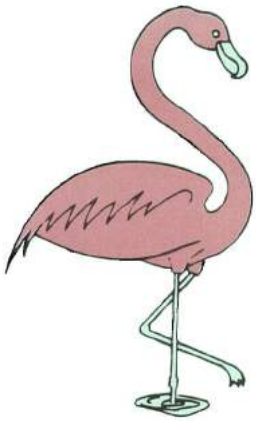
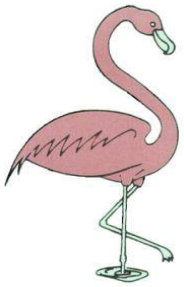
# LIVE OAK COLONY AT LIVE OAK
# TRAFFIC STUDY

SUWANNEE COUNTY, FLORIDA

September 2020



**BUCKHOLZ TRAFFIC**



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

September 3, 2020

Mr. Shay Segev
Live Oak Colony LLC
1400 Alton Road
Miami Beach, Florida 33139

Re: **Live Oak Colony at Live Oak Traffic Study**

Dear Mr. Segev:

Attached is the requested traffic study. If there are any questions or comments regarding this study, please contact me.

Sincerely,

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

This item has been digitally signed and sealed by Jeffrey W. Buckholz, P.E. on 9/3/20. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

## INTRODUCTION

This proposed residential development will contain 192 apartments in 3-floor buildings and will be located on the east side of SR 51 in Live Oak, Florida. Access to the development will be provided via one full access driveway on SR 51 and one full access driveway on Walker Avenue SW. SR 51 (Irvin Avenue SW) is a two lane undivided urban minor arterial with a posted speed limit of 45 mph in the vicinity of the site and an FDOT access management classification of 3. Walker Avenue SW is an undivided two lane urban major collector with a posted speed limit of 30 mph and nearby Marymac Street SW is a two lane undivided local road with a posted speed limit of 30 mph.

Figure 1 shows the site location and surrounding road network. Also shown in Figure 1 is the existing lane configuration and traffic control at intersections of interest in the area. Appendix A contains the proposed site plan. The development is expected to be completed and occupied by the end of 2021. Consequently, 2021 was chosen as the design year for this study.

## EXISTING TRAFFIC VOLUMES

Manual turning movement counts were conducted by Buckholz Traffic personnel during late August of 2020 at both the SR 51/Marymac Street SW intersection and the Walker Avenue SW/Marymac Street SW intersection. Turning movements into and out of Pineview Circle SW along SR 51 were also counted. These counts, which are provided in Tables 1 and 2, were conducted during the weekday peak period (3:30 PM - 5:45 PM) with school in session. The data was recorded at 15-minute intervals and includes a separate tabulation for trucks and pedestrians. Appendix B provides daily traffic volumes from the FDOT annual traffic counting program for two stations near the site. In the vicinity of the site the current Average Daily Traffic (ADT) on SR 51 is about 7900 vehicles per day and on Walker Avenue SW is about 4800 vehicles per day.

## TRIP GENERATION

Trip generation calculations were carried out using the 10th edition of ITE's Trip Generation Manual and referencing land use code 230 (Mid-Rise Multifamily Housing). Table 3 contains the daily, AM peak hour, and PM peak hour trip generation calculations. During an average weekday, the development is expected to generate 1044 trips (522 entering and 522 exiting) with 65 trips (17 entering and 48 exiting) occurring during the AM peak hour and 83 trips (51 entering and 32 exiting) occurring during the critical PM peak hour. All of these trips will be new trips.

## SITE TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

Weekday PM Peak hour site trips were directionally distributed based on the north/south residential trip distribution percentages calculated in Tables 1 and 2. The resulting peak hour traffic assignment for the development is provided in Figure 2. The values contained in this figure were obtained by multiplying the Table 3 trip generation results by the trip distribution percentages.

## FUTURE TRAFFIC VOLUMES

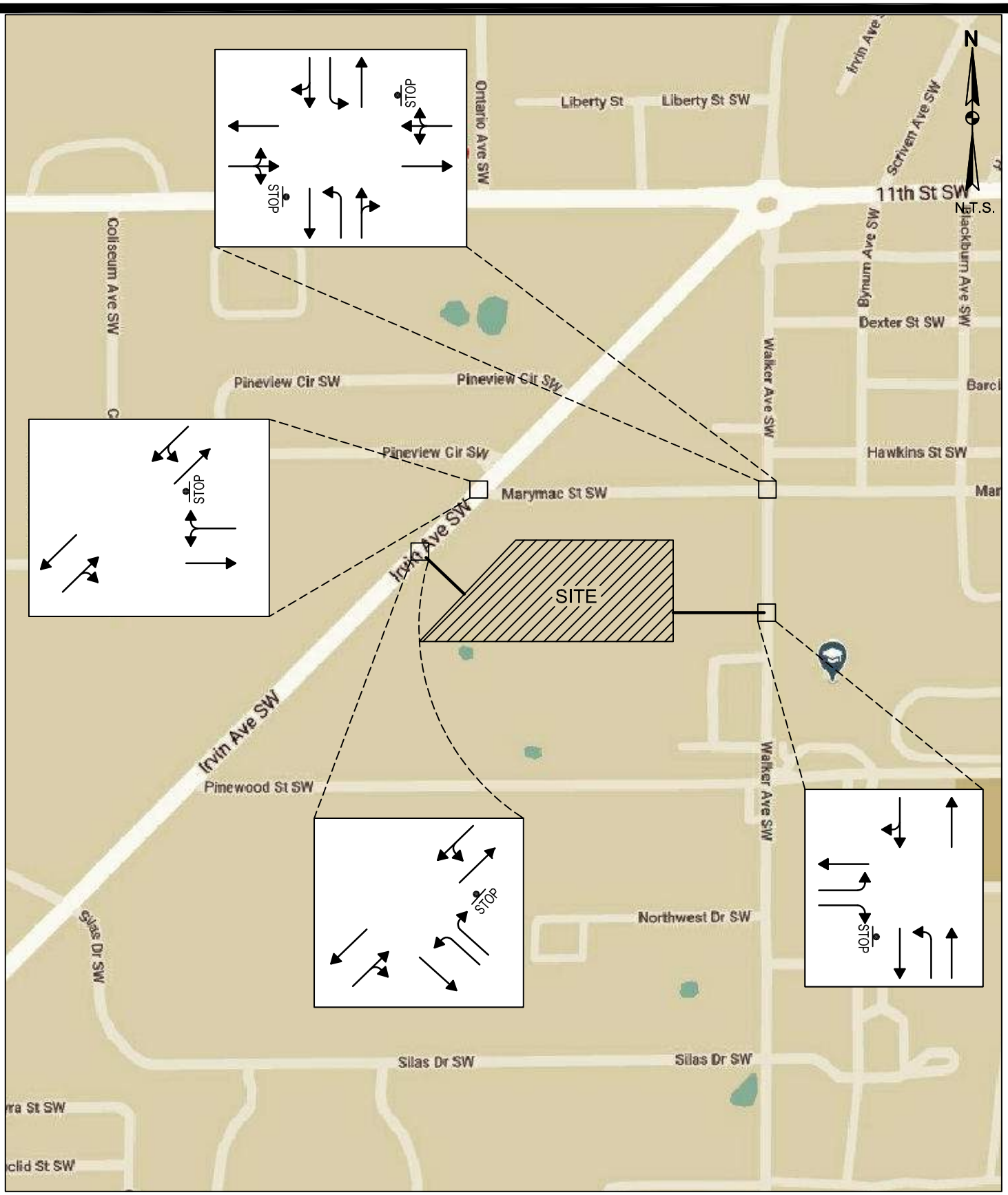
The expected weekday PM peak hour background (No Build) traffic volumes and total (Build) traffic volumes at area intersections of interest are graphically depicted in Figures 3 through 6. The 2021 background traffic volumes were obtained by multiplying the existing traffic volumes by a seasonal adjustment factor of 1.0 and then by an average annual growth rate of 2.3% for intersections located along SR 51 and 1.0% for intersections located along Walker Avenue SW. The growth rates were obtained via a linear regression analysis of recent daily FDOT traffic counts on SR 51 and Walker Avenue SW with 1% annual growth used as a minimum value. The 2021 total traffic volumes were obtained by adding the traffic generated by the new development to the 2021 background traffic volumes.

## TURN LANE EVALUATION

A formal analysis was made to determine if a right turn lane is warranted at either site drive. The methodology contained in NCHRP Report 279 was used to conduct this analysis. As is indicated in Figures 7 and 8, right turn volumes into the site under expected 2021 Build conditions 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 limit less than or equal to 45 mph. A formal analysis was also made to determine if a left turn lane is warranted at the west site drive (one already exists at the east 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 traffic volumes under expected 2021 Build conditions will not be high enough to warrant an exclusive left turn lane on SR 51 at the west site drive. The supporting analysis is provided in Figure 9.

## UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS

The four area unsignalized intersections of interest were analyzed using the two-way stop control methodology contained in Chapter 20 of the Sixth Edition of the Highway Capacity Manual. Table 4 summarizes the capacity analysis results for 2021 Build conditions. The supporting calculations are provided in Appendix C. Under 2021 Build conditions all minor movements at all four intersections are expected to operate at an acceptable level of service C or better with minimal queuing and delay. Two egress lanes are recommended for both site driveways to expedite traffic operations.




