TRAFFIC IMPACT STUDY

CIRRUS APARTMENTS
CITY OF COCOA, BREVARD COUNTY

Prepared for:

Framework Group, LLC
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August 2020

Revised
February 2021

TPD № 5382

PROFESSIONAL ENGINEERING CERTIFICATION

I hereby certify that I am a Professional Engineer properly registered in the State of Florida practicing with Traffic Planning & Design, Inc., a corporation authorized to operate as an engineering business, EB-3702, by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have prepared or approved the evaluations, findings, opinions, conclusions, or technical advice attached hereto for:

PROJECT: Cirrus Apartments

LOCATION: City of Cocoa, Brevard County

CLIENT: Framework Group, LLC

I hereby acknowledge that the procedures and references used to develop the results contained in these computations are standard to the professional practice of Transportation Engineering as applied through professional judgment and experience.

NAME: Turgut Dervish, P.E.

P.E. №: 20400

DATE: February 3, 2021

SIGNATURE: _____

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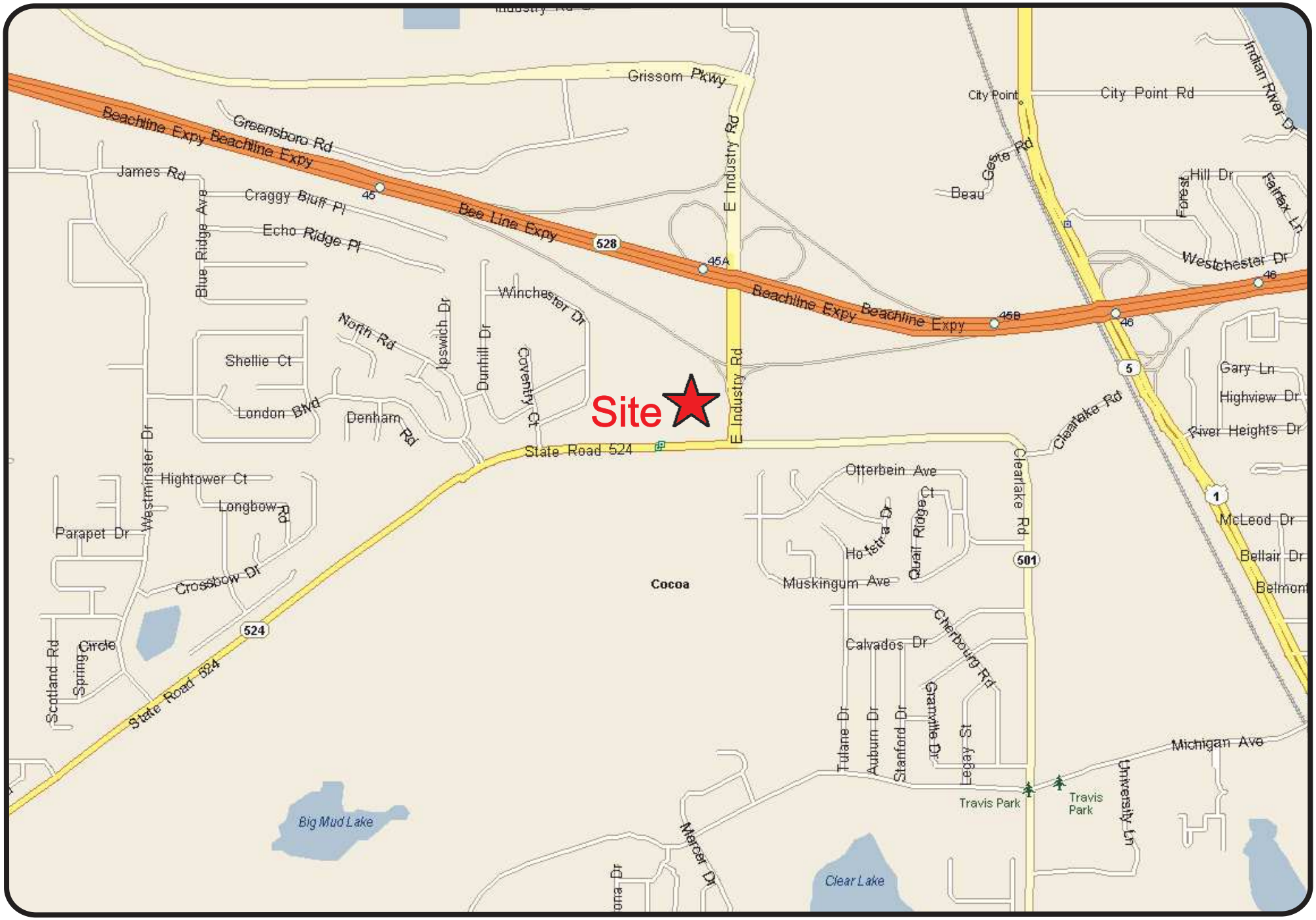
INTRODUCTION

This analysis was undertaken in order to assess the traffic impact of the proposed development of the Cirrus Apartments in Cocoa, Brevard County. Located in the northwest corner of the SR 524 and E. Industry Road intersection, the development will consist of 280 multi-family dwelling units and 20,000 square feet of retail commercial in an adjacent outparcel. **Figure 1** depicts the site location and the area roadways.

Data utilized in this study consisted of a site plan provided by Project Engineers, traffic volume data and Level of Service standards obtained from the Space Coast MPO. Additionally, intersection turning movement counts were collected by Traffic Planning and Design, Inc. staff.



Cirrus Apartments
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Figure 1

Site Location

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EXISTING CONDITIONS ANALYSIS

A capacity analysis was performed for the study roadway segments and intersections identified utilizing a 5% significance threshold as per Brevard County guidelines. As will be documented subsequently, only a short segment of SR 524 adjacent to the project site will be significantly impacted. Therefore, this and other adjacent roadway segments and the closest signalized intersections were included in the analysis. The analysis was conducted utilizing existing traffic volumes to establish the current operating conditions for the daily conditions for the roadway segments and P.M. peak hour traffic conditions for the intersections.

Roadway Segment Analysis

The adjacent roadway segments were analyzed by comparing their existing traffic volumes with the adopted LOS/capacities for daily traffic conditions. The existing daily traffic volumes and adopted LOS capacities were obtained from the Space Coast TPO. Pertinent pages from the traffic count database are included in **Appendix A**. The existing capacity analysis is summarized in **Table 1**.

Table 1
Existing Daily Roadway Capacity Analysis

Seg. ID	Roadway Segment	No. of Lanes	Functional Classification	Adopted*		Existing Daily Volume	V/C Ratio	LOS
				LOS	MAV			
SR 524								
76	Cox Rd to London Blvd	2	Urban Minor Arterial	D	19,470	13,380	0.69	C
76	London Blvd to Site Access	2	Urban Minor Arterial	D	19,470	13,380	0.69	C
76	Site Access to Industry Rd	2	Urban Minor Arterial	D	19,470	13,380	0.69	C
Clearlake Road								
95/50	SR 524 to Otterbein Ave	4	Urban Minor Arterial	E	41,790	18,610	0.45	C
39	Otterbein Ave to Michigan Ave	4	Urban Minor Arterial	E	39,800	19,530	0.49	C
Industry Road								
198	SR 524 to Grissom Pkwy	4	Urban Minor Arterial	E	41,790	20,700	0.50	C
594	Grissom Pkwy to Cidco Rd	2	Urban Local	E	15,600	4,570	0.29	C

* Based on the Space Coast TPO Traffic Count Spreadsheets

As shown, the existing conditions analysis reveals that the study roadway segments currently operate satisfactorily above their adopted Level of Service capacity.

Intersection Analysis

In addition to the adjacent roadway segments, three signalized intersections on SR 524 were included in the analysis. The intersections were analyzed in accordance with the procedures of the *Highway Capacity Manual (HCM 6E)* and *Highway Capacity Software (HCS)*. In the analysis, existing P.M. peak hour traffic volumes and intersection geometry were used. The intersection counts were made in August 2020 and may not represent normal traffic conditions due to COVID-19 pandemic. Therefore, a COVID factor of 1.23 was determined by comparing 2019 counts with the 2020 counts on Industry Road just north of SR 524. This factor was applied to the existing counts in addition to the Seasonal Factor (SF) of 1.11 obtained from FDOT for Brevard County. The adjusted intersection volumes in the form of turning movement counts are depicted in **Figure 2**. The intersection traffic counts, and adjustments factors are included in **Appendix B**. The results of the intersection capacity analysis are summarized in **Table 2**.

Table 2
Existing Intersection Capacity Analysis

Intersection	Control	EB		WB		NB		SB		Overall	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR 524/London Blvd	Signal	4.1	A	9.0	A	--	--	32.7	C	8.3	A
SR 524 & Site Entrance/SC west Entrance	Signal	21.6	C	24.4	C	61.4	E	65.2	E	28.7	C
SR 524 & Industry Rd	Signal	45.2	D	32.5	C	93.1	D	53.7	D	43.6	D

The study intersections currently operate at satisfactory Levels of Service. The *HCS* capacity analysis worksheets are included in **Appendix C**.

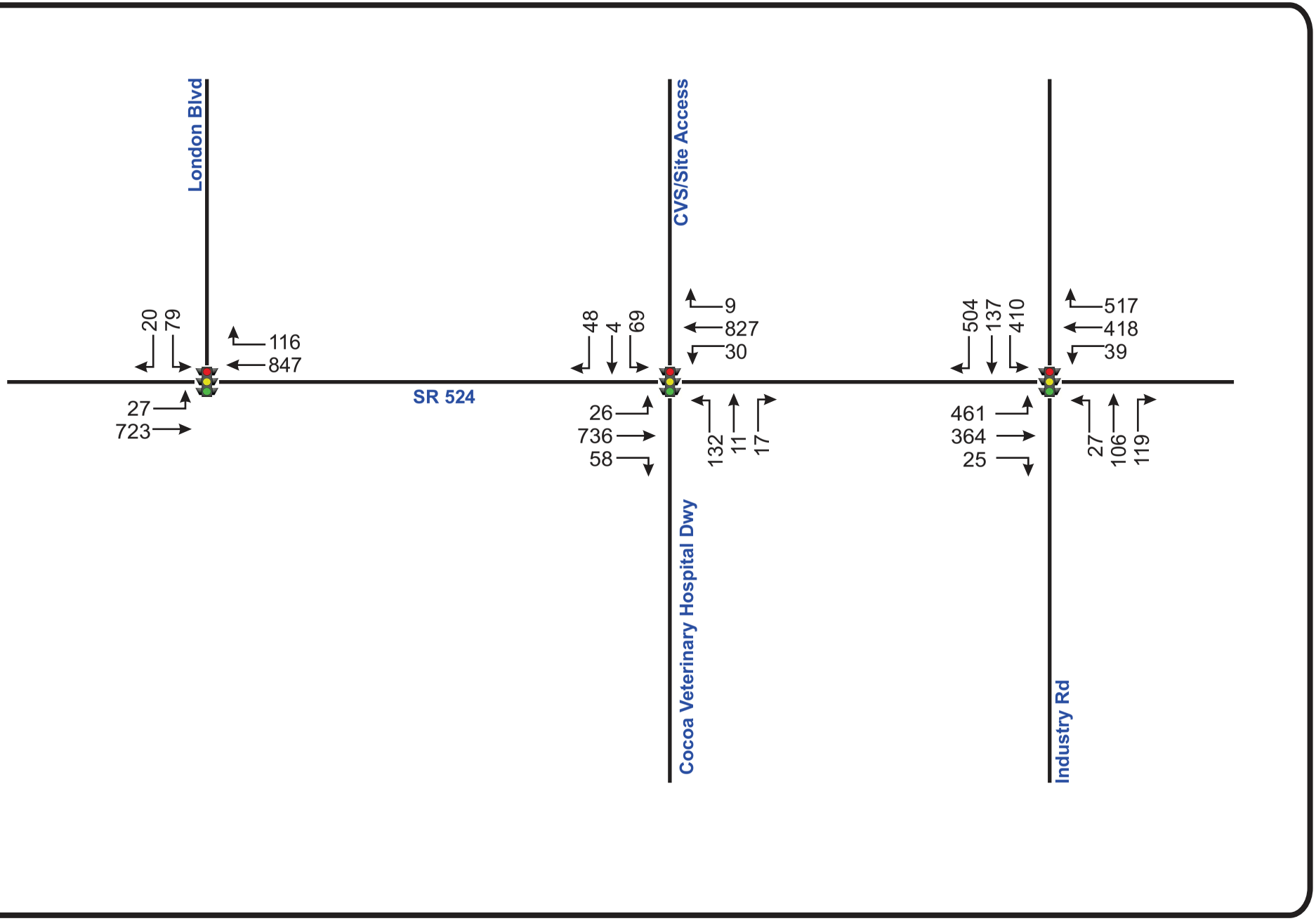

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Figure 2

Existing P.M. Peak Hour Traffic Volumes

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PROPOSED DEVELOPMENT AND TRIP GENERATION

The proposed development will consist of 280 multi-family dwelling units and 20,000 square feet of retail commercial. Access to the development will be provided by a signalized full access on SR 524 which currently serves the existing CVS store. **Figure 3** depicts the site plan and its access configuration. To determine the impact of the development in the area, an analysis of its trip generation characteristics was made. This included the determination of the number of trips generated by the site and their distribution onto the surrounding roadways.

Trip Generation

Trip generation rates were obtained from data contained in the Institute of *Transportation Engineers (ITE) Trip Generation Manual, 10th Edition.* The trip generation calculation of daily and P.M. peak hour volumes is summarized in **Table 3**, and the trip generation charts are included in **Appendix D.** The retail commercial development will generate 34% of its trips from the existing traffic stream on SR 524. Subtracting the pass-by trips results in new net trips to be added to the area roadways**.** The proposed development is estimated to generate 3,394 new net daily trips, 257 P.M. peak hour trips to be added to the area roadways.

Trip Distribution/Trip Assignment

To determine the distribution of the project trips in the area, the CFRPM (V6.1) was used. A slight modification was made to this model to add a TAZ representing the project and its SE data. Subsequently, the model was run with a Select Zone Analysis which produced a distribution of the project trips in the area. The model-generated distribution is included in **Appendix E**. The project trip distribution in the project vicinity is illustrated in **Figure 4.** Utilizing this distribution pattern, the development's daily and P.M. peak hour trips were assigned to the area roadways also shown in Figure 4.

Table 3
Trip Generation Summary

ITE Code	Land Use	Size*	Daily Trips		A.M. Peak Hour Generation				P.M. Peak Hour Generation			
			Rate	Trips	Rate**	Enter	Exit	Total	Rate**	Enter	Exit	Total
220	Multi-Family Residential	280 DU	7.4	2,076	0.45	29	98	127	0.53	93	55	148
820	Retail Commercial	20.0 KSF	100.6	2,012	0.94**	12	7	19	8.00	79	86	165
Total Trips			--	4,088	--	41	105	146	--	172	141	313
Pass-by Trips/Retail (34%) ***			--	694	--	4	3	7	--	27	29	56
Total Net New Trips			--	3,394	--	37	102	139	--	145	112	257

* DU = Dwelling Units, KSF=1,000 square feet

**Average Rate Used, other rates derived from ITE Equations (R^2>0.75)

***Obtained from the 3rd Edition of the ITE Trip Generation Handbook

Cirrus Apartments
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Figure 3

Site Plan

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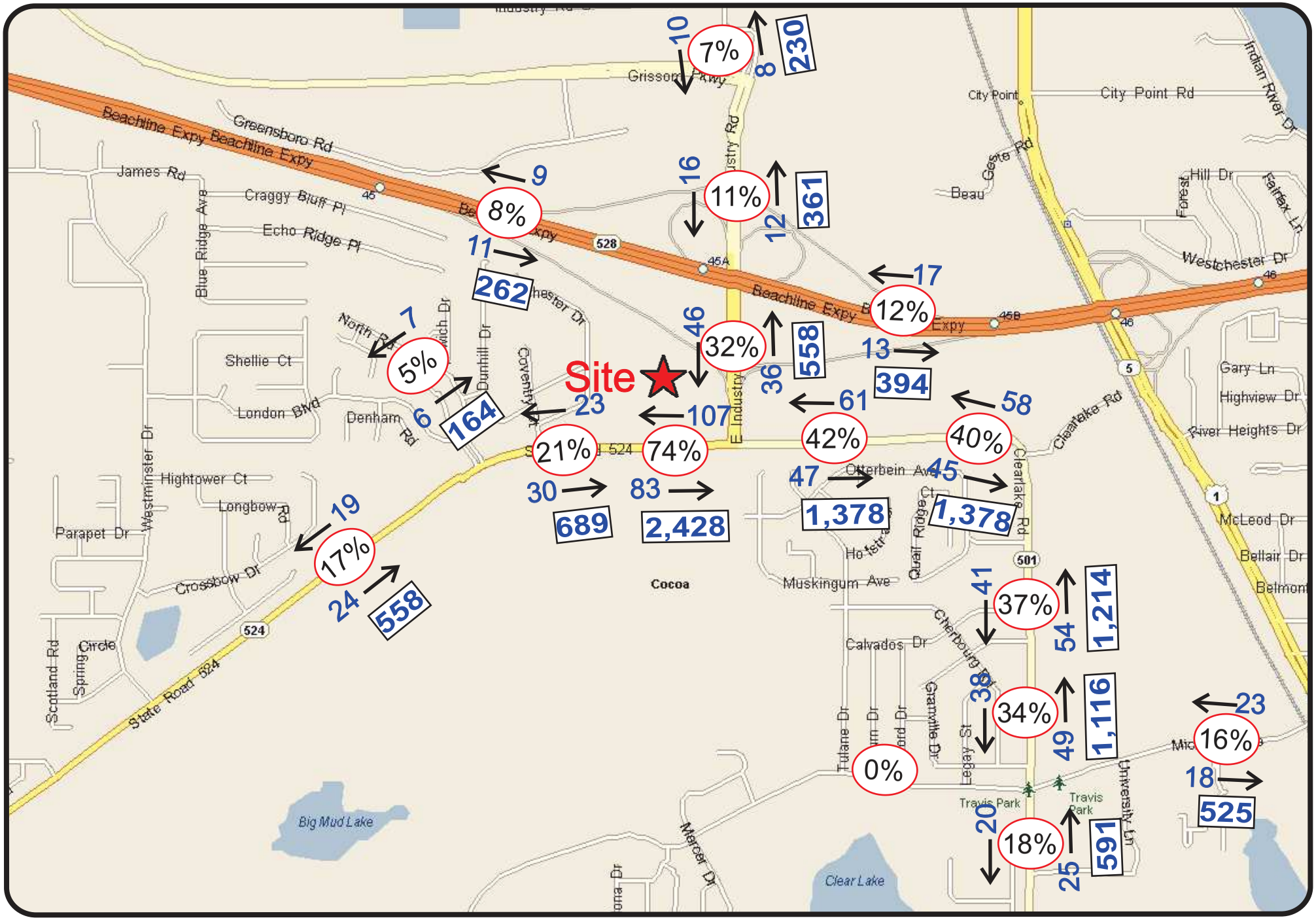

Cirrus Apartments
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Figure 4

Trip Distribution/Assignment

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Significance Analysis

As per Brevard County procedures and requirements, the influence area of the proposed project will include those roadway segments where project trips consume 5% or more of the Maximum Allowable Volume (MAV). Based upon the significance test performed, as shown in **Table 4**, the project will consume 5% or more of the adopted MAV at only a short segment of SR 524 from the CVS/Site Access to Industry Road. This segment along with the adjacent roadway segments of SR 524, Industry Road and Clearlake Road were included in the analysis.

