J F O G R O U P I N C
Traffic Engineering • Transportation Planning

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Revised November 8, 2019
August 31, 2019

Aimee Craig Carlson, AICP
Director of Land Planning & Entitlement
SE Florida Division
4400 PGA Blvd, Suite 700
Palm Beach Gardens, FL 33410

RE: Stuart Ocean Townhomes – Traffic Impact Study
Parcel ID: 27-37-41-033-000-00040-2/-00050-9

Dear Aimee,

JFO Group Inc. has been retained to evaluate a traffic impact analysis to determine compliance with the *Martin County Adequate Public Facilities Standards – Article V, Division 3, Section 5.63-5.64, of the Martin County Land Development Code*. This traffic statement is associated with the site plan application for the Stuart Ocean Townhomes property. The site is located on the south side of Ocean Boulevard (SR-A1A), about 0.60 miles east of Monterey Road (SR-714) in the City of Stuart. Figure 1 shows the project location in relation to the transportation network. Parcel ID Number associated with this project is 02-38-41-000-000-00020-6/-00050-9. A copy of the property appraiser information is included as Exhibit 1 while Exhibit 2 includes a copy of the proposed site plan for the project. Project buildout is expected in the year 2024.



Figure 1 : Project Location

The Stuart Ocean Townhomes project is proposing 80 townhomes. Project trip generation rates used for this analysis were based on ITE Trip Generation Rates, 10th Edition. Table 1 shows the rates used in order to determine the trip generation for Daily, AM, and PM peak hour conditions. Exhibit 3 includes the ITE Trip Generation rates used in this analysis.

Table 2 summarizes the net Daily, AM, and PM peak trips potentially generated by the proposed development. According to Table 2, the net Daily, AM and PM peak trips potentially generated due to the proposed development are 586, 37 and 45 trips respectively. According to Section 5.64.C. from the Land Development Regulations (LDR) and given the trip generation characteristics from Table 2, this analysis needs to consider the first directly accessed road on the major road network.

Table 1: Trip Generation Rates

Land Use	ITE Code	Daily Trip Gen.	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Townhouse	220	7.32	23%	77%	0.46	63%	37%	0.56

Table 2: Trip Generation

Land Use	Intensity	Daily Traffic	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Townhouse	80 DU	586	9	28	37	28	17	45

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Project Site

0.15 0.07 0 0.15 0.3 0.45 0.6 Miles

Figure 2:
Trip Distribution
Stuart Ocean

JFO GROUP INC

The main access to the site is being proposed on the existing connection from the Kingswood Community to Ocean Boulevard (SR-A1A). In addition, there is a cross connection on the southern portion of the site that will connect vehicular traffic directly to Monterey Road (SR-714) via SE Kingswood Terrace. Trip distribution and assignment included in Figure 2 incorporates the characteristics of the proposed development as well as the surrounding network configuration. Figure 3 provides Daily, AM and PM peak hour driveway volumes for the Stuart Ocean Townhomes property.

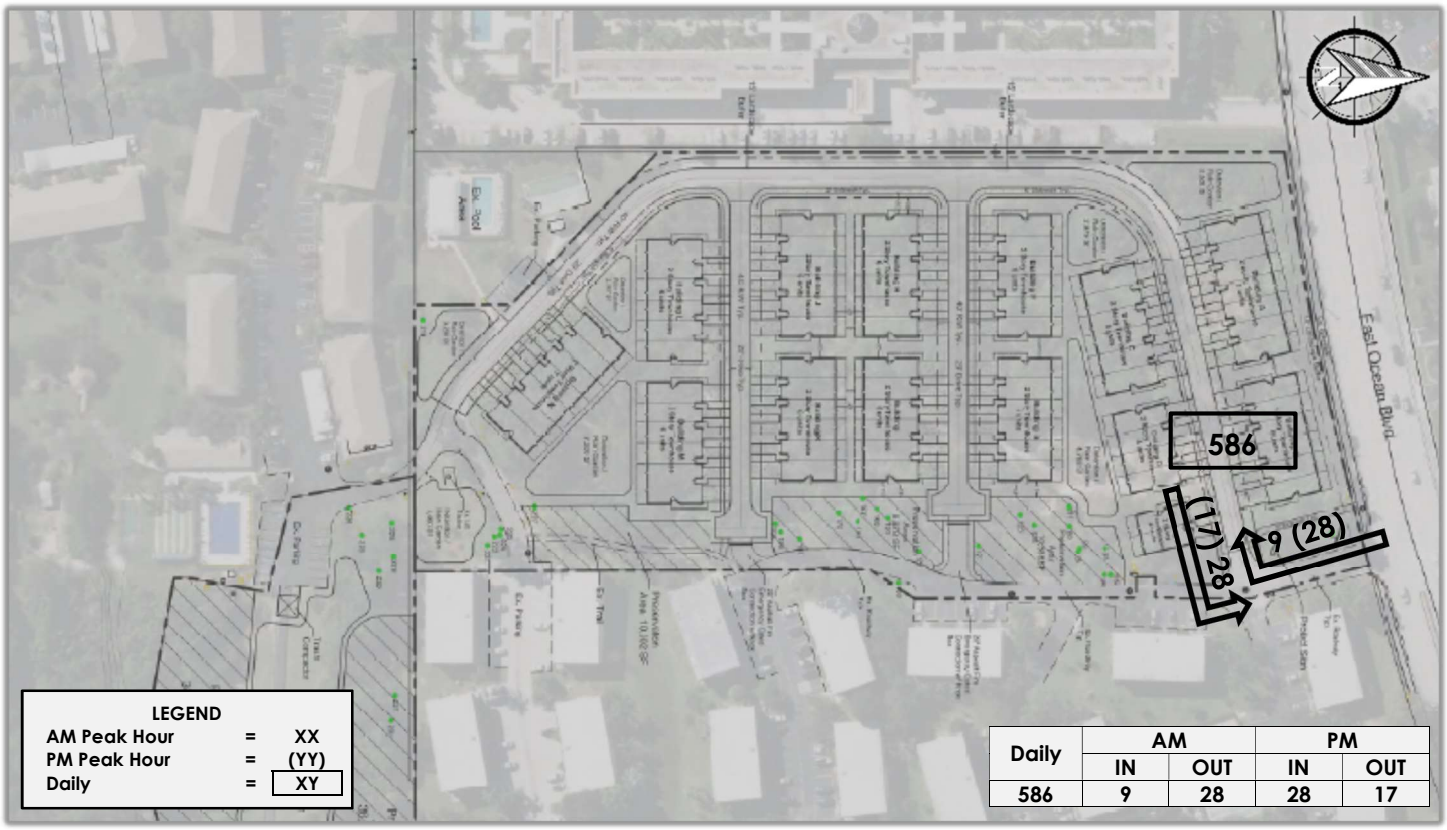


Figure 3: Project Driveway Volumes

Based on the trip generation characteristics shown in Table 2, PM peak hour period has higher trip generation than the AM peak hour period. Therefore, following Martin County LDR, project traffic impact shall be analyzed for PM peak hour conditions. Table 3 presents a summary of the project impact on the roadway links for the project build-out during peak hour conditions. Under the assumed distribution, Volume/Capacity (V/C) ratios for peak hour conditions were analyzed for the project build-out. This V/C calculation provides a preliminary understanding of future conditions at the assumed project build-out in 2024.

Table 3: Level of Service Analysis

Link	From	To	Capacity	Average Annual Growth Rate[1]	2018 Peak Hour Directional Volume[1]	2024 Projected Traffic	Project Assignment	PM Peak Hour				
								Project Traffic Peak Direction	Project Impact	2024 Total Peak Hour Directional	2024 V/C	Exceeds LOS?
SR-A1A (Ocean Blvd)	SR-714	St Lucie Blvd	1,630	1.4%	1,193	1,297	50%	14	0.86%	1,311	0.80	NO
SR-714 (Monterey Rd)	CR-A1A	SR-A1A	1,910	2.4%	1,068	1,231	30%	8	0.42%	1,239	0.65	NO

PM Directional Peak Hour = 28 Trips (IN)

[1] Source: *Martin County 2018 Roadway LOS inventory Report*, effective March 1, 2018. See Exhibit 4.

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As shown in Table 3, the Stuart Ocean Townhomes development will potentially generate less than one percent (1%) of the adopted LOS "D" for major thoroughfares within the study area. In addition, V/C ratios will be less than one hundred ten percent (110%).

