



TRAFFIC IMPACT ANALYSIS

FAIRWOOD PUD

DAN JONES ROAD & TOWNSHIP LINE ROAD

AVON, INDIANA

PREPARED FOR

PLATINUM PROPERTIES MANAGEMENT COMPANY, LLC.

MAY 2018

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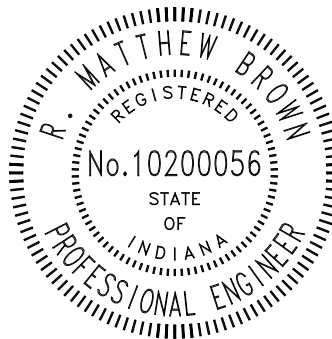
CERTIFICATION

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



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Traffic Engineer

INTRODUCTION

This **TRAFFIC IMPACT ANALYSIS**, prepared at the request of the Town of Avon on behalf of Platinum Properties Management Company, LLC., is for the proposed Fairwood PUD that is to be located along Dan Jones Road between Township Line Road and CR 150 S in Avon, 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 peak hour turning movement traffic volume counts between the hours of 6:00 A.M. to 9:00 A.M. and 4:00 P.M. and 7:00 P.M. at the following intersections:

- Avon Avenue & CR 150 S
- Dan Jones Road & CR 150 S
- Dan Jones Road & CR 200 S
- Dan Jones Road & Township Line Road
- Avon Avenue & Township Line Road

Second, estimate year 2028 background traffic volumes based on a 2% per year, non-compounded growth rate. This growth rate accounts for traffic generated by the future developments outside of the study area.

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

Fourth, assign and distribute the generated traffic volumes 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 intersection conditions and existing weekday peak hour traffic volumes.

Scenario 2: Year 2018 Proposed Development Traffic Volumes – Sum of existing traffic volumes and the generated traffic volumes from the proposed development.

Scenario 3: Year 2028 Background Traffic Volumes – Year 2028 background traffic volumes based on a 2% per year non-compounded growth rate.

Scenario 4: Year 2028 Proposed Development Traffic Volumes – Sum of year 2028 background traffic volumes and the generated traffic volumes from the proposed development.

Sixth, prepare recommendations for the roadway geometrics that will be needed to accommodate the total traffic volumes for each of the scenarios identified above.

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

DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposed development will be located along Dan Jones Road between Township Line Road and CR 150 S in Avon, Indiana. The proposed development will consist of the following land uses:

- 25,000 SF of Retail (approximate)
- 272 Single-Family Units

The residential development will be serviced by two full access drives. One access drive will be provided along an extension of CR 200 S, approximately 1200 feet west of Dan Jones Road. Another access drive will be located along Dan Jones Road, approximately 1900 feet south of CR 200 S. Additionally, access to Township Line Road will be provided by aligning the south access drive with Liberty Trail.

The retail development will be serviced by a full access drive along Dan Jones Road, approximately 450 feet south of CR 200 S.

Figure 1 is an area map showing the location and general layout of the proposed site.

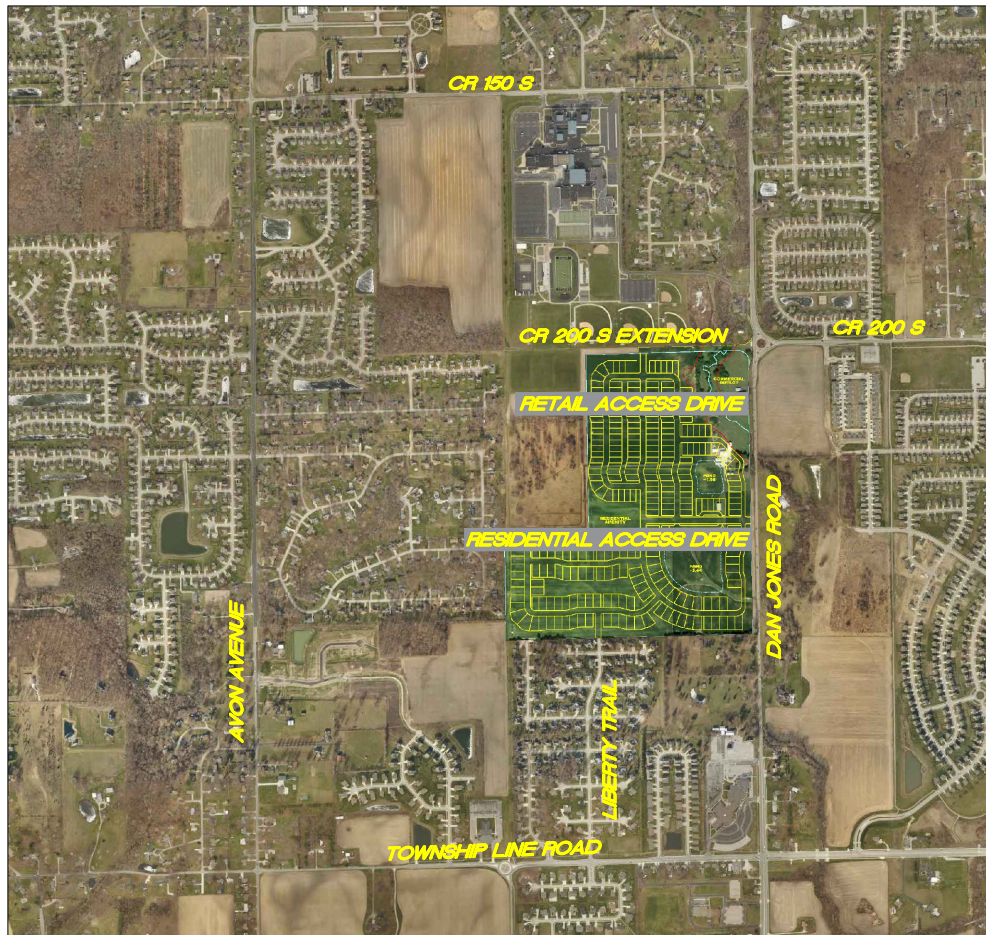


FIGURE 1
AREA MAP

TRAFFIC IMPACT STUDY
PLATINUM PROPERTIES
AVON, IN

STUDY AREA

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

- Avon Avenue & CR 150 S
- Dan Jones Road & CR 150 S
- Dan Jones Road & CR 200 S
- Dan Jones Road & Township Line Road
- Avon Avenue & Township Line Road
- Dan Jones Road & Retail Access Drive
- Dan Jones Road & Residential Access Drive

Figures 2A and 2B show the existing intersection geometrics at the subject intersections.

DESCRIPTION OF ABUTTING STREET SYSTEM

The proposed development will be primarily served by the public roadway system that includes the following:

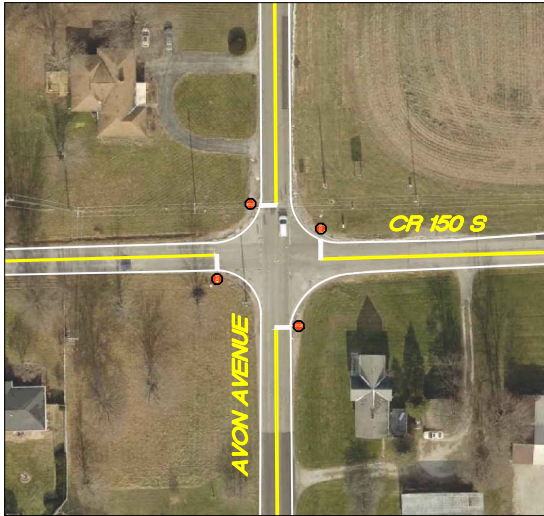
CR 150 S – is an east/west, two-lane undivided roadway with a posted speed limit of 30 mph to the north of the proposed development. According to the Town of Avon Thoroughfare Plan, CR 150 S is classified as a Collector.

CR 200 S – is an east/west, two-lane undivided roadway with a posted speed limit of 40 mph near the proposed development. According to the Town of Avon Thoroughfare Plan, CR 200 S is classified as a Collector.

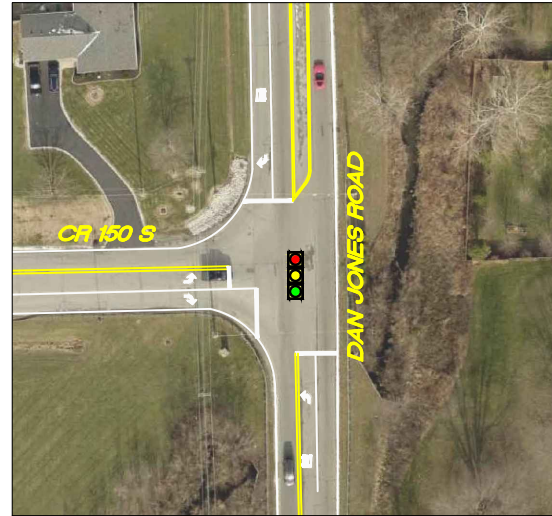
TOWNSHIP LINE ROAD – is an east/west, two-lane undivided highway with a posted speed limit of 30 mph to the south of the proposed development. According to the Town of Avon Thoroughfare Plan, Township Line Road is classified as a Secondary Arterial.

AVON AVENUE – is a north/south, two-lane undivided highway with a posted speed limit of 45 mph to the west of the proposed development. According to the Town of Avon Thoroughfare Plan, Avon Avenue is classified as a Primary Arterial.

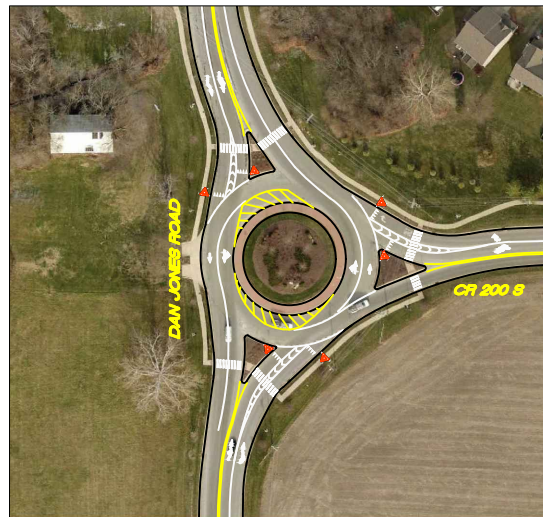
DAN JONES ROAD – is a north/south, two-lane undivided highway with a posted speed limit of 40 mph to the east of the proposed development. According to the Town of Avon Thoroughfare Plan, Dan Jones Road is classified as a Secondary Arterial.



AVON AVENUE & CR 150 S



DAN JONES ROAD & CR 150 S

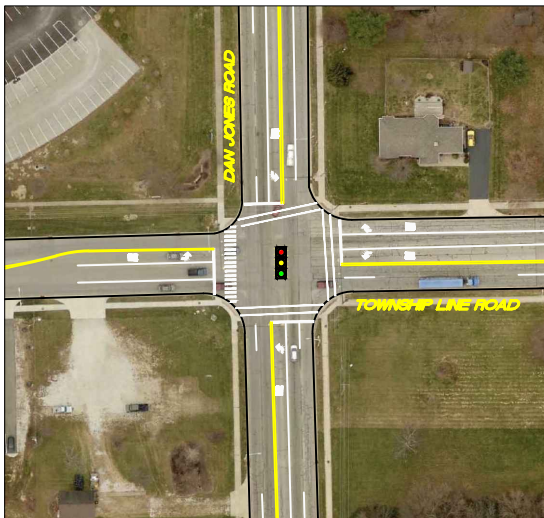


DAN JONES ROAD & CR 200 S

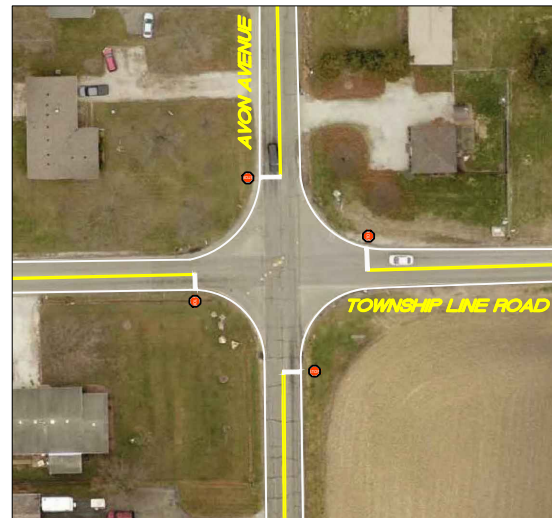
FIGURE 2A

**EXISTING INTERSECTION
 GEOMETRICS - 1**

**TRAFFIC IMPACT STUDY
 PLATINUM PROPERTIES
 AVON, IN**



**DAN JONES ROAD &
TOWNSHIP LINE ROAD**



**TOWNSHIP LINE ROAD &
AVON AVENUE**

FIGURE 2B
EXISTING INTERSECTION
GEOMETRICS - 2

TRAFFIC IMPACT STUDY
PLATINUM PROPERTIES
AVON, IN

EXISTING TRAFFIC VOLUMES

Peak hour turning movement traffic volume counts were collected by A&F Engineering at the study intersections between the hours of 6:00 AM and 9:00 AM and 4:00 PM and 7:00 PM during a typical weekday in April 2018 under good weather conditions. The AM and PM peak hours vary slightly between each location. Therefore, the actual peak hour at each location will be used to represent a maximum traffic scenario at each analyzed intersection. The intersection count output summary sheets are included in the **Appendix** and the peak hour volumes are shown on **Figure 3**.

YEAR 2028 BACKGROUND TRAFFIC VOLUMES

In order to account for annual growth in traffic that would occur due to future development outside of the study area over the next 10 years, an annual growth rate is applied to the existing traffic volumes. A 2.0% per year non-compounded growth rate was considered for this analysis. Therefore, a growth rate factor of 1.20 was applied to the existing traffic volumes to obtain year 2028 background traffic volume estimates. A summary of these volumes at the study intersections for the weekday AM and PM peak hour is shown in **Figure 4**.

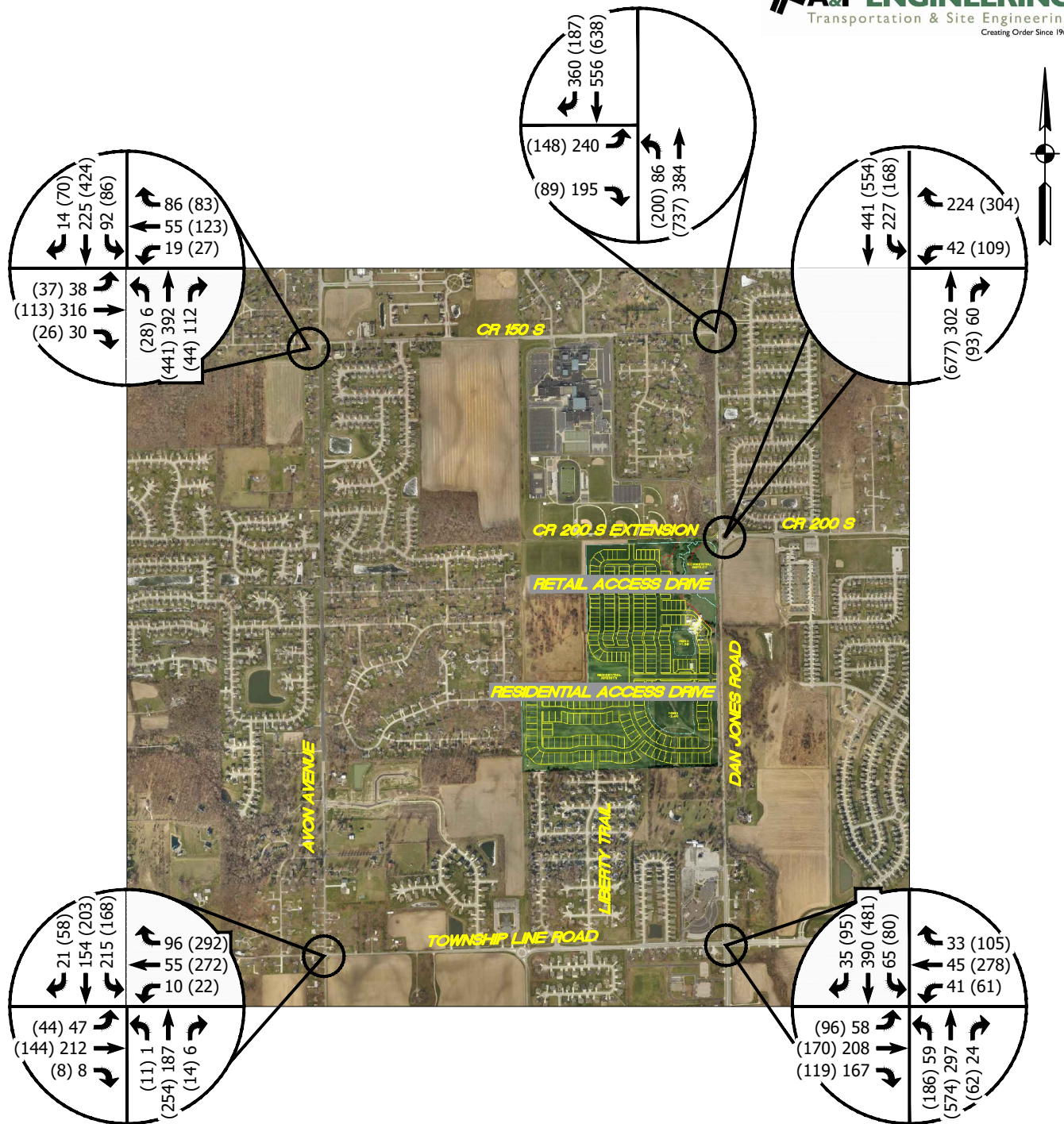
GENERATED TRAFFIC VOLUMES FOR PROPOSED DEVELOPMENT

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*¹ was used to calculate the number of trips that will be generated by the site. 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 1** summarizes the total trips that will be generated by the site.

TABLE 1 – TOTAL GENERATED TRIPS FOR PROPOSED DEVELOPMENT

DEVELOPMENT INFORMATION			GENERATED TRIPS			
LAND USE	ITE CODE	SIZE	AM ENTER	AM EXIT	PM ENTER	PM EXIT
Single-Family Detached Housing	210	272 DU	50	148	167	98
Shopping Center	820	25,000 SF	102	62	94	101

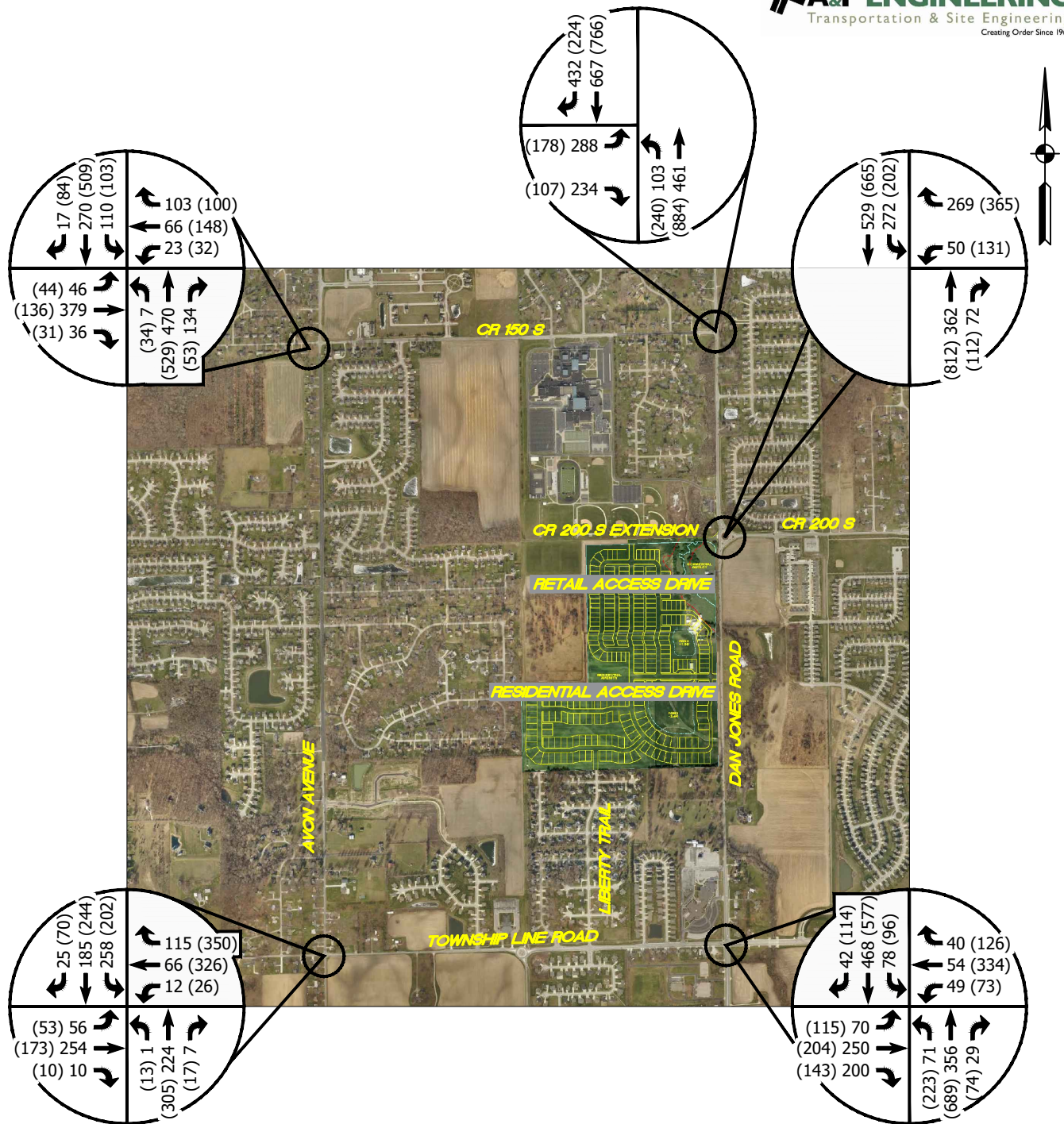
¹ *Trip Generation Manual*, Institute of Transportation Engineers, Tenth Edition, 2017.



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

FIGURE 3
EXISTING TRAFFIC VOLUMES

TRAFFIC IMPACT STUDY
PLATINUM PROPERTIES
AVON, IN



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

FIGURE 4
YEAR 2028 BACKGROUND
TRAFFIC VOLUMES

TRAFFIC IMPACT STUDY
PLATINUM PROPERTIES
AVON, IN

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*² were used to estimate the pass-by trips.

An internal trip results when a trip is made between two or more land uses without traversing the external public roadway system. Due to the fact that the two land uses are not connected through internal roadways, internal trip reductions were not applied. A summary of the pass-by trip reductions for the proposed development is shown in **Table 2**.

TABLE 2 – PASS-BY TRIP REDUCTIONS FOR PROPOSED DEVELOPMENT

DEVELOPMENT INFORMATION			GENERATED TRIPS			
LAND USE	ITE CODE	SIZE	AM PEAK		PM PEAK	
			ENTER	EXIT	ENTER	EXIT
Single-Family Detached Housing	210	272 DU	50	148	167	98
Shopping Center	820	25,000 SF	102	62	94	101
Pass-By Trips (58%)			59	36	55	58
Non-Pass-By Trips (42%)			43	26	39	43
TOTAL TRIPS			152	210	261	199
TOTAL PASS-BY TRIPS			59	36	55	58
TOTAL NON-PASS-BY TRIPS			93	174	206	141

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 site 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 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 site, the trip distribution was based on the location of the development, the existing traffic patterns, and the assignment of generated traffic.

² *Trip Generation Handbook*, Institute of Transportation Engineers, Third Edition, 2014.

Figure 5A illustrates the assignment and distribution of generated trips for the residential portion of the proposed development.

Figure 5B illustrates the assignment and distribution of generated non-pass-by trips for the retail portion of the proposed development.

Figure 5C illustrates the assignment and distribution of generated pass-by trips for the retail portion of the proposed development.

GENERATED TRIPS ADDED TO THE STREET SYSTEM

The total generated traffic volumes that can be expected from the proposed mixed-use 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**. The separated generated traffic volumes from each land use within the development can be found in the **Appendix**.

TURN LANE ANALYSIS

The generated peak hour traffic volumes were combined with year 2028 background traffic volumes to determine if left-turn lanes and right-turn lanes would be required at the proposed access drives. According to Section 46-4.01 of the INDOT *Design Manual*, the following are warranted at these intersections:

DAN JONES ROAD & RETAIL ACCESS DRIVE

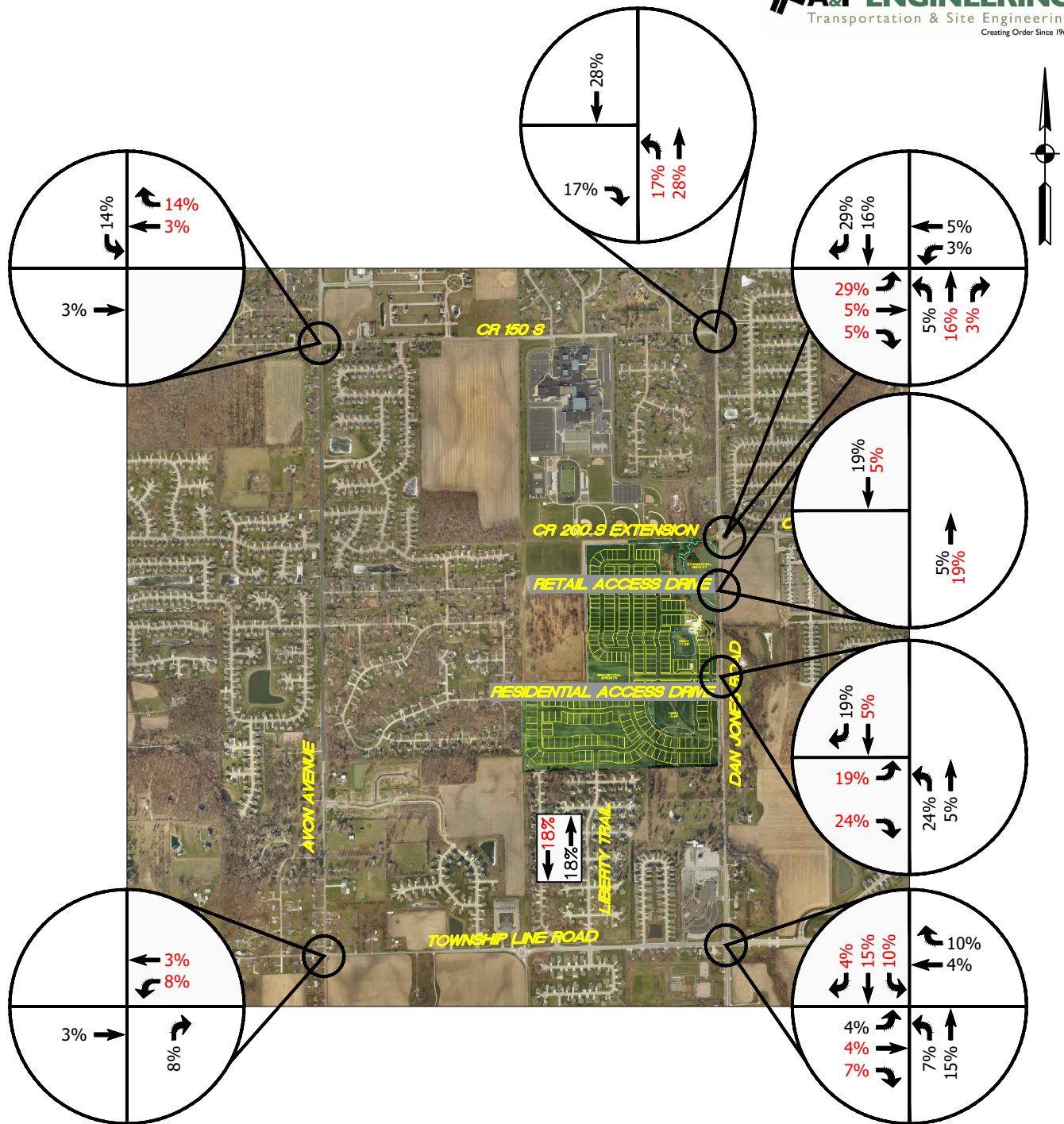
- Northbound left-turn treatment (passing blister or turn lane)
- Southbound right-turn lane

DAN JONES ROAD & RESIDENTIAL ACCESS DRIVE

- Northbound left-turn treatment (passing blister or turn lane)

In addition, it is recommended to construct an exclusive southbound right-turn lane at Dan Jones Road & Residential Access Drive in order to safely service vehicles entering the site.

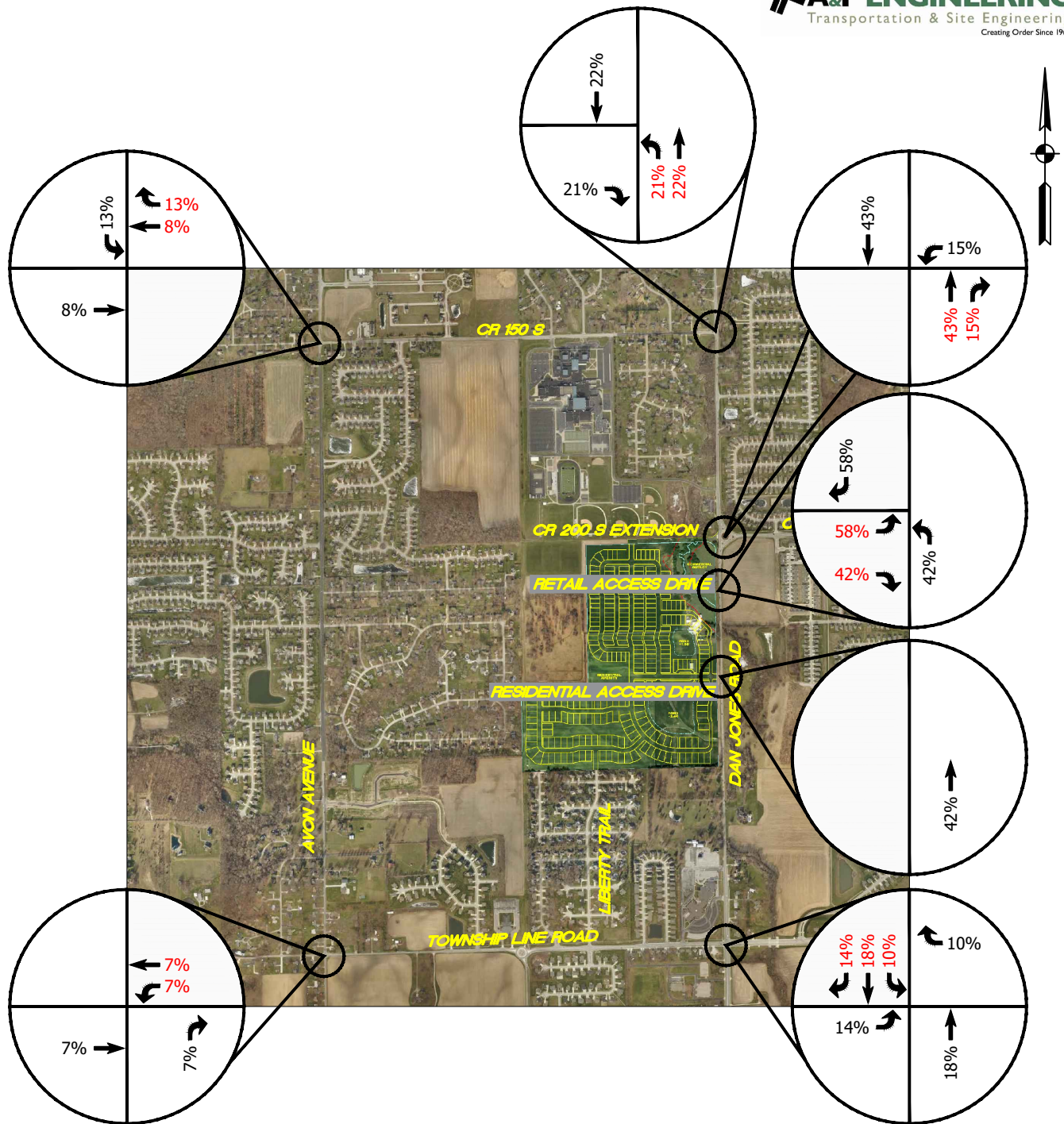
The graphs that show the left-turn lane and right-turn lane warrant criteria for each intersection are represented in the **Appendix**.