Additionally, the following intersections were included in the analysis:

- SR 524 & London Boulevard
- SR 524 & Site Entrance/CVS Entrance
- SR 524 & Industry Road

Table 4
Significance Analysis

Seg ID	Roadway Segment	Adopted		Project Trips		Significance **
		LOS	MAV	%*	Volume	
SR 524						
76	Cox Rd to London Blvd	D	19,470	17%	577	2.96
	London Blvd to Site Access	D	19,470	21%	713	3.66
	Site Access to Industry Rd	D	19,470	74%	2,512	12.90
Clearlake Road						
49/50	SR 524 to Otterbein Ave	E	41,790	42%	1,425	3.41
39	Otterbein Ave to Michigan Ave	E	39,800	37%	1,256	3.16
32	Michigan Ave to Rosetine St	E	39,800	18%	611	1.53
Industry Road						
198	SR 524 to Grissom Pkwy	E	41,790	32%	1,086	2.60
594	Grissom Pkwy to Cidco Rd	E	15,600	7%	238	1.52
Michigan Avenue						
48	Clearlake Rd to US 1	E	39,800	16%	543	1.36

*Highest Percentage on the Link
**Project Trips as % of MAV

PROJECTED TRAFFIC CONDITIONS

Projected traffic conditions were analyzed using projected traffic volumes for the roadway segments and study intersections in 2023. To determine the projected traffic volumes for the project's buildout year, existing traffic volumes were combined with the approved Integra Cocoa and Cocoa Landing trips plus project trips.

Roadway Segment Analysis

Table 5 is an analysis of the projected traffic conditions for the study roadway segments. This table lists the roadway segments along with their number of lanes, functional classification, existing/ projected traffic volumes, LOS/capacity and resultant Level of Service. The table reveals that the roadway segments are projected to operate satisfactorily within their adopted LOS standards.

Intersection Analysis

The projected traffic volumes at the study intersections, and the two site access driveways are depicted in **Figure 5**. The figure shows the existing P.M. peak hour traffic combined with the approved project trips and the trips generated by the project. The intersections were analyzed utilizing *Highway Capacity Software (HCS)* in accordance with the *Highway Capacity Manual* (HCM 6E). The results of this analysis as summarized in **Table 6** indicate satisfactory traffic operating conditions under projected conditions. The *HCS* capacity analysis worksheets are included in **Appendix F**.

Site Access and Auxiliary Lanes

The site is proposed to be served by the existing signalized full access driveway on SR 524 which currently served the CVS store. A 465-foot-long left turn lane and a 290-foot right turn lane exist at this site access driveway. To determine the adequacy of these turn lane lengths, the following analysis was performed:

Length Required = Deceleration Distance (DD) + Queue Length (QL)

- DD = 185 ft (for 45 mph), from FDOT Index 711-001
- Left Turn Lane required = 185 + 120 ft QL from HCS = 305 ft.
- Right Turn Lane Required = 185 + 78.5 ft QL from HCS = 263.5 ft

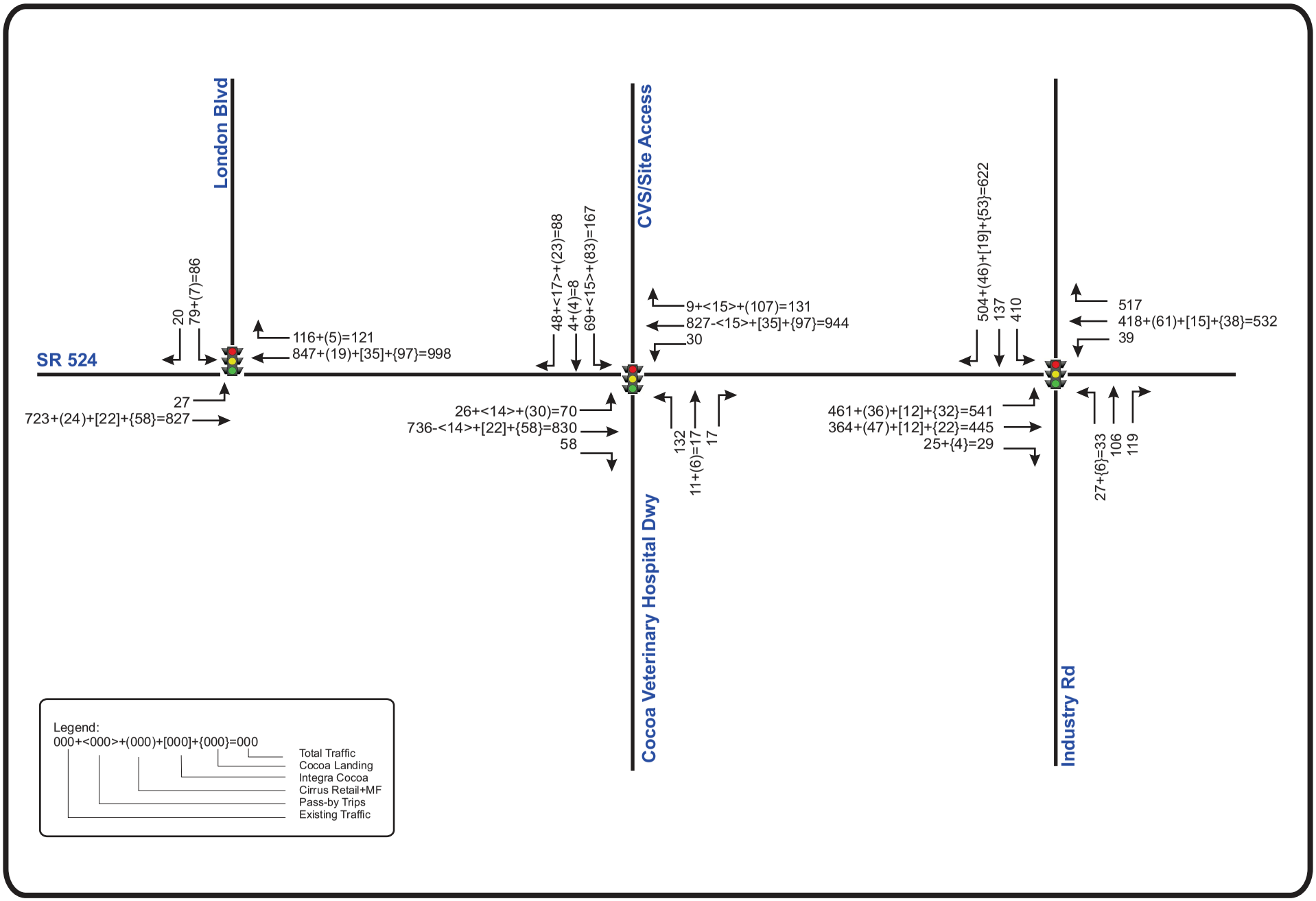
Based upon this analysis, the existing turn lane lengths are adequate.

Table 5
Projected Traffic Conditions Analysis

Segment ID	Roadway Segment	# of Lns	Functional Classification	Adopted		Projected Daily Volume						V/C Ratio	Available Capacity
				LOS	MAV	Existing	Integra	Cocoa Landing	Cirrus Retail	Cirrus Apartments	Total		
SR 524													
76	Cox Rd to London Blvd	2	Urban Minor Arterial	D	19,470	13,380	660	2,335	237	340	16,952	0.87	2,518
76	London Blvd to Site Access	2	Urban Minor Arterial	D	19,470	13,380	696	2,335	292	421	17,124	0.88	2,346
76	Site Access to Industry Rd	2	Urban Minor Arterial	D	19,470	13,380	696	2,335	1,030	1,482	18,923	0.97	547
Clearlake Road													
95/50	SR 524 to Otterbein Ave	4	Urban Minor Arterial	E	41,790	18,610	298	912	584	841	21,245	0.51	20,545
39	Otterbein Ave to Michigan Ave	4	Urban Minor Arterial	E	39,800	19,530	278	912	515	741	21,976	0.55	17,824
Industry Road													
198	SR 524 to Grissom Pkwy	4	Urban Minor Arterial	E	41,790	20,700	391	1,277	445	641	23,454	0.56	18,336
594	Grissom Pkwy to Cidco Rd	2	Urban Local	E	15,600	4,570	44	279	98	140	5,131	0.33	10,469

Table 6
Projected Intersection Capacity Analysis

Intersection	Control	EB		WB		NB		SB		Overall	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR 524/London Blvd	Signal	5.3	A	10.3	B	--	--	44.1	D	10.0	A
SR 524 & Industry Rd	Signal	54.2	D	67.3	E	45.7	D	56.9	E	58.7	E
SR 524 & Site Entrance/SC west Entrance	Signal	35.6	D	62.3	E	67.8	E	60.2	E	51.9	D



Cirrus Apartments
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Figure 5

Projected P.M. Peak Hour Traffic Volumes

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STUDY CONCLUSIONS

This traffic analysis was conducted in order to assess the traffic impact of the proposed development of the Cirrus Apartments in Cocoa, Brevard County. Located in the northwest corner of the SR 524 and E. Industry Road intersection, the development will consist of 280 multi-family dwelling units and 20,000 square feet of retail commercial in an outparcel. The findings of this analysis are as follows:

- The proposed development will generate 3,394 new net daily trips and 257 P.M. peak hour trips.

- The analysis of existing conditions indicates that the impacted roadway segment and the study intersections currently operate at satisfactory Levels of Service.

- The analysis of projected traffic conditions revealed that the impacted roadway segments and the study intersections will not be deficient in traffic capacity. The roadway segments and the intersections are projected to operate at satisfactory Levels of Service with project trips added.

- The site is proposed to be served via an existing full access connection on SR 524 which is signalized. There are an existing right and left turn lanes which would be adequate for the projected turns as a result of the proposed development.

APPENDICES

APPENDIX A

Space Coast/TPO Traffic Count Database

SPACE COAST TRANSPORTATION PLANNING ORGANIZATION TRAFFIC COUNTS: 2010 - 2019

ID	ROAD	SEGMENT (Sections)	2010 AADT	2011 AADT	2012 AADT	2013 AADT	2014 AADT	2015 AADT	2016 AADT	2017 AADT	2018 AADT	2019 AADT	Current MAV	Last Count Taken	Functional Classification
AREA: CENTRAL															
18	SPYGLASS HILL	MURRELL-PINEHURST	4,320	4,250	3,980	3,880	3,780	3,960	4,240	4,720	4,640	4,780	15,600	1/14/2019	Urban Minor Collector
	SR 520	ORANGE CO.-I-95	14,937	16,157	14,740	15,090	15,167	17,220	16,670	16,637	16,567	17,160			
534	SR 520	ORANGE CO-SR 524	12,790	14,750	13,480	13,140	12,760	15,950	15,170	15,750	12,240	16,010	40,300	1/23/2019	Rural Principal Arterial Other
1	SR 520	SR 524-Friday	14,110	15,180	13,290	14,050	13,990	15,720	14,880	14,320	16,610	14,650	41,790	3/5/2019	Urban Principal Arterial-Other
84	SR 520	Friday-I-95	17,910	18,540	17,450	18,080	18,750	19,990	19,960	19,840	20,850	20,820	41,790	1/23/2019	Urban Principal Arterial-Other
	SR 520	I-95-CLEARLAKE	21,343	19,957	19,850	20,367	20,583	23,857	22,600	21,240	20,573	23,173			
2	SR 520	I-95-Burnett	20,710	19,420	19,910	20,200	21,440	24,190	22,190	21,780	21,740	21,650	41,790	1/28/2019	Urban Principal Arterial-Other
3	SR 520	Burnett-Range	21,640	20,040	20,350	19,980	19,680	24,180	22,970	21,040	20,040	21,280	41,790	1/28/2019	Urban Principal Arterial-Other
14	SR 520	Range-Clearlake	21,680	20,410	19,290	20,920	20,630	23,200	22,640	20,900	19,940	26,590	41,790	1/28/2019	Urban Principal Arterial-Other
	SR 520	CLEARLAKE-FISKE	22,115	21,390	20,045	20,815	21,385	24,880	24,575	22,915	22,735	22,115			
4	SR 520	Clearlake-Lake	19,950	19,630	18,380	19,160	19,560	22,860	22,870	20,200	20,800	20,400	39,800	1/23/2019	Urban Principal Arterial-Other
5	SR 520	Lake-Fiske	24,280	23,150	21,710	22,470	23,210	26,900	26,280	25,630	24,670	23,830	39,800	1/23/2019	Urban Principal Arterial-Other
	SR 520	FISKE-US 1	25,505	25,210	23,390	23,775	25,160	28,120	28,250	26,600	25,495	25,275			
6	SR 520	Fiske-Blake	25,490	25,310	23,390	23,820	25,090	28,270	28,430	26,540	25,550	25,280	41,790	1/23/2019	Urban Principal Arterial-Other
7	SR 520	Blake-US 1	25,520	25,110	NC	23,730	25,230	27,970	28,070	26,660	25,440	25,270	41,790	1/23/2019	Urban Principal Arterial-Other
	SR 520 (Eastbound)	US 1-CAUSEWAY (EB)	19,695	20,125	19,215	19,838	19,020	21,483	18,600	20,718	20,855	21,135			
8	SR 520	US 1-Forrest	13,790	15,200	14,530	15,570	17,090	18,210	13,820	16,750	17,250	16,830	19,440	1/22/2019	Urban Principal Arterial-Other
9	SR 520	Forrest-Brevard	21,780	21,710	20,280	21,020	19,560	21,850	19,620	22,460	20,930	22,250	19,440	1/22/2019	Urban Principal Arterial-Other
10	SR 520	Brevard-Delannoy	20,970	21,450	20,280	20,900	19,450	22,930	22,010	21,670	22,280	22,500	19,440	1/22/2019	Urban Principal Arterial-Other
11	SR 520	Delannoy-Riveredge	22,240	22,140	21,770	21,860	19,980	22,940	18,950	21,990	22,960	22,960	19,440	1/22/2019	Urban Principal Arterial-Other
	SR 520 (Westbound)	CAUSEWAY-US 1 (WB)	20,790	21,085	20,205	20,770	20,643	21,703	20,098	21,220	20,920	21,915			
12	SR 520	Causeway-Delannoy	22,570	23,220	21,860	22,160	21,250	23,700	23,050	21,130	22,990	22,780	19,440	1/22/2019	Urban Principal Arterial-Other
13	SR 520	Delannoy-Brevard	24,230	24,360	23,150	23,970	23,100	23,460	21,900	24,290	22,980	24,250	19,440	1/22/2019	Urban Principal Arterial-Other
15	SR 520	Brevard-Forrest	21,710	21,530	21,080	21,220	21,560	22,400	18,690	21,810	20,660	21,610	19,440	1/22/2019	Urban Principal Arterial-Other
87	SR 520	Forrest-US 1	14,650	15,230	14,730	15,730	16,660	17,250	16,750	17,650	17,050	19,020	19,440	1/22/2019	Urban Principal Arterial-Other
66	SR 524	SR 520-I-95	4,680	4,650	4,400	4,670	4,530	5,690	5,300	5,890	7,200	6,870	24,200	1/23/2019	Urban Minor Arterial
	SR 524	I-95-INDUSTRY RD	11,490	11,180	10,795	11,220	10,880	12,765	12,605	11,710	13,860	12,540			
73	SR 524	I-95-Cox	10,050	9,810	9,610	9,780	9,670	11,440	11,170	10,460	12,690	11,700	18,590	1/23/2019	Urban Minor Arterial
76	SR 524	Cox-Industry Rd	12,930	12,550	11,980	12,660	12,090	14,090	14,040	12,960	15,030	13,380	19,470	1/23/2019	Urban Minor Arterial
	SR 528	ORANGE CO.-I-95	26,750	28,240	26,205	27,835	28,320	34,205	31,740	33,780	40,640	37,805			
91	SR 528	ORANGE CO-SR 407	29,770	31,790	28,950	30,820	30,220	37,830	35,120	37,330	40,640	42,560	43,000	3/12/2019	Rural Principal Arterial - Freeways & Expressways
90	SR 528	SR 407-I-95	23,730	24,690	23,460	24,850	26,420	30,580	28,360	30,230	NC	33,050	43,000	1/29/2019	Rural Principal Arterial - Freeways & Expressways
	SR 528	I-95-US 1	25,550	25,950	24,945	25,860	25,315	30,165	27,775	28,340	31,000	32,730			
93	SR 528	I-95-INDUSTRY RD	20,820	21,360	20,720	21,000	23,050	23,030	22,810	23,290	29,350	28,880	74,400	1/29/2019	Urban Principal Arterial - Freeways & Expressways
92	SR 528	INDUSTRY RD-US 1	30,280	30,540	29,170	30,720	27,580	37,300	32,740	33,390	32,650	36,580	74,400	1/29/2019	Urban Principal Arterial - Freeways & Expressways
25	STADIUM PKWY	WICKHAM-JAMIESON	4,890	5,090	5,910	6,550	6,890	7,810	8,480	9,150	10,460	11,240	17,700	1/14/2019	Urban Minor Arterial
	STADIUM PKWY	JAMIESON-I-95	15,500	15,880	15,585	16,515	16,965	17,707	18,173	19,337	20,273	20,780			
26	STADIUM PKWY	Jamieson-Viera Blvd	16,570	17,350	17,250	18,270	18,910	19,950	20,890	22,170	22,920	23,650	39,800	1/16/2019	Urban Minor Arterial
535	STADIUM PKWY	VIERA BLVD.-ROSEMOUNT DR	14,430	14,410	13,920	14,760	15,020	15,980	16,120	17,160	17,870	18,460	39,800	1/16/2019	Urban Minor Arterial
606	STADIUM PKWY	ROSEMOUNT DRIVE-I-95/FISKE						17,190	17,510	18,680	20,030	20,230	39,800	1/16/2019	Urban Minor Arterial
607	TAVISTOCK	JAMIESON-VIERA BLVD						3,300	3,680	3,720	3,780	3,620	15,600	1/14/2019	Urban Local
608	TAVISTOCK	VIERA BLVD-STADIUM PARKWAY						2,890	2,680	2,650	3,160	2,290	15,600	1/16/2019	Urban Local
	US 1	PINEDA-BARNES	32,480	33,950	27,120	29,530	31,853	32,577	32,687	30,737	32,013	31,497			
89	US 1	Pineda-Suntree Blvd	39,470	42,600	NC	33,100	37,580	37,310	38,750	34,340	38,730	37,540	41,790	1/14/2019	Urban Principal Arterial-Other
567	US 1	Suntree Blvd-Viera Blvd	30,740	31,160	28,680	28,770	31,550	32,650	31,520	30,670	31,070	29,740	41,790	3/6/2019	Urban Principal Arterial-Other
36	US 1	Viera Blvd-Barnes	27,230	28,090	25,560	26,720	26,430	27,770	27,790	27,200	26,240	27,210	41,790	3/13/2019	Urban Principal Arterial-Other
70	US 1	BARNES-EYSTER	24,700	25,800	23,920	26,150	25,690	25,980	26,300	25,060	26,090	26,340	41,790	3/12/2019	Urban Principal Arterial-Other

**Note: 2016 AADT's Beaches area were counted twice in 2016 and the AADT listed is the average of the two counts.*
NC=Not Counted; UC=Under Construction