Ⓢ = EXISTING TRAFFIC SIGNAL

FIGURE 1

SITE LOCATION

Buckholz Traffic

O:\20-1632\CAD\FIG 01.dwg Date:09-01-20 T:15:56 By:AVDelacruz

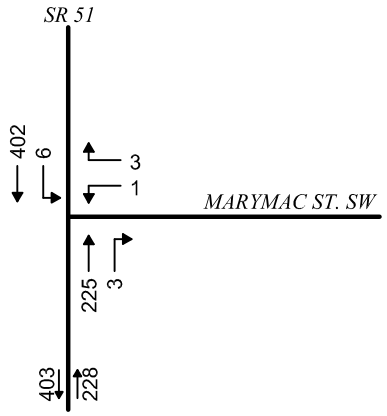

FIGURE 2

SITE TRAFFIC ASSIGNMENT

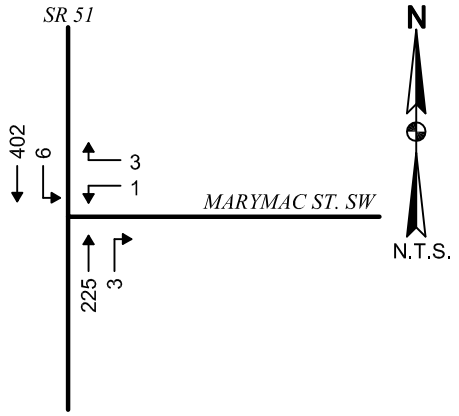
WEEKDAY PM PEAK HOUR

Buckholz Traffic

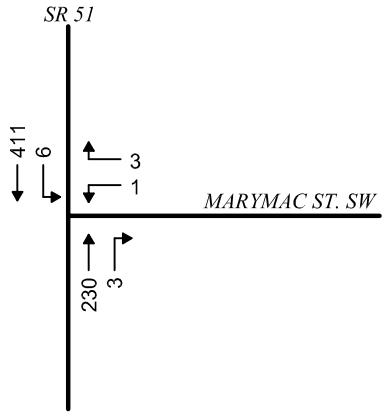
O:\20-1632\CAD\FIG 02.dwg Date:08-27-20 T:17:49 By:AVDelacruz



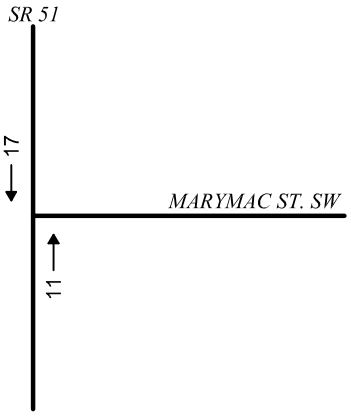

EXISTING TRAFFIC
08/26/20
4:45-5:45 PM



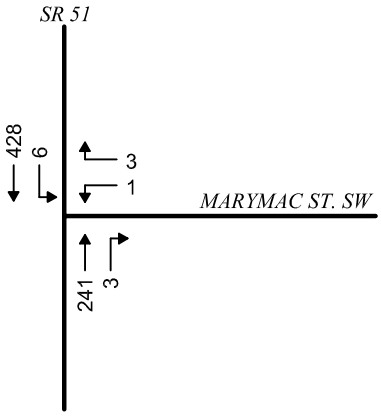

2020 SEASONALLY ADJUSTED TRAFFIC
FDOT SEASONAL CORRECTION FACTOR = 1.00




2021 NO BUILD TRAFFIC
AVERAGE ANNUAL GROWTH RATE = 2.3% (GF=1.023)




SITE TRAFFIC




2021 BUILD TRAFFIC

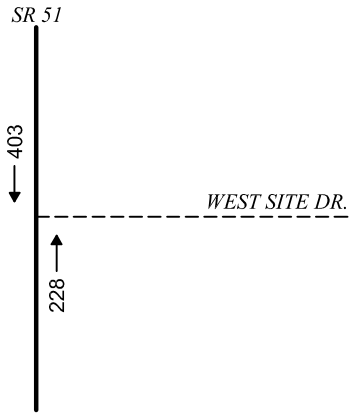
Buckholz Traffic

FIGURE 3

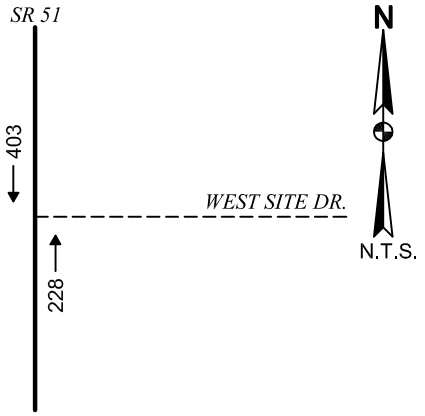
2021 BUILD TRAFFIC
SR 51 / MARYMAC ST. SW

WEEKDAY PM PEAK HOUR

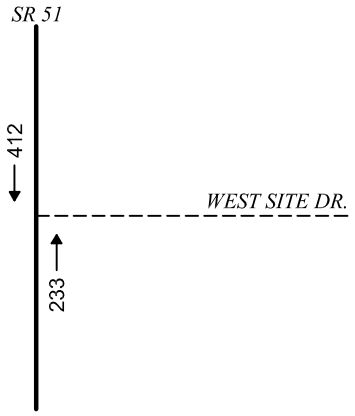
O:\20-1632\CAD\FIG_03.dwg Date:08-27-20 T:18:04 By:AVDelacruz



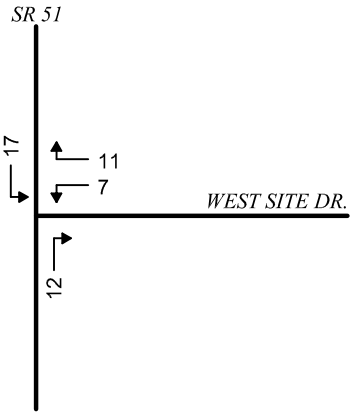

EXISTING TRAFFIC
08/26/20
4:45-5:45 PM



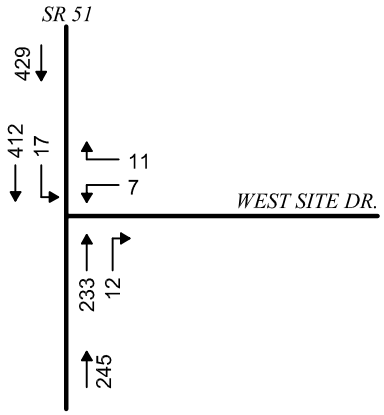

2020 SEASONALLY ADJUSTED TRAFFIC
FDOT SEASONAL CORRECTION FACTOR = 1.00




2021 NO BUILD TRAFFIC
AVERAGE ANNUAL GROWTH RATE = 2.3% (GF=1.023)




SITE TRAFFIC




2021 BUILD TRAFFIC

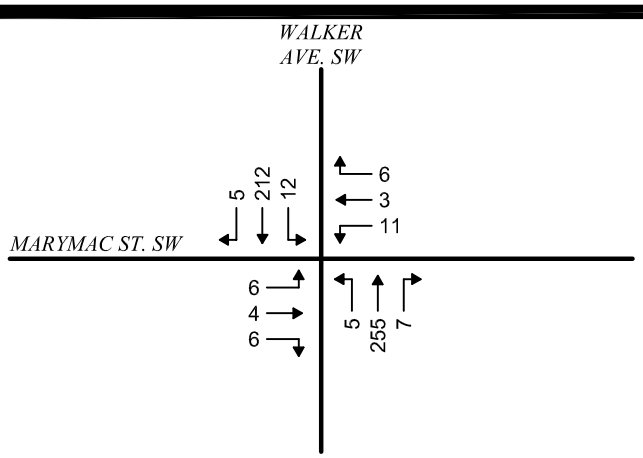
Buckholz Traffic

FIGURE 4

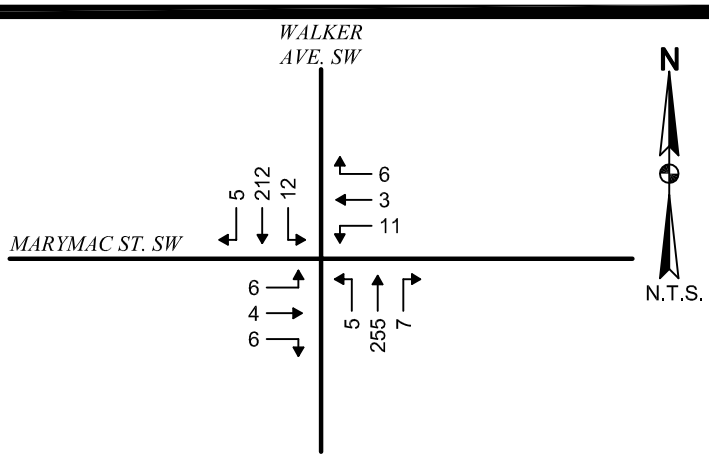
2021 BUILD TRAFFIC
SR 51 / WEST SITE DRIVE

WEEKDAY PM PEAK HOUR

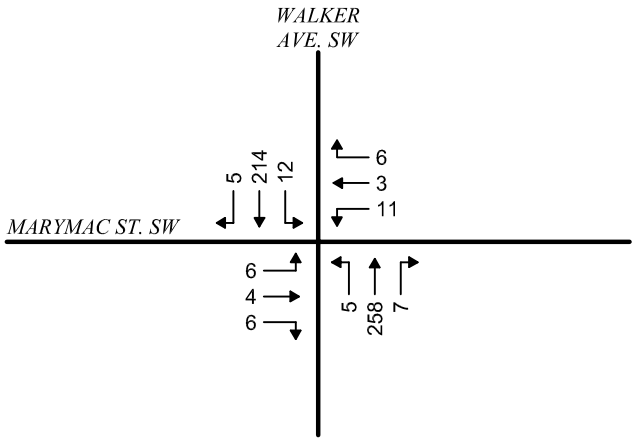
O:\20-1632\CAD\FIG_04.dwg Date:08-27-20 T:18:12 By:AVDelacruz



