



First Gate Commerce Center

Margate, Florida

prepared for:

Sun Tech Engineering, Inc

traffic engineering evaluation



6/8/2021

TRAFTECH
ENGINEERING, INC.

May 2021

May 24, 2021

First Gate Commerce Center c/o
Mike Gai - Principal
Sun Tech Engineering, Inc.
4577 Nob Hill Road, Suite 102
Sunrise, Florida 33351

Re: **First Gate Commerce Center – Traffic Engineering Study**

Dear Mike:

Traf Tech Engineering, Inc. is pleased to provide you with the results of the traffic evaluation associated with the proposed industrial development planned to be located at the northwest corner of the intersection of Copans Road and Banks Road in the City of Margate, Florida. Figure 1 shows the location of the project site.

Project Description and Access

The project will consist of up to 135,000 square feet of industrial distribution development. Access to the site is planned via one access driveway off of Copans Road and one access driveway off of NW 24th Street. Appendix A contains the site plan associated with the proposed development. For purposes of this traffic evaluation, the project is anticipated to be built and occupied in the year 2023. The following tasks were undertaken as part of this evaluation:

- Documented the existing lane geometry of the study area. Three (3) intersections and the project driveways were identified as the locations that will be impacted the most by the proposed industrial project. These intersections include SR 7/US 441 at NW 24th Street, Banks Road at NW 24th Street and Banks Road at Copans Road. Figure 2 illustrates the existing lane geometry of the study intersections.
- Collected intersection turning movement counts during the critical peak periods (7:00 AM to 9:00 AM) and (4:00 PM to 6:00 PM) at the following locations:
 - SR 7/US 441 and NW 24th Street (stop control)
 - Banks Road and NW 24th Street (stop control)
 - Banks Road and Copans Road (traffic signal)

The above traffic counts were recorded on Thursday, April 15, 2021. The traffic counts were collected during the peak season based on FDOT peak season adjustment factors. The traffic counts are included in Appendix B as well as the signal timing plan for the signalized intersection. The peak season adjustment factors and historical traffic counts are provided in Appendix C.

Additionally, an adjustment factor was applied to account for the effects of COVID-19. The calculations used to account for COVID-19 is reflected in Table D, located in Appendix D. Figure 3 shows the 2021 peak season AM and PM peak hour traffic volumes adjusted to account for Covid-19.

- o Determined the trip generation of the proposed land use based on the trip generation equations/rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition). Table 1 below documents the trip generation associated with the subject project. As presented in Table 1, the proposed project is projected to generate approximately 570 daily trips, approximately 56 AM peak hour trips (49 inbound and 7 outbound) and approximately 45 trips during the typical afternoon peak hour (6 inbound and 39 outbound).

TABLE 1 Trip Generation Summary Firstgate								
Land Use	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total Trips	Inbound	Outbound	Total Trips	Inbound	Outbound
General Industrial (LUC 110)	135,000 sf	570	56	49	7	45	6	39
Gross Trips		570	56	49	7	45	6	39

Source: ITE *Trip Generation Manual* (10th Edition)

Note: Fitted Equations were used based on process of selection depicted on Figure 4.2 of the *Trip Generation Handbook*.

- o The project's peak-hour trips documented in Table 1 were distributed and assigned to the study area based existing traffic patterns. The trip distribution based on current traffic counts for the subject development is summarized below:
 - 10% to and from the north via SR 7/US 441
 - 10% to and from the south via SR 7/US 441
 - 3% to and from the north via Banks Road
 - 7% to and from the south via Banks Road
 - 38% to and from the east via Copans Road
 - 32% to and from the west via Copans Road

Figure 4 documents the project traffic assignment based on the above traffic percentages.

- o Figures 5 and 6 present the future traffic volumes for the study area. Figure 5 includes background traffic only (without the proposed project) and Figure 6 includes the additional traffic anticipated to be generated by the proposed development. The background traffic includes traffic growth based on historical traffic data within the study area (refer to Appendix E). As indicated in the growth analysis presented in Appendix E, minimal growth has occurred over the past five (5) years (2014-2019) and to assess traffic impacts with a conservative approach, a 0.78% growth rate, compounded annually was applied for the future traffic projections to account for future increases in traffic volumes. The future traffic volumes are presented in Appendix E in tabular format.
- o To determine the impacts created to the impacted intersections, capacity/level of service analyses were undertaken using the SYNCHRO software. The results of the capacity/level of service analyses are presented in Table 2. As summarized in Table 2, all intersections are expected to operate adequately in the year 2023 with the proposed project in place. The traffic impacts created by this project are minimal. The project driveways are projected to operate at acceptable levels of service (A and B). No roadway improvements are required to mitigate the project's traffic impacts.

The SYNCHRO outputs are contained in Appendix F. Please give me a call if you have any questions.

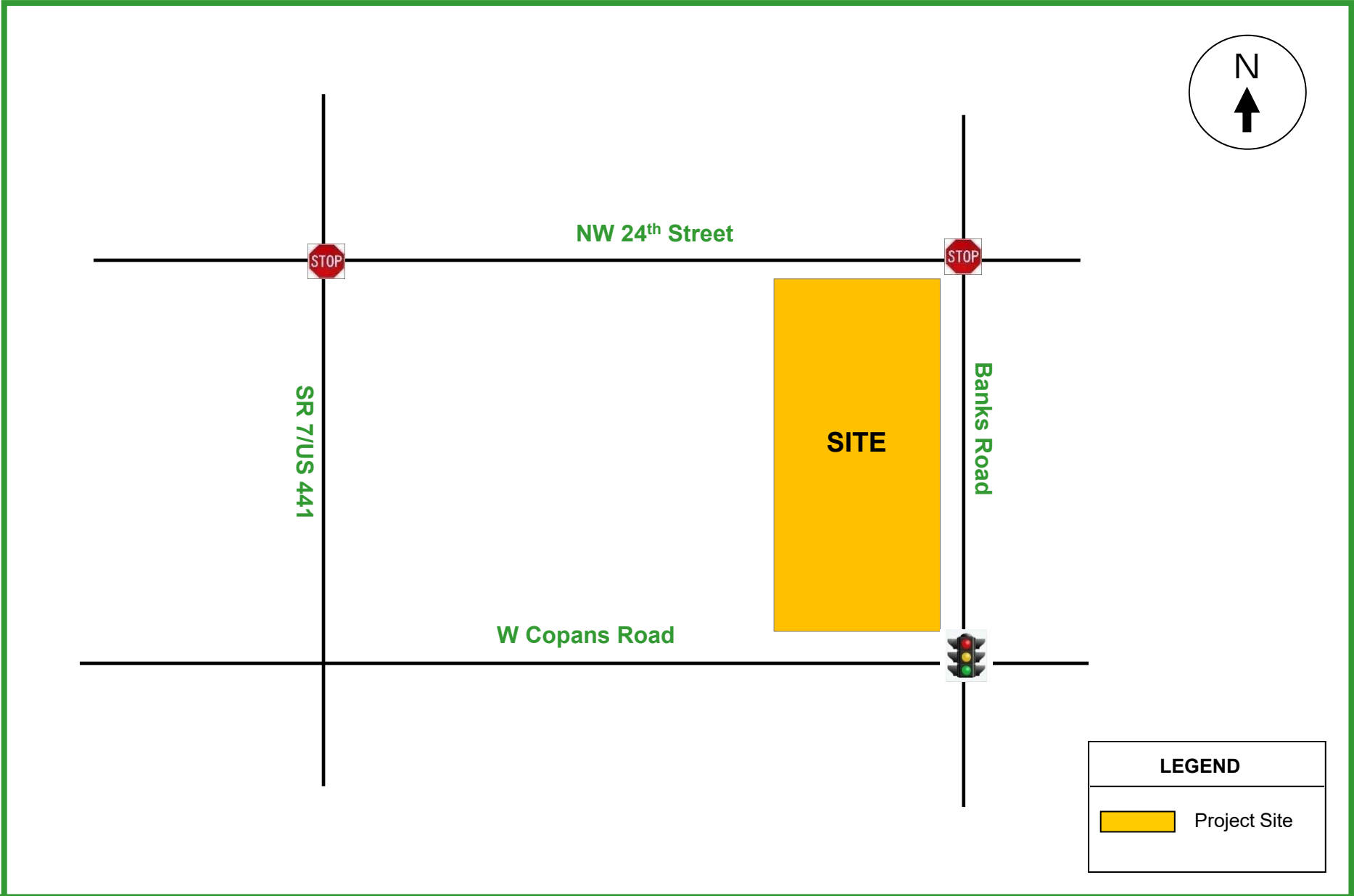
Sincerely,

TRAF TECH ENGINEERING, INC.

Page

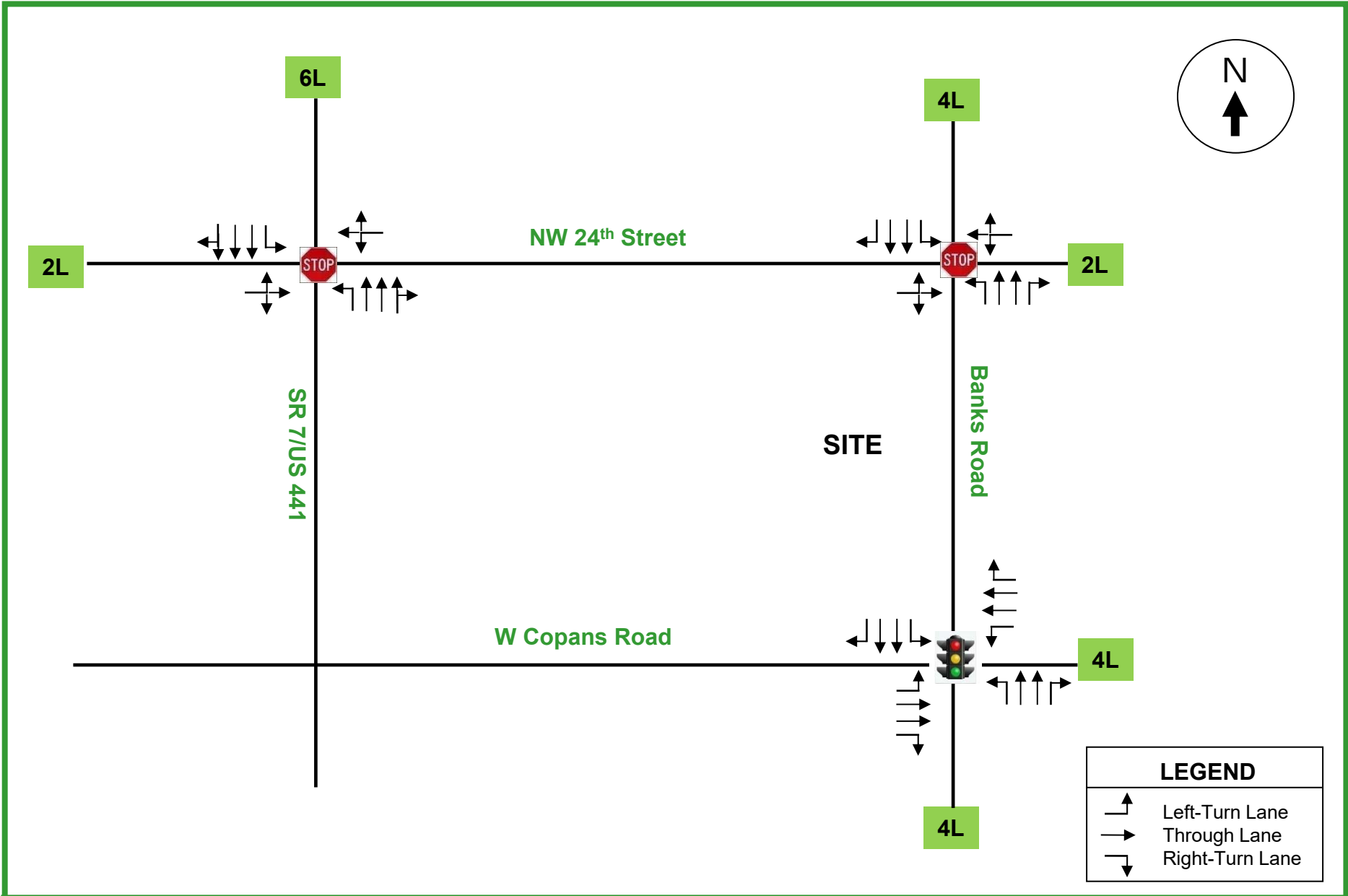
Joaquín E. Vargas, P.E.

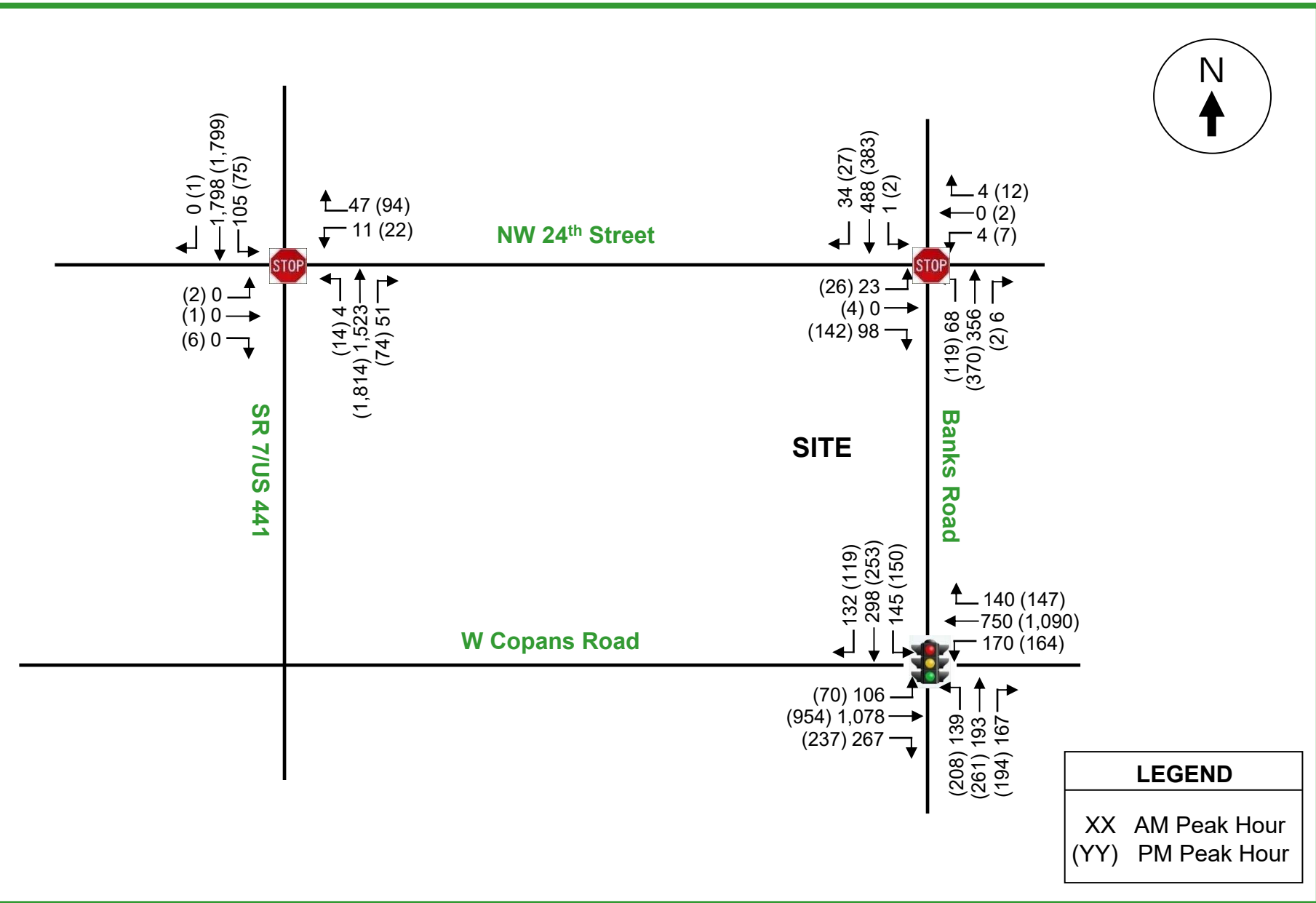
Senior Transportation Engineer



LOCATION MAP

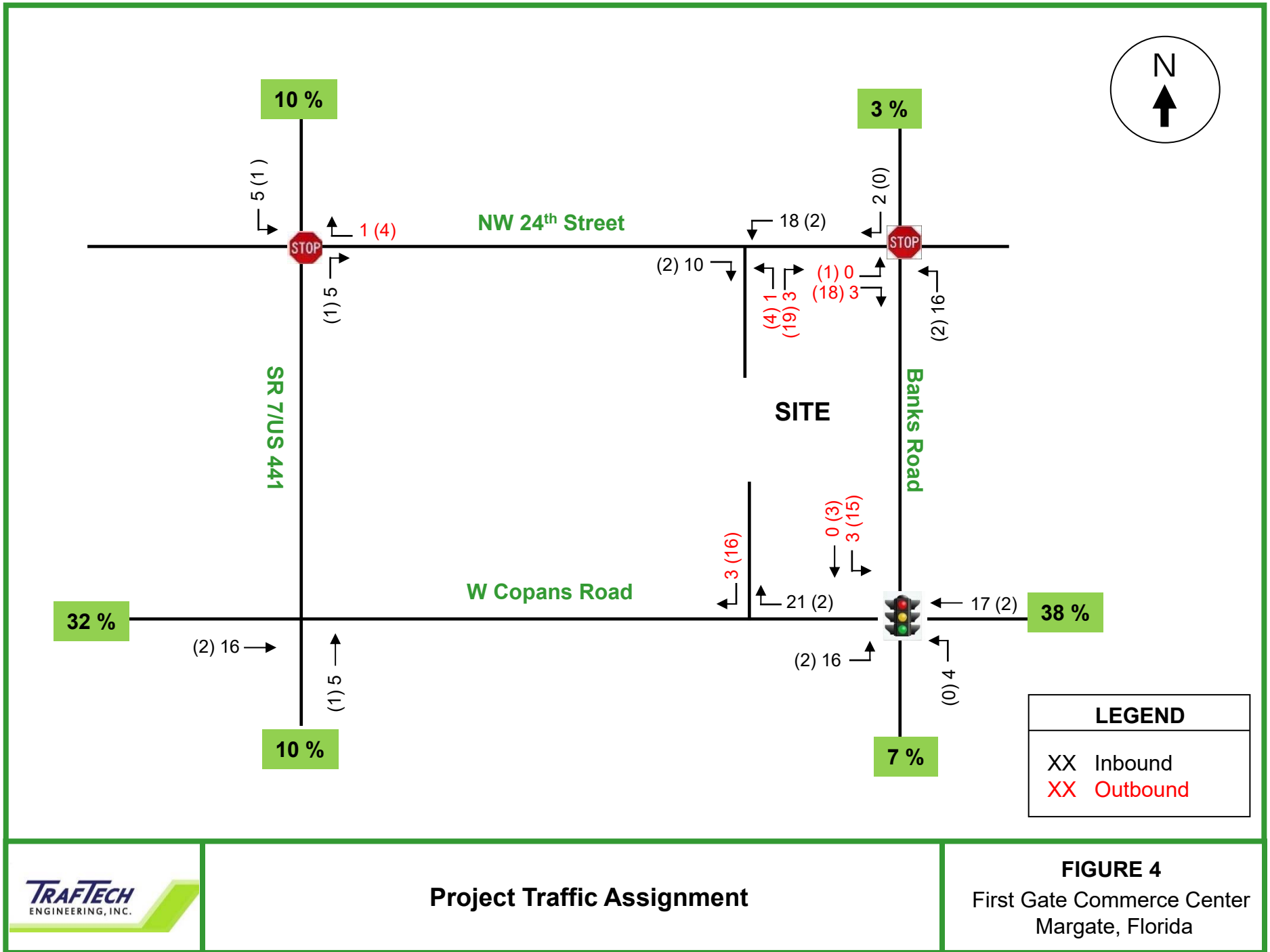
FIGURE 1
First Gate Commerce Center
Margate, Florida

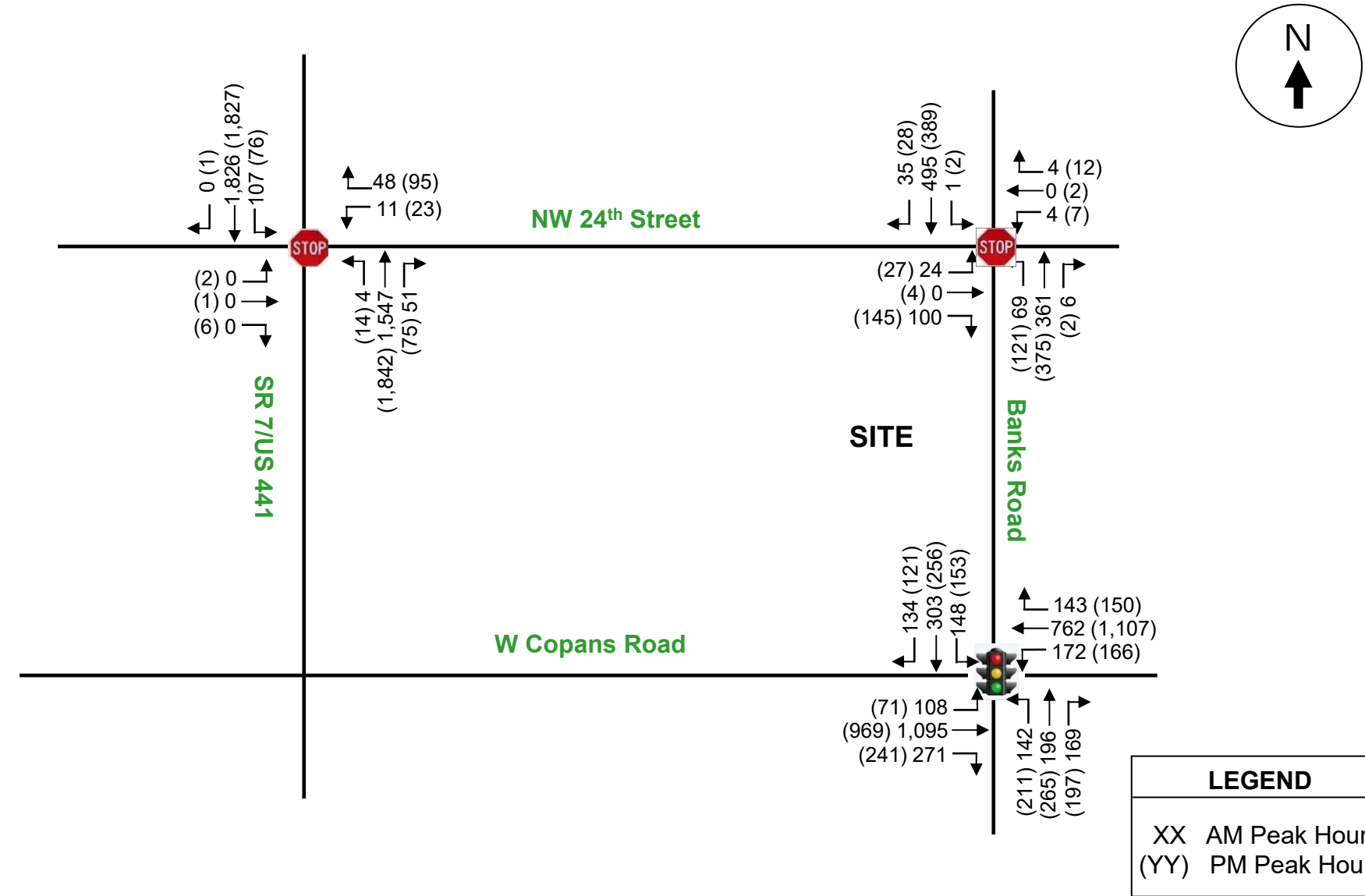


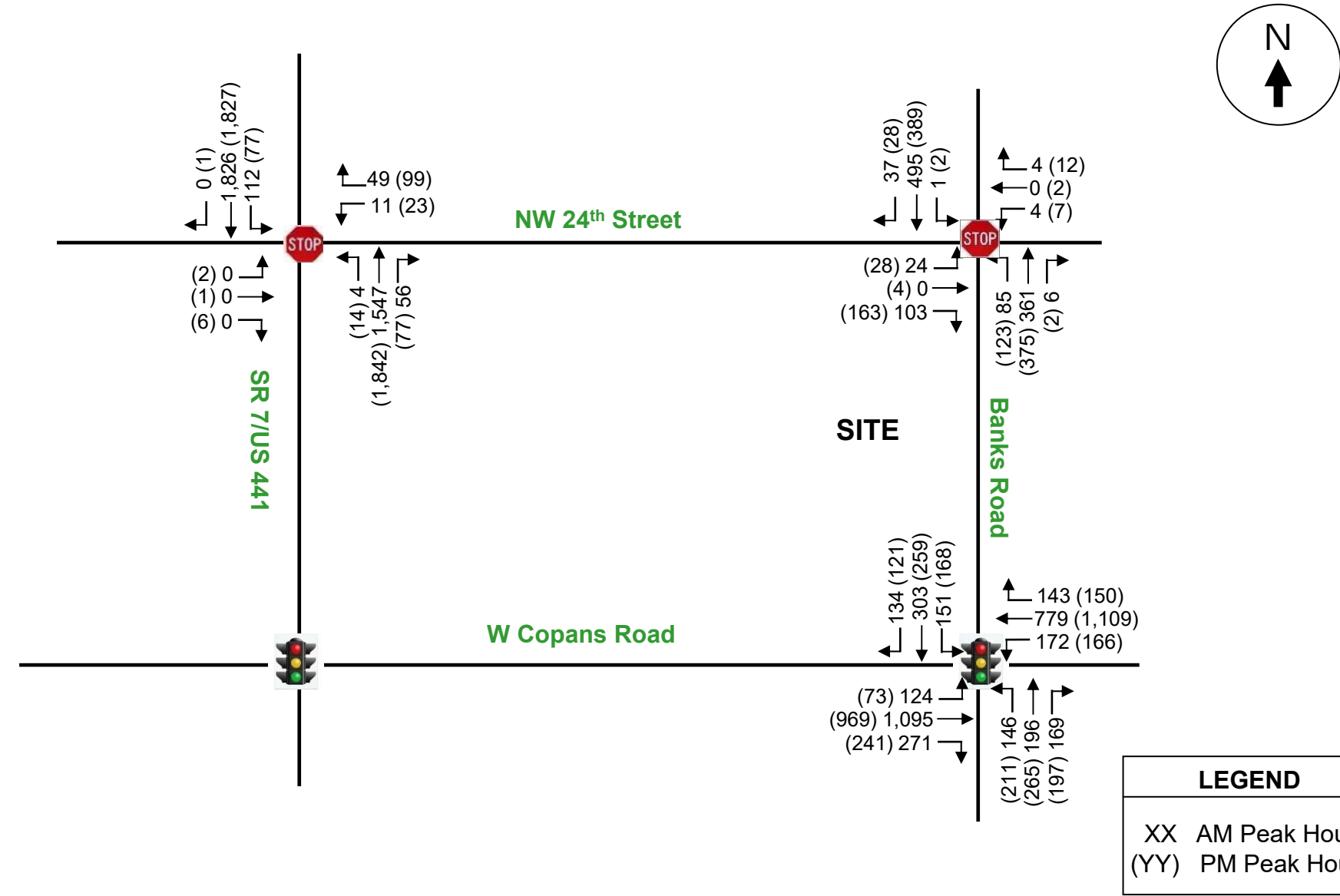


TRAFFIC COUNTS
 (Year 2021 Peak Season)

