



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

October 24, 2013

Mr. Michael Balanky
Chase Development
3728 Philips Highway / Suite 32207
Jacksonville, Florida 32084

Re: **Future Level of Service Analysis for the Commander Apartments Redevelopment;
Duval County, Florida**

Dear Mr. Balanky:

The revised Commander Apartments development investigated in this study will consist of 260 mid-rise apartments and 10,600 gsf of commercial/retail space. This new development will be located in the southeast quadrant of the St. Johns Avenue/Herschel Street/Geraldine Drive intersection and will replace the existing development at this location. The existing development consists of 90 high-rise apartments (94% of which is currently occupied) and 43,000 gsf of commercial/retail space (76% of which is currently occupied). Figure 1 shows the site location and surrounding road network while Attachment A contains the currently proposed site plan. Access to the site will be provided via two driveways on St. Johns Avenue; one less access point than currently exists. In contrast to the existing development, internal driveways will connect the residential and commercial portions of the site. The development is expected to be completed by the end of 2015.

Average weekday trip generation calculations for the **proposed** development were carried out using the 9th edition of ITE's Trip Generation Manual and referencing land use codes 223 (Mid-Rise Apartment) and 820 (Shopping Center). Tables 1 and 2 provide the expected weekday trip generation calculations for the development. Since both residential and commercial uses are present, a certain amount of trip-making can be expected via the internal driveways. The amount of internal trip-making is quantified in Tables 3 through 5 using the procedures contained in Chapter 7 of ITE's Trip Generation Handbook. The expected overall internal trip rate is 12% during the critical weekday PM peak hour. No pass-by capture is applied to the residential trips but a 74.8% pass-by capture is applied to the retail trips based on the procedures contained in Figure 5.5 of Volume I of ITE's Trip Generation Manual. Tables 6 through 8 summarize the results of the trip generation calculations. As detailed in Table 7, the weekday PM peak hour trip generation is expected to be 255 **total** trips (134 entering and 121 exiting), 225 **external** trips (118 entering and 107 exiting) and 130 **new external** trips (72 entering and 58 exiting).

To provide a consistent comparison, average weekday trip generation calculations for the fully-occupied **existing** development were also carried out using the 9th edition of ITE's Trip Generation Manual and referencing land use codes 222 (High Rise Apartment) and 820 (Shopping Center). Tables 9 and 10 provide the weekday trip generation calculations for the development. Since both residential and commercial uses are present, a certain amount of internal trip-making occurs. Since there are currently

no internal driveways, no reduction is taken for internal trip capture. No pass-by capture is applied to the residential trips but a 49.9% pass-by capture is applied to the retail trips based on the procedures contained in Figure 5.5 of Volume I of ITE's Trip Generation Manual. Table 11 summarizes the results of the trip generation calculations. The weekday PM peak hour trip generation for a fully occupied “average” development equal in size to the existing facility would be 402 **total** trips (198 entering and 204 exiting), 402 **external** trips (198 entering and 204 exiting) and 222 **new external** trips (112 entering and 110 exiting).

Figure 2 summarizes the existing weekday PM peak hour traffic counts along St. Johns Avenue and at its intersection with Riverside Avenue, Oak Street, Herschel Street, and the three existing development driveways and Attachment B contains the supporting count data. Figure 3 depicts the effective lane configuration in the study area. Using this data, intersection capacity analyses were completed for the St. Johns Avenue/Riverside Avenue, St. Johns Avenue/Oak Street and St. Johns Avenue/Herschel Street/Geraldine Drive intersections under existing conditions. These analyses are contained in Attachment C and are summarized in Table 12. All three intersections currently operate at an acceptable level of service.

Attachment D contains a page from the City of Jacksonville’s Road Links Status spreadsheet which indicates that the current level of service along the portion of St. Johns Avenue on which the site is located (link 213) is at B, an acceptable value.

Figure 4 contains the assignment of the future site traffic (minus the existing site traffic) with the proposed development in place. Trip distribution of the future site traffic was estimated using the directional distribution of the existing driveway and intersection counts and appropriate pass-by reductions were made to main street traffic. Adding Figure 4 site traffic to the Figure 2 traffic counts produces the total traffic for 2015 shown in Figure 5. Since traffic volumes in the area have actually been decreasing recently (see historical FDOT counts in Attachment E), no increase in background (non-site) traffic was made.

Using this 2015 data, intersection capacity analyses were again completed for the St. Johns Avenue/Riverside Avenue, St. Johns Avenue/Oak Street and St. Johns Avenue/Herschel Street/Geraldine Drive intersections. These analyses are contained in Attachment F and are summarized in Table 13. All three intersections will continue to operate at the same acceptable level of service with the proposed development in place. In addition, the St. Johns Avenue roadway link (which has 738 trips available) will continue to operate at an acceptable LOS B.

If you have any questions or comments concerning this matter, please contact me.

Sincerely,

Jeffrey W. Buckholz

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

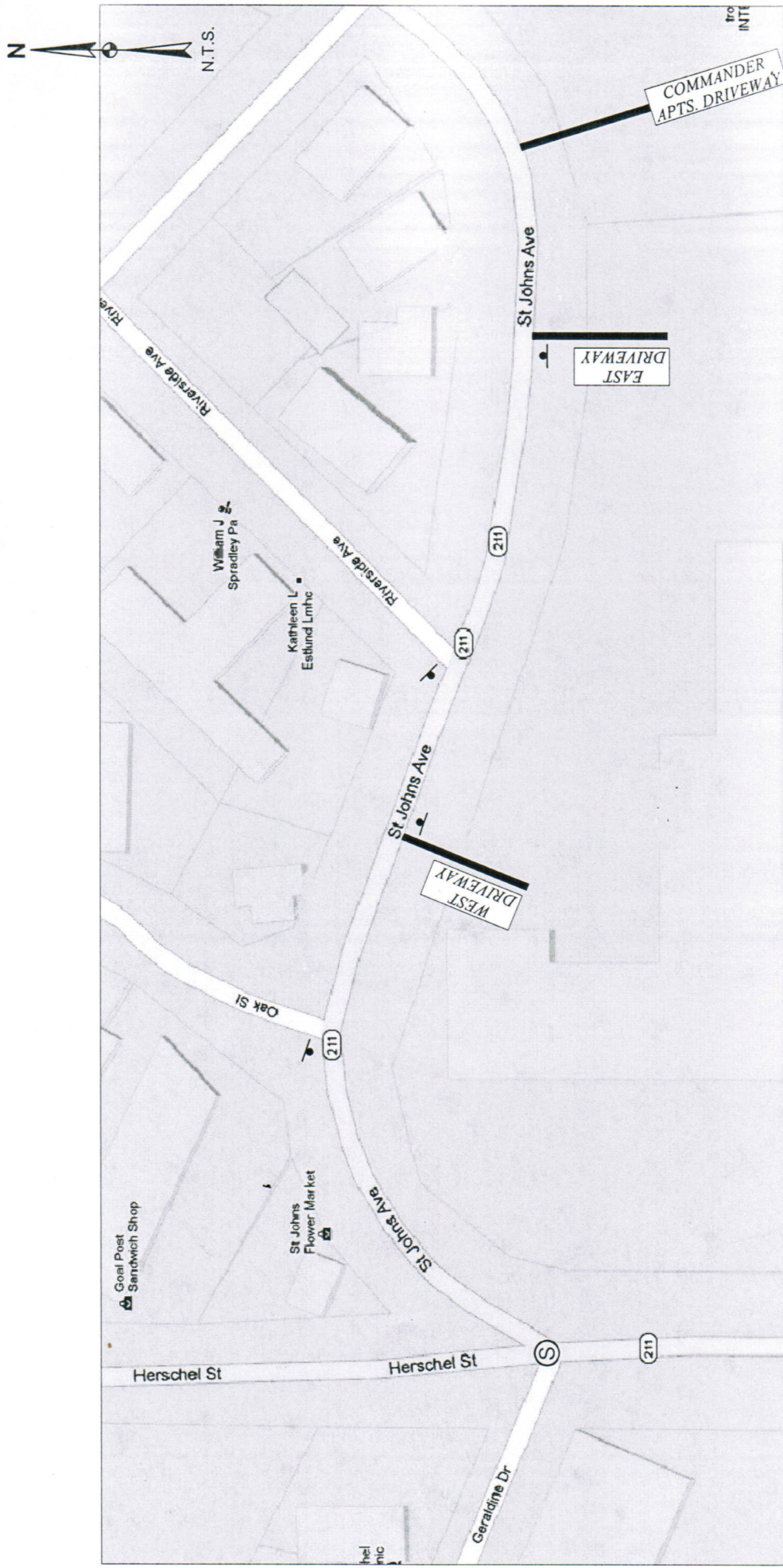
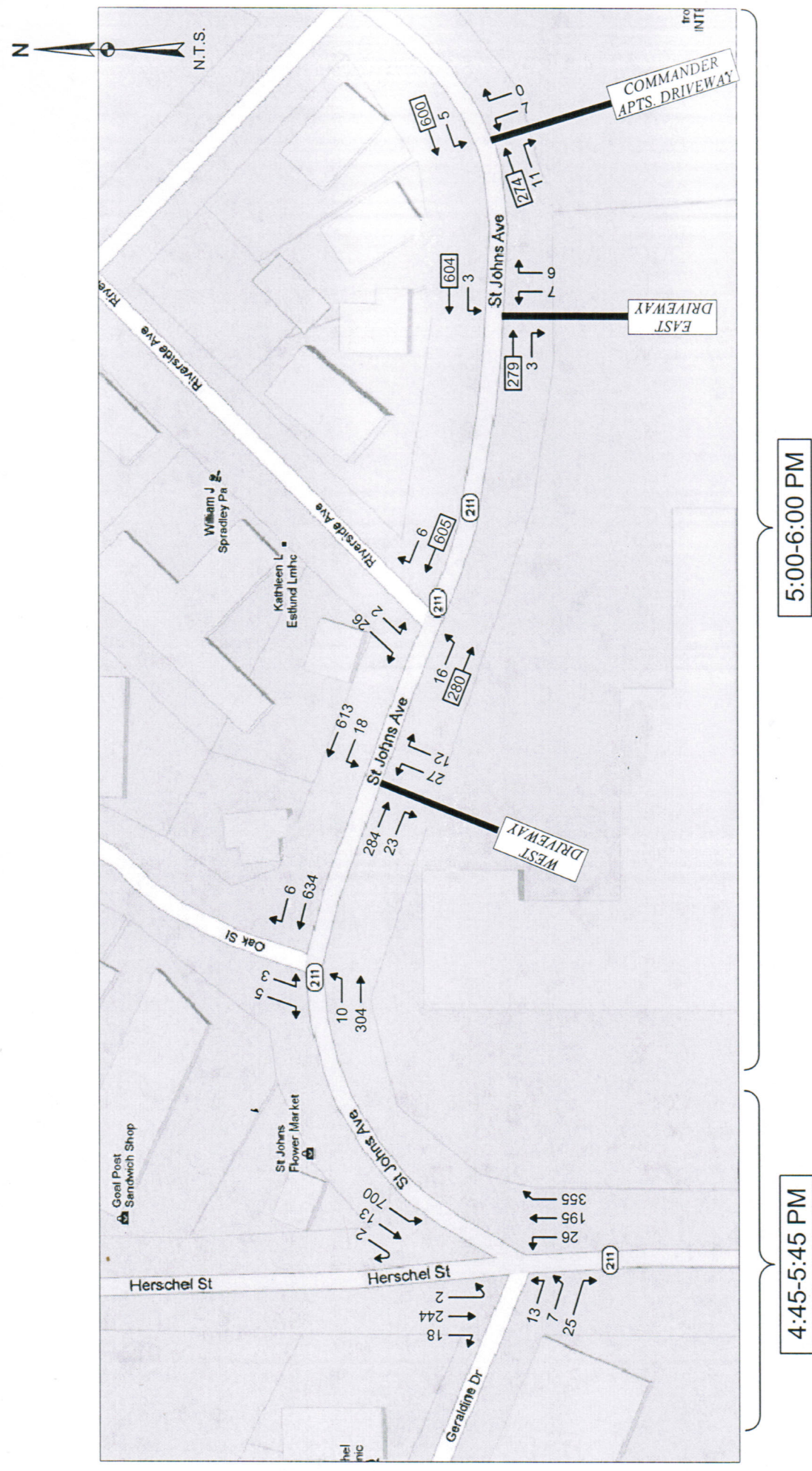


