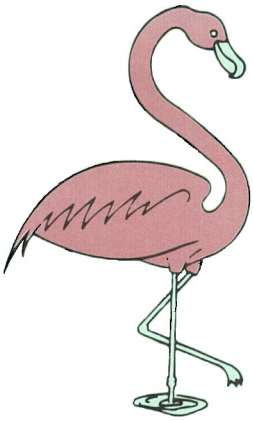
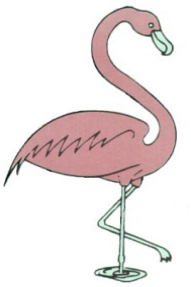
RIVER OAKS OFFICE-WAREHOUSE
TRAFFIC STUDY

CLAY COUNTY, FLORIDA

November 2023



BUCKHOLZ TRAFFIC



BUCKHOLZ TRAFFIC
3585 KORI ROAD
JACKSONVILLE, FLORIDA 32257
(904) 886-2171 jwbuckholz@aol.com

November 1, 2023

Ms. Quoc H. Mai, P.E.
MAI Engineering Services, Inc.
2510 US 1 South / Suite D
St. Augustine, Florida 32086

Re: **New River Oaks Office-Warehouse Traffic Study**

Dear Ms. Roth:

Attached is the new traffic study for the revised development. If there are any questions or comments regarding this study, please contact me.

Sincerely,

PRELIMINARY – FOR INTERNAL REVIEW ONLY

Jeffrey W. Buckholz, P.E., PTOE
Principal

INTRODUCTION

The revised River Oaks development will contain four buildings totaling 76,000 sf of commercial space. Building sizes will be 30,000 sf, 21,000 sf, 15,000 sf and 10,000 sf. These buildings will be located on the south side of Cove Lane approximately ¼ mile west of the US 17/SR 16/Cooks Lane intersection in Clay County, Florida. Two existing businesses will be relocated to the site. Van Up-Fitter will occupy the 30,000 sf building and River Oaks Outdoor will occupy the 15,000 sf building. The 21,000 sf building will be composed of warehouse space whereas the 10,000 sf building will contain 5000 sf of warehouse space and 5000 sf of office space.

Access to the development will be provided via one full access driveway on Cooks Lane. Cooks Lane is a two lane undivided major collector with a posted speed limit of 25 mph. US 17 and SR 16 are both urban principal arterials with an FDOT access management classification of 3. The posted speed limit on SR 16 and US 17 to the south of SR 16 is 45 mph while the posted speed limit on US 17 to the north of SR 16 is 45 mph northbound and 35 mph southbound.

Figure 1 shows the site location and surrounding road network while Appendix A contains the proposed site plan. The development is expected to be constructed and fully occupied by the end of 2026, therefore 2026 was chosen as the design year for this study.

EXISTING TRAFFIC VOLUMES

Weekday peak period manual turning movement counts were conducted by Buckholz Traffic personnel during December of 2022 with school in session at the US 17/SR 16/Cove Lane intersection. These counts, which are provided in Appendix B, were conducted during the weekday AM peak period (6:30 to 8:30 AM) and the weekday PM peak period (3:45 – 6:00 PM). The data was recorded at 15-minute intervals and includes a separate tabulation for trucks and pedestrians. Figure 2 graphically summarizes the AM and PM peak hour counts while Figure 3 summarizes the AM and PM peak period counts.

Appendix C provides daily traffic volumes for four nearby FDOT traffic counting stations. The current Average Daily Traffic (ADT) on Cooks lane is approximately 1600 vehicles per day. Also included in Appendix C are the FDOT seasonal adjustment factors for Clay County.

TRIP GENERATION

Trip generation calculations for the warehouse and office space were carried out using the 11th edition of ITE's Trip Generation Manual and referencing land use codes 150 (Warehousing) and 710 (Office). Tables 1 and 2 contain the associated daily, AM peak hour, and PM peak hour trip generation calculations. Trip generation calculations for the two relocated businesses are provided in Tables 3 and 4. The calculations are based on client-provided activity data. During an average weekday, the development is expected to generate 176 total trips (88 entering and 88 exiting) with 31 trips (23 entering and 8 exiting) occurring during the AM peak hour and 33 trips (8 entering and 25 exiting) occurring during the PM peak hour. All of these trips will be new trips.

SITE TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

Weekday AM and PM peak hour site trips were directionally distributed based on peak period turning movement counts and engineering judgment as shown in Figure 4.

FUTURE TRAFFIC VOLUMES

The expected weekday 2026 peak hour background (No Build) traffic volumes and total (Build) traffic volumes at intersections of interest are graphically depicted in Figures 5 and 6. The No Build traffic volumes were obtained by multiplying the existing traffic volumes by the appropriate FDOT seasonal adjustment factor (1.00) and then by a median annual growth rate of 1.8%. A linear regression analysis of recent FDOT daily traffic counts at nearby traffic counting stations was used to identify this rate (see graphs C-1, C-2, C-3 and C-4 in Appendix C). The 2026 Build traffic volumes were obtained by adding the traffic generated by the new development to the 2026 No Build traffic volumes.

TURN LANE EVALUATION

A formal analysis was made to determine if a right turn lane is warranted on eastbound Cooks Lane at the new Site Driveway. The methodology contained in NCHRP Report 279 was used to conduct this analysis. As is indicated in Figure 7, right turn volumes into the site will not be high enough to warrant an exclusive right turn lane. This result is supported by NCHRP Report 420 which requires 80 right turns per hour to warrant a right turn lane on a 2-lane roadway with a posted speed less than 45 mph.

A formal analysis was also made to determine if an exclusive left turn lane is warranted on westbound Cooks Lane at the Site Drive. The methodology contained in a paper written by M.D. Harmelink entitled: "Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections" was used to conduct this evaluation. The results indicate that left turn volumes under 2026 Build conditions will not be high enough to warrant an exclusive left turn lane at this location. The supporting analysis is provided in Figures 8 and 9.

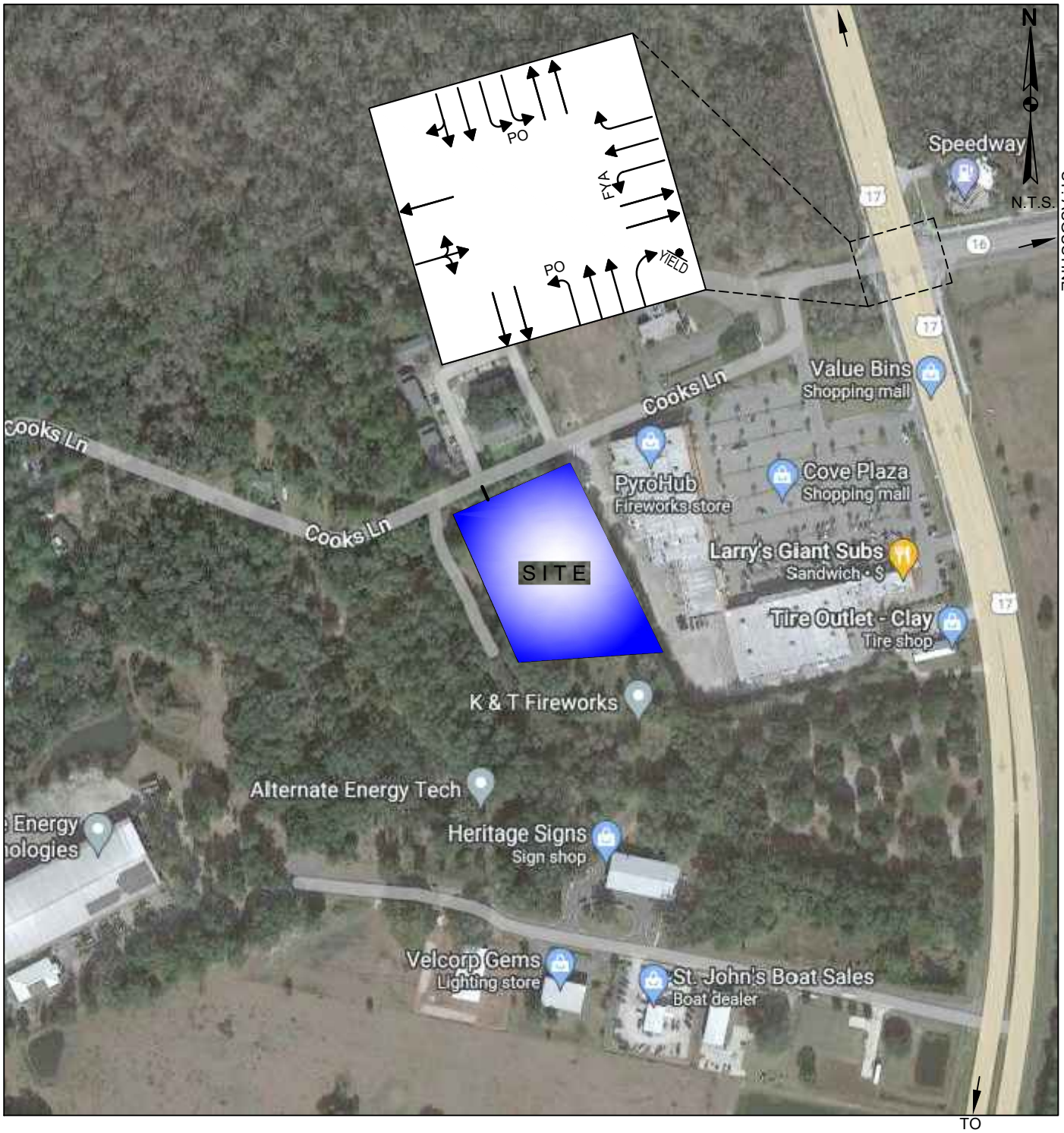
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS

The unsignalized Cooks Lane/Site Drive intersection was analyzed using the two-way stop control methodology contained in the 2023 version of the Highway Capacity Software. Table 3 summarizes the capacity analysis results under 2026 Build conditions with the supporting calculations provided in Appendix D. All minor movements at the Cooks Lane/Site Drive intersection are expected to operate at level of service A or better during both weekday peak hours with minimal queuing and a volume-to-capacity ratio of well less than one.

SIGNALIZED INTERSECTION CAPACITY ANALYSIS

The signalized US 17/SR 16/Cooks Lane intersection was analyzed using the operational methodology contained in the 2023 version of the Highway Capacity Software. The existing traffic signal timings are provided in Appendix E. Table 4 summarizes the capacity analysis results with the supporting calculations provided in Appendix F.

The US 17/SR 16/Cooks Lane intersection currently operates at level of service C during the weekday AM peak hour and level of service D during the PM peak hour and is expected to continue to operate at these levels of service under 2026 Build conditions. With a more balanced set of timings implemented to even-out individual movement levels of service the overall intersection level of service under 2026 Build conditions is expected to be D for both weekday peak hours.



FYA = FLASHING YELLOW ARROW
PO = PROTECTED ONLY LEFT TURN

FIGURE 1

SITE LOCATION

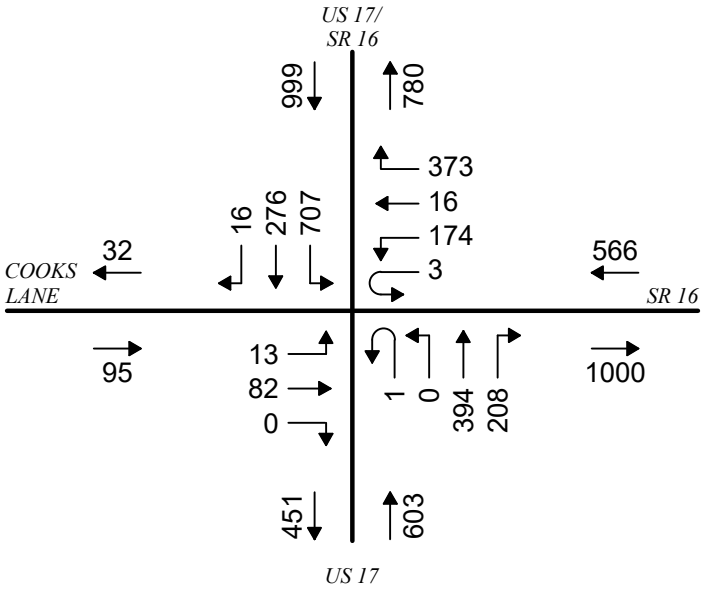
Buckholz Traffic

E:\22-1805\CAD\FIG 01.DWG

N

N.T.S.

6:45-7:45 AM



4:30-5:30 PM

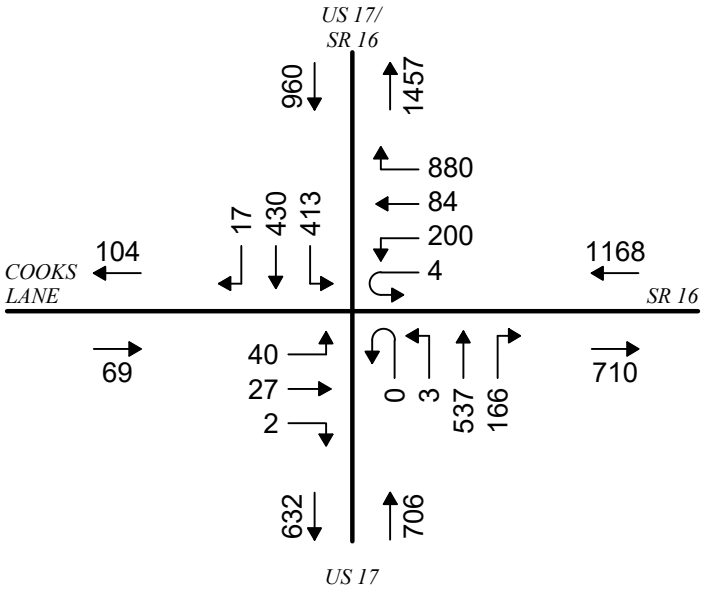


FIGURE 2

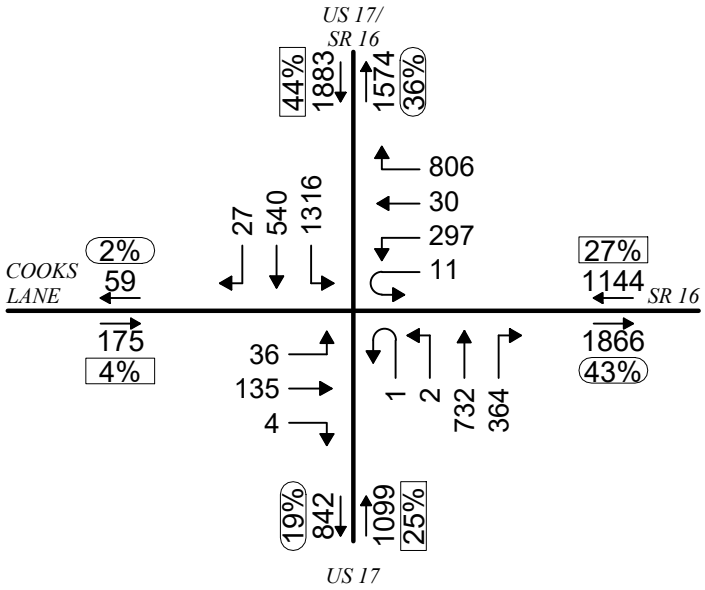
TRAFFIC
COUNTS

WEEKDAY PEAK HOURS

Buckholz Traffic

E:\22-1805\CAD\FIG_02.DWG

6:30-8:30 AM



N

N.T.S.