Furthermore, on April 12, 2019, turning movement counts at the proposed access were collected to determine if a right turn lane will be warranted at project buildout. On April 18, 2019, F-DOT issued a conceptual approval for the project to use the existing full median on the south side of SE Ocean Boulevard (SR-A1A), located approximately 750 feet west of SE St. Lucie Boulevard. See Exhibit 5 for a copy of the FDOT approval. Exhibit 6 includes HCS analyses for the project driveway. Table 4 summarizes the results of the HCS analyses. As shown in Table 4, a right turn lane at the project driveway is not warranted, and, the existing left turn lane will be able to accommodate existing and future traffic.

Table 4: HCS Driveway Analysis Summary

Approach	Eastbound				Westbound				Northbound			
Movement	**U**	**L**	**T**	**R**	**U**	**L**	**T**	**R**	**U**	**L**	**T**	**R**
AM												
Volume (veh/h)	-	-	722	12	0	11	1231	-	-	35	-	29
95% Queue Length, Q_{95} (veh)	-	-	-	-	-	0.0	-	-	-	0.5	-	0.2
95% Queue Length, Q_{95} (ft)	-	-	-	-	-	-	-	-	-	12.5	-	5
Turn Lane (ft)	-	-	-	-	-	160	-	-	-	100	-	100
PM												
Volume (veh/h)	-	-	1126	36	0	30	908	-	-	25	-	13
95% Queue Length, Q_{95} (veh)	-	-	-	-	-	0.2	-	-	-	0.5	-	0.1
95% Queue Length, Q_{95} (ft)	-	-	-	-	-	5	-	-	-	12.5	-	2.5
Turn Lane (ft)	-	-	-	-	-	160	-	-	-	100	-	100

Therefore, according to Section 5.64.B from the *Martin County - Land Development Code* the subject development is categorized as a *project with de minimis impact.* The traffic impact of the proposed site plan for the Stuart Ocean Townhomes development has been evaluated following *Section V.3.5.64 of the Martin County Land Development Code*. This analysis shows that the proposed development will be in compliance with *Martin County Adequate Public Facilities Standards – Article V, Division 3 of the Martin County Land Development Code*.

Sincerely,

JFO GROUP INC
COA Number 32276

JUAN F. ORTEGA
LICENSE
No. 63422
Digitally signed by Juan F Ortega
Date: 2019.11.08 21:18:44 -05'00'
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

Enclosures:
Exhibit 1: Property Appraiser Information
Exhibit 2: Preliminary Site Plan
Exhibit 3: ITE Trip Generation Rates
Exhibit 4: 2018 Roadway LOS Report
Exhibit 5: F-DOT Conceptual Approval
Exhibit 6: Driveway Analysis
Exhibit 7: Traffic Impact Analysis Review

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This item has been electronically signed and sealed by Dr. Juan F. Ortega PE on November 8, 2019 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Martin County Property Information Lookup

General Information

Parcel #	023841000000000206
Owner Name:	SERRAGUI GROUP INVESTMENTS LLC
Owner Address:	21 SW 15TH RD STE 200 MIAMI, FL 33129
Site Address:	,
Storm Surge Evacuation Zone:	
Flood Zone:	AE,X500,X
Base Flood Elevation:	6,N/A' NAVD
FIRM Panel:	12085C0154G
Urban Service District:	Primary
Municipality:	City of Stuart
Taxing District:	Municipality
ISO-PPC Rating:	Contact City of Stuart Fire Rescue
Subdivision infill applicability:	No

Building Design Wind Speed

Occupancy Category I:	150
Occupancy Category II:	160
Occupancy Category III and IV:	170

Land Use

*NOTE: Land Use information can change frequently, please verify with the Martin County Growth Management Department at 772-288-5495

Zoning:	STUART
Zoning Details:	N/A
Future Landuse	NO DATA
Landuse Details:	N/A

Community Redevelopment

CRA:	N/A
Zoning Overlay Zone:	N/A
Mixed Use Areas:	N/A

Schools

School information obtained from the Martin County School District system. If there are any questions, please contact the Martin County School District at 772-219-1200

Elementary School:	J D Parker Elem
Middle School:	Stuart Middle School
High School:	Jensen Beach High School

Created: August , 16th, 2019 10:56 PM

Property Location Map



Election Information

Election information obtained from the Martin County GIS system. If there are any questions, please contact the Martin County Supervisor of Elections at 772-288-5637

Voter Precinct	7	
Commission District:	1	
Commissioner:	Doug Smith	772-288-5400
Clerk of Circuit Court:	Carolyn Timmann	772-288-5576
County Sheriff:	William Snyder	772-220-7000
Property Appraiser:	Laurel Kelly	772-288-5608
School Superintendent:	Laurie J. Gaylord	772-219-1200
Supervisor of Elections:	Vicki Davis	772-288-5637
Tax Collector:	Ruth Pietruszewski	772-288-5600

Utilities & Solid Waste

Service:	Utility:	Availability:	Phone:
Water:	City of Stuart Utilities	Call	772-288-5317
Sewer:	City of Stuart Utilities	Call	772-288-5317

Recycle Collection:	N/A
Trash Collection:	N/A

Print

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Martin County Property Information Lookup

General Information

Parcel #	023841000000000509
Owner Name:	SERRAGUI GROUP INVESTMENTS LLC
Owner Address:	21 SW 15TH RD STE 200 MIAMI, FL 33129
Site Address:	,
Storm Surge Evacuation Zone:	
Flood Zone:	AE,X500,X
Base Flood Elevation:	6,N/A' NAVD
FIRM Panel:	12085C0154G
Urban Service District:	Primary
Municipality:	City of Stuart
Taxing District:	Municipality
ISO-PPC Rating:	Contact City of Stuart Fire Rescue
Subdivision infill applicability:	No

Building Design Wind Speed

Occupancy Category I:	150
Occupancy Category II:	160
Occupancy Category III and IV:	170

Land Use

*NOTE: Land Use information can change frequently, please verify with the Martin County Growth Management Department at 772-288-5495

Zoning:	STUART
Zoning Details:	N/A
Future Landuse	NO DATA
Landuse Details:	N/A

Community Redevelopment

CRA:	N/A
Zoning Overlay Zone:	N/A
Mixed Use Areas:	N/A

Schools

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Middle School:	Stuart Middle School
High School:	Jensen Beach High School

Created: August , 16th, 2019 10:55 PM

Property Location Map



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Commission District:	1	
Commissioner:	Doug Smith	772-288-5400
Clerk of Circuit Court:	Carolyn Timmann	772-288-5576
County Sheriff:	William Snyder	772-220-7000
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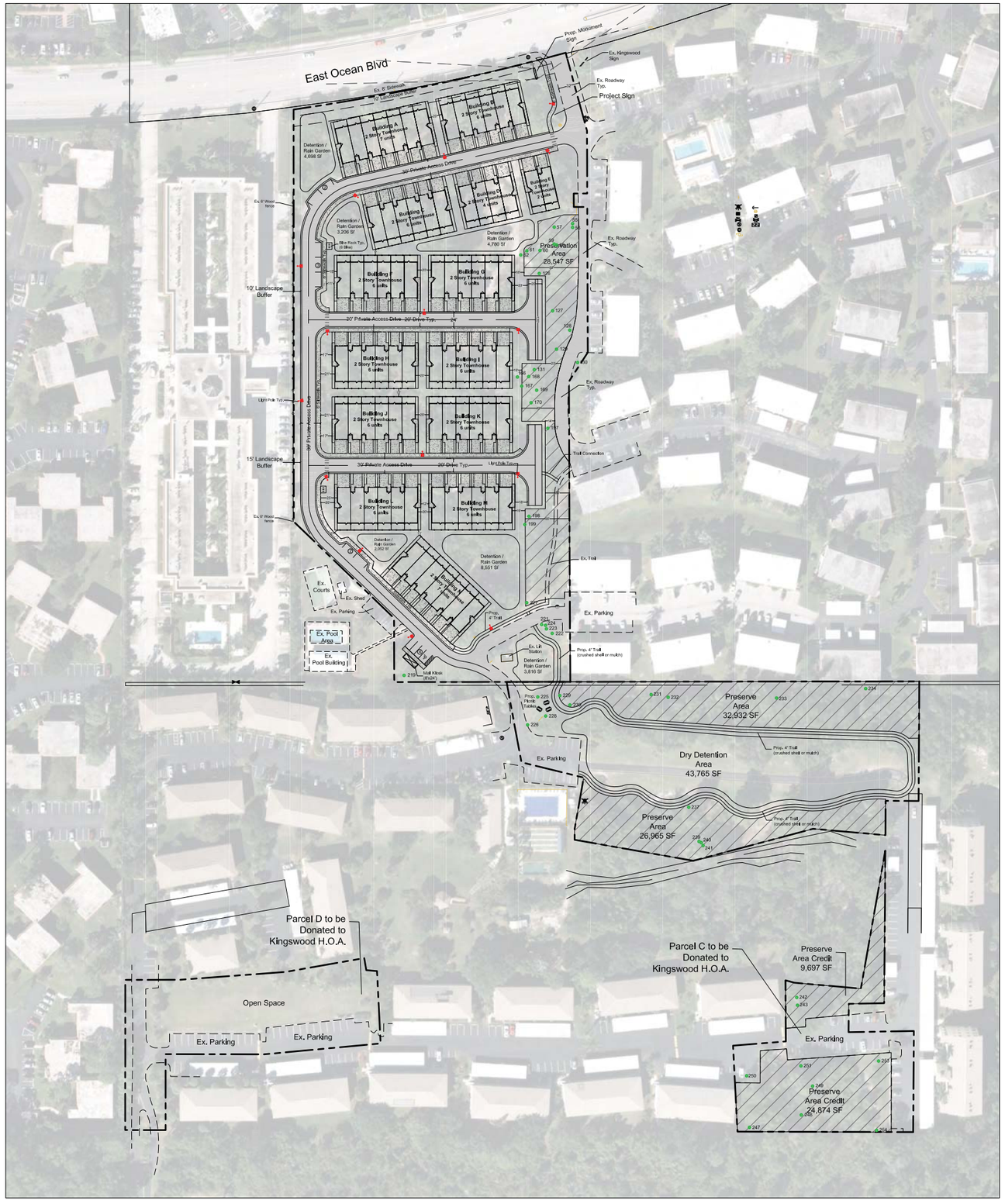
Utilities & Solid Waste

