SANDY OAKS SUBDIVISON TRAFFIC STUDY

NASSAU COUNTY, FLORIDA

April 2022





April 5, 2022

Mr. Jeffrey C. White SEDA New Homes 2120 Corporate Square Boulevard / Suite 3 Jacksonville, Florida 32216

Re: Sandy Oaks Subdivision Traffic Study

Dear Mr. White:

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 4/5/22. 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 93 single family homes and will be located at the end of Brooker Road north of Roses Bluff Road approximately 1.5 miles west of Chester Road in Nassau County, Florida. Access to the site will be provided via Brooker Road which will be paved from Roses Bluff Road to the site entrance. Roses Bluff Road is a two lane undivided roadway with a posted speed limit of 35 mph. Figure 1 shows the site location and surrounding road network while Appendix A contains the proposed site plan. The development is expected to be complete and fully occupied by the end of 2026. Consequently, 2026 was chosen as the design year for this study.

EXISTING TRAFFIC VOLUMES

2022 weekday peak period manual turning movement counts were conducted by Buckholz Traffic personnel at the Roses Bluff Road/Brooker Road intersection and the Roses Bluff Road/Bell River Estates Road intersection. These counts, which are provided in Appendix B, were conducted during the weekday AM peak period (6:30 ó 8:30 AM) and the weekday PM peak period (3:30 ó 5:30 PM) with school in session. The data was recorded at 15-minute intervals and includes a separate tabulation for trucks. Figure 2 summarizes the weekday peak hour counts.

Appendix C provides daily traffic volumes from the nearest FDOT traffic counting station to the site.

TRIP GENERATION

Trip generation calculations were carried out using the 11th edition of ITE's <u>Trip Generation Manual</u> and referencing land use code 210 (Single Family Housing). Table 1 contains the daily, AM peak hour, and PM peak hour trip generation calculations for the development. During an average weekday the development is expected to generate 944 trips (472 entering and 472 exiting) with 70 trips (18 entering and 52 exiting) occurring during the AM peak hour and 93 trips (59 entering and 34 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 as shown in Figure 3 using engineering judgment.

Page 2

FUTURE TRAFFIC VOLUMES

The expected weekday 2026 peak hour background (No Build) traffic volumes and total (Build) traffic volumes at the Roses Bluff Road/Brooker Road intersection are graphically depicted in Figures 4 and 5. The No Build traffic volumes were obtained by multiplying the existing traffic volumes by a seasonal adjustment factor (1.03) and then by a 2.5% annual growth rate. This growth rate was established via a linear regression analysis of recent FDOT daily traffic volumes near the site (see graph C-1 in Appendix C). The 2026 Build traffic volumes were then 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 westbound Roses Bluff Road at Brooker Road. The methodology contained in NCHRP Report 279 was used to conduct this analysis. As is indicated in Figure 6, right turn volumes under expected 2026 Build conditions will not be high enough to warrant an exclusive right turn lane at this location. 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 of 45 mph or less.

UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS

The Roses Bluff Road/Brooker Road intersection was analyzed using the two-way stop control methodology contained in Chapter 20 of the Sixth Edition of the <u>Highway Capacity Manual</u>. Table 2 summarizes the capacity analysis results under 2026 Build conditions. The supporting calculations are provided in Appendix D. Under 2026 Build conditions, all minor movements at this intersection are expected to operate at level of service A with minimal queuing and a volume-to-capacity ratio of well less than one during both weekday peak hours.





M: \2022\22-1740\CAD\FIG_02.dwg Date: 03-17-22 T: 17: 23 By: AVDelacruz







WESTBOUND ROSES BLUFF ROAD @ BROOKER ROAD



TABLE 1

TRIP GENERATION CALCULATIONS TOTAL DEVELOPMENT

SINGLE FAMILY DWELLING UNITS

Land Use Code 210

T = Number of Vehicle Trip Ends

X = Number of Dwelling Units = 93

		TOTAL			TOTAL	TOTAL
	TRIP GENERATION	TRIP	PERCENT	PERCENT	TRIP ENDS	TRIP ENDS
TIME PERIOD	EQUATION	ENDS	ENTERING	EXITING	ENTERING	EXITING
WEEKDAY						
Daily	Ln(T)=0.92Ln(X)+2.68	944	50%	50%	472	472
AM Peak Hour	Ln(T)=0.91Ln(X)+0.12	70	26%	74%	18	52
PM Peak Hour	Ln(T)=0.94Ln(X)+0.27	93	63%	37%	59	34