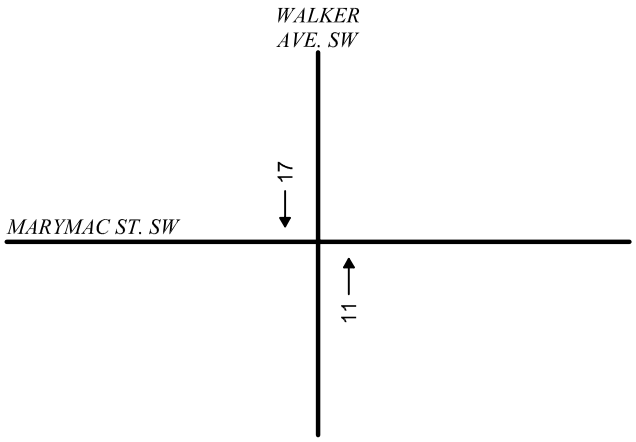

EXISTING TRAFFIC
08/28/20
4:15-5:15 PM



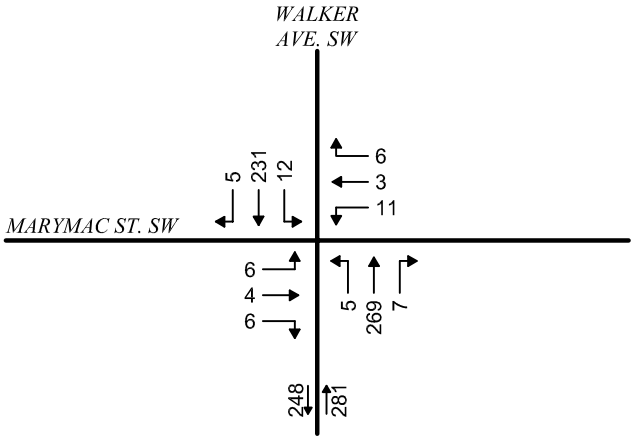

2020 SEASONALLY ADJUSTED TRAFFIC
FDOT SEASONAL CORRECTION FACTOR = 1.00




2021 NO BUILD TRAFFIC
AVERAGE ANNAL GROWTH RATE = 1.0% (GF=1.01)




SITE TRAFFIC




2021 BUILD TRAFFIC

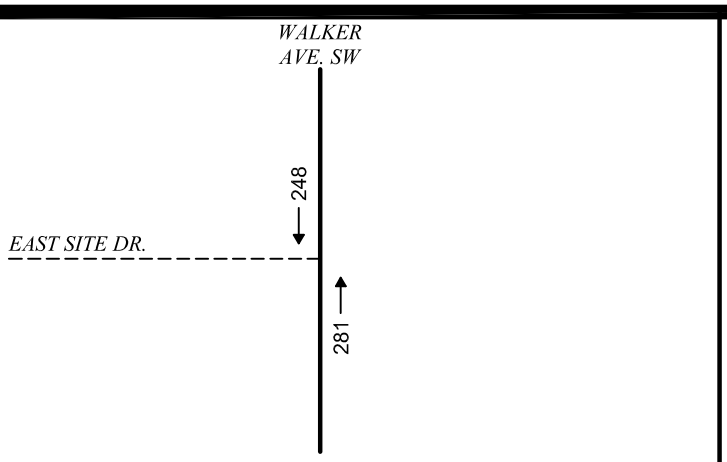
Buckholz Traffic

FIGURE 5
2021 BUILD TRAFFIC

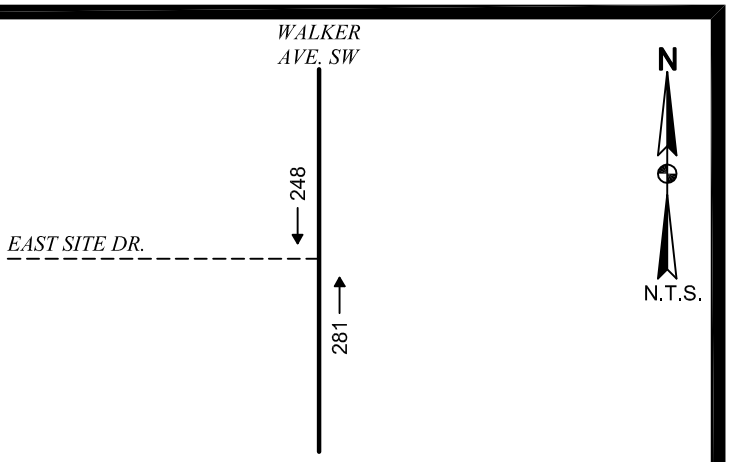
WALKER AVE. SW /
MARYMAC ST. SW

WEEKDAY PM PEAK HOUR

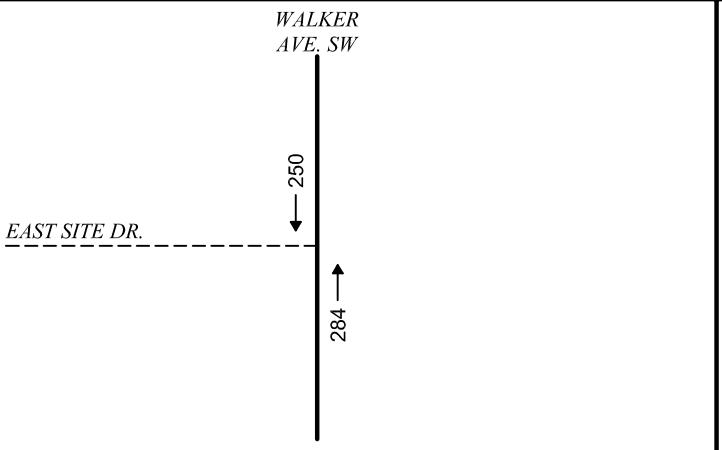
O:\20-1632\CAD\FIG_05.dwg Date: 09-01-20 T:16:05 By:AVDelacruz