Service:	Utility:	Availability:	Phone:
Water:	City of Stuart Utilities	Call	772-288-5317
Sewer:	City of Stuart Utilities	Call	772-288-5317

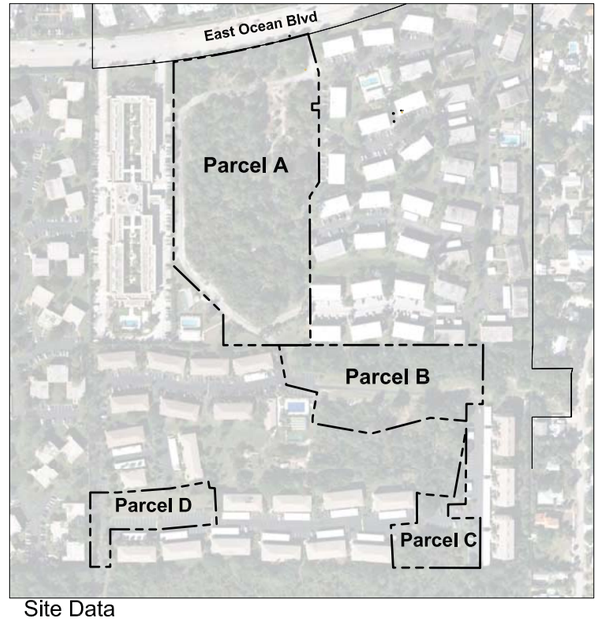
Recycle Collection:	
Trash Collection:	N/A

Print

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Parcel Map



Site Data

Total Site Area	11.03 Ac. / 480,602 sf
Parcel A	8.02 Ac. / 349,446 sf
Parcel B	3.01 Ac. / 131,156 sf
Future Land Use	Multi-family Residential
Existing Zoning	R-3
Proposed Zoning	RPUD (30 DU/ AC)
Proposed Use	2-Story Single Family Townhomes
Proposed Dwelling Units	80 Units

Density

Maximum Density - 30 DU/Ac. (11.03 Ac. x 30)	330 Max. Units
Proposed Density	80 Units
Proposed Gross Site Density	7.25 DU / Ac.

Impervious Area

Building Coverage	83,230 sf		
Existing & Proposed Vehicular Use Areas	66,670 sf		
Sidewalks / Paved Areas / Rear Patios	58,463 sf		
Total:	208,363 sf	4.78 Ac.	43%

Pervious Area / Open Space

Dry Detention Areas	70,868 sf		
Native Preserve Areas	88,444 sf		
Other Landscape / Open Space	112,927 sf		
Total:	272,239 sf	6.25 Ac.	57%

Native Upland Preserve Data

Required Native Preserve Area: (480,602 sf x 25%)	120,150 sf / 2.76 Ac. / 25%
Provided Native Preserve Area:	123,015 sf / 2.82 Ac. / 26%
Parcel A & B -Native Preserve Areas	88,444 sf
Parcel C - Native Preserve Area Credit	34,571 sf

Parking Data

Required Parking Spaces: (2 spaces per unit w/ 2 or more bedrooms)	160 Spaces
Provided Parking Spaces:	198 Spaces
One Car Garages (80 D.U.)	80 Spaces
One Car Driveways (53 D.U.)	53 Spaces
Two Car Driveways (27 D.U.)	54 Spaces
On-Street Parking (3 - 9' x 18 + 1 Handicap + 7 Parallel)	11 Spaces

Scale: 1" = 80'

0' 40' 80' 160' 240'

North

HJA DESIGN STUDIO
LANDSCAPE ARCHITECTURE
50 E. Ocean Blvd., Suite 101
Stuart, Florida 34994
T 772.678.7200
F 772.678.7201
www.hjadesignstudio.com
LA 0000905

Stuart Ocean Townhomes

Florida

City of Stuart
Major Development Site Plan (RPUD)

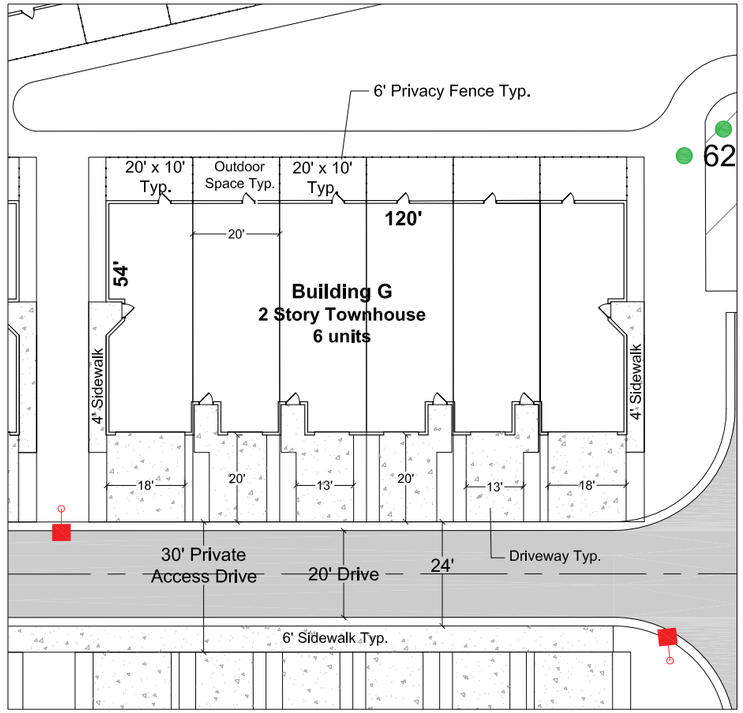
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Job No.	19005
Drawn By	TT
Checked By	MH
Approved By	MH
Submittal Dates	9-6-19
Revision Dates	

SP-1



Townhouse Enlargement Typical



HJA DESIGN STUDIO
LANDSCAPE ARCHITECTURE
50 E. Ocean Blvd., Suite 101
Stuart, Florida 34994
T 772.678.7200
F 772.678.7201
www.hjadesignstudio.com
LA 0000905

Stuart Ocean Townhomes

City of Stuart
Major Development Site Plan (RPUD)
Florida

Copyright
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Job No.	19005
Drawn By	TT
Checked By	MH
Approved By	MH
Submittal Dates	9-6-19
Revision Dates	

SP-2

Scale: 1" = 50'
0' 25' 50' 100' 150'
North

Multifamily Housing (Low-Rise)
(220)