FIGURE 1
SITE LOCATION

- LEGEND**
- Ⓢ = TRAFFIC SIGNAL
 - ⊥ = STOP CONTROL

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LEGEND
 [XXX] = CALCULATED VALUE

FIGURE 2
TRAFFIC COUNTS
PM PEAK HOUR



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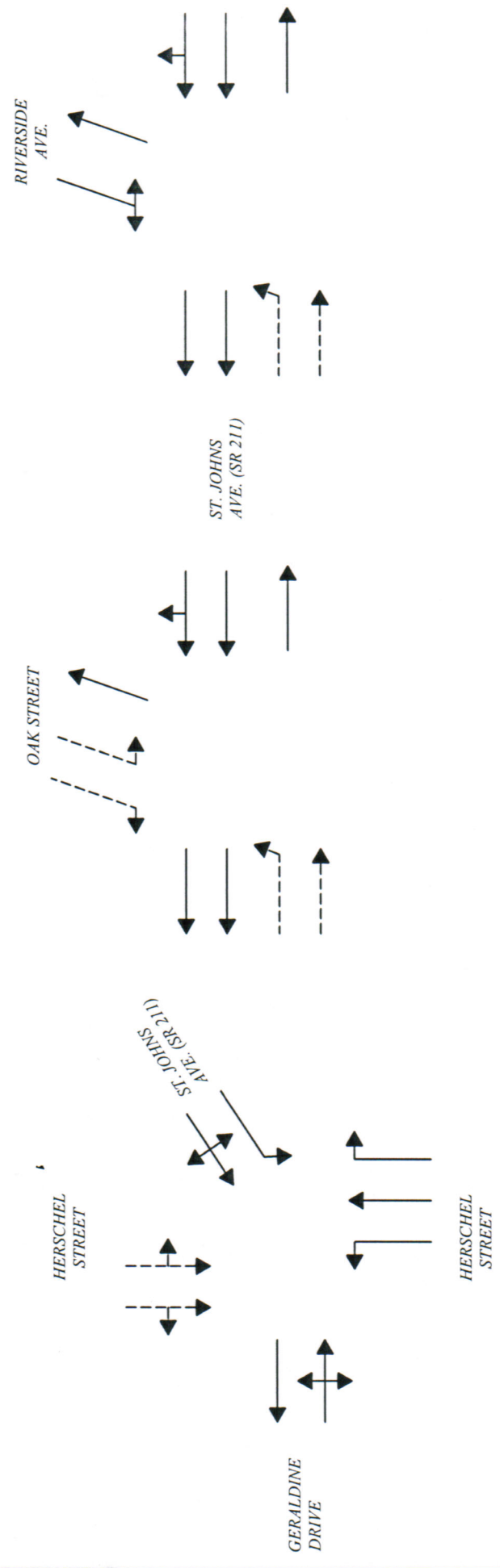


FIGURE 3
LANE CONFIGURATION

LEGEND
-----> = EFFECTIVE LANES

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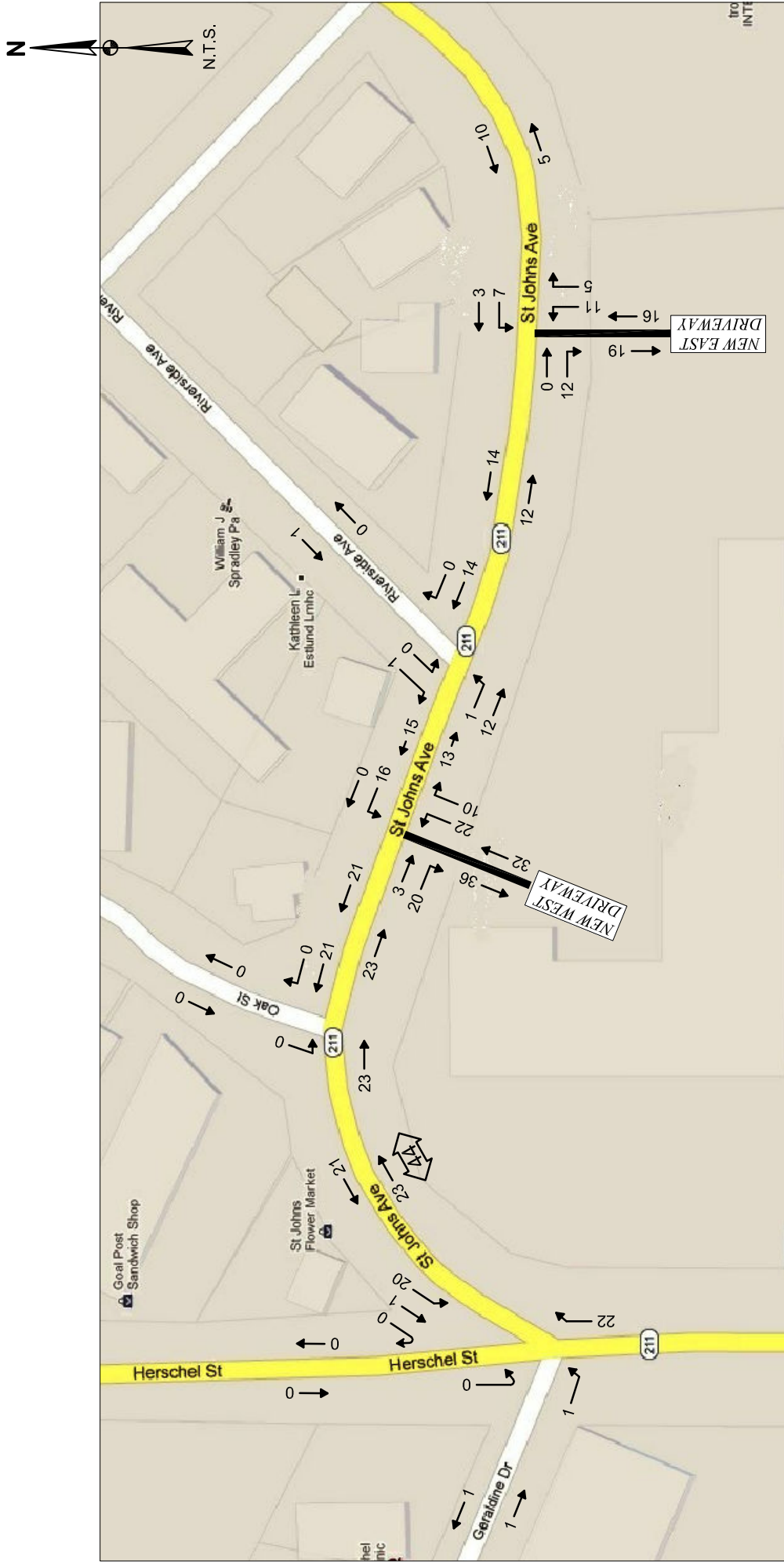
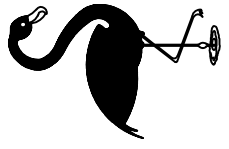


FIGURE 4
TRAFFIC ASSIGNMENT
NET EXTERNAL TRAFFIC
PM PEAK HOUR



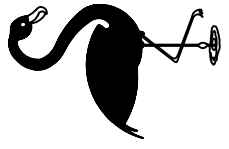


FIGURE 5
2015 BUILD TRAFFIC
PM PEAK HOUR

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TABLE 1

TRIP GENERATION CALCULATIONS

MID-RISE APARTMENT (3 to 10 Floors)