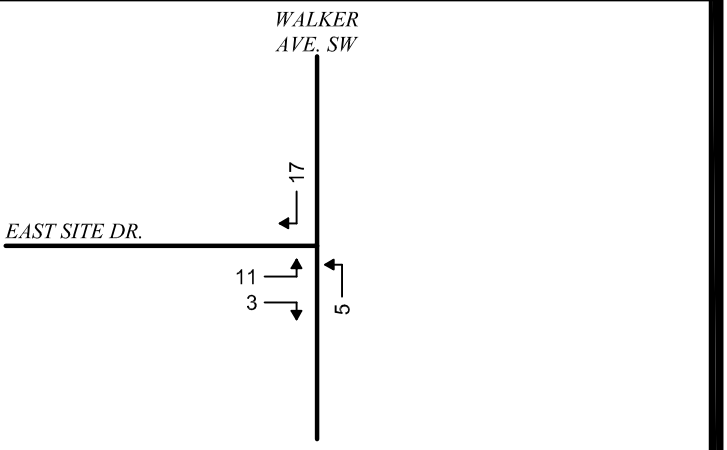

EXISTING TRAFFIC
2020
PM



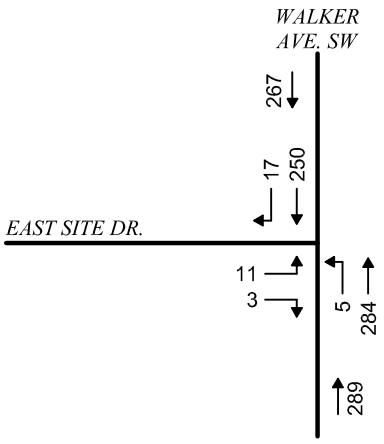

2020 SEASONALLY ADJUSTED TRAFFIC
FDOT SEASONAL CORRECTION FACTOR = 1.00




2021 NO BUILD TRAFFIC
AVERAGE ANNUAL GROWTH RATE = 1.0% (GF=1.01)




SITE TRAFFIC



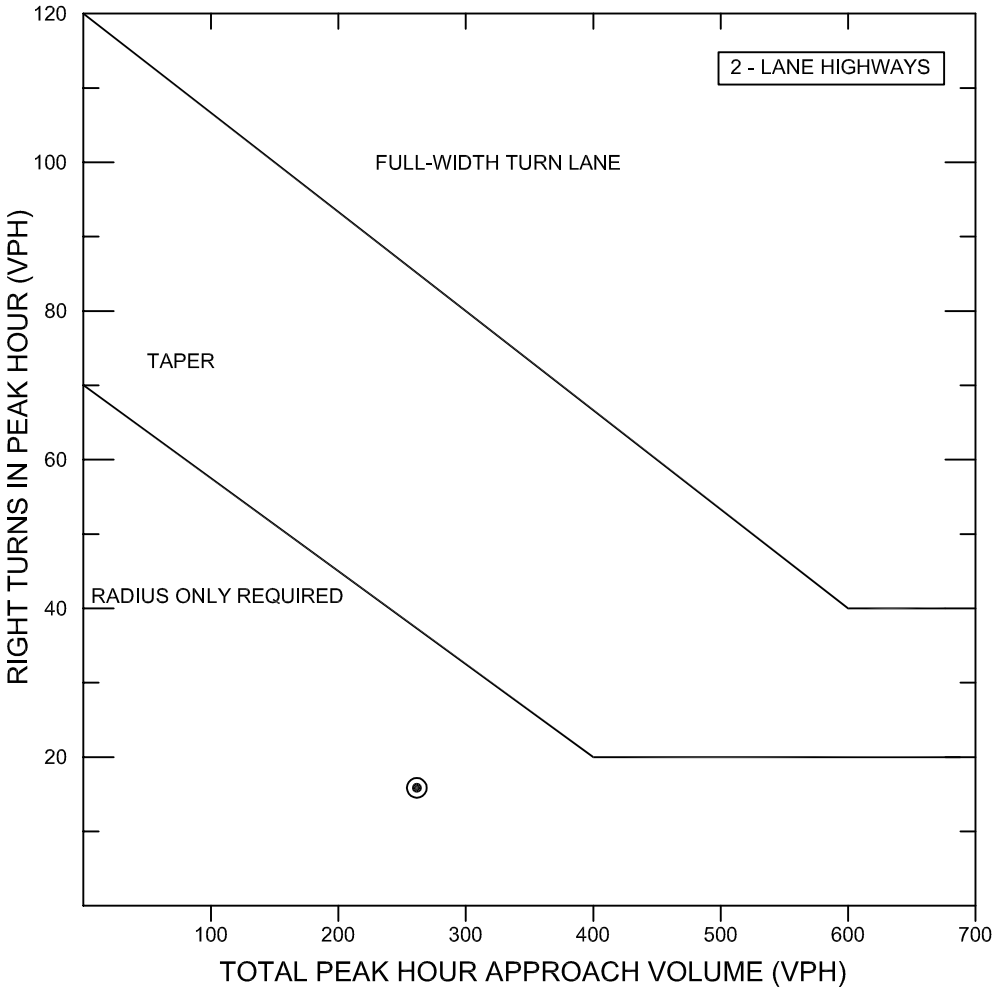

2021 BUILD TRAFFIC

Buckholz Traffic

FIGURE 6
2021 BUILD TRAFFIC
WALKER AVE. SW /
EAST SITE DRIVE
WEEKDAY PM PEAK HOUR

O:\20-1632\CAD\FIG_06.dwg Date: 09-01-20 T:16:13 By: AVDelacruz

# WALKER AVENUE SW AT EAST SITE DRIVE




## NOMOGRAPH FOR RIGHT TURN LANES

SOURCE: TRANSPORTATION RESEARCH BOARD NCHRP REPORT #279

⊙PM PEAK HOUR

| | |
|---|---|
| $V_A$ | 267 |
| $V_R$ | 17 |

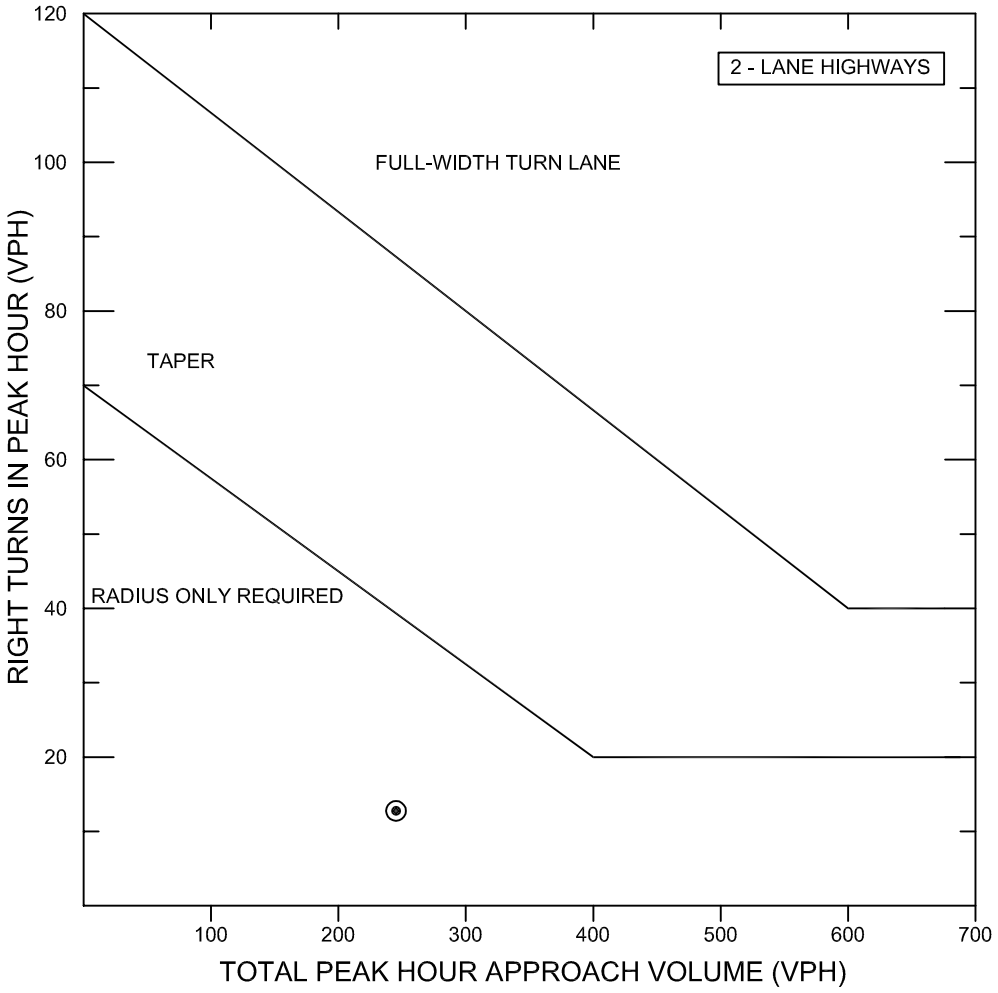
| NCHRP 420 | |
|---|---|
| 2 LANE | ≤ 45 MPH |

17 < 80 REQUIRED

FIGURE 7

RIGHT TURN
LANE ANALYSIS

# SR 51 AT WEST SITE DRIVE




## NOMOGRAPH FOR RIGHT TURN LANES

SOURCE: TRANSPORTATION RESEARCH BOARD NCHRP REPORT #279

⊙PM PEAK HOUR

| | |
|---|---|
| $V_A$ | 245 |
| $V_R$ | 12 |

| NCHRP 420 | |
|---|---|
| 2 LANE | ≤ 45 MPH |

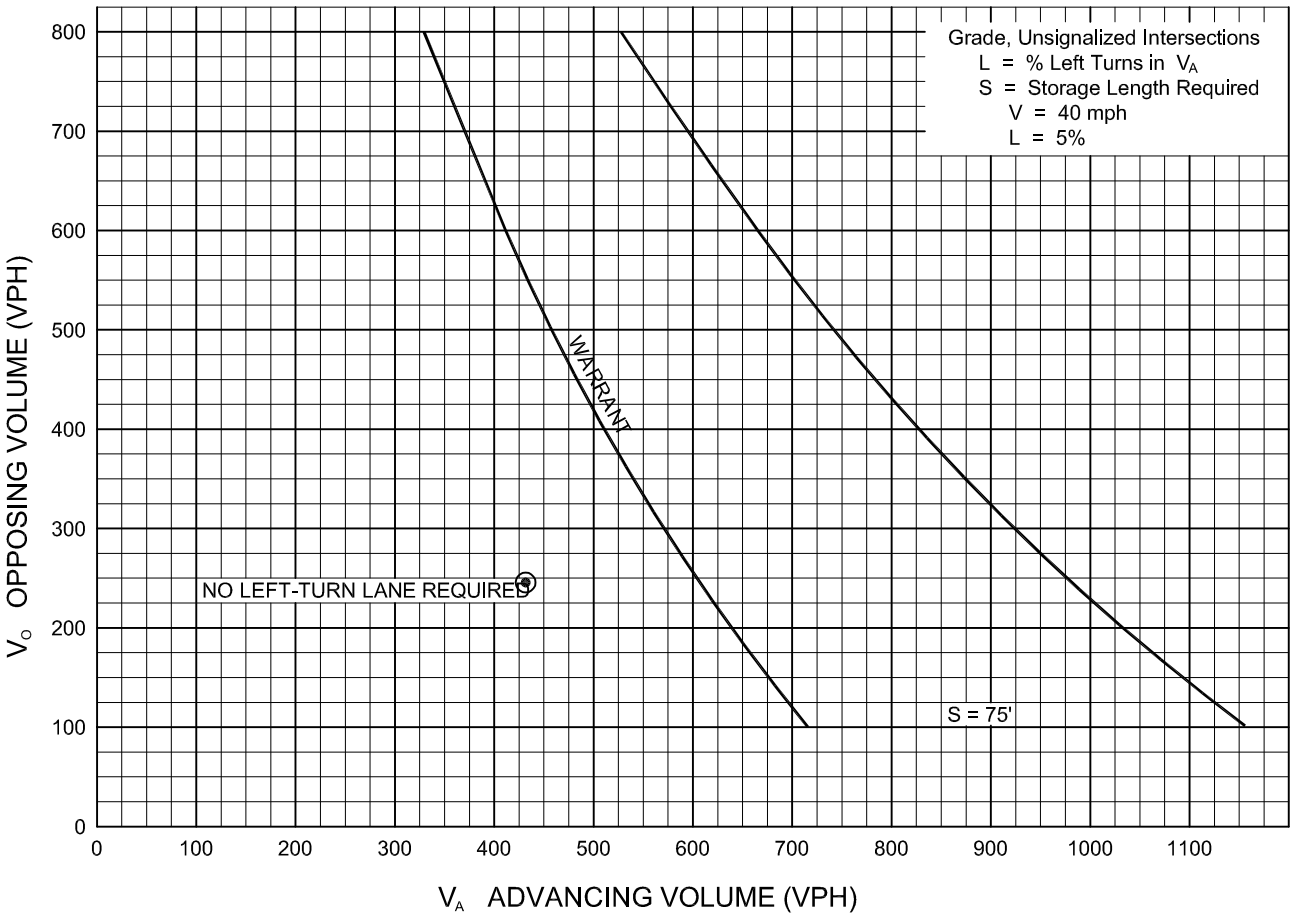
12 < 80 REQUIRED

FIGURE 8

RIGHT TURN
LANE ANALYSIS

Buckholz Traffic

## SR 51 AT WEST SITE DRIVE




## WARRANT FOR LEFT-TURN STORAGE LANES ON TWO-LANE HIGHWAYS

◉PM PEAK HOUR

| |
|---|
| $V_A$ = 429 |
| $V_O$ = 245 |
| $V_L$ = 17 |
| $\%LT = \frac{V_L}{V_A} = \frac{17}{429} = 4\%$ |

*SOURCE: HARMELINK*

FIGURE 9

LEFT TURN
LANE ANALYSIS

O:\20-1632\CAD\FIG_09.dwg Date:09-01-20 T:16:24 By:AVDelacruz

# TABLE 1
# MANUAL TURNING MOVEMENT COUNT
# SR 51 / MARYMAC STREET SW
# LIVE OAK, FLORIDA

**Wednesday, August 26, 2020**

**ALL VEHICLES**

| | SR 51 | | Marymac Street SW | | | | | Pineview Circle SW | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Northbound | Southbound | Left Turn In | Right Turn Out | Left Turn Out | Right Turn In | All | Left Turn In | Right Turn Out | Left Turn Out | Right Turn In | All |
| 3:30-3:45 PM | 64 | 68 | 2 | 1 | 0 | 0 | 135 | 0 | 0 | 1 | 1 | 2 |
| 3:45-4:00 PM | 68 | 70 | 0 | 1 | 0 | 0 | 139 | 0 | 0 | 0 | 1 | 1 |
| 4:00-4:15 PM | 60 | 71 | 0 | 1 | 1 | 0 | 133 | 3 | 0 | 2 | 2 | 7 |
| 4:15-4:30 PM | 54 | 80 | 1 | 2 | 1 | 1 | 139 | 1 | 2 | 0 | 2 | 5 |
| 4:30-4:45 PM | 48 | 74 | 2 | 2 | 1 | 4 | 131 | 1 | 0 | 3 | 4 | 8 |
| **4:45-5:00 PM** | **58** | **82** | **4** | **1** | **0** | **1** | **146** | 1 | 3 | 2 | 4 | 10 |
| **5:00-5:15 PM** | **57** | **121** | **0** | **1** | **1** | **1** | **181** | 2 | 0 | 2 | 1 | 5 |
| **5:15-5:30 PM** | **66** | **110** | **0** | **0** | **0** | **1** | **177** | 3 | 1 | 3 | 3 | 10 |
| **5:30-5:45 PM** | **44** | **89** | **2** | **1** | **0** | **0** | **136** | 1 | 0 | 2 | 3 | 6 |
| **PM PEAK PERIOD:** | **519** | **765** | **11** | **10** | **4** | **8** | **1317** | **12** | **6** | **15** | **21** | **54** |
| | **40%** | **60%** | **TO/FROM NORTH** | | **TO/FROM SOUTH** | | | **TO/FROM SOUTH** | | **TO/FROM NORTH** | | |
| | | | **66%** | | | | **34%** | | | | | |
| **PM PEAK HOUR:** | **225** | **402** | **6** | **3** | **1** | **3** | **640** | | | | | |