3:45-6:00 PM

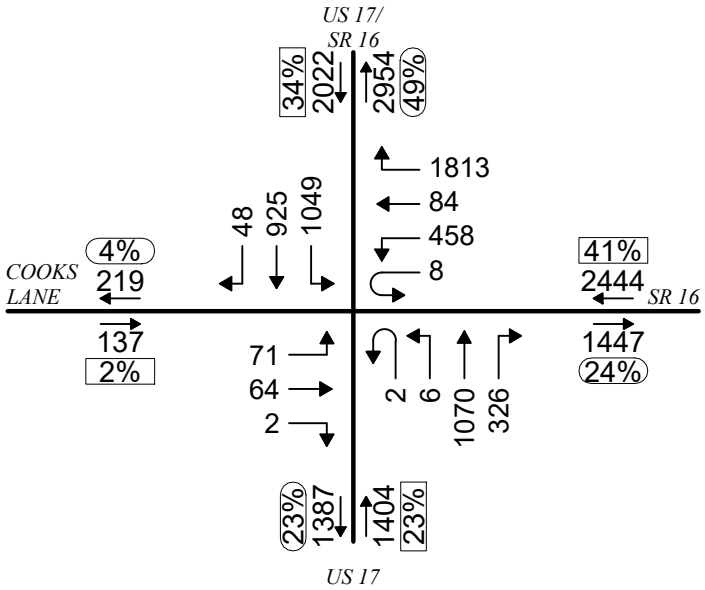


FIGURE 3

TRAFFIC
COUNTS

WEEKDAY PEAK PERIODS

Buckholz Traffic

E:\22-1805\CAD\FIG_03.DWG

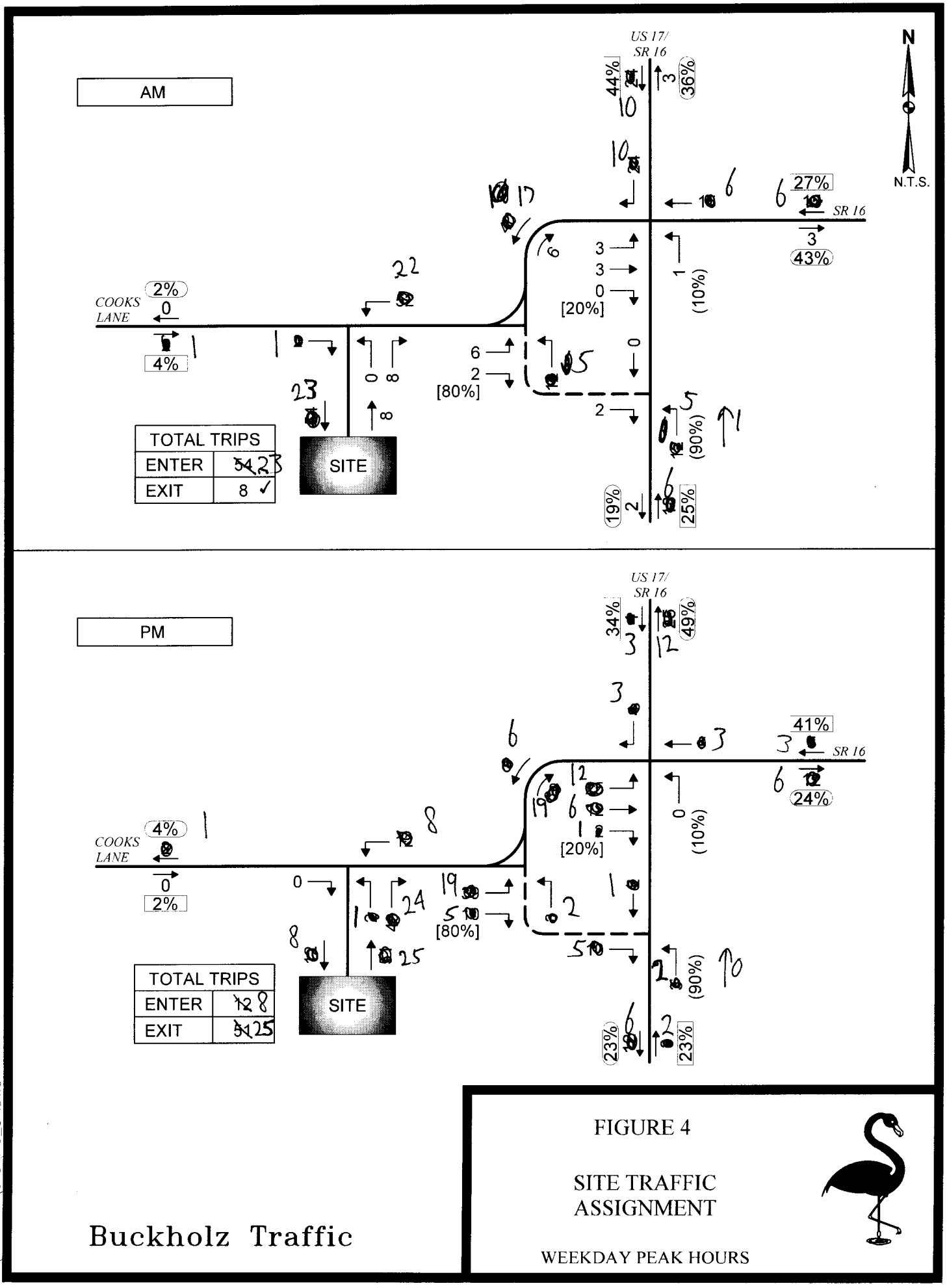


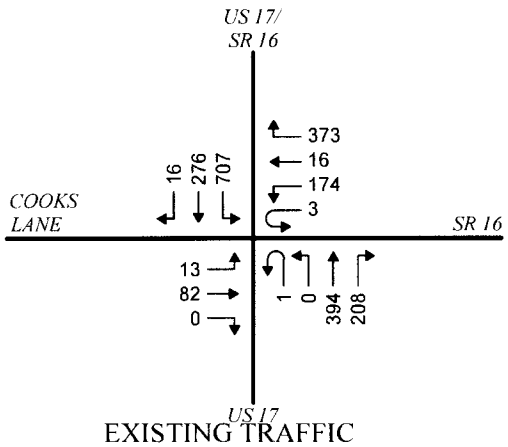
FIGURE 4

SITE TRAFFIC
ASSIGNMENT

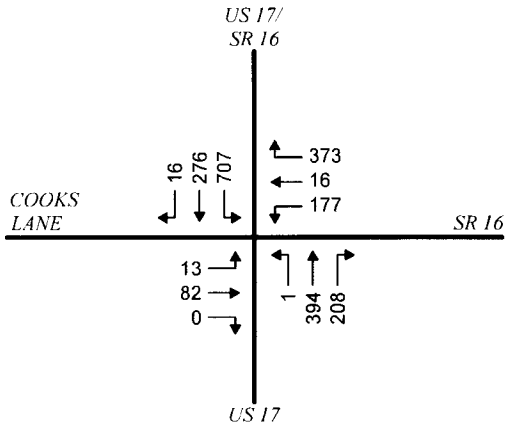
WEEKDAY PEAK HOURS

Buckholz Traffic

E:\22-1805\CAD\FG_04.DWG



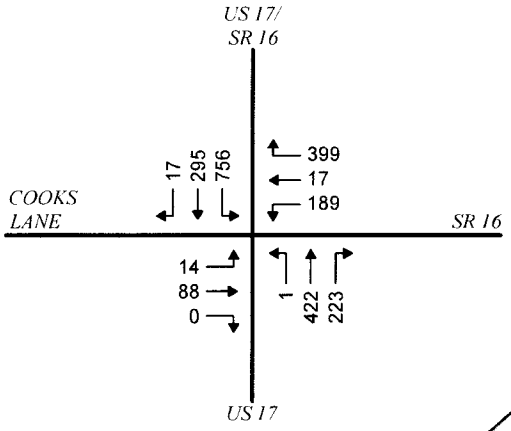
EXISTING TRAFFIC
12/15/22
6:45-7:45 AM



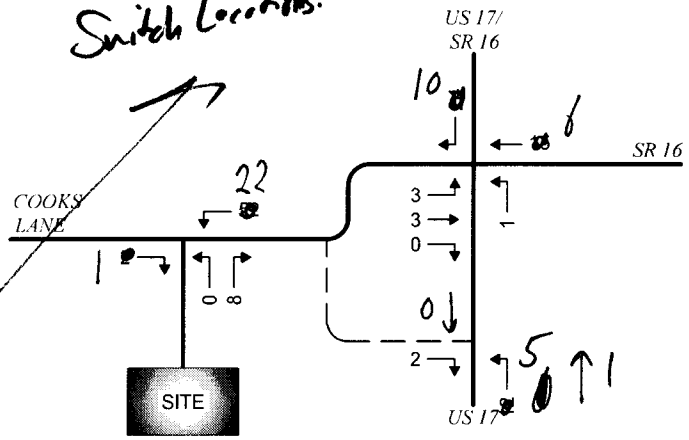
2022 SEASONALLY ADJUSTED TRAFFIC
FDOT SEASONAL CORRECTION FACTOR = 1.00

N

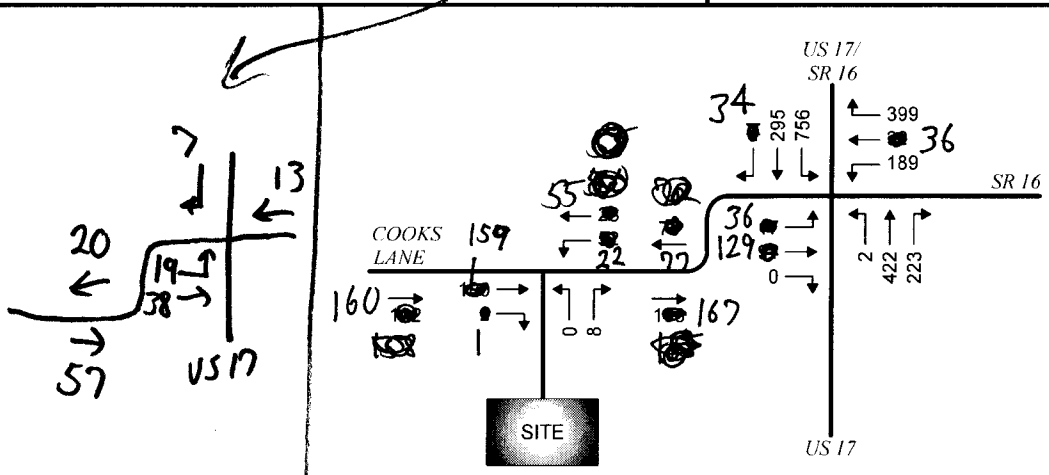
N.T.S.



2026 NO BUILD TRAFFIC
AVERAGE ANNUAL GROWTH RATE = 1.8% (GE=1.07)



SITE TRAFFIC



2026 BUILD TRAFFIC

AYRSHIRE PUD
Phases I & II
TRAFFIC

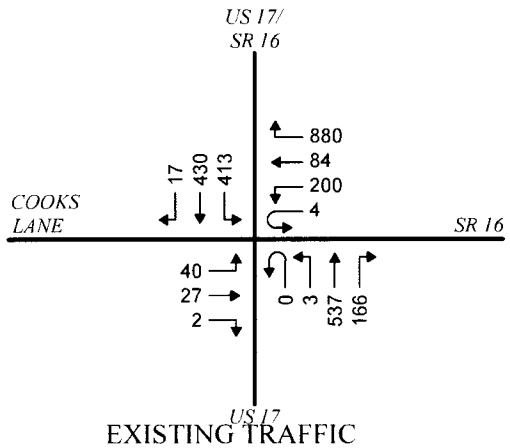
Buckholz Traffic

FIGURE 5

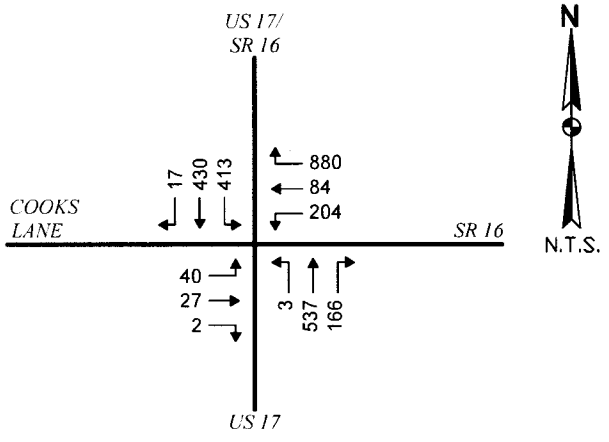
2026 BUILD TRAFFIC
US 17 / SR 16

WEEKDAY AM PEAK HOUR

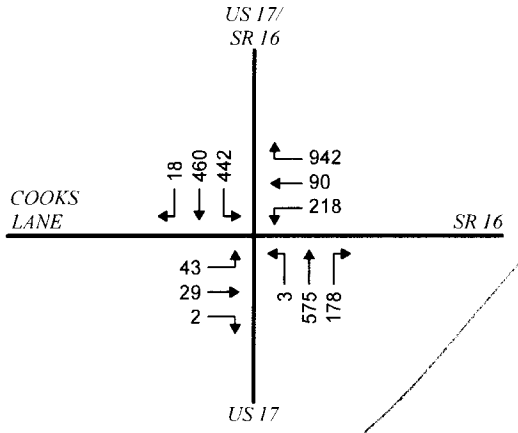
E:\22-1805\CAD\FG_05.DWG



EXISTING TRAFFIC
12/12/22
4:30-5:30 PM

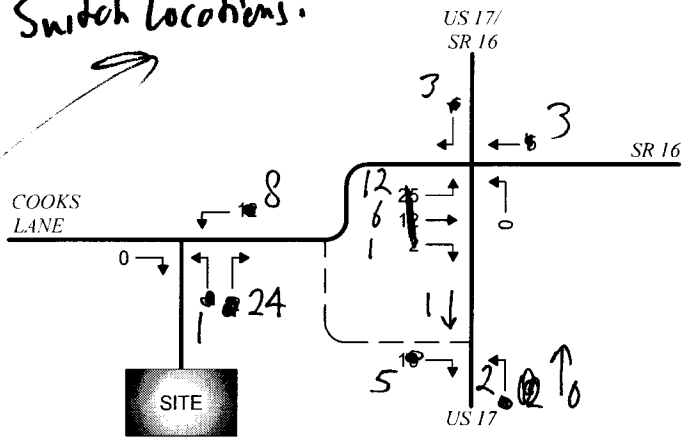


2022 SEASONALLY ADJUSTED TRAFFIC
FDOT SEASONAL CORRECTION FACTOR = 1.00

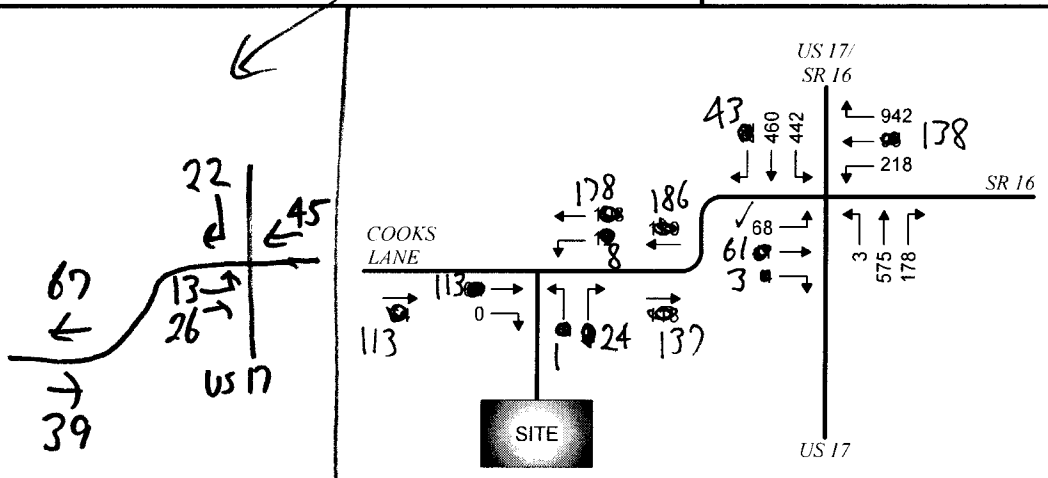


2026 NO BUILD TRAFFIC
AVERAGE ANNUAL GROWTH RATE = 1.8% (GF=1.07)

Switch locations!