SPACE COAST TRANSPORTATION PLANNING ORGANIZATION TRAFFIC COUNTS: 2010 - 2019

ID	ROAD	SEGMENT (Sections)	2010 AADT	2011 AADT	2012 AADT	2013 AADT	2014 AADT	2015 AADT	2016 AADT	2017 AADT	2018 AADT	2019 AADT	Current MAV	Last Count Taken	Functional Classification
AREA: MERRITT ISLAND															
603	SPACE COMMERCE WAY	SR 3-NASA CAUSEWAY						3,090	3,040	3,780	3,440	4,960	12,900	2/18/2019	Rural Principal Arterial Other
	SR 520	HUMPHREY BR-S. BANANA	34,103	33,698	30,878	32,220	33,311	34,200	32,467	30,929	29,694	29,844			
101	SR 520	Bridge-N.Tropical	46,750	46,850	NC	44,390	46,090	48,440	44,400	44,820	39,660	43,440	59,900	2/4/2019	Urban Principal Arterial-Other
148	SR 520	N.Tropical-SR 3	38,370	38,460	37,670	37,240	34,900	39,820	37,210	36,850	35,640	35,120	59,900	2/6/2019	Urban Principal Arterial-Other
97	SR 520	SR 3-Plaza ent	34,550	33,760	33,430	31,820	34,410	33,630	32,070	29,870	28,700	25,840	62,900	2/4/2019	Urban Principal Arterial-Other
98	SR 520	Plaza ent-Plumosa	34,430	33,940	30,530	31,860	34,130	33,790	31,800	29,940	30,490	31,230	62,900	2/6/2019	Urban Principal Arterial-Other
99	SR 520	Plumosa-Mall ent	33,970	32,810	32,560	30,560	32,780	32,140	31,640	28,750	25,300	28,870	62,900	2/6/2019	Urban Principal Arterial-Other
100	SR 520	Mall ent-SykesCrkPkw	27,500	25,620	26,270	26,010	28,740	27,140	24,810	23,660	24,130	23,280	62,900	3/6/2019	Urban Principal Arterial-Other
149	SR 520	Sykes-Newfound HrbDr	34,630	34,170	32,270	32,520	33,160	34,480	35,170	30,740	31,000	30,070	62,900	2/13/2019	Urban Principal Arterial-Other
150	SR 520	Newfound Hbr-N Banana	28,560	27,750	27,330	27,290	28,940	29,920	28,670	26,820	26,050	25,830	62,900	2/13/2019	Urban Principal Arterial-Other
151	SR 520	N Banana-S Banana	28,170	29,920	26,960	28,290	26,650	28,440	26,430	26,910	26,280	24,920	62,900	2/13/2019	Urban Principal Arterial-Other
	SR 528	US 1-SR 401	36,903	36,847	35,343	37,053	37,850	39,243	37,940	39,587	38,480	39,403			
128	SR 528	US 1-N COURTENAY	45,990	46,150	43,000	44,700	45,760	49,740	48,660	48,600	44,630	46,100	74,400	3/6/2019	Urban Principal Arterial-Other
129	SR 528	N Crtny-N Banana Rv Dr	33,710	33,920	32,770	33,630	36,360	32,570	31,070	36,810	37,340	37,570	74,400	2/13/2019	Urban Principal Arterial-Other
127	SR 528	N Banana Rv Dr-SR 401	31,010	30,470	30,260	32,830	31,430	35,420	34,090	33,350	33,470	34,540	74,400	2/13/2019	Urban Principal Arterial-Other
123	SYKES CREEK	FORTENBERRY-SR 520	5,630	5,530	5,490	5,610	NC	5,610	5,390	5,440	4,830	4,670	33,800	2/6/2019	Urban Major Collector
121	SYKES CREEK	SR 520-MERRITT	12,460	11,970	12,010	11,770	12,210	12,640	12,680	12,070	12,570	12,010	39,800	2/6/2019	Urban Major Collector
108	SYKES CREEK	MERRITT-N BANANA	9,880	9,670	9,700	9,890	NC	10,610	11,080	10,970	10,660	10,090	17,700	2/18/2019	Urban Major Collector
AREA: CENTRAL															
75	ADAMSON	PINE-SR 524	4,360	5,220	4,720	4,880	4,700	5,210	5,380	5,340	6,100	5,100	17,700	3/5/2019	Urban Minor Collector
	BARNES	FISKE-MURRELL	16,580	16,410	15,420	15,060	15,460	15,895		13,145	13,835	17,545			
77	BARNES	FISKE-THREE MEADOWS DRIVE	16,580	16,410	15,420	15,060	15,460	15,940	UC	13,440	13,750	19,340	39,800	1/16/2019	Urban Principal Arterial-Other
604	BARNES	THREE MEADOWS DRIVE-MURRELL						15,850	UC	12,850	13,920	15,750	39,800	1/22/2019	Urban Principal Arterial-Other
72	BARNES	MURRELL-US 1	10,930	NC	9,560	NC	9,720	9,910	8,800	9,560	10,510	10,910	17,700	1/16/2019	Urban Principal Arterial-Other
49	CLEARLAKE	PLUCKEBAUM-SR 520	6,380	5,640	5,130	5,400	4,800	5,050	4,590	4,750	5,910	5,160	15,600	1/28/2019	Urban Major Collector
	CLEARLAKE	SR 520-MICHIGAN	20,650	18,265	17,620	15,747	15,933	18,307	18,030	16,990	17,407	16,327			
29	CLEARLAKE	SR 520-Lake	16,580	13,250	12,650	11,550	11,640	14,160	13,400	12,810	14,590	12,870	39,800	3/5/2019	Urban Minor Arterial
30	CLEARLAKE	Lake-Dixon	19,470	17,740	17,010	16,010	16,210	19,620	19,120	18,200	18,010	17,110	39,800	1/29/2019	Urban Minor Arterial
31	CLEARLAKE	Dixon-Rosetine	23,220	20,620	20,250	NC	19,950	NC	21,570	NC	19,620	NC	39,800	1/30/2018	Urban Minor Arterial
32	CLEARLAKE	Rosetine-Michigan	23,330	21,450	20,570	19,680	NC	21,140	NC	19,960	NC	19,000	39,800	3/5/2019	Urban Minor Arterial
	CLEARLAKE	MICHIGAN-SR 524	20,023	19,460	18,100	17,233	17,727	19,817	19,927	18,193	18,640	17,783			
39	CLEARLAKE	Michigan-Otterbein	22,180	21,620	20,360	18,910	18,410	21,290	21,320	19,970	20,550	19,530	39,800	1/29/2019	Urban Minor Arterial
50	CLEARLAKE	Otterbein-N. Wal-Mart Ent.	17,100	16,580	14,920	14,120	15,520	16,960	16,090	14,810	15,770	15,210	41,790	1/29/2019	Urban Minor Arterial
95	CLEARLAKE	WAL-MART-SR 524	20,790	20,180	19,020	18,670	19,250	21,200	22,370	19,800	19,600	18,610	41,790	1/29/2019	Urban Minor Arterial
61	COX	SR 520-SR 524	4,400	4,180	3,210	4,260	4,100	4,560	4,810	4,240	4,460	4,370	17,700	1/23/2019	Urban Major Collector
69	COX	SR 524-JAMES	2,670	2,520	2,550	2,580	2,490	2,760	2,690	2,600	2,660	2,630	17,700	1/23/2019	Urban Major Collector
	DIXON	CLEARLAKE-US 1	12,173	11,320	10,970	9,855	9,630	10,160	10,415	10,303	10,758	10,340			
47	DIXON	Clearlake-Pineda St	12,740	11,740	11,490	10,280	10,320	11,360	11,290	10,920	11,070	10,620	39,800	3/5/2019	Urban Minor Arterial
51	DIXON	Pineda St-Fiske	11,820	11,250	10,760	9,590	9,420	10,260	10,130	10,240	10,490	10,390	39,800	3/13/2019	Urban Minor Arterial
46	DIXON	Fiske-Byrd Plaza ent	12,640	11,430	NC	10,140	9,800	10,220	10,760	10,560	11,260	10,780	39,800	3/5/2019	Urban Minor Arterial
45	DIXON	Byrd Plaza Ent-US 1	11,490	10,860	10,660	9,410	8,980	8,800	9,480	9,490	10,210	9,570	39,800	1/29/2019	Urban Minor Arterial
	FISKE	I-95-BARTON	23,645	21,390	20,990	21,360	21,805	23,125	23,310	22,190	24,190	25,015			
44	FISKE	I-95/Barnes-Eyster	23,210	21,050	21,060	21,880	22,160	24,690	25,080	24,190	25,820	27,300	41,790	1/16/2019	Urban Principal Arterial-Other
96	FISKE	Eyster-Barton	24,080	21,730	20,920	20,840	21,450	21,560	21,540	20,190	22,560	22,730	41,790	1/22/2019	Urban Principal Arterial-Other

**Note: 2016 AADT's Beaches area were counted twice in 2016 and the AADT listed is the average of the two counts.*
NC=Not Counted; UC=Under Construction

SPACE COAST TRANSPORTATION PLANNING ORGANIZATION TRAFFIC COUNTS: 2010 - 2019

ID	ROAD	SEGMENT (Sections)	2010 AADT	2011 AADT	2012 AADT	2013 AADT	2014 AADT	2015 AADT	2016 AADT	2017 AADT	2018 AADT	2019 AADT	Current MAV	Last Count Taken	Functional Classification
AREA: NORTH															
206	BARNA	SR 405-SR 50	5,470	5,200	4,770	4,770	4,930	5,160	5,540	5,920	NC	6,400	15,600	12/4/2019	Urban Major Collector
521	CAMP	GRISSOM-US 1	2,800	2,650	2,450	2,290	2,370	2,150	2,670	2,730	2,690	2,430	15,600	11/5/2019	Urban Major Collector
	CANAVERAL GROVES	PINE-US 1	7,310	4,640	7,020	4,365	6,760	4,360	7,290	4,620	7,680	5,260			
522	CITRUS	PINE-LEE	NC	3,710	NC	3,550	NC	3,380	NC	3,830	NC	4,500	15,600	10/30/2019	Urban Major Collector
212	CANAVERAL GROVES	LEE-GRISSOM	7,310	NC	7,020	NC	6,760	NC	7,290	NC	7,680	NC	15,600	11/6/2018	Urban Major Collector
213	CANAVERAL GROVES	GRISSOM-US 1	NC	5,570	NC	5,180	NC	5,340	NC	5,410	NC	6,020	15,600	12/4/2019	Urban Major Collector
	CARPENTER	FOX LAKE-SR 46	4,637	4,687	4,377	4,483	4,390	4,455	4,557	4,437	4,630	4,560			
188	CARPENTER	FOX LAKE-GARDEN	3,740	3,800	3,450	3,560	3,540	3,520	3,480	3,690	3,830	3,560	15,600	11/13/2019	Urban Major Collector
184	CARPENTER	GARDEN-DAIRY	5,220	5,230	4,890	4,970	4,960	5,390	5,390	5,410	5,400	5,450	15,600	11/6/2019	Urban Major Collector
183	CARPENTER	DAIRY-SR 46	4,950	5,030	4,790	4,920	4,670	NC	4,800	4,210	4,660	4,670	15,600	11/6/2019	Urban Major Collector
	DAIRY	CARPENTER-US 1	5,925	5,900	5,850	5,660	5,795	5,475	7,760	6,060	6,130	5,940			
185	DAIRY	CARPENTER-HOLDER	NC	5,300	NC	5,100	NC	4,820	NC	5,030	NC	5,270	15,600	11/5/2019	Urban Major Collector
523	DAIRY	HOLDER-SINGLETON	6,280	NC	6,180	NC	6,070	NC	7,760	NC	6,330	NC	15,600	11/7/2018	Urban Major Collector
186	DAIRY	SINGLETON-OLD DIXIE	NC	6,500	NC	6,220	NC	6,130	NC	6,930	NC	6,610	15,600	11/6/2019	Urban Major Collector
187	DAIRY	OLD DIXIE-US 1	5,570	NC	5,520	NC	5,520	NC	NC	6,220	5,930	NC	15,600	11/27/2018	Urban Major Collector
596	DEERING PARKWAY	I-95-US 1					1,870	1,720	2,090	2,470	2,530	2,720	14,200	11/6/2019	Rural Major Collector
	FAY	GOLFVIEW-GRISSOM	6,543	6,400	8,065	5,800	7,805	5,825	8,765	6,275	7,760	6,200			
549	FAY	GOLFVIEW-HOMESTEAD	2,660	2,740	NC	2,680	NC	2,880	NC	3,160	NC	3,120	15,600	11/5/2019	Urban Major Collector
207	FAY	HOMESTEAD-DEER	7,250	6,990	6,780	NC	6,460	NC	6,640	NC	6,740	NC	15,600	11/27/2018	Urban Major Collector
229	FAY	DEER-GRISSOM	9,720	9,470	9,350	8,920	9,150	8,770	10,890	9,390	8,780	9,280	15,600	11/5/2019	Urban Major Collector
	FAY	GRISSOM-US 1	14,555	14,965	13,975	13,730	13,670	13,590	14,465	14,280	14,380	14,325			
208	FAY	GRISSOM-AREQUIPPA	12,830	NC	12,380	NC	12,830	13,400	13,590	NC	13,090	NC	33,800	11/27/2018	Urban Major Collector
209	FAY	AREQUIPPA-CAROLE	NC	13,410	NC	12,230	NC	12,350	NC	12,860	NC	12,900	33,800	11/5/2019	Urban Major Collector
210	FAY	CAROLE-US 1	16,280	16,520	15,570	15,230	14,510	15,020	15,340	15,700	15,670	15,750	33,800	11/5/2019	Urban Major Collector
235	FOX LAKE	CARPENTER-SOUTH	4,250	NC	3,870	NC	NC	3,920	NC	NC	4,130	NC	17,700	11/27/2018	Urban Major Collector
	GRISSOM	INDUSTRY-PORT ST. JOHN PARKWAY	10,053	10,633	9,930	9,753	10,223	10,213	10,033	10,357	10,077	10,197			
197	GRISSOM	INDUSTRY-CANAVERAL GRVS	11,060	11,820	10,870	10,680	11,540	11,720	11,300	11,160	10,800	10,640	15,600	12/4/2019	Urban Minor Arterial
196	GRISSOM	CANAVERAL GRVS-CAMP	8,940	9,320	8,980	8,960	9,010	9,490	8,660	9,360	9,140	9,470	17,700	11/5/2019	Urban Minor Arterial
195	GRISSOM	CAMP-PORT ST. JOHN PARKWAY	10,160	10,760	9,940	9,620	10,120	9,430	10,140	10,550	10,290	10,480	17,700	11/5/2019	Urban Minor Arterial
	GRISSOM	PORT ST. JOHN PARKWAY-KINGS HWY	11,863	12,123	11,687	11,573	12,220	11,170	14,117	11,890	12,660	12,607			
194	GRISSOM	PORT ST. JOHN PARKWAY-BRIDGE	12,890	13,680	12,670	12,720	13,840	NC	14,940	13,920	14,150	14,550	17,700	11/5/2019	Urban Minor Arterial
193	GRISSOM	BRIDGE-FAY	11,290	11,750	11,380	12,130	12,390	12,740	13,700	12,070	12,670	12,990	17,700	11/5/2019	Urban Minor Arterial
192	GRISSOM	FAY-CURTIS	NC	10,940	NC	9,870	NC	9,600	NC	9,680	NC	10,280	15,600	11/5/2019	Urban Minor Arterial
191	GRISSOM	CURTIS-KINGS HIGHWAY	11,410	NC	11,010	NC	10,430	NC	13,710	NC	11,160	NC	15,600	11/27/2018	Urban Minor Arterial
	GRISSOM	KINGS HIGHWAY-SR 405	9,690	9,655	8,980	8,970	9,310	9,320	8,660	10,080	9,160	10,440			
190	GRISSOM	KINGS HIGHWAY-SHEPARD	10,010	9,890	NC	8,970	NC	9,320	NC	10,080	NC	10,440	30,400	11/5/2019	Rural Minor Arterial
189	GRISSOM	SHEPARD-SR 405	9,370	9,420	8,980	NC	9,310	NC	8,620	NC	9,160	NC	39,800	11/6/2018	Urban Minor Arterial
524	GOLFVIEW	PORT ST. JOHN PKWY-FAY	4,640	NC	4,610	NC	4,830	NC	NC	5,570	5,680	NC	15,600	11/6/2018	Urban Major Collector
526	HOLDER	DAIRY-SR 46	NC	2,720	NC	2,670	NC	NC	NC	2,840	NC	2,730	17,700	11/6/2019	Urban Major Collector
	HOPKINS	SR 50-GRACE			9,670	7,640	8,390	6,770	8,995	7,765	8,995	7,715			
583	HOPKINS	SR 50-KNOX MCRAE				6,970	7,130	NC	7,190	NC	7,420	NC	15,600	11/13/2018	Urban Minor Arterial
584	HOPKINS	KNOX MCREA-COUNTRY CLUB DR				9,640	NC	9,090	NC	10,710	NC	10,380	15,600	11/6/2019	Urban Minor Arterial
577	HOPKINS	COUNTRY CLUB DR-HARRISON			9,670	9,400	9,650	NC	10,800	NC	10,570	NC	15,600	11/13/2018	Urban Minor Arterial
586	HOPKINS	HARRISON-GRACE				4,550	NC	4,450	NC	4,820	NC	5,050	15,600	11/6/2019	Urban Minor Arterial
198	INDUSTRY	SR 524-GRISSOM	15,940	16,170	15,900	16,040	18,530	18,030	18,430	17,560	18,700	20,700	41,790	10/30/2019	Urban Minor Arterial
594	INDUSTRY	GRISSOM-CIDCO RD					4,360	NC	4,700	4,590	4,840	4,570	15,600	10/30/2019	Urban Local
245	KINGS HWY	GRISSOM-US 1	NC	4,710	NC	4,300	NC	4,060	NC	5,060	NC	5,200	15,600	11/5/2019	Urban Major Collector
223	NASA CSWY	US 1-SPACE COMMERCE WAY	13,870	12,060	11,200	10,520	11,110	10,170	12,070	12,260	13,400	14,380	30,400	11/5/2019	Rural Principal Arterial Other

**Note: 2016 AADT's Beaches area were counted twice in 2016 and the AADT listed is the average of the two counts.*
NC=Not Counted; UC=Under Construction

APPENDIX B

Intersection Traffic Counts & Adjustments Factors

Prepared by National Data & Surveying Services

E Industry Rd & SR 524

Peak Hour Turning Movement Count

ID: 20-130167-003
City: Cocoa

Day: Wednesday
Date: 08/26/2020

PEAK HOURS	
AM	NONE
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS	
AM	NONE
NOON	NONE
PM	04:00 PM - 06:00 PM

E Industry Rd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	369	100	300	1	794	PM

SR 524 — EASTBOUND

AM	NOON	PM	
0	0	695	⇦
0	0	0	↶ 0
0	0	338	↱ 0
0	0	267	→ 0
0	0	18	↴ 0
AM	NOON	PM	

SR 524 — WESTBOUND

PM	NOON	AM	
378	0	0	0 ↰
306	0	0	0 ←
128	0	0	0 ↰
1	0	0	0 ↶
655	0	0	⇨
PM	NOON	AM	

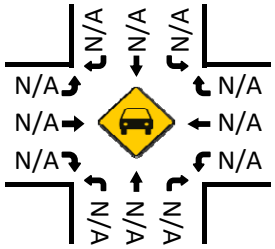
CONTROL: Signalized

	AM	NOON	PM
TEV	0	0	2390
PHF			0.94

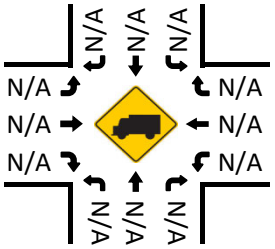
PM	246	0	20	77	87	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