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

**TRAFFIC IMPACT STUDY
PLATINUM PROPERTIES
AVON, IN**

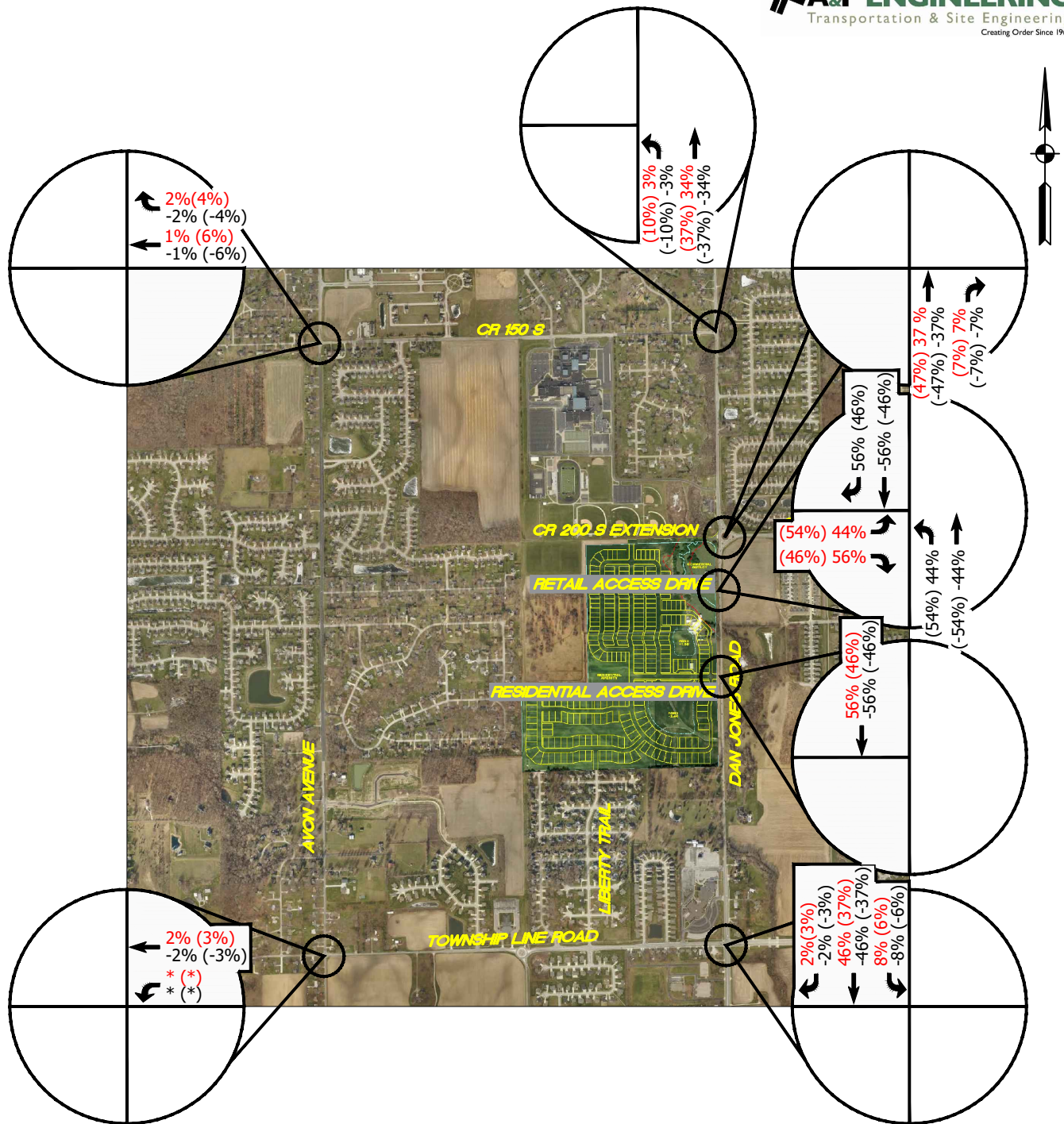
FIGURE 5A
**ASSIGNMENT & DISTRIBUTION
OF GENERATED TRAFFIC VOLUMES
FROM PROPOSED DEVELOPMENT
(RESIDENTIAL)**



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

**TRAFFIC IMPACT STUDY
PLATINUM PROPERTIES
AVON, IN**

FIGURE 5B
**ASSIGNMENT & DISTRIBUTION
OF GENERATED NON-PASS-BY
TRAFFIC VOLUMES FROM
PROPOSED DEVELOPMENT
(RETAIL)**



LEGEND

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

**TRAFFIC IMPACT STUDY
PLATINUM PROPERTIES
AVON, IN**

FIGURE 5C

**ASSIGNMENT & DISTRIBUTION
OF GENERATED PASS-BY
TRAFFIC VOLUMES FROM
PROPOSED DEVELOPMENT
(RETAIL)**

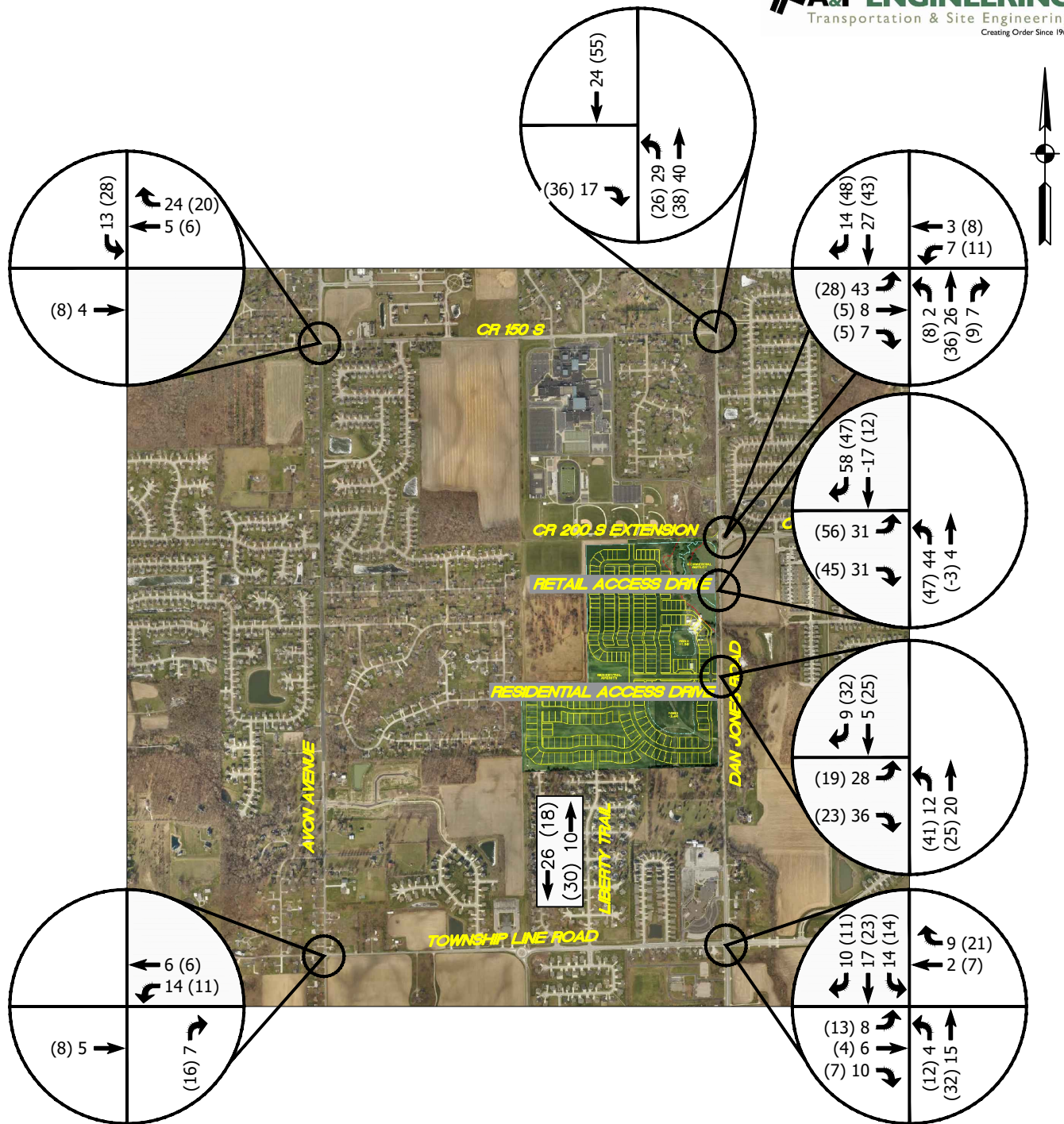


FIGURE 6
TOTAL GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT

**TRAFFIC IMPACT STUDY
PLATINUM PROPERTIES
AVON, IN**

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*³. This program allows intersections to be analyzed and optimized using the capacity calculation methods outlined within the *Highway Capacity Manual (HCM 6th Edition)*⁴. The following list shows the delays related to the levels of service for signalized, unsignalized, and roundabout 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. In addition, 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 weekday AM peak hour and PM peak hour at the study intersections for the following traffic volume scenarios:

Scenario 1: Existing Traffic Volumes – Based on existing intersection conditions and existing weekday peak hour traffic volumes. **Figure 3** is a summary of the weekday AM and PM peak hour traffic volumes.

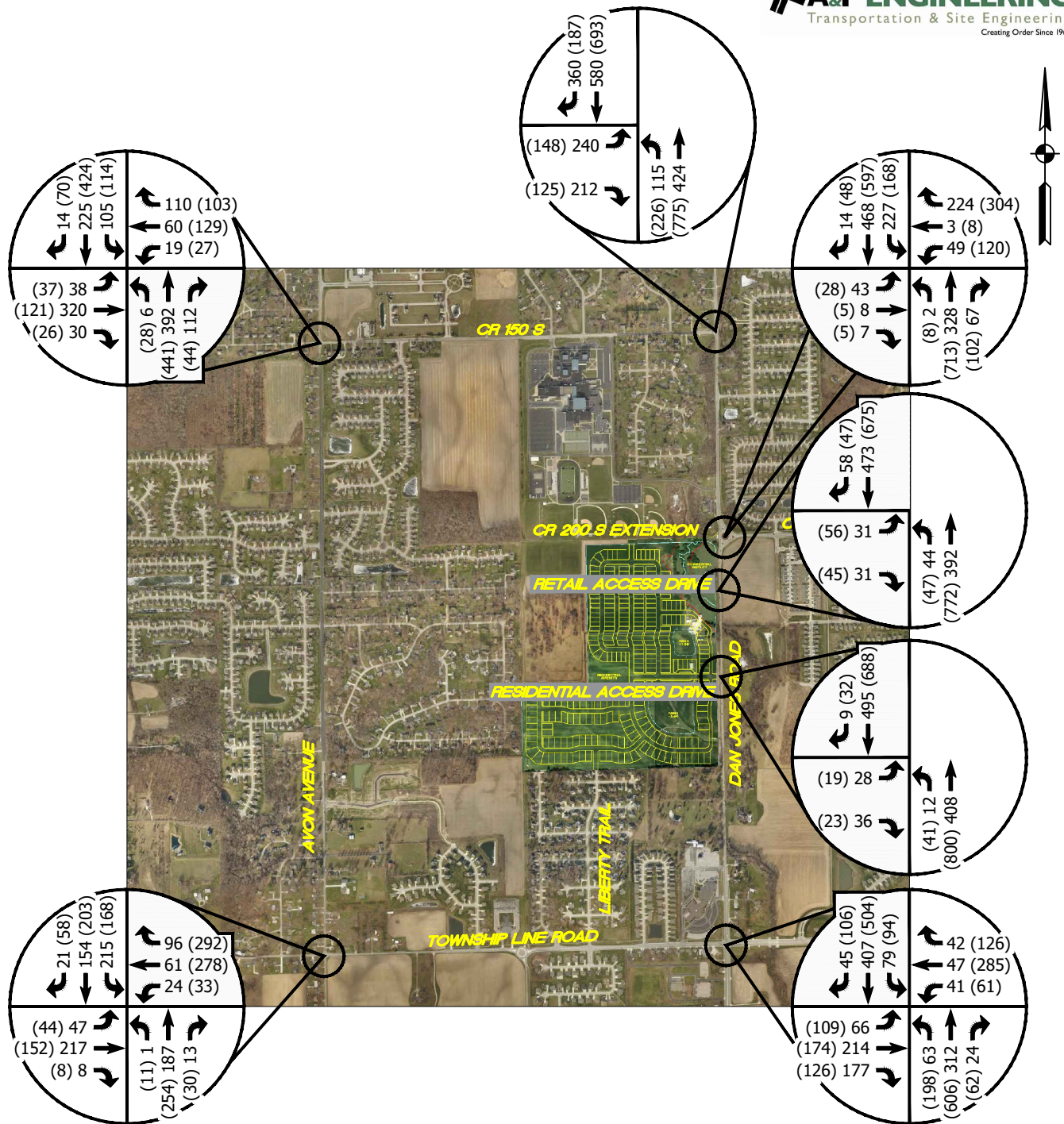
Scenario 2: Year 2018 Proposed Development Traffic Volumes – Sum of existing traffic volumes and the generated traffic volumes from the proposed development. **Figure 7A** is a summary these traffic volumes.

Scenario 3: Year 2028 Background Traffic Volumes – Year 2028 background traffic volumes based on a 2% per year non-compounded growth rate. **Figure 4** is a summary these traffic volumes.

Scenario 4: Year 2028 Proposed Development Traffic Volumes – Sum of year 2028 background traffic volumes and the generated traffic volumes from the proposed development. **Figure 7B** is a summary these traffic volumes.

³ *Synchro/SimTraffic 10.1*, Trafficware, 2017.

⁴ *Highway Capacity Manual (HCM), 6th Edition*, Transportation Research Board, National Research Council, Washington, DC, 2016.



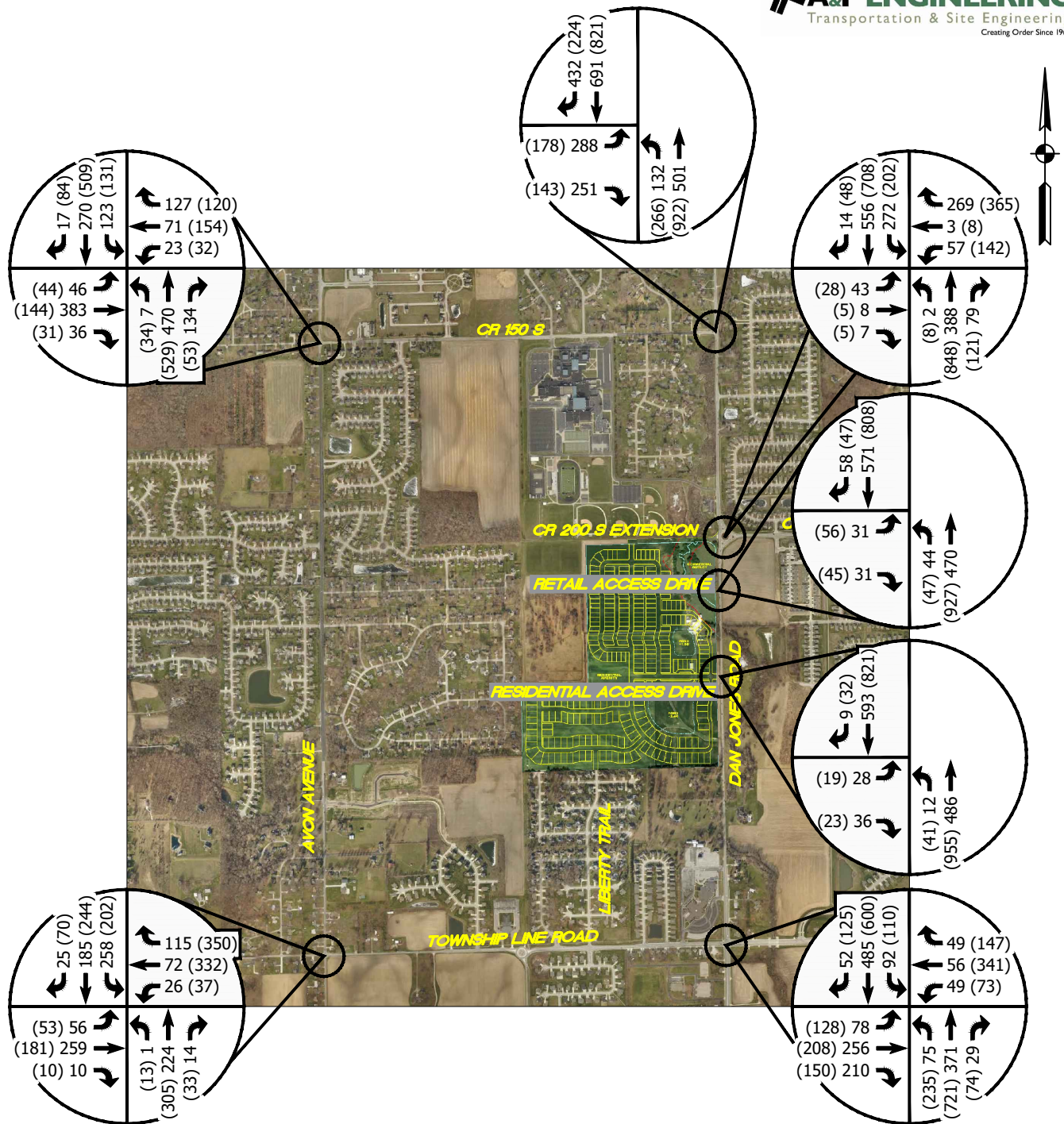
LEGEND

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

**TRAFFIC IMPACT STUDY
PLATINUM PROPERTIES
AVON, IN**

FIGURE 7A

**SUM OF EXISTING TRAFFIC
VOLUMES AND GENERATED
TRAFFIC VOLUMES FROM
PROPOSED DEVELOPMENT**



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

**TRAFFIC IMPACT STUDY
PLATINUM PROPERTIES
AVON, IN**

FIGURE 7B
**SUM OF YEAR 2028
BACKGROUND TRAFFIC VOLUMES
AND GENERATED TRAFFIC VOLUMES
FROM PROPOSED DEVELOPMENT**

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

TABLE 3 – LEVEL OF SERVICE SUMMARY: AVON AVENUE & CR 150 S

APPROACH	AM PEAK				PM PEAK			
	S1	S2	S3	S4	S1	S2	S3	S4
Northbound Approach	B	C	F	F	A	B	B	B
Southbound Approach	A	A	A	A	A	B	B	B
Eastbound Approach	B	B	C	C	B	A	A	A
Westbound Approach	B	A	A	B	B	A	B	B
Intersection	B	B	D	D	A	A	B	B

DESCRIPTION OF SCENARIOS:

- SCENARIO 1: Existing Traffic Volumes with Existing Intersection Conditions.
 SCENARIO 2: Year 2018 Proposed Development Traffic Volumes with Assumed Planned Intersection Conditions*.
 SCENARIO 3: Year 2028 Background Traffic Volumes with Assumed Planned Intersection Conditions*.
 SCENARIO 4: Year 2028 Proposed Development Traffic Volumes with Assumed Planned Intersection Conditions*.

*The assumed planned intersection geometrics include the construction of a single lane roundabout.

TABLE 4 – LEVEL OF SERVICE SUMMARY: DAN JONES ROAD & CR 150 S

APPROACH	AM PEAK				PM PEAK			
	S1	S2	S3	S4	S1	S2	S3	S4
Northbound Approach	A	A	B	B	A	A	A	B
Southbound Approach	B	C	C	C	B	B	B	B
Eastbound Approach	C	C	D	D	C	C	C	C
Intersection	B	B	C	C	B	B	B	B

DESCRIPTION OF SCENARIOS:

- SCENARIO 1: Existing Traffic Volumes with Existing Intersection Conditions.
 SCENARIO 2: Year 2018 Proposed Development Traffic Volumes with Existing Intersection Conditions.
 SCENARIO 3: Year 2028 Background Traffic Volumes with Existing Intersection Conditions.
 SCENARIO 4: Year 2028 Proposed Development Traffic Volumes with Existing Intersection Conditions.

TABLE 5 – LEVEL OF SERVICE SUMMARY: DAN JONES ROAD & CR 200 S

APPROACH	AM PEAK				PM PEAK			
	S1	S2	S3	S4	S1	S2	S3	S4
Northbound Approach	A	A	A	A	A	A	A	A
Southbound Approach	A	A	A	A	A	A	A	A
Eastbound Approach	-	A	-	A	-	A	-	A
Westbound Approach	A	A	A	A	A	B	B	C
Intersection	A	A	A	A	A	A	A	A

DESCRIPTION OF SCENARIOS:

SCENARIO 1: Existing Traffic Volumes with Existing Intersection Conditions.

SCENARIO 2: Year 2018 Proposed Development Traffic Volumes with Proposed Intersection Conditions*.

SCENARIO 3: Year 2028 Background Traffic Volumes with Existing Intersection Conditions.

SCENARIO 4: Year 2028 Proposed Development Traffic Volumes with Proposed Intersection Conditions*.

*The proposed intersection geometrics include the construction of the CR 200 S extension west of Dan Jones Road that will provide access to the development, with one entry lane and one exit lane at the roundabout.

TABLE 6 – LEVEL OF SERVICE SUMMARY: DAN JONES ROAD & TOWNSHIP LINE ROAD

APPROACH	AM PEAK				PM PEAK			
	S1	S2	S3	S4	S1	S2	S3	S4
Northbound Approach	B	B	B	B	B	B	B	B
Southbound Approach	B	B	B	B	B	B	C	C
Eastbound Approach	B	B	B	B	B	B	C	C
Westbound Approach	B	B	B	B	B	C	C	C
Intersection	B	B	B	B	B	B	C	C

DESCRIPTION OF SCENARIOS:

SCENARIO 1: Existing Traffic Volumes with Existing Intersection Conditions.

SCENARIO 2: Year 2018 Proposed Development Traffic Volumes with Existing Intersection Conditions.

SCENARIO 3: Year 2028 Background Traffic Volumes with Existing Intersection Conditions.

SCENARIO 4: Year 2028 Proposed Development Traffic Volumes with Existing Intersection Conditions.

TABLE 7 – LEVEL OF SERVICE SUMMARY: AVON AVENUE & TOWNSHIP LINE ROAD

APPROACH	AM PEAK				PM PEAK			
	S1	S2	S3	S4	S1	S2	S3	S4
Northbound Approach	F	F	F	F	D	D	F	F
Southbound Approach	E	E	F	F	E	E	F	F
Eastbound Approach	E	E	F	F	B	C	C	C
Westbound Approach	D	D	D	E	D	D	E	F
Intersection	E	E	F	F	D	D	F	F

DESCRIPTION OF SCENARIOS:

- SCENARIO 1: Existing Traffic Volumes with Existing Intersection Conditions.
- SCENARIO 2: Year 2018 Proposed Development Traffic Volumes with Existing Intersection Conditions.
- SCENARIO 3: Year 2028 Background Traffic Volumes with Existing Intersection Conditions.
- SCENARIO 4: Year 2028 Proposed Development Traffic Volumes with Existing Intersection Conditions.

TABLE 8 – LEVEL OF SERVICE SUMMARY: DAN JONES ROAD & RETAIL ACCESS DRIVE

APPROACH	AM PEAK		PM PEAK	
	S2	S4	S2	S4
Northbound Left-Turn	A	A	A	B
Eastbound Approach	C	C	F	F

DESCRIPTION OF SCENARIOS:

- SCENARIO 2: Year 2018 Proposed Development Traffic Volumes with Proposed Intersection Conditions*.
- SCENARIO 4: Year 2028 Proposed Development Traffic Volumes with Proposed Intersection Conditions*.

*The proposed intersection conditions include the construction of the eastbound approach with at least one inbound lane and two outbound lanes; the addition of a northbound left-turn treatment and an exclusive southbound right-turn lane.

TABLE 9 – LEVEL OF SERVICE SUMMARY: DAN JONES ROAD & RESIDENTIAL ACCESS DRIVE

APPROACH	AM PEAK		PM PEAK	
	S2	S4	S2	S4
Northbound Left-Turn	A	A	A	B
Eastbound Approach	C	C	D	F

DESCRIPTION OF SCENARIOS:

- SCENARIO 2: Year 2018 Proposed Development Traffic Volumes with Proposed Intersection Conditions*.
- SCENARIO 4: Year 2028 Proposed Development Traffic Volumes with Proposed Intersection Conditions*.

*The proposed intersection conditions include the construction of the eastbound approach with at least one inbound lane and two outbound lanes; the addition of a northbound left-turn treatment and an exclusive southbound right-turn lane.

CONCLUSIONS & RECOMMENDATIONS

Based on the turn lane analysis and capacity analysis for field measurements, the following recommendations are formulated to ensure that the roadway system will accommodate the increased traffic volumes from the proposed development.

AVON AVENUE & CR 150 S

Capacity analyses for all traffic volume scenarios have shown that this intersection currently operates and will continue to operate at acceptable levels of service during the AM and PM peak hours under existing intersection conditions and with planned roundabout that is expected to be constructed next year.

DAN JONES ROAD & CR 150 S

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

DAN JONES ROAD & CR 200 S EXTENSION

Capacity analyses for existing traffic volumes and year 2028 background traffic volumes have shown that this intersection currently operates and will continue to operate at acceptable levels of service during the AM and PM peak hours. When the generated traffic from the proposed development is considered, this intersection will continue to operate at acceptable levels of service with the construction of the CR 200 S extension, west of Dan Jones Road, with one entry lane and one exit lane at the roundabout.

DAN JONES ROAD & TOWNSHIP LINE ROAD

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

AVON AVENUE & TOWNSHIP LINE ROAD

Capacity analysis for the existing traffic volumes have shown that the intersection currently operates below acceptable levels of service during the AM peak. When the generated traffic volumes from the proposed development are added to the existing traffic volumes, the intersection will continue to operate below acceptable levels of service during the AM peak hour. In addition, capacity analysis for the year 2028 background traffic volumes has shown that the intersection will operate below

acceptable levels of service during the AM and PM peak hours. Similarly, the intersection will continue to operate below acceptable levels of service during the AM and PM peak hours when the generated traffic volumes from the proposed development is added to the year 2028 background traffic volumes. To improve current and future operations at this intersection, the addition of exclusive left-turn lanes along the northbound and southbound approaches should be considered. However, this improvement is needed with or without the construction of the proposed development.

DAN JONES ROAD & RETAIL ACCESS DRIVE

The following proposed intersection conditions are recommended at this intersection:

- Construction of the eastbound approach with at least one inbound lane and two outbound lanes.
- Addition of a northbound left-turn treatment (passing blister or turn lane) along Dan Jones Road at the proposed development driveway location.
- Addition of an exclusive southbound right-turn lane along Dan Jones Road at the proposed development driveway location.
- Stop Controlled intersection with the driveway stopping for Dan Jones Road.

DAN JONES ROAD & RESIDENTIAL ACCESS DRIVE

The following proposed intersection conditions are recommended at this intersection:

- Construction of the eastbound approach with at least one inbound lane and two outbound lanes.
- Addition of a northbound left-turn treatment (passing blister or turn lane) along Dan Jones Road at the proposed development driveway location.
- Addition of an exclusive southbound right-turn lane along Dan Jones Road at the proposed development driveway location.
- Stop Controlled intersection with the driveway stopping for Dan Jones Road.