SITE TRAFFIC



2026 BUILD TRAFFIC

AYRSHIRE PUD
Phases I & II
TRAFFIC

Buckholz Traffic

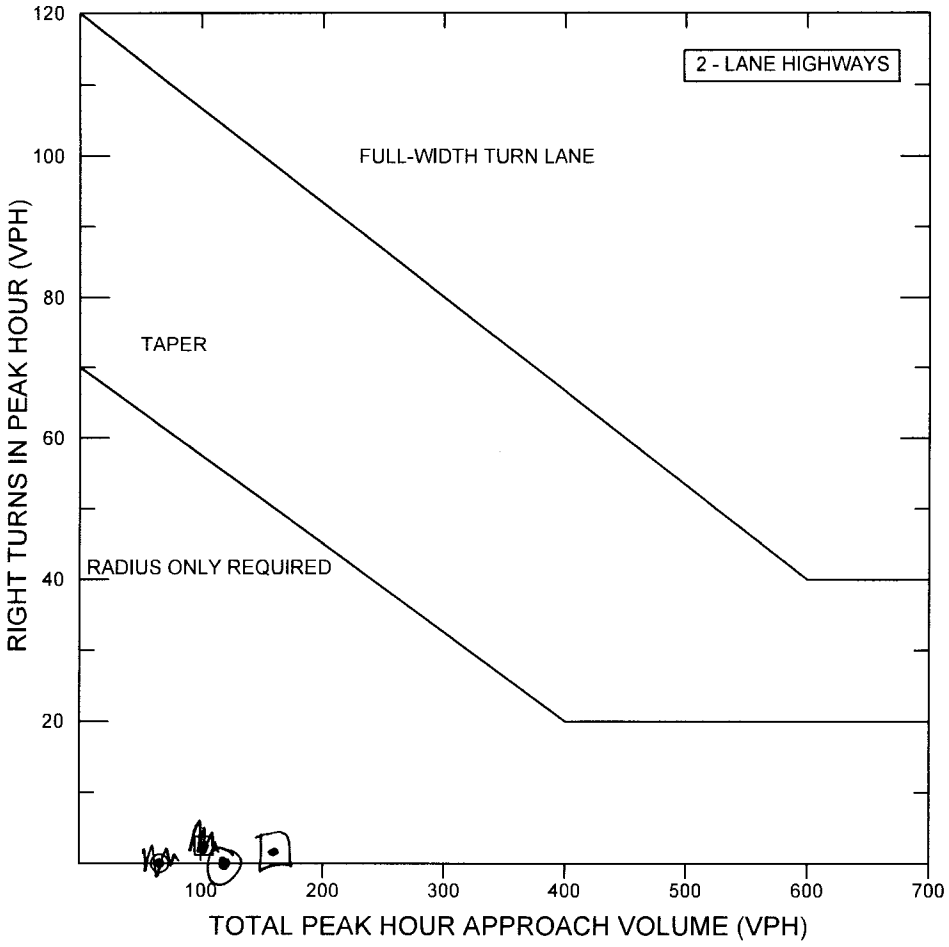
FIGURE 6

2026 BUILD TRAFFIC
US 17 / SR 16

WEEKDAY PM PEAK HOUR

E:\22-1805\CAD\FG_06.DWG

EASTBOUND COOKS LANE @ SITE DRIVEWAY



NOMOGRAPH FOR RIGHT TURN LANES

SOURCE: TRANSPORTATION RESEARCH BOARD NCHRP REPORT #279

☐ WEEKDAY AM PEAK HOUR

V_A	160
V_R	1

◉ WEEKDAY PM PEAK HOUR

V_A	113
V_R	0

NCHRP 420	
2 LANE	≤ 45 MPH

& 0 < 80 REQUIRED

FIGURE 7

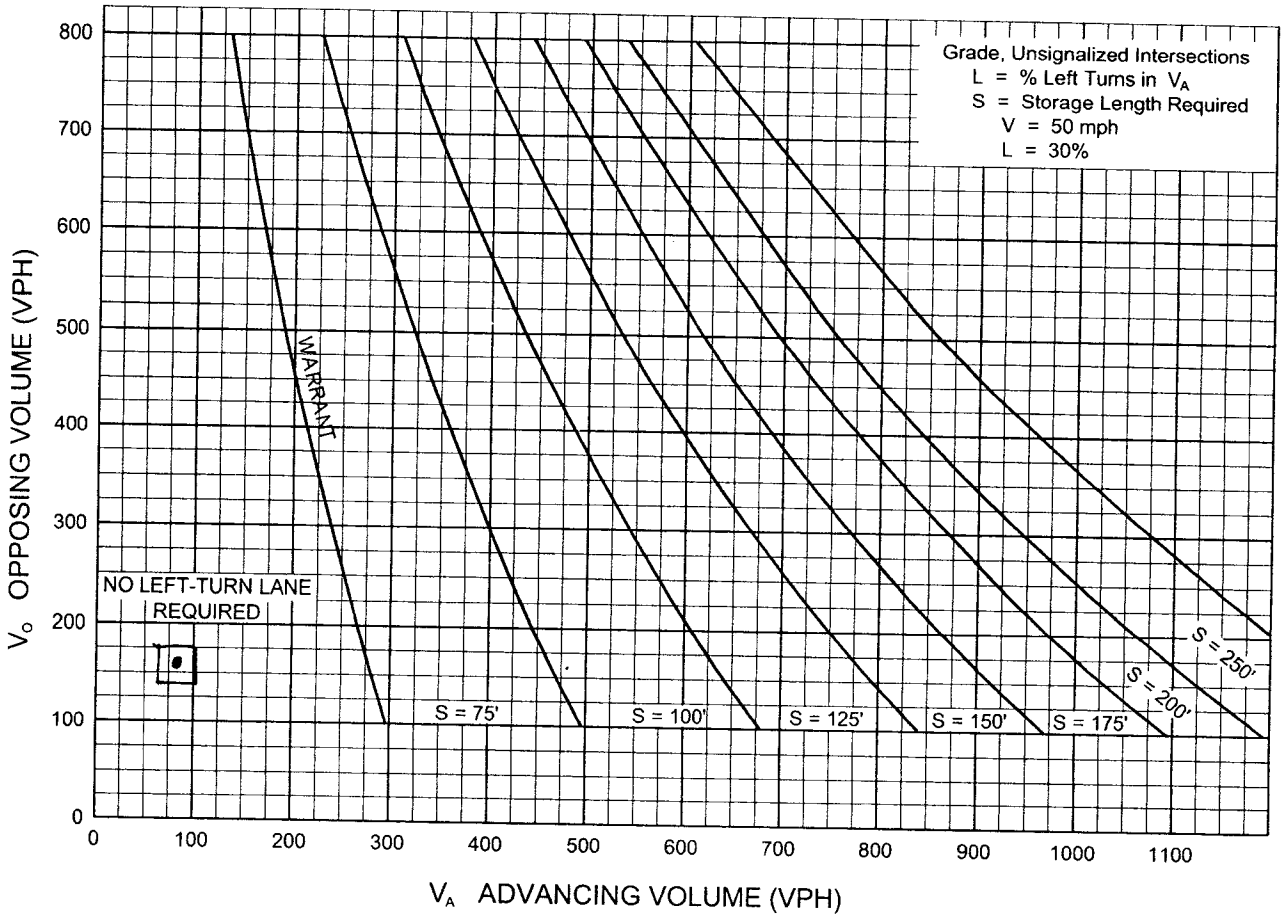
RIGHT TURN LANE ANALYSIS

2025 BUILD TRAFFIC

E:\22-1805\CAD\FIG_07.DWG

Buckholz Traffic

WESTBOUND COOKS LANE AT SITE DRIVEWAY



WARRANT FOR LEFT-TURN LANES ON TWO-LANE HIGHWAYS

☒ AM PEAK HOUR

V_A =	577
V_o =	168
V_L =	22
%LT = $\frac{V_L}{V_A}$ =	29 %

⊙ PM PEAK HOUR

V_A =	-
V_o =	-
V_L =	-
%LT = $\frac{V_L}{V_A}$ =	__ %

FIGURE 8

LEFT TURN LANE ANALYSIS

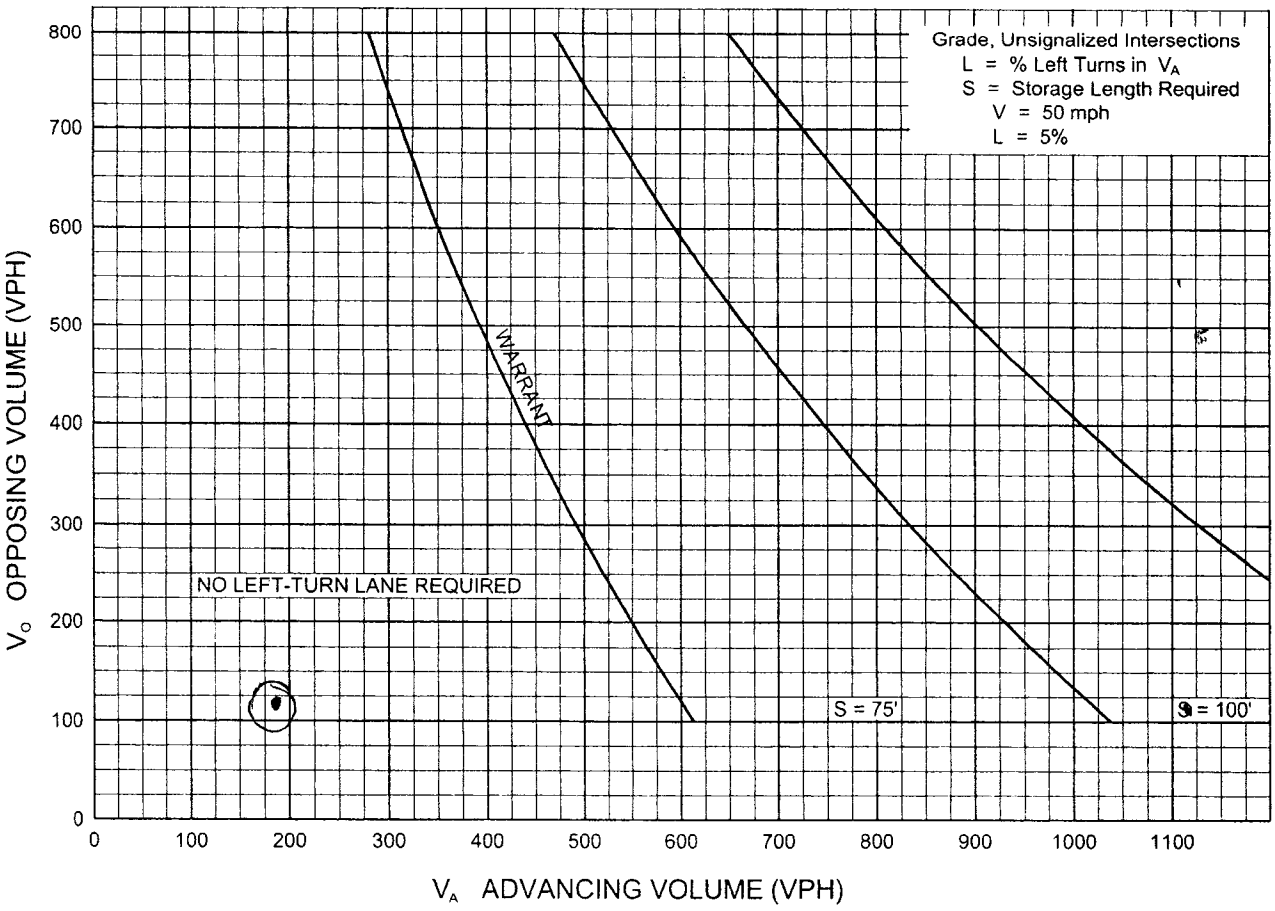
2025 BUILD TRAFFIC

SOURCE: HARMELINK

J:\SYM\WAR_LTL5.dwg Date: 10-27-15 T:14:04 By: AVDelacruz

Buckholz Traffic

WESTBOUND COOKS LANE AT SITE DRIVEWAY



WARRANT FOR LEFT-TURN LANES ON TWO-LANE HIGHWAYS

⊡ AM PEAK HOUR	◬ MIDDAY PEAK HOUR	⊙ PM PEAK HOUR
V_A = -	V_A = -	V_A = 186
V_O = -	V_O = -	V_O = 113
V_L = -	V_L = -	V_L = 8
%LT = $\frac{V_L}{V_A}$ = $\frac{-}{-}$ = 0.0%	%LT = $\frac{V_L}{V_A}$ = $\frac{-}{-}$ = 0.0%	%LT = $\frac{V_L}{V_A}$ = $\frac{8}{186}$ = 4%

FIGURE 9

LEFT TURN
LANE ANALYSIS

2025 BUILD TRAFFIC

SOURCE: HARMELINK

TABLE 1

TRIP GENERATION CALCULATIONS

WAREHOUSING

Land Use Code 150

T = Number of Vehicle Trip Ends

Size of Building = 26,000 gsf (X = 26)

TIME PERIOD	TOTAL TRIP GENERATION EQUATION	TOTAL TRIP ENDS	PERCENT ENTERING	PERCENT EXITING	TOTAL TRIP ENDS ENTERING	TOTAL TRIP ENDS EXITING
AVERAGE WEEKDAY						
Daily	T = 1.71 (X)	44	50%	50%	22	22
AM Peak Hour	T = 0.17 (X)	4	77%	23%	3	1
PM Peak Hour	T = 0.18 (X)	5	28%	72%	1	4

SOURCE: Institute of Transportation Engineers, "Trip Generation", 11th Edition (2021)

TABLE 2

TRIP GENERATION CALCULATIONS

GENERAL OFFICE BUILDING

Land Use Code 710

T = Number of Vehicle Trip Ends

Size of Building = 5000 gsf (X = 5)

TIME PERIOD	TRIP GENERATION EQUATION	**TOTAL** TRIP ENDS	PERCENT ENTERING	PERCENT EXITING	**TOTAL** TRIP ENDS ENTERING	**TOTAL** TRIP ENDS EXITING
AVERAGE WEEKDAY						
Daily	Ln(T) = 0.87 Ln(X) + 3.05	86	50%	50%	43	43
AM Peak Hour	Ln(T) = 0.86 Ln(X) + 1.16	13	88%	12%	11	2
PM Peak Hour	Ln(T) = 0.83 Ln(X) + 1.29	14	17%	83%	2	12

SOURCE: Institute of Transportation Engineers, "Trip Generation", 11th Edition (2021)

TABLE 3
VAN UP-FITTER
TRIP GENERATION CALCULATIONS

TRIPS	On-Site Employees 5	Customers 5 per month	Package Delivery 12 per month	Vehicle Pick-Up/Drop-Off 5 per month	EXISTING TOTAL	Expected Percentage Increase	**FUTURE TOTAL**
Daily	5 x 4 = 20 10 ENTER, 10 EXIT	2 1 ENTER, 1 EXIT	2 1 ENTER, 1 EXIT	2 1 ENTER, 1 EXIT	22 11 ENTER, 11 EXIT	10'%	**24** **12 ENTER, 12 EXIT**
AM Peak	5 x 1 = 5 ENTER	0	0	0	5 5 ENTER, 0 EXIT	10'%	**6** **6 ENTER, 0 EXIT**
PM Peak	5 x 1 = 5 EXIT	0	0	0	5 0 ENTER, 5 EXIT	10'%	**6** **0 ENTER, 6 EXIT**

BUCKHOLZ TRAFFIC

TABLE 4
RIVER OAKS OUTDOOR
TRIP GENERATION CALCULATIONS

TRIPS	On-Site Employees	Customers	Package Delivery	Company Vehicles	EXISTING TOTAL	Expected Percentage Increase	**FUTURE TOTAL**
	2	0	5 per month	5 per day			
Daily	2 x 4 = 8 4 ENTER, 4 EXIT	0	2 1 ENTER, 1 EXIT	10 5 ENTER, 5 EXIT	20 10 ENTER, 10 EXIT	10'%	**22** **11 ENTER, 11 EXIT**
AM Peak	2 x 1 = 2 ENTER	0	0	4 EXIT	6 2 ENTER, 4 EXIT	10'%	**8** **3 ENTER, 5 EXIT**
PM Peak	2 x 1 = 2 EXIT	0	0	4 ENTER	6 4 ENTER, 2 EXIT	10'%	**8** **5 ENTER, 3 EXIT**

BUCKHOLZ TRAFFIC

TABLE 5

UNSIGNALIZED INTERSECTION CAPACITY RESULTS

COOKS LANE / SITE DRIVE

2026 BUILD CONDITIONS	**WEEKDAY AM PEAK HOUR**			
Movement	LOS	Delay	v/c Ratio	95th % Queue (vehicles)
Westbound Left Turn	A	7.6 sec/veh	0.02	1
Northbound Approach	A	9.1 sec/veh	0.01	1

2026 BUILD CONDITIONS	**WEEKDAY PM PEAK HOUR**			
Movement	LOS	Delay	v/c Ratio	95th % Queue (vehicles)
Westbound Left Turn	A	7.5 sec/veh	0.01	1
Northbound Approach	A	9.1 sec/veh	0.03	1

TABLE 6
SUMMARY OF SIGNALIZED INTERSECTION CAPACITY RESULTS
US 17 / SR 16 / COOKS LANE

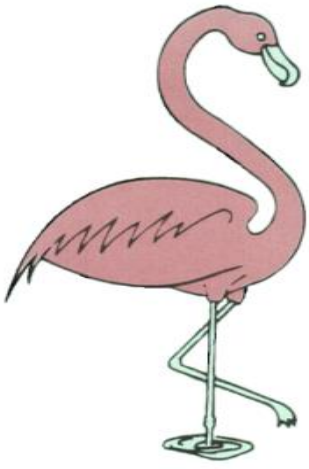
		EXISTING CONDITIONS				
	Highest v/c Ratio	Highest Queue Storage Ratio	Worst Movement Delay & LOS	Intersection Delay & LOS	Approach LOS	Cycle Length
AM PEAK HOUR	0.82 NBRT	0.99 NBRT	NBLT 168.5 sec/veh **LOS F**	30.8 sec/veh LOS C	NB/SB: D/C EB/WB: D/C	99 sec
PM PEAK HOUR	0.97 WBRT	0.52 NBRT	NBLT 106.3 sec/veh **LOS F**	37.9 sec/veh LOS D	NB/SB: D/C EB/WB: D	106 sec

		2026 BUILD CONDITIONS				
	Highest v/c Ratio	Highest Queue Storage Ratio	Worst Movement Delay & LOS	Intersection Delay & LOS	Approach LOS	Cycle Length
AM PEAK HOUR	0.82 SBLT	0.83 NBRT	NBLT 125.6 sec/veh **LOS F**	32.9 sec/veh LOS C	NB/SB: D/C EB/WB: D/C	105 sec
PM PEAK HOUR	**1.02** WBRT	0.95 EBT	NBLT 112.9 sec/veh **LOS F** WBRT 58.3 sec/veh **LOS F**	44.7 sec/veh LOS D	NB/SB: D/C EB/WB: D	117 sec

		2026 BUILD CONDITIONS – BALANCED TIMINGS				
	Highest v/c Ratio	Highest Queue Storage Ratio	Worst Movement Delay & LOS	Intersection Delay & LOS	Approach LOS	Cycle Length
AM PEAK HOUR	0.78 SBLT	**1.23** NBRT	WBLT 69.5 sec/veh **LOS E**	53.8 sec/veh LOS D	NB/SB: **E** EB/WB: **E**/D	193 sec
PM PEAK HOUR	0.99 WBRT	**1.07** EBT	NBT 55.4 sec/veh **LOS E**	50.0 sec/veh LOS D	NB/SB: D EB/WB: **E**/D	140 sec

APPENDIX A

SITE PLAN



LOCATION MAP

Legend

Proposed Location

N
W
E
S

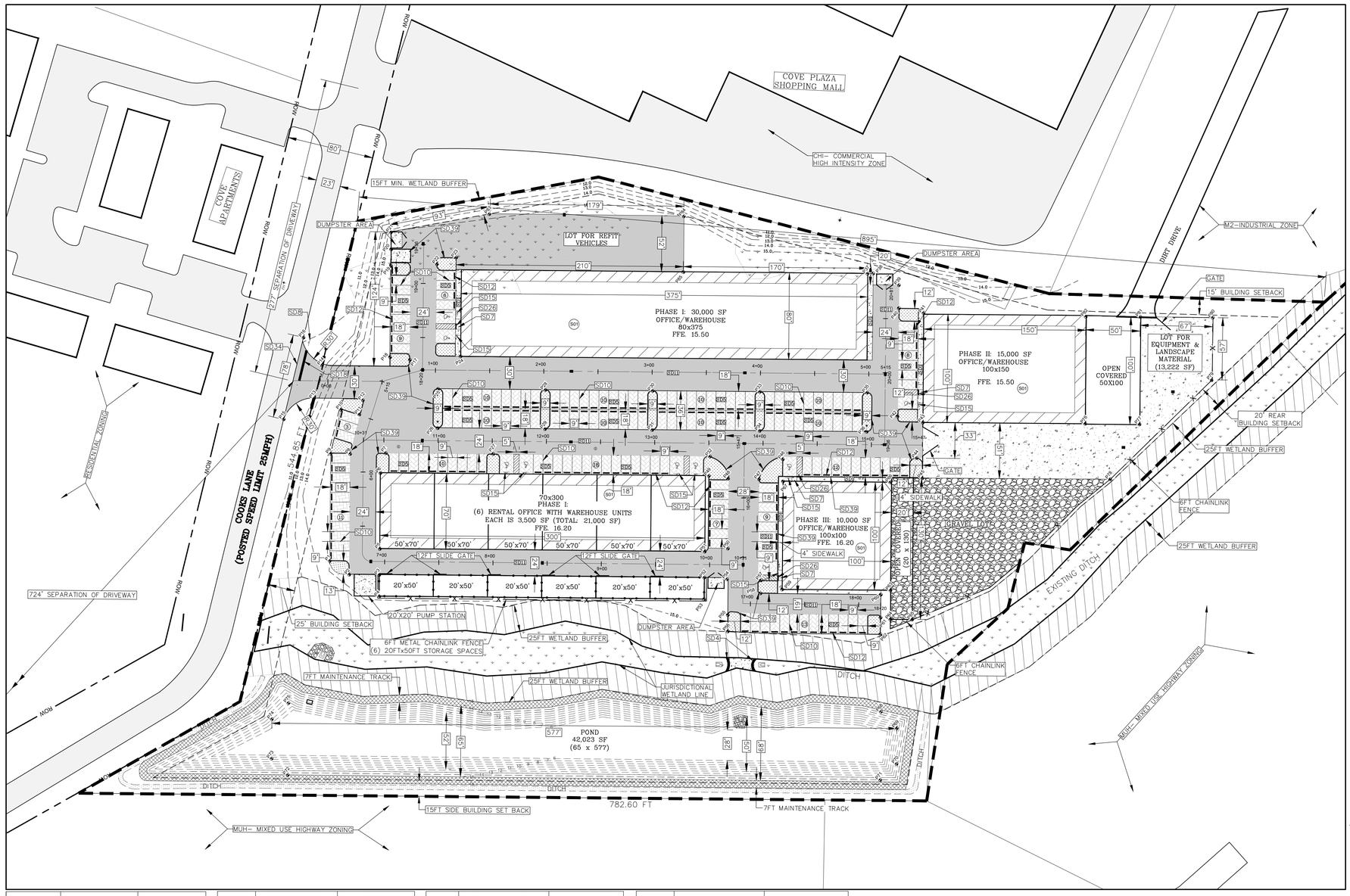
MAI ENGINEERING SERVICES, INC.