E Industry Rd — NORTHBOUND

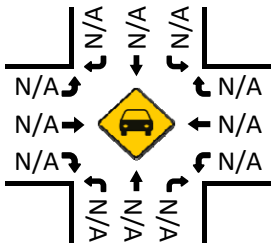
Cars (AM)



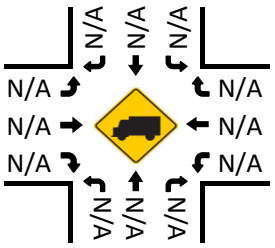
HT (AM)



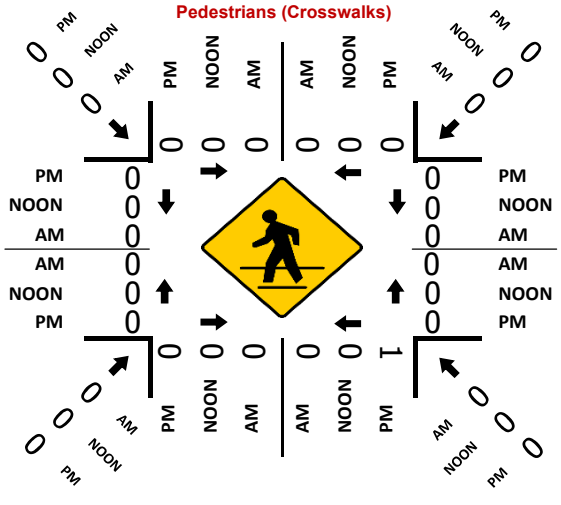
Cars (NOON)



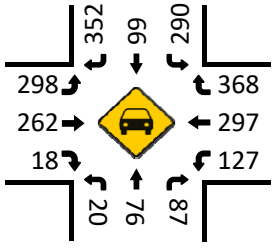
HT (NOON)



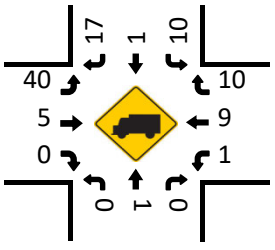
Pedestrians (Crosswalks)



Cars (PM)



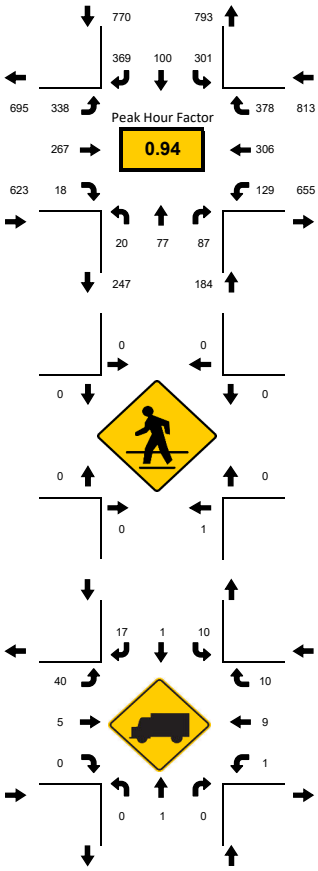
HT (PM)



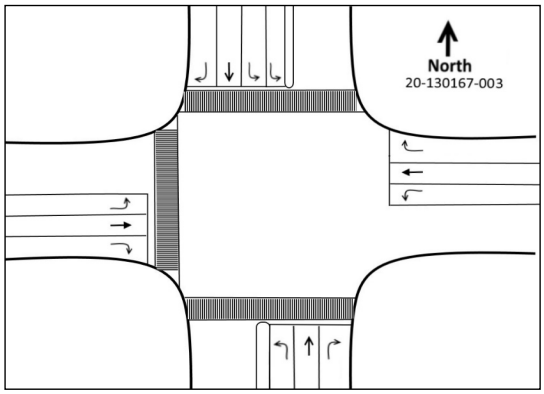
LOCATION: E Industry Rd & SR 524
CITY/STATE: Cocoa, FL

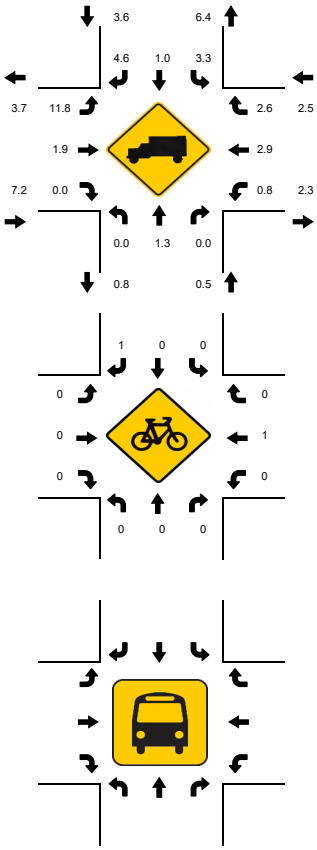
PROJECT ID: 20-130167-003
DATE: 08/26/2020

Peak-Hour: 04:00 PM - 05:00 PM
Peak 15-Minute: 04:15 PM - 04:30 PM



National Data & Surveying Services





15-Min Count Period Beginning At	E Industry Rd Northbound					E Industry Rd Southbound					SR 524 Eastbound					SR 524 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
04:00 PM	3	21	21	0		78	15	108	0		101	78	3	0		37	83	80	0		628	2390
04:15 PM	4	18	18	0		77	35	91	0		92	72	10	0		34	73	115	0		639	2381
04:30 PM	10	16	32	0		64	21	83	1		72	60	3	0		33	91	96	0		582	2340
04:45 PM	3	22	16	0		81	29	87	0		73	57	2	0		24	59	87	1		541	2298
05:00 PM	2	23	23	0		58	24	92	0		112	68	5	0		34	87	91	0		619	2256
05:15 PM	8	26	22	0		81	37	98	0		95	45	9	0		28	61	88	0		598	1637
05:30 PM	10	20	16	0		64	32	75	0		66	61	1	1		39	71	84	0		540	1039
05:45 PM	6	21	28	0		61	26	80	0		54	56	4	0		25	71	67	0		499	499
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	40	88	128	0		324	140	432	4		404	312	40	0		148	364	460	4		**2888**	
Heavy Trucks	0	4	0			20	4	24			60	8	0			4	16	12			**152**	
Pedestrians		4					0					0					0				**4**	
Bicycles	0	0	0			0	0	4			0	0	0			0	4	0			**8**	
Railroad																						
Stopped Buses																						

National Data & Surveying Services

N/S Street: **E Industry Rd**	Speed: **45 MPH**

Site Code: **20-130167-003**

Date: **08/26/2020**

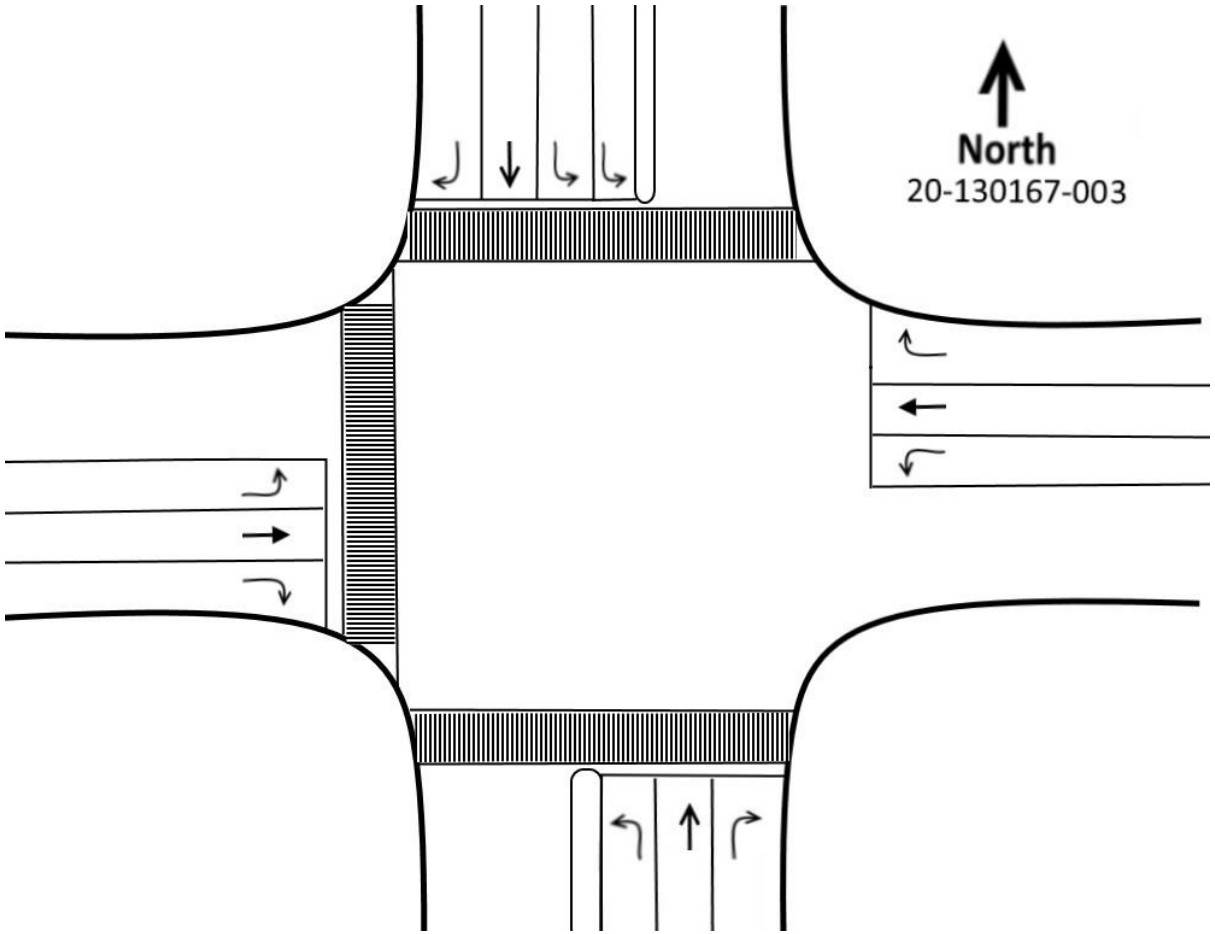
Weather: **Sunny**

City: **Cocoa**

County: **Brevard**

Count Times: **16:00 - 18:00**

Control: **Signalized**



E/W Street: **SR 524**

Speed: **55 MPH**

SIGNAL TIMING

PHASES	1	2	3
NL/SL	-	00:17	00:18
SL/ST	00:27	00:14	00:13
NT/ST	00:24	00:21	00:17
EL/WL	00:20	-	00:25
EL/ET	-	00:49	00:12
WL/WT	00:03	-	-
ET/WT	00:23	00:36	00:44

Prepared by National Data & Surveying Services

CVS Pharmacy Entrance/Cocoa Veterinary Hospital Dwy & SR 524

Peak Hour Turning Movement Count

ID: 20-130167-002
City: Cocoa

Day: Wednesday
Date: 08/26/2020

CVS Pharmacy Entrance/Cocoa Veterinary Hospital Dwy

SOUTHBOUND

PEAK HOURS		COUNT PERIODS
NONE	AM	NONE
NONE	NOON	NONE
04:15 PM - 05:15 PM	PM	04:00 PM - 06:00 PM

AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	35	3	50	0	33

EASTBOUND

AM	NOON	PM	
0	0	736	⇦
0	0	0	↶ 0
0	0	19	↱ 0
0	0	539	→ 0
0	0	42	↴ 0

WESTBOUND

	PM	NOON	AM
0	6	0	0
0	605	0	0
0	22	0	0
0	1	0	0
⇨	603	0	0

CONTROL: Signalized

	AM	NOON	PM
TEV	0	0	1439
PHF			0.92

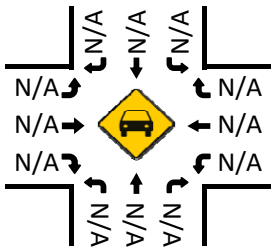
PM	67	0	96	8	13
NOON	0	0	0	0	0
AM	0	0	0	0	0

NORTHBOUND

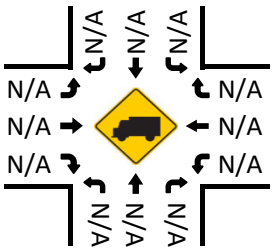
macy Entrance/Cocoa Veterinary Hos

SR 524 (EASTBOUND) | SR 524 (WESTBOUND)

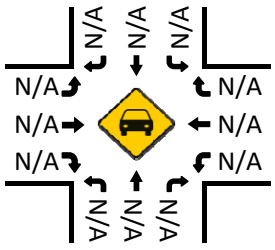
Cars (AM)



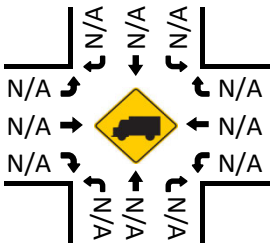
HT (AM)



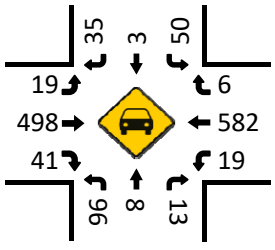
Cars (NOON)



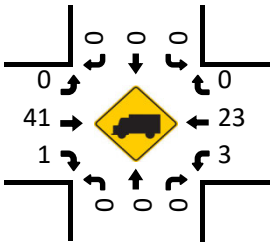
HT (NOON)



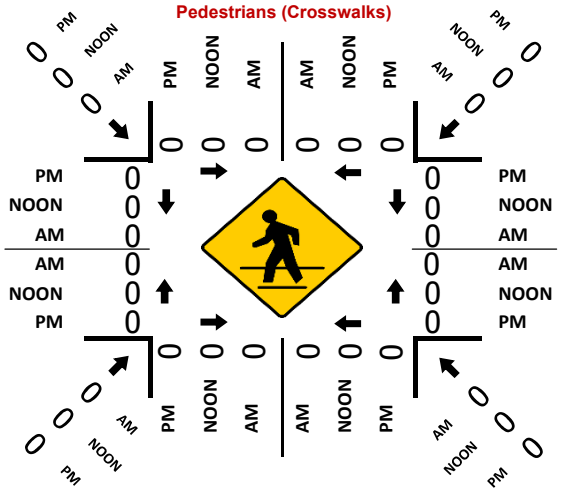
Cars (PM)



HT (PM)



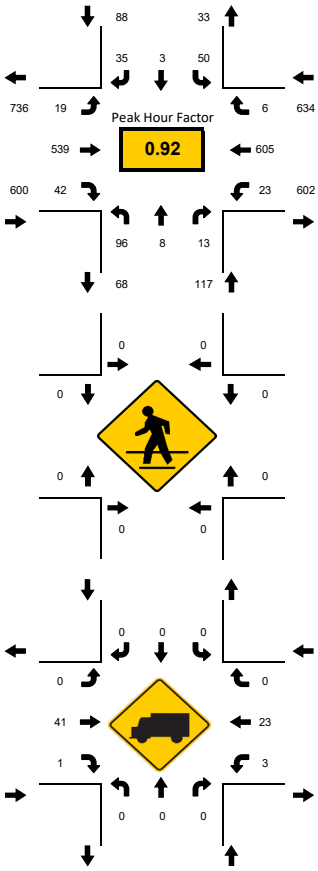
Pedestrians (Crosswalks)



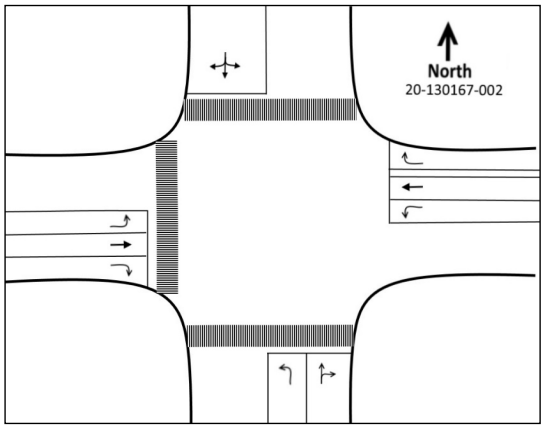
LOCATION: CVS Pharmacy Entrance/Cocoa Veterinary Hospital Dwy & SR 524
CITY/STATE: Cocoa, FL

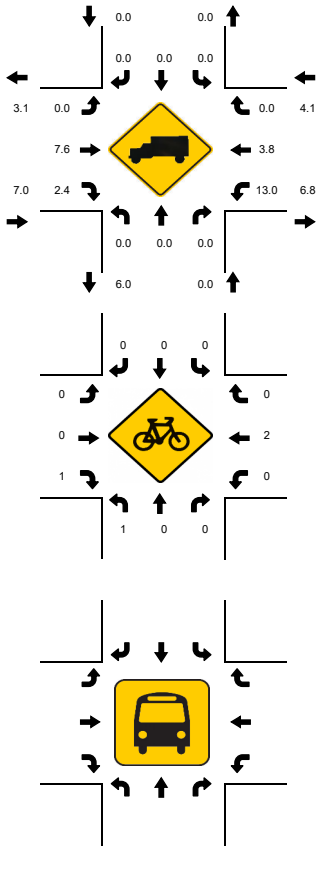
PROJECT ID: 20-130167-002
DATE: 08/26/2020

Peak-Hour: 04:15 PM - 05:15 PM
Peak 15-Minute: 05:00 PM - 05:15 PM



National Data & Surveying Services





15-Min Count Period Beginning At	ıcy Entrance/Cocoa Veterinary H Northbound					ıcy Entrance/Cocoa Veterinary H Southbound					SR 524 Eastbound					SR 524 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
04:00 PM	16	1	3	0		13	1	2	0		5	156	11	0		8	168	0	0		384	1432
04:15 PM	25	1	1	0		9	0	5	0		4	148	12	0		8	153	1	0		367	1439
04:30 PM	25	2	5	0		19	3	9	0		5	106	12	0		6	151	1	0		344	1429
04:45 PM	24	3	3	0		9	0	10	0		6	124	7	0		4	143	3	1		337	1386
05:00 PM	22	2	4	0		13	0	11	0		4	161	11	0		4	158	1	0		391	1354
05:15 PM	25	0	2	0		12	1	4	0		7	122	21	0		7	154	1	1		357	963
05:30 PM	30	0	0	0		9	1	7	0		4	112	7	0		4	127	0	0		301	606
05:45 PM	27	2	3	0		8	2	9	0		3	92	10	0		8	141	0	0		305	305
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	100	12	20	0		76	12	44	0		24	644	48	0		32	632	12	4		**1660**	
Heavy Trucks	0	0	0			0	0	0			0	64	4			4	36	0			**108**	
Pedestrians		0					0					0					0				**0**	
Bicycles	4	0	0			0	0	0			0	0	4			0	4	0			**12**	
Railroad																						
Stopped Buses																						

National Data & Surveying Services

N/S Street: **CVS Pharmacy Entrance/Cocoa Veterinary Hospital Dwy**	Speed: **N/A**