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

TABLE 2

UNSIGNALIZED INTERSECTION CAPACITY RESULTS

BROOKER ROAD / SITE DRIVE

2025 BUILD CONDITIONS		WEEKDAY AM PEAK HOUR										
Movement	LOS	Delay	v/c Ratio	95th % Queue (vehicles)								
Eastbound Left Turn	А	7.3 sec/veh	0.00	1								
Southbound Approach	А	9.0 sec/veh	0.09	1								

2025 BUILD CONDITIONS		WEEKDAY PM PEAK HOUR										
Movement	LOS	Delay	v/c Ratio	95th % Queue (vehicles)								
Eastbound Left Turn	А	7.4 sec/veh	0.00	1								
Southbound Approach	А	9.0 sec/veh	0.05	1								

APPENDIX A

SITE PLAN







APPENDIX B

TURNING MOVEMENT COUNTS



TABLE B-1 Roses Bluff Road / Brooker Road / Bell River Estates Road TURNING MOVEMENT COUNTS - ALL VEHICLES

				Tuesua	ay, watch o, a	2022							
			US 17 / BRO	OKER ROAD			US 17 / BELL RIVER ESTATES ROAD						
	EB Thru V	NB Right Turn	SB Left Turn	SB Right Turn	EB Left Turn	WB Thru	EB Left Turn	WB Right Turn	SB Left Turn	SB Right Turn	All		
6:30-6:45 AM	1	0	2	0	0	0	0	0	0	0	3		
6:45-7:00 AM	1	1	1	0	0	0	0	0	0	0	3		
7:00-7:15 AM	0	0	0	0	0	1	0	0	0	0	1		
7:15-7:30 AM	0	1	2	0	0	0	0	0	1	0	4		
7:30-7:45 AM	0	1	0	0	0	0	0	0	0	0	1		
7:45-8:00 AM	2	1	0	0	0	2	0	0	1	0	6		
8:00-8:15 AM	1	0	4	0	0	0	0	0	0	0	5		
8:15-8:30 AM	0	0	0	0	0	0	0	0	0	0	0		
AM PEAK PERIOD:	5	4	9	0	0	3	0	0	2	0	23		
AM PEAK HOUR:	3	3	6	0	0	2	0	0	2	0	16		
7:15-8:15 AM													

Tuesday, March 8, 2022

Wednesday, March 9, 2022

			US 17 / BRO	OKER ROAD	US 17 / BELL RIVER ESTATES ROAD						
	EB Thru	WB Right Turn	SB Left Turn	SB Right Turn	EB Left Turn	WB Thru	EB Left Turn	WB Right Turn	SB Left Turn	SB Right Turn	All
3:30-3:45 PM	0	0	1	0	0	1	0	0	0	0	2
3:45-4:00 PM	0	2	0	0	0	0	0	1	0	0	3
4:00-4:15 PM	1	5	0	0	0	1	0	1	1	0	9
4:15-4:30 PM	1	1	3	0	0	0	0	0	0	0	5
4:30-4:45 PM	1	3	2	0	0	3	0	0	0	0	9
4:45-5:00 PM	1	1	1	0	0	0	0	1	0	0	4
5:00-5:15 PM	0	1	0	0	0	0	0	0	1	0	2
5:15-5:30 PM	1	2	1	0	0	0	0	0	0	0	4
PM PEAK PERIOD:	5	15	8	0	0	5	0	3	2	0	38
	-						-				
PM PEAK HOUR:	4	10	6	0	0	4	0	2	1	0	27
4:00-5:00 PM											

APPENDIX C

FDOT TRAFFIC DATA



TABLE C-1 LINEAR REGRESSION ANALYSIS

Chester Road, North of Pages Dairy Road



FLORIDA DEPARTMENT OF TRANSPORTATION TRANSPORTATION STATISTICS OFFICE 2020 HISTORICAL AADT REPORT

COUNTY: 74 - NASSAU

SITE: 9113 - CHESTER RD. .1 MI N. OF PAGES DAIRY RD.