2510 U.S. Highway 1, Ste. D
St. Augustine, FL 32086
Ph: (904) 794-1760 • Fax: (904) 794-1768
E-mail: quoc@maiengineer.com

LOCATION MAP

1609 S ORANGE AVE.

GREEN COVE SPRINGS, FL.



GRAPHIC SCALE

50 0 50 100 200

(IN FEET)
1 inch = 50 ft.

SITE DETAILS

SD1	CONCRETE SIDEWALK DETAIL
SD4	18" STANDARD CURB & GUTTER (REVERSE PITCH)
SD5	PAVERS PARKING DETAIL
SD7	WHEELCHAIR RAMP IN SIDEWALK
SD8	STOP SIGN
SD9	WHEELCHAIR RAMP IN SIDEWALK AT CURB RETURN
SD10	PARKING PAINT STRIPPING
SD11	TYPICAL PAVEMENT SECTION
SD12	PRECAST CONCRETE WHEEL STOP
SD15	ACCESSIBLE PARKING SIGN
SD16	VALLEY CURB
SD18	STOP BAR
SD26	DETECTABLE WARNING DETAIL
SD34	CONNECTION TO EXISTING PAVEMENT
SD36	CONCRETE PAVEMENT SECTION
SD39	HEADER CURB
SD45	HEAVY PAVEMENT SECTION

SITE NOTES

S01 BUILDING – SEE ARCHITECTURAL PLANS (TBD BY OTHERS)

DEVELOPMENT DATA

MAX ALLOWABLE IMPERVIOUS COVERAGE: 70%
PROPOSED IMPERVIOUS COVERAGE: 49.6%
BUILDING SETBACK: FRONT 25FT, SIDE 15FT, REAR 20FT
ROAD DRIVEWAY CONNECTION POSTED SPEED LIMIT 25MPH
MINIMUM DRIVEWAY CONNECTION SPACING: 245FT.

TOTAL SITE AREA = 342,102SF = 7.84 ACRES
TOTAL PROPOSED IMPERVIOUS AREA = 161,811SF (INCLUDE BUILDING)
IMPERVIOUS COVERAGE = 47.30 %
TOTAL PROPOSED BUILDING AREA = 76,000SF
TOTAL PROPOSED CONCRETE AREA = 19,497SF
FAR = 14.9%

PHASE I:
PROPOSED BUILDING AREA: 51,000SF
(WAREHOUSE: 35,000SF; OFFICE: 16,000SF)
PROPOSED TOTAL PAVEMENT AREA: 62,733SF

PHASE II:
PROPOSED BUILDING AREA: 15,000SF
(WAREHOUSE: 10,000SF; OFFICE: 5,000SF)
PROPOSED TOTAL PAVEMENT AREA: 0SF

PHASE III:
PROPOSED BUILDING AREA: 10,000SF
(WAREHOUSE: 5,000SF; OFFICE: 5,000SF)
PROPOSED TOTAL PAVEMENT AREA: 1,806SF

GENERAL PROJECT INFORMATION

PARCEL #: 38–06–26–016564–002
ADDRESS: 1609 S ORANGE AVE.
FUTURE LAND USE: MUH–MIXED USE HIGHWAY
ZONING: MUH–MIXED USE HIGHWAY

STATEMENT OF USE: OFFICE AND INDUSTRIAL WAREHOUSE AND OFFICES.

PARCEL AREA: 8.88 ACRES

CURRENT LAND OWNER:
WILLIAM KRIEG
RIVER OAKS OUTDOOR, LLC
P.O. BOX 7902
JACKSONVILLE, FL 32238

DESIGN ENGINEER AGENT:
QUOC H. MAI, P.E. #64006
MAI ENGINEERING SERVICES, INC.
2510 US 1 S, SUITE D
ST. AUGUSTINE, FL 32086

GENERAL NOTES

1. ALL DIMENSIONS ARE LISTED TO THE EDGE OF PAVEMENT AND/OR FACE OF CURB.
2. ALL RADII ARE 5' UNLESS OTHERWISE NOTED.
3. SCREENING OF ALL MECHANICAL EQUPMENT SHALL BE IN ACCORDANCE WITH SJC LDC SEC.6.01.03.H.2. AND 6.06.04.B.9.
4. DUMPSTER/SOLID WASTE SCREENINGS STANDARDS SHALL BE IN ACCORDANCE WITH SJC LDC SEC 6.06.04.B.8.
5. SCREENING OF OUTDOOR STORAGE AREAS SHALL BE IN ACCORDANCE WITH SJC LDC SEC 6.06.04.B.7.

PARKING CALCULATIONS

PARKING REQUIREMENT PER CITY CODE:
OFFICE: 1/250SF
WAREHOUSE: 1/5,000SF

TOTAL PARKING REQUIRED = 114 SPACES
TOTAL PARKING PROVIDED = 186 SPACES
TOTAL ACCESSIBLE SPACES = 9 SPACES

PHASE I:
OFFICE PARKING REQUIRED = 16,000/250 = 64 SPACES
WAREHOUSE PARKING REQUIRED = 35,000/5,000 = 7 SPACES
TOTAL PARKING REQUIRED = 71 SPACES

PHASE II:
OFFICE PARKING REQUIRED = 5,000/250 = 20 SPACES
WAREHOUSE PARKING REQUIRED = 10,000/5,000 = 2 SPACES
TOTAL 2 PHASES REQUIRED = 22 SPACES

PHASE III:
OFFICE PARKING REQUIRED = 5,000/250 = 20 SPACES
WAREHOUSE PARKING REQUIRED = 5,000/5,000 = 1 SPACES
TOTAL 3 PHASES REQUIRED = 21 SPACES

CONTROL POINTS	NORTHING	EASTING
P1	2053825.617'	441068.556'
P2	2053803.647'	441069.5256'
P3	2053781.566'	441086.3012'
P4	2053769.493'	441070.3665'
P5	2053795.889'	441105.5487'
P6	2053838.148'	441161.3206'
P7	2053845.377'	441178.9383'
P8	2053871.042'	441158.3004'
P9	2053885.383'	441147.4339'
P10	2053902.706'	441185.4675'
P11	2053886.526'	441192.3233'
P12	2053892.066'	441204.7332'
P13	2053928.702'	441178.3726'
P14	2053941.648'	441207.3143'
P15	2053939.184'	441146.2791'
P16	2053970.784'	441217.1793'
P17	2053880.379'	441260.6959'
P18	2053896.435'	441251.6423'
P19	2053948.00'	441318.6799'
P20	2053956.288'	441331.0936'
P21	2053966.203'	441343.2669'
P22	2053920.019'	441352.290'
P23	2053901.236'	441357.5684'
P24	2053850.863'	441299.2665'
P25	2053846.498'	441259.3833'
P26	2053824.751'	441230.6171'
P27	2053766.429'	441318.9023'
P28	2053767.65'	441319.1244'
P29	2053745.841'	441290.4042'
P30	2053688.741'	441378.9117'
P31	2053666.963'	441350.1685'
P32	2053606.567'	441359.2422'
P33	2053609.893'	441438.6527'
P34	2053587.957'	441410.0286'
P35	2053531.014'	441498.4169'
P36	2053509.221'	441469.6853'
P37	2053600.195'	441588.9686'
P38	2053580.517'	441567.6369'
P39	2053565.24'	441590.9545'
P40	2053552.173'	441574.0863'
P41	2053531.546'	441584.4591'
P42	2053492.224'	441494.1761'
P43	2053470.297'	441503.9465'
P44	2053454.809'	441474.4115'
P45	2053439.226'	441462.9688'
P46	2053551.899'	441398.1857'
P47	2053558.103'	441370.263'
P48	2053580.95'	441353.2832'
P49	2053596.50'	441344.4181'
P50	2053541.742'	441301.9651'
P51	2053556.867'	441286.657'
P52	2053542.529'	441267.4212'
P53	2053530.455'	441251.4863'
P54	2053524.986'	441278.9825'
P55	2053504.195'	441253.3578'
P56	2053495.11'	441241.2275'
P57	2053499.539'	441297.2689'
P58	2053492.585'	441287.4821'
P59	2053478.94'	441302.6199'
P60	2053403.919'	441354.4416'
P61	2053391.155'	441337.5718'
P62	2053381.763'	441325.1591'
P63	2053399.274'	441362.9827'
P64	2053383.053'	441341.5725'
P65	2053366.966'	441353.7605'
P66	2053460.31'	441441.8898'
P67	2053539.183'	441382.1271'
P68	2053337.854'	441268.7599'
P69	2053316.924'	441265.807'
P70	2053297.001'	441239.5135'
P71	2053299.897'	441218.507'
P72	2053735.694'	440888.3013'
P73	2053756.701'	440891.1971'
P74	2053778.717'	440920.2538'
P75	2053775.746'	440941.3175'
P76	2053350.958'	441594.5376'
P77	2053310.866'	441624.7254'
P78	2053301.423'	441568.0198'
P79	2053283.074'	441697.6143'
P80	2053317.502'	441744.0686'
P81	2053370.731'	441703.7387'
P82	2053410.845'	441673.1995'
P83	2053904.571'	441412.0847'
P84	2053761.217'	441520.0993'
P85	2053735.642'	441486.3443'

2510 US 1 SOUTH SUITE D
ST. AUGUSTINE, FL 32086
PHONE (904)794–1760
FAX (904)794–1768
quoc@maiengineer.com

MAI ENGINEERING SERVICES, INC.

LICENSED ENGINEER
QUOC H. MAI
FL.#64006 CA#28162

REVISIONS

#	DESCRIPTION	DATE
1		
2		
3		
4		
5		

SHEET TITLE: SITE PLAN

RIVER OAKS INDUSTRIAL PARK

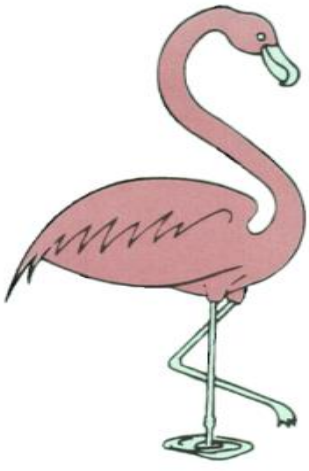
GREEN COVE SPRINGS, FLORIDA

PREPARED FOR
RIVER OAKS OUTDOOR, LLC

DSGN BY:	QHM
DWG BY:	GMG
CHK BY:	QHM
DATE:	12/9/2022
JOB No.:	1369
SHEET No.:	7

APPENDIX B

TURNING MOVEMENT COUNTS



JW BUCKHOLZ TRAFFIC ENGINEERING INC.

DAY: THURSDAY
DATE: 12/15/22
WEATHER: CLOUDY & LT RAIN
BEGIN TIME (MILITARY): 06:30 Hrs

MANUAL TURNING MOVEMENTS COUNT
US 17 @ SR 16/COOKS LANE
CLAY COUNTY, FLORIDA

Site Code : 12152201
Start Date: 12/15/22
File I.D. : 12152203
Page : 1

AUTOMOBILES, COMMERCIAL VEHICLES

	US 17 From North				SR 16 From East				US 17 From South				COOKS LANE From West				
	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Total
Date 12/15/22																	
06:30	170	65	1	0	28	2	89	5	0	83	64	0	3	25	0	0	535
06:45	194	83	2	0	37	5	76	0	0	98	73	0	2	20	0	0	590
07:00	186	47	4	0	44	5	75	1	0	111	51	0	5	27	0	0	556
07:15	180	77	7	0	40	3	114	2	0	85	42	1	3	25	0	0	579
Hr Total	730	272	14	0	149	15	354	8	0	377	230	1	13	97	0	0	2260
07:30	147	69	3	0	53	3	108	0	0	100	42	0	3	10	0	0	538
07:45	166	78	1	0	39	8	105	1	0	86	34	0	7	8	1	0	534
08:00	139	65	5	0	32	2	113	1	0	94	34	0	7	9	2	0	503
08:15	134	56	4	0	24	2	126	1	2	75	24	0	6	11	1	0	466
Hr Total	586	268	13	0	148	15	452	3	2	355	134	0	23	38	4	0	2041
TOTAL	1316	540	27	0	297	30	806	11	2	732	364	1	36	135	4	0	4301

Peak Hour Analysis By Entire Intersection for the Period: 06:45 to 07:45 on 12/15/22

Peak start	06:45				06:45				06:45				06:45				
Volume	707	276	16	0	174	16	373	3	0	394	208	1	13	82	0	0	
Percent	71%	28%	2%	0%	31%	3%	66%	1%	0%	65%	34%	0%	14%	86%	0%	0%	
Pk total	999				566				603				95				
Highest	06:45				07:30				06:45				07:00				
Volume	194	83	2	0	53	3	108	0	0	98	73	0	5	27	0	0	
Hi total	279				164				171				32				
PHF	.90				.86				.88				.74				

JW BUCKHOLZ TRAFFIC ENGINEERING INC.

DAY: THURSDAY
DATE: 12/15/22
WEATHER: CLOUDY & LT RAIN
BEGIN TIME (MILITARY): 06:30 Hrs

MANUAL TURNING MOVEMENTS COUNT
US 17 @ SR 16/COOKS LANE
CLAY COUNTY, FLORIDA

Site Code : 12152201
Start Date: 12/15/22
File I.D. : 12152203

AUTOMOBILES

	US 17 From North				SR 16 From East				US 17 From South				COOKS LANE From West				
	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Total
Date 12/15/22																	
06:30	153	59	0	0	24	2	84	5	0	75	55	0	3	23	0	0	483
06:45	184	72	1	0	30	5	71	0	0	87	61	0	2	20	0	0	533
07:00	166	42	4	0	29	2	72	1	0	103	39	0	5	26	0	0	489
07:15	161	71	6	0	31	3	106	2	0	79	30	1	3	24	0	0	517
Hr Total	664	244	11	0	114	12	333	8	0	344	185	1	13	93	0	0	2022
07:30	129	54	2	0	47	3	91	0	0	91	35	0	3	9	0	0	464
07:45	148	71	1	0	33	7	93	1	0	74	24	0	6	7	1	0	466
08:00	128	47	5	0	24	2	95	0	0	80	32	0	6	7	1	0	427
08:15	118	49	3	0	21	2	108	1	2	63	15	0	6	11	0	0	399
Hr Total	523	221	11	0	125	14	387	2	2	308	106	0	21	34	2	0	1756
TOTAL	1187	465	22	0	239	26	720	10	2	652	291	1	34	127	2	0	3778

Peak Hour Analysis By Entire Intersection for the Period: 06:45 to 07:45 on 12/15/22

Peak start	06:45				06:45				06:45				06:45				
Volume	640	239	13	0	137	13	340	3	0	360	165	1	13	79	0	0	
Percent	72%	27%	1%	0%	28%	3%	69%	1%	0%	68%	31%	0%	14%	86%	0%	0%	
Pk total	892				493				526				92				
Highest	06:45				07:15				06:45				07:00				
Volume	184	72	1	0	31	3	106	2	0	87	61	0	5	26	0	0	
Hi total	257				142				148				31				
PHF	.87				.87				.89				.74				

JW BUCKHOLZ TRAFFIC ENGINEERING INC.