**TRUCKS**

| | SR 51 | | Marymac Street SW | | | | |
|---|---|---|---|---|---|---|---|
| | Northbound | Southbound | Left Turn In | Right Turn Out | Left Turn Out | Right Turn In | All |
| 3:30-3:45 PM | 7 | 4 | 0 | 0 | 0 | 0 | 11 |
| 3:45-4:00 PM | 12 | 6 | 0 | 0 | 0 | 0 | 18 |
| 4:00-4:15 PM | 7 | 2 | 0 | 0 | 0 | 0 | 9 |
| 4:15-4:30 PM | 8 | 9 | 0 | 0 | 0 | 1 | 18 |
| 4:30-4:45 PM | 11 | 5 | 0 | 0 | 0 | 0 | 16 |
| **4:45-5:00 PM** | **5** | **6** | **0** | **0** | **0** | **0** | **11** |
| **5:00-5:15 PM** | **5** | **8** | **0** | **0** | **0** | **0** | **13** |
| **5:15-5:30 PM** | **7** | **6** | **0** | **0** | **0** | **0** | **13** |
| **5:30-5:45 PM** | **4** | **7** | **0** | **0** | **0** | **0** | **11** |
| **PM PEAK PERIOD:** | **66** | **53** | **0** | **0** | **0** | **1** | **120** |
| **Percent Trucks:** | **13%** | **7%** | **0%** | **0%** | **0%** | **13%** | **9%** |
| **PM PEAK HOUR:** | **21** | **27** | **0** | **0** | **0** | **0** | **48** |

**BUCKHOLZ TRAFFIC**

# TABLE 2
# MANUAL TURNING MOVEMENT COUNT
# WALKER AVENUE SW / MARYMAC STREET SW
# LIVE OAK, FLORIDA

**Friday, August 28, 2020**

**ALL VEHICLES**

| | Walker Avenue SW | | Marymac Street SW - East Approach | | | | | Marymac Street SW - West Approach | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Northbound | Southbound | Left Turn In | Right Turn Out | Straight Out | Left Turn Out | Right Turn In | Left Turn In | Right Turn Out | Straight Out | Left Turn Out | Right Turn In | All |
| 3:30-3:45 PM | 51 | 47 | 2 | 2 | 0 | 2 | 1 | 0 | 1 | 0 | 2 | 0 | 108 |
| 3:45-4:00 PM | 55 | 53 | 0 | 4 | 0 | 2 | 1 | 3 | 1 | 1 | 2 | 2 | 124 |
| 4:00-4:15 PM | 36 | 54 | 2 | 0 | 1 | 2 | 2 | 1 | 3 | 0 | 1 | 1 | 103 |
| **4:15-4:30 PM** | **57** | **51** | **0** | **1** | **0** | **2** | **1** | **1** | **2** | **0** | **1** | **2** | **118** |
| **4:30-4:45 PM** | **59** | **58** | **9** | **2** | **1** | **3** | **0** | **2** | **3** | **3** | **1** | **1** | **142** |
| **4:45-5:00 PM** | **68** | **56** | **0** | **2** | **0** | **5** | **4** | **0** | **1** | **1** | **2** | **2** | **141** |
| **5:00-5:15 PM** | **71** | **47** | **3** | **1** | **2** | **1** | **2** | **2** | **0** | **0** | **2** | **0** | **131** |
| 5:15-5:30 PM | 42 | 46 | 0 | 1 | 0 | 5 | 2 | 1 | 1 | 0 | 0 | 0 | 98 |
| 5:30-5:45 PM | 30 | 39 | 0 | 3 | 0 | 4 | 2 | 0 | 1 | 1 | 0 | 0 | 80 |
| **PM PEAK PERIOD:** | **469** | **451** | **16** | **16** | **4** | **26** | **15** | **10** | **13** | **6** | **11** | **8** | **1045** |
| | **51%** | **49%** | **TO/FROM NORTH** | | | **TO/FROM SOUTH** | | **TO/FROM SOUTH** | | | **TO/FROM NORTH** | | |
| | | | | | | **56%** | | | | | **44%** | | |
| **PM PEAK HOUR:** | **255** | **212** | **12** | **6** | **3** | **11** | **7** | **5** | **6** | **4** | **6** | **5** | **532** |

**TRUCKS**

| | Walker Avenue SW | | Marymac Street SW - East Approach | | | | | Marymac Street SW - West Approach | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Northbound | Southbound | Left Turn In | Right Turn Out | Straight Out | Left Turn Out | Right Turn In | Left Turn In | Right Turn Out | Straight Out | Left Turn Out | Right Turn In | All |
| 3:30-3:45 PM | 0 | 7 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 3:45-4:00 PM | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 4:00-4:15 PM | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| **4:15-4:30 PM** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** |
| **4:30-4:45 PM** | **3** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **6** |
| **4:45-5:00 PM** | **1** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **3** |
| **5:00-5:15 PM** | **1** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **3** |
| **5:15-5:30 PM** | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| **5:30-5:45 PM** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| **PM PEAK PERIOD:** | **8** | **32** | **1** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **42** |
| **Percent Trucks:** | **2%** | **7%** | **6%** | **0%** | **0%** | **4%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **4%** |
| **PM PEAK HOUR:** | **5** | **8** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **13** |

**BUCKHOLZ TRAFFIC**

**TABLE 3**

**TRIP GENERATION CALCULATIONS**

**MULTIFAMILY HOUSING (MID-RISE)**

Land Use Code 221

T = Number of Vehicle Trip Ends

X = Number of Dwelling Units = 192

| TIME PERIOD | TRIP GENERATION EQUATION | TOTAL TRIP ENDS | PERCENT ENTERING | PERCENT EXITING | TOTAL TRIP ENDS ENTERING | TOTAL TRIP ENDS EXITING |
|---|---|---|---|---|---|---|
| **WEEKDAY** | | | | | | |
| Daily | T = 5.45 (X) - 1.75 | 1044 | 50% | 50% | 522 | 522 |
| AM Peak Hour | Ln(T) = 0.98Ln(X) - 0.98 | 65 | 26% | 74% | 17 | 48 |
| PM Peak Hour | Ln(T) = 0.96Ln(X) - 0.63 | 83 | 61% | 39% | 51 | 32 |

SOURCE: Institute of Transportation Engineers, "Trip Generation", 10th Edition (2017)

**TABLE 4**
**UNSIGNALIZED INTERSECTION CAPACITY RESULTS**

**SR 51 / MARYMAC STREET SW**

| 2021 BUILD CONDITIONS | WEEKDAY PM PEAK HOUR | | | |
|---|---|---|---|---|
| Movement | LOS | Delay | v/c Ratio | 95th % Queue (vehicles) |
| Southbound Left Turn | A | 7.8 sec/veh | 0.01 | 1 |
| Westbound Approach | B | 11.0 sec/veh | 0.01 | 1 |

**WALKER AVENUE SW / MARYMAC STREET SW**

| 2021 BUILD CONDITIONS | WEEKDAY PM PEAK HOUR | | | |
|---|---|---|---|---|
| Movement | LOS | Delay | v/c Ratio | 95th % Queue (vehicles) |
| Northbound Left Turn | A | 7.7 sec/veh | 0.00 | 1 |
| Southbound Left Turn | A | 7.9 sec/veh | 0.01 | 1 |
| Eastbound Approach | B | 12.3 sec/veh | 0.03 | 1 |
| Westbound Approach | B | 12.9 sec/veh | 0.04 | 1 |

**SR 51 / WEST SITE DRIVE**

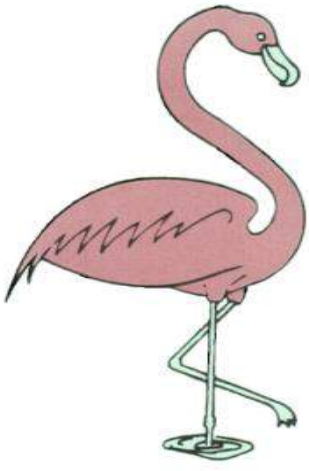
| 2021 BUILD CONDITIONS | WEEKDAY PM PEAK HOUR | | | |
|---|---|---|---|---|
| Movement | LOS | Delay | v/c Ratio | 95th % Queue (vehicles) |
| Southbound Left Turn | A | 7.8 sec/veh | 0.02 | 1 |
| Westbound Left Turn | C | 15.3 sec/veh | 0.02 | 1 |
| Westbound Right Turn | A | 9.8 sec/veh | 0.02 | 1 |