Site Code: **20-130167-002**

Date: **08/26/2020**

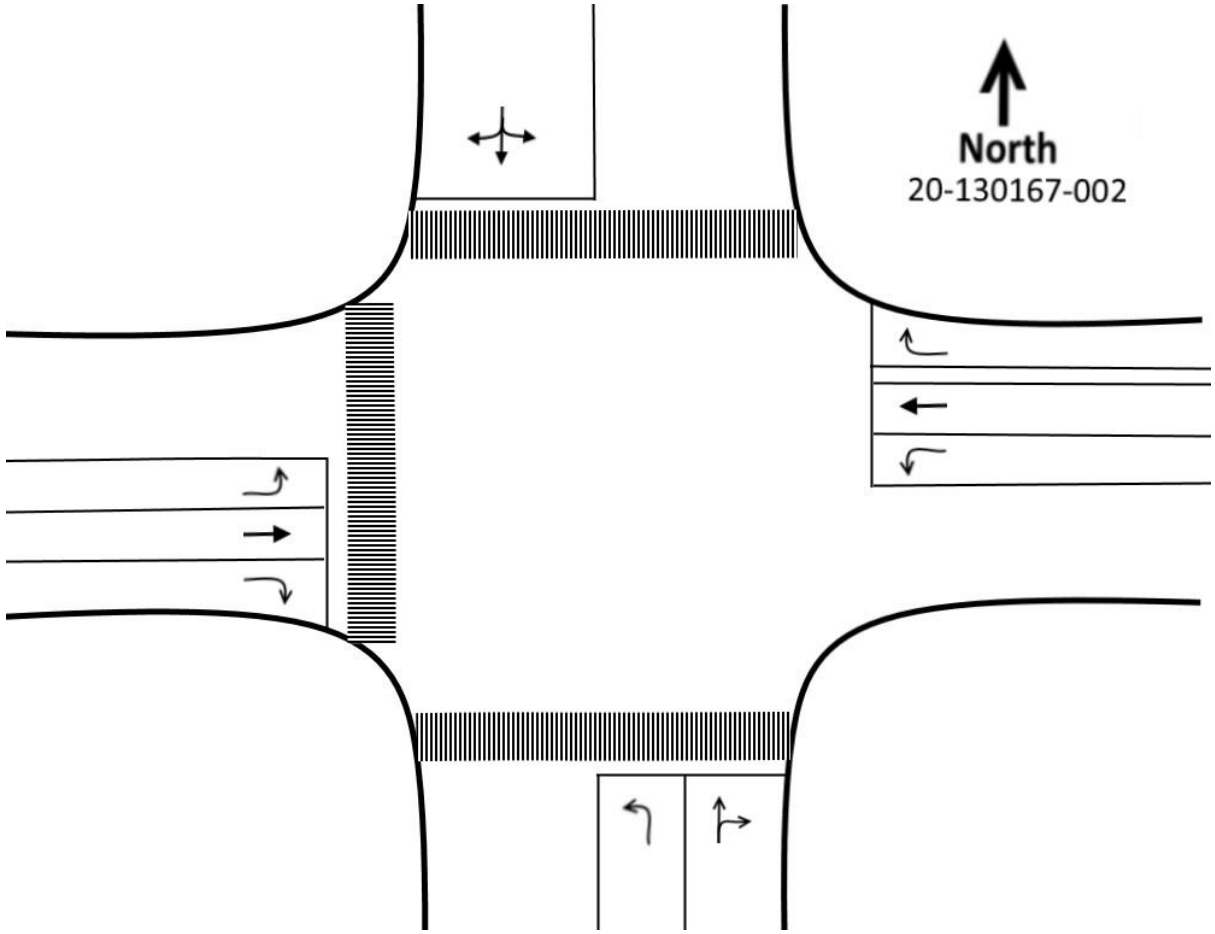
Weather: **Sunny**

City: **Cocoa**

County: **Brevard**

Count Times: **16:00 - 18:00**

Control: **Signalized**



E/W Street: **SR 524**

Speed: **55 MPH**

SIGNAL TIMING

PHASES	1	2	3
NT/ST	00:23	00:24	00:16
WL/WT	-	-	00:13
ET/WT	01:07	01:09	01:08

Prepared by National Data & Surveying Services

London Blvd & SR 524

Peak Hour Turning Movement Count

ID: 20-130167-001
City: Cocoa

Day: Wednesday
Date: 08/26/2020

PEAK HOURS	COUNT PERIODS
NONE	NONE
NONE	NONE
04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

London Blvd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	14	0	58	0	105	PM

EASTBOUND — SR 524

AM	NOON	PM	
0	0	635	⇦
0	0	0	↶ 0
0	0	20	↱ 0
0	0	530	→ 0
0	0	0	↴ 0

WESTBOUND — SR 524

PM	NOON	AM	
85	0	0	0 ↰
621	0	0	0 ←
0	0	0	0 ↰
0	0	0	0 ↶
588	0	0	⇨

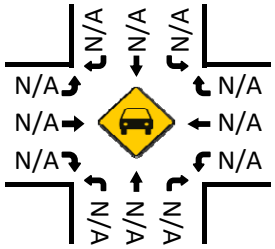
0	0	0	0

CONTROL			
Signalized			
TEV	0 AM	0 NOON	1328 PM
PHF			0.92

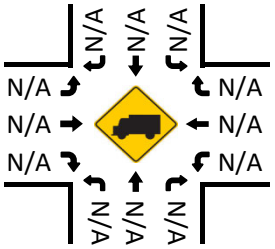
PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

NORTHBOUND — London Blvd

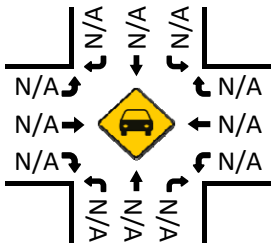
Cars (AM)



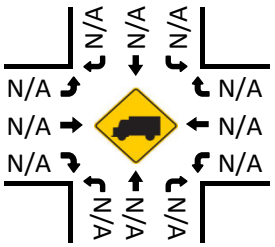
HT (AM)



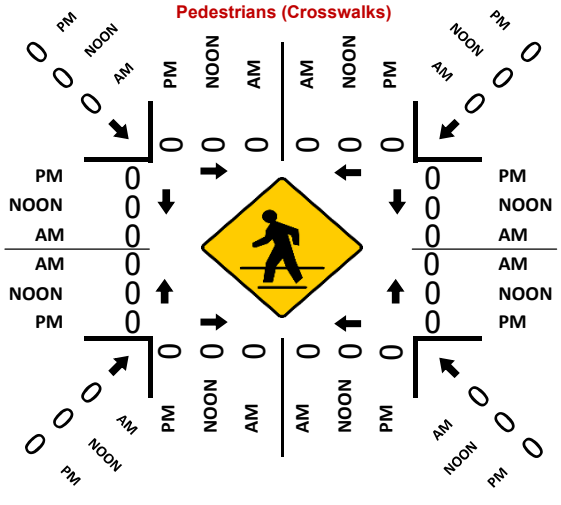
Cars (NOON)



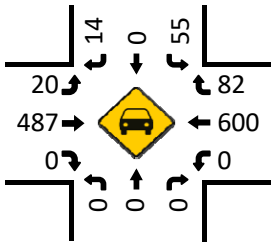
HT (NOON)



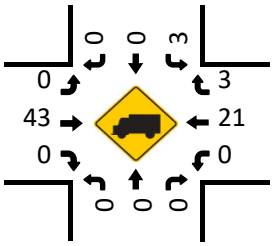
Pedestrians (Crosswalks)



Cars (PM)



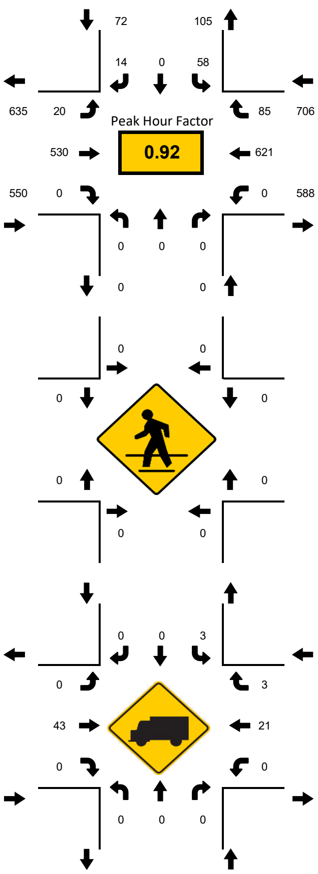
HT (PM)



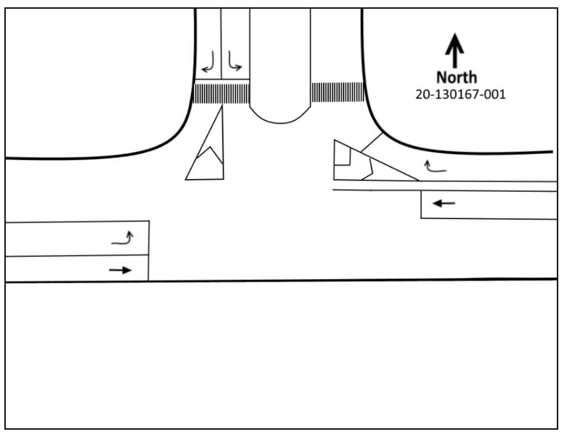
LOCATION: London Blvd & SR 524
CITY/STATE: Cocoa, FL

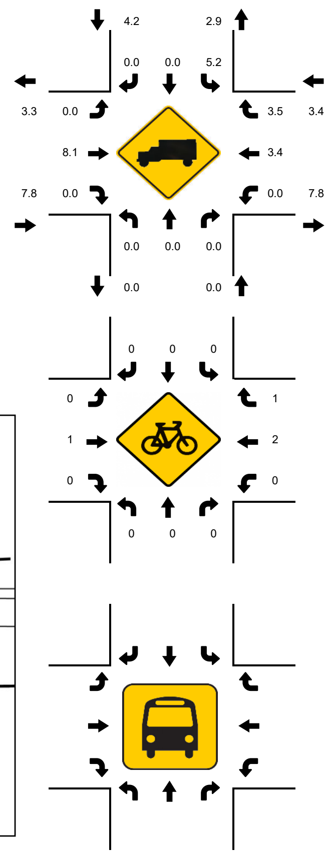
PROJECT ID: 20-130167-001
DATE: 08/26/2020

Peak-Hour: 04:00 PM - 05:00 PM
Peak 15-Minute: 04:15 PM - 04:30 PM



National Data & Surveying Services



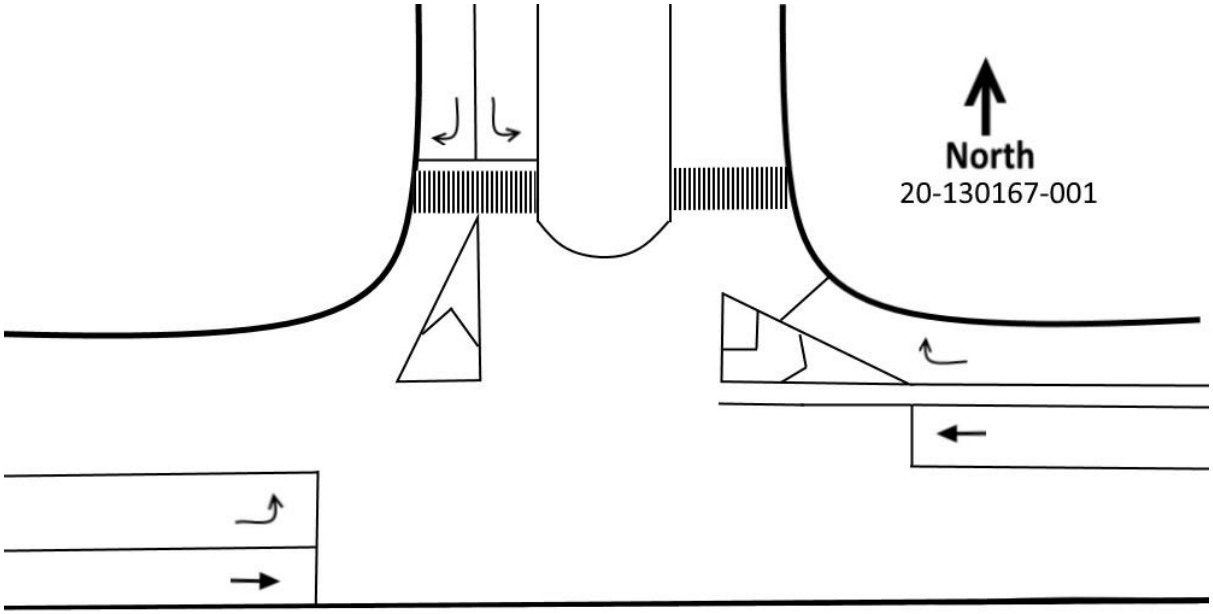


15-Min Count Period Beginning At	London Blvd Northbound					London Blvd Southbound					SR 524 Eastbound					SR 524 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
04:00 PM	0	0	0	0		14	0	6	0		2	152	0	0		0	160	20	0		354	1328
04:15 PM	0	0	0	0		22	0	2	0		6	146	0	0		0	155	28	0		359	1327
04:30 PM	0	0	0	0		12	0	2	0		4	109	0	0		0	153	18	0		298	1316
04:45 PM	0	0	0	0		10	0	4	0		8	123	0	0		0	153	19	0		317	1314
05:00 PM	0	0	0	0		24	0	4	0		5	149	0	0		0	140	31	0		353	1276
05:15 PM	0	0	0	0		17	0	2	0		6	134	0	0		0	167	22	0		348	923
05:30 PM	0	0	0	0		19	0	4	0		10	104	0	0		0	128	31	0		296	575
05:45 PM	0	0	0	0		13	0	1	0		12	96	0	0		0	133	24	0		279	279

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	0	0	0	0		88	0	24	0		32	608	0	0		0	640	112	0		**1504**
Heavy Trucks	0	0	0			8	0	0			0	60	0			0	32	4			**104**
Pedestrians		0					0					0					0				**0**
Bicycles	0	0	0			0	0	0			0	4	0			0	4	4			**12**
Railroad																					
Stopped Buses																					

National Data & Surveying Services

N/S Street: **London Blvd**	Speed: **25 MPH**



E/W Street: **SR 524**

Speed: **55 MPH**

Site Code: **20-130167-001**

Date: **08/26/2020**

Weather: **Sunny**

City: **Cocoa**

County: **Brevard**

Count Times: **16:00 - 18:00**

Control: **Signalized**

SIGNAL TIMING

PHASES	**1**	**2**	**3**
SL/SR	00:23	00:20	00:17
ET/WT	02:38	00:44	02:00

2019 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 7000 BREVARD COUNTYWIDE

MOCF: 0.91

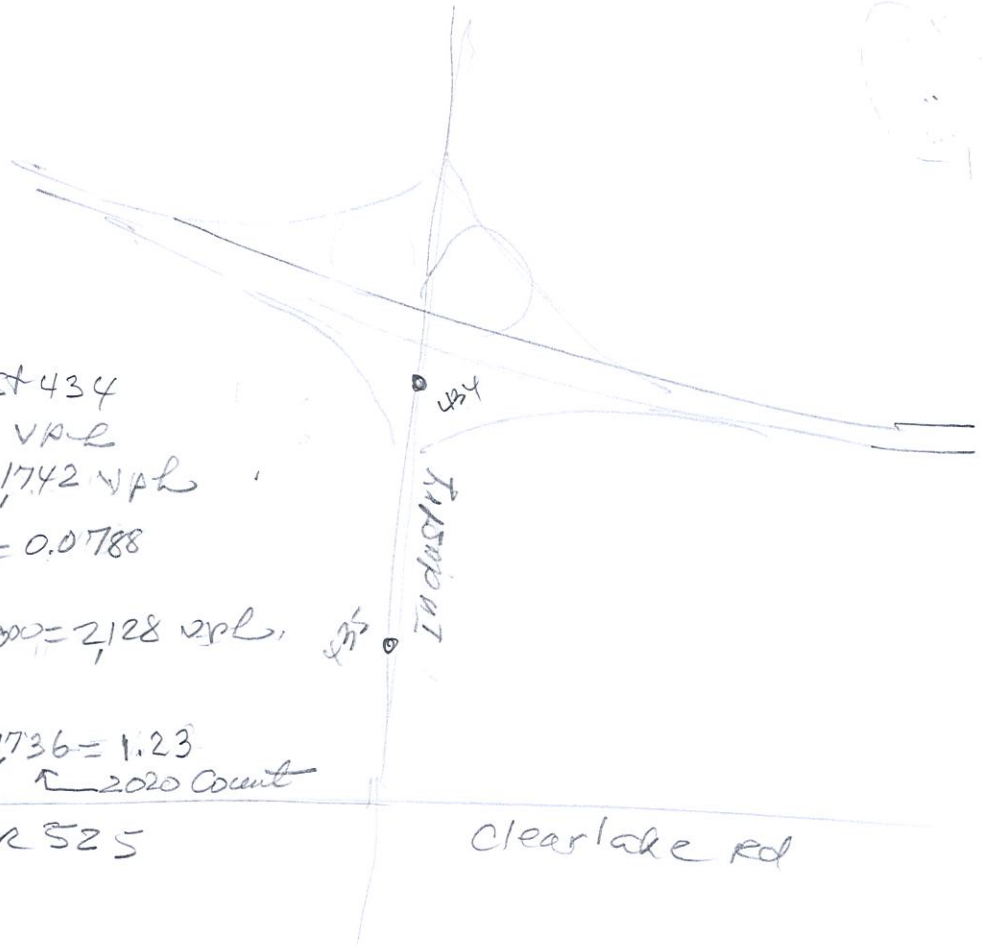
WEEK	DATES	SF	PSCF
1	01/01/2019 - 01/05/2019	1.03	1.13
2	01/06/2019 - 01/12/2019	1.00	1.10
3	01/13/2019 - 01/19/2019	0.97	1.07
4	01/20/2019 - 01/26/2019	0.96	1.05
* 5	01/27/2019 - 02/02/2019	0.94	1.03
* 6	02/03/2019 - 02/09/2019	0.92	1.01
* 7	02/10/2019 - 02/16/2019	0.90	0.99
* 8	02/17/2019 - 02/23/2019	0.90	0.99
* 9	02/24/2019 - 03/02/2019	0.89	0.98
*10	03/03/2019 - 03/09/2019	0.88	0.97
*11	03/10/2019 - 03/16/2019	0.88	0.97
*12	03/17/2019 - 03/23/2019	0.89	0.98
*13	03/24/2019 - 03/30/2019	0.90	0.99
*14	03/31/2019 - 04/06/2019	0.91	1.00
*15	04/07/2019 - 04/13/2019	0.92	1.01
*16	04/14/2019 - 04/20/2019	0.93	1.02
*17	04/21/2019 - 04/27/2019	0.94	1.03
18	04/28/2019 - 05/04/2019	0.96	1.05
19	05/05/2019 - 05/11/2019	0.98	1.08
20	05/12/2019 - 05/18/2019	0.99	1.09
21	05/19/2019 - 05/25/2019	1.01	1.11
22	05/26/2019 - 06/01/2019	1.02	1.12
23	06/02/2019 - 06/08/2019	1.03	1.13
24	06/09/2019 - 06/15/2019	1.05	1.15
25	06/16/2019 - 06/22/2019	1.05	1.15
26	06/23/2019 - 06/29/2019	1.05	1.15
27	06/30/2019 - 07/06/2019	1.05	1.15
28	07/07/2019 - 07/13/2019	1.05	1.15
29	07/14/2019 - 07/20/2019	1.06	1.16
30	07/21/2019 - 07/27/2019	1.06	1.16
31	07/28/2019 - 08/03/2019	1.07	1.18
32	08/04/2019 - 08/10/2019	1.08	1.19
33	08/11/2019 - 08/17/2019	1.08	1.19
34	08/18/2019 - 08/24/2019	1.10	1.21
35	08/25/2019 - 08/31/2019	1.11	1.22
36	09/01/2019 - 09/07/2019	1.12	1.23
37	09/08/2019 - 09/14/2019	1.13	1.24
38	09/15/2019 - 09/21/2019	1.14	1.25
39	09/22/2019 - 09/28/2019	1.12	1.23
40	09/29/2019 - 10/05/2019	1.10	1.21
41	10/06/2019 - 10/12/2019	1.07	1.18
42	10/13/2019 - 10/19/2019	1.05	1.15
43	10/20/2019 - 10/26/2019	1.05	1.15
44	10/27/2019 - 11/02/2019	1.04	1.14
45	11/03/2019 - 11/09/2019	1.04	1.14
46	11/10/2019 - 11/16/2019	1.03	1.13
47	11/17/2019 - 11/23/2019	1.03	1.13
48	11/24/2019 - 11/30/2019	1.03	1.13
49	12/01/2019 - 12/07/2019	1.03	1.13
50	12/08/2019 - 12/14/2019	1.03	1.13
51	12/15/2019 - 12/21/2019	1.03	1.13
52	12/22/2019 - 12/28/2019	1.00	1.10
53	12/29/2019 - 12/31/2019	0.97	1.07