YEAR	AADT	DIRECTION	J1 DIR	ECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	9500 R	0		0	9.00	53.70	4.60
2019	9600 T	0		0	9.00	54.30	3.40
2018	9300 S	0		0	9.00	54.50	4.50
2017	9000 F	0		0	9.00	55.10	4.00
2016	8600 C	N 0	S	0	9.00	56.00	5.90
2015	5000 R	0		0	9.00	55.30	3.50
2014	4900 T				9.00	55.10	4.30
2013	4800 S	0		0	9.00	56.90	4.10
2012	4700 F	0		0	9.00	54.70	4.50
2011	4700 C	N 0	S	0	9.00	55.80	4.20

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

$\begin{array}{cccccccccccccccccccccccccccccccccccc$	WEEK	DATES	SF	MOCF: 0.95 PSCF
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1	01/01/2020 - 01/04/2020	1.06	1.12
3 $01/12/2020 - 01/18/2020$ 0.99 1.04 4 $01/26/2020 - 01/18/2020$ 0.97 1.02 6 $02/09/2020 - 02/15/2020$ 0.96 1.01 7 $02/09/2020 - 02/28/2020$ 0.96 1.01 8 $02/16/2020 - 02/29/2020$ 0.97 1.02 9 $02/23/2020 - 03/14/2020 - 1.01$ 1.01 1.06 11 $03/08/2020 - 03/14/2020 - 1.03$ 1.08 1.04 12 $03/15/2020 - 03/21/2020 - 1.05$ 1.11 13 $03/22/2020 - 03/28/2020 - 1.162$ 1.18 1.24 14 $03/29/2020 - 04/18/2020 - 1.23$ 1.29 15 $04/16/2020 - 04/18/2020 - 1.23$ 1.29 18 $04/26/2020 - 05/02/2020 - 1.14$ 1.20 19 $05/03/2020 - 05/03/2020 - 0.95 1.00 *20 05/10/2020 - 05/30/2020 - 0.95 1.00 *21 05/10/2020 - 06/13/2020 - 0.95 1.00 *22 05/24/2020 - 07/14/2020 - 0.92 0.97 *23 05/31/2020 - 07/14/2020 - 0.95 1.00 *24 06/07/2020 - 06/20/202 - 0.95 $	2	01/05/2020 - 01/11/2020	1.03	1.08
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5 01/26/2020 $-02/08/2020$ 0.96 1.01 7 02/09/2020 $-02/15/2020$ 0.96 1.01 8 02/16/2020 $-02/28/2020$ 0.97 1.02 9 02/23/2020 $-02/29/2020$ 0.97 1.02 9 02/23/2020 $-03/14/2020$ 1.03 1.04 10 03/08/2020 $-03/14/2020$ 1.03 1.06 11 03/08/2020 $-03/14/2020$ 1.03 1.08 12 03/15/2020 $-03/28/2020$ 1.12 1.11 13 $03/22/2020$ $-03/28/2020$ 1.22 1.12 14 $03/22/2020$ $-04/11/2020$ 1.24 1.52 16 $04/12/2020$ $-04/12/2020$ 1.23 1.22 17 $04/19/2020$ $-04/12/2020$ 1.24 1.22 18 $04/26/2020$ $-05/27/2020$ 1.21 1.22 18 $04/26/2020$ $-05/16/2020$ 0.97 1.02	4	01/19/2020 - 01/25/2020	0.98	1.03
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14 $03/29/2020 - 04/04/2020$ 1.181.2415 $04/05/2020 - 04/18/2020$ 1.311.3817 $04/19/2020 - 04/25/2020$ 1.231.2918 $04/26/2020 - 05/09/2020$ 1.141.2019 $05/03/2020 - 05/09/2020$ 1.061.12*20 $05/10/2020 - 05/33/2020$ 0.971.02*21 $05/11/2020 - 05/33/2020$ 0.961.01*22 $05/24/2020 - 05/33/2020$ 0.951.00*23 $05/31/2020 - 06/06/2020$ 0.940.99*24 $06/07/2020 - 06/13/2020$ 0.920.97*26 $06/14/2020 - 06/20/2020$ 0.920.97*26 $06/14/2020 - 07/04/2020$ 