AGENDA REPORT
May 24, 2018

SUBJECT:
Public Hearing, Re: Horizon Title Company, Inc. (Kim Rezanka) requests a change of Zoning classification from AU to PUD. The property is 221.51 acres, located at 890 E. Hall Rd., Merritt Island. (18PZ00009) (District 2)

FISCAL IMPACT:
None.

DEPT/OFFICE:
Planning and Development

REQUESTED ACTION:
It is requested that the Board conduct a public hearing to consider the request for a change of Zoning classification from AU (Agricultural Residential) to PUD (Planned Unit Development) and approval of the Preliminary Development Plan (PDP), which consists of 182 single-family home lots, including those with 100' x 150', 80' x 130', and 50' x 130' lot size dimensions, and various amenities

SUMMARY EXPLANATION and BACKGROUND:
The applicant is seeking a change of Zoning classification from AU to PUD for the purpose of developing a residential subdivision with multiple product types. A revised PDP has been submitted, which consists of 182 single-family home lots and various amenities on a 221.51 acre parcel. The following exhibits have been included in the package: Exhibit A - PUD Code, Exhibit B - Applicant's Analysis of Review Criteria and Staff Response, Exhibit C - Staff Comments on Revised PDP.

Both the current AU zoning and proposed PUD zoning are consistent with the Residential 1 Future Land Use designation.

The Board should be aware that the approval of a PUD Zoning request not only entails review of the Zoning request itself, but also of the PDP that accompanies the request. The PDP has been included within the package, which has been reviewed for sufficiency by staff. Code provisions for this review and approval, as well as staff comments regarding the PDP submission, are included for reference.

The Board shall review the PDP and either approve, approve subject to conditions, or disapprove the PDP application. Unlike typical Zoning changes, the Board may stipulate conditions for development of a PUD. Approval of the PDP indicates approval of the PUD zoning subject to acceptance of the final development plan. The decision of the Board

shall be based upon a consideration of the facts specified as review criteria for the Planning and Zoning Board in Section 62-1448(b)(5) of the Land Development Regulations.

The Board may wish to consider whether the application proposing a change of Zoning classification from AU to PUD is consistent and compatible with the surrounding land use.

On April 12, 2018, the North Merritt Island Dependent Special District Board heard the request and unanimously recommended denial.

On April 23, 2018, the Planning and Zoning Board heard the request and recommended approval with the condition that density is restricted to one unit per two acres, and that no townhouses be proposed. The vote was 8:1.

On May 3, 2018, the Board of County Commissioners tabled the item to May 24, 2018, at the request of the applicant.

On May 14, 2018, the applicant submitted a revised Preliminary Development Plan (PDP), which staff has reviewed and provided comments on, which have been included for the Board's consideration.

Staff contact: Erin Sterk, Interim Planning & Zoning Manager, erin.sterk@brevardfl.gov

ATTACHMENTS:

Description

- **Revised Prelimiary Development Plan**
- **Staff Report 18PZ00009**
- **Maps**
- **Exhibit A - PUD Zoning Code**
- **Exhibit B - Applicant's Analysis of Review Criteria & Staff Response**
- **Exhibit C - Revised PDP Comments**
- **Disclosures**
- **School Concurrency**
- **Agency Correspondence - 1st PDP Submittal**
- **Additional FYI**
- **Transportation Analysis**

RESOLUTION NO. 18PZ00009 NL

On motion by Commissioner Barfield, seconded by Commissioner Smith, the following resolution was adopted by a unanimous vote:

WHEREAS, HORIZON TITLE COMPANY, INC. – (Kim Rezanka) – requests a change of classification from AU (Agricultural Residential) to PUD (Planned Unit Development), on property described as: SEE ATTACHED

Section 36, **Township** 23 S, **Range** 36 E, and,

WHEREAS, a public hearing of the North Merritt Island Dependent Special District Board was advertised and held, as required by law, and after hearing all interested parties and considering the adjacent areas, the North Merritt Island Dependent Special District Board recommended that the application be denied; and,

WHEREAS, the Planning and Zoning Board, after considering said application and the North Merritt Island Dependent Special District Board's recommendation, and hearing all interested parties, and after due and proper consideration having been given to the matter, recommended that the application should be approved with the condition that density is restricted to one unit per two acres, and that no townhouses be proposed; now therefore,

WHEREAS, the Board, after considering said application and the North Merritt Island Dependent Special District Board's and the Planning and Zoning Board's recommendations, and hearing all interested parties, and after due and proper consideration having been given to the matter, find that the application be Approved; now therefore,

BE IT RESOLVED by the Board of County Commissioners of Brevard County, Florida, that the requested change of classification from AU to PUD be APPROVED, and the Planning & Development Director, or designee, is hereby directed to make this change on the official zoning maps of Brevard County, Florida.

BE IT FURTHER RESOLVED that this resolution shall become effective as of May 24, 2018.

BOARD OF COUNTY COMMISSIONERS
Brevard County, Florida

by Rita Pritchett, Chair
Brevard County Commission
As approved by Brevard County Commission on May 24, 2018.

ATTEST:

SCOTT ELLIS, CLERK
(SEAL)

(NMI Hearing – April 12, 2018)
(P&Z Hearing – April 23, 2018)

Please note: A Conditional Use Permit will generally expire on the three year anniversary of its approval if the use is not established prior to that date. Conditional Use Permits for Towers and Antennas shall expire if a site plan for the tower is not submitted within one (1) year of approval or if construction does not commence within two years of approval. A PUD Preliminary Development Plan expires if a final development plan is not filed within three years.

THE GRANTING OF THIS ZONING DOES NOT GUARANTEE PHYSICAL DEVELOPMENT OF THE PROPERTY. AT THE TIME OF DEVELOPMENT, SAID DEVELOPMENT MUST BE IN ACCORDANCE WITH THE CRITERIA OF THE BREVARD COUNTY COMPREHENSIVE PLAN AND OTHER APPLICABLE LAWS AND ORDINANCES.

Resolution 18PZ00009 (Continued)

Legal Description:

The south ½ of the NE ¼ together with a portion of the SE ¼ of Section 36, Township 23S, Range 36E, Brevard County, Florida; said subject parcel being more fully described as follows: Begin at the NE corner of said SE ¼ as marked by a four (4) inch square concrete monumented stamped "Bussen Engineering Group" as shown on FDEP CCR document No. 0023182; thence S00deg50'39"W, along the east line of said SE ¼ a distance of 2,649.73 ft. to the SE corner of said SE ¼ as monumented by an unstamped 3/8 inch rebar as shown on FDEP CCR Document No. 0013854; thence S89deg47'47"W, along the south line of said SE ¼, a distance of 1,817.96 ft.; thence departing said south line N00deg28'24"E, parallel with the west line of said SE ¼ a distance of 861.59 ft.; thence N42deg48'07"W, a distance of 404.30 ft.; thence N89deg31'36"W, a distance of 547.79 ft. to said west of the SE ¼; thence N00deg28'24"E, along said west line of the SE ¼ and along the west line of said South ½ of the NE ¼ a distance of 2,817.24 ft. to the NW corner of said S ½ of the NE ¼; thence N89deg59'18"E, along the north line of said S ½ of the NE ¼, a distance of 2,668.95 ft. to the NE corner of said S ½ of the NE ¼; thence S00deg51'34"W, along the east line of said S ½ of the NE ¼, a distance of 1,324.67 ft. to the point of beginning. Containing 221.51 acres, more or less; being subject to any restrictions, covenants, easements, and/or rights-of-way of record. Located on the north side of Hall Rd., approx. 0.23 mile east of Wood Duck Lane. (890 E. Hall Rd., Merritt Island)

5/24/2018 Horizon Title Company
Item II(L) Submitted by applicant

NORTH MERRITT ISLAND DENSITY COMPARISON CHART

PLAT NAME/OWNER	PLAT BOOK/ PAGE	TOTAL ACREAGE	TOTAL LOTS	LOT SIZES	DENSITY (upa)	ZONING	FLUM	YEAR
Chase Hammock Lakes	50/43	122.71	61	1 acre	0.50	AU	RES 1	
Citrus Isle	41/48	19.83	51	1/4 to 1/3 ac	2.57	EU-2	RES 4	
Citrus River Groves 1-4	25/133, 28/89,	69.81	94	1/2+/- ac	1.35	SR	RES 4	
Crisafulli Townhomes		12.85	48		3.74	RA-2-4	CC, NC, RES 4	2017
Harvey's Groves/ Cpp II, LLC		41.95	56		1.33	EU-2	RES 2	2016
The Groves	32/26	13.96	20	1/4 to 1/2 ac	1.43	RA-2-10 (4)	RES 2	
The Groves Phase 2	39/73	12.91	16	1/2 ac	1.24	SR	RES 2	
Indian Bay Phase 1	26/34	47.1	89	1/3 to 1/2 ac	1.89	EU-2	RES 4	
Indian Bay Phase 2/1	36/41	11.27	21	1/3 ac	1.86	EU-2	RES 4	
Indian Bay 2/2	36/81	30.78	37	1/3 ac	1.20	EU-2	RES 4	
Najjad, Inc.		26.11	40		1.59	EU	RES 2	2017
North Grove	36/82	20.65	41	1/3 ac	1.99	EU-2	RES 4	
Otter Trace	38/28	35.77	37	1/2 to 1-1/2 ac	1.03	SR	RES 1	
Savannahs PUD**	35/56	97	288	0.26-0.29 ac	2.97	PUD	RES 1	
Sun Island Lakes	Mobile Home Pk	71.35	298+/-		4.18	TR-3	RES 2	
Stone Lake Estates	43/33	31.45	20	0.50 -0.53 ac	.93	SR	RES 1	
Sunset Lakes 1A	38/58	34.15	41	0.20 ac	1.20	PUD	RES 4	
Sunset Lakes 1B	39/21	21.76	61	0.20 ac	2.80	PUD	RES 4	
Sunset Lakes 2	41/14	14.07	45	0.20-0.28 ac	3.20	PUD	RES 4	
Sunset Lakes 4A	44/19	6.14	20	0.20-0.25 ac	3.26	PUD	RES 4	
Sunset Lakes 4B	44/22	5.04	16	0.20-0.31 ac	3.17	PUD	RES 4	
Sunset Lakes 5	44/93	7.37	26	0.14-0.17 ac	3.53	PUD	RES 4	
Sunset Lakes 6	45/41	8.98	32	0.13-0.15 ac	3.56	PUD	RES 4	
Sunset Lakes 7	46/1	28.21	39	0.14-0.29 ac	1.38	PUD	RES 4	
Sunset Lakes 8	46/43	12.28	31	0.17-0.30 ac	2.52	PUD	RES 4	
Sunset Lakes 9	47/26	29.33	44	0.17-0.19 ac	1.50	PUD	RES 4	
Sunset Lakes 11	50/27	4.37	5	0.51-0.71 ac	1.14	PUD	RES 4	
Egrets's Landing	Phase I & Phase 2	111.0	222	0.25 ac avg.	2.00	EU-2	RES 2	2014

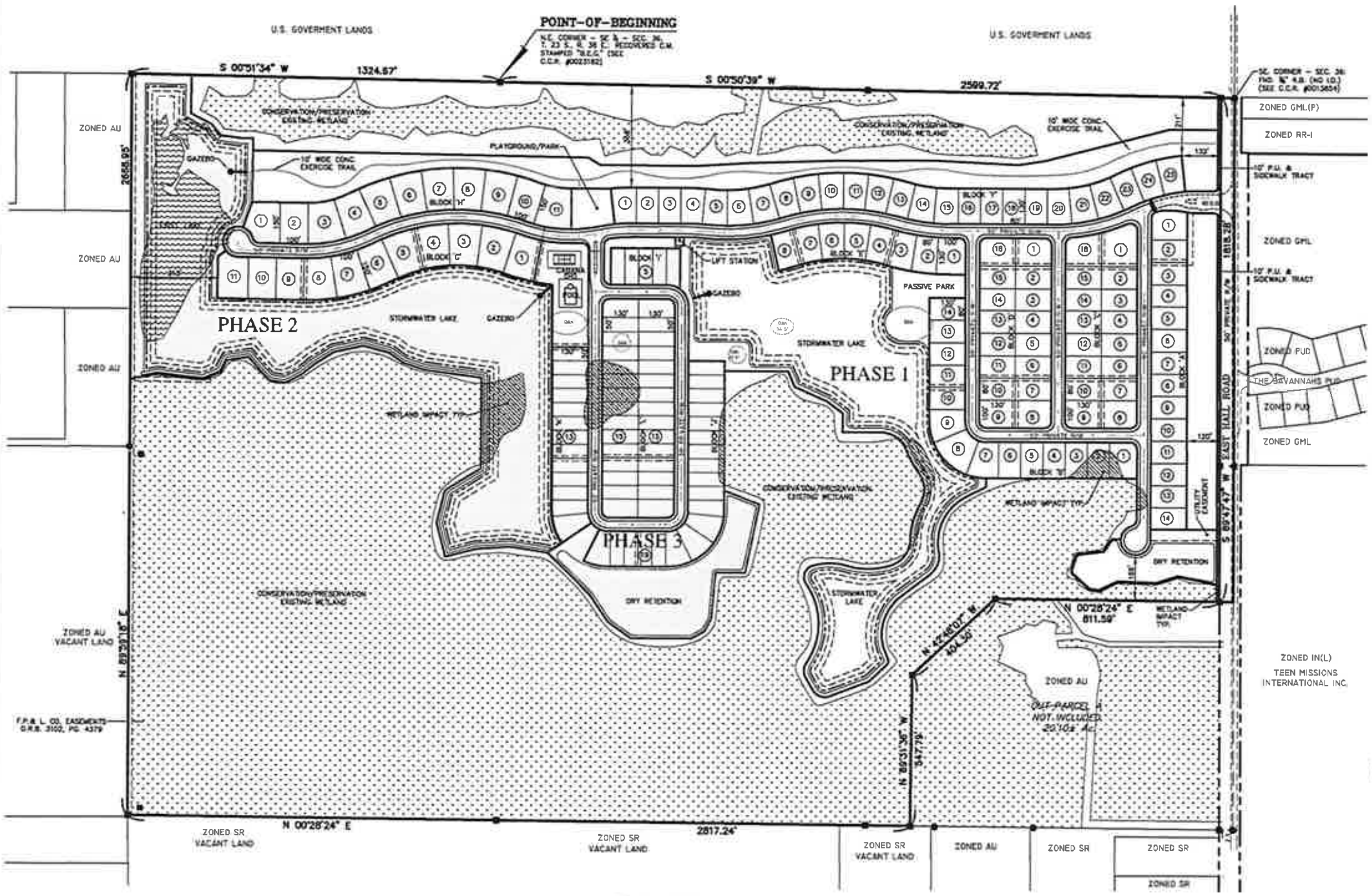
**Excluding Public Golf Course Area

Rev. 5.21.18

PRELIMINARY DEVELOPMENT PLANS PREPARED FOR:

Tranquility Estates

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 36 EAST. BREVARD COUNTY, FLORIDA



MASTER LAYOUT

SCALE: 1" = 200'

SHEET INDEX

SHEET	DESCRIPTION
1	COVER SHEET / PRELIMINARY DEVELOPMENT PLAN
2	MASTER DRAINAGE PLAN
3	MASTER UTILITIES PLAN
4	COMMON OPEN SPACE PLAN

GENERAL NOTES

1. THIS PLAN IS PRELIMINARY ONLY AND IS SUBJECT TO FINAL DESIGN AND PERMITTING.
2. WETLAND LOCATION DATA AND PRESERVATION AREAS SHOWN HEREON ARE APPROXIMATE ONLY, AND SUBJECT TO REGULATORY AGENCY VERIFICATION, AND FINAL DESIGN.

LEGAL DESCRIPTION

The South ½ of the Northeast ¼ and a portion of the Southeast ¼ of Section 36, Township 23 South, Range 36 East, Brevard County, Florida and being more particularly described as follows:

Begin at the Southeast corner of said Section 36; thence South 89° 47'47" West along the South line of said Southeast ¼ a distance of 1617.37 feet; thence North 00°12'13" West a distance of 50.00 feet; thence North 00°28'24" East a distance of 811.59 feet; thence North 42°48'07" West a distance of 404.30 feet; thence North 89°31'36" West a distance of 347.79 feet to a point on the West line of said Southeast ¼ of Section 36; thence North 00°28'24" East along said West line and along the West line of the South ½ of the Northeast ¼ of said Section 36, a distance of 2817.24 feet to the Northeast corner of the Southeast ¼ of the Northeast ¼ of said Section 36, thence North 89°29'16" East, along the North line of the South ½ of the Northeast ¼ of said Section 36, a distance of 2658.95 feet to the Northeast corner of the Southeast ¼ of the Northeast ¼ of said Section 36; thence South 00°51'34" West along the East line of the South ½ of the Northeast ¼ of said Section 36, a distance of 1324.67 feet to the Northeast corner of said Southeast ¼; thence South 00°50'39" West along the East line of said Southeast ¼, a distance of 2649.73 feet to the Point-of-Beginning.

Containing 221.51 acres more or less and being subject to any easements and/or rights-of-way of record.

PROJECT CONTACTS

DEVELOPER/OWNER:
HORIZON STILE COMPANY, INC.
2301 NW 87TH AVENUE, UNIT #501
MIAMI, FL 33172
305-597-8944
CONTACT: CARLOS TRAY

SURVEYOR:
BUSSEN-MAYER ENGINEERING GROUP, INC.
100 PARNELL STREET
MERRITT ISLAND, FLORIDA 32953
PHONE: (321) 453-0010
CONTACT: BARRY CABANISS P.L.S.

ENGINEER:
BUSSEN-MAYER ENGINEERING GROUP, INC
100 PARNELL STREET
MERRITT ISLAND, FLORIDA 32953
PHONE: (321) 453-0010
CONTACT: JOSEPH W. MAYER, P.E.

ENVIRONMENTAL CONSULTANT:
BUSSEN-MAYER ENGINEERING GROUP, INC
100 PARNELL STREET
MERRITT ISLAND, FLORIDA 32953
PHONE: (321) 453-0010
CONTACT: SHANDA RYER

APPLICANT:
KIM REZANKA, ESQ
96 WILLARD ST. SUITE 302
COCOA, FLORIDA 32922
PHONE: (321) 639-1320

ARCHITECT:
UNKNOWN AT THIS TIME

GENERAL STATEMENT

This Preliminary Development Plan is for the proposed construction of a 182 lot subdivision, along with associated roadway, sidewalks, open spaces and detention lakes. The existing site vegetation consists of uplands, wetlands, an asphalt entrance road and a small pond. The project will be constructed in 3 Phases. This plan reflects the proposed drainage corridors and conveyance system and existing natural drainage areas. Large stormwater lakes will be used to accommodate, treat and attenuate drainage run off.

SITE DATA

EXISTING ZONING: AU
PROPOSED ZONING: PUD
TOTAL SITE AREA = 221.52 AC.
SITE AREA = 219.42 AC. ± (NOT INCLUDING 30' HALL ROAD R/W)

TOTAL PROPOSED 80' x 130' LOTS = 93
TOTAL PROPOSED 100' x150' LOTS = 22
TOTAL PROPOSED 90' x 130' = 67

TOTAL PROPOSED LOTS = 182
LOT DENSITY = 0.82 LOTS/ACRE

SETBACKS

FRONT = 25'
SIDE = 10'
REAR = 20'
SIDE CORNER/CONTIGUOUS TO KEY = 25'

COMMON OPEN SPACE CALCULATIONS

A. Minimum required Open Space:
10% of Gross Site Area = 0.10 x 221.52 AC. = 22.15 AC.

Total Provided Open Space = 123.67 AC.

Active Common Open Space Required = 1.50 AC. per 100 units = 2.73 AC.
Active Common Open Space Provided = 3.42 AC.
1. Pool, Cabana & Tennis Court Tract = 1.26 AC.
2. Playground Tract = 0.49 AC.
3. Exercise Trail = 1.65 AC. (based on an area 20' wide x 3,598 long)

WETLAND DATA

TOTAL ONSITE WETLAND AREA = 98.39 AC. ±
MAXIMUM ALLOWABLE WETLAND IMPACT = 1.80% x 221.52 AC. = 3.99 AC.
PROPOSED WETLAND IMPACTS = 3.99 AC. ±

VICINITY MAP
N.T.S.

DATE	REVISIONS	
02/14/18	UPDATE PDP	LB
03/28/18	REV. ADD 50' WIDE LOTS	LB
04/26/18	REV. PER CLIENT	LB
05/21/18	REV. PER B.C. APPLICATION SUBMITTAL REVIEW	LB

Sec.: 36
Twp.: 23 South
Rng.: 36 East
Design by : JWM
Drawn by : LB
Checked by : JWM

Joseph W. Mayer
FLORIDA PROFESSIONAL ENGINEER LICENSE NUMBER: 36838
BUSSEN-MAYER ENGINEERING CERT. NO.: 3530
P.E.

PRELIMINARY DEVELOPMENT PLAN PREPARED FOR:
TRANQUILITY ESTATES SUBDIVISION
Brevard County Florida

Bussen-Mayer Engineering Group, Inc.
100 PARNELL STREET • MERRITT ISLAND, FLORIDA 32953
PH. NO.: (321) 453-0010 • FAX NO.: (321) 454-6885

Date : JAN. 24, 2018
Scale : 1" = 200'
Proj. No.: 344013
Sheet No. 1 of 4

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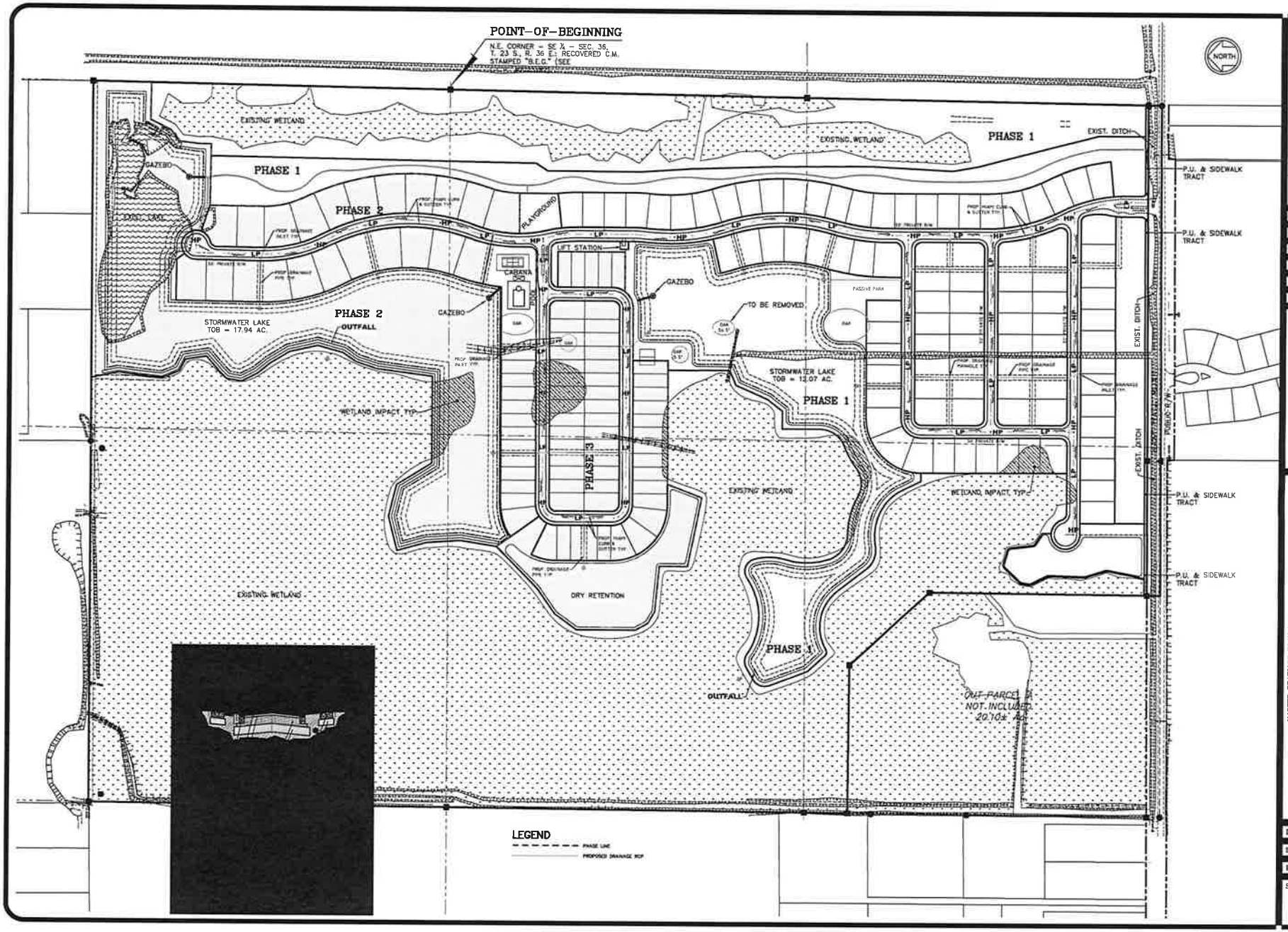


Sec.: 36
Twp.: 23 South
Rng.: 36 East
Design by : JWM
Drawn by : LB
Checked by : JWM

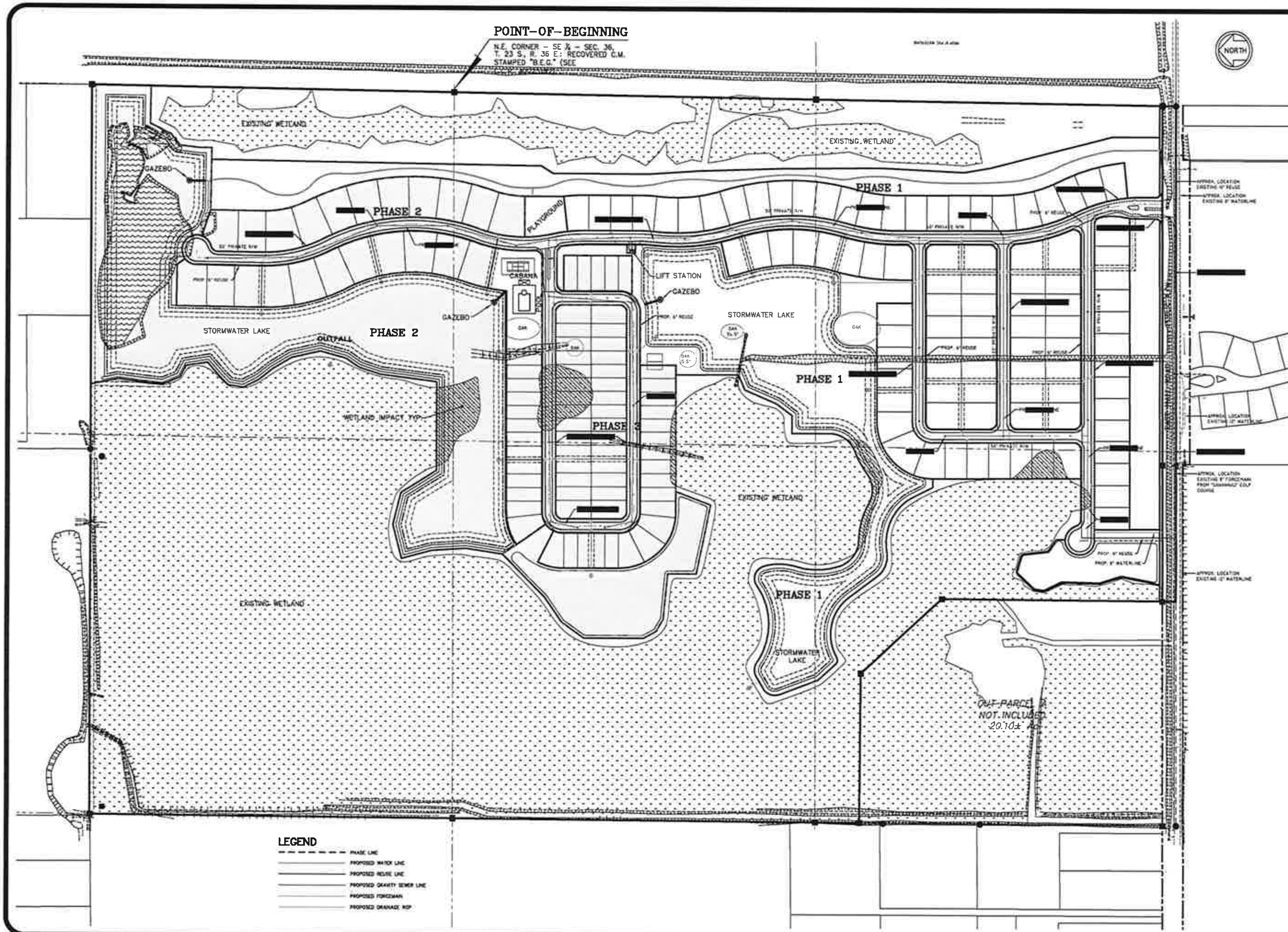
P.E. No. 38538

Joseph W. Meyer, FLORIDA PROFESSIONAL ENGINEER, BUSSEN-MAYER ENGINEERING CERT. NO.

MASTER DRAINAGE PLAN PREPARED FOR
TRANQUILITY ESTATES SUBDIVISION
Brevard County Florida

Bussen-Mayer Engineering Group, Inc.
100 PARNELL STREET, MERRITT ISLAND, FLORIDA 32953
PH. NO.: (321) 453-3010 * FAX NO.: (321) 454-8885

Date : JAN. 24, 2018
Scale : 1" = 150'
Proj. No.: 344013
Sheet No. 2 of 4



MASTER UTILITY PLAN PREPARED FOR
TRANQUILITY ESTATES SUBDIVISION
Brevard County, Florida

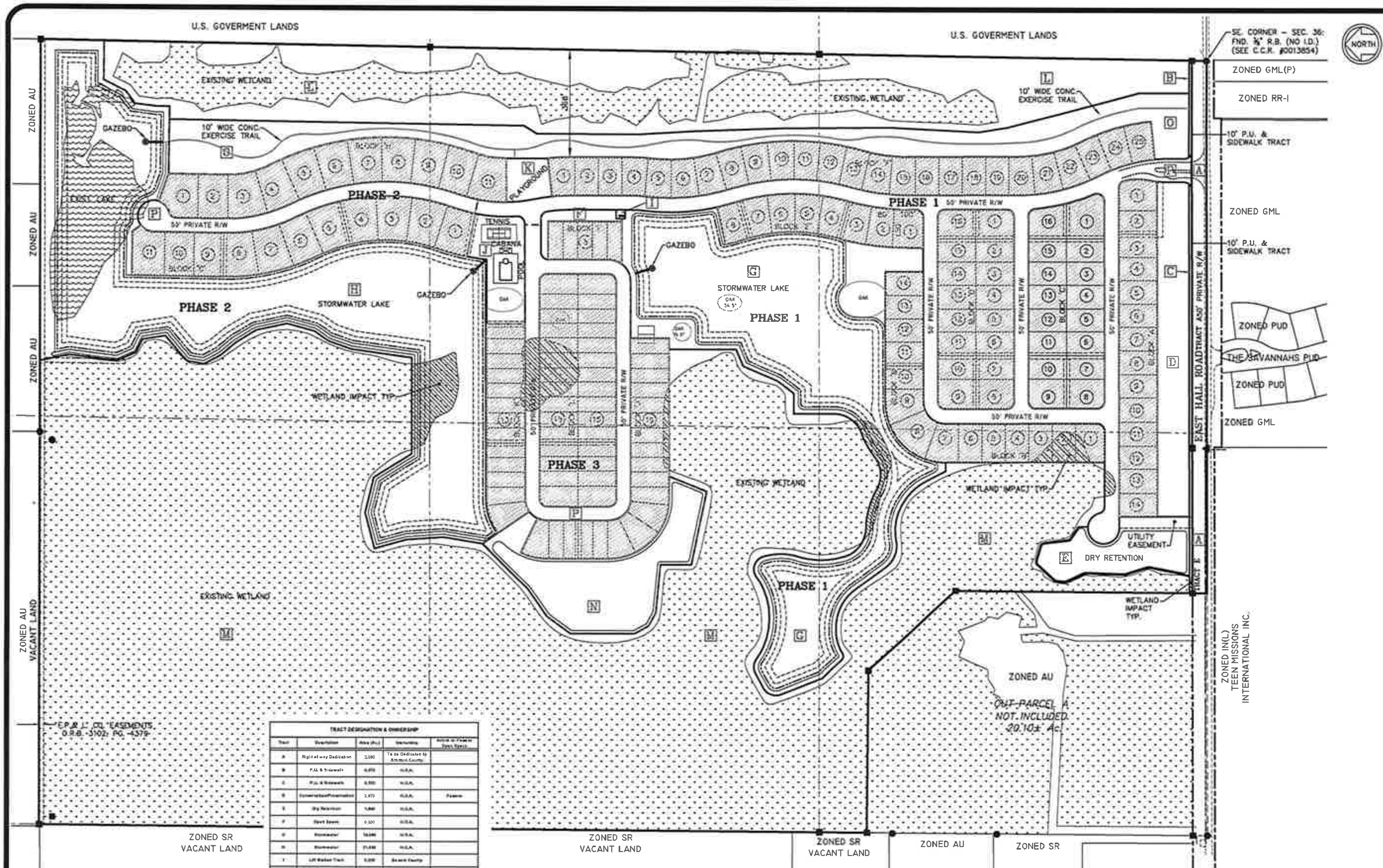
Bussen-Mayer Engineering Group, Inc.
100 PARNELL STREET • MERRITT ISLAND, FLORIDA 32953
PH. NO.: (321) 453-0010 • FAX NO.: (321) 454-8885

Joseph W. Mayer P.E. 36836
FLORIDA PROFESSIONAL ENGINEER LICENSE NUMBER
BUSSEN-MAYER ENGINEERING CERT. NO.: 3635

Sec.: 36
Twp: 23 South
Rng: 36 East
Design by: JWM
Drawn by: LB
Checked by: JWM

Date: JAN. 24, 2018
Scale: 1" = 150'
Proj. No.: 344013
Sheet No. 3 of 4

DATE	REVISIONS	
03/14/18	UPDATE PDP	LB
03/08/18	REV. ADD 50' WIDE LOTS	LB
04/26/18	REV. PER CLIENT	LB
5/21/18	REV. PER B.C. APPLICATION SUBMITTAL REVIEW	LB



TRACT DESIGNATION & OWNERSHIP				
Tract	Description	Area (Ac.)	Ownership	Active or Passive Open Space
A	Right of way Dedication	2.090	To be Dedicated to Brevard County	
B	P.U. & Sidewalk	[illegible]	H.O.A.	
C	P.U. & Sidewalk	[illegible]	H.O.A.	
D	Conservation/Preservation	2.970	H.O.A.	Passive
E	Dry Retention	[illegible]	H.O.A.	
F	Sport Court	0.300	H.O.A.	
G	Stormwater	[illegible]	H.O.A.	
H	Stormwater	[illegible]	H.O.A.	
I	Lift Station Tract	[illegible]	Brevard County	
J	Active Recreation Pool Complex	1.280	H.O.A.	Active
K	Active Recreation Playground and Park	[illegible]	H.O.A.	Active
L	Conservation/Preservation	[illegible]	H.O.A.	Passive
M	Conservation/Preservation	[illegible]	H.O.A.	Passive
N	Dry Retention	3.730	H.O.A.	
O	Active Recreation [illegible] Hall & Gazebo	[illegible]	H.O.A.	Active
P	Private Right of Way	[illegible]	H.O.A.	
	TOTAL	[illegible]		

[illegible]

LEGEND

LANDS DEDICATED TO PRIVATE OWNERSHIP

TRACT DESIGNATION

COMMON OPEN SPACE CALCULATIONS

A. Minimum required Open Space:
10% of Gross Site Area = 0.10 x 221.52 AC. = 22.15 AC.

Total Provided Open Space = 123.87 AC.

Active Common Open Space Required = 1.50 AC. per 100 units = 2.73 AC.
Active Common Open Space Provided = 3.42 AC.
1. Pool, Cabana & Tennis Court Tract = 1.28 AC.
2. Playground Tract = 0.49 AC.
3. Exercise Trail = 1.65 AC. (based on an area 20' wide x 3,598 long)

PHASES	
Phase	Area (Ac.)
1	[illegible]
2	[illegible]
3	[illegible]
TOTAL	[illegible]

PRIVATE OWNERSHIP	
Type	Area (Ac.)
Single Family Lots Phase 1	[illegible]
Single Family Lots Phase 2	[illegible]
Single Family Lots Phase 3	[illegible]
TOTAL	[illegible]

WETLAND DATA

TOTAL ONSITE WETLAND AREA = 98.59 AC. ±
MAXIMUM ALLOWABLE WETLAND IMPACT = 1.80% x 221.52 AC. = 3.99 AC.
PROPOSED WETLAND IMPACTS = 3.99 AC. ±

NOTE

Open Space to be dedicated via individual recorded plats for each phase and administered by a master Homeowners Association to be established by the developer.

DATE	REVISIONS	
03/14/18	UPDATE PDP	LB
03/08/18	REV. ADD 50' WIDE LOTS	LB
04/26/18	REV. PER CLIENT	LB
5/2/18	REV. PER P.C. APPLICATION SUBMITTAL REVIEW	LB

Sec.: 36
Twp.: 23 South
Rng.: 36 East
Design by : JWM
Drawn by : LB
Checked by : JWM

Joseph W. Mayer
FLORIDA PROFESSIONAL
ENGINEER LICENSE NUMBER: 36838 P.E.
BUSSEN-MAYER ENGINEERING CERT. NO.: 3535

COMMON OPEN SPACE PLAN PREPARED FOR
TRANQUILITY ESTATES SUBDIVISION
Brevard County Florida

Bussen-Mayer Engineering Group, Inc.
100 FARRELL STREET • MERRITT ISLAND, FLORIDA 32953
PH. NO.: (321) 453-0010 • FAX NO.: (321) 454-6885

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Sheet No. 4 of 4

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REZONING REVIEW WORKSHEET

18PZ00009

Commission District # 2
Hearing Dates: **NMI 04/12/18 P&Z 04/23/18 BCC 05/03/18**

Owner Name: **HORIZON TITLE COMPANY, INC.**

Request: **AU to PUD**

Subject Property:

Parcel ID# 23-36-36-00-4
Tax Acct.# 2318755
Location: North side of Hall Rd., approx. 0.23 mile east of Wood Duck Lane
Address: 890 E. Hall Rd., Merritt Island
Acreage: 221 +/- acres

Consistency with Land Use Regulations

YES **Current zoning can be considered under the Future Land Use Designation. Sec. 62-1255**
YES **Proposal can be considered under the Future Land Use Designation. Sec. 62-1255**
YES **Would proposal maintain acceptable Levels of Service (LOS) (XIII 1.6.C)**

	CURRENT	PROPOSED
Zoning	AU	PUD
Potential*	80 SF UNITS	219 BY PDP 117 SF & 102 townhouse
Can be Considered under FLU MAP	YES RESIDENTIAL 1	YES RESIDENTIAL 1

*Zoning potential for concurrency analysis purposes only, subject to applicable land development regulations. Traffic information limited to 117 SF and 102 townhouse units.

Background & Purpose of Request

The applicant is seeking a change of Zoning classification from Agricultural Residential (AU) to Planned Unit Development (PUD) for the purpose of developing a residential subdivision with multiple product types. The Preliminary Development Plan consists of 117 single-family home lots and a cluster of 102 townhouses (totaling 219 dwelling units) on a 221.51 acre parcel.

The project is named Tranquility Estates. Although lot configurations have been proposed for both the single-family and townhome lots, an architect has yet to be announced. Model units have not yet been identified. Single-family residential lots are proposed in two configurations: 80' x 130' or 100' x 150'. The townhouse lots are proposed as 32' x 125' lots with building envelopes maxing out at 32' x 76'. The townhouse development is located near the center of the property buffered by wetlands and single-family residential lots.

The prior development proposal for the site within the existing AU Zoning was for an Open Space Subdivision, pursuant to **Section 62-3000** of Brevard County Code. The prior project's name was Mission Estates and

consisted of an 80 unit SF development. While some infrastructure began to be developed, including the main road within the development, the project was never completed/platted.

Land Use Compatibility

The subject parcel retains the Residential 1 (Res 1) Future Land Use designation. **FLUE Policy 1.9** addresses the Residential 1 Future Land Use designation, which permits low density residential development with a maximum density of up to one (1) unit per acre, except as otherwise may be provided for within the Future Land Use Element.

Both the current AU zoning and the proposed PUD zoning are consistent with the Res 1 FLU designation. As a PUD, development density is allowed up to 25% higher than other standard zonings. The proposed Preliminary Development Plan offered in this submittal is not requesting to exceed the standard development density of 1 unit/acre by taking advantage of the available density bonus.

This site is also within North Merritt Island, which has had a history of density reductions, especially at the north end. A previous North Merritt Island Small Area Study Plan drafted June 1, 1992 proposed the reduction of residential densities from two (2) units to one (1) unit per acre, which applied to 65% of the NMI study area. **Future Land Use Map Amendment 92B.5.13** changed the Residential Density designation from Suburban 2 to Suburban 1 on 6500 +/- acres, which included the subject property. After the first EAR Amendment to the Comprehensive Plan in 2001, the Residential Density and Future Land Use maps were combined, and the Future Land Use designation was renamed from Suburban 1 to Residential 1 (Res1). This Res 1 FLU designation remains today.

A new North Merritt Island Small Area Study is currently underway, which includes a draft recommendation proposed by the Citizen's Committee, proposing to reduce densities even further. The draft recommendation asks the Board to consider changing the Future Land Use designation of all properties with an existing Residential 1 Future Land Use designation and with an Agricultural Residential (AU) Zoning classification from Residential 1 (up to 1 dwelling unit per acre) to Residential 1:2.5 (up to 1 dwelling unit per 2.5 acres).

The Board should evaluate the compatibility of this application within the context of the Board's Administrative Policies 1 - 8 of the Future Land Use Element, as outlined on pages 2 through 5 of the Administrative Policies.

Environmental Constraints

Please refer to comments provided by the Natural Resource Management Department.

Applicable Land Use Policies

The parcel is bounded along the north property line and at its southwest corner by AU zoning. The AU Zoning classification permits single-family residences and agricultural pursuits on 2 ½ acre lots, with a minimum lot width and depth of 150 feet. The minimum house size in AU is 750 square feet. The AU Zoning classification also permits the raising/grazing of animals, fowl and beekeeping.

The parcel is bounded along the west property line by Suburban residential SR zoning. The SR classification permits single family residences on minimum half acre lots, with a minimum width of 100 feet and a depth of 150 feet. The minimum house size in SR is 1,300 square feet.

The parcel is the easternmost parcel of land within the County's jurisdiction along Hall Road, bounded along the east property line by Federal lands.

The PUD Zoning classification allows single-family residences as small as 900 square feet of living area and townhouse apartment living areas as low as 500 square feet for a one bedroom unit. Across Hall Road to the south, the Savannah's development retains a similar PUD Zoning classification with the

Res 1 Future Land Use designation.

The residential zoning trends within the same section date back to March 28, 2011. Previous zoning applications were all rezoned to the AU zoning classification.

Z-11566 was rezoned from RR-1 to AU with BDP recorded in ORB 6356 Pgs 1887-1890 on March 28, 2001.

Z-11541 was rezoned from SR to AU on May 6, 2010.

Z-11470 was rezoned from IN(L) to AU, prior zoning application for this site adopted on February 5, 2009.

Across Hall Road, the Savannah's subdivision with a PUD Zoning classification was platted in 1989.

School Concurrency Analysis

At this time, the concurrency service area for the elementary school level is projected to have insufficient capacity to accommodate the maximum potential residential development resulting from the proposed Tranquility Estates subdivision rezoning.

Considering the total adjacent elementary school service areas, including those of Audubon Elementary and MILA Elementary, there is sufficient capacity for the total projected student memberships to accommodate the Tranquility Estates subdivision rezoning.

Transportation Concurrency Analysis

	ADT	PM PEAK		
Trips from Existing Zoning	762	80	Segment Number	167 & 168
Trips from Proposed Zoning	1,708	170	Segment Name	SR 3 from Barge Canal to Hall Rd.
Maximum Acceptable Volume (MAV)	41,790	3,761	Acceptable LOS	D
Current Volume	21,170	1,905	Directional Split	0.5
Volume With Proposed Development	22,878	2,075	ITE CODE	
Current Volume / MAV	50.66%	50.66%	210 & 230	
Volume / MAV with Proposal	54.75%	54.75%		
Current LOS	D	D		
LOS With Proposal	D	D		
Findings	☑ Non-Deficiency		☐ Deficiency	

The subject parcel has direct access from Hall Road. Current 2017 Space Coast TPO Traffic Counts do not include analysis of Hall Road. The closest roadway segment included within the dataset is N. Courtenay Parkway (SR 3) between the Barge Canal at the south and Hall Road to the north. This nearby segment of SR 3 was used for the preliminary trip generation and impact analysis within the Staff Report.

A preliminary review of the impact of trips anticipated to be generated by the increase in development potential of the property does not demonstrate that the impact on nearby N. Courtenay Parkway (SR 3) creates a deficiency

in Level of Service and that the corridor still remains under capacity within the segment between the Barge Canal and Hall Road. Should the proposal for rezoning to PUD be approved by the Board, and the property then subdivided, the applicant will be responsible for submitting a Traffic Impact Analysis (TIA) when submitting a site plan. The applicant will also be responsible for conducting traffic counts on Hall Road in order to demonstrate whether concurrency failure is indicated or whether a significant change in trip generation has occurred.

Special Considerations for PUD Zoning

The Board should be aware that approval of a PUD Zoning request not only entails review of the Zoning request itself, but also of the Preliminary Development Plan (PDP) that accompanies the request. The PDP has been included within the package, which has been reviewed for sufficiency by staff. Code provisions for this review and approval as well as staff comments regarding the PDP submission are included below for reference.

Pursuant to Section 62-1448 (b) (5) of Brevard County Code, a Preliminary Development Plan (PDP) must be submitted with a request for the PUD Zoning classification. The decision of the Planning and Zoning Board on the PDP included with the application shall include the findings of fact that serve as a basis for its recommendation. In making its recommendation, the planning and zoning board shall consider the following facts:

a. Degree of departure of the proposed planned unit development from surrounding residential areas in terms of character and density.

b. Compatibility within the planned unit development and relationship with surrounding neighborhoods.

c. Prevention of erosion and degrading of surrounding area.

d. Provision for future public education and recreation facilities, transportation, water supply, sewage disposal, surface drainage, flood control and soil conservation as shown in the preliminary development plan.

e. The nature, intent and compatibility of common open space, including the proposed method for the maintenance and conservation of the common open space.

f. The feasibility and compatibility of the specified stages contained in the preliminary development plan to exist as an independent development.

g. The availability and adequacy of water and sewer service to support the proposed planned unit development.

h. The availability and adequacy of primary streets and thoroughfares to support traffic to be generated within the proposed planned unit development.

i. The benefits within the proposed development and to the general public to justify the requested departure from the standard land use requirements inherent in a planned unit development classification.

j. The conformity and compatibility of the planned unit development with any adopted development plan of the county.

k. The conformity and compatibility of the proposed common open space, primary residential and secondary nonresidential uses with the proposed planned unit development.

The applicant has provided all of the exhibits required by Section 62-1448 (b) (2) of Brevard County Code except for the name of the architect. The Preliminary Development Plan includes a total of 133.19 acres of common open space, of which 13.32 acres is designated as active recreation. The types of passive and active recreation uses proposed include: conservation/preservation areas, a clubhouse complex with swimming pool, active recreation playground and park, exercise trail, volleyball and tennis courts, three (3) gazeboes and a grass playing field. The development is proposed in three (3) phases. Open space will be administered by a master homeowner association to be established by the developer.

For Board Consideration

The North Merritt Island Small Area Study is underway and is anticipated to come before the Board in mid- 2018. If this rezoning request were to be denied and the property were to retain its current AU Zoning classification and the Board were to approve the Small Area Study's recommendation to amend the Comprehensive Plan, the Future Land Use designation change to Res 1:2.5 would apply to this subject property.

The Board may wish to consider whether the application proposing a change of Zoning classification from AU to PUD is consistent and compatible with the surrounding land use.

The Board should be aware that approval of a PUD Zoning request not only entails review of the Zoning request itself, but also of the Preliminary Development Plan (PDP) that accompanies the request. The PDP has been included within the package, which has been reviewed for sufficiency by staff. Code provisions for this review and approval as well as staff comments regarding the PDP submission are included in these staff comments for reference.

NATURAL RESOURCES MANAGEMENT DEPARTMENT
Rezoning Review

SUMMARY

Item #: 18PZ00009 **Applicant: Tranquility Estates-Triay**
Request: AU to PUD
NMI: 04/12/18; P&Z Hearing Date: 04/23/18; BCC Hearing Date: 05/03/18

This is a preliminary review based on environmental maps available to the Natural Resources Management (NRM) Department at the time of this review and a site inspection conducted on January 23, 2018 to verify the accuracy of this information. This review does not ensure whether or not a proposed use, specific site design, or development of the property can be permitted under current Federal, State, or County Regulations. In that this process is not the appropriate venue for site plan review, specific site designs that may be submitted with the rezoning will be deemed conceptual and any comments or omissions relative to specific site design do not provide vested rights or waivers from these regulations, unless specifically requested by the owner and approved by the Board of County Commissioners. If the owner has any questions regarding this information, he/she is encouraged to contact NRM prior to submittal of any development or construction plans.

Natural Resource	Preliminary Assessment	Natural Resource	Preliminary Assessment
Hydric Soils/Wetlands	Mapped	Coastal Protection	N/A
Aquifer Recharge Soils	Mapped	Surface Waters	N/A
Floodplains	Mapped	Wildlife	Potential

Comments:
This review relates to the following property: Twp. 23, Rng. 36, Sec. 36; Tax ID No. 2318755

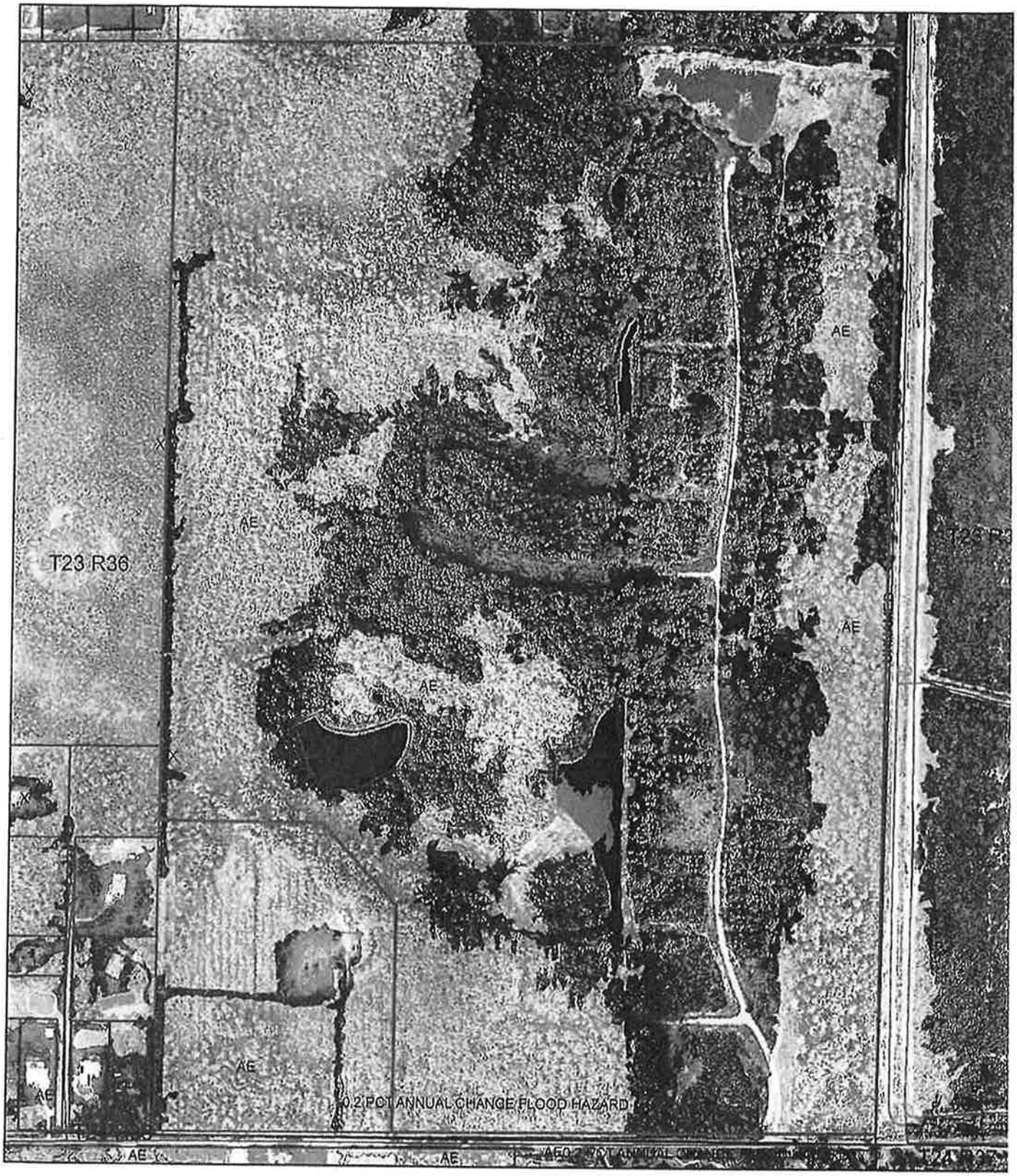
The subject parcel contains mapped NWI and SJRWMD wetlands and hydric soils (Floridana sand, Anclote sand, Copeland-Bradenton-Wabasso complex-limestone, and St. Johns sand-depressional), indicators that wetlands may be present on the property. Per Section 62-3694(c)(1), residential land uses within wetlands shall be limited to not more than one (1) dwelling unit per five (5) acres unless strict application of this policy renders a legally established parcel as of September 9, 1988, which is less than five (5) acres, as unbuildable. For subdivisions greater than five acres in area, the preceding limitation of one dwelling unit per five (5) acres within wetlands may be applied as a maximum percentage limiting wetland impacts to not more than 1.8% of the total non-commercial and non-industrial acreage on a cumulative basis as set forth in Sec. 65-3694(c)(6). Any permitted wetland impacts must meet the requirements of Section 62-3694(e) and 62-3696. The applicant is encouraged to contact NRM at 321-633-2016 prior to any land clearing activities, site plan or permit submittal.

The subject parcel contains mapped aquifer recharge soils (Pomello sand and St. Johns sand-depressional). The applicant is hereby notified of the development and impervious restrictions within Conservation Element Policy 10.2 and the Aquifer Protection Ordinance.

A portion of the property is mapped as being within the floodplain as identified by the Federal Emergency Management Agency; and is subject to the development criteria in Conservation Element Objective 4, its subsequent policies, and the Floodplain Ordinance.

Information available to NRM indicates that federally and/or state protected species may be present on the property. Specifically, gopher tortoises can be found in areas of aquifer recharge soils. Prior to any plan, permit submittal, or development activity, including land clearing, the applicant should obtain any necessary permits or clearance letters from the Florida Fish and Wildlife Conservation Commission and/or U.S. Fish and Wildlife Service, as applicable.

The applicant is advised to refer to Article XIII, Division 2, entitled Land Clearing, Landscaping, and Tree Protection, for specific requirements for preservation and canopy coverage requirements. Land clearing is not permitted without prior authorization by NRM.



