City of Palm Coast, Florida
Agenda Item

Agenda Date: April 20, 2021

Department	PLANNING	**Amount**	
Item Key	10349	**Account #**	

Subject RESOLUTION 2021-XX APPROVING POINTE GRAND APARTMENTS MASTER SITE PLAN, APPLICATION # 4633

Presenter: Bill Hoover

UPDATED BACKGROUND FROM THE APRIL 6, 2021 BUSINESS MEETING:

This item was heard by the City Council at their business meeting on April 6, 2021. City Council tabled the item and requested that City staff and the applicant return and provide additional information on the project's traffic impacts including providing a copy of the applicant's traffic impact study, which is attached to this item.

ORIGINAL BACKGROUND FROM THE APRIL 6, 2021 BUSINESS MEETING:

The applicant has submitted an application (AR#4633) for a Master Site Plan for Pointe Grand Apartments, a proposed 300-unit multi-family community located on the northwest side of Pine Lakes Parkway North about halfway between Palm Coast Parkway NW and Belle Terre Parkway North. The property's existing Multi-Family (MFR-2) Zoning allows a density of 12 units/per acre of the development area except for wetland areas that allow a reduced density of 3 units/per acre. The density calculations for this project allow for a maximum 385 homes (units). The site plan shows 300 units which is 78% of the maximum allowed units and based on the 34.64 +/- acres for development the overall density would be 8.66 units/acre.

Pointe Grand Apartments is a multi-family project comprised of 300 units in 9 residential buildings and a clubhouse with amenities. The project is situated internal to the 34.64 +/- acres the applicant is developing and set back about 400 feet northwest of Pine Lakes Parkway North. The project's main access aligns with Brushwood Lane and a secondary access is located about 850 feet to the northeast. Located between the two access points and between the residential community and Pine Lakes Parkway North is an approximate 800' long by 400' deep property and these 6.86 +/- acres are zoned General Commercial (COM-2) and not included in this Master Site Plan. Additionally to the south of the main access road is another 4.13 +/- acre COM-2 tract that is not part of this Master Site Plan. Combined these are about 11 +/- acres and will be developed at a later date. Most of the balance of the 157.6 +/- acre overall site is wetlands and is planned as a conservation area that will act as a natural buffer around this project.

Approval of this multi-family Master Site Plan will allow the developer to move forward with developing multi-family homes in an area that has single-family uses on the opposite side of Pine Lakes Parkway North and more intensive uses on this side of this roadway. The COM-2 land that separates the single-family homes from the proposed multi-family homes will also act as a buffer as the developer has agreed to save the existing trees and vegetation on the COM-2 sites until they are developed. This will allow the landscaping planted in the multi-family project time to mature in the meantime. By the developer saving the large wetland areas surrounding much of the development it further aids in providing a high quality transition between land uses.

Since the number of units is above the 100-unit threshold, the Master Site Plan is considered a "Major" (Tier 3) development, requiring review and recommendation by the Planning and Land

Development Regulation Board (PLDRB) followed by review and final determination by the City Council. If the City Council approves the Master Site Plan, the applicant will follow with a Technical Site Plan application that will require administrative review of detailed engineering drawings.

Public Participation: A neighborhood information meeting was held on March 9, 2021 starting at 5:30 PM at the Days Inn adjacent to Home Depot. On February 22, a letter was sent out to all neighbors living within 300 feet of the boundaries of the project inviting them to this meeting. The developer, his civil engineer, traffic engineer, planner, and four City staff members attended but no one from the public showed up.

Planning and Land Development Regulation Board: The PDLRB public hearing was held on March 17, 2021 starting at 5:30 PM. No one from the public attended specifically for this item nor spoke for or against it. The PLDRB found this project in compliance with the Comprehensive Plan and voted 7 – 0 to recommend approval to City Council subject to three conditions.

Recommended Action:

The Planning and Land Development Regulation Board found this in compliance with the Comprehensive Plan and recommended approval to City Council for Application #4633, Pointe Grand Apartments a Master Site Plan for 300 homes so the developer may apply for a Technical Site Plan that would need to meet all applicable development requirements and subject to the following conditions.

1. For the Technical Site Plan applicant's engineer shall provide vehicular use area calculations on the site and landscape plans.
2. For the Technical Site Plan applicant's landscape architect shall provide shade and understory trees each spaced at about 1 per 50 feet along the two shared entry drives as they travel next to the commercial areas on the landscape plans.
3. School concurrency shall be met during the Technical Site Plan process.

RESOLUTION 2021-____
POINTE GRAND APARTMENTS MASTER SITE PLAN

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALM COAST, FLORIDA, APPROVING APPLICATION # 4633 POINTE GRAND APARTMENTS MASTER SITE PLAN; PROVIDING FOR SEVERABILITY; PROVIDING FOR CONFLICTS; PROVIDING FOR IMPLEMENTING ACTIONS AND PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, on January 28, 2021, Application No. 4633, (hereinafter "the application") was submitted by Matthews Design Group, Inc. to the City of Palm Coast Community Development Department for approval of a residential Master Site Plan for 300 apartments on 34.64 +/- acres of land located on the northwest side of Pine Lakes Parkway North about halfway between Palm Coast Parkway NW and Belle Terre Parkway North; and

WHEREAS, the City staff has reviewed the development proposal and has determined that it is in accordance with the codes, ordinances and land development regulations of the City; and

WHEREAS, the Planning and Land Development Regulation Board held a public hearing on the application at its regularly scheduled meeting on March 17, 2021, and determined it is in compliance with the Comprehensive Plan and unanimously recommended approval to the City Council by a 7 - 0 vote; and

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Palm Coast, Flagler County, Florida:

SECTION 1. APPROVAL APPLICATION/FINDINGS.

(a). The City Council hereby approves the application for the Pointe Grand Apartments Master Site Plan for a 300-unit apartment community located on the northwest side of Pine Lakes Parkway North about halfway between Palm Coast Parkway NW and Belle Terre Parkway North and hereby authorizes the Mayor of the City of Palm Coast to execute the Development Order.

