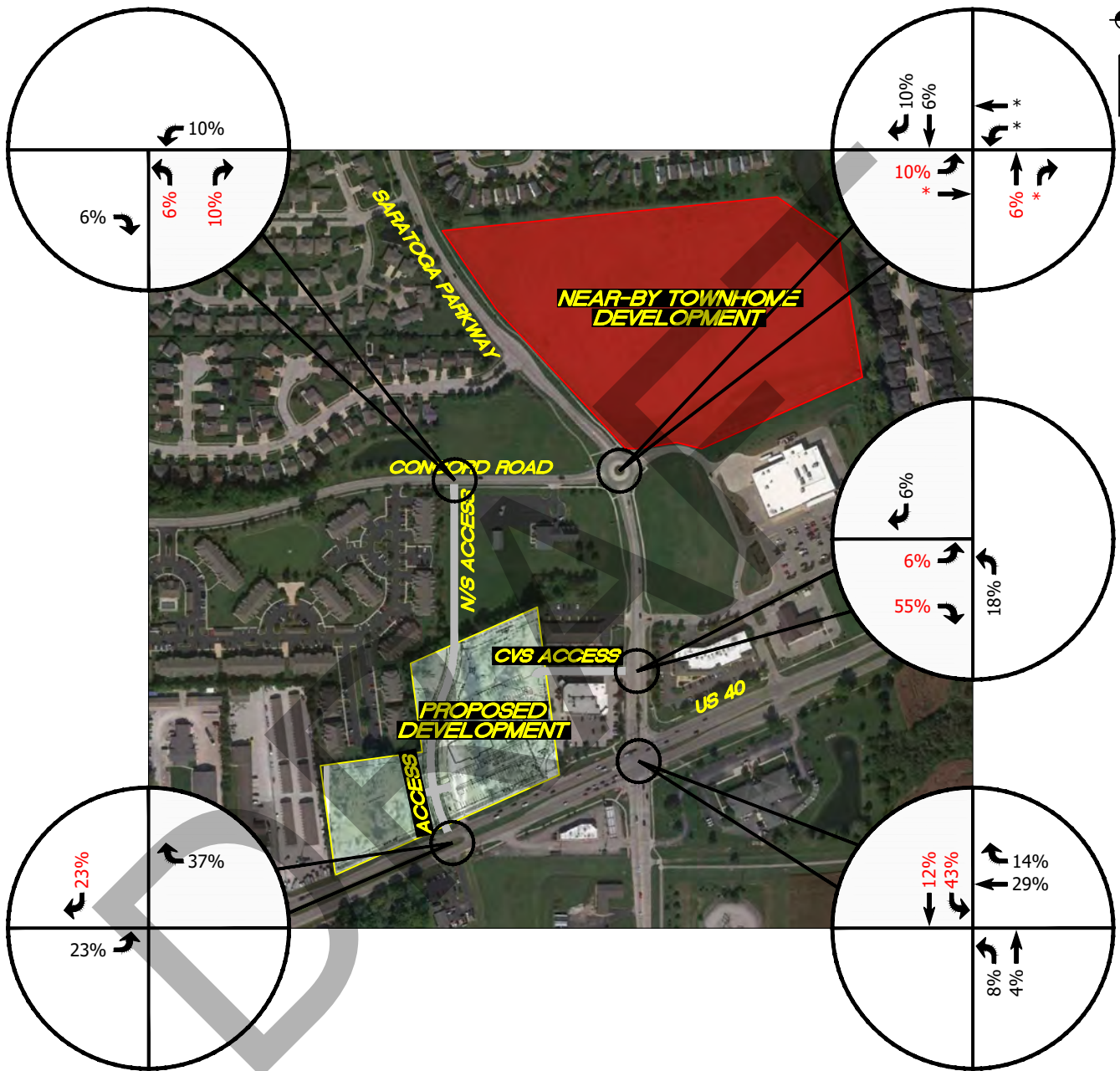
TABLE 4 – TURN LANE WARRANT RESULTS

LOCATION	SCENARIO	RIGHT-TURN LANE	LEFT-TURN LANE
Saratoga Parkway & CVS Access Drive	Year 2027 Background Traffic Volumes + Proposed Development Traffic Volumes	N/A	✓
Concord Road & North/South Access Drive Connection	Year 2027 Background Traffic Volumes + Proposed Development Traffic Volumes	X	X
US 40 & LI/RI/RO Access Drive	Year 2027 Background Traffic Volumes + Proposed Development Traffic Volumes	X	✓

✓ = Turn lane warranted; X = Turn lane not warranted

According to the results, an eastbound left-turn lane is warranted along US 40 at the Left-In/Right-In/Right-Out Access Drive and a northbound left-turn lane is warranted along Saratoga Parkway at the CVS Access Drive. While not warranted, a westbound right-turn lane along US 40 at the Left-In/Right-In/Right-Out Access Drive would be beneficial to help vehicles safely enter the site. It should be noted that the Town of Plainfield and/or INDOT could require turn treatments at locations where shown to not be warranted based on local standards. The graphs showing the left-turn lane and right-turn lane warrant criteria for each intersection are included in the **Appendix**.

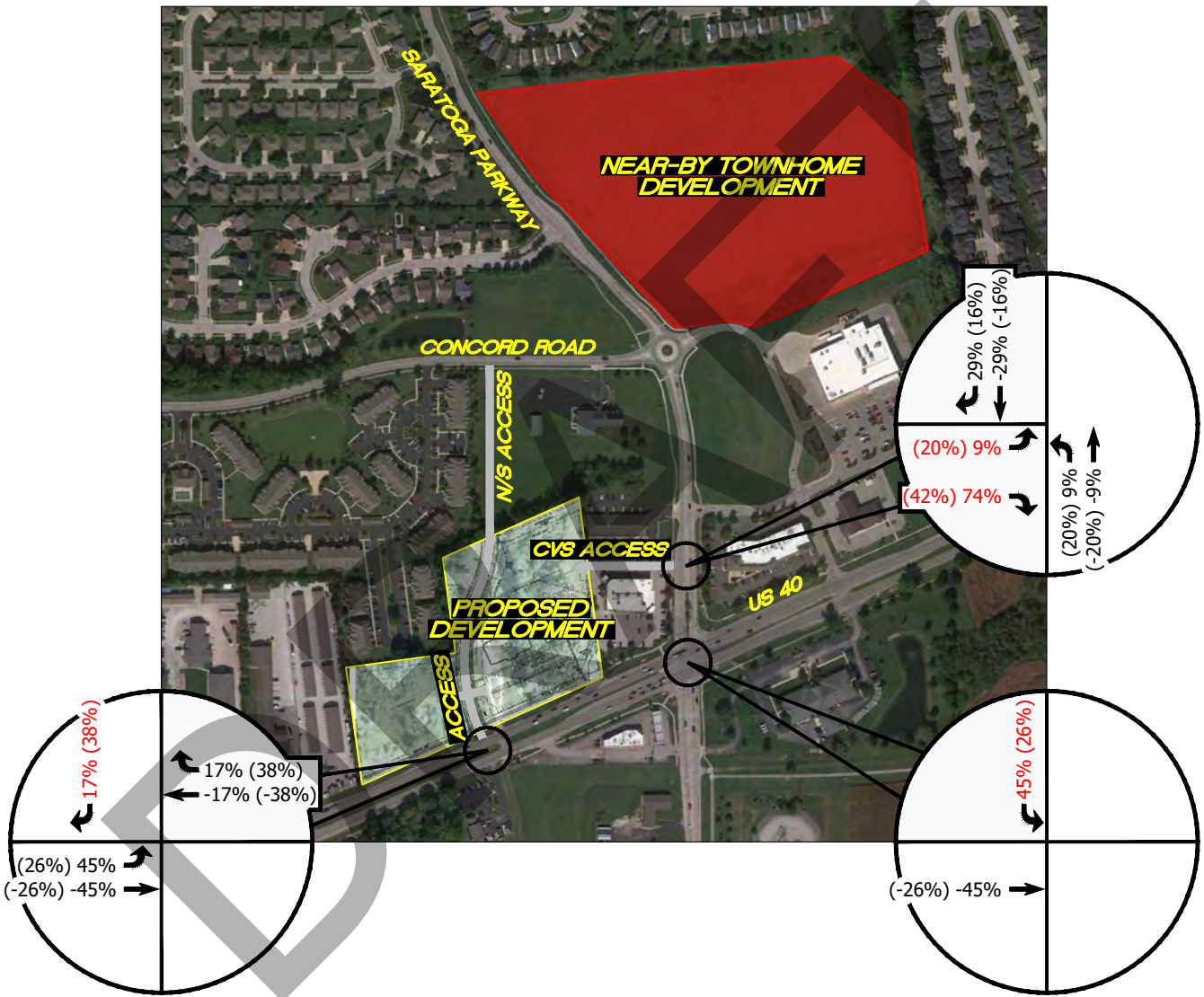
<sup>3</sup> INDOT *Driveway Permit Manual*, Indiana Department of Transportation, 2018



**LEGEND**  
 XX = INBOUND TRAFFIC  
 XX = OUTBOUND TRAFFIC  
 \* = NEGLIGIBLE

**TRAFFIC IMPACT STUDY  
 HENDRICKS REGIONAL HEALTH  
 PLAINFIELD, INDIANA**

**FIGURE 5A  
 ASSIGNMENT AND DISTRIBUTION  
 OF GENERATED TRAFFIC VOLUMES  
 FROM PROPOSED DEVELOPMENT  
 (NON-PASS-BY TRIPS)**



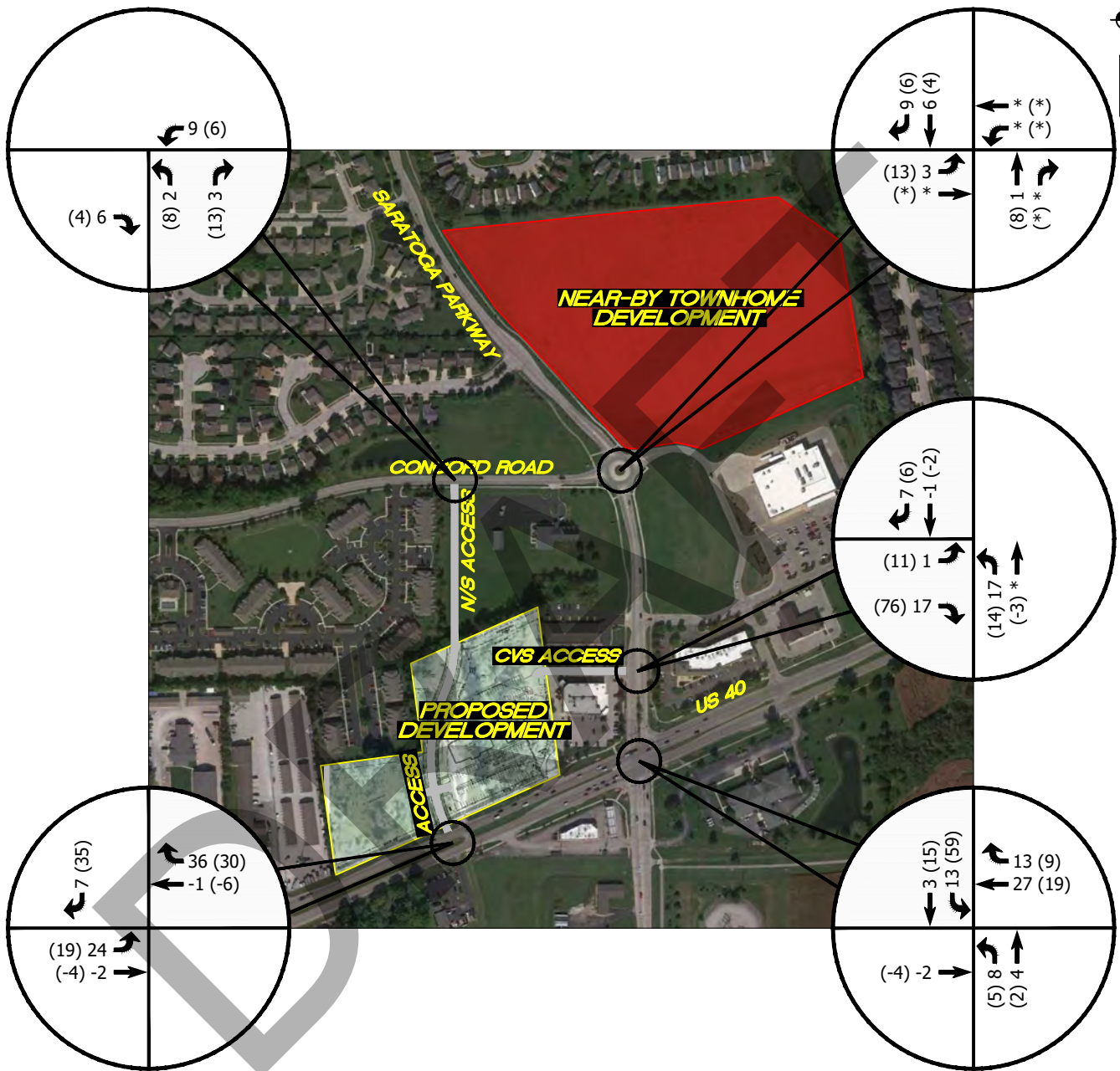
**LEGEND**

XX = A.M. INBOUND TRAFFIC  
 (XX) = P.M. INBOUND TRAFFIC  
 XX = A.M. OUTBOUND TRAFFIC  
 (XX) = P.M. OUTBOUND TRAFFIC  
 \* = NEGLIGIBLE

**FIGURE 5B**

**ASSIGNMENT AND DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT (PASS-BY TRIPS)**

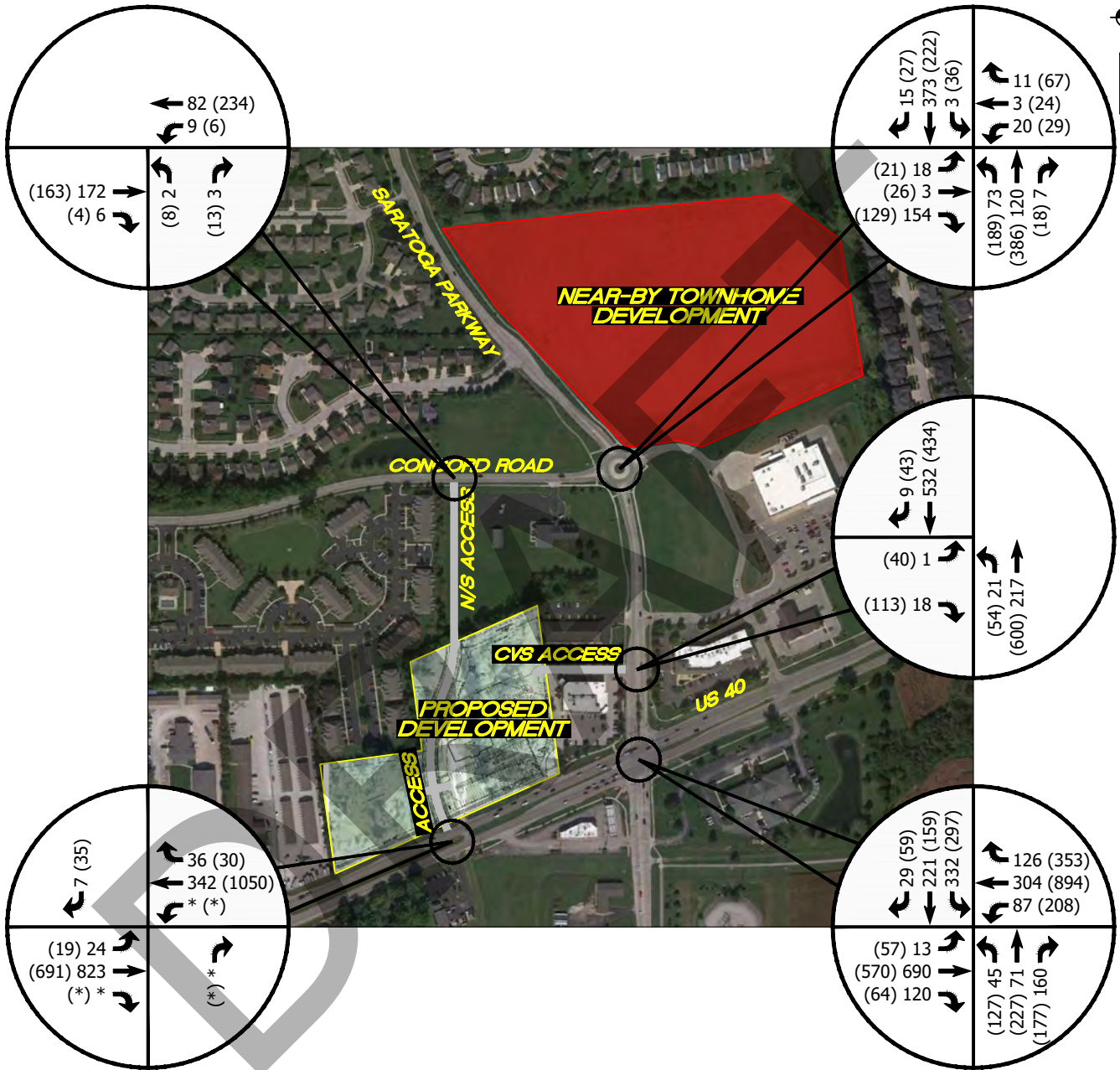
**TRAFFIC IMPACT STUDY  
 HENDRICKS REGIONAL HEALTH  
 PLAINFIELD, INDIANA**



**LEGEND**  
 XX = A.M. PEAK HOUR  
 (XX) = P.M. PEAK HOUR  
 \* = NEGLIGIBLE

**FIGURE 6**  
**TOTAL GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT**

**TRAFFIC IMPACT STUDY  
 HENDRICKS REGIONAL HEALTH  
 PLAINFIELD, INDIANA**



**LEGEND**  
 XX = A.M. PEAK HOUR  
 (XX) = P.M. PEAK HOUR  
 \* = NEGLIGIBLE

**TRAFFIC IMPACT STUDY  
 HENDRICKS REGIONAL HEALTH  
 PLAINFIELD, INDIANA**

**FIGURE 7  
 SUM OF YEAR 2026 BACKGROUND  
 TRAFFIC VOLUMES & TOTAL  
 GENERATED TRAFFIC VOLUMES  
 FROM PROPOSED DEVELOPMENT**

## CAPACITY ANALYSIS

The "efficiency" of an intersection is based on its ability to accommodate the traffic volumes that approach the intersection. It is defined by the Level-of-Service (LOS) of the intersection. The LOS is determined by a series of calculations commonly called a "capacity analysis". Input data into a capacity analysis include traffic volumes, intersection geometry, and number and use of lanes. To determine the LOS at each of the study intersections, a capacity analysis has been made using the recognized computer program *Synchro/SimTraffic*<sup>4</sup>. This program allows intersections to be analyzed and optimized using the capacity calculation methods outlined within the *Highway Capacity Manual (HCM 6<sup>th</sup> Edition)*<sup>5</sup>. The following list shows the delays related to the levels of service for unsignalized intersections:

<u>Level of Service</u>	<u>Control Delay (seconds/vehicle)</u>	
	<u>UNSIGNALIZED/RAB</u>	<u>SIGNALIZED</u>
A	Less than or equal to 10	Less than or equal to 10
B	Between 10.1 and 15	Between 10.1 and 20
C	Between 15.1 and 25	Between 20.1 and 35
D	Between 25.1 and 35	Between 35.1 and 55
E	Between 35.1 and 50	Between 55.1 and 80
F	greater than 50	greater than 80

## CAPACITY ANALYSIS SCENARIOS

To evaluate the proposed development's effect on the public street system, a series of traffic volume scenarios were analyzed to determine the adequacy of the existing roadway network. From this analysis, necessary recommendations can be made to improve the public street system so it will accommodate the future traffic volumes. An analysis has been made for the peak hours at each of the study intersections for the following traffic volume scenarios:

*Scenario 1: Existing Traffic Volumes* – Based on existing peak hour traffic volumes. **Figure 3** is a summary of these traffic volumes.