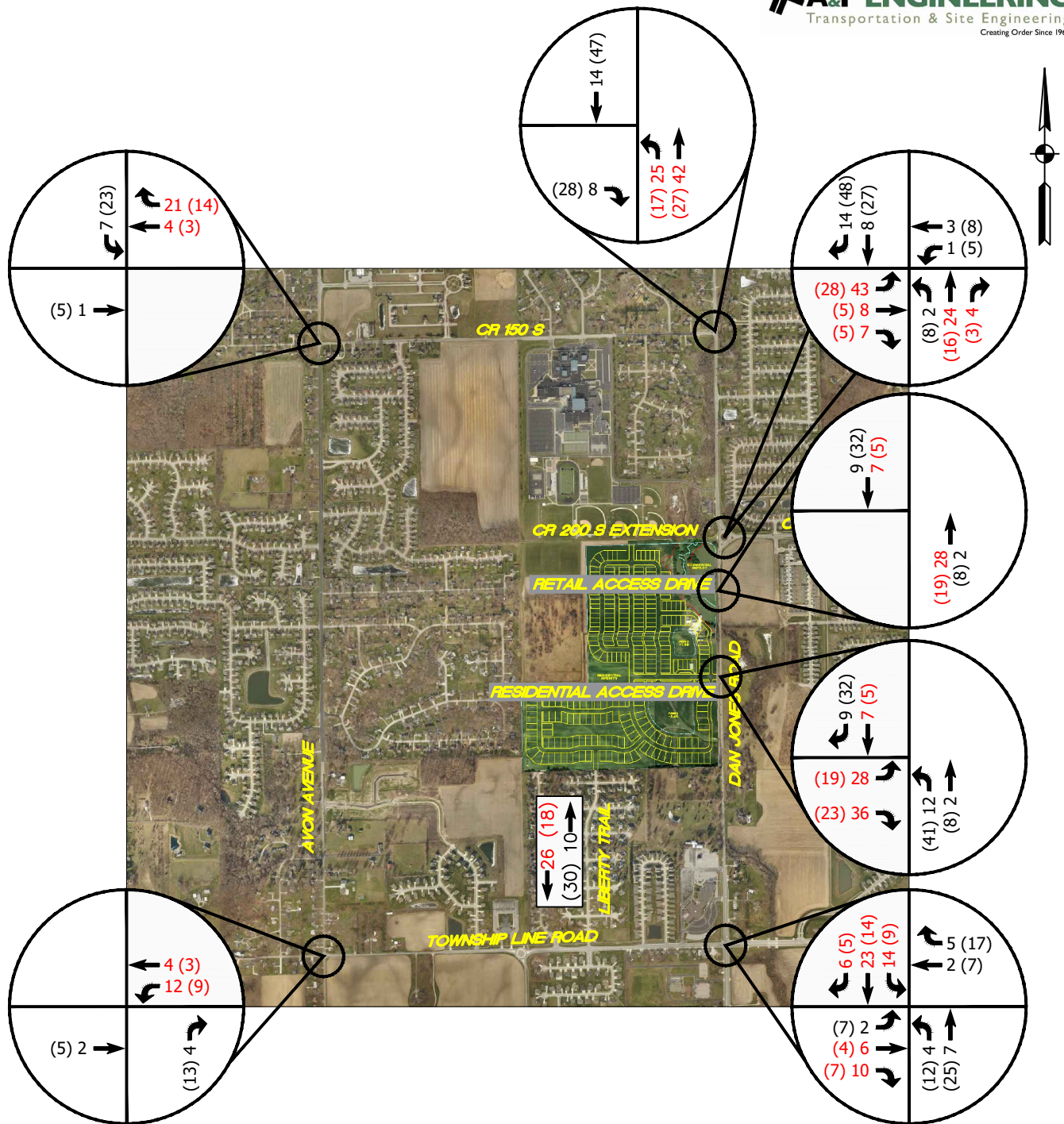
TRAFFIC IMPACT STUDY

APPENDIX



***8365 Keystone Crossing Boulevard, Suite 201
Indianapolis, IN 46240
Phone: (317) 202-0864 Fax: (317) 202-0908***

ADDITIONAL FIGURES



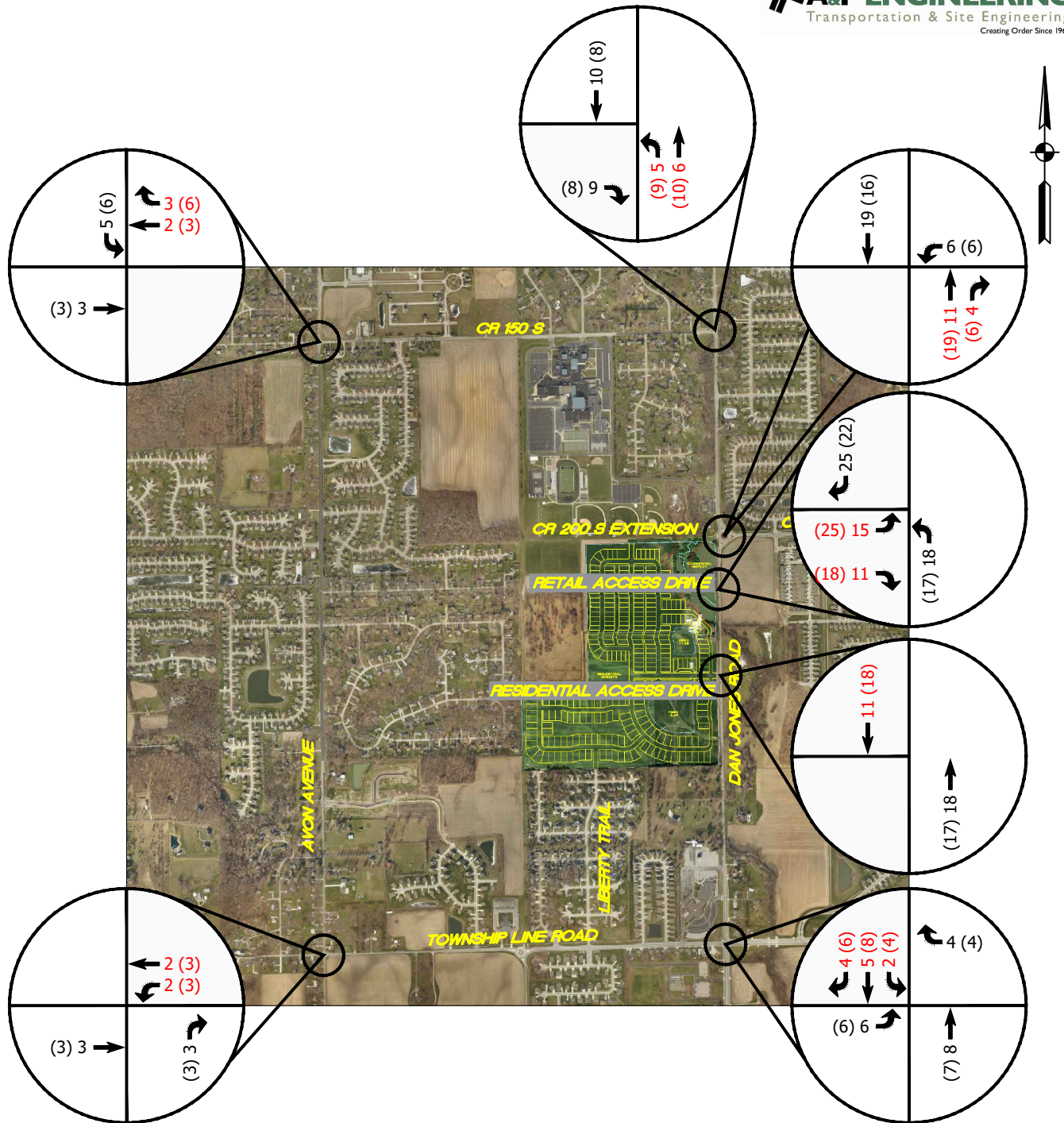
LEGEND

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

**TRAFFIC IMPACT STUDY
PLATINUM PROPERTIES
AVON, IN**

FIGURE A

**GENERATED TRAFFIC VOLUMES
FROM PROPOSED DEVELOPMENT
(RESIDENTIAL)**

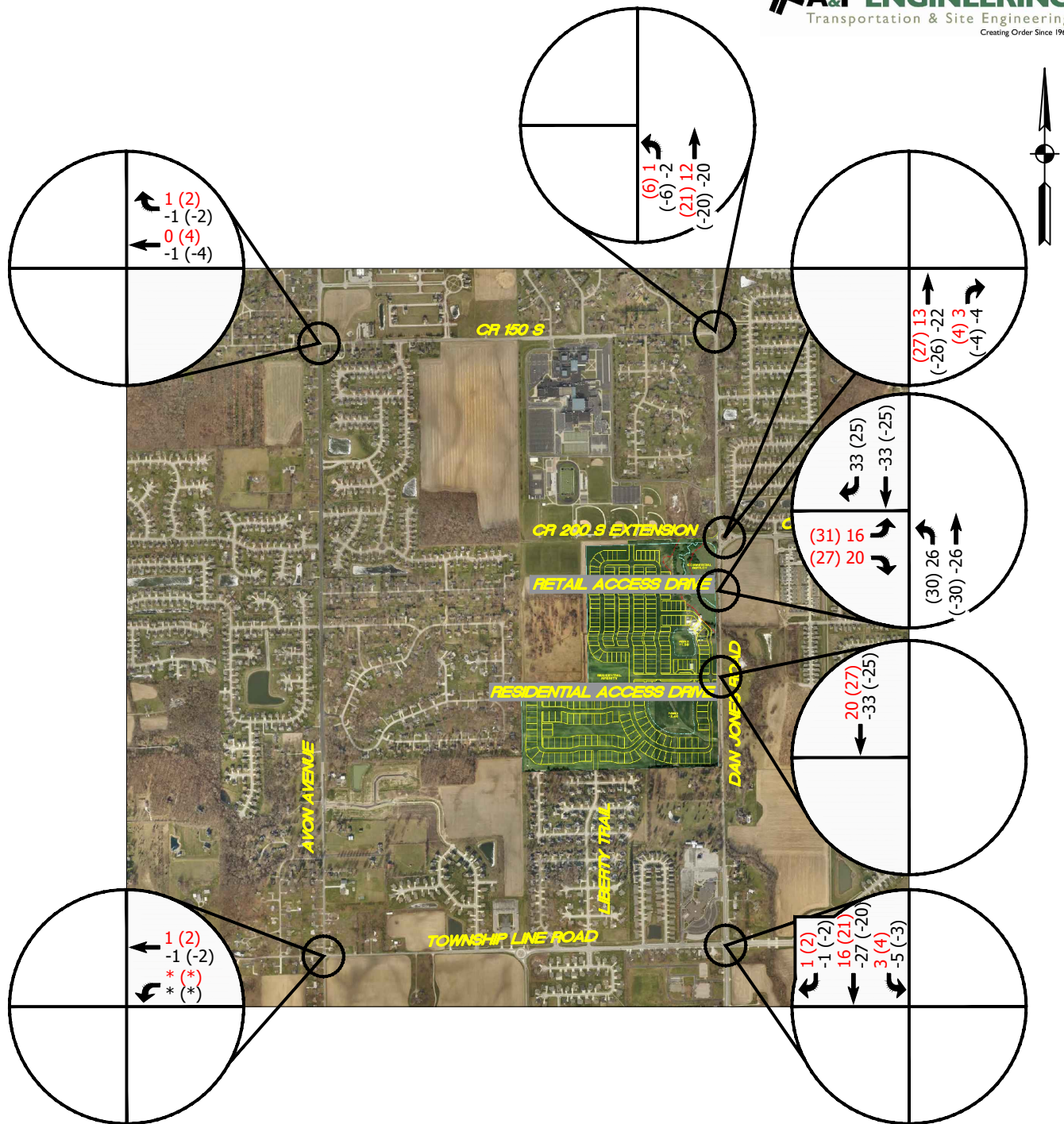


LEGEND

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

**TRAFFIC IMPACT STUDY
PLATINUM PROPERTIES
AVON, IN**

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



LEGEND

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

**TRAFFIC IMPACT STUDY
PLATINUM PROPERTIES
AVON, IN**

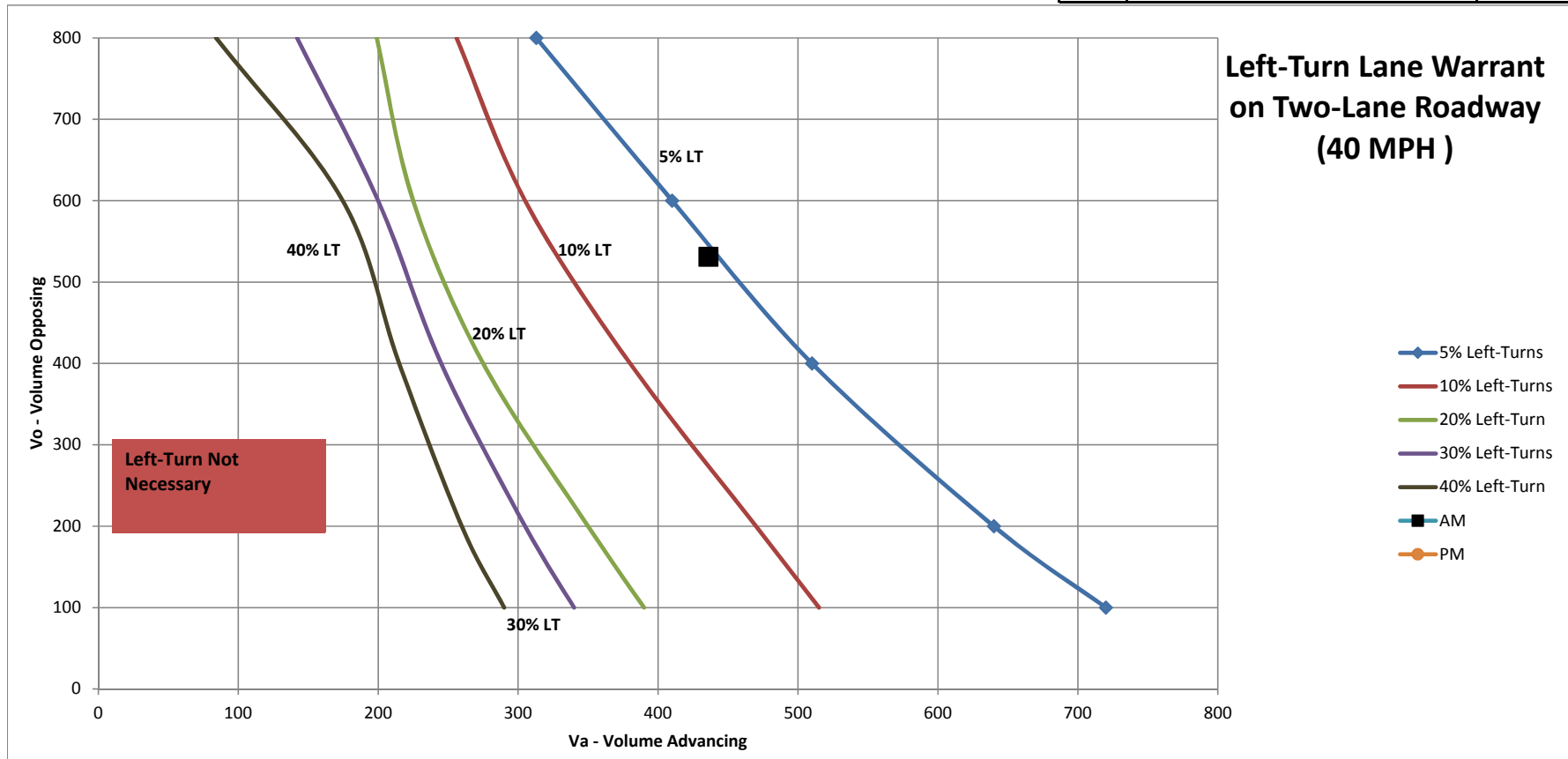
FIGURE C
**GENERATED PASS-BY
TRAFFIC VOLUMES FROM
PROPOSED DEVELOPMENT
(RETAIL)**

TURN LANE WARRANTS

Existing + Proposed - Dan Jones Road & Retail Access Drive

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
	800	313	256	228	199	171	142	113	84
	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

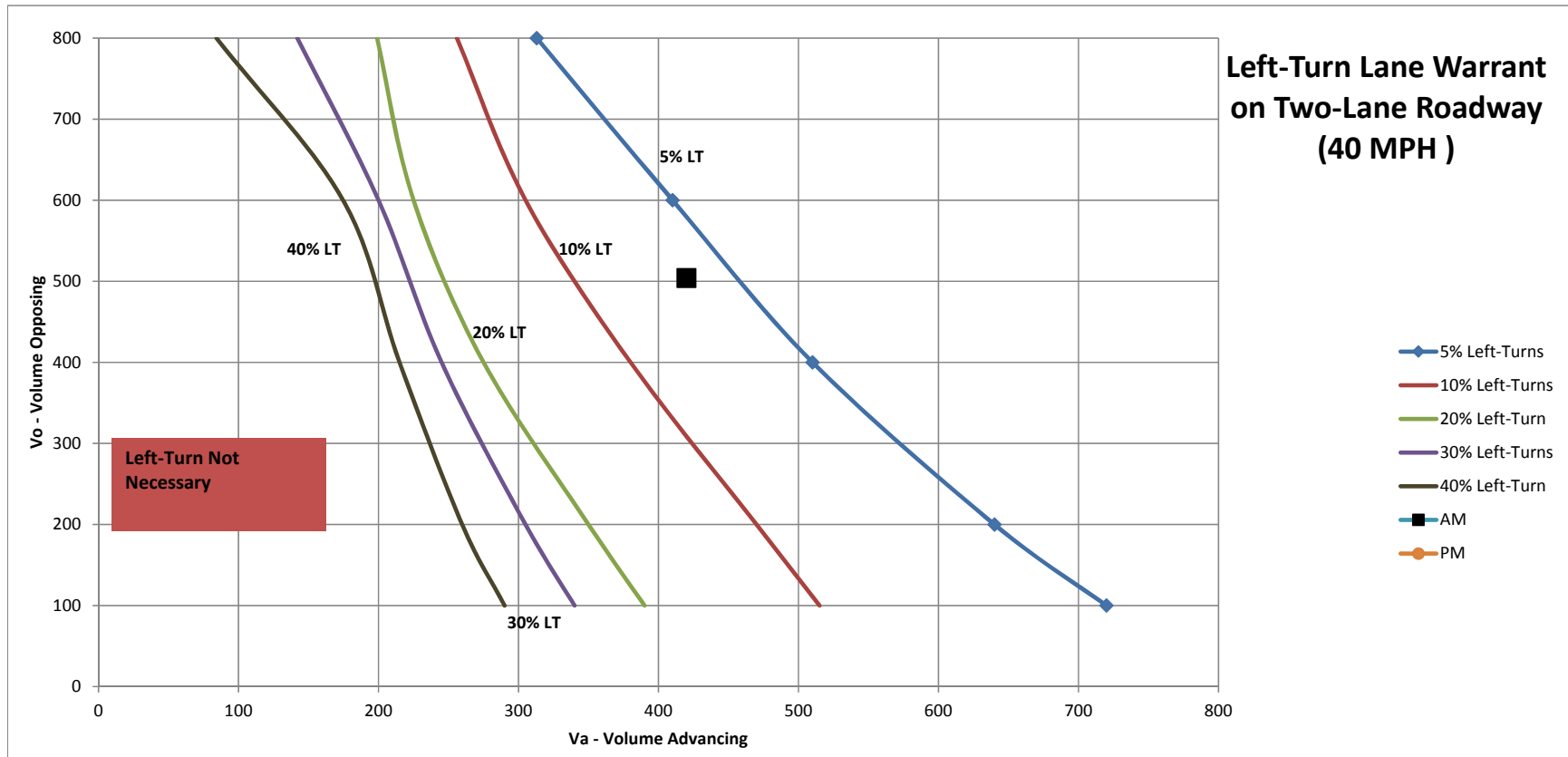
	INPUT	Warrant?
AM	Advancing Volume (Va)	436
	Opposing Volume (Vo)	531
	Left-turn Volume	44
	Left-turn %	10%
PM	Advancing Volume (Va)	819
	Opposing Volume (Vo)	722
	Left-turn Volume	47
	Left-turn %	6%



Existing + Proposed - Dan Jones Road & Resdential Access Drive

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	313	256	228	199	171	142	113	84
	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

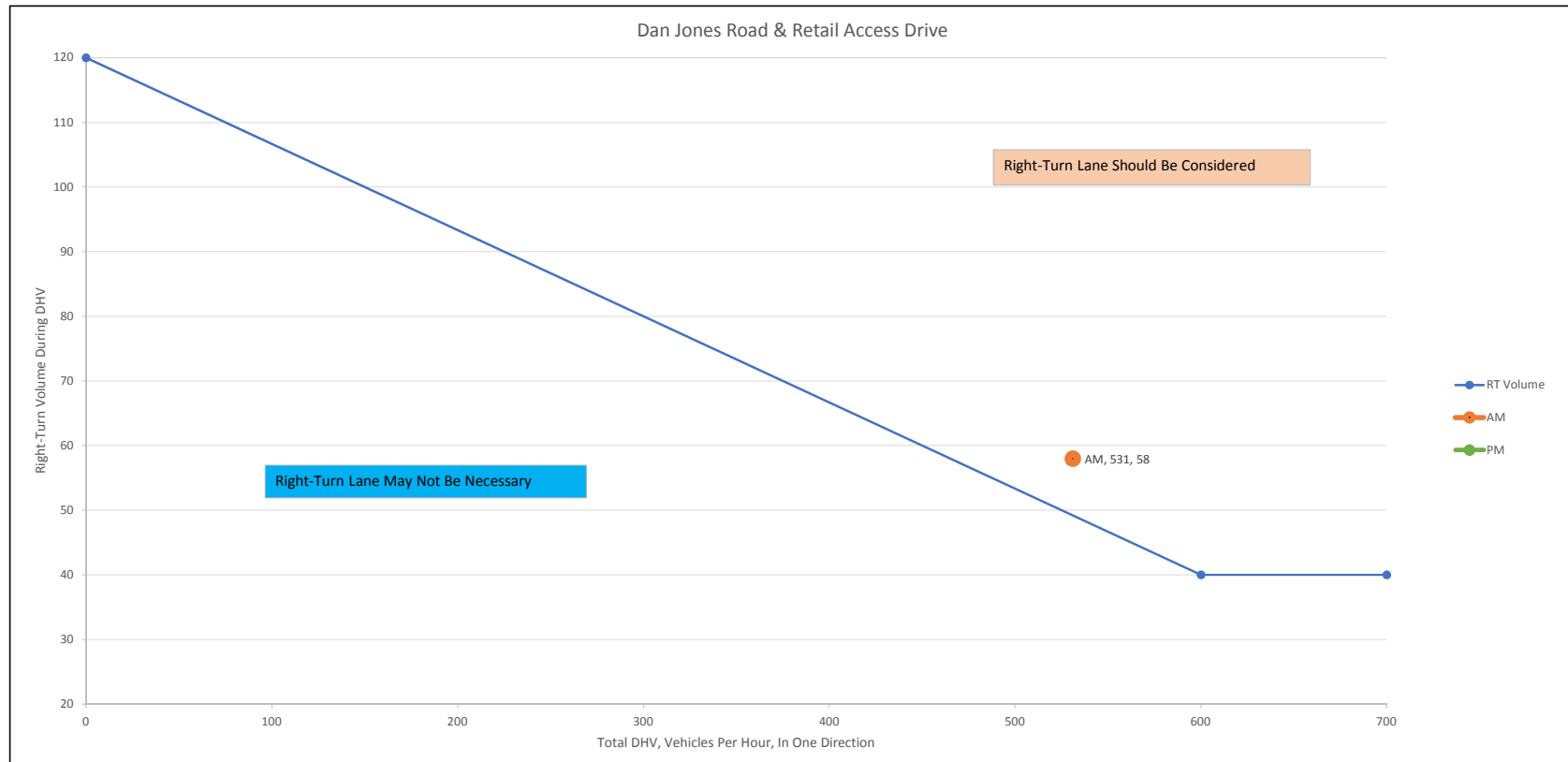
	INPUT		Warrant?
AM	Advancing Volume (Va)	420	NO
	Opposing Volume (Vo)	504	
	Left-turn Volume	12	
	Left-turn %	3%	
PM	Advancing Volume (Va)	841	YES
	Opposing Volume (Vo)	720	
	Left-turn Volume	41	
	Left-turn %	5%	



Existing + Proposed - Dan Jones Road & Retail Access Drive

Total Volume	RT Volume
0	120
600	40
700	40

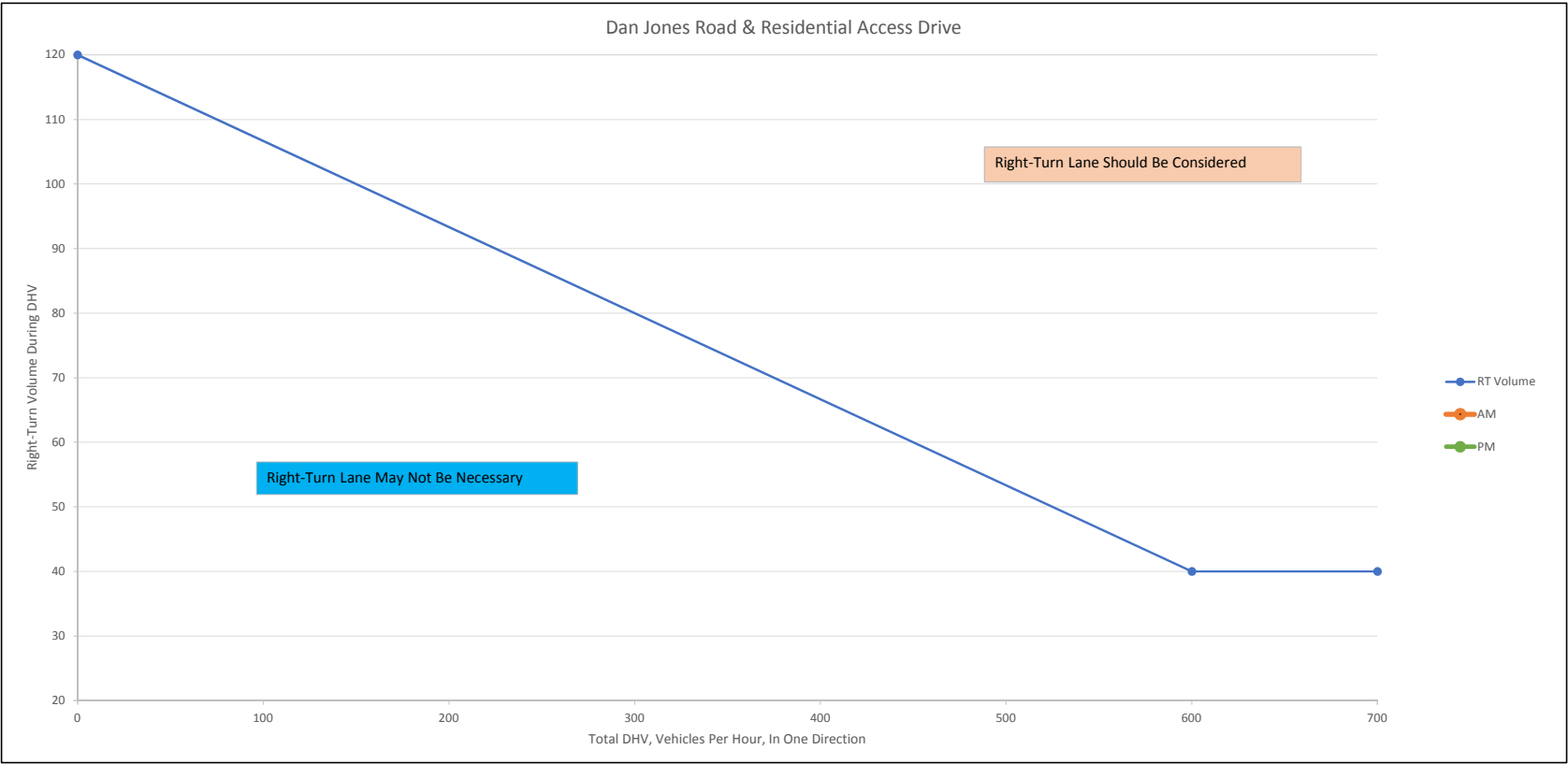
Time	Input		Met?
AM	RT Volume	58	YES
	Total Volume	531	
PM	RT Volume	47	YES
	Total Volume	722	



Existing + Proposed - Dan Jones Road & Residential Access Drive

Total Volume	RT Volume
0	120
600	40
700	40

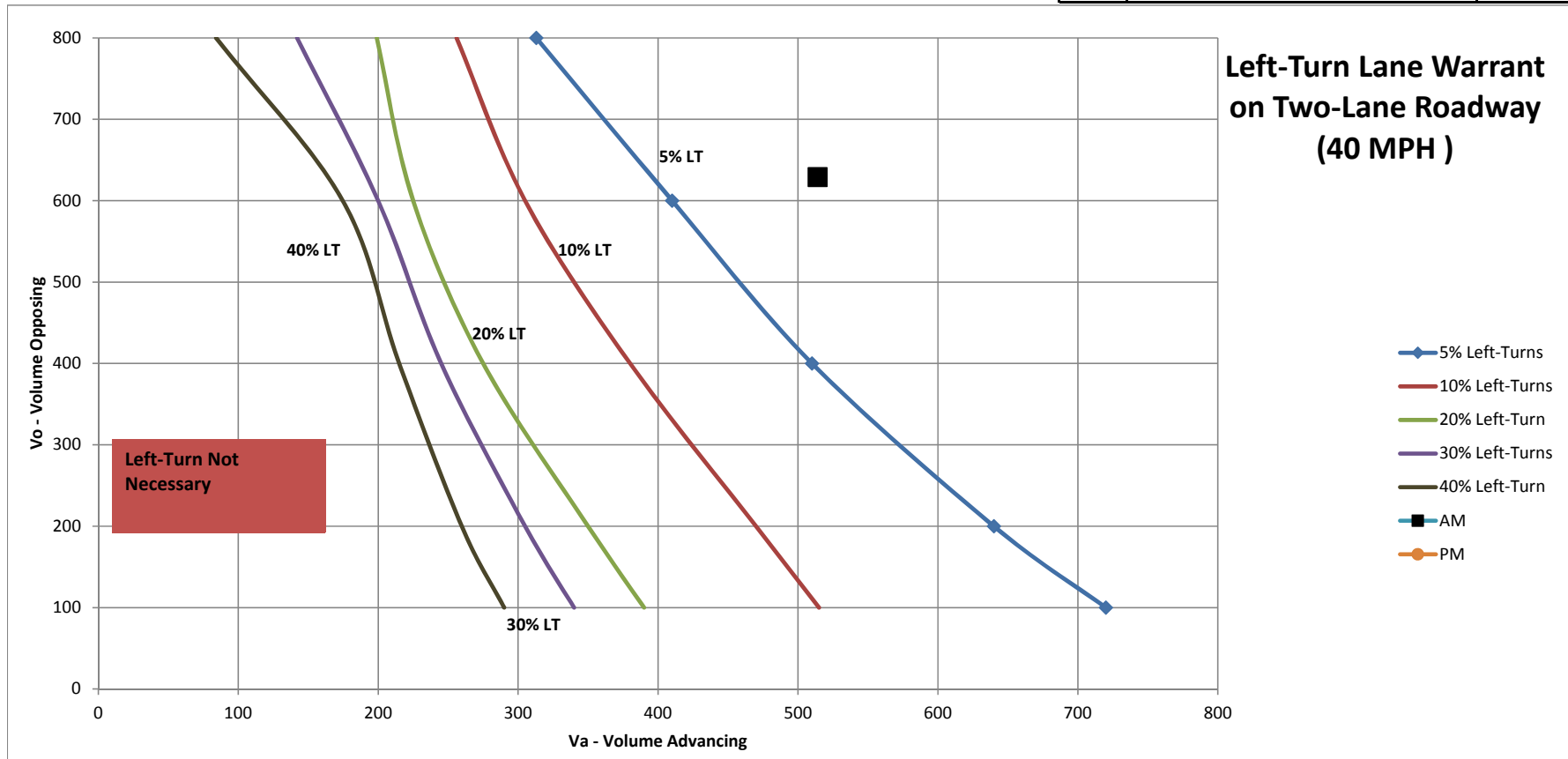
Time	Input		Met?
AM	RT Volume	9	NO
	Total Volume	504	
PM	RT Volume	32	NO
	Total Volume	720	



Year 2028 + Proposed - Dan Jones Road & Retail Access Drive

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
	800	313	256	228	199	171	142	113	84
	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

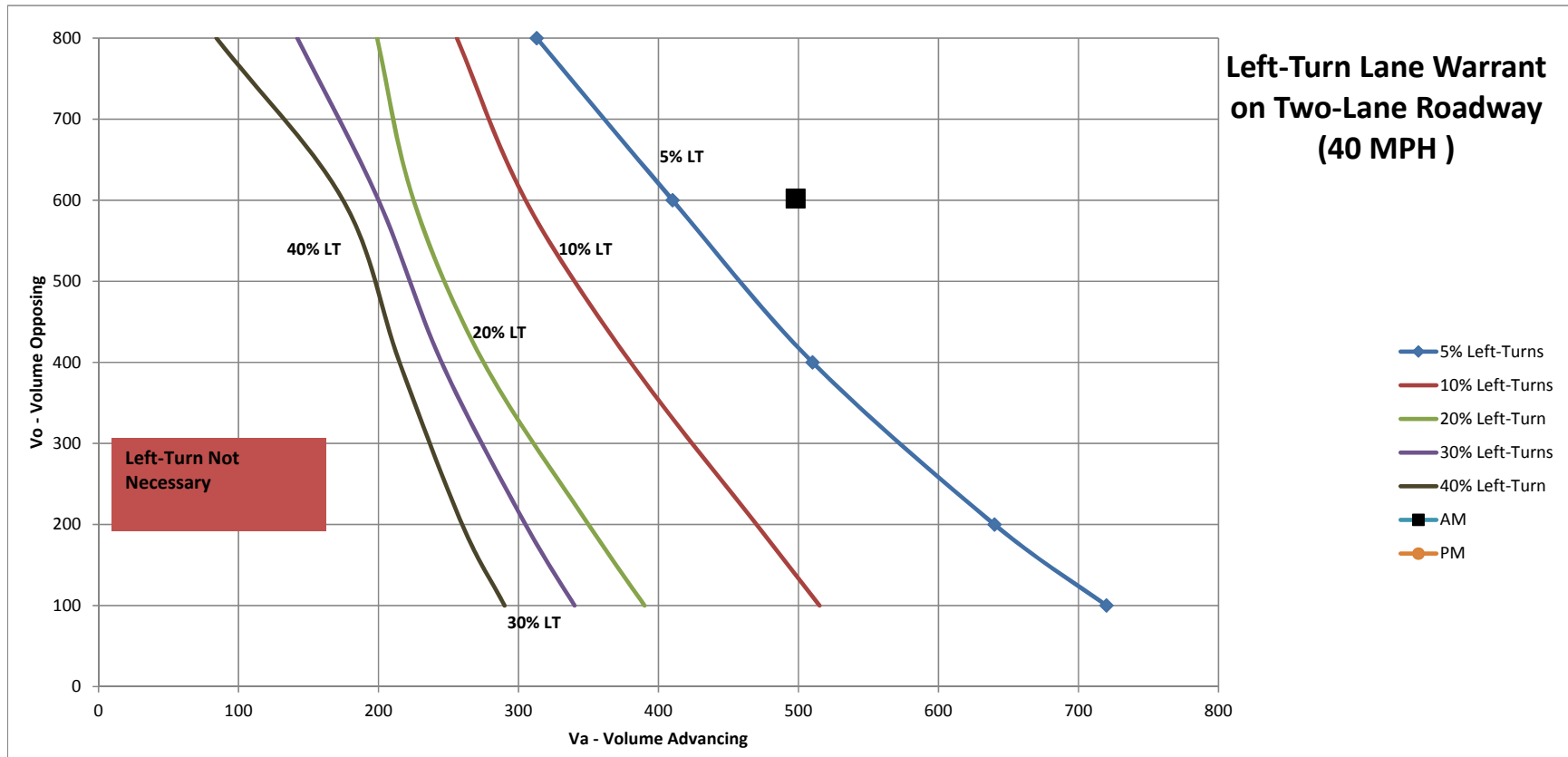
	INPUT	Warrant?
AM	Advancing Volume (Va)	514
	Opposing Volume (Vo)	629
	Left-turn Volume	44
	Left-turn %	9%
PM	Advancing Volume (Va)	974
	Opposing Volume (Vo)	855
	Left-turn Volume	47
	Left-turn %	5%



Year 2028 + Proposed - Dan Jones Road & Residential Access Drive

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	313	256	228	199	171	142	113	84
	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

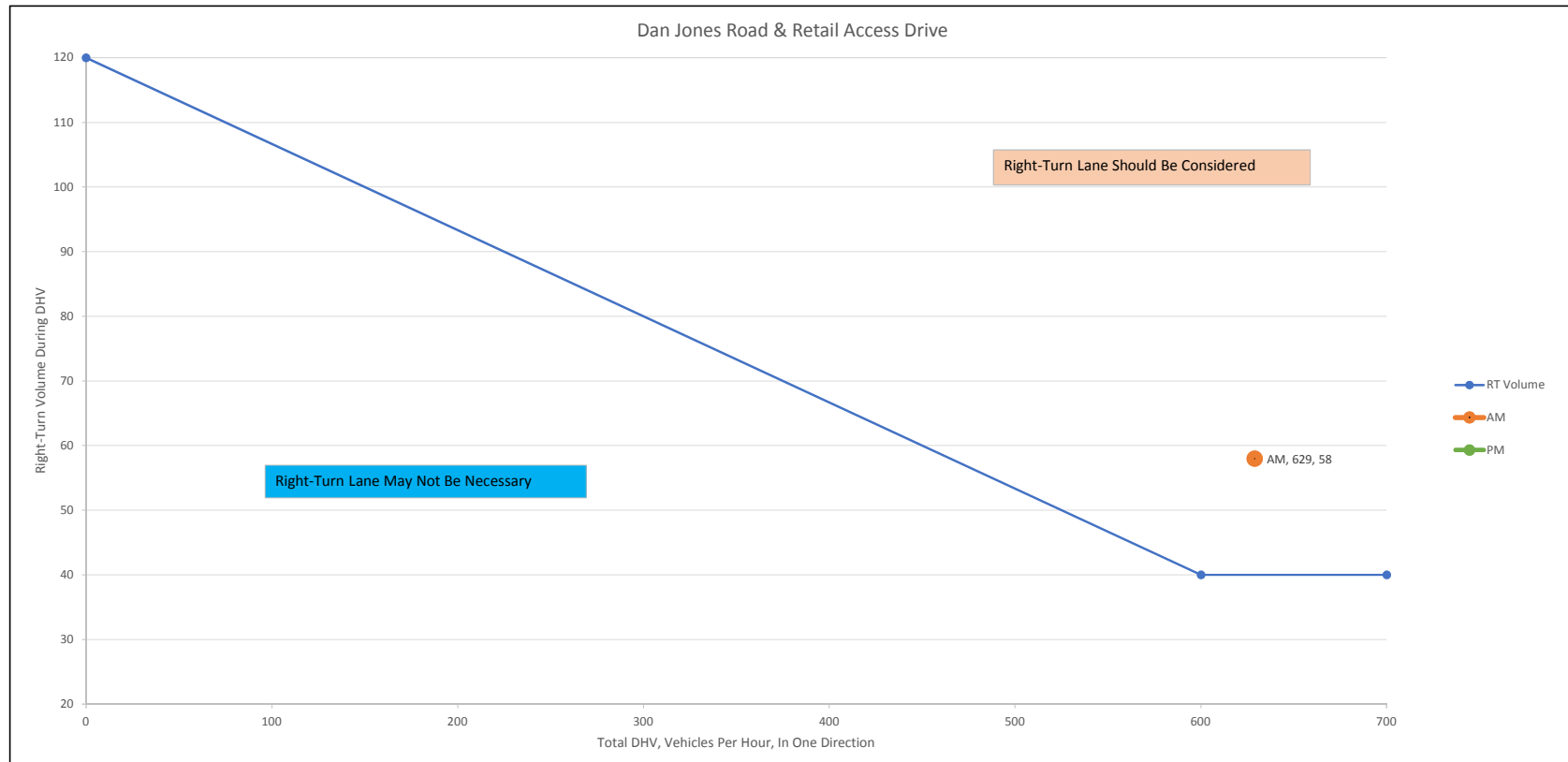
	INPUT		Warrant?
AM	Advancing Volume (Va)	498	NO
	Opposing Volume (Vo)	602	
	Left-turn Volume	12	
	Left-turn %	2%	
PM	Advancing Volume (Va)	996	YES
	Opposing Volume (Vo)	853	
	Left-turn Volume	41	
	Left-turn %	4%	