(b). The development approval sought under and pursuant to the application is consistent with the City of Palm Coast Comprehensive Plan and development of the property will be subject to and consistent with and in compliance with applicable land development

regulations and all other applicable regulations and ordinances as set forth in the *Code of Ordinances of the City of Palm Coast*.

SECTION 2. SEVERABILITY. It is hereby declared to be the intention of the City Council that the sections, paragraphs, sentences, clauses and phrases of this Resolution are severable, and if any phrase, clause, sentence, paragraph or section of this Resolution shall be declared unconstitutional by the valid judgment or decree of a court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs and sections of this Resolution.

SECTION 3. CONFLICTS. All resolutions or parts of resolutions in conflict with this Resolution are hereby repealed.

SECTION 4. IMPLEMENTING ACTIONS. The City Manager, or designee, is hereby authorized to take any actions necessary to implement the action taken in this Resolution.

SECTION 5. EFFECTIVE DATE. This Resolution shall become effective immediately upon its passage and adoption.

DULY PASSED AND ADOPTED by the City Council of the City of Palm Coast, Florida, on this 20th day of April 2021.

CITY OF PALM COAST, FLORIDA

_____
MILISSA HOLLAND, MAYOR

ATTEST:

_____
VIRGINIA A. SMITH, CITY CLERK

Approved as to form and legality

_____
William E. Reischmann, Jr., Esq.
City Attorney

City Council
Public Hearing on April 6, 2021

OVERVIEW

Project Name:	Pointe Grand Apartments Master Site Plan
Application Number:	4633
Applicant/agent:	Matthews Design Group, Inc., St. Augustine, FL
Property Owner:	Miral Corp, San Diego, CA
Location:	NW side of Pine Lakes Parkway N. about halfway between Palm Coast Parkway NW and Belle Terre Parkway N.
Parcel ID #:	10-11-30-5115-00000-0030
Current FLUM designation:	Mixed Use and Conservation
Current Zoning designation:	MFR-2
Current Use:	Vacant
Size of subject property:	157.67 +/- acres total parcel / 34.64 +/- acres for development

ANALYSIS

REQUESTED ACTION:

The applicant has submitted an application (AR#4633) for a Master Site Plan for Pointe Grand Apartments, a proposed 300-unit multi-family community located on the northwest side of Pine Lakes Parkway North about halfway between Palm Coast Parkway NW and Belle Terre Parkway North. The property's existing Multi-Family (MFR-2) Zoning allows a density of 12 units/per acre of the development area except for wetland areas that allow a reduced density of 3 units/per acre. The density calculations for this project allow for a maximum 385 homes (units). The site plan shows 300 units which is 78% of the maximum allowed units and based on the 34.64 +/- acres for development the overall density would be 8.66 units/acre.

PROJECT DESCRIPTION:

Pointe Grand Apartments is a multi-family project comprised of 300 units in 9 residential buildings and a clubhouse with amenities. The project is situated internal to the 34.64 +/- acres the applicant is developing and set back about 400 feet northwest of Pine Lakes Parkway North. The project's main access aligns with Brushwood Lane and a secondary access is located about 850 feet to the northeast. Located between the two access points and between the residential community and Pine Lakes Parkway North is an approximate 800' long by 400' deep property and these 6.86 +/- acres are zoned General Commercial (COM-2) and not included in this Master Site Plan. Additionally to the south of the main access road is another 4.13 +/- acre COM-2 tract that is not part of this Master Site Plan. Combined these are about 11 +/- acres and will be developed at a later date. Most of the balance of the 157.6 +/- acre overall site is wetlands and is planned as a conservation area that will act as a natural buffer around this project.

Since the number of multi-family units is above the 100-unit threshold, the Master Site Plan is considered a "Major" (Tier 3) development, requiring review and recommendation by the PLDRB followed by review and final determination by the City Council. If the City Council approves the Master Site Plan, the applicant can follow with a Technical Site Plan application with administrative review of detailed engineering drawings.

SITE DEVELOPMENT PLAN SUMMARY:

- PROJECT ACREAGE: 34.64 +/- acres (Master Site Plan area)
- NUMBER OF NEW BUILDINGS: Nine 3-story residential buildings + clubhouse
- TOTAL UNITS: 300 multi-family two-bedroom units

LAND USE AND ZONING INFORMATION

The following table summarizes the general existing and proposed land use and zoning data:

SURROUNDING ZONING AND FLUM CATEGORIES

Direction	**FLUM Category**	**Zoning District**
North	DRI/Mixed Use and Institutional	MPD and P&G
South	Mixed Use and Residential	COM-3 and SFR-3
East	Residential and Mixed Use	SFR-3, MPD
West	Mixed Use and Conservation	MPD, COM-2 and PSP

SITE DEVELOPMENT REQUIREMENTS:

Site development must be in accordance with the requirements of the City of Palm Coast Land Development Code, the Comprehensive Plan and the latest Building Codes. The following tables summarize the basic development standard requirements and corresponding proposed development criteria, with which the application complies:

SITE DEVELOPMENT REQUIREMENTS FOR MFR-2

Criteria *(per LDC)*	**Required**	**Provided**
Minimum Lot Size	4 acres	34.64 +/- acres
Maximum Density	11.14 units/acre	8.66 units/acre
Maximum Impervious Coverage	70%	29%
Maximum Building Height	60 ft.	42.75 ft.
Minimum living area	650 s.f.	1107 & 1153 s.f. 2-BR
Minimum Building Setbacks		
	Front: 25 ft.	25 ft. minimum
	Rear: 20 ft.	20 ft. minimum
	Int. Side: 10 ft.	10 ft. minimum
Minimum Parking		
300 units x 33% with garages =	100 garage spaces	100 garage spaces
300 2 bedroom units x 2 =	600 - garage spaces	500 regular spaces
Plus Clubhouse/Rec. uses =	20 spaces	20 clubhouse spaces

Total spaces including garages	620 spaces	620 spaces
Including ADA designated parking	12 spaces	12 spaces

MASTER SITE PLAN PROCESS

The Master Site Plan application process is specified in Section 2.10 of the Unified Land Development Code (LDC). This review process is intended to ensure that site development takes place in an orderly and efficient manner through a process that provides adequate review based on the size and complexity of the proposed development. Master Site Plan review and approval establishes the viability of a development thereby, allowing a project to proceed to the Technical Site Plan process.