0.920.97*27 $06/28/2020 - 07/18/2020$ 0.940.99*29 $07/12/2020 - 07/18/2020$ 0.951.00*31 $07/26/2020 - 08/01/2020$ 0.971.02*32 $08/02/2020 - 08/01/2020$ 0.981.0333 $08/09/2020 - 08/15/2020$ 1.001.0534 $08/16/2020 - 08/22/2020$ 1.001.0535 $08/23/2020 - 09/15/2020$ 1.001.0536 $08/30/2020 - 09/25/2020$ 1.001.0537 $09/06/2020 - 09/26/2020$ 1.001.0538 $09/13/2020 - 09/26/2020$ 1.001.0534 $10/18/2020 - 10/13/2020$ 0.991.0441 $10/25/2020 - 10/13/2020$ 0.991.0442 $10/11/2020 - 10/17/2020$ 1.001.0544 $10/25/$	13	03/22/2020 - 03/28/2020	1.12	1.18
15 $04/05/2020 - 04/11/2020$ 1.25 1.32 16 $04/12/2020 - 04/25/2020$ 1.23 1.29 18 $04/26/2020 - 05/02/2020$ 1.14 1.20 19 $05/03/2020 - 05/09/2020$ 1.06 1.12 *20 $05/10/202 - 05/30/2020$ 0.97 1.02 *21 $05/17/202 - 05/30/2020$ 0.96 1.01 *22 $05/24/202 - 06/06/2020$ 0.94 0.99 *24 $06/07/202 - 06/20/2020$ 0.92 0.97 *26 $06/12/202 - 06/20/2020$ 0.92 0.97 *26 $06/21/2020 - 06/20/2020$ 0.92 0.97 *27 $06/28/2020 - 07/11/2020$ 0.92 0.97 *28 $07/05/2020 - 07/11/2020$ 0.94 0.99 *29 $07/12/2020 - 07/11/2020$ 0.94 0.99 *29 $07/12/2020 - 07/11/2020$ 0.94 0.99 *29 $07/12/2020 - 07/11/2020$ 0.94 0.99 *29 $07/12/2020 - 07/11/2020$ 0.94 0.99 *29 $07/12/2020 - 07/11/2020$ 0.94 0.99 *30 $07/19/2020 - 07/11/2020$ 0.97 1.02 *31 $07/26/2020 - 08/05/2020$ 1.00 1.05 33 $08/09/2020 - 08/15/2020$ 1.00 1.05 34 $08/16/2020 - 08/22/2020$ 1.00 1.05 35 $08/23/2020 - 09/15/2020$ 1.00 1.05 36 $09/13/2020 - 09/12/2020$ 1.00 1.05 37 $09/06/2020 - 09/12/2020$ 1.00 1.05 38<	14	03/29/2020 - 04/04/2020	1.18	1.24
10 $04/12/2020 - 04/16/2020 1.23$ 1.3617 $04/126/2020 - 05/02/2020 1.14$ 1.2018 $04/26/2020 - 05/02/2020 1.14$ 1.2019 $05/03/2020 - 05/02/2020 1.06$ 1.01*20 $05/10/2020 - 05/23/2020 0.96$ 1.01*21 $05/17/2020 - 06/23/2020 0.95$ 1.00*23 $05/31/2020 - 06/06/2020 0.94$ 0.99*24 $06/07/2020 - 06/20/2020 0.92$ 0.97*25 $06/21/2020 - 06/20/2020 0.92$ 0.97*26 $06/21/2020 - 06/27/2020 0.92$ 0.97*27 $06/28/2020 - 07/11/2020 0.93$ 0.98*28 $07/05/2020 - 07/11/2020 0.95$ 1.00*30 $07/12/2020 - 07/18/2020 0.95$ 1.00*31 $07/26/2020 - 08/01/2020 0.97$ 1.02*32 $08/02/2020 - 08/01/2020 0.97$ 1.02*33 $08/09/2020 - 08/15/2020 1.00 1.05$ 1.0534 $08/16/2020 - 09/25/2020 1.00 1.05$ 1.0535 $08/30/2020 - 09/12/2020 1.00 1.05$ 1.0536 $08/30/2020 - 09/12/2020 1.00 1.05$ 1.0441 $10/04/2020 - 10/10/2020 0.99 1.04$ 41 $10/14/2020 - 10/17/2020 1.00 1.05$ 40 $09/27/2020 - 10/32020 0.99 1.04$ 41 $10/18/2020 - 10/17/2020 1.02 1.07$ 42 $10/11/2020 - 10/17/2020 1.00 1.05$ 44 $10/25/2020 - 10/31/2020 1.02 1.07$ 45 $11/01/2020 - 10/17/2020 1.02 1.07$ 46 $11/08/2020 - 10/12/2020 1.00 1.05$ 47 $11/15/2020 - 11/28/2020 1.04 1.09$ 48 $11/22/2020 - 11/28/2020 1.04 1.09$ <td>15 16</td> <td>04/05/2020 - 04/11/2020</td> <td>1.25 1.21</td> <td>1 20</td>	15 16	04/05/2020 - 04/11/2020	1.25 1.21	1 20