Year 2028 + Proposed - Retail Access Drive

Total Volume	RT Volume
0	120
600	40
700	40

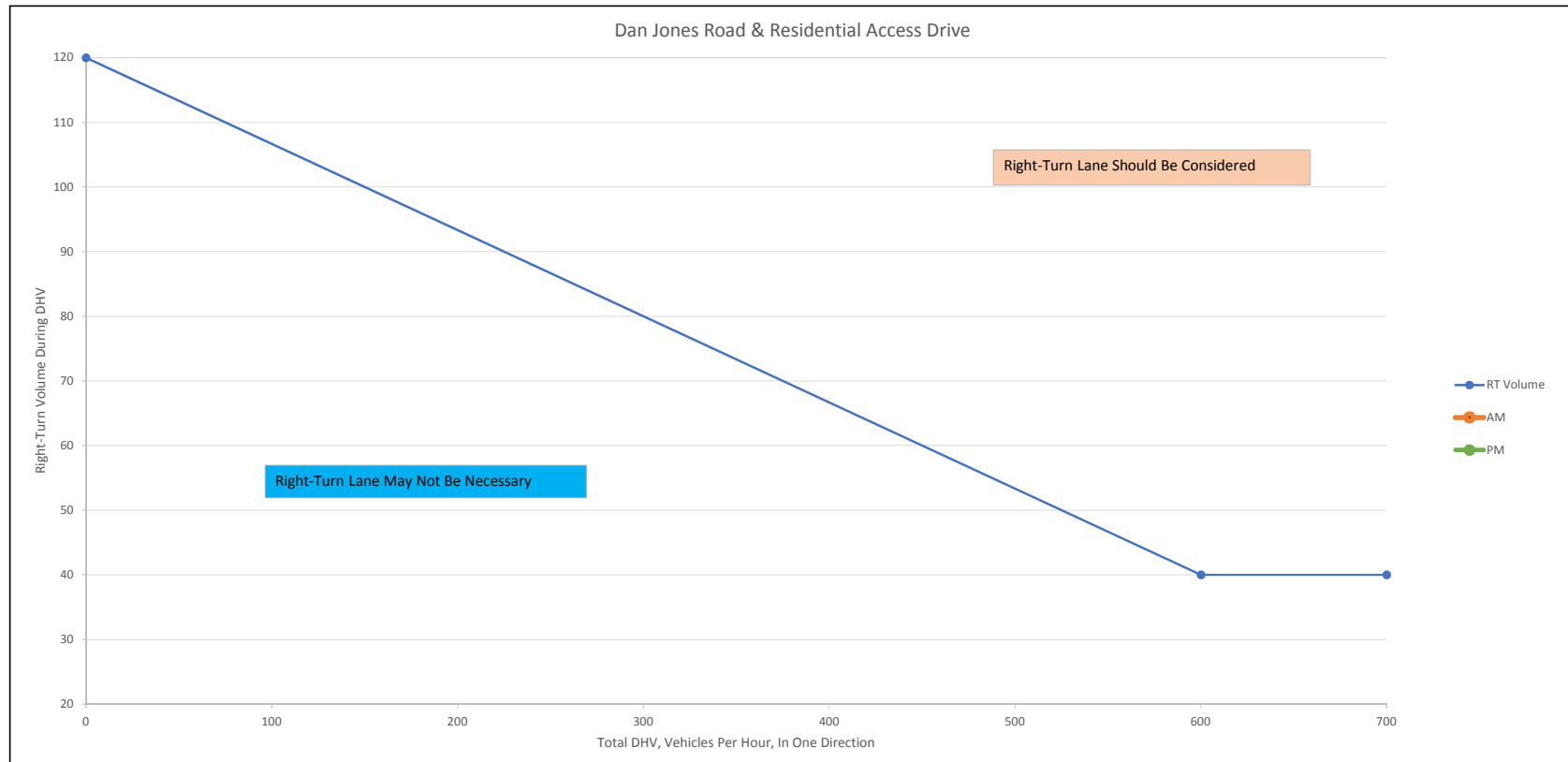
Time	Input		Met?
AM	RT Volume	58	YES
	Total Volume	629	
PM	RT Volume	47	YES
	Total Volume	808	



Year 2028 + Proposed - Dan Jones Road & Residential Access Drive

Total Volume	RT Volume
0	120
600	40
700	40

Time	Input		Met?
AM	RT Volume	9	NO
	Total Volume	602	
PM	RT Volume	32	NO
	Total Volume	853	



AVON AVENUE & CR 150 S

TRAFFIC VOLUME COUNTS CAPACITY ANALYSIS

AVON AVENUE & CR 150 - TMC

Tue Apr 24, 2018

Full Length (4PM-7PM, 6AM-9AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516263, Location: 39.740751, -86.399552

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
2018-04-24																					
6:00AM	2	41	2	0	45	2	30	2	0	34	6	13	2	0	21	2	4	2	0	8	108
6:15AM	0	59	0	0	59	8	29	1	0	38	2	24	5	0	31	0	3	5	0	8	136
6:30AM	3	63	3	0	69	4	41	1	0	46	5	24	4	0	33	0	3	1	0	4	152
6:45AM	1	85	9	0	95	9	46	2	0	57	15	39	3	0	57	0	3	7	0	10	219
Hourly Total	6	248	14	0	268	23	146	6	0	175	28	100	14	0	142	2	13	15	0	30	615
7:00AM	2	105	15	0	122	23	48	7	0	78	11	43	5	0	59	5	5	10	0	20	279
7:15AM	1	79	15	0	95	26	66	5	0	97	15	73	9	0	97	4	4	13	0	21	310
7:30AM	0	118	51	0	169	23	30	1	0	54	6	122	6	0	134	2	15	25	0	42	399
7:45AM	3	90	31	0	124	20	81	1	0	102	6	78	10	0	94	8	31	38	0	77	397
Hourly Total	6	392	112	0	510	92	225	14	0	331	38	316	30	0	384	19	55	86	0	160	1385
8:00AM	2	94	4	0	100	7	50	5	0	62	9	22	5	0	36	10	6	8	0	24	222
8:15AM	2	88	9	0	99	6	62	8	0	76	11	10	4	0	25	1	2	8	0	11	211
8:30AM	1	113	5	0	119	5	55	6	0	66	16	22	5	0	43	0	6	15	0	21	249
8:45AM	1	81	5	0	87	12	72	16	0	100	11	11	5	0	27	2	7	20	0	29	243
Hourly Total	6	376	23	0	405	30	239	35	0	304	47	65	19	0	131	13	21	51	0	85	925
9:00AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Hourly Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
4:00PM	6	92	8	0	106	13	105	18	0	136	4	22	1	0	27	12	30	25	0	67	336
4:15PM	5	102	3	0	110	22	116	13	0	151	2	20	6	0	28	10	35	21	0	66	355
4:30PM	8	101	4	0	113	12	137	21	0	170	9	16	6	0	31	8	23	12	0	43	357
4:45PM	3	106	13	0	122	19	112	22	0	153	7	26	8	0	41	9	24	18	0	51	367
Hourly Total	22	401	28	0	451	66	470	74	0	610	22	84	21	0	127	39	112	76	0	227	1415
5:00PM	5	95	15	0	115	30	117	13	0	160	8	32	5	0	45	5	29	15	0	49	369
5:15PM	7	125	9	0	141	18	118	14	0	150	5	20	5	0	30	8	25	14	0	47	368
5:30PM	7	123	8	0	138	16	98	22	0	136	10	36	5	0	51	4	41	27	0	72	397
5:45PM	9	98	12	0	119	22	91	21	0	134	14	25	11	0	50	10	28	27	0	65	368
Hourly Total	28	441	44	0	513	86	424	70	0	580	37	113	26	0	176	27	123	83	0	233	1502
6:00PM	8	80	4	0	92	14	79	22	0	115	7	19	3	1	30	7	31	26	0	64	301
6:15PM	5	70	4	0	79	8	83	12	0	103	8	16	4	0	28	6	25	16	0	47	257
6:30PM	3	61	5	0	69	12	84	12	0	108	3	18	1	0	22	5	20	8	0	33	232
6:45PM	3	49	10	0	62	10	60	8	0	78	5	17	4	0	26	5	20	10	0	35	201
Hourly Total	19	260	23	0	302	44	306	54	0	404	23	70	12	1	106	23	96	60	0	179	991
7:00PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	87	2118	244	0	2449	341	1813	253	0	2407	195	748	122	1	1066	123	421	371	0	915	6837
% Approach	3.6%	86.5%	10.0%	0%	-	14.2%	75.3%	10.5%	0%	-	18.3%	70.2%	11.4%	0.1%	-	13.4%	46.0%	40.5%	0%	-	-
% Total	1.3%	31.0%	3.6%	0%	35.8%	5.0%	26.5%	3.7%	0%	35.2%	2.9%	10.9%	1.8%	0%	15.6%	1.8%	6.2%	5.4%	0%	13.4%	-
Lights and Motorcycles	87	2059	238	0	2384	329	1774	243	0	2346	191	738	120	1	1050	114	411	357	0	882	6662
% Lights and Motorcycles	100%	97.2%	97.5%	0%	97.3%	96.5%	97.8%	96.0%	0%	97.5%	97.9%	98.7%	98.4%	100%	98.5%	92.7%	97.6%	96.2%	0%	96.4%	97.4%
Heavy	0	59	6	0	65	12	39	10	0	61	4	10	2	0	16	9	10	14	0	33	175
% Heavy	0%	2.8%	2.5%	0%	2.7%	3.5%	2.2%	4.0%	0%	2.5%	2.1%	1.3%	1.6%	0%	1.5%	7.3%	2.4%	3.8%	0%	3.6%	2.6%

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

AVON AVENUE & CR 150 - TMC

Tue Apr 24, 2018

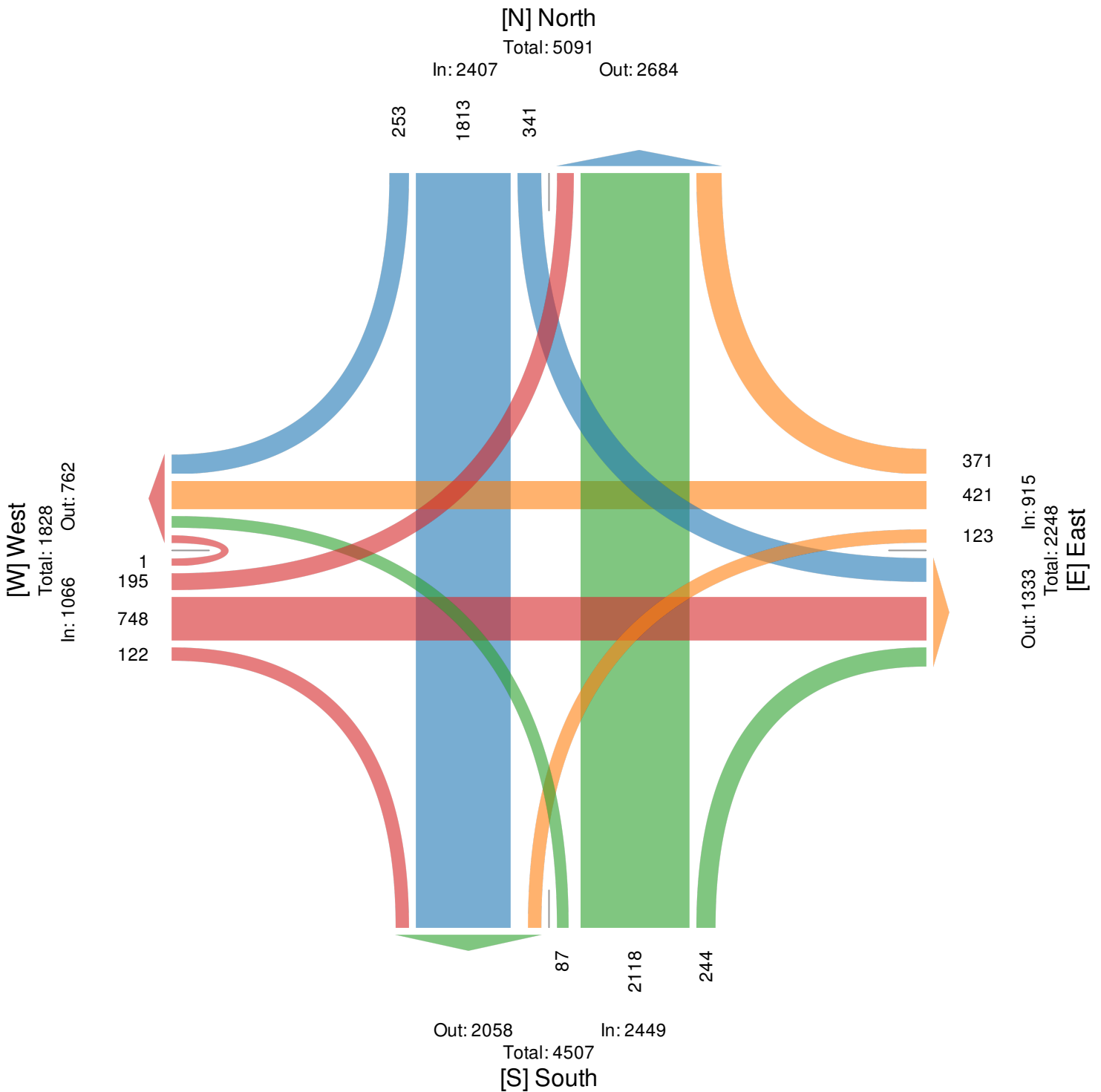
Full Length (4PM-7PM, 6AM-9AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516263, Location: 39.740751, -86.399552

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



AVON AVENUE & CR 150 - TMC

Tue Apr 24, 2018

AM Peak (7AM - 8AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516263, Location: 39.740751, -86.399552

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
2018-04-24 7:00AM	2	105	15	0	122	23	48	7	0	78	11	43	5	0	59	5	5	10	0	20	279
7:15AM	1	79	15	0	95	26	66	5	0	97	15	73	9	0	97	4	4	13	0	21	310
7:30AM	0	118	51	0	169	23	30	1	0	54	6	122	6	0	134	2	15	25	0	42	399
7:45AM	3	90	31	0	124	20	81	1	0	102	6	78	10	0	94	8	31	38	0	77	397
Total	6	392	112	0	510	92	225	14	0	331	38	316	30	0	384	19	55	86	0	160	1385
% Approach	1.2%	76.9%	22.0%	0%	-	27.8%	68.0%	4.2%	0%	-	9.9%	82.3%	7.8%	0%	-	11.9%	34.4%	53.8%	0%	-	-
% Total	0.4%	28.3%	8.1%	0%	36.8%	6.6%	16.2%	1.0%	0%	23.9%	2.7%	22.8%	2.2%	0%	27.7%	1.4%	4.0%	6.2%	0%	11.6%	-
PHF	0.500	0.831	0.549	-	0.754	0.885	0.694	0.500	-	0.811	0.633	0.648	0.750	-	0.716	0.594	0.444	0.566	-	0.519	0.868
Lights and Motorcycles	6	382	110	0	498	86	218	12	0	316	38	308	28	0	374	16	49	82	0	147	1335
% Lights and Motorcycles	100%	97.4%	98.2%	0%	97.6%	93.5%	96.9%	85.7%	0%	95.5%	100%	97.5%	93.3%	0%	97.4%	84.2%	89.1%	95.3%	0%	91.9%	96.4%
Heavy	0	10	2	0	12	6	7	2	0	15	0	8	2	0	10	3	6	4	0	13	50
% Heavy	0%	2.6%	1.8%	0%	2.4%	6.5%	3.1%	14.3%	0%	4.5%	0%	2.5%	6.7%	0%	2.6%	15.8%	10.9%	4.7%	0%	8.1%	3.6%

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

AVON AVENUE & CR 150 - TMC

Tue Apr 24, 2018

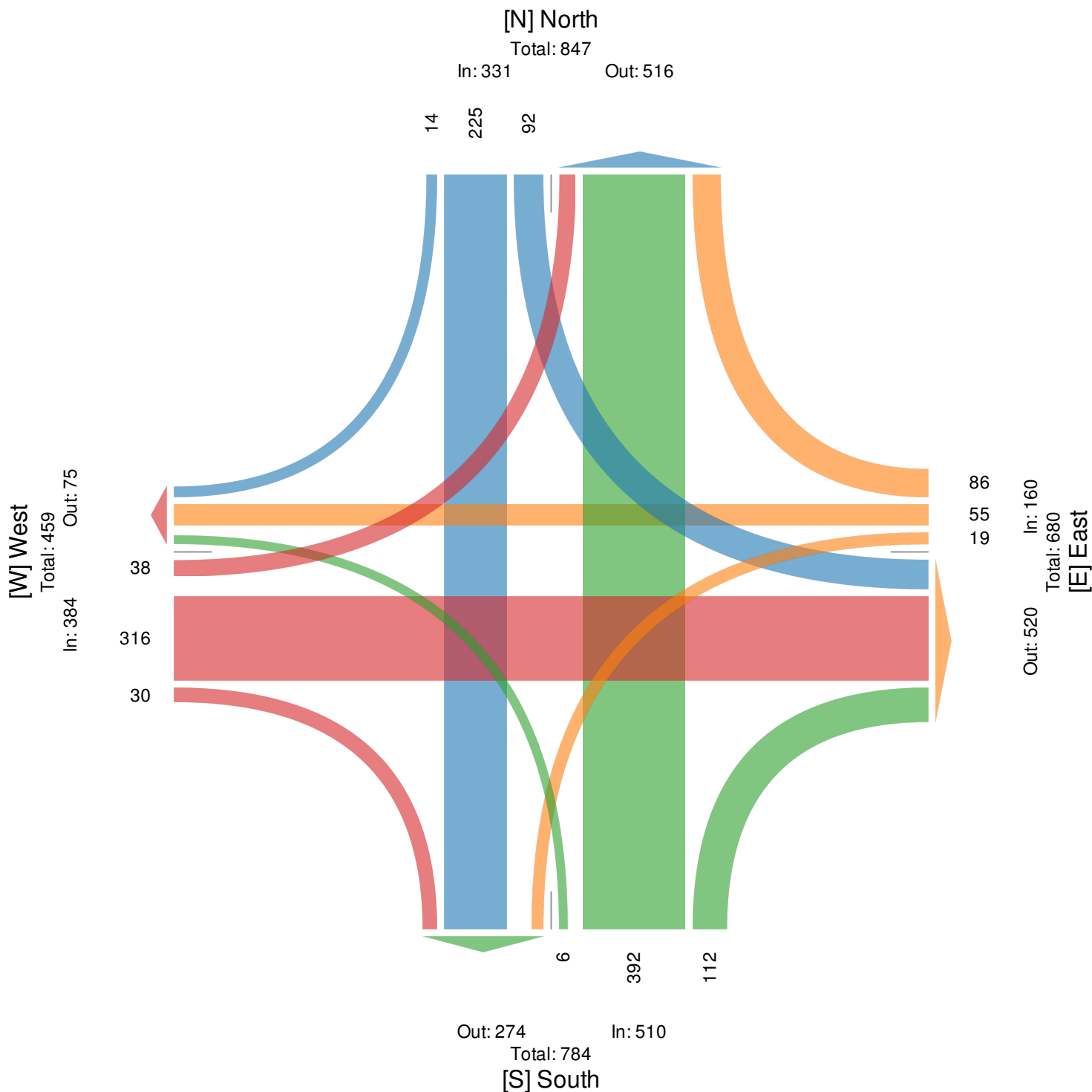
AM Peak (7AM - 8AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516263, Location: 39.740751, -86.399552

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



AVON AVENUE & CR 150 - TMC

Tue Apr 24, 2018

PM Peak (5PM - 6PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516263, Location: 39.740751, -86.399552

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
2018-04-24 5:00PM	5	95	15	0	115	30	117	13	0	160	8	32	5	0	45	5	29	15	0	49	369
5:15PM	7	125	9	0	141	18	118	14	0	150	5	20	5	0	30	8	25	14	0	47	368
5:30PM	7	123	8	0	138	16	98	22	0	136	10	36	5	0	51	4	41	27	0	72	397
5:45PM	9	98	12	0	119	22	91	21	0	134	14	25	11	0	50	10	28	27	0	65	368
Total	28	441	44	0	513	86	424	70	0	580	37	113	26	0	176	27	123	83	0	233	1502
% Approach	5.5%	86.0%	8.6%	0%	-	14.8%	73.1%	12.1%	0%	-	21.0%	64.2%	14.8%	0%	-	11.6%	52.8%	35.6%	0%	-	-
% Total	1.9%	29.4%	2.9%	0%	34.2%	5.7%	28.2%	4.7%	0%	38.6%	2.5%	7.5%	1.7%	0%	11.7%	1.8%	8.2%	5.5%	0%	15.5%	-
PHF	0.778	0.882	0.733	-	0.910	0.717	0.898	0.795	-	0.906	0.661	0.785	0.591	-	0.863	0.675	0.750	0.769	-	0.809	0.946
Lights and Motorcycles	28	437	44	0	509	86	420	69	0	575	37	113	26	0	176	27	123	83	0	233	1493
% Lights and Motorcycles	100%	99.1%	100%	0%	99.2%	100%	99.1%	98.6%	0%	99.1%	100%	100%	100%	0%	100%	100%	100%	100%	0%	100%	99.4%
Heavy	0	4	0	0	4	0	4	1	0	5	0	0	0	0	0	0	0	0	0	0	9
% Heavy	0%	0.9%	0%	0%	0.8%	0%	0.9%	1.4%	0%	0.9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.6%

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

AVON AVENUE & CR 150 - TMC

Tue Apr 24, 2018

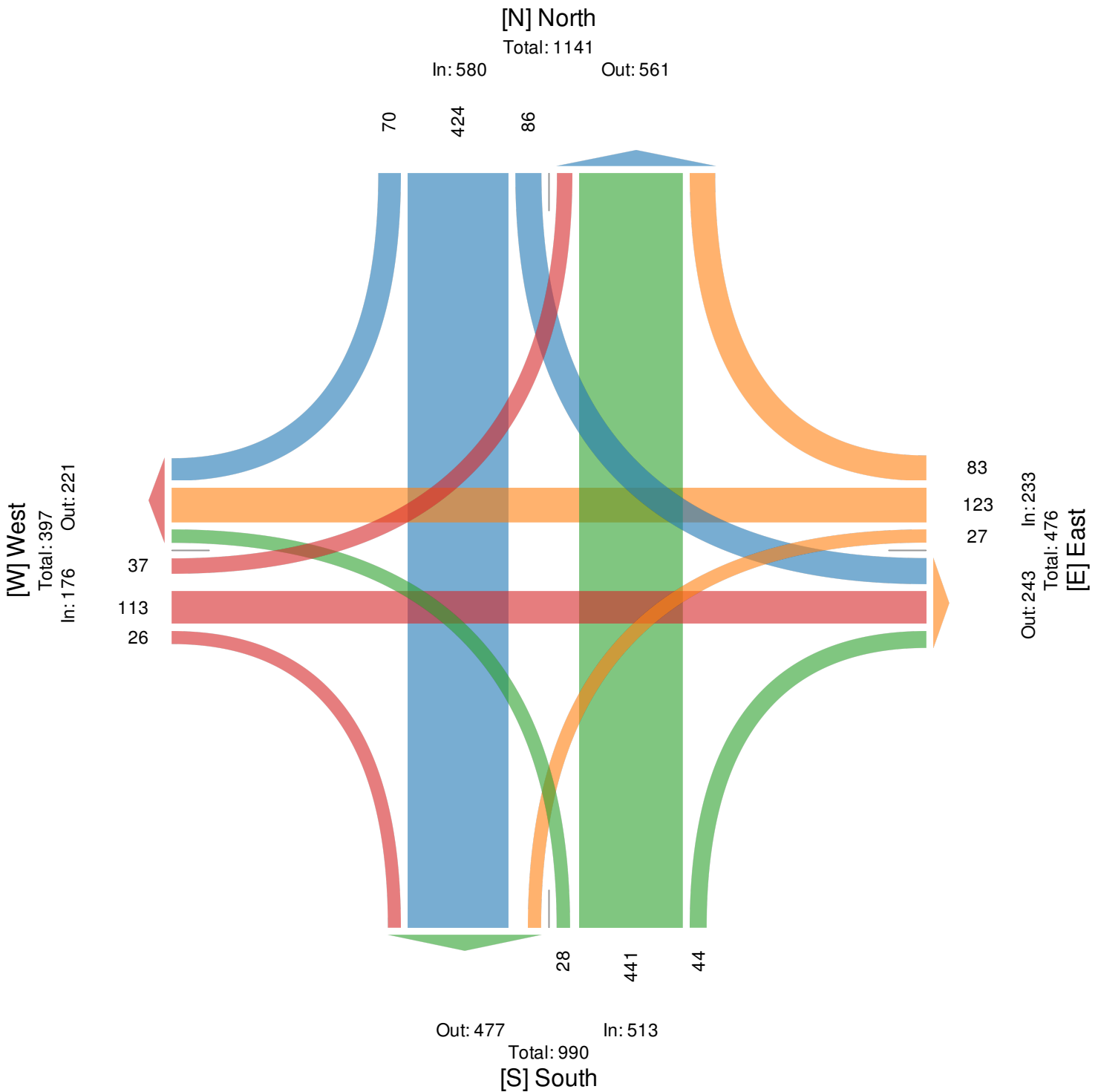
PM Peak (5PM - 6PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516263, Location: 39.740751, -86.399552

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



HCM 6th Signalized Intersection Summary
1: Avon Ave & CR 150 S

Existing AM Peak
05/02/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	316	30	19	55	86	6	392	112	92	225	14
Future Volume (veh/h)	38	316	30	19	55	86	6	392	112	92	225	14
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	1856	1856	1856	1737	1737	1737	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	44	363	34	22	63	99	7	451	129	106	259	16
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	11	11	11	3	3	3	3	3	3
Cap, veh/h	132	496	44	129	205	270	95	588	166	241	507	28
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	100	1541	137	83	637	839	6	1384	391	294	1193	65
Grp Volume(v), veh/h	441	0	0	184	0	0	587	0	0	381	0	0
Grp Sat Flow(s),veh/h/ln	1778	0	0	1559	0	0	1781	0	0	1552	0	0
Q Serve(g_s), s	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.7	0.0	0.0	3.5	0.0	0.0	11.1	0.0	0.0	6.3	0.0	0.0
Prop In Lane	0.10		0.08	0.12		0.54	0.01		0.22	0.28		0.04
Lane Grp Cap(c), veh/h	673	0	0	604	0	0	849	0	0	776	0	0
V/C Ratio(X)	0.66	0.00	0.00	0.30	0.00	0.00	0.69	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	1036	0	0	906	0	0	1395	0	0	1199	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.0	0.0	0.0	10.3	0.0	0.0	9.7	0.0	0.0	8.3	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.3	0.0	0.0	1.0	0.0	0.0	0.5	0.0	0.0
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	2.9	0.0	0.0	1.0	0.0	0.0	3.2	0.0	0.0	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	0.0	0.0	10.6	0.0	0.0	10.8	0.0	0.0	8.8	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h		441			184			587			381	
Approach Delay, s/veh		13.1			10.6			10.8			8.8	
Approach LOS		B			B			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		21.8		17.7		21.8		17.7				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		29.0		21.0		29.0		21.0				
Max Q Clear Time (g_c+I1), s		13.1		10.7		8.3		5.5				
Green Ext Time (p_c), s		3.7		2.0		2.7		0.9				
Intersection Summary												
HCM 6th Ctrl Delay				10.9								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary

1: Avon Ave & CR 150 S

Existing PM Peak

05/02/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	113	26	27	123	83	28	441	44	86	424	70
Future Volume (veh/h)	37	113	26	27	123	83	28	441	44	86	424	70
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	1900	1900	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	39	119	27	28	129	87	29	464	46	91	446	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	182	275	56	146	214	132	135	780	75	203	645	100
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	235	1280	259	114	999	617	41	1615	155	161	1337	206
Grp Volume(v), veh/h	185	0	0	244	0	0	539	0	0	611	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	0	1731	0	0	1811	0	0	1704	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0
Cycle Q Clear(g_c), s	2.9	0.0	0.0	4.2	0.0	0.0	7.0	0.0	0.0	8.8	0.0	0.0
Prop In Lane	0.21		0.15	0.11		0.36	0.05		0.09	0.15		0.12
Lane Grp Cap(c), veh/h	513	0	0	493	0	0	989	0	0	948	0	0
V/C Ratio(X)	0.36	0.00	0.00	0.50	0.00	0.00	0.54	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	1031	0	0	1026	0	0	2397	0	0	2225	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.3	0.0	0.0	11.8	0.0	0.0	6.2	0.0	0.0	6.6	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.8	0.0	0.0	0.5	0.0	0.0	0.7	0.0	0.0
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	0.9	0.0	0.0	1.3	0.0	0.0	1.5	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	0.0	0.0	12.6	0.0	0.0	6.7	0.0	0.0	7.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h	185			244			539			611		
Approach Delay, s/veh	11.8			12.6			6.7			7.4		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	21.0			12.1			21.0			12.1		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	42.5			17.5			42.5			17.5		
Max Q Clear Time (g_c+I1), s	9.0			4.9			10.8			6.2		
Green Ext Time (p_c), s	4.1			0.8			5.2			1.0		
Intersection Summary												
HCM 6th Ctrl Delay	8.5											
HCM 6th LOS	A											

Intersection				
Intersection Delay, s/veh	13.5			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	446	217	587	396
Demand Flow Rate, veh/h	459	235	604	414
Vehicles Circulating, veh/h	422	516	552	110
Vehicles Exiting, veh/h	102	640	329	641
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.9	8.1	22.4	6.3
Approach LOS	B	A	C	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	459	235	604	414
Cap Entry Lane, veh/h	897	815	786	1233
Entry HV Adj Factor	0.972	0.925	0.973	0.957
Flow Entry, veh/h	446	217	587	396
Cap Entry, veh/h	872	754	764	1180
V/C Ratio	0.512	0.288	0.769	0.336
Control Delay, s/veh	10.9	8.1	22.4	6.3
LOS	B	A	C	A
95th %tile Queue, veh	3	1	7	1

Intersection				
Intersection Delay, s/veh	9.6			
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	193	272	539	640
Demand Flow Rate, veh/h	193	272	544	645
Vehicles Circulating, veh/h	598	537	286	193
Vehicles Exiting, veh/h	240	293	505	616
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.7	8.5	10.0	10.2
Approach LOS	A	A	B	B
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	193	272	544	645
Cap Entry Lane, veh/h	750	798	1031	1133
Entry HV Adj Factor	1.000	1.000	0.991	0.992
Flow Entry, veh/h	193	272	539	640
Cap Entry, veh/h	750	798	1022	1124
V/C Ratio	0.257	0.341	0.528	0.569
Control Delay, s/veh	7.7	8.5	10.0	10.2
LOS	A	A	B	B
95th %tile Queue, veh	1	2	3	4

Intersection				
Intersection Delay, s/veh	28.3			
Intersection LOS	D			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	530	220	702	456
Demand Flow Rate, veh/h	545	235	721	475
Vehicles Circulating, veh/h	482	617	636	120
Vehicles Exiting, veh/h	113	740	391	732
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	15.2	9.3	58.0	7.0
Approach LOS	C	A	F	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	545	235	721	475
Cap Entry Lane, veh/h	844	735	721	1221
Entry HV Adj Factor	0.972	0.937	0.973	0.959
Flow Entry, veh/h	530	220	702	456
Cap Entry, veh/h	821	689	702	1171
V/C Ratio	0.646	0.320	1.000	0.389
Control Delay, s/veh	15.2	9.3	58.0	7.0
LOS	C	A	F	A
95th %tile Queue, veh	5	1	16	2

Intersection				
Intersection Delay, s/veh	12.3			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	222	295	649	732
Demand Flow Rate, veh/h	222	295	655	738
Vehicles Circulating, veh/h	683	645	297	226
Vehicles Exiting, veh/h	281	307	608	714
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.3	10.6	12.9	13.2
Approach LOS	A	B	B	B
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	222	295	655	738
Cap Entry Lane, veh/h	688	715	1019	1096
Entry HV Adj Factor	1.000	1.000	0.991	0.991
Flow Entry, veh/h	222	295	649	732
Cap Entry, veh/h	688	715	1011	1086
V/C Ratio	0.323	0.413	0.643	0.673
Control Delay, s/veh	9.3	10.6	12.9	13.2
LOS	A	B	B	B
95th %tile Queue, veh	1	2	5	6

Intersection				
Intersection Delay, s/veh	30.2			
Intersection LOS	D			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	534	254	702	471
Demand Flow Rate, veh/h	549	270	721	490
Vehicles Circulating, veh/h	497	617	655	126
Vehicles Exiting, veh/h	119	759	391	761
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	16.0	10.0	63.7	7.2
Approach LOS	C	B	F	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	549	270	721	490
Cap Entry Lane, veh/h	831	735	707	1213
Entry HV Adj Factor	0.972	0.939	0.973	0.961
Flow Entry, veh/h	534	254	702	471
Cap Entry, veh/h	808	691	689	1166
V/C Ratio	0.661	0.367	1.019	0.404
Control Delay, s/veh	16.0	10.0	63.7	7.2
LOS	C	B	F	A
95th %tile Queue, veh	5	2	17	2

Intersection				
Intersection Delay, s/veh	13.3			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	231	322	649	762
Demand Flow Rate, veh/h	231	322	655	768
Vehicles Circulating, veh/h	713	645	336	232
Vehicles Exiting, veh/h	287	346	608	735
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.0	11.4	14.2	14.4
Approach LOS	A	B	B	B
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	231	322	655	768
Cap Entry Lane, veh/h	667	715	980	1089
Entry HV Adj Factor	1.000	1.000	0.991	0.992
Flow Entry, veh/h	231	322	649	762
Cap Entry, veh/h	667	715	971	1080
V/C Ratio	0.346	0.451	0.669	0.705
Control Delay, s/veh	10.0	11.4	14.2	14.4
LOS	A	B	B	B
95th %tile Queue, veh	2	2	5	6

DAN JONES ROAD & CR 150 S

TRAFFIC VOLUME COUNTS CAPACITY ANALYSIS

DAN JONES RD & E CR 150 S - TMC

Tue Apr 24, 2018

Full Length (6AM-9AM, 4PM-7PM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516245, Location: 39.741021, -86.381131