DAY: THURSDAY
DATE: 12/15/22
WEATHER: CLOUDY & LT RAIN
BEGIN TIME (MILITARY): 06:30 Hrs

MANUAL TURNING MOVEMENTS COUNT
US 17 @ SR 16/COOKS LANE
CLAY COUNTY, FLORIDA

Site Code : 12152201
Start Date: 12/15/22
File I.D. : 12152203
Page : 1

COMMERCIAL VEHICLES

	US 17 From North				SR 16 From East				US 17 From South				COOKS LANE From West				
	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Total
Date 12/15/22																	
06:30	17	6	1	0	4	0	5	0	0	8	9	0	0	2	0	0	52
06:45	10	11	1	0	7	0	5	0	0	11	12	0	0	0	0	0	57
07:00	20	5	0	0	15	3	3	0	0	8	12	0	0	1	0	0	67
07:15	19	6	1	0	9	0	8	0	0	6	12	0	0	1	0	0	62
Hr Total	66	28	3	0	35	3	21	0	0	33	45	0	0	4	0	0	238
07:30	18	15	1	0	6	0	17	0	0	9	7	0	0	1	0	0	74
07:45	18	7	0	0	6	1	12	0	0	12	10	0	1	1	0	0	68
08:00	11	18	0	0	8	0	18	1	0	14	2	0	1	2	1	0	76
08:15	16	7	1	0	3	0	18	0	0	12	9	0	0	0	1	0	67
Hr Total	63	47	2	0	23	1	65	1	0	47	28	0	2	4	2	0	285
TOTAL	129	75	5	0	58	4	86	1	0	80	73	0	2	8	2	0	523

Peak Hour Analysis By Entire Intersection for the Period: 06:45 to 07:45 on 12/15/22

Peak start	06:45				06:45				06:45				06:45				
Volume	67	37	3	0	37	3	33	0	0	34	43	0	0	3	0	0	
Percent	63%	35%	3%	0%	51%	4%	45%	0%	0%	44%	56%	0%	0%	100%	0%	0%	
Pk total	107				73				77				3				
Highest	07:30				07:30				06:45				07:00				
Volume	18	15	1	0	6	0	17	0	0	11	12	0	0	1	0	0	
Hi total	34				23				23				1				
PHF	.79				.79				.84				.75				

JW BUCKHOLZ TRAFFIC ENGINEERING INC.

DAY: THURSDAY
DATE: 12/15/22
WEATHER: CLOUDY & LT RAIN
BEGIN TIME (MILITARY): 06:30 Hrs

MANUAL TURNING MOVEMENTS COUNT
US 17 @ SR 16/COOKS LANE
CLAY COUNTY, FLORIDA

Site Code : 12152201
Start Date: 12/15/22
File I.D. : 12152203
Page : 1

PEDESTRIAN & BICYCLES

	US 17 From North				SR 16 From East				US 17 From South				COOKS LANE From West				
	Left	Thru	Right	PEDS	Left	Thru	Right	PEDS	Left	Thru	Right	PEDS	Left	Thru	Right	PEDS	Total
Date 12/15/22																	
06:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
06:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1

Peak Hour Analysis By Entire Intersection for the Period: 06:45 to 07:45 on 12/15/22

Peak start	06:45				06:45				06:45				06:45				
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Percent	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Pk total	0				0				0				0				
Highest	06:30				06:30				06:30				06:30				
Volume	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
Hi total	0				0				0				0				
PHF	.0				.0				.0				.0				

JW BUCKHOLZ TRAFFIC ENGINEERING INC.

DAY: MONDAY
DATE: 12/12/22
WEATHER: CLEAR & DRY
BEGIN TIME (MILITARY): 15:45 Hrs

MANUAL TURNING MOVEMENTS COUNT
US 17 @ SR 16/COOKS LANE
CLAY COUNTY, FLORIDA

Site Code : 12122201
Start Date: 12/12/22
File I.D. : 12122203
Page : 1

AUTOMOBILES, COMMERCIAL VEHICLES

	US 17 From North				SR 16 From East				US 17 From South				COOKS LANE From West				
	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Total
Date 12/12/22																	
15:45	119	109	8	0	48	12	188	1	0	109	40	2	5	8	0	0	649
16:00	114	101	9	0	56	16	194	0	2	102	26	0	7	5	0	0	632
16:15	112	94	12	0	60	23	180	1	1	105	28	0	8	13	0	0	637
16:30	114	112	2	0	50	20	199	1	1	164	41	0	13	4	1	0	722
Hr Total	459	416	31	0	214	71	761	3	4	480	135	2	33	30	1	0	2640
16:45	148	111	5	0	40	15	222	1	1	99	47	0	8	11	0	0	708
17:00	139	108	4	0	59	22	244	2	1	151	45	0	9	3	0	0	787
17:15	112	99	6	0	51	27	215	0	0	123	33	0	10	9	1	0	686
17:30	122	98	1	0	53	20	197	0	0	103	30	0	7	4	0	0	635
Hr Total	521	416	16	0	203	84	878	3	2	476	155	0	34	27	1	0	2816
17:45	69	93	1	0	41	10	174	2	0	114	36	0	4	7	0	0	551
Hr Total	69	93	1	0	41	10	174	2	0	114	36	0	4	7	0	0	551
TOTAL	1049	925	48	0	458	165	1813	8	6	1070	326	2	71	64	2	0	6007

Peak Hour Analysis By Entire Intersection for the Period: 16:30 to 17:30 on 12/12/22

Peak start	16:30				16:30				16:30				16:30				
Volume	513	430	17	0	200	84	880	4	3	537	166	0	40	27	2	0	
Percent	53%	45%	2%	0%	17%	7%	75%	0%	0%	76%	24%	0%	58%	39%	3%	0%	
Pk total	960				1168				706				69				
Highest	16:45				17:00				16:30				17:15				
Volume	148	111	5	0	59	22	244	2	1	164	41	0	10	9	1	0	
Hi total	264				327				206				20				
PHF	.91				.89				.86				.86				

JW BUCKHOLZ TRAFFIC ENGINEERING INC.

DAY: MONDAY
DATE: 12/12/22
WEATHER: CLEAR & DRY
BEGIN TIME (MILITARY): 15:45 Hrs

MANUAL TURNING MOVEMENTS COUNT
US 17 @ SR 16/COOKS LANE
CLAY COUNTY, FLORIDA

Site Code : 12122201
Start Date: 12/12/22
File I.D. : 12122203
Page : 1

AUTOMOBILES

	US 17 From North				SR 16 From East				US 17 From South				COOKS LANE From West				
	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Total
Date 12/12/22																	
15:45	112	104	8	0	36	10	166	1	0	99	36	2	5	6	0	0	585
16:00	103	90	9	0	44	11	173	0	2	91	24	0	7	5	0	0	559
16:15	108	88	12	0	49	21	164	1	1	93	25	0	8	13	0	0	583
16:30	109	105	2	0	42	17	182	1	1	153	38	0	9	3	1	0	663
Hr Total	432	387	31	0	171	59	685	3	4	436	123	2	29	27	1	0	2390
16:45	140	104	4	0	38	12	200	1	1	88	40	0	8	11	0	0	647
17:00	135	102	4	0	51	21	225	2	1	137	43	0	8	3	0	0	732
17:15	108	93	6	0	48	26	202	0	0	114	32	0	10	7	1	0	647
17:30	117	90	1	0	52	19	192	0	0	98	29	0	7	4	0	0	609
Hr Total	500	389	15	0	189	78	819	3	2	437	144	0	33	25	1	0	2635
17:45	65	86	1	0	39	10	162	2	0	103	33	0	4	7	0	0	512
Hr Total	65	86	1	0	39	10	162	2	0	103	33	0	4	7	0	0	512
TOTAL	997	862	47	0	399	147	1666	8	6	976	300	2	66	59	2	0	5537

Peak Hour Analysis By Entire Intersection for the Period: 16:30 to 17:30 on 12/12/22

Peak start	16:30				16:30				16:30				16:30				
Volume	492	404	16	0	179	76	809	4	3	492	153	0	35	24	2	0	
Percent	54%	44%	2%	0%	17%	7%	76%	0%	0%	76%	24%	0%	57%	39%	3%	0%	
Pk total	912				1068				648				61				
Highest	16:45				17:00				16:30				16:45				
Volume	140	104	4	0	51	21	225	2	1	153	38	0	8	11	0	0	
Hi total	248				299				192				19				
PHF	.92				.89				.84				.80				

JW BUCKHOLZ TRAFFIC ENGINEERING INC.

DAY: MONDAY | MANUAL TURNING MOVEMENTS COUNT | Site Code : 12122201

DATE: 12/12/22 | US 17 @ SR 16/COOKS LANE | Start Date: 12/12/22

WEATHER: CLEAR & DRY | CLAY COUNTY, FLORIDA | File I.D. : 12122203

BEGIN TIME (MILITARY): 15:45 Hrs | Page : 1

COMMERCIAL VEHICLES

	US 17 From North				SR 16 From East				US 17 From South				COOKS LANE From West				
	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Left	Thru	Right	U-TURN	Total
Date 12/12/22																	
15:45	7	5	0	0	12	2	22	0	0	10	4	0	0	2	0	0	64
16:00	11	11	0	0	12	5	21	0	0	11	2	0	0	0	0	0	73
16:15	4	6	0	0	11	2	16	0	0	12	3	0	0	0	0	0	54
16:30	5	7	0	0	8	3	17	0	0	11	3	0	4	1	0	0	59
Hr Total	27	29	0	0	43	12	76	0	0	44	12	0	4	3	0	0	250
16:45	8	7	1	0	2	3	22	0	0	11	7	0	0	0	0	0	61
17:00	4	6	0	0	8	1	19	0	0	14	2	0	1	0	0	0	55
17:15	4	6	0	0	3	1	13	0	0	9	1	0	0	2	0	0	39
17:30	5	8	0	0	1	1	5	0	0	5	1	0	0	0	0	0	26
Hr Total	21	27	1	0	14	6	59	0	0	39	11	0	1	2	0	0	181
17:45	4	7	0	0	2	0	12	0	0	11	3	0	0	0	0	0	39
Hr Total	4	7	0	0	2	0	12	0	0	11	3	0	0	0	0	0	39
TOTAL	52	63	1	0	59	18	147	0	0	94	26	0	5	5	0	0	470

Peak Hour Analysis By Entire Intersection for the Period: 16:30 to 17:30 on 12/12/22

Peak start	16:30				16:30				16:30				16:30				
Volume	21	26	1	0	21	8	71	0	0	45	13	0	5	3	0	0	
Percent	44%	54%	2%	0%	21%	8%	71%	0%	0%	78%	22%	0%	62%	38%	0%	0%	
Pk total	48				100				58				8				
Highest	16:45				16:30				16:45				16:30				
Volume	8	7	1	0	8	3	17	0	0	11	7	0	4	1	0	0	
Hi total	16				28				18				5				
PHF	.75				.89				.81				.40				

JW BUCKHOLZ TRAFFIC ENGINEERING INC.

DAY: MONDAY | MANUAL TURNING MOVEMENTS COUNT | Site Code : 12122201

DATE: 12/12/22 | US 17 @ SR 16/COOKS LANE | Start Date: 12/12/22

WEATHER: CLEAR & DRY | CLAY COUNTY, FLORIDA | File I.D. : 12122203

BEGIN TIME (MILITARY): 15:45 Hrs | Page : 1

PEDESTRIAN & BICYCLES

	US 17 From North				SR 16 From East				US 17 From South				COOKS LANE From West				
	Left	Thru	Right	PEDS	Left	Thru	Right	PEDS	Left	Thru	Right	PEDS	Left	Thru	Right	PEDS	Total
Date 12/12/22																	
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Hr Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2

Peak Hour Analysis By Entire Intersection for the Period: 16:30 to 17:30 on 12/12/22

Peak start	16:30				16:30				16:30				16:30				
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Percent	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Pk total	0				0				0				0				
Highest	15:45				15:45				15:45				15:45				
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Hi total	0				0				0				0				
PHF	.0				.0				.0				.0				

APPENDIX C

FDOT TRAFFIC DATA

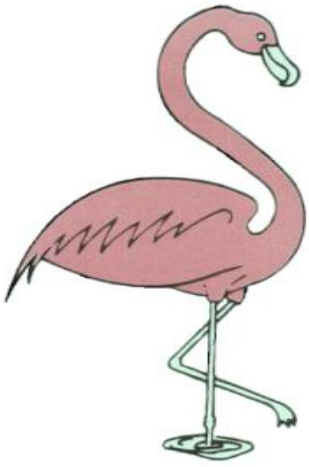
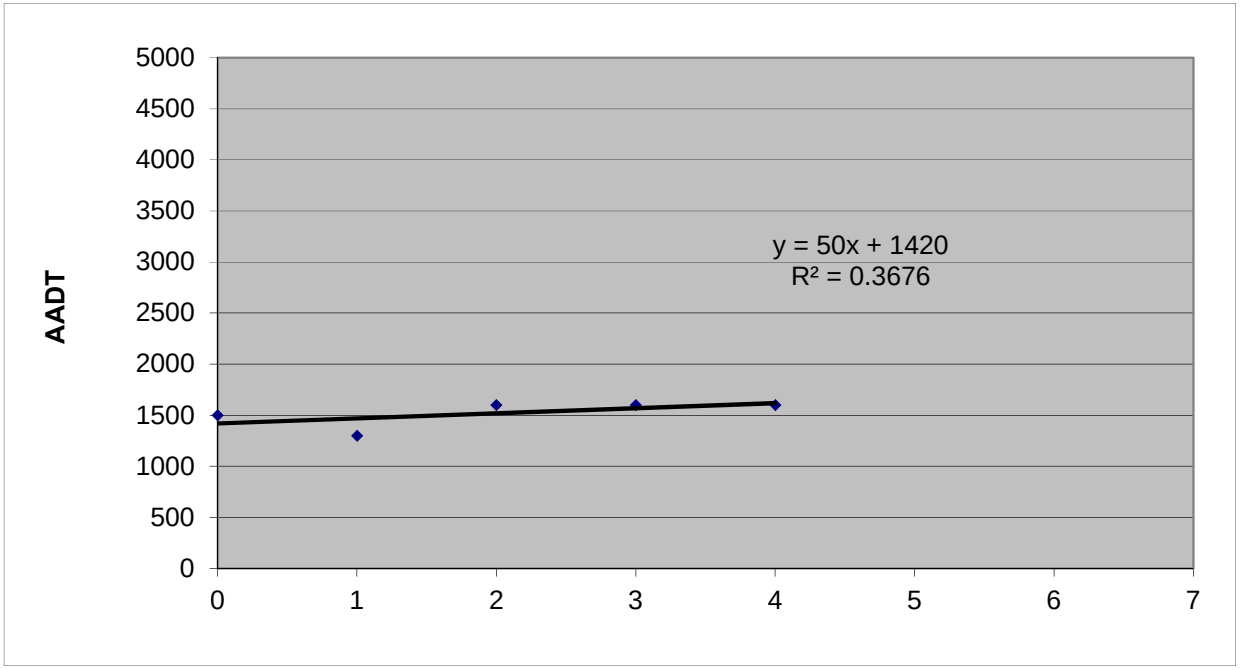


TABLE C-1
LINEAR REGRESSION ANALYSIS

Cooks Lane, West of US 17

Year	X	Actual AADT (Y)	**Predicted AADT**
2017	0	1500	**1420**
2018	1	1300	1470
2019	2	1600	1520
2020	3	1600	1570
2021	4	1600	1620
2022	5		1670
2023	6		1720
2024	7		**1770**

i = 3.2%



BUCKHOLZ TRAFFIC

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2021 HISTORICAL AADT REPORT

COUNTY: 71 - CLAY

SITE: 9115 - GREEN COVE AVE. .1 MI. W. OF US 17

YEAR	AADT	DIRECTION 1		DIRECTION 2		*K FACTOR	D FACTOR	T FACTOR
2021	1600 C	E	0	W	0	9.00	53.50	1.40
2020	1600 C	E	0	W	0	9.00	54.50	1.30
2019	1600 C	E	0	W	0	9.00	54.10	1.30
2018	1300 C	E	0	W	0	9.00	54.20	1.20
2017	1500 C	E	0	W	0	9.00	54.50	1.10
2016	1400 C	E	0	W	0	9.00	54.30	1.70
2015	1300 C	E	0	W	0	9.00	54.50	1.40
2014	1100 C	E		W		9.00	54.50	1.60
2013	1300 S		0		0	9.00	55.10	1.50
2012	1300 F		0		0	9.00	54.60	2.00
2011	1300 C	E	0	W	0	9.00	54.70	1.50

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

COUNTY: 71
STATION: 9115
DESCRIPTION: GREEN COVE AVE. .1 MI. W. OF US 17
START DATE: 11/09/2021
START TIME: 0000

DIRECTION: B

TIME	1ST	2ND	3RD	4TH	TOTAL
0000	0	3	0	0	3
0100	1	1	1	0	3
0200	2	1	0	1	4
0300	1	1	1	3	6
0400	1	8	10	9	28
0500	6	6	9	21	42
0600	29	43	43	50	165
0700	46	38	35	26	145
0800	41	16	20	31	108
0900	31	16	16	15	78
1000	14	16	17	23	70
1100	24	22	24	18	88
1200	27	18	23	23	91
1300	15	9	17	23	64
1400	16	13	30	22	81
1500	22	24	43	34	123
1600	37	43	49	39	168
1700	55	35	40	31	161
1800	27	24	26	14	91
1900	14	9	9	11	43
2000	12	4	11	5	32
2100	3	6	4	7	20
2200	2	4	3	4	13
2300	4	2	3	2	11
24-HOUR TOTALS:					1638