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*24 $06/07/2020 - 06/13/2020 0.93$ 0.98 *25 $06/14/2020 - 06/27/2020 0.92$ 0.97 *26 $06/21/2020 - 07/04/2020 0.93$ 0.98 *28 $07/05/2020 - 07/11/2020 0.94$ 0.99 *29 $07/12/2020 - 07/18/2020 0.95$ 1.00 *30 $07/19/2020 - 07/25/2020 0.96$ 1.01 *31 $07/26/2020 - 08/01/2020 0.97$ 1.02 *32 $08/02/2020 - 08/01/2020 0.98$ 1.03 33 $08/09/2020 - 08/22/2020 1.00 1.05$ 34 $08/16/2020 - 08/22/2020 1.00 1.05$ 35 $08/33/2020 - 08/29/2020 1.00 1.05$ 36 $08/30/2020 - 09/19/2020 1.00 1.05$ 37 $09/06/2020 - 09/12/2020 1.00 1.05$ 38 $09/13/2020 - 09/26/2020 1.00 1.05$ 39 $09/20/2020 - 09/26/2020 1.00 1.05$ 40 $09/27/2020 - 10/17/2020 0.99 1.04$ 41 $10/04/2020 - 10/17/2020 0.99 1.04$ 42 $10/11/2020 - 10/24/2020 1.01 1.06$ 43 $10/18/2020 - 10/24/2020 1.01 1.06$ 44 $10/25/2020 - 10/31/2020 0.99 1.04$ 45 $11/01/2020 - 10/17/2020 0.99 1.04$ 47 $11/15/2020 - 11/24/2020 1.01 1.06$ 46 $11/08/2020 - 11/24/2020 1.00 1.05$ 47 $11/15/2020 - 11/24/2020 1.00 1.05$ 40 $109/27/2020 - 10/24/2020 1.00 1.05$ 40 $109/27/2020 - 10/24/2020 1.00 1.05$ 40 $109/27/2020 - 10/24/2020 1.00 1.05$ 40 $109/27/2020 - 10/17/2020 0.99 1.04$ 41 $10/18/2020 - 10/24/2020 1.00 1.05$ 42 $10/11/2020 - 10/24/2020 1.00 1.05$ 43 $10/18/2020 - 10/24/2020 1.00 1.05$ 44 $10/25/2020 - 10/24/2020 1.00 1.05$ 45 $11/01/2020 - 10/24/2020 1.00 1.05$ 46 $11/08/2020 - 10/24/2020 1.00 1.05$ 47 $11/15/2020 - 11/24/2020 1.03 1.08$ 47 $11/15/2020 - 11/24/2020 1.04 1.09$ 49 $11/22/2020 - 11/28/2020 1.05 1.11$	*23	05/31/2020 - 06/06/2020	0.94	0.99
$^{+25}$ $^{-0}$ $^{+1}$	*24	06/07/2020 - 06/13/2020	0.93	0.98
227 $06/28/2020$ $07/04/2020$ 0.92 0.98 *28 $07/05/2020$ $07/11/2020$ 0.94 0.99 *29 $07/12/2020$ $07/18/2020$ 0.95 1.00 *30 $07/19/2020$ $07/25/2020$ 0.96 1.01 *31 $07/26/2020$ $08/08/2020$ 0.97 1.02 *32 $08/02/2020$ $08/08/2020$ 0.98 1.03 33 $08/09/2020$ $08/15/2020$ 1.00 1.05 34 $08/16/2020$ $08/22/2020$ 1.00 1.05 35 $08/23/2020$ $09/05/2020$ 1.00 1.05 36 $08/30/2020$ $09/12/2020$ 1.00 1.05 37 $09/06/2020$ $09/12/2020$ 1.00 1.05 38 $09/13/2020$ $09/12/2020$ 1.00 1.05 39 $09/20/2020$ $-10/03/2020$ 0.99 1.04 41 $10/04/2020$ $-10/17/2020$ 1.00 1.05 44 $10/25/2020$ $-10/24/2020$ 1.00 1.05 45 $11/01/2020$ $-10/24/2020$ 1.02 1.07 46 $11/08/2020$ $-11/14/2020$ 1.03 1.08 47 $11/15/2020$ $-11/24/2020$ 1.04 1.09 48 $11/22/2020$ $-11/28/2020$ 1.04 1.09	^∠5 *26	06/14/2020 = 06/20/2020	0.92	0.97