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg Direction	South Northbound				North Southbound				West Eastbound				
Time	L	T	U	App	T	R	U	App	L	R	U	App	Int
2018-04-24 6:00AM	8	40	0	48	24	8	0	32	13	17	0	30	110
6:15AM	7	37	0	44	50	7	0	57	14	25	0	39	140
6:30AM	11	50	0	61	83	11	0	94	25	27	0	52	207
6:45AM	11	59	0	70	108	9	0	117	24	39	0	63	250
Hourly Total	37	186	0	223	265	35	0	300	76	108	0	184	707
7:00AM	16	72	0	88	92	40	0	132	29	32	0	61	281
7:15AM	23	94	0	117	122	67	0	189	26	36	0	62	368
7:30AM	26	103	0	129	134	164	0	298	57	52	0	109	536
7:45AM	24	92	0	116	185	111	0	296	105	70	0	175	587
Hourly Total	89	361	0	450	533	382	0	915	217	190	0	407	1772
8:00AM	13	95	0	108	115	18	0	133	52	37	0	89	330
8:15AM	13	116	0	129	125	10	0	135	26	17	0	43	307
8:30AM	15	125	0	140	84	12	0	96	15	21	0	36	272
8:45AM	16	114	0	130	114	10	0	124	30	13	0	43	297
Hourly Total	57	450	0	507	438	50	0	488	123	88	0	211	1206
9:00AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00PM	33	144	0	177	137	27	0	164	41	22	0	63	404
4:15PM	34	135	0	169	123	47	0	170	50	19	0	69	408
4:30PM	45	180	0	225	157	43	0	200	45	24	0	69	494
4:45PM	47	189	0	236	141	51	0	192	28	25	0	53	481
Hourly Total	159	648	0	807	558	168	0	726	164	90	0	254	1787
5:00PM	53	174	0	227	162	40	0	202	41	20	0	61	490
5:15PM	55	194	0	249	178	53	0	231	34	20	0	54	534
5:30PM	55	187	0	242	115	44	0	159	33	15	0	48	449
5:45PM	53	164	0	217	128	64	0	192	46	18	0	64	473
Hourly Total	216	719	0	935	583	201	0	784	154	73	0	227	1946
6:00PM	35	120	0	155	122	41	0	163	39	21	0	60	378
6:15PM	33	132	0	165	114	31	0	145	38	25	0	63	373
6:30PM	29	97	0	126	75	33	0	108	23	9	0	32	266
6:45PM	17	100	0	117	89	41	0	130	26	11	0	37	284
Hourly Total	114	449	0	563	400	146	0	546	126	66	0	192	1301
7:00PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	672	2813	0	3485	2777	982	0	3759	860	615	0	1475	8719
% Approach	19.3%	80.7%	0%	-	73.9%	26.1%	0%	-	58.3%	41.7%	0%	-	-
% Total	7.7%	32.3%	0%	40.0%	31.8%	11.3%	0%	43.1%	9.9%	7.1%	0%	16.9%	-
Lights and Motorcycles	651	2752	0	3403	2739	950	0	3689	830	597	0	1427	8519
% Lights and Motorcycles	96.9%	97.8%	0%	97.6%	98.6%	96.7%	0%	98.1%	96.5%	97.1%	0%	96.7%	97.7%
Heavy	21	61	0	82	38	32	0	70	30	18	0	48	200
% Heavy	3.1%	2.2%	0%	2.4%	1.4%	3.3%	0%	1.9%	3.5%	2.9%	0%	3.3%	2.3%

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

DAN JONES RD & E CR 150 S - TMC

Tue Apr 24, 2018

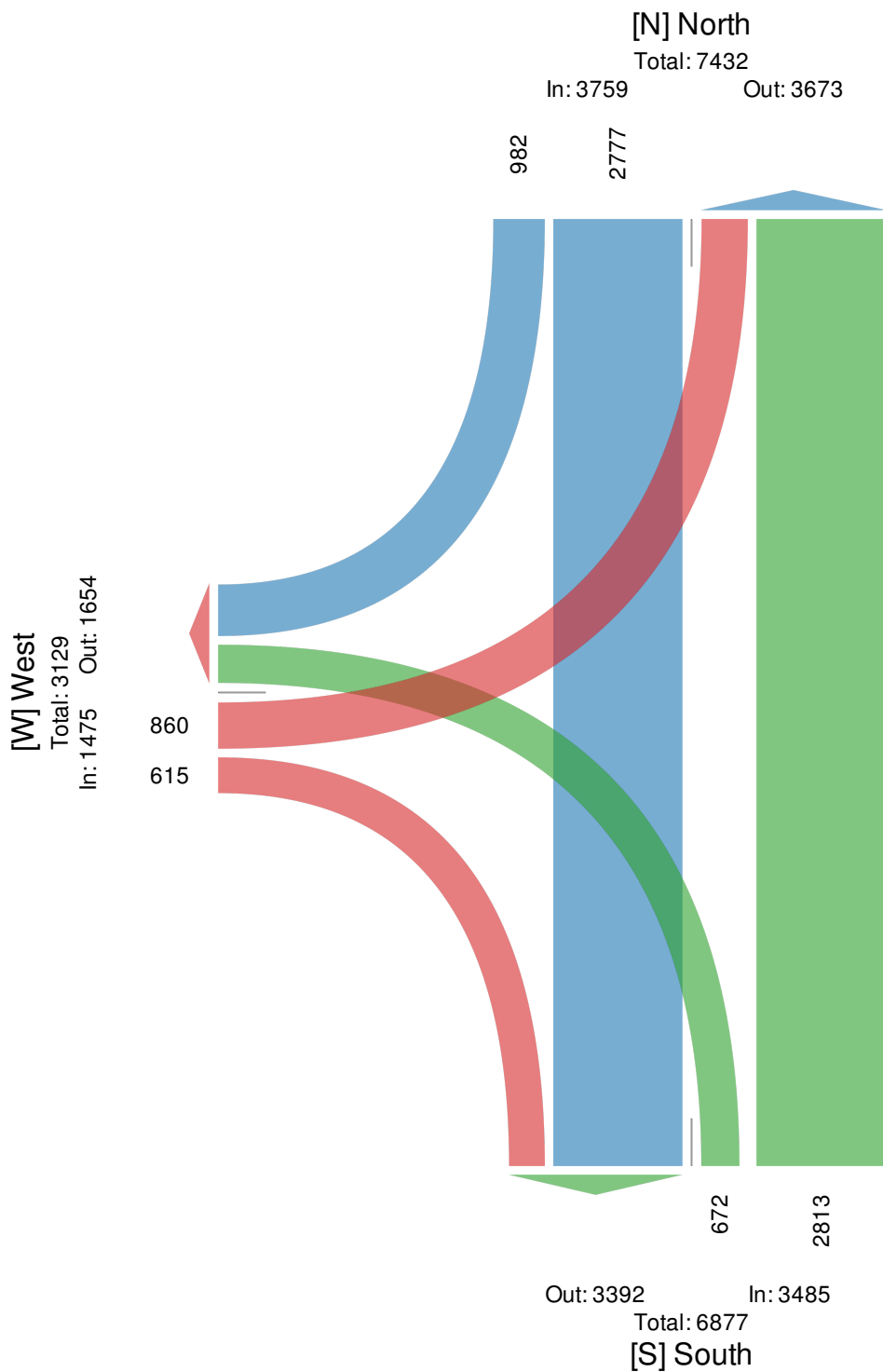
Full Length (6AM-9AM, 4PM-7PM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516245, Location: 39.741021, -86.381131

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



DAN JONES RD & E CR 150 S - TMC

Tue Apr 24, 2018

AM Peak (7:15AM - 8:15AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516245, Location: 39.741021, -86.381131

Provided by: A&F Engineering

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

Leg Direction	South Northbound				North Southbound				West Eastbound				
Time	L	T	U	App	T	R	U	App	L	R	U	App	Int
2018-04-24 7:15AM	23	94	0	117	122	67	0	189	26	36	0	62	368
7:30AM	26	103	0	129	134	164	0	298	57	52	0	109	536
7:45AM	24	92	0	116	185	111	0	296	105	70	0	175	587
8:00AM	13	95	0	108	115	18	0	133	52	37	0	89	330
Total	86	384	0	470	556	360	0	916	240	195	0	435	1821
% Approach	18.3%	81.7%	0%	-	60.7%	39.3%	0%	-	55.2%	44.8%	0%	-	-
% Total	4.7%	21.1%	0%	25.8%	30.5%	19.8%	0%	50.3%	13.2%	10.7%	0%	23.9%	-
PHF	0.827	0.932	-	0.911	0.751	0.549	-	0.768	0.571	0.696	-	0.621	0.776
Lights and Motorcycles	74	379	0	453	550	335	0	885	220	183	0	403	1741
% Lights and Motorcycles	86.0%	98.7%	0%	96.4%	98.9%	93.1%	0%	96.6%	91.7%	93.8%	0%	92.6%	95.6%
Heavy	12	5	0	17	6	25	0	31	20	12	0	32	80
% Heavy	14.0%	1.3%	0%	3.6%	1.1%	6.9%	0%	3.4%	8.3%	6.2%	0%	7.4%	4.4%

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

DAN JONES RD & E CR 150 S - TMC

Tue Apr 24, 2018

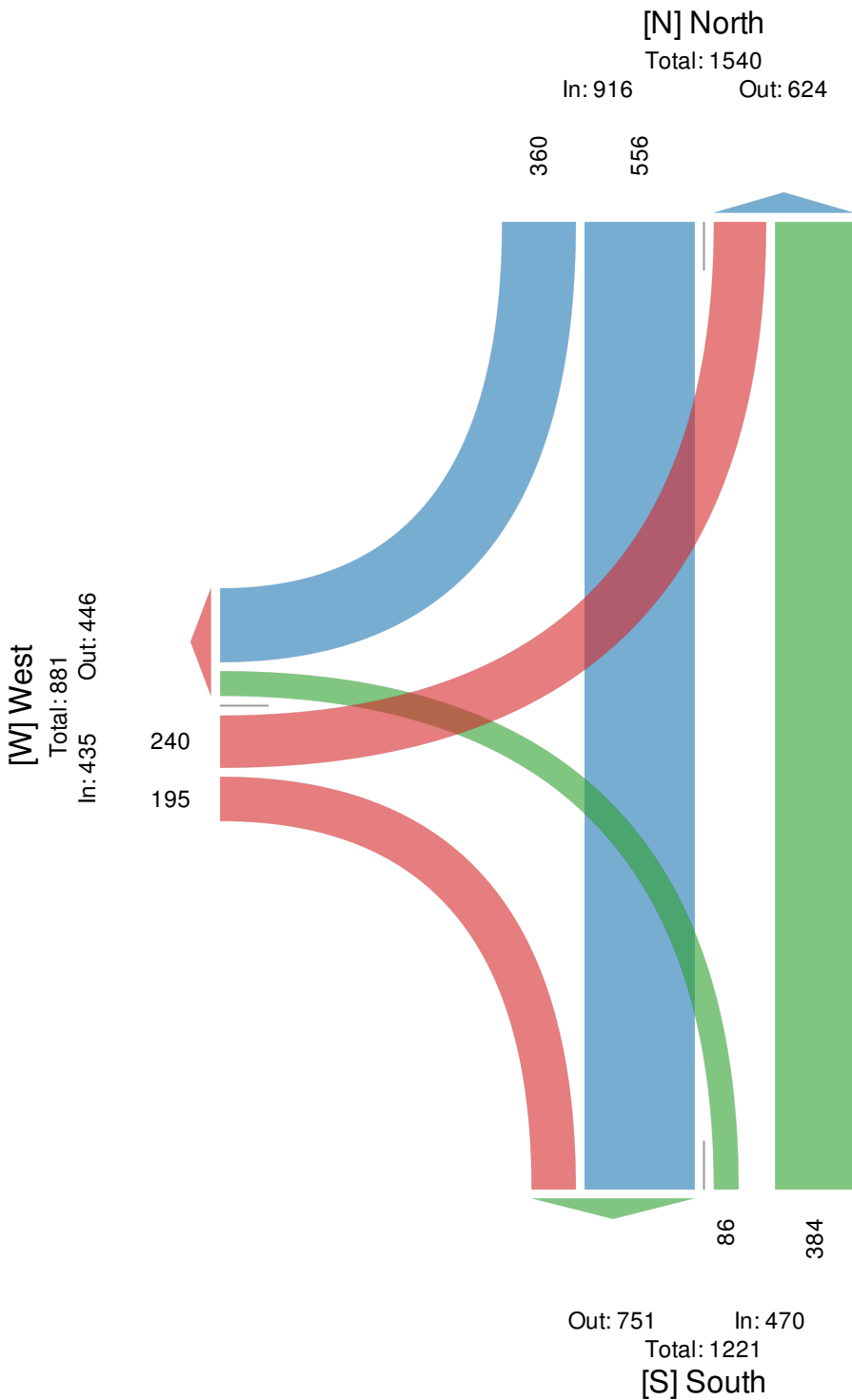
AM Peak (7:15AM - 8:15AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516245, Location: 39.741021, -86.381131

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



DAN JONES RD & E CR 150 S - TMC

Tue Apr 24, 2018

PM Peak (4:30PM - 5:30PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516245, Location: 39.741021, -86.381131

Provided by: A&F Engineering

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

Leg Direction	South Northbound				North Southbound				West Eastbound				
Time	L	T	U	App	T	R	U	App	L	R	U	App	Int
2018-04-24 4:30PM	45	180	0	225	157	43	0	200	45	24	0	69	494
4:45PM	47	189	0	236	141	51	0	192	28	25	0	53	481
5:00PM	53	174	0	227	162	40	0	202	41	20	0	61	490
5:15PM	55	194	0	249	178	53	0	231	34	20	0	54	534
Total	200	737	0	937	638	187	0	825	148	89	0	237	1999
% Approach	21.3%	78.7%	0%	-	77.3%	22.7%	0%	-	62.4%	37.6%	0%	-	-
% Total	10.0%	36.9%	0%	46.9%	31.9%	9.4%	0%	41.3%	7.4%	4.5%	0%	11.9%	-
PHF	0.909	0.950	-	0.941	0.896	0.882	-	0.893	0.822	0.890	-	0.859	0.936
Lights and Motorcycles	199	729	0	928	633	187	0	820	146	88	0	234	1982
% Lights and Motorcycles	99.5%	98.9%	0%	99.0%	99.2%	100%	0%	99.4%	98.6%	98.9%	0%	98.7%	99.1%
Heavy	1	8	0	9	5	0	0	5	2	1	0	3	17
% Heavy	0.5%	1.1%	0%	1.0%	0.8%	0%	0%	0.6%	1.4%	1.1%	0%	1.3%	0.9%

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

DAN JONES RD & E CR 150 S - TMC

Tue Apr 24, 2018

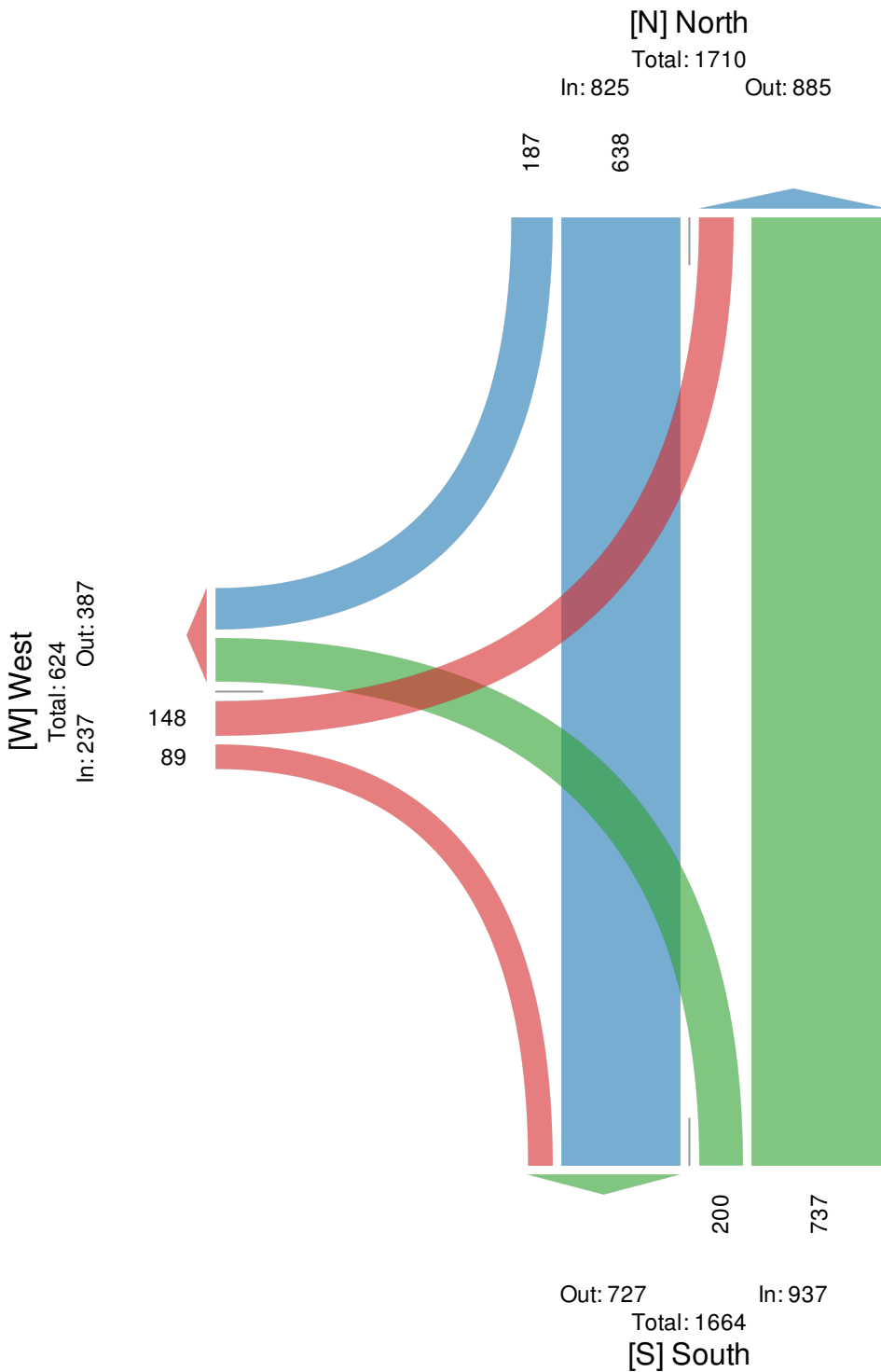
PM Peak (4:30PM - 5:30PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516245, Location: 39.741021, -86.381131

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



HCM 6th Signalized Intersection Summary

2: Dan Jones Rd & CR 150 S

Existing AM Peak
05/02/2018



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	240	195	86	384	556	360
Future Volume (veh/h)	240	195	86	384	556	360
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1781	1811	1693	1885	1885	1796
Adj Flow Rate, veh/h	308	250	110	492	713	462
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	8	6	14	1	1	7
Cap, veh/h	380	344	324	1147	835	674
Arrive On Green	0.22	0.22	0.10	0.61	0.44	0.44
Sat Flow, veh/h	1697	1535	1612	1885	1885	1522
Grp Volume(v), veh/h	308	250	110	492	713	462
Grp Sat Flow(s), veh/h/ln	1697	1535	1612	1885	1885	1522
Q Serve(g_s), s	10.3	9.0	1.9	8.3	20.2	14.5
Cycle Q Clear(g_c), s	10.3	9.0	1.9	8.3	20.2	14.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	380	344	324	1147	835	674
V/C Ratio(X)	0.81	0.73	0.34	0.43	0.85	0.68
Avail Cap(c_a), veh/h	526	476	355	1311	964	778
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	22.0	21.5	11.3	6.2	14.9	13.3
Incr Delay (d2), s/veh	6.6	3.5	0.6	0.3	6.8	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	7.7	0.5	2.5	8.9	12.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.5	24.9	11.9	6.4	21.6	15.4
LnGrp LOS	C	C	B	A	C	B
Approach Vol, veh/h	558			602	1175	
Approach Delay, s/veh	26.9			7.4	19.2	
Approach LOS	C			A	B	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	41.3			18.4	9.9	31.4
Change Period (Y+Rc), s	5.0			5.0	4.0	5.0
Max Green Setting (Gmax), s	41.5			18.5	7.0	30.5
Max Q Clear Time (g_c+I1), s	10.3			12.3	3.9	22.2
Green Ext Time (p_c), s	3.4			1.1	0.1	4.2
Intersection Summary						
HCM 6th Ctrl Delay			18.0			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

2: Dan Jones Rd & CR 150 S

Existing PM Peak
05/02/2018



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↱	↱	↰
Traffic Volume (veh/h)	148	89	200	737	638	187
Future Volume (veh/h)	148	89	200	737	638	187
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	157	95	213	784	679	199
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	0
Cap, veh/h	247	220	471	1244	838	716
Arrive On Green	0.14	0.14	0.13	0.66	0.44	0.44
Sat Flow, veh/h	1795	1598	1795	1885	1885	1610
Grp Volume(v), veh/h	157	95	213	784	679	199
Grp Sat Flow(s),veh/h/ln	1795	1598	1795	1885	1885	1610
Q Serve(g_s), s	4.1	2.7	2.5	11.9	15.4	3.9
Cycle Q Clear(g_c), s	4.1	2.7	2.5	11.9	15.4	3.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	247	220	471	1244	838	716
V/C Ratio(X)	0.64	0.43	0.45	0.63	0.81	0.28
Avail Cap(c_a), veh/h	673	599	485	1586	1166	996
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	20.1	19.5	8.6	4.9	11.9	8.7
Incr Delay (d2), s/veh	2.7	1.3	0.7	0.5	3.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.1	0.7	2.6	5.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.8	20.9	9.3	5.4	15.0	8.9
LnGrp LOS	C	C	A	A	B	A
Approach Vol, veh/h	252			997	878	
Approach Delay, s/veh	22.1			6.2	13.6	
Approach LOS	C			A	B	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	37.5			11.8	10.6	26.9
Change Period (Y+Rc), s	5.0			5.0	4.0	5.0
Max Green Setting (Gmax), s	41.5			18.5	7.0	30.5
Max Q Clear Time (g_c+I1), s	13.9			6.1	4.5	17.4
Green Ext Time (p_c), s	6.5			0.6	0.1	4.5
Intersection Summary						
HCM 6th Ctrl Delay			11.1			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

2: Dan Jones Rd & CR 150 S

Existing + Proposed AM Peak

05/03/2018



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	240	212	115	424	580	360
Future Volume (veh/h)	240	212	115	424	580	360
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1781	1811	1693	1885	1885	1796
Adj Flow Rate, veh/h	308	272	147	544	744	462
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	8	6	14	1	1	7
Cap, veh/h	377	341	321	1162	845	682
Arrive On Green	0.22	0.22	0.10	0.62	0.45	0.45
Sat Flow, veh/h	1697	1535	1612	1885	1885	1522
Grp Volume(v), veh/h	308	272	147	544	744	462
Grp Sat Flow(s), veh/h/ln	1697	1535	1612	1885	1885	1522
Q Serve(g_s), s	10.7	10.4	2.6	9.7	22.3	14.9
Cycle Q Clear(g_c), s	10.7	10.4	2.6	9.7	22.3	14.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	377	341	321	1162	845	682
V/C Ratio(X)	0.82	0.80	0.46	0.47	0.88	0.68
Avail Cap(c_a), veh/h	506	457	335	1260	926	748
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	22.9	22.8	12.4	6.4	15.6	13.6
Incr Delay (d2), s/veh	7.5	7.0	1.0	0.3	9.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	9.0	0.9	3.0	10.3	12.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.5	29.8	13.4	6.7	24.9	15.7
LnGrp LOS	C	C	B	A	C	B
Approach Vol, veh/h	580			691	1206	
Approach Delay, s/veh	30.2			8.1	21.4	
Approach LOS	C			A	C	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	43.3			18.8	10.4	32.8
Change Period (Y+Rc), s	5.0			5.0	4.0	5.0
Max Green Setting (Gmax), s	41.5			18.5	7.0	30.5
Max Q Clear Time (g_c+I1), s	11.7			12.7	4.6	24.3
Green Ext Time (p_c), s	3.9			1.1	0.1	3.5
Intersection Summary						
HCM 6th Ctrl Delay			19.7			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

2: Dan Jones Rd & CR 150 S

Existing + Proposed PM Peak

05/03/2018



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	148	125	226	775	693	187
Future Volume (veh/h)	148	125	226	775	693	187
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	157	133	240	824	737	199
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	0
Cap, veh/h	239	213	448	1271	879	750
Arrive On Green	0.13	0.13	0.13	0.67	0.47	0.47
Sat Flow, veh/h	1795	1598	1795	1885	1885	1610
Grp Volume(v), veh/h	157	133	240	824	737	199
Grp Sat Flow(s), veh/h/ln	1795	1598	1795	1885	1885	1610
Q Serve(g_s), s	4.3	4.1	2.9	13.1	17.8	3.9
Cycle Q Clear(g_c), s	4.3	4.1	2.9	13.1	17.8	3.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	239	213	448	1271	879	750
V/C Ratio(X)	0.66	0.63	0.54	0.65	0.84	0.27
Avail Cap(c_a), veh/h	641	570	456	1509	1109	948
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	21.3	21.2	9.6	4.9	12.1	8.4
Incr Delay (d2), s/veh	3.1	3.0	1.2	0.7	4.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.2	1.2	2.9	7.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.4	24.2	10.8	5.6	16.9	8.6
LnGrp LOS	C	C	B	A	B	A
Approach Vol, veh/h	290			1064	936	
Approach Delay, s/veh	24.3			6.8	15.1	
Approach LOS	C			A	B	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	39.9			11.9	10.8	29.2
Change Period (Y+Rc), s	5.0			5.0	4.0	5.0
Max Green Setting (Gmax), s	41.5			18.5	7.0	30.5
Max Q Clear Time (g_c+I1), s	15.1			6.3	4.9	19.8
Green Ext Time (p_c), s	6.9			0.7	0.1	4.4
Intersection Summary						
HCM 6th Ctrl Delay			12.4			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

2: Dan Jones Rd & CR 150 S

Year 2028 Background AM Peak

05/02/2018



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	288	234	103	461	667	432
Future Volume (veh/h)	288	234	103	461	667	432
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1826	1722	1885	1885	1811
Adj Flow Rate, veh/h	369	300	132	591	855	554
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	6	5	12	1	1	6
Cap, veh/h	415	372	255	1203	960	782
Arrive On Green	0.24	0.24	0.08	0.64	0.51	0.51
Sat Flow, veh/h	1725	1547	1640	1885	1885	1535
Grp Volume(v), veh/h	369	300	132	591	855	554
Grp Sat Flow(s), veh/h/ln	1725	1547	1640	1885	1885	1535
Q Serve(g_s), s	17.1	15.1	2.8	13.6	33.6	22.9
Cycle Q Clear(g_c), s	17.1	15.1	2.8	13.6	33.6	22.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	415	372	255	1203	960	782
V/C Ratio(X)	0.89	0.81	0.52	0.49	0.89	0.71
Avail Cap(c_a), veh/h	460	413	262	1325	1074	874
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	30.3	29.5	17.3	7.9	18.2	15.6
Incr Delay (d2), s/veh	17.8	10.3	1.7	0.3	8.8	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	1.1	1.4	4.8	15.5	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.1	39.8	18.9	8.2	27.0	17.9
LnGrp LOS	D	D	B	A	C	B
Approach Vol, veh/h	669			723	1409	
Approach Delay, s/veh	44.4			10.1	23.4	
Approach LOS	D			B	C	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	57.7			24.8	10.7	47.0
Change Period (Y+Rc), s	5.0			5.0	4.0	5.0
Max Green Setting (Gmax), s	58.0			22.0	7.0	47.0
Max Q Clear Time (g_c+l1), s	15.6			19.1	4.8	35.6
Green Ext Time (p_c), s	4.6			0.8	0.1	6.4
Intersection Summary						
HCM 6th Ctrl Delay			25.0			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

2: Dan Jones Rd & CR 150 S

Year 2028 Background PM Peak

05/02/2018



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	178	107	240	884	766	224
Future Volume (veh/h)	178	107	240	884	766	224
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	189	114	255	940	815	238
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	0
Cap, veh/h	259	230	398	1302	962	822
Arrive On Green	0.14	0.14	0.11	0.69	0.51	0.51
Sat Flow, veh/h	1795	1598	1795	1885	1885	1610
Grp Volume(v), veh/h	189	114	255	940	815	238
Grp Sat Flow(s), veh/h/ln	1795	1598	1795	1885	1885	1610
Q Serve(g_s), s	6.1	4.0	3.4	18.6	22.6	5.1
Cycle Q Clear(g_c), s	6.1	4.0	3.4	18.6	22.6	5.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	259	230	398	1302	962	822
V/C Ratio(X)	0.73	0.50	0.64	0.72	0.85	0.29
Avail Cap(c_a), veh/h	549	489	401	1605	1263	1078
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	24.8	23.9	11.9	5.8	12.8	8.5
Incr Delay (d2), s/veh	3.9	1.6	3.4	1.2	4.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	3.7	2.0	4.8	8.8	6.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.7	25.5	15.2	7.0	17.1	8.7
LnGrp LOS	C	C	B	A	B	A
Approach Vol, veh/h	303			1195	1053	
Approach Delay, s/veh	27.5			8.8	15.2	
Approach LOS	C			A	B	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	46.8			13.7	10.9	35.9
Change Period (Y+Rc), s	5.0			5.0	4.0	5.0
Max Green Setting (Gmax), s	51.5			18.5	7.0	40.5
Max Q Clear Time (g_c+I1), s	20.6			8.1	5.4	24.6
Green Ext Time (p_c), s	9.0			0.7	0.1	6.3
Intersection Summary						
HCM 6th Ctrl Delay			13.7			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

2: Dan Jones Rd & CR 150 S

Year 2028 + Proposed AM Peak

05/03/2018



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	288	251	132	501	691	432
Future Volume (veh/h)	288	251	132	501	691	432
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1826	1722	1885	1885	1811
Adj Flow Rate, veh/h	369	322	169	642	886	554
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	6	5	12	1	1	6
Cap, veh/h	407	365	248	1219	978	796
Arrive On Green	0.24	0.24	0.08	0.65	0.52	0.52
Sat Flow, veh/h	1725	1547	1640	1885	1885	1535
Grp Volume(v), veh/h	369	322	169	642	886	554
Grp Sat Flow(s), veh/h/ln	1725	1547	1640	1885	1885	1535
Q Serve(g_s), s	17.7	17.1	3.7	15.5	36.3	23.1
Cycle Q Clear(g_c), s	17.7	17.1	3.7	15.5	36.3	23.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	407	365	248	1219	978	796
V/C Ratio(X)	0.91	0.88	0.68	0.53	0.91	0.70
Avail Cap(c_a), veh/h	425	381	251	1306	1062	865
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	31.6	31.4	18.5	8.1	18.6	15.4
Incr Delay (d2), s/veh	22.2	20.1	7.2	0.4	10.5	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	15.5	2.2	5.5	17.0	19.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	53.8	51.5	25.7	8.4	29.1	17.6
LnGrp LOS	D	D	C	A	C	B
Approach Vol, veh/h	691			811	1440	
Approach Delay, s/veh	52.7			12.0	24.7	
Approach LOS	D			B	C	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	60.1			25.1	10.9	49.2
Change Period (Y+Rc), s	5.0			5.0	4.0	5.0
Max Green Setting (Gmax), s	59.0			21.0	7.0	48.0
Max Q Clear Time (g_c+I1), s	17.5			19.7	5.7	38.3
Green Ext Time (p_c), s	5.1			0.4	0.1	5.9
Intersection Summary						
HCM 6th Ctrl Delay			27.8			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

2: Dan Jones Rd & CR 150 S

Year 2028 + Proposed PM Peak

05/03/2018



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	178	143	266	922	821	224
Future Volume (veh/h)	178	143	266	922	821	224
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	189	152	283	981	873	238
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	0
Cap, veh/h	256	227	372	1333	1021	872
Arrive On Green	0.14	0.14	0.10	0.71	0.54	0.54
Sat Flow, veh/h	1795	1598	1795	1885	1885	1610
Grp Volume(v), veh/h	189	152	283	981	873	238
Grp Sat Flow(s), veh/h/ln	1795	1598	1795	1885	1885	1610
Q Serve(g_s), s	6.7	6.0	4.0	21.1	26.2	5.3
Cycle Q Clear(g_c), s	6.7	6.0	4.0	21.1	26.2	5.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	256	227	372	1333	1021	872
V/C Ratio(X)	0.74	0.67	0.76	0.74	0.85	0.27
Avail Cap(c_a), veh/h	501	445	427	1747	1378	1177
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	27.3	27.0	13.7	5.9	13.0	8.2
Incr Delay (d2), s/veh	4.2	3.4	6.8	1.2	4.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	5.4	2.9	5.6	10.2	6.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.4	30.3	20.5	7.1	17.1	8.3
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	341			1264	1111	
Approach Delay, s/veh	31.0			10.1	15.2	
Approach LOS	C			B	B	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	51.9			14.4	11.0	40.9
Change Period (Y+Rc), s	5.0			5.0	4.0	5.0
Max Green Setting (Gmax), s	61.5			18.5	9.0	48.5
Max Q Clear Time (g_c+I1), s	23.1			8.7	6.0	28.2
Green Ext Time (p_c), s	10.4			0.8	0.3	7.7
Intersection Summary						
HCM 6th Ctrl Delay			14.8			
HCM 6th LOS			B			

DAN JONES ROAD & CR 200 S

TRAFFIC VOLUME COUNTS CAPACITY ANALYSIS

A & F ENGINEERING CO., LLC
TRAFFIC VOLUME SUMMARY

CLIENT :
INTERSECTION :
DATE :
COUNTED BY :

Platinum Properties
Dan Jones Rd & CR 200 S
4/27/2018
DQ

TOTAL VEHICLES (PASSENGER CARS + TRUCKS)												
AM PEAK HOUR VOLUMES BEGINS 7:15 AM					OFF PEAK HOUR VOLUMES BEGINS				PM PEAK HOUR VOLUMES BEGINS 4:30 PM			
L	T	R	TOTAL		L	T	R	TOTAL	L	T	R	TOTAL
NORTHBOUND		302	60	362						677	93	770
SOUTHBOUND	227	441		668					168	554		722
WESTBOUND	42		224	266					109		304	413

PEAK HOUR FACTOR							
AM PEAK HOUR FACTOR				OFF PEAK HOUR FACTOR		PM PEAK HOUR FACTOR	
APPROACH	INTERSECTION			APPROACH	INTERSECTION	APPROACH	INTERSECTION
NORTHBOUND	0.81					0.94	
SOUTHBOUND	0.79	0.89				0.95	0.95
WESTBOUND	0.67					0.85	

TRUCK PERCENTAGE												
AM PEAK HOUR PERCENTAGE					OFF PEAK HOUR PERCENTAGE				PM PEAK HOUR PERCENTAGE			
L	T	R	TOTAL		L	T	R	TOTAL	L	T	R	TOTAL
NORTHBOUND		1.3%	1.8%	1.4%						0.6%	1.0%	0.6%
SOUTHBOUND	5.7%	1.1%		2.7%					1.8%	0.4%		0.7%
WESTBOUND	0.0%		4.9%	4.1%					0.0%		0.7%	0.5%

HOURLY SUMMARY									
HOUR			NB	SB	NB+SB	EB	WB	EB+WB	TOTAL
6:00 AM	TO	7:00 AM	203	382	585		95	95	680
7:00 AM	TO	8:00 AM	360	644	1004		273	273	1277
8:00 AM	TO	9:00 AM	361	526	887		191	191	1078
4:00 PM	TO	5:00 PM	724	654	1378		323	323	1701
5:00 PM	TO	6:00 PM	725	657	1382		417	417	1799
6:00 PM	TO	7:00 PM	472	477	949		230	230	1179
TOTAL VOLUME			2845	3340	6185		1529	1529	7714
PERCENTAGE			36.9%	43.3%	80.2%		19.8%	19.8%	100.0%