*Scenario 2: Year 2027 Background Traffic Volumes* – Based on applying a 2% annual growth rate to the existing traffic volumes and adding generated traffic from a future near-by townhome development. **Figure 4** is a summary of these traffic volumes.

*Scenario 3: Year 2027 Proposed Development Traffic Volumes* – Based on the sum of year 2027 background traffic volumes and generated traffic volumes from the proposed development. **Figure 7** is a summary of these traffic volumes.

<sup>4</sup> *Synchro/SimTraffic 11*, Trafficware, 2021.

<sup>5</sup> *Highway Capacity Manual (HCM), 6<sup>th</sup> Edition* Transportation Research Board, National Research Council, Washington, DC, 2016.

The following tables summarize the level of service results at each study intersection. The *Synchro* (*HCM 6<sup>th</sup> Edition*) intersection reports illustrating the capacity analysis results are included in the **Appendix**.

TABLE 5 – LEVEL OF SERVICE SUMMARY: US 40 & SARATOGA PARKWAY

APPROACH	AM PEAK			PM PEAK		
	Scenarios			Scenarios		
	1	2	3	1	2	3
Northbound Approach	F	F	F	E	E	E
Southbound Approach	E	E	E	E	E	F
Eastbound Approach	C	C	C	C	C	C
Westbound Approach	C	C	C	C	C	C
<b>Intersection</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>

TABLE 6 – LEVEL OF SERVICE SUMMARY: SARATOGA PARKWAY & CVS ACCESS DRIVE

APPROACH	AM PEAK			PM PEAK		
	Scenarios			Scenarios		
	1	2	3	1	2	3
Northbound Left-Turn	A	A	A	A	A	A
Eastbound Approach	B	B	B	C	C	C

TABLE 7 – LEVEL OF SERVICE SUMMARY: SARATOGA PARKWAY & CONCORD ROAD

APPROACH	AM PEAK			PM PEAK		
	Scenarios			Scenarios		
	1	2	3	1	2	3
Northbound Approach	A	A	A	A	A	A
Southbound Approach	A	A	A	A	A	A
Eastbound Approach	A	A	A	A	A	A
Westbound Approach	A	A	A	A	A	A
<b>Intersection</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>

TABLE 8 – LEVEL OF SERVICE SUMMARY: CONCORD ROAD & NORTH/SOUTH ACCESS DRIVE CONNECTION

APPROACH	AM PEAK	PM PEAK
	Scenario 3	Scenario 3
Northbound Approach	A	B
Westbound Left-Turn	A	A

Note: Analysis considers construction of the northbound full access drive with at least one inbound and one outbound lane that will stop for Concord Road.

TABLE 9 – LEVEL OF SERVICE SUMMARY: US 40 & PROPOSED LI/RI/RO ACCESS DRIVE

APPROACH	AM PEAK	PM PEAK
	Scenario 3	Scenario 3
Northbound Approach	A	A
Southbound Approach	A	B
Eastbound Left-Turn	A	B
Westbound Left-Turn	A	A

Note: Analysis considers construction of the southbound LI/RI/RO access drive with at least one inbound and one outbound lane, construction of exclusive eastbound left-turn lane and an exclusive westbound right-turn lane along US 40, and the access drive stopping for US 40.

### **CONCLUSIONS & RECOMMENDATIONS**

The conclusions that follow are based on existing traffic volume data, trip generation, assignment and distribution of generated traffic, turn lane analysis, capacity analyses/level of service results, and a field review conducted at the site. Based on the analysis and the resulting conclusions of this study, the following recommendations are formulated to ensure that the roadway system will accommodate the increased traffic volumes from the site.

#### US 40 & SARATOGA PARKWAY

Capacity analyses for all traffic scenarios have shown that this intersection operates and will continue to operate at acceptable levels of service during both AM and PM peak hours with existing intersection conditions. Therefore, no improvements are recommended at this location.

#### SARATOGA PARKWAY & CVS ACCESS DRIVE

Capacity analyses for all traffic scenarios have shown that all approaches to this intersection operate and will continue to operate at acceptable levels of service during both AM and PM peak hours with an added northbound left-turn lane along Saratoga Parkway at the access drive. Based on the projected traffic volumes, this turn lane should be a minimum of 60 feet in length. This storage length can be accomplished by restriping the existing pavement and/or removing a portion of the existing median along Saratoga Parkway.

#### SARATOGA PARKWAY & CONCORD ROAD

Capacity analyses for all traffic scenarios have shown that this intersection operates and will continue to operate at acceptable levels of service during both AM and PM peak hours with existing intersection conditions. Therefore, no improvements are recommended at this location.

CONCORD ROAD & NORTH/SOUTH ACCESS DRIVE CONNECTION

Capacity analyses have shown that all approaches to this intersection will operate at acceptable levels of service during the AM and PM peak hours with the following recommended intersection conditions:

- Construction of the access northbound full access drive with one inbound lane and at least one outbound lane.
- The intersection should be stop controlled with the access drive stopping for Concord Road.

US 40 & PROPOSED LEFT-IN/RIGHT-IN/RIGHT-OUT ACCESS DRIVE

Capacity analyses have shown that all approaches to this intersection will operate at acceptable levels of service during the AM and PM peak hours with the following recommended intersection conditions:

- Construction of the southbound left-in/right-in/right-out access with one inbound lane and one outbound lane that will align with the existing Excel Motors access drive.
- Construction of an exclusive eastbound left-turn lane along US 40 at the access drive location. Based on projected traffic volumes, this turn lane should be designed with a minimum storage length of 60 feet.
- Construction of an exclusive westbound right-turn lane along US 40 at the access drive location. This turn lane should be an extension of the current right-turn lane that ends at the existing CVS Access Drive to the east.
- The intersection should be stop controlled with the access drive stopping for US 40.

# ***TRAFFIC IMPACT STUDY***

## ***APPENDIX***

**DRAFT**



**A&F ENGINEERING**

Transportation & Site Engineering

Creating Order Since 1966

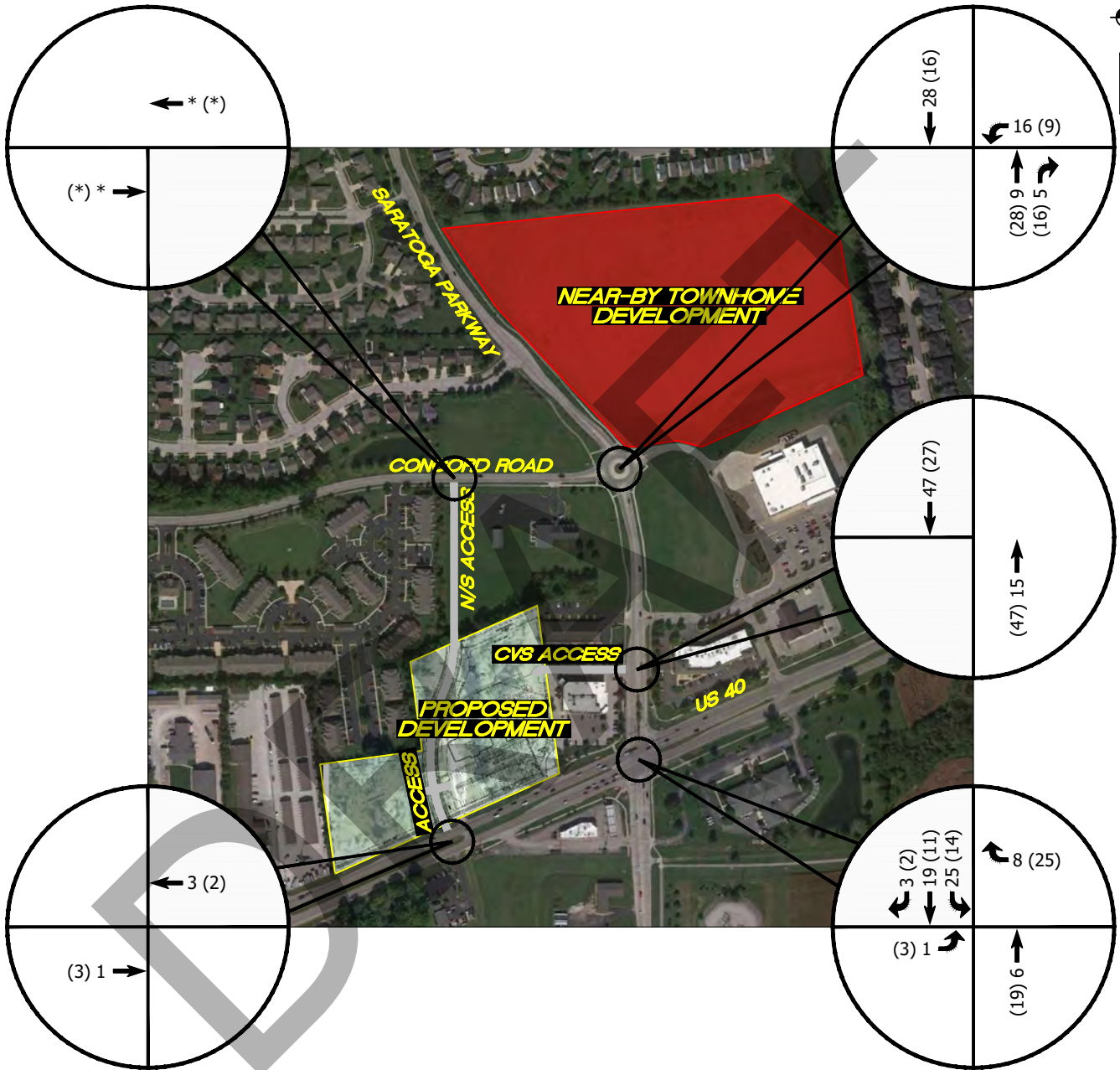
***8365 Keystone Crossing Boulevard, Suite 201***

***Indianapolis, IN 46240***

***Phone: (317) 202-0864 Fax: (317) 202-0908***

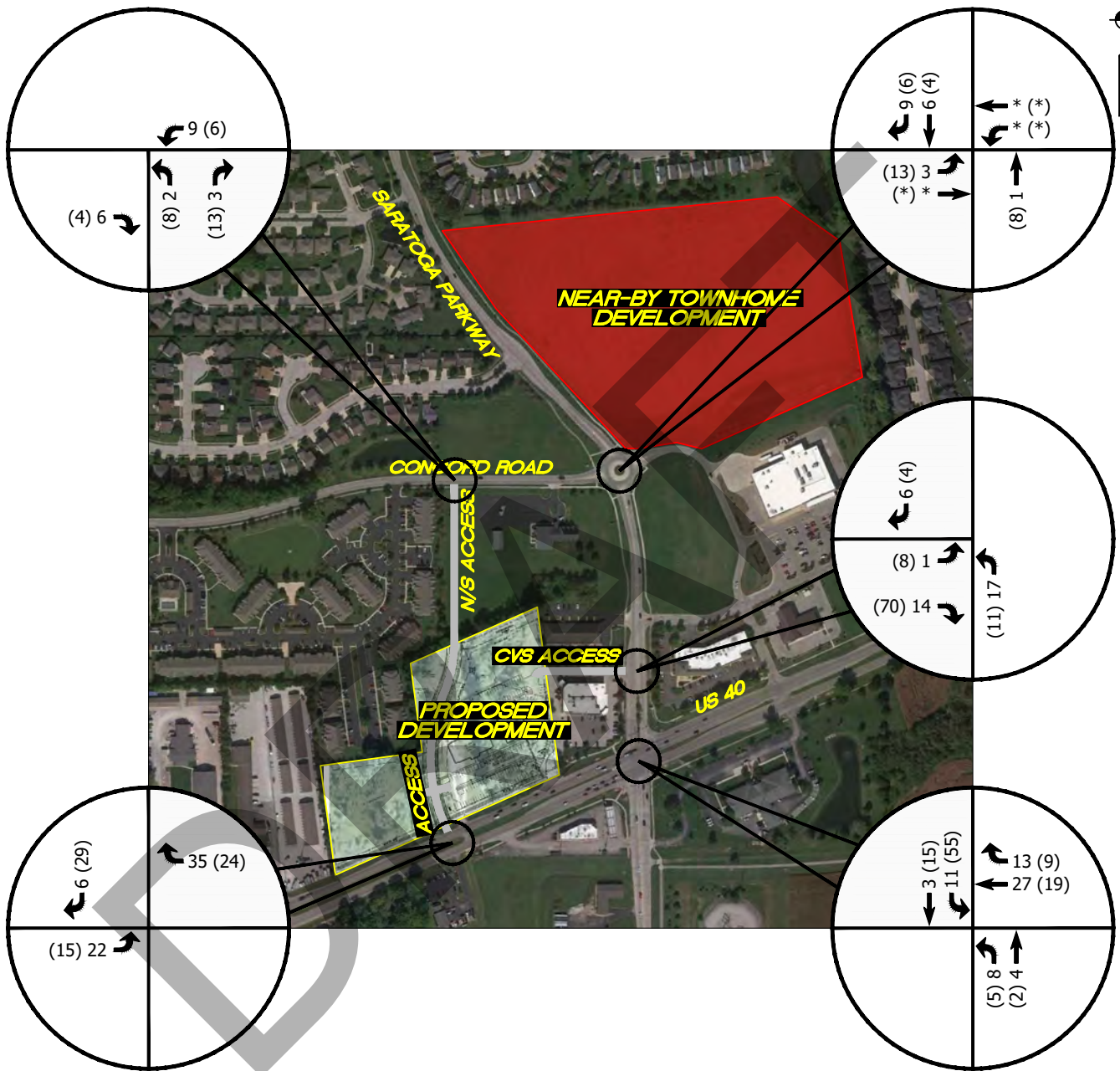
**DRAFT**

***ADDITIONAL FIGURES***



**FIGURE A**  
**GENERATED TRAFFIC VOLUMES**  
**FROM NEAR-BY TOWNHOME**  
**DEVELOPMENT**

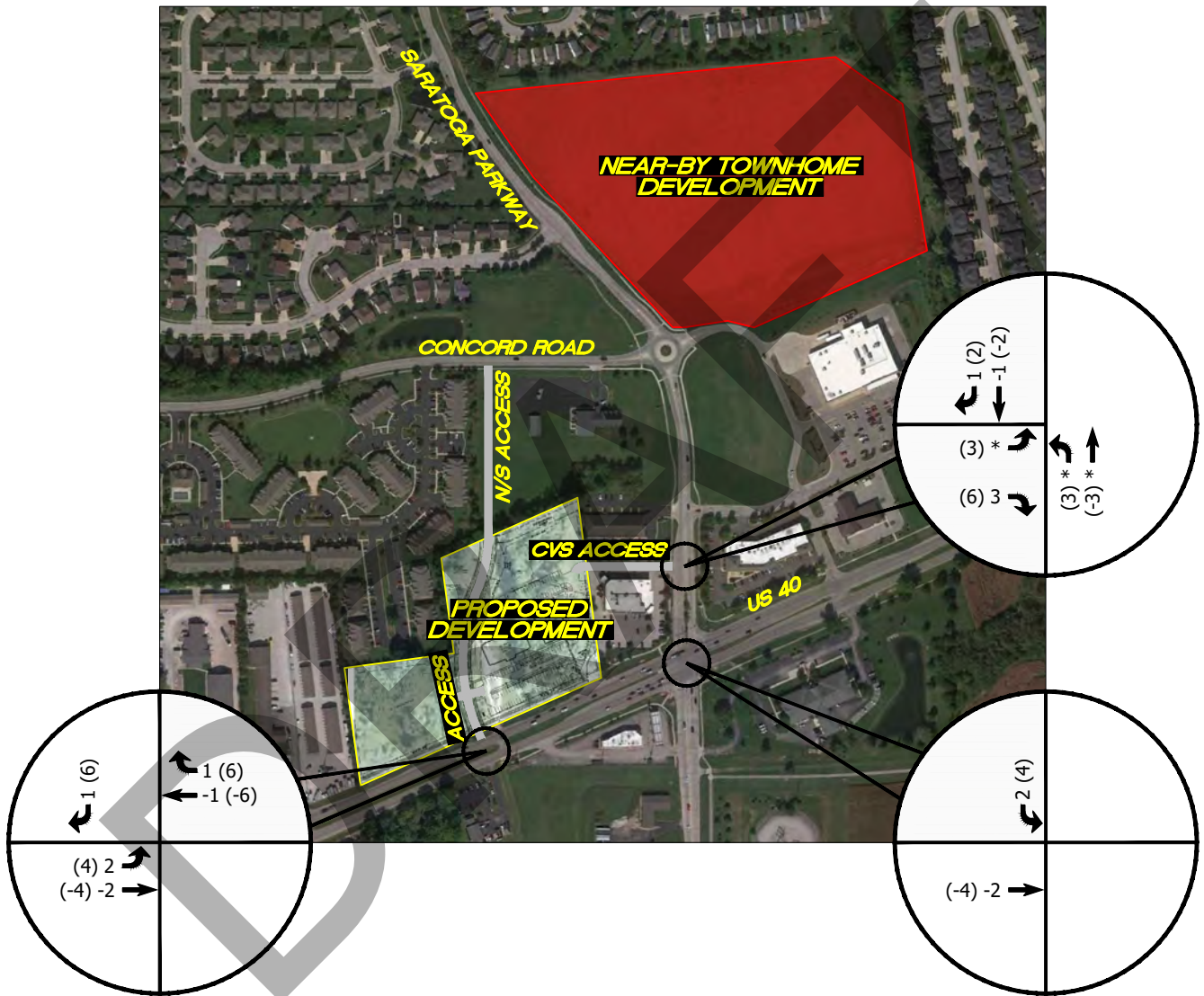
**TRAFFIC IMPACT STUDY**  
**HENDRICKS REGIONAL HEALTH**  
**PLAINFIELD, INDIANA**



**LEGEND**  
 XX = A.M. PEAK HOUR  
 (XX) = P.M. PEAK HOUR  
 \* = NEGLIGIBLE

**FIGURE B**  
**GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT (NON-PASS-BY)**

**TRAFFIC IMPACT STUDY  
 HENDRICKS REGIONAL HEALTH  
 PLAINFIELD, INDIANA**



**LEGEND**  
 XX = A.M. PEAK HOUR  
 (XX) = P.M. PEAK HOUR  
 \* = NEGLIGIBLE

**FIGURE C**  
**GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT (PASS-BY)**

**TRAFFIC IMPACT STUDY  
 HENDRICKS REGIONAL HEALTH  
 PLAINFIELD, INDIANA**

***US 40 & SARATOGA PARKWAY***

***TRAFFIC VOLUME COUNTS  
CAPACITY ANALYSIS***

**DRAFT**

US 40 & SARATOGA PKWY - TMC

Tue Jan 4, 2022

Full Length (4:30 PM-6:30 PM, 6:30 AM-8:30 AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 914679, Location: 39.697362, -86.418718