This application incorporates a review/approval process coordinated by and through City staff, the PLDRB, and the City Council as applicable. As provided in Table 2-1 of Sec. 2.04 of the LDC, residential projects over 100 units are classified as Major projects, which requires review and recommendation from the PLDRB, and with final review and determination by the City Council.

Section 2.10.04 of the LDC establishes the review criteria for a Master Site Plan as detailed below.

Review Criteria	Comments
1. Logic of design	The Master Site Plan proposed for multi-family development illustrates a proposed project consisting of nine 3-story buildings. Due to much of the perimeter site having wetlands the residential development area is clustered into a central area.
2. Internal Consistency	The Master Site Plan is designed for the multi-family development of Pointe Grand Apartments and future development of Parcels 2 and 3 which are zoned COM-2 and front along Pine Lakes Parkway North. A shared access road is being provided so the mixed use projects can utilize the same access roads.
3. Impact on neighboring sites	This multi-family project should have minimal impact on neighboring single-family homes due to the multi-family area being about 500 feet from the closest residential homes and an expanse of wetlands located along the remaining property lines.
4. Internal vehicle and pedestrian connectivity	Pedestrian access ways will allow future residents to walk and bicycle throughout the site using sidewalks and also travel to the future commercial and the hike/bike trail along the north side of Pine Lakes Parkway North.
5. Public benefit from the project	The project will allow for a wider diversity of housing opportunities to be available in Palm Coast which will provide housing for elderly residents and younger residents working in jobs that provide essential and key services to all Palm Coast residents.

ANALYSIS BASED ON UNIFIED LAND DEVELOPMENT CODE CHAPTER 2, SECTION 2.05.05

Prior to approval of a Development Order for a Site Plan, the proposed project must be evaluated for conformance with the requirements of LDC Chapter 2, Section 2.05.05, which provides criteria that must be met to issue approval. The proposed project has been evaluated against the review criteria as directed by the LDC, which states: *When reviewing a development order application, the approval authority shall determine whether sufficient factual data was presented in order to render a decision. The decision to issue a development order shall be based upon the following, including but not limited to*:

A. The proposed development must not be in conflict with or contrary to the public interest;

Planning Staff Finding: As conditioned in the staff recommendation, the proposed development is not in conflict with or contrary to the public interest, as the specified land use is consistent with the City's LDC, its MFR-2 Zoning and the Comprehensive Plan.

B. The proposed development must be consistent with the Comprehensive Plan and the provisions of this LDC;

Planning Staff Finding: The request is consistent with the Comprehensive Plan. The following are applicable goals, policies and objectives that the project supports:

- **Chapter 1 – Land Use Element: Goal 1.1** - *Preserve the character of residential communities, prevent urban sprawl and protect open space and environmental resources, while providing a mix of land uses, housing types, services, and job opportunities in mixed use centers and corridors.* Allowing multi-family uses on this infill site will combat urban sprawl by utilizing land that is located east of US 1 and reasonably close to commercial and institutional services. Additionally, these multi-family homes will allow a broader mix of housing types in Palm Coast where a preponderance of available homes are single-family detached homes. Multi-family land uses compared to single-family home sites, also allow a significantly better opportunity for preserving open space and protecting environmentally sensitive areas.

- **Chapter 1 – Land Use Element: Policy 1.1.4.5** – *Land use patterns will be required to be efficient and not disproportionately increase the cost of providing and maintaining public facilities, as well as providing housing and transportation strategies that will foster energy conservation.* All public services are already available to serve the site and have adequate capacity for doing so. Additionally, multi-family homes with fewer exterior walls than detached single-family homes will be significantly more energy efficient.

- **Chapter 3 - Housing Element**: **Objective 3.4.1 Diversity in Housing Opportunities; Policy 3.4.1.1** – *Through the FLUM and zoning district regulations of the LDC, the City shall make provisions to supply land that can be developed with various types of residential uses, including single-family homes of various sizes, duplexes, multi-family dwellings, and residential units in mixed use developments.* Approval of this multi-family Master Site Plan will allow the developer to move forward with developing multi-family homes in an area that has single-family uses on the opposite side of Pine Lakes Parkway North and more intensive uses on this side of this roadway. The COM-2 land that separates the

single-family homes from the proposed multi-family homes will also act as a buffer as the developer has agreed to save the existing trees and vegetation on the COM-2 sites until they are developed. This will allow the landscaping planted in the multi-family project time to mature in the meantime. By the developer saving the large wetland areas surrounding much of the development it further aids in providing a high quality transition between land uses.

C. The proposed development must not impose a significant financial liability or hardship for the City;

Planning Staff Findings: The proposed development does not impose a significant financial liability or hardship for the City as the project will meet the LDC and the City's concurrency requirements.

D. The proposed development must not create an unreasonable hazard, or nuisance, or constitute a threat to the general health, welfare, or safety of the City's inhabitants;

Planning Staff Finding: The proposed development poses no unreasonable hazard, nuisance, nor does it constitute a threat to the general health, welfare, or safety of the City's inhabitants. All improvements will be newly constructed and/or developed in compliance with the relevant LDC, Building Code and other agency requirements.

E. The proposed development must comply with all other applicable local, state and federal laws, statutes, ordinances, regulations, or codes;

Planning Staff Finding: For the project to proceed, the applicant is required to submit a Technical Site Plan, building plans and permit applications as required to the various agencies having jurisdiction, and shall meet all requirements of other applicable local, state and federal laws, statutes, ordinances, regulations and codes.