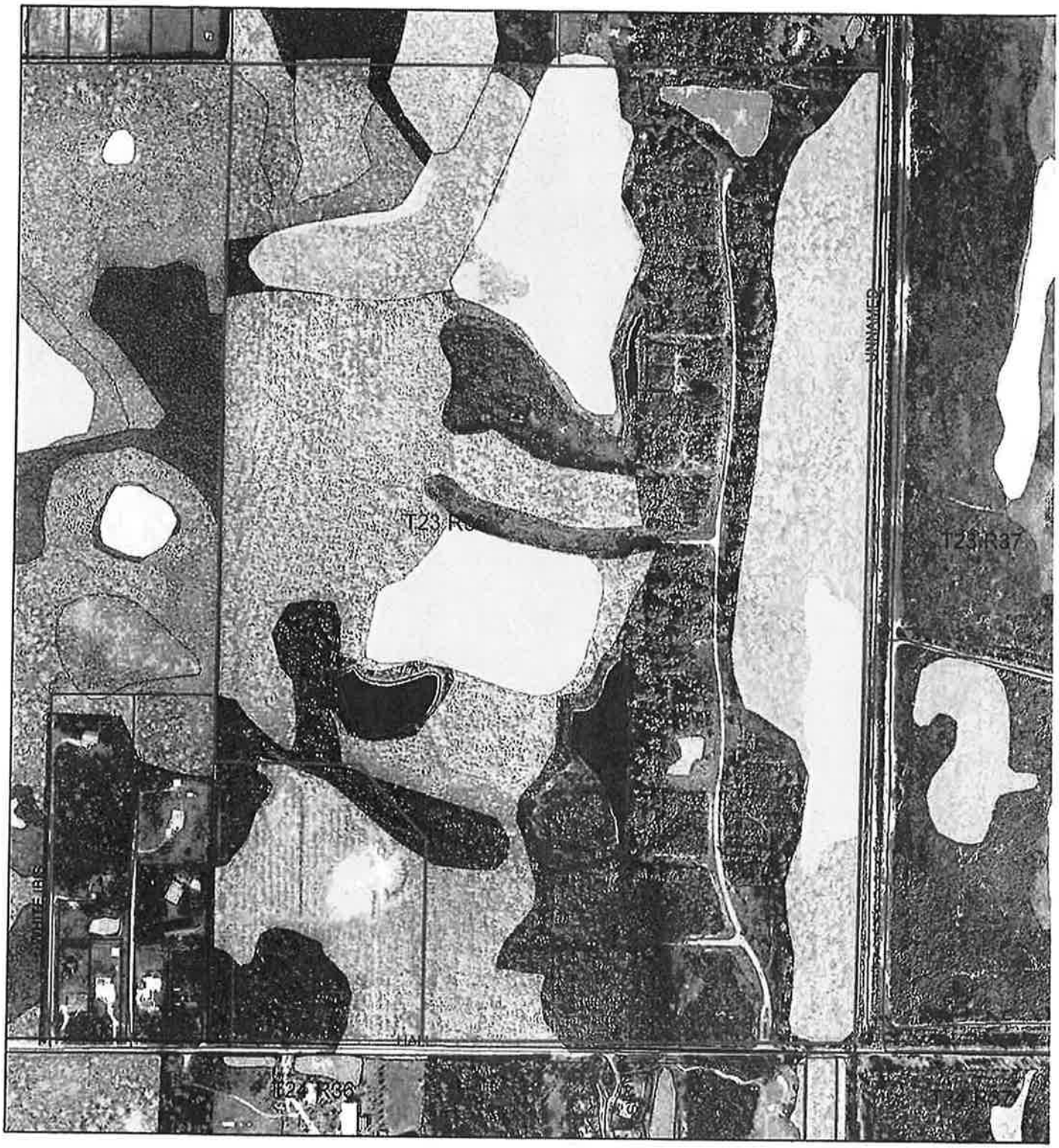
Legend

S_Fld_Haz_Ar

FLD_ZONE

- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD CONTAINED IN CHANNEL
- A
- AE
- AH
- AO
- OPEN WATER
- VE
- X
- X PROTECTED BY LEVEE

FEMA SFHA
18PZ00009



Legend

NWI	LCLU 2009 SJR 6000	6250
WETLAND_TY	LCCODE	6300
Estuarine and Marine Deepwater	6110	6410
Estuarine and Marine Wetland	6120	6420
Freshwater Emergent Wetland	6170	6430
Freshwater Forested/Shrub Wetland	6181	6440
Freshwater Pond	6182	6460
Lake	6210	6500
Other	6220	
Riverine		

NWI Wetlands & SJRWMD 6000 LCLU Wetlands 18PZ00009

Legend

16 - Hydric
23 - Hydric
91 - Hydric
49 - Aquifer Recharge
28 - N/A
55 - Aquifer Recharge & Hydric

Soils
18PZ00009

LOCATION MAP

HORIZON TITLE COMPANY, INC.

18PZ00009

N

W E

S

1:24,000 or 1 inch = 2,000 feet

Buffer Distance: 500 feet

Buffer

Subject Property

This map was compiled from recorded documents and does not reflect an actual survey. The Brevard County Board of County Commissioners does not assume responsibility for errors or omissions hereon.

Produced by the Brevard County Planning and Zoning Office - GIS Section Date: 2/22/2018

ZONING MAP

HORIZON TITLE COMPANY, INC.

18PZ00009

N

W E

S

1:9,600 or 1 inch = 800 feet

Subject Property

Parcels

Zoning

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Produced by the Brevard County Planning and Zoning Office - GIS Section Date: 2/22/2018

FUTURE LAND USE MAP

HORIZON TITLE COMPANY, INC.

18PZ00009

N

W E

S

1:9,600 or 1 inch = 800 feet

Subject Property

Parcels

This map was compiled from recorded documents and does not reflect an actual survey. The Brevard County Board of County Commissioners does not assume responsibility for errors or omissions hereon.

Produced by the Brevard County Planning and Zoning Office - GIS Section Date: 2/9/2018

AERIAL MAP

HORIZON TITLE COMPANY, INC.

18PZ00009

N

W E

S

1:9,600 or 1 inch = 800 feet

PHOTO YEAR: 2017

Subject Property

Parcels

This map was compiled from recorded documents and does not reflect an actual survey. The Brevard County Board of County Commissioners does not assume responsibility for errors or omissions hereon.

Produced by the Brevard County Planning and Zoning Office - GIS Section Date: 2/9/2018

Exhibit A – PUD Zoning code

Subdivision V. - Planned Unit Developments[2]

Sec. 62-1441. - PUD—Definitions and rules of construction.

For the purpose of this subdivision, certain words and terms used in this subdivision shall be defined as provided in this section. Words used in the present tense shall include the future tense, words used in the singular number shall include the plural number, and words used in the plural number shall include the singular number. The word "shall" is mandatory. The word "person" includes any individual, group of persons, firm, corporation, association or organization, and any legal public entity.

Common open space means a parcel or parcels of land, or a combination of land and water, within the site designated as a planned unit development, and designed and intended for the use or enjoyment of residents of the planned unit development. Common open space shall be integrated throughout the planned unit development to provide for a linked recreational/open space system. All common open space shall complement the residential uses and may contain compatible and complementary structures for the benefit and enjoyment of the residents of the planned unit development.

Development plan means the total site plan of the planned unit development drawn in conformity with the requirements of this subdivision. The development plan shall specify and clearly illustrate the location, relationship, design, nature and character of all primary and secondary uses, public and private easements, structures, parking areas, public and private roads and common open space.

Development schedule means a comprehensive statement showing the type and extent of development proposed and the order in which development is to be undertaken. A development schedule shall contain an exact description of the relative order of development of residential, non-residential, common open space and other improvements. The purpose of the development schedule is to assure that required open space is developed at a rate commensurate with the residential uses it supports, and that non-residential uses, where intended to serve residential uses within the project, are developed at a rate no faster than supporting residential uses.

Development of Regional Impact and *DRI* means a development which, because of its character, magnitude, or location, would have a substantial effect upon the health, safety, or welfare of citizens of more than one county. This term shall have the same meaning as defined in F.S. ch. 380.06. The DRI sub-designation of the PUD zoning classification is intended to implement the DRI land use designation of the county comprehensive plan for approved DRI projects with residential components. The classification and sub-designation may comprise some or all of a DRI.

Final engineered development plan means the engineered subdivision plan approved by the board of county commissioners and recorded with the clerk of the circuit court of the county according to the provisions of this subdivision, or the approved engineered site plan for any stage or tract within the PUD.

Planned unit development and *PUD* means an area of land developed as a single entity or in approved stages in conformity with a final development plan by a developer or group of developers acting jointly, which is totally planned to provide for a variety of residential and compatible uses and common open space.

Preliminary development plan means the development plan approved by the board of county commissioners and filed with approval by the county of a planned unit development zoning classification on the official zoning map of the county.

Preliminary development plan application means the application for zoning approval of the use of a site as a planned unit development and for approval of the required exhibits as specified in this subdivision.

Tract means an area delineated within a stage, except single-unit lots, which is separate unto itself, having a specific legal description of its boundaries. A tract will delineate all land uses such as common open space, recreational areas, residential areas (except single-unit lots), commercial areas and all other applicable areas.

(Code 1979, § 14-20.11(B); Ord. No. 95-48, § 1, 10-19-95; Ord. No. 03-52, § 1, 12-16-03)

Cross reference— Definitions generally, § 1-2.

Sec. 62-1442. - Same—Purpose and intent.

(a) The planned unit development is a concept which encourages and permits variation in development by allowing deviation in development standards such as, but not limited to, lot size, bulk or type of dwellings, density, lot coverage and open space from that required in any one residential zoning classification under this article. The purpose of a planned unit development is to encourage the development of planned residential neighborhoods and communities that provide a full range of residence types, as well as industrial, commercial and institutional land uses. It is recognized that only through ingenuity, imagination and flexibility can residential developments be produced which are in keeping with the intent of this subdivision while departing from the strict application of conventional use and dimension requirements of other zoning districts or other land development regulations in articles II, VI, VII, VIII, IX, or XIII of chapter 62 of the Brevard County Code.

(b) This subdivision is intended to establish procedures and standards for planned unit developments within the unincorporated areas of the county, in order that the following objectives may be attained:

(1) Accumulation of significant areas of usable open spaces for the preservation of natural amenities.

(2) Flexibility in design to take the greatest advantage of natural land, trees, historical features and other features.

(3) Creation of a variety of housing types and compatible neighborhood arrangements that give the home buyer greater choice in selecting types of environment and living units.

(4) Allowance of sufficient freedom for the developer to take a creative approach to the use of land and related physical development, as well as utilizing innovative techniques to enhance the visual character of the county.

(5) Efficient use of land which may result in smaller street and utility networks and reduce development costs.

(6) Establishment of criteria for the inclusion of compatible associated uses to complement the residential areas within the planned unit development.

(7) Simplification of the procedure for obtaining approval of proposed developments through simultaneous review by the county of proposed land use, site considerations, lot and setback considerations, public needs and requirements, and health and safety factors.

(c) In order to accomplish the objectives of this section, the applicant of a PUD may propose, and the county may consider, alternative development standards to any land development regulation in articles VI or VII of chapter 62 of the Brevard County Code. Where the PUD is part of a development of regional impact, the applicant may also propose alternative development standards to any land development regulation in articles II, VIII, IX, or XIII of chapter 62 of the Brevard County Code, in addition to those in articles VI or VII. The applicant shall justify the proposed alternative development standard(s) by describing how it promotes a development form facilitating the goals and objectives of article VI of this chapter and does not violate the purpose of this chapter for the protection of the public health, safety and welfare in the subdivision of land. The applicant shall specifically include the alternative development standard(s) in the preliminary development plan, and shall present its justification to the planning and zoning board and board of county commissioners in public hearing.

(Code 1979, § 14-20.11(A); Ord. No. 95-48, § 1, 10-19-95; Ord. No. 09-35, § 1, 12-15-09)

Sec. 62-1443. - Same—Permitted uses.

(a) The PUD zoning classification is designed to allow an applicant to submit a proposal for consideration, for any use or mixture of uses, and to allow the board of county commissioners to approve any proposal which it believes to be in the best interest of the public health, safety and welfare, along with any conditions or limitations thereon which the board of county commissioners deems advisable. Rezoning to the PUD zoning classification shall be an entirely voluntary procedure to be pursued only at the option of the applicant. Approval of the PUD zoning classification rests with the board of county commissioners, based upon its determination that the proposed development is in the best interests of the county. However no nonresidential land uses shall be permitted within the PUD unless the following criteria area met:

(1) Nonresidential land uses accessory to planned residential uses may be requested within the PUD provided they meet one of the following locational criteria.

a. Where the proposed nonresidential use is located consistent with the future land use map series; or

b. Where the proposed nonresidential use is completely internal and accessory to the proposed development and the developer demonstrates to the satisfaction of the board of county commissioners that the land uses proposed demonstrates a rational development scheme, interrelated to the development as a whole, which promotes the goals of the PUD zoning classification found in section 62-1442.

(2) Nonresidential land uses which are not permitted uses in the BU-1 zoning classification must be specified in the preliminary development plan (PDP) application. Proposed uses, setbacks, building heights, buffers and signs shall be submitted with the PDP along with a narrative justification of how these elements help meet the goals of the PUD zoning classification found in section 62-1442.

(3) Parks and public recreational facilities.

(4) Institutional uses such as, but not limited to schools, churches or other public or nonprofit uses as specifically designated on the preliminary development plan.

(5) Uses designated and permitted as part of a DRI development order.

(b) Permitted uses with conditions are as follows:

Group homes, level I development within any residential tracts, subject to the requirements set forth in section 62-1835.9.

Group homes, level II development within multi-family residential tracts, subject to the requirements set forth in section 62-1835.9.

Power substations, telephone exchanges and transmission facilities.

Preexisting use.

Resort dwellings.

(Code 1979, § 14.20.11(C); Ord. No. 95-47, § 48, 10-19-95; Ord. No. 95-48, § 1, 10-19-95; Ord. No. 96-16, § 51, 3-28-96; Ord. No. 2003-03, § 24, 1-14-03; Ord. No. 03-52, § 2, 12-16-03; Ord. No. 05-27, § 2, 5-19-05; Ord. No. 2007-59, § 27, 12-6-07)

Editor's note— Ord. No. 03-52, § 2, adopted December 16, 2003, enacted provisions designated as subsections (a)(4) and (a)(5). At the discretion of the editor, the provisions formerly designated as subsection (a)(4) have been redesignated as subsection (a)(6).

Sec. 62-1443.5. - Same—Accessory buildings and uses.

Accessory buildings or uses. Accessory buildings and uses customary to residential uses are permitted. Accessory uses customary to non-residential uses are permitted within non-residential tracts. (Refer to definition cited in section 62-1102 and standards cited in section 62-2100.5).

(Ord. No. 2002-49, § 30, 9-17-02)

Sec. 62-1444. - Same—Conditional uses.

Uses otherwise listed as conditional use permits in this division 5, subdivision III of this article may be specified as part of a preliminary development plan application process without the necessity to request a separate conditional use permit, as long as the requested use is consistent with the comprehensive plan. Owners of parcels within the PUD may request additional conditional use permits after the preliminary development plan is approved by undertaking the standard conditional use permit application process without applying for an amendment to the PUD preliminary development plan.

(Code 1979, § 14.20.11(D); Ord. No. 95-47, § 49, 10-19-95; Ord. No. 95-48, § 1, 10-19-95; Ord. No. 95-49, § 18, 1995)

Sec. 62-1445. - Same—Maintenance and operation of common facilities and common open space.

(a) Common open space, drainage systems, private roads and other related common facilities shall be maintained for their intended purpose as expressed in the final development plan. One or a combination of the following methods shall be utilized for maintaining common facilities:

(1) Maintenance may be provided for by public dedication to the county. This method is subject to formal acceptance by the county in its sole discretion.

(2) Maintenance may be provided for by establishment of an association or nonprofit corporation of all individuals or corporations owning property within the planned unit development to ensure the maintenance of all common facilities.

(3) Maintenance may be provided for by retention of ownership, control and maintenance of common facilities by the developer.

(4) The developer may also request or the county may require that the maintenance of common facilities be funded through a municipal service taxing or benefit unit as provided by F.S. § 125.01.

(5) Maintenance may be provided by a community development district or other non-profit, public or quasi-public agency whose stated purpose includes perpetual maintenance of such common facilities.

(b) All privately owned common open space shall continue to conform to its intended use and remain as expressed in the final development plan through the inclusion in all deeds of appropriate restrictions to ensure that the common open space is permanently preserved according to the final development plan. Such deed restrictions shall run with the land and be for the benefit of present as well as future property owners and shall contain a prohibition against partition.

(c) All common open space and recreational facilities shall be specifically included in the development schedule and be constructed and fully improved by the developer at an equivalent or greater rate than the construction of residential structures.

(d) If the developer elects to administer common open space through an association or nonprofit corporation, the organization shall conform to the following requirements:

(1) The developer must establish the association or nonprofit corporation prior to the sale of any lots, parcels or tracts.

(2) Membership in the association or nonprofit corporation shall be mandatory for all residential property owners within the planned unit development, and the association or corporation shall not discriminate in its members or shareholders.

(3) The association or nonprofit corporation shall manage all common open space and recreational and cultural facilities that are not dedicated to the public, and shall provide for the maintenance, administration and operation of such land and any other land within the planned unit development not publicly or privately owned, and shall secure adequate liability insurance on the land.

(4) If the developer elects an association or nonprofit corporation as a method of administering common open space, the title to all residential property owners shall include an undivided fee simple estate in all common open space, or appropriate shares in the association.

(Code 1979, § 14-20.11(E); Ord. No. 95-48, § 1, 10-19-95; Ord. No. 03-52, § 3, 12-16-03)

Sec. 62-1446. - Same—Land use regulations.

(a) *Minimum size.*

(1) The minimum size for a PUD shall be ten acres, except within the Merritt Island Redevelopment Area, where the minimum size for a PUD shall be seven acres.

(b) *Maximum density.*

(1) The average density permitted in each PUD shall be established by the board of county commissioners, upon recommendation of the planning and zoning board. The criteria for establishing an average density include existing zoning, adequacy of existing and proposed public facilities and services, site characteristics, and the recommended density of any land use involving the area in question. In no case shall the overall number of dwelling units permitted in the PUD be inordinately allocated to any particular portion of the total site area.

(2) Where a developer elects to develop the property in stages, the cumulative density with each subsequent stage must be approximately the same as the overall density approved for the entire project in that such cumulative density shall not vary upward more than two units per acre, except in the PUD-DRI classification and sub-designation, where the approved DRI maximum density shall control. Upon completion of all stages, the final density shall not exceed the density approved in the preliminary development plan.

(c) *Minimum common recreation and open space.* A portion of the gross site acreage shall be delineated as tracts for common recreation and open space to be weighted based upon the mixture of residential uses in the PUD according to the following schedule:

	Percent
Multifamily and single-family attached	25

Single-family and duplex with lots < ½ acre	10
Single-family with lots ≥ ½ acre	0

Gross site acreage, for the purpose of this section, shall be defined as the total acreage of the parcel designated PUD, less any portions that are designated for commercial, industrial or institutional use.

Regardless of the above, common recreation open space shall be provided at a minimum rate of 1.5 acres per 100 residential units, regardless of type. Required open space may be satisfied by either active recreation or passive recreation open space, as defined by section 62-1102.

Allocation of common recreation and open space facilities shall be determined utilizing the definition of the term "usable common open space" in section 62-1102.

(d) *Minimum lot area, frontage and setbacks; accessory uses.*

(1) The minimum lot size for detached single-family structures shall be an area not less than 5,000 square feet and having a width of not less than 50 feet. The minimum lot size requirement may be waived by the board of county commissioners if the proposed lot or lots all have substantial relationship to the common open space (e.g., are directly adjacent to or abut a common open space area) and the arrangement of dwelling units provides for adequate separation of units and the living area of the dwelling unit or units is properly related to the configuration of the proposed lots.

(2) Each dwelling unit or other permitted use shall have access to a public street, either directly or indirectly, via an approach private road, pedestrian way, court or other area dedicated to public or private use or common easement guaranteeing access. Permitted uses are not required to front on a publicly dedicated road. The county shall be allowed access on privately owned roads, easements and common open space to ensure the police and fire protection of the area to meet emergency needs, to conduct county services, and to generally ensure the health and safety of the residents of the PUD.

(3) Setbacks and minimum distances between structures are as follows:

a. Single-family detached structures shall be set back not less than five feet from the side lot lines for lots less than 75 feet in width. Seven and one-half feet from the side lot lines for lots at least 75 feet but less than 100 feet in width, and ten feet from the side lot lines for lots at least 100 feet in width. Single-family detached structures shall be set back not less than 20 feet from the rear lot line, except that screened porches may be set back not less than ten feet. On a corner lot, the side street setback shall be not less than 15 feet. However, if a corner lot is contiguous to a key lot, then the side setback shall be in accordance with the front setback provided in subsection (d)(4) of this section. The board of county commissioners may reduce the required side setbacks and the distances between structures provided that proposed structures do not abut utility easements or otherwise affect the ability to provide and maintain utility service to each lot.

b. Separation between structures of two stories or less shall be 15 feet.

c. Separation between structures of three stories shall be 20 feet.

d. Separation between structures of four stories shall be 25 feet.

e. Separation between structures over four stories shall be five feet for each additional story.

f. Between structures of varying heights, the larger distance separation shall be required.

(4) Except for single-family detached structures, setbacks required between the nearest part of any building wall and the edge of any public right-of-way or private street pavement shall be 25 feet unless waived by the board of county commissioners based on the recommendation of the planning and development services department and the public works department. For single-family detached structures on local public streets, the front setback shall be a minimum of 20 feet, except that an open porch attached to the residence may be set back a minimum of ten feet. On local private streets, the single-family detached structure shall be set back a minimum of 45 feet from the centerline of the private local street, except that an open porch may be set back a minimum of 35 feet from the centerline. A minimum 25-foot setback shall be maintained between the wall of any structure and the property line along the perimeter of the PUD unless waived by the board of county commissioners at the time the preliminary development plan is approved.

(5) On property bordering the ocean, a minimum of 30 percent of the ocean frontage shall be left open as breezeway/visual corridor. On property bordering a river, a minimum of 30 percent of the river frontage shall be left open as breezeway/visual corridor.

(6) On property bordering the ocean, setbacks from the ocean on oceanfront property shall be governed by the provisions of article XII of this chapter.

(7) Accessory structures shall be located behind the front building line of the principal structure. Accessory structures shall be set back not less than five feet from the side and rear lot lines for lots less than 75 feet in width, seven and one-half feet from the side and rear lot lines for lots at least 75 feet but less than 100 feet in width, and ten feet from the side and rear lot lines for lots at least 100 feet in width. On a corner lot, the side street setback shall be not less than 15 feet; however, if a corner lot is contiguous to a key lot, then the side setback shall be in accordance with the front setback provided in subsection (4), above.

(8) Nonresidential tracts shall be subject to the same development standards as are found in the BU-1-A, BU-1, BU-2 or industrial zoning classifications, as appropriate.

(e) *Maximum height of structures.*

(1) Where the property abuts any other land designated for single-family residential use or zoned for such use on the PUD preliminary or final development plan, the maximum height shall be 35 feet.

(2) Where the property abuts any other land designated for attached single-family or multifamily residential use or institutional use or zoned for such uses on the PUD preliminary or final development plan, the maximum height shall be 45 feet.

(3) Where the property abuts any other land designated for commercial use on the PUD preliminary or final development plan or zoned for commercial or industrial use, the maximum height shall be 60 feet.

(4) Where any structure or building exceeds 35 feet in height, all conditions enumerated in section 62-2101.5 as applicable shall be fully satisfied.

(5) Structures or buildings may not exceed the maximum height thresholds stated in this subsection unless otherwise permitted by section 62-2101.5.

(f) *Minimum floor area per unit.*

(1) Single-family dwellings, attached or detached: 900 square feet unless waived by the board of county commissioners.

(2) Duplex: 750 square feet per unit.

(3) Multifamily dwellings:

a. Efficiency: 400 square feet.

b. One bedroom: 500 square feet.

c. Two bedrooms: 750 square feet.

d. Three bedrooms: 900 square feet.

(4) Hotel and motel units, where permitted: 300 square feet.

(5) The internal design of the structure shall be compatible with the lot and adjacent single-family dwellings.

(g) *Parking requirements.* Where the planned unit development consists of single-family detached dwellings on platted lots of less than 6,600 square feet, the developer may be required to provide an approved designated common area for the parking of campers, travel trailers, recreational trailers and vehicles, boats and boat trailers, and other similar vehicles.

(h) *Underground utilities.* Within the PUD, all utilities, including telephone, television cable and electrical systems, shall be installed underground. Primary facilities providing service to the site of the PUD may be exempted from this requirement. Large transformers shall be placed on the ground and contained within pad mounts, enclosures or vaults. The developer must provide landscaping with shrubs and plants to screen all utility facilities permitted aboveground. The planning and zoning board may require that substations be screened by trees and shrubs or walls resembling a structure which is compatible with the design of the buildings within the PUD.

(i) *Development standards.* The minimum construction requirement for streets or roads, sidewalks, sewer facilities, utilities and drainage shall be in compliance with the requirements of article VII of this chapter, pertaining to subdivisions. Design requirements with respect to streets, sidewalks and drainage may be waived by the county commission upon the recommendation of the planning and development services department and the public works department.

(Code 1979, § 14-20.11(F); Ord. No. 95-48, § 1, 10-19-95; Ord. No. 97-43, § 1, 11-20-97; Ord. No. 01-23, § 1, 5-22-01; Ord. No. 01-30, § 8, 5-24-01; Ord. No. 03-52, § 4, 12-16-03)

Sec. 62-1447. - Reserved.

Editor's note— Ordinance No. 95-48, § 1, adopted October 19, 1995, deleted § 62-1447 in its entirety. Formerly, such section pertained to classification of applications and derived from § 14-20.11(G) of the 1979 Code.

Sec. 62-1448. - Same—Approval of preliminary development plan and tentative zoning.

(a) *Preapplication conference.* Before submission of a preliminary application for approval of a planned unit development zoning classification, the developer and his registered engineer, architects or site planner are encouraged to meet with the zoning official and such other personnel as necessary to determine the feasibility and suitability of his application. This step is encouraged so that the developer may obtain information and guidance from county personnel before entering into any binding commitments or incurring substantial expenses of site and plan preparation.

(b) *Preliminary application.*

(1) *Generally.* A preliminary application shall be submitted to the county by the developer requesting approval of the site as a planned unit development zone. The preliminary application shall contain the name of the developer, the surveyor and the engineer who prepared the development plan and topographic data map, and the name of the proposed planned unit development per the nomenclature provided in section 62-1447. (See PUD illustrations concerning the level of detail required.)

(2) *Exhibits; contents of development plan.* The following exhibits shall be attached to the preliminary application:

a. A vicinity map indicating the relationship between the planned unit development and its surrounding area, including adjacent streets and thorough- fares.

b. A development plan that shall contain but not be limited to the following information:

1. The proposed name or title of the project, and the name of the engineer, architect and developer.

2. North arrow, scale (one inch equals 200 feet or larger), date and legal description of the proposed site.

3. The boundaries of the tract shown with bearings, distances, closures and bulkhead lines, all existing easements, section lines, and all existing streets and physical features in and adjoining the project, and the existing zoning.

4. The name and location of adjoining developments and subdivisions.

5. Proposed parks, school sites or other public or private open space.

6. Vehicular and pedestrian circulation systems, including off-street parking and loading areas, driveways and access points.

7. Site data, including tabulation of the total number of gross acres in the project, the acreage to be devoted to each of the several types of primary residential and secondary nonresidential uses, and the total number of dwelling units.

8. Proposed common open space, including the proposed improvements and any complementary structures and the tabulation of the percent of the total area devoted to common open space. Areas qualifying for common open space shall be specifically designated on the site plan.

9. Delineation of specific areas designated as a proposed stage.

10. A general statement, including graphics, indicating proposed corridors of drainage and their direction, natural drainage areas, specific areas which are to function as retention lakes or ponds, anticipated method for accommodating runoff (curb and gutter, swales or other method), and treatment methods for discharge into area waterways for the site to ensure conformity with natural drainage within the vicinity area or with the drainage plan established within the vicinity area.

11. The general location within the site of each primary residential and secondary nonresidential use, and the proposed amount of land to be devoted to individual ownership.

12. The proposed method of dedication and administration of proposed common open space.

(3) *Submittal.*

a. The PUD zoning application and preliminary development plan shall be submitted concurrently to the county.

b. The application shall include 18 black or blue line prints of the development plan of the proposed planned unit development, and the required exhibits.

(4) *Review procedure.*

a. The preliminary development plan shall be reviewed formally by the county zoning office and such other departments of county government as necessary to determine the consistency of the plan with county plans and policies prior to the submission of the PUD zoning application to the planning and zoning board of the county. The planning and zoning board shall then review the preliminary plan.

b. Upon completion of its review, the planning and zoning board shall recommend to the board of county commissioners the approval, approval subject to conditions, or disapproval of the preliminary development plan application.

(5) *Review criteria.* The decision of the planning and zoning board on the preliminary development plan application shall include the findings of fact that serve as a basis for its recommendation. In making its recommendation, the planning and zoning board shall consider the following facts:

a. Degree of departure of the proposed planned unit development from surrounding residential areas in terms of character and density.

b. Compatibility within the planned unit development and relationship with surrounding neighborhoods.

c. Prevention of erosion and degrading of surrounding area.

d. Provision for future public education and recreation facilities, transportation, water supply, sewage disposal, surface drainage, flood control and soil conservation as shown in the preliminary development plan.

e. The nature, intent and compatibility of common open space, including the proposed method for the maintenance and conservation of the common open space.

f. The feasibility and compatibility of the specified stages contained in the preliminary development plan to exist as an independent development.

g. The availability and adequacy of water and sewer service to support the proposed planned unit development.

h. The availability and adequacy of primary streets and thoroughfares to support traffic to be generated within the proposed planned unit development.

i. The benefits within the proposed development and to the general public to justify the requested departure from the standard land use requirements inherent in a planned unit development classification.

j. The conformity and compatibility of the planned unit development with any adopted development plan of the county.

k. The conformity and compatibility of the proposed common open space, primary residential and secondary nonresidential uses with the proposed planned unit development.

(6) *Action by board of county commissioners.* Upon receiving the recommendation of the planning and zoning board, the board of county commissioners shall, at a regularly scheduled public meeting, review the recommendation and preliminary development plan, and either approve, approve subject to conditions, or disapprove the preliminary development plan application. Approval of the preliminary development plan indicates approval of the PUD zoning subject to acceptance of the final development plan. The decision of the board of county commissioners shall be based upon a consideration of the facts specified as review criteria for the planning and zoning board in subsection (b)(5) of this section.

(7) *Record of preliminary application.* If the preliminary development plan application is approved by the board of county commissioners, a copy of the application and required exhibits shall be maintained within the zoning division of the county.

(c) *Amendment to approved preliminary development plan.* If, after the initial approval of the PUD preliminary development plan, should the owner or applicant or his successors desire to make any changes to the preliminary development plan, such changes shall first be submitted to the county. If the zoning official deems there is a substantial change or deviation from that which is shown on the preliminary development plan, the owner or applicant shall be requested to return to the board of county commissioners where it is determined that the public interest warrants such procedure. For purposes of this subsection, a substantial change shall be defined as any change which increases the density or intensity of the project or decreases the amount of buffer areas from adjacent property

or decreases the amount of common open space. The zoning official shall have the authority to approve minor changes not determined by the director to be substantial as defined in this subsection.

(d) *Developments of regional impact (DRI).* any preliminary development plan approved under this section on a parcel that also constitutes some or all of a development of regional impact pursuant to F.S. ch. 380 shall be consistent with the provisions of this section as well as the provisions of the DRI development order and accompanying master plan. Approval of the DRI development order and master plan, including subsequent changes to such approved plan, shall constitute approval of, or changes to, the preliminary development plan, and shall not require separate action on the preliminary development plan. Any such project shall be designated as PUD-DRI on the official zoning maps.

(Code 1979, § 14-20.11(H); Ord. No. 95-48, § 1, 10-19-95; Ord. No. 97-49, § 7, 12-9-97; Ord. No. 03-52, § 5, 12-16-03)

Sec. 62-1449. - Same—Approval of final development plan; site plans.

(a) *Time limits.* The developer shall have three years from the date of the approval of the preliminary development plan for a planned unit development classification in which to file a final development plan application for the entire property or any stage thereof. However, where a preliminary development plan approved under this section also constitutes some or all of a development of regional impact pursuant to F.S. Ch. 380, such preliminary development plan shall have the same lifetime as prescribed in the development order of the DRI. At the request of the developer, the zoning official may extend the period required for filing of such application for successive periods of one year each unless and until the comprehensive plan has been amended causing the preliminary development plan to become inconsistent with the comprehensive plan.

(b) *Approval procedure; required submittals; recording of final development plan.*

(1) *Approval procedure.*

a. *Preapplication conference; coordination with county agencies.*

1. Reserved.

2. The other county departments and agencies which should be contacted for guidance prior to submittal of a final development plan are the zoning office, public safety, the public works department and environmental health services. The applicant should have the PZ Form 100 initialed by each department and division contacted.

b. *Reserved.*

(2) *Scope and contents of final development plan; recording of final development plan; site plans.* The final development plan application may request approval for the entire planned unit development or any stage designated in the preliminary development plan containing a minimum of ten acres. A final development plan, in addition to containing the exhibits, schedule, information and documents required in subsection (b)(2)a of this section, shall conform to the requirements for site plans.

a. *Exhibits; required information.* The following exhibits shall be attached to the final development plan application:

1. *Development plan.* The location and dimensions of each primary residential, secondary nonresidential and open space/recreational tract, including each tract's points of ingress and egress. The legal description of each of such tracts and the specific number of units, including the range of unit types to be constructed within each tract, shall be specified. These items will be affixed to the original linen drawing for recording purposes.

2. *Development schedule.* The development schedule shall contain the following information:

   i. The order of construction of the tracts and blocks as delineated in the preliminary development plan.

   ii. The proposed schedule for the construction and improvement of residential, non-residential, common open space, and other improvements relative to one another for the purpose described in the definition of "development schedule" as shown in section 62-1441.

(Code 1979, § 14-20.11(I); Ord. No. 95-48, § 1, 10-19-95; Ord. No. 97-49, § 8, 12-9-97; Ord. No. 03-52, § 6, 12-16-03)

Sec. 62-1450. - Same—Review of physical layout and amenities.

The county shall have the right to evaluate the physical layout, and amenities of the planned unit development and to suggest changes or modifications designed to create compatibility and conformity in the variety of uses within the development to ensure, protect and promote the health, safety and general welfare of the property owners of the planned unit development and the residents of the county.

(Code 1979, 14-20.11(J); Ord. No. 95-48, § 1, 10-19-95)

Sec. 62-1451. - Reserved.

Editor's note— Ordinance No. 95-48, § 1, adopted October 19, 1995, deleted § 62-1451 in its entirety. Formerly, such section pertained to issuance of building permits and derived from § 14-20.11(K) of the 1979 Code.

Sec. 62-1452. - Reserved.

Editor's note— Ordinance No. 95-48, § 1, adopted October 19, 1995, deleted § 62-1252 in its entirety. Formerly, such section pertained to bonds and derived from § 14-20.11(L) of the 1979 Code.

Sec. 62-1453. - Same—Termination of PUD zone.

Failure to submit final development plan. Failure of the developer to submit a final development plan for the entire development or a stage within the time periods specified in section 62-1449 shall cause approval of the complete preliminary development plan to be considered inactive pending reapplication by the applicant or administrative action by the board of county commissioners pursuant to section 62-1152.

(Code 1979, § 14-20.11(M); Ord. No. 95-48, § 1, 10-19-95)

Sec. 62-1454. - Reserved.

Editor's note— Ordinance No. 95-48, § 1, adopted October 19, 1995, deleted § 62-1454 in its entirety. Formerly, such section pertained to enforcement and derived from § 1420.11(N) of the 1979 Code.

Sec. 62-1455. - Same—Transfer of development rights.

Where a developer owns more than one tract or parcel of land within the unincorporated area of the county, and each such tract or parcel meets the minimum size requirement of ten acres, or five acres in the South Beach areas of the county, the uses permitted in a planned unit development may be transferred from one tract or parcel of land to the other tract or tracts of land provided the following conditions are met:

(1) The transfer of such uses must be justifiable as enhancing the use or nonuse of land in the public interest. The protection and preservation of some area of environmental concern is a prime example of the intent of this provision.

(2) The tracts of land need not be contiguous; however, they shall be in close proximity to each other.

(3) The activities and proposed uses of each tract must complement and be an integral part of the development of the other tract or tracts of land.

(4) The transfer of uses from one parcel to the other shall not increase the overall density permitted for the total acreage involved.

(5) When a use has been transferred from one tract of land to another, then the transfer shall be noted in the PUD file maintained by the county zoning office, and such designations and transfer of land shall become a binding condition on the use of the land for the developer and all subsequent owners of the property.

(6) The transfer of the land uses may include a transfer of primary residential uses, secondary nonresidential uses, motel and hotel units and restaurants; provided, however, the transferred motel and hotel units may only be transferred to a tract or parcel of land that meets the minimum size requirement of 20 acres.

(Code 1979, § 14-20.11(O); Ord. No. 95-48, § 1, 10-19-95; Ord. No. 97-49, § 9, 12-9-97)

State Law reference— Regulations authorizing transfer of development rights encouraged, F.S. § 163.3202(3).

Secs. 62-1456—62-1460. - Reserved.

Secs. 62-1471—62-1480. - Reserved.

Exhibit B – Applicant's Analysis of Review Criteria & Staff Response

The following exhibit has been compiled in response to the revised PDP's submittal. The **Applicant Response** language was submitted prior at the Planning & Zoning Board meeting and the **Staff Response** was compiled in response to the PDP revisions.

Sec. 62-1448. - Same—Approval of preliminary development plan and tentative zoning.

(5) *Review criteria.* The decision of the planning and zoning board on the preliminary development plan application shall include the findings of fact that serve as a basis for its recommendation. In making its recommendation, the planning and zoning board shall consider the following facts:

a. Degree of departure of the proposed planned unit development from surrounding residential areas in terms of character and density.

Applicant Response: FLU density is one unit to the acre, and this PDP is consistent with the FLU. Additionally, this PDP is consistent with the only nearby neighborhood of the Savannah's which was platted at one unit to the acre, but has lot sizes of .26 to .29 acres, or 3 to 4 units to the acre. Tranquility has 219 proposed units, Savannahs has 288.

The Character of the area is defined by the Savannah's PUD. It was initially 265.63 acres, 288 lots, 90 x 120 but some 92 x 65, even 86 x 79. Now, PUD only 97.56 acres since County owns 168.07 of PUD for Golf Course. Now 2.95 units to the acre. *See Savannah's PUD, attached.*

Staff Response: The PDP has been revised to include only single-family homes, which are proposed on a variety of proposed lot sizes, including 50' x 130', 100' x 150', and 80' x 130'. The applicant has included significant buffering between the lots proposed within the development and the surrounding property owners, including a 120' buffer from Hall Road to the south, conservation/preservation which is 211' at its narrowest point to the east, a stormwater pond which is 313' at its narrowest point to the north, and significant conservation/preservation of existing wetlands to the west.

The property is bounded to the south, across Hall Road, by the Savannah's PUD. The smallest lot size in that development is smaller in area than the smallest proposed as a part of this PUD, but does not contain any lots as narrow as those newly proposed within Tranquility Estates on the revised PDP. The property is bounded to the east by Federal Lands containing no residential development. The property is bounded to the west almost entirely by lands owned by Brevard County containing no residential development. A parcel in the southwest corner is 20+ acres in size and contains one single-family home. To the north, a 34+ acre parcel of land remains undeveloped and parcels ranging in size from one acre to eight acres in size are developed with single-family homes, which are primarily accessed by flag stems from Chase Hammock Road. Since the townhome product has been removed within the revised PDP and replaced with single-family homes, the development is consistent with the character of development in the area. The Board may wish to consider whether differences in proposed lot sizes are a departure from surrounding residential parcels.

b. Compatibility within the planned unit development and relationship with surrounding neighborhoods.

Applicant Response: Internal phasing is compatible because it keeps the Townhomes centralized, with larger lot sizes and homes to the north where larger residential parcels exist.

Staff Response: The area proposed for development is significantly buffered from surrounding neighborhoods. The revised PDP removed the townhome product and replaced it with single-family homes. The Savannah's PUD is directly south of the proposed development, across Hall Road. The subject property is 1.3 miles east of the closest residential subdivision on the same side of Hall Road. There are twenty-one other single-family homes developed on parcels ranging from one acre to twenty acres in size between the closest subdivision on the north side of Hall Road and this property.

c. Prevention of erosion and degrading of surrounding area.

Applicant Response: All construction will be per County and State codes and requirements. Substantial buffering along boundaries of property will not allow erosion or degradation of surrounding area.

Staff Response: The area proposed for development will be evaluated to ensure that it meets County code provisions during the subdivision process. The Board may wish to consider whether any of the proposed concepts within the PDP demonstrate whether degradation of the surrounding area will occur, including along the Hall Road corridor.

d. Provision for future public education and recreation facilities, transportation, water supply, sewage disposal, surface drainage, flood control and soil conservation as shown in the preliminary development plan.

Applicant Response: Development will pay substantial impact fees, including school impact fees. Potential for walking trail to be public, but it does not connect to any other trails to the north. PDP has provided for recreation, transportation, water, sewer, drainage, flood control and soil conservation – to the extent required at this stage of the process. This will be further defined during the final development plan and construction drawings.

Staff Response: The applicant has demonstrated that they are incorporating provisions for all of the facilities and infrastructure, as noted above. Further evaluation of these provisions will occur during the site development process.

e. The nature, intent and compatibility of common open space, including the proposed method for the maintenance and conservation of the common open space.

Applicant Response: Substantial open space is provided in the PDP. All of the common open space will be maintained by a HOA. Most if not all of wetland will be placed in a conservation easement with maintenance responsibilities by HOA.

Staff Response: The applicant has met the code provision for the PUD zoning classification, including active and passive open space opportunities.

f. The feasibility and compatibility of the specified stages contained in the preliminary development plan to exist as an independent development.

Applicant Response: Each phase can stand on its own, since Phase I requires the greatest amount of infrastructure improvements, and Phase II is to the north of beginning infrastructure. As mentioned, each Phase will meet the common open space and recreation requirements of the Code.

Staff Response:

g. The availability and adequacy of water and sewer service to support the proposed planned unit development.

Applicant Response: Both are available and adequate and are part of the PDP. Utility Services Director Helmer provided this information in response to request for comments.

Staff Response: Brevard County Utilities Services has indicated that there is sufficient capacity for wastewater treatment at the nearby treatment plant. City of Cocoa has available water supply adjacent to Hall Road. The applicant has demonstrated within the PDP that all units will be provided with water and sewer services.

h. The availability and adequacy of primary streets and thoroughfares to support traffic to be generated within the proposed planned unit development.

Applicant Response: The County Transportation Department reported that it had no concerns. The Transportation Concurrency Analysis opined that the trips generated by change of zoning "does not demonstrate that the impact on N. Courtenay Parkway creates a deficiency in the level of service and the corridor still remains under capacity."

Staff Response: The applicant has indicated that they planned to submit a Transportation Analysis with the revised PDP, but staff has not yet received this information for the package. The applicant will be responsible for submitting a Transportation Impact Analysis (TIA) when proposing development and submitting plans. The applicant will also be responsible for conducting traffic counts on Hall Road in order to demonstrate whether concurrency failure is indicated or whether a significant change in trip generation has occurred. The revised PDP proposes the removal of 102 townhouse units and replaces them with 65 single-family home units, resulting in an additional 26 trips per day (AADT) and 4 trips at the PM Peak Hour being generated by the newly proposed development. County staff comments have been compiled in Exhibit C.

i. The benefits within the proposed development and to the general public to justify the requested departure from the standard land use requirements inherent in a planned unit development classification.

Applicant Response: This PDP does not seek a departure from land use requirements; it is consistent with the FLU and PUD land use regulations. PUD's encourage planned residential neighborhoods with a full range of residence types. Sec. 62-1442(a). PUD objectives include: significant areas of useable open spaces for the preservation of natural amenities, flexibility in design to take advantage of natural land, variety of housing types to give home buyer great choice, efficient use of land.

Per the open space subdivision ordinance, clustering of development is permitted to encourage the efficient use of land, smaller lot sizes and interconnected open spaces.

Many new jobs coming to this area, and new and various housing options are needed in Central Brevard.

Staff Response: The revised PDP depicts the developer's proposed on-site amenities, including an exercise trail, pool and cabana, several gazebos near stormwater lakes, a passive park, and a playground park. The Board may wish to evaluate whether these benefits within the development and to the public justify the request.

j. The conformity and compatibility of the planned unit development with any adopted development plan of the county.

Applicant Response: This PDP/PUD conforms to the FLU of the County, and is consistent with the Savannah's PUD to the south.

Staff Response: The proposed PUD Zoning classification and overall density of the project is consistent with the Residential 1 (Res 1) Future Land Use designation. The Board may wish to evaluate whether the proposal conforms with the surrounding area.

k. The conformity and compatibility of the proposed common open space, primary residential and secondary nonresidential uses with the proposed planned unit development.

Applicant Response: The open spaces and residential uses are appropriate for the proposed PUD. It meets the land regulations for a PUD, and provides a variety of housing options and recreation, as anticipated by the PUD ordinances.

Staff Response: The development proposes to construct sidewalk along hall road and a potentially publically accessible walking trail within the development, along its eastern boundary. The primary single-family residential product conforms with the surrounding development. The Board may wish to consider whether the lot sizes proposed are consistent with the surrounding development trends.

Planning & Development Department
2725 Judge Fran Jamieson Way
Building A, Room 114
Viera, Florida 32940

BOARD OF COUNTY COMMISSIONERS

Exhibit C – Revised Preliminary Development Plan (Received 5/14/2018) Staff Comments

DATE: May 21, 2018

TO: Board of County Commissioners

THRU: Tad Calkins, Planning & Development Director
Erin Sterk, Planning & Zoning Manager

FROM: George C. Ritchie, Planner III

Project Name: **Tranquility Estates**
Application Number: **18PZ00009**
Owner/Applicant Name: **Horizon Title Company, Inc. / Kimberly Rezanka, Esq.**

RE: Amended Review Comments for the above mentioned zoning application.

This application was reviewed for compliance with Section 62-1448 of Brevard County Code. The following comments were received from several of the review agencies. Some of the agency comments may be regarding details that will be analyzed during the subsequent site plan and plat reviews, but are included as they may affect layout, design, or lot yield depicted on the Preliminary Development Plan.

ADDRESS ASSIGNMENT - 321-690-6846 Regina Mahaney, 911 Database/Addressing Coordinator
Address Assignment has no further comments at this time based on what has been submitted. Our comments forwarded in the attached email dated 5/14/18 remain valid.

Prior comment: Based on the attached updated page #1 sheet, Address Assignment will require 5 street name choices to be submitted for review and approval. Also, in 9-1-1 records, the main intersecting roadway with the project is named as (E. Hall Road) versus East Hall Road. The applicant may contact our office for street name choices that are still available from prior approvals in 2005 for the former project Mission Estates. For addressing purposes, we would like to see the lot numbering for Blocks I, J, K, and L on this master layout sheet and any further overall layout sheets.

ENGINEERING DESIGN - 321-637- 5437 Rachael Gerena
Please see comments below:

1. Please add the Brevard County Public Works Standard Development Notes and applicable Brevard County Land Development (BCLD) exhibits to the plans. These are available at http://www.brevardfl.gov/PublicWorks/Engineering. Please do not remove the border from the notes or exhibits when adding them to the plans.
2. Please provide sufficient topographic information to determine on- and off-site drainage flows.
3. Please address if there will be parking for the pool active open space amenities.
4. Please provide sidewalk connections from the roadside sidewalk to all active amenity areas.
5. Please ensure the plans are designed in accordance with the latest FDOT design standards and specifications.
6. Provide engineering plans with sufficient geometry and details for the constructability of all improvements, driveways, parking, sidewalk, drainage, retention area, etc.

7. Where new pavement is constructed adjacent to existing pavement, the asphalt shall be saw cut and removed 12 inches from the edge of the existing asphalt to offset the asphalt/base course joint. Please provide detail.
8. Please provide signed and sealed stormwater calculations in accordance with Brevard County Stormwater Criteria, Section 62-3751, Exhibit A.:
    a. Calculations should demonstrate that the post development stage and discharge rates do not exceed the pre-development stage and rates for the 25-yr, 24-hr storm event for a retention pond with outfall. If no outfall is provided, the calculations must be based on the 25-yr/96-hr storm event.
    b. Include treatment and drawdown calculations.
    c. Provide soil report verifying the seasonal high ground water level and normal water level within the retention area. The soil sample is to be taken within the proposed retention pond. Permeability tests are required where infiltration calculations are used. The soil report shall be signed and sealed by a Florida licensed soils engineer.
9. Please provide soil borings every 500' for all roadways.
10. Please provide plan and profile for all roadways.
11. Please note that all phases must be designed in a manner that allows them to stand on their own.
12. Please ensure that the entrance is designed in accordance with Land Development Exhibit 12.
13. Lot line drainage pipes are proposed in easements within the 50' wide lots. Will these fit without encroachment on such a small lot? Staff recommends putting in a wider lot at these locations or placing the pipe within a tract.

FIRE RESCUE - 321-637- 5660 Frank Scates, Fire Marshal
Fire Rescue has reviewed the drawings has no comments other than the location of fire hydrants and roadway markers will be addressed on the subdivision plan.

LANDSCAPE/CLEARING/ NATURAL RESOURCES - 321-633- 2016 Jeanne Allen
Natural resources has nothing to add regarding wetlands, soils, flood, etc. The P&Z comments already submitted with the package are sufficient. We would like to make tree preservation comments on the latest revised PDP as follows:

1. Three of the Live Oaks do not show diameter at breast height (DBH). DBH's are helpful in determining preservation prioritization (e.g. a Live Oak with 54.5 inch DBH is classified as a Heritage/Specimen tree, while a Live Oak with 15.5 inch DBH is classified as a Protected tree). Section 62-4331(3) of the Landscape Ordinance states that the Board of County Commissioners finds the health, safety and welfare of its citizens can best be protected by land use regulations that support and enforce the protection of Heritage or Specimen Trees. Section 62-4341(18) states Specimen and Protected trees shall be preserved or relocated onsite to the Greatest Extent Feasible. Greatest Extent Feasible includes but is not limited to, relocation of roads, buildings, ponds, increasing building height to reduce building footprint or reducing vehicular use areas/parking.
2. The proposed pool location is too close to the northern most Live Oak (unknown DBH). Is it possible to swap the pool and tennis court locations so the tree could provide afternoon shade for the tennis courts, or shift the amenities so the Live Oak can be preserved?
3. As presented, it is not possible to preserve a 54.5 inch DBH Heritage/Specimen Oak (photo attached below) that resides where the storm water lake is proposed, or the Live Oak (unknown DBH) that resides where Block L is proposed. Specimen and Protected trees shall be preserved or relocated onsite to the Greatest Extent Feasible.
4. The applicant is advised to refer to Article XIII, Division 2, entitled Land Clearing, Landscaping, and Tree Protection, for specific requirements for preservation and canopy coverage requirements. Land clearing is not permitted without prior authorization by NRM.
5. The subject parcel contains mapped NWI and SJRWMD wetlands and hydric soils (Floridana sand, Anclote sand, Copeland-Bradenton-Wabasso complex-limestone, and St. Johns sand-depressional), indicators that wetlands may be present on the property. Per Section 62-3694(c)(1), residential land uses within wetlands shall be limited to not more than one (1) dwelling unit per five (5) acres unless

strict application of this policy renders a legally established parcel as of September 9, 1988, which is less than five (5) acres, as unbuildable. For subdivisions greater than five acres in area, the preceding limitation of one dwelling unit per five (5) acres within wetlands may be applied as a maximum percentage limiting wetland impacts to not more than 1.8% of the total non-commercial and non-industrial acreage on a cumulative basis as set forth in Sec. 65-3694(c)(6). Any permitted wetland impacts must meet the requirements of Section 62-3694(e) and 62-3696. The applicant is encouraged to contact NRM at 321-633-2016 prior to any land clearing activities, site plan or permit submittal.

6. The subject parcel contains mapped aquifer recharge soils (Pomello sand and St. Johns sand-depressional). The applicant is hereby notified of the development and impervious restrictions within Conservation Element Policy 10.2 and the Aquifer Protection Ordinance.
7. A portion of the property is mapped as being within the floodplain as identified by the Federal Emergency Management Agency; and is subject to the development criteria in Conservation Element Objective 4, its subsequent policies, and the Floodplain Ordinance.
8. Information available to NRM indicates that federally and/or state protected species may be present on the property. Specifically, gopher tortoises can be found in areas of aquifer recharge soils. Prior to any plan, permit submittal, or development activity, including land clearing, the applicant should obtain any necessary permits or clearance letters from the Florida Fish and Wildlife Conservation Commission and/or U.S. Fish and Wildlife Service, as applicable.

PARKS AND RECREATION – 321-633-2046 Terry Stoms, Special Projects Coordinator III
The calculations of active open space acreage - they state the acreage of the exercise trail is based on a 20 foot width but the trail is only 10' wide. This gives an acreage of 1.65 acres that puts them above the minimum requirement for active recreation acreage. If you use the 10' width, there is not enough active recreation acreage. Also on sheet 4 of 4 the same area is listed as 7.84 acres.

PUBLIC WORKS – 321-617-7202 Andrew Holmes, Director
No response.

ROAD AND BRIDGE - 321-690-6877 – Susan Jackson, Area Manager
No response.

SURVEY - 321-633- 2080 – Mike Sweeney
They have denoted Hall Road as a private right of way on the plat. This needs to be a 50' public right of way dedicated to the public.

TRAFFIC ENGINEERING - 321-633- 2077 Corrina Gumm, P.E., Engineer III
Traffic Engineering has performed a brief review of the Traffic Impact Study dated May 2018. It should be noted that a more thorough review will be performed during the site development and permitting phase.

1. According to the study, right and left turn auxiliary lanes on Hall Road are not warranted at the project entrance. Based on our review of the traffic volume data on Hall Road, we are in agreement with this conclusion.
2. Queuing length provided at the entrance gate will be reviewed as part of the site development plan permitting.
3. Upon submittal of a Traffic Impact Study with the Site Development Application, the project study area shall include the intersections of SR 3/N. Courtenay Parkway and SR 528 eastbound and westbound ramps, as these intersections are within the 3 mile radius which depicts the study area as shown in Figure 1.
4. The revised Traffic Impact Study shall also include a queuing analysis of the westbound left turn movement at Hall Road and SR. 3/N. Courtenay Parkway.

UTILITY SERVICES - 321-633- 2091 Mark Reagan or Don Kean
No response.

ZONING - 321-633-2070 George C. Ritchie, Planner III
The following zoning comments are being generated due to the proposed Preliminary Development Plan (PDP) revision.

1. The revised PDP proposes the removal of 102 townhouse units and replaces them with an additional 65 single-family home sites bringing the total count to 182 lots. Although the unit count has decreased from 219 MF/SF units to 182 SF units (a reduction of 37 units), this change results in an additional 26 trips per day (AADT) and 12 trips at the PM Peak Hour being generated by the new development style.
2. As an architect still has not been designated for this project, issues such as development style and building height remain as at large issues. Minimum living area for each lot type has not been addressed. Within the PUD code, the minimum living area for a single-family residence is 900 square feet unless waived by the board of county commissioners. The Board may wish to require a larger minimum living area than the code requirement for the various phased lot sizes.
3. Although single-family development requires a smaller open space requirement than townhouse/multi-family development, it appears that sufficient open space acreage has been identified both as active and passive open space tracts; however, the exercise trail appears to be excessively wide unless exercise stations are provided and their locations depicted on the plan. Other passive uses could also be placed on the trail such as benches, water fountains and shade structures for those needing a short respite. A discrepancy has been noted between Sheet #1 & Sheet #4. On Sheet #1 the exercise trail is identified at 1.65 acres, however, on Sheet #4 the acreage has been identified at 7.840 acres. The incorrect page needs to be updated/replaced and total open space acreage revised. Additionally is the trail utilizing a concrete paved path 10 feet in width or is some other type of improved trail surface proposed? Please identify the exercise trail surface.
4. Tract "F" identified on Sheet #4 doesn't appear to meet size requirements to meet open space credit. Please check and adjust track uses or identify an active/passive recreation use to qualify this tract for credit.
5. Secondary emergency access road has been removed. Project now has only one entrance/exit. No other agency has commented on this aspect.
6. Section 62-1446 (g) requires: Parking requirements. Where the planned unit development consists of single-family detached dwellings on platted lots of less than 6,600 square feet, the developer may be required to provide an approved designated common area for the parking of campers, travel trailers, recreational trailers and vehicles, boats and boat trailers, and other similar vehicles. The applicant is proposing 67 lots at (50' x 130' = 6500 square feet) lots. The Board may wish to consider whether a storage/parking area should be designated.

BOARD OF COUNTY COMMISSIONERS

Rita Pritchett, District 1 Commissioner
2000 South Washington Avenue, Ste. 2
Titusville, FL 32780
(321) 607-6901
D1.commissioner@brevardfl.gov

Planning and Development
Zoning Meeting April 30, 2018
Tranquility Estates/Horizon Title (18PZ00009)

Commissioner Pritchett met with Kimberly Rezanka on April 30, 2018. The commissioner listened to Ms. Rezanka concerning the project Tranquility Estates/Horizon Title, 18PZ00009. Ms. Rezanka overviewed Planning and Zoning concerns and ideas to have solutions for their concerns.

/csm

Jones, Jennifer

From: Sterk, Erin
Sent: Monday, April 30, 2018 11:58 AM
To: Jones, Jennifer
Subject: FW: Meeting Disclosure (IV F)

From: Tobia, John
Sent: Friday, April 27, 2018 10:06 AM
To: Sterk, Erin
Subject: Meeting Disclosure (IV F)

April 27, 2018

To: Erin Sterk, Interim Planning & Zoning Manager
From: John Tobia, Brevard County Commissioner, District 3
Re: Meeting Disclosure

Ms. Sterk:

In regards to the upcoming agenda item IV.F for the Planning & Zoning meeting on May 3rd, 2018, please be advised in advance that a meeting that took place on April 26th, at 2:30 PM at Commissioner Tobia's office, located at:

2539 Palm Bay Rd. NE
Ste. 4
Palm Bay, FL 32908

The parties present were Commissioner Tobia and Chad Genoni.