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg Direction	South Northbound					North Southbound					West Eastbound					East Westbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2022-01-04 4:30PM	16	43	35	0	94	47	18	9	1	75	12	111	15	1	139	33	224	75	0	332	640
4:45PM	24	41	37	0	102	49	34	13	0	96	13	122	13	0	148	40	202	59	0	301	647
Hourly Total	40	84	72	0	196	96	52	22	1	171	25	233	28	1	287	73	426	134	0	633	1287
5:00PM	36	46	35	0	117	49	32	13	0	94	12	140	13	0	165	60	188	77	0	325	701
5:15PM	30	46	49	0	125	48	22	11	0	81	16	133	14	0	163	60	205	74	0	339	708
5:30PM	21	54	40	0	115	58	33	15	0	106	8	127	18	1	154	29	200	80	0	309	684
5:45PM	31	45	41	0	117	66	32	14	0	112	12	108	12	0	132	38	131	69	0	238	599
Hourly Total	118	191	165	0	474	221	119	53	0	393	48	508	57	1	614	187	724	300	0	1211	2692
6:00PM	24	52	48	0	124	56	19	17	0	92	11	95	8	0	114	43	149	49	0	241	571
6:15PM	15	28	41	0	84	60	13	11	0	84	4	75	9	0	88	34	139	62	0	235	491
Hourly Total	39	80	89	0	208	116	32	28	0	176	15	170	17	0	202	77	288	111	0	476	1062
2022-01-05 6:30AM	5	7	18	0	30	43	31	6	0	80	0	148	14	0	162	26	60	9	0	95	367
6:45AM	7	6	28	0	41	39	29	9	0	77	0	103	23	0	126	17	53	21	0	91	335
Hourly Total	12	13	46	0	71	82	60	15	0	157	0	251	37	0	288	43	113	30	0	186	702
7:00AM	7	8	28	0	43	56	42	5	0	103	0	141	32	0	173	21	43	16	0	80	399
7:15AM	6	12	33	0	51	78	33	8	0	119	2	165	20	0	187	13	81	18	0	112	469
7:30AM	7	14	52	0	73	64	59	5	0	128	3	173	30	0	206	22	66	20	0	108	515
7:45AM	14	21	32	0	67	69	47	6	0	122	6	150	27	0	183	23	62	41	1	127	499
Hourly Total	34	55	145	0	234	267	181	24	0	472	11	629	109	0	749	79	252	95	1	427	1882
8:00AM	11	28	24	0	63	47	23	2	0	72	5	108	19	0	132	20	68	16	0	104	371
8:15AM	11	9	40	0	60	81	22	5	0	108	3	120	14	0	137	20	59	27	0	106	411
Hourly Total	22	37	64	0	123	128	45	7	0	180	8	228	33	0	269	40	127	43	0	210	782
<b>Total</b>	265	460	581	0	1306	910	489	149	1	1549	107	2019	281	2	2409	499	1930	713	1	3143	8407
<b>% Approach</b>	20.3%	35.2%	44.5%	0%	-	58.7%	31.6%	9.6%	0.1%	-	4.4%	83.8%	11.7%	0.1%	-	15.9%	61.4%	22.7%	0%	-	-
<b>% Total</b>	3.2%	5.5%	6.9%	0%	15.5%	10.8%	5.8%	1.8%	0%	18.4%	1.3%	24.0%	3.3%	0%	28.7%	5.9%	23.0%	8.5%	0%	37.4%	-
<b>Lights and Motorcycles</b>	242	457	569	0	1268	891	488	147	1	1527	105	1962	275	2	2344	489	1886	705	1	3081	8220
<b>% Lights and Motorcycles</b>	91.3%	99.3%	97.9%	0%	97.1%	97.9%	99.8%	98.7%	100%	98.6%	98.1%	97.2%	97.9%	100%	97.3%	98.0%	97.7%	98.9%	100%	98.0%	97.8%
<b>Heavy</b>	23	3	12	0	38	19	1	2	0	22	2	57	6	0	65	10	44	8	0	62	187
<b>% Heavy</b>	8.7%	0.7%	2.1%	0%	2.9%	2.1%	0.2%	1.3%	0%	1.4%	1.9%	2.8%	2.1%	0%	2.7%	2.0%	2.3%	1.1%	0%	2.0%	2.2%

\*L: Left, R: Right, T: Thru, U: U-Turn

US 40 & SARATOGA PKWY - TMC

Tue Jan 4, 2022

Full Length (4:30 PM-6:30 PM, 6:30 AM-8:30 AM)

All Classes (Lights and Motorcycles, Heavy)

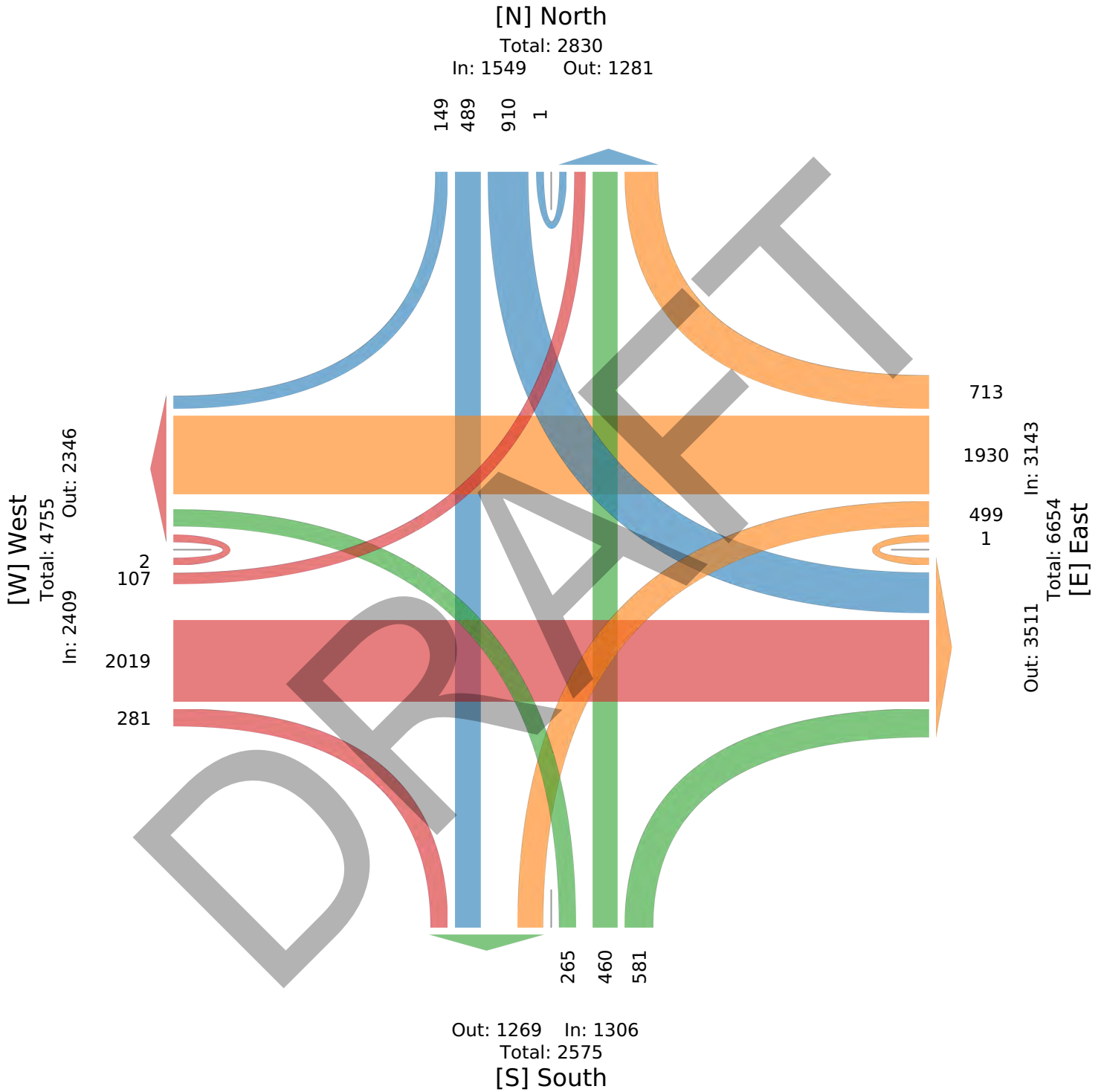
All Movements

ID: 914679, Location: 39.697362, -86.418718



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



US 40 & SARATOGA PKWY - TMC

Tue Jan 4, 2022

PM Peak (Jan 04 2022 4:45PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 914679, Location: 39.697362, -86.418718



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg Direction	South Northbound					North Southbound					West Eastbound					East Westbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2022-01-04 4:45PM	24	41	37	0	<b>102</b>	49	34	13	0	<b>96</b>	13	122	13	0	<b>148</b>	40	202	59	0	<b>301</b>	<b>647</b>
5:00PM	36	46	35	0	<b>117</b>	49	32	13	0	<b>94</b>	12	140	13	0	<b>165</b>	60	188	77	0	<b>325</b>	<b>701</b>
5:15PM	30	46	49	0	<b>125</b>	48	22	11	0	<b>81</b>	16	133	14	0	<b>163</b>	60	205	74	0	<b>339</b>	<b>708</b>
5:30PM	21	54	40	0	<b>115</b>	58	33	15	0	<b>106</b>	8	127	18	1	<b>154</b>	29	200	80	0	<b>309</b>	<b>684</b>
<b>Total</b>	111	187	161	0	<b>459</b>	204	121	52	0	<b>377</b>	49	522	58	1	<b>630</b>	189	795	290	0	<b>1274</b>	<b>2740</b>
<b>% Approach</b>	24.2%	40.7%	35.1%	0%	-	54.1%	32.1%	13.8%	0%	-	7.8%	82.9%	9.2%	0.2%	-	14.8%	62.4%	22.8%	0%	-	-
<b>% Total</b>	4.1%	6.8%	5.9%	0%	<b>16.8%</b>	7.4%	4.4%	1.9%	0%	<b>13.8%</b>	1.8%	19.1%	2.1%	0%	<b>23.0%</b>	6.9%	29.0%	10.6%	0%	<b>46.5%</b>	-
<b>PHF</b>	0.771	0.866	0.821	-	<b>0.918</b>	0.879	0.890	0.867	-	<b>0.889</b>	0.766	0.932	0.806	0.250	<b>0.955</b>	0.788	0.970	0.906	-	<b>0.940</b>	0.968
<b>Lights and Motorcycles</b>	103	187	161	0	<b>451</b>	200	121	52	0	<b>373</b>	49	510	58	1	<b>618</b>	189	785	290	0	<b>1264</b>	2706
<b>% Lights and Motorcycles</b>	92.8%	100%	100%	0%	<b>98.3%</b>	98.0%	100%	100%	0%	<b>98.9%</b>	100%	97.7%	100%	100%	<b>98.1%</b>	100%	98.7%	100%	0%	<b>99.2%</b>	98.8%
<b>Heavy</b>	8	0	0	0	<b>8</b>	4	0	0	0	<b>4</b>	0	12	0	0	<b>12</b>	0	10	0	0	<b>10</b>	34
<b>% Heavy</b>	7.2%	0%	0%	0%	<b>1.7%</b>	2.0%	0%	0%	0%	<b>1.1%</b>	0%	2.3%	0%	0%	<b>1.9%</b>	0%	1.3%	0%	0%	<b>0.8%</b>	1.2%

\*L: Left, R: Right, T: Thru, U: U-Turn



US 40 & SARATOGA PKWY - TMC

Tue Jan 4, 2022

PM Peak (Jan 04 2022 4:45PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

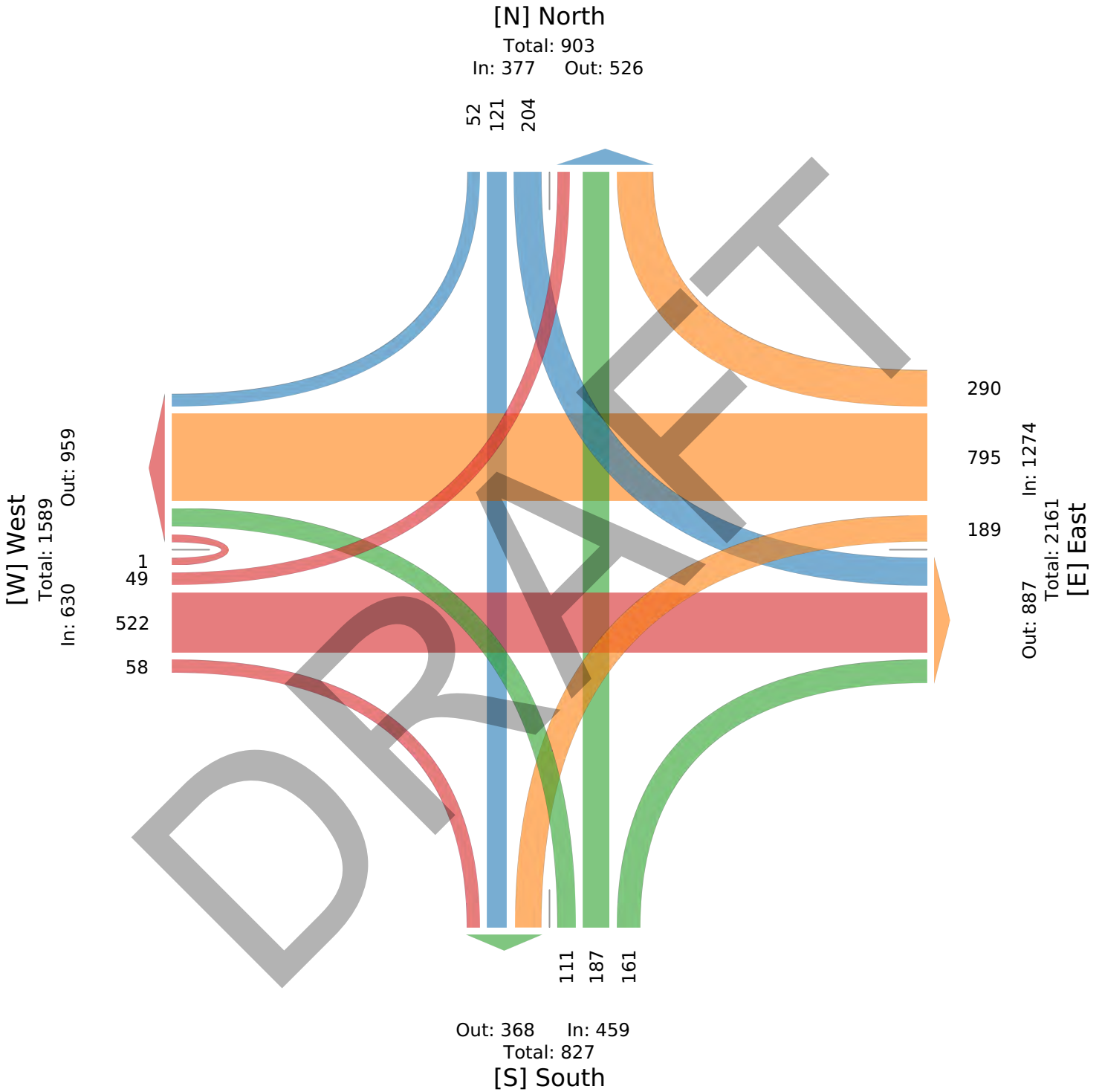
All Movements

ID: 914679, Location: 39.697362, -86.418718



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



US 40 & SARATOGA PKWY - TMC

Wed Jan 5, 2022

AM Peak (Jan 05 2022 7AM - 8 AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 914679, Location: 39.697362, -86.418718



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg Direction	South Northbound					North Southbound					West Eastbound					East Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-01-05 7:00AM	7	8	28	0	43	56	42	5	0	103	0	141	32	0	173	21	43	16	0	80	399
7:15AM	6	12	33	0	51	78	33	8	0	119	2	165	20	0	187	13	81	18	0	112	469
7:30AM	7	14	52	0	73	64	59	5	0	128	3	173	30	0	206	22	66	20	0	108	515
7:45AM	14	21	32	0	67	69	47	6	0	122	6	150	27	0	183	23	62	41	1	127	499
<b>Total</b>	34	55	145	0	234	267	181	24	0	472	11	629	109	0	749	79	252	95	1	427	1882
<b>% Approach</b>	14.5%	23.5%	62.0%	0%	-	56.6%	38.3%	5.1%	0%	-	1.5%	84.0%	14.6%	0%	-	18.5%	59.0%	22.2%	0.2%	-	-
<b>% Total</b>	1.8%	2.9%	7.7%	0%	12.4%	14.2%	9.6%	1.3%	0%	25.1%	0.6%	33.4%	5.8%	0%	39.8%	4.2%	13.4%	5.0%	0.1%	22.7%	-
<b>PHF</b>	0.607	0.655	0.697	-	0.801	0.856	0.767	0.750	-	0.922	0.458	0.909	0.852	-	0.909	0.859	0.778	0.579	0.250	0.841	0.914
<b>Lights and Motorcycles</b>	31	53	140	0	224	260	181	23	0	464	9	611	107	0	727	78	241	93	1	413	1828
<b>% Lights and Motorcycles</b>	91.2%	96.4%	96.6%	0%	95.7%	97.4%	100%	95.8%	0%	98.3%	81.8%	97.1%	98.2%	0%	97.1%	98.7%	95.6%	97.9%	100%	96.7%	97.1%
<b>Heavy</b>	3	2	5	0	10	7	0	1	0	8	2	18	2	0	22	1	11	2	0	14	54
<b>% Heavy</b>	8.8%	3.6%	3.4%	0%	4.3%	2.6%	0%	4.2%	0%	1.7%	18.2%	2.9%	1.8%	0%	2.9%	1.3%	4.4%	2.1%	0%	3.3%	2.9%

\*L: Left, R: Right, T: Thru, U: U-Turn



US 40 & SARATOGA PKWY - TMC

Wed Jan 5, 2022

AM Peak (Jan 05 2022 7AM - 8 AM)

All Classes (Lights and Motorcycles, Heavy)

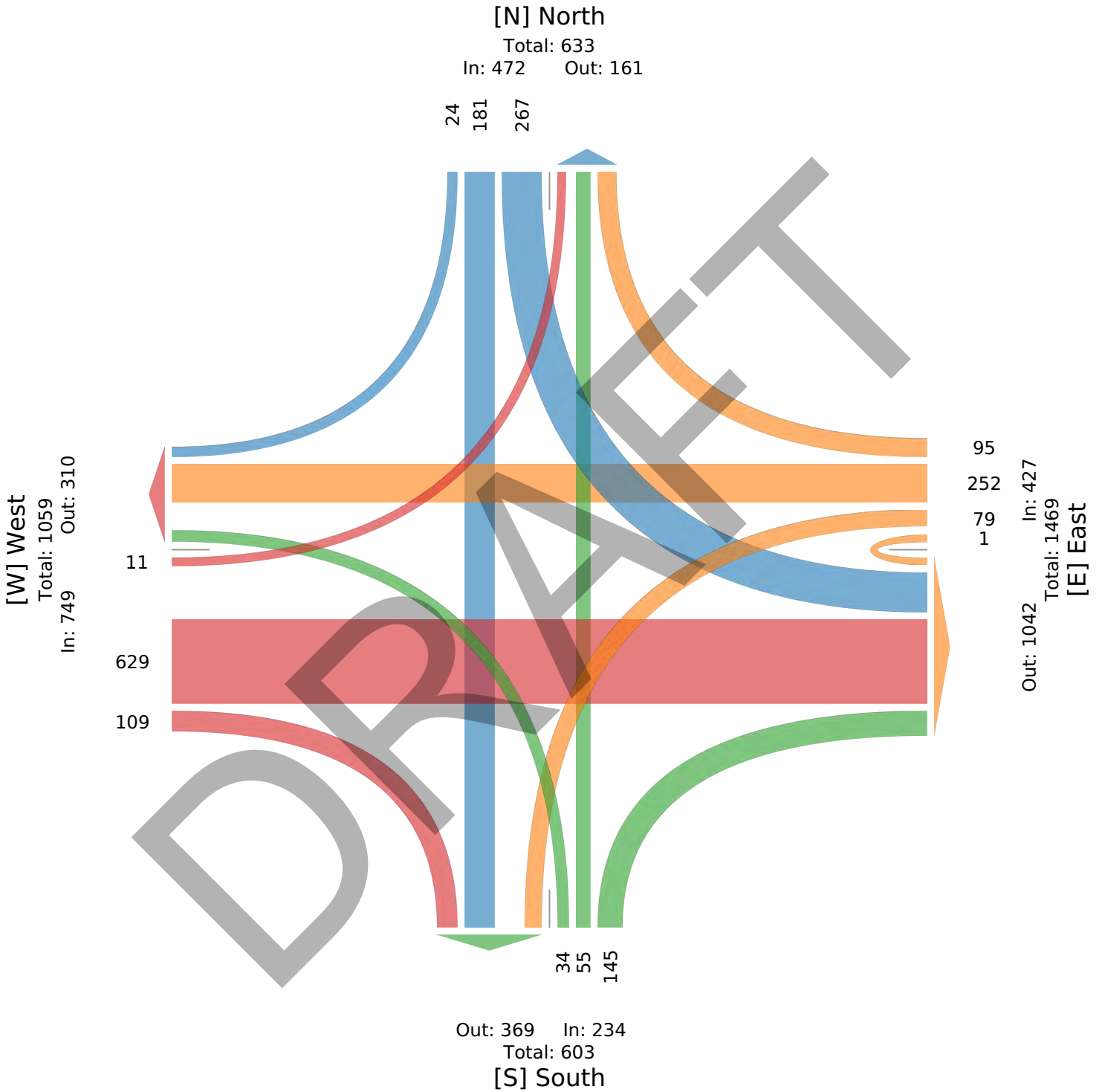
All Movements

ID: 914679, Location: 39.697362, -86.418718



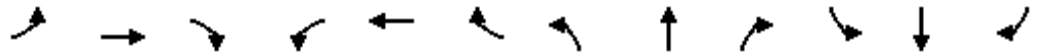
Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