PUBLIC PARTICIPATION

A neighborhood information meeting was held on March 9, 2021 starting at 5:30 PM at the Days Inn adjacent to Home Depot. On February 22, a letter was sent out to all neighbors living within 300 feet of the boundaries of the project inviting them to this meeting. The developer, his civil engineer, traffic engineer, planner, and four City staff members attended but no one from the public showed up.

PLANNING AND LAND DEVELOPMENT REGULATION BOARD

The PDLRB public hearing was held on March 17, 2021 starting at 5:30 PM. No one from the public attended specifically for this item nor spoke for or against it. The PLDRB found this project in compliance with the Comprehensive Plan and voted 7 – 0 to recommend approval to City Council subject to three conditions.

SUMMARY OF FINDINGS

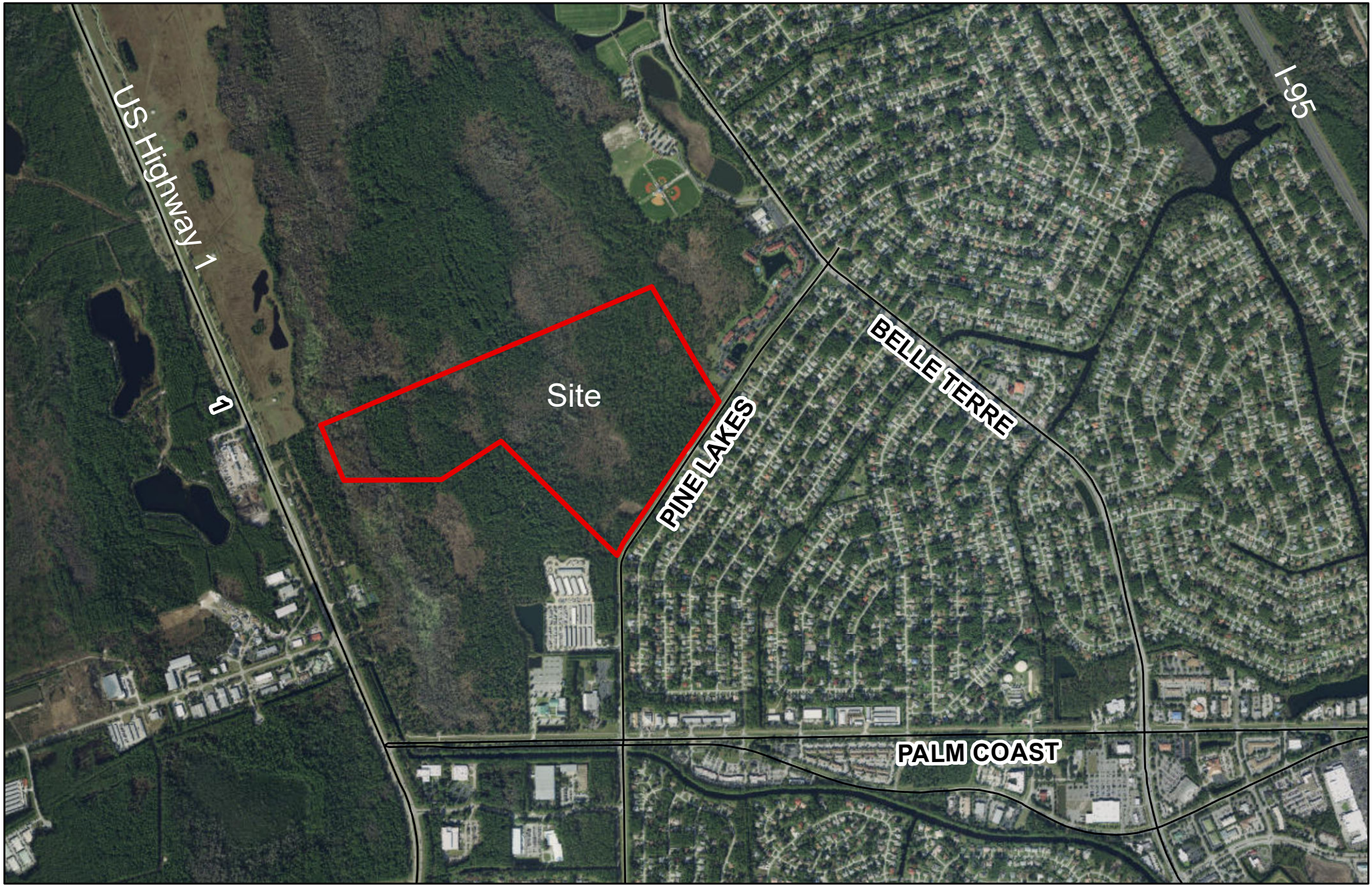
After review and evaluation of the proposed project for conformance with the requirements of the City of Palm Coast LDC and Comprehensive Plan, staff finds that the proposed conceptual Master Site Plan can meet the requirements for approval. The Master Site Plan process recognizes that up to 25% cumulative design change may be allowed after further engineering.

RECOMMENDATION

The Planning and Land Development Regulation Board found this in compliance with the Comprehensive Plan and recommended approval to City Council for Application #4633, Pointe Grand Apartments a Master Site Plan for 300 homes so the developer may apply for a Technical Site Plan that would need to meet all applicable development requirements and subject to the following conditions.

1. For the Technical Site Plan applicant's engineer shall provide vehicular use area calculations on the site and landscape plans.
2. For the Technical Site Plan applicant's landscape architect shall provide shade and understory trees each spaced at about 1 per 50 feet along the two shared entry drives as they travel next to the commercial areas on the landscape plans.
3. School concurrency shall be met during the Technical Site Plan process.