* PEAK SEASON

Covid Factor

Sta 435 AADT 27,000

Sta 434 AADT 22,100



From Synopsis Report @ St 434
PM Peak Hour = 1,584 vph

SF Factor = 1.10 → 1,584 x 1.10 = 1,742 vph

K = 1,742 / 22,100 = 0.0788

PM Peak Hour Cnt @ St 435: 0.0788 x 27,000 = 2,128 vph

Covid Factor: 2128 / 1736 = 1.23
(1736 ← 2020 Count)

COUNTY: 70
STATION: 0434
DESCRIPTION: ON SR-524, 0.232 MI. N OF SR-501 (UV)
START DATE: 08/21/2019
START TIME: 0000

	DIRECTION: N					DIRECTION: S					COMBINED
TIME	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL	TOTAL
0000	28	29	16	27	100	7	15	18	18	58	158
0100	33	6	10	8	57	17	11	19	22	69	126
0200	8	8	7	13	36	18	7	9	14	48	84
0300	15	10	14	26	65	8	18	18	19	63	128
0400	23	21	32	41	117	22	21	36	25	104	221
0500	36	43	52	65	196	40	41	77	95	253	449
0600	58	82	96	106	342	90	125	152	205	572	914
0700	111	95	107	109	422	190	255	261	315	1021	1443
0800	103	110	133	125	471	224	216	273	265	978	1449
0900	98	108	107	104	417	212	198	162	191	763	1180
1000	133	101	106	139	479	178	162	182	170	692	1171
1100	105	108	99	118	430	152	199	172	176	699	1129
1200	128	136	110	143	517	234	200	181	180	795	1312
1300	136	134	143	127	540	174	204	174	155	707	1247
1400	124	107	104	103	438	174	201	214	198	787	1225
1500	142	124	141	177	584	228	213	272	250	963	1547
1600	144	157	151	159	611	214	244	248	233	939	1550
1700	168	137	159	143	607	262	265	227	223	977	1584
1800	126	107	99	95	427	183	159	136	119	597	1024
1900	92	103	79	86	360	130	115	109	98	452	812
2000	89	84	75	57	305	81	103	90	73	347	652
2100	50	40	44	30	164	49	50	65	36	200	364
2200	39	37	27	24	127	31	45	35	26	137	264
2300	21	19	28	14	82	25	28	23	15	91	173
24-HOUR TOTALS:					7894					12312	20206

PEAK VOLUME INFORMATION

	DIRECTION: N		DIRECTION: S		COMBINED DIRECTIONS	
	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
A.M.	800	471	715	1055	745	1483
P.M.	1615	635	1630	1008	1630	1623
DAILY	1615	635	715	1055	1630	1623

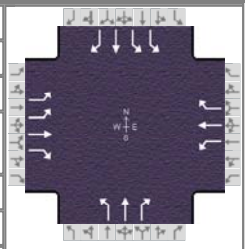
GENERATED BY SPS 5.0.48P

APPENDIX C

Existing HCS Capacity Worksheets

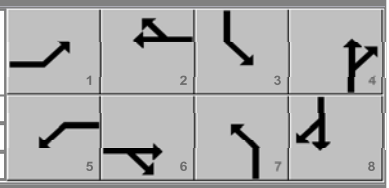
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TPD, Inc.			Duration, h	0.25
Analyst	BH	Analysis Date	8/28/2020	Area Type	Other
Jurisdiction	Brevard County	Time Period	P.M. Peak Existing	PHF	0.94
Urban Street	SR 524	Analysis Year	2020	Analysis Period	1> 7:00
Intersection	SR 524 & Industry Rd	File Name	SR 524 & Industry Rd.xus		
Project Description	Cocoa Apartment				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	461	364	25	39	418	517	27	106	119	410	137	504

Signal Information												
Cycle, s	106.1	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
				Green	4.2	6.4	26.0	3.4	8.1	21.9		
				Yellow	4.0	4.0	4.0	4.0	4.0	4.0		
				Red	2.0	2.0	2.0	2.0	2.0	2.0		



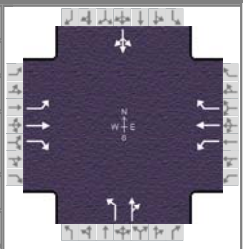
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2	7	4	3	8
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	22.7	44.4	10.2	32.0	9.4	27.9	23.5	42.0
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	4.9	5.0	4.9	5.0	5.0	5.2	5.0	5.2
Queue Clearance Time (g_s), s	16.5	19.3	4.4	28.0	3.7	9.2	14.6	37.0
Green Extension Time (g_e), s	0.2	9.1	0.0	0.0	0.0	6.5	3.0	0.0
Phase Call Probability	1.00	1.00	0.71	1.00	0.57	1.00	1.00	1.00
Max Out Probability	1.00	0.28	1.00	1.00	1.00	0.03	0.00	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	490	387	27	41	445	550	29	113	127	436	146	536
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1757	1900	1610	1810	1900		1810	1900	1610	1757	1900	1610
Queue Service Time (g_s), s	14.5	17.3	1.1	2.4	24.5		1.7	5.3	7.2	12.6	5.8	35.0
Cycle Queue Clearance Time (g_c), s	14.5	17.3	1.1	2.4	24.5		1.7	5.3	7.2	12.6	5.8	35.0
Green Ratio (*g/C*)	0.16	0.36	0.36	0.04	0.25		0.03	0.21	0.21	0.17	0.34	0.34
Capacity (*c*), veh/h	552	688	583	72	466		58	392	333	580	645	546
Volume-to-Capacity Ratio (*X*)	0.888	0.563	0.046	0.574	0.955		0.491	0.287	0.381	0.752	0.226	0.981
Back of Queue (*Q*), ft/ln (95 th percentile)	289	296.4	18.3	55.3	520.5		39.2	109.6	126.6	232.4	115	621.2
Back of Queue (*Q*), veh/ln (95 th percentile)	11.6	11.9	0.7	2.2	20.8		1.6	4.4	5.1	9.3	4.6	24.8
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	43.8	27.1	21.9	50.0	39.5		50.5	35.5	36.2	42.2	25.1	34.7
Incremental Delay (d_2), s/veh	16.1	1.1	0.0	9.9	30.6		8.8	0.6	1.0	2.8	0.3	33.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	59.9	28.2	22.0	59.9	70.1	0.0	59.3	36.1	37.3	45.0	25.3	68.4
Level of Service (LOS)	E	C	C	E	E	A	E	D	D	D	C	E
Approach Delay, s/veh / LOS	45.2	D		32.5	C		39.1	D		53.7	D	
Intersection Delay, s/veh / LOS	43.6						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.11	B	2.45	B	2.30	B	2.28	B
Bicycle LOS Score / LOS	1.98	B	2.20	B	0.93	A	2.33	B

HCS7 Signalized Intersection Results Summary

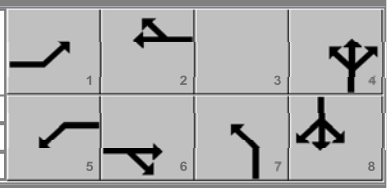
General Information				Intersection Information	
Agency	TPD, Inc.			Duration, h	0.25
Analyst	BH	Analysis Date	8/28/2020	Area Type	Other
Jurisdiction	Brevard County	Time Period	P.M. Peak Existing	PHF	0.92
Urban Street	SR 524	Analysis Year	2020	Analysis Period	1> 7:00
Intersection	SR 524 & CVS Entrance	File Name	SR 524 & CVS Entrance.xus		
Project Description	Cocoa Apartment				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	26	736	58	30	827	9	132	11	17	69	4	48

Signal Information			
Cycle, s	115.1	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.6	0.3	65.2	11.3	10.7	0.0						
Yellow	4.0	0.0	4.0	4.0	4.0	0.0						
Red	2.0	0.0	2.0	2.0	2.0	0.0						



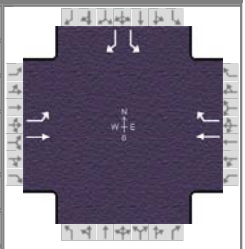
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2		4		8
Case Number	2.0	3.0	2.0	3.0		10.0		12.0
Phase Duration, s	9.6	71.2	9.9	71.5		17.3		16.7
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		6.0		6.0
Max Allow Headway (*MAH*), s	4.9	4.9	4.9	4.9		5.0		5.1
Queue Clearance Time (g_s), s	3.8	38.4	4.0	46.6		11.0		10.6
Green Extension Time (g_e), s	0.0	17.2	0.0	18.8		0.4		0.3
Phase Call Probability	0.60	1.00	0.65	1.00		1.00		0.99
Max Out Probability	1.00	0.24	1.00	0.13		0.56		0.44

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	28	800	63	33	899	10	143	30			132	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900	1610	1810	1900	1610	1810	1713			1727	
Queue Service Time (g_s), s	1.8	36.4	2.0	2.0	44.6	0.3	9.0	1.9			8.6	
Cycle Queue Clearance Time (g_c), s	1.8	36.4	2.0	2.0	44.6	0.3	9.0	1.9			8.6	
Green Ratio (*g/C*)	0.03	0.57	0.57	0.03	0.57	0.57	0.10	0.10			0.09	
Capacity (*c*), veh/h	56	1076	912	61	1081	916	178	168			161	
Volume-to-Capacity Ratio (*X*)	0.502	0.743	0.069	0.533	0.831	0.011	0.807	0.181			0.815	
Back of Queue (*Q*), ft/ln (95 th percentile)	41.6	511.6	29.6	47.7	609.3	4.4	202.9	36.8			190.8	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.7	20.5	1.2	1.9	24.4	0.2	8.1	1.5			7.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Uniform Delay (d_1), s/veh	55.0	18.7	11.3	54.8	20.3	10.8	50.9	47.7			51.3	
Incremental Delay (d_2), s/veh	9.5	2.2	0.0	9.9	2.8	0.0	13.2	0.7			13.9	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Control Delay (*d*), s/veh	64.5	20.9	11.3	64.7	23.1	10.8	64.1	48.4			65.2	
Level of Service (LOS)	E	C	B	E	C	B	E	D			E	
Approach Delay, s/veh / LOS	21.6	C		24.4	C		61.4	E		65.2	E	
Intersection Delay, s/veh / LOS	28.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.89	B	1.67	B	2.14	B	2.16	B
Bicycle LOS Score / LOS	1.96	B	2.04	B	0.77	A	0.70	A

HCS7 Signalized Intersection Results Summary

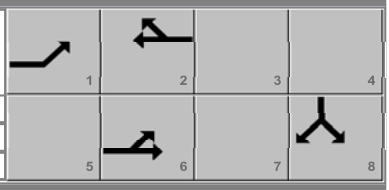
General Information				Intersection Information	
Agency	TPD, Inc.			Duration, h	0.25
Analyst	BH	Analysis Date	8/28/2020	Area Type	Other
Jurisdiction	Brevard County	Time Period	P.M. Peak Existing	PHF	0.92
Urban Street	SR 524	Analysis Year	2020	Analysis Period	1> 7:00
Intersection	SR 524 & London Blvd	File Name	SR 524 & London Blvd.xus		
Project Description	Cocoa Apartment				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	27	723			847	116				79		20

Signal Information			
Cycle, s	73.7	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.7	47.7	5.3	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6		2				8
Case Number	1.0	4.0		7.3				9.0
Phase Duration, s	8.7	62.4		53.7				11.3
Change Period, ($Y+R_c$), s	6.0	6.0		6.0				6.0
Max Allow Headway (*MAH*), s	4.9	4.9		4.9				5.1
Queue Clearance Time (g_s), s	2.4	14.2		26.5				5.4
Green Extension Time (g_e), s	0.0	20.6		21.1				0.3
Phase Call Probability	0.45	1.00		1.00				0.89
Max Out Probability	1.00	0.11		0.08				0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6			2	12				3		18
Adjusted Flow Rate (*v*), veh/h	29	786			921	126				86		22
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900			1900					1810		
Queue Service Time (g_s), s	0.4	12.2			24.5					3.4		
Cycle Queue Clearance Time (g_c), s	0.4	12.2			24.5					3.4		
Green Ratio (*g/C*)	0.71	0.76			0.65					0.07		
Capacity (*c*), veh/h	359	1453			1229					131		
Volume-to-Capacity Ratio (*X*)	0.082	0.541			0.749					0.655		
Back of Queue (*Q*), ft/ln (95 th percentile)	5.2	57.3			257.4					75.1		
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2	2.3			10.3					3.0		
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00			0.00					0.00		
Uniform Delay (d_1), s/veh	8.1	3.5			8.9					33.3		
Incremental Delay (d_2), s/veh	0.1	0.4			1.3					7.6		
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0					0.0		
Control Delay (*d*), s/veh	8.3	3.9			10.3	0.0				41.0		0.0
Level of Service (LOS)	A	A			B	A				D		A
Approach Delay, s/veh / LOS	4.1	A		9.0	A		0.0			32.7	C	
Intersection Delay, s/veh / LOS	8.3						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	0.63	A	1.86	B	1.95	B	1.95	B
Bicycle LOS Score / LOS	1.83	B	2.21	B				F

APPENDIX D

ITE Trip Generation Sheets

Multifamily Housing (Low-Rise)
(220)

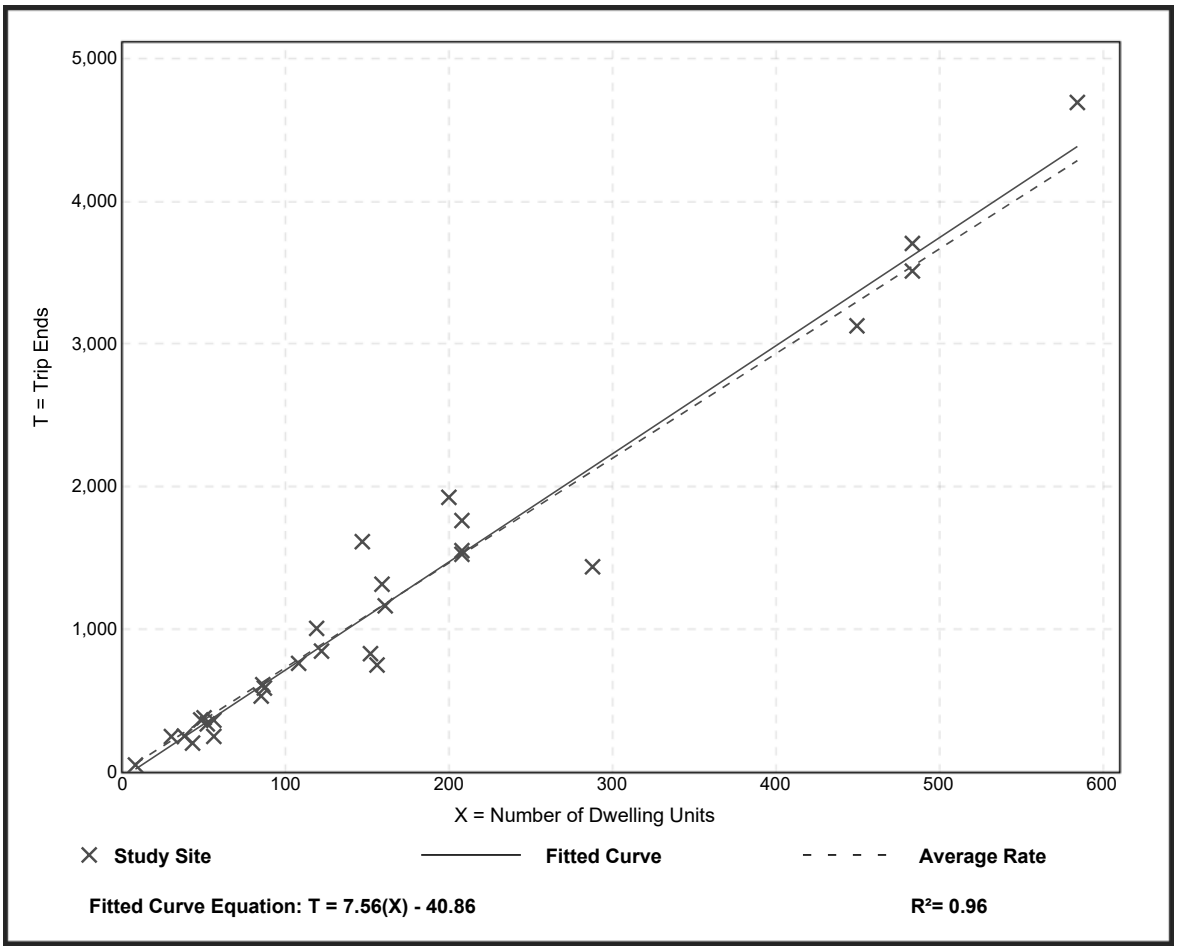
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 29
Avg. Num. of Dwelling Units: 168
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.32	4.45 - 10.97	1.31