HCM 6th Signalized Intersection Summary  
1: Moon Road/Saratoga Parkway & US 40

Background AM Peak  
01/26/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗	↘	↘	↗	↘	↘	↗	↘	↘	↗	↘
Traffic Volume (veh/h)	13	692	120	87	277	113	37	67	160	319	218	29
Future Volume (veh/h)	13	692	120	87	277	113	37	67	160	319	218	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1633	1856	1870	1885	1841	1870	1767	1841	1856	1856	1900	1841
Adj Flow Rate, veh/h	14	760	132	96	304	124	41	74	176	296	318	32
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
Percent Heavy Veh, %	18	3	2	1	4	2	9	4	3	3	0	4
Cap, veh/h	49	1442	648	148	1624	736	168	184	157	337	362	297
Arrive On Green	0.03	0.41	0.41	0.08	0.46	0.46	0.10	0.10	0.10	0.19	0.19	0.19
Sat Flow, veh/h	1555	3526	1585	1795	3497	1585	1682	1841	1572	1767	1900	1560
Grp Volume(v), veh/h	14	760	132	96	304	124	41	74	176	296	318	32
Grp Sat Flow(s),veh/h/ln	1555	1763	1585	1795	1749	1585	1682	1841	1572	1767	1900	1560
Q Serve(g_s), s	1.0	18.8	6.2	6.0	5.9	5.3	2.6	4.4	11.6	18.9	18.9	2.0
Cycle Q Clear(g_c), s	1.0	18.8	6.2	6.0	5.9	5.3	2.6	4.4	11.6	18.9	18.9	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	1442	648	148	1624	736	168	184	157	337	362	297
V/C Ratio(X)	0.29	0.53	0.20	0.65	0.19	0.17	0.24	0.40	1.12	0.88	0.88	0.11
Avail Cap(c_a), veh/h	142	1442	648	249	1624	736	168	184	157	381	409	336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	25.8	22.1	51.6	18.2	18.1	48.2	48.9	52.2	45.7	45.6	38.8
Incr Delay (d2), s/veh	3.2	1.4	0.7	4.7	0.3	0.5	0.7	1.4	107.4	18.8	17.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	8.1	2.5	2.9	2.5	2.0	1.1	2.1	9.2	10.0	10.6	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	27.2	22.8	56.3	18.5	18.5	48.9	50.4	159.6	64.5	63.3	39.0
LnGrp LOS	E	C	C	E	B	B	D	D	F	E	E	D
Approach Vol, veh/h		906			524			291			646	
Approach Delay, s/veh		27.0			25.4			116.2			62.6	
Approach LOS		C			C			F			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.0	15.4	54.5		28.1	9.0	60.9				
Change Period (Y+Rc), s		6.4	5.9	* 7		6.0	5.4	7.0				
Max Green Setting (Gmax), s		11.6	16.1	* 39		25.0	10.6	44.0				
Max Q Clear Time (g_c+I1), s		13.6	8.0	20.8		20.9	3.0	7.9				
Green Ext Time (p_c), s		0.0	0.1	5.5		1.2	0.0	2.6				

Intersection Summary

























HCM 6th Ctrl Delay	47.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.  
\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

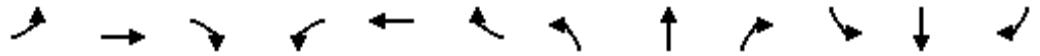
HCM 6th Signalized Intersection Summary  
 1: Moon Road/Saratoga Parkway & US 40

Existing PM Peak  
 01/26/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	522	58	189	795	290	111	187	161	204	121	52
Future Volume (veh/h)	49	522	58	189	795	290	111	187	161	204	121	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1900	1796	1900	1900	1870	1900	1900
Adj Flow Rate, veh/h	51	538	60	195	820	299	114	193	166	168	184	54
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
Percent Heavy Veh, %	0	2	0	0	1	0	7	0	0	2	0	0
Cap, veh/h	126	1497	678	226	1708	768	213	237	201	205	219	186
Arrive On Green	0.07	0.42	0.42	0.12	0.48	0.48	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1810	3554	1610	1810	3582	1610	1711	1900	1610	1781	1900	1610
Grp Volume(v), veh/h	51	538	60	195	820	299	114	193	166	168	184	54
Grp Sat Flow(s),veh/h/ln	1810	1777	1610	1810	1791	1610	1711	1900	1610	1781	1900	1610
Q Serve(g_s), s	3.1	12.0	2.6	12.3	18.0	13.8	7.2	11.5	11.7	10.7	11.0	3.6
Cycle Q Clear(g_c), s	3.1	12.0	2.6	12.3	18.0	13.8	7.2	11.5	11.7	10.7	11.0	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	126	1497	678	226	1708	768	213	237	201	205	219	186
V/C Ratio(X)	0.41	0.36	0.09	0.86	0.48	0.39	0.53	0.81	0.83	0.82	0.84	0.29
Avail Cap(c_a), veh/h	189	1497	678	314	1708	768	260	288	244	230	246	208
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	22.9	20.2	49.8	20.6	19.5	47.6	49.5	49.6	50.1	50.3	47.0
Incr Delay (d2), s/veh	2.1	0.7	0.3	16.2	1.0	1.5	2.1	13.8	17.4	18.5	20.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	5.1	1.0	6.6	7.7	5.5	3.2	6.4	5.7	5.8	6.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	23.6	20.4	65.9	21.6	21.0	49.7	63.3	67.0	68.6	70.6	47.8
LnGrp LOS	D	C	C	E	C	C	D	E	E	E	E	D
Approach Vol, veh/h		649			1314			473			406	
Approach Delay, s/veh		25.6			28.0			61.3			66.8	
Approach LOS		C			C			E			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.9	20.4	55.4		19.4	14.0	61.8				
Change Period (Y+Rc), s		6.4	5.9	6.5		6.0	5.9	6.5				
Max Green Setting (Gmax), s		17.6	20.1	38.5		15.0	12.1	46.5				
Max Q Clear Time (g_c+I1), s		13.7	14.3	14.0		13.0	5.1	20.0				
Green Ext Time (p_c), s		0.8	0.3	4.0		0.4	0.0	7.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				38.6								
HCM 6th LOS				D								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

HCM 6th Signalized Intersection Summary  
1: Moon Road/Saratoga Parkway & US 40

Background AM Peak  
01/26/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↗	↗	↘	↑↑	↗
Traffic Volume (veh/h)	13	692	120	87	277	113	37	67	160	319	218	29
Future Volume (veh/h)	13	692	120	87	277	113	37	67	160	319	218	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1633	1856	1870	1885	1841	1870	1767	1841	1856	1856	1900	1841
Adj Flow Rate, veh/h	14	760	132	96	304	124	41	74	176	296	318	32
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
Percent Heavy Veh, %	18	3	2	1	4	2	9	4	3	3	0	4
Cap, veh/h	49	1442	648	148	1624	736	168	184	157	337	362	297
Arrive On Green	0.03	0.41	0.41	0.08	0.46	0.46	0.10	0.10	0.10	0.19	0.19	0.19
Sat Flow, veh/h	1555	3526	1585	1795	3497	1585	1682	1841	1572	1767	1900	1560
Grp Volume(v), veh/h	14	760	132	96	304	124	41	74	176	296	318	32
Grp Sat Flow(s),veh/h/ln	1555	1763	1585	1795	1749	1585	1682	1841	1572	1767	1900	1560
Q Serve(g_s), s	1.0	18.8	6.2	6.0	5.9	5.3	2.6	4.4	11.6	18.9	18.9	2.0
Cycle Q Clear(g_c), s	1.0	18.8	6.2	6.0	5.9	5.3	2.6	4.4	11.6	18.9	18.9	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	1442	648	148	1624	736	168	184	157	337	362	297
V/C Ratio(X)	0.29	0.53	0.20	0.65	0.19	0.17	0.24	0.40	1.12	0.88	0.88	0.11
Avail Cap(c_a), veh/h	142	1442	648	249	1624	736	168	184	157	381	409	336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	25.8	22.1	51.6	18.2	18.1	48.2	48.9	52.2	45.7	45.6	38.8
Incr Delay (d2), s/veh	3.2	1.4	0.7	4.7	0.3	0.5	0.7	1.4	107.4	18.8	17.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	8.1	2.5	2.9	2.5	2.0	1.1	2.1	9.2	10.0	10.6	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	27.2	22.8	56.3	18.5	18.5	48.9	50.4	159.6	64.5	63.3	39.0
LnGrp LOS	E	C	C	E	B	B	D	D	F	E	E	D
Approach Vol, veh/h		906			524			291			646	
Approach Delay, s/veh		27.0			25.4			116.2			62.6	
Approach LOS		C			C			F			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.0	15.4	54.5		28.1	9.0	60.9				
Change Period (Y+Rc), s		6.4	5.9	* 7		6.0	5.4	7.0				
Max Green Setting (Gmax), s		11.6	16.1	* 39		25.0	10.6	44.0				
Max Q Clear Time (g_c+I1), s		13.6	8.0	20.8		20.9	3.0	7.9				
Green Ext Time (p_c), s		0.0	0.1	5.5		1.2	0.0	2.6				

Intersection Summary

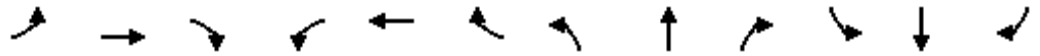
HCM 6th Ctrl Delay	47.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.  
\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary  
1: Moon Road/Saratoga Parkway & US 40

Background PM Peak  
01/26/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗	↘	↘	↗	↘	↘	↗	↘	↘	↗	↘
Traffic Volume (veh/h)	57	574	64	208	875	344	122	225	177	238	144	59
Future Volume (veh/h)	57	574	64	208	875	344	122	225	177	238	144	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1900	1796	1900	1900	1870	1900	1900
Adj Flow Rate, veh/h	59	592	66	214	902	355	126	232	182	196	216	61
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
Percent Heavy Veh, %	0	2	0	0	1	0	7	0	0	2	0	0
Cap, veh/h	133	1355	614	245	1587	713	241	267	227	230	245	208
Arrive On Green	0.07	0.38	0.38	0.14	0.44	0.44	0.14	0.14	0.14	0.13	0.13	0.13
Sat Flow, veh/h	1810	3554	1610	1810	3582	1610	1711	1900	1610	1781	1900	1610
Grp Volume(v), veh/h	59	592	66	214	902	355	126	232	182	196	216	61
Grp Sat Flow(s),veh/h/ln	1810	1777	1610	1810	1791	1610	1711	1900	1610	1781	1900	1610
Q Serve(g_s), s	3.6	14.3	3.1	13.5	21.7	18.3	7.9	13.9	12.7	12.5	13.0	4.0
Cycle Q Clear(g_c), s	3.6	14.3	3.1	13.5	21.7	18.3	7.9	13.9	12.7	12.5	13.0	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	1355	614	245	1587	713	241	267	227	230	245	208
V/C Ratio(X)	0.44	0.44	0.11	0.87	0.57	0.50	0.52	0.87	0.80	0.85	0.88	0.29
Avail Cap(c_a), veh/h	189	1355	614	314	1587	713	260	288	244	230	246	208
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	26.6	23.2	49.2	24.0	23.1	46.2	48.8	48.3	49.4	49.6	45.7
Incr Delay (d2), s/veh	2.3	1.0	0.4	19.2	1.5	2.5	1.8	22.3	16.4	25.2	28.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	6.2	1.2	7.4	9.4	7.4	3.5	8.2	6.1	7.2	8.1	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	27.7	23.5	68.4	25.5	25.6	48.0	71.0	64.7	74.6	78.3	46.5
LnGrp LOS	D	C	C	E	C	C	D	E	E	E	E	D
Approach Vol, veh/h		717			1471			540			473	
Approach Delay, s/veh		29.4			31.8			63.5			72.7	
Approach LOS		C			C			E			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.7	21.6	50.7		21.0	14.4	57.9				
Change Period (Y+Rc), s		6.4	5.9	6.5		6.0	5.9	6.5				
Max Green Setting (Gmax), s		17.6	20.1	38.5		15.0	12.1	46.5				
Max Q Clear Time (g_c+I1), s		15.9	15.5	16.3		15.0	5.6	23.7				
Green Ext Time (p_c), s		0.5	0.2	4.3		0.0	0.0	8.3				

Intersection Summary

HCM 6th Ctrl Delay	42.6
HCM 6th LOS	D

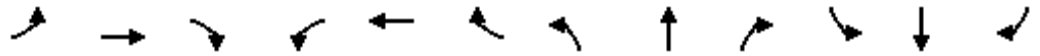
Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary  
1: Moon Road/Saratoga Parkway & US 40

Background + Proposed AM Peak

01/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗	↘	↘	↗	↘	↘	↗	↘	↘	↗	↘
Traffic Volume (veh/h)	13	690	120	87	304	126	45	71	160	332	221	29
Future Volume (veh/h)	13	690	120	87	304	126	45	71	160	332	221	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1633	1856	1870	1885	1841	1870	1767	1841	1856	1856	1900	1841
Adj Flow Rate, veh/h	14	758	132	96	334	138	49	78	176	304	328	32
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
Percent Heavy Veh, %	18	3	2	1	4	2	9	4	3	3	0	4
Cap, veh/h	49	1427	642	148	1609	729	168	184	157	344	370	304
Arrive On Green	0.03	0.40	0.40	0.08	0.46	0.46	0.10	0.10	0.10	0.19	0.19	0.19
Sat Flow, veh/h	1555	3526	1585	1795	3497	1585	1682	1841	1572	1767	1900	1560
Grp Volume(v), veh/h	14	758	132	96	334	138	49	78	176	304	328	32
Grp Sat Flow(s),veh/h/ln	1555	1763	1585	1795	1749	1585	1682	1841	1572	1767	1900	1560
Q Serve(g_s), s	1.0	18.9	6.3	6.0	6.6	6.0	3.1	4.6	11.6	19.4	19.5	2.0
Cycle Q Clear(g_c), s	1.0	18.9	6.3	6.0	6.6	6.0	3.1	4.6	11.6	19.4	19.5	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	1427	642	148	1609	729	168	184	157	344	370	304
V/C Ratio(X)	0.29	0.53	0.21	0.65	0.21	0.19	0.29	0.42	1.12	0.88	0.89	0.11
Avail Cap(c_a), veh/h	142	1427	642	249	1609	729	168	184	157	381	409	336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	26.2	22.4	51.6	18.7	18.5	48.4	49.1	52.2	45.4	45.5	38.4
Incr Delay (d2), s/veh	3.2	1.4	0.7	4.7	0.3	0.6	0.9	1.5	107.4	19.7	19.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	8.1	2.5	2.9	2.7	2.3	1.4	2.2	9.2	10.4	11.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	27.6	23.1	56.3	19.0	19.1	49.3	50.6	159.6	65.1	64.5	38.5
LnGrp LOS	E	C	C	E	B	B	D	D	F	E	E	D
Approach Vol, veh/h		904			568			303			664	
Approach Delay, s/veh		27.4			25.3			113.7			63.5	
Approach LOS		C			C			F			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.0	15.4	54.0		28.6	9.0	60.4				
Change Period (Y+Rc), s		6.4	5.9	* 7		6.0	5.4	7.0				
Max Green Setting (Gmax), s		11.6	16.1	* 39		25.0	10.6	44.0				
Max Q Clear Time (g_c+I1), s		13.6	8.0	20.9		21.5	3.0	8.6				
Green Ext Time (p_c), s		0.0	0.1	5.5		1.1	0.0	2.8				

Intersection Summary

HCM 6th Ctrl Delay	47.5
HCM 6th LOS	D

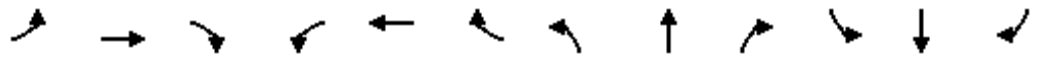
Notes

User approved volume balancing among the lanes for turning movement.  
\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary  
1: Moon Road/Saratoga Parkway & US 40

Background + Proposed PM Peak

01/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗	↘	↘	↗	↘	↘	↗	↘	↘	↗	↘
Traffic Volume (veh/h)	57	570	64	208	894	353	127	227	177	297	159	59
Future Volume (veh/h)	57	570	64	208	894	353	127	227	177	297	159	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1900	1796	1900	1900	1870	1900	1900
Adj Flow Rate, veh/h	59	588	66	214	922	364	131	234	182	235	263	61
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
Percent Heavy Veh, %	0	2	0	0	1	0	7	0	0	2	0	0
Cap, veh/h	133	1351	612	245	1583	712	242	269	228	230	246	208
Arrive On Green	0.07	0.38	0.38	0.14	0.44	0.44	0.14	0.14	0.14	0.13	0.13	0.13
Sat Flow, veh/h	1810	3554	1610	1810	3582	1610	1711	1900	1610	1781	1900	1610
Grp Volume(v), veh/h	59	588	66	214	922	364	131	234	182	235	263	61
Grp Sat Flow(s),veh/h/ln	1810	1777	1610	1810	1791	1610	1711	1900	1610	1781	1900	1610
Q Serve(g_s), s	3.6	14.3	3.1	13.5	22.4	18.9	8.3	14.0	12.7	15.0	15.0	4.0
Cycle Q Clear(g_c), s	3.6	14.3	3.1	13.5	22.4	18.9	8.3	14.0	12.7	15.0	15.0	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	1351	612	245	1583	712	242	269	228	230	246	208
V/C Ratio(X)	0.44	0.44	0.11	0.87	0.58	0.51	0.54	0.87	0.80	1.02	1.07	0.29
Avail Cap(c_a), veh/h	189	1351	612	314	1583	712	260	288	244	230	246	208
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	26.7	23.2	49.2	24.3	23.3	46.3	48.7	48.2	50.5	50.5	45.7
Incr Delay (d2), s/veh	2.3	1.0	0.4	19.2	1.6	2.6	1.9	22.7	15.9	64.6	77.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	6.2	1.2	7.4	9.7	7.6	3.6	8.3	6.1	10.8	12.4	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	27.7	23.6	68.4	25.9	26.0	48.2	71.4	64.1	115.1	127.8	46.5
LnGrp LOS	D	C	C	E	C	C	D	E	E	F	F	D
Approach Vol, veh/h		713			1500			547			559	
Approach Delay, s/veh		29.5			32.0			63.4			113.6	
Approach LOS		C			C			E			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.8	21.6	50.6		21.0	14.4	57.8				
Change Period (Y+Rc), s		6.4	5.9	6.5		6.0	5.9	6.5				
Max Green Setting (Gmax), s		17.6	20.1	38.5		15.0	12.1	46.5				
Max Q Clear Time (g_c+I1), s		16.0	15.5	16.3		17.0	5.6	24.4				
Green Ext Time (p_c), s		0.4	0.2	4.3		0.0	0.0	8.4				