Pointe Grand Distant Aerial



Legend

- Palm Coast City Limits
- Pointe Grand

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Map Provided By: Planning Division

Pointe Grand Close-Up Aerial

Legend

- Palm Coast City Limits
- Pointe Grand

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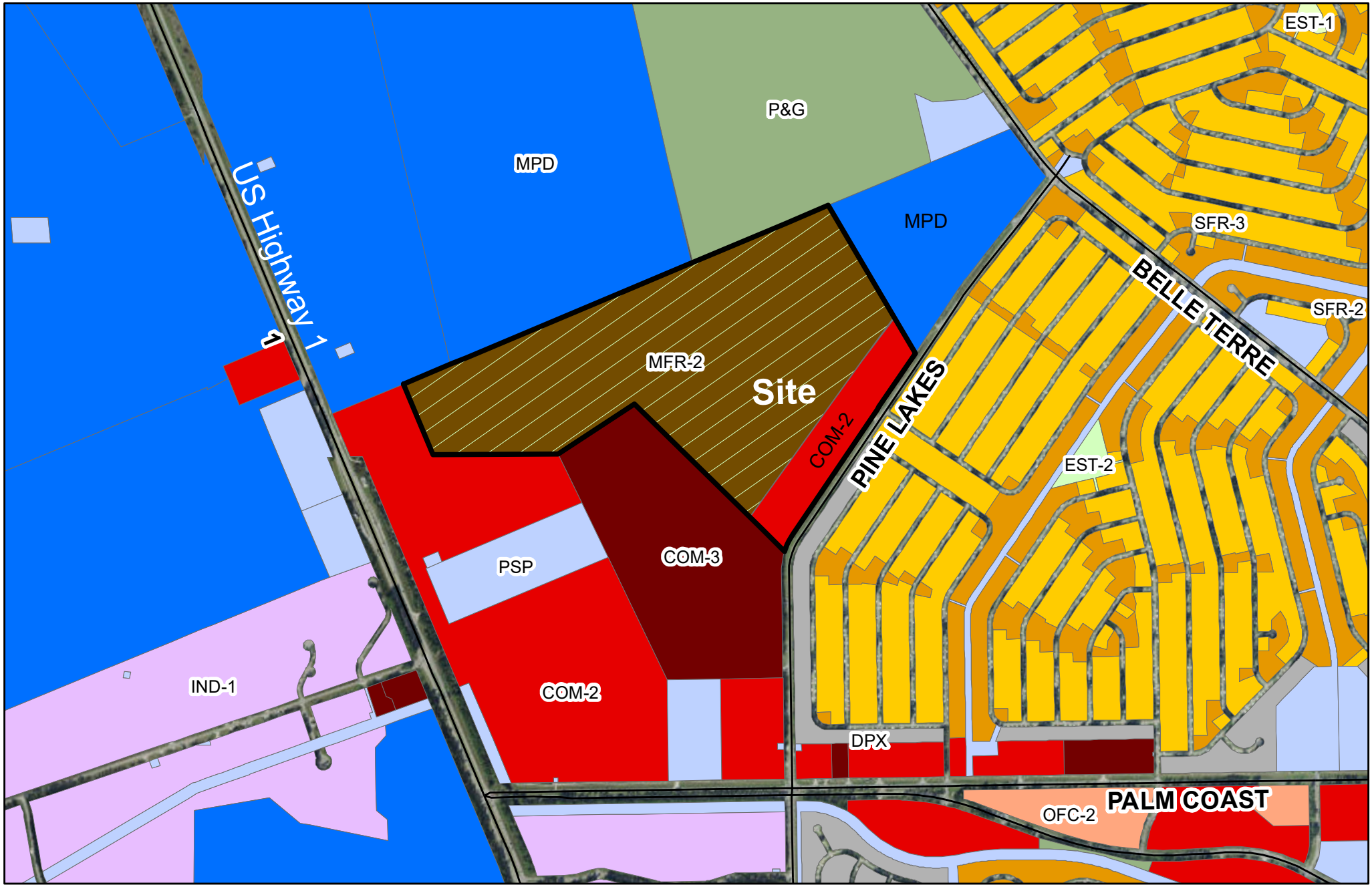
Map Provided By: Planning Division

Pointe Grand Zoning Map



Legend

- Palm Coast City Limits
- Pointe Grand

Zoning

- AC
- COM-1
- COM-2
- COM-3
- DPX
- EST-1
- EST-2
- IND-1
- IND-2
- MFR-1
- MFR-2
- MPD
- OFC-2
- P&G
- PRS
- PSP
- PUD
- SFR-1
- SFR-2
- SFR-3
- SFR-4