Land Use Code 223

T = Number of Vehicle Trip Ends

X = Number of Dwelling Units = 260

<u>TIME PERIOD</u>	<u>TRIP GENERATION EQUATION</u>	<u>TOTAL TRIP ENDS</u>	<u>PERCENT ENTERING</u>	<u>PERCENT EXITING</u>	<u>TOTAL TRIP ENDS ENTERING</u>	<u>TOTAL TRIP ENDS EXITING</u>
WEEKDAY						
Average Weekday	$1.06 \times [\ln(T) = 0.83 \ln(X) + 2.50]$ ***	1304	50%	50%	652	652
AM Peak Hour	$T = 0.41 (X) - 13.06$	94	31%	69%	29	65
PM Peak Hour	$T = 0.48 (X) - 11.07$	114	58%	42%	66	48

*** = Factored up by AM/PM average trip rate ratio of 1.06

SOURCE: Institute of Transportation Engineers, "Trip Generation", 9th Edition (2012)

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**TABLE 2
TRIP GENERATION CALCULATIONS**

SHOPPING CENTER

Land Use Code 820

T = Number of Vehicle Trip Ends

Size of Buildings = 10,600 gsf -----> X= 10.6

<u>TIME PERIOD</u> <u>AVERAGE WEEKDAY</u>	<u>TOTAL</u> <u>TRIP GENERATION</u> <u>EQUATION</u>	<u>TOTAL</u> <u>TRIP</u> <u>ENDS</u>	<u>PERCENT</u> <u>ENTERING</u>	<u>PERCENT</u> <u>EXITING</u>	<u>TOTAL</u> <u>TRIP ENDS</u> <u>ENTERING</u>	<u>TOTAL</u> <u>TRIP ENDS</u> <u>EXITING</u>
Daily	$\ln(T) = 0.65\ln(X) + 5.83$	1580	50%	50%	790	790
AM Peak Hour	$\ln(T) = 0.61\ln(X) + 2.24$	41	62%	38%	25	16
PM Peak Hour	$\ln(T) = 0.67\ln(X) + 3.31$	141	48%	52%	68	73

SOURCE: Institute of Transportation Engineers, "Trip Generation", 9th Edition (2012)

NEW TRIPS
PERCENT PASS-BY TRIPS
 $\ln(T) = -0.29\ln(X) + 5.00$
 74.8%

<u>TIME PERIOD</u> <u>AVERAGE WEEKDAY</u>	<u>PERCENT NEW TRIPS</u>	<u>NEW</u> <u>TRIP</u> <u>ENDS</u>	<u>PERCENT</u> <u>ENTERING</u>	<u>PERCENT</u> <u>EXITING</u>	<u>NEW</u> <u>TRIP ENDS</u> <u>ENTERING</u>	<u>NEW</u> <u>TRIP ENDS</u> <u>EXITING</u>
Daily	25.2%	398	50%	50%	199	199
AM Peak Hour	25.2%	10	62%	38%	6	4
PM Peak Hour	25.2%	36	48%	52%	17	19

SOURCE: Institute of Transportation Engineers, "Trip Generation", 9th Edition, Volume 1, Figure 5.5

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**TABLE 3
MULTI-USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY**

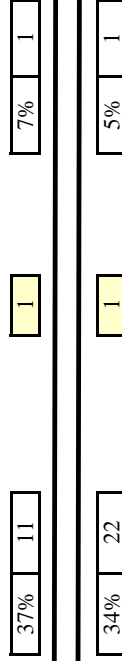
Analyst: J. Buckholz
Date: 10/17/2013

Name of Development: Saint Johns Village PUD
Time Period: Weekday AM Peak Hour
(Use Midday Percentages)

LAND USE A: Office		
ITE Land Use Code: 110		
Size:		
	Total	External
Enter	0	0
Exit	0	0
Total	0	0
%		

LAND USE B: Residential		
ITE Land Use Code: 223		
Size: 260 dwelling units		
	Total	External
Enter	29	28
Exit	65	64
Total	94	92
%	100%	98%

LAND USE C: Retail		
ITE Land Use Codes: 820		
Size: 10,600 square feet		
	Total	External
Enter	25	1
Exit	16	15
Total	41	39
%	100%	95%



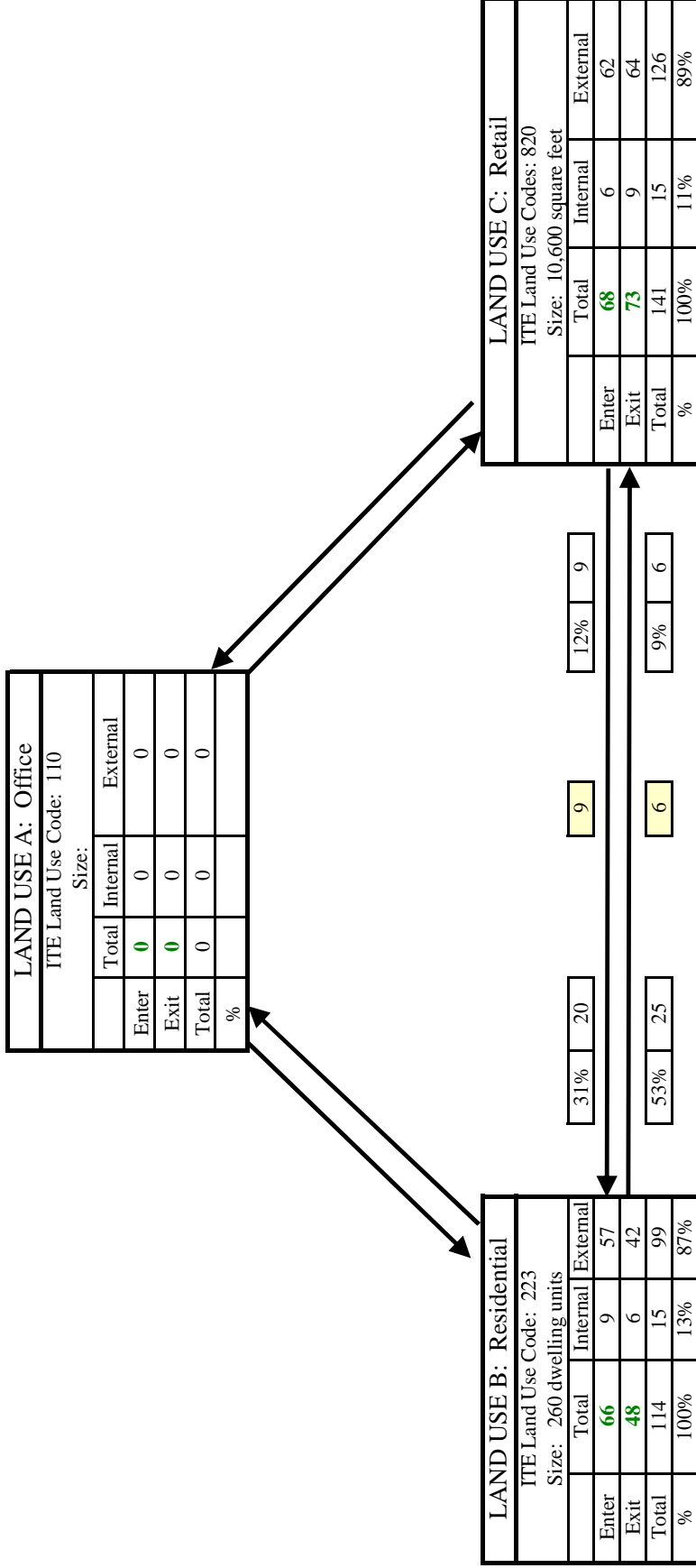
NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT				
	Land Use A	Land Use B	Land Use C	TOTAL
Enter	0	28	24	52
Exit	0	64	15	79
Total	0	92	39	131
Single Use Total	0	94	41	135
% Internal		2%	5%	3%

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**TABLE 4
MULTI-USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY**

Analyst: J. Buckholz
Date: 10/17/2013

Name of Development: Saint Johns Village PUD
Time Period: Weekday PM Peak Hour



NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT

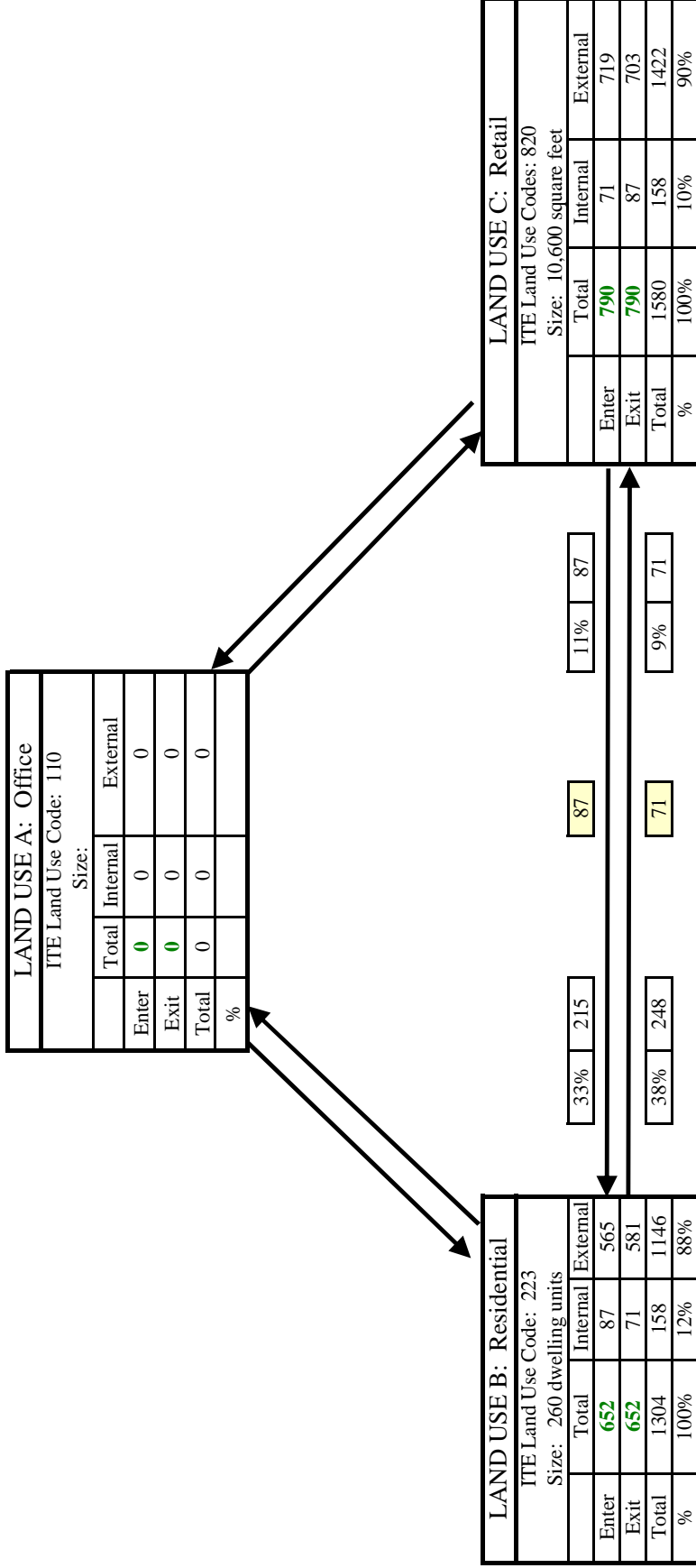
	Land Use A	Land Use B	Land Use C	TOTAL
Enter	0	57	62	119
Exit	0	42	64	106
Total	0	99	126	225
Single Use Total	0	114	141	255
% Internal		13%	11%	12%