FIGURE 3
 First Gate Commerce Center
 Margate, Florida







TOTAL TRAFFIC with PROJECT – Year 2023
AM (PM) Peak Hour Trips

FIGURE 6
 First Gate Commerce Center
 Margate, Florida

**TABLE 2
Level of Service Analyses
First Gate**

Intersection	Time Period	EASTBOUND		WESTBOUND		NORTHBOUND				SOUTHBOUND				Intersection	
		Approach		Approach		L		Approach		L		Approach			
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Copans Road and Banks Road	AM	C (D)[D]	35 (35.6)[38.3]	C (C)[D]	28.9 (29.5)[36.5]			D (D)[D]	51.4 (51.5)[49.1]			D (D)[D]	51.1 (51.1)[50.2]	D (D)[D]	38.7 (39.1)[41.5]
	PM	D (D)[D]	37.6 (38.3)[38.3]	D (D)[D]	35.7 (36.5)[36.6]			D (D)[D]	48.9 (49.1)[49.9]			D (D)[D]	50.2 (50.2)[49.9]	D (D)[D]	41 (41.5)[41.7]
SR 7 and NW 24 St	AM	A (A)[A]	0 (0)[0]	B (B)[B]	14.1(14.2)[14.3]					B (B)[B]	11.8 (11.9)[12.0]				
	PM	C (C)[C]	21 (21.6)[21.6]	C (C)[C]	18.6 (19.4)[19.3]					B (B)[B]	13.6 (13.8)[13.8]				
Banks Road and NW 24 St	AM	B (B)[B]	11.4 (11.5)[11.6]	B (B)[B]	11.8 (11.8)[12.1]	A (A)[A]	9.1 (9.1)[9.2]								
	PM	B (B)[B]	11.6 (11.8)[11.9]	B (B)[B]	12.3 (12.3)[12.5]	A (A)[A]	8.7 (8.7)[8.7]								
NW 24 St and Driveway	AM							[A]	[9.2]						
	PM							[A]	[9.1]						
Copans Road and Driveway	AM											[B]	[10.3]		
	PM											[B]	[11.5]		

SOURCE: SYNCHRO. LEGEND: Existing (Background)[Future]

NOTES: Most impacted intersection is Copans Road and Banks Road. This intersection is currently operating at level of service "D" and will continue operating at level of service "D" with and without the proposed Firstgate project in place.

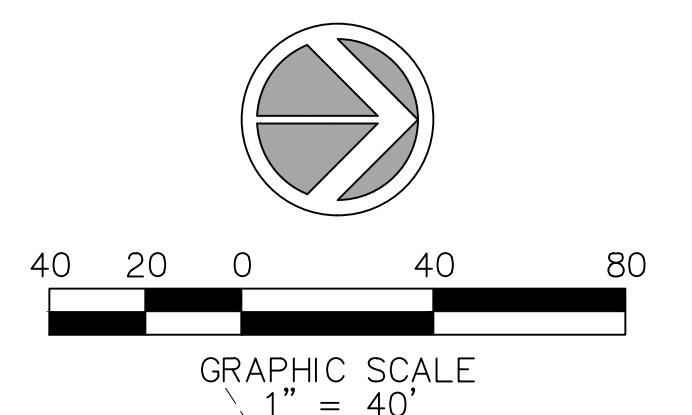
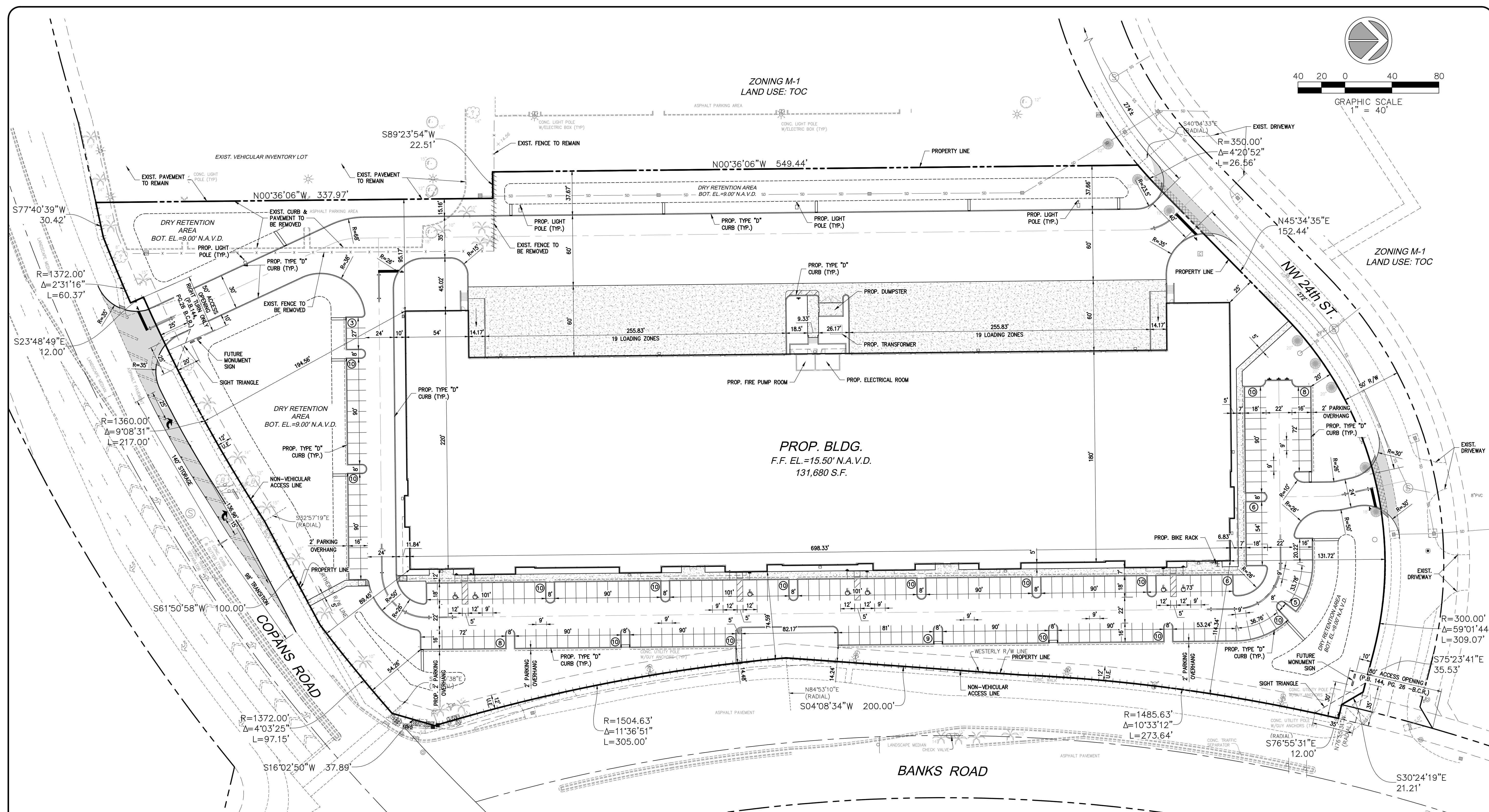
Both project access driveways projected to operate at level of service "B" or better with the project in place.

SR 7 and NW 24 Street projected to operate at level of service "C" or better with the project in place.

Intersection of Banks Road and NW 24 Street projected to operate at level of service "B" or better with the project in place.

APPENDIX A

Site Plan – First Gate Commerce Center



4577 Nob Hill Road, Suite 102
Sunrise, FL 33351
www.suntecheng.com
Certificate of Auth. #7057/LB 7019
Phone: (954) 777-3123
Fax: (954) 777-3114



NO.	DATE	DESCRIPTION

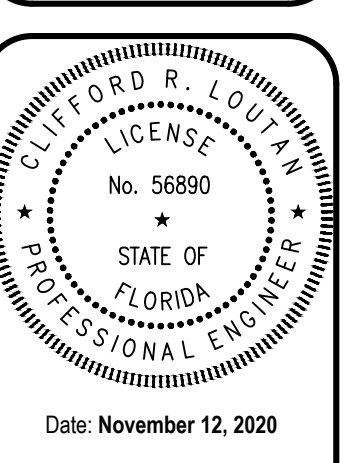
FIRSTGATE COMMERCE CENTER

FLORIDA

SITE PLAN

CITY OF MARGATE

DATE: JAN. 2020
SCALE: 1"=40'
DESIGNED BY: M.G.
DRAWN BY: M.A.S.
JOB #: 19-3970



SHEET No.
SP1

SITE DATA			
	AREA (S.F.)	AREA (ACRES)	PERCENTAGE
OPEN SPACE	127,404	2.92 AC.	31.4%
PAVEMENT AREA	139,419	3.20 AC.	34.4%
CONCRETE SIDEWALK	6,763	0.16 AC.	1.7%
BUILDING AREA	131,680	3.02 AC.	32.5%
TOTAL AREA	405,267	9.30 AC.	100.0%

PERVIOUS CALCULATIONS			
	AREA (S.F.)	AREA (ACRES)	PERCENTAGE
PERVIOUS	127,404	2.92 AC.	31.4%
IMPERVIOUS	277,862	6.38 AC.	68.6%

PARKING TABULATION	
PARKING PROVIDED	
TOTAL PARKING SPACES PROVIDED	177
TOTAL HANDICAP SPACES PROVIDED	8
TOTAL PARKING PROVIDED	185
LAND USE	TOC
ZONING	M-1

- NOTES:**
1. WATER AND SEWER PROVIDED BY CITY OF MARGATE.
 2. WATER AND SEWER DEMAND: 131,680 S.F. X 0.1 G.P.D./S.F.=13,168 G.P.D.

K:\PROJECTS\19-xxx\19-3970.dwg, SPl_11162020.9:00 AM, L1, Sun-Tech Engineering, Inc. (M.A.S.)

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PLOT DATE: 11/16/2020 9:00 AM BY: Miguel A. Sosa
LAYOUT: [SP1]

APPENDIX B

Traffic Counts and Signal Timing

Traf Tech Engineering Inc.

File Name : 1- SR-7 & NW 24th Street
 Site Code : 00000000
 Start Date : 4/15/2021
 Page No : 1

Groups Printed- Autos - Heavy Vehicles

Start Time	SR-7 / US-441 From North					NW 24th Street From East					SR-7 / US-441 From South					NW 24th Street From West					Int. Total
	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
07:00	0	307	21	3	331	6	0	4	1	11	18	289	0	1	308	0	0	0	0	0	650
07:15	0	375	15	7	397	9	0	3	0	12	6	327	0	0	333	0	0	0	0	0	742
07:30	0	474	23	2	499	7	0	3	0	10	13	372	0	0	385	0	0	0	0	0	894
07:45	0	451	26	2	479	6	0	2	0	8	14	359	0	1	374	0	0	0	0	0	861
Total	0	1607	85	14	1706	28	0	12	1	41	51	1347	0	2	1400	0	0	0	0	0	3147
08:00	0	441	31	0	472	14	0	2	0	16	8	362	0	2	372	0	0	0	0	0	860
08:15	0	414	18	2	434	20	0	4	0	24	15	415	0	1	431	0	0	0	0	0	889
08:30	1	390	20	2	413	11	0	2	0	13	6	341	0	3	350	0	0	0	0	0	776
08:45	3	422	17	2	444	8	1	8	0	17	17	373	2	1	393	0	0	0	0	0	854
Total	4	1667	86	6	1763	53	1	16	0	70	46	1491	2	7	1546	0	0	0	0	0	3379
*** BREAK ***																					
16:00	3	411	6	3	423	23	0	8	0	31	20	484	1	1	506	2	0	0	0	2	962
16:15	1	454	12	3	470	23	0	4	0	27	18	415	1	4	438	1	0	0	0	1	936
16:30	1	439	14	3	457	19	0	4	0	23	11	429	1	5	446	2	0	0	0	2	928
16:45	0	429	14	2	445	18	0	5	0	23	16	409	0	4	429	1	0	0	0	1	898
Total	5	1733	46	11	1795	83	0	21	0	104	65	1737	3	14	1819	6	0	0	0	6	3724
17:00	0	456	17	5	478	36	0	8	0	44	20	477	0	3	500	3	1	2	0	6	1028
17:15	0	457	15	4	476	20	0	5	0	25	26	481	0	1	508	0	0	0	0	0	1009
17:30	0	408	10	3	421	21	0	10	0	31	18	428	0	1	447	2	0	0	0	2	901
17:45	0	439	17	2	458	16	0	15	0	31	16	391	0	2	409	1	0	1	0	2	900
Total	0	1760	59	14	1833	93	0	38	0	131	80	1777	0	7	1864	6	1	3	0	10	3838
Grand Total	9	6767	276	45	7097	257	1	87	1	346	242	6352	5	30	6629	12	1	3	0	16	14088
Apprch %	0.1	95.4	3.9	0.6		74.3	0.3	25.1	0.3		3.7	95.8	0.1	0.5		75	6.2	18.8	0		
Total %	0.1	48	2	0.3	50.4	1.8	0	0.6	0	2.5	1.7	45.1	0	0.2	47.1	0.1	0	0	0	0.1	
Autos	9	6727										6219									13894
% Autos	100	99.4	100	100	99.4	97.7	100	95.4	100	97.1	95.9	97.9	100	96.7	97.8	100	100	100	0	100	98.6
Heavy Vehicles																					
% Heavy Vehicles	0	0.6	0	0	0.6	2.3	0	4.6	0	2.9	4.1	2.1	0	3.3	2.2	0	0	0	0	0	1.4

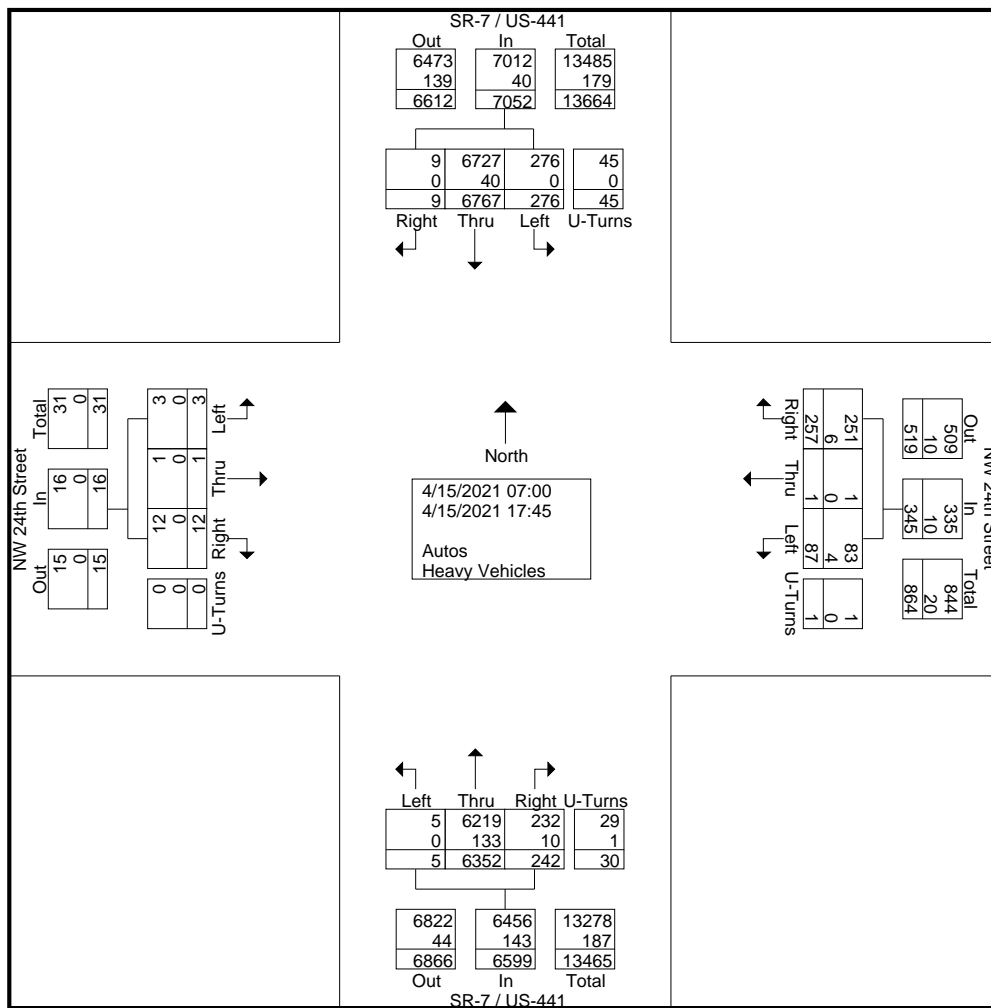
Traf Tech Engineering Inc.

File Name : 1- SR-7 & NW 24th Street

Site Code : 00000000

Start Date : 4/15/2021

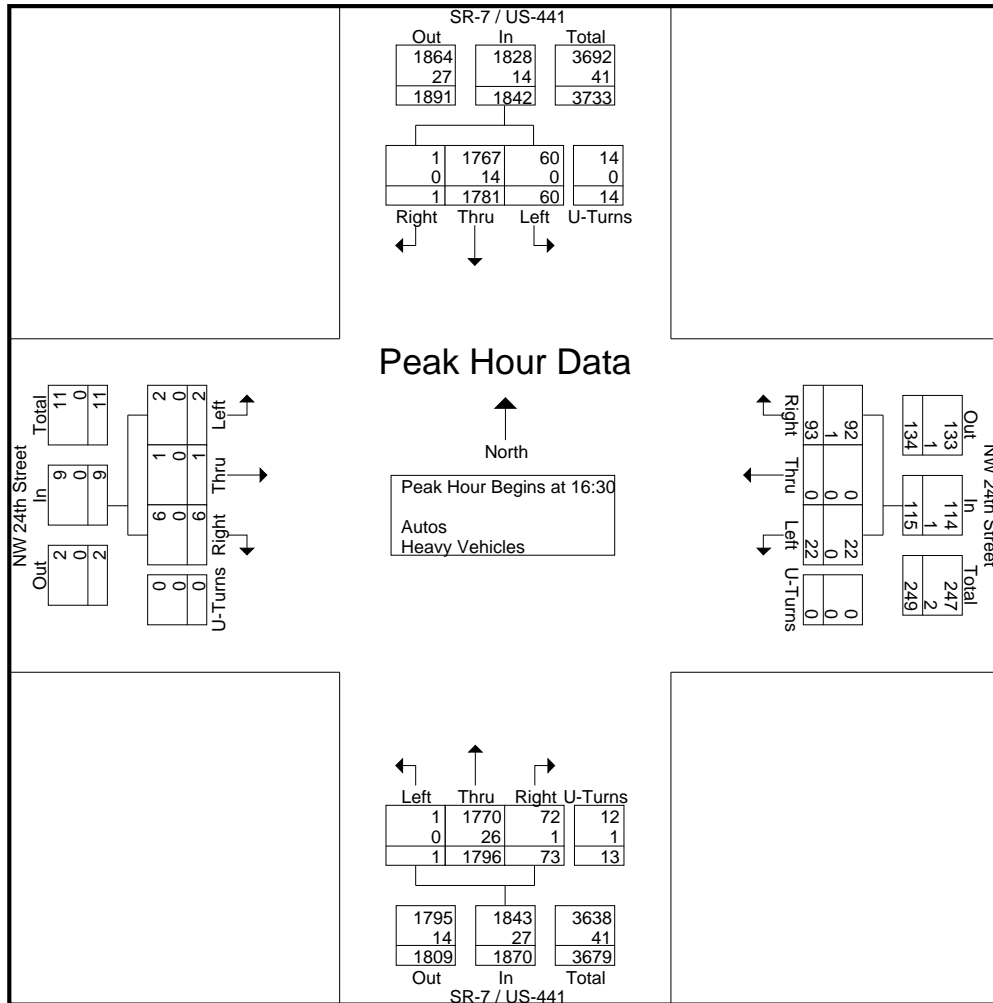
Page No : 2



Traf Tech Engineering Inc.