Data Plot and Equation



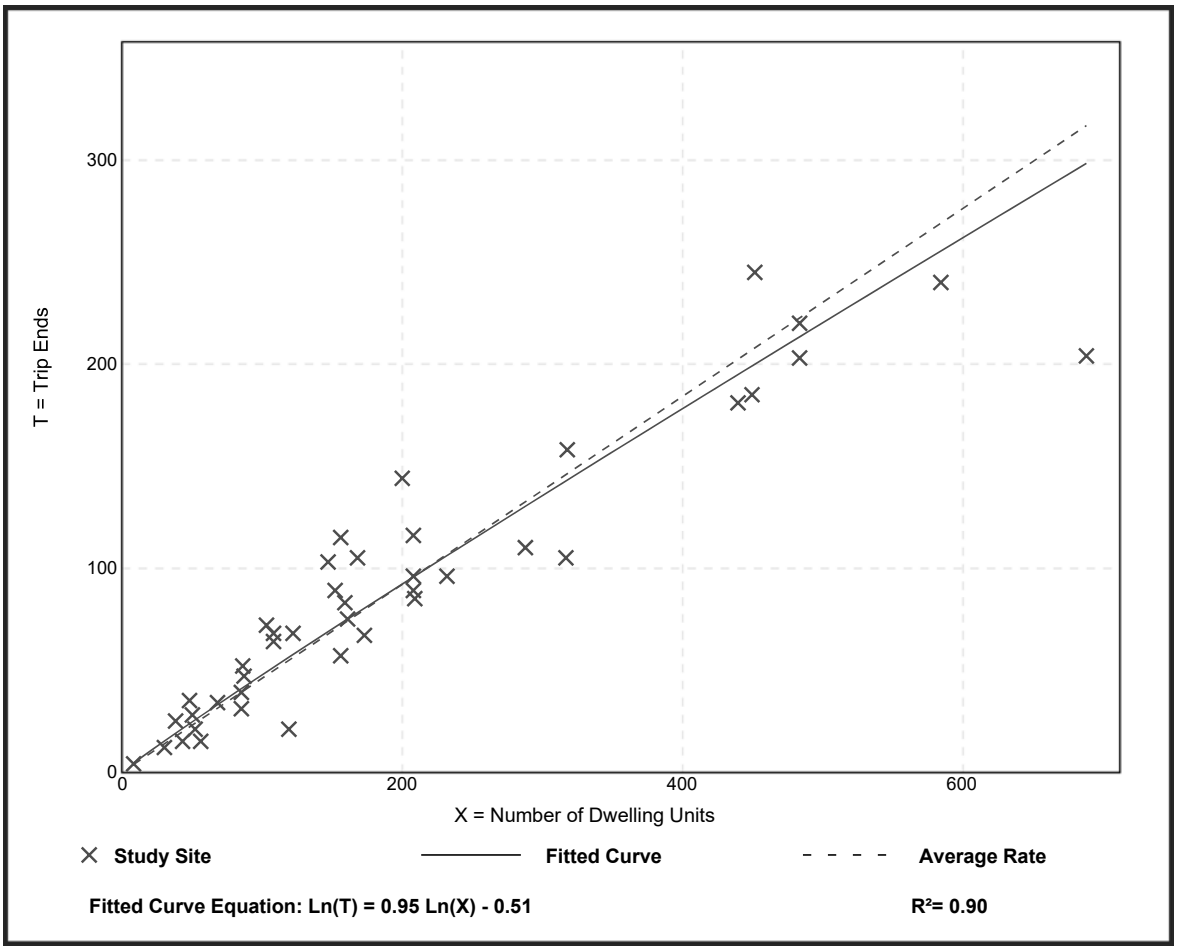
Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	42
Avg. Num. of Dwelling Units:	199
Directional Distribution:	23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



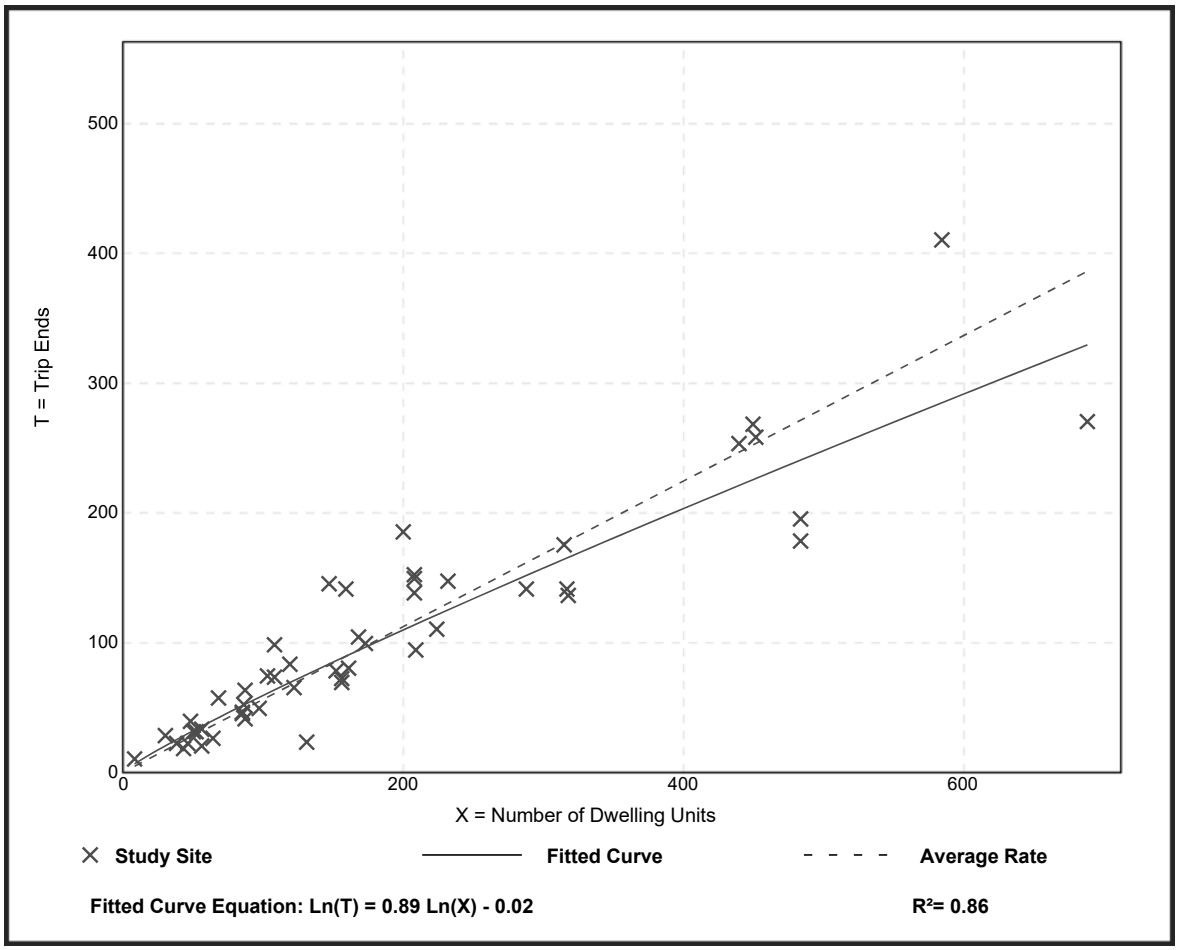
Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 50
Avg. Num. of Dwelling Units: 187
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



Shopping Center
(820)

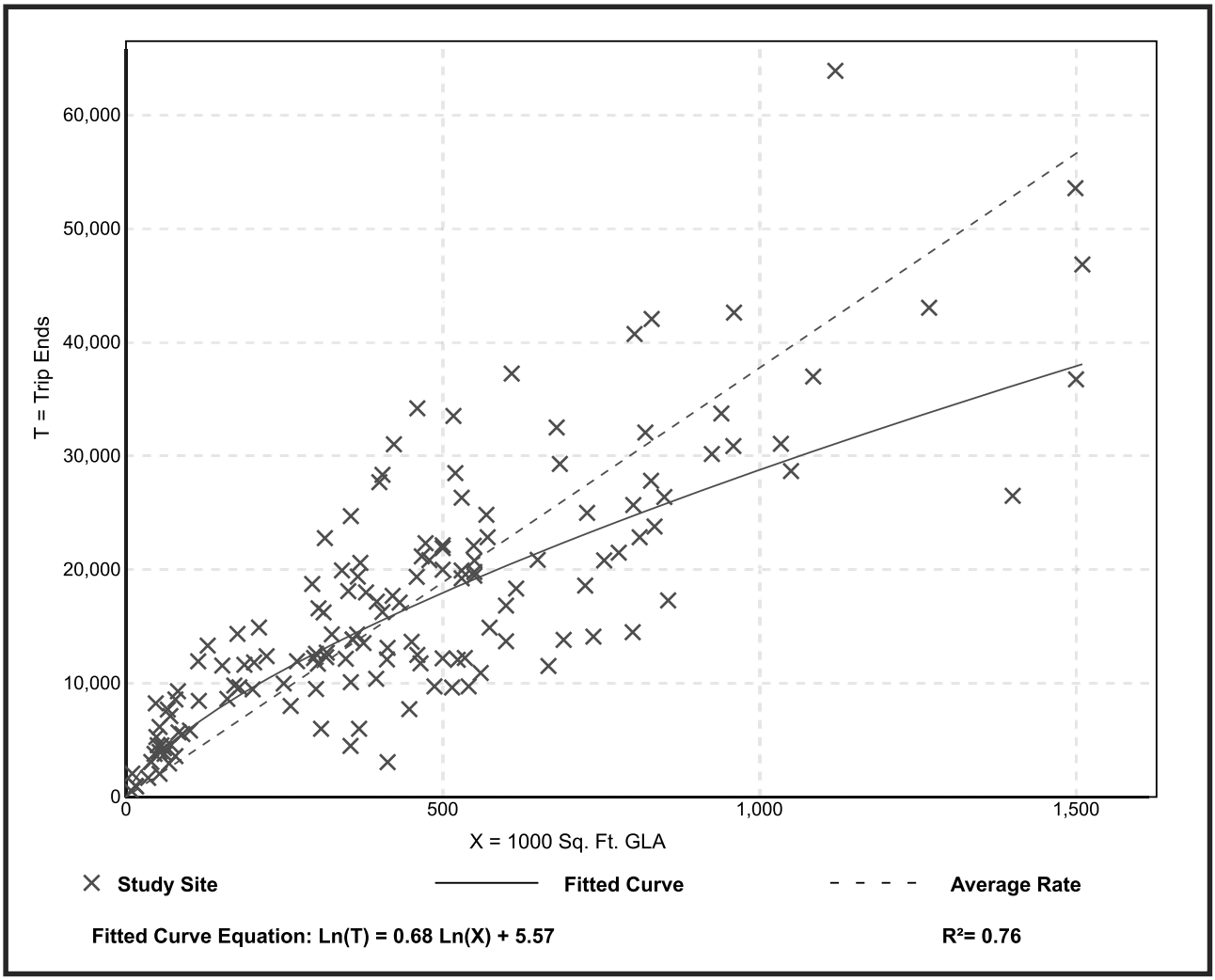
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 147
Avg. 1000 Sq. Ft. GLA: 453
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.75	7.42 - 207.98	16.41

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.68 Ln(X) + 5.57

R^2= 0.76

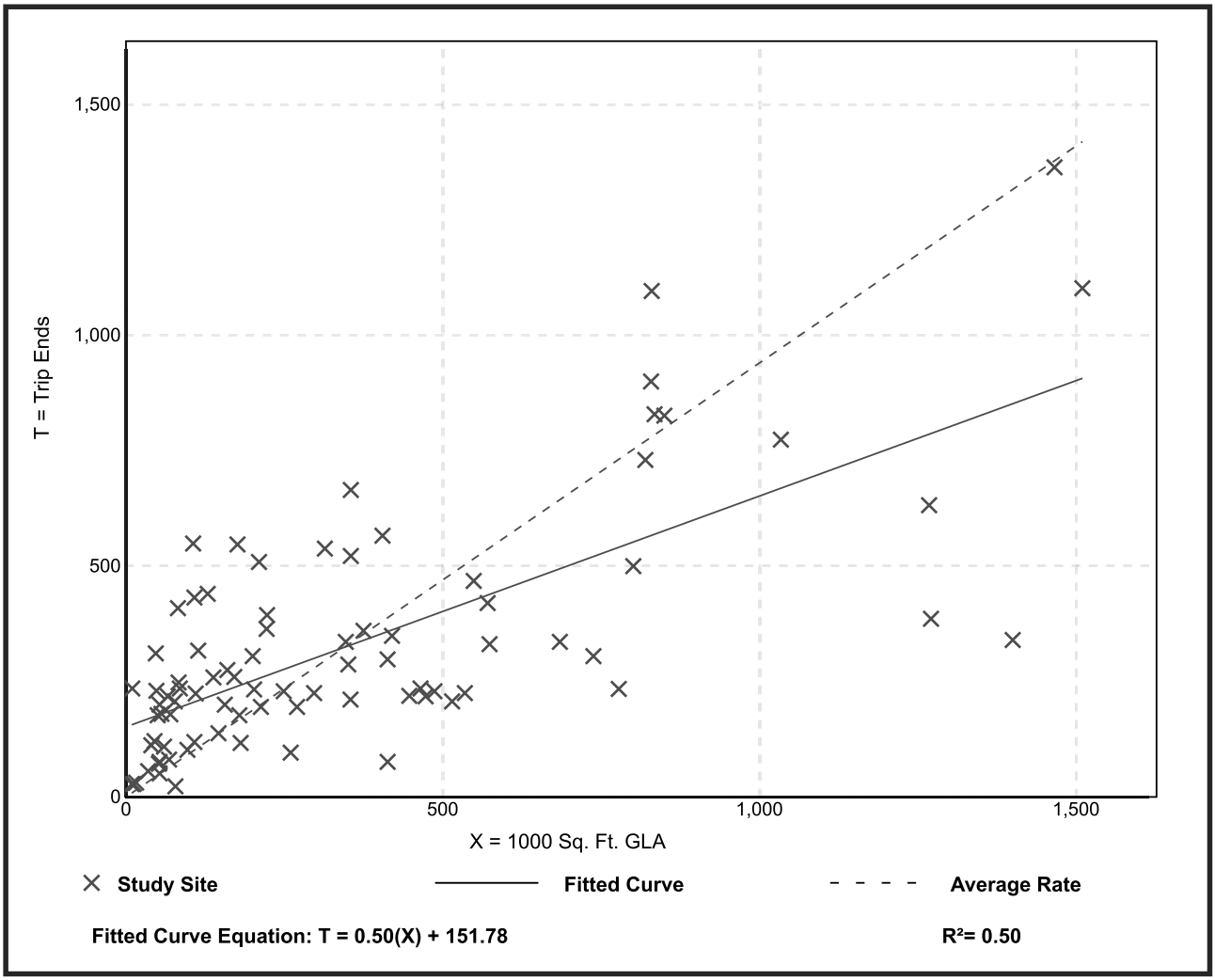
Shopping Center
(820)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 84
Avg. 1000 Sq. Ft. GLA: 351
Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.94	0.18 - 23.74	0.87

Data Plot and Equation



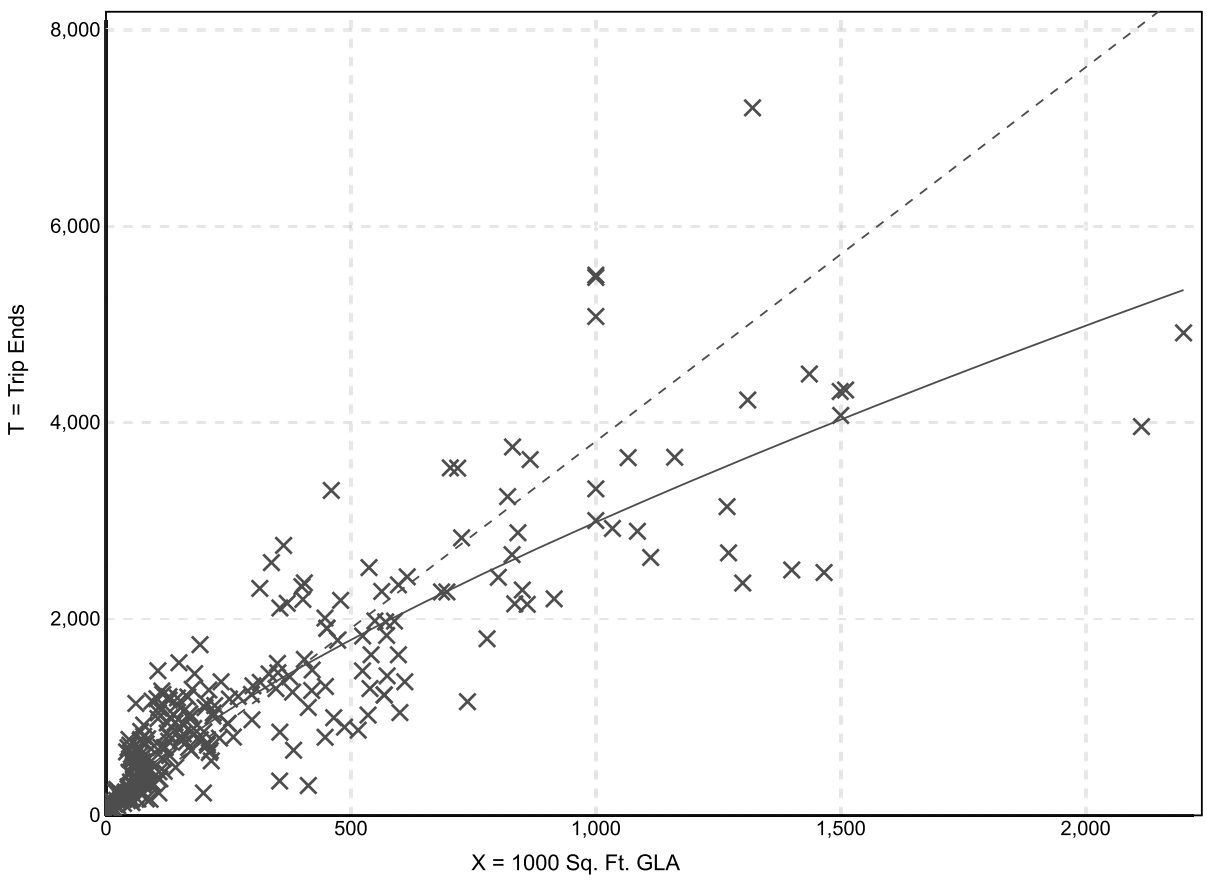
Shopping Center
(820)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	261
Avg. 1000 Sq. Ft. GLA:	327
Directional Distribution:	48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.81	0.74 - 18.69	2.04