N W E S

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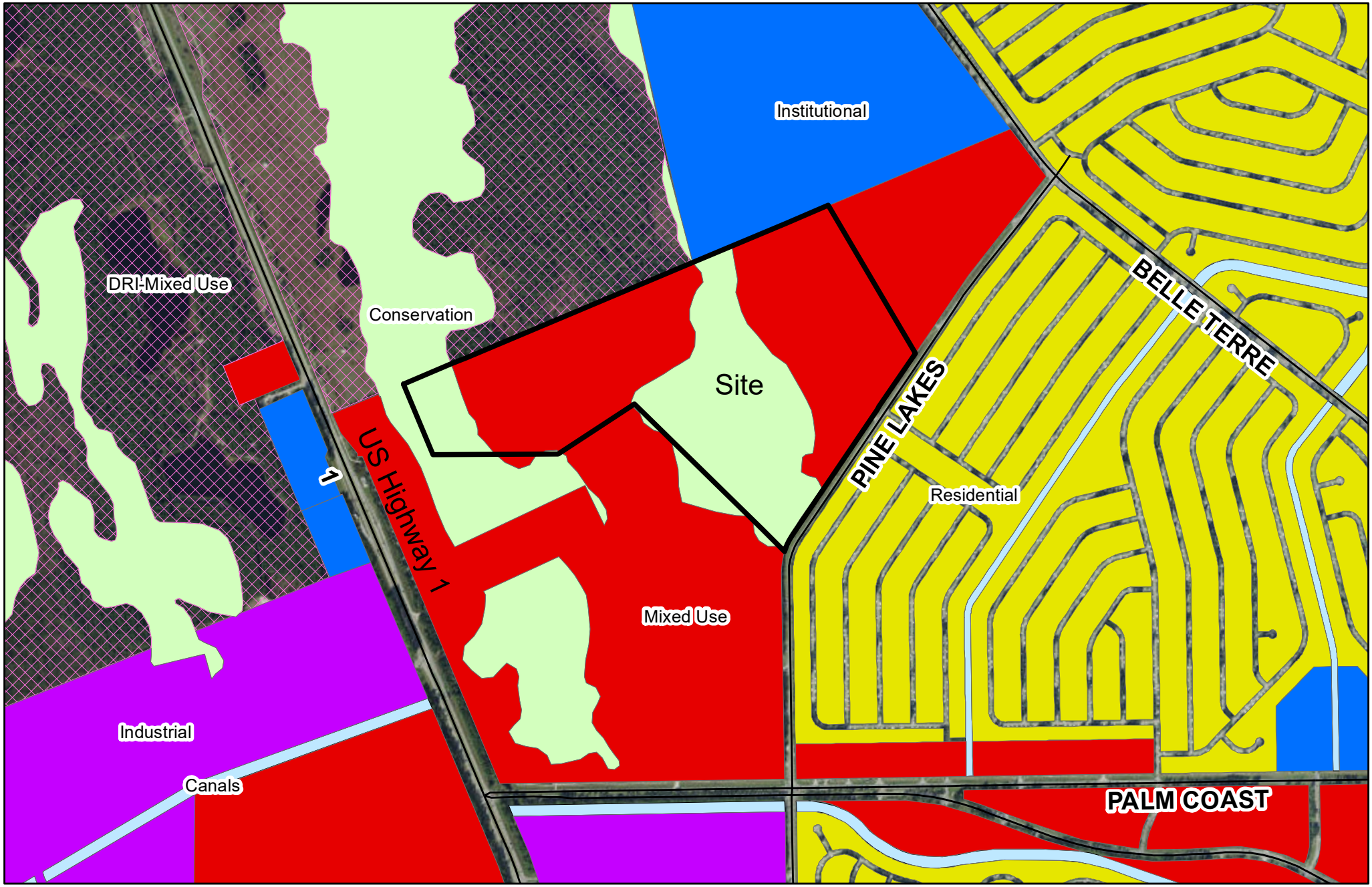
88

Map Provided By: Planning Division

Pointe Grand FLUM



Legend

- Palm Coast City Limits
- Pointe Grand

FLUM CATEGORY

- AGRICULTURE & TIMBERLANDS
- CONSERVATION
- Canals
- Conservation
- DRI-Mixed Use
- DRI-Urban Core
- Greenbelt
- Industrial
- Institutional
- Mixed Use
- Residential

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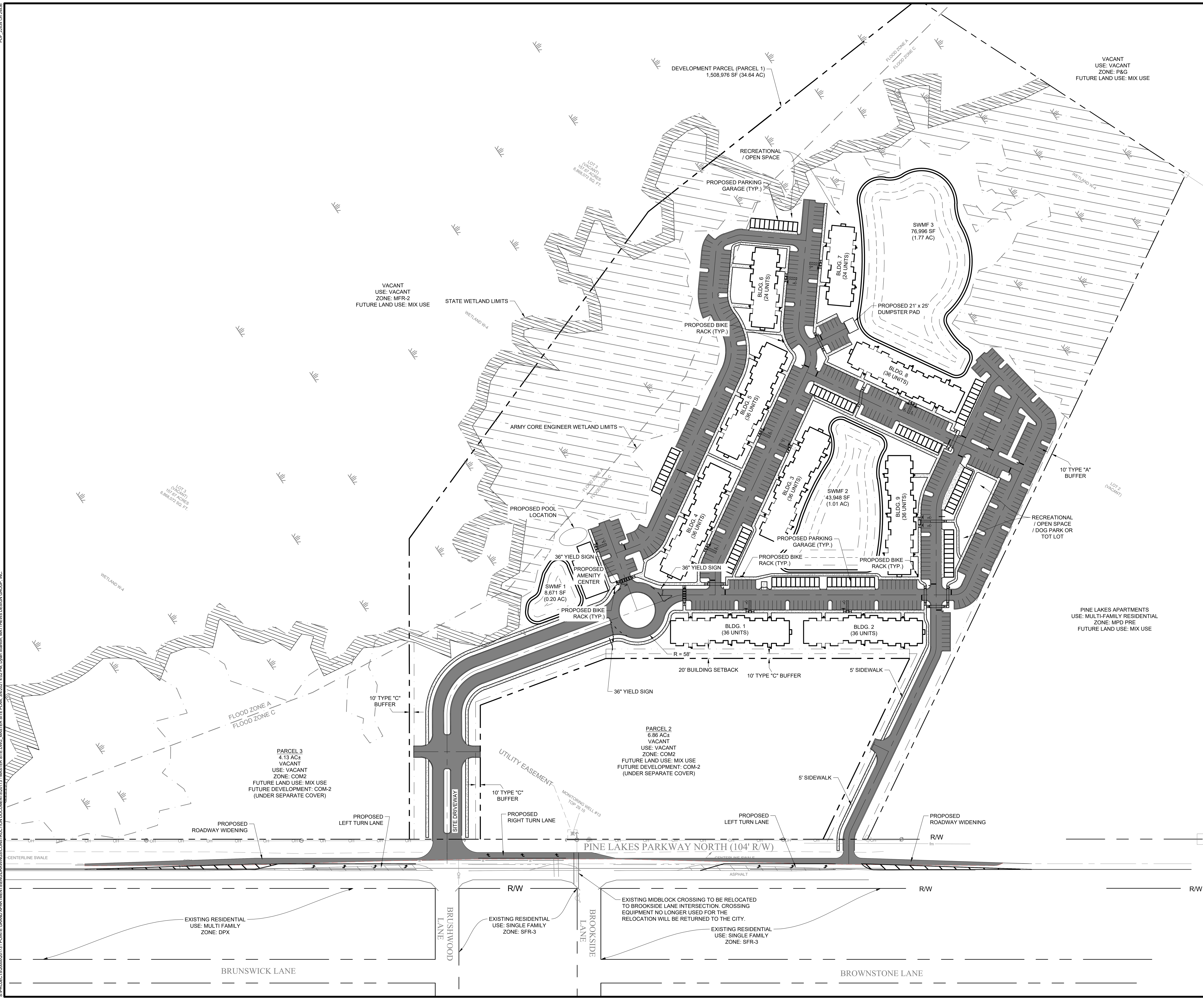
Map Provided By: Planning Division