File Name : 1- SR-7 & NW 24th Street
 Site Code : 00000000
 Start Date : 4/15/2021
 Page No : 3

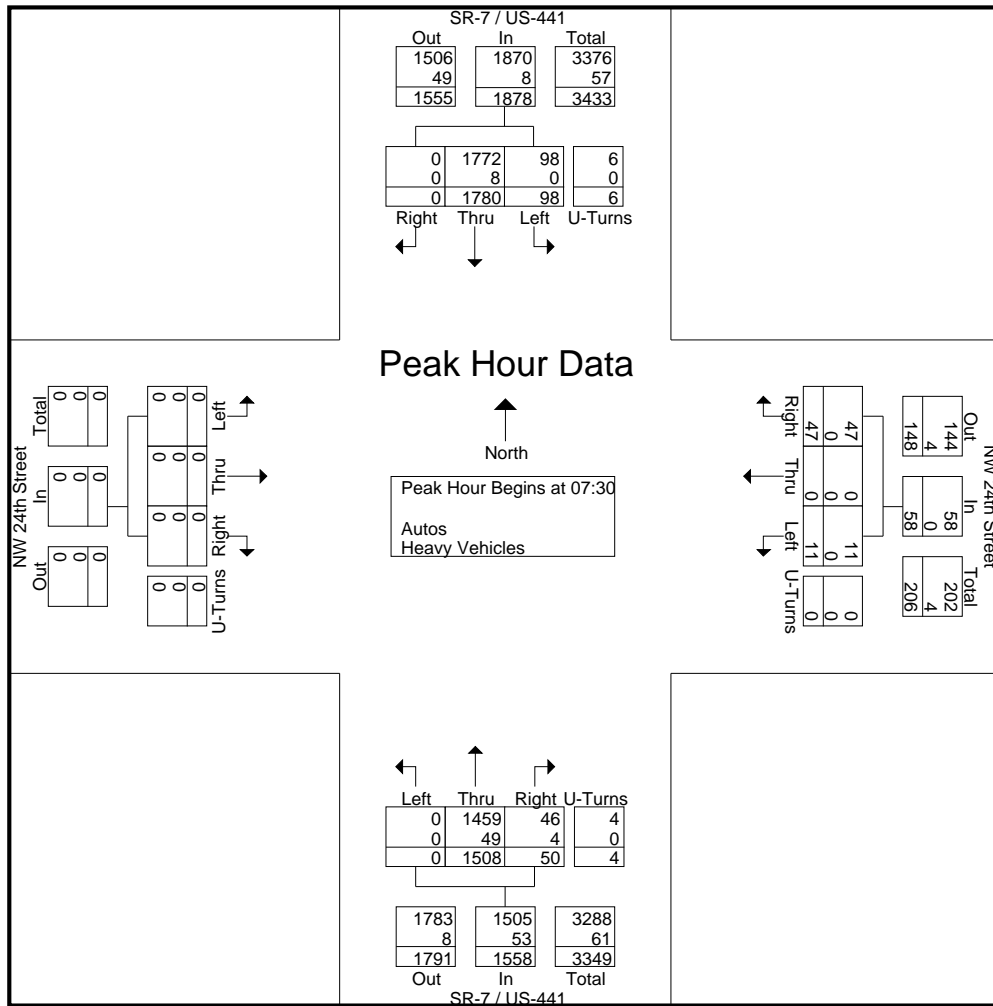
Start Time	SR-7 / US-441 From North					NW 24th Street From East					SR-7 / US-441 From South					NW 24th Street From West					Int. Total
	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	1	439	14	3	457	19	0	4	0	23	11	429	1	5	446	2	0	0	0	2	928
16:45	0	429	14	2	445	18	0	5	0	23	16	409	0	4	429	1	0	0	0	1	898
17:00	0	456	17	5	478	36	0	8	0	44	20	477	0	3	500	3	1	2	0	6	1028
17:15	0	457	15	4	476	20	0	5	0	25	26	481	0	1	508	0	0	0	0	0	1009
Total Volume	1	1781	60	14	1856	93	0	22	0	115	73	1796	1	13	1883	6	1	2	0	9	3863
% App. Total	0.1	96	3.2	0.8		80.9	0	19.1	0		3.9	95.4	0.1	0.7		66.7	11.1	22.2	0		
PHF	.250	.974	.882	.700	.971	.646	.000	.688	.000	.653	.702	.933	.250	.650	.927	.500	.250	.250	.000	.375	.939
Autos	1	1767									1770										
% Autos	100	99.2	100	100	99.2	98.9	0	100	0	99.1	98.6	98.6	100	92.3	98.5	100	100	100	0	100	98.9
Heavy Vehicles																					
% Heavy Vehicles	0	0.8	0	0	0.8	1.1	0	0	0	0.9	1.4	1.4	0	7.7	1.5	0	0	0	0	0	1.1



Traf Tech Engineering Inc.

File Name : 1- SR-7 & NW 24th Street
 Site Code : 00000000
 Start Date : 4/15/2021
 Page No : 4

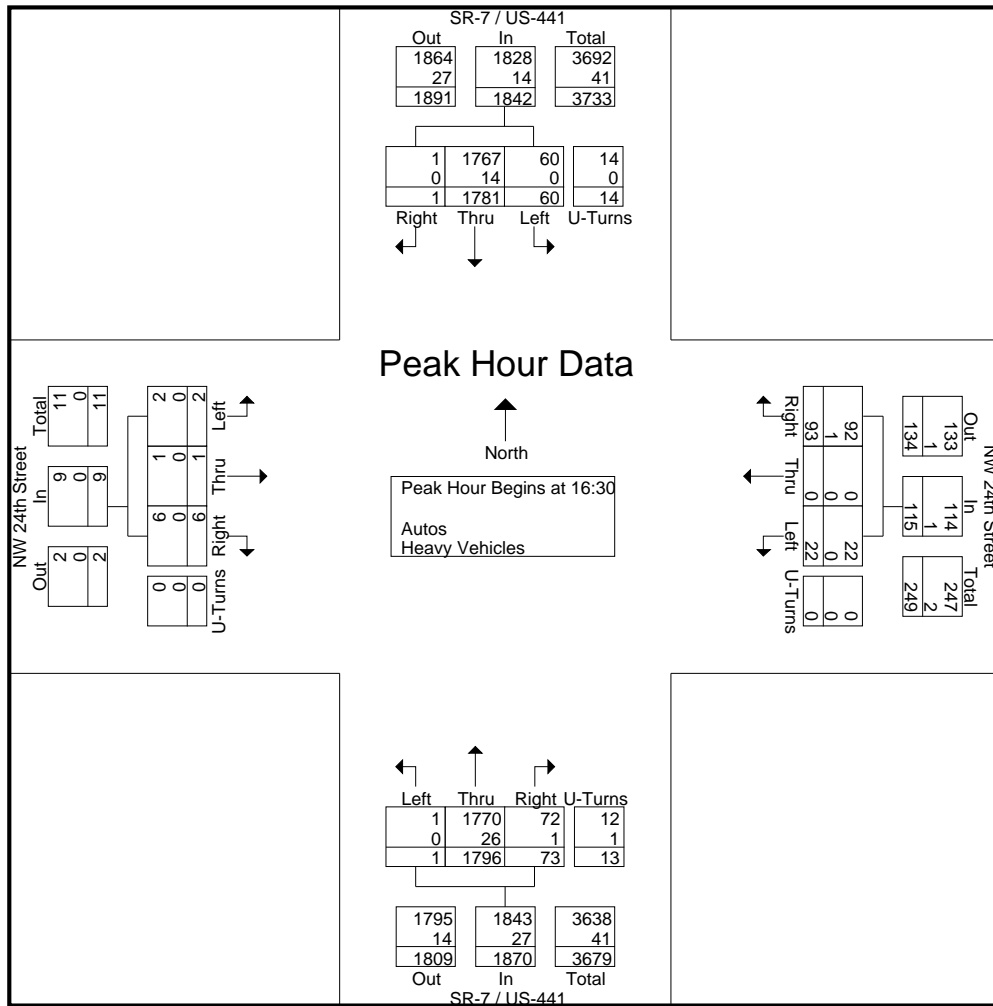
Start Time	SR-7 / US-441 From North					NW 24th Street From East					SR-7 / US-441 From South					NW 24th Street From West					Int. Total
	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	0	474	23	2	499	7	0	3	0	10	13	372	0	0	385	0	0	0	0	0	894
07:45	0	451	26	2	479	6	0	2	0	8	14	359	0	1	374	0	0	0	0	0	861
08:00	0	441	31	0	472	14	0	2	0	16	8	362	0	2	372	0	0	0	0	0	860
08:15	0	414	18	2	434	20	0	4	0	24	15	415	0	1	431	0	0	0	0	0	889
Total Volume	0	1780	98	6	1884	47	0	11	0	58	50	1508	0	4	1562	0	0	0	0	0	3504
% App. Total	0	94.5	5.2	0.3		81	0	19	0		3.2	96.5	0	0.3		0	0	0	0		
PHF	.000	.939	.790	.750	.944	.588	.000	.688	.000	.604	.833	.908	.000	.500	.906	.000	.000	.000	.000	.000	.980
Autos	0	1772									1459										
% Autos	0	99.6	100	100	99.6	100	0	100	0	100	92.0	96.8	0	100	96.6	0	0	0	0	0	98.3
Heavy Vehicles																					
% Heavy Vehicles	0	0.4	0	0	0.4	0	0	0	0	0	8.0	3.2	0	0	3.4	0	0	0	0	0	1.7



Traf Tech Engineering Inc.

File Name : 1- SR-7 & NW 24th Street
 Site Code : 00000000
 Start Date : 4/15/2021
 Page No : 5

Start Time	SR-7 / US-441 From North					NW 24th Street From East					SR-7 / US-441 From South					NW 24th Street From West					Int. Total
	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	1	439	14	3	457	19	0	4	0	23	11	429	1	5	446	2	0	0	0	2	928
16:45	0	429	14	2	445	18	0	5	0	23	16	409	0	4	429	1	0	0	0	1	898
17:00	0	456	17	5	478	36	0	8	0	44	20	477	0	3	500	3	1	2	0	6	1028
17:15	0	457	15	4	476	20	0	5	0	25	26	481	0	1	508	0	0	0	0	0	1009
Total Volume	1	1781	60	14	1856	93	0	22	0	115	73	1796	1	13	1883	6	1	2	0	9	3863
% App. Total	0.1	96	3.2	0.8		80.9	0	19.1	0		3.9	95.4	0.1	0.7		66.7	11.1	22.2	0		
PHF	.250	.974	.882	.700	.971	.646	.000	.688	.000	.653	.702	.933	.250	.650	.927	.500	.250	.250	.000	.375	.939
Autos	1	1767									1770										
% Autos	100	99.2	100	100	99.2	98.9	0	100	0	99.1	98.6	98.6	100	92.3	98.5	100	100	100	0	100	98.9
Heavy Vehicles																					
% Heavy Vehicles	0	0.8	0	0	0.8	1.1	0	0	0	0.9	1.4	1.4	0	7.7	1.5	0	0	0	0	0	1.1



Traf Tech Engineering Inc.

File Name : 1- SR-7 & NW 24th Street
 Site Code : 00000000
 Start Date : 4/15/2021
 Page No : 1

Groups Printed- Peds & Bikes

Start Time	SR-7 / US-441 From North				NW 24th Street From East				SR-7 / US-441 From South				NW 24th Street From West				Int. Total	
	Bikes			Peds	Bikes			Peds	Bikes			Peds	Bikes			Peds		
*** BREAK ***																		
08:15	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2
08:30	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2
*** BREAK ***																		
Total	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	4
*** BREAK ***																		
17:30	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
17:45	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	4
Grand Total	0	0	0	0	4	0	0	0	0	0	0	4	0	0	0	0	0	8
Apprch %	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	
Total %	0	0	0	0	50	0	0	0	0	0	0	50	0	0	0	0	0	

Traf Tech Engineering Inc.

File Name : 2- Banks Rd & NW 24th St
 Site Code : 00000000
 Start Date : 4/15/2021
 Page No : 1

Groups Printed- Autos - Heavy Vehicles

Start Time	Banks Rd From North					NW 24th Street From East					Banks Rd From South					NW 24th Street From West					Int. Total
	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
07:00	9	48	1	0	58	0	2	0	0	2	0	35	7	0	42	13	2	3	0	18	120
07:15	8	62	0	0	70	0	0	0	1	1	0	39	14	0	53	17	1	1	0	19	143
07:30	6	78	1	0	85	0	0	0	1	1	1	70	15	0	86	19	1	10	0	30	202
07:45	9	124	0	0	133	0	0	1	2	3	1	90	16	0	107	25	0	6	0	31	274
Total	32	312	2	0	346	0	2	1	4	7	2	234	52	0	288	74	4	20	0	98	739
08:00	13	138	1	0	152	0	0	0	1	1	1	105	18	0	124	34	0	4	0	38	315
08:15	9	122	0	0	131	2	0	0	0	2	1	95	18	0	114	21	0	8	0	29	276
08:30	3	99	0	0	102	2	0	0	0	2	3	62	15	0	80	17	0	5	0	22	206
08:45	9	74	6	0	89	0	0	0	0	0	4	36	17	0	57	18	2	3	0	23	169
Total	34	433	7	0	474	4	0	0	1	5	9	298	68	0	375	90	2	20	0	112	966
*** BREAK ***																					
16:00	6	88	0	1	95	1	1	1	0	3	1	69	23	0	93	26	0	3	0	29	220
16:15	5	87	0	0	92	0	1	0	0	1	0	68	23	0	91	21	1	8	0	30	214
16:30	4	100	0	0	104	1	0	0	0	1	1	85	27	0	113	37	0	4	0	41	259
16:45	7	89	0	0	96	2	1	2	0	5	0	88	23	0	111	25	2	6	0	33	245
Total	22	364	0	1	387	4	3	3	0	10	2	310	96	0	408	109	3	21	0	133	938
17:00	9	105	0	0	114	6	1	2	0	9	1	98	34	0	133	39	1	4	0	44	300
17:15	7	85	1	1	94	3	0	3	0	6	0	95	33	1	129	40	1	12	0	53	282
17:30	12	97	0	0	109	0	0	1	0	1	1	87	24	0	112	28	0	5	0	33	255
17:45	5	80	0	0	85	1	0	0	0	1	0	90	23	0	113	29	0	6	0	35	234
Total	33	367	1	1	402	10	1	6	0	17	2	370	114	1	487	136	2	27	0	165	1071
Grand Total	121	1476	10	2	1609	18	6	10	5	39	15	1212	330	1	1558	409	11	88	0	508	3714
Apprch %	7.5	91.7	0.6	0.1		46.2	15.4	25.6	12.8		1	77.8	21.2	0.1		80.5	2.2	17.3	0		
Total %	3.3	39.7	0.3	0.1	43.3	0.5	0.2	0.3	0.1	1.1	0.4	32.6	8.9	0	41.9	11	0.3	2.4	0	13.7	
Autos	116	1458										1208									
% Autos	95.9	98.8	100	100	98.6	100	100	100	100	100	100	99.7	99.4	100	99.6	96.8	100	89.8	0	95.7	98.6
Heavy Vehicles																					
% Heavy Vehicles	4.1	1.2	0	0	1.4	0	0	0	0	0	0	0.3	0.6	0	0.4	3.2	0	10.2	0	4.3	1.4

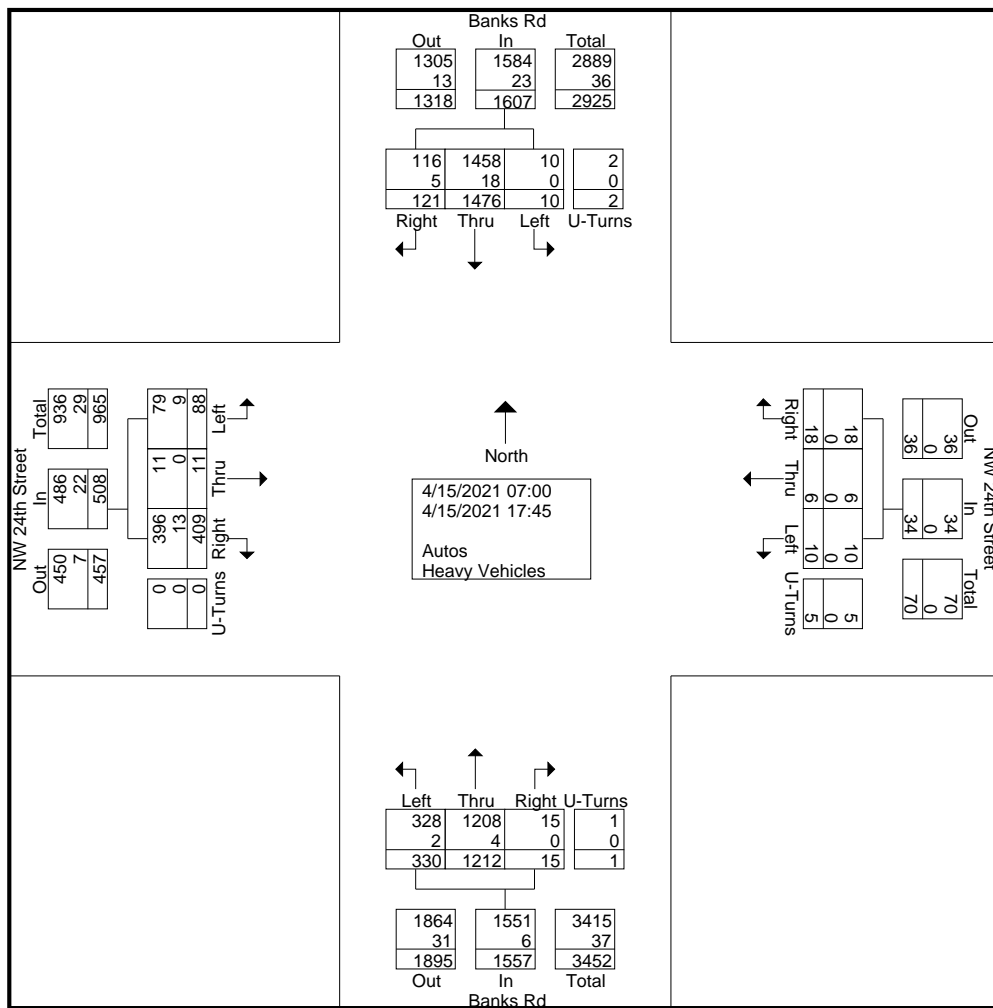
Traf Tech Engineering Inc.

File Name : 2- Banks Rd & NW 24th St

Site Code : 00000000

Start Date : 4/15/2021

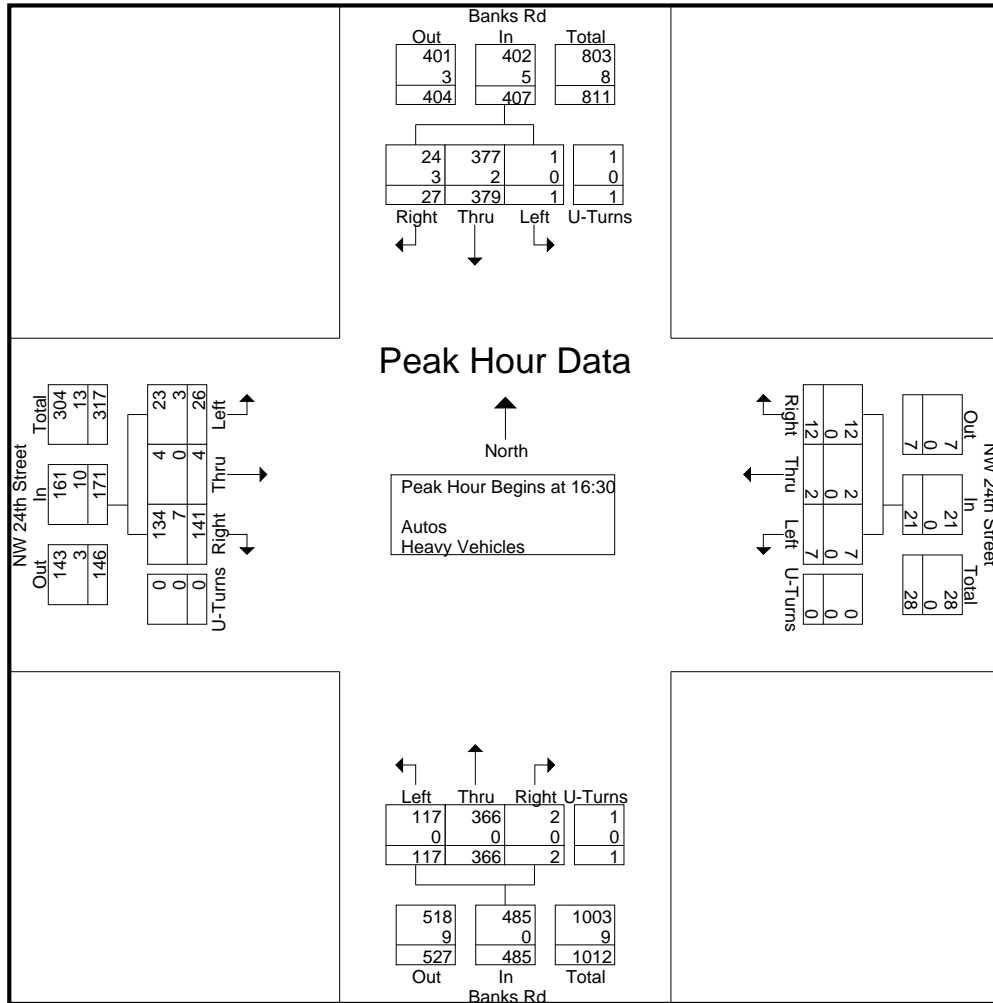
Page No : 2



Traf Tech Engineering Inc.

File Name : 2- Banks Rd & NW 24th St
 Site Code : 00000000
 Start Date : 4/15/2021
 Page No : 3

Start Time	Banks Rd From North					NW 24th Street From East					Banks Rd From South					NW 24th Street From West					Int. Total
	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	4	100	0	0	104	1	0	0	0	1	1	85	27	0	113	37	0	4	0	41	259
16:45	7	89	0	0	96	2	1	2	0	5	0	88	23	0	111	25	2	6	0	33	245
17:00	9	105	0	0	114	6	1	2	0	9	1	98	34	0	133	39	1	4	0	44	300
17:15	7	85	1	1	94	3	0	3	0	6	0	95	33	1	129	40	1	12	0	53	282
Total Volume	27	379	1	1	408	12	2	7	0	21	2	366	117	1	486	141	4	26	0	171	1086
% App. Total	6.6	92.9	0.2	0.2		57.1	9.5	33.3	0		0.4	75.3	24.1	0.2		82.5	2.3	15.2	0		
PHF	.750	.902	.250	.250	.895	.500	.500	.583	.000	.583	.500	.934	.860	.250	.914	.881	.500	.542	.000	.807	.905
Autos	24	377	1	1	403	12	2	7	0	21	2	366	117	1	486	134	4	23	0	161	1071
% Autos	88.9	99.5	100	100	98.8	100	100	100	0	100	100	100	100	100	100	95.0	100	88.5	0	94.2	98.6
Heavy Vehicles																					
% Heavy Vehicles	11.1	0.5	0	0	1.2	0	0	0	0	0	0	0	0	0	0	5.0	0	11.5	0	5.8	1.4



Traf Tech Engineering Inc.