This meeting lasted approximately thirty minutes, during which the above individual provided information on his desired change in zoning classification.

Sincerely,

John Tobia
County Commissioner, District 3

Brevard
COUNTY

BOARD OF COUNTY COMMISSIONERS

School Board of Brevard County
2700 Judge Fran Jamieson Way • Viera, FL 32940-6699
Desmond K. Blackburn, Ph.D., Superintendent

18PZ00009
School Concurrency
Horizon Title Co.

Brevard Public Schools

January 19, 2018

Mr. Paul Body
Planning & Development Department
Brevard County Board of County Commissioners
2725 Judge Fran Jamieson Way
Viera, Florida 32940

RE: Proposed Mission Estates Subdivision Rezoning
School Impact Analysis – Capacity Determination CD-2018-01

Dear Mr. Body,

We received a completed *School Facility Planning & Concurrency Application* for the referenced development on January 9, 2018. The subject property consists of one parcel, tax account number 2318755, containing approximately 219 acres in Brevard County, Florida. The proposed Rezoning would result in an increase in the number of residential units permitted by 132 dwelling units. The School Concurrency Determination of this proposed development has been undertaken based on the maximum proposed development of 219 single family homes. The following information is provided for your use.

The calculations used to analyze the prospective student impact are consistent with the methodology outlined in Section 13.2 of the *Interlocal Agreement for Public School Facility Planning & School Concurrency (ILA-2014)*. The following capacity analysis is performed using capacities/projected students as shown in years 2017-18 to 2021-22 of the *Brevard County Public Schools Financially Feasible Plan for School Years 2016-2017 to 2021-22* which is attached for reference.

Single Family	219		
Students Generated	**Student Generation Rates**	**Calculated Students Generated**	**Rounded Number of Students Generated**
Elementary	0.28	61.32	61
Middle	0.08	17.52	18
High	0.16	35.04	35
Total	**0.52**		**114**

RECEIVED
JAN 23 2018
BY:

Planning & Project Management
Facilities Services
Phone: (321) 633-1000 x450 • FAX: (321) 633-4646

FISH Capacity (including relocatables) from the Financially Feasible Plan Data and Analysis for School Years 2017-18 to 2021-22

School	2018-19	2019-20	2020-21	2021-22	2022-23
Carroll	751	751	751	751	751
Jefferson	854	854	854	854	854
Merritt Island	1,915	1,915	1,915	1,915	1,915

Projected Student Membership

School	2018-19	2019-20	2020-21	2021-22	2022-23
Carroll	641	629	634	652	632
Jefferson	610	669	711	733	735
Merritt Island	1,575	1,516	1,583	1,646	1,739

Students Generated by Previously Issued SCADL Reservations

School	2018-19	2019-20	2020-21	2021-22	2022-23
Carroll	85	93	101	101	101
Jefferson	28	37	45	45	45
Merritt Island	54	72	88	79	79

Cumulative Students Generated by Proposed Development

School	2018-19	2019-20	2020-21	2021-22	2022-23
Carroll	-	15	31	46	61
Jefferson	-	4	9	13	18
Merritt Island	-	9	18	26	35

Total Projected Student Membership (includes Cumulative Impact of Proposed Development)

School	2018-19	2019-20	2020-21	2021-22	2022-23
Carroll	726	737	766	799	794
Jefferson	638	710	765	791	798
Merritt Island	1,629	1,597	1,689	1,751	1,853

Projected Available Capacity = FISH Capacity - Total Projected Student Membership

School	2018-19	2019-20	2020-21	2021-22	2022-23
Carroll	25	14	(15)	(48)	(43)
Jefferson	216	144	89	63	56
Merritt Island	286	318	226	164	62

At this time, the concurrency service area for the elementary school level is projected to have insufficient capacity to accommodate the maximum potential residential development resulting from the Mission Estates Subdivision rezoning.

Because there is a shortfall of available capacity in the concurrency service area of the Mission Estates Subdivision, the capacity of adjacent concurrency service areas must be considered, per Interlocal Agreement Section 13.2(e). The adjacent Elementary School Concurrency Service Areas are those of Audubon Elementary and MILA Elementary. A table of capacities of the *Adjacent School Concurrency Service Areas* that could accommodate the impact of the Mission Estates Subdivision is shown.

FISH Capacity (including relocatables) from the Financially Feasible Plan Data and Analysis for School Years 2017-18 to 2021-22

School	2018-19	2019-20	2020-21	2021-22	2022-23
Audubon	761	761	761	761	761

Projected Student Membership

School	2018-19	2019-20	2020-21	2021-22	2022-23
Audubon	593	583	598	590	589

Students Generated by Previously Issued SCADL Reservations

School	2018-19	2019-20	2020-21	2021-22	2022-23
Audubon	85	93	101	101	101

Cumulative Students Generated by Proposed Development

School	2018-19	2019-20	2020-21	2021-22	2022-23
Audubon	-	15	31	46	61

Total Projected Student Membership (includes Cumulative Impact of Proposed Development)

School	2018-19	2019-20	2020-21	2021-22	2022-23
Audubon	678	691	730	737	751

Projected Available Capacity = FISH Capacity - Total Projected Student Membership

School	2018-19	2019-20	2020-21	2021-22	2022-23
Audubon	83	70	31	24	10

Considering the adjacent elementary school concurrency service areas, there is sufficient capacity for the total projected student membership to accommodate the Mission Estates Subdivision rezoning.

This is a **non-binding** review; a *Concurrency Determination* must to be performed by the School District prior to a Final Development Order and the issuance of a Concurrency Evaluation Finding of Nondeficiency by the Local Government.

We appreciate the opportunity to review this proposed project. Please let us know if you require additional information.

Sincerely,

David G. Lindemann, AICP
Manager Facilities Planning & Intergovernmental Relations

Enclosure: *Brevard County Public Schools Utilization 2016-17 to 2021-22*

Copy: Susan Hann, P.E., AICP, Director of Planning & Project Management
File CD-2018-01

Brevard County Public Schools
Financially Feasible Plan To Maintain Utilization Rates Lower than the 100% Level of Service
Data and Analysis for School Years 2016-17 to 2021-22

Summary	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Highest Utilization Elementary Schools:	98%	99%	100%	100%	99%	100%
Highest Utilization Middle Schools:	89%	87%	94%	97%	99%	99%
Highest Utilization Jr / Sr High Schools:	88%	90%	97%	100%	100%	100%
Highest Utilization High Schools:	99%	99%	100%	100%	100%	100%

				School Year 2016-17			School Year 2017-18			School Year 2018-19			School Year 2019-20			School Year 2020-21			School Year 2021-22		
School	Type	Grades	Utilization Factor	FISH Capacity	10/17/16 Member-ship	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization
Elementary School Concurrency Service Areas																					
Allen	Elementary	PK-6	100%	751	632	84%	751	638	85%	751	667	89%	751	695	93%	751	707	94%	751	694	92%
Andersen	Elementary	K-6	100%	884	701	79%	884	704	80%	884	715	81%	884	726	82%	884	713	81%	884	686	78%
Apollo	Elementary	K-6	100%	902	815	90%	902	805	89%	902	815	90%	902	850	94%	902	837	93%	902	841	93%
Atlantis	Elementary	PK-6	100%	703	648	92%	703	661	94%	703	694	99%	703	689	98%	703	692	98%	725	722	100%
Audubon	Elementary	PK-6	100%	761	599	79%	761	593	78%	761	583	77%	761	598	79%	761	590	78%	761	589	77%
Cambridge	Elementary	PK-6	100%	765	640	84%	765	658	86%	765	674	88%	765	694	91%	765	717	94%	765	735	96%
Cape View	Elementary	PK-6	100%	548	426	78%	548	421	77%	548	421	77%	548	413	75%	548	420	77%	548	422	77%
Carroll	Elementary	K-6	100%	751	660	88%	751	641	85%	751	629	84%	751	634	84%	751	652	87%	751	632	84%
Challenger 7	Elementary	PK-6	100%	573	525	92%	573	532	93%	573	554	97%	573	570	99%	595	580	97%	595	583	98%
Columbia	Elementary	PK-6	100%	751	544	72%	751	507	68%	751	538	72%	751	539	72%	751	524	70%	751	540	72%
Coquina	Elementary	K-6	100%	693	523	75%	693	531	77%	693	543	78%	693	546	79%	693	545	79%	693	551	80%
Creel	Elementary	PK-6	100%	1,154	940	81%	1,154	936	81%	1,154	973	84%	1,154	1,001	87%	1,154	1,029	89%	1,154	1,066	92%
Croton	Elementary	PK-6	100%	795	615	77%	795	619	78%	795	644	81%	795	669	84%	795	694	87%	795	719	90%
Discovery	Elementary	PK-6	100%	980	625	64%	980	634	65%	980	619	63%	980	611	62%	980	618	63%	980	634	65%
Endeavour	Elementary	PK-6	100%	990	890	90%	990	892	90%	990	941	95%	990	980	99%	990	981	99%	990	990	100%
Enterprise	Elementary	K-6	100%	729	543	74%	729	530	73%	729	499	68%	729	473	65%	729	450	62%	729	441	60%
Fairglen	Elementary	PK-6	100%	753	703	93%	753	707	94%	753	755	100%	819	820	100%	885	878	99%	951	927	97%
Gemini	Elementary	K-6	100%	711	451	63%	711	418	59%	711	407	57%	711	394	55%	711	390	55%	711	372	52%
Golfview	Elementary	PK-6	100%	777	619	80%	777	635	82%	777	650	84%	777	681	88%	777	707	91%	777	727	94%
Harbor City	Elementary	PK-6	100%	629	401	64%	629	387	62%	629	411	65%	629	427	68%	629	426	68%	629	431	69%
Holland	Elementary	PK-6	100%	605	466	77%	605	450	74%	605	462	76%	605	482	80%	605	517	85%	605	539	89%
Imperial Estates	Elementary	K-6	100%	729	718	98%	729	677	93%	729	678	93%	729	671	92%	729	673	92%	729	683	94%
Indialantic	Elementary	K-6	100%	798	751	94%	798	730	91%	798	735	92%	798	729	91%	798	736	92%	798	743	93%
Jupiter	Elementary	PK-6	100%	930	793	85%	930	761	84%	930	808	87%	930	822	88%	930	824	89%	930	825	89%
Lockmar	Elementary	PK-6	100%	892	728	82%	892	728	82%	892	743	83%	892	747	84%	892	739	83%	892	746	84%
Longleaf	Elementary	PK-6	100%	790	683	86%	790	700	89%	790	721	91%	790	720	91%	790	712	90%	790	716	91%
Manatee	Elementary	K-6	100%	954	864	91%	954	864	91%	954	943	99%	954	938	98%	954	940	99%	954	924	97%
McAuliffe	Elementary	PK-6	100%	918	786	86%	918	784	85%	918	800	87%	918	783	85%	918	761	83%	918	768	84%
Meadowlane Intermediate	Elementary	3-6	100%	1,114	1,010	91%	1,114	1,000	90%	1,114	1,017	91%	1,114	1,028	92%	1,114	1,058	95%	1,136	1,121	99%
Meadowlane Primary	Elementary	K-6	100%	824	748	91%	824	742	90%	824	827	100%	890	883	99%	912	905	99%	912	912	100%
Mila	Elementary	PK-6	100%	707	534	76%	707	538	76%	707	554	78%	707	563	80%	707	571	81%	707	596	84%
Mims	Elementary	PK-6	100%	725	485	67%	725	501	69%	725	520	72%	725	549	76%	725	577	80%	725	611	84%
Oak Park	Elementary	PK-6	100%	950	922	97%	950	944	99%	972	966	99%	1,016	1,004	99%	1,038	1,029	99%	1,060	1,047	99%
Ocean Breeze	Elementary	PK-6	100%	654	519	79%	654	525	80%	654	509	78%	654	485	74%	654	483	74%	654	475	73%
Palm Bay	Elementary	PK-6	100%	1,005	799	80%	1,005	796	79%	1,005	822	82%	1,005	820	82%	1,005	810	81%	1,005	791	79%
Pinewood	Elementary	PK-6	100%	551	530	96%	551	544	99%	595	576	97%	639	606	95%	639	632	99%	683	670	98%
Port Malabar	Elementary	PK-6	100%	852	741	87%	852	744	87%	852	780	92%	852	775	91%	852	764	90%	852	782	92%
Quest	Elementary	PK-6	100%	950	900	95%	1,016	1,000	98%	1,060	1,059	100%	1,126	1,125	100%	1,148	1,133	99%	1,148	1,098	96%
Riviera	Elementary	PK-6	100%	777	647	83%	777	655	84%	777	735	95%	777	768	99%	799	784	98%	799	801	100%
Roosevelt	Elementary	K-6	100%	599	359	60%	599	360	60%	599	361	60%	599	361	60%	599	348	58%	599	360	60%
Sabal	Elementary	PK-6	100%	785	550	70%	785	546	70%	785	554	71%	785	569	72%	785	572	73%	785	587	75%
Saturn	Elementary	PK-6	100%	976	763	78%	976	750	77%	976	747	77%	976	761	78%	976	769	79%	976	759	78%
Sea Park	Elementary	PK-6	100%	461	339	74%	461	322	70%	461	306	66%	461	314	68%	461	312	68%	461	306	66%
Sherwood	Elementary	PK-6	100%	609	485	80%	609	480	79%	609	482	79%	609	499	82%	609	506	83%	609	488	80%
Sunrise	Elementary	PK-6	100%	895	841	94%	895	858	96%	895	849	95%	895	823	92%	895	799	89%	895	787	88%
Suntree	Elementary	K-6	100%	755	657	87%	755	654	87%	755	619	82%	755	572	76%	755	548	73%	755	519	69%
Surfside	Elementary	K-6	100%	523	475	91%	523	468	89%	523	469	90%	523	483	92%	523	494	94%	523	513	98%
Tropical	Elementary	K-6	100%	910	787	86%	910	798	88%	910	815	90%	910	820	90%	910	839	92%	910	841	92%
Turner	Elementary	PK-6	100%	874	631	72%	874	636	73%	874	655	75%	874	640	73%	874	624	71%	874	592	68%
University Park	Elementary	PK-6	100%	811	546	67%	811	544	67%	811	653	81%	811	708	87%	811	711	88%	811	722	89%
Westside	Elementary	K-6	100%	857	712	83%	857	719	84%	857	723	84%	857	692	81%	857	658	77%	857	632	74%
Williams	Elementary	PK-6	100%	715	581	81%	715	581	81%	715	592	83%	715	596	83%	715	599	84%	715	617	86%
Elementary Totals				**41,095**	**33,850**		**41,161**	**33,868**		**41,271**	**34,812**		**41,557**	**35,346**		**41,733**	**35,575**		**41,909**	**35,873**	

School	Type	Grades	Utilization Factor	School Year 2016-17			School Year 2017-18			School Year 2018-19			School Year 2019-20			School Year 2020-21			School Year 2021-22		
				FISH Capacity	10/17/16 Member-ship	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization
ool Concurrency Service Areas																					
Central	Middle	8-Jul	90%	1,525	1,098	72%	1,525	1,129	74%	1,525	1,213	80%	1,525	1,325	87%	1,525	1,381	91%	1,525	1,354	89%
DeLaura	Middle	8-Jul	90%	941	703	75%	941	728	77%	941	740	79%	941	774	82%	941	769	82%	941	757	80%
Hoover	Middle	8-Jul	90%	659	509	77%	659	515	78%	659	460	70%	659	456	69%	659	474	72%	659	484	73%
Jackson	Middle	8-Jul	90%	654	584	89%	654	566	87%	654	613	94%	654	636	97%	654	635	97%	654	614	94%
Jefferson	Middle	8-Jul	90%	854	606	71%	854	610	71%	854	668	78%	854	711	83%	854	733	86%	854	735	86%
Johnson	Middle	8-Jul	90%	1,000	791	79%	1,000	791	79%	1,000	802	80%	1,000	810	81%	1,000	883	88%	1,000	868	87%
Kennedy	Middle	8-Jul	90%	813	632	78%	813	633	78%	813	645	79%	813	679	84%	813	741	91%	813	767	94%
Madison	Middle	8-Jul	90%	743	444	60%	743	450	61%	743	480	65%	743	533	72%	743	565	76%	743	562	76%
McNair	Middle	8-Jul	90%	611	456	75%	611	455	74%	611	443	73%	611	471	77%	611	481	79%	611	466	76%
Southwest	Middle	8-Jul	90%	1,177	880	75%	1,177	892	76%	1,177	895	76%	1,177	987	84%	1,177	1,041	88%	1,177	985	84%
Stone	Middle	8-Jul	90%	1,013	839	83%	1,013	800	79%	1,013	841	83%	1,013	877	87%	1,032	1,025	99%	1,072	1,059	99%
Middle Totals				**9,990**	**7,542**		**9,990**	**7,569**		**9,990**	**7,801**		**9,990**	**8,259**		**10,010**	**8,708**		**10,049**	**8,651**	
gh School Concurrency Service Areas																					
Cocoa	Jr / Sr High	PK, 7-12	90%	1,782	1,572	88%	1,782	1,599	90%	1,782	1,724	97%	1,850	1,858	100%	2,007	2,012	100%	2,142	2,147	100%
Cocoa Beach	Jr / Sr High	12-Jul	90%	1,466	1,064	73%	1,466	1,017	69%	1,466	976	67%	1,466	969	66%	1,466	961	66%	1,466	956	65%
Space Coast	Jr / Sr High	12-Jul	90%	1,812	1,519	84%	1,812	1,520	84%	1,812	1,485	82%	1,812	1,526	84%	1,812	1,590	88%	1,812	1,606	89%
Jr / Sr High Totals				**5,060**	**4,155**		**5,060**	**4,136**		**5,060**	**4,185**		**5,128**	**4,353**		**5,285**	**4,563**		**5,420**	**4,709**	
chool Concurrency Service Areas																					
Astronaut	High	12-Sep	95%	1,446	1,132	78%	1,446	1,124	78%	1,446	1,125	78%	1,446	1,159	80%	1,446	1,233	85%	1,446	1,314	91%
Bayside	High	12-Sep	95%	2,235	1,712	77%	2,235	1,684	75%	2,235	1,733	78%	2,235	1,697	76%	2,235	1,705	76%	2,235	1,789	80%
Eau Gallie	High	PK, 9-12	95%	2,186	1,672	76%	2,186	1,639	75%	2,186	1,693	77%	2,186	1,784	82%	2,186	1,834	84%	2,186	1,900	87%
Heritage	High	12-Sep	95%	2,314	1,855	80%	2,314	1,784	77%	2,314	1,778	77%	2,314	1,769	76%	2,314	1,846	80%	2,314	1,928	83%
Melbourne	High	12-Sep	95%	2,317	2,304	99%	2,317	2,300	99%	2,385	2,374	100%	2,460	2,471	100%	2,460	2,468	100%	2,602	2,601	100%
Merritt Island	High	PK, 9-12	95%	1,915	1,574	82%	1,915	1,575	82%	1,915	1,516	79%	1,915	1,583	83%	1,915	1,646	86%	1,915	1,739	91%
Palm Bay	High	PK, 9-12	95%	2,613	1,637	63%	2,613	1,635	63%	2,613	1,659	63%	2,613	1,786	68%	2,613	1,820	70%	2,613	1,897	73%
Rockledge	High	12-Sep	95%	1,689	1,460	86%	1,689	1,470	87%	1,689	1,515	90%	1,689	1,522	90%	1,689	1,485	88%	1,689	1,458	86%
Satellite	High	PK, 9-12	95%	1,516	1,356	89%	1,516	1,325	87%	1,516	1,345	89%	1,516	1,332	88%	1,516	1,357	90%	1,516	1,404	93%
Titusville	High	12-Sep	95%	1,872	1,394	74%	1,872	1,395	75%	1,872	1,437	77%	1,872	1,429	76%	1,872	1,468	78%	1,872	1,488	79%
Viera	High	PK, 9-12	95%	2,253	2,117	94%	2,253	2,150	95%	2,253	2,188	97%	2,253	2,233	99%	2,253	2,235	99%	2,348	2,337	100%
High Totals				**22,356**	**18,213**		**22,356**	**18,081**		**22,404**	**18,363**		**22,499**	**18,765**		**22,499**	**19,097**		**22,736**	**19,855**	
ce (Not Concurrency Service Areas)																					
Freedom 7	Elementary	K-6	100%	475	409	86%	475	414	87%	475	414	87%	475	414	87%	475	414	87%	475	414	87%
Stevenson	Elementary	K-6	100%	569	484	85%	569	508	89%	569	508	89%	569	508	89%	569	508	89%	569	508	89%
West Melbourne	Elementary	K-6	100%	618	550	89%	618	552	89%	618	552	89%	618	552	89%	618	552	89%	618	552	89%
Edgewood	Jr / Sr High	12-Jul	90%	1,072	948	88%	1,072	950	89%	1,072	950	89%	1,072	950	89%	1,072	950	99%	1,072	950	89%
West Shore	Jr / Sr High	12-Jul	90%	1,264	955	76%	1,264	956	76%	1,264	956	76%	1,264	956	76%	1,264	956	76%	1,264	956	76%
Schools of Choice				**3,998**	**3,346**		**3,998**	**3,380**		**3,998**	**3,380**		**3,998**	**3,380**		**3,998**	**3,380**		**3,998**	**3,380**	
Brevard Totals				**82,499**	**67,106**		**82,565**	**67,034**		**82,723**	**68,541**		**83,172**	**70,103**		**83,525**	**71,323**		**84,112**	**72,468**	

Notes

1. FISH Capacity is the sum of the factored permanent capacity and the factored relocatable capacity. Permanent and relocatable capacities for 2016-17 are reported from the FISH database as of December 13, 2016.
2. Student Membership is reported from the Fall Final Membership Count (10/17/16).
3. Davis Demographics SchoolSite Enrollment Forecasting Extension for ArcGIS estimates future student populations by analyzing the following data:
   - Development Projections from Brevard County Local Government Jurisdictions
   - Brevard County School Concurrency Student Generation Multipliers (SGM)
   - Fall Membership student addresses and corresponding concurrency service areas
   - Student Mobility Rates / Cohort Survival
   - Brevard County Birth rates by zip code
4. Davis Demographics estimates are then adjusted using the following factors:
   - PK (Pre-Kindergarten) and AH (**daycare** for students with infants) enrollment number are assumed to be constant
   - Current From/To attendance **patterns are assumed to remain constant.**
   - Nongeocoded student addresses are assumed to continue in their attendance schools.
   - Charter School Growth.
5. In order to maintain utilization rates lower than the 100% Level of Service, Relocatable Classrooms are assumed to add future student stations as necessary.
   - Primary relocatable classrooms (Grades K-3) = 18 student stations, Intermediate (Grades 4-8) relocatable classrooms = 22 student stations, and High School (Grades 9-12) relocatable classrooms = 25 student stations
   - Intermediate relocatable classrooms are proposed to be added at Atlantis Elementary, Challenger 7 Elementary, Fairglen Elementary, Meadowlane Intermediate, Meadowlane Primary, Oak Park Elementary, Pinewood Elementary, Quest Elementary, Riviera Elementary, and Stone Middle (Total of 38 Classrooms).
   - High school relocatable classrooms are proposed to be added at Melbourne High, Cocoa Jr/Sr High, and Viera High (Total of 32 Classrooms)

Agency Correspondence
18PZ00009
Horizon Title Co.

Ritchie, George C

From:	Ritchie, George C
Sent:	Monday, February 05, 2018 3:54 PM
To:	Mahaney, Regina R; Sweeney, Michael; christie.mcnamara@flhealth.gov; Scates, Franklin B; Calkins, Tad; Holmes, Andrew; Mcgee, Darcie A; Wheeler, Harvey; Stoms, Terrence K; Alward, Keith A; Gumm, Corrina; Helmer, Jim E
Cc:	Ragain, Rebecca; Sterk, Erin; Jones, Jennifer
Subject:	Comments for a new PUD development - Tranquility Estates
Attachments:	17PZ00009 Application.pdf

Good afternoon everyone,

I have been presented a preliminary development plan for the development of a new PUD in Merritt Island located on the northeast end of Hall Road (Tax Acct # 2318755). Please review the proposal from the standpoint of your agency's responsibilities and respond to me by February 16, 2018. While the project will still require Site Plan approval, the Board of County Commissioners and the applicant should be advised of potential compliance issues. Staff is looking for major issues that would keep the project from being approved as proposed; site plan review analysis is not sought for this specific review. Thank you for your assistance.

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George C. Ritchie, Planner III, Zoning Office
Brevard County Planning & Development Department
2725 Judge Fran Jamieson Way Bldg. A-114
Viera, Fl 32940

Ritchie, George C

From: Ritchie, George C
Sent: Monday, February 05, 2018 5:00 PM
To: Reagan, Mark
Cc: Hurley, Tammy L; Kean, Don; Dugan, Andrew; Francis, Jared; Helmer, Jim E; Sterk, Erin
Subject: RE: Comments for a new PUD development - Tranquility Estates

Right now it's just generalized concerns. If the zoning is approved, we will see site plans and subdivision plats for the development of this site.

From: Reagan, Mark
Sent: Monday, February 05, 2018 4:59 PM
To: Ritchie, George C
Cc: Hurley, Tammy L; Kean, Don; Dugan, Andrew; Francis, Jared; Helmer, Jim E; Sterk, Erin
Subject: RE: Comments for a new PUD development - Tranquility Estates

I wouldn't anticipate any problems, but of course we haven't seen the details and I don't know whether the proponent has either.

From: Ritchie, George C
Sent: Monday, February 05, 2018 4:47 PM
To: Reagan, Mark
Cc: Hurley, Tammy L; Kean, Don; Dugan, Andrew; Francis, Jared; Helmer, Jim E; Sterk, Erin
Subject: RE: Comments for a new PUD development - Tranquility Estates

Thanks Mark. Does that mean no major issues... or are there capacity issues? Anything I need to place into my zoning comments that will be heard by the various review Boards and the BCC?

From: Reagan, Mark
Sent: Monday, February 05, 2018 4:25 PM
To: Ritchie, George C
Cc: Hurley, Tammy L; Kean, Don; Dugan, Andrew; Francis, Jared; Helmer, Jim E
Subject: RE: Comments for a new PUD development - Tranquility Estates

Hi George,
Sanitary sewer and reclaimed water are generally available to serve this site.
Thanks,
Mark

From: Helmer, Jim E
Sent: Monday, February 05, 2018 4:08 PM
To: Hurley, Tammy L; Reagan, Mark; Kean, Don
Subject: FW: Comments for a new PUD development - Tranquility Estates

Please review

From: Ritchie, George C
Sent: Monday, February 05, 2018 3:55 PM
To: Mahaney, Regina R; Sweeney, Michael; christie.mcnamara@flhealth.gov; Scates, Franklin B; Calkins, Tad; Holmes, Andrew; Mcgee, Darcie A; Wheeler, Harvey; Stoms, Terrence K; Alward, Keith A; Gumm, Corrina; Helmer, Jim E

Cc: Ragain, Rebecca; Sterk, Erin; Jones, Jennifer
Subject: Comments for a new PUD development - Tranquility Estates

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George C. Ritchie, Planner III, Zoning Office
Brevard County Planning & Development Department
2725 Judge Fran Jamieson Way Bldg. A-114
Viera, Fl 32940

Phone # (321)633-2070 ext 52657
Fax # (321)633-2152

Ritchie, George C

From: Mahaney, Regina R
Sent: Tuesday, February 06, 2018 11:30 AM
To: Ritchie, George C
Cc: Assignment, Address; Dorman, Carla
Subject: RE: Comments for a new PUD development - Tranquility Estates
Attachments: 17PZ00009 Application.pdf

George,

Address Assignment will require 5 street name choices to be submitted for review and approval. Also, in 9-1-1 records, the main intersecting roadway with the project is named as (E. Hall Road) versus East Hall Road.

No other major issues from our perspective have been noted.

If you have any questions or our office can be of further assistance, please let us know.

Thank you.

Regina R. Mahaney
9-1-1 Addressing Coordinator
Brevard County E9-1-1 Administration
2725 Judge Fran Jamieson Way
Building A, Suite 120
Viera, FL 32940-6022
Office: (321) 690-6846 Ext. 1
Fax: (321) 690-6842
address.assign@brevardfl.gov

From: Ritchie, George C
Sent: Monday, February 05, 2018 3:55 PM
To: Mahaney, Regina R; Sweeney, Michael; christie.mcnamara@flhealth.gov; Scates, Franklin B; Calkins, Tad; Holmes, Andrew; Mcgee, Darcie A; Wheeler, Harvey; Stoms, Terrence K; Alward, Keith A; Gumm, Corrina; Helmer, Jim E
Cc: Ragain, Rebecca; Sterk, Erin; Jones, Jennifer
Subject: Comments for a new PUD development - Tranquility Estates

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Brevard County Planning & Development Department
2725 Judge Fran Jamieson Way Bldg. A-114
Viera, Fl 32940

Phone # (321)633-2070 ext 52657
Fax # (321)633-2152

Ritchie, George C

From: Gumm, Corrina
Sent: Thursday, February 08, 2018 2:48 PM
To: Ritchie, George C
Cc: Swanson, Devin A; Stanford, Ashley
Subject: Fw: Comments for a new PUD development - Tranquility Estates

George,

Traffic Engineering has no concerns to report.

Thanks,

Corrina Gumm, P.E.
Traffic Operations Manager

From: Stanford, Ashley
Sent: Tuesday, February 6, 2018 8:29 AM
To: Gumm, Corrina; Swanson, Devin A
Subject: RE: Comments for a new PUD development - Tranquility Estates

Corrina,

It appears Mission Estates has been renamed to this project, Tranquility Estates. We received the TIS methodology for Mission Estates from LTG on 1/8/18. I had no comments on the methodology. This project is in North Merritt Island so it will be interesting to see if this increase of density is approved.

Thank you,
Ashley

From: Gumm, Corrina
Sent: Tuesday, February 6, 2018 8:11 AM
To: Stanford, Ashley; Swanson, Devin A
Subject: FW: Comments for a new PUD development - Tranquility Estates

This looks familiar, like it was in Accela recently. Please take a look and let me know if we have any major concerns.

Thanks,

Corrina Gumm, P.E.
Traffic Operations Program Manager
Brevard County Public Works
(321) 633-2077

From: Ritchie, George C
Sent: Monday, February 05, 2018 3:55 PM
To: Mahaney, Regina R; Sweeney, Michael; christie.mcnamara@flhealth.gov; Scates, Franklin B; Calkins, Tad; Holmes, Andrew; Mcgee, Darcie A; Wheeler, Harvey; Stoms, Terrence K; Alward, Keith A; Gumm, Corrina; Helmer, Jim E
Cc: Ragain, Rebecca; Sterk, Erin; Jones, Jennifer
Subject: Comments for a new PUD development - Tranquility Estates

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Brevard County Planning & Development Department
2725 Judge Fran Jamieson Way Bldg. A-114
Viera, Fl 32940

Phone # (321)633-2070 ext 52657
Fax # (321)633-2152

Ritchie, George C

From: Stoms, Terrence K
Sent: Friday, February 16, 2018 11:11 AM
To: Ritchie, George C
Subject: RE: Comments for a new PUD development - Tranquility Estates

George,

I have reviewed the Tranquility Estates PUD plans and they show that the recreations requirements will be met. Let me know if you need any further information.

Terry Stoms
Special Projects Coordinator III
Brevard County Parks and Recreation
2725 Judge Fran Jamieson Way
Viera, FL 32940
(321) 633-2046

From: Ritchie, George C
Sent: Monday, February 5, 2018 3:55 PM
To: Mahaney, Regina R; Sweeney, Michael; christie.mcnamara@flhealth.gov; Scates, Franklin B; Calkins, Tad; Holmes, Andrew; Mcgee, Darcie A; Wheeler, Harvey; Stoms, Terrence K; Alward, Keith A; Gumm, Corrina; Helmer, Jim E
Cc: Ragain, Rebecca; Sterk, Erin; Jones, Jennifer
Subject: Comments for a new PUD development - Tranquility Estates

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Viera, Fl 32940

Phone # (321)633-2070 ext 52657
Fax # (321)633-2152

Ritchie, George C

From:	Ritchie, George C
Sent:	Thursday, February 22, 2018 4:35 PM
To:	Mahaney, Regina R; Sweeney, Michael; christie.mcnamara@flhealth.gov; Scates, Franklin B; Calkins, Tad; Holmes, Andrew; Mcgee, Darcie A; Wheeler, Harvey; Stoms, Terrence K; Alward, Keith A; Gumm, Corrina; Helmer, Jim E
Cc:	Ragain, Rebecca; Sterk, Erin; Jones, Jennifer
Subject:	RE: Comments for a new PUD development - Tranquility Estates

I would like to thank those department representatives which have remitted comments regarding this proposed zoning action. I am compiling those comments for the upcoming advisory boards and BCC meetings to be held in April and May, 2018. If you would like to attend the meetings, they will be held in Merritt Island @ 6PM on April 12, 2018 for the North Merritt Island Dependent Special District Board; in Viera @ 3PM on April 23, 2018 for the Local Planning Agency and before the Board of County Commissioners on May 3, 2018 @ 5PM.

George C. Ritchie, Planner III, Zoning Office
Brevard County Planning & Development Department
2725 Judge Fran Jamieson Way Bldg. A-114
Viera, Fl 32940

Phone # (321)633-2070 ext 52657
Fax # (321)633-2152

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Sent: Monday, February 05, 2018 3:54 PM
To: Mahaney, Regina R; Sweeney, Michael; christie.mcnamara@flhealth.gov; Scates, Franklin B; Calkins, Tad; Holmes, Andrew; Mcgee, Darcie A; Wheeler, Harvey; Stoms, Terrence K; Alward, Keith A; Gumm, Corrina; Helmer, Jim E
Cc: Ragain, Rebecca; Sterk, Erin; Jones, Jennifer
Subject: Comments for a new PUD development - Tranquility Estates

Good afternoon everyone,

I have been presented a preliminary development plan for the development of a new PUD in Merritt Island located on the northeast end of Hall Road (Tax Acct # 2318755). Please review the proposal from the standpoint of your agency's responsibilities and respond to me by February 16, 2018. While the project will still require Site Plan approval, the Board of County Commissioners and the applicant should be advised of potential compliance issues. Staff is looking for major issues that would keep the project from being approved as proposed; site plan review analysis is not sought for this specific review. Thank you for your assistance.

Address Assignment – Regina Mahaney, 911 Database/Addressing Coordinator or Natasha Petrie
County Surveyor - Mike Sweeney, PSM
Environmental Health Services – Christie McNamara or Scott Bauman
Fire Rescue - Frank Scates, Fire Marshal or Douglas Carter, Assistant Fire Marshal
Land Development – Tad Calkins, Assistant Director for Planning and Development

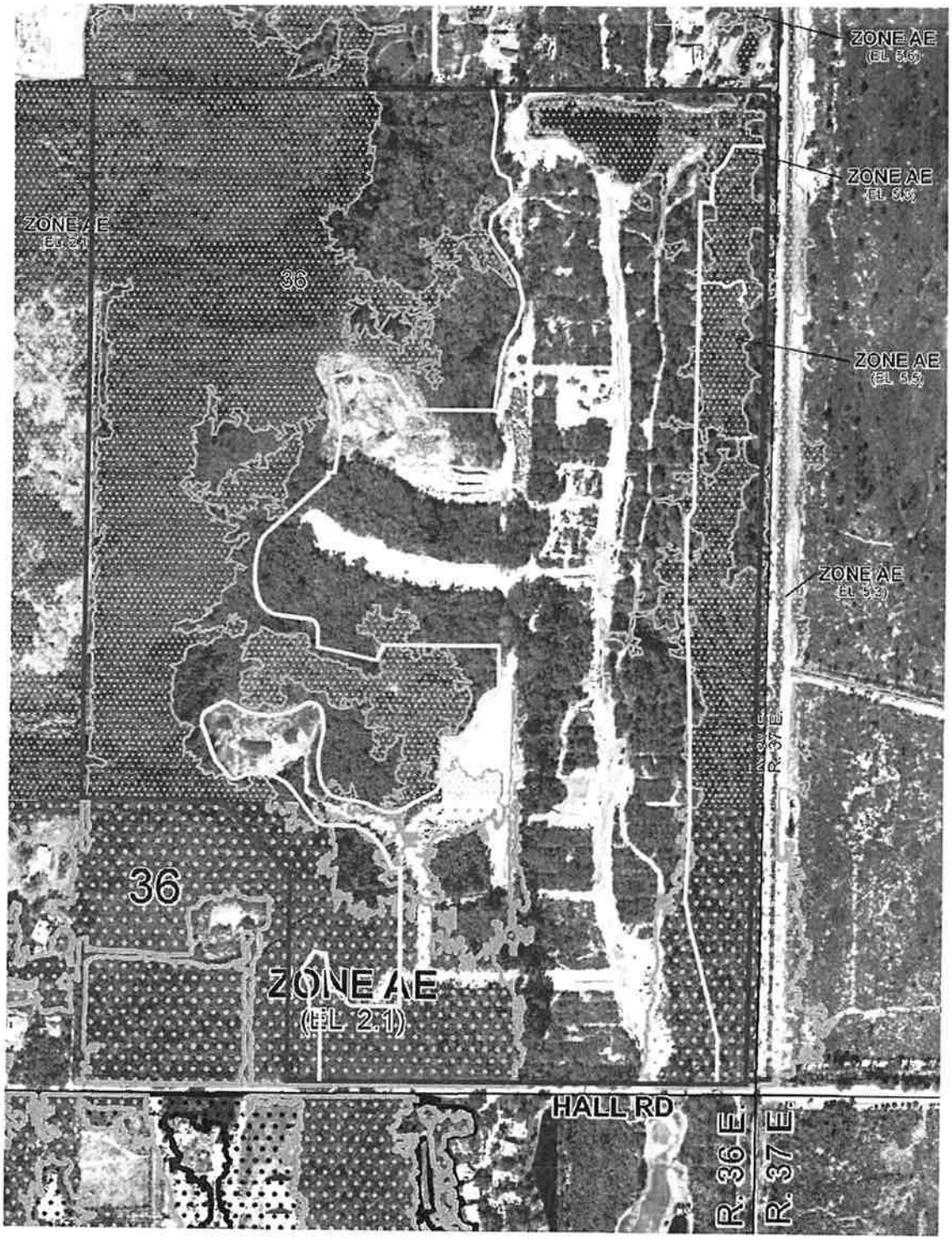
Land Development – Andrew Holmes, Engineering Manager
NRM – Darcie McGee, Special Projects Coordinator IV
NRM – Harvey Wheeler, Construction Coordinator
Parks and Recreation -Terry Stoms, Special Projects Coordinator III
Public Works/Road & Bridge – Keith Alward, Area Manager
Transportation – Corrina Gumm, P.E., Engineer III
Utilities Services Department –Jim E. Helmer, Director

This office can only provide zoning and comprehensive plan information. You may wish to contact other County agencies to fully determine the development potential of this property. This letter does not establish a right to develop or redevelop the property and does not constitute a waiver to any other applicable land development regulations. At the time of development, this property will be subject to all such regulations. Under Florida law, e-mail addresses are public records. If you do not want your e-mail address released in response to a public records request, do not send electronic mail to this entity. Instead, contact this office by phone or in writing.

George C. Ritchie, Planner III, Zoning Office
Brevard County Planning & Development Department
2725 Judge Fran Jamieson Way Bldg. A-114
Viera, Fl 32940

Phone # (321)633-2070 ext 52657
Fax # (321)633-2152

FYI
17PZ00009
Horizon Title Co. Inc.
(Submitted at 04/23/18 meeting)

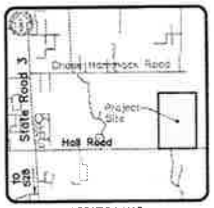


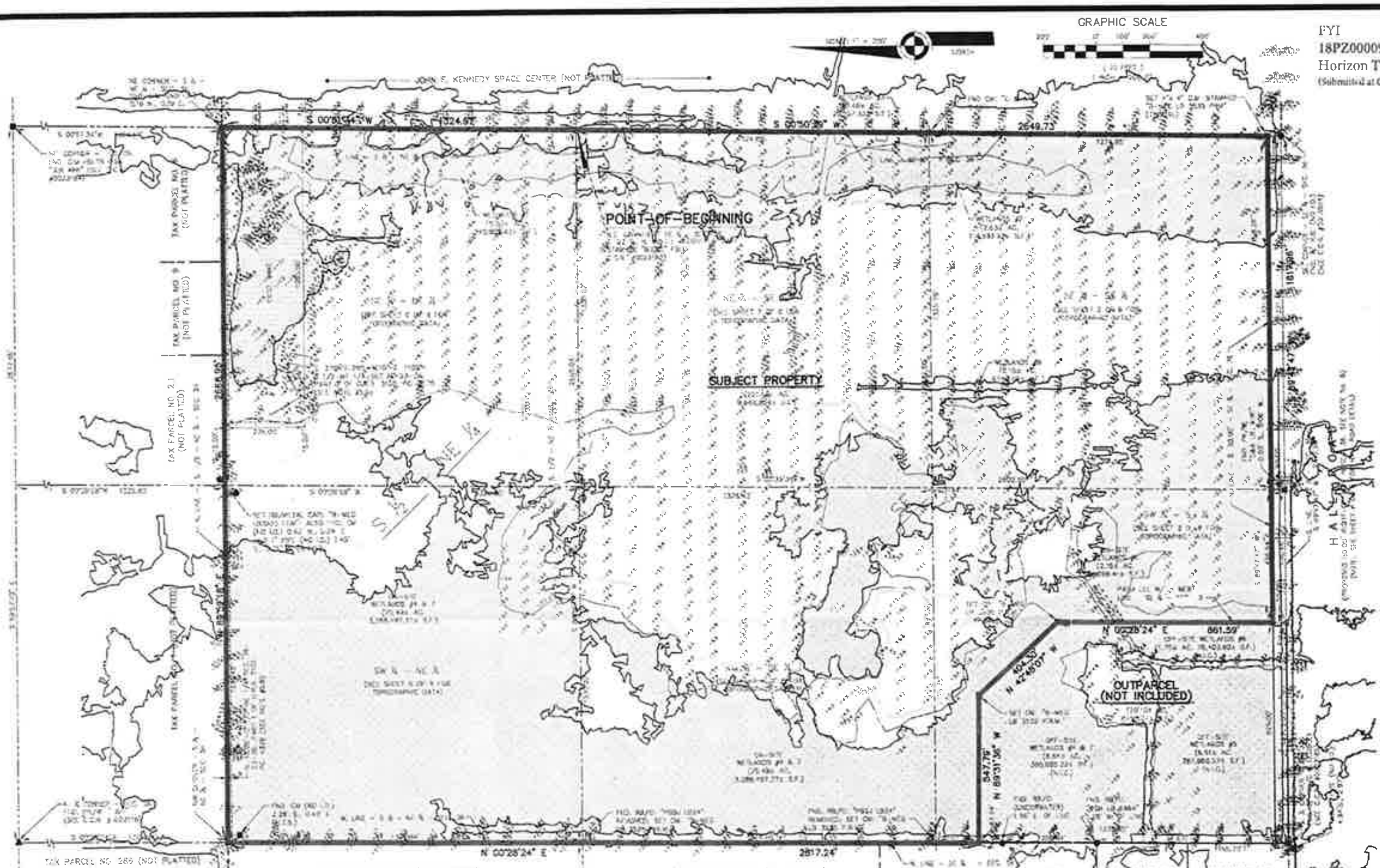
NORTH

Flood Insurance Rate Map
TRANQUILITY ESTATES

04/23/18
1"=400'
344013

C:\Dwg\Eng\344013 Tranquility Estates\344013 Maps\dwg\344013 Flood.dwg, 4/23/2018 8:25:07 AM, Cad-6





LEGEND:

Description:

The South ½ of the Northeast ¼ together with a portion the Southeast ¼ of Section 36, Township 23 South, Range 36 East, Brevard County, Florida; said subject parcel being more fully described as follows:

Begin at the northeast corner of said Southeast ¼ as marked by a four (4) inch square concrete monumented stamped "Bussen Engineering Group" as shown on Florida Department of Environmental Protection ("F.D.E.P.") Certified Corner Record ("C.C.R.") Document No. 0023165; thence S.00°50'35"W., along the east line of said Southeast ¼, a distance of 2649.73 feet to the southeast corner of said Southeast ¼ as monumented by an unstamped three-eights (3/8) inch rebar as shown on F.D.E.P. C.C.R. Document No. 0013654; thence S.89°47'47"W., along the south line of said Southeast ¼, a distance of 1017.95 feet; thence departing said south line, N.00°28'24"E., parallel with the west line of said Southeast ¼, a distance of 661.59 feet; thence N.42°48'07"W., a distance of 404.30 feet; thence N.89°31'30"W., a distance of 547.79 feet to said west of the Southeast ¼; thence N.00°28'24"E., along said west line of the Southeast ¼ and along the west line of said South ½ of the Northeast ¼, a distance of 2817.24 feet to the northwest corner of said South ½ of the Northeast ¼; thence N.89°39'18"E., along the north line of said South ½ of the Northeast ¼, a distance of 2665.05 feet to the northeast corner of said South ½ of the Northeast ¼; thence S.00°51'34"W., along the east line of said South ½ of the Northeast ¼, a distance of 1324.67 feet to the Point-of-Beginning.

Containing 221.51 acres (9,648,859 square feet), more or less, being subject to any restrictions, covenants, easements and/or rights-of-way of record.

Notes:

1. Bearings shown hereon are based on the east line of the Southeast ¼ of Section 36, Township 23 South, Range 36 East being "S.00°50'35"W." as assumed bearing.
2. Date of field survey: Boundary Survey: November 06, 2006; Topographic/Wetland Survey: April 26, 2005.
3. Underground improvements (foundations, septic tanks, drainfields, etc.) if any were not located at the time of survey.
4. This survey does not warrant that parcel is subject to restrictions, covenants, easements and/or rights-of-way of record.
5. The following documents were made known to the Surveyor via the Opinion of Title issued by [illegible], P.A., dated February 06, 2007. The Surveyor has no knowledge of any other record documents which may encumber the subject parcel and copies of the documents listed below may be found in the Public Records of Brevard County, Florida.
   A. O.R. Book 2777, Page 0636: 10.00 feet wide easement in favor of Florida Power and Light Company. The easement description does not establish a point of commence and is therefore unsurveyable. As such, the Surveyor is unable to ascertain if said easement encumbers the subject parcel (not shown).
   B. O.R. Book 3102, page 4378: Two (2) ~15 feet wide easements in favor of Florida Power and Light Company which encumber the north 15.00 feet and the South 15.00 feet of the East 1470.00 feet of the South 275.00 feet of the North 290.00 feet of the South ½ of the Northeast ¼ of said Section 36. These easements are also recorded in O.R. Book 3102, Page 4387 (see survey graphics).
6. Pursuant to the Surveyor's request and phone conversation with the Client's title agent, no recorded document which establishes the Hall Road right-of-way was available. This survey, which is being prepared for the platting of the subject parcel, includes a portion of the existing pavement of Hall Road per the instructions of Brevard County. It is the intention of the Client to dedicate the South 30.00 feet of the subject parcel to Brevard County for public right-of-way use via the recording of the proposed plat.
7. Elevations shown hereon are based on National Geodetic Vertical Datum of 1929.
   A. Primary Benchmark: United States Coast and Geodetic Survey Benchmark "K 307 1963" which has a published elevation of 7.42 feet.
   B. Site benchmarks as shown on drawing.
8. The location of underground utilities as shown hereon is based on their surface markings by their respective companies, the field location of their surface appurtenances and/or record as-built data. B-MEG, Inc. has not excavated said utilities to verify the markings and the Client will be responsible for their pre-construction, field location. Said utilities were field located in April of 2005; Sunshine State One Call of Florida reference ticket no. [illegible], and were not updated/verified with the boundary survey.
9. Wetlands shown hereon were field identified by the Client's environmental consultant and field located by B-MEG, Inc. Said wetlands were located in April of 2005 and were not updated/verified with the boundary survey.
10. The Surveyor has not inspected the subject parcel for the possibility of hazardous waste, endangered species habitat or any other environmental issues (except wetlands), if any.
11. This survey was prepared for the exclusive use of the parties listed below, copies are valid only when bearing the Surveyor's original signature and embossed seal.
12. Certified for the exclusive use of:
    HORIZON TITLE COMPANY, INC.

SUBTRACT 1.4' TO CONVERT TO NAVD 1988

BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED FOR:
TRANQUILITY ESTATES

Brevard County, Florida

Bussen-Mayer Engineering Group, Inc.
100 PARNELL STREET • MERRITT ISLAND, FLORIDA 32953
TEL NO. (321) 453-0010 • FAX NO. (321) 454-6085

CERTIFICATE:
I hereby certify that the survey shown hereon is true and correct to the best of my knowledge and belief, as performed under my direction and supervision and that it meets or exceeds the standards of practice as set forth by the Florida Board of Professional Land Surveyors in Chapter 61G17-6 Florida Administrative Code, pursuant to Section 472.027 Florida Statutes.

Sec: 36	
Twp: 23 South	
Rng: 36 East	
Design by: N/A	
Drawn by: FWS/JWS	
Checked by: MPS	
Date: NOV. 15, 2006	
Scale: 1" = 200'	
Proj. No.: 364009	
Sheet No. 1 of 8	

SURVEY DEPT.

FYI
18PZ00009
Horizon Title Co. Inc.
(Submitted 04/12/18)

NOTICE OF INFORMATIONAL MEETING

March 7, 2018

Horizon Title Company, Inc. has submitted a Rezoning Application to Brevard County Planning and Development. Horizon Title is proposing a zoning change for 221.51 acres of land located at the East End of Hall Road from an existing RES 1 - AU Zoning to RES 1 - PUD in order to resurrect a defunct development by providing a variety of marketable housing options. The property address is known as 890 E. Hall Road, Merritt Island, Florida, Parcel Id is 23-36-36-00-4, formerly known as Mission Estates Community Association.

We will be holding an informal meeting to give you the opportunity to review the proposed plan and discuss the proposal with the Developer and its representatives.

This meeting is not part of the County public hearings.

The meeting to discuss this development proposal will be held:

DATE:	**Thursday, March 22, 2018**
TIME:	**6:30 p.m. to 8:00 p.m.**
LOCATION:	**Merritt Island Redevelopment Agency** **2575 N. Courtenay Parkway** **Meeting Room – 2nd Floor** **Merritt Island, FL 32953**

Contact Kim Rezanka, Esq. at (321) 639-1320 for further information.