Intersection						
Intersection Delay, s/veh 5.2						
Intersection LOS A						
Approach	WB		NB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	299		406		751	
Demand Flow Rate, veh/h	312		410		771	
Vehicles Circulating, veh/h	342		270		47	
Vehicles Exiting, veh/h	338		548		607	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	5.1		5.0		5.4	
Approach LOS	A		A		A	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	LTR	R	LT	TR	LT	TR
Assumed Moves	LTR	R	LT	TR	LT	TR
RT Channelized						
Lane Util	0.471	0.529	0.471	0.529	0.470	0.530
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	147	165	193	217	362	409
Cap Entry Lane, veh/h	985	1062	1053	1129	1293	1364
Entry HV Adj Factor	0.956	0.960	0.988	0.991	0.975	0.973
Flow Entry, veh/h	141	158	191	215	353	398
Cap Entry, veh/h	942	1020	1040	1118	1261	1328
V/C Ratio	0.149	0.155	0.183	0.192	0.280	0.300
Control Delay, s/veh	5.2	5.0	5.2	4.9	5.4	5.4
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	1	1

Intersection						
Intersection Delay, s/veh	6.6					
Intersection LOS	A					
Approach	WB		NB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	435		811		760	
Demand Flow Rate, veh/h	438		819		764	
Vehicles Circulating, veh/h	720		181		115	
Vehicles Exiting, veh/h	280		698		1043	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	8.5		6.4		5.7	
Approach LOS	A		A		A	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	LTR	R	LT	TR	LT	TR
Assumed Moves	LTR	R	LT	TR	LT	TR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	206	232	385	434	359	405
Cap Entry Lane, veh/h	696	770	1143	1218	1214	1288
Entry HV Adj Factor	0.992	0.994	0.990	0.990	0.995	0.995
Flow Entry, veh/h	204	231	381	430	357	403
Cap Entry, veh/h	691	765	1131	1206	1208	1281
V/C Ratio	0.296	0.301	0.337	0.356	0.296	0.314
Control Delay, s/veh	8.9	8.2	6.5	6.4	5.7	5.7
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	2	2	1	1

Intersection							
Intersection Delay, s/veh 5.7							
Intersection LOS A							
Approach	EB	WB		NB		SB	
Entry Lanes	1	2		2		2	
Conflicting Circle Lanes	2	2		2		2	
Adj Approach Flow, veh/h	64	310		446		796	
Demand Flow Rate, veh/h	65	323		451		816	
Vehicles Circulating, veh/h	856	423		327		60	
Vehicles Exiting, veh/h	20	355		594		686	
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	6.2		5.6		5.6	
Approach LOS	A	A		A		A	
Lane	Left	Left	Right	Left	Right	Left	Right
Designated Moves	LTR	LT	R	LT	TR	LT	TR
Assumed Moves	LTR	LT	R	LT	TR	LT	TR
RT Channelized							
Lane Util	1.000	0.180	0.820	0.470	0.530	0.471	0.529
Follow-Up Headway, s	2.535	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	65	58	265	212	239	384	432
Cap Entry Lane, veh/h	686	915	991	999	1075	1277	1349
Entry HV Adj Factor	0.982	0.999	0.951	0.989	0.990	0.974	0.976
Flow Entry, veh/h	64	58	252	210	237	374	422
Cap Entry, veh/h	674	914	943	989	1064	1244	1317
V/C Ratio	0.095	0.063	0.267	0.212	0.222	0.301	0.320
Control Delay, s/veh	6.4	4.5	6.5	5.7	5.5	5.6	5.6
LOS	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	1	1	1	1	1

Intersection							
Intersection Delay, s/veh 7.5							
Intersection LOS A							
Approach	EB	WB		NB		SB	
Entry Lanes	1	2		2		2	
Conflicting Circle Lanes	2	2		2		2	
Adj Approach Flow, veh/h	40	455		867		857	
Demand Flow Rate, veh/h	41	458		876		862	
Vehicles Circulating, veh/h	935	799		217		144	
Vehicles Exiting, veh/h	71	294		759		1113	
Ped Vol Crossing Leg, #/h	0	0		0		0	
Ped Cap Adj	1.000	1.000		1.000		1.000	
Approach Delay, s/veh	6.5	10.4		7.1		6.3	
Approach LOS	A	B		A		A	
Lane	Left	Left	Right	Left	Right	Left	Right
Designated Moves	LTR	LT	R	LT	TR	LT	TR
Assumed Moves	LTR	LT	R	LT	TR	LT	TR
RT Channelized							
Lane Util	1.000	0.295	0.705	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.535	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	41	135	323	412	464	405	457
Cap Entry Lane, veh/h	641	647	720	1106	1181	1182	1256
Entry HV Adj Factor	0.973	0.999	0.991	0.990	0.991	0.995	0.994
Flow Entry, veh/h	40	135	320	408	460	403	454
Cap Entry, veh/h	624	646	713	1094	1170	1176	1249
V/C Ratio	0.064	0.209	0.449	0.373	0.393	0.343	0.364
Control Delay, s/veh	6.5	8.1	11.3	7.1	7.0	6.4	6.3
LOS	A	A	B	A	A	A	A
95th %tile Queue, veh	0	1	2	2	2	2	2

Intersection						
Intersection Delay, s/veh 5.9						
Intersection LOS A						
Approach	WB		NB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	358		488		900	
Demand Flow Rate, veh/h	373		494		924	
Vehicles Circulating, veh/h	411		324		56	
Vehicles Exiting, veh/h	407		656		728	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	5.8		5.8		6.1	
Approach LOS	A		A		A	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	LTR	R	LT	TR	LT	TR
Assumed Moves	LTR	R	LT	TR	LT	TR
RT Channelized						
Lane Util	0.469	0.531	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	175	198	232	262	434	490
Cap Entry Lane, veh/h	925	1001	1002	1078	1282	1354
Entry HV Adj Factor	0.961	0.958	0.988	0.987	0.975	0.974
Flow Entry, veh/h	168	190	229	259	423	477
Cap Entry, veh/h	889	960	990	1064	1250	1318
V/C Ratio	0.189	0.198	0.232	0.243	0.339	0.362
Control Delay, s/veh	5.9	5.7	5.9	5.7	6.0	6.1
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	2	2

Intersection						
Intersection Delay, s/veh 8.1						
Intersection LOS A						
Approach	WB		NB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	522		973		913	
Demand Flow Rate, veh/h	526		983		917	
Vehicles Circulating, veh/h	864		217		138	
Vehicles Exiting, veh/h	336		838		1252	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	11.5		7.7		6.6	
Approach LOS	B		A		A	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	LTR	R	LT	TR	LT	TR
Assumed Moves	LTR	R	LT	TR	LT	TR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	247	279	462	521	431	486
Cap Entry Lane, veh/h	610	681	1106	1181	1189	1263
Entry HV Adj Factor	0.993	0.992	0.990	0.990	0.996	0.996
Flow Entry, veh/h	245	277	458	516	429	484
Cap Entry, veh/h	606	676	1095	1169	1184	1257
V/C Ratio	0.405	0.410	0.418	0.441	0.363	0.385
Control Delay, s/veh	12.0	11.0	7.7	7.7	6.6	6.6
LOS	B	B	A	A	A	A
95th %tile Queue, veh	2	2	2	2	2	2

Intersection							
Intersection Delay, s/veh 6.6							
Intersection LOS A							
Approach	EB	WB		NB		SB	
Entry Lanes	1	2		2		2	
Conflicting Circle Lanes	2	2		2		2	
Adj Approach Flow, veh/h	64	369		527		946	
Demand Flow Rate, veh/h	64	384		533		970	
Vehicles Circulating, veh/h	1019	489		380		69	
Vehicles Exiting, veh/h	20	424		703		804	
Ped Vol Crossing Leg, #/h	0	0		0		0	
Ped Cap Adj	1.000	1.000		1.000		1.000	
Approach Delay, s/veh	7.3	7.3		6.4		6.4	
Approach LOS	A	A		A		A	
Lane	Left	Left	Right	Left	Right	Left	Right
Designated Moves	LTR	LT	R	LT	TR	LT	TR
Assumed Moves	LTR	LT	R	LT	TR	LT	TR
RT Channelized							
Lane Util	1.000	0.174	0.826	0.471	0.529	0.470	0.530
Follow-Up Headway, s	2.535	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	64	67	317	251	282	456	514
Cap Entry Lane, veh/h	597	861	937	952	1028	1267	1339
Entry HV Adj Factor	1.000	0.999	0.953	0.986	0.990	0.975	0.975
Flow Entry, veh/h	64	67	302	248	279	445	501
Cap Entry, veh/h	597	860	893	938	1018	1235	1306
V/C Ratio	0.107	0.078	0.338	0.264	0.274	0.360	0.384
Control Delay, s/veh	7.3	4.9	7.8	6.5	6.2	6.3	6.4
LOS	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	2	1	1	2	2

Intersection							
Intersection Delay, s/veh 9.4							
Intersection LOS A							
Approach	EB	WB		NB		SB	
Entry Lanes	1	2		2		2	
Conflicting Circle Lanes	2	2		2		2	
Adj Approach Flow, veh/h	40	542		1029		1010	
Demand Flow Rate, veh/h	41	546		1039		1015	
Vehicles Circulating, veh/h	1111	942		253		167	
Vehicles Exiting, veh/h	71	350		899		1321	
Ped Vol Crossing Leg, #/h	0	0		0		0	
Ped Cap Adj	1.000	1.000		1.000		1.000	
Approach Delay, s/veh	7.6	15.2		8.5		7.4	
Approach LOS	A	C		A		A	
Lane	Left	Left	Right	Left	Right	Left	Right
Designated Moves	LTR	LT	R	LT	TR	LT	TR
Assumed Moves	LTR	LT	R	LT	TR	LT	TR
RT Channelized							
Lane Util	1.000	0.289	0.711	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.535	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	41	158	388	488	551	477	538
Cap Entry Lane, veh/h	552	567	638	1070	1145	1158	1232
Entry HV Adj Factor	0.973	0.999	0.990	0.991	0.990	0.995	0.995
Flow Entry, veh/h	40	158	384	484	545	475	535
Cap Entry, veh/h	537	567	631	1060	1134	1152	1226
V/C Ratio	0.074	0.278	0.609	0.456	0.481	0.412	0.437
Control Delay, s/veh	7.6	10.2	17.2	8.5	8.5	7.4	7.4
LOS	A	B	C	A	A	A	A
95th %tile Queue, veh	0	1	4	2	3	2	2

DAN JONES ROAD & TOWNSHIP LINE ROAD

TRAFFIC VOLUME COUNTS CAPACITY ANALYSIS

DAN JONES RD & TOWNSHIP LINE RD - TMC

Tue Apr 24, 2018

Full Length (6AM-9AM, 4PM-7PM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516249, Location: 39.719031, -86.380783

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
2018-04-24																					
6:00AM	1	31	3	0	35	1	24	2	0	27	1	25	13	0	39	2	3	4	0	9	110
6:15AM	4	42	2	0	48	5	45	4	0	54	3	38	17	0	58	2	5	3	0	10	170
6:30AM	2	48	1	0	51	10	62	5	0	77	16	35	25	0	76	5	8	7	0	20	224
6:45AM	2	51	7	0	60	14	86	11	0	111	11	41	28	0	80	7	10	9	0	26	277
Hourly Total	9	172	13	0	194	30	217	22	0	269	31	139	83	0	253	16	26	23	0	65	781
7:00AM	5	54	3	0	62	12	60	6	0	78	10	57	33	0	100	10	15	12	0	37	277
7:15AM	8	63	7	0	78	17	99	3	0	119	8	53	43	0	104	17	13	6	0	36	337
7:30AM	16	84	6	0	106	15	81	10	0	106	21	54	49	0	124	10	11	11	0	32	368
7:45AM	18	70	7	0	95	16	110	6	0	132	16	57	47	0	120	11	10	6	0	27	374
Hourly Total	47	271	23	0	341	60	350	25	0	435	55	221	172	0	448	48	49	35	0	132	1356
8:00AM	12	63	6	0	81	18	101	5	0	124	14	52	34	0	100	11	11	5	0	27	332
8:15AM	13	80	5	0	98	16	98	14	0	128	7	45	37	0	89	9	13	11	0	33	348
8:30AM	14	81	7	0	102	10	75	8	0	93	13	26	36	0	75	9	17	9	0	35	305
8:45AM	23	91	5	0	119	13	60	13	0	86	14	37	36	0	87	2	17	8	0	27	319
Hourly Total	62	315	23	0	400	57	334	40	0	431	48	160	143	0	351	31	58	33	0	122	1304
4:00PM	39	126	26	0	191	18	92	20	0	130	27	28	28	0	83	14	61	19	0	94	498
4:15PM	43	115	15	0	173	19	89	19	0	127	17	41	30	0	88	7	47	28	0	82	470
4:30PM	39	142	7	0	188	20	124	20	0	164	30	51	19	0	100	13	65	28	0	106	558
4:45PM	40	152	19	0	211	17	116	29	0	162	19	40	31	0	90	14	64	26	0	104	567
Hourly Total	161	535	67	0	763	74	421	88	0	583	93	160	108	0	361	48	237	101	0	386	2093
5:00PM	50	118	17	0	185	19	98	24	0	141	31	44	31	0	106	19	78	27	0	124	556
5:15PM	57	162	19	0	238	24	143	22	0	189	16	35	38	0	89	15	71	24	0	110	626
5:30PM	62	145	21	0	228	14	95	18	0	127	20	33	31	0	84	14	64	27	0	105	544
5:45PM	49	109	18	0	176	12	104	18	0	134	14	27	39	0	80	15	75	24	0	114	504
Hourly Total	218	534	75	0	827	69	440	82	0	591	81	139	139	0	359	63	288	102	0	453	2230
6:00PM	36	106	22	0	164	30	84	12	0	126	16	39	18	0	73	16	58	21	0	95	458
6:15PM	45	101	13	0	159	14	97	9	0	120	13	29	23	0	65	13	50	17	0	80	424
6:30PM	40	77	26	0	143	5	67	11	0	83	9	23	14	0	46	10	48	17	0	75	347
6:45PM	17	86	13	0	116	10	76	14	0	100	10	17	17	0	44	4	39	14	0	57	317
Hourly Total	138	370	74	0	582	59	324	46	0	429	48	108	72	0	228	43	195	69	0	307	1546
7:00PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	635	2197	275	0	3107	349	2086	303	0	2738	356	927	717	0	2000	249	853	363	0	1465	9310
% Approach	20.4%	70.7%	8.9%	0%	-	12.7%	76.2%	11.1%	0%	-	17.8%	46.4%	35.9%	0%	-	17.0%	58.2%	24.8%	0%	-	-
% Total	6.8%	23.6%	3.0%	0%	33.4%	3.7%	22.4%	3.3%	0%	29.4%	3.8%	10.0%	7.7%	0%	21.5%	2.7%	9.2%	3.9%	0%	15.7%	-
Lights and Motorcycles	629	2174	272	0	3075	348	2062	297	0	2707	350	919	710	0	1979	248	846	356	0	1450	9211
% Lights and Motorcycles	99.1%	99.0%	98.9%	0%	99.0%	99.7%	98.8%	98.0%	0%	98.9%	98.3%	99.1%	99.0%	0%	99.0%	99.6%	99.2%	98.1%	0%	99.0%	98.9%
Heavy	6	23	3	0	32	1	24	6	0	31	6	8	7	0	21	1	7	7	0	15	99
% Heavy	0.9%	1.0%	1.1%	0%	1.0%	0.3%	1.2%	2.0%	0%	1.1%	1.7%	0.9%	1.0%	0%	1.1%	0.4%	0.8%	1.9%	0%	1.0%	1.1%

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

DAN JONES RD & TOWNSHIP LINE RD - TMC

Tue Apr 24, 2018

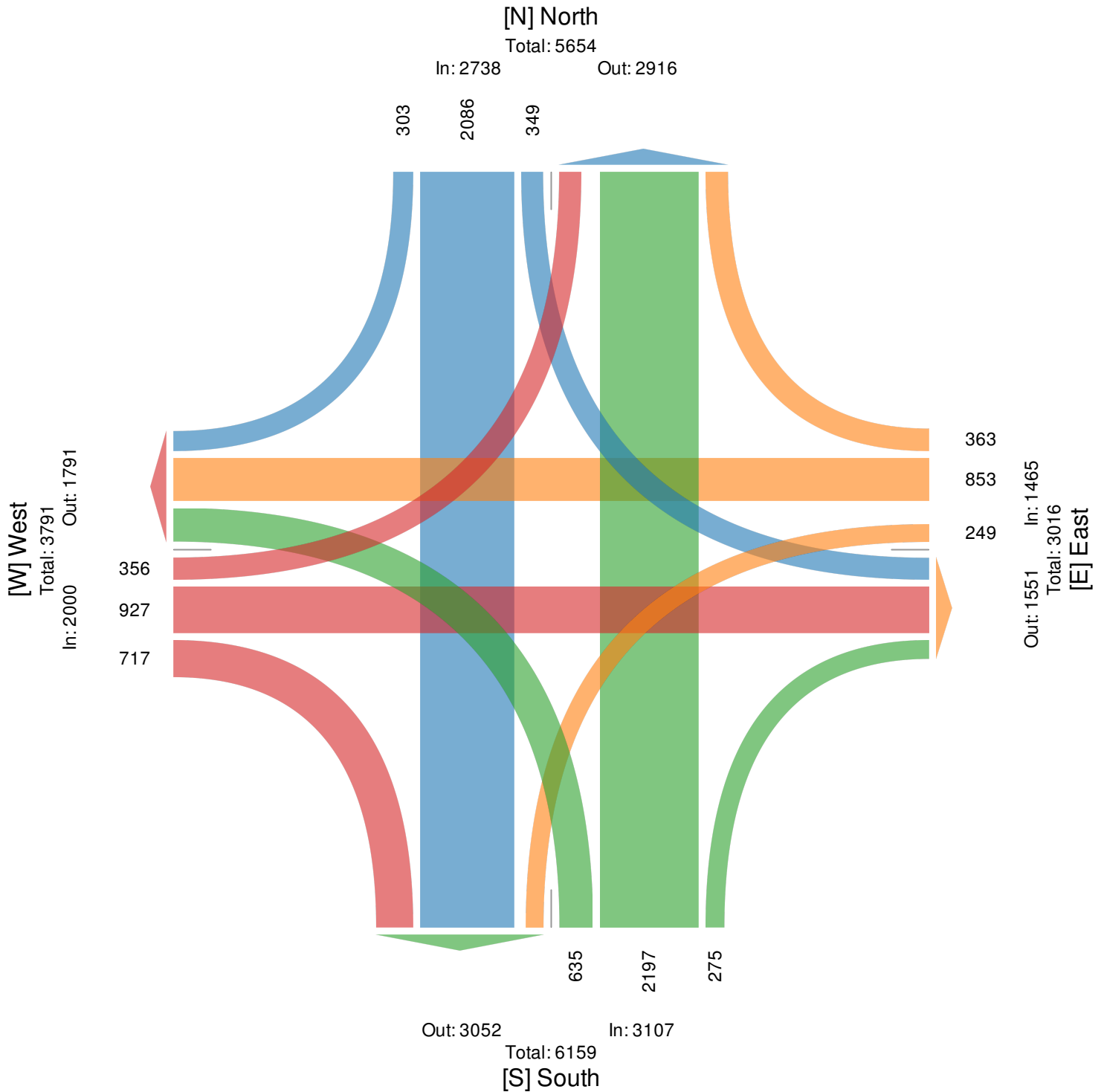
Full Length (6AM-9AM, 4PM-7PM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516249, Location: 39.719031, -86.380783

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



DAN JONES RD & TOWNSHIP LINE RD - TMC

Tue Apr 24, 2018

AM Peak (7:30AM - 8:30AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516249, Location: 39.719031, -86.380783

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
2018-04-24 7:30AM	16	84	6	0	106	15	81	10	0	106	21	54	49	0	124	10	11	11	0	32	368
7:45AM	18	70	7	0	95	16	110	6	0	132	16	57	47	0	120	11	10	6	0	27	374
8:00AM	12	63	6	0	81	18	101	5	0	124	14	52	34	0	100	11	11	5	0	27	332
8:15AM	13	80	5	0	98	16	98	14	0	128	7	45	37	0	89	9	13	11	0	33	348
Total	59	297	24	0	380	65	390	35	0	490	58	208	167	0	433	41	45	33	0	119	1422
% Approach	15.5%	78.2%	6.3%	0%	-	13.3%	79.6%	7.1%	0%	-	13.4%	48.0%	38.6%	0%	-	34.5%	37.8%	27.7%	0%	-	-
% Total	4.1%	20.9%	1.7%	0%	26.7%	4.6%	27.4%	2.5%	0%	34.5%	4.1%	14.6%	11.7%	0%	30.5%	2.9%	3.2%	2.3%	0%	8.4%	-
PHF	0.819	0.884	0.857	-	0.896	0.903	0.886	0.625	-	0.928	0.690	0.912	0.852	-	0.873	0.932	0.865	0.750	-	0.902	0.951
Lights and Motorcycles	56	290	23	0	369	64	381	32	0	477	56	208	166	0	430	41	45	31	0	117	1393
% Lights and Motorcycles	94.9%	97.6%	95.8%	0%	97.1%	98.5%	97.7%	91.4%	0%	97.3%	96.6%	100%	99.4%	0%	99.3%	100%	100%	93.9%	0%	98.3%	98.0%
Heavy	3	7	1	0	11	1	9	3	0	13	2	0	1	0	3	0	0	2	0	2	29
% Heavy	5.1%	2.4%	4.2%	0%	2.9%	1.5%	2.3%	8.6%	0%	2.7%	3.4%	0%	0.6%	0%	0.7%	0%	0%	6.1%	0%	1.7%	2.0%

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

DAN JONES RD & TOWNSHIP LINE RD - TMC

Tue Apr 24, 2018

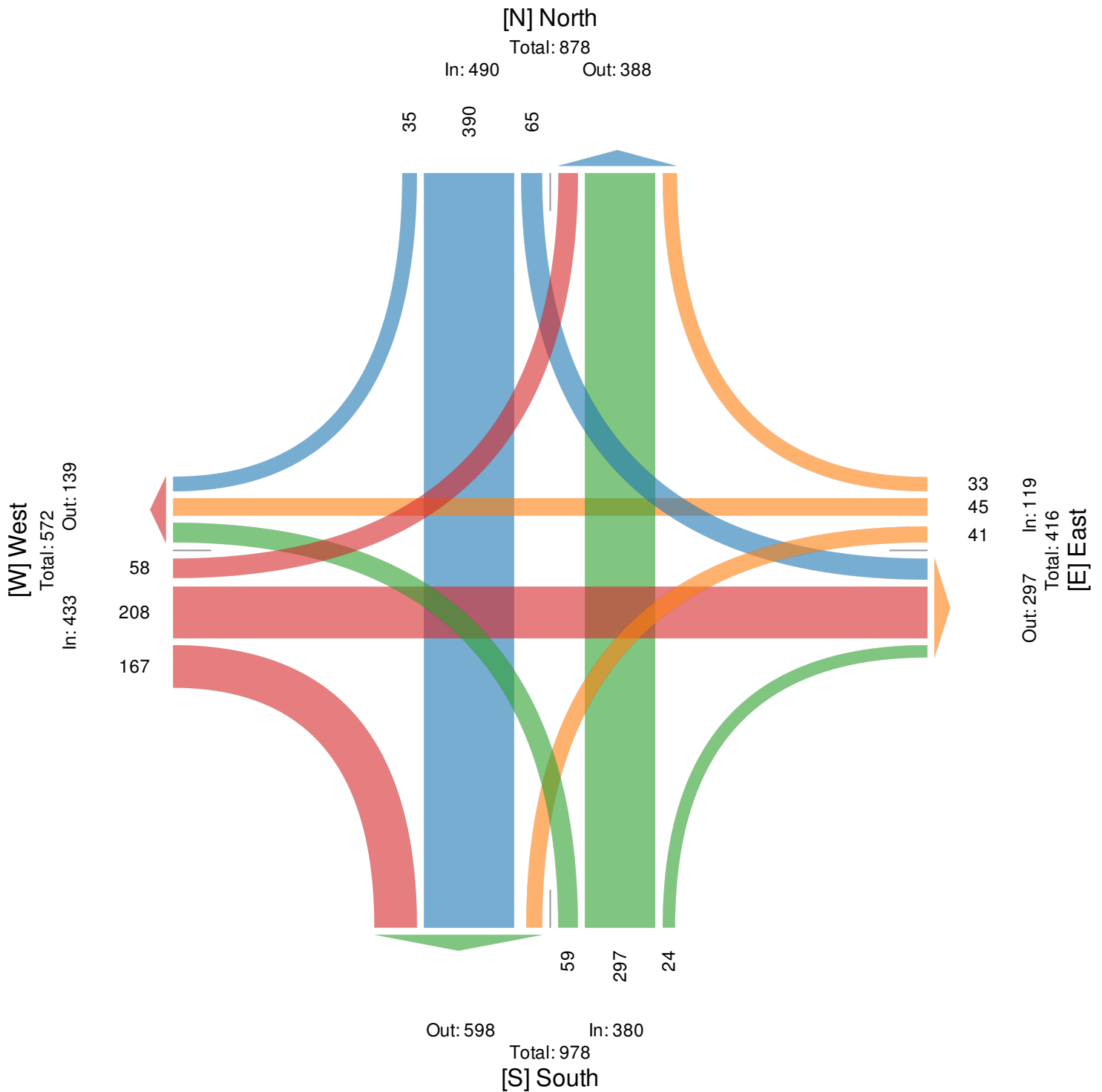
AM Peak (7:30AM - 8:30AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516249, Location: 39.719031, -86.380783

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



DAN JONES RD & TOWNSHIP LINE RD - TMC

Tue Apr 24, 2018

PM Peak (4:30PM - 5:30PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516249, Location: 39.719031, -86.380783

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
2018-04-24																					
4:30PM	39	142	7	0	188	20	124	20	0	164	30	51	19	0	100	13	65	28	0	106	558
4:45PM	40	152	19	0	211	17	116	29	0	162	19	40	31	0	90	14	64	26	0	104	567
5:00PM	50	118	17	0	185	19	98	24	0	141	31	44	31	0	106	19	78	27	0	124	556
5:15PM	57	162	19	0	238	24	143	22	0	189	16	35	38	0	89	15	71	24	0	110	626
Total	186	574	62	0	822	80	481	95	0	656	96	170	119	0	385	61	278	105	0	444	2307
% Approach	22.6%	69.8%	7.5%	0%	-	12.2%	73.3%	14.5%	0%	-	24.9%	44.2%	30.9%	0%	-	13.7%	62.6%	23.6%	0%	-	-
% Total	8.1%	24.9%	2.7%	0%	35.6%	3.5%	20.8%	4.1%	0%	28.4%	4.2%	7.4%	5.2%	0%	16.7%	2.6%	12.1%	4.6%	0%	19.2%	-
PHF	0.816	0.886	0.816	-	0.863	0.833	0.841	0.819	-	0.868	0.774	0.833	0.783	-	0.908	0.803	0.891	0.938	-	0.895	0.921
Lights and Motorcycles	185	570	62	0	817	80	480	95	0	655	94	168	116	0	378	60	277	105	0	442	2292
% Lights and Motorcycles	99.5%	99.3%	100%	0%	99.4%	100%	99.8%	100%	0%	99.8%	97.9%	98.8%	97.5%	0%	98.2%	98.4%	99.6%	100%	0%	99.5%	99.3%
Heavy	1	4	0	0	5	0	1	0	0	1	2	2	3	0	7	1	1	0	0	2	15
% Heavy	0.5%	0.7%	0%	0%	0.6%	0%	0.2%	0%	0%	0.2%	2.1%	1.2%	2.5%	0%	1.8%	1.6%	0.4%	0%	0%	0.5%	0.7%

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

DAN JONES RD & TOWNSHIP LINE RD - TMC

Tue Apr 24, 2018

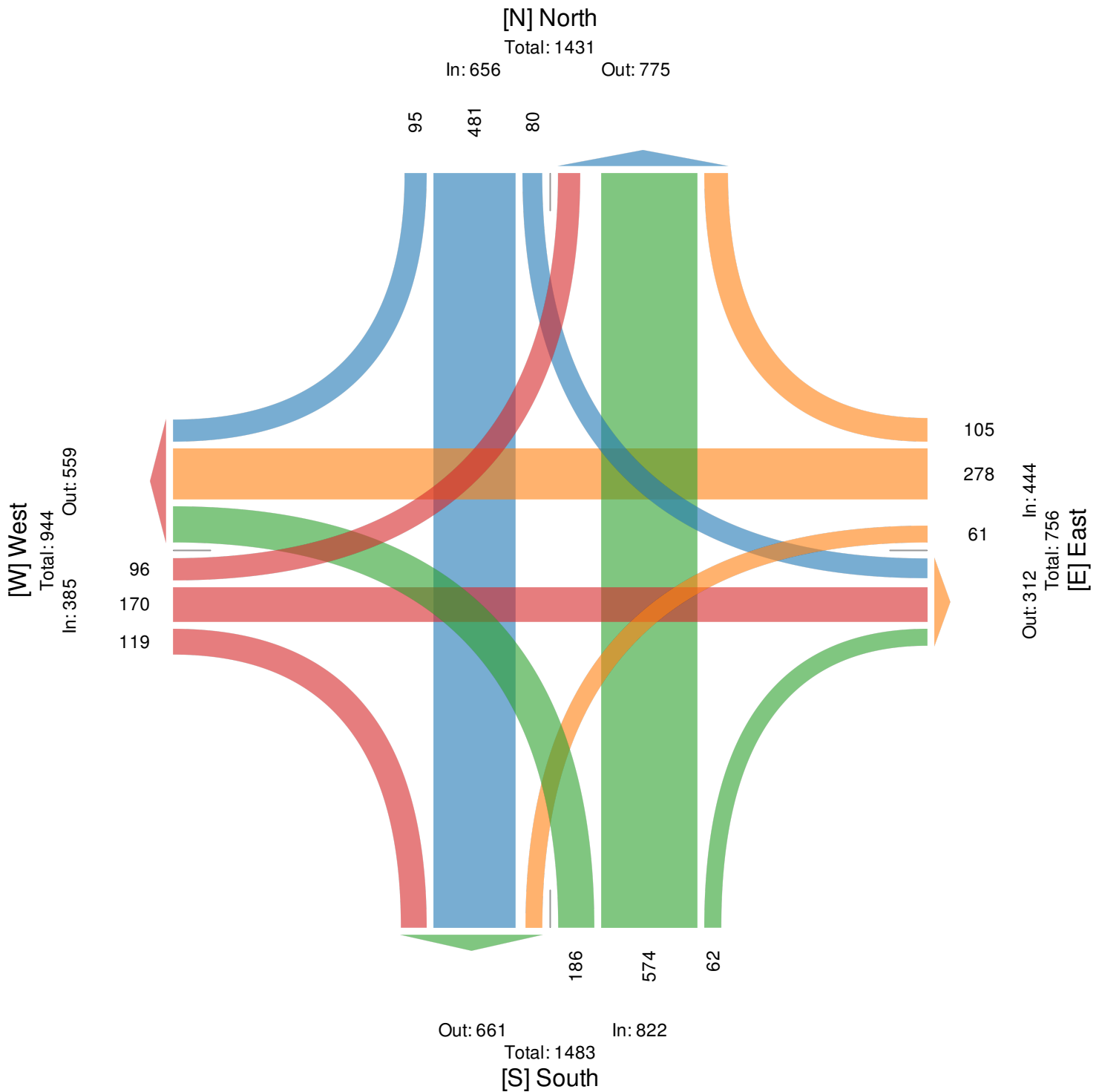
PM Peak (4:30PM - 5:30PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516249, Location: 39.719031, -86.380783

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



HCM 6th Signalized Intersection Summary 4: Township line Rd & Dan Jones Rd

Existing AM Peak
05/02/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	208	167	41	45	33	59	297	24	65	390	35
Future Volume (veh/h)	58	208	167	41	45	33	59	297	24	65	390	35
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	1856	1900	1885	1900	1900	1811	1826	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	219	176	43	47	35	62	313	25	68	411	37
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	1	0	0	6	5	2	2	2	2	2
Cap, veh/h	509	377	317	367	350	283	402	743	59	453	749	67
Arrive On Green	0.06	0.20	0.20	0.05	0.18	0.18	0.06	0.22	0.22	0.07	0.23	0.23
Sat Flow, veh/h	1767	1900	1598	1810	1900	1535	1739	3335	265	1781	3298	296
Grp Volume(v), veh/h	61	219	176	43	47	35	62	166	172	68	221	227
Grp Sat Flow(s),veh/h/ln	1767	1900	1598	1810	1900	1535	1739	1777	1823	1781	1777	1817
Q Serve(g_s), s	1.0	4.1	3.9	0.7	0.8	0.7	1.0	3.1	3.1	1.1	4.3	4.3
Cycle Q Clear(g_c), s	1.0	4.1	3.9	0.7	0.8	0.7	1.0	3.1	3.1	1.1	4.3	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.16
Lane Grp Cap(c), veh/h	509	377	317	367	350	283	402	396	406	453	403	413
V/C Ratio(X)	0.12	0.58	0.55	0.12	0.13	0.12	0.15	0.42	0.42	0.15	0.55	0.55
Avail Cap(c_a), veh/h	672	1126	947	560	1126	909	651	1236	1268	609	1144	1170
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	11.4	14.1	14.0	11.9	13.2	13.2	10.5	12.9	12.9	10.3	13.2	13.3
Incr Delay (d2), s/veh	0.1	1.4	1.5	0.1	0.2	0.2	0.2	0.7	0.7	0.2	1.2	1.2
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	0.3	1.6	1.3	0.2	0.3	0.2	0.3	1.1	1.1	0.4	1.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.5	15.5	15.5	12.0	13.4	13.4	10.7	13.6	13.6	10.5	14.4	14.4
LnGrp LOS	B	B	B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		456		125			400			516		
Approach Delay, s/veh		15.0		12.9			13.2			13.9		
Approach LOS		B		B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.6	13.7	5.9	12.7	6.4	13.8	6.4	12.2				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	6.0	27.0	6.0	23.0	8.0	25.0	6.0	23.0				
Max Q Clear Time (g_c+I), s	13.5	5.1	2.7	6.1	3.0	6.3	3.0	2.8				
Green Ext Time (p_c), s	0.0	1.9	0.0	1.7	0.0	2.5	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			13.9									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary