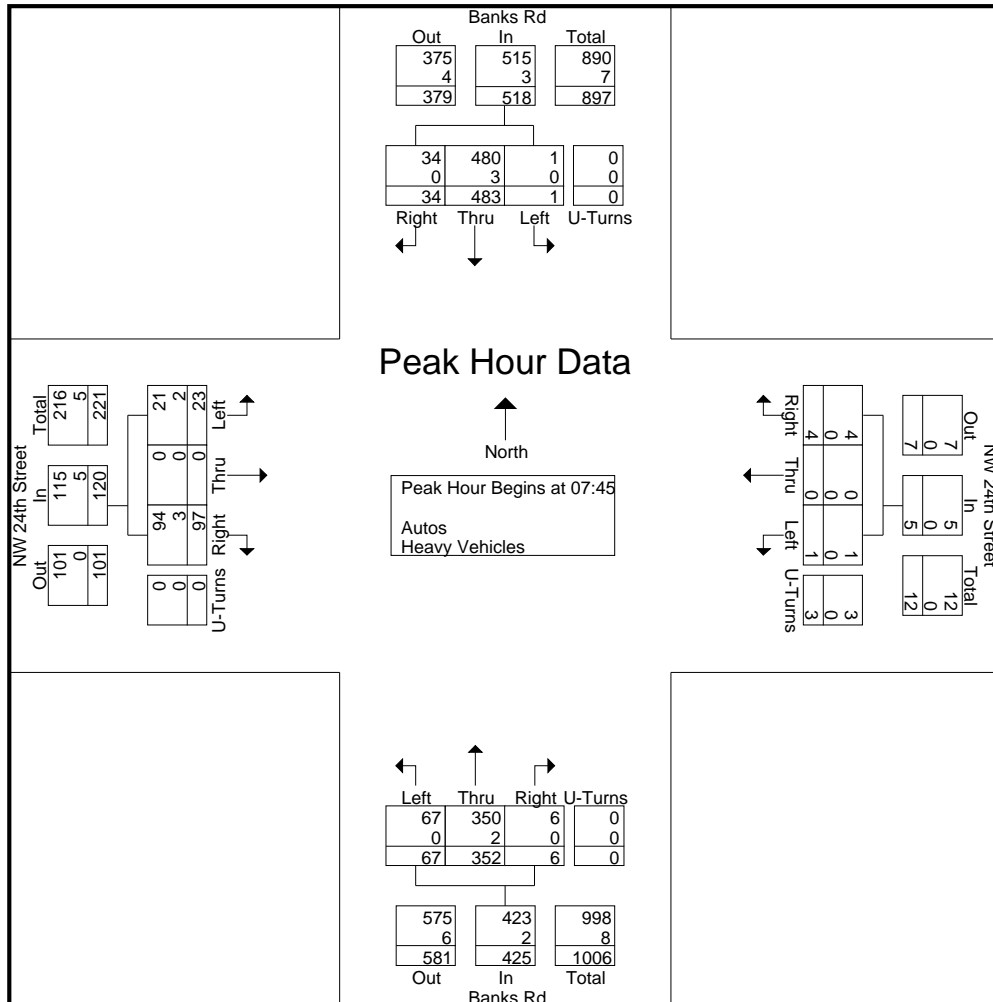
File Name : 2- Banks Rd & NW 24th St
 Site Code : 00000000
 Start Date : 4/15/2021
 Page No : 4

Start Time	Banks Rd From North					NW 24th Street From East					Banks Rd From South					NW 24th Street From West					Int. Total
	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	

Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:45

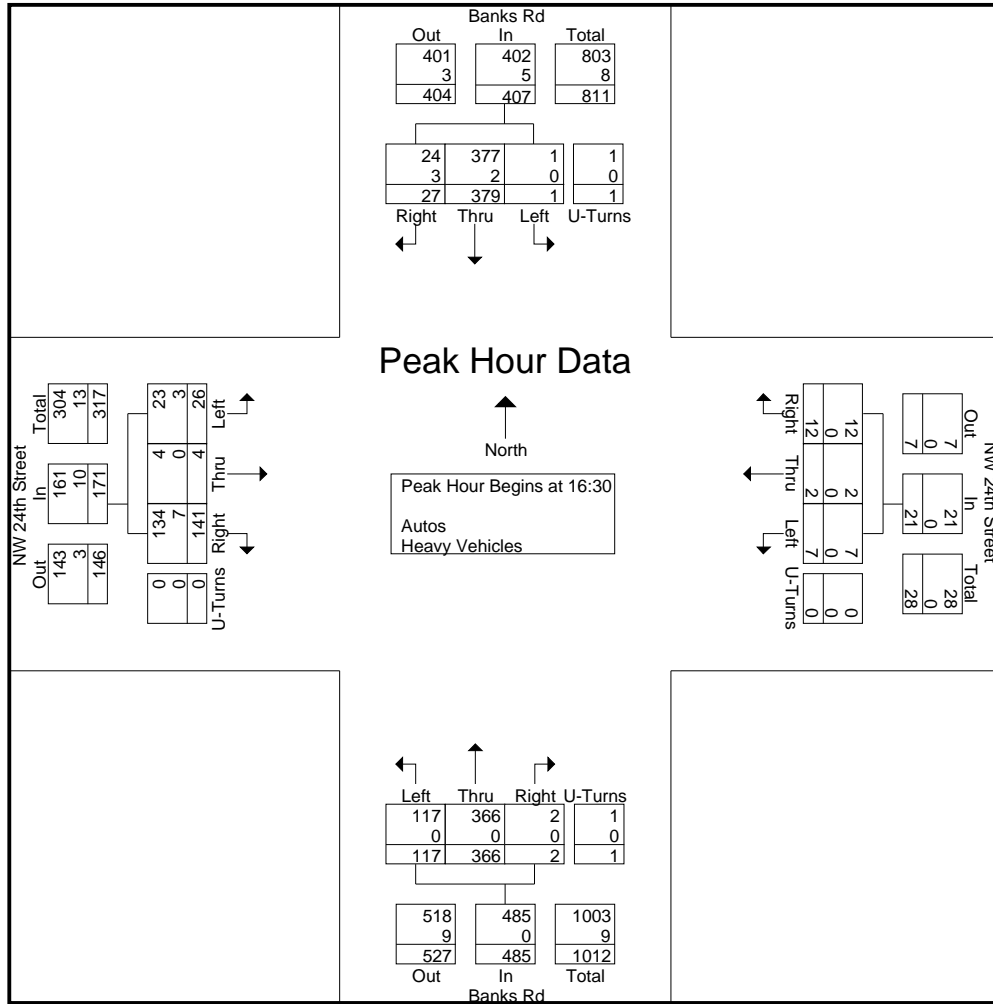
07:45	9	124	0	0	133	0	0	1	2	3	1	90	16	0	107	25	0	6	0	31	274
08:00	13	138	1	0	152	0	0	0	1	1	1	105	18	0	124	34	0	4	0	38	315
08:15	9	122	0	0	131	2	0	0	0	2	1	95	18	0	114	21	0	8	0	29	276
08:30	3	99	0	0	102	2	0	0	0	2	3	62	15	0	80	17	0	5	0	22	206
Total Volume	34	483	1	0	518	4	0	1	3	8	6	352	67	0	425	97	0	23	0	120	1071
% App. Total	6.6	93.2	0.2	0		50	0	12.5	37.5		1.4	82.8	15.8	0		80.8	0	19.2	0		
PHF	.654	.875	.250	.000	.852	.500	.000	.250	.375	.667	.500	.838	.931	.000	.857	.713	.000	.719	.000	.789	.850
Autos	34	480	1	0	515	4	0	1	3	8	6	350	67	0	423	94	0	21	0	115	1061
% Autos	100	99.4	100	0	99.4	100	0	100	100	100	100	99.4	100	0	99.5	96.9	0	91.3	0	95.8	99.1
Heavy Vehicles	0	0.6	0	0	0.6	0	0	0	0	0	0	0.6	0	0	0.5	3.1	0	8.7	0	4.2	0.9
% Heavy Vehicles																					



Traf Tech Engineering Inc.

File Name : 2- Banks Rd & NW 24th St
 Site Code : 00000000
 Start Date : 4/15/2021
 Page No : 5

Start Time	Banks Rd From North					NW 24th Street From East					Banks Rd From South					NW 24th Street From West					Int. Total
	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	4	100	0	0	104	1	0	0	0	1	1	85	27	0	113	37	0	4	0	41	259
16:45	7	89	0	0	96	2	1	2	0	5	0	88	23	0	111	25	2	6	0	33	245
17:00	9	105	0	0	114	6	1	2	0	9	1	98	34	0	133	39	1	4	0	44	300
17:15	7	85	1	1	94	3	0	3	0	6	0	95	33	1	129	40	1	12	0	53	282
Total Volume	27	379	1	1	408	12	2	7	0	21	2	366	117	1	486	141	4	26	0	171	1086
% App. Total	6.6	92.9	0.2	0.2		57.1	9.5	33.3	0		0.4	75.3	24.1	0.2		82.5	2.3	15.2	0		
PHF	.750	.902	.250	.250	.895	.500	.500	.583	.000	.583	.500	.934	.860	.250	.914	.881	.500	.542	.000	.807	.905
Autos	24	377	1	1	403	12	2	7	0	21	2	366	117	1	486	134	4	23	0	161	1071
% Autos	88.9	99.5	100	100	98.8	100	100	100	0	100	100	100	100	100	100	95.0	100	88.5	0	94.2	98.6
Heavy Vehicles																					
% Heavy Vehicles	11.1	0.5	0	0	1.2	0	0	0	0	0	0	0	0	0	0	5.0	0	11.5	0	5.8	1.4



Traf Tech Engineering Inc.

File Name : 2- Banks Rd & NW 24th St
 Site Code : 00000000
 Start Date : 4/15/2021
 Page No : 1

Groups Printed- Peds & Bikes

Start Time	Banks Rd From North				NW 24th Street From East				Banks Rd From South				NW 24th Street From West				Int. Total
	Bikes			Peds	Bikes			Peds	Bikes			Peds	Bikes			Peds	
*** BREAK ***																	
16:15	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4
*** BREAK ***																	
Total	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4
*** BREAK ***																	
17:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
Grand Total	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	6
Apprch %	100	0	0	0	0	0	0	0	0	0	0	0	50	0	0	50	
Total %	33.3	0	0	0	0	0	0	0	0	0	0	0	33.3	0	0	33.3	

Traf Tech Engineering Inc.

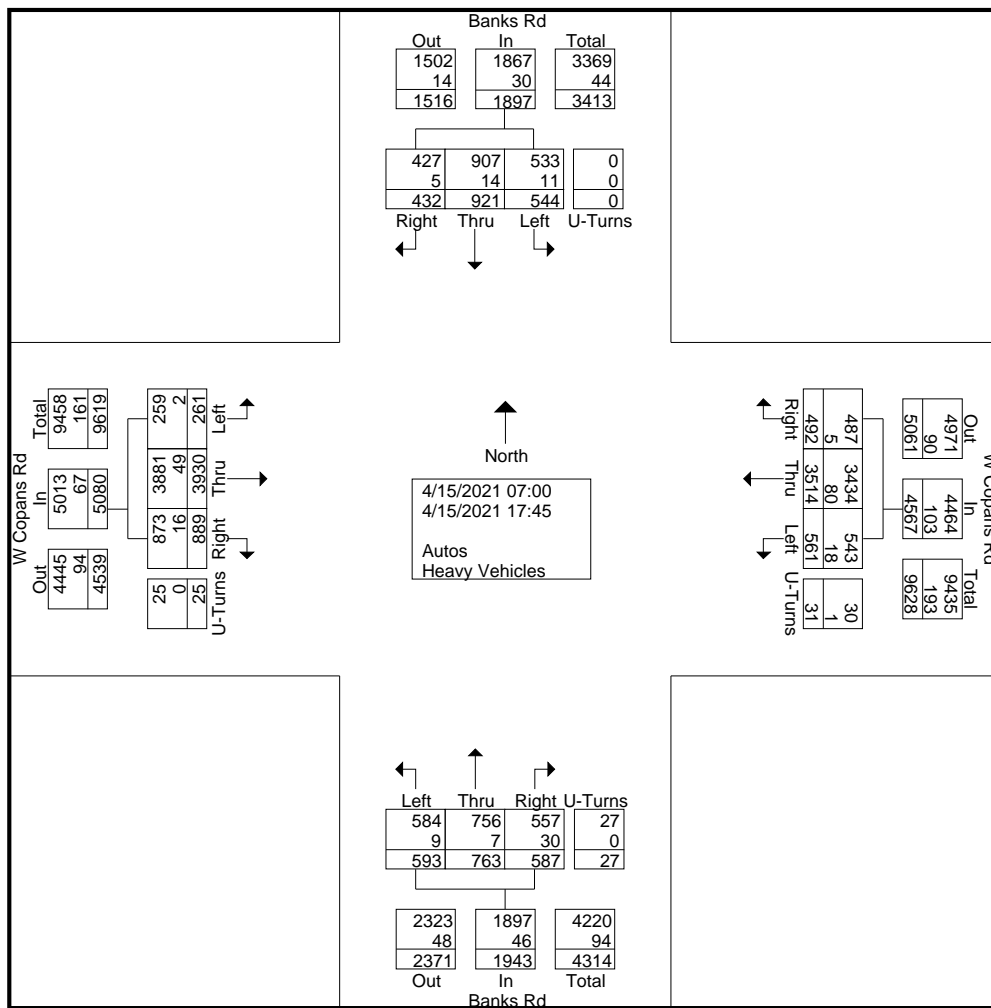
File Name : 3- Banks Rd & Copans Rd
 Site Code : 00000000
 Start Date : 4/15/2021
 Page No : 1

Groups Printed- Autos - Heavy Vehicles

Start Time	Banks Rd From North					W Copans Rd From East					Banks Rd From South					W Copans Rd From West					Int. Total
	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
07:00	6	30	20	0	56	18	140	32	2	192	12	12	9	3	36	42	297	8	1	348	632
07:15	18	37	27	0	82	25	131	21	1	178	33	20	22	2	77	41	281	8	0	330	667
07:30	23	37	27	0	87	30	208	27	3	268	30	43	17	2	92	65	307	12	1	385	832
07:45	24	87	40	0	151	40	189	39	3	271	27	38	32	1	98	71	254	24	1	350	870
Total	71	191	114	0	376	113	668	119	9	909	102	113	80	8	303	219	1139	52	3	1413	3001
08:00	47	99	38	0	184	33	167	44	0	244	58	62	28	1	149	65	267	36	0	368	945
08:15	37	72	39	0	148	36	179	47	5	267	50	48	53	4	155	63	239	30	1	333	903
08:30	33	51	33	0	117	30	212	16	1	259	18	34	22	3	77	48	233	13	0	294	747
08:45	32	23	33	0	88	18	167	39	2	226	27	25	29	3	84	55	252	9	1	317	715
Total	149	245	143	0	537	117	725	146	8	996	153	169	132	11	465	231	991	88	2	1312	3310
*** BREAK ***																					
16:00	26	50	30	0	106	29	257	35	0	321	40	42	44	1	127	39	240	20	0	299	853
16:15	17	59	33	0	109	32	280	49	1	362	31	48	45	2	126	46	234	11	2	293	890
16:30	32	64	49	0	145	25	251	29	3	308	30	66	47	1	144	55	188	19	3	265	862
16:45	34	56	33	0	123	35	254	34	1	324	41	64	51	0	156	49	244	16	3	312	915
Total	109	229	145	0	483	121	1042	147	5	1315	142	220	187	4	553	189	906	66	8	1169	3520
17:00	34	66	36	0	136	31	287	42	1	361	59	75	63	1	198	53	255	15	3	326	1021
17:15	28	68	44	0	140	33	256	41	4	334	52	67	47	0	166	61	226	13	6	306	946
17:30	22	60	36	0	118	47	282	38	1	368	40	52	43	1	136	72	220	12	1	305	927
17:45	19	62	26	0	107	30	254	28	3	315	39	67	41	2	149	64	193	15	2	274	845
Total	103	256	142	0	501	141	1079	149	9	1378	190	261	194	4	649	250	894	55	12	1211	3739
Grand Total	432	921	544	0	1897	492	3514	561	31	4598	587	763	593	27	1970	889	3930	261	25	5105	13570
Apprch %	22.8	48.6	28.7	0		10.7	76.4	12.2	0.7		29.8	38.7	30.1	1.4		17.4	77	5.1	0.5		
Total %	3.2	6.8	4	0	14	3.6	25.9	4.1	0.2	33.9	4.3	5.6	4.4	0.2	14.5	6.6	29	1.9	0.2	37.6	
Autos	427	907	533	0	1867	487	3434									3881					13323
% Autos	98.8	98.5	98	0	98.4	99	97.7	96.8	96.8	97.7	94.9	99.1	98.5	100	97.7	98.2	98.8	99.2	100	98.7	98.2
Heavy Vehicles																					
% Heavy Vehicles	1.2	1.5	2	0	1.6	1	2.3	3.2	3.2	2.3	5.1	0.9	1.5	0	2.3	1.8	1.2	0.8	0	1.3	1.8

Traf Tech Engineering Inc.

File Name : 3- Banks Rd & Copans Rd
 Site Code : 00000000
 Start Date : 4/15/2021
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Traf Tech Engineering Inc.

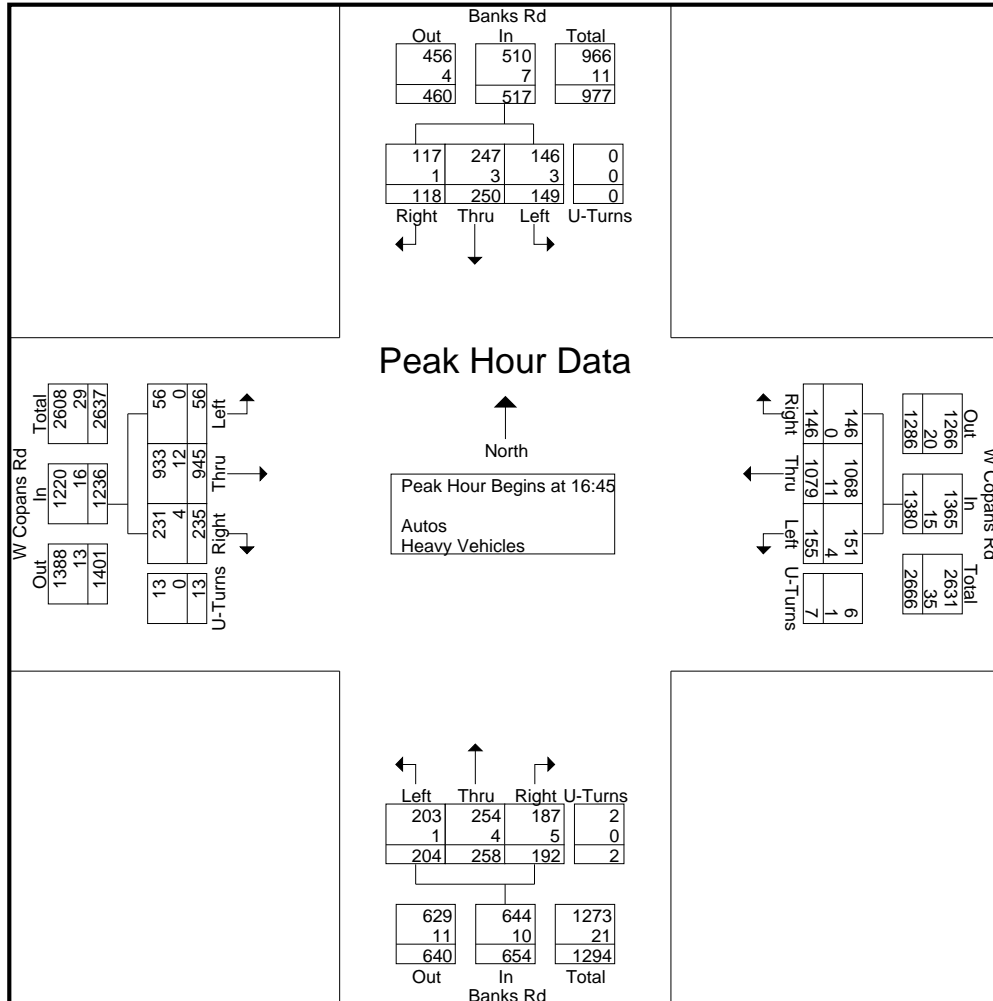
File Name : 3- Banks Rd & Copans Rd

Site Code : 00000000

Start Date : 4/15/2021

Page No : 3

Start Time	Banks Rd From North					W Copans Rd From East					Banks Rd From South					W Copans Rd From West					Int. Total
	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	34	56	33	0	123	35	254	34	1	324	41	64	51	0	156	49	244	16	3	312	915
17:00	34	66	36	0	136	31	287	42	1	361	59	75	63	1	198	53	255	15	3	326	1021
17:15	28	68	44	0	140	33	256	41	4	334	52	67	47	0	166	61	226	13	6	306	946
17:30	22	60	36	0	118	47	282	38	1	368	40	52	43	1	136	72	220	12	1	305	927
Total Volume	118	250	149	0	517	146	1079	155	7	1387	192	258	204	2	656	235	945	56	13	1249	3809
% App. Total	22.8	48.4	28.8	0		10.5	77.8	11.2	0.5		29.3	39.3	31.1	0.3		18.8	75.7	4.5	1		
PHF	.868	.919	.847	.000	.923	.777	.940	.923	.438	.942	.814	.860	.810	.500	.828	.816	.926	.875	.542	.958	.933
Autos	117	247	146	0	510	146	1068				97.4	98.4	99.5	100	98.5	98.3	98.7	100	100	98.7	98.7
% Autos	99.2	98.8	98.0	0	98.6	100	99.0	97.4	85.7	98.8	97.4	98.4	99.5	100	98.5	98.3	98.7	100	100	98.7	98.7
Heavy Vehicles											2.6	1.6	0.5	0	1.5	1.7	1.3	0	0	1.3	1.3
% Heavy Vehicles	0.8	1.2	2.0	0	1.4	0	1.0	2.6	14.3	1.2	2.6	1.6	0.5	0	1.5	1.7	1.3	0	0	1.3	1.3



Traf Tech Engineering Inc.

File Name : 3- Banks Rd & Copans Rd

Site Code : 00000000

Start Date : 4/15/2021

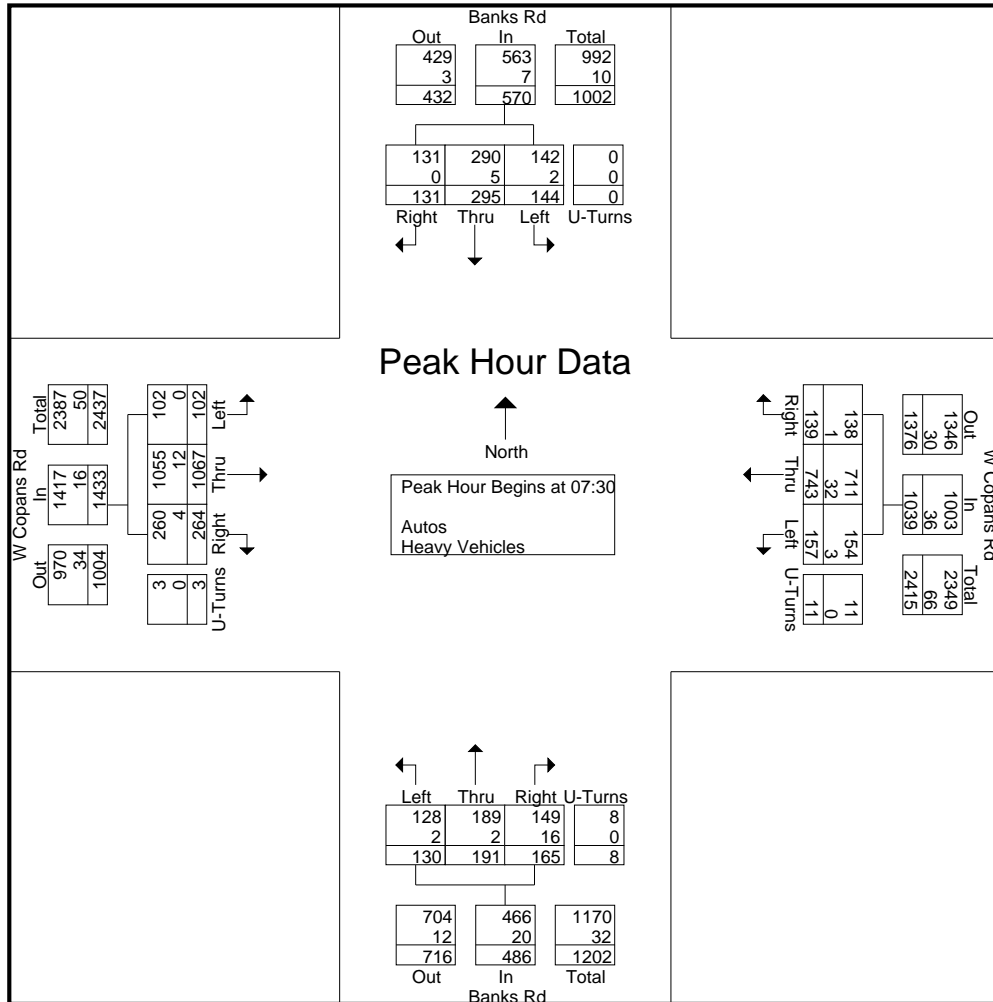
Page No : 4

Start Time	Banks Rd From North					W Copans Rd From East					Banks Rd From South					W Copans Rd From West					Int. Total
	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	

Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:30

07:30	23	37	27	0	87	30	208	27	3	268	30	43	17	2	92	65	307	12	1	385	832
07:45	24	87	40	0	151	40	189	39	3	271	27	38	32	1	98	71	254	24	1	350	870
08:00	47	99	38	0	184	33	167	44	0	244	58	62	28	1	149	65	267	36	0	368	945
08:15	37	72	39	0	148	36	179	47	5	267	50	48	53	4	155	63	239	30	1	333	903
Total Volume	131	295	144	0	570	139	743	157	11	1050	165	191	130	8	494	264	1067	102	3	1436	3550
% App. Total	23	51.8	25.3	0		13.2	70.8	15	1		33.4	38.7	26.3	1.6		18.4	74.3	7.1	0.2		
PHF	.697	.745	.900	.000	.774	.869	.893	.835	.550	.969	.711	.770	.613	.500	.797	.930	.869	.708	.750	.932	.939
Autos	131	290	142	0	563	138	711	154	11	1014	149	189	128	8	474	260	1055				
% Autos	100	98.3	98.6	0	98.8	99.3	95.7	98.1	100	96.6	90.3	99.0	98.5	100	96.0	98.5	98.9	100	100	98.9	97.8
Heavy Vehicles																					
% Heavy Vehicles	0	1.7	1.4	0	1.2	0.7	4.3	1.9	0	3.4	9.7	1.0	1.5	0	4.0	1.5	1.1	0	0	1.1	2.2



Traf Tech Engineering Inc.