REZANKA, Kim
Cantwell & Goldman

AGRILLO, THEODORE
AGRILLO, KATHERINE
PO BOX 541258
MERRITT ISLAND FL 32954-1258

BARRS, SCOTT VAN DYKE
BARRS, SUMIKO SHIN
4400 SEA ISLAND LANE
MERRITT ISLAND FL 32953-

BISHOP, GEOFFREY
3400 SUNSET RIDGE DRIVE
MERRITT ISLAND FL 32953-

BROMSTAD, MARJORIE R LIFE ESTATE
BROMSTAD, PAUL O
4290 SAVANNAHS TRL
MERRITT ISLAND FL 32953-

CONDON FAMILY TRUST
4944 HUNTER'S LN
MERRITT ISLAND FL 32953-7539

DELEO, JOHN
DELEO, SHANNA
4914 HUNTERS LN
MERRITT ISLAND FL 32953-7539

FISHER, FRANK S
4540 WOOD DUCK LANE
MERRITT ISLAND FL 32953-

FISHER, FRANK S
4540 WOOD DUCK LN
MERRITT ISLAND FL 32953-

GARDNER, RONALD C
GARDNER, NANCY J
4270 SAVANNAHS TRAIL
MERRITT ISLAND FL 32953-

HESHMATI, HEIDAR
HESHMATI, NIMA
861 ENVIRON LN
MERRITT ISLAND FL 32953-

HESHMATI, NIMA
PO BOX 542054
MERRITT ISLAND FL 32954-2054

HESHMATI, NIMA
HESHMATI, HEIDAR
PO BOX 542054
MERRITT ISLAND FL 32954-2054

HORIZON TITLE COMPANY INC
2301 NW 87TH AVE STE 501
MIAMI FL 33172-

KABBOORD PROPERTIES INC
3201 ATLANTIC AVE N
COCOA BCH FL 32931-

KNAPPMAN, JOHN W
KNAPPMAN, TANYA M
2255 CHASE HAMMOCK RD
MERRITT ISLAND FL 32953-

KRAMER, DONALD D
KRAMER, CYNTHIA L
4600 WHITE IBIS LANE
MERRITT ISLAND FL 32953-

MC LEOD, MARTHA G
PO BOX 540686
MERRITT ISLAND FL 32954-0686

MOEHLE, CHARLES F
65 COUNTRY CLUB RD
COCOA BEACH FL 32931-2001

RIGHI, ALAN G
RIGHI, NANCY L
4940 ALYSIAN LN
MERRITT ISLAND FL 32953-7718

ROMAN, ALBERTO L
ROMAN, BIVIANA B
2385 CHASE HAMMOCK RD
MERRITT ISLAND FL 32953-7522

ROSA, RAMON
ROSA, LEIDA
2235 CHASE HAMMOCK ROAD
MERRITT ISLAND FL 32953-

RYLAND, DAVID F
RYLAND, HELENITA A
4980 N COURTENAY PKWY
MERRITT ISLAND FL 32953-7928

SAVANNAHS AT SYKES CREEK
HOMEOWNERS ASSOC INC, THE
PO BOX 541194
MERRITT ISLAND FL 32954-1194

SAVANNAHS AT SYKES CREEK
HOMEOWNERS, ASSOC INC THE
PO BOX 541194
MERRITT ISLAND FL 32954-1194

SPENCER, SAMUEL J TRUSTEE
4275 SAVANNAHS TRAIL
MERRITT ISLAND FL 32953-

SULLIVAN, ROBERT MARX
2205 ATLANTIC AVENUE S
COCOA BCH FL 32931-

TEEN MISSIONS INTERNATIONAL INC
885 EAST HALL RD
MERRITT ISLAND FL 32953-

TOLEDO, OSCAR
TOLEDO, SUZANNE C
3542 TERRAMORE DRIVE
VIERA FL 32940-

UNITED STATES GOVT
PO BOX 366
TITUSVILLE FL 32781-0366

VIRGINIA M PLUMLEY REVOCABLE TRUST
2295 CHASE HAMMOCK RD
MERRITT ISLAND FL 32953-7520

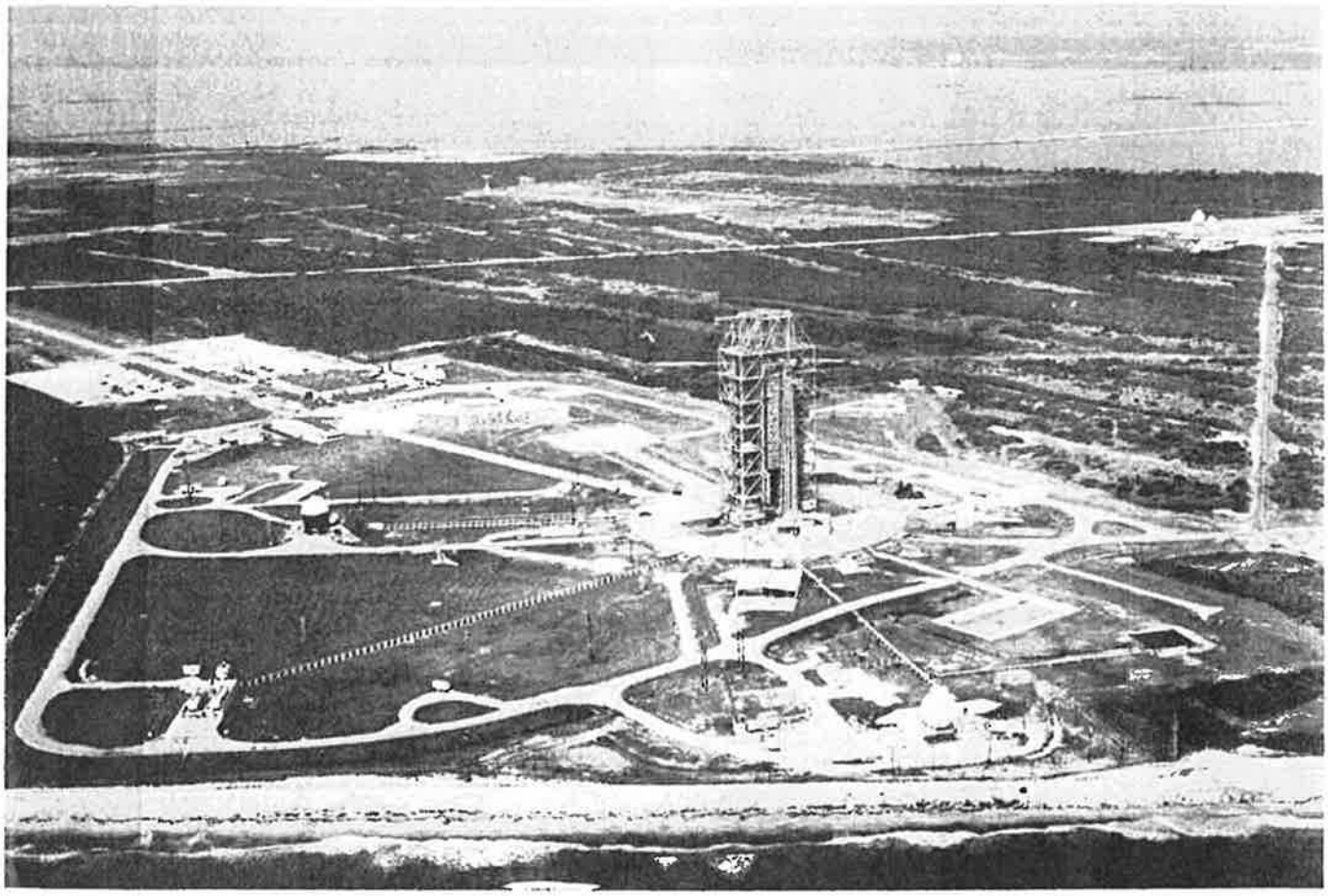
WATKINS, GERALD W
4265 SAVANNAHS TRL
MERRITT ISLAND FL 32953-8608

YOSSIFON, DEREK
4280 SAVANNAHS TRL
MERRITT ISLAND FL 32953-8604

FYI
18PZ00009
Horizon Title Co. Inc.
(Submitted by NMI board member 04-12-18)

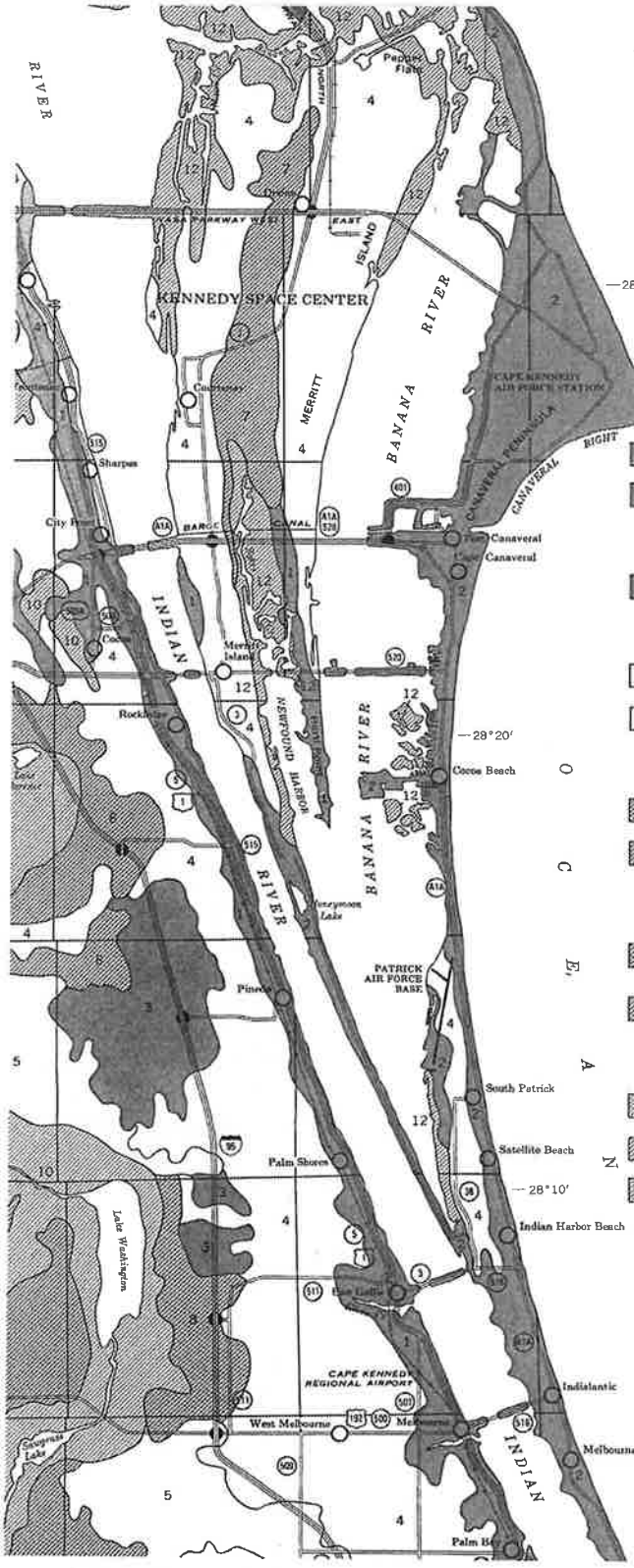
SOIL SURVEY OF

Brevard County, Florida



United States Department of Agriculture
Soil Conservation Service
In cooperation with
University of Florida
Agricultural Experiment Stations

Issued November 1974



SOIL ASSOCIATIONS

SOILS OF THE SAND RIDGES

1 — Poola-Pomello-Astatula association: Nearly level to strongly sloping, excessively drained and moderately well drained soils, sandy throughout

2 — Canaveral-Palm Beach-Welaka association: Nearly level to gently sloping, moderately well drained to excessively drained soils, sandy throughout

SOILS OF THE BROAD GRASSY FLATS

3 — Pompano association: Nearly level, poorly drained soils, sandy throughout

SOILS OF THE FLATWOODS

4 — Myakka-EauGallie-Immokalee association: Nearly level, poorly drained soils, sandy throughout, or sandy to a depth of 40 inches and loamy below

5 — Pineda-Wabasso association: Nearly level, poorly drained soils, sandy to a depth of 20 to 40 inches and loamy below

SOILS OF THE HAMMOCKS AND LOW RIDGES

6 — Myakka-Bradenton, shallow variant-Copeland association: Nearly level, poorly drained and very poorly drained soils, some sandy throughout and others sandy to a depth of less than 20 inches and loamy below

7 — Copeland-Wabasso association: Nearly level, very poorly drained and poorly drained soils, sandy to a depth of less than 40 inches and loamy below

SOILS OF THE ST. JOHNS RIVER FLOOD PLAINS

8 — Felda-Floridana-Winder association: Nearly level, poorly drained and very poorly drained soils, sandy to a depth of less than 40 inches and loamy below

9 — Floridana-Chobee-Felda association: Nearly level, poorly drained and very poorly drained soils, some loamy throughout and others sandy to a depth of 20 to 40 inches and loamy below

SOILS OF THE SWAMPS AND MARSHES AND VERY WET AREAS

10 — Montverde-Micco-Tomoka association: Nearly level, very poorly drained, organic soils, sandy and loamy material at a depth of more than 52 inches for some and within a depth of 16 to 40 inches for others

11 — Swamp association: Nearly level, poorly drained and very poorly drained soils of variable texture

12 — Tidal Marsh-Tidal Swamp association: Nearly level, very poorly drained, saline to brackish soils of variable texture

Compiled 1971

Bussen-Mayer ENGINEERING GROUP
100 Parnell Street • Merritt Island, FL 32953
(321) 453-0010 • BMEG.NET

Joseph W. Mayer, P.E.

President
Project Manager and
Chief Design Engineer
joe@bmeg.net

PROFESSIONAL RESUME

EDUCATION: University of Central Florida
Bachelor of Science Degree in Civil Engineering -1982

EXPERIENCE: Bussen-Mayer Engineering Group, Inc. - 09/82 to present
Other consulting firms - 2 years

QUALIFICATIONS: 34 years experience as Civil Design Engineer in Florida
Florida Registered Professional Engineer #36836 (1986)

ENGINEERING EXPERIENCE:

Since 1990, CEO of a civil engineering, environmental and surveying firm located in Merritt Island, FL. Responsible for all technical operations and administrative functions of the firm.

As Principal Engineer, Mr. Mayer is responsible for coordinating all major design aspects of the project. Mr. Mayer has more than 30 years of project design experience with expertise in the areas of stormwater design, utilities design, subdivision and site plans, roadway and drainage projects, permitting site cost analysis, specifications and plan preparation, and construction management services.

SPECIFIC PROJECT EXPERIENCE (Partial Listing):

- Egret's Landing Subdivision
- River Grove on the Trail Subdivision
- Honeymoon Hill Subdivision
- Fay Boulevard Widening Project
- Veteran's Park Expansion Project
- Pineda Crossing Subdivision
- Barnes Boulevard Widening Project
- Fortenberrry Regional Stormwater Mgmt. System
- Lake Dr. Drainage Improvements Project (3 phases)
- Griffis Landing
- Merritt Island Airport Stormwater Improvements
- South Tropical Trail Sewer Extension
- South Tropical Trail Waterline Relocation
- Deer Lakes Subdivision
- South Atlantic Avenue Watermain Replacement
- Melbourne Harbor/Crane Creek Dredging Project
- Fortenberry/Plumosa Intersection Improvements (JPA)
- S-10 Lift Station Replacement
- Mitchell Ellington Park
- Hall Road/SR 3 Intersection Improvements
- US 1 20" Watermain Extension, Edgewater (JPA)
- Rose Street Improvements Project (JPA)
- N. Tropical Trail/S.R. 520 Realignment (JPA)
- Health First Viera Hospital Site
- Health First Viera Medical Office Building

LTG Engineering & Planning

RELEVANT EXPERIENCE

Project Panel, Performance Based Management of Traffic Signals, National Cooperative Highway Research Program (NCHRP) Project 03-112, Transportation Research Board: Mr. Ramirez is serving on the project panel to develop guidance that enables agencies to incorporate a performance-based approach to the management of their signal systems. The guidance will be scalable to fit various agencies in terms of their staffing, equipment, and policies. It will also identify what performance metrics and operational improvement strategies are available based on the current maturity of an agency's systems.

Engineer of Record, Signal System Timing Study, Palm Bay Road, Palm Bay, FL: Using data collected by the City of Palm Bay, developed coordinated signal system timing plans for three time periods, deployed the plans, observed the corridor and conducted final changes. The signal system consisted of eighteen intersections along two major arterials (Palm Bay Road and Minton Road) and included the Palm Bay Road/I-95 interchange ramps. SYNCHRO was utilized to optimize the cycle lengths, offsets, and splits and TSPP was used to evaluate progression and to conduct travel-time runs. ATMS.Now was used to evaluate controller coordinator problems and to deploy and adjust the timings.

Engineer of Record, Traffic Signal Warrant Studies, FL: Mr. Ramirez has conducted numerous Signal warrant studies throughout Brevard County. Responsibilities included evaluating volume count data, conducting warrant analyses in accordance with MUTCD guidelines, conducting site visits, preparing the reports, and presenting the reports to residents, senior management, and the County Commissioners.

Engineer of Record, St. Andrews/Brisbane Blvd. Connection Travel Time Analysis, Suntree, FL: Responsible for conducting the data collection, analysis, and presentation. The purpose of this study was to determine if completing the connection of the two roadways would cause a significant shift in traffic through the Suntree PUD. The floating vehicle analysis indicated that travel times to major destinations through and around the PUD were comparable and therefore no significant shift in traffic volume was anticipated. A traffic count one year after the opening of the roadway proved the analysis accurate.

Engineer of Record, Transportation Capacity Analyses, Brevard County, FL: Mr. Ramirez has conducted several detailed roadway capacity analyses using the LOSPLAN and ARTPLAN software developed by FDOT to establish the Level of Service thresholds and Maximum Allowable Volume for freeway, arterial, and collector roadways.

Engineer of Record, Stop Sign Warrant Studies, Brevard County, FL: Mr. Ramirez has conducted numerous Stop Sign Warrant studies throughout Brevard County. Responsibilities included evaluating volume count data, conducting warrant analyses in accordance with MUTCD guidelines, conducting site visits, preparing the reports, and presenting the reports to residents, senior management, and the County Commissioners.

Engineer of Record, Speed Limit Change Studies, Brevard County, FL: Mr. Ramirez has conducted numerous Speed Limit Change studies throughout Brevard County. Responsibilities included evaluating speed/volume count data, conducting analyses in accordance with MUTCD guidelines, conducting site visits, preparing the reports, and presenting the reports to residents, senior management, and the County Commissioners.

Gil Ramirez, PE
Senior Project Manager

OVERVIEW

Mr. Ramirez brings over 18 years of design, project management and traffic operations experience on a variety of projects. Through his government background Mr. Ramirez has acquired a thorough knowledge of FDOT policies, procedures, and specifications and has become proficient in the use of various software packages, including: Highway Capacity Software, Synchro, TSPP, AutoCAD, Atlas, Mastarm, ArtPLAN, and many others.

EDUCATION

Florida Institute of Technology,
B.S.C.E., Civil Engineering (2000)

REGISTRATIONS

Registered Professional Engineer,
Florida P.E. No. 62600

FDOT Intermediate MOT Certification

IMSA Traffic Signals Level II Technician

AFFILIATIONS

International Municipal Signal Association

ITS Florida

YEARS EXPERIENCE

18

YEARS WITH LTG

5

Engineer of Record, Mid-Block Crosswalk Studies, Brevard County, FL: Mr. Ramirez has conducted numerous Mid-Block Crosswalk studies throughout Brevard County. Responsibilities included evaluating speed/volume count data, collecting pedestrian data, conducting analyses in accordance with MUTCD guidelines, conducting site visits, preparing the reports, and presenting the reports to residents, senior management, and the County Commissioners.

Engineer of Record, School Zone and Crossing Guard Needs Studies, Brevard County, FL: Mr. Ramirez has conducted several School Zone and Crossing Guard Needs studies throughout Brevard County. Responsibilities included evaluating speed/volume count data, collecting pedestrian data, conducting analyses in accordance with MUTCD guidelines, FDOT and ITE recommendations, conducting site visits, preparing the reports, and presenting the reports to residents, senior management, and the County Commissioners.

Engineer of Record, Traffic Management Center Conceptual Demand Analysis, Brevard County, FL: Responsible for conducting the data collection, analysis, report, and concept plans for the future Brevard County Traffic Management Center and Traffic Operations facilities. The project included using the Florida Standard Urban Transportation Model Structure (FSUTMS) and ArcGIS tools to predict the number of signalized intersections to be constructed within a 25 year horizon, estimate the design-year operations and maintenance needs, and size a facility to house the anticipated resources.

Traffic Review Engineer, City of Palm Bay, FL: Mr. Ramirez assisted the City of Palm Bay staff in ensuring the City's traffic impact study guidelines, access management criteria, transportation concurrency system, and impact fee provisions were properly addressed during site and subdivision permit applications.

Traffic Review Engineer, City of New Smyrna Beach, FL: Mr. Ramirez assisted the City of New Smyrna Beach staff in ensuring the City's traffic impact study guidelines, access management criteria, transportation concurrency system, and impact fee provisions were properly addressed during site and subdivision permit applications.

Traffic Operations Manager, Brevard County, FL: Mr. Ramirez conducted traffic impact study and plans reviews to ensure the County's traffic impact study guidelines, access management criteria, transportation concurrency system, and impact fee provisions were properly addressed during site and subdivision permit applications.

Traffic Operations Manager, Brevard County Advanced Traffic Management System Expansion (ATMS) and Wickham Intelligent Transportation System (ITS) Phase II, Brevard County, FL: Provided support and technical assistance with the deployment, integration, validation, and final testing of an ITS expansion project which deployed CCTV, travel-time, vehicle detection, and adaptive traffic signal control technologies to 112 intersections on 11 corridors in Brevard County, and interconnected them through fiber-optic cabling and Ethernet compliant network devices to two Brevard County management centers, and the City of Melbourne management center.
The project included:

- Underground and overhead 72 SM fiber-optic trunk cabling and 12 SM drop cabling
- Juniper and ITS Express layer 2 and layer 3 networking devices
- Bosch Closed Circuit Television (CCTV) Cameras
- Sensys Networks wireless Vehicle Detection Systems
- Sensys Networks Archive, Proxy, and Statistics (SNAPS) server
- BlueTOAD Travel Time System
- Naztec, Inc. Advanced Traffic Control (ATC) traffic signal controllers
- Trafficware, Inc. SynchroGreen traffic adaptive server software

FYI
18PZ00009
Horizon Title Co.
(Submitted 04/26/18)

18PZ-009: Horizon Title Company, Inc. – Rezoning to PUD
(verbally presented at P & Z on 4/23/18)

Preliminary Development Plan

Sec. 62-1448 (5). Review criteria. The decision of the planning and zoning board on the ***preliminary development plan*** application shall include the findings of fact that serve as a basis for its recommendation. In making its recommendation, the planning and zoning board shall consider the following facts:

a. Degree of departure of the proposed planned unit development from surrounding residential areas in terms of character and density.

FLU density is one unit to the acre, and this PDP is consistent with FLU. Additionally, this PDP is consistent with the only nearby neighborhood of the Savannah's which was platted at one unit to the acre, but has lots size of .26 to .29 acres, or 3 to 4 units to the acre. Tranquility has 219 proposed units, Savannahs has 288.

The Character of the area is defined by the Savannah's PUD. It was initially 265.63 acres, 288 lots, 90 x 120 but some 92 x 65, even 86 x 79. Now, PUD only 97.56 acres since County owns 168.07 of PUD for Golf Course. Now 2.95 units to the acre. ***See Savannah's PUD, attached.***

b. Compatibility within the planned unit development and relationship with surrounding neighborhoods.

Internal phasing is compatible because it keeps the Townhomes centralized, with larger lot sizes and homes to the north where larger residential parcels exist.

c. Prevention of erosion and degrading of surrounding area.

All construction will be per County and State codes and requirements. Substantial buffering along boundaries of property will not allow erosion or degradation of surrounding area.

d. Provision for future public education and recreation facilities, transportation, water supply, sewage disposal, surface drainage, flood control and soil conservation as shown in the preliminary development plan.

Development will pay substantial impact fees, including school impact fees. Potential for walking trail to be public, but it does not connect to any other trails to the north. PDP has provided for recreation, transportation, water, sewer,

drainage, flood control and soil conservation – to the extent required at this stage of the process. This will be further defined during the final development plan and construction drawings.

e. The nature, intent and compatibility of common open space, including the proposed method for the maintenance and conservation of the common open space.

Substantial open space is provided in the PDP. All of the common open space will be maintained by a HOA. Most if not all of wetland will be placed in a conservation easement with maintenance responsibilities by HOA.

f. The feasibility and compatibility of the specified stages contained in the preliminary development plan to exist as an independent development.

Each phase can stand on its own, since Phase I requires the greatest amount of infrastructure improvements, and Phase II is to the north of beginning intrastructure. As mentioned, each Phase will meet the common open space and recreation requirements of the Code.

g. The availability and adequacy of water and sewer service to support the proposed planned unit development.

Both are available and adequate and are part of the PDP. Utility Services Director Helmer provided this information in response to request for comments.

h. The availability and adequacy of primary streets and thoroughfares to support traffic to be generated within the proposed planned unit development.

The County Transportation Department reported that it had no concerns. The Transportation Concurrency Analysis opined that the trips generated by change of zoning "does not demonstrate that the impact on N. Courtenay Parkway creates a deficiency in the level of service and the corridor still remains under capacity."

i. The benefits within the proposed development and to the general public to justify the requested departure from the standard land use requirements inherent in a planned unit development classification.

This PDP does not seek a departure from land use requirements; it is consistent with the FLU and PUD land use regulations. PUD's encourage planned residential neighborhoods with a full range of residence types. Sec. 62-1442(a). PUD's objectives include: significant areas of useable open spaces for the preservation of natural amenities, flexibility in design to take

advantage of natural land, variety of housing types to give home buyer great choice, efficient use of land.

Per the open space subdivision ordinance, clustering of development is permitted to encourage the efficient use of land, smaller lot sizes and interconnected open spaces.

Many new jobs coming to this area, and new and various housing options are needed in Central Brevard.

j. The conformity and compatibility of the planned unit development with any adopted development plan of the county.

This PDP/PUD conforms to the FLU of the County, and is consistent with the Savannah's PUD to the south.

k. The conformity and compatibility of the proposed common open space, primary residential and secondary nonresidential uses with the proposed planned unit development.

The open spaces and residential uses are appropriate for the proposed PUD. It meets the land regulations for a PUD, and provides a variety of housing options and recreation, as anticipated by the PUD ordinances.

THE SAVANNAHS P.U.D.

A Subdivision lying in Sections 1 and 12, Township 24 South, Range 36 East, of Brevard County, Florida.

DESCRIPTION:

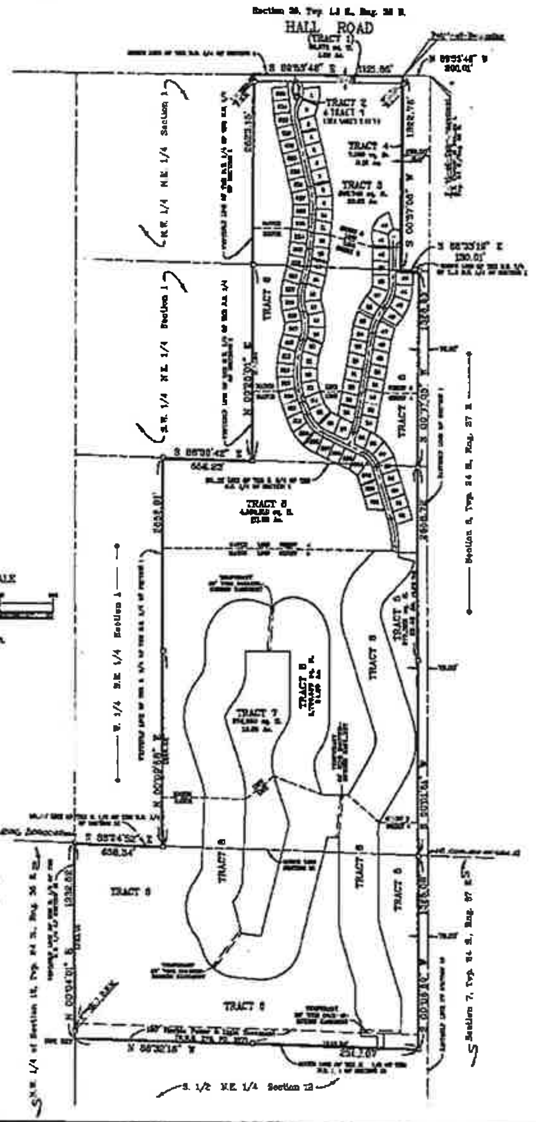
A parcel of land lying in Sections 1 and 12, Township 24 South, Range 36 East, being: the Northeast 1/4 of the Northeast 1/4 of said Section 1, less and except the easterly 200.00 feet; the Southeast 1/4 of the Northeast 1/4, and the East 3/4 of the Southeast 1/4 of said Section 1, less and except the easterly 70.00 feet; the North 1/2 of the Northeast 1/4 of said Section 12, less and except the easterly 70.00 feet, all lying in Brevard County, Florida and being more particularly described as follows:

Commence at the northeast corner of aforesaid Section 1; thence N.89°53'46"W., along the north line of the Northeast 1/4 of said Section 1, a distance of 200.01 feet to a point 200.00 feet west, by right angle measure, of the easterly line of said Section 1, said point being the Point-of-Beginning of this description to wit: thence S.00°37'05"W., parallel with and 200.00 feet westerly of said easterly line, a distance of 1322.78 feet to a point on the north line of the Southeast 1/4 of the Northeast 1/4 of said Section 1; thence S.89°53'19"E., along said north line of the Southeast 1/4 of the Northeast 1/4, a distance of 130.01 feet to a point 70.00 feet west, by right angle measure, of the aforesaid easterly line of Section 1; thence S.00°37'05"W., parallel with and 70.00 feet west, by right angle measure, of said easterly line of Section 1, a distance of 1322.63 feet to a point on the north line of the East 3/4 of the Southeast 1/4 of said Section 1; thence S.00°01'31"W., parallel with and 70.00 feet west, by right angle measure, of said easterly line of Section 1, a distance of 2666.72 feet to a point on the north line of Section 12, Township 24 South, Range 36 East; thence S.00°05'53"W., parallel with and 70.00 feet west, by right angle measure, of the east line of said Section 12, a distance of 1325.05 feet to a point on the south line of the North 1/2 of the Northeast 1/4 of said Section 12; thence N.89°32'18"W., along said south line of the North 1/2 of the Northeast 1/4, a distance of 2562.07 feet to the southwest corner of the North 1/2 of the Northeast 1/4, of said Section 12; thence N.00°04'01"E., along the west line of said North 1/2 of the Northeast 1/4, a distance of 1332.52 feet to the northwest corner of the Northeast 1/4 of said Section 12; thence S.89°24'52"E., along the north line of said North 1/2 of the Northeast 1/4, a distance of 658.34 feet to the southwest corner of the East 3/4 of the Southeast 1/4 of aforesaid Section 1; thence N.00°09'58"E., along the west line of the East 3/4 of the Southeast 1/4 of said Section 1, a distance of 2652.31 feet to the northwest corner of said East 3/4 of the Southeast 1/4 of Section 1; thence S.89°30'42"E., along the north line of the East 3/4 of the Southeast 1/4, a distance of 656.22 feet to the Southwest corner of the Southeast 1/4 of the Northeast 1/4 of said Section 1; thence N.00°25'01"E., along the west lines of the Southeast 1/4 of the Northeast 1/4 and the Northeast 1/4 of the Northeast 1/4 of said Section 1, a distance of 2673.15 feet to the northwest corner of the Northeast 1/4 of the Northeast 1/4 of said Section 1; thence S.89°53'46"E., along the aforesaid north line of the Northeast 1/4, a distance of 1121.54 feet to the Point-of-Beginning.

Containing 265.63 acres more less.

GRAPHIC SCALE

(IN FEET)
1 inch = 400 ft.



NOTES:

1.) Bearings shown hereon are based on the North line of the Northeast 1/4 of Section 1, Township 24 South, Range 36 East; being "N.89°53'46"W.", an assumed bearing.
2.) There may be additional restrictions that are not recorded on this plat that may be found in the Public Records of this County.
3.) An easement 7.50 feet wide is hereby reserved along all front, rear, and side lot lines for the installation and maintenance of public utilities and drainage, unless otherwise shown.
4.) Unless otherwise shown; there is hereby reserved along all lots, a 7.50 feet wide Florida Power & Light Company easement abutting street rights-of-ways.
5.) All platted utility easements shall also be easements for the construction, installation, maintenance, and operation of cable television services, and Southern Bell telephone services.
6.) When more than one lot is used as a building site, the easements noted by note #3 will revert to the perimeter of said building site.
7.) Tract 5 is a landscape [illegible] to be owned and maintained by the developer and or [illegible]
8.) Tracts 3, 5, 6 and 7 are golf course and common open area tracts, as further described by the final development plan, to be owned and maintained by Brevard County.
9.) Tract 8 is intended for future residential development, to include single family lots and public roadways. Ownership to be retained by the developer.
10.) Tract 4 is a 50' wide tract to be utilized for the installation and maintenance of a decorative boundary wall, to be owned by the developer.
11.) Tract 1 is hereby dedicated to Brevard County for Hall Road right-of-way.
12.) "□" denotes P.R.M. (permanent reference monument) set. (4"x4" concrete monument w/ "P.R.M." stamped on [illegible] metal cap) "○" denotes P.C.P. (permanent control point) set. ("[illegible]" washer and P.K. nail stamped "P.C.P.")
13.) "(R)" denotes radial line.
14.) "(NR)" denotes non-radial line.
15.) For deed restrictions see O.R.B. 2976, page 4792.
16.) For mortgagee joinder in dedication see O.R.B. 2976, page 4775.
17.) See sheet 7 of 7 for additional notes.

Bessent Engineering Group Inc.
P.O. Box [illegible] • [illegible] Parnell Street
Merritt Island, Florida [illegible]

PLAT BOOK 35 PAGE 56
SHEET 1 OF 7
SECTION 1,12 TWP 24 S. RANGE 36 E.

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, that the Corporation named below, being the owner in fee simple of the lands described in THE SAVANNAHS P.U.D. hereby dedicates said lands and plat for the uses and purposes therein expressed and dedicates all roads, streets, alleys, thoroughfares, parks, canals, drainage easements, utility easements, lakes, pathways, open spaces and other rights of way, easements shown hereon to the perpetual use of the public, and
IN WITNESS WHEREOF, has caused these presents to be signed and attested to by the officers named below and its corporate seal to be affixed hereto on January [illegible], 1989.

By [signature] President
Attest: [signature] Secretary

Signed and sealed in the presence of: [signatures]
Savannahs of Sykes Creek, Inc.
100 Parnell St.
Merritt Island, Fla. 32953

STATE OF FLORIDA COUNTY OF BREVARD
THIS IS TO CERTIFY, That on January 17, 1989 before me, an officer duly authorized to take acknowledgments in the State and County aforesaid, personally appeared [illegible] and [illegible] respectively President and Secretary of the above named corporation incorporated under the laws of the State of FLORIDA, to me known to be the individuals and officers described in and who executed the foregoing Dedication and severally acknowledged the execution thereof to be their free act and deed as such officers thereunto duly authorized; that the official seal of said corporation is duly affixed thereto, and that the said Dedication is the act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the above date.

Patricia Anne [illegible]
NOTARY PUBLIC
My Commission Expires 2-27-92
SEAL

CERTIFICATE OF SURVEYOR

KNOW ALL MEN BY THESE PRESENTS, That the undersigned, being a licensed and registered land surveyor, does hereby certify that on January 5, 1989 he completed the survey of the lands as shown in the foregoing plat; that said plat is a correct representation of the lands therein described and platted; that permanent reference monuments have been placed as shown thereon as required by Chapter 177 & 472 Florida Statutes, and that said land is located in Brevard County, Florida. Dated [illegible]
[signature] Registration No. 2022

CERTIFICATE OF APPROVAL BY MUNICIPALITY

THIS IS TO CERTIFY, That on ______ the ______ approved the foregoing plat.
SEAL
______ MAYOR
ATTEST:
______ CITY CLERK

CERTIFICATE OF ACCEPTANCE OF DEDICATION BY BOARD OF COUNTY COMMISSIONERS

THIS IS TO CERTIFY That the Board of County Commissioners hereby accepts all roads, streets, alleys, thoroughfares, parks, canals, drainage easements, utility easements, lakes, pathways, open spaces and other rights of way, easements and areas dedicated for public use on this plat.

[signature] Chairman of the Board
ATTEST: R.C. Winstead by June Margagliotti
Clerk of the Board

CERTIFICATE OF APPROVAL BY BOARD OF COUNTY COMMISSIONERS

THIS IS TO CERTIFY, That on January [illegible], 1989, the foregoing plat was approved by the Board of County Commissioners of Brevard County, Florida.
[signature] Chairman of the Board
Attest R.C. Winstead By June Margagliotti
Clerk of the Board
Approved ______ County Engineer

CERTIFICATE OF APPROVAL BY PLANNING AND ZONING COMMISSION

THIS IS TO CERTIFY, That on January 9, 1989 the Zoning Commission of the [illegible] approved the foregoing plat.
[signature]
Planning and Zoning Director

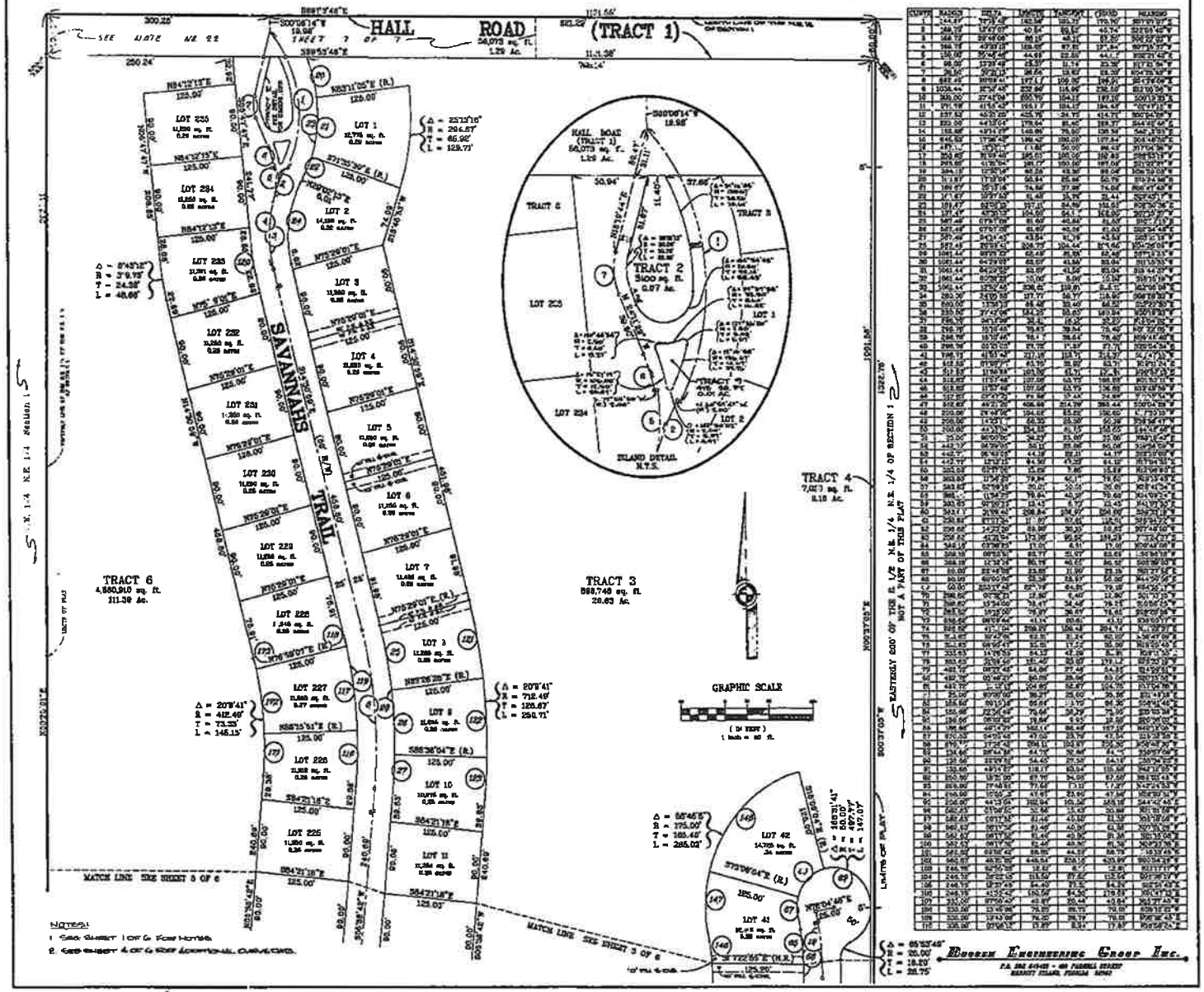
CERTIFICATE OF CLERK

I HEREBY CERTIFY, That I have examined the foregoing plat and find that it complies in form with all the requirements of Chapter 177, Florida Statutes, and was filed for record on January 25, 89 at 3:10 pm File No. 620008
R.C. Winstead by June Margagliotti
Clerk of the Circuit Court in and for Brevard County, Fla.

THE SAVANNAHS P.U.D.

PLAT BOOK 35 PAGE 57
SHEET 2 OF 7
SECTION 1,12 TWP. 24 S., RANGE 36 E.

A Subdivision lying in Sections 1 and 12, Township 24 South, Range 36 East, of Brevard County, Florida



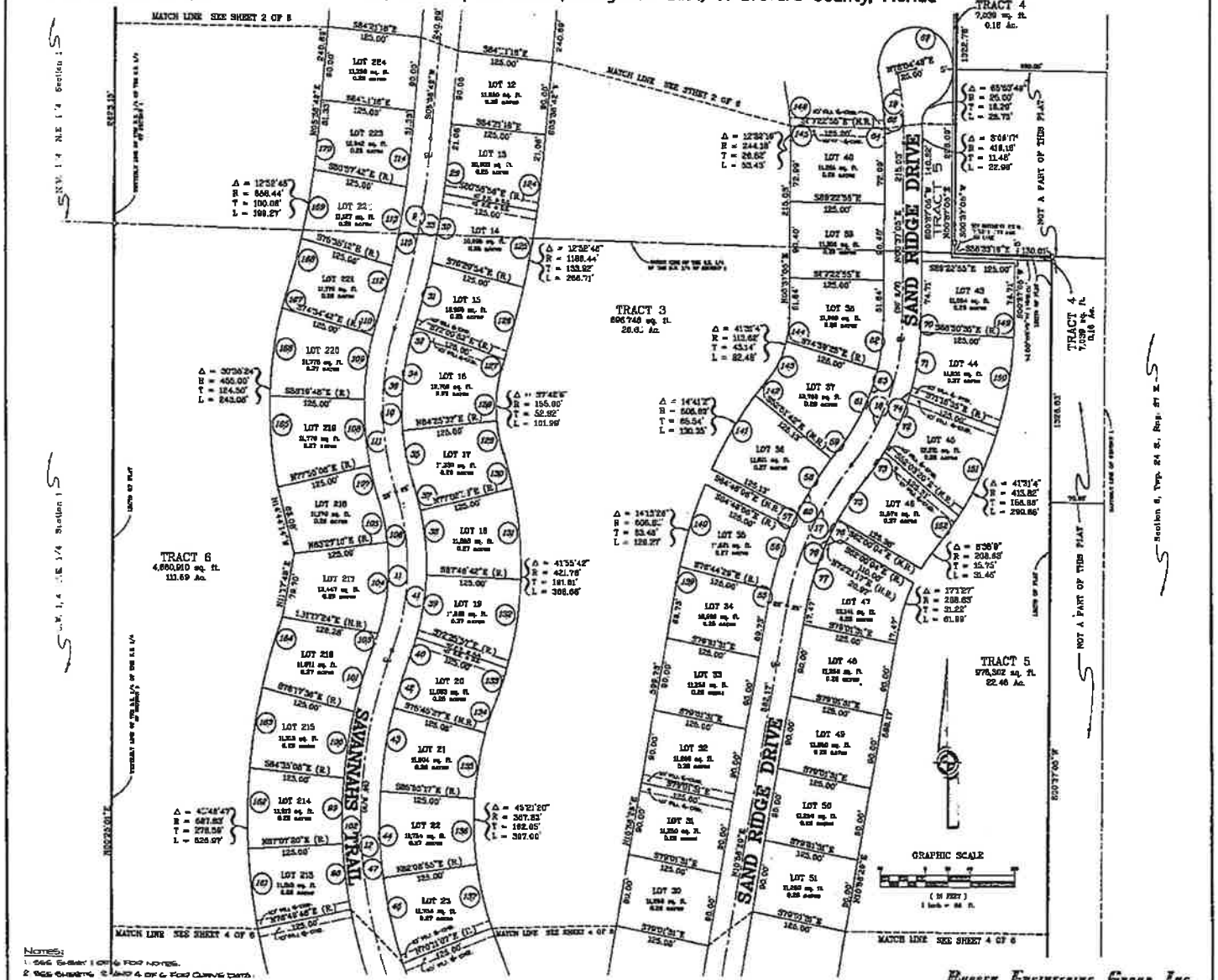
NOTES:
1. See Sheet 1 of 6 for Notes.
2. See Sheet 4 of 6 for Additional Curve Data.

Bowden Engineering Group Inc.

THE SAVANNAHS P.U.D.

PLAT BOOK 35 PAGE 58
SHEET 3 OF 7
SECTION 1,12 TWP. 24 S., RANGE 36 E

A Subdivision lying in Sections 1 and 12, Township 24 South, Range 36 East, of Brevard County, Florida



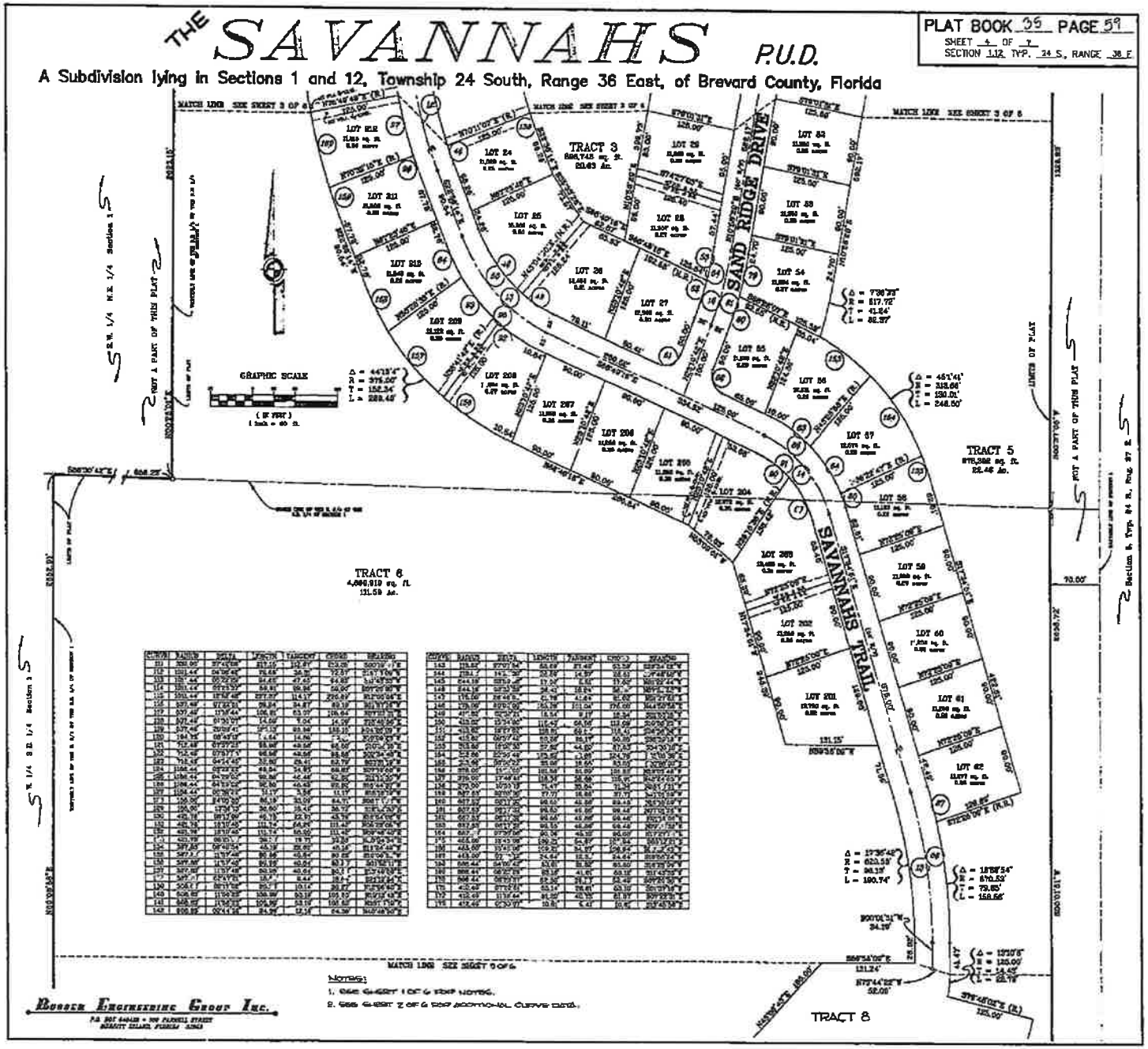
Notes:
1. SEE SHEET 1 OF 6 FOR NOTES.
2. SEE SHEETS 3 AND 4 OF 6 FOR CURVE DATA.

Bunker Engineering Group Inc.

THE SAVANNAHS P.U.D.

PLAT BOOK 35 PAGE 59
SHEET 4 OF 7
SECTION 1,12, TWP. 24 S., RANGE 36 E

A Subdivision lying in Sections 1 and 12, Township 24 South, Range 36 East, of Brevard County, Florida

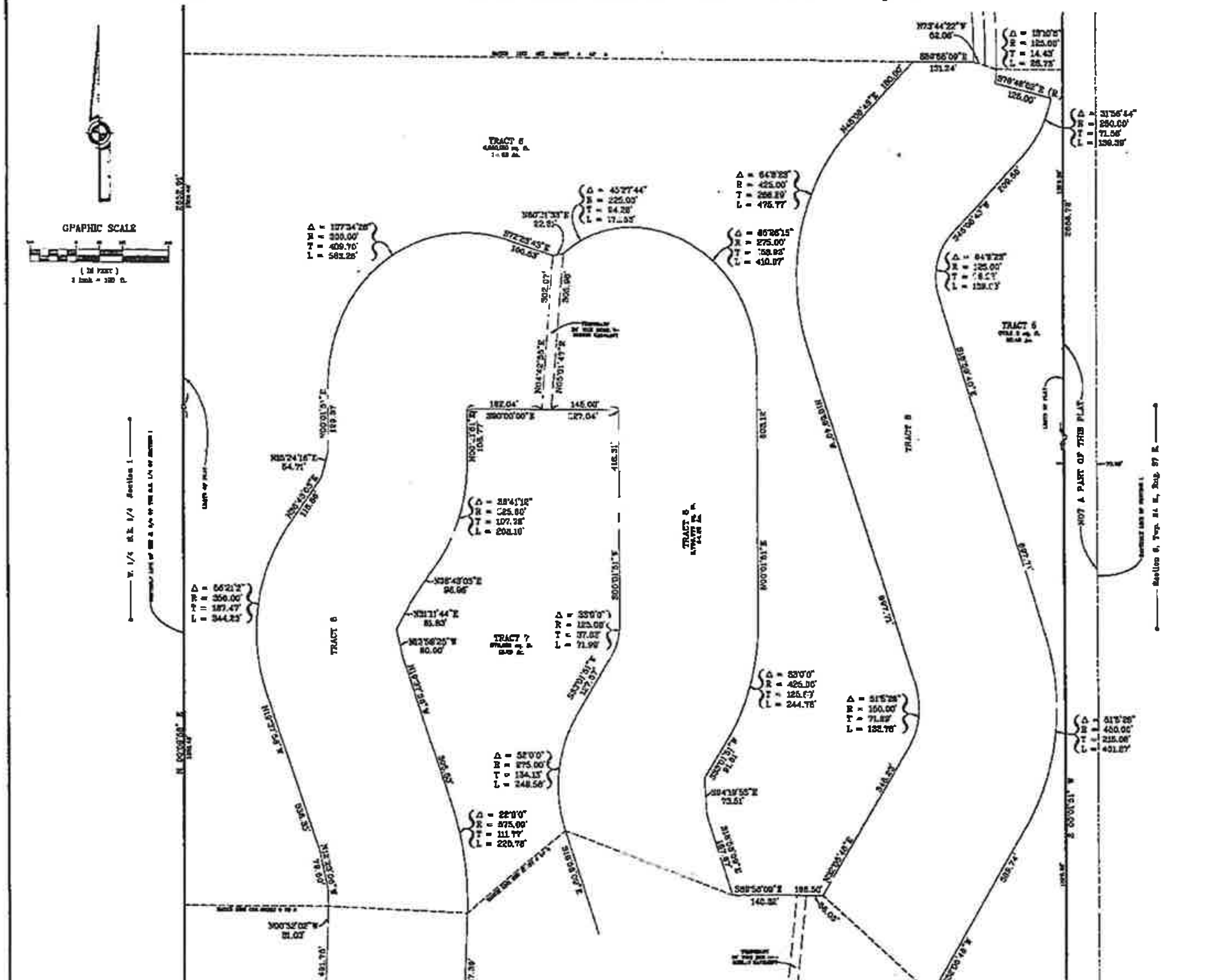


Bowyer Engineering Group Inc.

THE SAVANNAHS P.U.D.

A Subdivision lying in Sections 1 and 12, Township 24 South, Range 36 East, of Brevard County, Florida

PLAT BOOK 35 PAGE 60
SHEET 5 OF 7
SECTION 1,12 TWP. 24 S., RANGE 36 E.

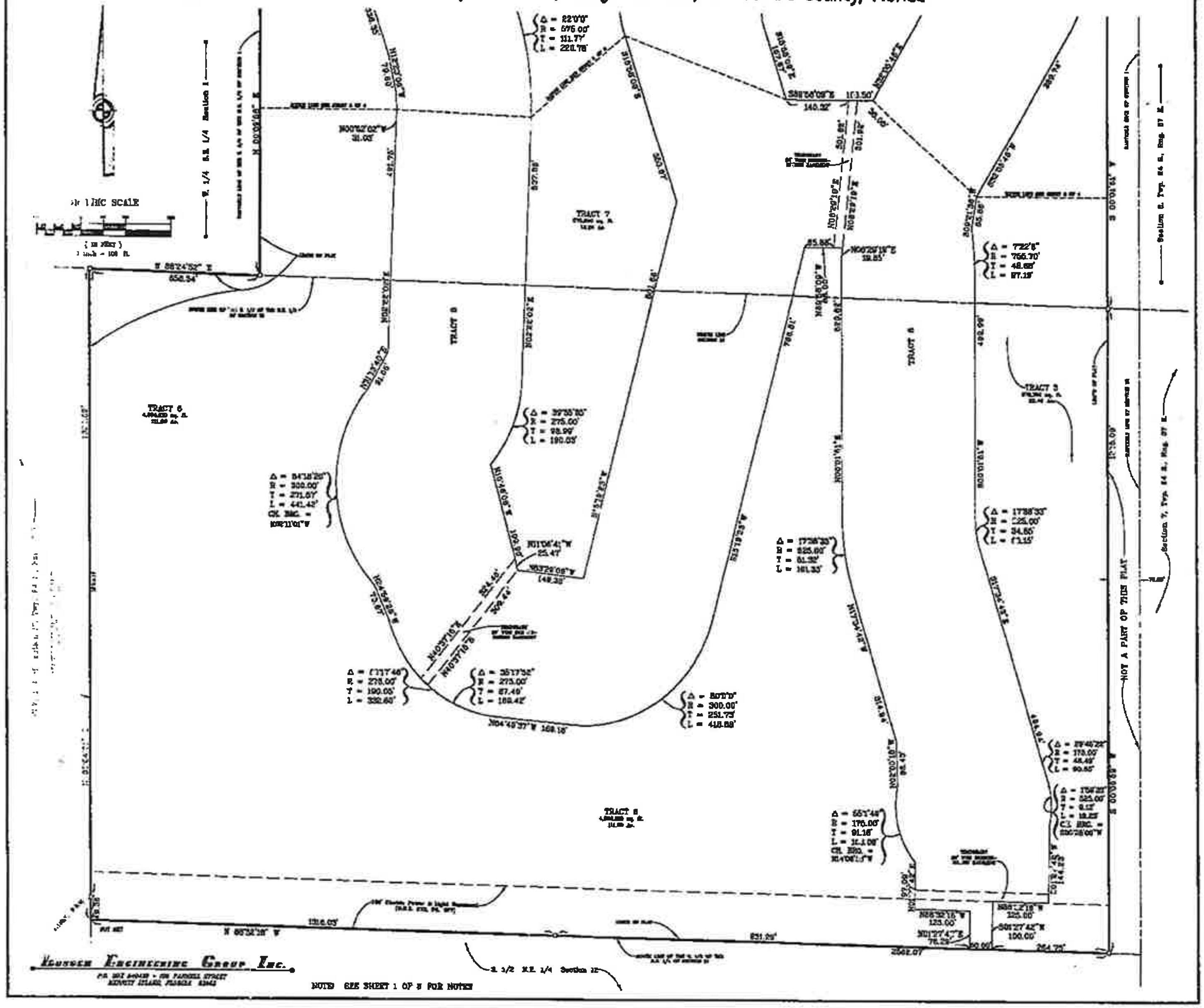


Rogers Engineering Group Inc.

NOTE: SEE SHEET 1 OF 6 FOR NOTES.

THE SAVANNAHS P.U.D.

A Subdivision lying in Sections 1 and 12, Township 24 South, Range 36 East, of Brevard County, Florida



SAVANNAHS P.U.D.

A Subdivision lying in Sections 1 and 12, Township 24 South, Range 36 East, of Brevard County, Florida.

FOR ADDITIONAL INFORMATION SEE SHEETS 1 THRU 6, INCLUSIVE, OF 7

18 SEE SHEET 1 OF 7 FOR ADDITIONAL NOTES.
19 EXISTING 30.00 FOOT WIDE F.P.&L. EASEMENT RECORDED IN O.R. BOOK 1556, PAGE 691, BREVARD COUNTY PUBLIC RECORDS TO BE VACATED UPON COMPLETION OF CONSTRUCTION OF PHASE I. ADDITIONALLY, IMPROVEMENTS RELATED TO SAID TO BE REMOVED.
20 THERE IS AN EXISTING DITCH EASEMENT PER DEED BOOK 14, PAGE 38 OF UNSPECIFIED WIDTH.
21 THERE IS AN EXISTING ROAD EASEMENT RECORDED IN DEED BOOK 14, PAGE 3?; AND DEED BOOK 136, PAGE 96 BREVARD COUNTY PUBLIC RECORDS OF UNSPECIFIED WIDTH.
22 THE 50.00 FOOT WIDE ROAD RESERVATION RECORDED IN O.R. BOOK 1512, PAGE 253, BREVARD COUNTY PUBLIC RECORDS IS EXCLUDED ENTIRELY WITHIN "TRACT I" AS SHOWN ON SHEET 2 OF 7 OF THIS PLAT; SAID "TRACT I" IS BEING DEDICATED TO BREVARD COUNTY
23 THE "SPOIL BANK ROAD" REFERRED TO IN O.R. BOOK 2668, PAGE 690 BREVARD COUNTY PUBLIC RECORDS, LIES PARTIALLY ACROSS "TRACT G"; SAID "TRACT G" IS BEING DEDICATED TO BREVARD COUNTY

Rossen Engineering Group Inc.
P.O. BOX [illegible] PARNELL STREET
MERRITT ISLAND, FLORIDA [illegible]

PLAT BOOK 35
AND PAGE 62 SHEET 7 OF 7

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, That the undersigned, being the owner in fee simple of the lands described in
THE SAVANNAHS P.U.D.
hereby dedicates said lands and plat for the uses and purposes therein expressed and dedicates the streets, alleys, thoroughfares, parks, canals, drainage easements, utility easements, lakes, pathways, open spaces and other rights of way, easements shown hereon to the perpetual use of the public.
IN WITNESS WHEREOF, the undersigned hereunto set his hand and seal on [illegible] JAN 1988.

Robert D. Guthrie, as Trustee and Individually

Signed and sealed in the presence of:

STATE OF FLORIDA COUNTY OF BREVARD
THIS IS TO CERTIFY, That on [illegible] JAN 1988, before me, an officer duly authorized to take acknowledgments in the State and County aforesaid, personally appeared

Robert D. Guthrie, as Trustee and Individually

to me known to be the person described in and who executed the foregoing dedication and severally acknowledged the execution thereof to be his free act and deed for the uses and purposes therein expressed.

SEAL

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the above date.

NOTARY PUBLIC
My Commission Expires 6-24-92

CERTIFICATE OF SURVEYOR

KNOW ALL MEN BY THESE PRESENTS, That the undersigned, being a licensed and registered land surveyor, does hereby certify that on [illegible] he completed the survey of the lands as shown in the foregoing plat; that said plat is a correct representation of the lands therein described and platted; [illegible] Chapter 177, Florida Statutes; [illegible] Brevard County, Florida. Dated [illegible]

Registration No.

CERTIFICATE OF APPROVAL BY MUNICIPALITY

THIS IS TO CERTIFY, That on [illegible] approved the foregoing plat.

MAYOR

ATTEST:

CITY CLERK

CERTIFICATE OF ACCEPTANCE OF DEDICATION BY BOARD OF COUNTY COMMISSIONERS

THIS IS TO CERTIFY, That the Board of County Commissioners hereby accepts of roads, streets, alleys, thoroughfares, parks, canals, drainage easements, utility easements, lakes, pathways, open spaces and other rights of way, easements [illegible] dedicated for public use on this plat.

Chairman of the Board

ATTEST:

Clerk of the Board

CERTIFICATE OF APPROVAL BY BOARD OF COUNTY COMMISSIONERS

THIS IS TO CERTIFY, That on [illegible] the foregoing plat was approved by the Board of County Commissioners of Brevard County, Florida.

Chairman of the Board

Attest

Clerk of the Board

Approved

County Engineer

CERTIFICATE OF APPROVAL BY PLANNING AND ZONING COMMISSION

THIS IS TO CERTIFY, That on [illegible] the Zoning Commission of the above [illegible] approved the foregoing plat.

Planning and Zoning Director

CERTIFICATE OF CLERK

I HEREBY CERTIFY, That I have examined the foregoing plat and find it complies in form with all the requirements of Chapter 177, Florida Statutes, and was filed for record on [illegible]

Clerk of the Circuit Court in and for Brevard County, Fla.

GOAL, OBJECTIVES AND POLICIES

GOAL

TO MANAGE GROWTH IN BREVARD COUNTY IN A MANNER THAT ENHANCES NATURAL AND MAN-MADE SYSTEMS AND MEETS THE PUBLIC'S SOCIAL AND ECONOMIC NEEDS.