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**TABLE 5
MULTI-USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY**

Analyst: J. Buckholz
Date: 10/17/2013

Name of Development: Saint Johns Village PUD
Time Period: Weekday



NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT

	Land Use A	Land Use B	Land Use C	TOTAL
Enter	0	565	719	1284
Exit	0	581	703	1284
Total	0	1146	1422	2568
Single Use Total	0	1304	1580	2884
% Internal		12%	10%	11%

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TABLE 6
TRIP GENERATION CALCULATIONS - NEW DEVELOPMENT
AM PEAK HOUR

	260 DU	10.6 kgsf	
TOTAL TRIPS	Mid-Rise		
	<u>Apartments</u>	<u>Retail</u>	<u>TOTAL</u>
ENTER	29	25	54
EXIT	65	16	81
TOTAL	94	41	135
 EXTERNAL TRIPS			
% External Trips:	98.0%	95.0%	
	<u>Apartments</u>	<u>Retail</u>	<u>TOTAL</u>
ENTER	28	24	52
EXIT	64	15	79
TOTAL	92	39	131
 NEW EXTERNAL TRIPS			
% New Trips:	100.0%	25.2%	
	<u>Apartments</u>	<u>Retail</u>	<u>TOTAL</u>
ENTER	28	6	34
EXIT	64	4	68
TOTAL	92	10	102

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TABLE 7
TRIP GENERATION CALCULATIONS - NEW DEVELOPMENT
PM PEAK HOUR

	260 DU	10.6 kgsf	
TOTAL TRIPS	Mid-Rise		
	<u>Apartments</u>	<u>Retail</u>	<u>TOTAL</u>
ENTER	66	68	134
EXIT	48	73	121
TOTAL	114	141	255
EXTERNAL TRIPS			
% External Trips:	87.0%	89.0%	
	<u>Apartments</u>	<u>Retail</u>	<u>TOTAL</u>
ENTER	57	61	118
EXIT	42	65	107
TOTAL	99	126	225
NEW EXTERNAL TRIPS			
% New Trips:	100.0%	25.2%	
	<u>Apartments</u>	<u>Retail</u>	<u>TOTAL</u>
ENTER	57	15	72
EXIT	42	16	58
TOTAL	99	31	130

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TABLE 8
TRIP GENERATION CALCULATIONS - NEW DEVELOPMENT
WEEKDAY

	260 DU	10.6 kgsf	
TOTAL TRIPS	Mid-Rise		
	<u>Apartments</u>	<u>Retail</u>	<u>TOTAL</u>
ENTER	652	790	1442
EXIT	652	790	1442
TOTAL	1304	1580	2884
 EXTERNAL TRIPS			
% External Trips:	88.0%	90.0%	
	<u>Apartments</u>	<u>Retail</u>	<u>TOTAL</u>
ENTER	574	711	1285
EXIT	574	711	1285
TOTAL	1148	1422	2570
 NEW EXTERNAL TRIPS			
% New Trips:	100.0%	25.2%	
	<u>Apartments</u>	<u>Retail</u>	<u>TOTAL</u>
ENTER	574	179	753
EXIT	574	179	753
TOTAL	1148	358	1506

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TABLE 9

TRIP GENERATION CALCULATIONS

HIGH RISE APARTMENT

Land Use Code 222

T = Number of Vehicle Trip Ends

X = Number of Dwelling Units = 90

<u>TIME PERIOD</u>	<u>TRIP GENERATION EQUATION</u>	<u>TOTAL TRIP ENDS</u>	<u>PERCENT ENTERING</u>	<u>PERCENT EXITING</u>	<u>TOTAL TRIP ENDS ENTERING</u>	<u>TOTAL TRIP ENDS EXITING</u>
WEEKDAY						
Average Weekday	$\ln(T) = 0.83 \ln(X) + 2.5$	510	50%	50%	255	255
AM Peak Hour	$\ln(T) = 0.99 \ln(X) - 1.14$	28	25%	75%	7	21
PM Peak Hour	$T = 0.32 (X) + 12.30$	41	61%	39%	25	16

SOURCE: Institute of Transportation Engineers, "Trip Generation", 9th Edition (2012)

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TABLE 10
TRIP GENERATION CALCULATIONS

SHOPPING CENTER

Land Use Code 820

T = Number of Vehicle Trip Ends

Size of Buildings = 43,000 gsf -----> X= 43.0

<u>TIME PERIOD</u> AVERAGE WEEKDAY	TOTAL TRIP GENERATION <u>EQUATION</u>	TOTAL TRIP <u>ENDS</u>	<u>PERCENT</u> <u>ENTERING</u>	<u>PERCENT</u> <u>EXITING</u>	TOTAL TRIP ENDS <u>ENTERING</u>	TOTAL TRIP ENDS <u>EXITING</u>
Daily	$\ln(T) = 0.65\ln(X) + 5.83$	3924	50%	50%	1962	1962
AM Peak Hour	$\ln(T) = 0.61\ln(X) + 2.24$	94	62%	38%	58	36
PM Peak Hour	$\ln(T) = 0.67\ln(X) + 3.31$	361	48%	52%	173	188

SOURCE: Institute of Transportation Engineers, "Trip Generation", 9th Edition (2012)

<u>TIME PERIOD</u> AVERAGE WEEKDAY	<u>PERCENT PASS-BY TRIPS</u>	NEW TRIP <u>ENDS</u>	<u>PERCENT</u> <u>ENTERING</u>	<u>PERCENT</u> <u>EXITING</u>	NEW TRIP ENDS <u>ENTERING</u>	NEW TRIP ENDS <u>EXITING</u>
	$\ln(T) = -0.29\ln(X) + 5.00$ 49.9%					
Daily	50.1%	1968	50%	50%	984	984
AM Peak Hour	50.1%	47	62%	38%	29	18
PM Peak Hour	50.1%	181	48%	52%	87	94

SOURCE: Institute of Transportation Engineers, "Trip Generation", 9th Edition, Volume 1, Figure 5.5

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TABLE 11
TRIP GENERATION CALCULATIONS - EXISTING DEVELOPMENT
PM PEAK HOUR

	90 DU	43 kgsf	
TOTAL TRIPS			
	<u>Apartments</u>	<u>Retail</u>	<u>TOTAL</u>
ENTER	25	173	198
EXIT	16	188	204
TOTAL	41	361	402
 EXTERNAL TRIPS			
% External Trips:	100.0%	100.0%	
	<u>Apartments</u>	<u>Retail</u>	<u>TOTAL</u>
ENTER	25	173	198
EXIT	16	188	204
TOTAL	41	361	402
 NEW EXTERNAL TRIPS			
% New Trips:	100.0%	50.1%	
	<u>Apartments</u>	<u>Retail</u>	<u>TOTAL</u>
ENTER	25	87	112
EXIT	16	94	110
TOTAL	41	181	222

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TABLE 12
WEEKDAY PM PEAK HOUR CAPACITY RESULTS
2013 EXISTING CONDITIONS

	UNSIGNALIZED INTERSECTIONS			
St. Johns Avenue at:	Critical Movement	Critical Movement LOS (& Delay)	Critical Movement v/c Ratio	Critical Movement 95 th % Queue
Riverside Avenue	Southbound All	LOS B (11.1 sec/veh)	0.06	< 1
Oak Street	Southbound LT	LOS C (16.3 sec/veh)	0.02	< 1

	SIGNALIZED INTERSECTIONS			
St. Johns Avenue at:	Cycle Length	Intersection Delay	Intersection LOS	Longest 95 th % Queue
Herschel Street/Geraldine Drive	85 sec	27.7 sec/veh	C	15 (westbound)

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TABLE 13
WEEKDAY PM PEAK HOUR CAPACITY RESULTS
2015 BUILD CONDITIONS

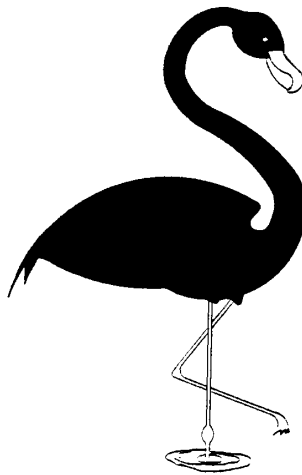
	UNSIGNALIZED INTERSECTIONS			
St. Johns Avenue at:	Critical Movement	Critical Movement LOS (& Delay)	Critical Movement v/c Ratio	Critical Movement 95 th % Queue
Riverside Avenue	Southbound All	LOS B (11.2 sec/veh)	0.07	< 1
Oak Street	Southbound LT	LOS C (24.9 sec/veh)	0.02	< 1

	SIGNALIZED INTERSECTIONS			
St. Johns Avenue at:	Cycle Length	Intersection Delay	Intersection LOS	Longest 95 th % Queue
Herschel Street/Geraldine Drive	85 sec	28.2 sec/veh	C	15 (westbound)