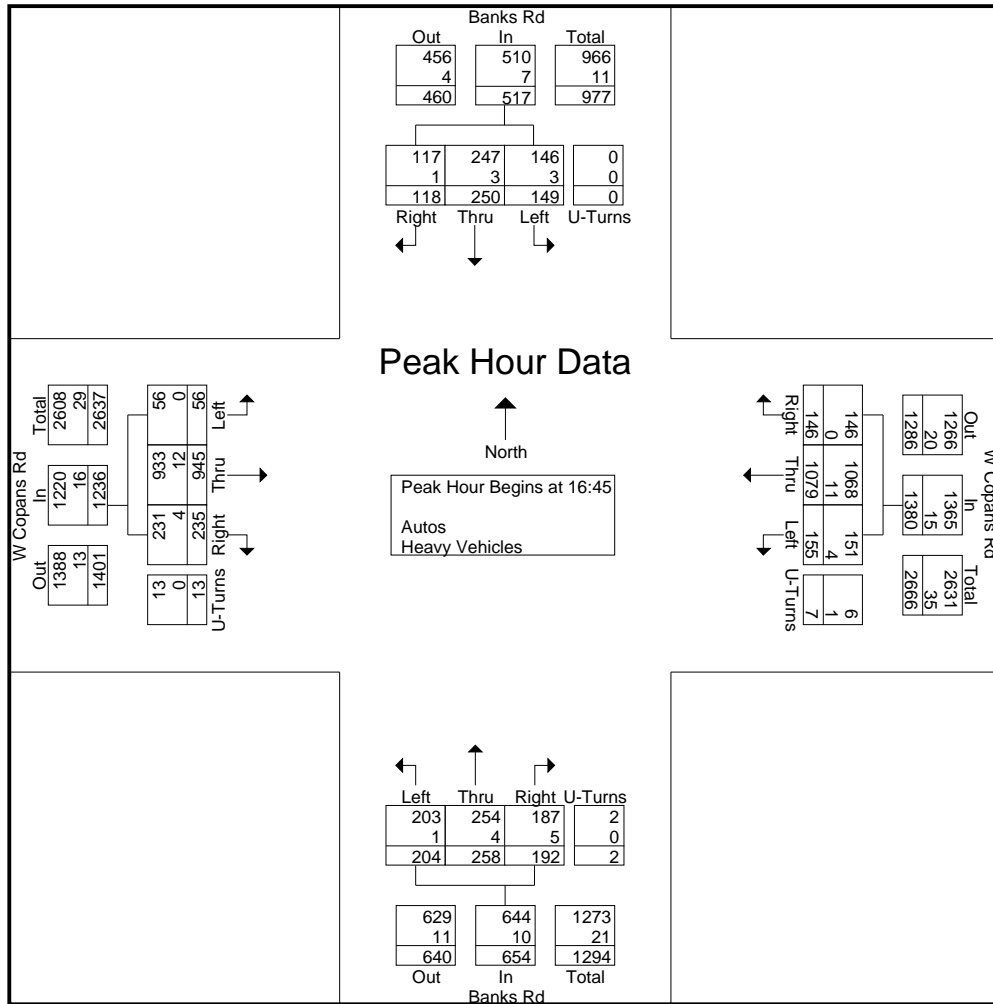
File Name : 3- Banks Rd & Copans Rd

Site Code : 00000000

Start Date : 4/15/2021

Page No : 5

Start Time	Banks Rd From North					W Copans Rd From East					Banks Rd From South					W Copans Rd From West					Int. Total
	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	34	56	33	0	123	35	254	34	1	324	41	64	51	0	156	49	244	16	3	312	915
17:00	34	66	36	0	136	31	287	42	1	361	59	75	63	1	198	53	255	15	3	326	1021
17:15	28	68	44	0	140	33	256	41	4	334	52	67	47	0	166	61	226	13	6	306	946
17:30	22	60	36	0	118	47	282	38	1	368	40	52	43	1	136	72	220	12	1	305	927
Total Volume	118	250	149	0	517	146	1079	155	7	1387	192	258	204	2	656	235	945	56	13	1249	3809
% App. Total	22.8	48.4	28.8	0		10.5	77.8	11.2	0.5		29.3	39.3	31.1	0.3		18.8	75.7	4.5	1		
PHF	.868	.919	.847	.000	.923	.777	.940	.923	.438	.942	.814	.860	.810	.500	.828	.816	.926	.875	.542	.958	.933
Autos	117	247	146	0	510	146	1068				97.4	98.4	99.5	100	98.5	98.3	98.7	100	100	98.7	98.7
% Autos	99.2	98.8	98.0	0	98.6	100	99.0	97.4	85.7	98.8	97.4	98.4	99.5	100	98.5	98.3	98.7	100	100	98.7	98.7
Heavy Vehicles																					
% Heavy Vehicles	0.8	1.2	2.0	0	1.4	0	1.0	2.6	14.3	1.2	2.6	1.6	0.5	0	1.5	1.7	1.3	0	0	1.3	1.3



Traf Tech Engineering Inc.

File Name : 3- Banks Rd & Copans Rd
 Site Code : 00000000
 Start Date : 4/15/2021
 Page No : 1

Groups Printed- Peds & Bikes

Start Time	Banks Rd From North				W Copans Rd From East				Banks Rd From South				W Copans Rd From West				Int. Total
	Bikes			Peds	Bikes			Peds	Bikes			Peds	Bikes			Peds	
*** BREAK ***																	
07:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
08:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
08:15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
*** BREAK ***																	
Total	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3
*** BREAK ***																	
16:15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***																	
Total	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
17:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
*** BREAK ***																	
Total	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	3
Grand Total	3	0	0	1	1	0	0	1	0	0	0	2	0	0	0	2	10
Apprch %	75	0	0	25	50	0	0	50	0	0	0	100	0	0	0	100	
Total %	30	0	0	10	10	0	0	10	0	0	0	20	0	0	0	20	

Station : 1317 - Copans Rd & Banks Rd (Standard File)

Phase	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Walk		7		7		7		7								
Ped Clearance		31		24		31		28								
Min Green	4	12	4	6	4	12	4	6								
Gap Ext	1.5	3	1.5	2.5	1.5	3	1.5	2.5								
Max1	12	45	12	27	12	45	12	27								
Max2																
Yellow Clr	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	2	2	2	2	2	2	2	2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1		ON				ON										
Non-Actuated 2																
Lock Call							ON		ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry				ON				ON								
Sim Gap Enable									ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																

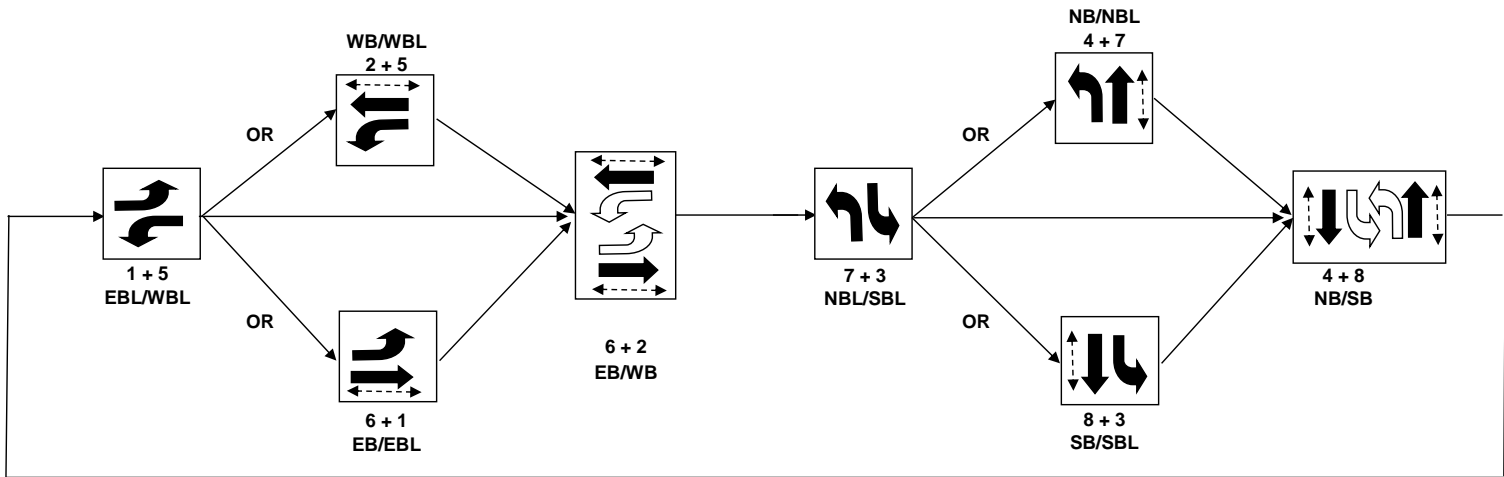
Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash	ON	ON	ON	ON	ON	ON
Override Higher Preempt	ON	ON	ON	ON	ON	ON
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1						
Dwell Cyc Veh 2						
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				

Sequence of Operation for Copans Road/Royal Palm and Banks Road (1317)



←----- Denotes pedestrian crosswalk signal

↪ Denotes permissive left turn



BROWARD COUNTY TRAFFIC ENGINEERING
ACTUATED TRAFFIC SIGNAL TIMING SHEET

Intersection Number	1317	Initial Operation Date	3/28/85
Controller Type	2070 LN2 (BIU)	System Number	1317
Modification Number	8	Modification Date	08/29/2019
Drawing/Project No		FPL Grid Number	87289898405
Intersection	COPANS ROAD/ROYAL PALM and BANKS ROAD		
Municipality	MARGATE		

Controller Phase								
Face Number	1	2	3	4	5	6	7	8
Direction	EBL	WB	SBL	NB	WBL	EB	NBL	SB
Initial Green(MIN)	4	12	4	6	4	12	4	6
Vehicle Ext.(GAP)	1.5	3.0	1.5	2.5	1.5	3.0	1.5	2.5
Maximum Green I	12	45	12	27	12	45	12	27
Maximum Green II								
Yellow Clearance	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All Red Clearance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Phase Recall	OFF	MIN	OFF	OFF	OFF	MIN	OFF	OFF
Detector Delay				10-RT				10-RT
Walk		7		7		7		7
Pedestrian Clearance		31		24		31		28
Permissive	YES		YES		YES		YES	
Flash Operation		YELLOW		RED		YELLOW		RED

Attachment

NOTES:

1. ANTI-BACKDOWN EAST/WEST: PHASES 2+6 ON--->OMIT PHASES 1+5.
2. DUAL ENTRY HARDWIRED NORTH/SOUTH.
3. MOD. 8 UPDATES PHASES 3 & 8 YELLOW CLEARANCE VALUES.

Submitted By _____

Approved By _____

APPENDIX C
PSCF and Historical Data

2019 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 8601 CEN.-W OF US1 TO SR7

MOCF: 0.97

WEEK	DATES	SF	PSCF
1	01/01/2019 - 01/05/2019	1.00	1.03
2	01/06/2019 - 01/12/2019	1.00	1.03
3	01/13/2019 - 01/19/2019	1.01	1.04
4	01/20/2019 - 01/26/2019	1.00	1.03
5	01/27/2019 - 02/02/2019	0.99	1.02
* 6	02/03/2019 - 02/09/2019	0.98	1.01
* 7	02/10/2019 - 02/16/2019	0.97	1.00
* 8	02/17/2019 - 02/23/2019	0.97	1.00
* 9	02/24/2019 - 03/02/2019	0.97	1.00
*10	03/03/2019 - 03/09/2019	0.96	0.99
*11	03/10/2019 - 03/16/2019	0.96	0.99
*12	03/17/2019 - 03/23/2019	0.97	1.00
*13	03/24/2019 - 03/30/2019	0.97	1.00
*14	03/31/2019 - 04/06/2019	0.97	1.00
*15	04/07/2019 - 04/13/2019	0.98	1.01
*16	04/14/2019 - 04/20/2019	0.98	1.01
*17	04/21/2019 - 04/27/2019	0.99	1.02
*18	04/28/2019 - 05/04/2019	0.99	1.02
19	05/05/2019 - 05/11/2019	1.00	1.03
20	05/12/2019 - 05/18/2019	1.00	1.03
21	05/19/2019 - 05/25/2019	1.01	1.04
22	05/26/2019 - 06/01/2019	1.01	1.04
23	06/02/2019 - 06/08/2019	1.01	1.04
24	06/09/2019 - 06/15/2019	1.02	1.05
25	06/16/2019 - 06/22/2019	1.02	1.05
26	06/23/2019 - 06/29/2019	1.02	1.05
27	06/30/2019 - 07/06/2019	1.03	1.06
28	07/07/2019 - 07/13/2019	1.03	1.06
29	07/14/2019 - 07/20/2019	1.04	1.07
30	07/21/2019 - 07/27/2019	1.03	1.06
31	07/28/2019 - 08/03/2019	1.02	1.05
32	08/04/2019 - 08/10/2019	1.02	1.05
33	08/11/2019 - 08/17/2019	1.01	1.04
34	08/18/2019 - 08/24/2019	1.02	1.05
35	08/25/2019 - 08/31/2019	1.03	1.06
36	09/01/2019 - 09/07/2019	1.03	1.06
37	09/08/2019 - 09/14/2019	1.04	1.07
38	09/15/2019 - 09/21/2019	1.05	1.08
39	09/22/2019 - 09/28/2019	1.04	1.07
40	09/29/2019 - 10/05/2019	1.02	1.05
41	10/06/2019 - 10/12/2019	1.01	1.04
42	10/13/2019 - 10/19/2019	1.00	1.03
43	10/20/2019 - 10/26/2019	1.00	1.03
44	10/27/2019 - 11/02/2019	1.00	1.03
45	11/03/2019 - 11/09/2019	1.00	1.03
46	11/10/2019 - 11/16/2019	1.00	1.03
47	11/17/2019 - 11/23/2019	1.00	1.03
48	11/24/2019 - 11/30/2019	1.00	1.03
49	12/01/2019 - 12/07/2019	1.00	1.03
50	12/08/2019 - 12/14/2019	1.00	1.03
51	12/15/2019 - 12/21/2019	1.00	1.03
52	12/22/2019 - 12/28/2019	1.00	1.03
53	12/29/2019 - 12/31/2019	1.01	1.04

* PEAK SEASON

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2019 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 0169 - SR 7 - S OF ROYAL PALM BLVD/COPANS RD

YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	53500	C	N 24500		S 29000	9.00	54.60	3.10
2018	55000	C	N 28500		S 26500	9.00	54.50	2.80
2017	51000	C	N 24000		S 27000	9.00	51.90	2.80
2016	53000	C	N 27000		S 26000	9.00	54.10	2.80
2015	53000	C	N 26500		S 26500	9.00	54.00	2.90
2014	53000	C	N 27500		S 25500	9.00	54.20	3.10
2013	51500	C	N 26000		S 25500	9.00	53.60	3.10
2012	52500	C	N 25500		S 27000	9.00	52.20	2.70
2011	45000	C	N 23000		S 22000	9.00	52.50	5.60
2010	48500	C	N 25000		S 23500	8.35	52.69	5.60
2009	47000	C	N 23500		S 23500	8.53	53.89	4.00
2008	55000	C	N 28000		S 27000	8.81	54.16	4.00
2007	50500	C	N 26000		S 24500	8.63	55.75	2.20
2006	51500	C	N 26500		S 25000	8.40	55.34	5.10
2005	52000	C	N 26500		S 25500	8.20	51.70	5.10
2004	52000	C	N 26000		S 26000	9.10	55.30	5.10

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN

*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2019 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 5294 - SR 7 - N OF ROYAL PALM BLVD/COPANS RD

YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	52500	C	N 26000		S 26500	9.00	54.60	4.80
2018	49500	C	N 25500		S 24000	9.00	54.50	4.80
2017	52500	C	N 26500		S 26000	9.00	51.90	3.60
2016	48000	C	N 23000		S 25000	9.00	54.10	3.60
2015	49500	C	N 21500		S 28000	9.00	54.00	3.60
2014	50000	C	N 25500		S 24500	9.00	54.20	2.40
2013	49500	C	N 24500		S 25000	9.00	53.60	2.60
2012	53000	C	N 26500		S 26500	9.00	52.20	5.60
2011	43000	C	N 21000		S 22000	9.00	52.50	5.60
2010	49000	C	N 25500		S 23500	8.35	52.69	5.60
2009	47500	C	N 23500		S 24000	8.53	53.89	4.80
2008	50500	C	N 26500		S 24000	8.81	54.16	4.80
2007	50000	C	N 25000		S 25000	8.63	55.75	2.20
2006	50000	C	N 25000		S 25000	8.40	55.34	5.20
2005	50500	C	N 25000		S 25500	8.20	51.70	5.20
2004	49000	C	N 24500		S 24500	9.10	55.30	5.20

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN

*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 8056 - COPANS ROAD, E OF SR 7

YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	33500	R	E 17000		W 16500	9.00	54.60	5.50
2018	33500	T	E 17000		W 16500	9.00	54.50	6.00
2017	33500	S	E 17000		W 16500	9.00	51.90	6.20
2016	33500	F	E 17000		W 16500	9.00	54.10	2.90
2015	33500	C	E 17000		W 16500	9.00	54.00	3.40
2014	28500	X				9.00	54.20	7.40
2013	28500	X	0		0	9.00	53.60	7.60
2012	28500	T	0		0	9.00	52.20	5.90
2011	28500	S	0		0	9.00	52.50	6.30
2010	28500	F	E 14000		W 14500	8.35	52.69	9.30
2009	28500	C	E 14000		W 14500	8.53	53.89	5.30
2008	25500	C	E 14000		W 11500	8.81	54.16	6.50
2007	29500	C	E 15000		W 14500	8.63	55.75	4.80
2006	38000	C	E 19000		W 19000	8.40	55.34	2.90
2005	30000	C	E 15000		W 15000	8.20	51.70	0.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN

*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2019 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 9423 - BANKS ROAD, N OF COCONUT CREEK PARKWAY

YEAR	AADT		DIRECTION 1		DIRECTION 2		*K FACTOR	D FACTOR	T FACTOR
2019	14100	R	N	6900	S	7200	9.00	54.60	5.50
2018	14100	T	N	6900	S	7200	9.00	54.50	6.00
2017	14100	S	N	6900	S	7200	9.00	51.90	6.20
2016	14100	F	N	6900	S	7200	9.00	54.10	2.90
2015	13900	C	N	6800	S	7100	9.00	54.00	3.40
2014	13000	T	N	6100	S	6900	9.00	54.20	7.40
2013	12800	S	N	6000	S	6800	9.00	53.60	7.60
2012	12800	F	N	6000	S	6800	9.00	52.20	5.90
2011	12800	C	N	6000	S	6800	9.00	52.50	6.30
2010	14600	F	N	6500	S	8100	8.35	52.69	9.30
2009	14600	C	N	6500	S	8100	8.53	53.89	5.30
2008	10900	C	N	5800	S	5100	8.81	54.16	6.50
2007	16300	C	N	8100	S	8200	8.63	55.75	4.80
2006	15200	C	N	7100	S	8100	8.40	55.34	2.90
2005	16000	C	N	7600	S	8400	8.20	51.70	0.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN

*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

APPENDIX D

Covid-19 Adjustment Factors

TABLE D
Covid-19 Adjustment Factor

Roadway	Location	Daily Volume			Adjustment Factor
		2019 (1) Pre Covid-19	2021 (2) Pre Covid-19	2021 Covid-19	
Copans Rd	E. of SR 7	33,500	34,025	34,367	0.99
Totals		33,500	34,025	34,367	0.99

Source: FDOT Transportations Statistics Office & Traffic Counts

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2019 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 8056 - COPANS ROAD, E OF SR 7

YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	33500	R	E 17000		W 16500	9.00	54.60	5.50
2018	33500	T	E 17000		W 16500	9.00	54.50	6.00
2017	33500	S	E 17000		W 16500	9.00	51.90	6.20
2016	33500	F	E 17000		W 16500	9.00	54.10	2.90
2015	33500	C	E 17000		W 16500	9.00	54.00	3.40
2014	28500	X				9.00	54.20	7.40
2013	28500	X	0		0	9.00	53.60	7.60
2012	28500	T	0		0	9.00	52.20	5.90
2011	28500	S	0		0	9.00	52.50	6.30
2010	28500	F	E 14000		W 14500	8.35	52.69	9.30
2009	28500	C	E 14000		W 14500	8.53	53.89	5.30
2008	25500	C	E 14000		W 11500	8.81	54.16	6.50
2007	29500	C	E 15000		W 14500	8.63	55.75	4.80
2006	38000	C	E 19000		W 19000	8.40	55.34	2.90
2005	30000	C	E 15000		W 15000	8.20	51.70	0.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN

*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traf Tech Engineering Inc.