RESIDENTIAL LAND USES

Objective 1

Brevard County shall facilitate the development of residential neighborhoods that offer the highest quality of life to the citizenry through the implementation of policies that accomplish the following:

Criteria:

A. Ensure the compatibility of new development with its surroundings;

B Ensure the delivery of services that meet or exceed established levels of service;

C. Discourage the occurrence of inefficiencies inherent in urban sprawl as defined by Florida Statutes;

D. Strive to decrease identified hurricane evacuation deficiencies;

E. Produce neighborhoods that complement adjacent land uses;

F. Permit mixed use developments which, through the application of appropriate performance standards, juxtaposes neighborhood services and employment centers with residential uses in order to promote efficient use of land; and

G. Encourage open space within residential developments and promote interconnectivity with surrounding land uses through innovative land regulations and bonus incentives.

Residential Land Use Designations

Policy 1.1

The residential land use designations adopted as part of the Future Land Use Map represent maximum density thresholds. Approved densities may be lower than the maximum allowed by a residential land use designation as a result of one or more of the following:

Criteria:

A. Environmental constraints identified in applicable objectives and policies of the Conservation Element which impose more stringent density guidelines;

B. Land use compatibility pursuant to Administrative Policy 3;

C. Unavailability or inadequacy of public facilities and services, including educational facilities, to accommodate adopted density allowances, as set forth in Policy 1.2 and the policies found in the 'Service Delivery, Concurrency and Growth' section of this Element as well as related objectives and policies in the Capital Improvements Element;

areas and to maximize the integration of open space within the development and promote inter-connectivity with surrounding uses. This density bonus shall not be utilized for properties within the CHHA.

Residential 1 (maximum of 1 unit per acre)
Policy 1.9

The Residential 1 land use designation permits low density residential development with a maximum density of up to one (1) unit per acre, except as otherwise may be provided for within this element. The Residential 1 land use designation may be considered for lands within the following generalized locations, unless otherwise limited by this Comprehensive Plan:

Criteria:

A. Areas adjacent to existing Residential 1 land use designation; or
B. Areas which serve as a transition between existing land uses or land use designations with density greater than one (1) unit per acre and areas with lesser density; or
C. Unincorporated areas which are adjacent to incorporated areas and may be considered a logical transition for Residential 1.
D. Up to a 25% density bonus to permit up to 1.25 dwelling units per acre may be considered with a Planned Unit Development where deemed compatible by the County with adjacent development, provided that minimum infrastructure requirements set forth in Policy 1.2 are available. Such higher densities should be relegated to interior portions of the PUD tract, away from perimeters, to enhance blending with adjacent areas and to maximize the integration of open space within the development and promote inter-connectivity with surrounding uses. This density bonus shall not be utilized by properties within the CHHA.

Residential 1:2.5 (maximum of 1 unit per 2.5 acres)
Policy 1.10

The Residential 1:2.5 land use designation, which establishes the lowest density of all the residential future land use designations, permits a maximum density of up to one (1) unit per 2.5 acres, except as otherwise may be provided for within this element. Development in the Residential 1:2.5 land use designation should seek to maximize the integration of open space within the development and promote inter-connectivity with surrounding uses. The Residential 1:2.5 land use designation may be considered for lands within the following generalized locations, unless otherwise limited by this Comprehensive Plan:

Criteria:

A. Areas adjacent to existing Residential 1:2.5 land use designation; or

Brevard County shall maintain zoning regulations as part of its Land Development Regulations to establish adequate zoning classifications for residential development in terms of allowing for a variety of housing types while providing residents with choices in terms of residential locations.

General Zoning Regulations Criteria
Policy 14.1

Zoning regulations shall adhere to the following criteria:

Criteria:

A. Residential zoning classifications shall be designated for single family, multi-family, and mobile home developments to meet the housing needs demonstrated in the Housing Element of this Comprehensive Plan.

B. The densities of these classifications, as applied, shall not exceed those established for each residential designation as adopted on the Future Land Use Map, unless otherwise provided for by this Element.

C. Proposed locations for residentially-zoned lands should be consistent with the residential designations shown on the Future Land Use Map and consistent with this Comprehensive Plan.

D. At a minimum, residential zoning classifications shall provide for a variety of minimum lot sizes, minimum floor areas, setbacks, and residential land use mixes that allow for choice in housing types, designs and price levels. These residential zoning classifications shall provide for both urban and rural residential environments.

Zoning Regulations to Promote Creative Utilization of Land
Policy 14.2

Zoning regulations should continue to provide for flexibility regarding development patterns and land use mix. The County encourages implementation of innovative residential and commercial development patterns and lot layout techniques which achieve efficient use of public resources, reduced land consumption, and preservation of interconnected open spaces. These techniques include:

Criteria:

A. The Planned Unit Development concept, where appropriate, to encourage creativity in development design, provision of connected open spaces, protection of environmental features, and an integrated mix of residential and non-residential land uses and employment opportunities.

B. The use of zero-lot line residential development patterns, shared driveways and reduced setbacks, where appropriate, to encourage more compact subdivision layouts and to generally provide increased flexibility in the design and use of the lot area.

C. Designed integration of residential, employment and commercial uses as permitted in the context of this Element, to promote compact mixed use development patterns within a single structure or complex of structures.

D. Mixed use developments to promote efficient use of land and public resources by integrating neighborhood support services and employment centers with residential uses. Mixed use patterns should be implemented and achieved through the use of performance standards and other mitigating techniques to ensure compatibility between land uses.

E. Creative clustering of residential and commercial lots and streets which preserve undisturbed vegetative corridors and consolidate cleared land areas. Innovative techniques may include reduced lot sizes, shared driveways and other design features. In furtherance of the County's Master Plan of Linear Open Spaces, clustered development schemes which permanently preserve interconnected networks of open space within subdivisions and link same with adjacent subdivisions and parks will be considered for density bonuses or other development incentives (Figure 2 in the Appendix depicts an example of a clustered land development technique in comparison with a conventional subdivision layout).

CONSISTENCY WITH COMPREHENSIVE PLAN, ZONING AND LAND DEVELOPMENT REGULATIONS

Objective 15

Brevard County shall eliminate inconsistencies between the Comprehensive Plan and the zoning regulations of the Land Development Regulations, and thereafter, shall reduce the number of existing land uses which are non-conforming to the Comprehensive Plan.

Authority to Initiate Administrative Actions

Policy 15.1

Brevard County retains the authority to initiate appropriate administrative actions, such as administrative rezonings.

Administrative Rezonings for Consistency with the Future Land Use Map

Policy 15.2

County staff may initiate administrative rezonings for those properties that are found to be inconsistent with the Future Land Use Map at the time of a development permit application.

Criteria:

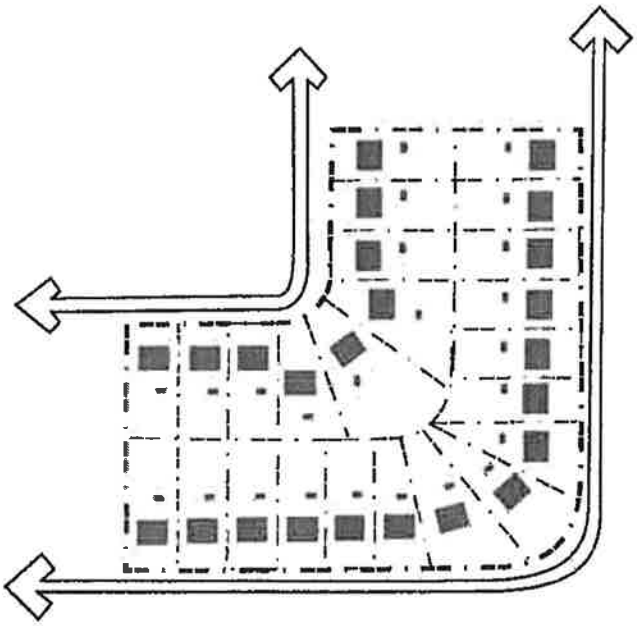
A. Determination of appropriate zoning classifications for these properties shall be pursuant to the policies and criteria which govern the Future Land Use Map and future land use designations established in this element.

FIGURE 2

COMPARATIVE DEPICTION OF

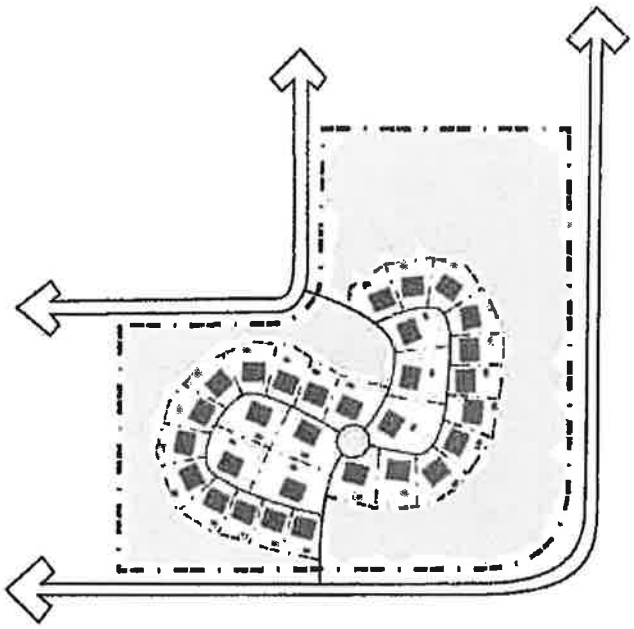
CONVENTIONAL VS. CLUSTERING LAND DEVELOPMENT TECHNIQUES

(See Policy 14.2.E)



Example of a Parcel with a Conventional large Lot Subdivision

Residential Lot Yield	24
Non Residential Lot Yield	0
Open Space Preservation	0%



Example of the Same Parcel with a Clustered, Mixed Use Subdivision

Residential Lot Yield	28*
Non Residential Lot Yield	2
Open Space Preservation	50%

* assumes a theoretical density bonus for creation and clustering of smaller lots; integration of non-residential uses; connection of undisturbed linear open spaces.

StreetSide Developments

StreetSide Developments Blog

10 Benefits of Townhome Living

POSTED ON JANUARY 27, 2017

When it comes to condo living, most people think of apartment style condos rising high across the cityscape. Fortunately, there is another great condo type for the urban dweller. Many developers build townhome style condominiums that merge all the perks and benefits of condo living with the features of a single-family home.

This style of condo strikes the perfect balance between a low-maintenance lifestyle and the luxuries of private home ownership. Here's our list of ten great benefits townhome living offers homeowners.

1. Greenspace

One of the joys of detached home living is personal property. Whether you enjoy hosting backyard barbecues or simply like space to tinker around, outdoor space is something that's universally appreciated.

Most townhomes have plots of land that are owned by the unit holder. It gives you ample room for children and pets to play and even for some gardening, should you wish to really maximize your space. If you're looking to cut back on seasonal yard work but still want the benefit of outdoor space, townhome living could be exactly what you're looking for.

2. Balconies

Beyond some added green space, townhome living often features other outdoor spaces just for you. Many townhomes have walk-out balconies or verandas, perfect for sipping your morning coffee or relaxing with a book.

3. Patios

Some townhomes also include patios in the yard space, possibly with natural gas hook-ups for summertime grilling. When it comes to urban living, this is a nice feature to have.

4. Garage Space

Let's be honest, those two and three car garages are often filled with more "stuff" than cars. Some townhomes have tandem garage space that protects your vehicle while giving you some extra storage space. When it comes to downsizing, things like garage space are typically the first to go. If you're thinking about condo living, townhomes offer the perfect compromise.

5. Minimal Maintenance

Aside from the above-mentioned features, townhomes still offer nearly maintenance-free living. In many townhome communities, homeowner's associations or condo corporations are responsible for all exterior maintenance work and seasonal yard care.

Condo fees contribute to hiring teams that take care of everything from snow shoveling to lawn care, to exterior painting and gutter cleaning, leaving homeowners responsible for the interior of their homes and nothing more.

6. Multi-Level Living

Contrary to apartment style condo living, one of the benefits of townhome living is the multi-level floor plans. Like single-family homes, townhomes provide plenty of space for everyone, with bedrooms upstairs, spacious living rooms and kitchens, and the option of a fully finished basement.

7. Close Community

Living side-by-side, you're bound to bump into your neighbours now and again. Whether you're the neighbourly type or not, there are benefits to living in a close-knit community. That extra cup of sugar is

just steps away, and when you head out of town for a few days there's always someone to keep an eye on your home while you're away.

8. Urban Convenience

Townhomes were designed for convenient living. They are typically located in urban communities with amenities, entertainment destinations and the staples of everyday life located nearby.

For many urban dwellers, public transit is an important consideration and good builders will often seek to build in areas that provide easy access to the city. Townhome living is made for people that are always on the go. With seasonal yard care services and maintenance teams caring for your property, coming and going is truly worry free.

9. More Cost Friendly

This final point is pretty straightforward. Townhomes are generally less expensive than single-family, detached homes. With smaller square footage, lower utility bills and fewer out-of-pocket maintenance costs, townhome living simply costs less.

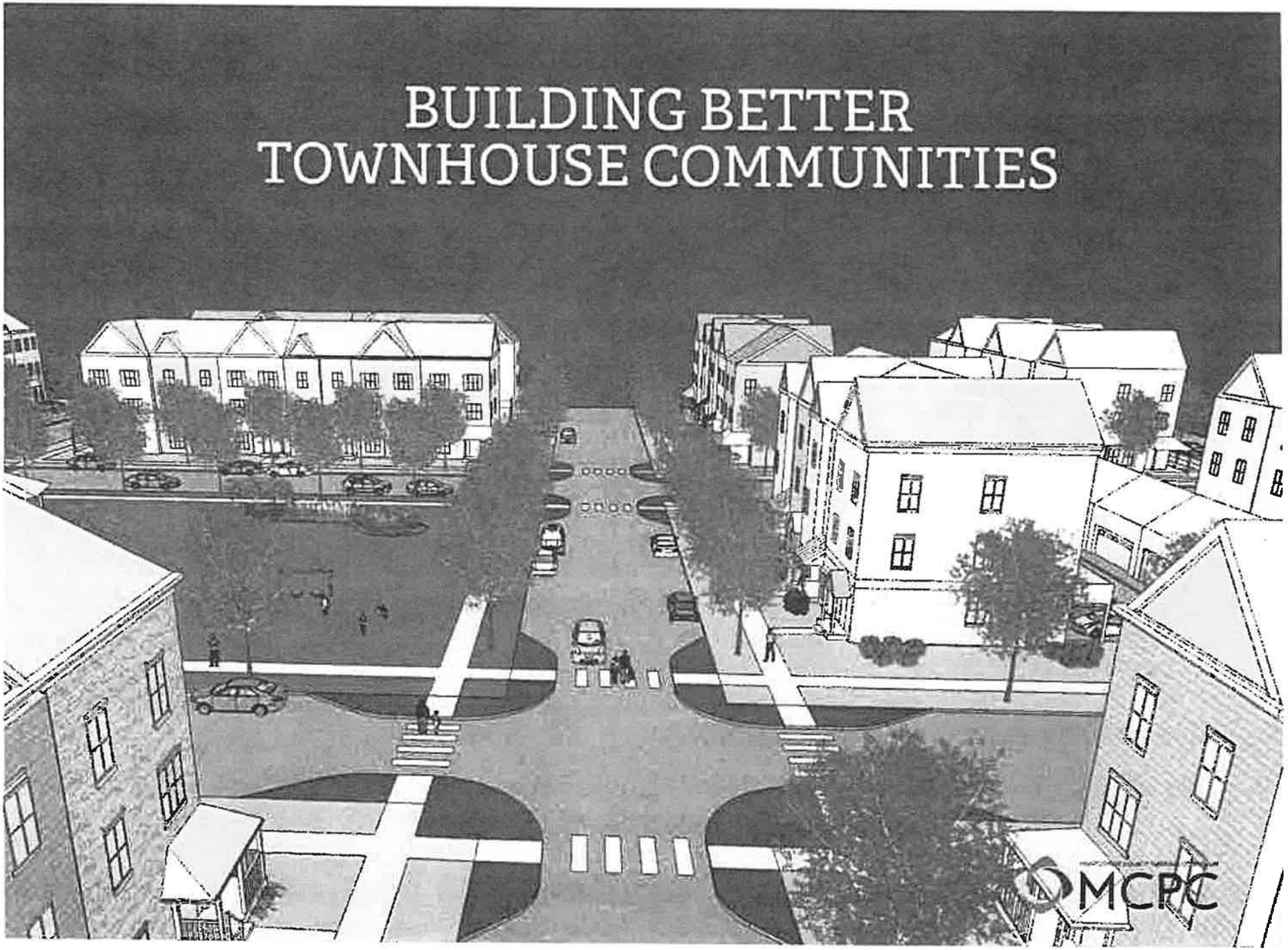
With more and more people moving into cities and urban communities becoming denser, townhome living provides a convenient and affordable alternative to detached home living, with a lot of added perks!

10. Consider Your Options

In considering the differences between apartment condos, townhomes and attached bungalows, you should be able to decide what's best for you. In a fast-paced world where convenience is coveted, townhome living offers a nice mix of detached home features with the flexibility of condo living.

Whether it's your first home-buying experience, or you think it's time to downsize, you may find a townhome is your solution. If low-maintenance living is high on the priority list, but sacrificing too much space is a concern, a townhome can be the perfect in-between.

BUILDING BETTER TOWNHOUSE COMMUNITIES



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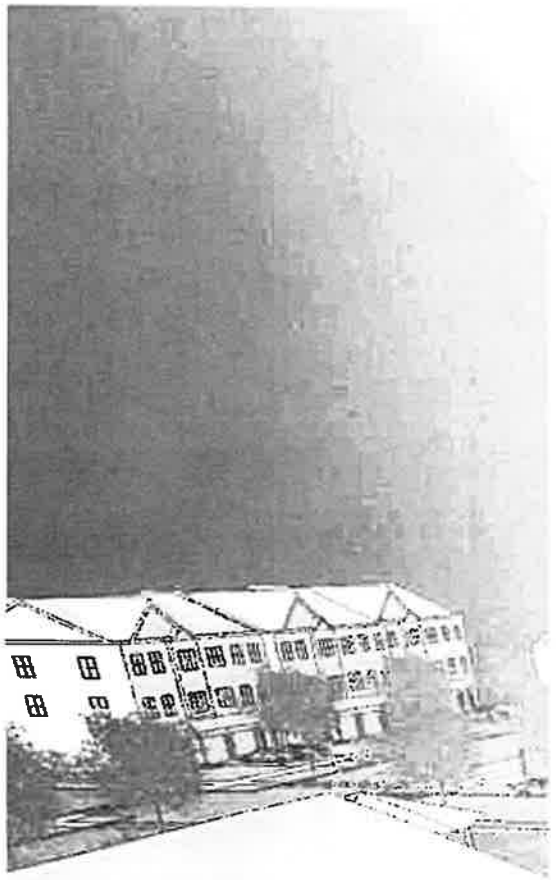

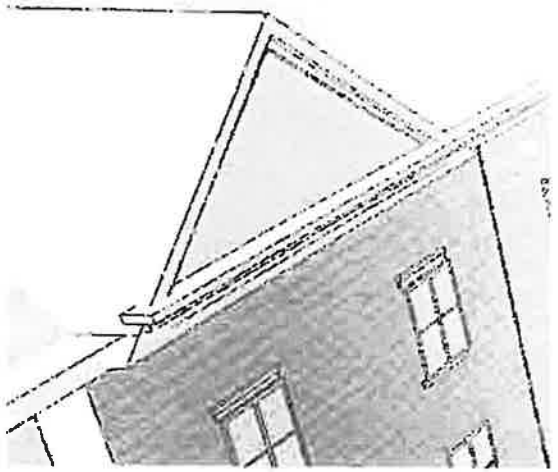

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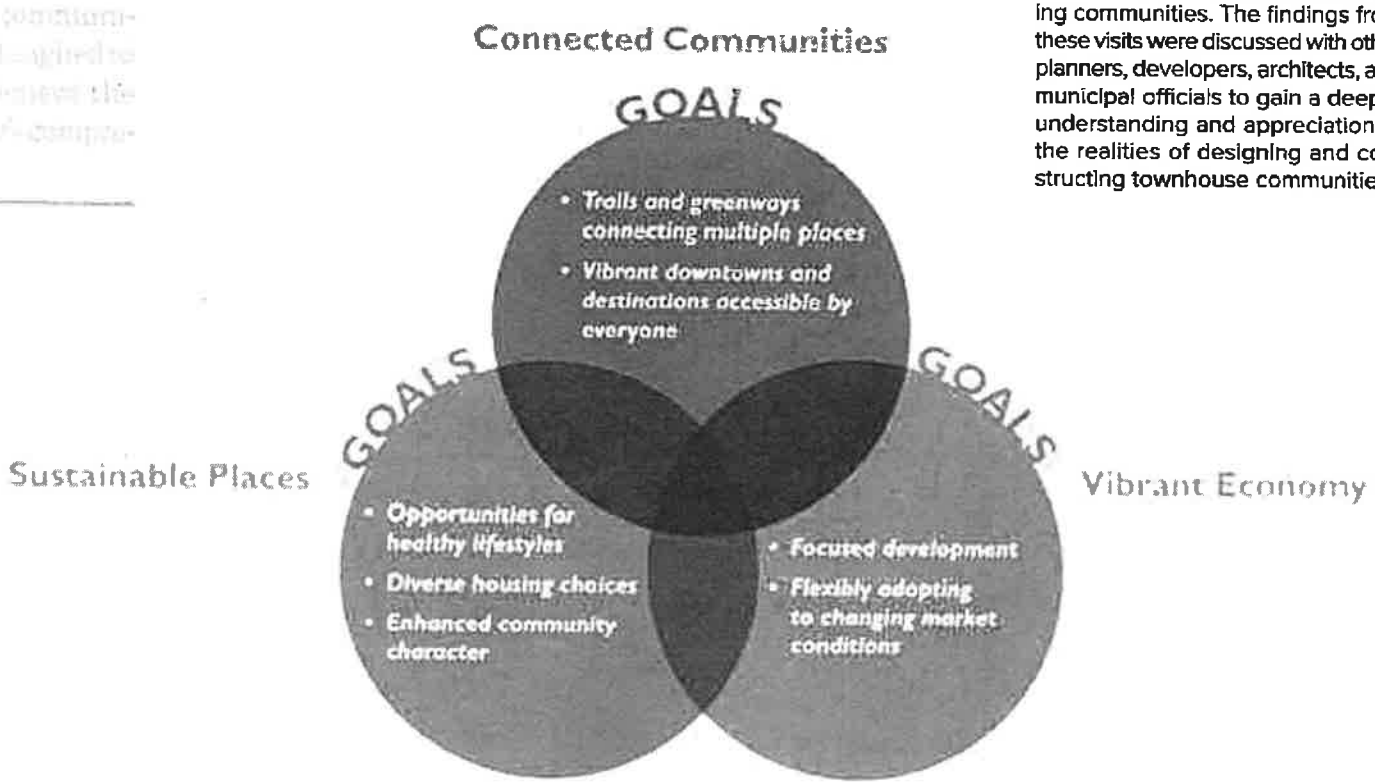
INTRODUCTION

Townhouse developments are a common housing type in Montgomery County, both as higher density infill projects in older boroughs as well as large-scale new development in suburban townships. Townhouses are an attractive housing choice for many. They can be more affordable than single-family detached homes in the same community and have reduced home maintenance responsibilities. As predominant trends in townhouse development have evolved and as townhouses have become an important housing choice within the county, recent developments have provided valuable examples of how design features and amenities make townhouse neighborhoods desirable places to live.

Creating great townhouse communities involves smart design choices and successful integration into the surrounding neighborhoods. All townhouse developments, regardless of size or location, benefit from careful attention to site planning, design, and architecture to ensure successful projects that meet the needs of residents and provide long-term value to the community. The Montgomery County Planning Commission (MCPC) has prepared this design guidebook to focus attention on good townhouse design and to make recommendations on how municipalities can adopt solutions to create vibrant, healthy communities that address the goals established in *Montco2040: A Shared Vision*, Montgomery County's comprehensive plan. The goals established in the plan, adopted in 2015, form the basis for this publication. The Montco 2040 plan recognizes sustainable places as a key theme with supporting goals focused on providing diverse housing choices and the need to enhance community character and protect neighborhoods. It also recognizes connected communities and vibrant economy as important goals to connect places with trails and focus development. Recommendations in this publication are consistent with other design guides and model ordinances prepared by MCPC and were developed based upon numerous site visits to townhouse communities in Montgomery County and surrounding communities. The findings from these visits were discussed with other planners, developers, architects, and municipal officials to gain a deeper understanding and appreciation of the realities of designing and constructing townhouse communities.



Evolution of the townhouse

The term "townhouse" is derived from the style of attached housing units maintained by members of the upper class in eighteenth-century London. Families owned homes in the city in addition to their estate homes in the country—literally a "town" house.[1] These homes were distinct from other attached housing in cities of the time by their size and grandeur and were meant to serve as a single-family home rather than house multiple tenants. This style of housing made its way to North American cities and took on different terms depending on the city location, building material, and size or quality of home. Attached homes are referred to as "brownstones" in places like New York and Baltimore, derived from the dominant building material used, and as "row houses" in places like Philadelphia, as a reference to the long rows of attached homes that occupy entire city blocks. In the latter half of the twentieth-century, the term "townhouse" became a marketing concept to describe uniquely designed suburban forms of horizontally attached housing built in multi-unit complexes increasingly found in suburban communities.

The defining distinctions between townhouses and other attached or multifamily forms of housing is that townhouses consist of multiple floors and have their own outside door as opposed to having only one level and/or having access from a common hallway. Townhouses, especially in suburban settings, are typically limited to between 3 and 8 units in a building row whereas rowhomes can sometimes extend across entire city blocks without a break in the façade. Most townhouses are individually owned, and the property can either be limited to just the home itself where the lawn area is owned and maintained by a homeowners' association (similar to a condominium form of ownership), or the property could also include the lawn area belonging to that lot. Even when lotted into private lots, homeowners' associations often have responsibility for landscaping the public and private lawn areas to ensure uniform maintenance. Newer townhouse developments favor unlotted housing units while some older townhouse communities give homeowners full responsibility for the maintenance of their lots. In the suburbs, townhouse communities have acquired a recognizable design style that blends features original to the urban setting with traditional single-family detached residential developments. In early townhouse communities, parking was often established in common parking lots near each unit. Later townhouse developments incorporated separated blocks of detached garages or carports that homeowners could also purchase. By the 1990s, it became common to provide separate driveways for each unit and increasingly almost all developments included an attached one- or two-car garage. The inclusion of attached garages has also meant that many new townhouses have increased in height from 2 stories to 3 stories.

1 Stewart, Rachel. *The Town House in Georgian London*

to 2005 when the average number of proposed attached housing units per year was just under 1,000—half that of detached housing units.

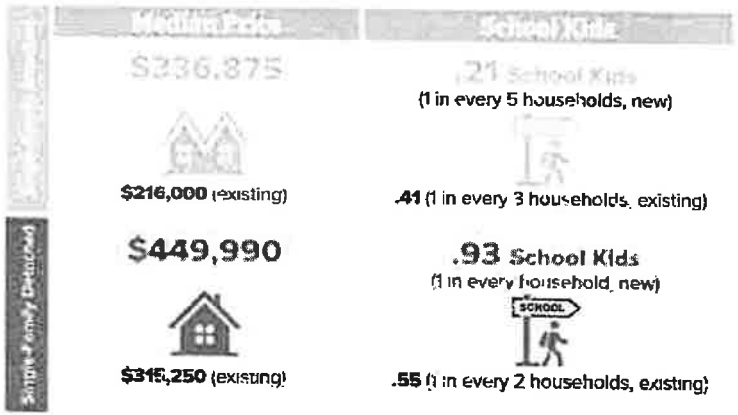
While townhouses often have been a more affordable housing choice, with pricing between single-family detached homes and multifamily units, over the past two decades a strong luxury townhouse market has grown with units in price ranges comparable to larger single-family detached homes. In 2016, the median price for new attached housing units was greater than the median price for existing single-family detached units.

Impacts of townhouse communities

For municipalities, townhouse developments are potentially advantageous because of their limited impact on municipal infrastructure and resulting fiscal demand compared to single-family detached developments. Though every residential development is different, most of the common infrastructure in many townhouse communities, including roads and stormwater management facilities, is maintained by the homeowners' association and is not the responsibility of the municipality.

The fiscal impact on the local school district also can be attractive. The average townhouse unit accounts for fewer school children than the single-family detached home, although existing townhouses tend to have more children per unit than new townhouses. This increase may be because many new construction units are purchased by people over 55 or by young couples with no school-aged children. A typical new single-family detached unit will have more children per unit than an existing single-family unit. This is because existing single-family detached units are more likely to have empty nesters, while new single-family detached units are more likely to draw families with school-aged children.

Comparison of Attached versus Detached Housing Units



TOWNHOUSE DESIGN ELEMENTS

The following section describes common design elements in townhouse communities in Montgomery County. Though townhouse communities may be different, each of the design elements are integral to the overall site design. The reader will come away with a thorough understanding of how design trends, zoning requirements, and site-specific considerations influence the final housing product, overall site design, and general feel of the community. The following elements and their impacts on the appearance and function of the development are reviewed:

- Street pattern
- Open space and recreation
- Pedestrian circulation
- Parking
- Garages and driveways
- Landscaping and street trees
- Front yard areas
- Architecture and building massing

Open space and recreation

Open spaces and parkland can play an important role in the lifestyle of the townhouse resident and serve as the recreation and play areas for homes with limited to no private lawn. Many municipalities require a percentage of the tract area to be set aside as open space. Typically, this open space requirement is met through perimeter buffer areas, stormwater facilities, or in environmentally sensitive areas such as stream corridors, steep slope areas, or wooded areas where development is restricted. More active types of open space in townhouse developments include walking trails, gathering spaces, central greens, recreation areas, and playgrounds.

Walking trails

With an increasing emphasis on walking as a healthy lifestyle habit, walking trails are a popular feature in all types of developments. Trail networks, especially through naturalized open space areas, provide a respite from the urban form and provide on-site recreational opportunities for walking, jogging, or even biking. Typically, these are paved with widths of 6 feet or wider. If trails are to be used for bicycles, they are generally 8 feet or wider. Trails can serve as part of the townhouse development's pedestrian circulation system and also connect with other trails and sidewalks within the surrounding community.

Gathering spaces

Gathering spaces are often placed in the development at prominent locations near intersections and focal points, such as around shared mailboxes or in central greens surrounded by houses. These spaces include improvements, such as seating areas and gazebos, and feature attractive landscaping. Grills, outdoor picnic facilities, or dog parks may be included in gathering areas.

Central greens

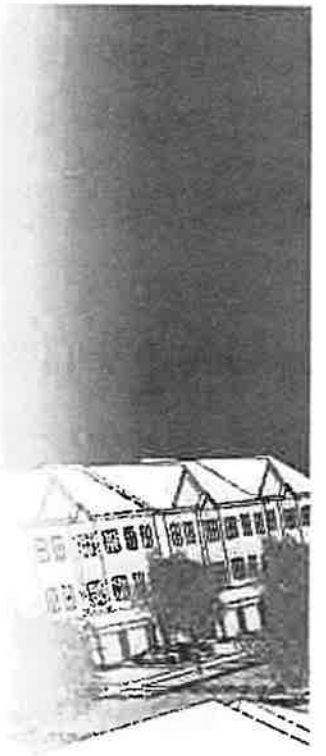
Central greens serve many purposes depending on their size, topography, and density and types of plantings. Large, flat, mowed fields, often times placed prominently in a development, can provide space for informal sports or for dog walking. Heavily planted or landscaped greens can serve as a focal point within a development and enhance views from adjoining houses, particularly if little or no landscaping is present in front of individual homes. Central greens are often found in courtyard-style developments, and guest parking is often provided around the green space.

Recreation areas and playgrounds

Many townhouse developments have playground facilities for children. A few developments contain other forms of active recreation such as tennis courts and swimming pools, although this is increasingly less common in newer development proposals.

Natural areas

Larger, more naturalized open space areas are often reserved along stream corridors and in wooded areas. They help to provide stormwater management and serve as buffers between adjoining land uses.



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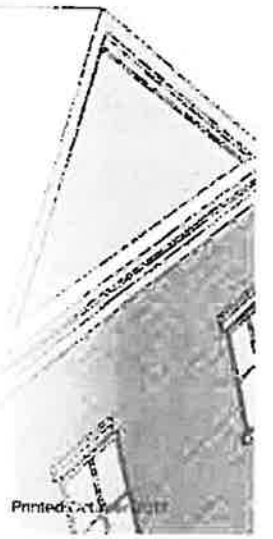

Tranquility Estates
Brevard County, Florida

Traffic Impact Study

Prepared for: Carlos A. Triay
By: LTG, Inc.
May 2018

LTG Engineering & Planning

PROFESSIONAL ENGINEERING CERTIFICATION

I hereby certify that I am a Professional Engineer properly registered in the State of Florida practicing with LTG, Inc., a corporation authorized to operate as an engineering business, EB 0009227, by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have prepared or approved the evaluations, findings, opinions, conclusions, or technical advice attached hereto for:

PROJECT: Tranquility Estates

LOCATION: Brevard County, Florida

CLIENT: Carlos A. Triay

JOB #: 4497.02

I hereby acknowledge that the procedures and references used to develop the results contained in these computations are standard to the professional practice of Transportation Engineering as applied through professional judgment and experience.

Prepared by:
LTG, Inc.
1970 Dairy Road,
W. Melbourne, FL 32904
Certificate of Authorization 9227
321/499-4679

This item has been electronically signed and sealed by: Gil Ramirez, PE on date shown 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.

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INTRODUCTION

LTG Inc. has been retained by Carlos A. Triay to prepare a Traffic Impact Study (TIS) for the proposed Tranquility Estates subdivision located on the north side of Hall Road and 1.9 miles east of SR 3/N Courtenay Parkway in Brevard County, Florida. The proposed development consists of 182 single family units and has an anticipated build-out year of 2022. Figure 1 shows the location of the project relative to the surrounding road network. A preliminary site plan showing the site layout is attached as Appendix A.

Study Area

The study area includes the following intersections as approved in the submitted methodology. The methodology is included as Appendix B.

Intersections:

- SR 3/N Courtenay Parkway at Hall Road
- SR 3/N Courtenay Parkway at Grant Road/Smith Road
- Hall Road at Project Driveway

Roadway Segments:

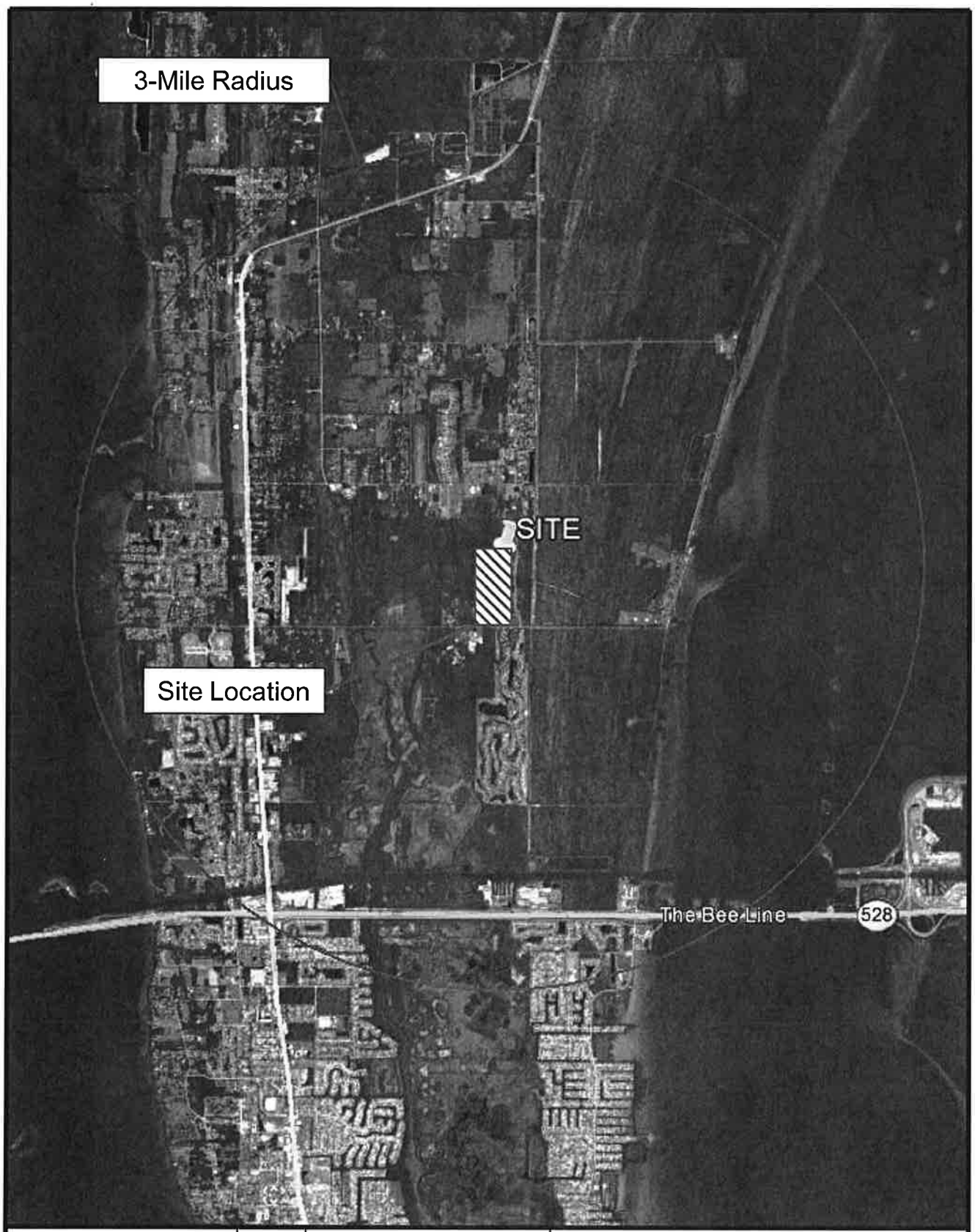
- SR 3 / N Courtenay Parkway from SR 528 N Ramp to Hall Road
- SR 3 / N Courtenay Parkway from Hall Road to N Tropical Trail
- Hall Road from Audubon Road to SR 3 / N Courtenay Parkway
- Hall Road from SR 3 / N Courtenay Parkway to N Tropical Trail

Study Procedures

Standard engineering and planning procedures were used to determine the impacts of this project. Reference data was obtained from the Florida Department of Transportation (FDOT), the Space Coast Transportation Planning Organization (TPO), and the Brevard County Planning Department.

Planned Roadway Improvements

FDOT's Five Year Work Program, Space Coast TPO Transportation Improvement Program, and the Brevard County Capital Improvement Plan were reviewed to ascertain if there were any programmed or planned roadway improvements within the area of interest. Based on information obtained, there are no completions of planned capacity enhancing improvements scheduled within the area before the end of 2022.



Tranquility Estates	N NTS	**Site Location Map**		LTG Engineering & Planning
		Project No.: 4497.02	Figure: 1	1970 Dairy Road, W. Melbourne. FL 32904 Telephone: 321.499.4679 Fax: 321.499.4680 EB# 0009227

2

EXISTING ROADWAY ANALYSIS

Peak-period turning movement counts for the a.m. and p.m. peak-hours were conducted at the study area intersections on a typical weekday. Figures 2 and 3 graphically show the existing a.m. and p.m. peak-hour turning movements at the study area intersections. The raw traffic counts are provided in Appendix C.

Signalized Intersection Analysis

The Level of Service (LOS) at a signalized intersection is based on the average control delay per vehicle for the various movements within the intersection. The operating conditions at the signalized intersections were evaluated using the agencies' signal timings, and the *Highway Capacity Software 7 version 7.5*. This software utilizes the procedures outlined in Chapter 19 of the Highway Capacity Manual, 6th Edition, titled "Signalized Intersections". Table 1 shows the existing a.m. and p.m. peak-hour LOS at the signalized intersections. As indicated in the table, all intersections operate within an acceptable level of service. The HCS worksheets are located in Appendix D. The signal timings are included in Appendix E.

Table 1
Existing A.M. and P.M. Peak-Hour LOS – Signalized Intersections
Tranquility Estates

Intersection	Adopted LOS	Existing Conditions					
		A.M. Peak-Hour			P.M. Peak-Hour		
		Delay (sec.)	LOS	V/C >1	Delay (sec.)	LOS	V/C >1
SR 3 at Hall Road	D	19.7	B	No	17.7	B	No
SR 3 at Grant Road / Smith Road	D	9.9	A	No	8.5	A	No

Roadway Segment Analysis

Roadway level of service describes the operating condition determined from the number of vehicles passing over a given section of roadway during a specified time period. It is a qualitative measure of several factors which include: speed, travel time, traffic interruptions, freedom to maneuver, driver comfort, convenience, safety and vehicle operating costs. Six levels of service have been established as standards by which to gauge roadway performance, designated by the letters A through F. The level of service categories are defined as follows:

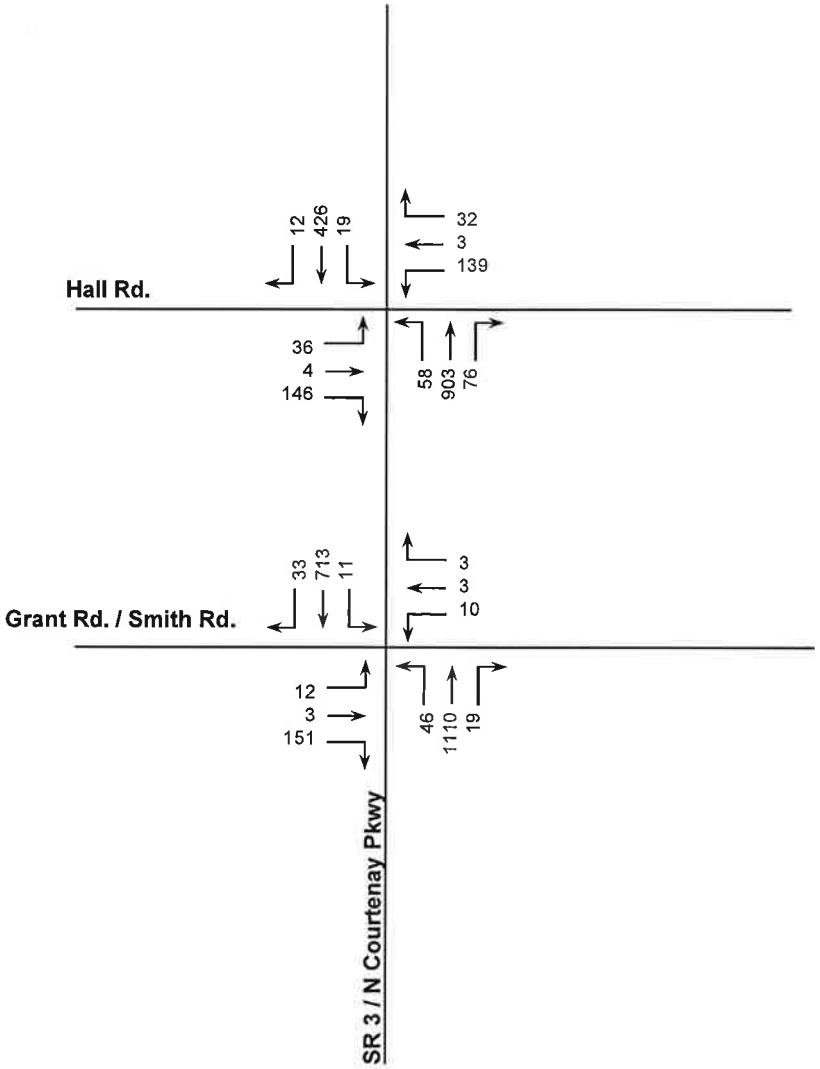
Level of Service A: Free flow, individual users virtually unaffected by the presence of others
Level of Service B: Stable flow with a high degree of freedom to select operating conditions
Level of Service C: Flow remains stable, but with significant interactions with others
Level of Service D: High-density stable flow in which the freedom to maneuver is severely restricted
Level of Service E: This condition represents the capacity level of the road
Level of Service F: Forced flow in which the traffic exceeds the amount that can be served

The AADT for the study roadway segments were obtained from the Space Coast TPO Segment Counts database. The existing p.m. peak-hour two-way LOS for the study area road segments are shown in Table 2. As indicated in the table, the study roadway segments are currently operating within the adopted levels of service.

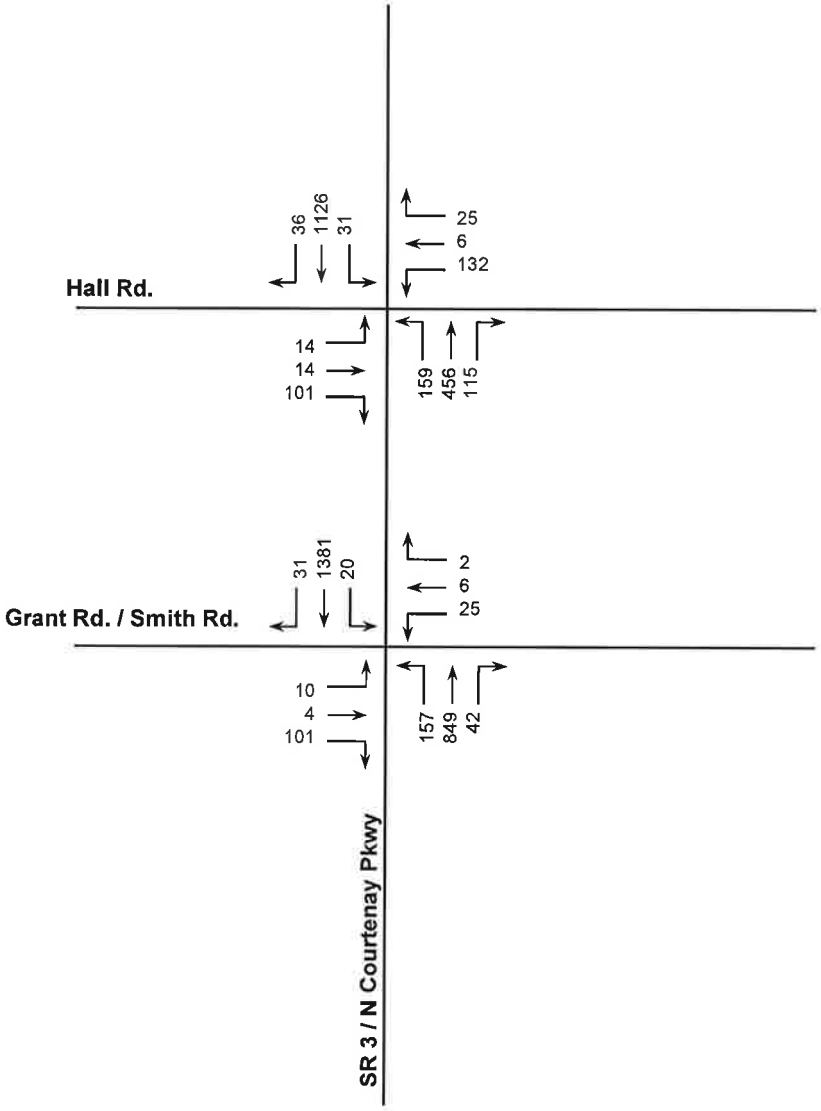
Table 2
Existing P.M. Peak-Hour Two-Way LOS – Roadway Segments
Tranquility Estates

Roadway	Segment		Lanes	Adopted LOS	Peak-Hour Two-Way Capacity at Adopted LOS	Existing AADT*	MAV*	K Factor	Existing Peak-Hour Two-Way Volume	LOS
	From	To								
SR 3	SR 528 N Ramp	Hall Rd.	4	D	3,761	22,960	41,790	0.09	2,066	C
SR 3	Hall Rd.	N Tropical Trail	4	D	3,761	15,220	41,790	0.09	1,370	C
Hall Rd	Audubon Rd.	SR 3 / N Courtenay	2	E	1,404	3,607**	15,600	0.09	325	C
Hall Rd	SR 3 / N Courtenay	N Tropical Trail	2	E	1,404	3,270	15,600	0.09	294	C

**Taken from Space Coast Transportation Planning Organization Traffic Counts: 2007-2017*
*** Taken from 24-Hour Counts*



Tranquility Estates	N NTS	**Existing A.M. Peak-Hour Turning Movement Counts**	LTG Engineering & Planning
		Project No.: 4497.02 Figure: 2	1970 Dairy Road, W. Melbourne. FL 32904 Telephone: 321.499.4679 Fax: 321.499.4680 EB# 0009227



Tranquility Estates	N NTS	**Existing P.M. Peak-Hour Turning Movement Counts**		LTG Engineering & Planning
		Project No.: 4497.02	Figure: 3	1970 Dairy Road, W. Melbourne. FL 32904 Telephone: 321.499.4679 Fax: 321.499.4680 EB# 0009227

3

FUTURE TRAFFIC CONDITIONS

The next step in the analysis was to determine the future traffic conditions on the study area roadways at the time of project completion. The following documents the procedures used to determine the future traffic.

Background Traffic Growth Rates

Historical growth rates were used to determine the background traffic. *FDOT Traffic Trends* software was used to calculate historical growth rates using the past five years of data obtained from the Space Coast Transportation Planning Organization (see Appendix F). When existing growth rates fall below 2%, a minimum growth rate of 2% was applied to the existing traffic volumes. The historical and applied growth rates used in the analysis are provided in Table 3.

Table 3
Historical Growth Rates
Tranquility Estates

Roadway	Segment		Average Growth Rate	Applied Growth Rate	Growth Factor
	From	To			
SR 3/N Courtenay Pkwy	SR 528 N Ramp	Hall Rd.	1.23%	2.00%	1.020
SR 3/N Courtenay Pkwy	Hall Rd.	N Tropical Trail	1.87%	2.00%	1.020
Hall Rd.	SR3/N Courtenay Pkwy	N Tropical Trail	1.72%	2.00%	1.020

Background Signalized Intersection Analysis

The signalized intersections were analyzed to determine the operational LOS under the background conditions during the a.m. and p.m. peak-hours. Table 4 shows the project background conditions. As indicated in Table 4, the intersections are anticipated to operate within the adopted LOS with only background growth. The HCS summary sheets are located in Appendix G.

Table 4
Background A.M. and P.M. Peak Hour LOS – Signalized Intersection
Tranquility Estates

Intersection	Adopted LOS	Background Conditions					
		A.M. Peak-Hour			P.M. Peak-Hour		
		Delay (sec.)	LOS	V/C >1	Delay (sec.)	LOS	V/C >1
SR 3 at Hall Road	D	20.7	C	No	19.2	B	No
SR 3 at Grant Road / Smith Road	D	10.7	B	No	9.3	A	No

Roadway Segment Analysis

The background p.m. peak-hour two-way LOS for the study area road segments are shown in Table 5. As indicated in the table, the study roadway segments are expected to operate within the adopted level of service under 2022 background conditions.

Table 5
Background P.M. Peak Hour Two-Way LOS – Roadway Segments
Tranquility Estates

Roadway	Segment		Lanes	Adopted LOS	Peak-Hour Two-Way Capacity at Adopted LOS	Existing Peak-Hour Two-Way Volume	MAV*	Growth Factor	Back-ground Traffic	LOS
	From	To								
SR 3	SR 528 N Ramp	Hall Rd.	4	D	3,761	2,066	41,790	1.020	2,108	C
SR 3	Hall Rd.	N Tropical Trail	4	D	3,761	1,370	41,790	1.020	1,397	C
Hall Rd.	Audubon Rd.	SR 3 / N Courtenay	2	E	1,404	325	15,600	1.020	331	C
Hall Rd.	SR 3 / N Courtenay	N Tropical Trail	2	E	1,404	294	15,600	1.020	300	C

**Taken from Space Coast Transportation Planning Organization Traffic Counts: 2007-2017*

4

BUILD-OUT ROADWAY ANALYSIS

The study intersections and roadway segments were analyzed based on the build-out roadway conditions to determine potential impacts and to investigate mitigation requirements.

Trip Generation

Trip generation for this development was determined using the trip generation rates published by the Institute of Transportation Engineers (ITE) in the document Trip Generation Manual, 10th Edition. The total daily, a.m. and p.m. peak-hours trip generation are presented in Table for the proposed development.

Table 6
Trip Generation
Tranquility Estates

Time Period	Land Use	ITE Land Use Code	Trip Rate Equation	Units (x) Dus	Total Trips	Percent Entering	Percent Exiting	Trips Entering	Trips Exiting
Daily	Single-Family	210	Ln(T) = 0.92 Ln(X) + 2.71	182	1,804	50%	50%	902	902
A.M. Peak-hour	Single-Family	210	T = 0.71 (X) + 4.80	182	134	25%	75%	34	100
P.M. Peak-hour	Single-Family	210	Ln(T) = 0.96 Ln(X) + 0.20	182	181	63%	37%	114	67

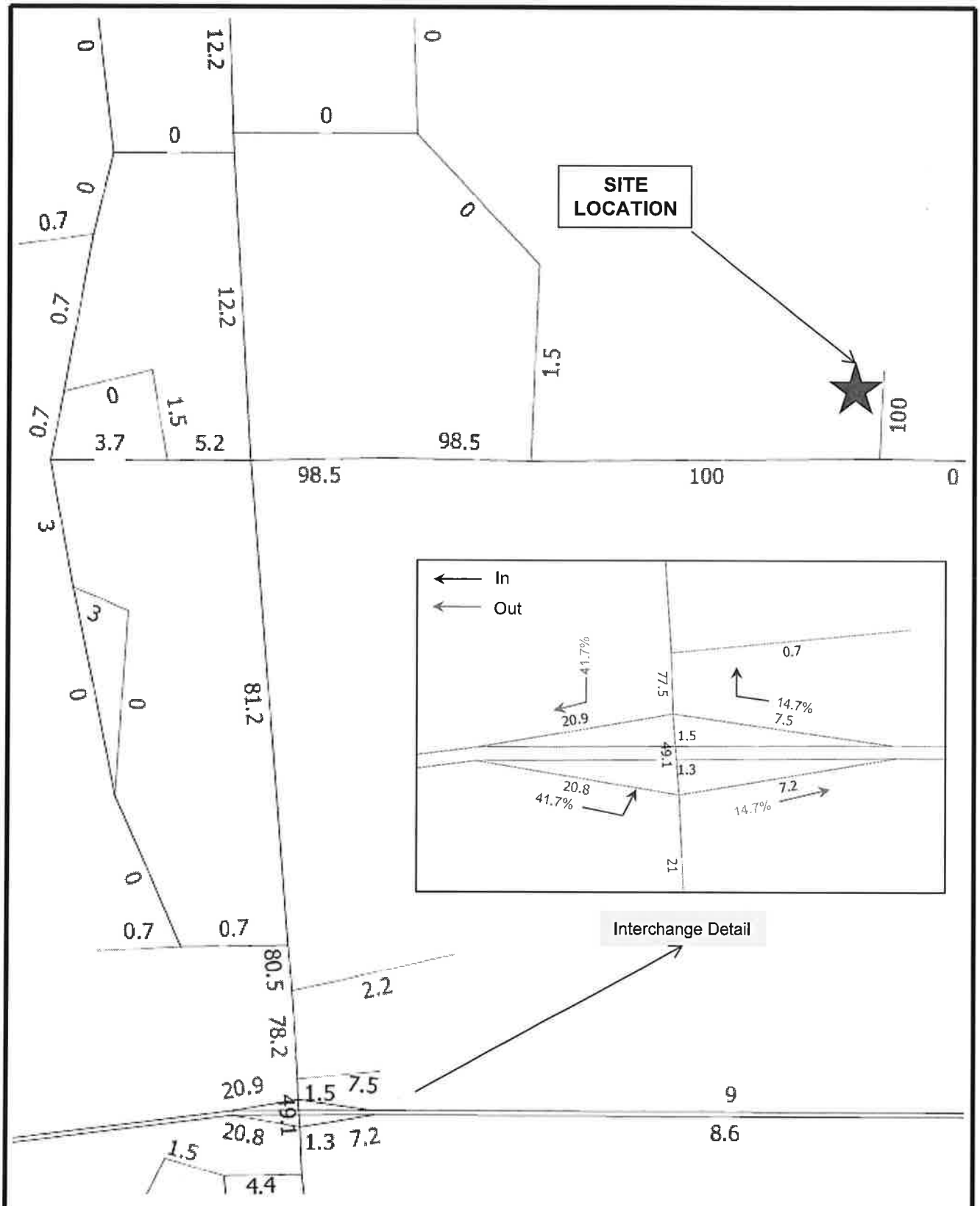
Source: ITE, Trip Generation 10th Edition

Trip Distribution

The process of determining the directional flow of traffic associated with a new development is called trip distribution. The Central Florida Regional Planning Model version 6.1 was used to obtain trip distribution and was manually modified where appropriate. The project TAZ is 3621. The anticipated distribution and lane configuration are illustrated in Figures 4 and 5.

Trip Assignment

The final step in the analysis was to assign the project traffic to the road network. Figures 6 and 7 graphically depict the a.m. and p.m. peak-hour traffic assignments for the proposed development.