4: Township line Rd & Dan Jones Rd

Existing PM Peak

05/02/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	170	119	61	278	105	186	574	62	80	481	95
Future Volume (veh/h)	96	170	119	61	278	105	186	574	62	80	481	95
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	1870	1885	1856	1870	1900	1900	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	104	185	129	66	302	114	202	624	67	87	523	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	3	2	0	0	1	1	1	0	0	0
Cap, veh/h	335	439	366	399	414	351	420	983	105	363	766	150
Arrive On Green	0.07	0.23	0.23	0.06	0.22	0.22	0.11	0.30	0.30	0.07	0.25	0.25
Sat Flow, veh/h	1781	1885	1572	1781	1900	1610	1795	3263	350	1810	3009	590
Grp Volume(v), veh/h	104	185	129	66	302	114	202	342	349	87	313	313
Grp Sat Flow(s),veh/h/ln	1781	1885	1572	1781	1900	1610	1795	1791	1822	1810	1805	1794
Q Serve(g_s), s	2.3	4.4	3.6	1.5	7.8	3.2	4.2	8.8	8.8	1.8	8.3	8.4
Cycle Q Clear(g_c), s	2.3	4.4	3.6	1.5	7.8	3.2	4.2	8.8	8.8	1.8	8.3	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.33
Lane Grp Cap(c), veh/h	335	439	366	399	414	351	420	540	549	363	460	457
V/C Ratio(X)	0.31	0.42	0.35	0.17	0.73	0.33	0.48	0.63	0.64	0.24	0.68	0.69
Avail Cap(c_a), veh/h	405	781	652	496	787	667	586	944	961	444	782	777
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	14.8	17.3	17.0	14.6	19.3	17.5	12.5	16.0	16.0	13.2	17.8	17.9
Incr Delay (d2), s/veh	0.5	0.6	0.6	0.2	2.5	0.5	0.9	1.2	1.2	0.3	1.8	1.8
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	0.9	1.8	1.2	0.6	3.4	1.1	1.5	3.3	3.4	0.7	3.3	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	18.0	17.6	14.8	21.8	18.0	13.4	17.3	17.3	13.6	19.6	19.7
LnGrp LOS	B	B	B	B	C	B	B	B	B	B	B	B
Approach Vol, veh/h	418			482			893			713		
Approach Delay, s/veh	17.2			19.9			16.4			18.9		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	21.0	7.1	17.4	10.1	18.5	7.9	16.6				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	6.0	28.0	6.0	22.0	11.0	23.0	6.0	22.0				
Max Q Clear Time (g_c+I1), s	3.8	10.8	3.5	6.4	6.2	10.4	4.3	9.8				
Green Ext Time (p_c), s	0.0	4.0	0.0	1.3	0.2	3.2	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay	17.9											
HCM 6th LOS	B											

HCM 6th Signalized Intersection Summary

4: Township line Rd & Dan Jones Rd

Existing + Proposed AM Peak

05/03/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	214	177	41	47	42	63	312	24	79	407	45
Future Volume (veh/h)	66	214	177	41	47	42	63	312	24	79	407	45
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	1856	1900	1885	1900	1900	1811	1826	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	69	225	186	43	49	44	66	328	25	83	428	47
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	1	0	0	6	5	2	2	2	2	2
Cap, veh/h	506	382	321	359	345	279	399	752	57	459	759	83
Arrive On Green	0.07	0.20	0.20	0.05	0.18	0.18	0.07	0.22	0.22	0.08	0.23	0.23
Sat Flow, veh/h	1767	1900	1598	1810	1900	1535	1739	3348	254	1781	3231	353
Grp Volume(v), veh/h	69	225	186	43	49	44	66	173	180	83	234	241
Grp Sat Flow(s),veh/h/ln	1767	1900	1598	1810	1900	1535	1739	1777	1825	1781	1777	1807
Q Serve(g_s), s	1.2	4.3	4.2	0.7	0.9	1.0	1.1	3.3	3.4	1.4	4.6	4.7
Cycle Q Clear(g_c), s	1.2	4.3	4.2	0.7	0.9	1.0	1.1	3.3	3.4	1.4	4.6	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.20
Lane Grp Cap(c), veh/h	506	382	321	359	345	279	399	399	410	459	417	425
V/C Ratio(X)	0.14	0.59	0.58	0.12	0.14	0.16	0.17	0.43	0.44	0.18	0.56	0.57
Avail Cap(c_a), veh/h	653	1096	922	546	1096	886	635	1114	1144	682	1114	1133
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	11.7	14.4	14.4	12.3	13.7	13.7	10.7	13.3	13.3	10.4	13.4	13.5
Incr Delay (d2), s/veh	0.1	1.4	1.7	0.1	0.2	0.3	0.2	0.7	0.7	0.2	1.2	1.2
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	1.7	1.4	0.3	0.3	0.3	0.4	1.2	1.2	0.4	1.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	15.9	16.1	12.4	13.9	14.0	10.9	14.0	14.0	10.6	14.6	14.6
LnGrp LOS	B	B	B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h	480			136			419			558		
Approach Delay, s/veh	15.4			13.5			13.5			14.0		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	14.0	5.9	13.0	6.6	14.4	6.7	12.2				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	25.0	25.0	6.0	23.0	8.0	25.0	6.0	23.0				
Max Q Clear Time (g_c+I), s	13.4	5.4	2.7	6.3	3.1	6.7	3.2	3.0				
Green Ext Time (p_c), s	0.1	1.9	0.0	1.7	0.0	2.7	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	14.3
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary

4: Township line Rd & Dan Jones Rd

Existing + Proposed PM Peak

05/03/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	174	126	61	285	126	198	606	62	94	504	106
Future Volume (veh/h)	109	174	126	61	285	126	198	606	62	94	504	106
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	1870	1885	1856	1870	1900	1900	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	118	189	137	66	310	137	215	659	67	102	548	115
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	3	2	0	0	1	1	1	0	0	0
Cap, veh/h	328	449	374	393	418	355	416	1015	103	359	778	163
Arrive On Green	0.08	0.24	0.24	0.06	0.22	0.22	0.12	0.31	0.31	0.07	0.26	0.26
Sat Flow, veh/h	1781	1885	1572	1781	1900	1610	1795	3283	333	1810	2972	621
Grp Volume(v), veh/h	118	189	137	66	310	137	215	359	367	102	332	331
Grp Sat Flow(s),veh/h/ln	1781	1885	1572	1781	1900	1610	1795	1791	1825	1810	1805	1788
Q Serve(g_s), s	2.8	4.7	4.0	1.5	8.4	4.0	4.6	9.6	9.7	2.2	9.2	9.3
Cycle Q Clear(g_c), s	2.8	4.7	4.0	1.5	8.4	4.0	4.6	9.6	9.7	2.2	9.2	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.35
Lane Grp Cap(c), veh/h	328	449	374	393	418	355	416	554	564	359	473	468
V/C Ratio(X)	0.36	0.42	0.37	0.17	0.74	0.39	0.52	0.65	0.65	0.28	0.70	0.71
Avail Cap(c_a), veh/h	386	746	623	483	752	638	558	903	920	425	747	740
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	15.5	17.9	17.7	15.2	20.2	18.5	12.9	16.6	16.6	13.6	18.5	18.6
Incr Delay (d2), s/veh	0.7	0.6	0.6	0.2	2.6	0.7	1.0	1.3	1.3	0.4	1.9	2.0
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	1.1	1.9	1.4	0.6	3.7	1.4	1.7	3.7	3.8	0.8	3.7	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	18.6	18.3	15.4	22.8	19.2	13.9	17.9	17.9	14.0	20.5	20.5
LnGrp LOS	B	B	B	B	C	B	B	B	B	B	C	C
Approach Vol, veh/h	444					513		941		765		
Approach Delay, s/veh	17.8					20.9		17.0		19.6		
Approach LOS	B					C		B		B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	22.2	7.2	18.2	10.6	19.5	8.2	17.2				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	30.0	28.0	6.0	22.0	11.0	23.0	6.0	22.0				
Max Q Clear Time (g_c+I), s	14.2	11.7	3.5	6.7	6.6	11.3	4.8	10.4				
Green Ext Time (p_c), s	0.0	4.2	0.0	1.3	0.2	3.2	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			18.6									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary

4: Township line Rd & Dan Jones Rd

Year 2028 Background AM Peak

05/02/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	250	200	49	54	40	71	356	29	78	468	42
Future Volume (veh/h)	70	250	200	49	54	40	71	356	29	78	468	42
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	1856	1900	1885	1900	1900	1826	1841	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	263	211	52	57	42	75	375	31	82	493	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	1	0	0	5	4	2	2	2	2	2
Cap, veh/h	514	413	347	347	386	314	385	817	67	439	824	73
Arrive On Green	0.07	0.22	0.22	0.05	0.20	0.20	0.07	0.25	0.25	0.07	0.25	0.25
Sat Flow, veh/h	1767	1900	1598	1810	1900	1547	1753	3324	274	1781	3301	294
Grp Volume(v), veh/h	74	263	211	52	57	42	75	200	206	82	265	272
Grp Sat Flow(s),veh/h/ln	1767	1900	1598	1810	1900	1547	1753	1777	1821	1781	1777	1817
Q Serve(g_s), s	1.4	5.5	5.2	1.0	1.1	1.0	1.3	4.2	4.2	1.4	5.8	5.8
Cycle Q Clear(g_c), s	1.4	5.5	5.2	1.0	1.1	1.0	1.3	4.2	4.2	1.4	5.8	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.16
Lane Grp Cap(c), veh/h	514	413	347	347	386	314	385	437	448	439	443	454
V/C Ratio(X)	0.14	0.64	0.61	0.15	0.15	0.13	0.20	0.46	0.46	0.19	0.60	0.60
Avail Cap(c_a), veh/h	636	998	839	498	998	813	505	1096	1123	555	1096	1121
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	12.2	15.6	15.4	12.7	14.3	14.3	11.2	14.0	14.0	10.9	14.5	14.5
Incr Delay (d2), s/veh	0.1	1.6	1.7	0.2	0.2	0.2	0.2	0.7	0.7	0.2	1.3	1.3
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	0.5	2.2	1.8	0.3	0.4	0.3	0.4	1.5	1.6	0.5	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	17.2	17.2	12.9	14.5	14.5	11.4	14.8	14.8	11.1	15.8	15.8
LnGrp LOS	B	B	B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h	548			151			481			619		
Approach Delay, s/veh	16.5			14.0			14.2			15.2		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	15.8	6.3	14.5	7.0	15.9	7.0	13.9				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	6.0	27.0	6.0	23.0	6.0	27.0	6.0	23.0				
Max Q Clear Time (g_c+I), s	13.4	6.2	3.0	7.5	3.3	7.8	3.4	3.1				
Green Ext Time (p_c), s	0.0	2.3	0.0	2.0	0.0	3.1	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary

4: Township line Rd & Dan Jones Rd

Year 2028 Background PM Peak

05/02/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	204	143	73	334	126	223	689	74	96	577	114
Future Volume (veh/h)	115	204	143	73	334	126	223	689	74	96	577	114
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	1870	1885	1870	1870	1900	1900	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	125	222	155	79	363	137	242	749	80	104	627	124
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	2	2	0	0	1	1	1	0	0	0
Cap, veh/h	300	485	408	375	460	390	399	1108	118	326	845	167
Arrive On Green	0.07	0.26	0.26	0.06	0.24	0.24	0.12	0.34	0.34	0.07	0.28	0.28
Sat Flow, veh/h	1781	1885	1585	1781	1900	1610	1795	3265	349	1810	3005	593
Grp Volume(v), veh/h	125	222	155	79	363	137	242	411	418	104	376	375
Grp Sat Flow(s),veh/h/ln	1781	1885	1585	1781	1900	1610	1795	1791	1822	1810	1805	1793
Q Serve(g_s), s	3.3	6.4	5.2	2.1	11.5	4.5	5.7	12.7	12.7	2.6	12.2	12.3
Cycle Q Clear(g_c), s	3.3	6.4	5.2	2.1	11.5	4.5	5.7	12.7	12.7	2.6	12.2	12.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.33
Lane Grp Cap(c), veh/h	300	485	408	375	460	390	399	608	618	326	508	504
V/C Ratio(X)	0.42	0.46	0.38	0.21	0.79	0.35	0.61	0.68	0.68	0.32	0.74	0.74
Avail Cap(c_a), veh/h	334	731	614	437	736	624	567	972	989	376	755	750
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	17.4	20.2	19.7	16.7	22.9	20.3	14.3	18.3	18.3	15.3	21.0	21.1
Incr Delay (d2), s/veh	0.9	0.7	0.6	0.3	3.1	0.5	1.5	1.3	1.3	0.6	2.2	2.2
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	1.3	2.7	1.8	0.8	5.2	1.7	2.2	5.0	5.1	1.0	5.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.3	20.8	20.3	17.0	26.0	20.8	15.8	19.6	19.6	15.9	23.2	23.3
LnGrp LOS	B	C	C	B	C	C	B	B	B	B	C	C
Approach Vol, veh/h	502			579			1071			855		
Approach Delay, s/veh	20.0			23.5			18.7			22.3		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.9	7.8	21.6	12.0	23.1	8.8	20.6					
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	35.0	6.0	25.0	14.0	27.0	6.0	25.0					
Max Q Clear Time (g_c+I), s	14.7	4.1	8.4	7.7	14.3	5.3	13.5					
Green Ext Time (p_c), s	0.0	5.4	0.0	1.6	0.4	3.9	0.0	2.1				

Intersection Summary

HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary

4: Township line Rd & Dan Jones Rd

Year 2028 + Proposed AM Peak

05/03/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	256	210	49	56	49	75	371	29	92	485	52
Future Volume (veh/h)	78	256	210	49	56	49	75	371	29	92	485	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	1856	1900	1885	1900	1900	1826	1841	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	269	221	52	59	52	79	391	31	97	511	55
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	1	0	0	5	4	2	2	2	2	2
Cap, veh/h	509	417	350	340	382	311	380	832	66	443	834	90
Arrive On Green	0.07	0.22	0.22	0.05	0.20	0.20	0.07	0.25	0.25	0.08	0.26	0.26
Sat Flow, veh/h	1767	1900	1598	1810	1900	1547	1753	3336	263	1781	3237	347
Grp Volume(v), veh/h	82	269	221	52	59	52	79	207	215	97	280	286
Grp Sat Flow(s),veh/h/ln	1767	1900	1598	1810	1900	1547	1753	1777	1823	1781	1777	1808
Q Serve(g_s), s	1.6	5.8	5.6	1.0	1.2	1.2	1.4	4.5	4.5	1.7	6.2	6.3
Cycle Q Clear(g_c), s	1.6	5.8	5.6	1.0	1.2	1.2	1.4	4.5	4.5	1.7	6.2	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.19
Lane Grp Cap(c), veh/h	509	417	350	340	382	311	380	443	455	443	458	466
V/C Ratio(X)	0.16	0.65	0.63	0.15	0.15	0.17	0.21	0.47	0.47	0.22	0.61	0.61
Avail Cap(c_a), veh/h	619	971	817	485	971	791	492	1067	1094	542	1067	1085
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(l)	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	12.5	16.0	15.9	13.2	14.8	14.9	11.3	14.3	14.4	11.0	14.7	14.7
Incr Delay (d2), s/veh	0.1	1.7	1.9	0.2	0.2	0.3	0.3	0.8	0.8	0.2	1.3	1.3
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	0.5	2.3	1.9	0.4	0.5	0.4	0.5	1.6	1.7	0.6	2.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	17.7	17.8	13.4	15.0	15.1	11.6	15.1	15.1	11.3	16.0	16.0
LnGrp LOS	B	B	B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h	572			163			501			663		
Approach Delay, s/veh	17.0			14.5			14.6			15.3		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	16.2	6.4	14.9	7.1	16.6	7.2	14.0				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	6.0	27.0	6.0	23.0	6.0	27.0	6.0	23.0				
Max Q Clear Time (g_c+I), s	13.7	6.5	3.0	7.8	3.4	8.3	3.6	3.2				
Green Ext Time (p_c), s	0.0	2.4	0.0	2.1	0.0	3.3	0.0	0.4				

Intersection Summary

HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary

4: Township line Rd & Dan Jones Rd

Year 2028 + Proposed PM Peak

05/03/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	208	150	73	341	147	235	721	74	110	600	125
Future Volume (veh/h)	128	208	150	73	341	147	235	721	74	110	600	125
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	1870	1885	1870	1870	1900	1900	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	139	226	163	79	371	160	255	784	80	120	652	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	2	2	0	0	1	1	1	0	0	0
Cap, veh/h	301	503	423	373	463	392	391	1129	115	319	852	177
Arrive On Green	0.08	0.27	0.27	0.06	0.24	0.24	0.13	0.34	0.34	0.07	0.29	0.29
Sat Flow, veh/h	1781	1885	1585	1781	1900	1610	1795	3281	335	1810	2974	620
Grp Volume(v), veh/h	139	226	163	79	371	160	255	428	436	120	395	393
Grp Sat Flow(s),veh/h/ln	1781	1885	1585	1781	1900	1610	1795	1791	1825	1810	1805	1788
Q Serve(g_s), s	3.9	6.8	5.7	2.2	12.5	5.7	6.3	14.1	14.1	3.1	13.7	13.7
Cycle Q Clear(g_c), s	3.9	6.8	5.7	2.2	12.5	5.7	6.3	14.1	14.1	3.1	13.7	13.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.35
Lane Grp Cap(c), veh/h	301	503	423	373	463	392	391	616	628	319	517	512
V/C Ratio(X)	0.46	0.45	0.39	0.21	0.80	0.41	0.65	0.69	0.69	0.38	0.76	0.77
Avail Cap(c_a), veh/h	314	690	580	428	696	590	533	866	882	407	714	707
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	18.3	20.8	20.4	17.7	24.3	21.7	15.1	19.3	19.3	16.1	22.3	22.3
Incr Delay (d2), s/veh	1.1	0.6	0.6	0.3	4.0	0.7	1.8	1.4	1.4	0.7	3.3	3.4
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	1.6	2.9	2.1	0.9	5.8	2.1	2.5	5.6	5.7	1.3	5.9	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	21.5	21.0	18.0	28.3	22.4	17.0	20.7	20.7	16.9	25.6	25.7
LnGrp LOS	B	C	C	B	C	C	B	C	C	B	C	C
Approach Vol, veh/h	528			610			1119			908		
Approach Delay, s/veh	20.8			25.4			19.8			24.5		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	28.5	7.9	23.2	12.6	24.5	9.5	21.6				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	33.0	33.0	6.0	25.0	14.0	27.0	6.0	25.0				
Max Q Clear Time (g_c+I), s	16.1	16.1	4.2	8.8	8.3	15.7	5.9	14.5				
Green Ext Time (p_c), s	0.1	5.2	0.0	1.7	0.4	3.8	0.0	2.1				

Intersection Summary

HCM 6th Ctrl Delay	22.4
HCM 6th LOS	C

AVON AVENUE & TOWNSHIP LINE ROAD

TRAFFIC VOLUME COUNTS *CAPACITY ANALYSIS*

AVON AVENUE & TOWNSHIP LINE RD - TMC

Tue Apr 24, 2018

Full Length (4PM-7PM, 6AM-9AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516254, Location: 39.718713, -86.399524

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
2018-04-24																					
6:00AM	0	27	4	0	31	25	23	1	0	49	5	22	1	0	28	0	3	6	0	9	117
6:15AM	1	27	1	0	29	37	20	2	0	59	7	21	2	0	30	3	1	6	0	10	128
6:30AM	0	30	4	0	34	40	17	4	0	61	11	24	1	0	36	0	5	9	0	14	145
6:45AM	1	40	0	0	41	42	32	1	0	75	13	36	1	0	50	1	7	13	0	21	187
Hourly Total	2	124	9	0	135	144	92	8	0	244	36	103	5	0	144	4	16	34	0	54	577
7:00AM	0	50	4	0	54	53	31	4	0	88	13	40	0	0	53	5	7	18	0	30	225
7:15AM	1	33	3	0	37	55	31	4	0	90	12	52	2	0	66	2	6	15	0	23	216
7:30AM	0	59	3	0	62	56	37	4	0	97	16	53	3	0	72	2	17	29	0	48	279
7:45AM	1	47	0	0	48	65	43	3	0	111	12	60	3	0	75	3	9	25	0	37	271
Hourly Total	2	189	10	0	201	229	142	15	0	386	53	205	8	0	266	12	39	87	0	138	991
8:00AM	0	32	1	0	33	48	36	7	0	91	13	47	0	0	60	2	9	24	0	35	219
8:15AM	0	49	2	0	51	46	38	7	0	91	6	52	2	0	60	3	20	18	0	41	243
8:30AM	0	57	0	0	57	31	31	5	0	67	14	30	1	0	45	2	12	19	0	33	202
8:45AM	3	34	6	0	43	62	41	8	0	111	16	38	3	0	57	3	17	21	0	41	252
Hourly Total	3	172	9	0	184	187	146	27	0	360	49	167	6	0	222	10	58	82	0	150	916
4:00PM	5	47	5	0	57	17	58	13	0	88	9	29	0	0	38	7	63	50	0	120	303
4:15PM	2	57	2	0	61	30	48	18	0	96	6	41	0	0	47	10	49	53	0	112	316
4:30PM	3	51	2	0	56	21	67	17	0	105	11	34	1	0	46	0	51	62	0	113	320
4:45PM	2	59	5	0	66	47	47	20	0	114	11	44	2	0	57	6	63	67	0	136	373
Hourly Total	12	214	14	0	240	115	220	68	0	403	37	148	3	0	188	23	226	232	0	481	1312
5:00PM	4	54	3	0	61	45	54	11	0	110	10	31	0	0	41	4	72	68	0	144	356
5:15PM	3	68	5	0	76	34	65	14	0	113	12	36	5	0	53	8	65	76	0	149	391
5:30PM	2	73	1	0	76	42	37	13	0	92	11	33	1	0	45	4	72	81	0	157	370
5:45PM	1	44	3	0	48	64	55	13	0	132	12	26	2	0	40	11	60	75	0	146	366
Hourly Total	10	239	12	0	261	185	211	51	0	447	45	126	8	0	179	27	269	300	0	596	1483
6:00PM	2	38	6	0	46	21	42	13	0	76	7	45	1	0	53	2	59	51	0	112	287
6:15PM	3	39	4	0	46	30	42	13	0	85	5	25	1	0	31	4	54	41	0	99	261
6:30PM	2	36	2	0	40	20	20	9	0	49	6	20	4	0	30	6	43	49	0	98	217
6:45PM	2	30	5	0	37	23	35	8	0	66	10	16	1	0	27	7	35	23	0	65	195
Hourly Total	9	143	17	0	169	94	139	43	0	276	28	106	7	0	141	19	191	164	0	374	960
7:00PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
Total	38	1081	71	0	1190	954	950	212	0	2116	248	855	37	0	1140	96	800	899	0	1795	6241
% Approach	3.2%	90.8%	6.0%	0%	-	45.1%	44.9%	10.0%	0%	-	21.8%	75.0%	3.2%	0%	-	5.3%	44.6%	50.1%	0%	-	-
% Total	0.6%	17.3%	1.1%	0%	19.1%	15.3%	15.2%	3.4%	0%	33.9%	4.0%	13.7%	0.6%	0%	18.3%	1.5%	12.8%	14.4%	0%	28.8%	-
Lights and Motorcycles	37	1040	69	0	1146	949	924	209	0	2082	241	849	34	0	1124	90	796	882	0	1768	6120
% Lights and Motorcycles	97.4%	96.2%	97.2%	0%	96.3%	99.5%	97.3%	98.6%	0%	98.4%	97.2%	99.3%	91.9%	0%	98.6%	93.8%	99.5%	98.1%	0%	98.5%	98.1%
Heavy	1	41	2	0	44	5	26	3	0	34	7	6	3	0	16	6	4	17	0	27	121
% Heavy	2.6%	3.8%	2.8%	0%	3.7%	0.5%	2.7%	1.4%	0%	1.6%	2.8%	0.7%	8.1%	0%	1.4%	6.3%	0.5%	1.9%	0%	1.5%	1.9%

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

AVON AVENUE & TOWNSHIP LINE RD - TMC

Tue Apr 24, 2018

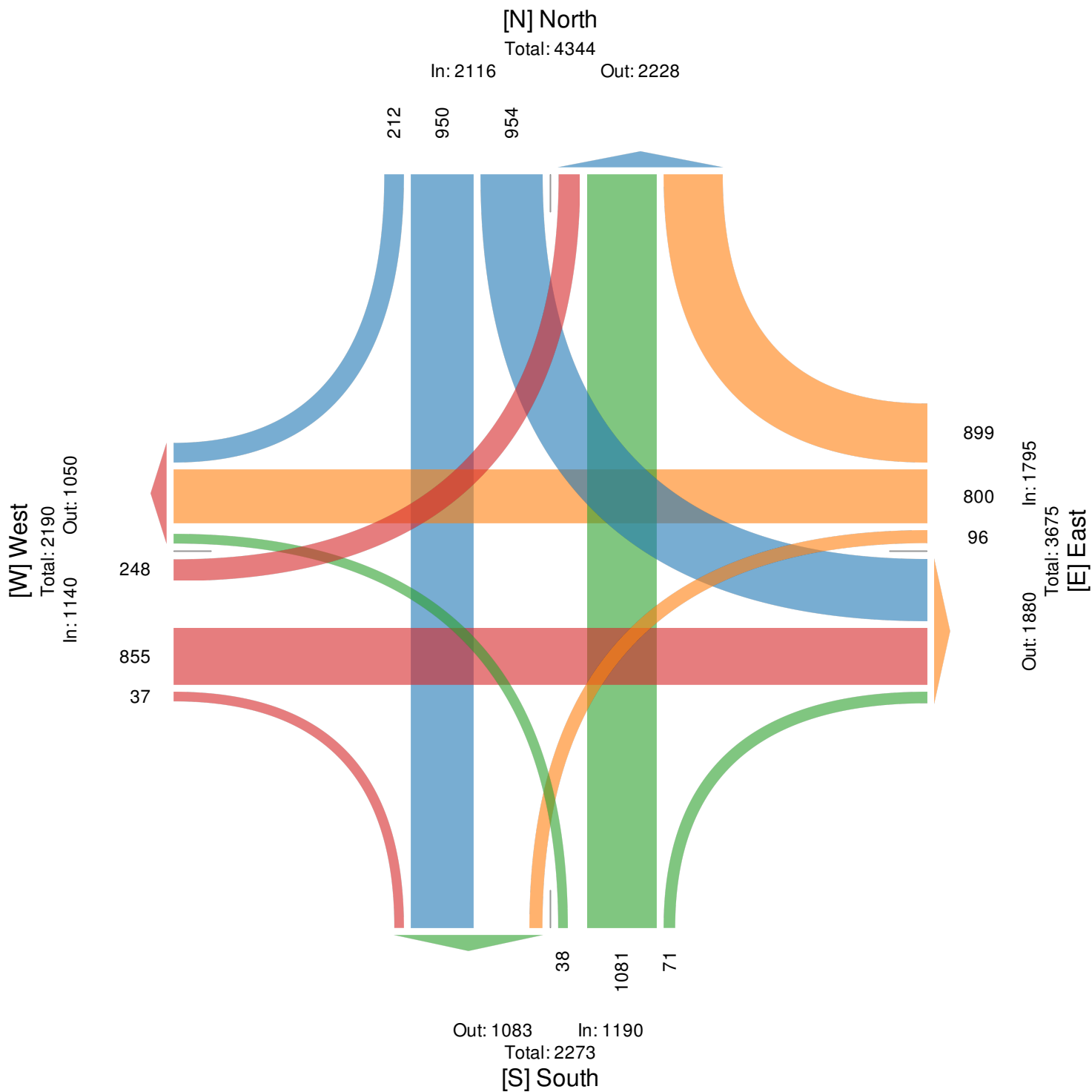
Full Length (4PM-7PM, 6AM-9AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516254, Location: 39.718713, -86.399524

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



AVON AVENUE & TOWNSHIP LINE RD - TMC

Tue Apr 24, 2018

AM Peak (7:30AM - 8:30AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516254, Location: 39.718713, -86.399524

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
2018-04-24 7:30AM	0	59	3	0	62	56	37	4	0	97	16	53	3	0	72	2	17	29	0	48	279
7:45AM	1	47	0	0	48	65	43	3	0	111	12	60	3	0	75	3	9	25	0	37	271
8:00AM	0	32	1	0	33	48	36	7	0	91	13	47	0	0	60	2	9	24	0	35	219
8:15AM	0	49	2	0	51	46	38	7	0	91	6	52	2	0	60	3	20	18	0	41	243
Total	1	187	6	0	194	215	154	21	0	390	47	212	8	0	267	10	55	96	0	161	1012
% Approach	0.5%	96.4%	3.1%	0%	-	55.1%	39.5%	5.4%	0%	-	17.6%	79.4%	3.0%	0%	-	6.2%	34.2%	59.6%	0%	-	-
% Total	0.1%	18.5%	0.6%	0%	19.2%	21.2%	15.2%	2.1%	0%	38.5%	4.6%	20.9%	0.8%	0%	26.4%	1.0%	5.4%	9.5%	0%	15.9%	-
PHF	0.250	0.792	0.500	-	0.782	0.827	0.895	0.750	-	0.878	0.734	0.883	0.667	-	0.890	0.833	0.688	0.828	-	0.839	0.907
Lights and Motorcycles	1	182	6	0	189	213	145	19	0	377	44	212	6	0	262	10	53	90	0	153	981
% Lights and Motorcycles	100%	97.3%	100%	0%	97.4%	99.1%	94.2%	90.5%	0%	96.7%	93.6%	100%	75.0%	0%	98.1%	100%	96.4%	93.8%	0%	95.0%	96.9%
Heavy	0	5	0	0	5	2	9	2	0	13	3	0	2	0	5	0	2	6	0	8	31
% Heavy	0%	2.7%	0%	0%	2.6%	0.9%	5.8%	9.5%	0%	3.3%	6.4%	0%	25.0%	0%	1.9%	0%	3.6%	6.3%	0%	5.0%	3.1%

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

AVON AVENUE & TOWNSHIP LINE RD - TMC

Tue Apr 24, 2018

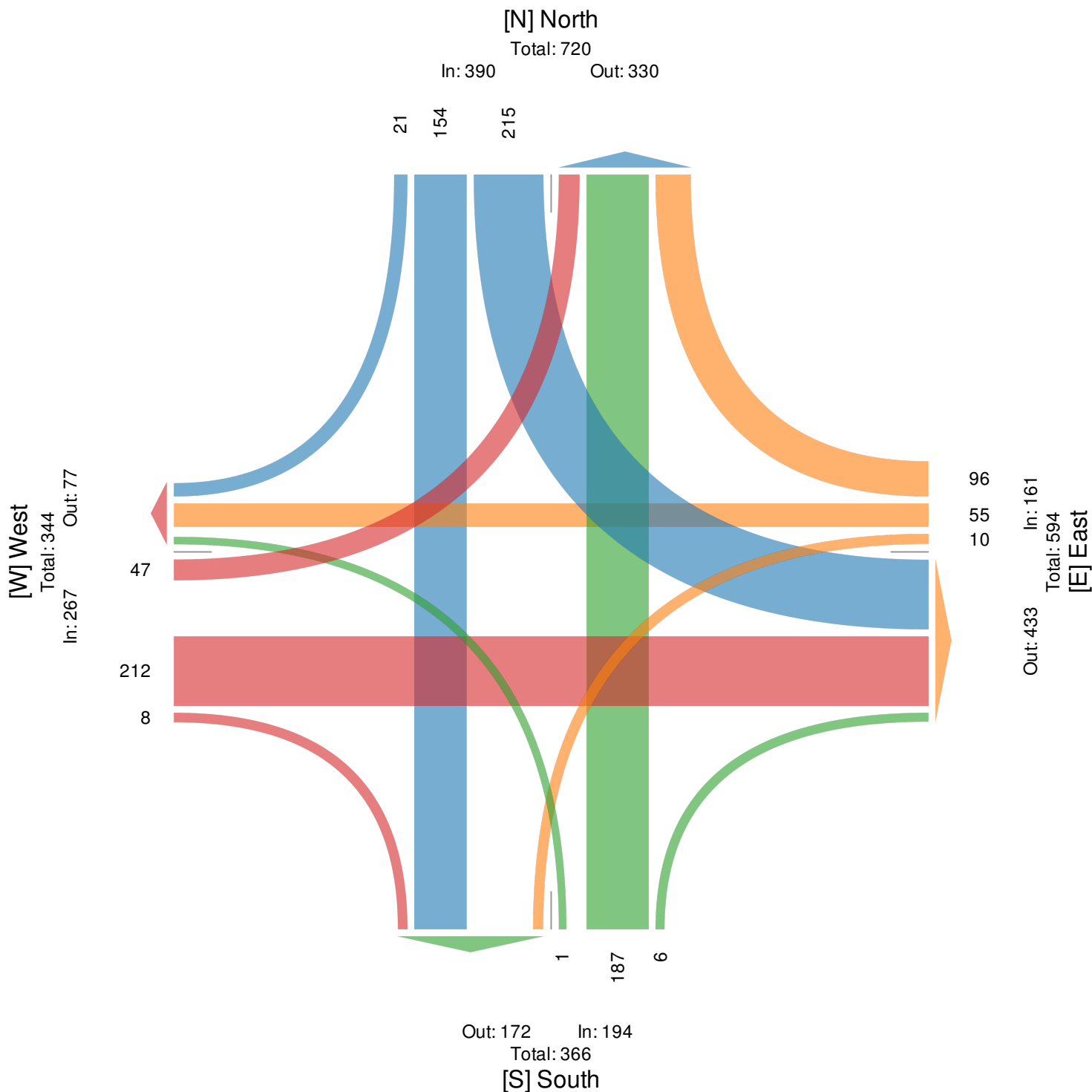
AM Peak (7:30AM - 8:30AM)