Date Start: 15-Apr-21
W.Copans Rd E of SR-7

Start Time	15-Apr-21 Thu	EASTBOUND	WESTBOUND	Combined Total	
12:00 AM		156	177	333	██████
01:00		80	92	172	███
02:00		60	60	120	██
03:00		140	69	209	███
04:00		185	86	271	████
05:00		482	147	629	██████
06:00		1019	412	1431	██████████
07:00		1440	759	2199	██████████████
08:00		1288	1006	2294	██████████████
09:00		1076	756	1832	██████████████
10:00		901	772	1673	██████████████
11:00		906	778	1684	██████████████
12:00 PM		993	876	1869	██████████████
01:00		985	928	1913	██████████████
02:00		1134	1113	2247	██████████████
03:00		1092	1244	2336	██████████████
04:00		1193	1386	2579	██████████████
05:00		1170	1460	2630	██████████████
06:00		1061	1336	2397	██████████████
07:00		877	1021	1898	██████████████
08:00		656	657	1313	██████████████
09:00		501	529	1030	██████████████
10:00		372	395	767	██████████
11:00		228	313	541	██████
Total		17995	16372	34367	
Percent		52.4%	47.6%		
Grand Total		17995	16372		
Percentage		52.4%	47.6%		

ADT

ADT 34,367

AADT 34,367

APPENDIX E
Growth Analysis and Future Turning
Movement Volumes

Growth Rate Trend Analysis Calculations

Description	Station #			
	0169	5294	8056	9423
Trend Growth Rate(1)	0.57	1.53	0.00	0.18
Adjusted Growth Rate (2)	0.57	1.53	0.50	0.50
Average Growth Rate	0.78			
Growth Rate Used	0.78			

Notes:

1: Refer to Trend Analysis Chart

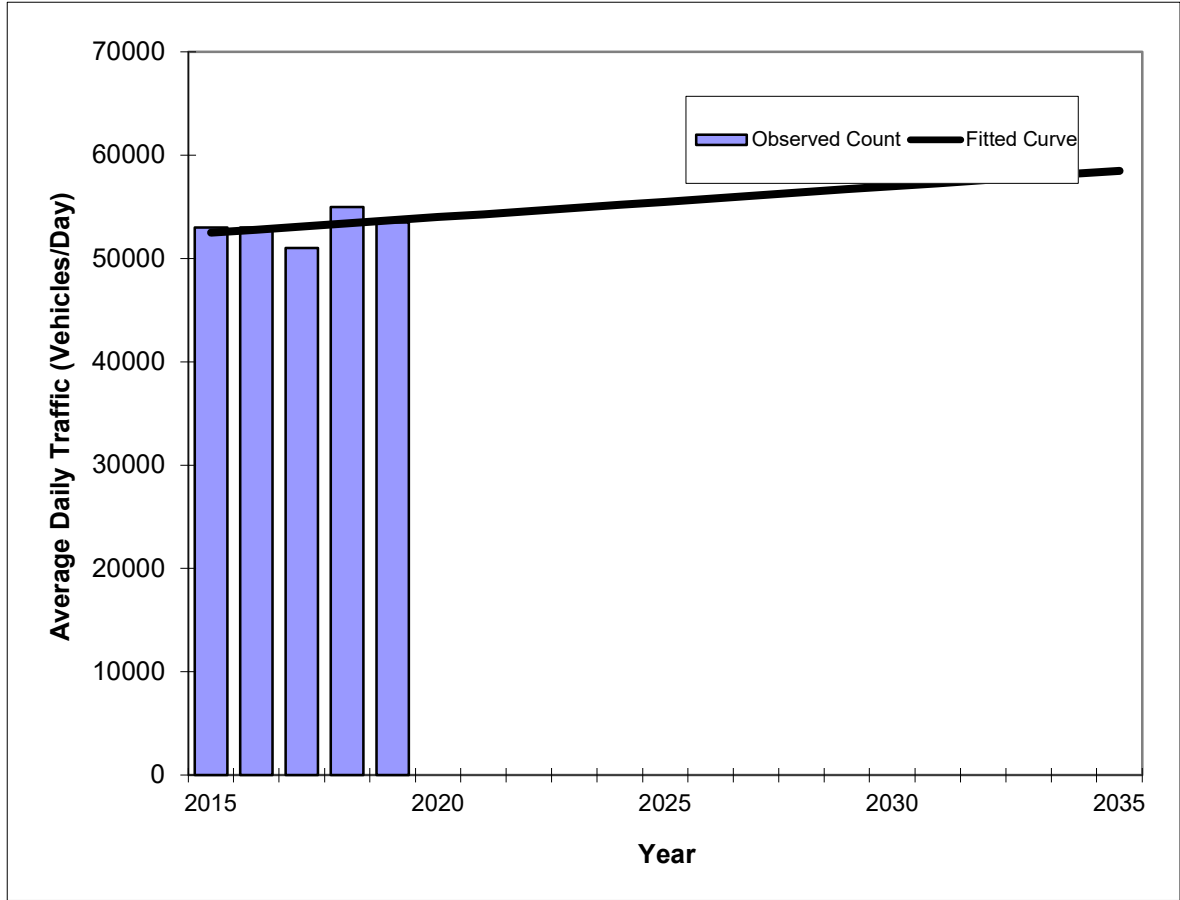
2: If the resulting growth rate is negative, a 0.5 growth rate was used

Traffic Trends - V03.a

SR 7 -- S OF ROYAL PALM BLVD/COPANS RD

FIN#	1234
Location	1

County:	Broward (86)
Station #:	0169
Highway:	SR 7



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	53000	52500
2016	53000	52800
2017	51000	53100
2018	55000	53400
2019	53500	53700
2021 Opening Year Trend		
2021	N/A	54300
2022 Mid-Year Trend		
2022	N/A	54600
2023 Design Year Trend		
2023	N/A	54900
TRANPLAN Forecasts/Trends		

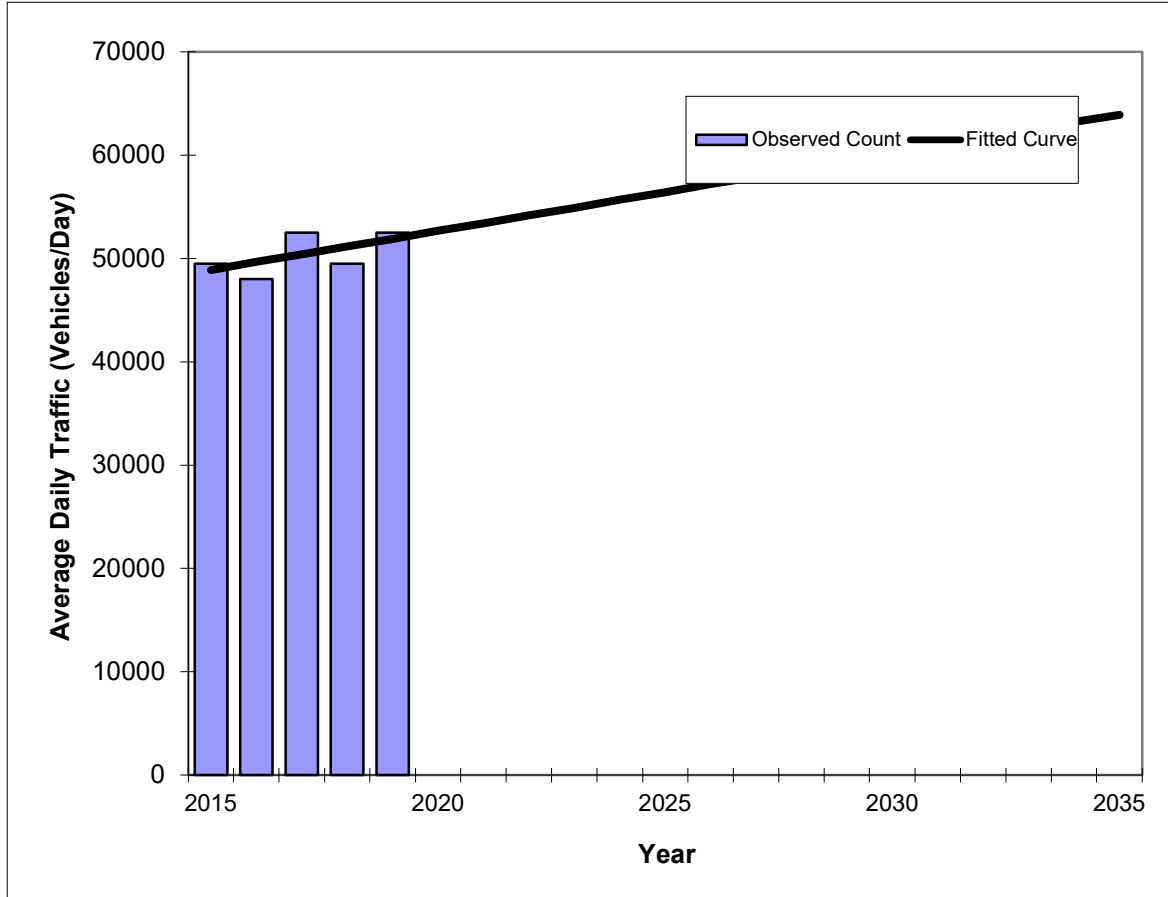
** Annual Trend Increase:	300
Trend R-squared:	10.98%
Trend Annual Historic Growth Rate:	0.57%
Trend Growth Rate (2019 to Design Year):	0.56%
Printed:	21-Apr-21
Straight Line Growth Option	

*Axle-Adjusted

Traffic Trends - V03.a
SR 7 -- N OF ROYAL PALM BLVD/COPANS RD

FIN#	1234
Location	2

County:	Broward (86)
Station #:	5294
Highway:	SR 7



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	49500	48900
2016	48000	49700
2017	52500	50400
2018	49500	51200
2019	52500	51900
2021 Opening Year Trend		
2021	N/A	53400
2022 Mid-Year Trend		
2022	N/A	54200
2023 Design Year Trend		
2023	N/A	54900
TRANPLAN Forecasts/Trends		

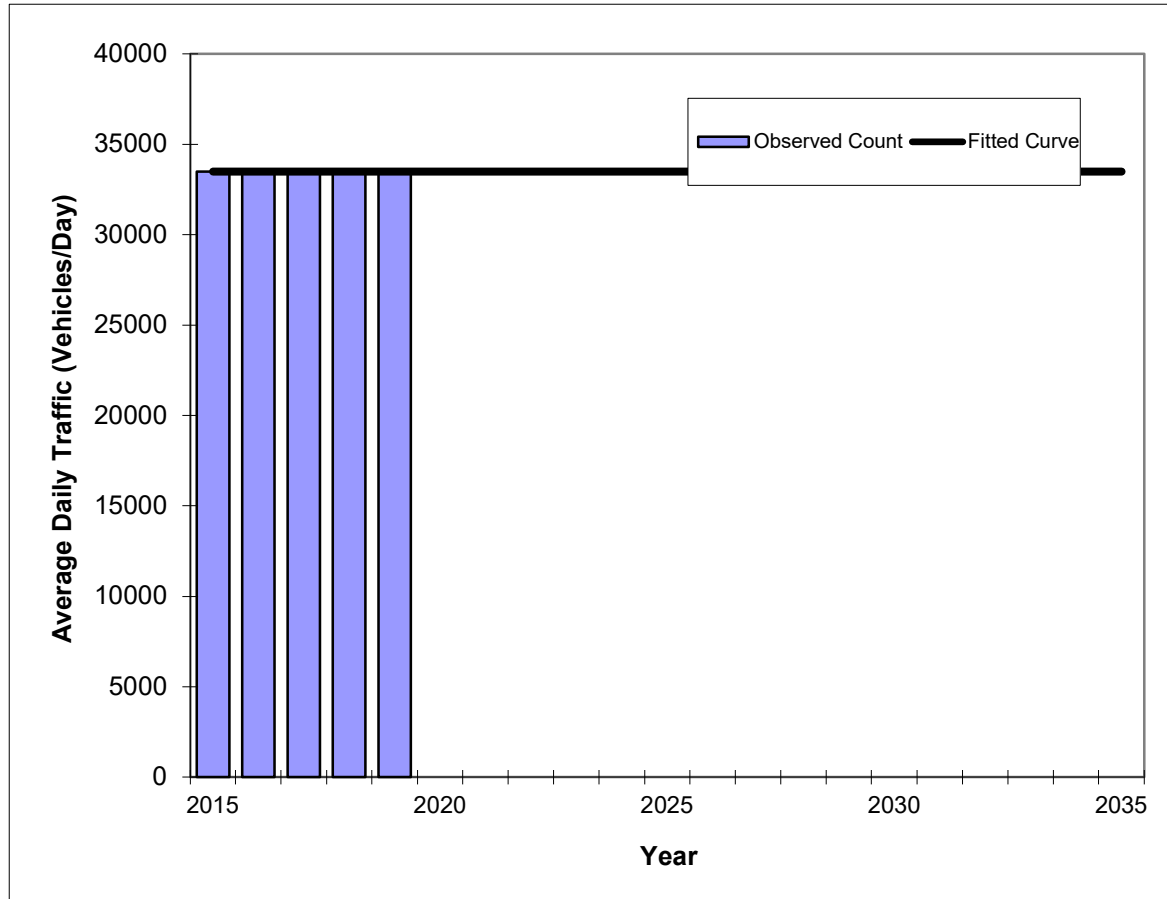
** Annual Trend Increase:	750
Trend R-squared:	34.72%
Trend Annual Historic Growth Rate:	1.53%
Trend Growth Rate (2019 to Design Year):	1.45%
Printed:	21-Apr-21
Straight Line Growth Option	

*Axle-Adjusted

Traffic Trends - V03.a COPANS -- E OF SR 7

FIN#	1234
Location	3

County:	Broward (86)
Station #:	8056
Highway:	COPANS



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	33500	33500
2016	33500	33500
2017	33500	33500
2018	33500	33500
2019	33500	33500
2021 Opening Year Trend		
2021	N/A	33500
2022 Mid-Year Trend		
2022	N/A	33500
2023 Design Year Trend		
2023	N/A	33500
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	0
Trend R-squared:	#DIV/0!
Trend Annual Historic Growth Rate:	0.00%
Trend Growth Rate (2019 to Design Year):	0.00%
Printed:	21-Apr-21
Straight Line Growth Option	

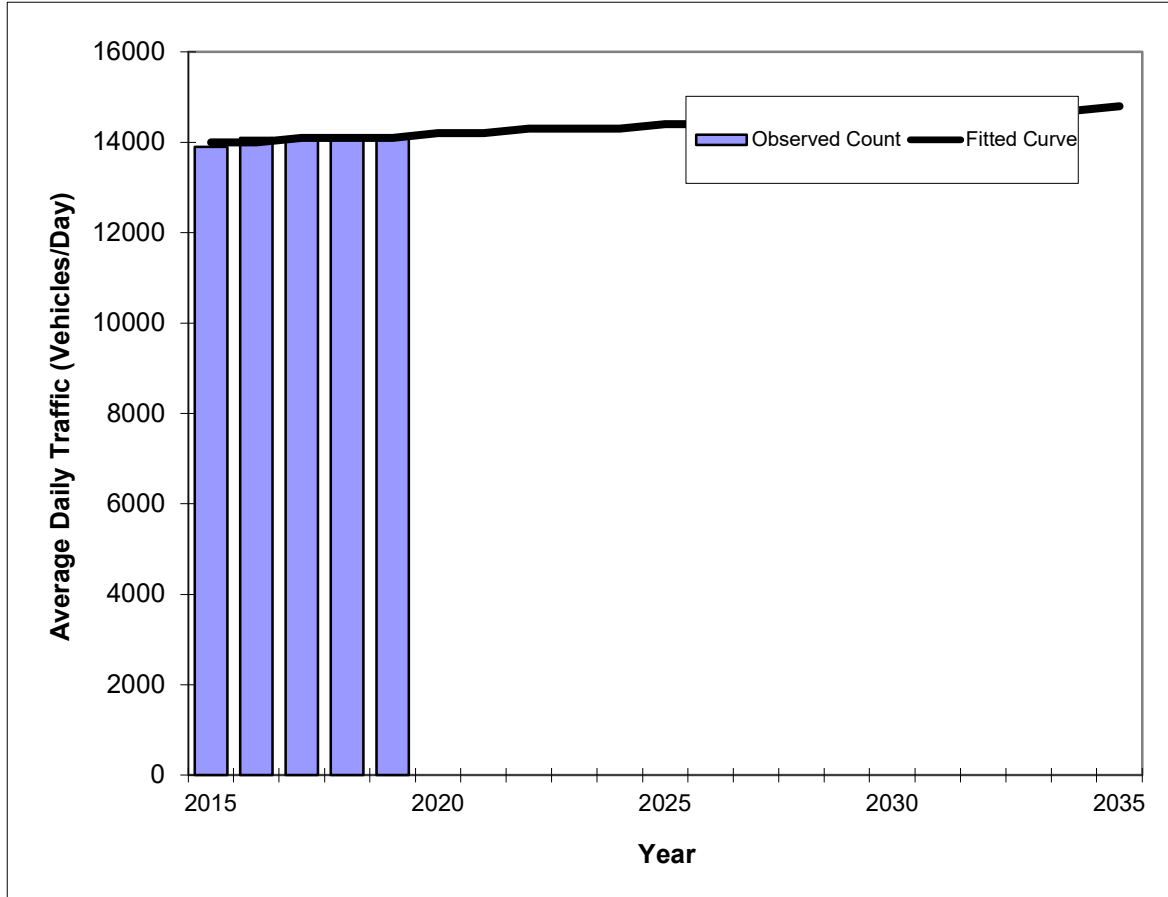
*Axle-Adjusted

Traffic Trends - V03.a

BANKS ROAD -- N OF COCONUT CREEK PARKWAY

FIN#	1234
Location	4

County:	Broward (86)
Station #:	9423
Highway:	BANKS ROAD



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	13900	14000
2016	14100	14000
2017	14100	14100
2018	14100	14100
2019	14100	14100
2021 Opening Year Trend		
2021	N/A	14200
2022 Mid-Year Trend		
2022	N/A	14300
2023 Design Year Trend		
2023	N/A	14300
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	40
Trend R-squared:	50.00%
Trend Annual Historic Growth Rate:	0.18%
Trend Growth Rate (2019 to Design Year):	0.35%
Printed:	21-Apr-21
Straight Line Growth Option	

*Axle-Adjusted

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

**SR 7 and NW 24th Street
AM Peak Hour**

Description	SR 7/US 441 Northbound			SR 7/US 441 Southbound			NW 24th Street Eastbound			NW 24th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (4/15/2021)	4	1,508	50	104	1,780					11		47
Season Adjustment Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Covid-19 Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2021 Peak Season Traffic	4	1,523	51	105	1,798	0	0	0	0	11	0	47
Annual Growth Rate	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%
2023 Background Traffic	4	1,547	51	107	1,826	0	0	0	0	11	0	48
Firstgate			5	5								1
2023 Total Traffic	4	1,547	56	112	1,826	0	0	0	0	11	0	49

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

SR 7 and NW 24th Street PM Peak Hour

Description	SR 7/US 441 Northbound			SR 7/US 441 Southbound			NW 24th Street Eastbound			NW 24th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (4/15/2021)	14	1,796	73	74	1,781	1	2	1	6	22	0	93
Season Adjustment Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Covid-19 Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2021 Peak Season Traffic	14	1,814	74	75	1,799	1	2	1	6	22	0	94
Annual Growth Rate	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%
2023 Background Traffic	14	1,842	75	76	1,827	1	2	1	6	23	0	95
Firstgate			1	1								4
2023 Total Traffic	14	1,842	76	77	1,827	1	2	1	6	23	0	99

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

**Banks Road and NW 24th Street
AM Peak Hour**

Description	Banks Road Northbound			Banks Road Southbound			NW 24th Street Eastbound			NW 24th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (4/15/2021)	67	352	6	1	483	34	23		97	4		4
Season Adjustment Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Covid-19 Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2021 Peak Season Traffic	68	356	6	1	488	34	23	0	98	4	0	4
Annual Growth Rate	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%
2023 Background Traffic	69	361	6	1	495	35	24	0	100	4	0	4
Firstgate	16					2			3			
2023 Total Traffic	85	361	6	1	495	37	24	0	103	4	0	4

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

**Banks Road and NW 24th Street
PM Peak Hour**

Description	Banks Road Northbound			Banks Road Southbound			NW 24th Street Eastbound			NW 24th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (4/15/2021)	118	366	2	2	379	27	26	4	141	7	2	12
Season Adjustment Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Covid-19 Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2021 Peak Season Traffic	119	370	2	2	383	27	26	4	142	7	2	12
Annual Growth Rate	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%
2023 Background Traffic	121	375	2	2	389	28	27	4	145	7	2	12
Firstgate	2						1		18			
2023 Total Traffic	123	375	2	2	389	28	28	4	163	7	2	12

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

**Banks Road and Copans Road
AM Peak Hour**

Description	Banks Road Northbound			Banks Road Southbound			Copans Road Eastbound			Copans Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (4/15/2021)	138	191	165	144	295	131	105	1,067	264	168	743	139
Season Adjustment Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Covid-19 Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2021 Peak Season Traffic	139	193	167	145	298	132	106	1,078	267	170	750	140
Annual Growth Rate	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%
2023 Background Traffic	142	196	169	148	303	134	108	1,095	271	172	762	143
Firstgate	4			3			16				17	
2023 Total Traffic	146	196	169	151	303	134	124	1,095	271	172	779	143

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

**Banks Road and Copans Road
PM Peak Hour**

Description	Banks Road Northbound			Banks Road Southbound			Copans Road Eastbound			Copans Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (4/15/2021)	206	258	192	149	250	118	69	945	235	162	1,079	146
Season Adjustment Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Covid-19 Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2021 Peak Season Traffic	208	261	194	150	253	119	70	954	237	164	1,090	147
Annual Growth Rate	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%
2023 Background Traffic	211	265	197	153	256	121	71	969	241	166	1,107	150
Firstgate				15	3		2				2	
2023 Total Traffic	211	265	197	168	259	121	73	969	241	166	1,109	150

APPENDIX F
SYNCHRO Analyses

HCM 6th TWSC
101: SR 7 & NW 24 St

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	11	0	47	4	1015	51	105	1198	0
Future Vol, veh/h	0	0	0	11	0	47	4	1015	51	105	1198	0
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	220	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	11	0	48	4	1036	52	107	1222	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1962	2532	612	1896	2506	544	1222	0	0	1088	0	0
Stage 1	1436	1436	-	1070	1070	-	-	-	-	-	-	-
Stage 2	526	1096	-	826	1436	-	-	-	-	-	-	-
Critical Hdwy	5.5	6.54	4.5	5.5	6.54	4.5	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.5	5.54	-	5.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	115	27	660	124	28	699	566	-	-	637	-	-
Stage 1	212	197	-	322	296	-	-	-	-	-	-	-
Stage 2	503	287	-	332	197	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	93	22	659	107	23	699	566	-	-	637	-	-
Mov Cap-2 Maneuver	159	88	-	183	104	-	-	-	-	-	-	-
Stage 1	211	164	-	320	294	-	-	-	-	-	-	-
Stage 2	465	285	-	276	164	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	14.1	0	1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	566	-	-	-	-	455	637	-
HCM Lane V/C Ratio	0.007	-	-	-	-	0.13	0.168	-
HCM Control Delay (s)	11.4	-	-	0	14.1	11.8	-	-
HCM Lane LOS	B	-	-	A	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0.6	-	-

HCM 6th TWSC
102: Banks Road & NW 24 St

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔			↕↔		↕	↑↑	↕	↕	↑↑	↕
Traffic Vol, veh/h	23	0	98	4	0	4	68	356	6	1	488	34
Future Vol, veh/h	23	0	98	4	0	4	68	356	6	1	488	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	200	200	-	90
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	0	115	5	0	5	80	419	7	1	574	40

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	946	1162	287	868	1195	210	614	0	0	426	0	0
Stage 1	576	576	-	579	579	-	-	-	-	-	-	-
Stage 2	370	586	-	289	616	-	-	-	-	-	-	-
Critical Hdwy	5.5	6.54	4.5	5.5	6.54	4.5	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.5	5.54	-	5.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	369	194	862	403	185	917	961	-	-	1130	-	-
Stage 1	555	500	-	553	499	-	-	-	-	-	-	-
Stage 2	622	495	-	694	480	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	344	178	862	327	169	917	961	-	-	1130	-	-
Mov Cap-2 Maneuver	400	298	-	384	272	-	-	-	-	-	-	-
Stage 1	509	500	-	507	458	-	-	-	-	-	-	-
Stage 2	567	454	-	601	480	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.4		11.8		1.4		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	961	-	-	707	541	1130	-	-
HCM Lane V/C Ratio	0.083	-	-	0.201	0.017	0.001	-	-
HCM Control Delay (s)	9.1	-	-	11.4	11.8	8.2	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.7	0.1	0	-	-