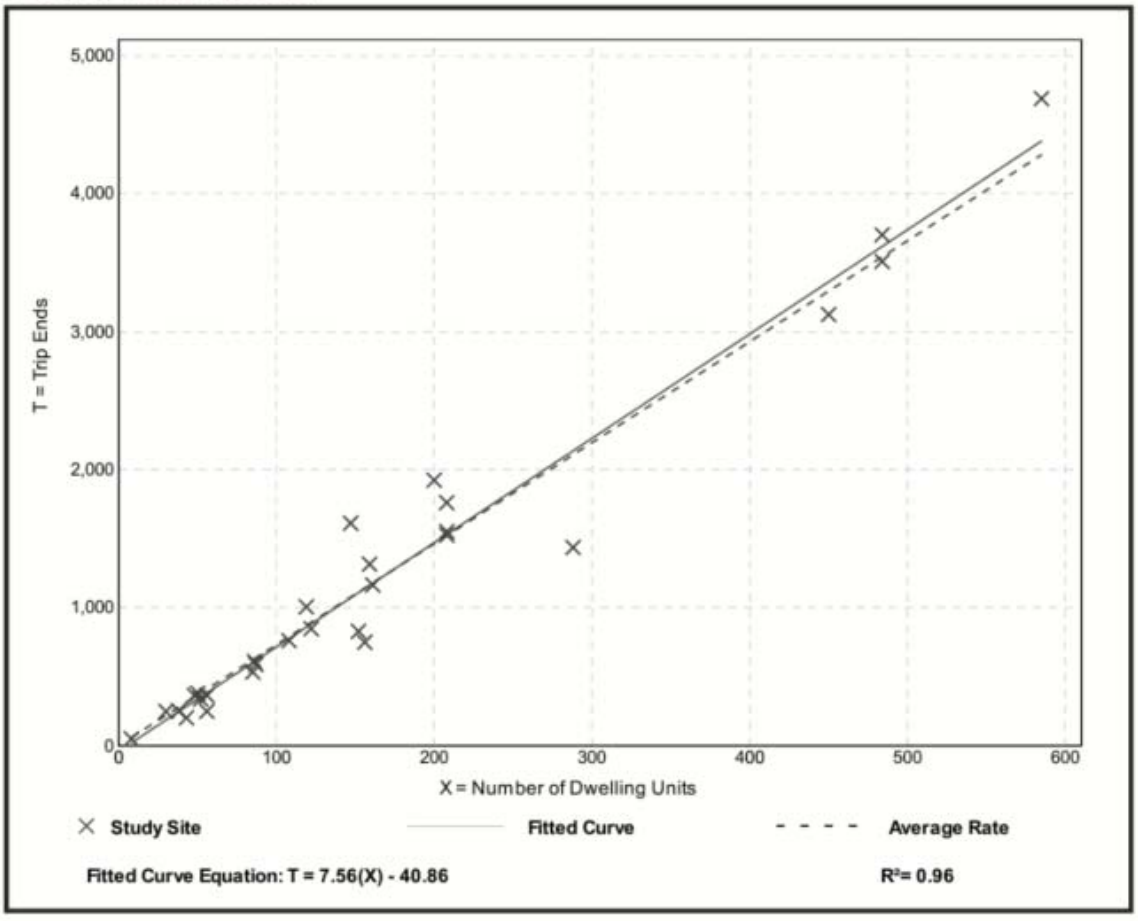
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

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

Vehicle Trip Generation per Dwelling Unit

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

Data Plot and Equation



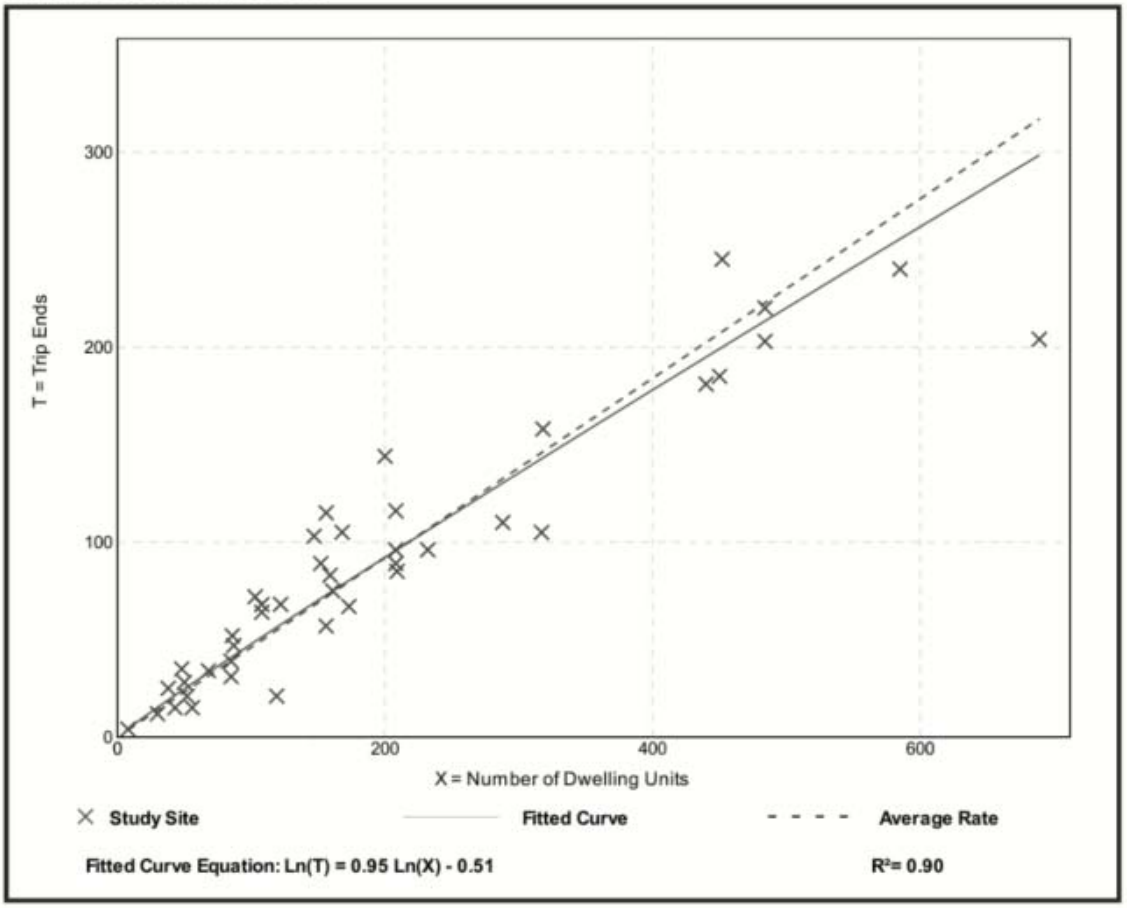
Multifamily Housing (Low-Rise)
(220)

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

Vehicle Trip Generation per Dwelling Unit

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

Data Plot and Equation



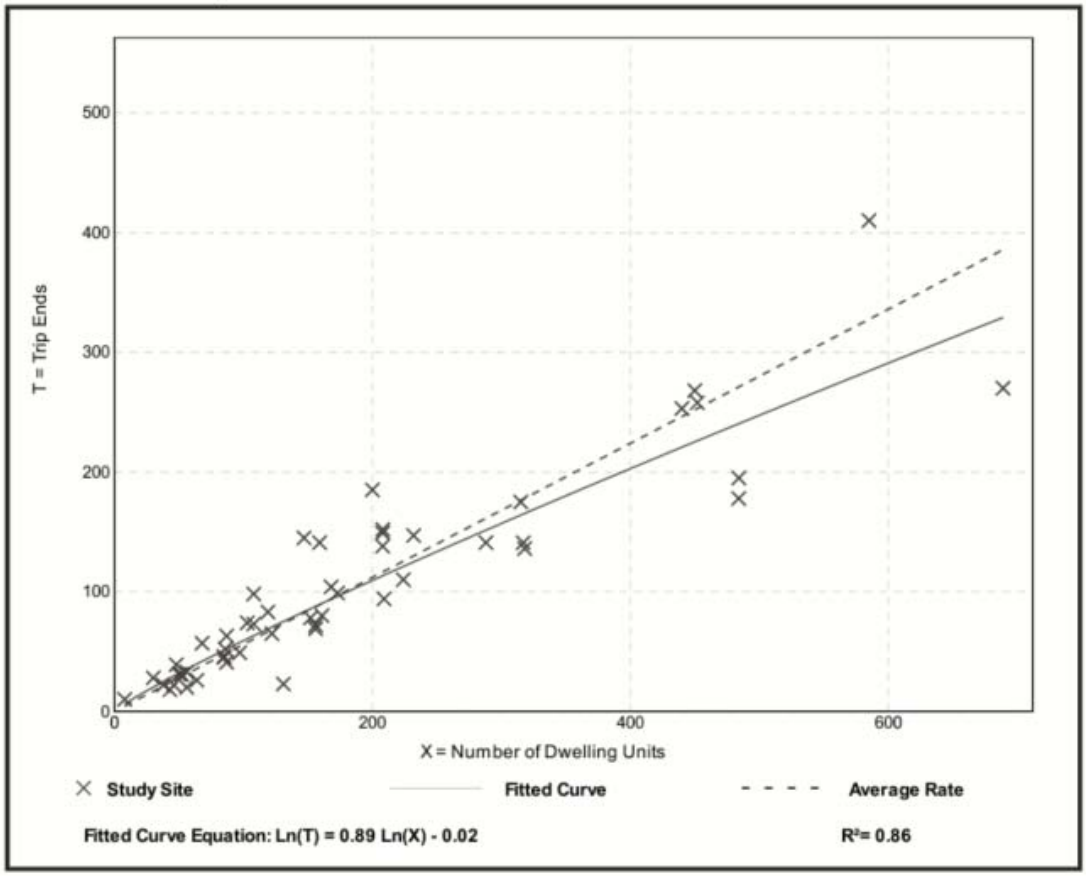
Multifamily Housing (Low-Rise)
(220)