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516254, Location: 39.718713, -86.399524

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



AVON AVENUE & TOWNSHIP LINE RD - TMC

Tue Apr 24, 2018

PM Peak (4:45PM - 5:45PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516254, Location: 39.718713, -86.399524

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
2018-04-24 4:45PM	2	59	5	0	66	47	47	20	0	114	11	44	2	0	57	6	63	67	0	136	373
5:00PM	4	54	3	0	61	45	54	11	0	110	10	31	0	0	41	4	72	68	0	144	356
5:15PM	3	68	5	0	76	34	65	14	0	113	12	36	5	0	53	8	65	76	0	149	391
5:30PM	2	73	1	0	76	42	37	13	0	92	11	33	1	0	45	4	72	81	0	157	370
Total	11	254	14	0	279	168	203	58	0	429	44	144	8	0	196	22	272	292	0	586	1490
% Approach	3.9%	91.0%	5.0%	0%	-	39.2%	47.3%	13.5%	0%	-	22.4%	73.5%	4.1%	0%	-	3.8%	46.4%	49.8%	0%	-	-
% Total	0.7%	17.0%	0.9%	0%	18.7%	11.3%	13.6%	3.9%	0%	28.8%	3.0%	9.7%	0.5%	0%	13.2%	1.5%	18.3%	19.6%	0%	39.3%	-
PHF	0.688	0.870	0.700	-	0.918	0.894	0.781	0.725	-	0.941	0.917	0.818	0.400	-	0.860	0.688	0.944	0.901	-	0.933	0.953
Lights and Motorcycles	11	246	14	0	271	167	199	58	0	424	44	141	8	0	193	22	272	292	0	586	1474
% Lights and Motorcycles	100%	96.9%	100%	0%	97.1%	99.4%	98.0%	100%	0%	98.8%	100%	97.9%	100%	0%	98.5%	100%	100%	100%	0%	100%	98.9%
Heavy	0	8	0	0	8	1	4	0	0	5	0	3	0	0	3	0	0	0	0	0	16
% Heavy	0%	3.1%	0%	0%	2.9%	0.6%	2.0%	0%	0%	1.2%	0%	2.1%	0%	0%	1.5%	0%	0%	0%	0%	0%	1.1%

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

AVON AVENUE & TOWNSHIP LINE RD - TMC

Tue Apr 24, 2018

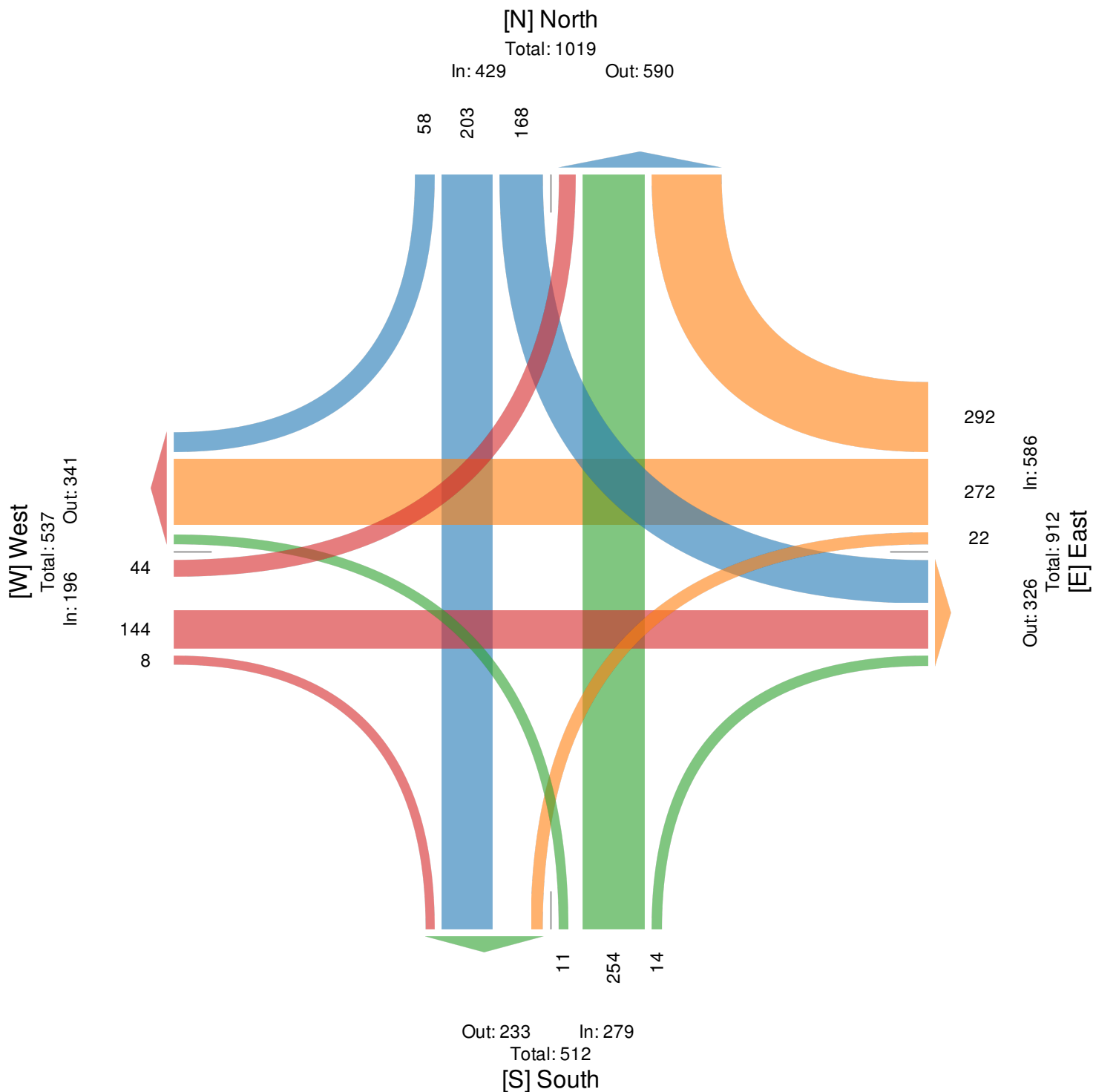
PM Peak (4:45PM - 5:45PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

All Movements

ID: 516254, Location: 39.718713, -86.399524

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



HCM 6th Signalized Intersection Summary 5: Township line Rd & Avon Ave

Existing AM Peak
05/02/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	47	212	8	10	55	96	1	187	6	215	154	21
Future Volume (veh/h)	47	212	8	10	55	96	1	187	6	215	154	21
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	1900	1900	1841	1841	1841	1856	1856	1856	1811	1811	1811
Adj Flow Rate, veh/h	52	233	9	11	60	105	1	205	7	860	169	23
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.25	0.91	0.91
Percent Heavy Veh, %	0	0	0	4	4	4	3	3	3	6	6	6
Cap, veh/h	75	263	10	37	117	186	1	229	8	815	160	22
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.13	0.13	0.13	0.58	0.58	0.58
Sat Flow, veh/h	238	1412	52	49	625	997	9	1775	61	1417	278	38
Grp Volume(v), veh/h	294	0	0	176	0	0	213	0	0	1052	0	0
Grp Sat Flow(s),veh/h/ln	702	0	0	1671	0	0	1844	0	0	1733	0	0
Q Serve(g_s), s	10.2	0.0	0.0	0.0	0.0	0.0	15.7	0.0	0.0	79.2	0.0	0.0
Cycle Q Clear(g_c), s	23.4	0.0	0.0	13.3	0.0	0.0	15.7	0.0	0.0	79.2	0.0	0.0
Prop In Lane	0.18		0.03	0.06		0.60	0.00		0.03	0.82		0.02
Lane Grp Cap(c), veh/h	348	0	0	340	0	0	238	0	0	997	0	0
V/C Ratio(X)	0.84	0.00	0.00	0.52	0.00	0.00	0.89	0.00	0.00	1.05	0.00	0.00
Avail Cap(c_a), veh/h	365	0	0	355	0	0	252	0	0	997	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	55.0	0.0	0.0	50.9	0.0	0.0	59.0	0.0	0.0	29.2	0.0	0.0
Incr Delay (d2), s/veh	15.8	0.0	0.0	1.2	0.0	0.0	29.8	0.0	0.0	44.1	0.0	0.0
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	1.6	0.0	0.0	5.7	0.0	0.0	9.3	0.0	0.0	43.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.8	0.0	0.0	52.2	0.0	0.0	88.9	0.0	0.0	73.3	0.0	0.0
LnGrp LOS	E	A	A	D	A	A	F	A	A	F	A	A
Approach Vol, veh/h	294		176			213			1052			
Approach Delay, s/veh	70.8		52.2			88.9			73.3			
Approach LOS	E		D			F			E			
Timer - Assigned Phs	2		4			6			8			
Phs Duration (G+Y+Rc), s	22.8		30.7			84.2			30.7			
Change Period (Y+Rc), s	5.0		5.0			5.0			5.0			
Max Green Setting (Gmax), s	18.8		27.0			79.2			27.0			
Max Q Clear Time (g_c+I1), s	17.7		25.4			81.2			15.3			
Green Ext Time (p_c), s	0.1		0.3			0.0			0.7			
Intersection Summary												
HCM 6th Ctrl Delay	72.7											
HCM 6th LOS	E											

HCM 6th Signalized Intersection Summary 5: Township line Rd & Avon Ave

Existing PM Peak
05/02/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	144	8	22	272	292	11	254	14	168	203	58
Future Volume (veh/h)	44	144	8	22	272	292	11	254	14	168	203	58
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	1870	1870	1870	1900	1900	1900	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	46	152	8	23	286	307	12	267	15	177	214	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	3	3	3	2	2	2
Cap, veh/h	113	345	16	55	310	320	14	310	17	189	228	65
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.19	0.19	0.19	0.27	0.27	0.27
Sat Flow, veh/h	166	929	44	33	834	861	75	1666	94	702	848	242
Grp Volume(v), veh/h	206	0	0	616	0	0	294	0	0	452	0	0
Grp Sat Flow(s),veh/h/ln	1139	0	0	1728	0	0	1835	0	0	1792	0	0
Q Serve(g_s), s	0.0	0.0	0.0	14.3	0.0	0.0	13.4	0.0	0.0	21.3	0.0	0.0
Cycle Q Clear(g_c), s	6.8	0.0	0.0	30.0	0.0	0.0	13.4	0.0	0.0	21.3	0.0	0.0
Prop In Lane	0.22		0.04	0.04		0.50	0.04		0.05	0.39		0.13
Lane Grp Cap(c), veh/h	474	0	0	685	0	0	341	0	0	482	0	0
V/C Ratio(X)	0.43	0.00	0.00	0.90	0.00	0.00	0.86	0.00	0.00	0.94	0.00	0.00
Avail Cap(c_a), veh/h	474	0	0	685	0	0	421	0	0	482	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.2	0.0	0.0	26.4	0.0	0.0	34.0	0.0	0.0	30.8	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	15.0	0.0	0.0	14.1	0.0	0.0	26.2	0.0	0.0
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	2.9	0.0	0.0	14.5	0.0	0.0	7.2	0.0	0.0	12.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.8	0.0	0.0	41.4	0.0	0.0	48.1	0.0	0.0	57.0	0.0	0.0
LnGrp LOS	B	A	A	D	A	A	D	A	A	E	A	A
Approach Vol, veh/h	206			616			294			452		
Approach Delay, s/veh	19.8			41.4			48.1			57.0		
Approach LOS	B			D			D			E		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	21.0			37.0			28.2			37.0		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	19.8			32.0			23.2			32.0		
Max Q Clear Time (g_c+I1), s	15.4			8.8			23.3			32.0		
Green Ext Time (p_c), s	0.7			1.3			0.0			0.0		
Intersection Summary												
HCM 6th Ctrl Delay	44.3											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary

5: Township line Rd & Avon Ave

Existing + Proposed AM Peak

05/03/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	47	217	8	24	61	96	1	187	13	215	154	21
Future Volume (veh/h)	47	217	8	24	61	96	1	187	13	215	154	21
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	1900	1900	1841	1841	1841	1856	1856	1856	1811	1811	1811
Adj Flow Rate, veh/h	52	238	9	26	67	105	1	205	14	860	169	23
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.25	0.91	0.91
Percent Heavy Veh, %	0	0	0	4	4	4	3	3	3	6	6	6
Cap, veh/h	74	268	10	53	115	157	1	224	15	803	158	21
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.13	0.13	0.13	0.57	0.57	0.57
Sat Flow, veh/h	225	1379	50	123	593	808	8	1709	117	1417	278	38
Grp Volume(v), veh/h	299	0	0	198	0	0	220	0	0	1052	0	0
Grp Sat Flow(s),veh/h/ln	1654	0	0	1524	0	0	1834	0	0	1733	0	0
Q Serve(g_s), s	8.7	0.0	0.0	0.0	0.0	0.0	16.5	0.0	0.0	79.0	0.0	0.0
Cycle Q Clear(g_c), s	24.9	0.0	0.0	16.2	0.0	0.0	16.5	0.0	0.0	79.0	0.0	0.0
Prop In Lane	0.17		0.03	0.13		0.53	0.00		0.06	0.82		0.02
Lane Grp Cap(c), veh/h	351	0	0	325	0	0	241	0	0	983	0	0
V/C Ratio(X)	0.85	0.00	0.00	0.61	0.00	0.00	0.91	0.00	0.00	1.07	0.00	0.00
Avail Cap(c_a), veh/h	359	0	0	332	0	0	241	0	0	983	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	55.2	0.0	0.0	51.5	0.0	0.0	59.7	0.0	0.0	30.2	0.0	0.0
Incr Delay (d2), s/veh	17.2	0.0	0.0	3.1	0.0	0.0	35.6	0.0	0.0	49.5	0.0	0.0
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	12.0	0.0	0.0	6.7	0.0	0.0	10.1	0.0	0.0	45.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.4	0.0	0.0	54.6	0.0	0.0	95.3	0.0	0.0	79.7	0.0	0.0
LnGrp LOS	E	A	A	D	A	A	F	A	A	F	A	A
Approach Vol, veh/h	299		198			220			1052			
Approach Delay, s/veh	72.4		54.6			95.3			79.7			
Approach LOS	E		D			F			E			
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	23.3		32.0		84.0		32.0					
Change Period (Y+Rc), s	5.0		5.0		5.0		5.0					
Max Green Setting (Gmax), s	18.3		27.7		79.0		27.7					
Max Q Clear Time (g_c+I1), s	18.5		26.9		81.0		18.2					
Green Ext Time (p_c), s	0.0		0.1		0.0		0.7					
Intersection Summary												
HCM 6th Ctrl Delay	77.6											
HCM 6th LOS	E											

HCM 6th Signalized Intersection Summary

5: Township line Rd & Avon Ave

Existing + Proposed PM Peak

05/03/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	44	152	8	33	278	292	11	254	30	168	203	58
Future Volume (veh/h)	44	152	8	33	278	292	11	254	30	168	203	58
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	1870	1870	1870	1900	1900	1900	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	46	160	8	35	293	307	12	267	32	177	214	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	3	3	3	2	2	2
Cap, veh/h	108	347	16	64	311	311	14	302	36	184	223	64
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.19	0.19	0.19	0.26	0.26	0.26
Sat Flow, veh/h	155	928	42	57	832	832	70	1561	187	702	848	242
Grp Volume(v), veh/h	214	0	0	635	0	0	311	0	0	452	0	0
Grp Sat Flow(s),veh/h/ln	125	0	0	1720	0	0	1818	0	0	1792	0	0
Q Serve(g_s), s	0.0	0.0	0.0	19.2	0.0	0.0	14.7	0.0	0.0	21.9	0.0	0.0
Cycle Q Clear(g_c), s	7.2	0.0	0.0	32.3	0.0	0.0	14.7	0.0	0.0	21.9	0.0	0.0
Prop In Lane	0.21		0.04	0.06		0.48	0.04		0.10	0.39		0.13
Lane Grp Cap(c), veh/h	470	0	0	686	0	0	351	0	0	471	0	0
V/C Ratio(X)	0.46	0.00	0.00	0.93	0.00	0.00	0.89	0.00	0.00	0.96	0.00	0.00
Avail Cap(c_a), veh/h	470	0	0	686	0	0	387	0	0	471	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.5	0.0	0.0	27.3	0.0	0.0	34.6	0.0	0.0	32.1	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	18.5	0.0	0.0	19.7	0.0	0.0	31.3	0.0	0.0
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	8.1	0.0	0.0	16.1	0.0	0.0	8.3	0.0	0.0	13.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.2	0.0	0.0	45.8	0.0	0.0	54.4	0.0	0.0	63.3	0.0	0.0
LnGrp LOS	C	A	A	D	A	A	D	A	A	E	A	A
Approach Vol, veh/h	214		635			311			452			
Approach Delay, s/veh	20.2		45.8			54.4			63.3			
Approach LOS	C		D			D			E			
Timer - Assigned Phs	2		4			6			8			
Phs Duration (G+Y+Rc), s	22.1		38.0			28.2			38.0			
Change Period (Y+Rc), s	5.0		5.0			5.0			5.0			
Max Green Setting (Gmax), s	18.8		33.0			23.2			33.0			
Max Q Clear Time (g_c+I1), s	16.7		9.2			23.9			34.3			
Green Ext Time (p_c), s	0.4		1.4			0.0			0.0			
Intersection Summary												
HCM 6th Ctrl Delay	49.0											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary

5: Township line Rd & Avon Ave

Year 2028 Background AM Peak

05/02/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	56	254	10	12	66	115	1	224	7	258	185	25
Future Volume (veh/h)	56	254	10	12	66	115	1	224	7	258	185	25
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	1900	1900	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	62	279	11	13	73	126	1	246	8	1032	203	27
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.25	0.91	0.91
Percent Heavy Veh, %	0	0	0	3	3	3	3	3	3	5	5	5
Cap, veh/h	79	276	10	38	129	205	1	254	8	776	153	20
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.14	0.14	0.14	0.54	0.54	0.54
Sat Flow, veh/h	233	1334	51	50	624	988	7	1780	58	1429	281	37
Grp Volume(v), veh/h	352	0	0	212	0	0	255	0	0	1262	0	0
Grp Sat Flow(s),veh/h/ln	1617	0	0	1662	0	0	1845	0	0	1748	0	0
Q Serve(g_s), s	12.9	0.0	0.0	0.0	0.0	0.0	19.2	0.0	0.0	76.0	0.0	0.0
Cycle Q Clear(g_c), s	29.0	0.0	0.0	16.1	0.0	0.0	19.2	0.0	0.0	76.0	0.0	0.0
Prop In Lane	0.18		0.03	0.06		0.59	0.00		0.03	0.82		0.02
Lane Grp Cap(c), veh/h	365	0	0	371	0	0	264	0	0	949	0	0
V/C Ratio(X)	0.96	0.00	0.00	0.57	0.00	0.00	0.97	0.00	0.00	1.33	0.00	0.00
Avail Cap(c_a), veh/h	365	0	0	371	0	0	264	0	0	949	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.3	0.0	0.0	50.4	0.0	0.0	59.7	0.0	0.0	32.0	0.0	0.0
Incr Delay (d2), s/veh	37.5	0.0	0.0	2.1	0.0	0.0	46.3	0.0	0.0	155.9	0.0	0.0
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	16.4	0.0	0.0	7.0	0.0	0.0	12.4	0.0	0.0	72.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.8	0.0	0.0	52.5	0.0	0.0	106.0	0.0	0.0	187.9	0.0	0.0
LnGrp LOS	F	A	A	D	A	A	F	A	A	F	A	A
Approach Vol, veh/h	352		212			255			1262			
Approach Delay, s/veh	93.8		52.5			106.0			187.9			
Approach LOS	F		D			F			F			
Timer - Assigned Phs	2		4			6			8			
Phs Duration (G+Y+Rc), s	25.0		34.0			81.0			34.0			
Change Period (Y+Rc), s	5.0		5.0			5.0			5.0			
Max Green Setting (Gmax), s	20.0		29.0			76.0			29.0			
Max Q Clear Time (g_c+I1), s	21.2		31.0			78.0			18.1			
Green Ext Time (p_c), s	0.0		0.0			0.0			0.9			
Intersection Summary												
HCM 6th Ctrl Delay	148.1											
HCM 6th LOS	F											

HCM 6th Signalized Intersection Summary

5: Township line Rd & Avon Ave

Year 2028 Background PM Peak

05/02/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	53	173	10	26	326	350	13	305	17	202	244	70
Future Volume (veh/h)	53	173	10	26	326	350	13	305	17	202	244	70
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	1870	1870	1870	1900	1900	1900	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	56	182	11	27	343	368	14	321	18	213	257	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	2	2	2	2	2	2
Cap, veh/h	86	262	14	46	330	343	14	324	18	202	243	70
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.19	0.19	0.19	0.29	0.29	0.29
Sat Flow, veh/h	125	663	36	38	835	869	73	1682	94	701	846	244
Grp Volume(v), veh/h	249	0	0	738	0	0	353	0	0	544	0	0
Grp Sat Flow(s),veh/h/ln	824	0	0	1742	0	0	1850	0	0	1791	0	0
Q Serve(g_s), s	0.0	0.0	0.0	23.0	0.0	0.0	22.9	0.0	0.0	34.5	0.0	0.0
Cycle Q Clear(g_c), s	24.4	0.0	0.0	47.4	0.0	0.0	22.9	0.0	0.0	34.5	0.0	0.0
Prop In Lane	0.22		0.04	0.04		0.50	0.04		0.05	0.39		0.14
Lane Grp Cap(c), veh/h	362	0	0	719	0	0	356	0	0	515	0	0
V/C Ratio(X)	0.69	0.00	0.00	1.03	0.00	0.00	0.99	0.00	0.00	1.06	0.00	0.00
Avail Cap(c_a), veh/h	362	0	0	719	0	0	356	0	0	515	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.9	0.0	0.0	37.2	0.0	0.0	48.4	0.0	0.0	42.8	0.0	0.0
Incr Delay (d2), s/veh	5.4	0.0	0.0	40.4	0.0	0.0	45.3	0.0	0.0	55.3	0.0	0.0
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	6.1	0.0	0.0	29.2	0.0	0.0	15.0	0.0	0.0	23.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	0.0	0.0	77.6	0.0	0.0	93.6	0.0	0.0	98.1	0.0	0.0
LnGrp LOS	C	A	A	F	A	A	F	A	A	F	A	A
Approach Vol, veh/h	249		738			353			544			
Approach Delay, s/veh	32.3		77.6			93.6			98.1			
Approach LOS	C		E			F			F			
Timer - Assigned Phs	2		4			6			8			
Phs Duration (G+Y+Rc), s	28.1		52.4			39.5			52.4			
Change Period (Y+Rc), s	5.0		5.0			5.0			5.0			
Max Green Setting (Gmax), s	23.1		47.4			34.5			47.4			
Max Q Clear Time (g_c+I1), s	24.9		26.4			36.5			49.4			
Green Ext Time (p_c), s	0.0		1.7			0.0			0.0			
Intersection Summary												
HCM 6th Ctrl Delay			80.5									
HCM 6th LOS			F									

HCM 6th Signalized Intersection Summary

5: Township line Rd & Avon Ave

Year 2028 + Proposed AM Peak

05/03/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	56	259	10	26	72	115	1	224	14	258	185	25
Future Volume (veh/h)	56	259	10	26	72	115	1	224	14	258	185	25
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	1900	1900	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	62	285	11	29	79	126	1	246	15	1032	203	27
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.25	0.91	0.91
Percent Heavy Veh, %	0	0	0	3	3	3	3	3	3	5	5	5
Cap, veh/h	74	268	10	51	120	168	1	241	15	781	154	20
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.14	0.14	0.14	0.55	0.55	0.55
Sat Flow, veh/h	215	1256	47	115	561	788	7	1724	105	1429	281	37
Grp Volume(v), veh/h	358	0	0	234	0	0	262	0	0	1262	0	0
Grp Sat Flow(s),veh/h/ln	1518	0	0	1464	0	0	1836	0	0	1748	0	0
Q Serve(g_s), s	10.4	0.0	0.0	0.0	0.0	0.0	21.0	0.0	0.0	82.0	0.0	0.0
Cycle Q Clear(g_c), s	32.0	0.0	0.0	21.6	0.0	0.0	21.0	0.0	0.0	82.0	0.0	0.0
Prop In Lane	0.17		0.03	0.12		0.54	0.00		0.06	0.82		0.02
Lane Grp Cap(c), veh/h	352	0	0	339	0	0	257	0	0	955	0	0
V/C Ratio(X)	1.02	0.00	0.00	0.69	0.00	0.00	1.02	0.00	0.00	1.32	0.00	0.00
Avail Cap(c_a), veh/h	352	0	0	339	0	0	257	0	0	955	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	60.5	0.0	0.0	54.3	0.0	0.0	64.5	0.0	0.0	34.0	0.0	0.0
Incr Delay (d2), s/veh	52.4	0.0	0.0	5.8	0.0	0.0	61.1	0.0	0.0	151.8	0.0	0.0
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	18.8	0.0	0.0	8.8	0.0	0.0	14.2	0.0	0.0	74.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	112.9	0.0	0.0	60.2	0.0	0.0	125.6	0.0	0.0	185.8	0.0	0.0
LnGrp LOS	F	A	A	E	A	A	F	A	A	F	A	A
Approach Vol, veh/h	358		234			262			1262			
Approach Delay, s/veh	112.9		60.2			125.6			185.8			
Approach LOS	F		E			F			F			
Timer - Assigned Phs	2		4			6			8			
Phs Duration (G+Y+Rc), s	26.0		37.0			87.0			37.0			
Change Period (Y+Rc), s	5.0		5.0			5.0			5.0			
Max Green Setting (Gmax), s	21.0		32.0			82.0			32.0			
Max Q Clear Time (g_c+I1), s	23.0		34.0			84.0			23.6			
Green Ext Time (p_c), s	0.0		0.0			0.0			0.9			
Intersection Summary												
HCM 6th Ctrl Delay	152.1											
HCM 6th LOS	F											

HCM 6th Signalized Intersection Summary

5: Township line Rd & Avon Ave

Year 2028 + Proposed PM Peak

05/03/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	53	181	10	37	332	350	13	305	33	202	244	70
Future Volume (veh/h)	53	181	10	37	332	350	13	305	33	202	244	70
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	1870	1870	1870	1900	1900	1900	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	56	191	11	39	349	368	14	321	35	213	257	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	2	2	2	2	2	2
Cap, veh/h	87	280	15	55	326	332	14	326	36	194	234	67
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.21	0.21	0.21	0.28	0.28	0.28
Sat Flow, veh/h	130	713	38	61	829	844	69	1593	174	701	846	244
Grp Volume(v), veh/h	258	0	0	756	0	0	370	0	0	544	0	0
Grp Sat Flow(s),veh/h/ln	880	0	0	1734	0	0	1836	0	0	1791	0	0
Q Serve(g_s), s	0.0	0.0	0.0	23.7	0.0	0.0	24.1	0.0	0.0	33.2	0.0	0.0
Cycle Q Clear(g_c), s	23.5	0.0	0.0	47.2	0.0	0.0	24.1	0.0	0.0	33.2	0.0	0.0
Prop In Lane	0.22		0.04	0.05		0.49	0.04		0.09	0.39		0.14
Lane Grp Cap(c), veh/h	383	0	0	714	0	0	376	0	0	496	0	0
V/C Ratio(X)	0.67	0.00	0.00	1.06	0.00	0.00	0.98	0.00	0.00	1.10	0.00	0.00
Avail Cap(c_a), veh/h	383	0	0	714	0	0	376	0	0	496	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.0	0.0	0.0	37.3	0.0	0.0	47.5	0.0	0.0	43.4	0.0	0.0
Incr Delay (d2), s/veh	4.6	0.0	0.0	50.6	0.0	0.0	41.8	0.0	0.0	69.7	0.0	0.0
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	6.2	0.0	0.0	31.0	0.0	0.0	15.3	0.0	0.0	24.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.7	0.0	0.0	87.8	0.0	0.0	89.3	0.0	0.0	113.1	0.0	0.0
LnGrp LOS	C	A	A	F	A	A	F	A	A	F	A	A
Approach Vol, veh/h	258		756			370			544			
Approach Delay, s/veh	31.7		87.8			89.3			113.1			
Approach LOS	C		F			F			F			
Timer - Assigned Phs	2		4			6			8			
Phs Duration (G+Y+Rc), s	29.6		52.2			38.2			52.2			
Change Period (Y+Rc), s	5.0		5.0			5.0			5.0			
Max Green Setting (Gmax), s	24.6		47.2			33.2			47.2			
Max Q Clear Time (g_c+I1), s	26.1		25.5			35.2			49.2			
Green Ext Time (p_c), s	0.0		1.7			0.0			0.0			
Intersection Summary												
HCM 6th Ctrl Delay	87.7											
HCM 6th LOS	F											

DAN JONES ROAD & RETAIL ACCESS DRIVE

CAPACITY ANALYSIS

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	31	44	392	473	58
Future Vol, veh/h	31	31	44	392	473	58
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	100	-	-	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	34	34	48	426	514	63
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1036	514	577	0	-	0
Stage 1	514	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	256	560	996	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	595	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	244	560	996	-	-	-
Mov Cap-2 Maneuver	244	-	-	-	-	-
Stage 1	571	-	-	-	-	-
Stage 2	595	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	17	0.9		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	996	-	244	560	-	-
HCM Lane V/C Ratio	0.048	-	0.138	0.06	-	-
HCM Control Delay (s)	8.8	-	22.1	11.8	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	0.2	-	-

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	56	45	47	772	675	47
Future Vol, veh/h	56	45	47	772	675	47
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	100	-	-	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	61	49	51	839	734	51
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1675	734	785	0	-	0
Stage 1	734	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	105	420	834	-	-	-
Stage 1	475	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	99	420	834	-	-	-
Mov Cap-2 Maneuver	99	-	-	-	-	-
Stage 1	446	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	55	0.6		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	834	-	99	420	-	-
HCM Lane V/C Ratio	0.061	-	0.615	0.116	-	-
HCM Control Delay (s)	9.6	-	87.3	14.7	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	3	0.4	-	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	31	44	470	571	58
Future Vol, veh/h	31	31	44	470	571	58
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	100	-	-	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	34	34	48	511	621	63
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1228	621	684	0	-	0
Stage 1	621	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	197	487	909	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	187	487	909	-	-	-
Mov Cap-2 Maneuver	187	-	-	-	-	-
Stage 1	508	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	20.7	0.8		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	909	-	187	487	-	-
HCM Lane V/C Ratio	0.053	-	0.18	0.069	-	-
HCM Control Delay (s)	9.2	-	28.4	12.9	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	0.2	-	-

Intersection						
Int Delay, s/veh	7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	56	45	47	927	808	47
Future Vol, veh/h	56	45	47	927	808	47
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	100	-	-	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	61	49	51	1008	878	51
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1988	878	929	0	-	0
Stage 1	878	-	-	-	-	-
Stage 2	1110	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	67	347	736	-	-	-
Stage 1	406	-	-	-	-	-
Stage 2	315	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	62	347	736	-	-	-
Mov Cap-2 Maneuver	62	-	-	-	-	-
Stage 1	378	-	-	-	-	-
Stage 2	315	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	129.2	0.5		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	736	-	62	347	-	-
HCM Lane V/C Ratio	0.069	-	0.982	0.141	-	-
HCM Control Delay (s)	10.3	-	219.2	17.1	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.2	-	4.7	0.5	-	-

DAN JONES ROAD & RESIDENTIAL ACCESS DRIVE

CAPACITY ANALYSIS

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	36	12	408	495	9
Future Vol, veh/h	28	36	12	408	495	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	100	-	-	100
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	30	39	13	443	538	10
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1007	538	548	0	-	0
Stage 1	538	-	-	-	-	-
Stage 2	469	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	267	543	1021	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	264	543	1021	-	-	-
Mov Cap-2 Maneuver	264	-	-	-	-	-
Stage 1	577	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	15.7	0.2		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1021	-	264	543	-	-
HCM Lane V/C Ratio	0.013	-	0.115	0.072	-	-
HCM Control Delay (s)	8.6	-	20.4	12.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	0.2	-	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	23	41	800	688	32
Future Vol, veh/h	19	23	41	800	688	32
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	100	-	-	100
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	21	25	45	870	748	35
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1708	748	783	0	-	0
Stage 1	748	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	100	412	835	-	-	-
Stage 1	468	-	-	-	-	-
Stage 2	372	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	95	412	835	-	-	-
Mov Cap-2 Maneuver	95	-	-	-	-	-
Stage 1	443	-	-	-	-	-
Stage 2	372	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	31.9	0.5		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	835	-	95	412	-	-
HCM Lane V/C Ratio	0.053	-	0.217	0.061	-	-
HCM Control Delay (s)	9.6	-	53.1	14.3	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	0.2	-	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	36	12	486	593	9
Future Vol, veh/h	28	36	12	486	593	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	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	30	39	13	528	645	10
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1199	645	655	0	-	0
Stage 1	645	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	207	476	932	-	-	-
Stage 1	526	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	204	476	932	-	-	-
Mov Cap-2 Maneuver	204	-	-	-	-	-
Stage 1	519	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	18.7	0.2		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	932	-	204	476	-	-
HCM Lane V/C Ratio	0.014	-	0.149	0.082	-	-
HCM Control Delay (s)	8.9	-	25.7	13.2	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0	-	0.5	0.3	-	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	23	41	955	821	32
Future Vol, veh/h	19	23	41	955	821	32
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	100	-	-	100
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	21	25	45	1038	892	35
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2020	892	927	0	-	0
Stage 1	892	-	-	-	-	-
Stage 2	1128	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	64	341	737	-	-	-
Stage 1	400	-	-	-	-	-
Stage 2	309	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	60	341	737	-	-	-
Mov Cap-2 Maneuver	60	-	-	-	-	-
Stage 1	376	-	-	-	-	-
Stage 2	309	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	51.4	0.4		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	737	-	60	341	-	-
HCM Lane V/C Ratio	0.06	-	0.344	0.073	-	-
HCM Control Delay (s)	10.2	-	93.7	16.4	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.3	0.2	-	-