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ATTACHMENT A

SITE PLAN





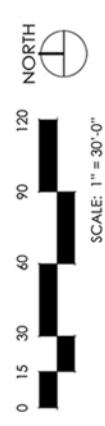
BUILDING 100A/100B
 - 4 STORY BUILDING
 - 82 RESIDENTIAL UNITS
 - 1 LEVEL STRUCTURED PARKING

BUILDING 200
 - 1 STORY BUILDING
 - 10,000 S.F. RETAIL SHOPS

BUILDING 300
 - 5 STORY BUILDING
 - 178 RESIDENTIAL UNITS
 - MULTI-LEVEL STRUCTURED PARKING

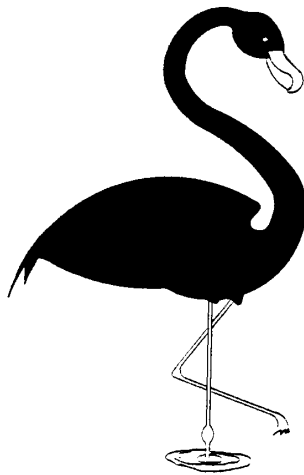
DEVELOPMENT SUMMARY

TOTAL GROSS ACREAGE	5.86 ACRES	100%
AMOUNT OF LAND USE BY ACREAGE	HDR: 2.54 ACRES CCG: 3.3 ACRES	60.9% 39.1%
TOTAL NUMBER AND TYPE OF DWELLING UNITS BY EACH TYPE OF THE SAME	260 MULTI-FAMILY UNITS 120 1 BR UNITS 120 2 BR UNITS 20 3 BR UNITS	100% 46% 46% 8%
TOTAL AMOUNT OF ACTIVE RECREATION OR OPEN SPACE	20,000 SQUARE FEET	7.6%
TOTAL AMOUNT OF PASSIVE OPEN SPACE	124,600 SQUARE FEET	48.8%
AMOUNT OF PUBLIC AND PRIVATE RIGHTS-OF-WAY	PRIVATE: 0.46 ACRES PUBLIC: 0.0 ACRES	7.8% 0%
MAXIMUM COVERAGE OF BUILDINGS AND STRUCTURES AT GROUND LEVEL	118,000 SQUARE FEET	46%
NON-RESIDENTIAL FLOOR AREA	5,000 SQUARE FEET (EXCLUDING GARAGE)	1.9%



ATTACHMENT B

TRAFFIC COUNTS



DAY: WEDNESDAY

MANUAL TURNING MOVEMENT COUNTS

Site Code : 12770002

DATE: 05/08/13

ST. JOHNS AVE. AT HERSCHEL STREET

Start Date: 05/08/13

WEATHER: CLEAR & DRY

DUVAL COUNTY, FLORIDA

File I.D. : 12770002

BEGIN TIME (MILITARY):16:00 Hrs

Page : 1

AUTOMOBILES, COMMERCIAL VEHICLES

Date	HERSCHEL STREET From North				ST. JOHNS AVENUE From East				HERSCHEL STREET From South				GERALDINE DRIVE From West				Total
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	
05/08/13	-----																
16:00	1	52	3	0	118	1	1	0	11	37	68	0	4	0	5	0	301
16:15	2	62	4	0	142	4	1	0	9	45	85	0	3	1	5	0	363
16:30	3	51	4	0	121	5	2	0	9	44	79	0	1	0	9	0	328
16:45	0	51	2	0	166	3	2	0	11	43	77	0	1	1	5	0	362
Hr Total	6	216	13	0	547	13	6	0	40	169	309	0	9	2	24	0	1354
17:00	0	66	5	0	178	1	0	0	6	50	105	0	5	3	7	0	426
17:15	2	56	9	0	192	8	0	0	6	49	92	0	4	3	7	0	428
17:30	0	71	2	0	164	1	0	0	3	53	81	0	3	0	6	0	384
17:45	1	61	1	0	154	5	0	0	5	44	74	0	0	0	5	0	350
Hr Total	3	254	17	0	688	15	0	0	20	196	352	0	12	6	25	0	1588

TOTAL	9	470	30	0	1235	28	6	0	60	365	661	0	21	8	49	0	2942

Peak Hour Analysis By Entire Intersection for the Period: 16:45 to 17:45 on 05/08/13

Peak start	16:45				16:45				16:45				16:45			
Volume	2	244	18	0	700	13	2	0	26	195	355	0	13	7	25	0
Percent	1%	92%	7%	0%	98%	2%	0%	0%	5%	34%	62%	0%	29%	16%	56%	0%
Pk total	264				715				576				45			
Highest	17:30				17:15				17:00				17:00			
Volume	0	71	2	0	192	8	0	0	6	50	105	0	5	3	7	0
Hi total	73				200				161				15			
PHF	.90				.89				.89				.75			

DAY: WEDNESDAY
 DATE: 05/08/13
 WEATHER: CLEAR & DRY
 BEGIN TIME (MILITARY):16:00 Hrs

MANUAL TURNING MOVEMENT COUNTS
 ST. JOHNS AVE. AT HERSCHEL STREET
 DUVAL COUNTY, FLORIDA

Site Code : 12770002
 Start Date: 05/08/13
 File I.D. : 12770002
 Page : 1

AUTOMOBILES

Date	HERSCHEL STREET From North				ST. JOHNS AVENUE From East				HERSCHEL STREET From South				GERALDINE DRIVE From West				Total
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	
05/08/13	-----																
16:00	1	50	3	0	117	1	1	0	11	36	68	0	4	0	5	0	297
16:15	2	61	4	0	141	4	1	0	9	45	85	0	3	1	5	0	361
16:30	3	51	4	0	121	5	1	0	8	44	77	0	1	0	9	0	324
16:45	0	51	2	0	164	3	2	0	10	43	75	0	0	1	5	0	356
Hr Total	6	213	13	0	543	13	5	0	38	168	305	0	8	2	24	0	1338
17:00	0	65	5	0	175	1	0	0	6	49	105	0	5	3	7	0	421
17:15	2	56	9	0	192	8	0	0	6	49	92	0	4	3	7	0	428
17:30	0	71	2	0	163	1	0	0	3	53	79	0	3	0	6	0	381
17:45	1	61	1	0	153	5	0	0	5	43	73	0	0	0	5	0	347
Hr Total	3	253	17	0	683	15	0	0	20	194	349	0	12	6	25	0	1577

TOTAL	9	466	30	0	1226	28	5	0	58	362	654	0	20	8	49	0	2915

Peak Hour Analysis By Entire Intersection for the Period: 16:45 to 17:45 on 05/08/13

Peak start	16:45				16:45				16:45				16:45			
Volume	2	243	18	0	694	13	2	0	25	194	351	0	12	7	25	0
Percent	1%	92%	7%	0%	98%	2%	0%	0%	4%	34%	62%	0%	27%	16%	57%	0%
Pk total	263				709				570				44			
Highest	17:30				17:15				17:00				17:00			
Volume	0	71	2	0	192	8	0	0	6	49	105	0	5	3	7	0
Hi total	73				200				160				15			
PHF	.90				.89				.89				.73			

DAY: WEDNESDAY
 DATE: 05/08/13
 WEATHER: CLEAR & DRY
 BEGIN TIME (MILITARY):16:00 Hrs

MANUAL TURNING MOVEMENT COUNTS
 ST. JOHNS AVE. AT HERSCHEL STREET
 DUVAL COUNTY, FLORIDA

Site Code : 12770002
 Start Date: 05/08/13
 File I.D. : 12770002
 Page : 1

COMMERCIAL VEHICLES

Date	HERSCHEL STREET From North				ST. JOHNS AVENUE From East				HERSCHEL STREET From South				GERALDINE DRIVE From West				Total
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	
05/08/13	-----																
16:00	0	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	4
16:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
16:30	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	4
16:45	0	0	0	0	2	0	0	0	1	0	2	0	1	0	0	0	6
Hr Total	0	3	0	0	4	0	1	0	2	1	4	0	1	0	0	0	16
17:00	0	1	0	0	3	0	0	0	0	1	0	0	0	0	0	0	5
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	1	0	0	0	0	0	2	0	0	0	0	0	3
17:45	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	3
Hr Total	0	1	0	0	5	0	0	0	0	2	3	0	0	0	0	0	11

TOTAL	0	4	0	0	9	0	1	0	2	3	7	0	1	0	0	0	27

Peak Hour Analysis By Entire Intersection for the Period: 16:45 to 17:45 on 05/08/13

Peak start	16:45				16:45				16:45				16:45			
Volume	0	1	0	0	6	0	0	0	1	1	4	0	1	0	0	0
Percent	0%	100%	0%	0%	100%	0%	0%	0%	17%	17%	67%	0%	100%	0%	0%	0%
Pk total	1				6				6				1			
Highest	17:00				17:00				16:45				16:45			
Volume	0	1	0	0	3	0	0	0	1	0	2	0	1	0	0	0
Hi total	1				3				3				1			
PHF	.25				.50				.50				.25			

DAY: WEDNESDAY
 DATE: 05/08/13
 WEATHER: CLEAR & DRY
 BEGIN TIME (MILITARY):16:00 Hrs

MANUAL TURNING MOVEMENT COUNTS
 ST. JOHNS AVE. AT HERSCHEL STREET
 DUVAL COUNTY, FLORIDA

Site Code : 12770002
 Start Date: 05/08/13
 File I.D. : 12770002
 Page : 1

PEDESTRIAN & BICYCLES

Date	HERSCHEL STREET From North				ST. JOHNS AVENUE From East				HERSCHEL STREET From South				GERALDINE DRIVE From West				Total
	Left	Thru	Right	PEDS	Left	Thru	Right	PEDS	Left	Thru	Right	PEDS	Left	Thru	Right	PEDS	
05/08/13	-----																
16:00	0	0	0	3	1	0	0	1	0	0	1	0	0	0	0	4	10
16:15	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	4
16:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
16:45	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	1	4
Hr Total	0	3	0	3	3	0	0	2	0	1	2	0	0	0	0	6	20
17:00	0	2	0	2	1	0	0	1	0	0	0	0	0	0	1	1	8
17:15	0	2	0	2	0	0	0	0	1	0	0	0	0	0	0	3	8
17:30	0	1	0	0	1	0	0	3	0	0	0	0	0	0	0	1	6
17:45	0	4	0	2	1	0	0	2	0	0	1	0	0	0	0	1	11
Hr Total	0	9	0	6	3	0	0	6	1	0	1	0	0	0	1	6	33