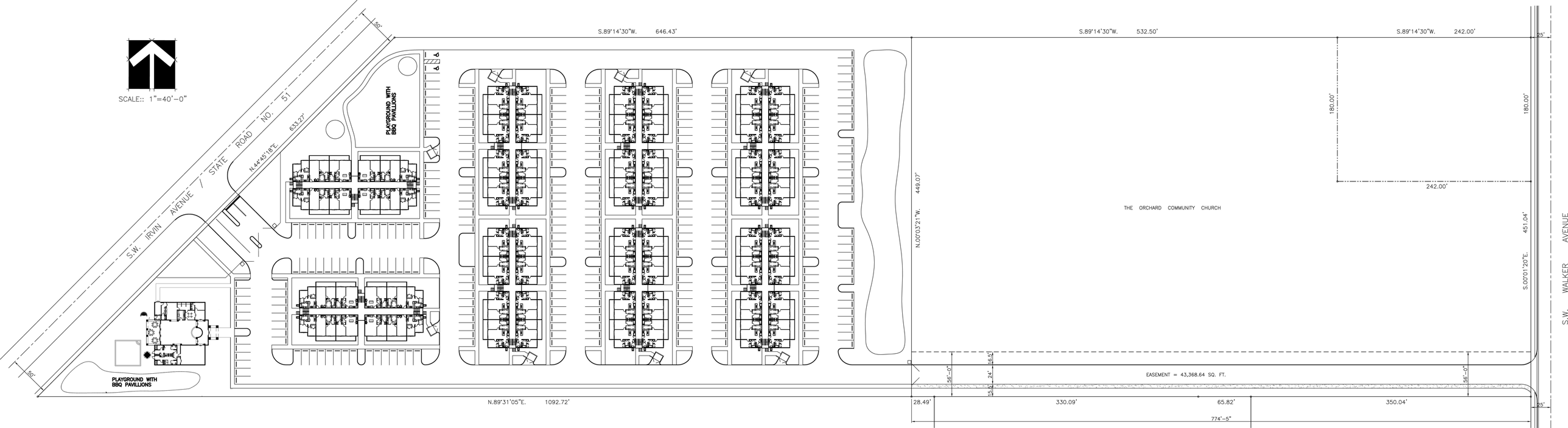
**WALKER AVENUE SW / EAST SITE DRIVE**

| 2021 BUILD CONDITIONS | WEEKDAY PM PEAK HOUR | | | |
|---|---|---|---|---|
| Movement | LOS | Delay | v/c Ratio | 95th % Queue (vehicles) |
| Southbound Left Turn | A | 7.8 sec/veh | 0.00 | 1 |
| Eastbound Left Turn | B | 12.9 sec/veh | 0.02 | 1 |
| Eastbound Right Turn | A | 9.7 sec/veh | 0.00 | 1 |

# APPENDIX A

# SITE PLAN




SCALE:: 1"=40'-0"
S.W. IRVIN AVENUE / STATE ROAD NO. 51
N.44°45'18"E. 633.27'
50'
50'
PLAYGROUND WITH BBQ PAVILLIONS
PLAYGROUND WITH BBQ PAVILLIONS
S.89°14'30"W. 646.43'
S.89°14'30"W. 532.50'
S.89°14'30"W. 242.00'
N.89°31'05"E. 1092.72'
N.00°03'21"W. 449.07'
S.00°01'20"E. 451.04'
180.00'
180.00'
242.00'
THE ORCHARD COMMUNITY CHURCH
EASEMENT = 43,368.64 SQ. FT.
56'-0"
15.5'
24'
16.5'
56'-0"
28.49'
330.09'
65.82'
350.04'
774'-5"
25'
25'
S.W. WALKER AVENUE

# APPENDIX B

# FDOT TRAFFIC DATA

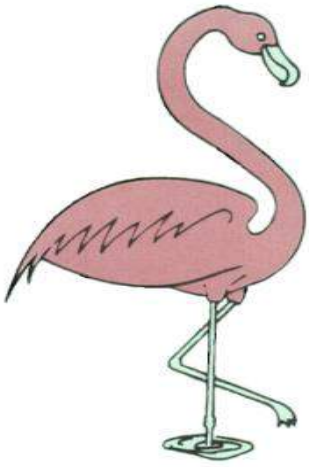
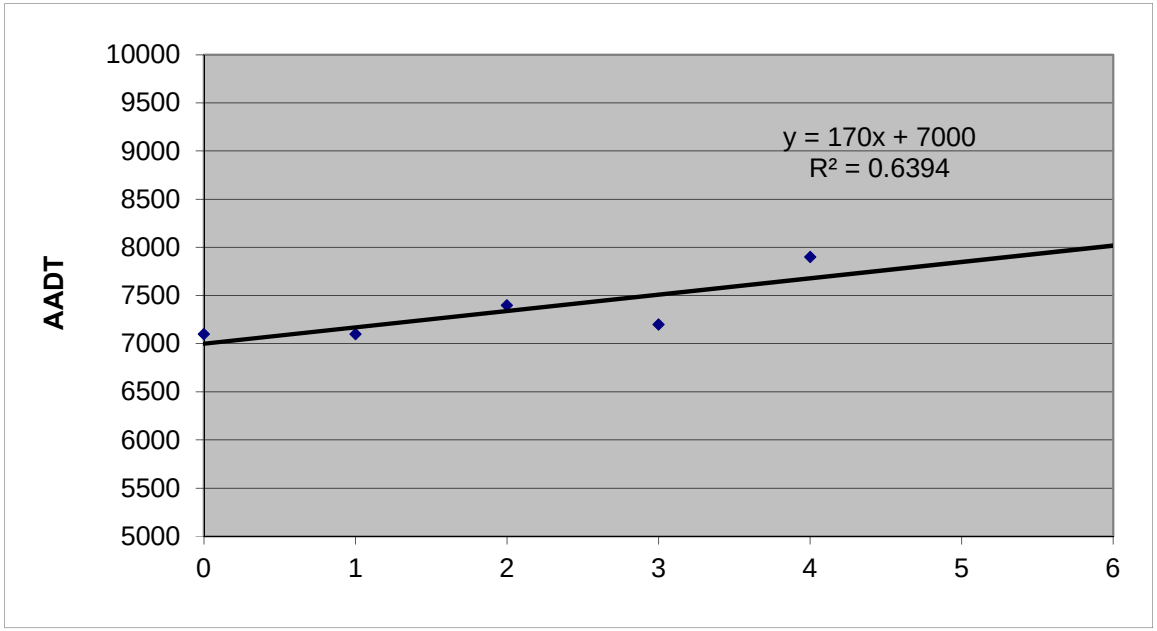


**TABLE B-1**
**LINEAR REGRESSION ANALYSIS**

**SR 51, South of Evergreen Avenue**

| Year | X | Actual AADT (Y) | **Predicted AADT** |
|---|---|---|---|
| 2015 | 0 | 7100 | **7000** |
| 2016 | 1 | 7100 | 7170 |
| 2017 | 2 | 7400 | 7340 |
| 2018 | 3 | 7200 | 7510 |
| 2019 | 4 | 7900 | 7680 |
| 2020 | 5 | | 7850 |
| 2021 | 6 | | **8020** |

**i = 2.3%**




**BUCKHOLZ TRAFFIC**

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

COUNTY: 37 - SUWANNEE

SITE: 0120 - SR 51 S. OF EVERGEEN AVE.

| YEAR | AADT | DIRECTION 1 | | DIRECTION 2 | | *K FACTOR | D FACTOR | T FACTOR |
|---|---|---|---|---|---|---|---|---|
| 2019 | 7900 C | E | 0 | W | 0 | 9.00 | 56.60 | 7.00 |
| 2018 | 7200 C | E | 0 | W | 0 | 9.00 | 55.90 | 8.00 |
| 2017 | 7400 C | E | 0 | W | 0 | 9.00 | 56.50 | 7.10 |
| 2016 | 7100 C | E | 0 | W | 0 | 9.50 | 55.10 | 7.90 |
| 2015 | 7100 C | E | 0 | W | 0 | 9.50 | 55.90 | 7.00 |
| 2014 | 6900 C | E | | W | | 9.50 | 55.90 | 6.90 |
| 2013 | 6500 C | E | 0 | W | 0 | 9.50 | 55.60 | 7.50 |
| 2012 | 7100 C | E | 0 | W | 0 | 9.50 | 56.00 | 7.00 |
| 2011 | 6800 C | E | 0 | W | 0 | 9.50 | 55.20 | 5.90 |
| 2010 | 6900 C | E | 0 | W | 0 | 9.90 | 56.28 | 6.70 |
| 2009 | 6500 C | E | 0 | W | 0 | 9.74 | 54.89 | 5.40 |
| 2008 | 7000 C | E | 0 | W | 0 | 9.89 | 56.36 | 6.90 |
| 2007 | 7500 C | E | 0 | W | 0 | 9.99 | 55.55 | 8.50 |
| 2006 | 7200 C | E | 0 | W | 0 | 10.00 | 58.44 | 7.60 |
| 2005 | 7900 C | E | | W | | 9.90 | 57.70 | 13.00 |
| 2004 | 7700 C | E | | W | | 9.90 | 55.70 | 11.10 |

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

COUNTY: 37
STATION: 0120
DESCRIPTION: SR 51 S. OF EVERGEEN AVE.
START DATE: 06/26/2019
START TIME: 0000

DIRECTION: B

| TIME | 1ST | 2ND | 3RD | 4TH | TOTAL |
|---|---|---|---|---|---|
| 0000 | 25 | 25 | 22 | 18 | 90 |
| 0100 | 16 | 8 | 10 | 11 | 45 |
| 0200 | 11 | 8 | 7 | 5 | 31 |
| 0300 | 15 | 6 | 14 | 12 | 47 |
| 0400 | 3 | 20 | 14 | 10 | 47 |
| 0500 | 7 | 24 | 23 | 30 | 84 |
| 0600 | 19 | 28 | 35 | 49 | 131 |
| 0700 | 67 | 91 | 90 | 107 | 355 |
| 0800 | 125 | 109 | 152 | 174 | 560 |
| 0900 | 133 | 116 | 109 | 136 | 494 |
| 1000 | 87 | 115 | 103 | 103 | 408 |
| 1100 | 118 | 99 | 120 | 118 | 455 |
| 1200 | 117 | 123 | 119 | 137 | 496 |
| 1300 | 134 | 156 | 136 | 118 | 544 |
| 1400 | 133 | 153 | 121 | 148 | 555 |
| 1500 | 133 | 137 | 132 | 142 | 544 |
| 1600 | 117 | 152 | 128 | 142 | 539 |
| 1700 | 158 | 157 | 154 | 176 | 645 |
| 1800 | 212 | 178 | 181 | 153 | 724 |
| 1900 | 136 | 125 | 116 | 111 | 488 |
| 2000 | 114 | 93 | 122 | 100 | 429 |
| 2100 | 80 | 87 | 73 | 65 | 305 |
| 2200 | 84 | 57 | 63 | 45 | 249 |
| 2300 | 38 | 35 | 33 | 24 | 130 |
| 24-HOUR TOTALS: | | | | | 8395 |