Intersection Summary

HCM 6th Ctrl Delay	50.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

***SARATOGA PARKWAY & CVS ACCESS DRIVE***

***TRAFFIC VOLUME COUNTS  
TURN LANE WARRANTS  
CAPACITY ANALYSIS***

SARATOGA PKWY & CVS ACCESS DRIVE - TMC

Tue Jan 4, 2022

Full Length (4:30 PM-6:30 PM, 6:30 AM-8:30 AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 914656, Location: 39.698155, -86.418758



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg Direction	South Northbound				North Southbound				West Eastbound				Int
	L	T	U	App	T	R	U	App	L	R	U	App	
2022-01-04 4:30PM	16	123	0	139	70	4	0	74	5	9	0	14	227
4:45PM	12	95	0	107	80	4	0	84	10	7	0	17	208
Hourly Total	28	218	0	246	150	8	0	158	15	16	0	31	435
5:00PM	10	128	0	138	87	10	0	97	6	6	0	12	247
5:15PM	10	126	0	136	86	6	0	92	6	6	0	12	240
5:30PM	10	135	1	146	94	13	0	107	5	12	0	17	270
5:45PM	6	116	0	122	105	5	0	110	9	10	0	19	251
Hourly Total	36	505	1	542	372	34	0	406	26	34	0	60	1008
6:00PM	12	119	0	131	82	3	0	85	9	7	0	16	232
6:15PM	6	84	0	90	73	3	0	76	2	5	0	7	173
6:30PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	18	203	0	221	155	6	0	161	11	12	0	23	405
2022-01-05 6:30AM	0	13	0	13	91	0	0	91	0	0	0	0	104
6:45AM	0	20	0	20	73	0	0	73	0	0	0	0	93
Hourly Total	0	33	0	33	164	0	0	164	0	0	0	0	197
7:00AM	0	25	0	25	99	0	0	99	0	0	0	0	124
7:15AM	0	32	0	32	128	0	0	128	0	0	0	0	160
7:30AM	0	34	0	34	136	0	0	136	0	0	0	0	170
7:45AM	0	55	0	55	105	1	0	106	0	0	0	0	161
Hourly Total	0	146	0	146	468	1	0	469	0	0	0	0	615
8:00AM	4	63	0	67	73	1	0	74	0	1	0	1	142
8:15AM	2	30	0	32	101	2	0	103	3	2	0	5	140
8:30AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	6	93	0	99	174	3	0	177	3	3	0	6	282
<b>Total</b>	<b>88</b>	<b>1198</b>	<b>1</b>	<b>1287</b>	<b>1483</b>	<b>52</b>	<b>0</b>	<b>1535</b>	<b>55</b>	<b>65</b>	<b>0</b>	<b>120</b>	<b>2942</b>
<b>% Approach</b>	<b>6.8%</b>	<b>93.1%</b>	<b>0.1%</b>	<b>-</b>	<b>96.6%</b>	<b>3.4%</b>	<b>0%</b>	<b>-</b>	<b>45.8%</b>	<b>54.2%</b>	<b>0%</b>	<b>-</b>	<b>-</b>
<b>% Total</b>	<b>3.0%</b>	<b>40.7%</b>	<b>0%</b>	<b>43.7%</b>	<b>50.4%</b>	<b>1.8%</b>	<b>0%</b>	<b>52.2%</b>	<b>1.9%</b>	<b>2.2%</b>	<b>0%</b>	<b>4.1%</b>	<b>-</b>
<b>Lights and Motorcycles</b>	<b>88</b>	<b>1187</b>	<b>1</b>	<b>1276</b>	<b>1459</b>	<b>52</b>	<b>0</b>	<b>1511</b>	<b>55</b>	<b>65</b>	<b>0</b>	<b>120</b>	<b>2907</b>
<b>% Lights and Motorcycles</b>	<b>100%</b>	<b>99.1%</b>	<b>100%</b>	<b>99.1%</b>	<b>98.4%</b>	<b>100%</b>	<b>0%</b>	<b>98.4%</b>	<b>100%</b>	<b>100%</b>	<b>0%</b>	<b>100%</b>	<b>98.8%</b>
<b>Heavy</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>11</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>35</b>
<b>% Heavy</b>	<b>0%</b>	<b>0.9%</b>	<b>0%</b>	<b>0.9%</b>	<b>1.6%</b>	<b>0%</b>	<b>0%</b>	<b>1.6%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>1.2%</b>

\*L: Left, R: Right, T: Thru, U: U-Turn

SARATOGA PKWY & CVS ACCESS DRIVE - TMC

Tue Jan 4, 2022

Full Length (4:30 PM-6:30 PM, 6:30 AM-8:30 AM)

All Classes (Lights and Motorcycles, Heavy)

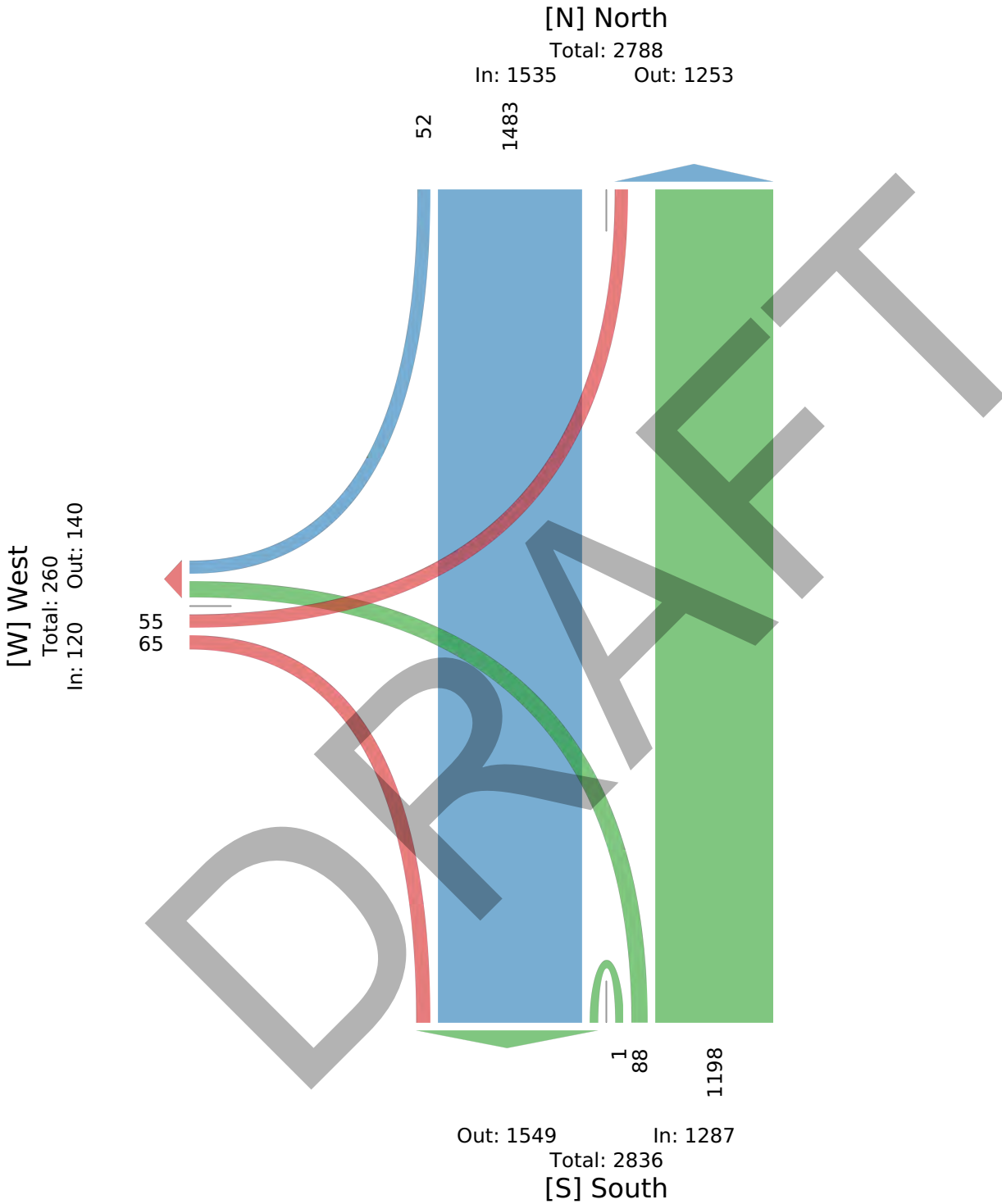
All Movements

ID: 914656, Location: 39.698155, -86.418758



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



SARATOGA PKWY & CVS ACCESS DRIVE - TMC

Tue Jan 4, 2022

PM Peak (Jan 04 2022 5PM - 6 PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 914656, Location: 39.698155, -86.418758



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg Direction	South Northbound				North Southbound				West Eastbound				Int
	L	T	U	App	T	R	U	App	L	R	U	App	
2022-01-04 5:00PM	10	128	0	138	87	10	0	97	6	6	0	12	247
5:15PM	10	126	0	136	86	6	0	92	6	6	0	12	240
5:30PM	10	135	1	146	94	13	0	107	5	12	0	17	270
5:45PM	6	116	0	122	105	5	0	110	9	10	0	19	251
<b>Total</b>	36	505	1	542	372	34	0	406	26	34	0	60	1008
<b>% Approach</b>	6.6%	93.2%	0.2%	-	91.6%	8.4%	0%	-	43.3%	56.7%	0%	-	-
<b>% Total</b>	3.6%	50.1%	0.1%	53.8%	36.9%	3.4%	0%	40.3%	2.6%	3.4%	0%	6.0%	-
<b>PHF</b>	0.900	0.935	0.250	0.928	0.886	0.654	-	0.923	0.722	0.708	-	0.789	0.933
<b>Lights and Motorcycles</b>	36	505	1	542	367	34	0	401	26	34	0	60	1003
<b>% Lights and Motorcycles</b>	100%	100%	100%	100%	98.7%	100%	0%	98.8%	100%	100%	0%	100%	99.5%
<b>Heavy</b>	0	0	0	0	5	0	0	5	0	0	0	0	5
<b>% Heavy</b>	0%	0%	0%	0%	1.3%	0%	0%	1.2%	0%	0%	0%	0%	0.5%

\*L: Left, R: Right, T: Thru, U: U-Turn

DRAFT

SARATOGA PKWY & CVS ACCESS DRIVE - TMC

Tue Jan 4, 2022

PM Peak (Jan 04 2022 5PM - 6 PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

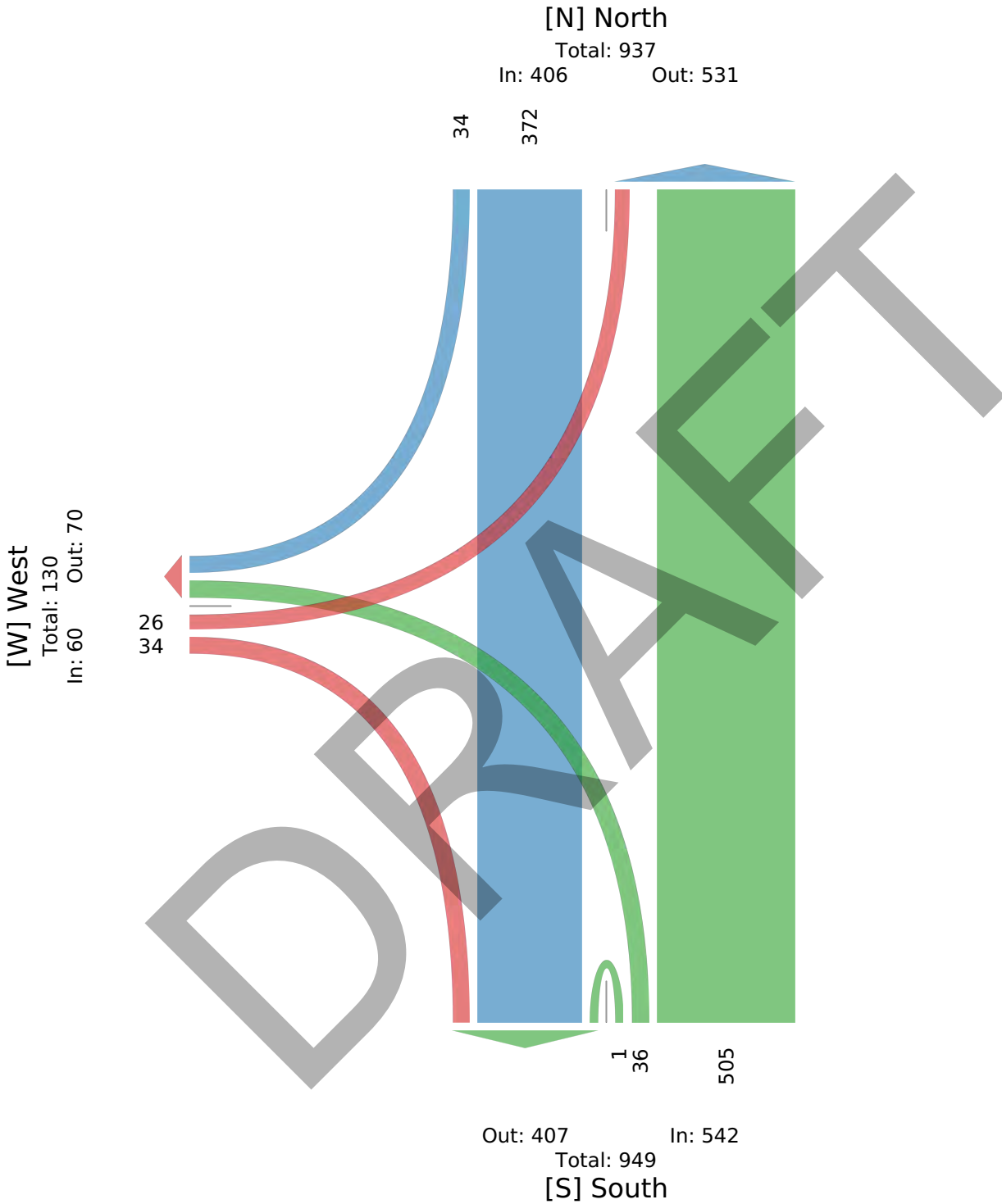
All Movements

ID: 914656, Location: 39.698155, -86.418758



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



SARATOGA PKWY & CVS ACCESS DRIVE - TMC

Wed Jan 5, 2022

AM Peak (Jan 05 2022 7:15AM - 8:15 AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 914656, Location: 39.698155, -86.418758



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg Direction	South Northbound				North Southbound				West Eastbound				Int
	L	T	U	App	T	R	U	App	L	R	U	App	
2022-01-05 7:15AM	0	32	0	32	128	0	0	128	0	0	0	0	160
7:30AM	0	34	0	34	136	0	0	136	0	0	0	0	170
7:45AM	0	55	0	55	105	1	0	106	0	0	0	0	161
8:00AM	4	63	0	67	73	1	0	74	0	1	0	1	142
<b>Total</b>	4	184	0	188	442	2	0	444	0	1	0	1	633
<b>% Approach</b>	2.1%	97.9%	0%	-	99.5%	0.5%	0%	-	0%	100%	0%	-	-
<b>% Total</b>	0.6%	29.1%	0%	29.7%	69.8%	0.3%	0%	70.1%	0%	0.2%	0%	0.2%	-
<b>PHF</b>	0.250	0.730	-	0.701	0.813	0.500	-	0.816	-	0.250	-	0.250	0.931
<b>Lights and Motorcycles</b>	4	177	0	181	437	2	0	439	0	1	0	1	621
<b>% Lights and Motorcycles</b>	100%	96.2%	0%	96.3%	98.9%	100%	0%	98.9%	0%	100%	0%	100%	98.1%
<b>Heavy</b>	0	7	0	7	5	0	0	5	0	0	0	0	12
<b>% Heavy</b>	0%	3.8%	0%	3.7%	1.1%	0%	0%	1.1%	0%	0%	0%	0%	1.9%

\*L: Left, R: Right, T: Thru, U: U-Turn

DRAFT

SARATOGA PKWY & CVS ACCESS DRIVE - TMC

Wed Jan 5, 2022

AM Peak (Jan 05 2022 7:15AM - 8:15 AM)

All Classes (Lights and Motorcycles, Heavy)