TOTAL	0	12	0	9	6	0	0	8	1	1	3	0	0	0	1	12	53

Peak Hour Analysis By Entire Intersection for the Period: 16:45 to 17:45 on 05/08/13

Peak start	16:45				16:45				16:45				16:45			
Volume	0	6	0	4	3	0	0	4	1	0	1	0	0	0	1	6
Percent	0%	60%	0%	40%	43%	0%	0%	57%	50%	0%	50%	0%	0%	0%	14%	86%
Pk total	10				7				2				7			
Highest	17:00				17:30				16:45				17:15			
Volume	0	2	0	2	1	0	0	3	0	0	1	0	0	0	0	3
Hi total	4				4				1				3			
PHF	.62				.44				.50				.58			

AUTOMOBILES, COMMERCIAL VEHICLES

Date	OAK STREET From North				ST. JOHNS AVENUE From East				ST. JOHNS VILLAGE ENTRANCE From South				ST. JOHNS AVENUE From West				Total
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	
05/06/13	-----																
16:00	0	0	0	0	3	110	1	0	4	0	2	0	3	68	2	0	193
16:15	1	0	3	0	6	136	2	0	1	0	1	0	3	55	8	0	216
16:30	0	0	1	0	0	132	4	0	3	0	2	0	4	51	8	0	205
16:45	0	0	2	0	3	151	0	0	6	0	2	0	1	67	8	0	240
Hr Total	1	0	6	0	12	529	7	0	14	0	7	0	11	241	26	0	854
17:00	1	0	1	0	6	170	1	0	2	0	2	0	1	67	5	0	256
17:15	0	0	2	0	6	146	3	0	12	0	5	0	1	70	6	0	251
17:30	2	0	1	0	1	143	1	0	5	0	4	0	2	61	3	0	223
17:45	0	0	1	0	5	148	1	0	8	0	1	0	6	83	9	0	262
Hr Total	3	0	5	0	18	607	6	0	27	0	12	0	10	281	23	0	992
TOTAL	4	0	11	0	30	1136	13	0	41	0	19	0	21	522	49	0	1846

Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 18:00 on 05/06/13

Peak start	17:00				17:00				17:00				17:00			
Volume	3	0	5	0	18	607	6	0	27	0	12	0	10	281	23	0
Percent	38%	0%	62%	0%	3%	96%	1%	0%	69%	0%	31%	0%	3%	89%	7%	0%
Pk total	8				631				39				314			
Highest	17:30				17:00				17:15				17:45			
Volume	2	0	1	0	6	170	1	0	12	0	5	0	6	83	9	0
Hi total	3				177				17				98			
PHF	.67				.89				.57				.80			

DAY: MONDAY

DATE: 05/06/13

ST. JOHNS AVE. AT OAK ST.-VILLAGE ENT.

Start Date: 05/06/13

WEATHER: CLEAR & DRY

DUVAL COUNTY, FLORIDA

File I.D. : 12770001

BEGIN TIME (MILITARY):16:00 Hrs

Page : 1

AUTOMOBILES

Date 05/06/13	OAK STREET				ST. JOHNS AVENUE				ST. JOHNS VILLAGE ENTRANCE				ST. JOHNS AVENUE				Total
	From North				From East				From South				From West				
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	
16:00	0	0	0	0	3	110	1	0	4	0	2	0	3	68	2	0	193
16:15	1	0	3	0	6	134	2	0	1	0	1	0	3	54	8	0	213
16:30	0	0	1	0	0	131	4	0	3	0	2	0	4	51	8	0	204
16:45	0	0	2	0	3	151	0	0	6	0	2	0	1	67	7	0	239
Hr Total	1	0	6	0	12	526	7	0	14	0	7	0	11	240	25	0	849
17:00	1	0	1	0	6	167	1	0	2	0	2	0	1	65	5	0	251
17:15	0	0	2	0	6	144	3	0	12	0	5	0	1	69	6	0	248
17:30	2	0	1	0	1	141	1	0	5	0	4	0	2	60	3	0	220
17:45	0	0	1	0	5	147	1	0	8	0	1	0	6	83	9	0	261
Hr Total	3	0	5	0	18	599	6	0	27	0	12	0	10	277	23	0	980
TOTAL	4	0	11	0	30	1125	13	0	41	0	19	0	21	517	48	0	1829

Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 18:00 on 05/06/13

Peak start	17:00				17:00				17:00				17:00			
Volume	3	0	5	0	18	599	6	0	27	0	12	0	10	277	23	0
Percent	38%	0%	62%	0%	3%	96%	1%	0%	69%	0%	31%	0%	3%	89%	7%	0%
Pk total	8				623				39				310			
Highest	17:30				17:00				17:15				17:45			
Volume	2	0	1	0	6	167	1	0	12	0	5	0	6	83	9	0
Hi total	3				174				17				98			
PHF	.67				.90				.57				.79			

DAY: MONDAY

MANUAL TURNING MOVEMENT COUNTS

Site Code : 12770001

DATE: 05/06/13

ST. JOHNS AVE. AT OAK ST.-VILLAGE ENT.

Start Date: 05/06/13

WEATHER: CLEAR & DRY

DUVAL COUNTY, FLORIDA

File I.D. : 12770001

BEGIN TIME (MILITARY):16:00 Hrs

Page : 1

COMMERCIAL VEHICLES

Date 05/06/13	OAK STREET				ST. JOHNS AVENUE				ST. JOHNS VILLAGE ENTRANCE				ST. JOHNS AVENUE				Total
	From North				From East				From South				From West				
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
16:30	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Hr Total	0	0	0	0	0	3	0	0	0	0	0	0	0	1	1	0	5
17:00	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	5
17:15	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
17:30	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
17:45	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Hr Total	0	0	0	0	0	8	0	0	0	0	0	0	0	4	0	0	12
TOTAL	0	0	0	0	0	11	0	0	0	0	0	0	0	5	1	0	17

Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 18:00 on 05/06/13

Peak start	17:00				17:00				17:00							
Volume	0	0	0	0	0	8	0	0	0	0	0	0	0	4	0	0
Percent	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
Pk total	0				8				0							
Highest	16:00				17:00				17:00							
Volume	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0
Hi total	0				3				0							
PHF	.0				.67				.50							

PEDESTRIAN & BICYCLES

Date	OAK STREET				ST. JOHNS AVENUE				ST. JOHNS VILLAGE ENTRANCE				ST. JOHNS AVENUE				Total		
	From North				From East				From South				From West						
	U-TURN	Thru	Right	PEDS	U-TURN	Thru	Right	PEDS	U-TURN	Thru	Right	PEDS	U-TURN	Thru	Right	PEDS			
05/06/13																			
16:00	0	0	0	0	1	0	0	0	0	0	0	1	0	2	0	1			5
16:15	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2			5
16:30	0	0	0	1	0	3	0	0	0	0	0	2	1	0	0	0			7
16:45	0	0	0	1	0	1	0	0	0	0	0	4	0	0	0	2			8
Hr Total	0	0	0	2	1	4	0	0	0	0	0	10	1	2	0	5			25
17:00	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0			3
17:15	0	0	0	1	0	1	0	1	0	0	0	7	0	0	0	0			10
17:30	0	0	0	1	0	1	0	0	0	0	0	2	0	4	0	0			8
17:45	0	0	0	1	0	2	0	0	0	0	0	3	0	0	0	0			6
Hr Total	0	0	0	3	0	4	0	1	0	0	0	15	0	4	0	0			27
TOTAL	0	0	0	5	1	8	0	1	0	0	0	25	1	6	0	5			52

Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 18:00 on 05/06/13

Peak start	17:00				17:00				17:00				17:00			
Volume	0	0	0	3	0	4	0	1	0	0	0	15	0	4	0	0
Percent	0%	0%	0%	100%	0%	80%	0%	20%	0%	0%	0%	100%	0%	100%	0%	0%
Pk total	3				5				15				4			
Highest	17:15				17:15				17:15				17:30			
Volume	0	0	0	1	0	1	0	1	0	0	0	7	0	4	0	0
Hi total	1				2				7				4			
PHF	.75				.62				.54				.25			

RIVERSIDE AVENUE COUNTS
St. Johns Avenue; Jacksonville, Florida

Monday, May 6, 2013

	Riverside Avenue			
	From East	From West	To East	To West
4:00-4:15 PM				
4:15-4:30 PM				
4:30-4:45 PM	1	3	1	5
4:45-5:00 PM	0	3	2	7
5:00-5:15 PM	0	2	1	6
5:15-5:30 PM	1	2	0	4
5:30-5:45 PM	3	7	1	6
5:45-6:00 PM	2	5	0	10
TOTAL:	7	22	5	38
				All
				10
				12
				9
				7
				17
				<u>17</u>
				72

PEAK HOUR	6	16	2	26	50
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BUCKHOLZ TRAFFIC

**EXISTING DEVELOPMENT COUNTS
St. Johns Avenue; Jacksonville, Florida**

Monday, May 6, 2013

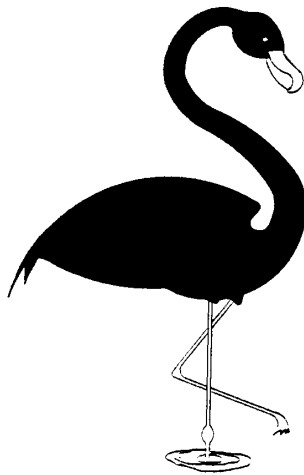
	Western Commercial Driveway			Eastern Commercial Driveway			Residential Driveway		
	From East	From West	All	From East	From West	All	From East	From West	All
4:00-4:15 PM	3	2	11						
4:15-4:30 PM	6	8	16						
4:30-4:45 PM	0	8	13	0	0	6	0	1	4
4:45-5:00 PM	3	8	19	2	1	4	0	4	7
5:00-5:15 PM	6	5	15	1	1	8	1	3	6
5:15-5:30 PM	6	6	29	0	1	2	0	1	2
5:30-5:45 PM	1	3	13	1	1	5	1	1	5
5:45-6:00 PM	5	9	23	1	0	4	3	6	10
TOTAL:	30	49	139	5	4	29	5	16	34