PEAK VOLUME INFORMATION

| | HOUR | VOLUME |
|---|---|---|
| A.M. | 830 | 575 |
| P.M. | 1745 | 747 |
| DAILY | 1745 | 747 |

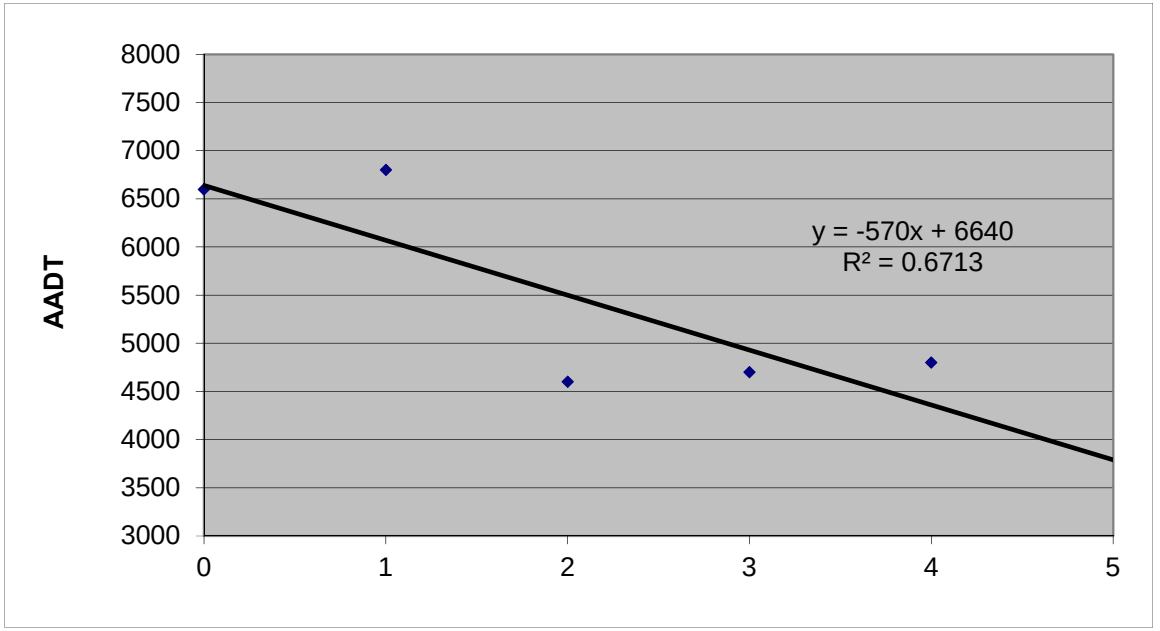
GENERATED BY SPS 5.0.53P

**TABLE B-2**
**LINEAR REGRESSION ANALYSIS**

**Walker Avenue, South of 11th Street SW Roundabout**

| Year | X | Actual AADT (Y) | **Predicted AADT** |
|---|---|---|---|
| 2015 | 0 | 6600 | **6640** |
| 2016 | 1 | 6800 | 6070 |
| 2017 | 2 | 4600 | 5500 |
| 2018 | 3 | 4700 | 4930 |
| 2019 | 4 | 4800 | 4360 |
| 2020 | 5 | | 3790 |
| 2021 | 6 | | **3220** |

**i = - 11.4%**




**BUCKHOLZ TRAFFIC**

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

COUNTY: 37 - SUWANNEE

SITE: 9146 - WALKER AVE. .1 MI. S. OF ROUNDABOUT

| YEAR | AADT | DIRECTION 1 | DIRECTION 2 | *K FACTOR | D FACTOR | T FACTOR |
|---|---|---|---|---|---|---|
| 2019 | 4800 S | 0 | 0 | 9.00 | 56.60 | 3.70 |
| 2018 | 4700 F | 0 | 0 | 9.00 | 55.90 | 4.60 |
| 2017 | 4600 C N | 0 | S 0 | 9.00 | 56.50 | 4.40 |
| 2016 | 6800 R | 0 | 0 | 9.00 | 55.10 | 4.50 |
| 2015 | 6600 T | 0 | 0 | 9.00 | 55.90 | 3.80 |
| 2014 | 6500 S | | | 9.00 | 55.90 | 4.50 |
| 2013 | 6500 F | 0 | 0 | 9.00 | 55.60 | 3.60 |
| 2012 | 6600 C N | 0 | S 0 | 9.00 | 56.00 | 3.20 |

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

2019 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 3700  SUWANNEE COUNTYWIDE

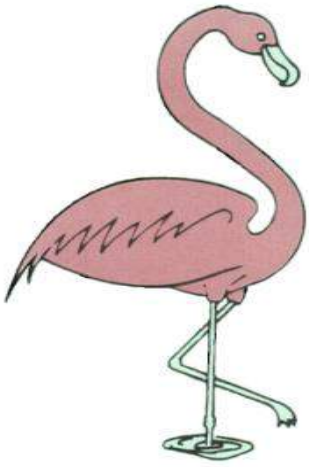
MOCF: 0.97

| WEEK | DATES | SF | PSCF |
|---|---|---|---|
| 1 | 01/01/2019 - 01/05/2019 | 1.02 | 1.05 |
| 2 | 01/06/2019 - 01/12/2019 | 1.05 | 1.08 |
| 3 | 01/13/2019 - 01/19/2019 | 1.07 | 1.10 |
| 4 | 01/20/2019 - 01/26/2019 | 1.05 | 1.08 |
| 5 | 01/27/2019 - 02/02/2019 | 1.04 | 1.07 |
| 6 | 02/03/2019 - 02/09/2019 | 1.02 | 1.05 |
| 7 | 02/10/2019 - 02/16/2019 | 1.01 | 1.04 |
| 8 | 02/17/2019 - 02/23/2019 | 1.00 | 1.03 |
| 9 | 02/24/2019 - 03/02/2019 | 0.99 | 1.02 |
| *10 | 03/03/2019 - 03/09/2019 | 0.98 | 1.01 |
| *11 | 03/10/2019 - 03/16/2019 | 0.97 | 1.00 |
| *12 | 03/17/2019 - 03/23/2019 | 0.97 | 1.00 |
| *13 | 03/24/2019 - 03/30/2019 | 0.97 | 1.00 |
| *14 | 03/31/2019 - 04/06/2019 | 0.97 | 1.00 |
| *15 | 04/07/2019 - 04/13/2019 | 0.98 | 1.01 |
| *16 | 04/14/2019 - 04/20/2019 | 0.98 | 1.01 |
| *17 | 04/21/2019 - 04/27/2019 | 0.97 | 1.00 |
| *18 | 04/28/2019 - 05/04/2019 | 0.97 | 1.00 |
| *19 | 05/05/2019 - 05/11/2019 | 0.97 | 1.00 |
| *20 | 05/12/2019 - 05/18/2019 | 0.97 | 1.00 |
| *21 | 05/19/2019 - 05/25/2019 | 0.97 | 1.00 |
| *22 | 05/26/2019 - 06/01/2019 | 0.98 | 1.01 |
| 23 | 06/02/2019 - 06/08/2019 | 0.99 | 1.02 |
| 24 | 06/09/2019 - 06/15/2019 | 0.99 | 1.02 |
| 25 | 06/16/2019 - 06/22/2019 | 1.00 | 1.03 |
| 26 | 06/23/2019 - 06/29/2019 | 1.00 | 1.03 |
| 27 | 06/30/2019 - 07/06/2019 | 1.01 | 1.04 |
| 28 | 07/07/2019 - 07/13/2019 | 1.01 | 1.04 |
| 29 | 07/14/2019 - 07/20/2019 | 1.02 | 1.05 |
| 30 | 07/21/2019 - 07/27/2019 | 1.01 | 1.04 |
| 31 | 07/28/2019 - 08/03/2019 | 1.01 | 1.04 |
| 32 | 08/04/2019 - 08/10/2019 | 1.00 | 1.03 |
| 33 | 08/11/2019 - 08/17/2019 | 1.00 | 1.03 |
| 34 | 08/18/2019 - 08/24/2019 | 1.00 | 1.03 |
| 35 | 08/25/2019 - 08/31/2019 | 1.00 | 1.03 |
| 36 | 09/01/2019 - 09/07/2019 | 0.99 | 1.02 |
| 37 | 09/08/2019 - 09/14/2019 | 0.99 | 1.02 |
| 38 | 09/15/2019 - 09/21/2019 | 0.99 | 1.02 |
| 39 | 09/22/2019 - 09/28/2019 | 1.00 | 1.03 |
| 40 | 09/29/2019 - 10/05/2019 | 1.00 | 1.03 |
| 41 | 10/06/2019 - 10/12/2019 | 1.00 | 1.03 |
| 42 | 10/13/2019 - 10/19/2019 | 1.00 | 1.03 |
| 43 | 10/20/2019 - 10/26/2019 | 1.01 | 1.04 |
| 44 | 10/27/2019 - 11/02/2019 | 1.01 | 1.04 |
| 45 | 11/03/2019 - 11/09/2019 | 1.02 | 1.05 |
| 46 | 11/10/2019 - 11/16/2019 | 1.03 | 1.06 |
| 47 | 11/17/2019 - 11/23/2019 | 1.03 | 1.06 |
| 48 | 11/24/2019 - 11/30/2019 | 1.03 | 1.06 |
| 49 | 12/01/2019 - 12/07/2019 | 1.02 | 1.05 |
| 50 | 12/08/2019 - 12/14/2019 | 1.02 | 1.05 |
| 51 | 12/15/2019 - 12/21/2019 | 1.02 | 1.05 |
| 52 | 12/22/2019 - 12/28/2019 | 1.05 | 1.08 |
| 53 | 12/29/2019 - 12/31/2019 | 1.07 | 1.10 |

* PEAK SEASON

# APPENDIX C

# CAPACITY CALCULATIONS
# UNSIGNALIZED INTERSECTIONS



# HCS7 Two-Way Stop-Control Report

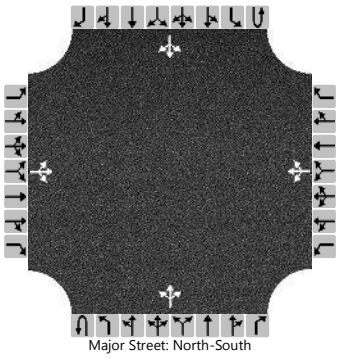
## General Information

| | |
|---|---|
| Analyst | J. Buckholz |
| Agency/Co. | BUCKHOLZ TRAFFIC |
| Date Performed | 9/1/2020 |
| Analysis Year | 2021 |
| Time Analyzed | PM Peak Hour - BUILD |
| Intersection Orientation | North-South |
| Project Description | #20-1632 |