SITE LOCATION
In
Out
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Tranquility Estates
N
NTS
Trip Distribution
Project No.: 4497.02
Figure: 4
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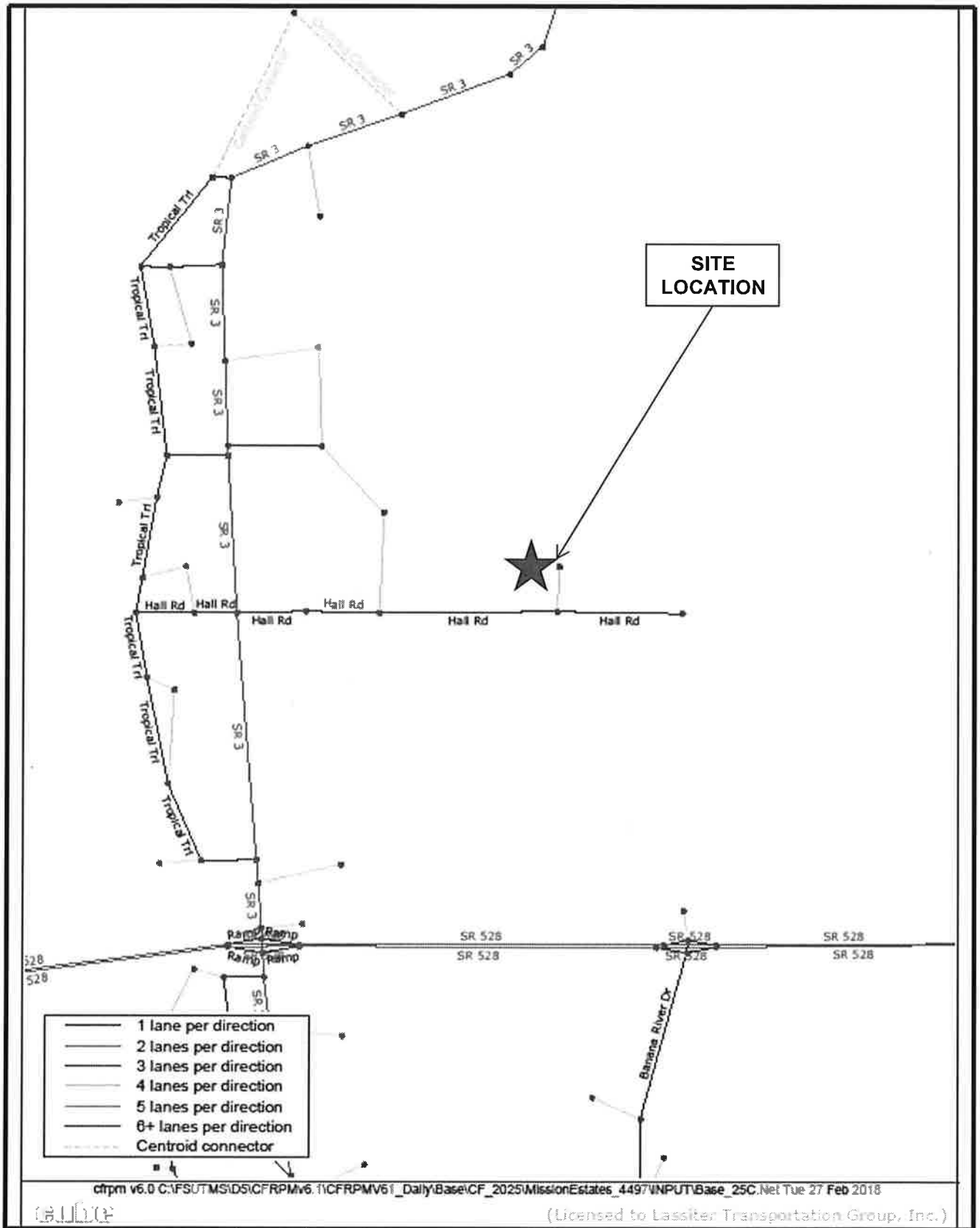

Tranquility Estates	N NTS	**Lane Configuration**		LTG Engineering & Planning
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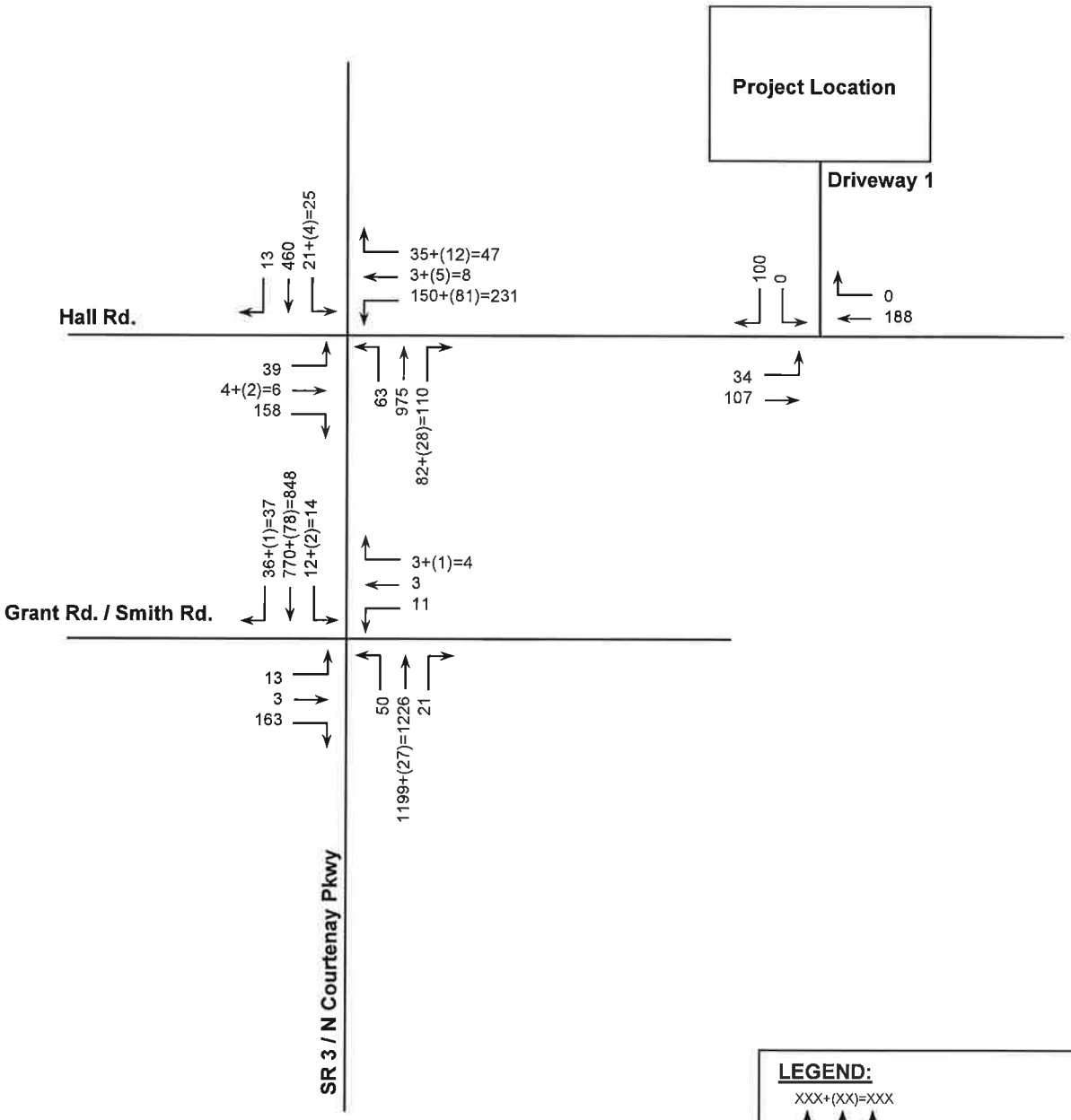

A.M. Peak-Hour	Enter	Exit	Total
Project Trips	34	100	134

Tranquility Estates

N

NTS

2022 Build-Out A.M. Peak-Hour Trip Assignment

Project No.: 4497.02 | Figure: 6

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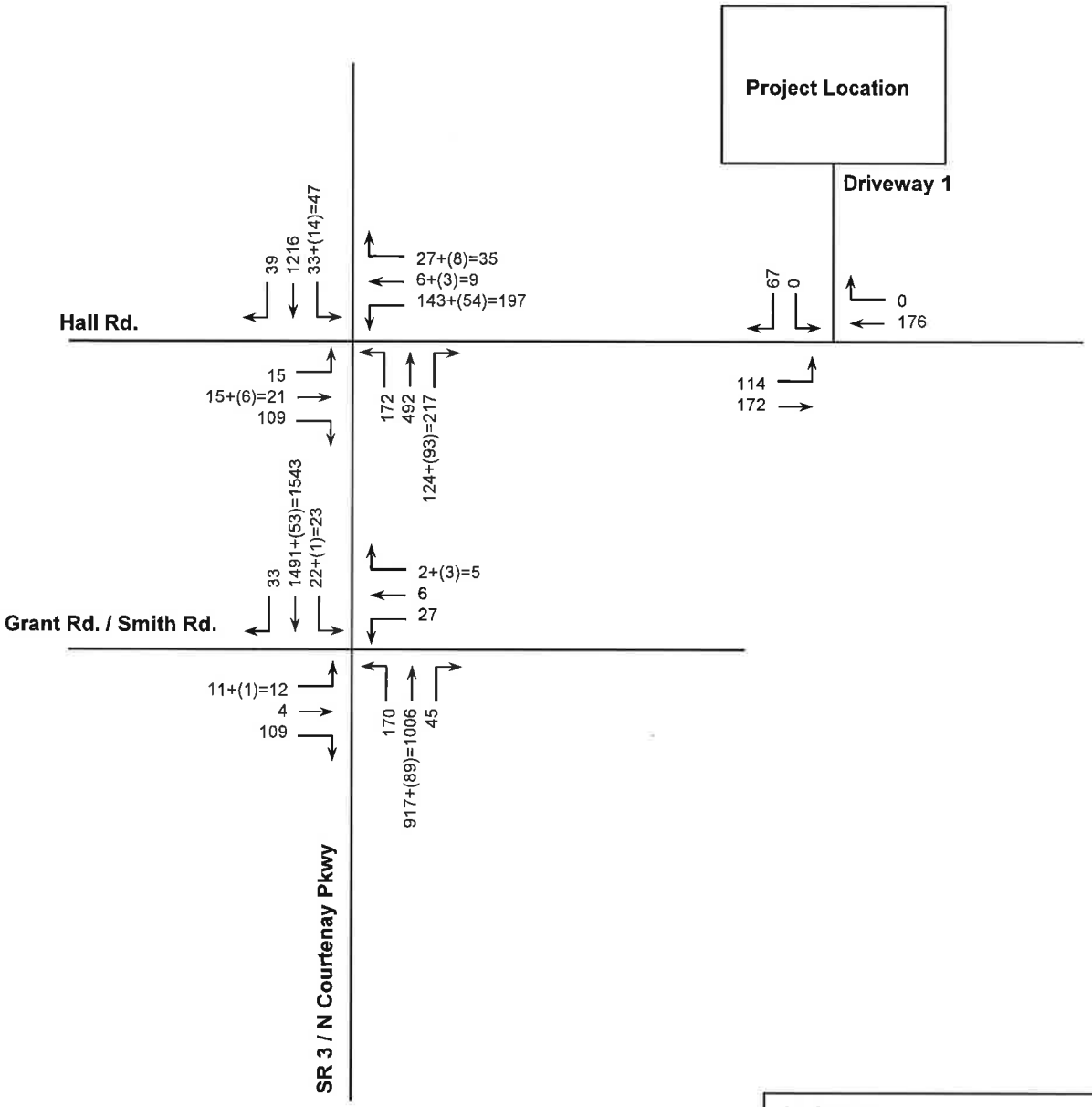
1970 Dairy Road, W. Melbourne. FL 32904
Telephone: 321.499.4679 Fax: 321.499.4680 EB# 0009227



P.M. Peak-Hour	Enter	Exit	Total
Project Trips	114	67	181

Tranquility Estates

N

NTS

2022 Build-Out P.M. Peak-Hour Trip Assignment

Project No.: 4497.02 | Figure: 7

LTG Engineering & Planning
1970 Dairy Road, W. Melbourne. FL 32904
Telephone: 321.499.4679 Fax: 321.499.4680 EB# 0009227

Unsignalized Intersection Analysis

The Level of Service (LOS) at an unsignalized intersection is based on the average control delay per vehicle for the various movements within the intersection. The operating conditions at the unsignalized intersection was evaluated using the *Highway Capacity Software 7 version 7.5 (HCS).* This software utilizes the procedures outlined in Chapter 20 and Chapter 21 of the Highway Capacity Manual 6th Edition, titled "Two-Way Stop-Controlled Intersections" and "All-Way Stop Controlled Intersections". The unsignalized intersection was analyzed to determine the operational LOS at the time of build-out. Table 7 shows the projected LOS for the study unsignalized intersection at build-out. As indicated in the table, the study unsignalized intersection is anticipated to operate within the adopted LOS. The HCS worksheets are included in Appendix H.

Table 7
Build-Out A.M. and P.M. Peak-Hour LOS - Unsignalized Intersections
Tranquility Estates

Intersections	Adopted LOS	Build-Out Conditions					
		A.M. Peak-Hour			P.M. Peak-Hour		
		Critical Approach	Delay (sec.)	LOS	Critical Approach	Delay (sec.)	LOS
Hall Road. at Project Driveway	D	SB	10.0	A	SB	9.6	A

Signalized Intersection Analysis

The signalized intersections were analyzed to determine the operational LOS at the time of build-out. Table shows the projected LOS for the study intersections under build-out conditions. The HCS worksheets are contained in Appendix I. As indicated in the table, the study signalized intersections are anticipated to operate within the adopted level of services at build-out.

Table 8
Build-Out A.M. and P.M. Peak-Hour LOS – Signalized Intersections
Tranquility Estates

Intersection	Adopted LOS	Build-Out Conditions					
		A.M. Peak-Hour			P.M. Peak-Hour		
		Delay (sec.)	LOS	V/C >1	Delay (sec.)	LOS	V/C >1
SR 3 at Hall Road	D	23.3	C	No	21.3	C	No
SR 3 at Grant Road / Smith Road	D	11.0	B	No	9.7	A	No

Roadway Segment Analysis

The traffic analysis for the roadway segments involves the comparison of the future peak-hour two-way volumes to available capacity. Table 9 presents the results of the p.m. peak-hour two-way road segment analyses for the study area roadways segments under 2022 build-out conditions. As indicated in the table, all the study roadway segments are anticipated to operate within the adopted LOS under 2022 build-out conditions.

Table 9
Build-Out P.M. Peak-Hour Two-Way LOS – Roadway Segment
Tranquility Estates

Roadway	Segment		Lanes	Adopted LOS	Peak-Hour Two-Way Capacity at Adopted LOS	Existing Peak-Hour Two-Way Volume	MAV*	Growth Factor	Background Traffic	Project Trip Distribution	Build-Out		
	From	To									Project Trips	Traffic	LOS
SR 3	SR 528 N Ramp	Hall Rd.	4	D	3,761	2,066	41,790	1.020	2,108	78.2%	142	2,250	C
SR 3	Hall Rd.	N Tropical Trail	4	D	3,761	1,370	41,790	1.020	1,397	12.2%	22	1,419	C
Hall Rd.	Audubon Rd.	SR 3 / N Courtenay	2	E	1,404	325	15,600	1.020	331	98.5%	178	509	C
Hall Rd.	SR 3 / N Courtenay	N Tropical Trail	2	E	1,404	294	15,600	1.020	300	5.2%	9	309	C

**Taken from Space Coast Transportation Planning Organization Traffic Counts: 2007-2017*

Access Review

The project access to the development will be provided via a single driveway on Hall Road. The need and geometry for turn lanes was evaluated using National Cooperative Highway Research Program (NCHRP) Report 457, FDOT standard index 301 and HCS outputs. The summary worksheets are included as Appendix J. The results of the turn lane evaluation are provided below:

Project Driveway at Hall Road

The recommended geometry of the ingress and egress at the intersection will consist of:

- Eastbound: One left/through/right shared lane
- Southbound: One left/right shared lane
- Westbound: One left/through/right shared lane

Based on NCHRP Report 457, turn lanes are not warranted under build-out conditions.

5

CONCLUSION AND RECOMMENDATIONS

This study was conducted to evaluate the impact of the proposed Tranquility Estates development in Brevard County, Florida. The results of the study are summarized below:

- The proposed subdivision consists of 182 single family units. The proposed development is located north of East Hall Road and 1.9 miles east of Courtenay Parkway. The property has one driveway on East Hall Road.

- This development is anticipated to generate 134 total trips during the a.m. peak-hour and 181 total trips during the p.m. peak-hour. The anticipated build-out year is 2022.

Existing

- Under existing conditions, all signalized intersections operate within an acceptable level of service.

- Under existing conditions, all study area roadway segments currently operate within the adopted LOS.

2022 Background

- Under background conditions, all signalized intersections are anticipated to operate within an acceptable level of service.

- Under background conditions, all study area roadway segments are anticipated to operate within the adopted LOS.

2022 Build-Out

- Under 2022 Build-Out conditions, the unsignalized intersection of E Hall Rd at Project Driveway is expected to operate within the adopted LOS.

- Under 2022 Build-Out conditions, all signalized intersections are anticipated to operate within an acceptable level of service.

- Under 2022 Build-Out conditions, all study area roadway segments are anticipated to operate within the adopted LOS.

Based on the results of this study and the recommendations provided above, the Tranquility Estates project is recommended for approval.

Appendices

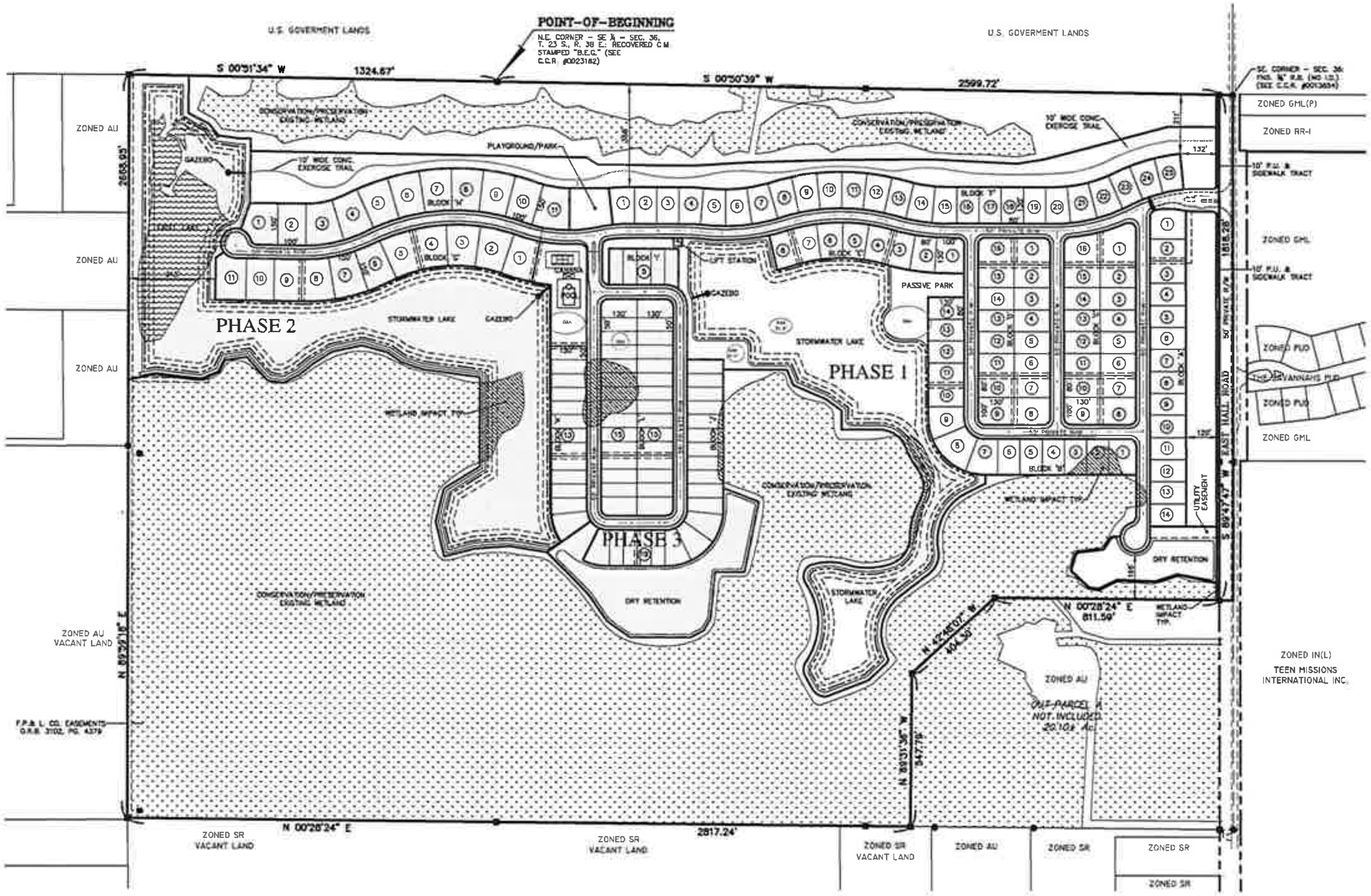
APPENDIX A

Preliminary Site Plan

PRELIMINARY DEVELOPMENT PLANS PREPARED FOR:

Tranquility Estates

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 36 EAST. BREVARD COUNTY, FLORIDA



MASTER LAYOUT
SCALE: 1" = 200'

SHEET INDEX

SHEET	DESCRIPTION
1	COVER SHEET / PRELIMINARY DEVELOPMENT PLAN
2	MASTER DRAINAGE PLAN
3	MASTER UTILITIES PLAN
4	COMMON OPEN SPACE PLAN

LEGAL DESCRIPTION

The South ½ of the Northeast ¼ and a portion of the Southeast ¼ of Section 36, Township 23 South, Range 36 East, Brevard County, Florida and being more particularly described as follows:

Begin at the Southeast corner of said Section 36; thence South 89° 47'47" West along the South line of said Southeast ¼ a distance of 1817.37 feet; thence North 00°12'13" West a distance of 50.00 feet; thence North 00°28'24" East a distance of 811.59 feet; thence North 42°46'07" West a distance of 404.30 feet; thence North 89°31'36" West a distance of 547.79 feet to a point on the West line of said Southeast ¼ of Section 36; thence North 00°28'24" East, along said West line and along the West line of the South ½ of the Northeast ¼ of said Section 36, a distance of 2817.24 feet to the Northwest corner of the Southeast ¼ of the Northeast ¼ of said Section 36; thence North 89°29'18" East, along the North line of the South ½ of the Northeast ¼ of said Section 36, a distance of 2688.95 feet to the Northeast corner of the Southeast ¼ of the Northeast ¼ of said Section 36; thence South 00°51'34" West, along the East line of the South ½ of the Northeast ¼ of said Section 36, a distance of 1324.67 feet to the Northeast corner of said Southeast ¼; thence South 00°50'39" West, along the East line of said Southeast ¼, a distance of 2649.73 feet to the Point-of-Beginning.

Containing 221.51 acres more or less and being subject to any easements and/or rights-of-way of record.

PROJECT CONTACTS

DEVELOPER/OWNER:
HORIZON TITLE COMPANY, INC.
2301 NW 87TH AVNUE, UNIT #301
MIAMI, FL 33172
305-597-8944
CONTACT: CARLOS TRIAY

SURVEYOR:
BUSSEN-MAYER ENGINEERING GROUP, INC.
100 PARNELL STREET
MERRITT ISLAND, FLORIDA 32953
PHONE: (321) 453-0010
CONTACT: BARRY CABANISS P.L.S.

ENGINEER:
BUSSEN-MAYER ENGINEERING GROUP, INC.
100 PARNELL STREET
MERRITT ISLAND, FLORIDA 32953
PHONE: (321) 453-0010
CONTACT: JOSEPH W. MAYER, P.E.

ENVIRONMENTAL CONSULTANT:
BUSSEN-MAYER ENGINEERING GROUP, INC.
100 PARNELL STREET
MERRITT ISLAND, FLORIDA 32953
PHONE: (321) 453-0010
CONTACT: SHANDA RYER

APPLICANT:
KIM REZANKA, ESQ.
86 WILLARD ST, SUITE 302
COCOA, FLORIDA 32922
PHONE: (321) 639-1320

ARCHITECT:
UNKNOWN AT THIS TIME

GENERAL STATEMENT

This Preliminary Development Plan is for the proposed construction of a 182 lot subdivision, along with associated roadway, sidewalks, open spaces and detention lakes. The existing site vegetation consists of uplands, wetlands, an asphalt entrance road and a small pond. The project will be constructed in 3 Phases. This plan reflects the proposed drainage corridors and conveyance system and existing natural drainage areas. Large stormwater lakes will be used to accommodate, treat and attenuate drainage run off.

SITE DATA

EXISTING ZONING: AU
PROPOSED ZONING: PUD
TOTAL SITE AREA = 221.52 AC.
SITE AREA = 219.42 AC. ± (NOT INCLUDING 50' HALL ROAD R/W)

TOTAL PROPOSED 80' x 130' LOTS = 93
TOTAL PROPOSED 100' x150' LOTS = 22
TOTAL PROPOSED 50' x 130' = 67

TOTAL PROPOSED LOTS = 182
LOT DENSITY = 0.82 LOTS/ACRE

SETBACKS

FRONT = 25'
SIDE = 10'
REAR = 20'
SIDE CORNER/CONTIGUOUS TO KEY = 25'

COMMON OPEN SPACE CALCULATIONS

A. Minimum required Open Space:
10% of Gross Site Area = 0.10 x 221.52 AC. = 22.15 AC.

Total Provided Open Space = 123.67 AC.

Active Common Open Space Required = 1.50 AC. per 100 units = 2.73 AC.
Active Common Open Space Provided = 3.42 AC.
1. Pool, Cabana & Tennis Court Tract = 1.28 AC
2. Playground Tract = 0.49 AC.
3. Exercise Trail = 1.85 AC (based on an area 20' wide x 3,398 long)

WETLAND DATA

TOTAL ONSITE WETLAND AREA = 98.58 AC. ±
MAXIMUM ALLOWABLE WETLAND IMPACT = 1.80% x 221.52 AC. = 3.99 AC.
PROPOSED WETLAND IMPACTS = 3.99 AC. ±

GENERAL NOTES

1. THIS PLAN IS PRELIMINARY ONLY AND IS SUBJECT TO FINAL DESIGN AND PERMITTING.

2. WETLAND LOCATION DATA AND PRESERVATION AREAS SHOWN HEREON ARE APPROXIMATE ONLY, AND SUBJECT TO REGULATORY AGENCY VERIFICATION, AND FINAL DESIGN.

VICINITY MAP
N.T.S.

DATE	REVISIONS	
03/14/18	UPDATE PDP	LB
03/09/18	REV. ADD 50' WIDE LOTS	LB
04/26/18	REV. PER CLIENT	LB
01/21/18	REV. PER B.C. APPLICATION SUBMITTAL REVIEW	LB

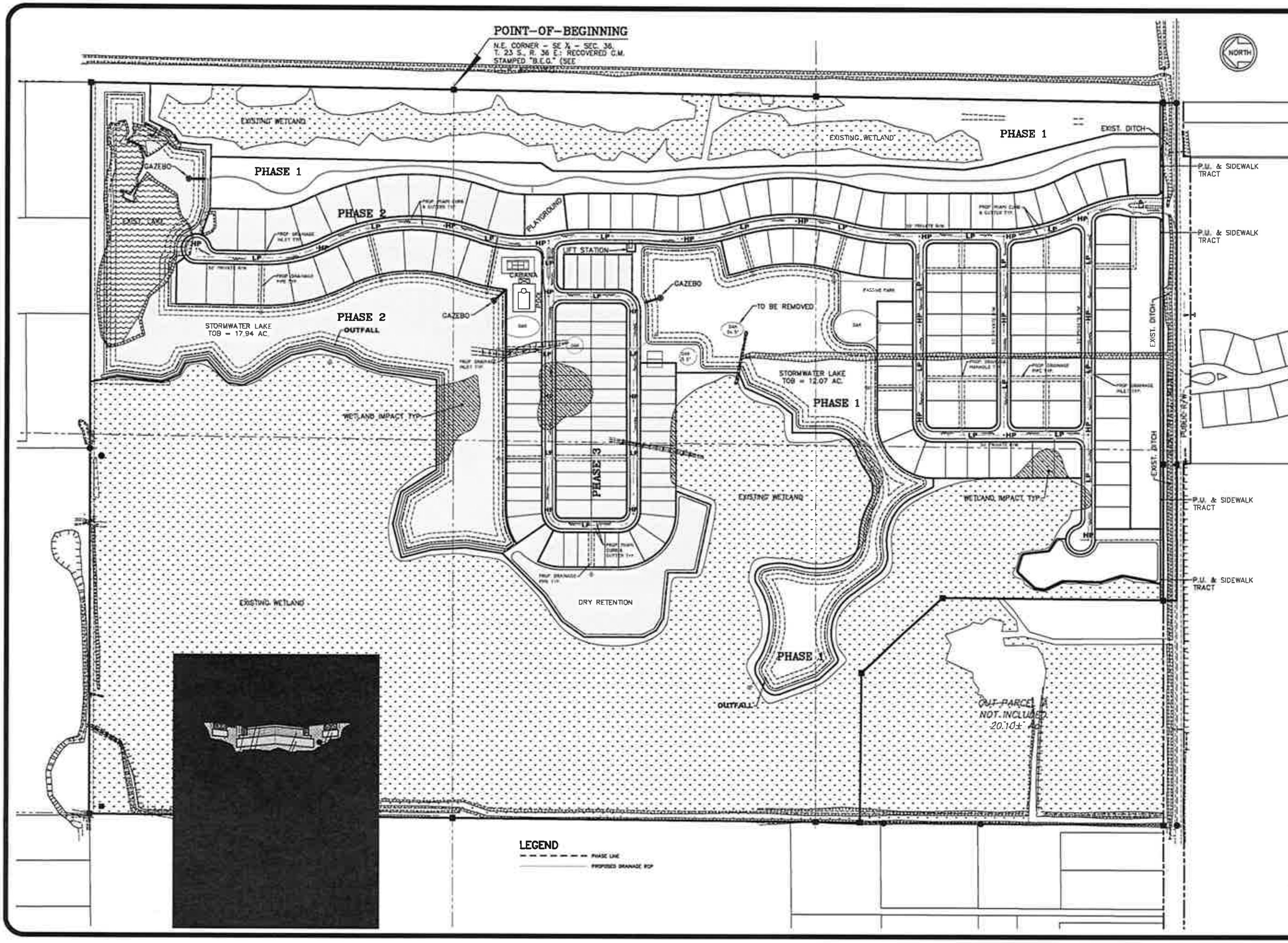
Sec.: 36
Twp.: 23 South
Rng.: 36 East
Design by : JWM
Drawn by : LB
Checked by : JWM

Joseph W. Mayer
FLORIDA PROFESSIONAL ENGINEER LICENSE NUMBER 36836 P.E.
BUSSEN-MAYER ENGINEERING CERT. NO.: 3535

PRELIMINARY DEVELOPMENT PLAN PREPARED FOR:
TRANQUILITY ESTATES SUBDIVISION
Brevard County, Florida

Bussen-Mayer Engineering Group, Inc.
100 PARNELL STREET • MERRITT ISLAND, FLORIDA 32953
PH. NO.: (321) 453-0010 • FAX NO.: (321) 454-6885

Date : JAN. 24, 2018
Scale : 1" = 200'
Proj. No.: 344013
Sheet No. 1 of 4



DATE	REVISIONS	
03/14/18	UPDATE PDP	LB
03/08/18	REV. ADD 50' WIDE LOTS	LB
04/26/18	REV. PER CLIENT	LB
0/21/18	REV. PER B.C. APPLICATION SUBMITTAL REVIEW	LB

Sec.: 36
Twp.: 23 South
Rng.: 36 East
Design by : JWM
Drawn by : LB
Checked by : JWM

Joseph W. Mayer
FLORIDA PROFESSIONAL
ENGINEER LICENSE NUMBER:
BUSSEN-MAYER ENGINEERING CERT. NO.: 3636
P.E. 36836

MASTER DRAINAGE PLAN PREPARED FOR
TRANQUILITY ESTATES SUBDIVISION
Brevard County Florida

Bussen-Mayer Engineering Group, Inc.
100 PARNELL STREET • MERRITT ISLAND, FLORIDA 32953
PH. NO.: (321) 453-0010 • FAX NO.: (321) 454-6885

Date : JAN. 24, 2018
Scale : 1" = 150'
Proj. No.: 344013
Sheet No. 2 of 4

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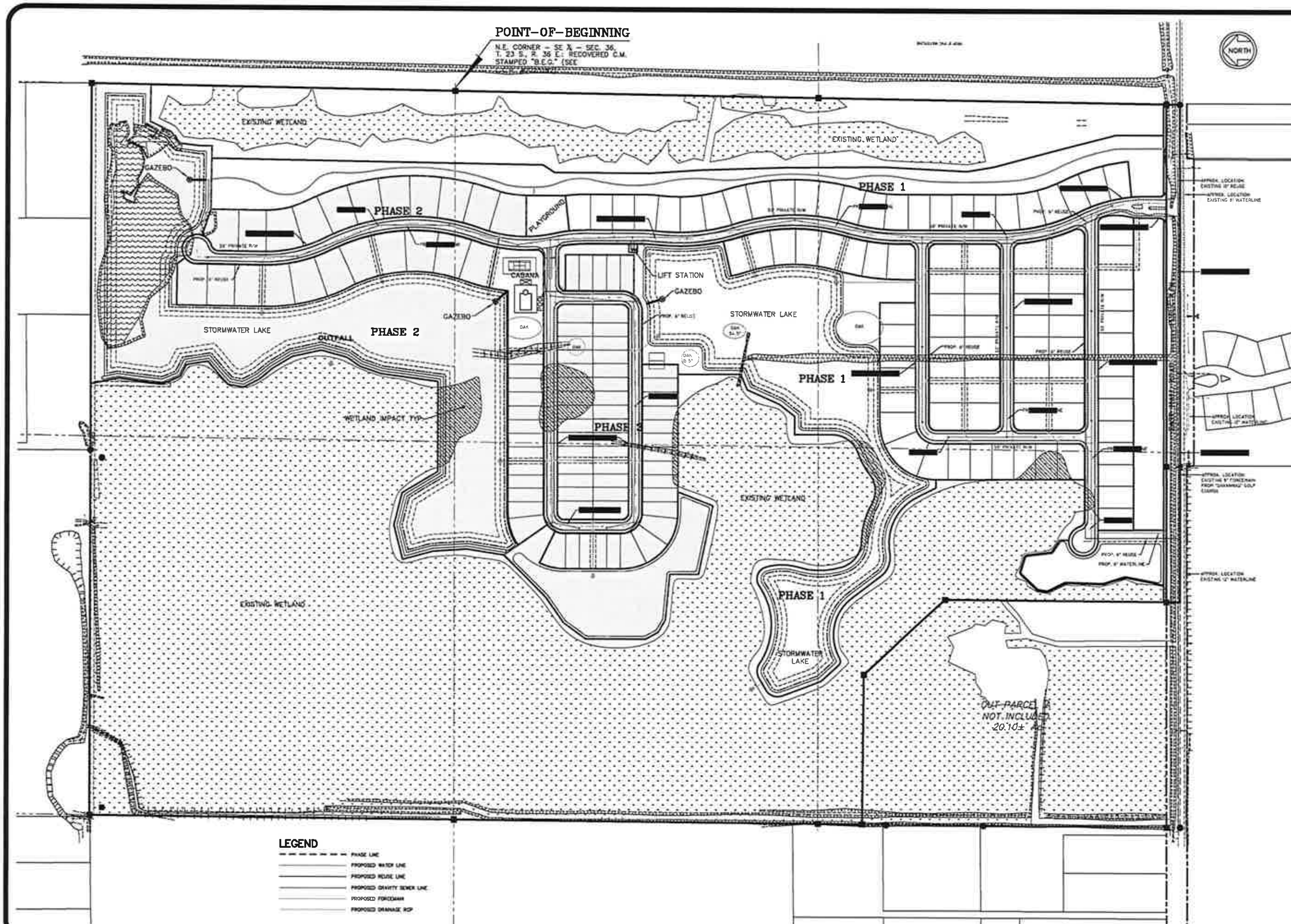


DATE	REVISIONS	
03/14/18	UPDATE PDP	LB
03/08/18	REV. ADD 50' WIDE LOTS	LB
04/26/18	REV. PER CLIENT	LB
5/21/18	REV. PER B.C. APPLICATION SUBMITTAL REVIEW	LB

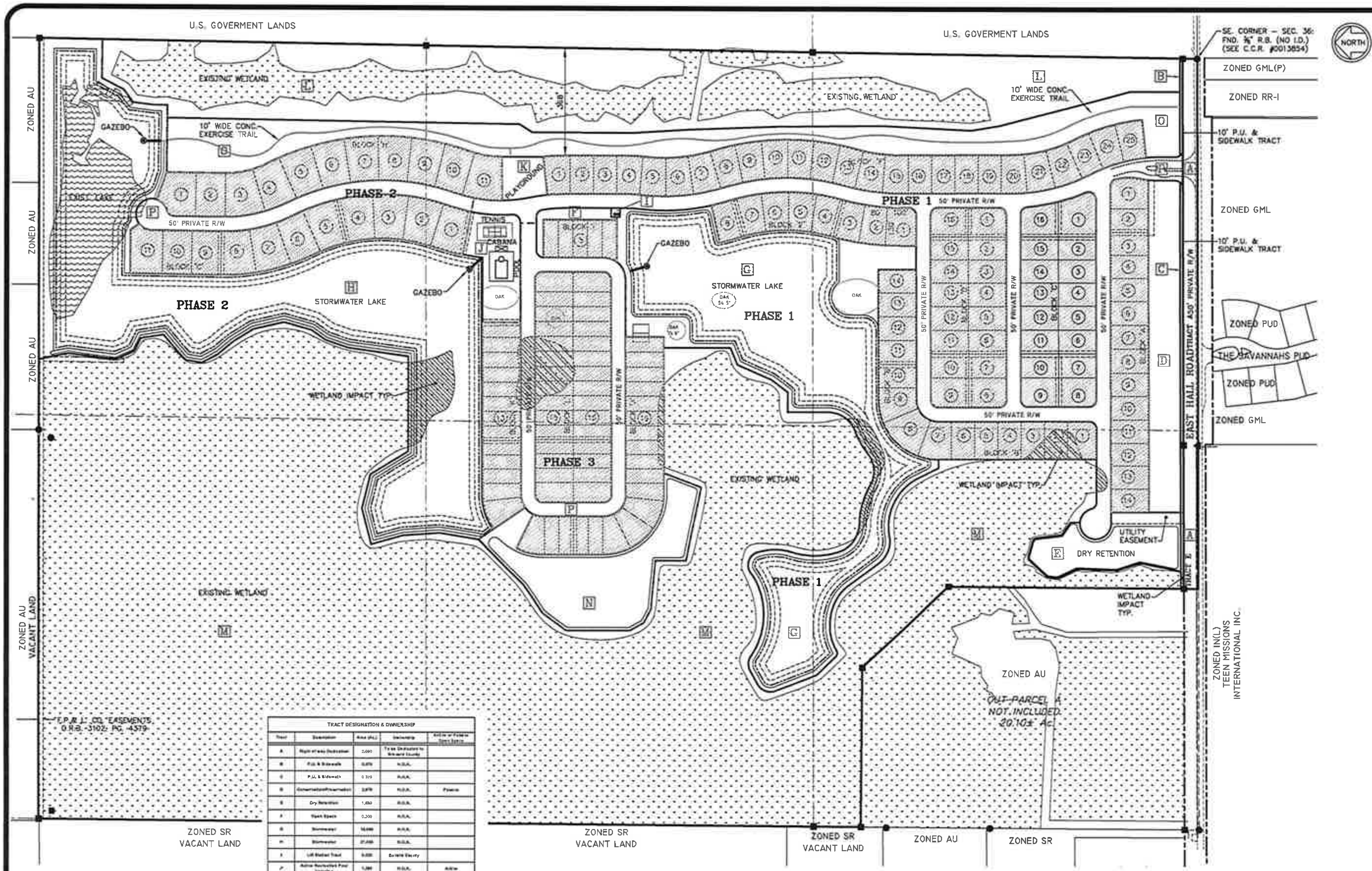
Sec.: 36
Twp.: 23 South
Rng.: 36 East
Design by : JWM
Drawn by : LB
Checked by : JWM

Joseph W. Mayer
P.E.
FLORIDA PROFESSIONAL
ENGINEER LICENSE NUMBER: 36838
BUSSEN-MAYER ENGINEERING CERT. NO.: 3035

MASTER UTILITY PLAN PREPARED FOR
TRANQUILITY ESTATES SUBDIVISION
Brevard County, Florida

Bussen-Mayer Engineering Group, Inc.
100 PARNELL STREET • MERRITT ISLAND, FLORIDA 32953
PH. NO.: (321) 453-0010 • FAX NO.: (321) 454-6885

Date : JAN. 24, 2018
Scale : 1" = 150'
Proj. No.: 344013
Sheet No. 3 of 4



LEGEND

LANDS DEDICATED TO PRIVATE OWNERSHIP

M — TRACT DESIGNATION

TRACT DESIGNATION & OWNERSHIP

Tract	Description	Area (Ac.)	Ownership	Active or Passive Open Space
A	Right-of-way Dedication	2.090	To be Dedicated to Brevard County	
B	P.U. & Sidewalk	[illegible]	H.O.A.	
C	P.U. & Sidewalk	0.370	H.O.A.	
D	Conservation/Preservation	[illegible]	H.O.A.	Passive
E	Dry Retention	1.080	H.O.A.	
F	Open Space	0.300	H.O.A.	
G	Stormwater	[illegible]	H.O.A.	
H	Stormwater	[illegible]	H.O.A.	
I	Lift Station Tract	[illegible]	Brevard County	
J	Active Recreation Pool Complex*	[illegible]	H.O.A.	Active
K	Active Recreation Playground and Park	0.480	H.O.A.	Active
L	Conservation/Preservation	[illegible]	H.O.A.	Passive
M	Conservation/Preservation	[illegible]	H.O.A.	Passive
N	Dry Retention	[illegible]	H.O.A.	
O	Active Recreation exercise trail & Gazebo	[illegible]	H.O.A.	Active
P	Private Right of Way	[illegible]	H.O.A.	
	TOTAL	[illegible]		

* [illegible]

COMMON OPEN SPACE CALCULATIONS

A. Minimum required Open Space:
10% of Cross Site Area = 0.10 x 221.52 AC. = 22.15 AC.

Total Provided Open Space = 123.87 AC.

Active Common Open Space Required = 1.50 AC. per 100 units = 2.73 AC.
Active Common Open Space Provided = 3.42 AC.
1. Pool, Cabana & Tennis Court Tract = 1.28 AC.
2. Playground Tract = 0.49 AC.
3. Exercise Trail = 1.65 AC. (based on an area 20' wide x 3,598 long)

PHASES

Phase	Area (Ac.)
1	[illegible]
2	[illegible]
3	[illegible]
TOTAL	[illegible]

PRIVATE OWNERSHIP

Type	Area (Ac.)
Single Family Lots Phase 1	[illegible]
Single Family Lots Phase 2	[illegible]
Single Family Lots Phase 3	[illegible]
TOTAL	[illegible]

WETLAND DATA

TOTAL ONSITE WETLAND AREA = 58.58 AC. ±
MAXIMUM ALLOWABLE WETLAND IMPACT = 1.80% x 221.52 AC. = 3.99 AC.
PROPOSED WETLAND IMPACTS = 3.88 AC. ±

NOTE

Open Space to be dedicated via individual recorded plats for each phase and administered by a master Homeowners Association to be established by the developer.

DATE	REVISIONS	
05/14/18	UPDATE PDP	LB
05/08/18	REV. ADD 30' WIDE LOTS	LB
04/25/18	REV. PER CLIENT	LB
0/21/18	REV. PER B.C. APPLICATION SUBMITTAL REVIEW	LB

Sec.: 36
Twp.: 23 South
Rng.: 36 East
Design by : JWM
Drawn by : LB
Checked by : JWM

Joseph W. Mayer P.E.
FLORIDA PROFESSIONAL ENGINEER LICENSE NUMBER: 38836
BUSSEN-MAYER ENGINEERING CERT. NO.: 3538

COMMON OPEN SPACE PLAN PREPARED FOR
TRANQUILITY ESTATES SUBDIVISION
Brevard County Florida

Bussen-Mayer Engineering Group, Inc.
100 PARNELL STREET • MERRITT ISLAND, FLORIDA 32953
PH. NO.: (321) 453-0010 • FAX NO.: (321) 454-6885

Date : JAN. 24, 2018
Scale : 1" = 150'
Proj. No.: 344013
Sheet No. 4 of 4

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APPENDIX B

Methodology Letter

LTG Engineering & Planning

Via Email: (corrina.gumm@brevardfl.gov)

Ref: 4497.01

January 8, 2018

Corrina Gumm
Brevard County Traffic Operations
2725 Judge Fran Jamieson Way, Bldg A,
Viera, Florida 32940

RE: Mission Estates - Traffic Impact Study Methodology
Brevard County, Florida

Dear Ms. Gumm:

LTG, Inc. (LTG) has been retained by Calos A. Triay to prepare a Traffic Impact Study for the proposed Mission Estates. The subdivision will consist of 117 single-family units and 102 multi-family (low rise) units located on the north of Hall Road and 1.9 mile east of N Courtenay Parkway in Brevard County, Florida and with one access driveway on Hall Road. The project build-out year is 2022. Figure 1 shows the location and influence area of the project relative to the surrounding road network. A concept site plan showing the layout of the site is attached as Appendix A.

Trip Generation

The daily, a.m. and p.m. peak-hour trip generation for the build-out of the development was determined using the Institute of Transportation Engineers (ITE) 10th edition of the *Trip Generation Manual*. The trip generation for the development is summarized in Table 1.

Table 1
Trip Generation
Mission Estates

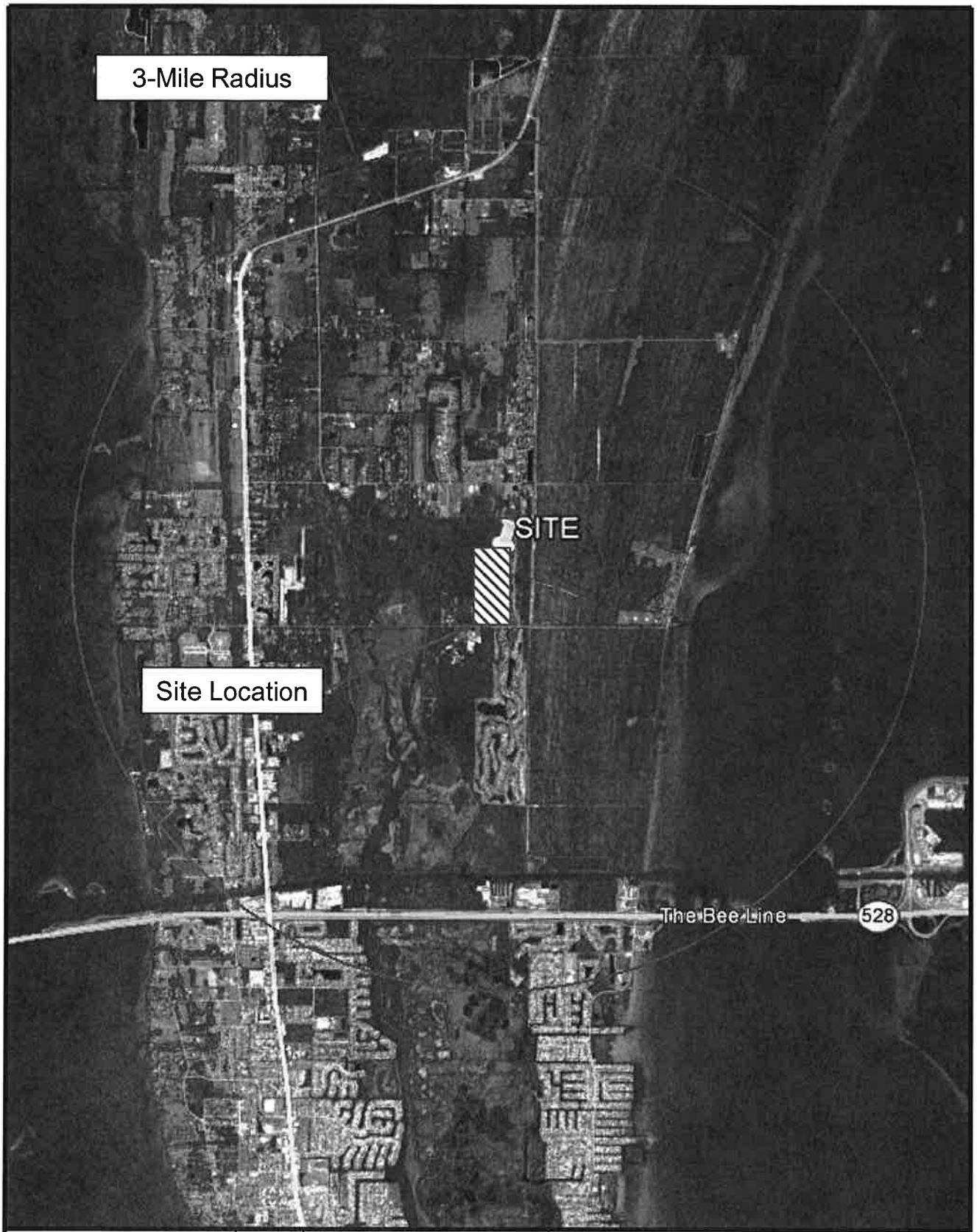
Time Period	Land Use	ITE Land Use Code	Trip Rate Equation	Units (x) Dus	Total Trips	Percent Entering	Percent Exiting	Trips Entering	Trips Exiting
Daily	Single-Family	210	Ln(T) = 0.92 Ln(X) + 2.72	117	1,213	50%	50%	607	606
	Multifamily Housing (Low-Rise)	220	T = 7.56(X) - 40.86	102	730	50%	50%	365	365
Daily Total					1,943			972	971
A.M. Peak-hour	Single-Family	210	T = 0.70 (X) + 9.74	117	92	25%	75%	23	69
	Multifamily Housing (Low-Rise)	220	Ln(T) = 0.95 Ln(X) -0.51	102	49	23%	77%	11	38
A.M. Total					141			34	107
P.M. Peak-hour	Single-Family	210	Ln(T) = 0.90 Ln(X) + 0.51	117	121	63%	37%	76	45
	Multifamily Housing (Low-Rise)	230	Ln(T) = 0.89 Ln(X) -0.02	102	61	63%	37%	38	23
P.M. Total					182			114	68

Trip Distribution

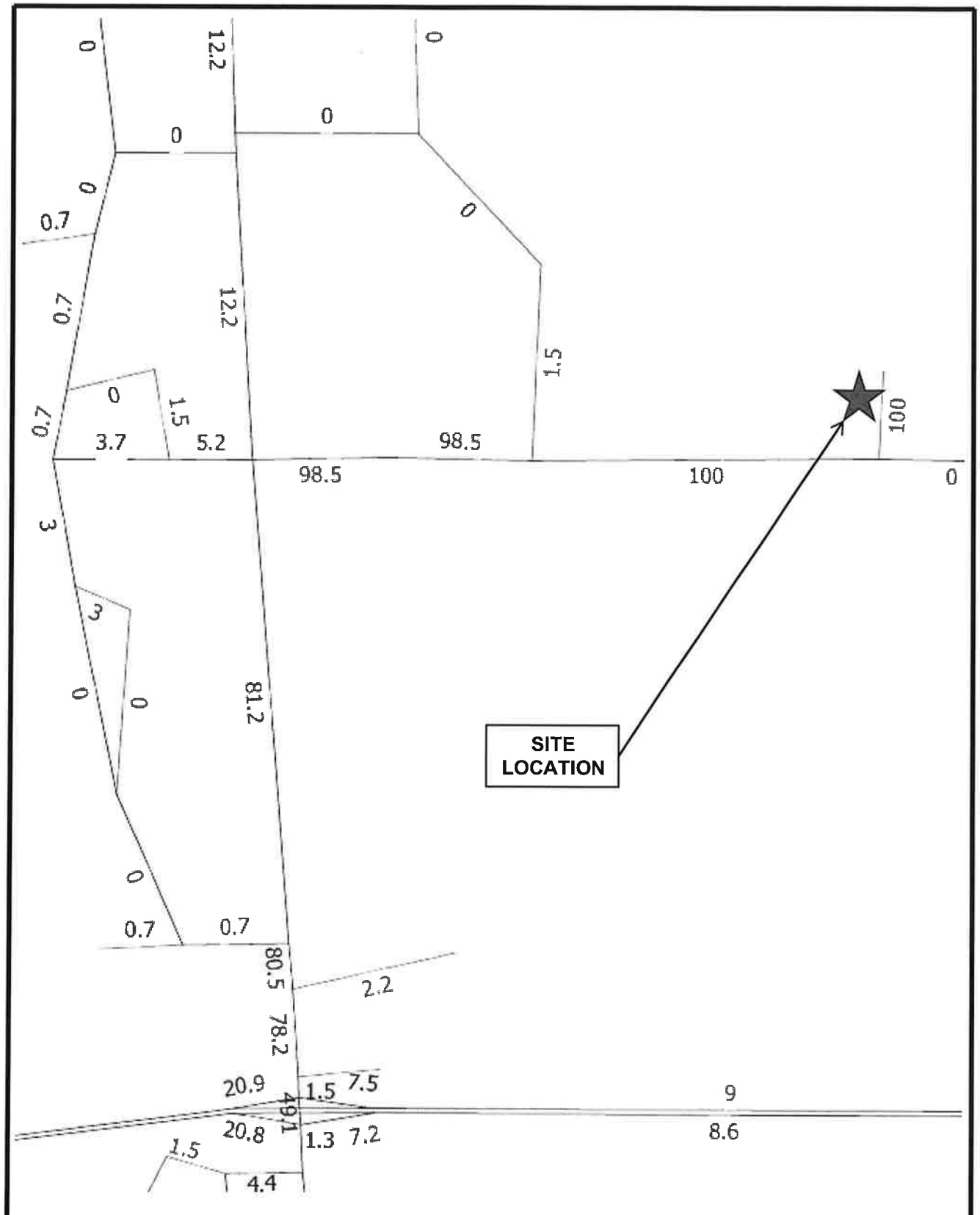
The Central Florida Regional Planning Model version 6.1 will be used to obtain trip distribution and will be manually modified where appropriate. Figure 2 shows the proposed distribution of traffic along the surrounding road network.

Trip Assignment

Traffic will be assigned to the study area roadways using the peak-hour trip generation and the project trip distribution identified by the model.



Mission Estates	N NTS	**Site Location Map**		LTG *Engineering & Planning*
		Project No.: 4497.01	Figure: 1	1970 Dairy Road, W. Melbourne. FL 32904 Telephone: 321.499.4679 Fax: 321.499.4680 EB# 0009227



Mission Estates	N NTS	**Trip Distribution**		LTG Engineering & Planning
		Project No.: 4497.01	Figure: 2	1970 Dairy Road – W. Melbourne, Florida 32904 Telephone: 321.499.4679 Fax: 321.499.4680 EB# 0009227

Study Area

The Brevard County Traffic Impact Analysis Policy was used to determine the project study area. Based on the trip generation criteria the study area for the project was determined to be a 3-mile radius.

The study area selected consists of the following intersections and road segments:

Intersections:

- SR 3/N Courtenay Parkway at Hall Road
- SR 3/N Courtenay Parkway at Grant Road/Smith Road
- SR 3/N Courtenay Parkway at SR 528 Westbound
- SR 3/N Courtenay Parkway at SR 528 Eastbound
- Hall Road at Project Driveway

Roadway Segments:

- SR 3 / N Courtenay Parkway from SR 528 N Ramp to Hall Road
- SR 3 / N Courtenay Parkway from Hall Road to N Tropical Trail
- Hall Road from SR 3 / N Courtenay Parkway to N Tropical Trail

Analysis Period

Roadway segments will be analyzed based on p.m. peak-hour traffic and intersections will be analyzed for the a.m. and p.m. peak-hours. The analysis will be conducted under 2018 existing conditions and 2018 build-out conditions.

Traffic Concurrency Spreadsheet

The analysis will be based on the latest concurrency information as obtained from the Florida Department of Transportation (FDOT), the Space Coast Transportation Planning Organization (SCTPO), and Brevard County Planning Department.

Traffic Count Procedures

Manual turning movement counts will be conducted on a Tuesday, Wednesday or Thursday during a.m. and p.m. peak hours at each study intersection. Turning movement counts will not be older than one year.