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

Vehicle Trip Generation per Dwelling Unit

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

Data Plot and Equation



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Martin County 2018 Roadway Level of Service Inventory Report

Road Name	From	To	Generalized Service Capacity	2018 Average Annual Daily Traffic	Peak Hour Factor K_{30}	Directional Distribution D_{100}	2018 Peak Hour Directional Volume	2018 Generalized LOS	Avg. Annual Growth Rate
SR-5 (US-1)	Baker Rd	Britt Rd	3020	53,335	0.08	0.51	2,203	C	0.5%
SR-5 (US-1)	Britt Rd	SR-732	3020	55,454	0.09	0.53	2,616	C	0.9%
SR-5 (US-1)	SR-732	Westmoreland Blvd	4040	64,326	0.09	0.61	3,414	C	0.6%
SR-5 (US-1)	Westmoreland Blvd	St Lucie County	4040	62,920	0.08	0.52	2,519	C	1.1%
SR-710 (Warfield Blvd)	Okeechobee County	Fox Brown Rd	670	6,227	0.06	0.59	231	A/B	4.4%
SR-710 (Warfield Blvd)	Fox Brown Rd	CR-609 (Allapattah)	670	7,587	0.07	0.51	279	C	4.7%
SR-710 (Warfield Blvd)	CR-609 (Allapattah)	Van Buren	870	11,942	0.10	0.60	709	C	8.0%
SR-710 (Warfield Blvd)	Van Buren	CR-726 (Citrus)	765	11,942	0.10	0.60	709	C	8.0%
SR-710 (Warfield Blvd)	CR-726	SR-76 (Kanner)	2450	10,528	0.06	0.53	329	A/B	5.7%
SR-710 (Warfield Blvd)	SR-76	Palm Beach County	2450	6,863	0.07	0.53	251	A/B	1.4%
SR-714 (Martin Hwy)	I-95	CR-76A (Citrus)	1200	12,902	0.10	0.53	684	C	4.7%
SR-714 (Martin Hwy)	CR-76A (Citrus)	Florida's Turnpike	2000	20,756	0.10	0.58	1,180	C	4.8%
SR-714 (Martin Downs Blvd)	Florida's Turnpike	CR-713	2000	20,107	0.09	0.53	948	C	1.8%
SR-714 (Martin Downs Blvd)	CR-713	Matheson Ave	2000	28,929	0.09	0.61	1,588	C	1.2%
SR-714 (Martin Downs Blvd)	Matheson Ave	Mapp Rd	2000	32,616	0.10	0.53	1,718	C	2.7%
SR-714 (Palm City Bridge)	Mapp Rd	SR-76	2000	34,965	0.10	0.59	2,022	F	0.9%
SR-714 (Monterey Rd)	SR-76	Willoughby Blvd	2000	28,608	0.10	0.52	1,488	C	5.2%
SR-714 (Monterey Rd)	Willoughby Blvd	Monterey Extension	2000	25,028	0.10	0.54	1,284	C	1.7%
SR-714 (Monterey Rd)	Monterey Extension	SR-5	2000	15,598	0.09	0.62	899	C	0.5%
SR-714 (Monterey Rd)	SR-5	CR-A1A	1630	20,190	0.09	0.52	966	D	0.5%
SR-714 (Monterey Rd)	CR-A1A	SR-A1A	1910	18,242	0.10	0.61	1,068	C	2.4%

Segments with shaded LOS require additional analysis.
The peaks are: CR-A1A (PM/SB); CR-713 (PM/NB); Murphy Rd (PM/NB); SR-5 (AM/SB); SR-714 [Palm City Bridge] (PM/WB) and SR-714 (PM/WB).

Martin County 2018 Roadway Level of Service Inventory Report

Road Name	From	To	Generalized Service Capacity	2018 Average Annual Daily Traffic	Peak Hour Factor K_{30}	Directional Distribution D_{100}	2018 Peak Hour Directional Volume	2018 Generalized LOS	Avg. Annual Growth Rate
SR-732 (Causeway Blvd)	CR-707	SR-A1A	1190	13,403	0.10	0.51	684	C	0.8%
SR-732 (Jensen Beach Blvd)	SR-5	Green River Pkwy	2000	25,891	0.10	0.52	1,319	C	0.5%
SR-732 (Jensen Beach Blvd)	Green River Pkwy	CR-723	2000	24,869	0.09	0.56	1,253	C	0.5%
SR-76 (Kanner Hwy)	SR-15	SR-710	740	2,117	0.09	0.57	105	A/B	8.0%
SR-76 (Kanner Hwy)	SR-710	CR-708	740	3,488	0.08	0.59	171	A/B	8.0%
SR-76 (Kanner Hwy)	CR-708	CR-711/CR-76A	1200	3,027	0.11	0.54	180	A/B	1.9%
SR-76 (Kanner Hwy)	CR-711/CR76A	Locks Rd	2000	12,928	0.12	0.52	813	C	1.2%
SR-76 (Kanner Hwy)	Locks Rd	Jack James	2000	20,494	0.09	0.60	1,082	C	2.0%
SR-76 (Kanner Hwy)	Jack James	Cove Rd	3020	45,918	0.10	0.52	2,409	C	2.4%
SR-76 (Kanner Hwy)	Cove Rd	Salerno Rd	3020	31,734	0.09	0.52	1,436	C	0.9%
SR-76 (Kanner Hwy)	Salerno Rd	Indian St	3020	29,492	0.10	0.52	1,468	C	2.6%
SR-76 (Kanner Hwy)	Indian St	SR-714	3020	21,161	0.07	0.52	759	C	0.5%
SR-76 (Kanner Hwy)	SR-714	SR-5	3020	25,033	0.08	0.50	1,001	C	0.5%
SR-A1A (Ocean Blvd)	SR-714	St Lucie Blvd	1630	19,372	0.11	0.57	1,193	D	1.4%
SR-A1A (Ocean Blvd)	St Lucie Blvd	Sewalls Point Rd	2000	21,532	0.09	0.51	1,010	C	0.5%
SR-A1A (Ocean Blvd)	Sewalls Point Rd	Macarthur Blvd	925	12,803	0.09	0.54	650	C	0.5%
SR-A1A (Ocean Blvd)	MacArthur Blvd	SR-732	1190	8,278	0.09	0.53	395	A/B	2.5%
SR-A1A (Ocean Blvd)	SR-732	St Lucie County	1190	14,957	0.12	0.54	953	D	3.6%
St Lucie Blvd	CR-A1A	Indian St	675	3,083	0.10	0.55	163	C	0.5%
St Lucie Blvd	Indian St	SR-A1A	675	7,420	0.11	0.54	421	D	0.8%
Westmoreland Blvd	St Lucie County	SR-5	790	12,542	0.08	0.60	632	D	2.6%

Segments with shaded LOS require additional analysis.
The peaks are: CR-A1A (PM/SB); CR-713 (PM/NB); Murphy Rd (PM/NB); SR-5 (AM/SB); SR-714 [Palm City Bridge] (PM/WB) and SR-714 (PM/WB).

Florida Department of Transportation

RON DESANTIS
GOVERNOR

3400 West Commercial Boulevard
Fort Lauderdale, FL 33309

KEVIN J. THIBAULT
SECRETARY

April 18, 2019

THIS PRE-APPLICATION LETTER IS VALID UNTIL – **April 18, 2020**
THIS LETTER IS NOT A PERMIT APPROVAL

Juan F. Ortega
JFO Group Inc
11924 Forest Hill Boulevard
Suite 10A-123, Wellington, FL 33414

Dear Juan F. Ortega:

RE: **April 18, 2019-** Pre-application Meeting for **Category D Driveway**
Martin- Not within City Limits, Urban; SR A1A; Sec. # 89040; MP: 2.299
Access Class - 07; Posted Speed - 35; SIS - N; Ref. Project:

Request: To use existing full median on the south side of SE Ocean Boulevard(SR-A1A), located approximately 750 feet east of SE St. Lucie Blvd.