Timings

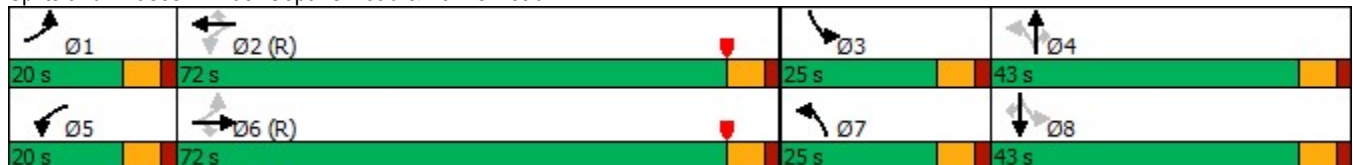
103: Copans Road & Banks Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	1078	267	170	750	140	139	193	167	145	298	132
Future Volume (vph)	106	1078	267	170	750	140	139	193	167	145	298	132
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	6.0	6.0	4.0	6.0	6.0
Minimum Split (s)	10.5	44.5	44.5	10.5	44.5	44.5	10.5	37.5	37.5	10.5	41.5	41.5
Total Split (s)	20.0	72.0	72.0	20.0	72.0	72.0	25.0	43.0	43.0	25.0	43.0	43.0
Total Split (%)	12.5%	45.0%	45.0%	12.5%	45.0%	45.0%	15.6%	26.9%	26.9%	15.6%	26.9%	26.9%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	75.7	66.6	66.6	82.3	69.9	69.9	54.6	41.6	41.6	55.4	42.0	42.0
Actuated g/C Ratio	0.47	0.42	0.42	0.51	0.44	0.44	0.34	0.26	0.26	0.35	0.26	0.26
v/c Ratio	0.38	0.78	0.37	0.85	0.52	0.20	0.39	0.22	0.33	0.35	0.34	0.27
Control Delay	22.7	45.1	11.6	62.8	34.5	7.5	36.6	48.2	7.9	35.9	49.8	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.7	45.1	11.6	62.8	34.5	7.5	36.6	48.2	7.9	35.9	49.8	8.3
LOS	C	D	B	E	C	A	D	D	A	D	D	A
Approach Delay		37.3			35.5			31.5			36.8	
Approach LOS		D			D			C			D	

Intersection Summary













Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 130 (81%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 35.9	Intersection LOS: D
Intersection Capacity Utilization 78.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 103: Copans Road & Banks Road



Queues

103: Copans Road & Banks Road

























												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	113	1147	284	181	798	149	148	205	178	154	317	140
v/c Ratio	0.38	0.78	0.37	0.85	0.52	0.20	0.39	0.22	0.33	0.35	0.34	0.27
Control Delay	22.7	45.1	11.6	62.8	34.5	7.5	36.6	48.2	7.9	35.9	49.8	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.7	45.1	11.6	62.8	34.5	7.5	36.6	48.2	7.9	35.9	49.8	8.3
Queue Length 50th (ft)	57	549	59	104	316	16	104	89	0	108	142	0
Queue Length 95th (ft)	93	641	136	#240	394	63	161	133	65	166	198	59
Internal Link Dist (ft)		534			728			511			920	
Turn Bay Length (ft)	300		245	280		200	460		480	360		270
Base Capacity (vph)	348	1472	762	223	1546	760	437	919	543	491	928	513
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.78	0.37	0.81	0.52	0.20	0.34	0.22	0.33	0.31	0.34	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

103: Copans Road & Banks Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	1078	267	170	750	140	139	193	167	145	298	132
Future Volume (veh/h)	106	1078	267	170	750	140	139	193	167	145	298	132
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		0.99
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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	113	1147	0	181	798	0	148	205	178	154	317	140
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	355	1653		265	1725		325	811	362	366	820	361
Arrive On Green	0.05	0.47	0.00	0.07	0.49	0.00	0.08	0.23	0.23	0.08	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1565
Grp Volume(v), veh/h	113	1147	0	181	798	0	148	205	178	154	317	140
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1565
Q Serve(g_s), s	5.3	40.8	0.0	8.5	23.8	0.0	10.1	7.6	15.6	10.5	12.1	12.1
Cycle Q Clear(g_c), s	5.3	40.8	0.0	8.5	23.8	0.0	10.1	7.6	15.6	10.5	12.1	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	355	1653		265	1725		325	811	362	366	820	361
V/C Ratio(X)	0.32	0.69		0.68	0.46		0.46	0.25	0.49	0.42	0.39	0.39
Avail Cap(c_a), veh/h	424	1653		298	1725		396	811	362	432	820	361
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	33.8	0.0	27.8	27.3	0.0	42.8	50.6	53.7	42.3	52.0	52.0
Incr Delay (d2), s/veh	0.2	2.4	0.0	3.9	0.9	0.0	0.4	0.7	4.7	0.3	1.4	3.1
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	2.2	17.7	0.0	3.8	10.2	0.0	4.5	3.4	6.7	4.7	5.5	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.2	36.2	0.0	31.7	28.2	0.0	43.1	51.3	58.4	42.6	53.4	55.1
LnGrp LOS	C	D		C	C		D	D	E	D	D	E
Approach Vol, veh/h		1260	A		979	A		531			611	
Approach Delay, s/veh		35.0			28.9			51.4			51.1	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.8	84.2	19.0	43.0	17.0	80.9	18.6	43.4				
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5				
Max Green Setting (Gmax), s	13.5	65.5	18.5	36.5	13.5	65.5	18.5	36.5				
Max Q Clear Time (g_c+I1), s	7.3	25.8	12.5	17.6	10.5	42.8	12.1	14.1				
Green Ext Time (p_c), s	0.0	5.8	0.1	1.3	0.0	8.1	0.1	1.9				
Intersection Summary												
HCM 6th Ctrl Delay			38.7									
HCM 6th LOS			D									
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC
101: SR 7 & NW 24 St

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	11	0	48	4	1031	51	107	1217	0
Future Vol, veh/h	0	0	0	11	0	48	4	1031	51	107	1217	0
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	220	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	11	0	49	4	1052	52	109	1242	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1994	2572	622	1926	2546	552	1242	0	0	1104	0	0
Stage 1	1460	1460	-	1086	1086	-	-	-	-	-	-	-
Stage 2	534	1112	-	840	1460	-	-	-	-	-	-	-
Critical Hdwy	5.5	6.54	4.5	5.5	6.54	4.5	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.5	5.54	-	5.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	111	25	655	120	26	694	556	-	-	628	-	-
Stage 1	206	192	-	316	291	-	-	-	-	-	-	-
Stage 2	498	282	-	326	192	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	89	21	654	103	21	694	556	-	-	628	-	-
Mov Cap-2 Maneuver	155	85	-	178	101	-	-	-	-	-	-	-
Stage 1	205	159	-	314	289	-	-	-	-	-	-	-
Stage 2	460	280	-	269	159	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		14.2		0		1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	556	-	-	-	451	628	-	-
HCM Lane V/C Ratio	0.007	-	-	-	0.133	0.174	-	-
HCM Control Delay (s)	11.5	-	-	0	14.2	11.9	-	-
HCM Lane LOS	B	-	-	A	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.5	0.6	-	-

HCM 6th TWSC
102: Banks Road & NW 24 St

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Vol, veh/h	24	0	100	4	0	4	69	361	6	1	495	35
Future Vol, veh/h	24	0	100	4	0	4	69	361	6	1	495	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	200	200	-	90
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	0	118	5	0	5	81	425	7	1	582	41

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	959	1178	291	880	1212	213	623	0	0	432	0	0
Stage 1	584	584	-	587	587	-	-	-	-	-	-	-
Stage 2	375	594	-	293	625	-	-	-	-	-	-	-
Critical Hdwy	5.5	6.54	4.5	5.5	6.54	4.5	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.5	5.54	-	5.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	364	189	859	398	181	915	954	-	-	1124	-	-
Stage 1	550	496	-	548	495	-	-	-	-	-	-	-
Stage 2	618	491	-	691	475	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	339	173	859	321	165	915	954	-	-	1124	-	-
Mov Cap-2 Maneuver	396	294	-	378	267	-	-	-	-	-	-	-
Stage 1	503	496	-	501	453	-	-	-	-	-	-	-
Stage 2	563	449	-	596	475	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.5		11.8		1.4		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	954	-	-	700	535	1124	-	-
HCM Lane V/C Ratio	0.085	-	-	0.208	0.018	0.001	-	-
HCM Control Delay (s)	9.1	-	-	11.5	11.8	8.2	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.8	0.1	0	-	-

Timings

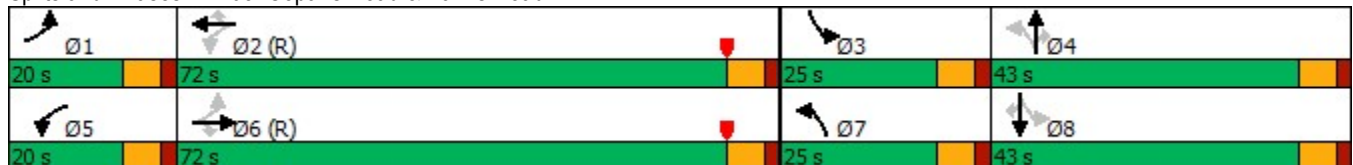
103: Copans Road & Banks Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	1095	271	172	762	143	142	196	169	148	303	134
Future Volume (vph)	108	1095	271	172	762	143	142	196	169	148	303	134
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	6.0	6.0	4.0	6.0	6.0
Minimum Split (s)	10.5	44.5	44.5	10.5	44.5	44.5	10.5	37.5	37.5	10.5	41.5	41.5
Total Split (s)	20.0	72.0	72.0	20.0	72.0	72.0	25.0	43.0	43.0	25.0	43.0	43.0
Total Split (%)	12.5%	45.0%	45.0%	12.5%	45.0%	45.0%	15.6%	26.9%	26.9%	15.6%	26.9%	26.9%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	75.5	66.3	66.3	82.5	69.8	69.8	54.7	41.4	41.4	55.3	41.8	41.8
Actuated g/C Ratio	0.47	0.41	0.41	0.52	0.44	0.44	0.34	0.26	0.26	0.35	0.26	0.26
v/c Ratio	0.39	0.79	0.38	0.88	0.53	0.20	0.40	0.23	0.33	0.36	0.35	0.28
Control Delay	23.0	46.0	11.9	68.8	34.8	7.9	36.8	48.4	8.0	36.0	50.1	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	46.0	11.9	68.8	34.8	7.9	36.8	48.4	8.0	36.0	50.1	8.4
LOS	C	D	B	E	C	A	D	D	A	D	D	A
Approach Delay		38.0			36.7			31.7			37.0	
Approach LOS		D			D			C			D	

Intersection Summary













Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 130 (81%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 36.6
 Intersection Capacity Utilization 79.1%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 103: Copans Road & Banks Road



Queues

103: Copans Road & Banks Road

























												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	115	1165	288	183	811	152	151	209	180	157	322	143
v/c Ratio	0.39	0.79	0.38	0.88	0.53	0.20	0.40	0.23	0.33	0.36	0.35	0.28
Control Delay	23.0	46.0	11.9	68.8	34.8	7.9	36.8	48.4	8.0	36.0	50.1	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	46.0	11.9	68.8	34.8	7.9	36.8	48.4	8.0	36.0	50.1	8.4
Queue Length 50th (ft)	58	562	62	114	323	18	106	91	0	111	145	0
Queue Length 95th (ft)	95	655	139	#259	403	65	163	135	66	170	202	59
Internal Link Dist (ft)		534			728			511			920	
Turn Bay Length (ft)	300		245	280		200	460		480	360		270
Base Capacity (vph)	343	1467	760	218	1544	759	434	916	543	488	923	513
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.79	0.38	0.84	0.53	0.20	0.35	0.23	0.33	0.32	0.35	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

103: Copans Road & Banks Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	1095	271	172	762	143	142	196	169	148	303	134
Future Volume (veh/h)	108	1095	271	172	762	143	142	196	169	148	303	134
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		0.99
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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	1165	0	183	811	0	151	209	180	157	322	143
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	350	1646		261	1718		325	811	362	366	820	361
Arrive On Green	0.05	0.46	0.00	0.07	0.48	0.00	0.08	0.23	0.23	0.08	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1565
Grp Volume(v), veh/h	115	1165	0	183	811	0	151	209	180	157	322	143
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1565
Q Serve(g_s), s	5.4	41.9	0.0	8.6	24.4	0.0	10.3	7.7	15.8	10.7	12.3	12.4
Cycle Q Clear(g_c), s	5.4	41.9	0.0	8.6	24.4	0.0	10.3	7.7	15.8	10.7	12.3	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	350	1646		261	1718		325	811	362	366	820	361
V/C Ratio(X)	0.33	0.71		0.70	0.47		0.46	0.26	0.50	0.43	0.39	0.40
Avail Cap(c_a), veh/h	418	1646		292	1718		394	811	362	430	820	361
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	34.3	0.0	28.6	27.7	0.0	42.7	50.6	53.8	42.3	52.1	52.1
Incr Delay (d2), s/veh	0.2	2.6	0.0	4.9	0.9	0.0	0.4	0.8	4.8	0.3	1.4	3.2
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	2.3	18.2	0.0	3.9	10.4	0.0	4.6	3.5	6.8	4.7	5.6	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	36.9	0.0	33.5	28.6	0.0	43.1	51.4	58.6	42.6	53.5	55.3
LnGrp LOS	C	D		C	C		D	D	E	D	D	E
Approach Vol, veh/h		1280	A		994	A		540			622	
Approach Delay, s/veh		35.6			29.5			51.5			51.1	
Approach LOS		D			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.9	83.8	19.3	43.0	17.2	80.6	18.8	43.4				
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5				
Max Green Setting (Gmax), s	13.5	65.5	18.5	36.5	13.5	65.5	18.5	36.5				
Max Q Clear Time (g_c+I1), s	7.4	26.4	12.7	17.8	10.6	43.9	12.3	14.4				
Green Ext Time (p_c), s	0.0	5.9	0.1	1.3	0.0	8.1	0.1	1.9				
Intersection Summary												
HCM 6th Ctrl Delay			39.1									
HCM 6th LOS			D									
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC
101: SR 7 & NW 24 St

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	11	0	49	4	1031	56	112	1217	0
Future Vol, veh/h	0	0	0	11	0	49	4	1031	56	112	1217	0
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	220	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	11	0	50	4	1052	57	114	1242	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2004	2587	622	1939	2559	555	1242	0	0	1109	0	0
Stage 1	1470	1470	-	1089	1089	-	-	-	-	-	-	-
Stage 2	534	1117	-	850	1470	-	-	-	-	-	-	-
Critical Hdwy	5.5	6.54	4.5	5.5	6.54	4.5	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.5	5.54	-	5.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	109	25	655	118	26	692	556	-	-	625	-	-
Stage 1	204	190	-	315	290	-	-	-	-	-	-	-
Stage 2	498	281	-	322	190	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	86	20	654	101	21	692	556	-	-	625	-	-
Mov Cap-2 Maneuver	152	82	-	175	99	-	-	-	-	-	-	-
Stage 1	203	155	-	313	288	-	-	-	-	-	-	-
Stage 2	459	279	-	263	155	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		14.3		0		1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	556	-	-	-	449	625	-	-
HCM Lane V/C Ratio	0.007	-	-	-	0.136	0.183	-	-
HCM Control Delay (s)	11.5	-	-	0	14.3	12	-	-
HCM Lane LOS	B	-	-	A	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.5	0.7	-	-

HCM 6th TWSC
102: Banks Road & NW 24 St

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Vol, veh/h	24	0	103	4	0	4	85	361	6	1	495	37
Future Vol, veh/h	24	0	103	4	0	4	85	361	6	1	495	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	200	200	-	90
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	0	121	5	0	5	100	425	7	1	582	44

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	997	1216	291	918	1253	213	626	0	0	432	0	0
Stage 1	584	584	-	625	625	-	-	-	-	-	-	-
Stage 2	413	632	-	293	628	-	-	-	-	-	-	-
Critical Hdwy	5.5	6.54	4.5	5.5	6.54	4.5	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.5	5.54	-	5.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	349	180	859	381	171	915	952	-	-	1124	-	-
Stage 1	550	496	-	526	475	-	-	-	-	-	-	-
Stage 2	587	472	-	691	474	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	319	161	859	301	153	915	952	-	-	1124	-	-
Mov Cap-2 Maneuver	377	281	-	357	251	-	-	-	-	-	-	-
Stage 1	492	496	-	471	425	-	-	-	-	-	-	-
Stage 2	523	422	-	593	474	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	11.6		12.1		1.7			0		
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	952	-	-	692	514	1124	-	-
HCM Lane V/C Ratio	0.105	-	-	0.216	0.018	0.001	-	-
HCM Control Delay (s)	9.2	-	-	11.6	12.1	8.2	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.8	0.1	0	-	-

Timings

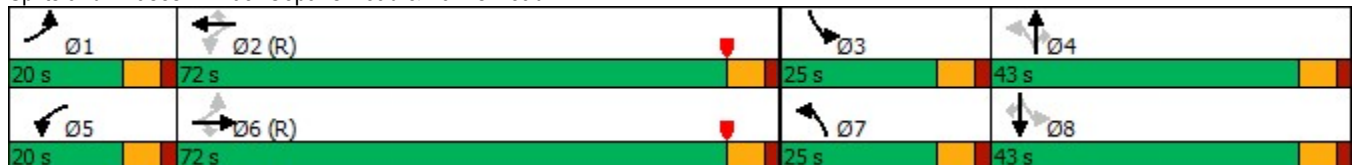
103: Copans Road & Banks Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	1095	271	172	779	143	146	196	169	151	303	134
Future Volume (vph)	124	1095	271	172	779	143	146	196	169	151	303	134
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	6.0	6.0	4.0	6.0	6.0
Minimum Split (s)	10.5	44.5	44.5	10.5	44.5	44.5	10.5	37.5	37.5	10.5	41.5	41.5
Total Split (s)	20.0	72.0	72.0	20.0	72.0	72.0	25.0	43.0	43.0	25.0	43.0	43.0
Total Split (%)	12.5%	45.0%	45.0%	12.5%	45.0%	45.0%	15.6%	26.9%	26.9%	15.6%	26.9%	26.9%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	76.4	66.3	66.3	81.6	69.0	69.0	54.7	41.2	41.2	55.3	41.5	41.5
Actuated g/C Ratio	0.48	0.41	0.41	0.51	0.43	0.43	0.34	0.26	0.26	0.35	0.26	0.26
v/c Ratio	0.45	0.79	0.38	0.88	0.54	0.20	0.41	0.23	0.33	0.37	0.35	0.28
Control Delay	24.2	46.0	11.9	69.2	35.8	8.3	37.0	48.5	8.0	36.2	50.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	46.0	11.9	69.2	35.8	8.3	37.0	48.5	8.0	36.2	50.3	8.4
LOS	C	D	B	E	D	A	D	D	A	D	D	A
Approach Delay		38.0			37.5			31.8			37.1	
Approach LOS		D			D			C			D	

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 130 (81%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 36.8
 Intersection LOS: D
 Intersection Capacity Utilization 79.3%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 103: Copans Road & Banks Road



Queues

103: Copans Road & Banks Road



























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	132	1165	288	183	829	152	155	209	180	161	322	143
v/c Ratio	0.45	0.79	0.38	0.88	0.54	0.20	0.41	0.23	0.33	0.37	0.35	0.28
Control Delay	24.2	46.0	11.9	69.2	35.8	8.3	37.0	48.5	8.0	36.2	50.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	46.0	11.9	69.2	35.8	8.3	37.0	48.5	8.0	36.2	50.3	8.4
Queue Length 50th (ft)	68	562	62	114	336	19	109	91	0	114	145	0
Queue Length 95th (ft)	107	655	139	#259	419	68	167	135	66	173	202	59
Internal Link Dist (ft)		534			728			511			920	
Turn Bay Length (ft)	300		245	280		200	460		480	360		270
Base Capacity (vph)	332	1467	760	218	1525	750	431	911	541	488	918	511
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.79	0.38	0.84	0.54	0.20	0.36	0.23	0.33	0.33	0.35	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

103: Copans Road & Banks Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	1095	271	172	779	143	146	196	169	151	303	134
Future Volume (veh/h)	124	1095	271	172	779	143	146	196	169	151	303	134
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		0.99
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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	132	1165	0	183	829	0	155	209	180	161	322	143
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	347	1639		260	1693		328	811	362	369	820	361
Arrive On Green	0.05	0.46	0.00	0.07	0.48	0.00	0.08	0.23	0.23	0.08	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1565
Grp Volume(v), veh/h	132	1165	0	183	829	0	155	209	180	161	322	143
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1565
Q Serve(g_s), s	6.2	42.0	0.0	8.6	25.5	0.0	10.6	7.7	15.8	11.0	12.3	12.4
Cycle Q Clear(g_c), s	6.2	42.0	0.0	8.6	25.5	0.0	10.6	7.7	15.8	11.0	12.3	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	347	1639		260	1693		328	811	362	369	820	361
V/C Ratio(X)	0.38	0.71		0.70	0.49		0.47	0.26	0.50	0.44	0.39	0.40
Avail Cap(c_a), veh/h	405	1639		291	1693		394	811	362	430	820	361
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	34.6	0.0	28.8	28.6	0.0	42.6	50.6	53.8	42.2	52.1	52.1
Incr Delay (d2), s/veh	0.3	2.6	0.0	5.1	1.0	0.0	0.4	0.8	4.8	0.3	1.4	3.2
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	2.6	18.3	0.0	3.9	10.9	0.0	4.7	3.5	6.8	4.9	5.6	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	37.2	0.0	33.8	29.6	0.0	43.0	51.4	58.6	42.5	53.5	55.3
LnGrp LOS	C	D		C	C		D	D	E	D	D	E
Approach Vol, veh/h		1297	A		1012	A		544			626	
Approach Delay, s/veh		35.7			30.4			51.4			51.1	
Approach LOS		D			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.8	82.7	19.5	43.0	17.2	80.3	19.1	43.4				
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5				
Max Green Setting (Gmax), s	13.5	65.5	18.5	36.5	13.5	65.5	18.5	36.5				
Max Q Clear Time (g_c+I1), s	8.2	27.5	13.0	17.8	10.6	44.0	12.6	14.4				
Green Ext Time (p_c), s	0.0	6.1	0.1	1.3	0.0	8.1	0.1	1.9				
Intersection Summary												
HCM 6th Ctrl Delay			39.4									
HCM 6th LOS			D									
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC
201: Driveway & NW 24 St

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	158	10	18	104	1	3
Future Vol, veh/h	158	10	18	104	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	172	11	20	113	1	3

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	183	0	331
Stage 1	-	-	-	-	178
Stage 2	-	-	-	-	153
Critical Hdwy	-	-	4.12	-	5.5
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1392	-	722
Stage 1	-	-	-	-	853
Stage 2	-	-	-	-	875
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1392	-	711
Mov Cap-2 Maneuver	-	-	-	-	711
Stage 1	-	-	-	-	840
Stage 2	-	-	-	-	875

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	871	-	-	1392	-
HCM Lane V/C Ratio	0.005	-	-	0.014	-
HCM Control Delay (s)	9.2	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th TWSC
202: Copans Road & Driveway

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1474	1038	21	0	3
Future Vol, veh/h	0	1474	1038	21	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1602	1128	23	0	3

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.5
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	0	-	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	680
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	680
HCM Lane V/C Ratio	-	-	-	0.005
HCM Control Delay (s)	-	-	-	10.3
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC
101: SR 7 & NW 24 St

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	2	1	6	22	0	94	14	1209	74	75	1199	1
Future Vol, veh/h	2	1	6	22	0	94	14	1209	74	75	1199	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	220	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	1	6	23	0	100	15	1286	79	80	1276	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2110	2832	639	2155	2793	683	1277	0	0	1365	0	0
Stage 1	1437	1437	-	1356	1356	-	-	-	-	-	-	-
Stage 2	673	1395	-	799	1437	-	-	-	-	-	-	-
Critical Hdwy	5.5	6.54	4.5	5.5	6.54	4.5	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.5	5.54	-	5.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	96	17	646	91	18	622	540	-	-	499	-	-
Stage 1	212	197	-	233	216	-	-	-	-	-	-	-
Stage 2	411	207	-	345	197	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	69	14	646	77	15	622	540	-	-	499	-	-
Mov Cap-2 Maneuver	135	70	-	147	87	-	-	-	-	-	-	-
Stage 1	206	165	-	226	210	-	-	-	-	-	-	-
Stage 2	335	201	-	285	165	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	21		18.6		0.1		0.8	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	540	-	-	234	386	499	-	-
HCM Lane V/C Ratio	0.028	-	-	0.041	0.32	0.16	-	-
HCM Control Delay (s)	11.9	-	-	21	18.6	13.6	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	1.4	0.6	-	-

HCM 6th TWSC
102: Banks Road & NW 24 St

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑↑	↕	↕	↑↑	↕
Traffic Vol, veh/h	26	4	142	7	2	12	119	370	2	2	383	27
Future Vol, veh/h	26	4	142	7	2	12	119	370	2	2	383	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	200	200	-	90
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	4	156	8	2	13	131	407	2	2	421	30