PARCEL 1 SITE DATA TABLE

PARCEL 1 AREA	34.64 AC	1,508,976 SF
PROPOSED BUILDING FOOTPRINT		136,653 SF
PROPOSED SIDEWALK AREA		53,522 SF
PROPOSED VEHICULAR USE AREA		244,413 SF
PROPOSED POND AREA		129,615 SF
BUILDING PERCENTAGE		9.06%
SIDEWALK PERCENTAGE		3.55%
PAVEMENT PERCENTAGE		16.20%
POND PERCENTAGE		8.59%
TOTAL IMPERVIOUS		434,587 SF
TOTAL PERVIOUS		1,074,389 SF
TOTAL IMPERVIOUS % (ISR)		29%
TOTAL PERVIOUS %		71%
% BUILDING COVERAGE		9%
TOTAL BUILDING AREA		359,958 SF
FLOOR AREA RATIO (FAR)		23.9%
PARCEL NUMBER(S)		10-11-30-5115-00000-0030
PARCEL USE:		MULTI-FAMILY APARTMENTS
911 ADDRESS		PINE LIKES PARKWAY
FEMA PANEL NUMBER		12035C0110E
FLOOD ZONE		ZONE A + X
SETBACKS (FRONT/SIDES/BACK)		25' / 10' (20' ALONG STREET) / 20'
MAXIMUM BUILDING HEIGHT		42.75'
ZONING		MFR-2 & COM-2

PARKING CALCULATIONS

USE: MULTI FAMILY	=	2 SPACE PER	1 UNIT
UNITS	=	300 UNITS	600 SPACES
USE: AMENITY CENTER	=	1 SPACE PER	250 SF
UNITS	=	5,000 SF	20 SPACES
TOTAL REQUIRED	=	620 SPACES	
STANDARD PARKING	=	520 SPACES	
PARKING GARAGE	=	100 SPACES	
TOTAL PROVIDED	=	620 SPACES	
ADA REQUIRED	=	12 SPACES	
ADA PROVIDED	=	12 SPACES	

BIKE CALCULATIONS

PROPOSED VEHICLE PARKING	=	600 SPACES
TOTAL REQUIRED	=	30 SPACES
TOTAL PROVIDED	=	32 SPACES

HATCH LEGEND

ASPHALT PAVEMENT (2 LIFTS)	
CONCRETE SIDEWALK	

OVERALL SITE NOTES:

A. ALL UNITS SHALL BE 2-BEDROOMS WITH A MINIMUM SIZE OF 1,153 SF AND 1,007 SF (NET)

B. ONE GARAGE SPACE WILL BE PROVIDED FOR 100 UNITS

C. STOP SIGNS TO BE 30" AND YIELD SIGNS ARE TO BE 36"

REGISTERED ENGINEER
CHRIS L. BUTTERMORE, P.E.
CA#26535 FL #78811

REVISIONS

NO.	DATE	DESCRIPTION
1	02-24-21	REVISED PER COPC COMMENTS
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DSGN BY:	CLB
DWG BY:	DTS
CHK BY:	RAM
DATE:	02-24-21
JOB No.:	20173

MATTHEWS DESIGN GROUP
P.O. BOX 3126, 7 WALDO STREET
ST. AUGUSTINE, FL 32084
PHONE: 904.826.1334 • FAX: 904.826.4547
INFO@MDGINC.COM

MASTER SITE PLAN

POINTE GRAND APARTMENTS
CITY OF PALM COAST
PREPARED FOR
HILLPOINTE LLC

SHEET No.
2
OF 4

March 10, 2021

Bill Hoover, AICP
Senior Planning
City of Palm Coast
160 Lake Avenue
Palm Coast, FL 32164
386-986-3744

RE: Pointe Grand Apartments – Community Meeting Summary
MDG #20173

On February 22nd, 2021, notifications were sent out to all residents within the vicinity of the proposed project. The list of recipients was provided by the City of Palm Coast. The notifications summarized the proposed development, what the community meeting was for, and the date and location of the meeting.

On March 9th, 2021, the community meeting was held in the Days Inn at 120 Garden St N, Palm Coast, FL 32137 at 5:30pm and was led by Chris Buttermore and Shannon Acevedo from Matthews Design Group. Also in attendance were the applicants/developers, H. Walker from CTSi (traffic consultant), and multiple City staff members. No residents attended the meeting. All parties involved in the project stayed until 6:30pm to ensure no residents showed up. At 6:30pm we closed the community meeting.

Sincerely yours,
MATTHEWS DESIGN GROUP, INC.

Chris Buttermore, P.E.
Senior Project Manager

MATTHEWS DESIGN GROUP, INC.
PO BOX 3126 • 7 Waldo Street • St. Augustine • Florida • 32084
Phone: 904.826.1334 • Fax: 904.826.4547

MATTHEWS
DESIGN GROUP

February 22, 2021

RE: Notification of Neighborhood Meeting for Pointe Grand Apartments
MDG #20173
Subject Parcel #10-11-30-5115-00000-0030

Dear Neighboring Property Owner:

A neighborhood meeting to discuss the development of the above referenced parcel located along Pine Lakes Parkway, is scheduled for Tuesday March 9th, located at the Days Inn by Wyndham Palm Coast, 120 Garden St N, Palm Coast, FL 32137 at 5:30 pm. (Days Inn is just north of Home Depot.)