SITE SPECIFIC INFORMATION
Project Name & Address: **Stuart Ocean – 2950 Southeast Ocean Blvd, Stuart, FL 34996**
Applicant/Property Owner: **PulteGroup, Inc**
Parcel Size: **8.0 Acres** Development Size: **80 DU/Townhouses**

WE APPROVE YOUR REQUEST

This decision is based on your presentation of the facts, site plan and survey - please see the **conditions** and **comments** below. You may choose to review this concept further with the District Access Management Review Committee (AMRC).

Conditions:
- **A minimum driveway length of 25 feet, as measured from the ultimate right-of-way line to the first conflict point shall be provided. If a gate is installed a minimum driveway length of 100 feet is required.**
- **A recorded cross access agreement or easement with the adjacent property to the east shall be provided prior to the Permit approval.**

Comments:

- Drainage mitigation is required for any impacts within FDOT right-of-way (i.e. increased runoff or reduction of existing storage). A Storm Water Pollution Prevention Plan must be submitted with the application for more than one acre of "disturbed area" as defined by the Florida Department of Environmental Protection (FDEP).
- The applicant shall donate the right-of-way to the Department if right-of-way dedication is required to implement the improvements,
- Dimensions between driveways are measured from the near edge of pavement to near edge of pavement and for median openings are measured from centerline to centerline unless otherwise indicated.

The purpose of this Pre-Application letter is to document the conceptual review of the approximate location of driveway(s) to the State Highway system and to note required improvements, if any. This letter shall be submitted with any further reviews and for permitting. The Department's personnel shall review permit plans for compliance with this letter as well as current Department standards and/or specifications. Final design must consider the existing roadway profile and any impacts to the existing drainage system. **Note, this letter does not guarantee permit approval.** The permit may be denied based on the review of the submitted engineering plans. Be aware that any approved median openings may be modified (or closed) in the future, at the sole discretion of the Department. For right-of-way dedication requirements go to: https://gis.dot.state.fl.us/OneStopPermitting; click on Statewide Permit News; Scroll down to District 4; Scroll down to Additional Information and Examples and choose Right-of-way Donations/Dedications.
Please contact the Access Management Manager - Tel. # 954-777-4363 or e-mail: ashok.sampath@dot.state.fl.us with any questions regarding the Pre-Approval Letter and Permits Office - Tel. # 954-777-4383 with any questions regarding permits.

Sincerely,

S. Ashok

Ashok Sampath, M.S.
District Access Management Manager

cc: Nesa Y. Harden NYH
File: S:\Transportation Operations\Traffic Operations\Access Management\1. Pre-Apps and Variance\2019-04-18\4. 89040 MP 2.29 SR A1A_Stuart Ocean\89040 MP 2.29 SR A1A_Stuart Ocean.docx

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Intersection Volume Development



SE Ocean Blvd and Kingwood Development

Stuart Ocean

Input Data

GR	=	1.40%
Peak Season	=	1.03
Traffic Count Year	=	2019
Buildout Year	=	2023
Years	=	4

AM Peak Hour		PM Peak Hour		Intensity
In	Out	In	Out	
9	28	28	17	80 Townhomes

AM Peak Hour

AM	Eastbound			Westbound			Northbound			Southbound		
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT
Volume 12-Apr-19	-	663	7	6	1,130	-	19	-	14	-	-	-
Peak Season Volume (Existing)	**-**	**683**	**7**	**6**	**1,164**	**-**	**20**	**-**	**14**	**-**	**-**	**-**
2023 Historic Growth	-	722	7	6	1,231	-	21	-	15	-	-	-
Major Project Traffic	-	0	0	0	0	-	0	-	0	-	-	-
Future Background	**-**	**722**	**7**	**6**	**1,231**	**-**	**21**	**-**	**15**	**-**	**-**	**-**
% Project Traffic	-	-	50%	50%	-	-	50%	-	50%	-	-	-
Project Traffic Direction	-	-	IN	IN	-	-	OUT	-	OUT	-	-	-
Project Traffic	-	-	5	5	-	-	14	-	14	-	-	-
2023 Future Total	**-**	**722**	**12**	**11**	**1,231**	**-**	**35**	**-**	**29**	**-**	**-**	**-**

PM Peak Hour

PM	Eastbound			Westbound			Northbound			Southbound		
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT
Volume 12-Apr-19	-	1,034	20	15	834	-	15	-	4	-	-	-
Peak Season Volume (Existing)	**-**	**1,065**	**21**	**15**	**859**	**-**	**15**	**-**	**4**	**-**	**-**	**-**
2023 Historic Growth	-	1,126	22	16	908	-	16	-	4	-	-	-
Major Project Traffic	-	0	0	0	0	-	0	-	0	-	-	-
Future Background	**-**	**1,126**	**22**	**16**	**908**	**-**	**16**	**-**	**4**	**-**	**-**	**-**
% Project Traffic	-	-	50%	50%	-	-	50%	-	50%	-	-	-
Project Traffic Direction	-	-	IN	IN	-	-	OUT	-	OUT	-	-	-
Project Traffic	-	-	14	14	-	-	9	-	9	-	-	-
2023 Future Total	**-**	**1,126**	**36**	**30**	**908**	**-**	**25**	**-**	**13**	**-**	**-**	**-**

HCS7 Two-Way Stop-Control Report

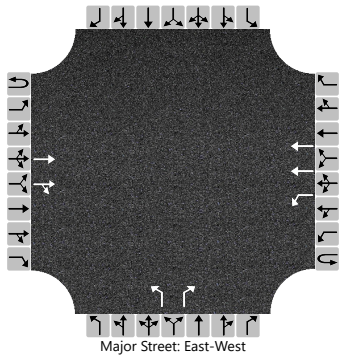
General Information

Analyst	JF
Agency/Co.	JFO
Date Performed	10/28/2019
Analysis Year	2023
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	Stuart Ocean Townhomes

Site Information

Intersection	SE Ocean Blvd & Kingswood
Jurisdiction	F-DOT
East/West Street	SE Ocean Blvd
North/South Street	Kingswood
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		1	0	1		0	0	0
Configuration			T	TR		L	T			L		R				
Volume (veh/h)			722	12	0	11	1231			35		29				
Percent Heavy Vehicles (%)					0	2				2		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Left + Thru								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						12				37		31				
Capacity, c (veh/h)						838				257		612				
v/c Ratio						0.01				0.14		0.05				
95% Queue Length, Q_{95} (veh)						0.0				0.5		0.2				
Control Delay (s/veh)						9.4				21.4		11.2				
Level of Service (LOS)						A				C		B				
Approach Delay (s/veh)					0.1				16.8							
Approach LOS									C							

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HCS7 Two-Way Stop-Control Report

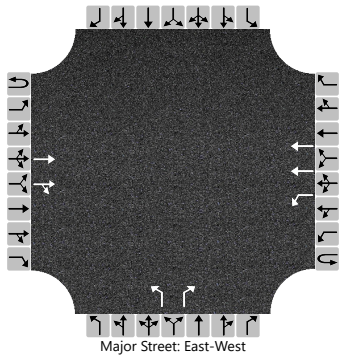
General Information

Analyst	JF
Agency/Co.	JFO
Date Performed	10/28/2019
Analysis Year	2023
Time Analyzed	PM
Intersection Orientation	East-West
Project Description	Stuart Ocean Townhomes

Site Information

Intersection	SE Ocean Blvd & Kingswood
Jurisdiction	F-DOT
East/West Street	SE Ocean Blvd
North/South Street	Kingswood
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		1	0	1		0	0	0
Configuration			T	TR		L	T			L		R				
Volume (veh/h)			1126	36	0	30	908			25		13				
Percent Heavy Vehicles (%)					0	2				2		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Left + Thru									1						

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						32				26		14				
Capacity, c (veh/h)						566				181		436				
v/c Ratio						0.06				0.15		0.03				
95% Queue Length, Q_{95} (veh)						0.2				0.5		0.1				
Control Delay (s/veh)						11.7				28.3		13.5				
Level of Service (LOS)						B				D		B				
Approach Delay (s/veh)					0.4				23.2							
Approach LOS									C							

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KMF Traffic Group, LLC
Stuart, FL
(772) 221-7971

Manual Traffic Count - All Traffic
SE Ocean Blvd and Kingwood Development
Stuart, FL