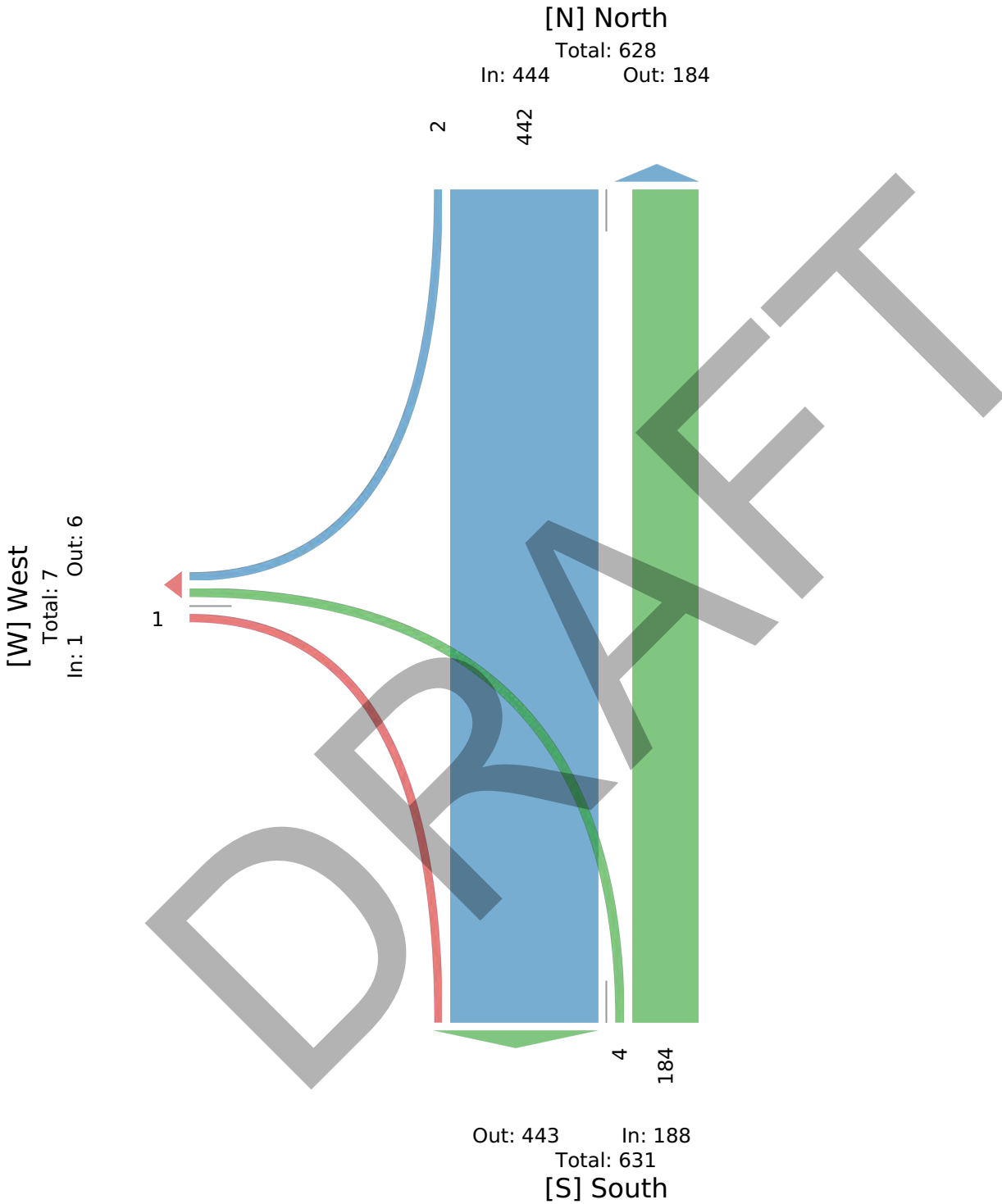
All Movements

ID: 914656, Location: 39.698155, -86.418758



Provided by: A&F Engineering

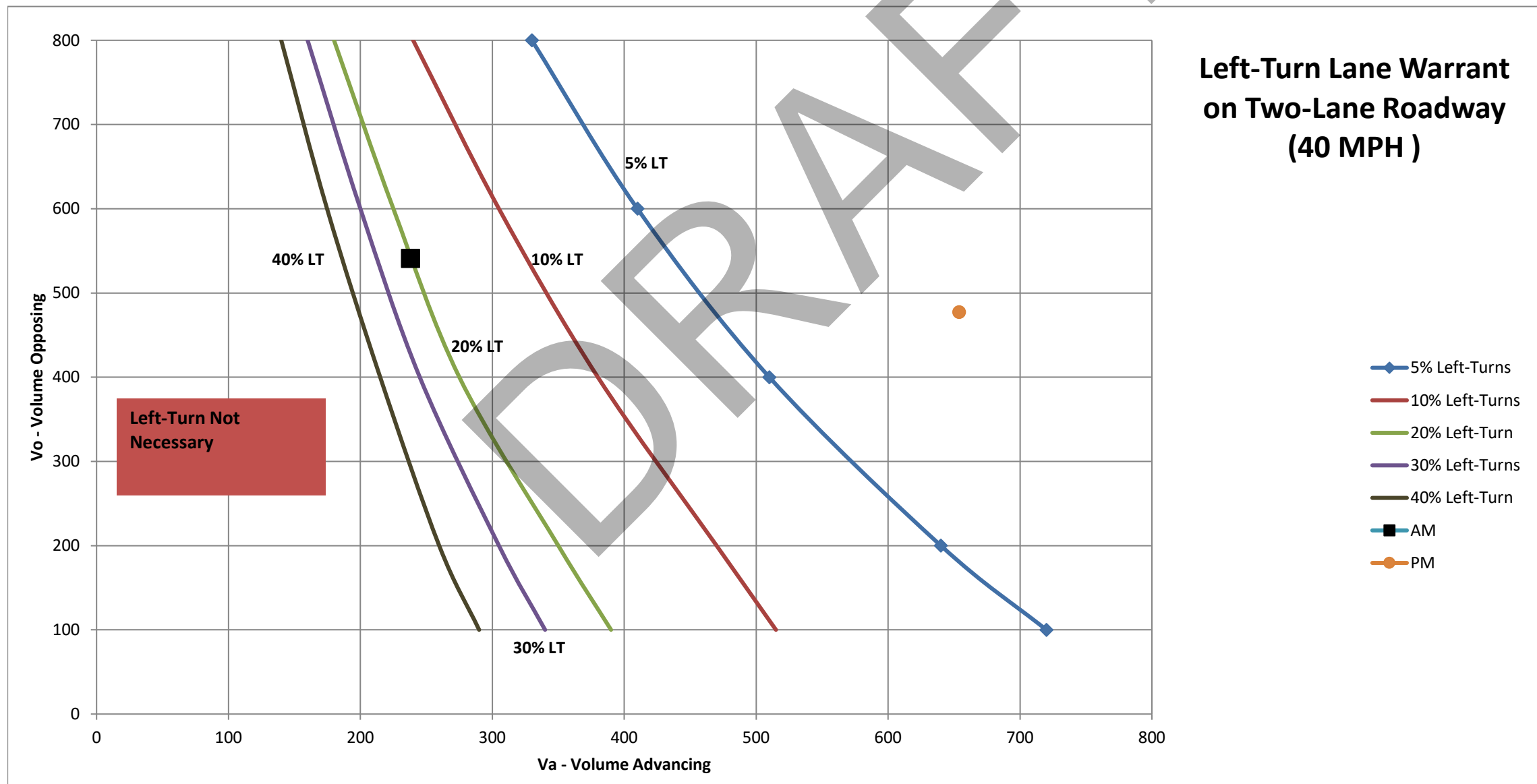
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



**Saratoga Parkway & CVS Access Drive - Year 2027 + Proposed**

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
40	800	330	240	210	180	170	160	150	140
	600	410	305	265	225	213	200	187	175
	400	510	380	328	275	260	245	230	215
	200	640	470	410	350	328	305	282	260
	100	720	515	453	390	365	340	315	290

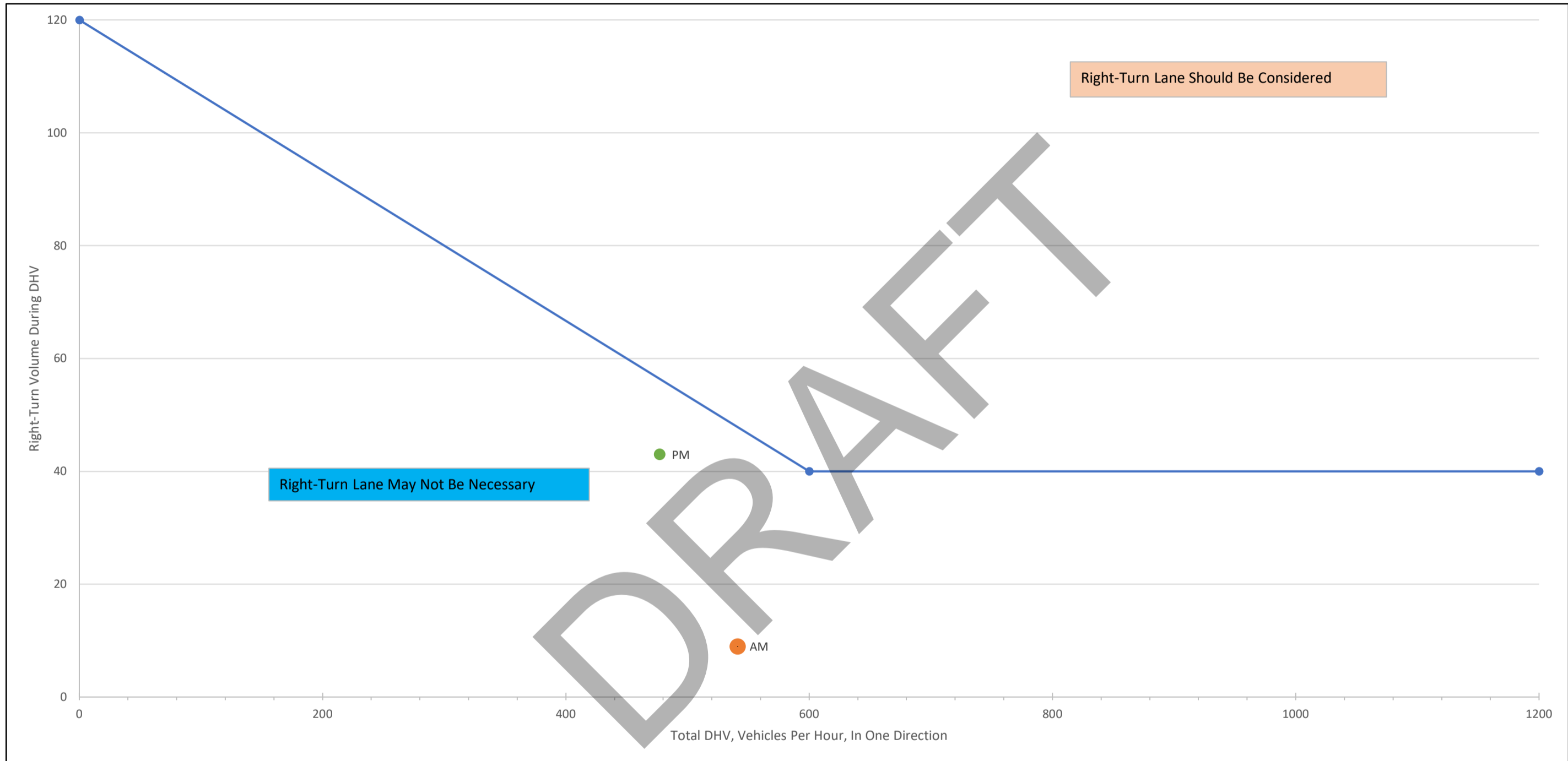
	INPUT		Warrant?
AM	Advancing Volume (Va)	238	NO
	Opposing Volume (Vo)	541	
	Left-turn Volume	21	
	Left-turn %	9%	
PM	Advancing Volume (Va)	654	YES
	Opposing Volume (Vo)	477	
	Left-turn Volume	54	
	Left-turn %	8%	



Saratoga Parkway & CVS Access Drive - Year 2027 + Proposed

Total Volume	RT Volume
0	120
600	40
1200	40

Time	Input		Met?
AM	RT Volume	9	NO
	Total Volume	541	
PM	RT Volume	43	NO
	Total Volume	477	



**NOTE : For highways with a design speed below 80 km/h (50 mph) with a DHV < 300 and where right turns > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.**

**Intersection**

Int Delay, s/veh 0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↗	↗	↘
Traffic Vol, veh/h	0	1	4	217	533	2
Future Vol, veh/h	0	1	4	217	533	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	75	-	-	30
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	4	1	0
Mvmt Flow	0	1	4	233	573	2

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	814	573	575	0	0
Stage 1	573	-	-	-	-
Stage 2	241	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	350	523	1008	-	-
Stage 1	568	-	-	-	-
Stage 2	804	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	349	523	1008	-	-
Mov Cap-2 Maneuver	349	-	-	-	-
Stage 1	566	-	-	-	-
Stage 2	804	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1008	-	-	523	-	-
HCM Lane V/C Ratio	0.004	-	-	0.002	-	-
HCM Control Delay (s)	8.6	-	0	11.9	-	-
HCM Lane LOS	A	-	A	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↗	↗	↙
Traffic Vol, veh/h	26	34	36	505	372	34
Future Vol, veh/h	26	34	36	505	372	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	75	-	-	30
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	1	0
Mvmt Flow	28	37	39	543	400	37
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1021	400	437	0	-	0
Stage 1	400	-	-	-	-	-
Stage 2	621	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	264	654	1134	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	255	654	1134	-	-	-
Mov Cap-2 Maneuver	255	-	-	-	-	-
Stage 1	658	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	15.1	0.6	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1134	-	255	654	-	-
HCM Lane V/C Ratio	0.034	-	0.11	0.056	-	-
HCM Control Delay (s)	8.3	-	20.8	10.8	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	0.2	-	-

**Intersection**

Int Delay, s/veh 0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↑	↑	↗
Traffic Vol, veh/h	0	1	4	217	533	2
Future Vol, veh/h	0	1	4	217	533	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	75	-	-	30
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	4	1	0
Mvmt Flow	0	1	4	233	573	2

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	814	573	575	0	0
Stage 1	573	-	-	-	-
Stage 2	241	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	350	523	1008	-	-
Stage 1	568	-	-	-	-
Stage 2	804	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	349	523	1008	-	-
Mov Cap-2 Maneuver	349	-	-	-	-
Stage 1	566	-	-	-	-
Stage 2	804	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1008	-	-	523	-	-
HCM Lane V/C Ratio	0.004	-	-	0.002	-	-
HCM Control Delay (s)	8.6	-	0	11.9	-	-
HCM Lane LOS	A	-	A	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	-

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	29	37	40	603	436	37
Future Vol, veh/h	29	37	40	603	436	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	75	-	-	30
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	1	0
Mvmt Flow	31	40	43	648	469	40
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1203	469	509	0	-	0
Stage 1	469	-	-	-	-	-
Stage 2	734	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	206	598	1066	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	198	598	1066	-	-	-
Mov Cap-2 Maneuver	198	-	-	-	-	-
Stage 1	609	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	18.1	0.5	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1066	-	198	598	-	-
HCM Lane V/C Ratio	0.04	-	0.157	0.067	-	-
HCM Control Delay (s)	8.5	-	26.6	11.4	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	0.2	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	1	18	21	217	532	9
Future Vol, veh/h	1	18	21	217	532	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	75	-	-	30
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	4	1	0
Mvmt Flow	1	19	23	233	572	10
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	851	572	582	0	-	0
Stage 1	572	-	-	-	-	-
Stage 2	279	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	333	523	1002	-	-	-
Stage 1	569	-	-	-	-	-
Stage 2	773	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	325	523	1002	-	-	-
Mov Cap-2 Maneuver	325	-	-	-	-	-
Stage 1	556	-	-	-	-	-
Stage 2	773	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	12.3	0.8	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1002	-	325	523	-	-
HCM Lane V/C Ratio	0.023	-	0.003	0.037	-	-
HCM Control Delay (s)	8.7	-	16.1	12.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0	0.1	-	-

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↑	↑	↔
Traffic Vol, veh/h	40	113	54	600	434	43
Future Vol, veh/h	40	113	54	600	434	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	75	-	-	30
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	1	0
Mvmt Flow	43	122	58	645	467	46
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1228	467	513	0	-	0
Stage 1	467	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	199	600	1063	-	-	-
Stage 1	635	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	188	600	1063	-	-	-
Mov Cap-2 Maneuver	188	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	17	0.7	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1063	-	188	600	-	-
HCM Lane V/C Ratio	0.055	-	0.229	0.203	-	-
HCM Control Delay (s)	8.6	-	29.7	12.5	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	0.8	-	-

***SARATOGA PARKWAY & CONCORD ROAD***

***TRAFFIC VOLUME COUNTS  
CAPACITY ANALYSIS***

DRAFT

**SARATOGA PKWY & CONCORD RD - TMC**

Tue Jan 4, 2022

Full Length (4:30 PM-6:30 PM, 6:30 AM-8:30 AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 914655, Location: 39.699985, -86.419031



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg Direction	South Northbound					North Southbound					West Eastbound					East Westbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2022-01-04 4:30PM	44	75	0	0	119	7	39	4	0	50	4	0	17	0	21	3	6	15	0	24	214
4:45PM	28	71	0	0	99	8	46	4	0	58	3	2	23	0	28	5	5	11	0	21	206
Hourly Total	72	146	0	0	218	15	85	8	0	108	7	2	40	0	49	8	11	26	0	45	420
5:00PM	43	77	0	0	120	7	42	5	0	54	4	4	28	0	36	1	7	13	0	21	231
5:15PM	41	85	0	0	126	6	53	8	0	67	0	2	20	0	22	1	4	15	0	20	235
5:30PM	48	85	1	0	134	8	57	6	0	71	3	9	33	0	45	6	2	13	0	21	271
5:45PM	42	66	0	0	108	7	48	2	0	57	3	7	33	0	43	4	9	17	0	30	238
Hourly Total	174	313	1	0	488	28	200	21	0	249	10	22	114	0	146	12	22	58	0	92	975
6:00PM	41	82	1	0	124	12	26	3	0	41	1	6	31	0	38	7	7	16	0	30	233
6:15PM	26	59	1	0	86	8	30	3	0	41	2	1	27	0	30	3	4	10	0	17	174
6:30PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	67	141	2	0	210	20	56	6	0	82	3	7	58	0	68	10	11	26	0	47	407
2022-01-05 6:30AM	6	7	0	0	13	1	60	0	0	61	0	2	30	0	32	0	0	1	0	1	107
6:45AM	8	12	1	0	21	1	55	2	0	58	1	1	23	0	25	0	4	1	0	5	109
Hourly Total	14	19	1	0	34	2	115	2	0	119	1	3	53	0	57	0	4	2	0	6	216
7:00AM	7	19	0	0	26	2	56	0	0	58	3	1	43	0	47	1	0	4	0	5	136
7:15AM	16	15	0	0	31	1	90	1	0	92	3	0	40	0	43	0	1	2	0	3	169
7:30AM	9	22	1	0	32	0	95	0	0	95	5	1	47	0	53	0	0	3	0	3	183
7:45AM	24	24	0	0	48	2	68	1	0	71	4	1	31	0	36	3	0	0	0	3	158
Hourly Total	56	80	1	0	137	5	309	2	0	316	15	3	161	0	179	4	1	9	0	14	646
8:00AM	17	39	1	0	57	0	55	3	0	58	2	1	22	0	25	1	2	5	0	8	148
8:15AM	12	21	0	0	33	1	61	1	0	63	2	0	44	0	46	2	1	0	0	3	145
8:30AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	29	60	1	0	90	1	116	4	0	121	4	1	66	0	71	3	3	5	0	11	293
<b>Total</b>	<b>412</b>	<b>759</b>	<b>6</b>	<b>0</b>	<b>1177</b>	<b>71</b>	<b>881</b>	<b>43</b>	<b>0</b>	<b>995</b>	<b>40</b>	<b>38</b>	<b>492</b>	<b>0</b>	<b>570</b>	<b>37</b>	<b>52</b>	<b>126</b>	<b>0</b>	<b>215</b>	<b>2957</b>
<b>% Approach</b>	35.0%	64.5%	0.5%	0%	-	7.1%	88.5%	4.3%	0%	-	7.0%	6.7%	86.3%	0%	-	17.2%	24.2%	58.6%	0%	-	-
<b>% Total</b>	13.9%	25.7%	0.2%	0%	<b>39.8%</b>	2.4%	29.8%	1.5%	0%	<b>33.6%</b>	1.4%	1.3%	16.6%	0%	<b>19.3%</b>	1.3%	1.8%	4.3%	0%	<b>7.3%</b>	-
<b>Lights and Motorcycles</b>	408	754	5	0	1167	70	874	40	0	984	39	38	478	0	555	34	51	122	0	207	2913
<b>% Lights and Motorcycles</b>	99.0%	99.3%	83.3%	0%	<b>99.2%</b>	98.6%	99.2%	93.0%	0%	<b>98.9%</b>	97.5%	100%	97.2%	0%	<b>97.4%</b>	91.9%	98.1%	96.8%	0%	<b>96.3%</b>	98.5%
<b>Heavy</b>	4	5	1	0	10	1	7	3	0	11	1	0	14	0	15	3	1	4	0	8	44
<b>% Heavy</b>	1.0%	0.7%	16.7%	0%	<b>0.8%</b>	1.4%	0.8%	7.0%	0%	<b>1.1%</b>	2.5%	0%	2.8%	0%	<b>2.6%</b>	8.1%	1.9%	3.2%	0%	<b>3.7%</b>	1.5%

\*L: Left, R: Right, T: Thru, U: U-Turn

SARATOGA PKWY & CONCORD RD - TMC

Tue Jan 4, 2022

Full Length (4:30 PM-6:30 PM, 6:30 AM-8:30 AM)

All Classes (Lights and Motorcycles, Heavy)