## Site Information

| | |
|---|---|
| Intersection | Walker Ave/Marymac St |
| Jurisdiction | Suwannee County |
| East/West Street | Marymac Street SW |
| North/South Street | Walker Avenue SW |
| Peak Hour Factor | 0.94 |
| Analysis Time Period (hrs) | 0.25 |

## Lanes


Major Street: North-South

## 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 | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 |
| Number of Lanes | | 0 | 1 | 0 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration | | | LTR | | | | LTR | | | | LTR | | | | LTR | |
| Volume (veh/h) | | 6 | 4 | 6 | | 11 | 3 | 6 | | 5 | 269 | 7 | | 12 | 231 | 5 |
| Percent Heavy Vehicles (%) | | 0 | 0 | 0 | | 4 | 0 | 0 | | 0 | | | | 6 | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | 0 | | | | 0 | | | | | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type \| Storage | Undivided | | | | | | | | | | | | | | | |

## Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Critical Headway (sec) | | 7.1 | 6.5 | 6.2 | | 7.1 | 6.5 | 6.2 | | 4.1 | | | | 4.1 | | |
| Critical Headway (sec) | | 7.10 | 6.50 | 6.20 | | 7.14 | 6.50 | 6.20 | | 4.10 | | | | 4.16 | | |
| Base Follow-Up Headway (sec) | | 3.5 | 4.0 | 3.3 | | 3.5 | 4.0 | 3.3 | | 2.2 | | | | 2.2 | | |
| Follow-Up Headway (sec) | | 3.50 | 4.00 | 3.30 | | 3.54 | 4.00 | 3.30 | | 2.20 | | | | 2.25 | | |

## Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow Rate, v (veh/h) | | | 17 | | | | 21 | | | 5 | | | | 13 | | |
| Capacity, c (veh/h) | | | 510 | | | | 478 | | | 1326 | | | | 1245 | | |
| v/c Ratio | | | 0.03 | | | | 0.04 | | | 0.00 | | | | 0.01 | | |
| 95% Queue Length, $Q_{95}$ (veh) | | | 0.1 | | | | 0.1 | | | 0.0 | | | | 0.0 | | |
| Control Delay (s/veh) | | | 12.3 | | | | 12.9 | | | 7.7 | | | | 7.9 | | |
| Level of Service (LOS) | | | B | | | | B | | | A | | | | A | | |
| Approach Delay (s/veh) | 12.3 | | | | 12.9 | | | | 0.2 | | | | 0.5 | | | |
| Approach LOS | B | | | | B | | | | | | | | | | | |

# HCS7 Two-Way Stop-Control Report

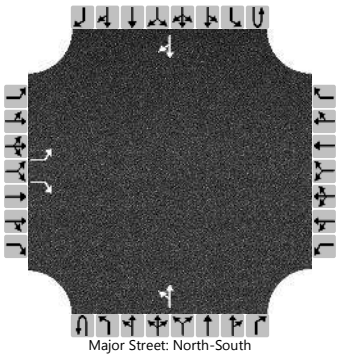
## General Information

| | |
|---|---|
| Analyst | J. Buckholz |
| Agency/Co. | BUCKHOLZ TRAFFIC |
| Date Performed | 9/1/2020 |
| Analysis Year | 2021 |
| Time Analyzed | PM Peak Hour - BUILD |
| Intersection Orientation | North-South |
| Project Description | #20-1632 |

## Site Information

| | |
|---|---|
| Intersection | Walker Ave/East Site Dr |
| Jurisdiction | Suwannee County |
| East/West Street | East Site Drive |
| North/South Street | Walker Avenue SW |
| Peak Hour Factor | 0.94 |
| Analysis Time Period (hrs) | 0.25 |

## Lanes


Major Street: North-South

## 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 | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 |
| Number of Lanes | | 1 | 0 | 1 | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration | | L | | R | | | | | | LT | | | | | | TR |
| Volume (veh/h) | | 11 | | 3 | | | | | | 5 | 284 | | | | 250 | 17 |
| Percent Heavy Vehicles (%) | | 2 | | 2 | | | | | | 2 | | | | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | 0 | | | | | | | | | | | | | | |
| Right Turn Channelized | | No | | | | | | | | | | | | | | |
| Median Type \| Storage | | Undivided | | | | | | | | | | | | | | |

## Critical and Follow-up Headways

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

## Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow Rate, v (veh/h) | | 12 | | 3 | | | | | | 5 | | | | | | |
| Capacity, c (veh/h) | | 469 | | 764 | | | | | | 1278 | | | | | | |
| v/c Ratio | | 0.02 | | 0.00 | | | | | | 0.00 | | | | | | |
| 95% Queue Length, $Q_{95}$ (veh) | | 0.1 | | 0.0 | | | | | | 0.0 | | | | | | |
| Control Delay (s/veh) | | 12.9 | | 9.7 | | | | | | 7.8 | | | | | | |
| Level of Service (LOS) | | B | | A | | | | | | A | | | | | | |
| Approach Delay (s/veh) | | 12.2 | | | | | | | | 0.2 | | | | | | |
| Approach LOS | | B | | | | | | | | | | | | | | |

# HCS7 Two-Way Stop-Control Report

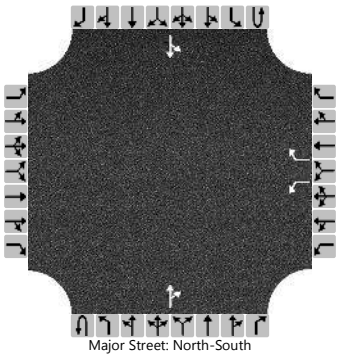
## General Information

| | |
|---|---|
| Analyst | J. Buckholz |
| Agency/Co. | BUCKHOLZ TRAFFIC |
| Date Performed | 9/1/2020 |
| Analysis Year | 2021 |
| Time Analyzed | PM Peak Hour - BUILD |
| Intersection Orientation | North-South |
| Project Description | #20-1632 |

## Site Information

| | |
|---|---|
| Intersection | SR 51/West Site Drive |
| Jurisdiction | Suwannee County |
| East/West Street | West Site Drive |
| North/South Street | SR 51 |
| Peak Hour Factor | 0.88 |
| Analysis Time Period (hrs) | 0.25 |

## Lanes


Major Street: North-South

## 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 | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 |
| Number of Lanes | | 0 | 0 | 0 | | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration | | | | | | L | | R | | | | TR | | LT | | |
| Volume (veh/h) | | | | | | 7 | | 11 | | | 233 | 12 | | 17 | 412 | |
| Percent Heavy Vehicles (%) | | | | | | 2 | | 2 | | | | | | 2 | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | 0 | | | | | | | | | | |
| Right Turn Channelized | | | | | | No | | | | | | | | | | |
| Median Type \| Storage | | Undivided | | | | | | | | | | | | | | |

## Critical and Follow-up Headways

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

## Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow Rate, v (veh/h) | | | | | | 8 | | 13 | | | | | | 19 | | |
| Capacity, c (veh/h) | | | | | | 357 | | 767 | | | | | | 1284 | | |
| v/c Ratio | | | | | | 0.02 | | 0.02 | | | | | | 0.02 | | |
| 95% Queue Length, $Q_{95}$ (veh) | | | | | | 0.1 | | 0.0 | | | | | | 0.0 | | |
| Control Delay (s/veh) | | | | | | 15.3 | | 9.8 | | | | | | 7.8 | | |
| Level of Service (LOS) | | | | | | C | | A | | | | | | A | | |
| Approach Delay (s/veh) | | | | | | 11.9 | | | | | | | | 0.5 | | |
| Approach LOS | | | | | | B | | | | | | | | | | |

# HCS7 Two-Way Stop-Control Report

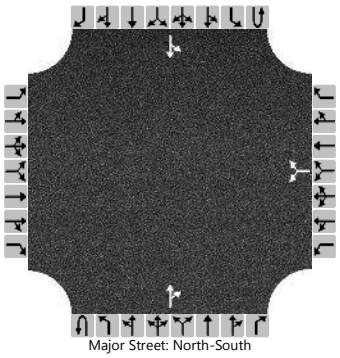
## General Information

| | |
|---|---|
| Analyst | J. Buckholz |
| Agency/Co. | BUCKHOLZ TRAFFIC |
| Date Performed | 9/1/2020 |
| Analysis Year | 2021 |
| Time Analyzed | PM Peak Hour - BUILD |
| Intersection Orientation | North-South |
| Project Description | #20-1632 |

## Site Information

| | |
|---|---|
| Intersection | SR 51/Marymac Street SW |
| Jurisdiction | Suwannee County |
| East/West Street | Marymac Street SW |
| North/South Street | SR 51 |
| Peak Hour Factor | 0.88 |
| Analysis Time Period (hrs) | 0.25 |

## Lanes


Major Street: North-South

## 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 | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 |
| Number of Lanes | | 0 | 0 | 0 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration | | | | | | | LR | | | | | TR | | LT | | |
| Volume (veh/h) | | | | | | 1 | | 3 | | | 241 | 3 | | 6 | 428 | |
| Percent Heavy Vehicles (%) | | | | | | 0 | | 0 | | | | | | 0 | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | 0 | | | | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type \| Storage | | Undivided | | | | | | | | | | | | | | |

## Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Critical Headway (sec) | | | | | | 7.1 | | 6.2 | | | | | | 4.1 | | |
| Critical Headway (sec) | | | | | | 6.40 | | 6.20 | | | | | | 4.10 | | |
| Base Follow-Up Headway (sec) | | | | | | 3.5 | | 3.3 | | | | | | 2.2 | | |
| Follow-Up Headway (sec) | | | | | | 3.50 | | 3.30 | | | | | | 2.20 | | |

## Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow Rate, v (veh/h) | | | | | | | 5 | | | | | | | 7 | | |
| Capacity, c (veh/h) | | | | | | | 603 | | | | | | | 1297 | | |
| v/c Ratio | | | | | | | 0.01 | | | | | | | 0.01 | | |
| 95% Queue Length, $Q_{95}$ (veh) | | | | | | | 0.0 | | | | | | | 0.0 | | |
| Control Delay (s/veh) | | | | | | | 11.0 | | | | | | | 7.8 | | |
| Level of Service (LOS) | | | | | | | B | | | | | | | A | | |
| Approach Delay (s/veh) | | | | | 11.0 | | | | | | | | 0.2 | | | |
| Approach LOS | | | | | B | | | | | | | | | | | |