PEAK VOLUME INFORMATION

	HOUR	VOLUME
A.M.	645	169
P.M.	1615	186
DAILY	1615	186

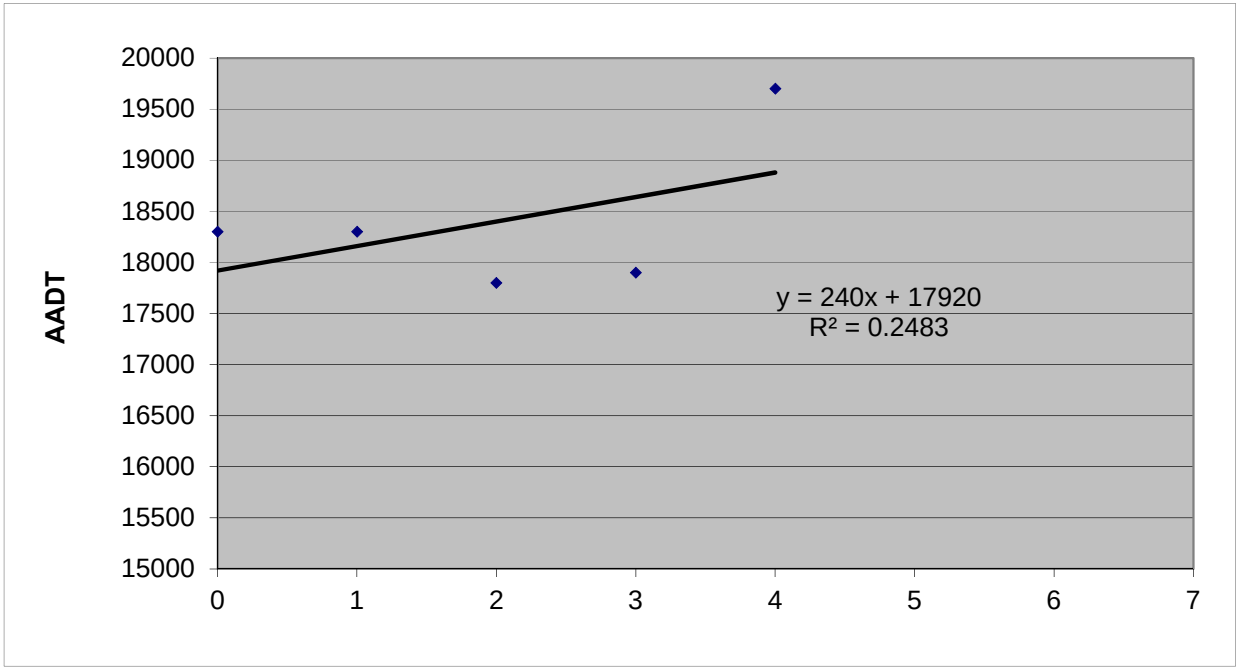
GENERATED BY SPS 5.0.57P

TABLE C-2
LINEAR REGRESSION ANALYSIS

SR 16, East of US 17

Year	X	Actual AADT (Y)	**Predicted AADT**
2017	0	18300	**17920**
2018	1	18300	18160
2019	2	17800	18400
2020	3	17900	18640
2021	4	19700	18880
2022	5		19120
2023	6		19360
2024	7		**19600**

i = 1.3%



BUCKHOLZ TRAFFIC

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2021 HISTORICAL AADT REPORT

COUNTY: 71 - CLAY

SITE: 0113 - SR 16 .75 MI. E. OF SR 15

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2021	19700 C	E 9700	W 10000	9.00	53.50	9.50
2020	17900 C	E 8800	W 9100	9.00	54.50	9.30
2019	17800 C	E 8600	W 9200	9.00	54.10	7.00
2018	18300 C	E 9100	W 9200	9.00	54.20	8.10
2017	18300 C	E 9000	W 9300	9.00	54.50	6.50
2016	16200 C	E 7900	W 8300	9.00	54.30	5.80
2015	14400 C	E 7100	W 7300	9.00	54.50	5.70
2014	14300 C	E 7200	W 7100	9.00	54.50	5.50
2013	13700 C	E 6800	W 6900	9.00	55.10	6.20
2012	12400 C	E 6200	W 6200	9.00	54.60	5.50
2011	12300 C	E 6100	W 6200	9.00	54.70	5.40
2010	13300 C	E 6600	W 6700	9.86	54.07	5.40
2009	14300 C	E 7100	W 7200	9.76	54.11	6.50
2008	15400 C	E 7600	W 7800	9.71	55.26	7.60
2007	15500 C	E 7800	W 7700	9.36	55.25	8.80
2006	16600 C	E 8300	W 8300	9.36	55.56	9.20

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

COUNTY: 71
STATION: 0113
DESCRIPTION: SR 16 .75 MI. E. OF SR 15
START DATE: 11/17/2021
START TIME: 0000

	DIRECTION: E					DIRECTION: W					COMBINED
TIME	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL	TOTAL
0000	3	5	3	4	15	7	13	12	3	35	50
0100	1	4	1	1	7	7	2	1	6	16	23
0200	8	2	10	5	25	2	0	5	4	11	36
0300	6	7	5	10	28	2	3	5	5	15	43
0400	12	23	28	32	95	10	6	16	14	46	141
0500	53	74	85	126	338	22	30	64	63	179	517
0600	205	261	274	304	1044	81	115	142	158	496	1540
0700	273	256	230	210	969	170	158	181	165	674	1643
0800	161	173	196	139	669	149	180	144	171	644	1313
0900	129	143	144	140	556	136	127	147	119	529	1085
1000	132	135	131	133	531	101	109	145	113	468	999
1100	106	135	125	137	503	128	149	134	150	561	1064
1200	161	142	151	148	602	162	127	166	172	627	1229
1300	149	153	112	159	573	131	151	160	128	570	1143
1400	157	165	160	154	636	163	148	168	179	658	1294
1500	136	135	168	178	617	209	229	227	270	935	1552
1600	172	180	206	198	756	260	244	256	276	1036	1792
1700	223	180	181	124	708	306	274	283	266	1129	1837
1800	113	102	77	88	380	239	211	142	97	689	1069
1900	82	57	71	47	257	90	81	65	57	293	550
2000	34	38	37	42	151	45	47	61	58	211	362
2100	38	25	27	26	116	48	32	35	36	151	267
2200	19	18	15	17	69	30	19	24	22	95	164
2300	9	9	5	8	31	20	13	12	15	60	91
24-HOUR TOTALS:					9676					10128	19804

PEAK VOLUME INFORMATION

	DIRECTION: E		DIRECTION: W		COMBINED DIRECTIONS	
	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
A.M.	645	1063	730	675	645	1730
P.M.	1615	807	1645	1139	1645	1921
DAILY	615	1112	1645	1139	1645	1921

TRUCK PERCENTAGE 9.02 9.89 9.47

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
E	67	5433	3303	5	179	211	30	69	243	130	1	5	0	0	0	873	9676
W	60	5522	3544	5	232	231	19	101	336	68	3	3	4	0	0	1002	10128

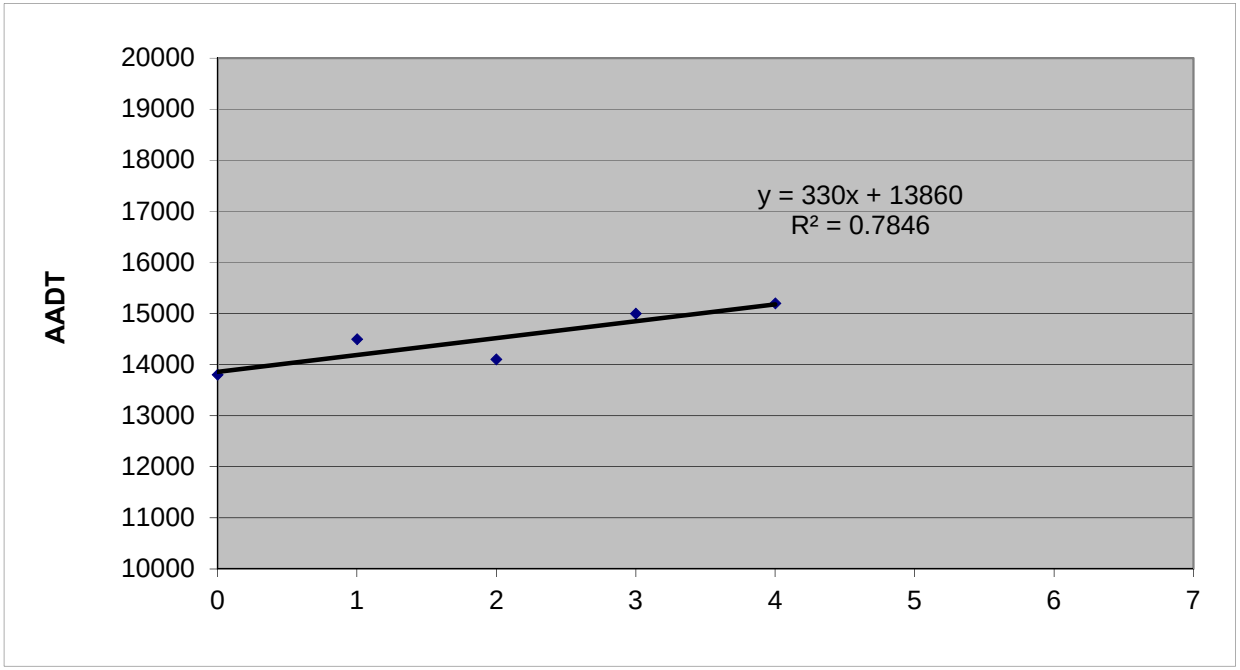
GENERATED BY SPS 5.0.57P

TABLE C-3
LINEAR REGRESSION ANALYSIS

US 17, South of SR 16

Year	X	Actual AADT (Y)	**Predicted AADT**
2017	0	13800	**13860**
2018	1	14500	14190
2019	2	14100	14520
2020	3	15000	14850
2021	4	15200	15180
2022	5		15510
2023	6		15840
2024	7		**16170**

i = 2.2%



BUCKHOLZ TRAFFIC

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2021 HISTORICAL AADT REPORT

COUNTY: 71 - CLAY

SITE: 0196 - SR 15/US 17 .3 MI. S. OF SR 16 TO E.

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2021	15200 C	N 7600	S 7600	9.00	53.50	12.10
2020	15000 C	N 7500	S 7500	9.00	54.50	14.00
2019	14100 C	N 7100	S 7000	9.00	54.10	10.70
2018	14500 C	N 7200	S 7300	9.00	54.20	11.80
2017	13800 C	N 6900	S 6900	9.00	54.50	9.70
2016	12900 C	N 6500	S 6400	9.00	54.30	10.50
2015	11600 C	N 5800	S 5800	9.00	54.50	11.20
2014	11100 C	N 5600	S 5500	9.00	54.50	10.90
2013	11200 C	N 5700	S 5500	9.00	55.10	12.30
2012	11400 C	N 5800	S 5600	9.00	54.60	11.10
2011	11400 C	N 5700	S 5700	9.00	54.70	11.80
2010	11600 C	N 5800	S 5800	9.86	54.07	11.10
2009	11800 C	N 5900	S 5900	9.76	54.11	10.90
2008	12400 C	N 6700	S 5700	9.71	55.26	13.00
2007	13500 C	N 6800	S 6700	9.36	55.25	12.50
2006	14400 C	N 7200	S 7200	9.36	55.56	14.80

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

COUNTY: 71
STATION: 0196
DESCRIPTION: SR 15/US 17 .3 MI. S. OF SR 16 TO E.
START DATE: 11/17/2021
START TIME: 0000

	DIRECTION: N					DIRECTION: S					COMBINED
TIME	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL	TOTAL
0000	2	5	5	3	15	9	8	7	3	27	42
0100	4	9	2	17	32	9	5	2	4	20	52
0200	26	5	3	4	38	1	2	6	1	10	48
0300	4	5	32	10	51	5	4	8	14	31	82
0400	21	22	38	43	124	16	28	41	83	168	292
0500	39	65	63	85	252	41	50	105	93	289	541
0600	128	148	163	154	593	89	120	131	148	488	1081
0700	141	153	154	135	583	112	112	130	128	482	1065
0800	116	111	100	97	424	126	126	129	92	473	897
0900	113	127	101	96	437	107	91	123	88	409	846
1000	127	114	109	107	457	100	77	96	96	369	826
1100	105	133	123	134	495	83	116	111	130	440	935
1200	151	109	118	92	470	132	125	123	150	530	1000
1300	110	102	107	101	420	115	127	122	106	470	890
1400	110	96	124	119	449	116	107	110	128	461	910
1500	102	115	206	164	587	129	160	152	169	610	1197
1600	130	132	186	162	610	177	134	152	169	632	1242
1700	217	150	198	128	693	171	163	136	146	616	1309
1800	143	98	89	63	393	137	108	76	90	411	804
1900	63	44	49	26	182	66	67	46	57	236	418
2000	38	31	45	29	143	43	49	79	58	229	372
2100	23	20	19	21	83	37	23	30	28	118	201
2200	17	16	9	14	56	17	18	15	13	63	119
2300	11	5	4	5	25	15	16	8	8	47	72
24-HOUR TOTALS:					7612					7629	15241

PEAK VOLUME INFORMATION

	DIRECTION: N		DIRECTION: S		COMBINED DIRECTIONS	
	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
A.M.	645	602	730	510	645	1104
P.M.	1645	727	1515	658	1630	1370
DAILY	1645	727	1515	658	1630	1370

TRUCK PERCENTAGE 11.78 12.32 12.05

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
N	67	4155	2493	5	131	197	17	105	418	22	0	1	1	0	0	897	7612
S	34	4076	2579	6	128	216	15	85	404	82	1	1	2	0	0	940	7629

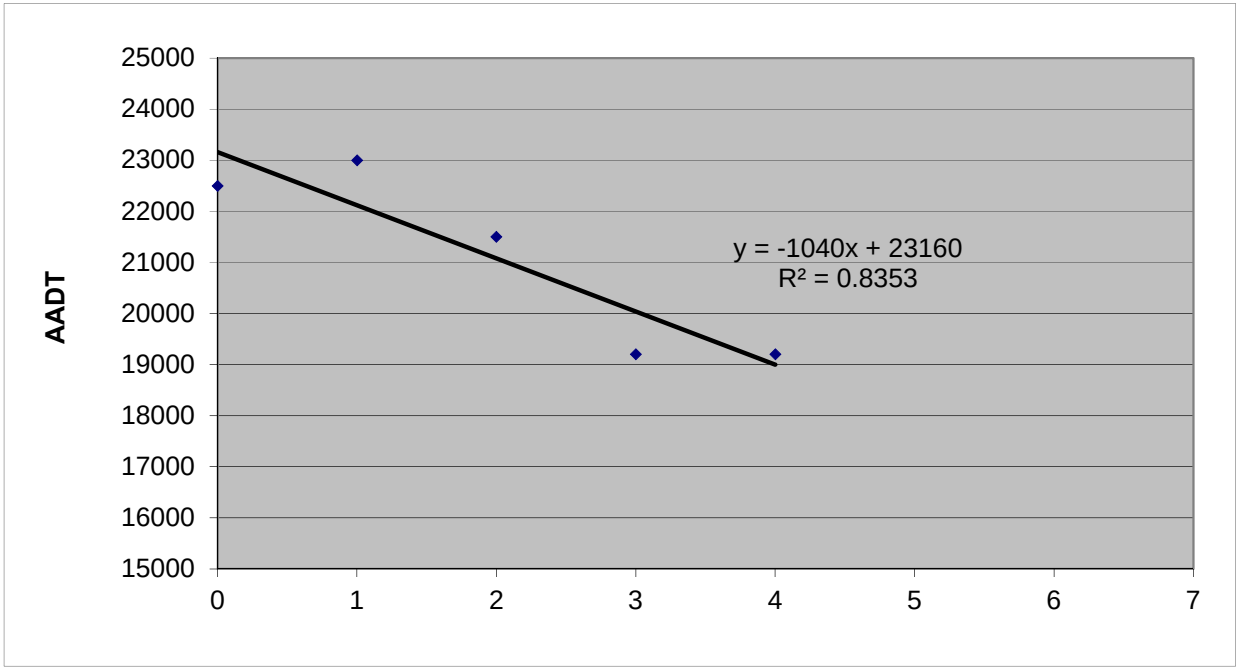
GENERATED BY SPS 5.0.57P

TABLE C-4
LINEAR REGRESSION ANALYSIS

US 17, North of SR 16

Year	X	Actual AADT (Y)	**Predicted AADT**
2017	0	22500	**23160**
2018	1	23000	22120
2019	2	21500	21080
2020	3	19200	20040
2021	4	19200	19000
2022	5		17960
2023	6		16920
2024	7		**15880**

i = - 5.2%



BUCKHOLZ TRAFFIC

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2021 HISTORICAL AADT REPORT

COUNTY: 71 - CLAY

SITE: 0142 - SR 15 .1 MI. N. OF SR 16 TO E.