Build-Out Traffic

The build-out traffic will be developed by the sum of the background traffic derived from growth rates plus the estimated project traffic. Growth rates for each study area roadway segment will be determined by historic growth trends calculated based upon five years of historic count data. A Minimum annual growth rate of two percent shall be used unless otherwise documented. In no case shall a negative growth rate be used. All improvements funded for construction within the first three years of the five-year work program will be considered in the analysis.

Segment Analysis – Existing and Build-Out Conditions

If the future projected volume is expected to exceed the maximum service volume of a roadway segment, an additional transportation analysis may be conducted (requires client authorization) to determine the service volume specific to that segment. The procedures documented in the latest version of the FDOT *Quality/Level of Service Handbook* will be used to determine specific capacity, if default capacities are exceeded and if detailed, site-specific capacity analysis has the potential to yield a higher capacity calculation.

Intersection Analysis – A.M. and P.M. Peak-Hour (Existing and Build-Out Conditions)

The operating conditions for both the existing and future conditions at the unsignalized intersections will be analyzed using the Highway *Capacity Software* (HCS). HCS utilizes the procedures outlined in Chapter 20 of the HCM 6th Edition, titled "Two-Way Stop Control Intersections".

The operating conditions for both the existing and future conditions at the signalized intersections will be evaluated using the *Highway Capacity Software (*HCS). This software utilizes the methodology outlined in Chapter 19 of the HCM 6th Edition, titled "Signalized Intersections".

Improvements

If warranted, appropriate roadway and intersection improvements will be identified. Conditions for each analysis phase will be analyzed for improvements that are required for mitigation. Site access needs will be addressed. The need for auxiliary lanes will be assessed using the methodology provided by NCHRP Report 457, HCS, and the latest version of the FDOT Design Standards.

Please review and advise if the Brevard County is in agreement with this proposed methodology or provide comments relating to preferred revisions. If you have any questions, please contact me at 321.499.4679.

Sincerely,

LTG, Inc.

Josh Black
Senior Designer

c: Carlos A. Triay, Esquire
Gil A. Ramirez, PE

APPENDIX C

Turning Movement Counts

DE TRAFFIC

http:de-traffic.com
SR 3 at Hall Rd
Brevard County, FL

File Name : SR 3 at Hall
Site Code : 00000005
Start Date : 2/1/2018
Page No : 1

Groups Printed- Automobiles - Commercial

	SR 3 Southbound				Hall Rd Westbound				SR 3 Northbound				Hall Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	1	80	5	86	19	1	12	32	10	210	7	227	7	2	21	30	375
07:15 AM	0	99	2	101	20	3	8	31	6	232	15	253	13	2	23	38	423
07:30 AM	7	121	3	131	37	0	16	53	7	231	22	260	9	2	46	57	501
07:45 AM	7	109	3	119	31	1	4	36	15	252	21	288	9	1	40	50	493
Total	15	409	13	437	107	5	40	152	38	925	65	1028	38	7	130	175	1792
08:00 AM	2	93	2	97	36	1	6	43	27	205	18	250	8	1	35	44	434
08:15 AM	3	103	4	110	35	1	6	42	9	215	15	239	10	0	25	35	426
08:30 AM	1	100	3	104	48	1	4	53	20	186	24	230	7	0	31	38	425
08:45 AM	2	93	4	99	23	1	3	27	18	174	23	215	5	1	22	28	369
Total	8	389	13	410	142	4	19	165	74	780	80	934	30	2	113	145	1654
04:00 PM	4	239	10	253	38	0	3	41	35	118	28	181	5	2	21	28	503
04:15 PM	5	283	10	298	20	2	1	23	30	124	25	179	2	2	22	26	526
04:30 PM	6	268	6	280	30	1	4	35	29	115	24	168	5	3	30	38	521
04:45 PM	10	283	10	303	36	1	5	42	32	106	35	173	2	2	23	27	545
Total	25	1073	36	1134	124	4	13	141	126	463	112	701	14	9	96	119	2095
05:00 PM	6	276	10	292	40	3	11	54	47	96	25	168	4	4	26	34	548
05:15 PM	9	299	10	318	26	1	5	32	51	139	31	221	3	5	22	30	601
05:30 PM	9	231	14	254	34	2	3	39	42	110	33	185	4	2	30	36	514
05:45 PM	3	223	10	236	23	4	2	29	50	104	27	181	5	3	40	48	494
Total	27	1029	44	1100	123	10	21	154	190	449	116	755	16	14	118	148	2157

DE TRAFFIC

http:de-traffic.com
SR 3 at Hall Rd
Brevard County, FL

File Name : SR 3 at Hall
Site Code : 00000005
Start Date : 2/1/2018
Page No : 2

Groups Printed- Automobiles - Commercial

	SR 3 Southbound				Hall Rd Westbound				SR 3 Northbound				Hall Rd Eastbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
Grand Total	75	2900	106	3081	496	23	93	612	428	2617	373	3418	98	32	457	587	7698
Apprch %	2.4	94.1	3.4		81	3.8	15.2		12.5	76.6	10.9		16.7	5.5	77.9		
Total %	1	37.7	1.4	40	6.4	0.3	1.2	8	5.6	34	4.8	44.4	1.3	0.4	5.9	7.6	
Automobiles	75	2867	104	3046	489	23	89	601	421	2599	369	3389	97	32	446	575	7611
% Automobiles	100	98.9	98.1	98.9	98.6	100	95.7	98.2	98.4	99.3	98.9	99.2	99	100	97.6	98	98.9
Commercial	0	33	2	35	7	0	4	11	7	18	4	29	1	0	11	12	87
% Commercial	0	1.1	1.9	1.1	1.4	0	4.3	1.8	1.6	0.7	1.1	0.8	1	0	2.4	2	1.1

DE TRAFFIC

http:de-traffic.com
SR 3 at Hall Rd
Brevard County, FL

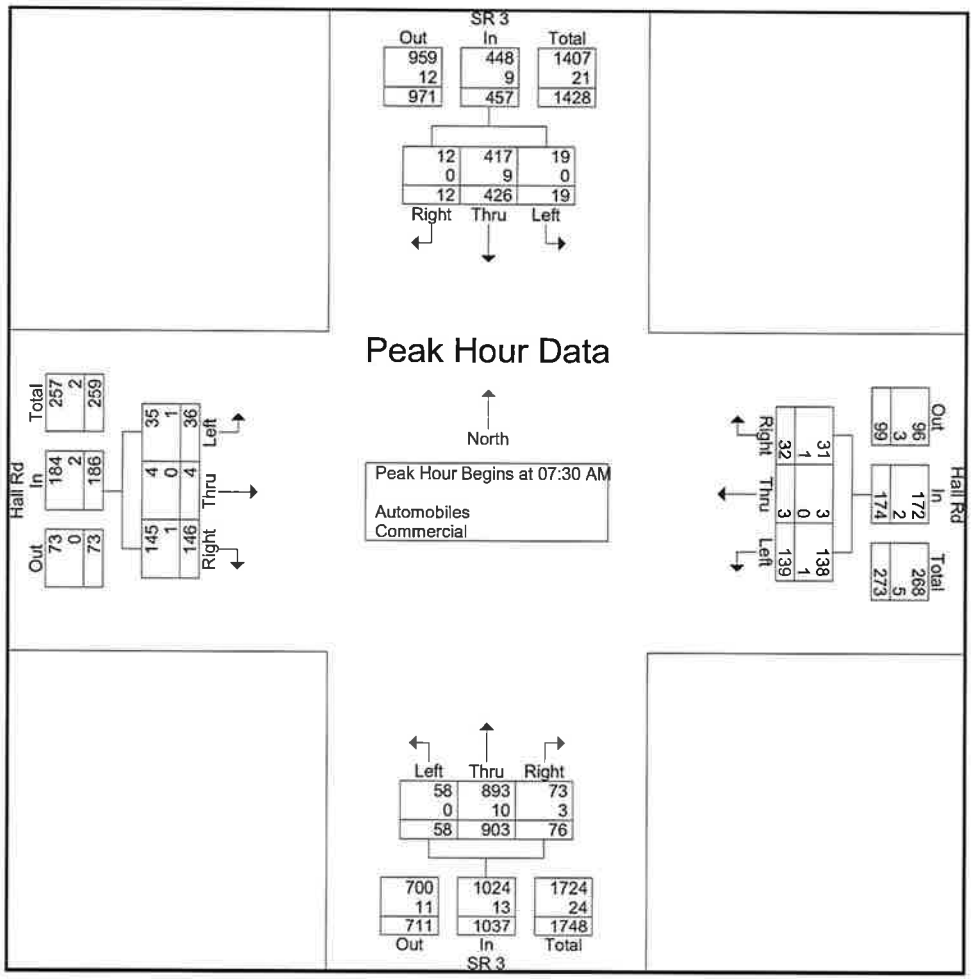
File Name : SR 3 at Hall
Site Code : 00000005
Start Date : 2/1/2018
Page No : 3

	SR 3 Southbound				Hall Rd Westbound				SR 3 Northbound				Hall Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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 07:30 AM																	
07:30 AM	7	121	3	131	37	0	16	53	7	231	22	260	9	2	46	57	501
07:45 AM	7	109	3	119	31	1	4	36	15	252	21	288	9	1	40	50	493
08:00 AM	2	93	2	97	36	1	6	43	27	205	18	250	8	1	35	44	434
08:15 AM	3	103	4	110	35	1	6	42	9	215	15	239	10	0	25	35	426
Total Volume	19	426	12	457	139	3	32	174	58	903	76	1037	36	4	146	186	1854
% App. Total	4.2	93.2	2.6		79.9	1.7	18.4		5.6	87.1	7.3		19.4	2.2	78.5		
PHF	.679	.880	.750	.872	.939	.750	.500	.821	.537	.896	.864	.900	.900	.500	.793	.816	.925
Automobiles	19	417	12	448	138	3	31	172	58	893	73	1024	35	4	145	184	1828
% Automobiles	100	97.9	100	98.0	99.3	100	96.9	98.9	100	98.9	96.1	98.7	97.2	100	99.3	98.9	98.6
Commercial	0	9	0	9	1	0	1	2	0	10	3	13	1	0	1	2	26
% Commercial	0	2.1	0	2.0	0.7	0	3.1	1.1	0	1.1	3.9	1.3	2.8	0	0.7	1.1	1.4

DE TRAFFIC

http:de-traffic.com
SR 3 at Hall Rd
Brevard County, FL

File Name : SR 3 at Hall
Site Code : 00000005
Start Date : 2/1/2018
Page No : 4



DE TRAFFIC

http:de-traffic.com
SR 3 at Hall Rd
Brevard County, FL

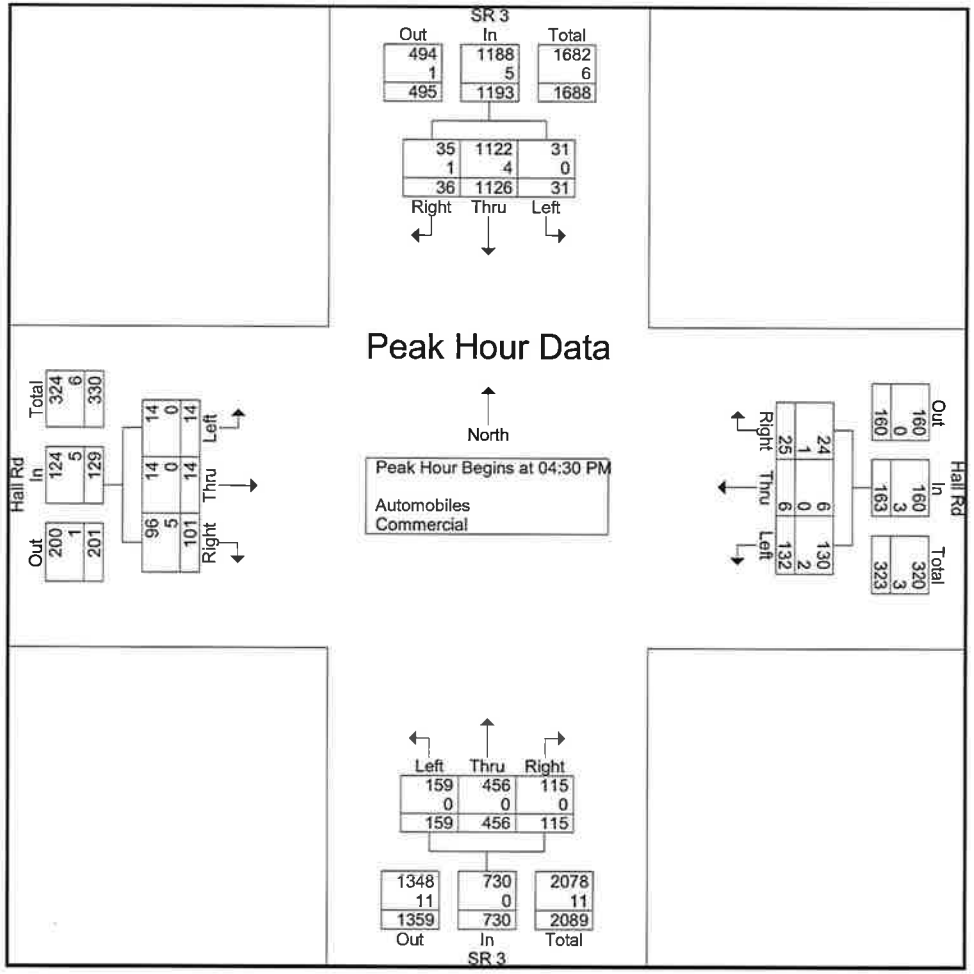
File Name : SR 3 at Hall
Site Code : 00000005
Start Date : 2/1/2018
Page No : 5

	SR 3 Southbound				Hall Rd Westbound				SR 3 Northbound				Hall Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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	6	268	6	280	30	1	4	35	29	115	24	168	5	3	30	38	521
04:45 PM	10	283	10	303	36	1	5	42	32	106	35	173	2	2	23	27	545
05:00 PM	6	276	10	292	40	3	11	54	47	96	25	168	4	4	26	34	548
05:15 PM	9	299	10	318	26	1	5	32	51	139	31	221	3	5	22	30	601
Total Volume	31	1126	36	1193	132	6	25	163	159	456	115	730	14	14	101	129	2215
% App. Total	2.6	94.4	3		81	3.7	15.3		21.8	62.5	15.8		10.9	10.9	78.3		
PHF	.775	.941	.900	.938	.825	.500	.568	.755	.779	.820	.821	.826	.700	.700	.842	.849	.921
Automobiles	31	1122	35	1188	130	6	24	160	159	456	115	730	14	14	96	124	2202
% Automobiles	100	99.6	97.2	99.6	98.5	100	96.0	98.2	100	100	100	100	100	100	95.0	96.1	99.4
Commercial	0	4	1	5	2	0	1	3	0	0	0	0	0	0	5	5	13
% Commercial	0	0.4	2.8	0.4	1.5	0	4.0	1.8	0	0	0	0	0	0	5.0	3.9	0.6

DE TRAFFIC

http:de-traffic.com
SR 3 at Hall Rd
Brevard County, FL

File Name : SR 3 at Hall
Site Code : 00000005
Start Date : 2/1/2018
Page No : 6



DE TRAFFIC

http:de-traffic.com
SR 3 at Hall Rd
Brevard County, FL

File Name : SR 3 at Hall
Site Code : 00000005
Start Date : 2/1/2018
Page No : 7

Groups Printed- Peds

	SR 3 Southbound					Hall Rd Westbound					SR 3 Northbound					Hall Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:15 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
07:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3
05:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
05:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
Total	0	0	0	2	2	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4
Grand Total	0	0	0	4	4	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	7
Apprch %	0	0	0	100		0	0	0	0		0	0	0	100		0	0	0	0		
Total %	0	0	0	57.1	57.1	0	0	0	0	0	0	0	0	42.9	42.9	0	0	0	0	0	

DE TRAFFIC

http:de-traffic.com
SR 3 at Grant Rd/Smith Rd
Brevard County, FL

File Name : SR 3 at Grant
Site Code : 00000003
Start Date : 2/1/2018
Page No : 1

Groups Printed- Automobiles - Commercial

	SR 3 Southbound				Smith Rd Westbound				SR 3 Northbound				Grant Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	2	128	5	135	0	1	0	1	6	200	5	211	2	1	35	38	385
07:15 AM	1	146	4	151	0	0	0	0	7	235	3	245	2	1	34	37	433
07:30 AM	1	180	6	187	5	2	0	7	11	248	5	264	4	1	42	47	505
07:45 AM	8	202	8	218	3	0	0	3	14	305	4	323	3	0	40	43	587
Total	12	656	23	691	8	3	0	11	38	988	17	1043	11	3	151	165	1910
08:00 AM	1	171	10	182	1	1	1	3	13	304	3	320	4	1	39	44	549
08:15 AM	1	160	9	170	1	0	2	3	8	253	7	268	1	1	30	32	473
08:30 AM	2	151	5	158	4	0	0	4	12	224	5	241	3	0	28	31	434
08:45 AM	0	148	5	153	0	2	0	2	15	231	8	254	2	1	29	32	441
Total	4	630	29	663	6	3	3	12	48	1012	23	1083	10	3	126	139	1897
04:00 PM	3	282	8	293	3	0	1	4	28	197	11	236	5	2	22	29	562
04:15 PM	4	254	6	264	8	2	0	10	33	191	16	240	2	0	19	21	535
04:30 PM	4	247	7	258	4	2	0	6	32	186	8	226	5	0	17	22	512
04:45 PM	7	389	10	406	6	2	1	9	37	204	9	250	2	2	20	24	689
Total	18	1172	31	1221	21	6	2	29	130	778	44	952	14	4	78	96	2298
05:00 PM	7	287	4	298	10	0	1	11	41	209	10	260	3	1	33	37	606
05:15 PM	2	346	9	357	3	2	0	5	38	222	10	270	1	0	22	23	655
05:30 PM	4	359	8	371	6	2	0	8	41	214	13	268	4	1	26	31	678
05:45 PM	5	330	5	340	4	1	2	7	31	203	7	241	1	1	11	13	601
Total	18	1322	26	1366	23	5	3	31	151	848	40	1039	9	3	92	104	2540

DE TRAFFIC

http:de-traffic.com
SR 3 at Grant Rd/Smith Rd
Brevard County, FL

File Name : SR 3 at Grant
Site Code : 00000003
Start Date : 2/1/2018

Groups Printed- Automobiles - Commercial

	SR 3 Southbound				Smith Rd Westbound				SR 3 Northbound				Grant Rd Eastbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
Grand Total	52	3780	109	3941	58	17	8	83	367	3626	124	4117	44	13	447	504	8645
Apprch %	1.3	95.9	2.8		69.9	20.5	9.6		8.9	88.1	3		8.7	2.6	88.7		
Total %	0.6	43.7	1.3	45.6	0.7	0.2	0.1	1	4.2	41.9	1.4	47.6	0.5	0.2	5.2	5.8	
Automobiles	45	3698	99	3842	54	14	6	74	350	3543	116	4009	40	11	441	492	8417
% Automobiles	86.5	97.8	90.8	97.5	93.1	82.4	75	89.2	95.4	97.7	93.5	97.4	90.9	84.6	98.7	97.6	97.4
Commercial	7	82	10	99	4	3	2	9	17	83	8	108	4	2	6	12	228
% Commercial	13.5	2.2	9.2	2.5	6.9	17.6	25	10.8	4.6	2.3	6.5	2.6	9.1	15.4	1.3	2.4	2.6

DE TRAFFIC

http:de-traffic.com
SR 3 at Grant Rd/Smith Rd
Brevard County, FL

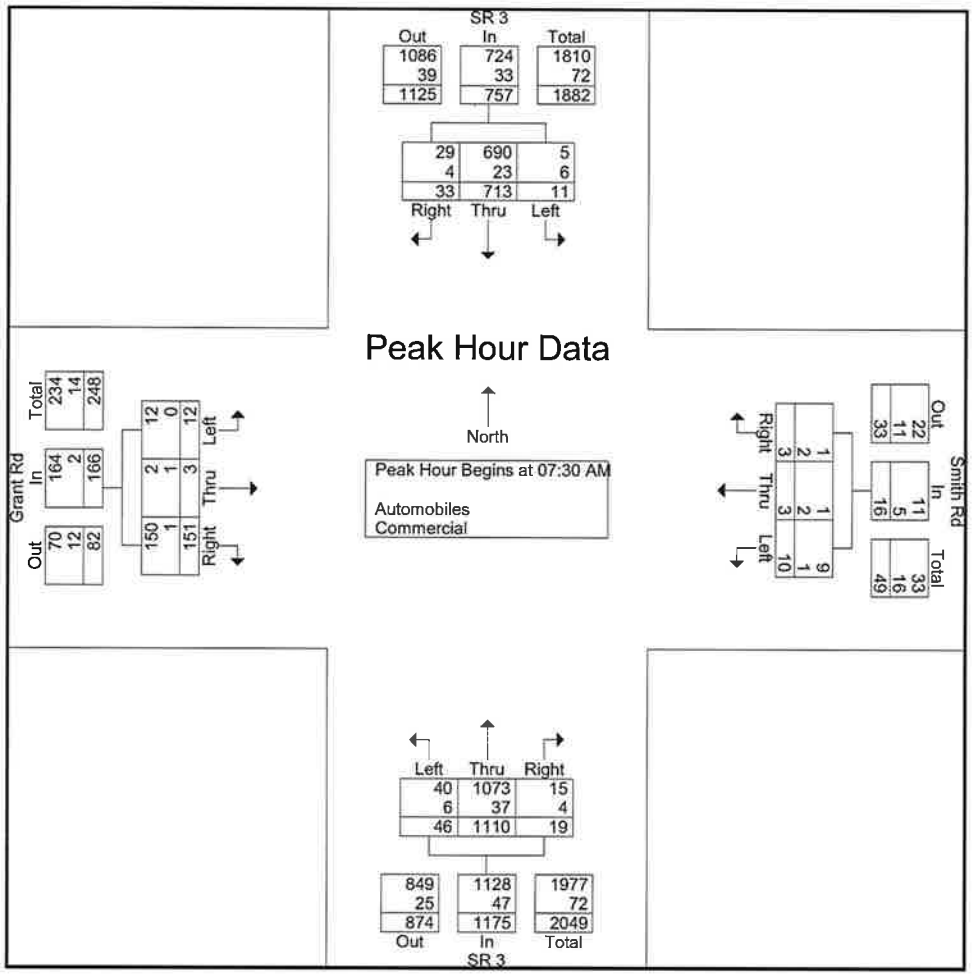
File Name : SR 3 at Grant
Site Code : 00000003
Start Date : 2/1/2018
Page No : 3

	SR 3 Southbound				Smith Rd Westbound				SR 3 Northbound				Grant Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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 07:30 AM																	
07:30 AM	1	180	6	187	5	2	0	7	11	248	5	264	4	1	42	47	505
07:45 AM	8	202	8	218	3	0	0	3	14	305	4	323	3	0	40	43	587
08:00 AM	1	171	10	182	1	1	1	3	13	304	3	320	4	1	39	44	549
08:15 AM	1	160	9	170	1	0	2	3	8	253	7	268	1	1	30	32	473
Total Volume	11	713	33	757	10	3	3	16	46	1110	19	1175	12	3	151	166	2114
% App. Total	1.5	94.2	4.4		62.5	18.8	18.8		3.9	94.5	1.6		7.2	1.8	91		
PHF	.344	.882	.825	.868	.500	.375	.375	.571	.821	.910	.679	.909	.750	.750	.899	.883	.900
Automobiles	5	690	29	724	9	1	1	11	40	1073	15	1128	12	2	150	164	2027
% Automobiles	45.5	96.8	87.9	95.6	90.0	33.3	33.3	68.8	87.0	96.7	78.9	96.0	100	66.7	99.3	98.8	95.9
Commercial	6	23	4	33	1	2	2	5	6	37	4	47	0	1	1	2	87
% Commercial	54.5	3.2	12.1	4.4	10.0	66.7	66.7	31.3	13.0	3.3	21.1	4.0	0	33.3	0.7	1.2	4.1

DE TRAFFIC

http:de-traffic.com
SR 3 at Grant Rd/Smith Rd
Brevard County, FL

File Name : SR 3 at Grant
Site Code : 00000003
Start Date : 2/1/2018
Page No : 4



DE TRAFFIC

http:de-traffic.com
SR 3 at Grant Rd/Smith Rd
Brevard County, FL

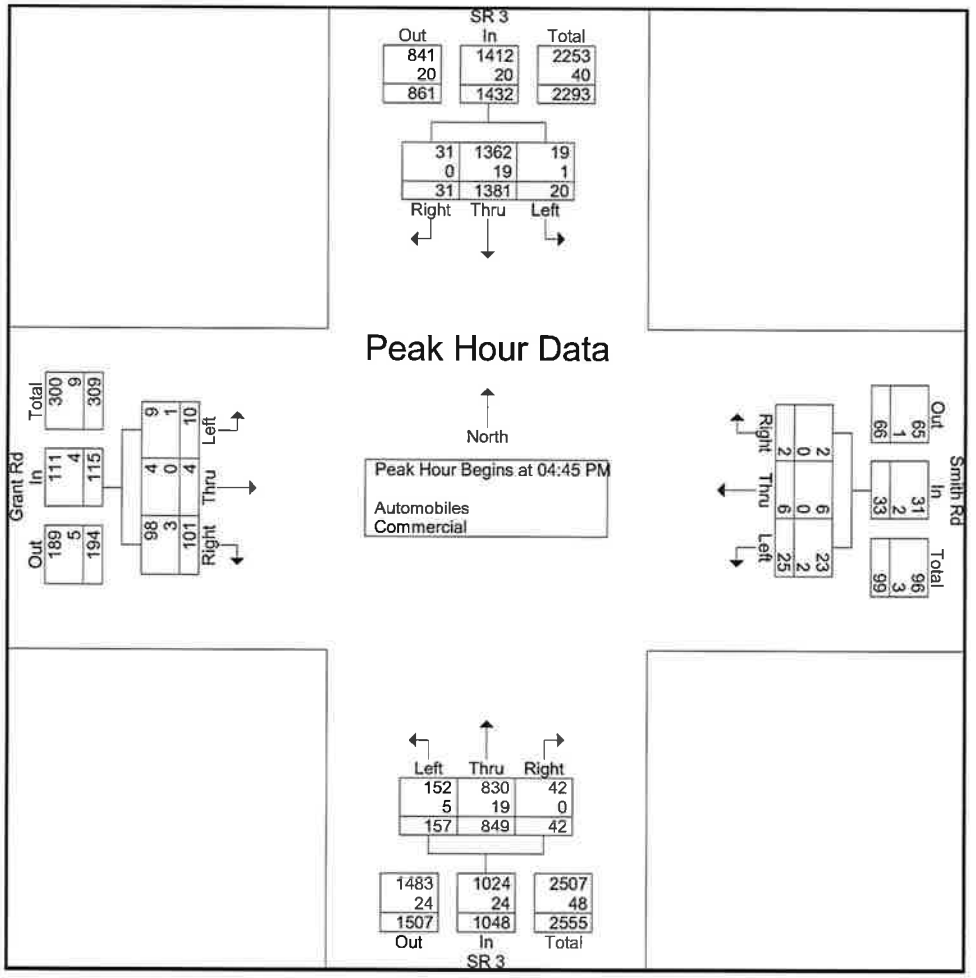
File Name : SR 3 at Grant
Site Code : 00000003
Start Date : 2/1/2018
Page No : 5

	SR 3 Southbound				Smith Rd Westbound				SR 3 Northbound				Grant Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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 04:45 PM																	
04:45 PM	7	389	10	406	6	2	1	9	37	204	9	250	2	2	20	24	689
05:00 PM	7	287	4	298	10	0	1	11	41	209	10	260	3	1	33	37	606
05:15 PM	2	346	9	357	3	2	0	5	38	222	10	270	1	0	22	23	655
05:30 PM	4	359	8	371	6	2	0	8	41	214	13	268	4	1	26	31	678
Total Volume	20	1381	31	1432	25	6	2	33	157	849	42	1048	10	4	101	115	2628
% App. Total	1.4	96.4	2.2		75.8	18.2	6.1		15	81	4		8.7	3.5	87.8		
PHF	.714	.888	.775	.882	.625	.750	.500	.750	.957	.956	.808	.970	.625	.500	.765	.777	.954
Automobiles	19	1362	31	1412	23	6	2	31	152	830	42	1024	9	4	98	111	2578
% Automobiles	95.0	98.6	100	98.6	92.0	100	100	93.9	96.8	97.8	100	97.7	90.0	100	97.0	96.5	98.1
Commercial	1	19	0	20	2	0	0	2	5	19	0	24	1	0	3	4	50
% Commercial	5.0	1.4	0	1.4	8.0	0	0	6.1	3.2	2.2	0	2.3	10.0	0	3.0	3.5	1.9

DE TRAFFIC

http:de-traffic.com
SR 3 at Grant Rd/Smith Rd
Brevard County, FL

File Name : SR 3 at Grant
Site Code : 00000003
Start Date : 2/1/2018
Page No : 6



DE TRAFFIC

http:de-traffic.com
SR 3 at Grant Rd/Smith Rd
Brevard County, FL

File Name : SR 3 at Grant
Site Code : 00000003
Start Date : 2/1/2018
Page No : 7

Groups Printed- Peds

	SR 3 Southbound					Smith Rd Westbound					SR 3 Northbound					Grant Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:30 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
08:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
05:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
Grand Total	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	7
Apprch %	0	0	0	100		0	0	0	0		0	0	0	0		0	0	0	100		
Total %	0	0	0	57.1	57.1	0	0	0	0	0	0	0	0	0	0	0	0	0	42.9	42.9	

NB Approach

SB Approach

EB Approach

WB Approach

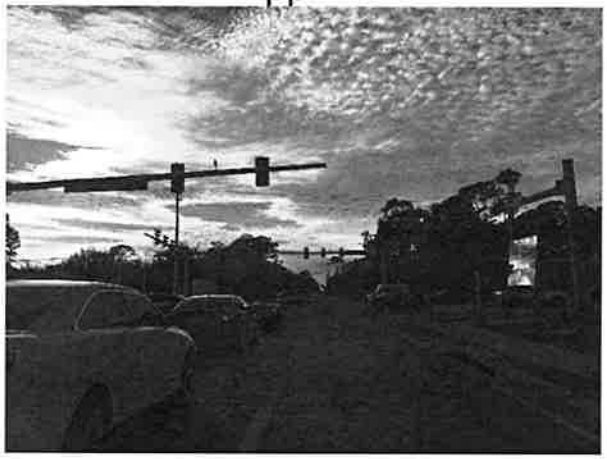
de traffic

SR 3 at Grant Rd/ Smith Rd	Brevard County	
www.de-traffic.com	Project Number: L18-007	Sheet Number: 3
299 McGregor Rd. DeLand Fl. 32720		

NB Approach

SB Approach

EB Approach



WB Approach

de traffic

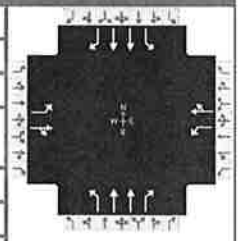
SR 3 at Hall Rd	Brevard County	
www.de-traffic.com	Project Number: L18-007	Sheet Number: 4
299 McGregor Rd. DeLand Fl. 32720		

APPENDIX D

Signalized Intersections HCS Worksheets – Existing Conditions

HCS7 Signalized Intersection Results Summary

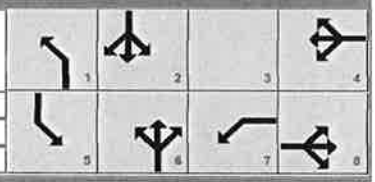
General Information				Intersection Information	
Agency	LTG			Duration, h	0.25
Analyst	LAE	Analysis Date	Jan 16, 2018	Area Type	Other
Jurisdiction	FDOT	Time Period	Existing A.M. Peak-Hour	PHF	0.93
Urban Street	SR 3 / N Courtenay Par...	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	SR 3 at Hall Rd	File Name	1 SR 3 at Hall Rd - Existing AM.xus		
Project Description	4497.02				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	36	4	146	139	3	32	58	903	76	19	426	12

Signal Information			
Cycle, s	85.3	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	1.9	2.1	37.8	7.8	9.0	0.0						
Yellow	5.1	0.0	5.1	4.1	4.1	0.0						
Red	2.1	0.0	2.0	2.1	2.0	0.0						



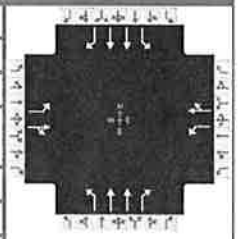
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8	7	4	1	6	5	2
Case Number		6.3	1.0	4.0	1.1	3.0	1.1	3.0
Phase Duration, s		15.1	14.0	29.1	11.3	47.0	9.1	44.9
Change Period, ($Y+R_c$), s		6.1	6.2	6.1	7.4	7.1	7.2	7.1
Max Allow Headway (*MAH*), s		3.2	3.0	3.2	3.0	7.3	3.0	7.3
Queue Clearance Time (g_s), s		8.8	7.9	3.1	3.5	18.2	2.5	8.7
Green Extension Time (g_e), s		0.3	0.1	0.4	0.0	21.7	0.0	25.9
Phase Call Probability		0.99	0.97	1.00	0.77	1.00	0.38	1.00
Max Out Probability		0.00	0.28	0.00	0.00	0.58	0.00	0.47

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	39	130		149	28		62	971	6	20	458	0
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1371	1593		1781	1613		1781	1781	1560	1781	1781	1585
Queue Service Time (g_s), s	2.3	6.8		5.9	1.1		1.5	16.2	0.2	0.5	6.7	0.0
Cycle Queue Clearance Time (g_c), s	2.3	6.8		5.9	1.1		1.5	16.2	0.2	0.5	6.7	0.0
Green Ratio (*g/C*)	0.12	0.12		0.24	0.28		0.51	0.49	0.49	0.49	0.47	0.47
Capacity (*c*), veh/h	198	132		316	398		538	1752	694	293	1662	666
Volume-to-Capacity Ratio (*X*)	0.196	0.988		0.473	0.070		0.116	0.554	0.009	0.070	0.276	0.000
Back of Queue (*Q*), ft/ln (95 th percentile)	33.8	149.7		108.5	18.4		23.1	238.3	2.8	7.9	106.5	0
Back of Queue (*Q*), veh/ln (95 th percentile)	1.3	5.9		4.3	0.7		0.9	9.4	0.1	0.3	4.2	0.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.23	0.00		0.46	0.00		0.08	0.00	0.01	0.03	0.00	0.00
Uniform Delay (d_1), s/veh	36.9	37.6		27.1	23.4		10.8	15.7	13.2	13.0	14.5	0.0
Incremental Delay (d_2), s/veh	0.2	19.5		0.4	0.0		0.0	0.1	0.0	0.0	0.0	0.0
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	37.1	57.1		27.5	23.4		10.8	15.8	13.2	13.1	14.5	0.0
Level of Service (LOS)	D	E		C	C		B	B	B	B	B	
Approach Delay, s/veh / LOS	52.5	D		26.9	C		15.5	B		14.4	B	
Intersection Delay, s/veh / LOS	19.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.55	C	2.45	B	1.91	B	1.94	B
Bicycle LOS Score / LOS	0.77	A	0.78	A	1.35	A	0.88	A

HCS7 Signalized Intersection Results Summary

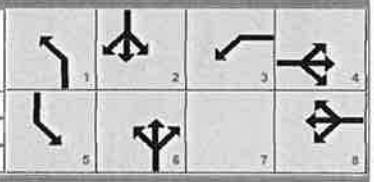
General Information				Intersection Information	
Agency	LTG			Duration, h	0.25
Analyst	LAE	Analysis Date	Jan 16, 2018	Area Type	Other
Jurisdiction	FDOT	Time Period	Existing P.M. Peak-Hour	PHF	0.92
Urban Street	SR 3/N Courtenay Pkwy	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	SR 3 at Hall Rd	File Name	1 SR 3 at Hall Rd - Existing PM.xus		
Project Description	4497.02				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	14	14	101	132	6	25	156	456	115	31	1126	36

Signal Information			
Cycle, s	71.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

	EB			WB			NB			SB		
Green	2.4	3.5		28.3	6.6	5.3	0.0					
Yellow	5.1	0.0		5.1	3.0	4.1	0.0					
Red	2.1	0.0		2.0	2.0	2.0	0.0					



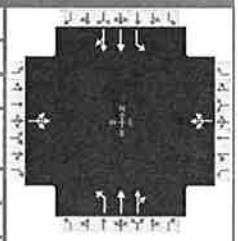
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4	3	8	1	6	5	2
Case Number		6.3	1.0	4.0	1.1	3.0	1.1	3.0
Phase Duration, s		11.4	11.6	23.0	13.1	38.8	9.6	35.4
Change Period, ($Y+R_c$), s		6.1	5.0	6.1	7.4	7.1	7.2	7.1
Max Allow Headway (*MAH*), s		3.1	3.0	3.1	3.0	2.9	3.0	2.9
Queue Clearance Time (g_s), s		3.6	6.9	2.5	5.7	8.1	2.7	23.6
Green Extension Time (g_e), s		0.1	0.1	0.1	0.2	4.7	0.0	4.6
Phase Call Probability		0.76	0.94	0.99	0.97	1.00	0.49	1.00
Max Out Probability		0.00	0.08	0.00	0.00	0.00	0.00	0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	15	40		143	16		170	496	53	34	1224	32
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1397	1682		1781	1688		1781	1781	1585	1781	1781	1572
Queue Service Time (g_s), s	0.8	1.6		4.9	0.5		3.7	6.1	1.5	0.7	21.6	0.9
Cycle Queue Clearance Time (g_c), s	0.8	1.6		4.9	0.5		3.7	6.1	1.5	0.7	21.6	0.9
Green Ratio (*g/C*)	0.09	0.09		0.22	0.25		0.50	0.47	0.47	0.46	0.42	0.42
Capacity (*c*), veh/h	166	78		380	352		317	1681	660	487	1508	578
Volume-to-Capacity Ratio (*X*)	0.092	0.513		0.378	0.046		0.534	0.295	0.081	0.069	0.811	0.055
Back of Queue (*Q*), ft/ln (95 th percentile)	11	30.1		85.8	8.9		53.8	88.8	19.8	11	296.1	13.1
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	1.2		3.4	0.4		2.1	3.5	0.8	0.4	11.7	0.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.07	0.00		0.37	0.00		0.19	0.00	0.06	0.04	0.00	0.03
Uniform Delay (d_1), s/veh	32.9	31.4		23.6	21.0		14.6	12.1	12.6	10.9	18.9	14.6
Incremental Delay (d_2), s/veh	0.1	1.9		0.2	0.0		0.5	0.0	0.0	0.0	0.4	0.0
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	33.0	33.3		23.9	21.0		15.2	12.2	12.6	11.0	19.4	14.6
Level of Service (LOS)	C	C		C	C		B	B	B	B	B	B
Approach Delay, s/veh / LOS	33.2	C		23.6	C		12.9	B		19.0	B	
Intersection Delay, s/veh / LOS	17.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.54	C	2.44	B	1.92	B	2.01	B
Bicycle LOS Score / LOS	0.58	A	0.75	A	1.08	A	1.55	B

HCS7 Signalized Intersection Results Summary

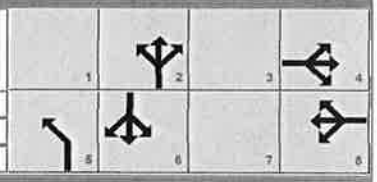
General Information				Intersection Information	
Agency	LTG			Duration, h	0.25
Analyst	LAE	Analysis Date	Jan 16, 2018	Area Type	Other
Jurisdiction	FDOT	Time Period	Existing A.M. Peak Hour	PHF	0.90
Urban Street	SR 3/N Courtenay Pkwy	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	SR 3 at Grant Rd/Smith...	File Name	2 SR 3 at Grant Rd - Existing AM.xus		
Project Description	4497.02				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	12	3	151	10	3	3	46	1110	19	11	713	33

Signal Information			
Cycle, s	59.3	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

	EB			WB			NB		
Green	2.9	27.3		9.5	0.0	0.0	0.0		
Yellow	4.8	4.8		4.0	0.0	0.0	0.0		
Red	2.0	2.0		2.0	0.0	0.0	0.0		



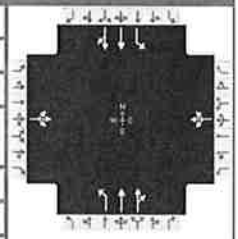
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2		6
Case Number		8.0		8.0	1.0	4.0		6.3
Phase Duration, s		15.5		15.5	9.7	43.7		34.1
Change Period, ($Y+R_c$), s		6.0		6.0	6.8	6.8		6.8
Max Allow Headway (*MAH*), s		4.2		4.2	4.0	4.5		4.5
Queue Clearance Time (g_s), s		9.6		2.9	2.9	12.8		11.3
Green Extension Time (g_e), s		0.6		0.4	0.1	15.8		16.0
Phase Call Probability		0.94		0.94	0.57	1.00		1.00
Max Out Probability		0.00		0.03	0.00	0.17		0.16

Movement Group Results	EB			WB			NB			SB		
Approach Movement	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		159			14		51	629	625	12	418	411
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1202			593		1626	1930	1918	257	1856	1826
Queue Service Time (g_s), s		2.7			0.0		0.9	10.8	10.8	1.7	9.3	9.3
Cycle Queue Clearance Time (g_c), s		7.6			0.9		0.9	10.8	10.8	2.8	9.3	9.3
Green Ratio (*g/C*)		0.16			0.16		0.54	0.62	0.62	0.46	0.46	0.46
Capacity (*c*), veh/h		259			203		383	1202	1195	235	854	841
Volume-to-Capacity Ratio (*X*)		0.612			0.071		0.133	0.523	0.523	0.052	0.489	0.489
Back of Queue (*Q*), ft/ln (95 th percentile)		116			10.9		11.1	120.1	118.5	5.2	138.3	135.2
Back of Queue (*Q*), veh/ln (95 th percentile)		3.7			0.3		0.4	4.7	4.7	0.1	5.4	5.3
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00			0.00		0.03	0.00	0.00	0.01	0.41	0.41
Uniform Delay (d_1), s/veh		24.0			21.2		7.6	6.3	6.3	9.7	11.2	11.2
Incremental Delay (d_2), s/veh		2.3			0.1		0.2	0.4	0.4	0.1	0.5	0.5
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		26.4			21.4		7.7	6.7	6.7	9.8	11.7	11.7
Level of Service (LOS)		C			C		A	A	A	A	B	B
Approach Delay, s/veh / LOS	26.4	C		21.4	C		6.7	A		11.7	B	
Intersection Delay, s/veh / LOS	9.9						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.28	B	2.28	B	1.63	B	1.69	B
Bicycle LOS Score / LOS	0.75	A	0.51	A	1.56	B	1.18	A

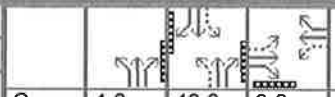
HCS7 Signalized Intersection Results Summary

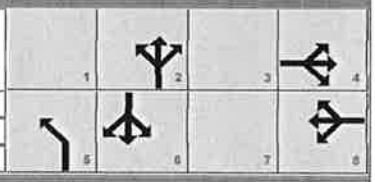
General Information				Intersection Information	
Agency	LTG			Duration, h	0.25
Analyst	LAE	Analysis Date	Jan 16, 2018	Area Type	Other
Jurisdiction	FDOT	Time Period	Existing P.M. Peak-Hour	PHF	0.95
Urban Street	SR 3/N Courtenay Pkwy	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	SR 3 at Grant Rd/Smith...	File Name	2 SR 3 at Grant Rd - Existing PM.xus		
Project Description	4497.02				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	10	4	101	25	6	2	157	849	42	20	1381	31

Signal Information			
Cycle, s	68.4	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On





Green	4.8	40.2	3.8	0.0	0.0	0.0
Yellow	4.8	4.8	4.0	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2		6
Case Number		8.0		8.0	1.0	4.0		6.3
Phase Duration, s		9.8		9.8	11.6	58.6		47.0
Change Period, ($Y+R_c$), s		6.0		6.0	6.8	6.8		6.8
Max Allow Headway (*MAH*), s		4.1		4.1	4.0	4.5		4.5
Queue Clearance Time (g_s), s		4.0		5.1	4.4	7.3		20.9
Green Extension Time (g_e), s		0.2		0.1	0.4	21.7		19.3
Phase Call Probability		0.74		0.74	0.96	1.00		1.00
Max Out Probability		0.00		0.04	0.00	0.27		0.39

Movement Group Results	EB			WB			NB			SB		
Approach Movement	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		38			33		165	465	460	21	742	739
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1265			716		1626	1930	1906	351	1856	1843
Queue Service Time (g_s), s		0.0			1.1		2.4	5.3	5.3	1.8	18.8	18.9
Cycle Queue Clearance Time (g_c), s		2.0			3.1		2.4	5.3	5.3	1.8	18.8	18.9
Green Ratio (*g/C*)		0.06			0.06		0.69	0.76	0.76	0.59	0.59	0.59
Capacity (*c*), veh/h		138			135		321	1461	1443	311	1091	1083
Volume-to-Capacity Ratio (*X*)		0.275			0.242		0.515	0.319	0.319	0.068	0.681	0.682
Back of Queue (*Q*), ft/ln (95 th percentile)		34.2			36.2		42.8	32.6	32	6.8	241.9	239.2
Back of Queue (*Q*), veh/ln (95 th percentile)		1.1			0.9		1.6	1.3	1.3	0.2	9.4	9.4
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00			0.00		0.12	0.00	0.00	0.01	0.72	0.72
Uniform Delay (d_1), s/veh		31.4			31.9		10.2	2.7	2.7	6.2	9.7	9.7
Incremental Delay (d_2), s/veh		1.1			0.9		1.3	0.2	0.2	0.1	0.9	0.9
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		32.5			32.8		11.5	2.8	2.8	6.3	10.6	10.6
Level of Service (LOS)		C			C		B	A	A	A	B	B
Approach Delay, s/veh / LOS	32.5	C		32.8	C		4.1	A		10.6	B	
Intersection Delay, s/veh / LOS	8.5						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.31	B	2.30	B	1.60	B	1.76	B
Bicycle LOS Score / LOS	0.55	A	0.54	A	1.39	A	1.73	B

APPENDIX E

Signal Timings

Station : 13 - SR 3 & Hall Rd (Standard File)

Phase [1.1.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Walk		7		7		7		7								
Ped Clearance		27		28		20		31								
Min Green	5	12	5	7	5	12	5	7								
Gap Ext	3	4		3	3	4	3	3								
Max1	15	50	12	30	15	50	12	30								
Max2	45	45		45	45	45	45	45								
Yellow Clr	5.1	5.1	3	4.1	5.1	5.1	4.1	4.1	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	2.3	2	2	2	2.1	2	2.1	2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Rest In Walk																
Concurrent Ps	1	1	1	1	2	2	2	2								

Phase Option [1.1.2]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable	ON	ON		ON	ON	ON	ON	ON								
Lock Call		ON				ON			ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable	ON	ON		ON	ON	ON		ON	ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Cond Service																
Add Init Calc																

Alternate Phase Program 1, Calls and Redirection [1.1.6.3]

	Entry	Call Phases	From	To	From	To	From	To	From	To	Assigned Ph
1											
2											
3											
4											
5											
6											
7											
8											

Alternate Phase Program 2, Calls and Redirection [1.1.6.3]

	Entry	Call Phases	From	To	From	To	From	To	From	To	Assigned Ph
1											
2											
3											
4											
5											
6											
7											
8											

Alternate Phase Program 1, Interval Times [1.1.6.1]

	Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1											
2											
3											
4											
5											
6											
7											
8											

Alternate Phase Program 2, Interval Times [1.1.6.1]

	Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1											
2											
3											
4											
5											
6											
7											
8											

Prepared By	Date Implemented	Reviewed By	Traffic Engineer

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Station : 13 - SR 3 & Hall Rd (Standard File)

Unit Parameters [1.2.1]

StartUp	Auto P.	Red Re	Local F	Allow <	Allow S	MCE T	Enable	Start R	Phase N	Startup	Diamon	Stop Ti	Free Ri	Clearan	Min Pe		

3	OFF	3	OFF	OFF	OFF		ON		STD8	OFF	4PH	OFF	1	OFF	OFF					

Comm, General Comm Parameters [6.1]

Station ID	Master Station ID	Fallback time	Allow Pencil	Port	System-Up	Sys-Down	PC/Print	Aux 232
13								

Port Parameters [6.2]

Comm	Mode	Baud	MsgTime	Duplex	Enable	DialTime	Modem	ModemTime	Tel#1	Tel#2
System Up(P-A)										
System Down(P-B)										
PC/Print(P-2)										

Overlap General Parameters [1.5.1]

Conflict Lock	Lock Inhibit	Program Card	Use Parent	Canadian Fast Flash
OFF	OFF	OFF	ALWAYS	

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1																	NORMAL		3.5	1.5
Overlap 2	1								2								FYA-4		3.5	1.5
Overlap 3																	NORMAL		3.5	1.5
Overlap 4																	NORMAL		3.5	1.5
Overlap 5																	NORMAL		3.5	1.5
Overlap 6	5								6								FYA-4		3.5	1.5
Overlap 7																	NORMAL		3.5	1.5
Overlap 8	7								8								FYA-4		3.5	1.5

Overlap Conflict Parameters+ [1.5.2.2]

Overlap	Conflicting Phases								Conflicting Overlaps								Conflicting Peds							
Overlap 1																								
Overlap 2																								
Overlap 3																								
Overlap 4																								
Overlap 5																								
Overlap 6																								
Overlap 7																								
Overlap 8																								

Detector, Vehicle Parameters 1-16 [5.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase																
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 17-32 [5.1]

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase	1	2	8	4	5	6	7	8								
Switch Phase																
Delay Time	5		5	5	5											

Station : 13 - SR 3 & Hall Rd (Standard File)

Detector Alternate Program 1, Vehicle Parameters [5.5.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase																
Switch Phase																
Delay Time																

Channels/SDLC, Assign to Phases [1.3.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
PH/OLP #	2	2	3	4	6	6	8	8	1	2	3	4	2	4	6	8	1	3	5	7				
Type	OLP	VEH	VEH	VEH	OLP	VEH	OLP	VEH	OLP	OLP	OLP	OLP	PED	PED	PED	PED	PED	PED	PED	PED	VEH	VEH	VEH	VEH
Flash	RED	YEL	RED	RED	RED	YEL	RED	RED	RED	RED	RED	RED	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK
Alt Hz				ON				ON																
Dimming Green																								
Dimming Yellow																								
Dimming Red																								
Dimming Cyc	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Channel/SDLC, Parameters [1.3.3]

TOD Dim Enable	Extra Maps Enable	D Connector Enable	Single BIU Map	IO Mode	Preempt or Ext Output
OFF	DEFAULT				

Channel/SDLC, MMU Map [1.3.5]

MMU-to-Controller Channel Map

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Channel/SDLC, Permissive [1.3.4]

Channel	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1		1									1	1			
2		1		1							1	1			
3															
4	1		1						1	1					
5				1											
6		1		1											
7			1												
8	1		1												
9															
10															
11															
12															
13		1													
14	1														
15															

Channel/SDLC, Permissive [1.3.7]

SDLC Device	Term/Fac		Detector														MMU	Diag
BIU#	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8		
Dev Present	ON	ON								ON							ON	
Peer to Peer																		

Ring Sequence [1.2.4]

Ring	P1	P2	P3	P4	P5	P6	P7	P8
Ring 1	1	2	3	4				
Ring 2	5	6	7	8				
Ring 3								
Ring 4								

Station : 13 - SR 3 & Hall Rd (Standard File)

Alarms, Enable Events [1.6.1]

Event#	Event Enable
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
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61	
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63	
64	

Alarms, Enable Alarms [1.6.4]

Alarm#	Alarm Enable
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
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63	
64	

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash	ON	ON	ON	ON	ON	ON
Override Higher Preempt	ON	ON	ON	ON	ON	ON
Flash in Dwell	ON	ON	ON	ON	ON	ON
Link to Preempt						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1						
Dwell Cyc Veh 2						
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						
Dwell Cyc Veh 7						
Dwell Cyc Veh 8						
Dwell Cyc Veh 9						
Dwell Cyc Veh 10						
Dwell Cyc Veh 11						
Dwell Cyc Veh 12						
Dwell Cyc Ped1						
Dwell Cyc Ped2						
Dwell Cyc Ped3						
Dwell Cyc Ped4						
Dwell Cyc Ped5						
Dwell Cyc Ped6						
Dwell vPed7						
Dwell Cyc Ped8						
Exit 1						
Exit 2						
Exit 3						
Exit 4						

Alarms, Parameters [1.4.1]
Auto Flash Parameter

Yellow	Red	Mode	Source
35	15		

Alarms, Parameters [1.6.7]

Preempt Event Enabled	Pattern Event Enabled
OFF	OFF

Alarms, Phases/Overlaps [1.4.2]

Auto Flash	1	2	3	4	5	6	7	8	9	10	11	12
Phases	2	6										
Overlaps												

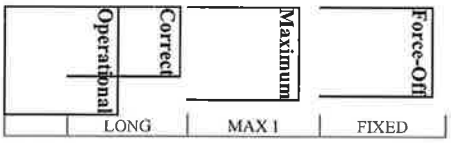
Station : 13 - SR 3 & Hall Rd (Standard File)

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

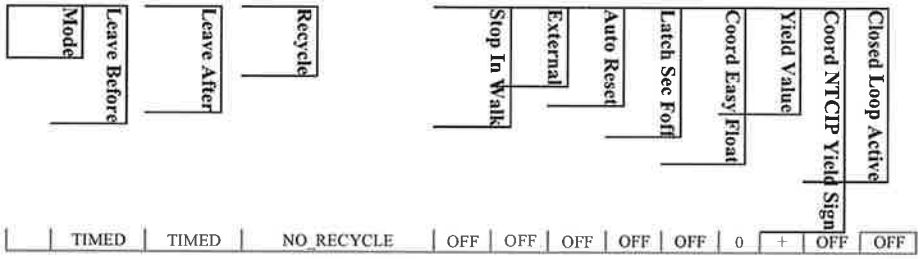
Preempt	1	2	3	4	5	6
Enable	ON	ON	ON	ON	ON	ON
Type	EMERG	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
DwellCyc Over 1						
DwellCyc Over 2						
DwellCyc Over 3						
DwellCyc Over 4						
DwellCyc Over 5						
DwellCyc Over 6						
DwellCyc Over 7						
DwellCyc Over 8						
DwellCyc Over 9						
DwellCyc Over 10						
DwellCyc Over 11						
DwellCyc Over 12						
Ped Clear						
Yellow						
Red						
Return Max						

Coordination, Modes,+ [2.1]

Modes



Modes+



Coordination, Pattern 1-16 [2.1]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time																
Offset Time																
Split Number																
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Offset	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn

Coordination, Pattern 17-32 [2.1]

Pattern	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Cycle Time																
Offset Time																
Split Number																
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Offset	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn

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Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

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Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 22	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 25	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 26	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 27	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 28	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 29	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 32	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

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TB Coor, Advanced Scheduler [4.3]

	Month												Day of Week							Day of Month										1									2									3		
Plan	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	Day Plan
1																																																1
2																																																	1
3																																																	1
4																																																	1
5																																																	1
6																																																	1
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31																																																	1
32																																																	1

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

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Station : 13 - SR 3 & Hall Rd (Standard File)

Day Plan Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Station : 13 - SR 3 & Hall Rd (Standard File)

TB Coor, Action Table [4.5]

Action	Pattern	Aux 1	Aux 2	Aux 3	Special 1	Special 2	Special 3	Special 4	Special 5	Special 6	Special 7	Special 8
1					0	0						
2					0	0						
3					0	0						
4					0	0						
5					0	0						
6					0	0						
7					0	0						
8					0	0						
9					0	0						
10					0	0						
11					0	0						
12					0	0						
13					0	0						
14					0	0						
15					0	0						
16					0	0						
17					0	0						
18					0	0						
19					0	0						
20					0	0						
21					0	0						
22					0	0						
23					0	0						
24					0	0						
25					0	0						
26					0	0						
27					0	0						
28					0	0						
29					0	0						
30					0	0						
31					0	0						
32					0	0						
33					0	0						
34					0	0						
35					0	0						
36					0	0						
37					0	0						
38					0	0						
39					0	0						
40					0	0						
41					0	0						
42					0	0						
43					0	0						
44					0	0						
45					0	0						
46					0	0						
47					0	0						
48					0	0						
49					0	0						
50					0	0						
51					0	0						
52					0	0						
53					0	0						
54					0	0						
55					0	0						
56					0	0						
57					0	0						
58					0	0						
59					0	0						
60					0	0						
61					0	0						
62					0	0						
63					0	0						
64					0	0						
99					0	0						
100					0	0						

Station : 318 - SR 3 & Grant Rd /Smith Rd (Standard File)

Phase [1.1.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Walk		7		7		7										
Ped Clearance		12		18		12										
Min Green	5	15		5	5	15		5	3		3		3		3	
Passage	3	3.5		3	3	3.5		3								
Max1	20	60		30	20	60		12								
Max2	25	60		30	25	60		30								
Yellow	4.8	4.8	4	4	4.8	4.8	4	4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red	2	2	2	2	2	2	2	2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Auto Exit		ON				ON										
Rest In Walk		ON				ON										