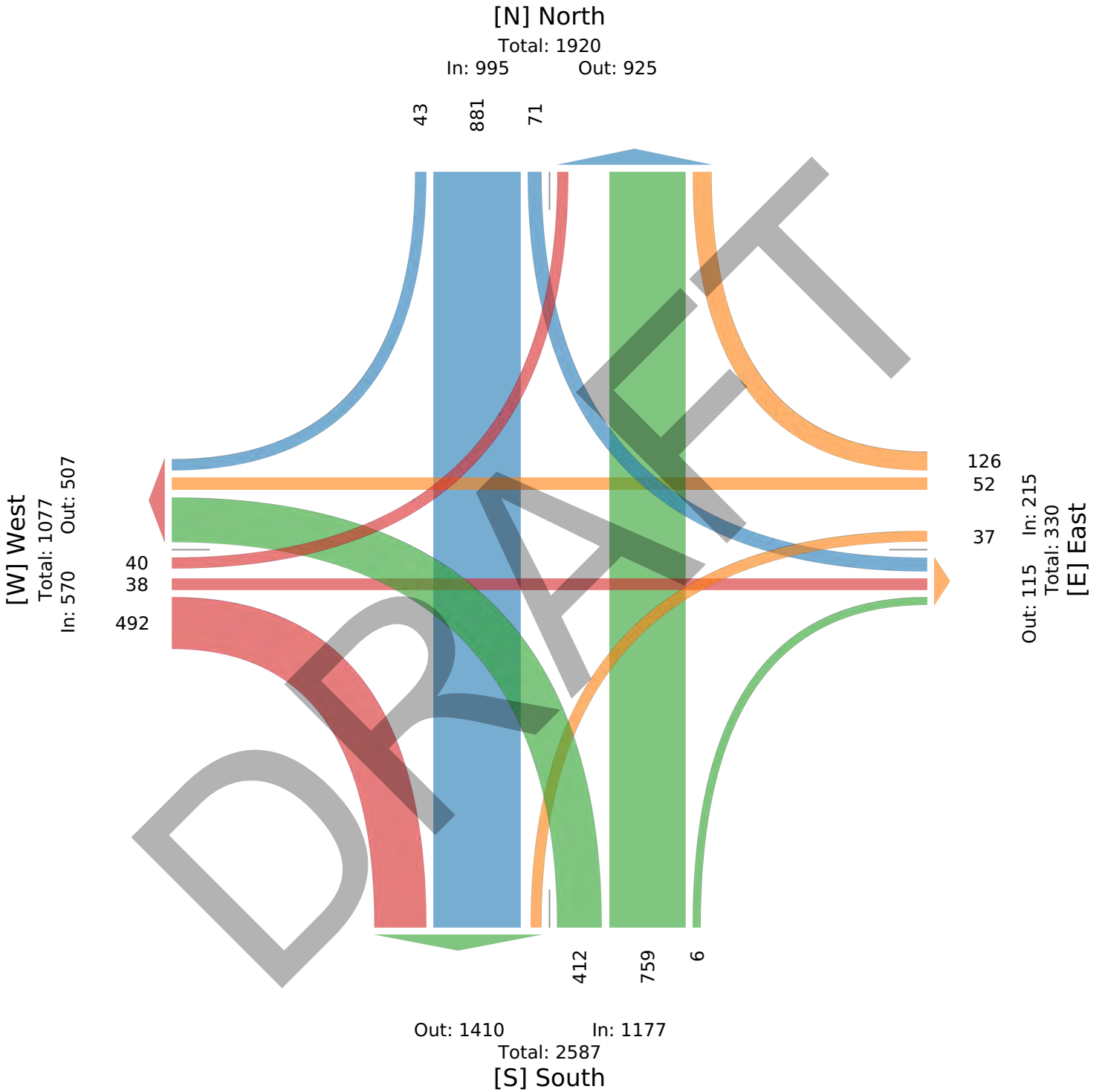
All Movements

ID: 914655, Location: 39.699985, -86.419031



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



SARATOGA PKWY & CONCORD RD - TMC

Tue Jan 4, 2022

PM Peak (Jan 04 2022 5:15PM - 6:15 PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 914655, Location: 39.699985, -86.419031



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg Direction	South Northbound					North Southbound					West Eastbound					East Westbound					Int	
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App		
2022-01-04 5:15PM	41	85	0	0	126	6	53	8	0	67	0	2	20	0	22	1	4	15	0	20	235	
5:30PM	48	85	1	0	134	8	57	6	0	71	3	9	33	0	45	6	2	13	0	21	271	
5:45PM	42	66	0	0	108	7	48	2	0	57	3	7	33	0	43	4	9	17	0	30	238	
6:00PM	41	82	1	0	124	12	26	3	0	41	1	6	31	0	38	7	7	16	0	30	233	
<b>Total</b>	172	318	2	0	492	33	184	19	0	236	7	24	117	0	148	18	22	61	0	101	977	
<b>% Approach</b>	35.0%	64.6%	0.4%	0%	-	14.0%	78.0%	8.1%	0%	-	4.7%	16.2%	79.1%	0%	-	17.8%	21.8%	60.4%	0%	-	-	
<b>% Total</b>	17.6%	32.5%	0.2%	0%	50.4%	3.4%	18.8%	1.9%	0%	24.2%	0.7%	2.5%	12.0%	0%	15.1%	1.8%	2.3%	6.2%	0%	10.3%	-	
<b>PHF</b>	0.896	0.935	0.500	-	0.918	0.688	0.807	0.594	-	0.831	0.583	0.667	0.886	-	0.822	0.643	0.611	0.897	-	0.842	0.901	
<b>Lights and Motorcycles</b>	172	318	2	0	492	32	184	17	0	233	7	24	111	0	142	18	22	61	0	101	968	
<b>% Lights and Motorcycles</b>	100%	100%	100%	0%	100%	97.0%	100%	89.5%	0%	98.7%	100%	100%	94.9%	0%	95.9%	100%	100%	100%	0%	100%	99.1%	
<b>Heavy</b>	0	0	0	0	0	1	0	2	0	3	0	0	6	0	6	0	0	0	0	0	0	9
<b>% Heavy</b>	0%	0%	0%	0%	0%	3.0%	0%	10.5%	0%	1.3%	0%	0%	5.1%	0%	4.1%	0%	0%	0%	0%	0%	0%	0.9%

\*L: Left, R: Right, T: Thru, U: U-Turn



SARATOGA PKWY & CONCORD RD - TMC

Tue Jan 4, 2022

PM Peak (Jan 04 2022 5:15PM - 6:15 PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

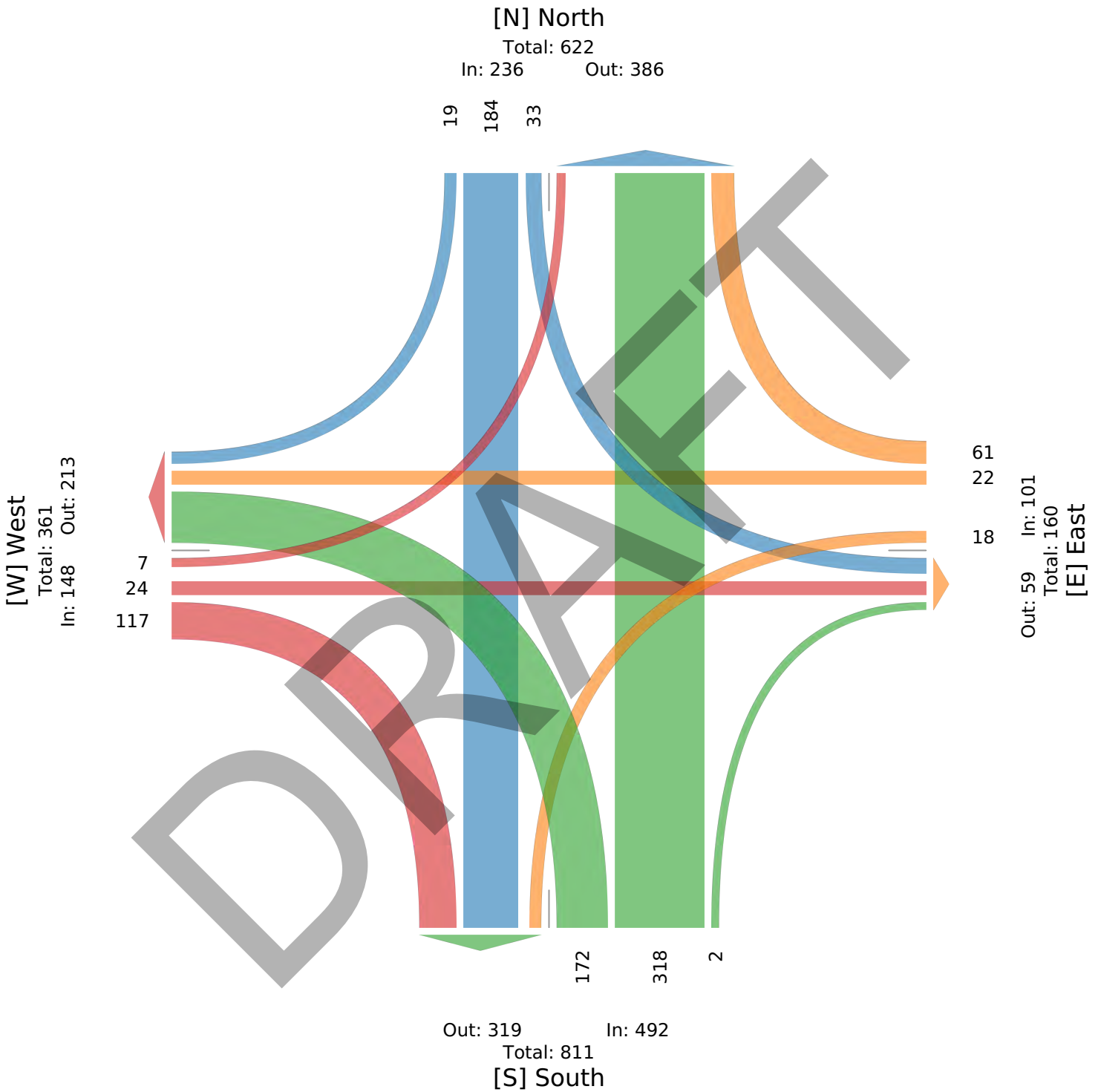
All Movements

ID: 914655, Location: 39.699985, -86.419031



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



SARATOGA PKWY & CONCORD RD - TMC

Wed Jan 5, 2022

AM Peak (Jan 05 2022 7:15AM - 8:15 AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 914655, Location: 39.699985, -86.419031



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg Direction	South Northbound					North Southbound					West Eastbound					East Westbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2022-01-05 7:15AM	16	15	0	0	31	1	90	1	0	92	3	0	40	0	43	0	1	2	0	3	169
7:30AM	9	22	1	0	32	0	95	0	0	95	5	1	47	0	53	0	0	3	0	3	183
7:45AM	24	24	0	0	48	2	68	1	0	71	4	1	31	0	36	3	0	0	0	3	158
8:00AM	17	39	1	0	57	0	55	3	0	58	2	1	22	0	25	1	2	5	0	8	148
<b>Total</b>	66	100	2	0	168	3	308	5	0	316	14	3	140	0	157	4	3	10	0	17	658
<b>% Approach</b>	39.3%	59.5%	1.2%	0%	-	0.9%	97.5%	1.6%	0%	-	8.9%	1.9%	89.2%	0%	-	23.5%	17.6%	58.8%	0%	-	-
<b>% Total</b>	10.0%	15.2%	0.3%	0%	25.5%	0.5%	46.8%	0.8%	0%	48.0%	2.1%	0.5%	21.3%	0%	23.9%	0.6%	0.5%	1.5%	0%	2.6%	-
<b>PHF</b>	0.688	0.641	0.500	-	0.737	0.375	0.811	0.417	-	0.832	0.700	0.750	0.745	-	0.741	0.333	0.375	0.500	-	0.531	0.899
<b>Lights and Motorcycles</b>	63	97	2	0	162	3	304	4	0	311	13	3	140	0	156	3	3	8	0	14	643
<b>% Lights and Motorcycles</b>	95.5%	97.0%	100%	0%	96.4%	100%	98.7%	80.0%	0%	98.4%	92.9%	100%	100%	0%	99.4%	75.0%	100%	80.0%	0%	82.4%	97.7%
<b>Heavy</b>	3	3	0	0	6	0	4	1	0	5	1	0	0	0	1	1	0	2	0	3	15
<b>% Heavy</b>	4.5%	3.0%	0%	0%	3.6%	0%	1.3%	20.0%	0%	1.6%	7.1%	0%	0%	0%	0.6%	25.0%	0%	20.0%	0%	17.6%	2.3%

\*L: Left, R: Right, T: Thru, U: U-Turn



SARATOGA PKWY & CONCORD RD - TMC

Wed Jan 5, 2022

AM Peak (Jan 05 2022 7:15AM - 8:15 AM)

All Classes (Lights and Motorcycles, Heavy)

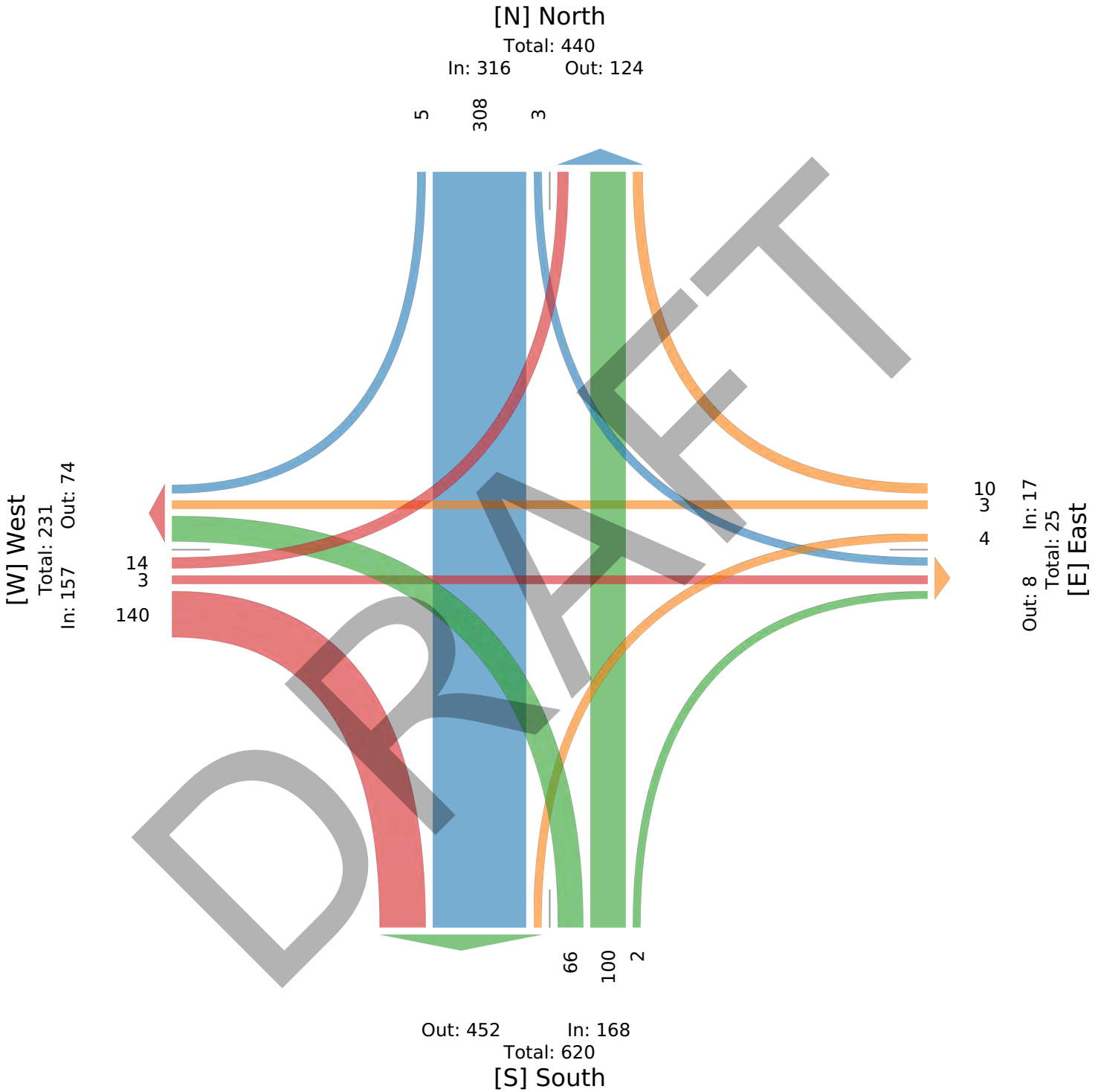
All Movements

ID: 914655, Location: 39.699985, -86.419031



Provided by: A&F Engineering

8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



Intersection				
Intersection Delay, s/veh	5.7			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	191	37	221	418
Demand Flow Rate, veh/h	192	45	229	423
Vehicles Circulating, veh/h	442	239	24	115
Vehicles Exiting, veh/h	96	14	610	168
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.4	4.4	4.2	6.2
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	192	45	229	423
Cap Entry Lane, veh/h	879	1081	1346	1227
Entry HV Adj Factor	0.995	0.822	0.965	0.988
Flow Entry, veh/h	191	37	221	418
Cap Entry, veh/h	875	889	1300	1212
V/C Ratio	0.218	0.042	0.170	0.345
Control Delay, s/veh	6.4	4.4	4.2	6.2
LOS	A	A	A	A
95th %tile Queue, veh	1	0	1	2

HCM 6th Roundabout  
 3: Saratoga Parkway & Concord Road/Wal Mart Drive

Existing PM Peak  
 01/26/2022

Intersection				
Intersection Delay, s/veh	6.3			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	165	112	546	262
Demand Flow Rate, veh/h	171	112	546	265
Vehicles Circulating, veh/h	262	552	73	235
Vehicles Exiting, veh/h	238	67	360	429
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.0	6.1	7.0	5.7
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	171	112	546	265
Cap Entry Lane, veh/h	1056	786	1281	1086
Entry HV Adj Factor	0.965	1.000	1.000	0.989
Flow Entry, veh/h	165	112	546	262
Cap Entry, veh/h	1019	786	1281	1073
V/C Ratio	0.162	0.143	0.426	0.244
Control Delay, s/veh	5.0	6.1	7.0	5.7
LOS	A	A	A	A
95th %tile Queue, veh	1	0	2	1

Intersection				
Intersection Delay, s/veh	5.7			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	191	37	221	418
Demand Flow Rate, veh/h	192	45	229	423
Vehicles Circulating, veh/h	442	239	24	115
Vehicles Exiting, veh/h	96	14	610	168
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.4	4.4	4.2	6.2
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	192	45	229	423
Cap Entry Lane, veh/h	879	1081	1346	1227
Entry HV Adj Factor	0.995	0.822	0.965	0.988
Flow Entry, veh/h	191	37	221	418
Cap Entry, veh/h	875	889	1300	1212
V/C Ratio	0.218	0.042	0.170	0.345
Control Delay, s/veh	6.4	4.4	4.2	6.2
LOS	A	A	A	A
95th %tile Queue, veh	1	0	1	2

Intersection				
Intersection Delay, s/veh	7.3			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	181	133	650	305
Demand Flow Rate, veh/h	188	133	650	308
Vehicles Circulating, veh/h	315	639	79	269
Vehicles Exiting, veh/h	262	90	424	503
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.5	7.1	8.3	6.4
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	188	133	650	308
Cap Entry Lane, veh/h	1001	719	1273	1049
Entry HV Adj Factor	0.963	1.000	1.000	0.990
Flow Entry, veh/h	181	133	650	305
Cap Entry, veh/h	963	719	1273	1039
V/C Ratio	0.188	0.185	0.511	0.294
Control Delay, s/veh	5.5	7.1	8.3	6.4
LOS	A	A	A	A
95th %tile Queue, veh	1	1	3	1

Intersection				
Intersection Delay, s/veh	5.8			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	194	37	222	434
Demand Flow Rate, veh/h	195	45	230	439
Vehicles Circulating, veh/h	448	243	27	115
Vehicles Exiting, veh/h	106	14	616	172
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.4	4.5	4.2	6.4
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	195	45	230	439
Cap Entry Lane, veh/h	874	1077	1342	1227
Entry HV Adj Factor	0.995	0.822	0.965	0.988
Flow Entry, veh/h	194	37	222	434
Cap Entry, veh/h	869	885	1296	1213
V/C Ratio	0.223	0.042	0.171	0.358
Control Delay, s/veh	6.4	4.5	4.2	6.4
LOS	A	A	A	A
95th %tile Queue, veh	1	0	1	2

Intersection				
Intersection Delay, s/veh	7.5			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	195	133	659	317
Demand Flow Rate, veh/h	202	133	659	321
Vehicles Circulating, veh/h	320	662	93	269
Vehicles Exiting, veh/h	270	90	429	526
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.7	7.3	8.6	6.5
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	202	133	659	321
Cap Entry Lane, veh/h	996	702	1255	1049
Entry HV Adj Factor	0.965	1.000	1.000	0.988
Flow Entry, veh/h	195	133	659	317
Cap Entry, veh/h	961	702	1255	1036
V/C Ratio	0.203	0.189	0.525	0.306
Control Delay, s/veh	5.7	7.3	8.6	6.5
LOS	A	A	A	A
95th %tile Queue, veh	1	1	3	1