PEAK HOUR	18	23	80	3	3	19	5	11	0	7	23
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BUCKHOLZ TRAFFIC

ATTACHMENT C

EXISTING CAPACITY ANALYSIS



TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	J. Buckholz			Intersection	St. Johns Ave./Riverside Ave.		
Agency/Co.	BUCKHOLZ TRAFFIC			Jurisdiction	Duval County		
Date Performed	5/7/2013			Analysis Year	2013 Existing		
Analysis Time Period	Weekday PM Peak Hour						
Project Description 13-1277							
East/West Street: St. Johns Avenue				North/South Street: Riverside Avenue			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	16	280			605	6	
Peak-Hour Factor, PHF	0.80	0.80	1.00	1.00	0.89	0.89	
Hourly Flow Rate, HFR (veh/h)	19	349	0	0	679	6	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0				0
Lanes	1	1	0	0	2	0	
Configuration	L	T			T	TR	
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				2		26	
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.67	1.00	0.67	
Hourly Flow Rate, HFR (veh/h)	0	0	0	2	0	38	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)		0			0		
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0				0
Lanes	0	0	0	0	0	0	
Configuration					LR		
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11
Lane Configuration	L						LR
v (veh/h)	19						40
C (m) (veh/h)	912						628
v/c	0.02						0.06
95% queue length	0.06						0.20
Control Delay (s/veh)	9.0						11.1
LOS	A						B
Approach Delay (s/veh)	--	--					11.1
Approach LOS	--	--					B

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	J. Buckholz			Intersection	St. Johns Ave./Oak St.			
Agency/Co.	BUCKHOLZ TRAFFIC			Jurisdiction	Duval County			
Date Performed	5/7/2013			Analysis Year	2013 Existing			
Analysis Time Period	Weekday PM Peak Hour							
Project Description 13-1277								
East/West Street: St. Johns Avenue				North/South Street: Oak Street				
Intersection Orientation: East-West				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	10	304			634	6		
Peak-Hour Factor, PHF	0.80	0.80	1.00	1.00	0.89	0.89		
Hourly Flow Rate, HFR (veh/h)	12	379	0	0	712	6		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	1	1	0	0	2	0		
Configuration	L	T			T	TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				3		5		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.67	1.00	0.67		
Hourly Flow Rate, HFR (veh/h)	0	0	0	4	0	7		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	1	0	1		
Configuration				L		R		
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (veh/h)	12					4		7
C (m) (veh/h)	888					200		685
v/c	0.01					0.02		0.01
95% queue length	0.04					0.06		0.03
Control Delay (s/veh)	9.1					23.4		10.3
LOS	A					C		B
Approach Delay (s/veh)	--	--				15.1		
Approach LOS	--	--				C		

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information		
Agency	BUCKHOLZ TRAFFIC				Duration, h	0.25	
Analyst	J. Buckholz	Analysis Date	5/9/2013		Area Type	Other	
Jurisdiction	Duval County	Time Period	PM Peak Hour		PHF	0.93	
Intersection	Herschel St/St. Johns Ave/	Analysis Year	2013		Analysis Period	1> 7:00	
File Name	2013_PM_Herschel_StJohns_Geraldine.xus						
Project Description	2013 Existing Traffic						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	13	7	25	700	13	2	26	195	355	2	244	18

Signal Information													
Cycle, s	85.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On	Green	1.9	33.8	22.4	3.1	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.2	3.2	3.2	3.0	0.0	0.0			
				Red	1.6	3.0	3.4	3.2	0.0	0.0			

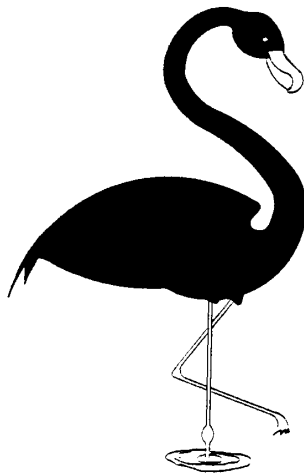
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2		6
Case Number		12.0		10.0	1.0	3.0		8.3
Phase Duration, s		9.3		29.0	6.7	46.7		40.0
Change Period, (Y+R _c), s		6.2		6.6	4.8	6.2		6.2
Max Allow Headway (MAH), s		4.4		4.2	4.2	0.0		0.0
Queue Clearance Time (g _s), s		4.5		20.8	2.8			
Green Extension Time (g _e), s		0.1		1.6	0.0	0.0		0.0
Phase Call Probability		0.68		1.00	0.48			
Max Out Probability		0.01		0.69	0.00			

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (v), veh/h		48		414	414		28	210	382	150		134
Adjusted Saturation Flow Rate (s), veh/h/ln		1666		1792	1792		1740	1881	1594	1895		1684
Queue Service Time (g _s), s		2.5		18.8	18.8		0.8	5.6	14.0	0.0		4.4
Cycle Queue Clearance Time (g _c), s		2.5		18.8	18.8		0.8	5.6	14.0	4.4		4.4
Capacity (c), veh/h		60		473	473		494	896	760	796		669
Volume-to-Capacity Ratio (X)		0.805		0.876	0.876		0.057	0.234	0.503	0.188		0.201
Available Capacity (c _a), veh/h		250		556	556		1005	896	760	796		669
Back of Queue (Q), veh/ln (95th percentile)		2.4		14.6	14.6		0.5	4.3	9.0	3.5		3.2
Overflow Queue (Q ₃), veh/ln		0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Queue Storage Ratio (RQ) (95th percentile)		0.00		0.00	0.00		0.14	0.00	0.00	0.00		0.00
Uniform Delay (d ₁), s/veh		40.7		29.9	29.9		13.6	13.1	15.3	16.8		16.8
Incremental Delay (d ₂), s/veh		21.4		13.0	13.0		0.0	0.6	2.4	0.5		0.7
Initial Queue Delay (d ₃), s/veh		0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Control Delay (d), s/veh		62.1		43.0	43.0		13.7	13.7	17.7	17.3		17.5
Level of Service (LOS)		E		D	D		B	B	B	B		B
Approach Delay, s/veh / LOS	62.1	E		38.5	D		16.2	B		17.4		B
Intersection Delay, s/veh / LOS			27.7						C			

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.3	B	2.3	B	2.1	B
Bicycle LOS Score / LOS	0.6	A	1.8	A	1.5	A	0.7	A

ATTACHMENT D

ROAD LINKS STATUS REPORT

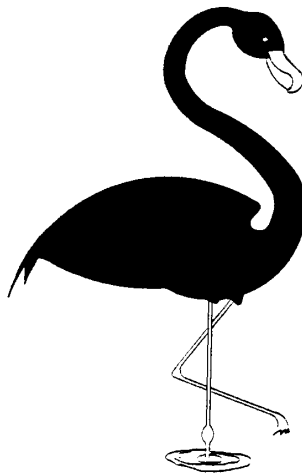


Link Id Facility From To Roadway Type Lanes Max PH PHT Cap In Pct Cap Capacity LOS
Number Name

Link Id Number	Facility Name	From To	Roadway Type	Lanes	Max PH Capacity	PHT	Cap In Reserve	Pct Cap Used	Capacity Available	LOS
15	SOUTHSIDE BLVD (SR 115)	BELLE RIVE TO BAYMEADOWS RD	PRINCIPAL ARTERIAL	6	5360	4589	558	96.03%	213	D
16	SOUTHSIDE BLVD (SR 115)	BAYMEADOWS RD TO J TURNER BUTLER BLVD	PRINCIPAL ARTERIAL	6	5360	4728	774	102.65%	-142	F
136	SOUTHSIDE BLVD (SR 115)	J TURNER BUTLER BLVD TO BEACH BLVD	PRINCIPAL ARTERIAL	4	3560	4380	869	147.44%	-1689	F
137	SOUTHSIDE BLVD (SR 115)	BEACH BLVD TO ATLANTIC BLVD	PRINCIPAL ARTERIAL	4	3560	3275	817	114.94%	-532	F
138	SOUTHSIDE BLVD (SR 115)	ATLANTIC BLVD TO ARLINGTON EXPY	PRINCIPAL ARTERIAL	4	3560	3152	1232	123.15%	-824	F
207	SOUTHSIDE CONNECTOR (ARLINGTON EXPY TO SR 9A	PRINCIPAL ARTERIAL	4	3560	2623	1581	118.09%	-644	F
423	SPRING GLEN RD	BEACH BLVD TO SPRING PARK RD	COLLECTOR	2	1440	715	24	51.32%	701	D
424	SPRING GLEN RD	BEACH BLVD TO HART EXPY	COLLECTOR	2	1440	133	19	10.56%	1288	C
176	SPRING PARK RD	ATLANTIC BLVD TO EMERSON ST	COLLECTOR	2	1440	357	16	25.90%	1067	C
177	SPRING PARK RD	EMERSON ST TO UNIVERSITY BLVD	COLLECTOR	2	1512	502	0	33.20%	1010	C
164	ST. AUGUSTINE RD	PHILIPS HWY TO EMERSON ST	MINOR ARTERIAL	2	1680	862	97	57.08%	721	C
165	ST. AUGUSTINE RD	EMERSON ST TO UNIVERSITY BLVD	MINOR ARTERIAL	4	2670	854	48	33.78%	1768	B
166	ST. AUGUSTINE RD	UNIVERSITY BLVD TO SAN JOSE BLVD	MINOR ARTERIAL	4	2550	1175	3	46.20%	1372	C
312	ST. JOHNS AVE	ROOSEVELT BLVD TO HERSHEL ST	COLLECTOR	2	1130	461	0	40.80%	669	C
213	ST. JOHNS AVE (SR 211)	GERALDINE AVE TO EDGEWOOD AVE S	MINOR ARTERIAL	2	1600	816	46	53.88%	738	B
702	ST. JOHNS AVE (SR 211)	EDGEWOOD AVE S TO KINGS ST/RIVERSIDE DR (SR 211)	MINOR ARTERIAL	2	1570	595	47	40.89%	928	B
224	ST. JOHNS BLUFF RD	MONUMENT RD TO ATLANTIC BLVD	COLLECTOR	4	3204	1087	318	43.85%	1799	C
225	ST. JOHNS BLUFF RD	ATLANTIC BLVD TO BEACH BLVD	MINOR ARTERIAL	4	3910	1807	1443	83.12%	660	D
226	ST. JOHNS BLUFF RD	BEACH BLVD TO TOWN CENTER PKWY/JNF	MINOR ARTERIAL	4	3910	1358	295	42.28%	2257	C
703	ST. JOHNS BLUFF RD	FORT CAROLINE RD TO MONUMENT RD	COLLECTOR	2	1625	627	43	41.23%	955	B
372	STARRATT RD	DUVAL STATION RD TO YELLOW BLUFF RD	COLLECTOR	2	1152	699	1603	199.83%	-1150	F
371	STARRATT ROAD	NEW BERLIN RD TO DUVAL STATION RD	COLLECTOR	2	1512	579	1110	111.71%	-177	F
155	STATE ST (SR 10A)	LIBERTY ST TO US HWY 1	MINOR ARTERIAL 1-W	4	4128	3013	1	73.01%	1114	C
705	STATE ST (SR 139)	MAIN ST (SR 5) TO I-95	MINOR ARTERIAL 1-W	4	3768	2379	5	63.27%	1384	D
316	STOCKTON ST	RIVERSIDE AVE TO I-10	COLLECTOR	2	1296	814	253	82.33%	229	D