*28 $07/05/2020 - 07/11/2020 0.94$ 0.99 *29 $07/12/2020 - 07/18/2020 0.95$ 1.00 *30 $07/19/2020 - 07/25/2020 0.96$ 1.01 *31 $07/26/2020 - 08/01/2020 0.97$ 1.02 *32 $08/02/2020 - 08/15/2020 1.00$ 1.05 34 $08/16/2020 - 08/22/2020 1.00$ 1.05 35 $08/23/2020 - 08/29/2020 1.00$ 1.05 36 $08/30/2020 - 09/12/2020 1.00$ 1.05 37 $09/06/2020 - 09/12/2020 1.00$ 1.05 38 $09/13/2020 - 09/12/2020 1.00$ 1.05 39 $09/20/2020 - 09/26/2020 1.00$ 1.05 40 $09/27/2020 - 10/03/2020 0.99$ 1.04 41 $10/04/2020 - 10/10/2020 0.99$ 1.04 42 $10/11/2020 - 10/24/2020 1.00$ 1.05 44 $10/25/2020 - 10/24/2020 1.00$ 1.05 45 $11/01/2020 - 11/07/2020 1.01$ 1.06 45 $11/01/2020 - 11/07/2020 1.02$ 1.07 46 $11/08/2020 - 11/24/2020 1.04$ 1.09 48 $11/22/2020 - 11/24/2020 1.04$ 1.09 49 $11/29/2020 - 11/28/2020 1.05$	*20	06/21/2020 = 07/04/2020	0.92	0.98
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*32 $08/02/2020 - 08/08/2020$ 0.98 1.03 33 $08/09/2020 - 08/15/2020$ 1.00 1.05 34 $08/16/2020 - 08/22/2020$ 1.00 1.05 35 $08/23/2020 - 08/29/2020$ 1.00 1.05 36 $08/30/2020 - 09/05/2020$ 1.00 1.05 37 $09/06/2020 - 09/12/2020$ 1.00 1.05 38 $09/13/2020 - 09/19/2020$ 1.00 1.05 39 $09/20/2020 - 09/26/2020$ 1.00 1.05 40 $09/27/2020 - 10/03/2020$ 0.99 1.04 41 $10/04/2020 - 10/10/2020$ 0.99 1.04 42 $10/11/2020 - 10/17/2020$ 1.00 1.05 44 $10/25/2020 - 10/24/2020$ 1.00 1.05 45 $11/01/2020 - 11/07/2020$ 1.01 1.06 45 $11/01/2020 - 11/07/2020$ 1.02 1.07 46 $11/08/2020 - 11/14/2020$ 1.03 1.08 47 $11/15/2020 - 11/28/2020$ 1.04 1.09 48 $11/22/2020 - 11/28/2020$ 1.05 1.11	*31	07/26/2020 - 08/01/2020	0.97	1.02
33 $08/09/2020 - 08/15/2020$ 1.00 1.05 34 $08/16/2020 - 08/22/2020$ 1.00 1.05 35 $08/23/2020 - 08/29/2020$ 1.00 1.05 36 $08/30/2020 - 09/05/2020$ 1.00 1.05 37 $09/06/2020 - 09/12/2020$ 1.00 1.05 38 $09/13/2020 - 09/19/2020$ 1.00 1.05 39 $09/20/2020 - 09/26/2020$ 1.00 1.05 40 $09/27/2020 - 10/03/2020$ 0.99 1.04 41 $10/04/2020 - 10/17/2020$ 0.99 1.04 42 $10/11/2020 - 10/17/2020$ 1.00 1.05 44 $10/25/2020 - 10/31/2020$ 1.00 1.05 44 $10/25/2020 - 10/31/2020$ 1.01 1.06 45 $11/01/2020 - 11/07/2020$ 1.02 1.07 46 $11/08/2020 - 11/14/2020$ 1.03 1.08 47 $11/15/2020 - 11/28/2020$ 1.04 1.09 48 $11/22/2020 - 12/05/2020$ 1.05 1.11	*32	08/02/2020 - 08/08/2020	0.98	1.03
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$	36	00/25/2020 = 00/25/2020	1 00	1 05