Phase Option [1.1.2]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable	ON	ON		ON	ON	ON		ON								
Auto Entry				ON				ON								
Non Act1																
Non Act2																
Lock Call									ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable		ON				ON				ON		ON		ON		ON
Guar Passage																
Cond Service																
Add Init Calc																

Alternate Phase Program 1, Calls and Redirection [1.1.6.3]

Entry	Call Phases	From	To	From	To	From	To	From	To	Assigned Ph
1										2
2										4
3										6
4										8
5										
6										
7										
8										

Alternate Phase Program 2, Calls and Redirection [1.1.6.3]

Entry	Call Phases	From	To	From	To	From	To	From	To	Assigned Ph
1										2
2										4
3										6
4										8
5										
6										
7										
8										

Alternate Phase Program 1, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 2, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Prepared By | Date Implemented | Reviewed By | Traffic Engineer

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Station : 318 - SR 3 & Grant Rd /Smith Rd (Standard File)

Unit Parameters [1.2.1]

StartUp F	Auto Ped	Backup Ti	Red Rever	Local Flas	Console T	Yellow 3 S	Tone Disa	Omit Yell	Allow Pen	Enable Ru	Start Red	Phase Mo	Disable In	Diamond I	TOD Dim	Extra Maj	D Connec	TS2 Det F SDLC Rat	Preempt S	Single BI

	OFF			OFF	20	OFF	OFF	OFF	OFF	ON		STD8	OFF	4PH	OFF	DEFAULT	TX2_V14	ON	OFFON

Comm, General Comm Parameters [6.1]

Station ID	Master Station ID	Fallback time	Allow Pencil	Port	System-Up	Sys-Down	PC/Print	Aux 232
318								

Port Parameters [6.2]

Comm	Mode	Baud	MsgTime	Duplex	Enable	DialTime	Modem	ModemTime	Tel#1	Tel#2
System Up(P-A)										
System Down(P-B)										
PC/Print(P-2)										

Overlap General Parameters [1.5.1]

Conflict Lock	Lock Inhibit	Program Card	Use Parent	Canadian Fast Flash
OFF	OFF	OFF	ON	

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1																	NORMAL		3.5	1.5
Overlap 2																	NORMAL		3.5	1.5
Overlap 3																	NORMAL		3.5	1.5
Overlap 4																	NORMAL		3.5	1.5
Overlap 5																	NORMAL		3.5	1.5
Overlap 6																	NORMAL		3.5	1.5
Overlap 7																	NORMAL		3.5	1.5
Overlap 8																	NORMAL		3.5	1.5

Overlap Conflict Parameters+ [1.5.2.2]

Overlap	Conflicting Phases								Conflicting Overlaps								Conflicting Peds							
Overlap 1																								
Overlap 2																								
Overlap 3																								
Overlap 4																								
Overlap 5																								
Overlap 6																								
Overlap 7																								
Overlap 8																								

Detector, Vehicle Parameters 1-16 [5.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase	1	2		4	5	6		8								
Switch Phase	2				6											
Delay Time	2			7	2			7								

Detector, Vehicle Parameters 17-32 [5.1]

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase																
Switch Phase																
Delay Time																

Station : 318 - SR 3 & Grant Rd /Smith Rd (Standard File)

Detector Alternate Program 1, Vehicle Parameters [5.5.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase	1	2	3	4	5	6	7	8								
Switch Phase																
Delay Time																

Channels/SDLC, Assign to Phases [1.3.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
PH/OLP #	1	2	3	4	5	6	7	8	1	2	3	4	2	4	6	8	1	3	5	7				
Type	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	OLP	OLP	OLP	OLP	PED	PED	PED	PED	PED	PED	PED	PED	VEH	VEH	VEH	VEH
Flash	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK
Flash 1-2 Hertz																								
Dimming Green																								
Dimming Yellow																								
Dimming Red																								
Alt Cyc	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Channel/SDLC, Parameters [1.3.3]

TOD Dim Enable	Extra Maps Enable	D Connector Enable	Single BIU Map	IO Mode	Preempt or Ext Output

Channel/SDLC, MMU Map [1.3.5]

MMU-to-Controller Channel Map

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Channel/SDLC, Permissive [1.3.4]

Channel	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1		1									1	1			
2		1		1							1	1			
3	1								1	1					
4	1		1						1	1					
5				1											
6		1		1											
7			1												
8	1		1												
9															
10															
11															
12															
13		1													
14	1														
15															

Channel/SDLC, Permissive [1.3.7]

SDLC Device	Term/Fac		Detector														MMU	Diag
BIU#	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8		
Present	ON	ON							ON								ON	
Peer to Peer																		

Ring Sequence [1.2.4]

Ring	P1	P2	P3	P4	P5	P6	P7	P8
Ring 1	1	2	3	4				
Ring 2	5	6	7	8				
Ring 3								
Ring 4								

Station : 318 - SR 3 & Grant Rd /Smith Rd (Standard File)

Alarms, Enable Events [1.6.1]

Event#	Event Enable
1	ON
2	ON
3	ON
4	ON
5	ON
6	ON
7	ON
8	ON
9	
10	ON
11	
12	
13	
14	
15	
16	ON
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	ON
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	ON
50	ON
51	ON
52	ON
53	ON
54	ON
55	ON
56	ON
57	ON
58	ON
59	
60	
61	
62	
63	
64	

Alarms, Enable Alarms [1.6.4]

Alarm#	Alarm Enable
1	ON
2	ON
3	ON
4	ON
5	ON
6	ON
7	ON
8	ON
9	
10	ON
11	
12	
13	
14	
15	
16	ON
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	ON
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	ON
50	ON
51	ON
52	ON
53	ON
54	ON
55	ON
56	ON
57	ON
58	ON
59	
60	
61	
62	
63	
64	

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Flash	ON					
Override Higher	ON					
Flash Dwell						
Link						
Delay						
Min Duration			10	10	10	10
Min Green		5				
Min Walk		3				
Ped Clear		255				
Track Green						
Min Dwell		5				
Max Presence		240	60	60	60	60
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1			8	2	4	1
Dwell P2				5		6
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1			2	2	2	2
Exit R2			6	6	6	6
Exit R3						
Exit R4						

Alarms, Parameters [1.4.1]
Auto Flash Parameter

Yellow	Red	Mode	Source
45	30	VOT_MON	TEST B

Alarms, Parameters [1.6.7]

Preempt Event Enabled	Pattern Event Enabled
OFF	ON

Alarms, Phases/Overlaps [1.4.2]

Auto Flash	1	2	3	4	5	6	7	8	9	10	11	12
Phases	2	6										
Overlaps												

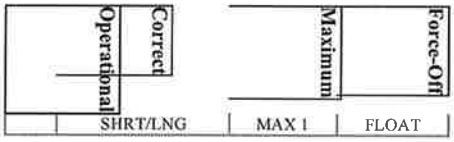
Station : 318 - SR 3 & Grant Rd /Smith Rd (Standard File)

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

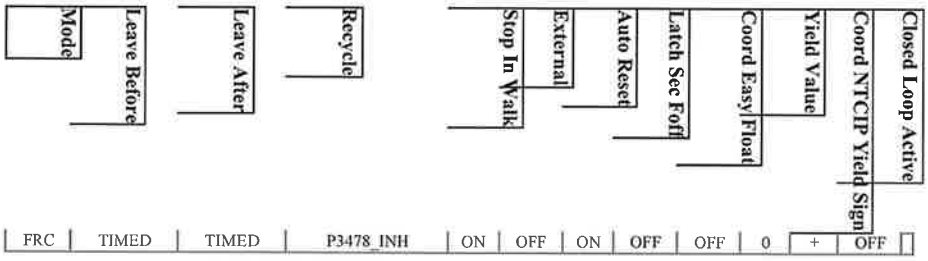
Preempt	1	2	3	4	5	6
Enable		ON	ON	ON	ON	ON
Type	RAIL	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt	ON	ON	ON	ON	ON	ON
Extend Dwell		1	1	1	1	1
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1						
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow		4	4	4	4	4
Red		2	2	2	2	2
Max Green						

Coordination, Modes,+ [2.1]

Modes



Modes+



Coordination, Pattern 1-16 [2.1]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time																
Offset Time																
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Offset	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn

Coordination, Pattern 17-32 [2.1]

Pattern	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Cycle Time																
Offset Time																
Split Number	17	18	19	20	21	22	23	24								
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Offset	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn

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Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

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Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 22	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Station : 318 - SR 3 & Grant Rd /Smith Rd (Standard File)

TB Coor, Advanced Scheduler [4.3]

	Month												Day of Week							Day of Month										1										2										3		
Plan	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	Day Plan
1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
3	1	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
4	1	1	1	1	1	1	1	1	1	1	1	1								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
5	1	1	1	1	1	1	1	1	1	1	1	1								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
6	1	1	1	1	1	1	1	1	1	1	1	1								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6
7	1	1	1	1	1	1	1	1	1	1	1	1								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7
8																																																	1
9																																																		1
10																																																		1
11																																																		1
12																																																		1
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14																																																		1
15																																																		1
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28																																																		1
29																																																		1
30																																																		1
31																																																		1
32																																																		1

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Brevard County | Timing Sheet | 1/10/2018 4:03:00 PM

Station : 318 - SR 3 & Grant Rd /Smith Rd (Standard File)

Day Plan Table 7	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action	100															

Day Plan Table 8	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Day Plan Table 9	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Day Plan Table 10	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Day Plan Table 11	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Day Plan Table 12	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Station : 318 - SR 3 & Grant Rd /Smith Rd (Standard File)

TB Coor, Action Table [4.5]

Action	Pattern	Aux 1	Aux 2	Aux 3	Special 1	Special 2	Special 3	Special 4	Special 5	Special 6	Special 7	Special 8
1	1											
2	2											
3	3											
4	4											
5	5											
6	6											
7	7											
8	8											
9	9											
10	10											
11	11											
12	12											
13	13											
14	14											
15	15											
16	16											
17	17											
18	18											
19	19											
20	20											
21	21											
22	22											
23	23											
24	24											
25	255											
26	1											
27	2											
28	3											
29	4											
30	5											
31	6											
32	7											
33	8											
34	9											
35	10											
36	11											
37	12											
38	13											
39	14											
40	15											
41	16											
42	17											
43	18											
44	19											
45	20											
46	21											
47	22											
48	23											
49	24											
50	48											
51												
52												
53												
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57												
58												
59												
60												
61												
62												
63												
64												
99												
100	254											

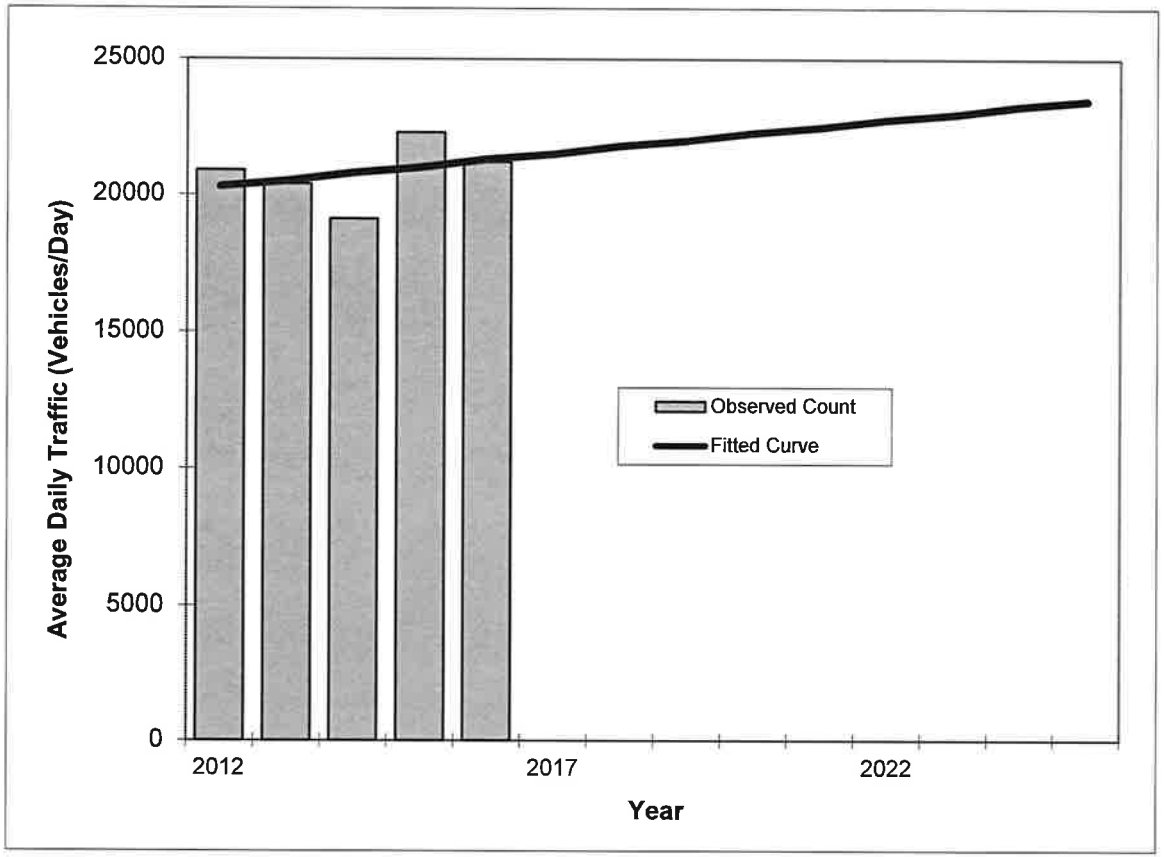
APPENDIX F

Traffic Trends Analysis Sheets

TRAFFIC TRENDS

SR 3/N Courtenay Parkway -- From SR 528 N Ramp to Hall Road

County:	Brevard
Station #:	140
Highway:	SR 3/N Courtenay Parkway



Year	Traffic (ADT/AADT) Count*	Trend**
2012	20900	20300
2013	20400	20500
2014	19100	20800
2015	22300	21000
2016	21200	21300
2018 Opening Year Trend		
2018	N/A	21800
2020 Mid-Year Trend		
2020	N/A	22300
2021 Design Year Trend		
2021	N/A	22500
TRANPLAN Forecasts/Trends		

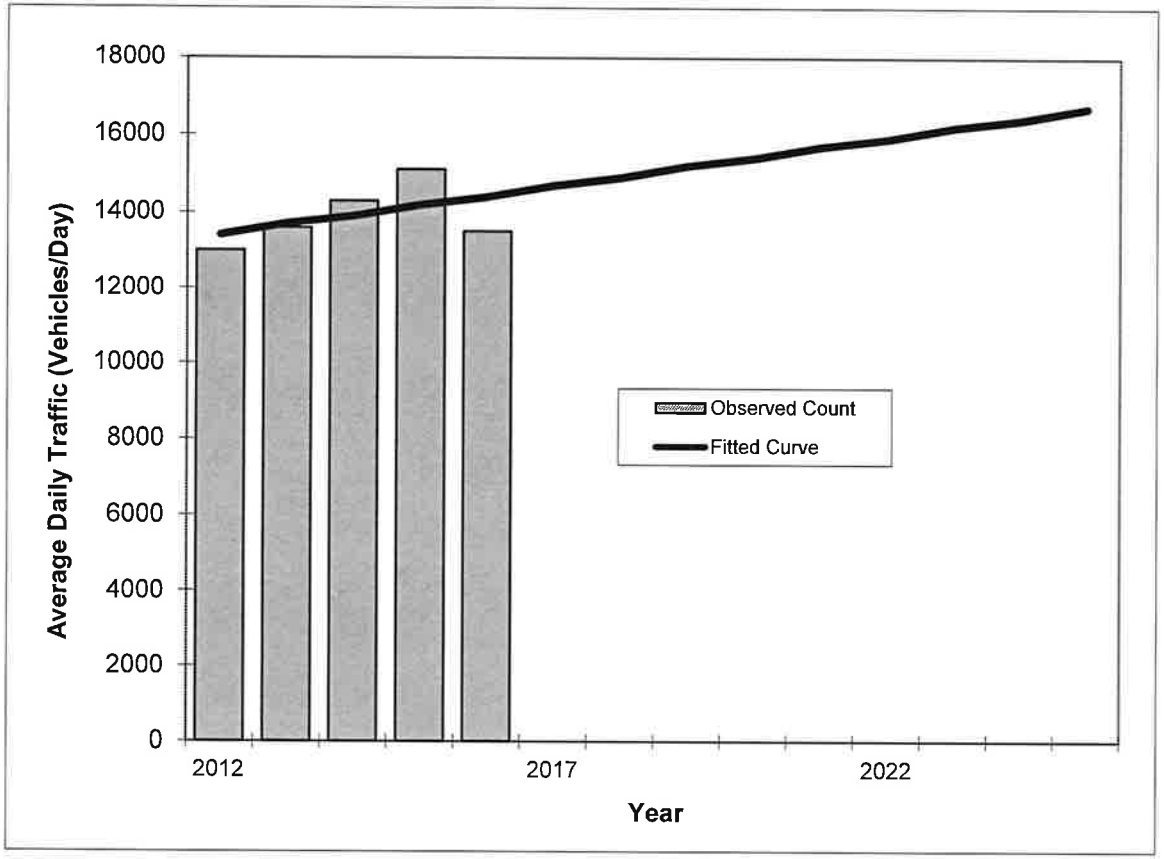
** Annual Trend Increase:	250
Trend R-squared:	11.4%
Trend Annual Historic Growth Rate:	1.23%
Trend Growth Rate (2016 to Design Year):	1.13%
Printed:	3-Jan-18
Straight Line Growth Option	

*Axle-Adjusted

TRAFFIC TRENDS

SR 3/N Courtenay Parkway -- From Hall Road to N Tropical Trail

County:	Brevard
Station #:	157
Highway:	SR 3/N Courtenay Parkway



Year	Traffic (ADT/AADT) Count*	Trend**
2012	13000	13400
2013	13600	13700
2014	14300	13900
2015	15100	14200
2016	13500	14400
2018 Opening Year Trend		
2018	N/A	14900
2020 Mid-Year Trend		
2020	N/A	15400
2021 Design Year Trend		
2021	N/A	15700
TRANPLAN Forecasts/Trends		

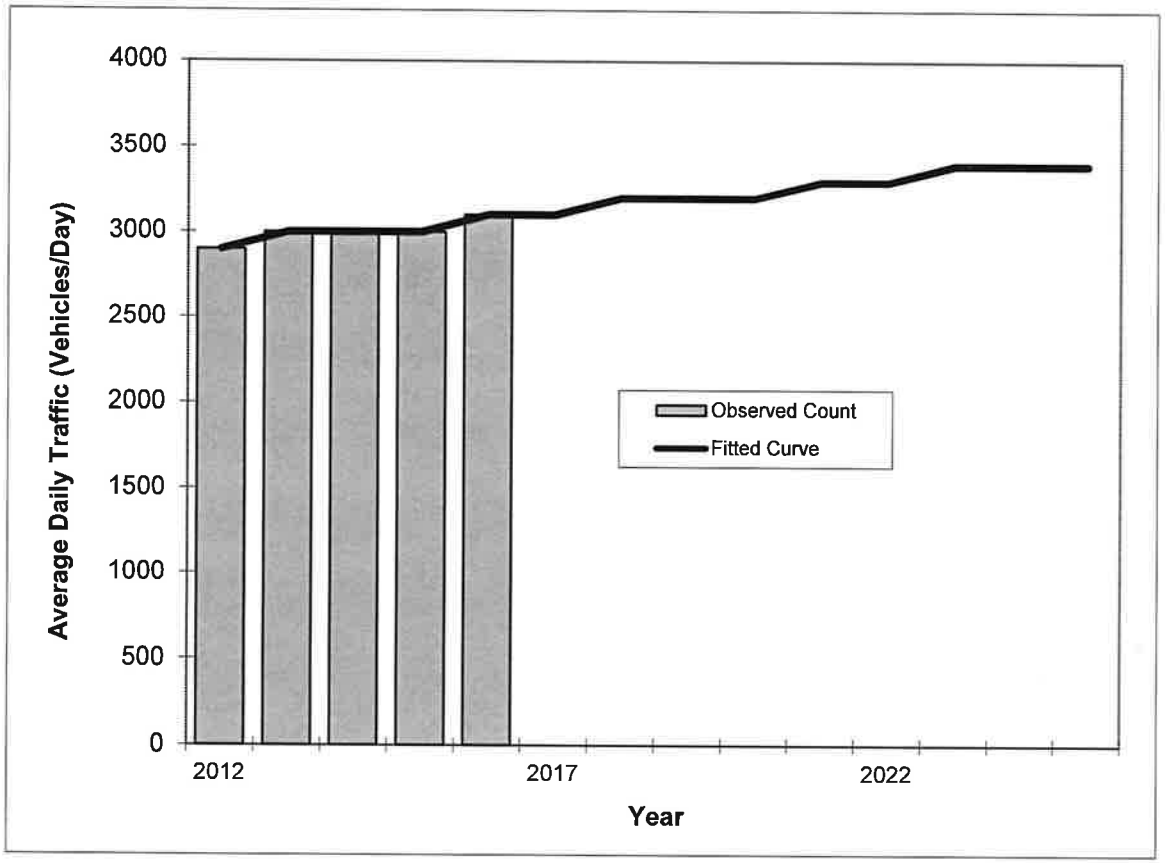
*Axle-Adjusted

** Annual Trend Increase:	250
Trend R-squared:	23.5%
Trend Annual Historic Growth Rate:	1.87%
Trend Growth Rate (2016 to Design Year):	1.81%
Printed:	3-Jan-18
Straight Line Growth Option	

TRAFFIC TRENDS

Hall Road -- From N Courtenay Pkwy to N Tropical Trail

County:	Brevard
Station #:	158
Highway:	Hall Road



Year	Traffic (ADT/AADT) Count*	Trend**
2012	2900	2900
2013	3000	3000
2014	3000	3000
2015	3000	3000
2016	3100	3100
2018 Opening Year Trend		
2018	N/A	3200
2020 Mid-Year Trend		
2020	N/A	3200
2021 Design Year Trend		
2021	N/A	3300
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

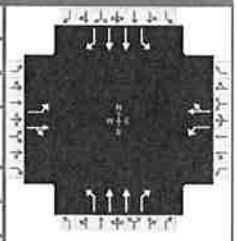
** Annual Trend Increase:	40
Trend R-squared:	80.0%
Trend Annual Historic Growth Rate:	1.72%
Trend Growth Rate (2016 to Design Year):	1.29%
Printed:	3-Jan-18
Straight Line Growth Option	

APPENDIX G

Signalized Intersections HCS Worksheets – Background Conditions

HCS7 Signalized Intersection Results Summary

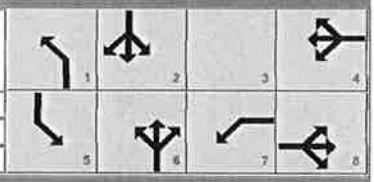
General Information				Intersection Information	
Agency	LTG			Duration, h	0.25
Analyst	LAE	Analysis Date	Jan 16, 2018	Area Type	Other
Jurisdiction	FDOT	Time Period	Background A.M. Peak-Hour	PHF	0.93
Urban Street	SR 3 / N Courtenay Par...	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	SR 3 at Hall Rd	File Name	1 SR 3 at Hall Rd - Background AM.xus		
Project Description	4497.02				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	39	4	158	150	3	35	63	975	82	21	460	13

Signal Information			
Cycle, s	90.3	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.2	2.1	40.6	8.6	10.2	0.0
Yellow	5.1	0.0	5.1	4.1	4.1	0.0
Red	2.1	0.0	2.0	2.1	2.0	0.0



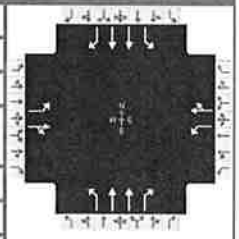
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8	7	4	1	6	5	2
Case Number		6.3	1.0	4.0	1.1	3.0	1.1	3.0
Phase Duration, s		16.3	14.8	31.2	11.5	49.8	9.4	47.7
Change Period, ($Y+R_c$), s		6.1	6.2	6.1	7.4	7.1	7.2	7.1
Max Allow Headway (*MAH*), s		3.2	3.0	3.2	3.0	7.3	3.0	7.3
Queue Clearance Time (g_s), s		9.9	8.7	3.3	3.7	21.1	2.6	9.7
Green Extension Time (g_e), s		0.4	0.1	0.4	0.1	21.6	0.0	27.6
Phase Call Probability		1.00	0.98	1.00	0.82	1.00	0.43	1.00
Max Out Probability		0.00	0.74	0.00	0.00	0.68	0.00	0.55

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	42	143		161	31		68	1048	13	23	495	1
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1367	1592		1781	1610		1781	1781	1560	1781	1781	1585
Queue Service Time (g_s), s	2.6	7.9		6.7	1.3		1.7	19.1	0.4	0.6	7.7	0.0
Cycle Queue Clearance Time (g_c), s	2.6	7.9		6.7	1.3		1.7	19.1	0.4	0.6	7.7	0.0
Green Ratio (*g/C*)	0.12	0.12		0.25	0.29		0.52	0.49	0.49	0.50	0.47	0.47
Capacity (*c*), veh/h	204	145		316	412		518	1761	703	271	1678	677
Volume-to-Capacity Ratio (*X*)	0.205	0.985		0.510	0.076		0.131	0.595	0.018	0.083	0.295	0.002
Back of Queue (*Q*), ft/ln (95 th percentile)	38.8	170.5		124.6	21.8		27	275.8	6.1	9.4	124.8	0.5
Back of Queue (*Q*), veh/ln (95 th percentile)	1.5	6.7		4.9	0.9		1.1	10.9	0.2	0.4	4.9	0.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.26	0.00		0.53	0.00		0.09	0.00	0.02	0.03	0.00	0.00
Uniform Delay (d_1), s/veh	38.5	39.5		28.3	24.3		11.3	17.0	13.8	14.0	15.2	14.8
Incremental Delay (d_2), s/veh	0.2	17.8		0.5	0.0		0.0	0.2	0.0	0.0	0.0	0.0
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	38.7	57.3		28.8	24.3		11.4	17.1	13.8	14.0	15.3	14.9
Level of Service (LOS)	D	E		C	C		B	B	B	B	B	B
Approach Delay, s/veh / LOS	53.1	D		28.1	C		16.7	B		15.2	B	
Intersection Delay, s/veh / LOS	20.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.55	C	2.45	B	1.91	B	1.94	B
Bicycle LOS Score / LOS	0.79	A	0.81	A	1.42	A	0.92	A

HCS7 Signalized Intersection Results Summary

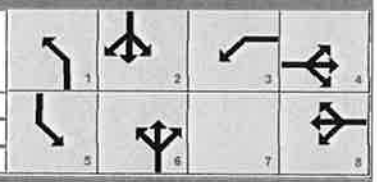
General Information				Intersection Information	
Agency	LTG			Duration, h	0.25
Analyst	LAE	Analysis Date	Jan 16, 2018	Area Type	Other
Jurisdiction	FDOT	Time Period	Background P.M. Peak-Hour	PHF	0.92
Urban Street	SR 3/N Courtenay Pkwy	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	SR 3 at Hall Rd	File Name	1 SR 3 at Hall Rd - Background PM.xus		
Project Description	4497.02				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	15	15	109	143	6	27	172	492	124	33	1216	39

Signal Information			
Cycle, s	78.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.7	3.9	32.9	7.7	5.9	0.0
Yellow	5.1	0.0	5.1	3.0	4.1	0.0
Red	2.1	0.0	2.0	2.0	2.0	0.0



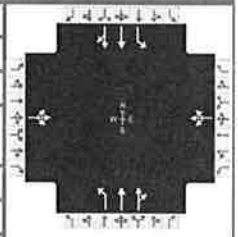
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4	3	8	1	6	5	2
Case Number		6.3	1.0	4.0	1.1	3.0	1.1	3.0
Phase Duration, s		12.0	12.7	24.7	13.9	43.9	9.9	40.0
Change Period, ($Y+R_c$), s		6.1	5.0	6.1	7.4	7.1	7.2	7.1
Max Allow Headway (*MAH*), s		3.1	3.0	3.1	3.0	2.9	3.0	2.9
Queue Clearance Time (g_s), s		4.3	7.8	2.7	6.4	9.0	2.8	27.8
Green Extension Time (g_e), s		0.1	0.1	0.1	0.2	5.3	0.0	5.0
Phase Call Probability		0.84	0.97	0.99	0.98	1.00	0.54	1.00
Max Out Probability		0.00	0.26	0.00	0.00	0.00	0.00	0.03

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	16	50		155	18		187	535	63	36	1322	35
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1394	1668		1781	1675		1781	1781	1585	1781	1781	1572
Queue Service Time (g_s), s	0.9	2.3		5.8	0.7		4.4	7.0	1.8	0.8	25.8	1.1
Cycle Queue Clearance Time (g_c), s	0.9	2.3		5.8	0.7		4.4	7.0	1.8	0.8	25.8	1.1
Green Ratio (*g/C*)	0.09	0.09		0.22	0.25		0.53	0.49	0.49	0.48	0.44	0.44
Capacity (*c*), veh/h	161	83		369	354		304	1761	703	486	1583	619
Volume-to-Capacity Ratio (*X*)	0.101	0.602		0.421	0.052		0.615	0.304	0.090	0.074	0.835	0.056
Back of Queue (*Q*), ft/ln (95 th percentile)	13.2	42.4		105.2	11.4		65.1	104.7	25.2	12.8	353.5	15.6
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5	1.7		4.1	0.4		2.6	4.1	1.0	0.5	13.9	0.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.09	0.00		0.45	0.00		0.22	0.00	0.07	0.04	0.00	0.03
Uniform Delay (d_1), s/veh	35.9	34.7		26.1	23.1		16.2	12.3	12.7	11.1	20.1	14.8
Incremental Delay (d_2), s/veh	0.1	2.6		0.3	0.0		0.8	0.0	0.0	0.0	1.1	0.0
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	36.0	37.3		26.4	23.2		17.0	12.4	12.7	11.1	21.2	14.8
Level of Service (LOS)	D	D		C	C		B	B	B	B	C	B
Approach Delay, s/veh / LOS	37.0	D		26.0	C		13.5	B		20.8	C	
Intersection Delay, s/veh / LOS	19.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.54	C	2.45	B	1.92	B	2.01	B
Bicycle LOS Score / LOS	0.60	A	0.77	A	1.14	A	1.64	B

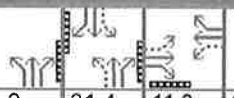
HCS7 Signalized Intersection Results Summary

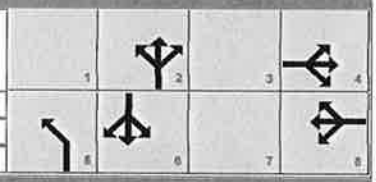
General Information				Intersection Information	
Agency	LTG			Duration, h	0.25
Analyst	LAE	Analysis Date	Jan 16, 2018	Area Type	Other
Jurisdiction	FDOT	Time Period	Background A.M. Peak Hour	PHF	0.90
Urban Street	SR 3/N Courtenay Pkwy	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	SR 3 at Grant Rd/Smith...	File Name	2 SR 3 at Grant Rd - Background AM.xus		
Project Description	4497.02				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	13	3	163	11	3	3	50	1199	21	12	770	36

Signal Information			
Cycle, s	65.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On





Green	3.2	31.4	11.3	0.0	0.0	0.0
Yellow	4.8	4.8	4.0	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0

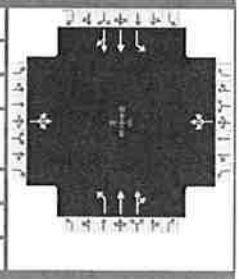
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2		6
Case Number		8.0		8.0	1.0	4.0		6.3
Phase Duration, s		17.3		17.3	10.0	48.1		38.2
Change Period, ($Y+R_c$), s		6.0		6.0	6.8	6.8		6.8
Max Allow Headway (*MAH*), s		4.2		4.2	4.0	4.5		4.5
Queue Clearance Time (g_s), s		11.1		3.3	3.0	15.2		13.0
Green Extension Time (g_e), s		0.6		0.4	0.1	18.1		18.3
Phase Call Probability		0.97		0.97	0.64	1.00		1.00
Max Out Probability		0.00		0.05	0.00	0.26		0.24

Movement Group Results	EB			WB			NB			SB		
Approach Movement	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		173			16		56	680	676	13	451	444
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1201			518		1626	1930	1918	233	1856	1826
Queue Service Time (g_s), s		3.3			0.0		1.0	13.1	13.2	2.3	11.0	11.0
Cycle Queue Clearance Time (g_c), s		9.1			1.3		1.0	13.1	13.2	5.4	11.0	11.0
Green Ratio (*g/C*)		0.17			0.17		0.56	0.63	0.63	0.48	0.48	0.48
Capacity (*c*), veh/h		268			188		366	1218	1211	210	888	874
Volume-to-Capacity Ratio (*X*)		0.647			0.083		0.152	0.558	0.558	0.063	0.508	0.508
Back of Queue (*Q*), ft/ln (95 th percentile)		142.8			13.2		13.7	158.9	157.8	6.8	168.5	164.7
Back of Queue (*Q*), veh/ln (95 th percentile)		4.5			0.3		0.5	6.2	6.2	0.2	6.6	6.5
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00			0.00		0.04	0.00	0.00	0.01	0.50	0.50
Uniform Delay (d_1), s/veh		26.1			22.9		8.0	6.9	6.9	11.3	11.8	11.8
Incremental Delay (d_2), s/veh		2.6			0.2		0.2	0.5	0.5	0.2	0.5	0.6
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		28.7			23.0		8.2	7.4	7.4	11.4	12.3	12.3
Level of Service (LOS)		C			C		A	A	A	B	B	B
Approach Delay, s/veh / LOS	28.7	C		23.0	C		7.4	A		12.3	B	
Intersection Delay, s/veh / LOS	10.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.28	B	2.28	B	1.64	B	1.69	B
Bicycle LOS Score / LOS	0.77	A	0.51	A	1.65	B	1.24	A

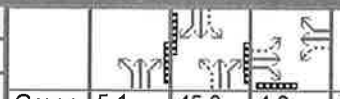
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LTG			Duration, h	0.25
Analyst	LAE	Analysis Date	Jan 16, 2018	Area Type	Other
Jurisdiction	FDOT	Time Period	Background P.M. Peak-Hour	PHF	0.95
Urban Street	SR 3/N Courtenay Pkwy	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	SR 3 at Grant Rd/Smith...	File Name	2 SR 3 at Grant Rd - Background PM.xus		
Project Description	4497.02				

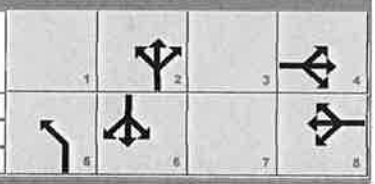


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	11	4	109	27	6	2	170	917	45	22	1491	33

Signal Information			
Cycle, s	74.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	5.1	45.3	4.6	0.0	0.0	0.0
Yellow	4.8	4.8	4.0	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2		6
Case Number		8.0		8.0	1.0	4.0		6.3
Phase Duration, s		10.6		10.6	11.9	63.9		52.1
Change Period, (*Y+R c*), s		6.0		6.0	6.8	6.8		6.8
Max Allow Headway (*MAH*), s		4.1		4.1	4.0	4.5		4.5
Queue Clearance Time (*g s*), s		4.7		5.5	4.7	8.1		24.4
Green Extension Time (*g e*), s		0.2		0.1	0.5	25.1		20.9
Phase Call Probability		0.82		0.82	0.98	1.00		1.00
Max Out Probability		0.00		0.08	0.00	0.38		0.53

Movement Group Results	EB			WB			NB			SB		
Approach Movement	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		47			35		179	503	497	23	801	798
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1262			719		1626	1930	1906	327	1856	1843
Queue Service Time (*g s*), s		0.0			0.9		2.7	6.1	6.1	2.2	22.3	22.4
Cycle Queue Clearance Time (*g c*), s		2.7			3.5		2.7	6.1	6.1	2.2	22.3	22.4
Green Ratio (*g/C*)		0.06			0.06		0.70	0.77	0.77	0.61	0.61	0.61
Capacity (*c*), veh/h		138			132		297	1479	1461	295	1127	1119
Volume-to-Capacity Ratio (*X*)		0.343			0.263		0.603	0.340	0.340	0.079	0.711	0.713
Back of Queue (*Q*), ft/ln (95 th percentile)		47.6			42.6		82.6	43.6	42.7	8.1	286.2	283.3
Back of Queue (*Q*), veh/ln (95 th percentile)		1.5			1.1		3.0	1.7	1.7	0.2	11.2	11.2
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00			0.00		0.23	0.00	0.00	0.02	0.85	0.85
Uniform Delay (*d 1*), s/veh		34.1			34.4		13.0	2.7	2.7	6.2	10.1	10.1
Incremental Delay (*d 2*), s/veh		1.5			1.0		2.0	0.2	0.2	0.1	1.2	1.3
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		35.6			35.5		15.0	2.9	2.9	6.3	11.4	11.4
Level of Service (LOS)		D			D		B	A	A	A	B	B
Approach Delay, s/veh / LOS	35.6	D		35.5	D		4.7	A		11.3	B	
Intersection Delay, s/veh / LOS	9.3						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.31	B	2.30	B	1.60	B	1.75	B
Bicycle LOS Score / LOS	0.57	A	0.54	A	1.46	A	1.83	B

APPENDIX H

Unsignalized Intersection HCS Worksheets – Build-Out Conditions

HCS7 Two-Way Stop-Control Report

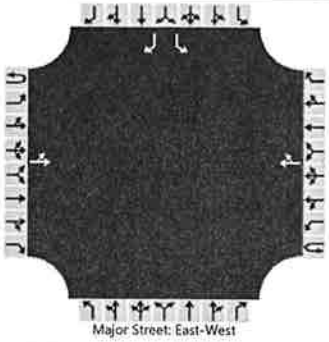
General Information

Analyst	LAE
Agency/Co.	LTG
Date Performed	2/6/2018
Analysis Year	2022
Time Analyzed	Build-Out A.M. Peak Hour
Intersection Orientation	East-West
Project Description	4497.02

Site Information

Intersection	Driveway at Hall Rd
Jurisdiction	Brevard County
East/West Street	Hall Rd
North/South Street	Driveway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		1	0	1
Configuration		LT						TR						L		R
Volume (veh/h)		34	107				188	0						0		100
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type | Storage	Undivided															

Critical and Follow-up Headways

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

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		37												0		109
Capacity, c (veh/h)		1366												593		836
v/c Ratio		0.03												0.00		0.13
95% Queue Length, Q_{95} (veh)		0.1												0.0		0.4
Control Delay (s/veh)		7.7												11.1		10.0
Level of Service (LOS)		A												B		A
Approach Delay (s/veh)	2.0												10.0			
Approach LOS													A			

HCS7 Two-Way Stop-Control Report

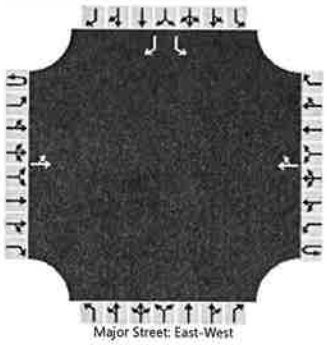
General Information

Analyst	LAE
Agency/Co.	LTG
Date Performed	2/6/2018
Analysis Year	2022
Time Analyzed	Build-Out P.M. Peak Hour
Intersection Orientation	East-West
Project Description	4497.02

Site Information

Intersection	Driveway at Hall Rd
Jurisdiction	Brevard County
East/West Street	Hall Rd
North/South Street	Driveway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		1	0	1
Configuration		LT						TR						L		R
Volume (veh/h)		114	172				176	0						0		67
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

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

Delay, Queue Length, and Level of Service

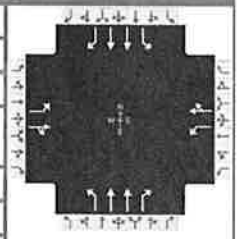
Flow Rate, v (veh/h)		124												0		73
Capacity, c (veh/h)		1381												408		850
v/c Ratio		0.09												0.00		0.09
95% Queue Length, Q_{95} (veh)		0.3												0.0		0.3
Control Delay (s/veh)		7.9												13.8		9.6
Level of Service (LOS)		A												B		A
Approach Delay (s/veh)	3.6												9.6			
Approach LOS													A			

APPENDIX I

Signalized Intersections HCS Worksheets – Build-Out Conditions

HCS7 Signalized Intersection Results Summary

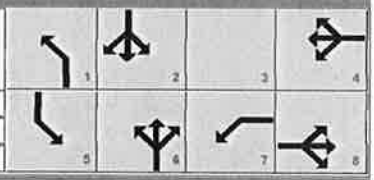
General Information				Intersection Information	
Agency	LTG			Duration, h	0.25
Analyst	LAE	Analysis Date	Jan 16, 2018	Area Type	Other
Jurisdiction	FDOT	Time Period	Build-Out A.M. Peak-Hour	PHF	0.93
Urban Street	SR 3 / N Courtenay Par...	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR 3 at Hall Rd	File Name	1 SR 3 at Hall Rd - Build-Out AM.xus		
Project Description	4497.02				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	39	6	158	231	8	47	63	975	110	25	460	13

Signal Information			
Cycle, s	95.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.6	1.8	41.6	12.0	10.9	0.0
Yellow	5.1	0.0	5.1	4.1	4.1	0.0
Red	2.1	0.0	2.0	2.1	2.0	0.0



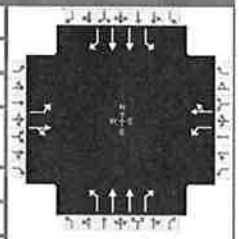
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8	7	4	1	6	5	2
Case Number		6.3	1.0	4.0	1.1	3.0	1.1	3.0
Phase Duration, s		17.0	18.2	35.2	11.6	50.6	9.8	48.7
Change Period, ($Y+R_c$), s		6.1	6.2	6.1	7.4	7.1	7.2	7.1
Max Allow Headway (*MAH*), s		3.2	3.0	3.2	3.0	7.2	3.0	7.2
Queue Clearance Time (g_s), s		10.4	13.1	4.1	3.9	22.9	2.8	10.4
Green Extension Time (g_e), s		0.4	0.0	0.4	0.1	20.6	0.0	27.4
Phase Call Probability		1.00	1.00	1.00	0.83	1.00	0.51	1.00
Max Out Probability		0.00	1.00	0.00	0.00	0.70	0.00	0.56

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	42	145		248	49		68	1048	43	27	495	1
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1345	1596		1781	1628		1781	1781	1560	1781	1781	1585
Queue Service Time (g_s), s	2.8	8.4		11.1	2.1		1.9	20.9	1.5	0.8	8.4	0.0
Cycle Queue Clearance Time (g_c), s	2.8	8.4		11.1	2.1		1.9	20.9	1.5	0.8	8.4	0.0
Green Ratio (*g/C*)	0.12	0.12		0.28	0.31		0.50	0.48	0.48	0.48	0.46	0.46
Capacity (*c*), veh/h	200	148		362	461		496	1696	678	258	1628	658
Volume-to-Capacity Ratio (*X*)	0.210	0.981		0.685	0.107		0.137	0.618	0.063	0.104	0.304	0.002
Back of Queue (*Q*), ft/ln (95 th percentile)	41.4	180.7		217	35.7		30.6	307.1	23.1	12.5	139.5	0.6
Back of Queue (*Q*), veh/ln (95 th percentile)	1.6	7.1		8.5	1.4		1.2	12.1	0.9	0.5	5.5	0.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.28	0.00		0.92	0.00		0.11	0.00	0.07	0.04	0.00	0.00
Uniform Delay (d_1), s/veh	40.6	41.7		29.4	24.0		12.8	19.2	15.7	15.6	16.9	16.3
Incremental Delay (d_2), s/veh	0.2	16.9		4.4	0.0		0.0	0.3	0.0	0.1	0.0	0.0
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	40.7	58.6		33.8	24.1		12.8	19.5	15.7	15.7	16.9	16.3
Level of Service (LOS)	D	E		C	C		B	B	B	B	B	B
Approach Delay, s/veh / LOS	54.6	D		32.2	C		18.9	B		16.9	B	
Intersection Delay, s/veh / LOS	23.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.56	C	2.45	B	1.92	B	1.95	B
Bicycle LOS Score / LOS	0.80	A	0.98	A	1.44	A	0.92	A

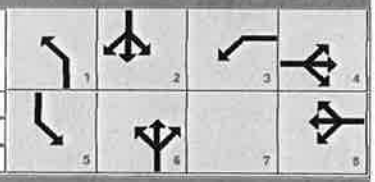
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LTG			Duration, h	0.25
Analyst	LAE	Analysis Date	Jan 16, 2018	Area Type	Other
Jurisdiction	FDOT	Time Period	Build-Out P.M. Peak-Hour	PHF	0.92
Urban Street	SR 3/N Courtenay Pkwy	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR 3 at Hall Rd	File Name	1 SR 3 at Hall Rd - Build-Out PM.xus		
Project Description	4497.02				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	15	21	109	197	9	35	172	492	217	47	1216	39

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							
Green	3.5	3.6	35.4	10.7	6.4	0.0	
Yellow	5.1	0.0	5.1	3.0	4.1	0.0	
Red	2.1	0.0	2.0	2.0	2.0	0.0	

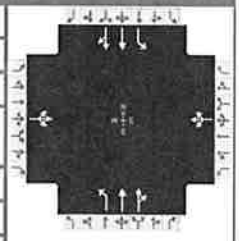
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4	3	8	1	6	5	2
Case Number		6.3	1.0	4.0	1.1	3.0	1.1	3.0
Phase Duration, s		12.5	15.7	28.2	14.3	46.1	10.7	42.5
Change Period, ($Y+R_c$), s		6.1	5.0	6.1	7.4	7.1	7.2	7.1
Max Allow Headway (*MAH*), s		3.1	3.0	3.1	3.0	2.9	3.0	2.9
Queue Clearance Time (g_s), s		4.7	10.7	3.2	6.8	9.8	3.3	30.1
Green Extension Time (g_e), s		0.2	0.1	0.2	0.2	5.7	0.0	5.2
Phase Call Probability		0.91	0.99	1.00	0.99	1.00	0.70	1.00
Max Out Probability		0.00	1.00	0.00	0.00	0.00	0.00	0.06

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	16	57		214	30		187	535	164	51	1322	35
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1379	1689		1781	1667		1781	1781	1585	1781	1781	1572
Queue Service Time (g_s), s	1.0	2.7		8.7	1.2		4.8	7.8	5.6	1.3	28.1	1.2
Cycle Queue Clearance Time (g_c), s	1.0	2.7		8.7	1.2		4.8	7.8	5.6	1.3	28.1	1.2
Green Ratio (*g/C*)	0.09	0.09		0.25	0.27		0.52	0.48	0.48	0.48	0.44	0.44
Capacity (*c*), veh/h	156	87		405	395		291	1717	690	479	1567	618
Volume-to-Capacity Ratio (*X*)	0.105	0.647		0.529	0.077		0.643	0.311	0.238	0.107	0.843	0.056
Back of Queue (*Q*), ft/ln (95 th percentile)	14.4	52.7		159.8	20.1		75	121.6	80.4	20.6	395.2	17.4
Back of Queue (*Q*), veh/ln (95 th percentile)	0.6	2.1		6.3	0.8		3.0	4.8	3.2	0.8	15.6	0.7
Queue Storage Ratio (*RQ*) (95 th percentile)	0.10	0.00		0.68	0.00		0.26	0.00	0.23	0.07	0.00	0.04
Uniform Delay (d_1), s/veh	38.7	37.6		27.5	23.7		17.8	14.0	15.1	12.1	22.0	16.0
Incremental Delay (d_2), s/veh	0.1	3.0		0.4	0.0		0.9	0.0	0.1	0.0	1.7	0.0
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	38.8	40.6		27.9	23.8		18.7	14.0	15.2	12.1	23.7	16.0
Level of Service (LOS)	D	D		C	C		B	B	B	B	C	B
Approach Delay, s/veh / LOS	40.2	D		27.4	C		15.2	B		23.1	C	
Intersection Delay, s/veh / LOS	21.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.55	C	2.45	B	1.92	B	2.02	B
Bicycle LOS Score / LOS	0.61	A	0.89	A	1.22	A	1.65	B

HCS7 Signalized Intersection Results Summary

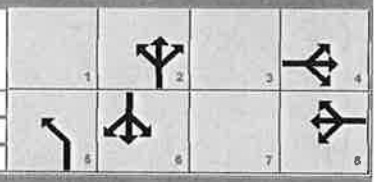
General Information				Intersection Information	
Agency	LTG			Duration, h	0.25
Analyst	LAE	Analysis Date	Jan 16, 2018	Area Type	Other
Jurisdiction	FDOT	Time Period	Build-Out A.M. Peak Hour	PHF	0.90
Urban Street	SR 3/N Courtenay Pkwy	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR 3 at Grant Rd/Smith...	File Name	2 SR 3 at Grant Rd - Build-Out AM.xus		
Project Description	4497.02				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	14	3	163	11	3	4	50	1226	21	14	848	37

Signal Information			
Cycle, s	69.6	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.3	34.7	12.1	0.0	0.0	0.0
Yellow	4.8	4.8	4.0	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



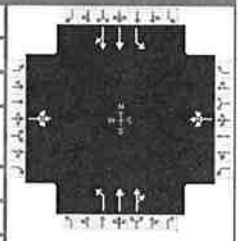
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2		6
Case Number		8.0		8.0	1.0	4.0		6.3
Phase Duration, s		18.1		18.1	10.1	51.6		41.5
Change Period, (*Y+R c*), s		6.0		6.0	6.8	6.8		6.8
Max Allow Headway (*MAH*), s		4.2		4.2	4.0	4.5		4.5
Queue Clearance Time (*g s*), s		11.8		3.5	3.0	16.0		14.7
Green Extension Time (*g e*), s		0.6		0.4	0.1	19.7		19.9
Phase Call Probability		0.98		0.98	0.66	1.00		1.00
Max Out Probability		0.00		0.05	0.00	0.33		0.31

Movement Group Results	EB			WB			NB			SB		
Approach Movement	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		174			17		56	695	691	16	495	488
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1201			521		1626	1930	1918	227	1856	1828
Queue Service Time (*g s*), s		3.7			0.0		1.0	14.0	14.0	2.9	12.7	12.7
Cycle Queue Clearance Time (*g c*), s		9.8			1.5		1.0	14.0	14.0	6.8	12.7	12.7
Green Ratio (*g/C*)		0.17			0.17		0.57	0.64	0.64	0.50	0.50	0.50
Capacity (*c*), veh/h		264			180		345	1241	1233	203	924	910
Volume-to-Capacity Ratio (*X*)		0.660			0.093		0.161	0.560	0.560	0.076	0.536	0.536
Back of Queue (*Q*), ft/ln (95 th percentile)		155.8			15.4		14.3	175.4	173.3	8.5	197.2	193.5
Back of Queue (*Q*), veh/ln (95 th percentile)		4.9			0.4		0.5	6.9	6.8	0.2	7.7	7.6
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00			0.00		0.04	0.00	0.00	0.02	0.59	0.58
Uniform Delay (*d 1*), s/veh		27.8			24.3		8.3	6.9	6.9	11.6	12.0	12.0
Incremental Delay (*d 2*), s/veh		2.8			0.2		0.2	0.5	0.5	0.2	0.6	0.6
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		30.6			24.5		8.5	7.4	7.4	11.8	12.6	12.6
Level of Service (LOS)		C			C		A	A	A	B	B	B
Approach Delay, s/veh / LOS	30.6	C		24.5	C		7.5	A		12.6	B	
Intersection Delay, s/veh / LOS	11.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.28	B	2.28	B	1.64	B	1.69	B
Bicycle LOS Score / LOS	0.78	A	0.52	A	1.68	B	1.31	A

HCS7 Signalized Intersection Results Summary

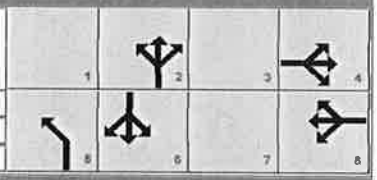
General Information				Intersection Information	
Agency	LTG			Duration, h	0.25
Analyst	LAE	Analysis Date	Jan 16, 2018	Area Type	Other
Jurisdiction	FDOT	Time Period	Build-Out P.M. Peak-Hour	PHF	0.95
Urban Street	SR 3/N Courtenay Pkwy	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR 3 at Grant Rd/Smith...	File Name	2 SR 3 at Grant Rd - Build-Out PM.xus		
Project Description	4497.02				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	12	4	109	27	6	5	170	1006	45	23	1544	33

Signal Information			
Cycle, s	77.9	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.2	48.1	5.1	0.0	0.0	0.0
Yellow	4.8	4.8	4.0	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2		6
Case Number		8.0		8.0	1.0	4.0		6.3
Phase Duration, s		11.1		11.1	12.0	66.8		54.9
Change Period, (*Y+R c*), s		6.0		6.0	6.8	6.8		6.8
Max Allow Headway (*MAH*), s		4.1		4.1	4.0	4.5		4.5
Queue Clearance Time (*g s*), s		4.9		5.9	4.8	9.1		26.3
Green Extension Time (*g e*), s		0.2		0.1	0.5	27.6		21.4
Phase Call Probability		0.85		0.85	0.98	1.00		1.00
Max Out Probability		0.00		0.13	0.00	0.46		0.61

Movement Group Results	EB			WB			NB			SB		
Approach Movement	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			38		179	550	544	24	829	826
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1258			732		1626	1930	1908	299	1856	1844
Queue Service Time (*g s*), s		0.0			1.1		2.8	7.1	7.1	2.6	24.1	24.3
Cycle Queue Clearance Time (*g c*), s		2.9			3.9		2.8	7.1	7.1	2.6	24.1	24.3
Green Ratio (*g/C*)		0.07			0.07		0.71	0.77	0.77	0.62	0.62	0.62
Capacity (*c*), veh/h		141			129		284	1486	1470	277	1144	1137
Volume-to-Capacity Ratio (*X*)		0.344			0.294		0.630	0.370	0.370	0.087	0.724	0.726
Back of Queue (*Q*), ft/ln (95 th percentile)		50.9			49		101.1	54	53	8.9	310.3	307.4
Back of Queue (*Q*), veh/ln (95 th percentile)		1.6			1.3		3.7	2.1	2.1	0.2	12.1	12.1
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00			0.00		0.28	0.00	0.00	0.02	0.93	0.92
Uniform Delay (*d 1*), s/veh		35.4			35.8		14.2	2.9	2.9	6.2	10.3	10.4
Incremental Delay (*d 2*), s/veh		1.4			1.3		2.3	0.2	0.2	0.2	1.5	1.6
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		36.8			37.1		16.5	3.1	3.1	6.4	11.9	12.0
Level of Service (LOS)		D			D		B	A	A	A	B	B
Approach Delay, s/veh / LOS	36.8	D		37.1	D		5.0	A		11.8	B	
Intersection Delay, s/veh / LOS	9.7						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.32	B	2.31	B	1.60	B	1.75	B
Bicycle LOS Score / LOS	0.57	A	0.55	A	1.54	B	1.87	B

APPENDIX J

NCHRP 457 Reports

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

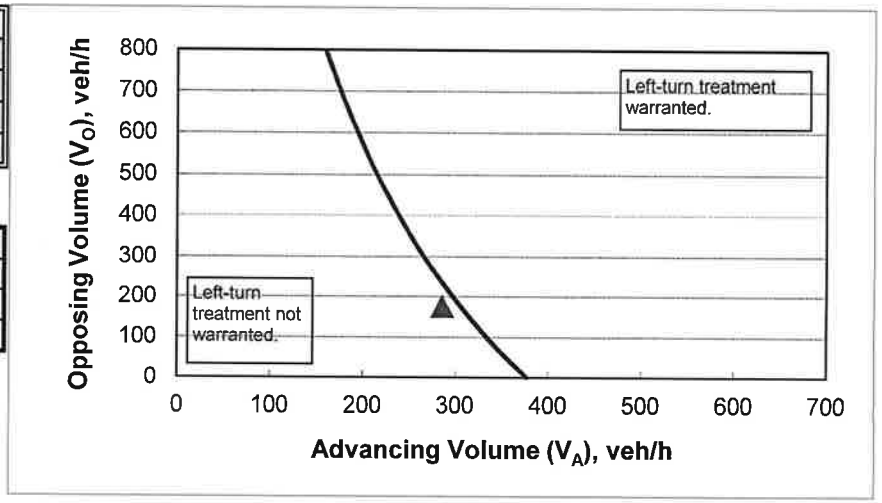
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	40%
Advancing volume (V_A), veh/h:	286
Opposing volume (V_O), veh/h:	176

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	305
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane , s:	1.9

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadw ay
Variable	Value
Major-road speed, mph:	35
Major-road volume (one direction), veh/h:	1
Right-turn volume, veh/h:	1

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	#########
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.