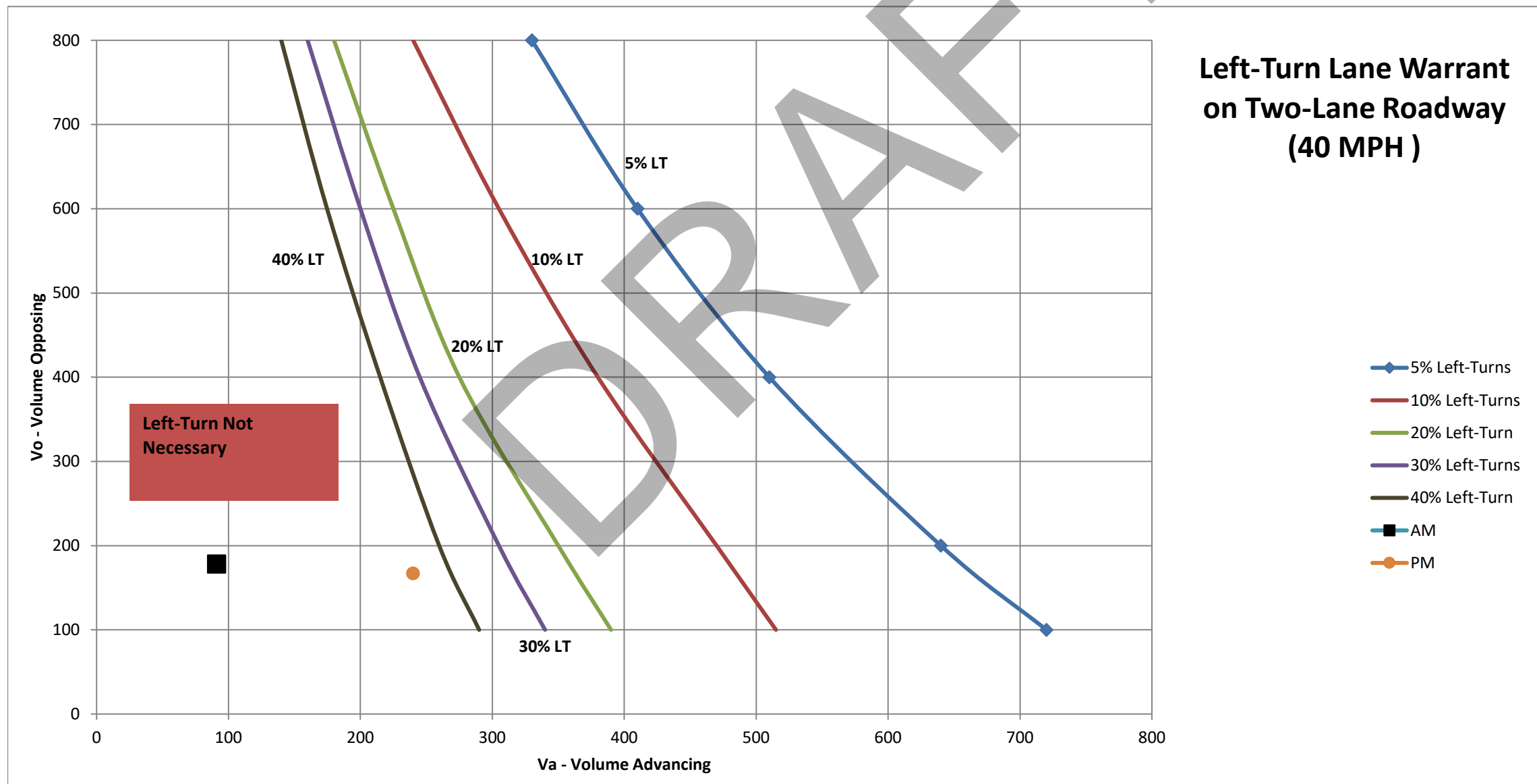
***CONCORD ROAD & NORTH/SOUTH ACCESS DRIVE  
CONNECTION***

***TURN LANE WARRANTS  
CAPACITY ANALYSIS***

**Concord Road & North/South Access Drive Connection - Year 2027 + Proposed**

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
40	800	330	240	210	180	170	160	150	140
	600	410	305	265	225	213	200	187	175
	400	510	380	328	275	260	245	230	215
	200	640	470	410	350	328	305	282	260
	100	720	515	453	390	365	340	315	290

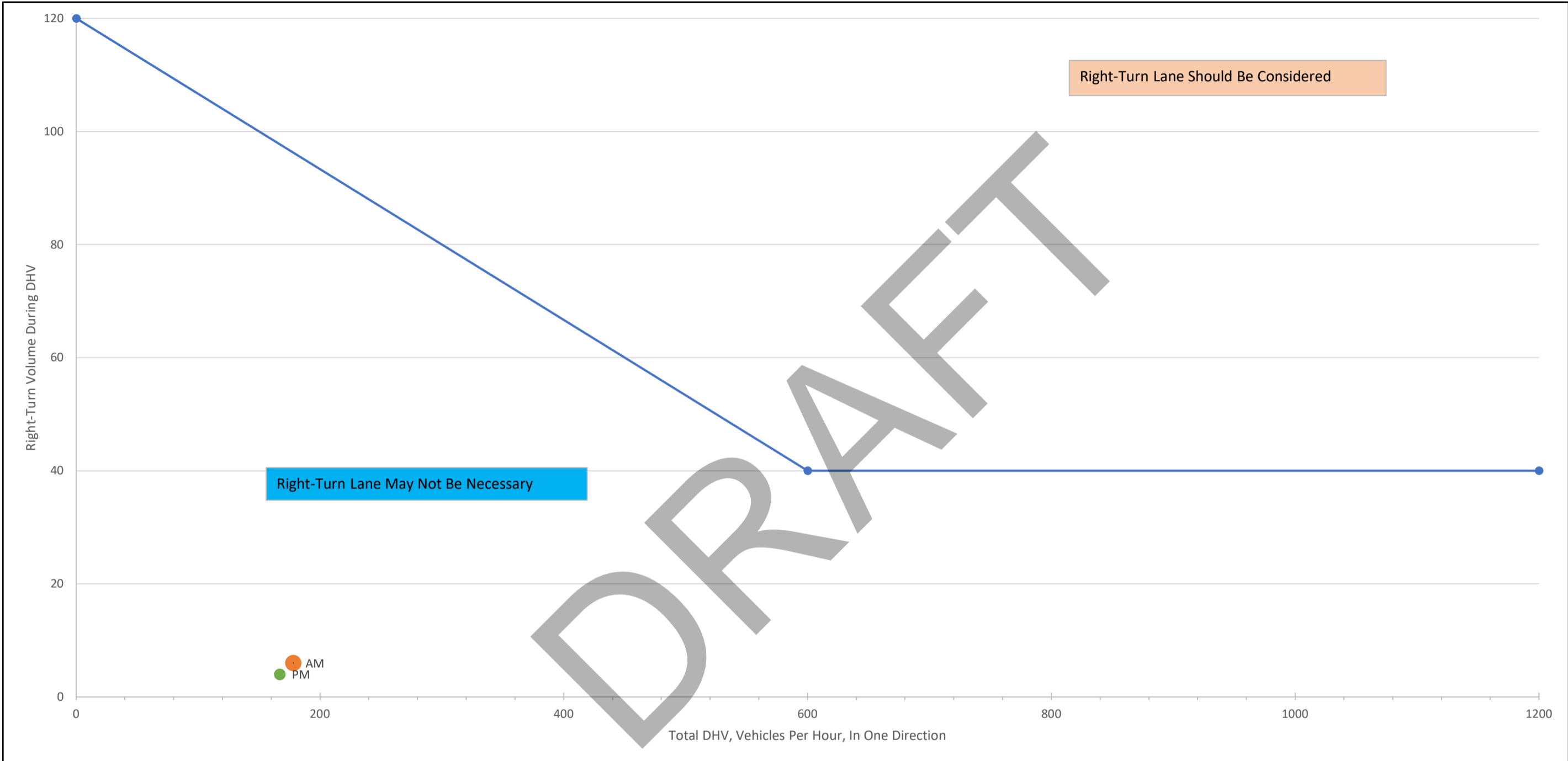
	INPUT		Warrant?
AM	Advancing Volume (Va)	91	NO
	Opposing Volume (Vo)	178	
	Left-turn Volume	9	
	Left-turn %	10%	
PM	Advancing Volume (Va)	240	NO
	Opposing Volume (Vo)	167	
	Left-turn Volume	6	
	Left-turn %	3%	



Concord Road & North/South Access Drive Connection - Year 2027 + Proposed

Total Volume	RT Volume
0	120
600	40
1200	40

Time	Input		Met?
AM	RT Volume	6	NO
	Total Volume	178	
PM	RT Volume	4	NO
	Total Volume	167	



**NOTE : For highways with a design speed below 80 km/h (50 mph) with a DHV < 300 and where right turns > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.**

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	172	6	9	82	2	3
Future Vol, veh/h	172	6	9	82	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	187	7	10	89	2	3
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	194	0	300	191
Stage 1	-	-	-	-	191	-
Stage 2	-	-	-	-	109	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1379	-	691	851
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1379	-	685	851
Mov Cap-2 Maneuver	-	-	-	-	685	-
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	909	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.8	9.7			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	776	-	-	1379	-	
HCM Lane V/C Ratio	0.007	-	-	0.007	-	
HCM Control Delay (s)	9.7	-	-	7.6	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	163	4	6	234	8	13
Future Vol, veh/h	163	4	6	234	8	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	177	4	7	254	9	14
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	181	0	447	179
Stage 1	-	-	-	-	179	-
Stage 2	-	-	-	-	268	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1394	-	569	864
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	777	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1394	-	566	864
Mov Cap-2 Maneuver	-	-	-	-	566	-
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	772	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		10.2	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	720	-	-	1394	-	
HCM Lane V/C Ratio	0.032	-	-	0.005	-	
HCM Control Delay (s)	10.2	-	-	7.6	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

***US 40 & PROPOSED LEFT-IN/RIGHT-IN/RIGHT-  
OUT ACCESS DRIVE***

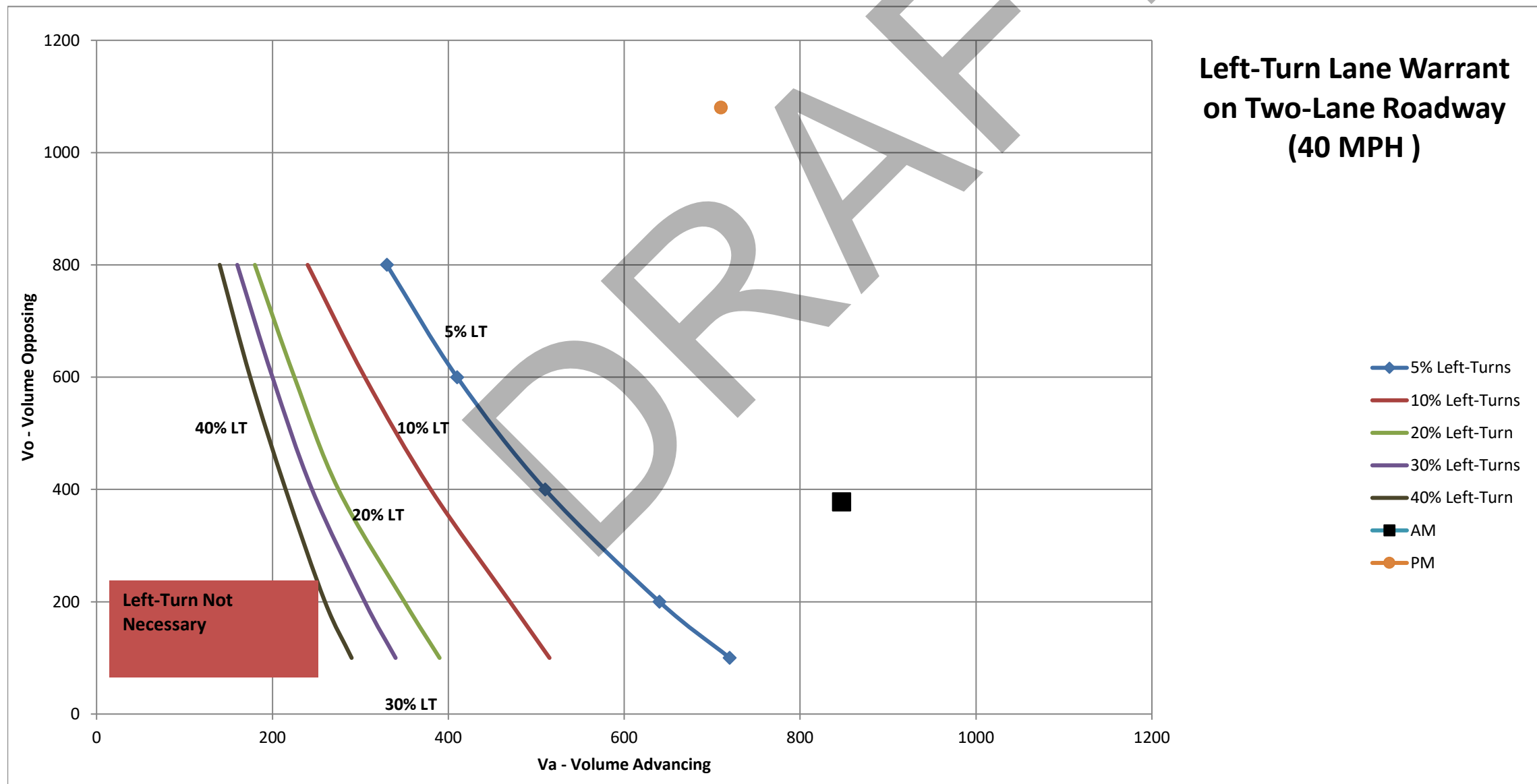
***TURN LANE WARRANTS  
CAPACITY ANALYSIS***

DRAFT

**US 40 & Proposed Left-In/Right-In/Right-Out Access Drive - Year 2027 + Proposed**

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
40	800	330	240	210	180	170	160	150	140
	600	410	305	265	225	213	200	187	175
	400	510	380	328	275	260	245	230	215
	200	640	470	410	350	328	305	282	260
	100	720	515	453	390	365	340	315	290

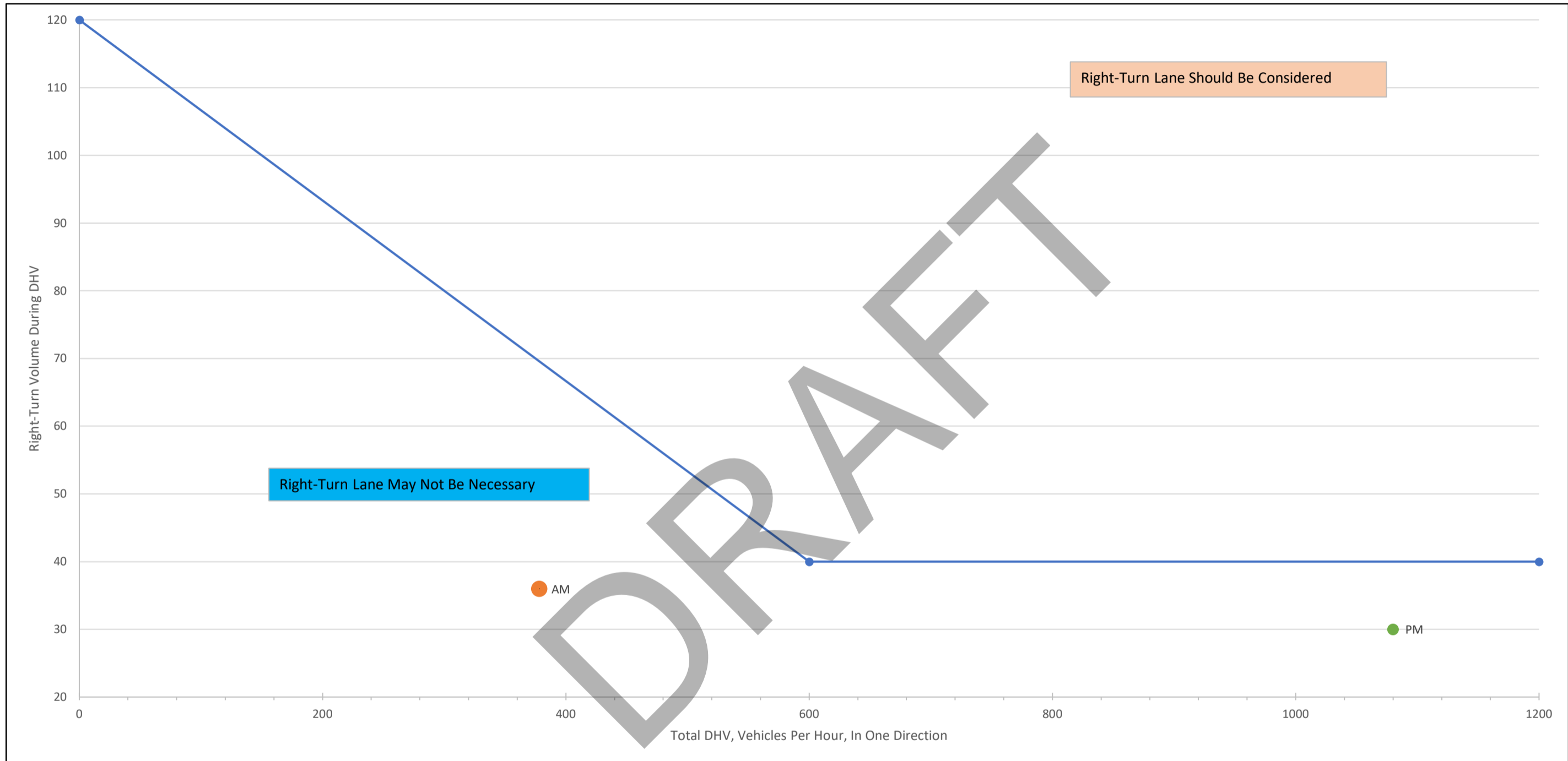
	INPUT		Warrant?
AM	Advancing Volume (Va)	847	YES
	Opposing Volume (Vo)	378	
	Left-turn Volume	24	
	Left-turn %	3%	
PM	Advancing Volume (Va)	710	YES
	Opposing Volume (Vo)	1080	
	Left-turn Volume	19	
	Left-turn %	3%	



**US 40 & LI/RI/RO Access Drive - Year 2027 + Proposed**

Total Volume	RT Volume
0	120
600	40
1200	40

Time	Input		Met?
AM	RT Volume	36	NO
	Total Volume	378	
PM	RT Volume	30	NO
	Total Volume	1080	



**NOTE : For highways with a design speed below 80 km/h (50 mph) with a DHV < 300 and where right turns > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.**

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↖				↖		↖
Traffic Vol, veh/h	24	823	0	0	342	36	0	0	0	0	0	7
Future Vol, veh/h	24	823	0	0	342	36	0	0	0	0	0	7
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	150	-	-	150	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	895	0	0	372	39	0	0	0	0	0	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	411	0	0	895	0	0	-	-	448	-	-	186
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	1144	-	-	754	-	-	0	0	558	0	0	824
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1144	-	-	754	-	-	-	-	558	-	-	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0			0			9.4		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	1144	-	-	754	-	-	824				
HCM Lane V/C Ratio	-	0.023	-	-	-	-	-	0.009				
HCM Control Delay (s)		0	8.2	-	-	0	-	9.4				
HCM Lane LOS		A	A	-	-	A	-	A				
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗	↖				↖		↖
Traffic Vol, veh/h	19	691	0	0	1050	30	0	0	0	0	0	35
Future Vol, veh/h	19	691	0	0	1050	30	0	0	0	0	0	35
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	150	-	-	150	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	751	0	0	1141	33	0	0	0	0	0	38
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1174	0	0	751	0	0	-	-	376	-	-	571
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	591	-	-	854	-	-	0	0	622	0	0	464
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	591	-	-	854	-	-	-	-	622	-	-	464
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0			0			13.5		
HCM LOS	A			B			A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	591	-	-	854	-	-	464				
HCM Lane V/C Ratio	-	0.035	-	-	-	-	-	0.082				
HCM Control Delay (s)	0	11.3	-	-	0	-	-	13.5				
HCM Lane LOS	A	B	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.3				