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2021	19200 F	N 9700	S 9500	9.00	53.50	12.10
2020	19200 C	N 9700	S 9500	9.00	54.50	21.90
2019	21500 C	N 11000	S 10500	9.00	54.10	18.10
2018	23000 C	N 11500	S 11500	9.00	54.20	11.80
2017	22500 C	N 11000	S 11500	9.00	54.50	9.70
2016	20000 C	N 10000	S 10000	9.00	54.30	10.50
2015	19100 C	N 9700	S 9400	9.00	54.50	11.20
2014	17900 C	N 9000	S 8900	9.00	54.50	10.90
2013	17500 C	N 8800	S 8700	9.00	55.10	12.30
2012	16600 C	N 8400	S 8200	9.00	54.60	11.10
2011	17900 C	N 9200	S 8700	9.00	54.70	11.80
2010	18100 C	N 9200	S 8900	9.86	54.07	11.10
2009	18500 C	N 9300	S 9200	9.76	54.11	10.90
2008	19600 C	N 9900	S 9700	9.71	55.26	13.00
2007	21000 C	N 10500	S 10500	9.36	55.25	12.50
2006	23000 C	N 11500	S 11500	9.36	55.56	14.80

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

2021 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 7100 CLAY COUNTYWIDE

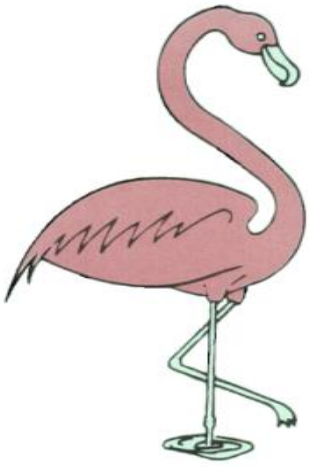
MOCF: 0.96

WEEK	DATES	SF	PSCF
1	01/01/2021 - 01/02/2021	1.00	1.04
2	01/03/2021 - 01/09/2021	1.06	1.10
3	01/10/2021 - 01/16/2021	1.11	1.16
4	01/17/2021 - 01/23/2021	1.11	1.16
5	01/24/2021 - 01/30/2021	1.10	1.15
6	01/31/2021 - 02/06/2021	1.09	1.14
7	02/07/2021 - 02/13/2021	1.09	1.14
8	02/14/2021 - 02/20/2021	1.08	1.13
9	02/21/2021 - 02/27/2021	1.05	1.09
10	02/28/2021 - 03/06/2021	1.02	1.06
11	03/07/2021 - 03/13/2021	1.00	1.04
12	03/14/2021 - 03/20/2021	0.97	1.01
*13	03/21/2021 - 03/27/2021	0.96	1.00
*14	03/28/2021 - 04/03/2021	0.96	1.00
*15	04/04/2021 - 04/10/2021	0.96	1.00
*16	04/11/2021 - 04/17/2021	0.96	1.00
*17	04/18/2021 - 04/24/2021	0.95	0.99
*18	04/25/2021 - 05/01/2021	0.95	0.99
*19	05/02/2021 - 05/08/2021	0.95	0.99
*20	05/09/2021 - 05/15/2021	0.95	0.99
*21	05/16/2021 - 05/22/2021	0.96	1.00
*22	05/23/2021 - 05/29/2021	0.96	1.00
*23	05/30/2021 - 06/05/2021	0.96	1.00
*24	06/06/2021 - 06/12/2021	0.97	1.01
*25	06/13/2021 - 06/19/2021	0.97	1.01
26	06/20/2021 - 06/26/2021	0.98	1.02
27	06/27/2021 - 07/03/2021	0.99	1.03
28	07/04/2021 - 07/10/2021	1.00	1.04
29	07/11/2021 - 07/17/2021	1.01	1.05
30	07/18/2021 - 07/24/2021	1.02	1.06
31	07/25/2021 - 07/31/2021	1.02	1.06
32	08/01/2021 - 08/07/2021	1.02	1.06
33	08/08/2021 - 08/14/2021	1.02	1.06
34	08/15/2021 - 08/21/2021	1.03	1.07
35	08/22/2021 - 08/28/2021	1.02	1.06
36	08/29/2021 - 09/04/2021	1.01	1.05
37	09/05/2021 - 09/11/2021	1.01	1.05
38	09/12/2021 - 09/18/2021	1.00	1.04
39	09/19/2021 - 09/25/2021	0.99	1.03
40	09/26/2021 - 10/02/2021	0.98	1.02
41	10/03/2021 - 10/09/2021	0.97	1.01
42	10/10/2021 - 10/16/2021	0.96	1.00
43	10/17/2021 - 10/23/2021	0.97	1.01
44	10/24/2021 - 10/30/2021	0.98	1.02
45	10/31/2021 - 11/06/2021	0.99	1.03
46	11/07/2021 - 11/13/2021	0.99	1.03
47	11/14/2021 - 11/20/2021	1.00	1.04
48	11/21/2021 - 11/27/2021	1.00	1.04
49	11/28/2021 - 12/04/2021	1.00	1.04
50	12/05/2021 - 12/11/2021	1.00	1.04
51	12/12/2021 - 12/18/2021	1.00	1.04
52	12/19/2021 - 12/25/2021	1.06	1.10
53	12/26/2021 - 12/31/2021	1.11	1.16

* PEAK SEASON

APPENDIX D

CAPACITY CALCULATIONS
UNSIGNALIZED INTERSECTIONS



HCS Two-Way Stop-Control Report

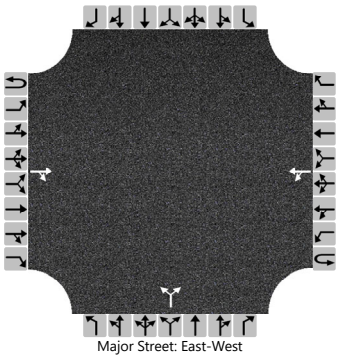
General Information

Analyst	J. Buckholz
Agency/Co.	BUCKHOLZ TRAFFIC
Date Performed	10/30/2023
Analysis Year	2026
Time Analyzed	AM Peak Hr. BUILD Traffic
Intersection Orientation	East-West
Project Description	#22-1805

Site Information

Intersection	Cooks Lane / Site Driveway
Jurisdiction	Clay County
East/West Street	Cooks Lane
North/South Street	Site Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			159	1		22	55			0		8				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.12				6.42		6.22				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						23					8					
Capacity, c (veh/h)						1411					878					
v/c Ratio						0.02					0.01					
95% Queue Length, Q_{95} (veh)						0.0					0.0					
Control Delay (s/veh)						7.6	0.1				9.1					
Level of Service (LOS)						A	A				A					
Approach Delay (s/veh)						2.3				9.1						
Approach LOS						A				A						

HCS Two-Way Stop-Control Report

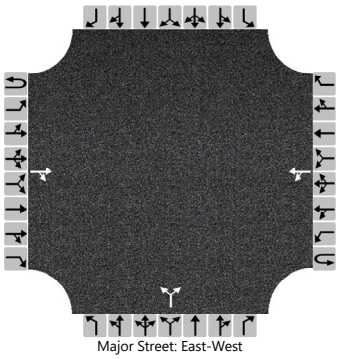
General Information

Analyst	J. Buckholz
Agency/Co.	BUCKHOLZ TRAFFIC
Date Performed	10/30/2023
Analysis Year	2026
Time Analyzed	PM Peak Hr. BUILD Traffic
Intersection Orientation	East-West
Project Description	#22-1805

Site Information

Intersection	Cooks Lane / Site Driveway
Jurisdiction	Clay County
East/West Street	Cooks Lane
North/South Street	Site Driveway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			113	0		8	178			1		24				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

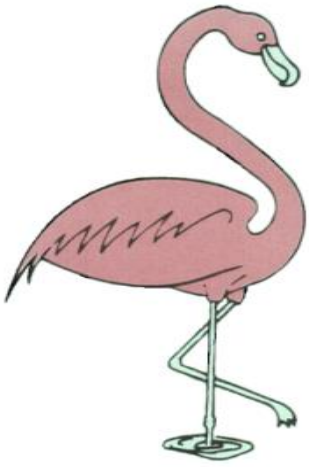
Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.12				6.42		6.22				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						9					27					
Capacity, c (veh/h)						1464					913					
v/c Ratio						0.01					0.03					
95% Queue Length, Q_{95} (veh)						0.0					0.1					
Control Delay (s/veh)						7.5	0.0				9.1					
Level of Service (LOS)						A	A				A					
Approach Delay (s/veh)						0.4				9.1						
Approach LOS						A				A						

APPENDIX E

TRAFFIC SIGNAL TIMINGS



Location Details			
Signal ID:	**45**	Date:	**November 19, 2022**
Major Street:	**US 17**	Orientation:	**N-S**
Minor Street:	**Cooks Ln-SR 16**	Orientation:	**E-W**

Controller Timings (seconds)

Movement # (Controller Phase Ø)	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø13	Ø14	Ø15	Ø16	Notes
Direction	NBLT	SB		WB	SBLT	NB	WBLT	EB									
Turn Type	Prot				Prot		FYA										
Min Green	4	18		6	4	18	4	6									
Ext	3.0	4.0		6.0	4.0	4.0	4.0	3.0									
Yellow	4.9	4.9		4.8	4.9	4.9	4.8	4.8									
All Red	2.0	2.0		2.5	2.0	2.0	2.0	2.5									
Max I	15	50		40	55	35	25	30									
Max II	15	50		40	55	35	25	30									
Walk		7		7		7		7									
Flashing Don't Walk		21		34		26		30									
Detector Memory																	
Det. Switching to:																	
Recall		MIN				MIN											
CNA																	

Coordination Timings (seconds)

Pattern	C-S-O	Cycle Length	Splits																Offset	Seq	Coord Ø
			Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø13	Ø14	Ø15	Ø16			

Offset Reference Point	Phase Mode
End of Green of first through movement	STD8

SEQ 1

Ring - 1	1	2	4	
Ring - 2	5	6	7	8

Notes:
1) Use 'Max I' during FREE Operation.
2) 3 second delay on FYA

Signal ID:	**45**
Major Street:	**US 17**
Minor Street:	**Cooks Ln-SR 16**

Day Plans

Monday-Friday			
Day Plan 1			
Hr	Min	Patt	Cycl
00	00	254	Free

Saturday			
Day Plan 2			
Hr	Min	Patt	Cycl
00	00	254	Free

Sunday			
Day Plan 3			
Hr	Min	Patt	Cycl
00	00	254	Free

Day Plan 4			
Hr	Min	Patt	Cycl

Day Plan 5			
Hr	Min	Patt	Cycl

Day Plan 6			
Hr	Min	Patt	Cycl

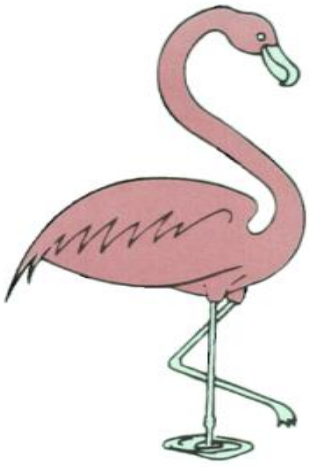
Day Plan 7			
Hr	Min	Patt	Cycl

Day Plan 8			
Hr	Min	Patt	Cycl

Patt	Force Mode	Alt Opt Table	Alt Time Table	Coord Max Plan	Alt Time Table Max Values (Seconds)														
					Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø13	Ø14	Ø15	Ø16

APPENDIX F

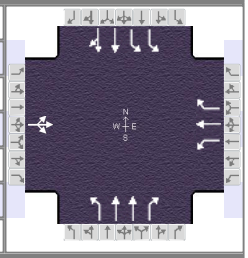
SIGNALIZED INTERSECTION CAPACITY CALCULATIONS



AM PEAK HOUR

HCS Signalized Intersection Results Summary

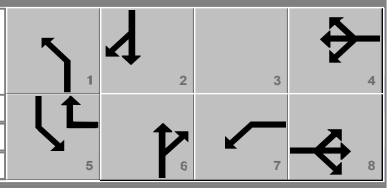
General Information				Intersection Information	
Agency	BUCKHOLZ TRAFFIC			Duration, h	0.250
Analyst	J. Buckholz	Analysis Date	Jan 24, 2023	Area Type	Other
Jurisdiction	Clay County	Time Period	AM Peak Hour	PHF	0.96
Urban Street	US 17	Analysis Year	2022	Analysis Period	1> 6:45
Intersection	SR 16 / Cooks Lane	File Name	2022_AM_US17_SR16_CoveLn.xus		
Project Description	2022 AM Peak Hr Traffic				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	13	82	0	177	16	373	1	394	298	707	276	16

Signal Information			
Cycle, s	99.3	Reference Phase	2
Offset, s	110	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	Off

Green	0.1	21.0	22.4	13.2	7.7	0.0
Yellow	4.9	4.9	4.9	4.8	4.8	0.0
Red	2.0	2.0	2.0	2.0	2.5	0.0



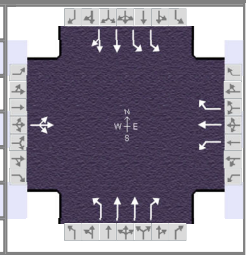
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8	7	4	1	6	5	2
Case Number		8.3	1.0	3.0	2.0	3.0	2.0	4.0
Phase Duration, s		15.0	20.0	35.1	7.0	29.3	35.0	57.2
Change Period, ($Y+R_c$), s		7.3	6.8	7.3	6.9	6.9	6.9	6.9
Max Allow Headway (*MAH*), s		4.1	4.9	7.1	3.9	4.5	4.9	4.4
Queue Clearance Time (g_s), s		7.5	12.6	15.3	2.1	19.4	22.8	6.9
Green Extension Time (g_e), s		0.3	0.6	4.1	0.0	2.9	5.2	1.3
Phase Call Probability		1.00	0.99	1.00	0.03	1.00	1.00	1.00
Max Out Probability		0.00	0.01	0.03	0.00	0.05	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h		99		184	17	350	1	410	248	736	153	151
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1735		1513	1618	1497	1810	1682	1346	1634	1693	1660
Queue Service Time (g_s), s		2.6		10.6	0.7	13.3	0.1	10.7	17.4	20.8	4.9	4.9
Cycle Queue Clearance Time (g_c), s		5.5		10.6	0.7	13.3	0.1	10.7	17.4	20.8	4.9	4.9
Green Ratio (*g/C*)		0.08		0.23	0.28	0.56	0.00	0.23	0.23	0.28	0.51	0.51
Capacity (*c*), veh/h		177		300	453	842	2	758	304	924	858	842
Volume-to-Capacity Ratio (*X*)		0.560		0.614	0.037	0.416	0.495	0.541	0.817	0.797	0.178	0.180
Back of Queue (*Q*), ft/ln (95 th percentile)		116.6		207.6	15.1	201.4	4.3	205.2	297.1	347.4	90.1	83.6
Back of Queue (*Q*), veh/ln (95 th percentile)		4.6		7.1	0.5	7.5	0.2	7.7	10.2	13.0	3.2	3.2
Queue Storage Ratio (*RQ*) (95 th percentile)		0.52		0.44	0.00	0.00	0.02	0.00	0.99	0.51	0.00	0.00
Uniform Delay (d_1), s/veh		44.8		33.8	26.1	12.4	49.7	34.0	36.6	33.1	13.3	13.3
Incremental Delay (d_2), s/veh		2.8		2.9	0.1	1.2	118.8	0.9	8.2	2.3	0.1	0.1
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
Control Delay (*d*), s/veh		47.5		36.7	26.2	13.6	168.5	34.9	44.8	35.3	13.4	13.4
Level of Service (LOS)		D		D	C	B	F	C	D	D	B	B
Approach Delay, s/veh / LOS	47.5	D		21.7	C		38.8	D		28.9	C	
Intersection Delay, s/veh / LOS	30.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

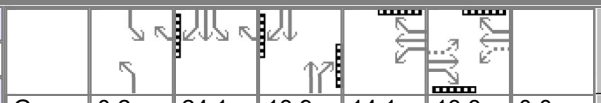
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	BUCKHOLZ TRAFFIC			Duration, h	0.250
Analyst	J. Buckholz	Analysis Date	Oct 30, 2023	Area Type	Other
Jurisdiction	Clay County	Time Period	AM Peak Hour	PHF	0.96
Urban Street	US 17	Analysis Year	2026	Analysis Period	1> 6:45
Intersection	SR 16 / Cooks Lane	File Name	2026_B_AM_US17_SR16_CooksLn.xus		
Project Description	2026 AM Peak Hr BUILD Traffic				

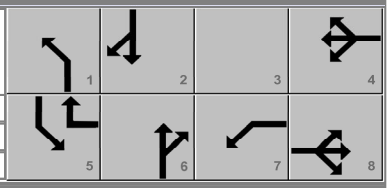


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	36	129	0	189	36	399	2	422	223	756	295	34

Signal Information			
Cycle, s	105.4	Reference Phase	2
Offset, s	110	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	Off



Green	0.2	24.1	18.9	14.1	13.3	0.0
Yellow	4.9	4.9	4.9	4.8	4.8	0.0
Red	2.0	2.0	2.0	2.0	2.5	0.0



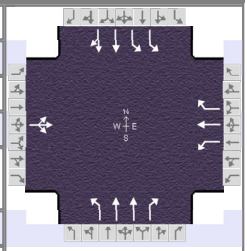
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8	7	4	1	6	5	2
Case Number		8.3	1.0	3.0	2.0	3.0	2.0	4.0
Phase Duration, s		20.6	20.9	41.5	7.1	25.8	38.1	56.8
Change Period, (*Y+R c*), s		7.3	6.8	7.3	6.9	6.9	6.9	6.9
Max Allow Headway (*MAH*), s		4.2	4.9	7.1	3.9	4.5	4.9	4.4
Queue Clearance Time (*g s*), s		12.8	13.4	15.3	2.1	15.9	25.6	8.5
Green Extension Time (*g e*), s		0.5	0.7	4.7	0.0	2.9	5.5	1.5
Phase Call Probability		1.00	1.00	1.00	0.06	1.00	1.00	1.00
Max Out Probability		0.00	0.02	0.05	0.00	0.01	0.01	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h		172		197	38	374	2	440	186	788	173	170
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1624		1513	1618	1497	1810	1682	1346	1634	1693	1631
Queue Service Time (*g s*), s		7.4		11.4	1.7	13.3	0.1	13.0	13.9	23.6	6.3	6.5
Cycle Queue Clearance Time (*g c*), s		10.8		11.4	1.7	13.3	0.1	13.0	13.9	23.6	6.3	6.5
Green Ratio (*g/C*)		0.13		0.28	0.32	0.62	0.00	0.18	0.18	0.30	0.47	0.47
Capacity (*c*), veh/h		247		296	525	930	4	603	241	969	802	772
Volume-to-Capacity Ratio (*X*)		0.696		0.665	0.071	0.402	0.506	0.729	0.772	0.813	0.216	0.219
Back of Queue (*Q*), ft/ln (95 th percentile)		209.3		223.8	33.9	194.5	6.2	246.7	250.2	387.5	121.3	111.3
Back of Queue (*Q*), veh/ln (95 th percentile)		8.2		7.7	1.2	7.3	0.2	9.2	8.6	14.5	4.4	4.3
Queue Storage Ratio (*RQ*) (95 th percentile)		0.93		0.47	0.00	0.00	0.03	0.00	0.83	0.57	0.00	0.00
Uniform Delay (*d 1*), s/veh		44.8		32.5	24.7	10.1	52.7	40.9	41.3	34.5	16.3	16.3
Incremental Delay (*d 2*), s/veh		3.5		3.6	0.2	1.0	72.9	2.4	7.3	2.4	0.2	0.2
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
Control Delay (*d*), s/veh		48.3		36.1	24.9	11.1	125.6	43.4	48.6	36.9	16.5	16.5
Level of Service (LOS)		D		D	C	B	F	D	D	D	B	B
Approach Delay, s/veh / LOS	48.3	D		20.1	C		45.2	D		30.7	C	
Intersection Delay, s/veh / LOS	32.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