File Name : OCAMPM
Site Code : JO1920
Start Date : 4/12/2019
Page No : 1

Groups Printed- All Traffic

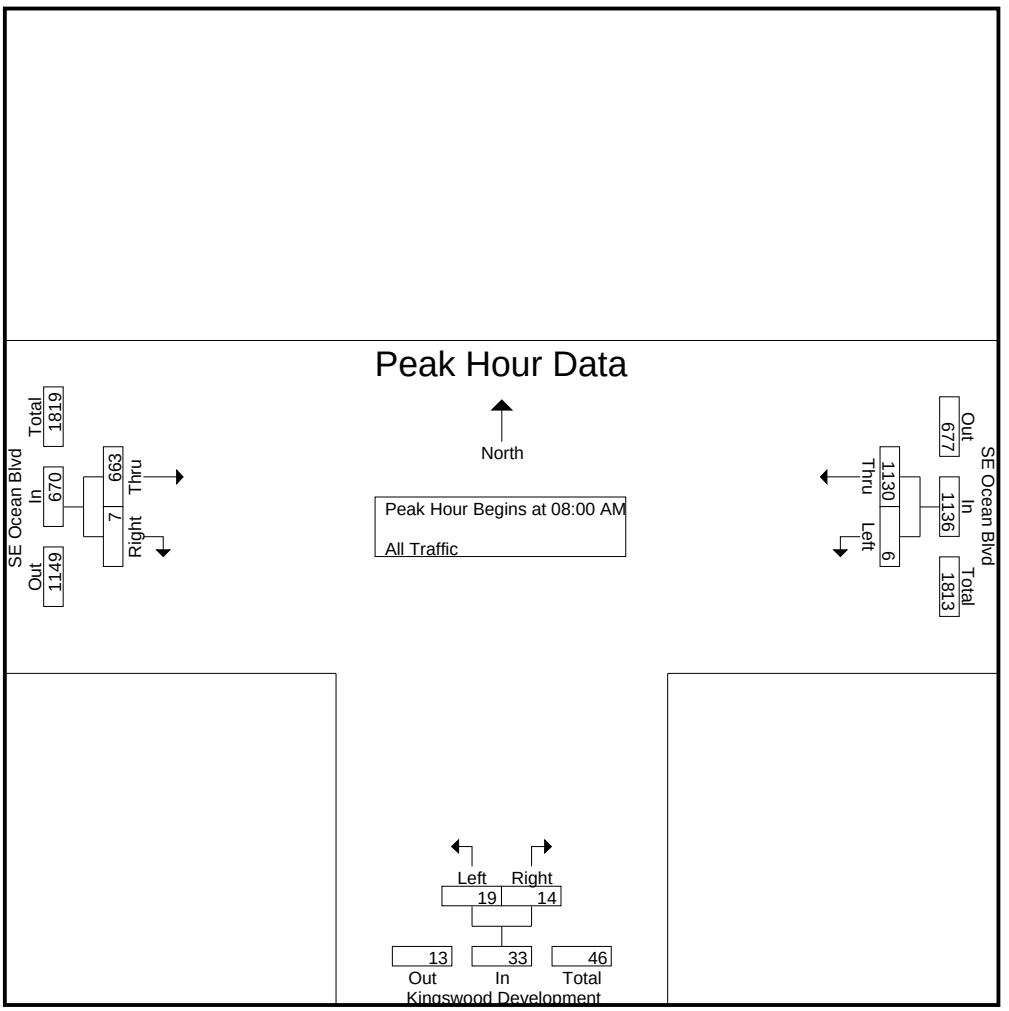
	Kingswood Development NB			SE Ocean Blvd EB			SE Ocean Blvd WB			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
07:00 AM	0	2	2	1	54	55	147	0	147	204
07:15 AM	2	0	2	1	91	92	160	1	161	255
07:30 AM	4	0	4	2	138	140	218	1	219	363
07:45 AM	1	5	6	1	155	156	218	0	218	380
Total	7	7	14	5	438	443	743	2	745	1202
08:00 AM	4	3	7	2	132	134	237	1	238	379
08:15 AM	2	7	9	1	168	169	333	0	333	511
08:30 AM	3	5	8	2	186	188	248	0	248	444
08:45 AM	5	4	9	2	177	179	312	5	317	505
Total	14	19	33	7	663	670	1130	6	1136	1839
*** BREAK ***										
04:00 PM	2	2	4	5	225	230	148	3	151	385
04:15 PM	2	4	6	0	234	234	165	4	169	409
04:30 PM	3	6	9	5	248	253	209	3	212	474
04:45 PM	1	4	5	9	266	275	255	6	261	541
Total	8	16	24	19	973	992	777	16	793	1809
05:00 PM	0	0	0	5	255	260	177	2	179	439
05:15 PM	0	5	5	1	265	266	193	4	197	468
05:30 PM	0	1	1	4	273	277	181	1	182	460
05:45 PM	1	0	1	2	223	225	178	1	179	405
Total	1	6	7	12	1016	1028	729	8	737	1772
Grand Total	30	48	78	43	3090	3133	3379	32	3411	6622
Apprch %	38.5	61.5		1.4	98.6		99.1	0.9		
Total %	0.5	0.7	1.2	0.6	46.7	47.3	51	0.5	51.5	

KMF Traffic Group, LLC
Stuart, FL
(772) 221-7971

Manual Traffic Count - All Traffic
SE Ocean Blvd and Kingwood Development
Stuart, FL

File Name : OCAMPM
Site Code : JO1920
Start Date : 4/12/2019

	Kingswood Development NB			SE Ocean Blvd EB			SE Ocean Blvd WB			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	4	3	7	2	132	134	237	1	238	379
08:15 AM	2	7	9	1	168	169	333	0	333	511
08:30 AM	3	5	8	2	186	188	248	0	248	444
08:45 AM	5	4	9	2	177	179	312	5	317	505
Total Volume	14	19	33	7	663	670	1130	6	1136	1839
% App. Total	42.4	57.6		1	99		99.5	0.5		
PHF	.700	.679	.917	.875	.891	.891	.848	.300	.853	.900

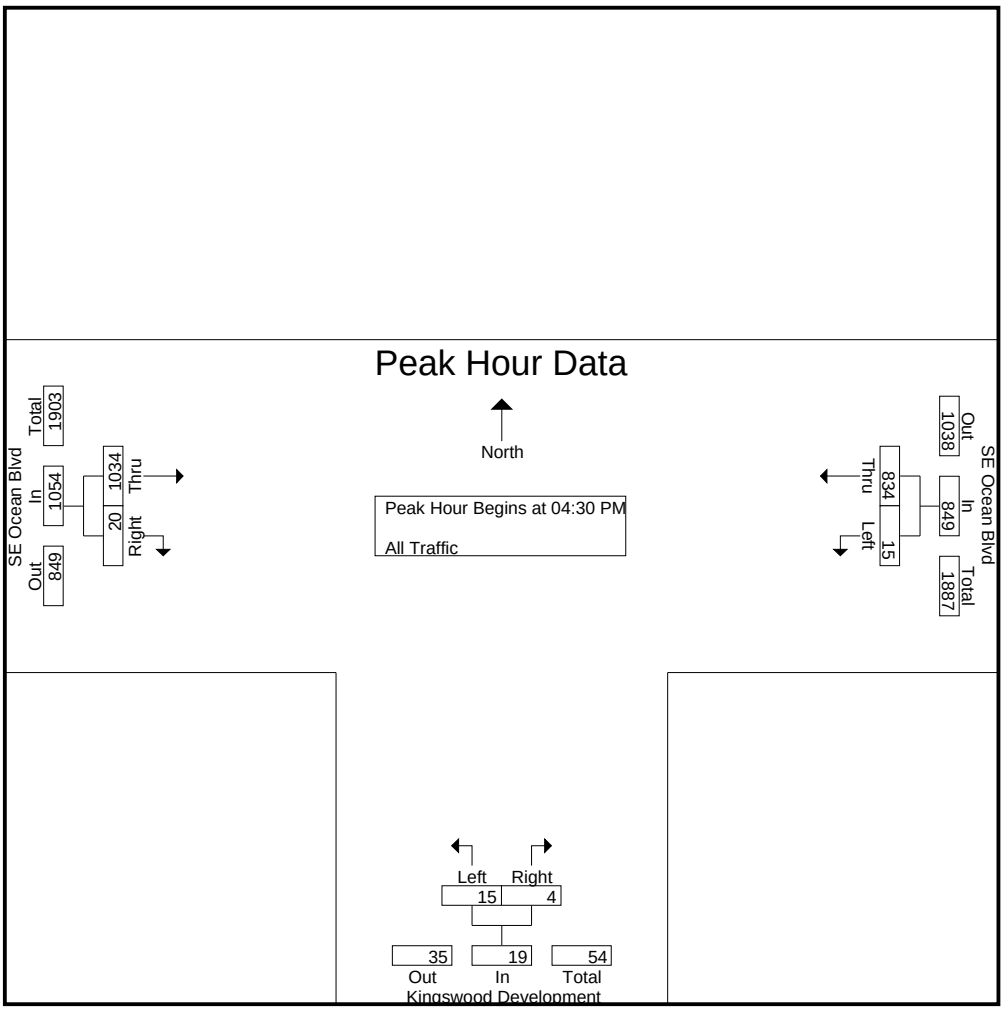


KMF Traffic Group, LLC
Stuart, FL
(772) 221-7971

Manual Traffic Count - All Traffic
SE Ocean Blvd and Kingwood Development
Stuart, FL