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	892	1096	211	886	1124	204	451	0	0	409	0	0
Stage 1	425	425	-	669	669	-	-	-	-	-	-	-
Stage 2	467	671	-	217	455	-	-	-	-	-	-	-
Critical Hdwy	5.5	6.54	4.5	5.5	6.54	4.5	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.5	5.54	-	5.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	392	212	917	395	204	922	1106	-	-	1146	-	-
Stage 1	653	585	-	501	454	-	-	-	-	-	-	-
Stage 2	545	453	-	765	567	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	349	187	917	294	180	922	1106	-	-	1146	-	-
Mov Cap-2 Maneuver	390	297	-	347	272	-	-	-	-	-	-	-
Stage 1	576	584	-	442	400	-	-	-	-	-	-	-
Stage 2	471	400	-	629	566	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	11.6		12.3		2.1		0			
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1106	-	-	732	518	1146	-	-
HCM Lane V/C Ratio	0.118	-	-	0.258	0.045	0.002	-	-
HCM Control Delay (s)	8.7	-	-	11.6	12.3	8.1	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	1	0.1	0	-	-

Timings

103: Copans Road & Banks Road

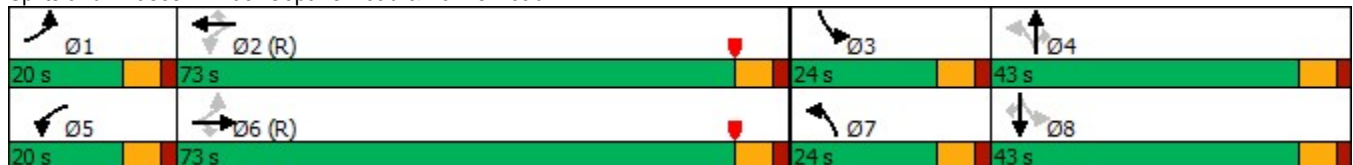
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	954	237	164	1090	147	208	261	194	150	253	119
Future Volume (vph)	70	954	237	164	1090	147	208	261	194	150	253	119
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	6.0	6.0	4.0	6.0	6.0
Minimum Split (s)	10.5	44.5	44.5	10.5	44.5	44.5	10.5	37.5	37.5	10.5	41.5	41.5
Total Split (s)	20.0	73.0	73.0	20.0	73.0	73.0	24.0	43.0	43.0	24.0	43.0	43.0
Total Split (%)	12.5%	45.6%	45.6%	12.5%	45.6%	45.6%	15.0%	26.9%	26.9%	15.0%	26.9%	26.9%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	75.7	68.5	68.5	84.3	72.8	72.8	56.4	40.4	40.4	51.6	38.0	38.0
Actuated g/C Ratio	0.47	0.43	0.43	0.53	0.46	0.46	0.35	0.25	0.25	0.32	0.24	0.24
v/c Ratio	0.43	0.68	0.33	0.72	0.73	0.20	0.55	0.32	0.38	0.41	0.32	0.27
Control Delay	26.0	40.0	8.8	37.0	39.1	9.2	41.6	50.5	7.9	37.8	52.1	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	40.0	8.8	37.0	39.1	9.2	41.6	50.5	7.9	37.8	52.1	8.9
LOS	C	D	A	D	D	A	D	D	A	D	D	A
Approach Delay		33.3			35.7			35.2			38.2	
Approach LOS		C			D			D			D	

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 120 (75%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 35.2
 Intersection Capacity Utilization 91.3%
 Analysis Period (min) 15













Intersection LOS: D
 ICU Level of Service F

Splits and Phases: 103: Copans Road & Banks Road



























Queues

103: Copans Road & Banks Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	75	1026	255	176	1172	158	224	281	209	161	272	128
v/c Ratio	0.43	0.68	0.33	0.72	0.73	0.20	0.55	0.32	0.38	0.41	0.32	0.27
Control Delay	26.0	40.0	8.8	37.0	39.1	9.2	41.6	50.5	7.9	37.8	52.1	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	40.0	8.8	37.0	39.1	9.2	41.6	50.5	7.9	37.8	52.1	8.9
Queue Length 50th (ft)	37	455	37	92	520	27	167	126	0	115	126	0
Queue Length 95th (ft)	65	543	103	141	625	75	241	177	71	175	172	56
Internal Link Dist (ft)		534			728			511			920	
Turn Bay Length (ft)	300		245	280		200	460		480	360		270
Base Capacity (vph)	244	1514	781	264	1609	781	421	892	549	437	839	472
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.68	0.33	0.67	0.73	0.20	0.53	0.32	0.38	0.37	0.32	0.27
Intersection Summary												

HCM 6th Signalized Intersection Summary

103: Copans Road & Banks Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	954	237	164	1090	147	208	261	194	150	253	119
Future Volume (veh/h)	70	954	237	164	1090	147	208	261	194	150	253	119
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	75	1026	0	176	1172	0	224	281	209	161	272	128
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	1544		277	1658		399	905	398	363	811	361
Arrive On Green	0.03	0.43	0.00	0.07	0.47	0.00	0.11	0.25	0.25	0.08	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1563	1781	3554	1583
Grp Volume(v), veh/h	75	1026	0	176	1172	0	224	281	209	161	272	128
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1563	1781	1777	1583
Q Serve(g_s), s	3.7	36.7	0.0	8.7	42.0	0.0	15.3	10.2	18.4	11.0	10.2	10.9
Cycle Q Clear(g_c), s	3.7	36.7	0.0	8.7	42.0	0.0	15.3	10.2	18.4	11.0	10.2	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	1544		277	1658		399	905	398	363	811	361
V/C Ratio(X)	0.37	0.66		0.64	0.71		0.56	0.31	0.52	0.44	0.34	0.35
Avail Cap(c_a), veh/h	293	1544		308	1658		401	905	398	413	811	361
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	36.0	0.0	28.1	34.0	0.0	40.8	48.2	51.3	42.1	51.6	51.9
Incr Delay (d2), s/veh	0.4	2.3	0.0	2.4	2.6	0.0	1.1	0.9	4.9	0.3	1.1	2.7
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	16.0	0.0	3.8	18.2	0.0	6.8	4.7	7.7	4.9	4.7	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	38.3	0.0	30.5	36.5	0.0	41.8	49.1	56.2	42.4	52.7	54.6
LnGrp LOS	C	D		C	D		D	D	E	D	D	D
Approach Vol, veh/h		1101	A		1348	A		714			561	
Approach Delay, s/veh		37.6			35.7			48.9			50.2	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.1	81.2	19.5	47.3	17.2	76.0	23.8	43.0				
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5				
Max Green Setting (Gmax), s	13.5	66.5	17.5	36.5	13.5	66.5	17.5	36.5				
Max Q Clear Time (g_c+I1), s	5.7	44.0	13.0	20.4	10.7	38.7	17.3	12.9				
Green Ext Time (p_c), s	0.0	8.3	0.1	1.7	0.0	7.5	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			41.0									
HCM 6th LOS			D									
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC
101: SR 7 & NW 24 St

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	2	1	6	23	0	95	14	1228	75	76	1218	1
Future Vol, veh/h	2	1	6	23	0	95	14	1228	75	76	1218	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	220	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	1	6	24	0	101	15	1306	80	81	1296	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2142	2875	649	2187	2835	693	1297	0	0	1386	0	0
Stage 1	1459	1459	-	1376	1376	-	-	-	-	-	-	-
Stage 2	683	1416	-	811	1459	-	-	-	-	-	-	-
Critical Hdwy	5.5	6.54	4.5	5.5	6.54	4.5	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.5	5.54	-	5.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	93	16	640	88	17	617	530	-	-	490	-	-
Stage 1	207	192	-	227	211	-	-	-	-	-	-	-
Stage 2	405	202	-	339	192	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	66	13	640	74	14	617	530	-	-	490	-	-
Mov Cap-2 Maneuver	131	67	-	143	84	-	-	-	-	-	-	-
Stage 1	201	160	-	221	205	-	-	-	-	-	-	-
Stage 2	329	196	-	278	160	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	21.6		19.4		0.1		0.8	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	530	-	-	227	375	490	-	-
HCM Lane V/C Ratio	0.028	-	-	0.042	0.335	0.165	-	-
HCM Control Delay (s)	12	-	-	21.6	19.4	13.8	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	1.4	0.6	-	-

HCM 6th TWSC
102: Banks Road & NW 24 St

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↑↑	↗	↗	↑↑	↗
Traffic Vol, veh/h	27	4	145	7	2	12	121	375	2	2	389	28
Future Vol, veh/h	27	4	145	7	2	12	121	375	2	2	389	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	200	200	-	90
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	4	159	8	2	13	133	412	2	2	427	31

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	904	1111	214	898	1140	206	458	0	0	414	0	0
Stage 1	431	431	-	678	678	-	-	-	-	-	-	-
Stage 2	473	680	-	220	462	-	-	-	-	-	-	-
Critical Hdwy	5.5	6.54	4.5	5.5	6.54	4.5	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.5	5.54	-	5.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	387	208	914	390	200	920	1099	-	-	1141	-	-
Stage 1	649	581	-	497	450	-	-	-	-	-	-	-
Stage 2	541	449	-	762	563	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	344	182	914	289	175	920	1099	-	-	1141	-	-
Mov Cap-2 Maneuver	386	292	-	342	268	-	-	-	-	-	-	-
Stage 1	570	580	-	437	396	-	-	-	-	-	-	-
Stage 2	466	395	-	623	562	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.8		12.3		2.1		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1099	-	-	726	513	1141	-	-
HCM Lane V/C Ratio	0.121	-	-	0.266	0.045	0.002	-	-
HCM Control Delay (s)	8.7	-	-	11.8	12.3	8.2	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	1.1	0.1	0	-	-

Timings

103: Copans Road & Banks Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	969	241	166	1107	150	211	265	197	153	256	121
Future Volume (vph)	71	969	241	166	1107	150	211	265	197	153	256	121
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	6.0	6.0	4.0	6.0	6.0
Minimum Split (s)	10.5	44.5	44.5	10.5	44.5	44.5	10.5	37.5	37.5	10.5	41.5	41.5
Total Split (s)	20.0	73.0	73.0	20.0	73.0	73.0	24.0	43.0	43.0	24.0	43.0	43.0
Total Split (%)	12.5%	45.6%	45.6%	12.5%	45.6%	45.6%	15.0%	26.9%	26.9%	15.0%	26.9%	26.9%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	75.6	68.3	68.3	84.4	72.7	72.7	56.3	40.2	40.2	51.7	37.9	37.9
Actuated g/C Ratio	0.47	0.43	0.43	0.53	0.45	0.45	0.35	0.25	0.25	0.32	0.24	0.24
v/c Ratio	0.45	0.69	0.33	0.74	0.74	0.21	0.56	0.32	0.39	0.42	0.33	0.27
Control Delay	26.8	40.5	9.1	39.3	39.6	9.5	42.0	50.7	8.0	38.1	52.2	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	40.5	9.1	39.3	39.6	9.5	42.0	50.7	8.0	38.1	52.2	8.8
LOS	C	D	A	D	D	A	D	D	A	D	D	A
Approach Delay		33.8			36.4			35.5			38.2	
Approach LOS		C			D			D			D	

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 120 (75%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 35.6
 Intersection Capacity Utilization 92.0%
 Analysis Period (min) 15













Intersection LOS: D
 ICU Level of Service F

Splits and Phases: 103: Copans Road & Banks Road



Queues

103: Copans Road & Banks Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	76	1042	259	178	1190	161	227	285	212	165	275	130
v/c Ratio	0.45	0.69	0.33	0.74	0.74	0.21	0.56	0.32	0.39	0.42	0.33	0.27
Control Delay	26.8	40.5	9.1	39.3	39.6	9.5	42.0	50.7	8.0	38.1	52.2	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	40.5	9.1	39.3	39.6	9.5	42.0	50.7	8.0	38.1	52.2	8.8
Queue Length 50th (ft)	37	466	39	93	532	29	169	129	0	118	127	0
Queue Length 95th (ft)	66	555	107	151	639	78	245	180	70	180	174	57
Internal Link Dist (ft)		534			728			511			920	
Turn Bay Length (ft)	300		245	280		200	460		480	360		270
Base Capacity (vph)	239	1510	780	259	1608	780	420	888	550	433	838	474
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.69	0.33	0.69	0.74	0.21	0.54	0.32	0.39	0.38	0.33	0.27
Intersection Summary												

HCM 6th Signalized Intersection Summary

103: Copans Road & Banks Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	969	241	166	1107	150	211	265	197	153	256	121
Future Volume (veh/h)	71	969	241	166	1107	150	211	265	197	153	256	121
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	1042	0	178	1190	0	227	285	212	165	275	130
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	200	1537		272	1652		400	904	397	363	811	361
Arrive On Green	0.04	0.43	0.00	0.07	0.46	0.00	0.11	0.25	0.25	0.08	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1563	1781	3554	1583
Grp Volume(v), veh/h	76	1042	0	178	1190	0	227	285	212	165	275	130
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1563	1781	1777	1583
Q Serve(g_s), s	3.8	37.7	0.0	8.8	43.1	0.0	15.5	10.4	18.7	11.3	10.4	11.0
Cycle Q Clear(g_c), s	3.8	37.7	0.0	8.8	43.1	0.0	15.5	10.4	18.7	11.3	10.4	11.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	200	1537		272	1652		400	904	397	363	811	361
V/C Ratio(X)	0.38	0.68		0.65	0.72		0.57	0.32	0.53	0.45	0.34	0.36
Avail Cap(c_a), veh/h	287	1537		302	1652		400	904	397	410	811	361
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.0	36.5	0.0	28.7	34.4	0.0	40.7	48.4	51.5	42.0	51.7	51.9
Incr Delay (d2), s/veh	0.4	2.4	0.0	3.0	2.7	0.0	1.2	0.9	5.1	0.3	1.1	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	16.5	0.0	3.9	18.7	0.0	6.9	4.7	7.9	5.0	4.7	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	38.9	0.0	31.7	37.2	0.0	41.9	49.3	56.5	42.3	52.8	54.7
LnGrp LOS	C	D		C	D		D	D	E	D	D	D
Approach Vol, veh/h		1118	A		1368	A		724			570	
Approach Delay, s/veh		38.3			36.5			49.1			50.2	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.1	80.9	19.8	47.2	17.3	75.7	24.0	43.0				
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5				
Max Green Setting (Gmax), s	13.5	66.5	17.5	36.5	13.5	66.5	17.5	36.5				
Max Q Clear Time (g_c+I1), s	5.8	45.1	13.3	20.7	10.8	39.7	17.5	13.0				
Green Ext Time (p_c), s	0.0	8.3	0.1	1.7	0.0	7.6	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			41.5									
HCM 6th LOS			D									
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC
101: SR 7 & NW 24 St

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	2	1	6	23	0	99	14	1228	76	77	1218	1
Future Vol, veh/h	2	1	6	23	0	99	14	1228	76	77	1218	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	220	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	1	6	24	0	105	15	1306	81	82	1296	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2144	2878	649	2190	2838	694	1297	0	0	1387	0	0
Stage 1	1461	1461	-	1377	1377	-	-	-	-	-	-	-
Stage 2	683	1417	-	813	1461	-	-	-	-	-	-	-
Critical Hdwy	5.5	6.54	4.5	5.5	6.54	4.5	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.5	5.54	-	5.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	92	16	640	87	17	617	530	-	-	490	-	-
Stage 1	206	192	-	227	211	-	-	-	-	-	-	-
Stage 2	405	201	-	339	192	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	65	13	640	73	14	617	530	-	-	490	-	-
Mov Cap-2 Maneuver	130	66	-	143	84	-	-	-	-	-	-	-
Stage 1	200	160	-	221	205	-	-	-	-	-	-	-
Stage 2	326	195	-	278	160	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	21.6		19.3		0.1		0.8	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	530	-	-	226	380	490	-	-
HCM Lane V/C Ratio	0.028	-	-	0.042	0.342	0.167	-	-
HCM Control Delay (s)	12	-	-	21.6	19.3	13.8	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	1.5	0.6	-	-

HCM 6th TWSC
102: Banks Road & NW 24 St

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑↑	↕	↕	↑↑	↕
Traffic Vol, veh/h	28	4	163	7	2	12	123	375	2	2	389	28
Future Vol, veh/h	28	4	163	7	2	12	123	375	2	2	389	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	200	200	-	90
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	4	179	8	2	13	135	412	2	2	427	31

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	908	1115	214	902	1144	206	458	0	0	414	0	0
Stage 1	431	431	-	682	682	-	-	-	-	-	-	-
Stage 2	477	684	-	220	462	-	-	-	-	-	-	-
Critical Hdwy	5.5	6.54	4.5	5.5	6.54	4.5	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.5	5.54	-	5.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	385	207	914	388	198	920	1099	-	-	1141	-	-
Stage 1	649	581	-	494	448	-	-	-	-	-	-	-
Stage 2	538	447	-	762	563	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	341	181	914	279	173	920	1099	-	-	1141	-	-
Mov Cap-2 Maneuver	383	290	-	333	266	-	-	-	-	-	-	-
Stage 1	569	580	-	433	393	-	-	-	-	-	-	-
Stage 2	463	392	-	607	562	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.9		12.5		2.1		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1099	-	-	735	505	1141	-	-
HCM Lane V/C Ratio	0.123	-	-	0.292	0.046	0.002	-	-
HCM Control Delay (s)	8.7	-	-	11.9	12.5	8.2	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	1.2	0.1	0	-	-

Timings

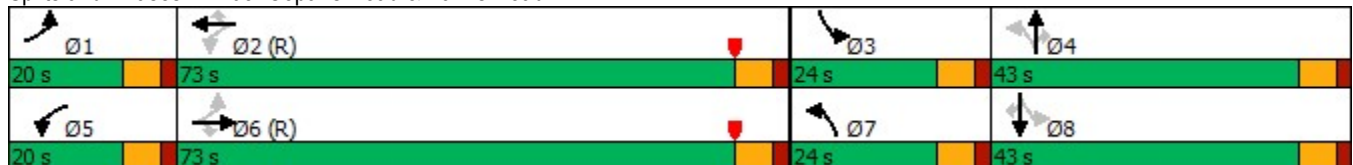
103: Copans Road & Banks Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	969	241	166	1109	150	211	265	197	168	259	121
Future Volume (vph)	73	969	241	166	1109	150	211	265	197	168	259	121
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	6.0	6.0	4.0	6.0	6.0
Minimum Split (s)	10.5	44.5	44.5	10.5	44.5	44.5	10.5	37.5	37.5	10.5	41.5	41.5
Total Split (s)	20.0	73.0	73.0	20.0	73.0	73.0	24.0	43.0	43.0	24.0	43.0	43.0
Total Split (%)	12.5%	45.6%	45.6%	12.5%	45.6%	45.6%	15.0%	26.9%	26.9%	15.0%	26.9%	26.9%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	75.7	68.3	68.3	84.3	72.6	72.6	55.5	39.4	39.4	52.5	37.9	37.9
Actuated g/C Ratio	0.47	0.43	0.43	0.53	0.45	0.45	0.35	0.25	0.25	0.33	0.24	0.24
v/c Ratio	0.46	0.69	0.33	0.74	0.74	0.21	0.56	0.33	0.39	0.46	0.33	0.27
Control Delay	27.1	40.5	9.1	39.3	39.8	9.5	42.1	51.4	8.1	38.9	52.3	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	40.5	9.1	39.3	39.8	9.5	42.1	51.4	8.1	38.9	52.3	8.8
LOS	C	D	A	D	D	A	D	D	A	D	D	A
Approach Delay		33.8			36.6			35.8			38.6	
Approach LOS		C			D			D			D	

Intersection Summary













Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 120 (75%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 35.8
 Intersection LOS: D
 Intersection Capacity Utilization 92.8%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 103: Copans Road & Banks Road



Queues

103: Copans Road & Banks Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	78	1042	259	178	1192	161	227	285	212	181	278	130
v/c Ratio	0.46	0.69	0.33	0.74	0.74	0.21	0.56	0.33	0.39	0.46	0.33	0.27
Control Delay	27.1	40.5	9.1	39.3	39.8	9.5	42.1	51.4	8.1	38.9	52.3	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	40.5	9.1	39.3	39.8	9.5	42.1	51.4	8.1	38.9	52.3	8.8
Queue Length 50th (ft)	38	466	39	93	534	29	169	130	0	131	129	0
Queue Length 95th (ft)	67	555	107	151	642	78	245	180	70	195	175	57
Internal Link Dist (ft)		534			728			511			920	
Turn Bay Length (ft)	300		245	280		200	460		480	360		270
Base Capacity (vph)	238	1510	780	259	1605	779	418	870	543	428	838	474
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.69	0.33	0.69	0.74	0.21	0.54	0.33	0.39	0.42	0.33	0.27
Intersection Summary												

HCM 6th Signalized Intersection Summary

103: Copans Road & Banks Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	969	241	166	1109	150	211	265	197	168	259	121
Future Volume (veh/h)	73	969	241	166	1109	150	211	265	197	168	259	121
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	1042	0	178	1192	0	227	285	212	181	278	130
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	200	1536		272	1650		399	880	387	369	811	361
Arrive On Green	0.04	0.43	0.00	0.07	0.46	0.00	0.11	0.25	0.25	0.09	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1563	1781	3554	1583
Grp Volume(v), veh/h	78	1042	0	178	1192	0	227	285	212	181	278	130
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1563	1781	1777	1583
Q Serve(g_s), s	3.9	37.7	0.0	8.8	43.3	0.0	15.5	10.5	18.9	12.3	10.5	11.0
Cycle Q Clear(g_c), s	3.9	37.7	0.0	8.8	43.3	0.0	15.5	10.5	18.9	12.3	10.5	11.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	200	1536		272	1650		399	880	387	369	811	361
V/C Ratio(X)	0.39	0.68		0.65	0.72		0.57	0.32	0.55	0.49	0.34	0.36
Avail Cap(c_a), veh/h	286	1536		302	1650		399	880	387	404	811	361
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	36.5	0.0	28.7	34.6	0.0	40.7	49.2	52.4	41.6	51.7	51.9
Incr Delay (d2), s/veh	0.5	2.4	0.0	3.0	2.8	0.0	1.2	1.0	5.5	0.4	1.2	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	16.5	0.0	3.9	18.8	0.0	6.9	4.8	8.0	5.5	4.8	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.6	38.9	0.0	31.7	37.3	0.0	41.9	50.2	57.9	42.0	52.9	54.7
LnGrp LOS	C	D		C	D		D	D	E	D	D	D
Approach Vol, veh/h		1120	A		1370	A		724			589	
Approach Delay, s/veh		38.3			36.6			49.9			49.9	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	80.8	20.9	46.1	17.3	75.7	24.0	43.0				
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5				
Max Green Setting (Gmax), s	13.5	66.5	17.5	36.5	13.5	66.5	17.5	36.5				
Max Q Clear Time (g_c+I1), s	5.9	45.3	14.3	20.9	10.8	39.7	17.5	13.0				
Green Ext Time (p_c), s	0.0	8.3	0.0	1.7	0.0	7.6	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			41.7									
HCM 6th LOS			D									
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC
 201: Driveway & NW 24 St

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	152	2	2	151	4	19
Future Vol, veh/h	152	2	2	151	4	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	165	2	2	164	4	21

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	167	0	334
Stage 1	-	-	-	-	166
Stage 2	-	-	-	-	168
Critical Hdwy	-	-	4.12	-	5.5
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1411	-	720
Stage 1	-	-	-	-	863
Stage 2	-	-	-	-	862
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1411	-	719
Mov Cap-2 Maneuver	-	-	-	-	719
Stage 1	-	-	-	-	861
Stage 2	-	-	-	-	862

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	900	-	-	1411	-
HCM Lane V/C Ratio	0.028	-	-	0.002	-
HCM Control Delay (s)	9.1	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC
202: Copans Road & Driveway

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1283	1439	2	0	16
Future Vol, veh/h	0	1283	1439	2	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1395	1564	2	0	17

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	783
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	4.5
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	572
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	572
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	572
HCM Lane V/C Ratio	-	-	-	0.03
HCM Control Delay (s)	-	-	-	11.5
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1