HCS Signalized Intersection Results Summary

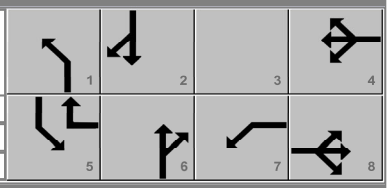
General Information				Intersection Information	
Agency	BUCKHOLZ TRAFFIC			Duration, h	0.250
Analyst	J. Buckholz	Analysis Date	Oct 30, 2023	Area Type	Other
Jurisdiction	Clay County	Time Period	AM Peak Hour	PHF	0.96
Urban Street	US 17	Analysis Year	2026 w/ Balanced Timings	Analysis Period	1> 6:45
Intersection	SR 16 / Cooks Lane	File Name	BAL_2026_B_AM_US17_SR16_CooksLn.xus		
Project Description	2026 AM Peak Hr BUILD Traffic				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	36	129	0	189	36	399	2	422	223	756	295	34

Signal Information			
Cycle, s	192.9	Reference Phase	2
Offset, s	110	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	Off

Green	30.0	23.1	50.0	15.0	40.0	0.0
Yellow	4.9	4.9	4.9	4.8	4.8	0.0
Red	2.0	2.0	2.0	2.0	2.5	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8	7	4	1	6	5	2
Case Number		8.3	1.0	3.0	2.0	3.0	2.0	4.0
Phase Duration, s		47.3	21.8	69.1	36.9	56.9	66.9	86.9
Change Period, (*Y+R c*), s		7.3	6.8	7.3	6.9	6.9	6.9	6.9
Max Allow Headway (*MAH*), s		4.2	4.9	7.1	3.9	4.5	4.9	4.4
Queue Clearance Time (*g s*), s		19.5	17.0	25.7	2.2	25.0	44.2	15.1
Green Extension Time (*g e*), s		0.5	0.0	3.6	0.0	3.1	4.5	1.4
Phase Call Probability		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability		0.00	1.00	0.29	0.00	0.00	0.13	0.00

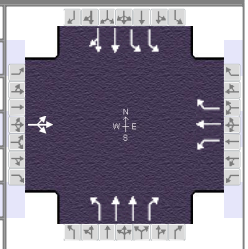
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h		172		197	38	374	2	440	186	788	173	170
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1601		1513	1618	1497	1810	1682	1346	1634	1693	1631
Queue Service Time (*g s*), s		10.4		15.0	3.1	23.7	0.2	21.5	23.0	42.2	12.9	13.1
Cycle Queue Clearance Time (*g c*), s		17.5		15.0	3.1	23.7	0.2	21.5	23.0	42.2	12.9	13.1
Green Ratio (*g/C*)		0.21		0.30	0.32	0.63	0.16	0.26	0.26	0.31	0.41	0.41
Capacity (*c*), veh/h		355		279	518	945	281	872	349	1016	702	676
Volume-to-Capacity Ratio (*X*)		0.485		0.705	0.072	0.396	0.007	0.504	0.534	0.775	0.247	0.251
Back of Queue (*Q*), ft/ln (95 th percentile)		314.3		184.5	67	350	4	380.3	369.9	672.5	260.1	239.5
Back of Queue (*Q*), veh/ln (95 th percentile)		12.3		6.3	2.3	13.1	0.2	14.2	12.7	25.1	9.4	9.2
Queue Storage Ratio (*RQ*) (95 th percentile)		1.40		0.39	0.00	0.00	0.02	0.00	1.23	1.00	0.00	0.00
Uniform Delay (*d 1*), s/veh		67.2		60.9	45.6	17.5	68.9	60.9	61.4	60.3	36.8	36.9
Incremental Delay (*d 2*), s/veh		1.0		8.6	0.2	1.0	0.0	0.7	2.1	4.0	0.3	0.3
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
Control Delay (*d*), s/veh		68.2		69.5	45.8	18.4	68.9	61.5	63.5	64.4	37.1	37.1
Level of Service (LOS)		E		E	D	B	E	E	E	E	D	D
Approach Delay, s/veh / LOS	68.2	E		36.7	D		62.2	E		56.1	E	
Intersection Delay, s/veh / LOS	53.8						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

PM PEAK HOUR

HCS Signalized Intersection Results Summary

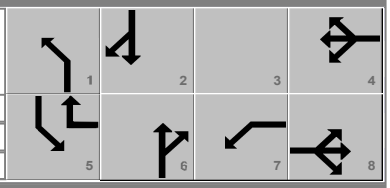
General Information				Intersection Information	
Agency	BUCKHOLZ TRAFFIC			Duration, h	0.250
Analyst	J. Buckholz	Analysis Date	Jan 24, 2023	Area Type	Other
Jurisdiction	Clay County	Time Period	PM Peak Hour	PHF	0.92
Urban Street	US 17	Analysis Year	2022	Analysis Period	1> 16:30
Intersection	SR 16 / Cooks Lane	File Name	2022_PM_US17_SR16_CoveLn.xus		
Project Description	2022 PM Peak Hr Traffic				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	40	27	2	204	84	880	3	537	166	513	430	17

Signal Information			
Cycle, s	105.8	Reference Phase	2
Offset, s	110	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	Off

Green	0.4	14.9	22.6	13.7	19.5	0.0	
Yellow	4.9	4.9	4.9	4.8	4.8	0.0	
Red	2.0	2.0	2.0	2.0	2.5	0.0	



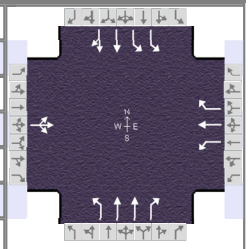
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8	7	4	1	6	5	2
Case Number		8.3	1.0	3.0	2.0	3.0	2.0	4.0
Phase Duration, s		26.8	20.5	47.3	7.3	29.5	29.1	51.3
Change Period, ($Y+R_c$), s		7.3	6.8	7.3	6.9	6.9	6.9	6.9
Max Allow Headway (*MAH*), s		6.0	4.9	7.1	3.9	4.4	4.9	4.4
Queue Clearance Time (g_s), s		9.4	12.9	42.0	2.2	19.3	18.4	11.6
Green Extension Time (g_e), s		0.4	0.8	0.0	0.0	3.2	3.8	2.2
Phase Call Probability		1.00	1.00	1.00	0.09	1.00	1.00	1.00
Max Out Probability		0.00	0.02	1.00	0.00	0.05	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h		75		222	91	861	3	584	145	558	244	242
Adjusted Saturation Flow Rate (*s*), veh/h/ln		831		1654	1752	1510	1810	1696	1510	1702	1811	1786
Queue Service Time (g_s), s		6.0		10.9	3.6	40.0	0.2	17.3	8.8	16.4	9.6	9.6
Cycle Queue Clearance Time (g_c), s		7.4		10.9	3.6	40.0	0.2	17.3	8.8	16.4	9.6	9.6
Green Ratio (*g/C*)		0.18		0.33	0.38	0.59	0.33	0.21	0.21	0.21	0.42	0.42
Capacity (*c*), veh/h		207		427	662	887	6	723	322	713	759	749
Volume-to-Capacity Ratio (*X*)		0.363		0.519	0.138	0.971	0.519	0.807	0.449	0.782	0.322	0.323
Back of Queue (*Q*), ft/ln (95 th percentile)		88		208.5	72	821.4	8	309.6	155.6	292	189.3	186
Back of Queue (*Q*), veh/ln (95 th percentile)		3.2		7.7	2.7	30.9	0.3	11.6	5.8	11.3	7.2	7.2
Queue Storage Ratio (*RQ*) (95 th percentile)		0.39		0.44	0.00	0.00	0.04	0.00	0.52	0.43	0.00	0.00
Uniform Delay (d_1), s/veh		37.8		27.8	21.6	21.0	52.7	39.6	36.2	39.6	20.6	20.6
Incremental Delay (d_2), s/veh		1.1		1.4	0.3	23.7	53.6	3.4	1.4	2.7	0.3	0.4
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
Control Delay (*d*), s/veh		38.8		29.1	22.0	44.7	106.3	42.9	37.6	42.3	21.0	21.0
Level of Service (LOS)		D		C	C	D	F	D	D	D	C	C
Approach Delay, s/veh / LOS	38.8	D		40.0	D		42.2	D		32.4	C	
Intersection Delay, s/veh / LOS	37.9						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

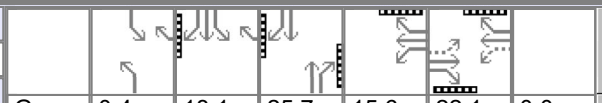
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	BUCKHOLZ TRAFFIC			Duration, h	0.250
Analyst	J. Buckholz	Analysis Date	Oct 30, 2023	Area Type	Other
Jurisdiction	Clay County	Time Period	PM Peak Hour	PHF	0.92
Urban Street	US 17	Analysis Year	2026	Analysis Period	1> 16:30
Intersection	SR 16 / Cooks Lane	File Name	2026_B_PM_US17_SR16_CooksLn.xus		
Project Description	2026 PM Peak Hr BUILD Traffic				

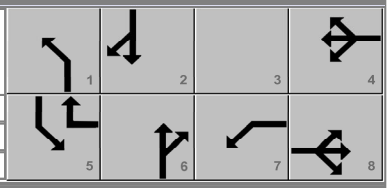


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	68	61	3	218	138	942	3	575	178	549	460	43

Signal Information			
Cycle, s	116.6	Reference Phase	2
Offset, s	110	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	Off



Green	0.4	18.1	25.7	15.6	22.1	0.0
Yellow	4.9	4.9	4.9	4.8	4.8	0.0
Red	2.0	2.0	2.0	2.0	2.5	0.0



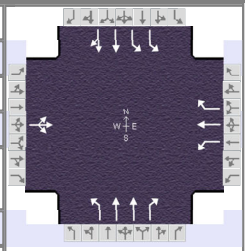
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8	7	4	1	6	5	2
Case Number		8.3	1.0	3.0	2.0	3.0	2.0	4.0
Phase Duration, s		29.4	22.4	51.8	7.3	32.6	32.3	57.5
Change Period, (*Y+R c*), s		7.3	6.8	7.3	6.9	6.9	6.9	6.9
Max Allow Headway (*MAH*), s		6.1	4.9	7.1	3.9	4.4	4.9	4.4
Queue Clearance Time (*g s*), s		21.6	14.9	46.4	2.2	22.5	21.4	14.0
Green Extension Time (*g e*), s		0.5	0.8	0.0	0.0	3.2	4.0	2.5
Phase Call Probability		1.00	1.00	1.00	0.10	1.00	1.00	1.00
Max Out Probability		0.34	0.07	1.00	0.00	0.15	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h		143		237	150	922	3	625	154	597	277	270
Adjusted Saturation Flow Rate (*s*), veh/h/ln		826		1654	1752	1510	1810	1696	1510	1702	1811	1756
Queue Service Time (*g s*), s		17.7		12.9	6.7	44.4	0.2	20.5	10.3	19.4	11.9	12.0
Cycle Queue Clearance Time (*g c*), s		19.6		12.9	6.7	44.4	0.2	20.5	10.3	19.4	11.9	12.0
Green Ratio (*g/C*)		0.19		0.34	0.38	0.60	0.00	0.22	0.22	0.22	0.43	0.43
Capacity (*c*), veh/h		203		309	668	904	6	746	332	741	786	762
Volume-to-Capacity Ratio (*X*)		0.707		0.768	0.225	1.020	0.525	0.837	0.465	0.806	0.352	0.354
Back of Queue (*Q*), ft/ln (95 th percentile)		214.1		252.8	136.7	1052.2	8.5	365.6	184.7	337.6	228.9	223.1
Back of Queue (*Q*), veh/ln (95 th percentile)		7.8		9.3	5.1	39.6	0.3	13.7	6.9	13.1	8.7	8.6
Queue Storage Ratio (*RQ*) (95 th percentile)		0.95		0.53	0.00	0.00	0.04	0.00	0.62	0.50	0.00	0.00
Uniform Delay (*d 1*), s/veh		45.3		32.0	24.4	23.4	57.9	43.4	39.5	43.2	22.0	22.0
Incremental Delay (*d 2*), s/veh		6.5		6.5	0.6	35.0	55.0	5.4	1.4	3.0	0.4	0.4
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
Control Delay (*d*), s/veh		51.8		38.5	25.0	58.3	112.9	48.8	40.9	46.2	22.4	22.4
Level of Service (LOS)		D		D	C	F	F	D	D	D	C	C
Approach Delay, s/veh / LOS	51.8	D		50.9	D		47.5	D		34.8	C	
Intersection Delay, s/veh / LOS	44.7						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

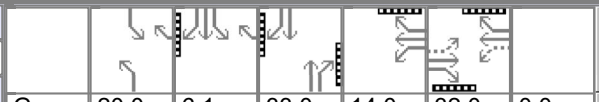
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	BUCKHOLZ TRAFFIC			Duration, h	0.250
Analyst	J. Buckholz	Analysis Date	Oct 30, 2023	Area Type	Other
Jurisdiction	Clay County	Time Period	PM Peak Hour	PHF	0.92
Urban Street	US 17	Analysis Year	2026 w/ Balanced Timings	Analysis Period	1> 16:30
Intersection	SR 16 / Cooks Lane	File Name	BAL_2026_B_PM_US17_SR16_CooksLn.xus		
Project Description	2026 PM Peak Hr BUILD Traffic				

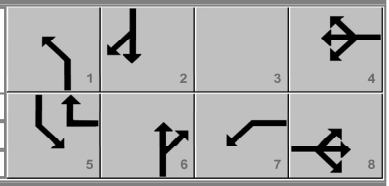


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	68	61	3	218	138	942	3	575	178	549	460	43

Signal Information			
Cycle, s	139.9	Reference Phase	2
Offset, s	110	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	Off



Green	20.0	6.1	33.0	14.0	32.0	0.0
Yellow	4.9	4.9	4.9	4.8	4.8	0.0
Red	2.0	2.0	2.0	2.0	2.5	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8	7	4	1	6	5	2
Case Number		8.3	1.0	3.0	2.0	3.0	2.0	4.0
Phase Duration, s		39.3	20.8	60.1	26.9	39.9	39.9	52.9
Change Period, ($Y+R_c$), s		7.3	6.8	7.3	6.9	6.9	6.9	6.9
Max Allow Headway (*MAH*), s		6.1	4.9	7.1	3.9	4.4	4.9	4.4
Queue Clearance Time (g_s), s		24.8	16.0	54.8	2.2	26.1	24.7	19.1
Green Extension Time (g_e), s		0.5	0.0	0.0	0.0	2.2	2.3	2.4
Phase Call Probability		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability		0.60	1.00	1.00	0.00	0.56	0.43	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h		143		237	150	922	3	625	154	597	277	270
Adjusted Saturation Flow Rate (*s*), veh/h/ln		800		1654	1752	1510	1810	1696	1359	1702	1811	1756
Queue Service Time (g_s), s		20.9		14.0	8.2	52.8	0.2	24.1	13.7	22.7	16.9	17.1
Cycle Queue Clearance Time (g_c), s		22.8		14.0	8.2	52.8	0.2	24.1	13.7	22.7	16.9	17.1
Green Ratio (*g/C*)		0.23		0.34	0.38	0.61	0.14	0.24	0.24	0.24	0.33	0.33
Capacity (*c*), veh/h		222		298	661	926	259	800	320	803	595	578
Volume-to-Capacity Ratio (*X*)		0.647		0.794	0.227	0.996	0.013	0.781	0.482	0.743	0.465	0.467
Back of Queue (*Q*), ft/ln (95 th percentile)		240		317.7	170	1173	4.4	423.7	219.3	393.9	318.8	310.5
Back of Queue (*Q*), veh/ln (95 th percentile)		8.8		11.7	6.3	44.1	0.2	15.9	8.2	15.3	12.2	11.9
Queue Storage Ratio (*RQ*) (95 th percentile)		1.07		0.67	0.00	0.00	0.02	0.00	0.73	0.58	0.00	0.00
Uniform Delay (d_1), s/veh		49.4		39.8	29.7	26.9	51.5	50.1	46.1	49.5	37.2	37.2
Incremental Delay (d_2), s/veh		6.4		14.4	0.6	28.5	0.0	5.3	1.6	4.0	0.8	0.8
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
Control Delay (*d*), s/veh		55.8		54.1	30.3	55.4	51.5	55.4	47.7	53.6	38.0	38.1
Level of Service (LOS)		E		D	C	E	D	E	D	D	D	D
Approach Delay, s/veh / LOS	55.8	E		52.3	D		53.8	D		46.1	D	
Intersection Delay, s/veh / LOS	50.7						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								