File Name : OCAMPM
Site Code : JO1920
Start Date : 4/12/2019

	Kingswood Development NB			SE Ocean Blvd EB			SE Ocean Blvd WB			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	3	6	9	5	248	253	209	3	212	474
04:45 PM	1	4	5	9	266	275	255	6	261	541
05:00 PM	0	0	0	5	255	260	177	2	179	439
05:15 PM	0	5	5	1	265	266	193	4	197	468
Total Volume	4	15	19	20	1034	1054	834	15	849	1922
% App. Total	21.1	78.9		1.9	98.1		98.2	1.8		
PHF	.333	.625	.528	.556	.972	.958	.818	.625	.813	.888



2018 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 8900 EAST- A1A TO US1

MOCF: 0.87

WEEK	DATES	SF	PSCF
1	01/01/2018 - 01/06/2018	1.02	1.17
2	01/07/2018 - 01/13/2018	0.98	1.13
3	01/14/2018 - 01/20/2018	0.94	1.08
* 4	01/21/2018 - 01/27/2018	0.91	1.05
* 5	01/28/2018 - 02/03/2018	0.89	1.02
* 6	02/04/2018 - 02/10/2018	0.86	0.99
* 7	02/11/2018 - 02/17/2018	0.84	0.97
* 8	02/18/2018 - 02/24/2018	0.84	0.97
* 9	02/25/2018 - 03/03/2018	0.84	0.97
*10	03/04/2018 - 03/10/2018	0.84	0.97
*11	03/11/2018 - 03/17/2018	0.84	0.97
*12	03/18/2018 - 03/24/2018	0.85	0.98
*13	03/25/2018 - 03/31/2018	0.87	1.00
*14	04/01/2018 - 04/07/2018	0.88	1.01
*15	04/08/2018 - 04/14/2018	0.90	1.03
*16	04/15/2018 - 04/21/2018	0.92	1.06
17	04/22/2018 - 04/28/2018	0.96	1.10
18	04/29/2018 - 05/05/2018	1.01	1.16
19	05/06/2018 - 05/12/2018	1.06	1.22
20	05/13/2018 - 05/19/2018	1.11	1.28
21	05/20/2018 - 05/26/2018	1.11	1.28
22	05/27/2018 - 06/02/2018	1.10	1.26
23	06/03/2018 - 06/09/2018	1.10	1.26
24	06/10/2018 - 06/16/2018	1.09	1.25
25	06/17/2018 - 06/23/2018	1.09	1.25
26	06/24/2018 - 06/30/2018	1.09	1.25
27	07/01/2018 - 07/07/2018	1.09	1.25
28	07/08/2018 - 07/14/2018	1.09	1.25
29	07/15/2018 - 07/21/2018	1.10	1.26
30	07/22/2018 - 07/28/2018	1.10	1.26
31	07/29/2018 - 08/04/2018	1.10	1.26
32	08/05/2018 - 08/11/2018	1.11	1.28
33	08/12/2018 - 08/18/2018	1.11	1.28
34	08/19/2018 - 08/25/2018	1.11	1.28
35	08/26/2018 - 09/01/2018	1.12	1.29
36	09/02/2018 - 09/08/2018	1.12	1.29
37	09/09/2018 - 09/15/2018	1.12	1.29
38	09/16/2018 - 09/22/2018	1.12	1.29
39	09/23/2018 - 09/29/2018	1.12	1.29
40	09/30/2018 - 10/06/2018	1.12	1.29
41	10/07/2018 - 10/13/2018	1.12	1.29
42	10/14/2018 - 10/20/2018	1.12	1.29
43	10/21/2018 - 10/27/2018	1.10	1.26
44	10/28/2018 - 11/03/2018	1.09	1.25
45	11/04/2018 - 11/10/2018	1.07	1.23
46	11/11/2018 - 11/17/2018	1.05	1.21
47	11/18/2018 - 11/24/2018	1.04	1.20
48	11/25/2018 - 12/01/2018	1.03	1.18
49	12/02/2018 - 12/08/2018	1.02	1.17
50	12/09/2018 - 12/15/2018	1.02	1.17
51	12/16/2018 - 12/22/2018	0.99	1.14
52	12/23/2018 - 12/29/2018	0.96	1.10
53	12/30/2018 - 12/31/2018	0.94	1.08

* PEAK SEASON

25-FEB-2019 16:26:26 830UPD 4_8900_PKSEASON.TXT

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Kimley»Horn

To: Tom Reetz
Senior Planner
City of Stuart Development Department

From: Nicholas J. Mora, P.E.
Kimley-Horn and Associates, Inc.

Alexander R. Memering, E.I.T.
Kimley-Horn and Associates, Inc.

Date: October 14, 2019

Re: **Stuart Ocean Townhomes – City of Stuart, Florida**
Review of Traffic Impact Analysis

Kimley-Horn has reviewed the Traffic Impact Analysis (dated August 31, 2019) prepared by JFO Group Inc. related to the above-mentioned project. Please find below our review comments pertaining to the development's impacts to adjacent transportation facilities.

1. Based on the City of Stuart's Land Development Code, "An analysis of all project driveways shall be performed which includes, at a minimum, projected turning movements in and out of the project during the AM and PM peak hours. A capacity analysis of the proposed driveways shall be performed to determine the need for separate turning lanes and/or any other necessary improvement." Please evaluate the project driveway during the AM and PM peak hours and detail the project Level of Service and whether an eastbound ingress right-turn lane is warranted along SE Ocean Boulevard. Please also evaluate the storage length of the westbound left-turn lane to determine if the storage length is sufficient for project traffic.

2. A peak season correctional factor was not used within the intersection volume development sheets for the intersection of SE Ocean Boulevard & Site Driveway. Please update the volume development sheet to incorporate the appropriate peak season correctional factor.

3. Figure 3 conflicts with the intersection volume development sheet for SE Ocean Boulevard & Site Driveway. Please clarify the proposed project driveway assignment for the site.

Thank you for the opportunity to assist the City of Stuart in reviewing the noted project. Please contact us if you have any questions or need additional information.

Kimley Horn
October 14, 2019
Re: Stuart Ocean Townhomes – City of Stuart, Florida
Review of Traffic Impact Analysis

1. Based on the City of Stuart's Land Development Code, "An analysis of all project driveways shall be performed which includes, at a minimum, projected turning movements in and out of the project during the AM and PM peak hours. A capacity analysis of the proposed driveways shall be performed to determine the need for separate turning lanes and/or any other necessary improvement." Please evaluate the project driveway during the AM and PM peak hours and detail the project Level of Service and whether an eastbound ingress right-turn lane is warranted along SE Ocean Boulevard. Please also evaluate the storage length of the westbound left-turn lane to determine if the storage length is sufficient for project traffic.

[JFO->] *Traffic analysis has been revised accordingly. Exhibit 6 includes detailed driveway analysis.*

2. A peak season correctional factor was not used within the intersection volume development sheets for the intersection of SE Ocean Boulevard & Site Driveway. Please update the volume development sheet to incorporate the appropriate peak season correctional factor.

[JFO->] *Traffic analysis has been revised accordingly.*

3. Figure 3 conflicts with the intersection volume development sheet for SE Ocean Boulevard & Site Driveway. Please clarify the proposed project driveway assignment for the site.

[JFO->] *Traffic analysis has been revised. The intersection volume development sheet for SE Ocean Boulevard & Site Driveway included in Exhibit 5 of the traffic analysis dated August 31, 2019 was the driveway analysis submitted to F-DOT to obtain the driveway pre-approval letter. The conceptual approval from F-DOT assumed all project traffic on the Ocean Boulevard driveway. To avoid confusion, the FDOT analysis was removed from the revised traffic analysis and a revised driveway analysis matching FDOT conservative assumptions has been provided in Exhibit 6 including the feedback from comment #1 above.*