38 $09/13/2020 - 09/19/2020$ 1.00 1.05 39 $09/20/2020 - 09/26/2020$ 1.00 1.05 40 $09/27/2020 - 10/03/2020$ 0.99 1.04 41 $10/04/2020 - 10/10/2020$ 0.99 1.04 42 $10/11/2020 - 10/17/2020$ 0.99 1.04 43 $10/18/2020 - 10/24/2020$ 1.00 1.05 44 $10/25/2020 - 10/31/2020$ 1.01 1.06 45 $11/01/2020 - 11/07/2020$ 1.02 1.07 46 $11/08/2020 - 11/21/2020$ 1.04 1.09 48 $11/22/2020 - 11/28/2020$ 1.04 1.09 49 $11/29/2020 - 12/05/2020$ 1.05 1.11	37	09/06/2020 - 09/12/2020	1.00	1.05
39 $09/20/2020 - 09/26/2020$ 1.00 1.05 40 $09/27/2020 - 10/03/2020$ 0.99 1.04 41 $10/04/2020 - 10/10/2020$ 0.99 1.04 42 $10/11/2020 - 10/17/2020$ 0.99 1.04 43 $10/18/2020 - 10/24/2020$ 1.00 1.05 44 $10/25/2020 - 10/31/2020$ 1.01 1.06 45 $11/01/2020 - 11/07/2020$ 1.02 1.07 46 $11/08/2020 - 11/14/2020$ 1.03 1.08 47 $11/15/2020 - 11/21/2020$ 1.04 1.09 48 $11/22/2020 - 11/28/2020$ 1.04 1.09 49 $11/29/2020 - 12/05/2020$ 1.05 1.11	38	09/13/2020 - 09/19/2020	1.00	1.05
40 $09/27/2020 - 10/03/2020$ 0.99 1.04 41 $10/04/2020 - 10/10/2020$ 0.99 1.04 42 $10/11/2020 - 10/17/2020$ 0.99 1.04 43 $10/18/2020 - 10/24/2020$ 1.00 1.05 44 $10/25/2020 - 10/31/2020$ 1.01 1.06 45 $11/01/2020 - 11/07/2020$ 1.02 1.07 46 $11/08/2020 - 11/14/2020$ 1.03 1.08 47 $11/15/2020 - 11/21/2020$ 1.04 1.09 48 $11/22/2020 - 11/28/2020$ 1.04 1.09 49 $11/29/2020 - 12/05/2020$ 1.05 1.11	39	09/20/2020 - 09/26/2020	1.00	1.05
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	40	09/27/2020 - 10/03/2020	0.99	1.04
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	41	10/04/2020 - 10/10/2020	0.99	1.04
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	42	10/11/2020 - 10/17/2020	0.99	1.04
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	43 44	10/18/2020 = 10/24/2020 10/25/2020 = 10/31/2020	1.00	1.05
46 11/08/2020 - 11/14/2020 1.03 1.08 47 11/15/2020 - 11/21/2020 1.04 1.09 48 11/22/2020 - 11/28/2020 1.04 1.09 49 11/29/2020 - 12/05/2020 1.05 1.11	45	11/01/2020 - 11/07/2020	1 02	1 07
47 11/15/2020 - 11/21/2020 1.04 1.09 48 11/22/2020 - 11/28/2020 1.04 1.09 49 11/29/2020 - 12/05/2020 1.05 1.11	46	$\frac{11}{08}/2020 - \frac{11}{14}/2020$	1.03	1.08
48 11/22/2020 - 11/28/2020 1.04 1.09 49 11/29/2020 - 12/05/2020 1.05 1.11	47	11/15/2020 - 11/21/2020	1.04	1.09
49 11/29/2020 - 12/05/2020 1.05 1.11	48	11/22/2020 - 11/28/2020	1.04	1.09
	49	11/29/2020 - 12/05/2020	1.05	1.11
50 12/06/2020 - 12/12/2020 1.06 1.12	50	12/06/2020 - 12/12/2020	1.06	1.12
51 12/13/2020 = 12/19/2020 1.06 1.12	51	12/13/2020 - 12/19/2020	1.00	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5∠ 53	12/20/2020 - 12/20/2020 12/27/2020 - 12/31/2020	0.99	1.04