Data Plot and Equation

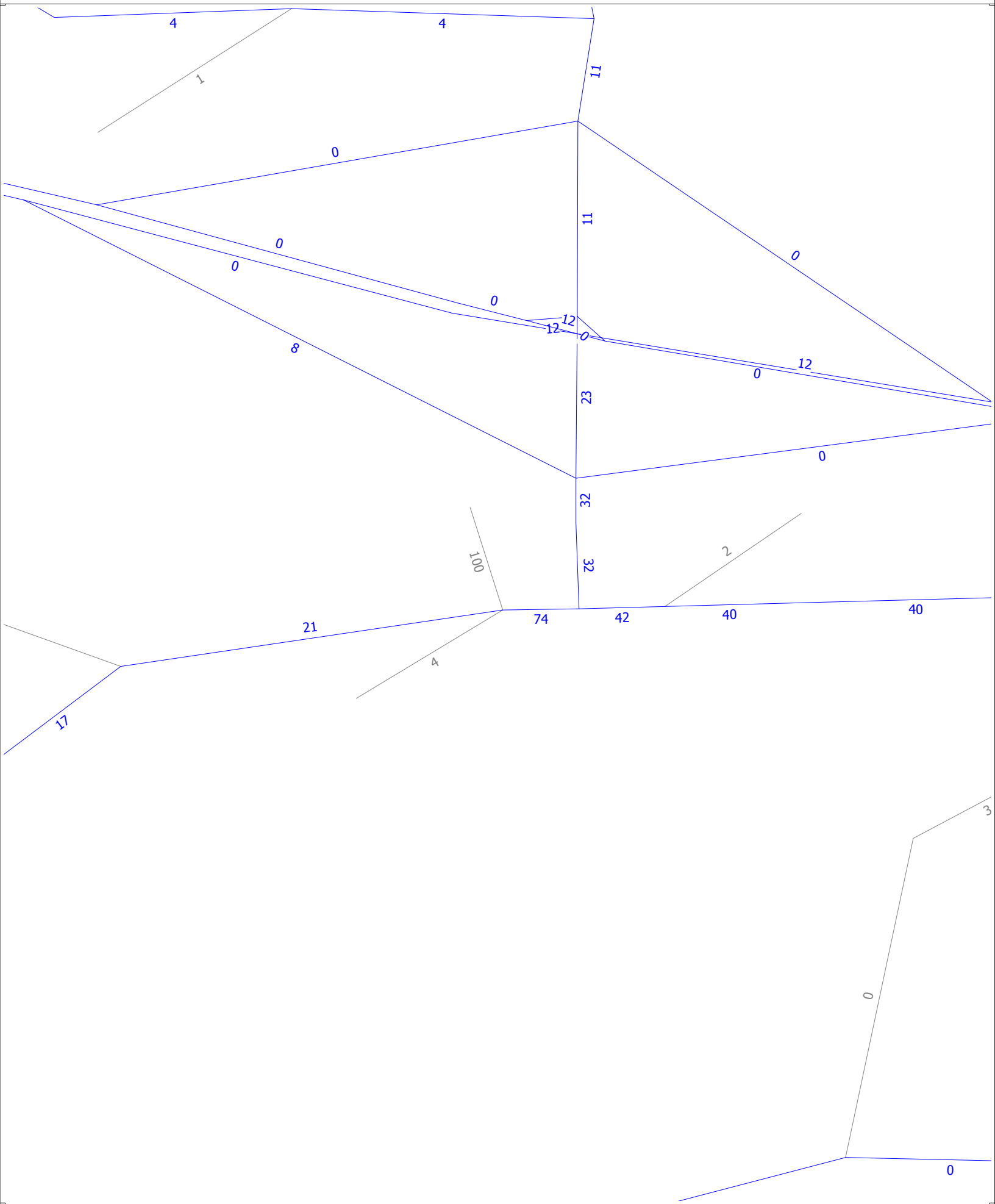


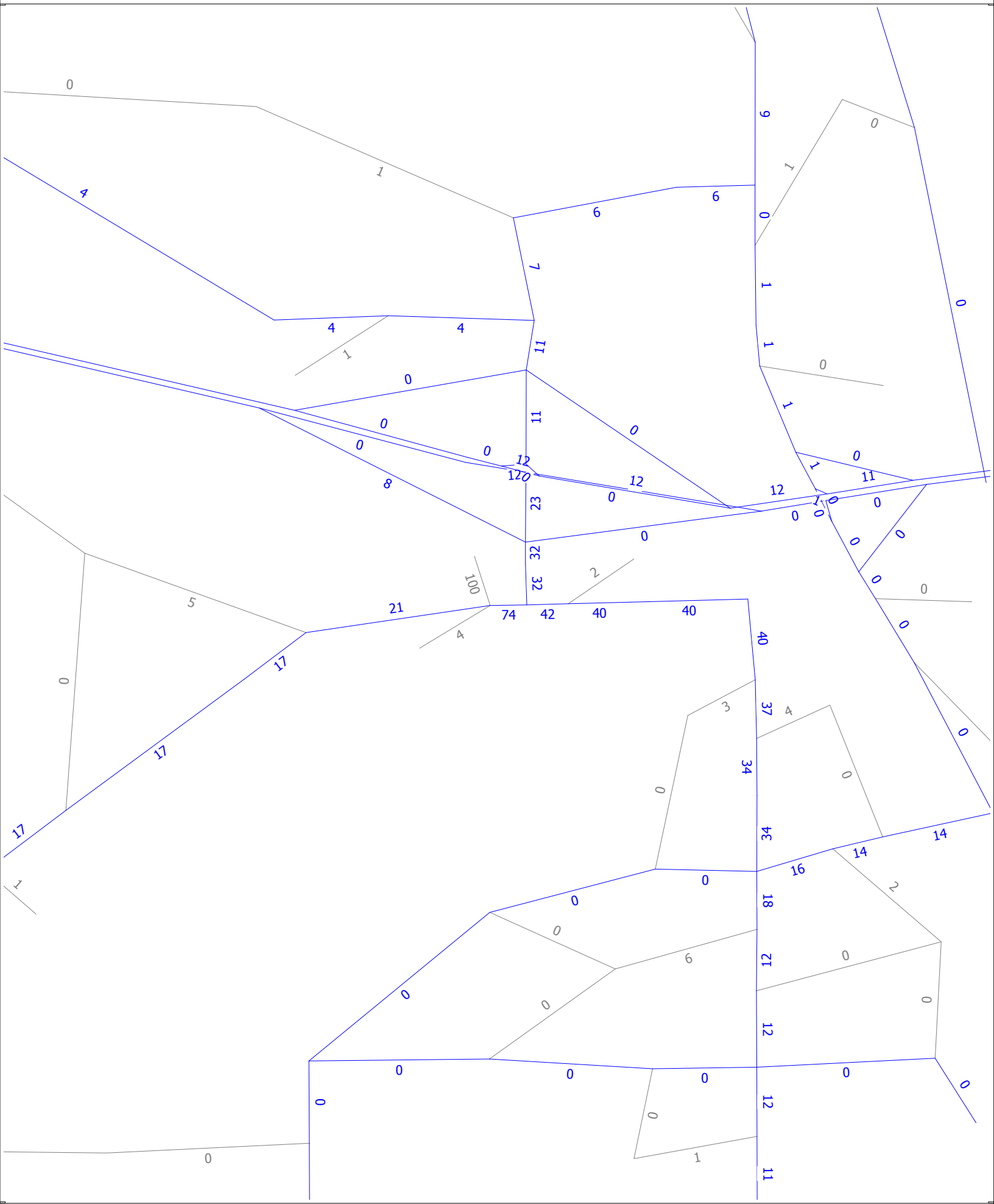
Fitted Curve Equation: Ln(T) = 0.74 Ln(X) + 2.89

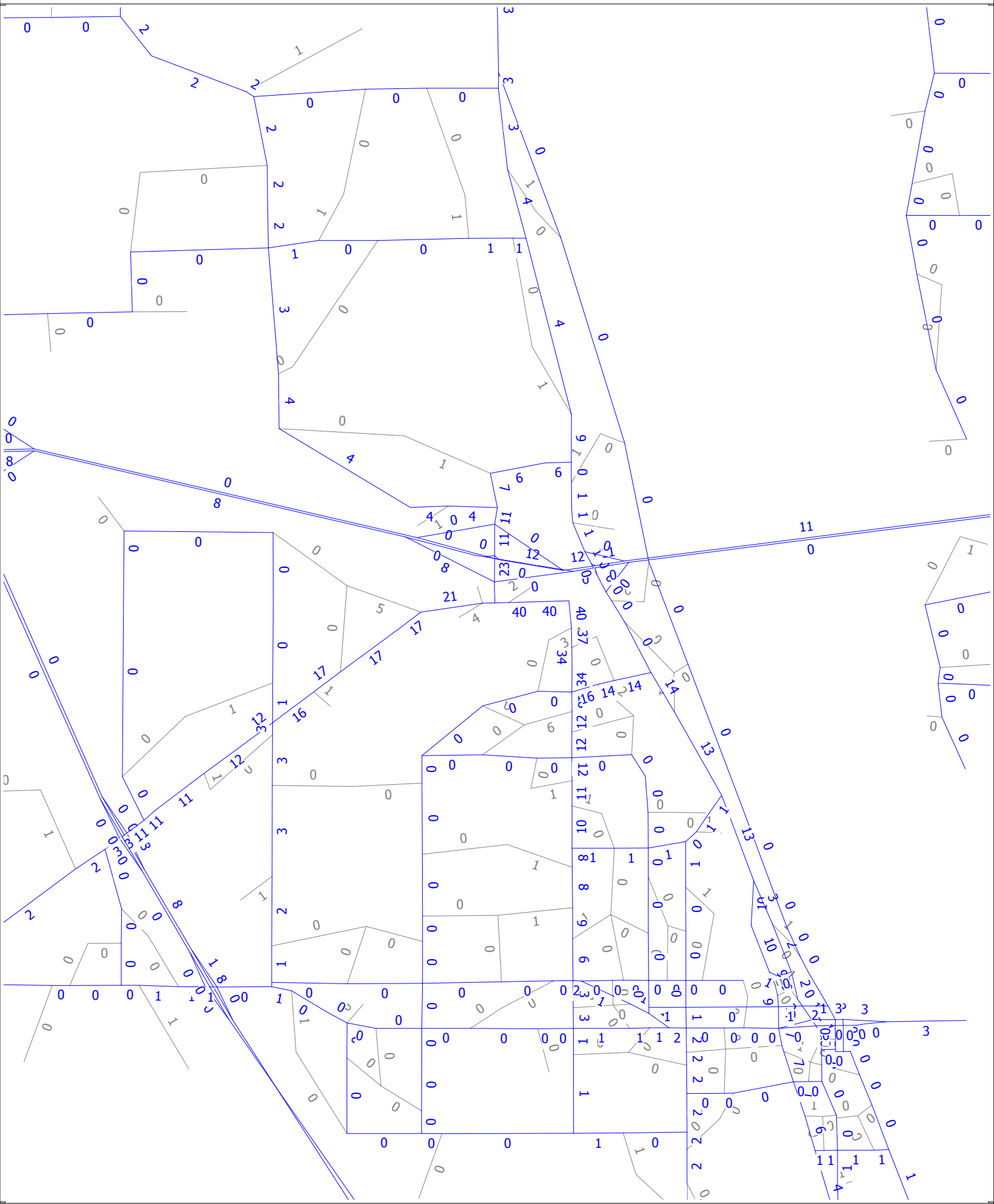
R^2= 0.82

APPENDIX E

Model Distribution Plot


4
4
1
11
0
0
0
0
11
0
12
12
0
8
12
0
23
0
32
32
100
2
21
74
42
40
40
4
17
3
0
0



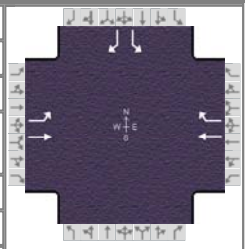


APPENDIX F

Projected HCS Capacity Worksheets

HCS7 Signalized Intersection Results Summary

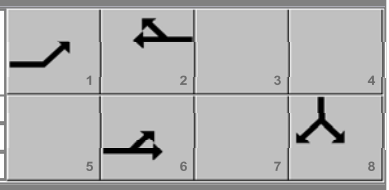
General Information				Intersection Information	
Agency	TPD, Inc.			Duration, h	0.25
Analyst	BH	Analysis Date	8/28/2020	Area Type	Other
Jurisdiction	Brevard County	Time Period	P.M. Peak Projected	PHF	0.92
Urban Street	SR 524	Analysis Year	2023	Analysis Period	1> 7:00
Intersection	SR 524 & London Blvd	File Name	SR 524 & London Blvd.xus		
Project Description	Cocoa Apartment				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	27	827			998	121				86		20

Signal Information			
Cycle, s	96.6	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.3	68.4	6.9	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



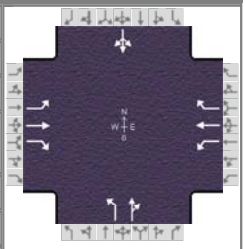
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6		2				8
Case Number	1.0	4.0		7.3				9.0
Phase Duration, s	9.3	83.7		74.4				12.9
Change Period, ($Y+R_c$), s	6.0	6.0		6.0				6.0
Max Allow Headway (*MAH*), s	4.9	4.9		4.9				5.1
Queue Clearance Time (g_s), s	2.4	22.9		39.5				6.9
Green Extension Time (g_e), s	0.0	27.7		28.9				0.3
Phase Call Probability	0.55	1.00		1.00				0.95
Max Out Probability	1.00	0.33		0.28				0.03

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6			2	12				3		18
Adjusted Flow Rate (*v*), veh/h	29	899			1085	132				93		22
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1710			1900					1810		
Queue Service Time (g_s), s	0.4	20.9			37.5					4.9		
Cycle Queue Clearance Time (g_c), s	0.4	20.9			37.5					4.9		
Green Ratio (*g/C*)	0.76	0.80			0.71					0.07		
Capacity (*c*), veh/h	305	1376			1346					129		
Volume-to-Capacity Ratio (*X*)	0.096	0.653			0.806					0.725		
Back of Queue (*Q*), ft/ln (95 th percentile)	10.4	125.3			391.2					111.5		
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	5.0			15.6					4.5		
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00			0.00					0.00		
Uniform Delay (d_1), s/veh	11.3	3.9			9.6					43.9		
Incremental Delay (d_2), s/veh	0.2	1.2			1.9					10.4		
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0					0.0		
Control Delay (*d*), s/veh	11.5	5.1			11.5	0.0				54.4		0.0
Level of Service (LOS)	B	A			B	A				D		A
Approach Delay, s/veh / LOS	5.3	A		10.3	B		0.0			44.1	D	
Intersection Delay, s/veh / LOS	10.0						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	0.62	A	1.85	B	1.96	B	1.96	B
Bicycle LOS Score / LOS	2.02	B	2.49	B				F

HCS7 Signalized Intersection Results Summary

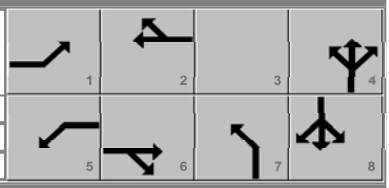
General Information				Intersection Information	
Agency	TPD, Inc.			Duration, h	0.25
Analyst	BH	Analysis Date	8/28/2020	Area Type	Other
Jurisdiction	Brevard County	Time Period	P.M. Peak Projected	PHF	0.92
Urban Street	SR 524	Analysis Year	2023	Analysis Period	1> 7:00
Intersection	SR 524 & CVS Entrance	File Name	SR 524 & CVS Entrance.xus		
Project Description	Cocoa Apartment				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	830	58	30	944	131	132	17	17	167	8	88

Signal Information			
Cycle, s	106.1	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.7	42.3	5.5	9.7	14.9	0.0						
Yellow	4.0	4.0	4.0	4.0	4.0	0.0						
Red	2.0	2.0	2.0	2.0	2.0	0.0						



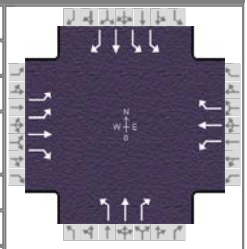
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2		4		8
Case Number	2.0	3.0	2.0	3.0		10.0		12.0
Phase Duration, s	11.5	59.8	9.7	58.0		15.7		20.9
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		6.0		6.0
Max Allow Headway (*MAH*), s	4.9	4.9	4.9	4.9		5.0		5.0
Queue Clearance Time (g_s), s	6.2	45.0	3.8	54.0		9.8		14.4
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.0		0.5
Phase Call Probability	0.89	1.00	0.62	1.00		0.99		1.00
Max Out Probability	1.00	1.00	0.23	1.00		1.00		0.76

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	76	902	63	33	1026	142	143	26			226	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1905	2000	1695	1905	2000	1695	1924	1919			1890	
Queue Service Time (g_s), s	4.2	43.0	2.0	1.8	52.0	5.0	7.8	1.3			12.4	
Cycle Queue Clearance Time (g_c), s	4.2	43.0	2.0	1.8	52.0	5.0	7.8	1.3			12.4	
Green Ratio (*g/C*)	0.05	0.51	0.51	0.03	0.49	0.49	0.09	0.09			0.14	
Capacity (*c*), veh/h	99	1014	859	67	980	830	176	176			265	
Volume-to-Capacity Ratio (*X*)	0.767	0.890	0.073	0.490	1.047	0.171	0.814	0.148			0.852	
Back of Queue (*Q*), ft/ln (95 th percentile)	120	688	31.4	42.9	1088.7	78.5	210	28.8			275.1	
Back of Queue (*Q*), veh/ln (95 th percentile)	4.8	27.5	1.3	1.7	43.5	3.1	8.4	1.2			11.0	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Uniform Delay (d_1), s/veh	49.7	23.5	13.4	50.3	27.1	15.1	47.3	44.4			44.6	
Incremental Delay (d_2), s/veh	28.0	10.1	0.1	7.8	41.9	0.1	24.6	0.5			15.7	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Control Delay (*d*), s/veh	77.6	33.6	13.4	58.0	69.0	15.2	71.9	44.9			60.2	
Level of Service (LOS)	E	C	B	E	F	B	E	D			E	
Approach Delay, s/veh / LOS	35.6	D		62.3	E		67.8	E		60.2	E	
Intersection Delay, s/veh / LOS	51.9						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	1.81	B	2.14	B	2.15	B
Bicycle LOS Score / LOS	2.21	B	2.47	B	0.77	A	0.86	A

HCS7 Signalized Intersection Results Summary

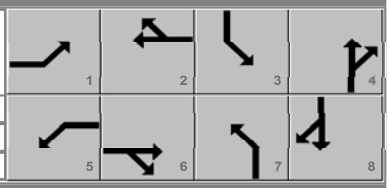
General Information				Intersection Information	
Agency	TPD, Inc.			Duration, h	0.25
Analyst	BH	Analysis Date	8/28/2020	Area Type	Other
Jurisdiction	Brevard County	Time Period	P.M. Peak Projected	PHF	0.94
Urban Street	SR 524	Analysis Year	2023	Analysis Period	1> 7:00
Intersection	SR 524 & Industry Rd	File Name	SR 524 & Industry Rd.xus		
Project Description	Cocoa Apartment				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	541	445	29	39	532	517	33	106	119	410	137	622

Signal Information			
Cycle, s	136.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	4.7	12.7	34.0	4.4	9.7	34.4						
Yellow	4.0	4.0	4.0	4.0	4.0	4.0						
Red	2.0	2.0	2.0	2.0	2.0	2.0						



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2	7	4	3	8
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	29.5	58.7	10.7	40.0	10.4	40.4	26.1	56.1
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	4.9	5.0	4.9	5.0	5.0	5.2	5.0	5.2
Queue Clearance Time (g_s), s	22.7	30.7	4.9	36.0	4.5	8.1	17.5	47.4
Green Extension Time (g_e), s	0.8	0.0	0.0	0.0	0.0	0.0	2.7	2.7
Phase Call Probability	1.00	1.00	0.79	1.00	0.73	1.00	1.00	1.00
Max Out Probability	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.74

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	576	473	31	41	566	550	35	113	95	436	146	587
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1853	1847	1699	1909	2004		1909	2004	1699	1853	2004	1699
Queue Service Time (g_s), s	20.7	28.7	1.5	2.9	34.0		2.5	6.1	6.0	15.5	6.7	45.4
Cycle Queue Clearance Time (g_c), s	20.7	28.7	1.5	2.9	34.0		2.5	6.1	6.0	15.5	6.7	45.4
Green Ratio (*g/C*)	0.17	0.39	0.39	0.03	0.25		0.03	0.25	0.25	0.15	0.37	0.37
Capacity (*c*), veh/h	640	716	659	67	501		62	507	430	549	739	626
Volume-to-Capacity Ratio (*X*)	0.899	0.661	0.047	0.623	1.130		0.568	0.222	0.220	0.795	0.197	0.938
Back of Queue (*Q*), ft/ln (95 th percentile)	401.6	503.5	27.6	73.1	978.2		62.2	135.7	114	297.7	146.4	740.4
Back of Queue (*Q*), veh/ln (95 th percentile)	15.9	18.5	1.1	2.9	38.8		2.5	5.4	4.5	11.8	5.8	29.4
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	55.1	34.3	26.0	64.8	51.0		64.9	40.2	40.2	56.0	29.3	41.5
Incremental Delay (d_2), s/veh	14.8	2.6	0.0	12.8	81.0		11.1	0.3	0.4	3.8	0.2	20.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	69.9	36.9	26.0	77.5	132.0	0.0	76.0	40.5	40.6	59.7	29.4	61.7
Level of Service (LOS)	E	D	C	E	F	A	E	D	D	E	C	E
Approach Delay, s/veh / LOS	54.2	D		67.3	E		45.7	D		56.9	E	
Intersection Delay, s/veh / LOS	58.7						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.16	B	2.56	C	2.30	B	2.29	B
Bicycle LOS Score / LOS	2.27	B	2.40	B	0.89	A	2.42	B