ATTACHMENT E

HISTORICAL FDOT COUNTS



Florida Department of Transportation
 Transportation Statistics Office
 2011 Historical AADT Report

County: 72 - DUVAL

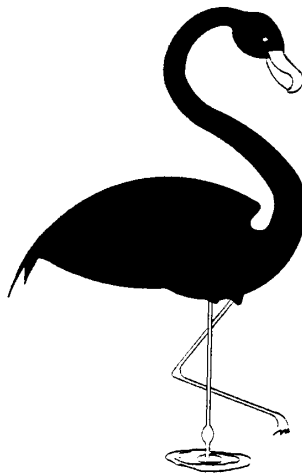
Site: 5506 - SR 211 (ST JOHNS AVE) 150' NORTH OF GLENDALE ST.

Year	AADT	Direction 1		Direction 2		*K Factor	D Factor	T Factor
----	-----	-----	-----	-----	-----	-----	-----	-----
2011	9400 C	N	0	S	0	9.00	56.60	1.70
2010	8800 C	N	0	S	0	9.75	56.38	1.40
2009	9700 F		0		0	9.48	57.48	2.70
2008	10000 C	N	0	S	0	9.68	57.27	2.00
2007	12500 C	N	0	S	0	9.26	57.87	3.50
2006	12000 C	N	0	S	0	9.52	57.03	5.80
2005	11500 C	N		S		9.00	56.50	4.50
2004	11000 C	N		S		9.20	58.40	4.20
2003	11500 C	N		S		9.40	53.50	3.80
2002	11000 C	N		S		9.80	57.00	9.20
2001	12000 C	N		S		10.70	56.70	5.40
2000	11500 C	N		S		10.70	61.10	8.50
1999	10500 C	N		S		9.10	56.80	7.30
1998	12500 C	N		S		9.30	56.20	8.10
1997	11500 C	N		S		10.80	56.00	7.50
1996	12000 C	N		S		10.90	55.70	6.90

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
 S = Second Year Estimate; T = Third Year Estimate; X = Unknown
 *K Factor: Starting with Year 2011 is StandardK, Prior years are K30 values

ATTACHMENT F

2015 BUILD CAPACITY ANALYSIS

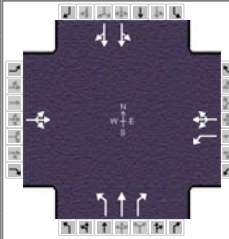


TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	J. Buckholz			Intersection	St. Johns Ave./Riverside Ave.		
Agency/Co.	BUCKHOLZ TRAFFIC			Jurisdiction	Duval County		
Date Performed	10/24/2013			Analysis Year	2015 BUILD		
Analysis Time Period	Weekday PM Peak Hour						
Project Description 13-1277							
East/West Street: St. Johns Avenue				North/South Street: Riverside Avenue			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	17	292			619	6	
Peak-Hour Factor, PHF	0.80	0.80	1.00	1.00	0.89	0.89	
Hourly Flow Rate, HFR (veh/h)	21	364	0	0	695	6	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	1	1	0	0	2	0	
Configuration	L	T			T	TR	
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				2		27	
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.67	1.00	0.67	
Hourly Flow Rate, HFR (veh/h)	0	0	0	2	0	40	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)		0			0		
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	0	0	
Configuration					LR		
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11
Lane Configuration	L						LR
v (veh/h)	21						42
C (m) (veh/h)	899						620
v/c	0.02						0.07
95% queue length	0.07						0.22
Control Delay (s/veh)	9.1						11.2
LOS	A						B
Approach Delay (s/veh)	--	--					11.2
Approach LOS	--	--					B

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst	J. Buckholz				Intersection	St. Johns Ave./Oak St.		
Agency/Co.	BUCKHOLZ TRAFFIC				Jurisdiction	Duval County		
Date Performed	10/24/2013				Analysis Year	2015 BUILD		
Analysis Time Period	Weekday PM Peak Hour							
Project Description 13-1277								
East/West Street: St. Johns Avenue					North/South Street: Oak Street			
Intersection Orientation: East-West					Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments								
Major Street		Eastbound			Westbound			
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	10	327			655	6		
Peak-Hour Factor, PHF	0.80	0.80	1.00	1.00	0.89	0.89		
Hourly Flow Rate, HFR (veh/h)	12	408	0	0	735	6		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0					0
Lanes	1	1	0	0	2	0		
Configuration	L	T			T	TR		
Upstream Signal		0			0			
Minor Street		Northbound			Southbound			
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				3		5		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.67	1.00	0.67		
Hourly Flow Rate, HFR (veh/h)	0	0	0	4	0	7		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	1	0	1		
Configuration				L		R		
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (veh/h)	12					4		7
C (m) (veh/h)	871					185		675
v/c	0.01					0.02		0.01
95% queue length	0.04					0.07		0.03
Control Delay (s/veh)	9.2					24.9		10.4
LOS	A					C		B
Approach Delay (s/veh)	--	--				15.7		
Approach LOS	--	--				C		

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	BUCKHOLZ TRAFFIC			Duration, h	0.25		
Analyst	J. Buckholz	Analysis Date	5/9/2013	Area Type	Other		
Jurisdiction	Duval County	Time Period	PM Peak Hour	PHF	0.93		
Intersection	Herschel St/St. Johns Ave/	Analysis Year	2015 BUILD	Analysis Period	1 > 7:00		
File Name	2_2015_B_PM_Herschel_StJohns_Geraldine.xus						
Project Description	2015 BUILD Traffic						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	14	7	25	720	14	2	26	195	377	2	244	18

Signal Information				Signal Timing (s)									
Cycle, s	85.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On	Green	1.9	33.2	22.9	3.1	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.2	3.2	3.2	3.0	0.0	0.0			
				Red	1.6	3.0	3.4	3.2	0.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2		6
Case Number		12.0		10.0	1.0	3.0		8.3
Phase Duration, s		9.3		29.5	6.7	46.1		39.4
Change Period, (Y+R _c), s		6.2		6.6	4.8	6.2		6.2
Max Allow Headway (MAH), s		4.4		4.2	4.2	0.0		0.0
Queue Clearance Time (g _s), s		4.5		21.4	2.8			
Green Extension Time (g _e), s		0.1		1.6	0.0	0.0		0.0
Phase Call Probability		0.69		1.00	0.48			
Max Out Probability		0.02		0.80	0.00			

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (v), veh/h		49		426	426		28	210	405	150		134
Adjusted Saturation Flow Rate (s), veh/h/ln		1669		1792	1792		1740	1881	1594	1894		1684
Queue Service Time (g _s), s		2.5		19.4	19.4		0.8	5.7	15.4	0.0		4.5
Cycle Queue Clearance Time (g _c), s		2.5		19.4	19.4		0.8	5.7	15.4	4.4		4.5
Green Ratio (g/C)		0.04		0.27	0.27		0.44	0.47	0.47	0.39		0.39
Capacity (c), veh/h		62		483	483		486	884	749	783		658
Volume-to-Capacity Ratio (X)		0.803		0.881	0.881		0.057	0.237	0.541	0.191		0.204
Available Capacity (c _a), veh/h		241		556	556		986	884	749	783		658
Back of Queue (Q), veh/ln (95th percentile)		2.5		15.0	15.0		0.5	4.4	9.8	3.6		3.2
Queue Storage Ratio (RQ) (95th percentile)		0.00		0.00	0.00		0.14	0.00	0.00	0.00		0.00
Uniform Delay (d ₁), s/veh		40.6		29.7	29.7		13.9	13.4	16.0	17.1		17.1
Incremental Delay (d ₂), s/veh		20.8		13.9	13.9		0.0	0.6	2.8	0.5		0.7
Initial Queue Delay (d ₃), s/veh		0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Control Delay (d), s/veh		61.5		43.6	43.6		14.0	14.1	18.8	17.7		17.8
Level of Service (LOS)		E		D	D		B	B	B	B		B
Approach Delay, s/veh / LOS	61.5	E		39.0	D		17.1	B		17.8	B	
Intersection Delay, s/veh / LOS	28.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.3	B	2.3	B	2.1	B
Bicycle LOS Score / LOS	0.6	A	1.8	A	1.5	A	0.7	A