* PEAK SEASON

27-FEB-2021 10:29:58

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APPENDIX D

CAPACITY CALCULATIONS UNSIGNALIZED INTERSECTIONS



HCS7 Two-Way Stop-Control Report General Information Site Information Analyst J. Buckholz Intersection Roses Bluff Rd/Brooker Rd Agency/Co. BUCKHOLZ TRAFFIC Jurisdiction Nassau County Date Performed 3/31/2022 East/West Street Roses Bluff Road Analysis Year 2026 North/South Street Brooker Road Time Analyzed AM Peak Hr BUILD Traffic Peak Hour Eactor 0.67	HCS7 Two-Way Stop-Control Report Site Information	
General Information Site Information Analyst J. Buckholz Intersection Roses Bluff Rd/Brooker Rd Agency/Co. BUCKHOLZ TRAFFIC Jurisdiction Nassau County Date Performed 3/31/2022 East/West Street Roses Bluff Road Analysis Year 2026 North/South Street Brooker Road Time Analyzed AM Peak Hr BUILD Traffic Peak Hour Eactor 0.67	Site Information	
AnalystJ. BuckholzIntersectionRoses Bluff Rd/Brooker RdAgency/Co.BUCKHOLZ TRAFFICJurisdictionNassau CountyDate Performed3/31/2022East/West StreetRoses Bluff RoadAnalysis Year2026North/South StreetBrooker RoadTime AnalyzedAM Peak Hr BUILD TrafficPeak Hour Factor0.67		
Agency/Co. BUCKHOLZ TRAFFIC Jurisdiction Nassau County Date Performed 3/31/2022 East/West Street Roses Bluff Road Analysis Year 2026 North/South Street Brooker Road Time Analyzed AM Peak Hr. BUILD Traffic Peak Hour Factor 0.67	uckholz Intersection Roses Bluff Rd/Brook	ker Rd
Date Performed 3/31/2022 East/West Street Roses Bluff Road Analysis Year 2026 North/South Street Brooker Road Time Analyzed AM Peak Hr BUILD Traffic Peak Hour Factor 0.67	CKHOLZ TRAFFIC Jurisdiction Nassau County	
Analysis Year 2026 North/South Street Brooker Road Time Analyzed AM Peak Hr. BUILD Traffic Peak Hour Factor 0.67	East/West Street Roses Bluff Road	
Time Analyzed AM Peak Hr BUILD Traffic Peak Hour Factor 0.67	26 North/South Street Brooker Road	
	I Peak Hr. BUILD Traffic Peak Hour Factor 0.67	
Intersection Orientation East-West Analysis Time Period (hrs) 0.25	t-West Analysis Time Period (hrs) 0.25	
Project Description #22-1745	2-1745	
Lanes		



Vehicle Volumes and Adjustments

Approach	Eastbound					Westbound			Northbound				Southbound			
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	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	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	6				2	21						59		0
Percent Heavy Vehicles (%)		0												2		0
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type Storage	Undivided															
Critical and Follow-up He	adwa	ys														
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.42		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.52		3.30
Delay, Queue Length, and	l Leve	l of Se	ervice													
Flow Rate, v (veh/h)		0													88	
Capacity, c (veh/h)		1590													987	
v/c Ratio		0.00													0.09	
95% Queue Length, Q ₉₅ (veh)		0.0													0.3	
Control Delay (s/veh)		7.3													9.0	
Level of Service (LOS)		А													А	
Approach Delay (s/veh)		0	.0									9.0				
Approach LOS													A			

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HCS7 Two-Way Stop	p-Control Report						
	Site Information						
J. Buckholz	Intersection	Roses Bluff Rd/Brooker Rd					
BUCKHOLZ TRAFFIC	Jurisdiction	Nassau County					
3/31/2022	East/West Street	Roses Bluff Road					
2026	North/South Street	Brooker Road					
PM Peak Hr. BUILD Traffic	Peak Hour Factor	0.75					
East-West	Analysis Time Period (hrs)	0.25					
#22-1745							
	HCS7 Two-Way Stop J. Buckholz BUCKHOLZ TRAFFIC 3/31/2022 2026 PM Peak Hr. BUILD Traffic East-West #22-1745	HCS7 Two-Way Stop-Control Report Site Information J. Buckholz Intersection BUCKHOLZ TRAFFIC Jurisdiction 3/31/2022 East/West Street 2026 North/South Street PM Peak Hr. BUILD Traffic Peak Hour Factor East-West Analysis Time Period (hrs) #22-1745 Intersection					



Vehicle Volumes and Adjustments

Approach		Eastb	ound			West	bound			North	bound		Southbound			
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	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	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	4				4	61						35		0
Percent Heavy Vehicles (%)		0												2		0
Proportion Time Blocked																
Percent Grade (%)														()	
Right Turn Channelized																
Median Type Storage	Undivided															
Critical and Follow-up He	adwa	ys														
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.42		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.52		3.30
Delay, Queue Length, and	Leve	l of Se	ervice													
Flow Rate, v (veh/h)		0													47	
Capacity, c (veh/h)		1522													957	
v/c Ratio		0.00													0.05	
95% Queue Length, Q ₉₅ (veh)		0.0													0.2	
Control Delay (s/veh)		7.4													9.0	
Level of Service (LOS)		A													А	
Approach Delay (s/veh)		0	.0										9.0			
Approach LOS													A			

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