The subject parcel has been zoned General Commercial (COM-2) along Pines Lakes Parkway and Multi-Family Residential – 2 (MFR-2) behind the COM-2 land since 2005 when the City created their initial official zoning map. The COM-2 land will not be developed at this time except for two shared access roads with the MFR-2 land. Since the COM-2 land is about 375 feet deep and the trees on it will remain (except for along the two shared access roads) the MFR-2 project will be primarily hidden from view from residents living on the southeast side of Pine Lakes Parkway and motorists traveling along Pine Lakes Parkway.

The meeting is to not to discuss whether multi-family uses are appropriate for the site since the property's zoning has allowed that use since 2005, but rather for neighboring property owners to know what is proposed and to view and comment on the conceptual site layout as it goes through the Master Site Plan review process. A Map of the subject property showing the preliminary Master Site Plan layout is attached for your use and reference.

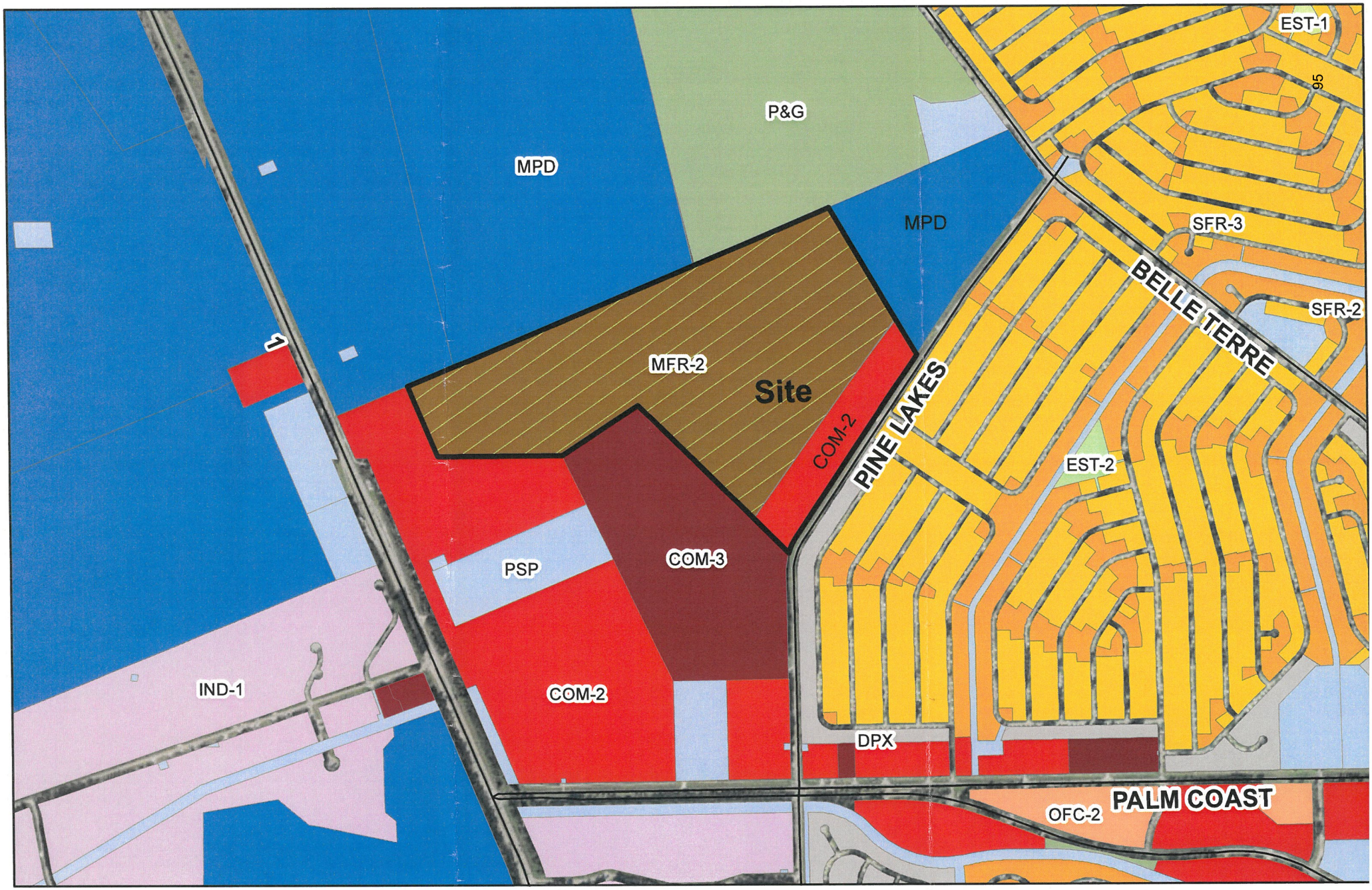
Due to COVID-19, masks will be required to attend the meeting. If you have any questions, please do not hesitate to contact me at (904) 826-1334. We look forward to seeing you at the above referenced meeting.

Sincerely yours,
MATTHEWS DESIGN GROUP, INC.

Chris Buttermore, P.E.
Senior Project Manager

MATTHEWS DESIGN GROUP, INC.
PO BOX 3126 • 7 Waldo Street • St. Augustine • Florida • 32084
Phone: 904.826.1334 • Fax: 904.826.4547

Pointe Grand



Legend

Palm Coast City Limits	COM-2	IND-1	OFC-2	SFR-1
Pointe Grand	COM-3	IND-2	P&G	SFR-2
Zoning	DPX	MFR-1	PRS	SFR-3
AC	EST-1	MFR-2	PSP	SFR-4

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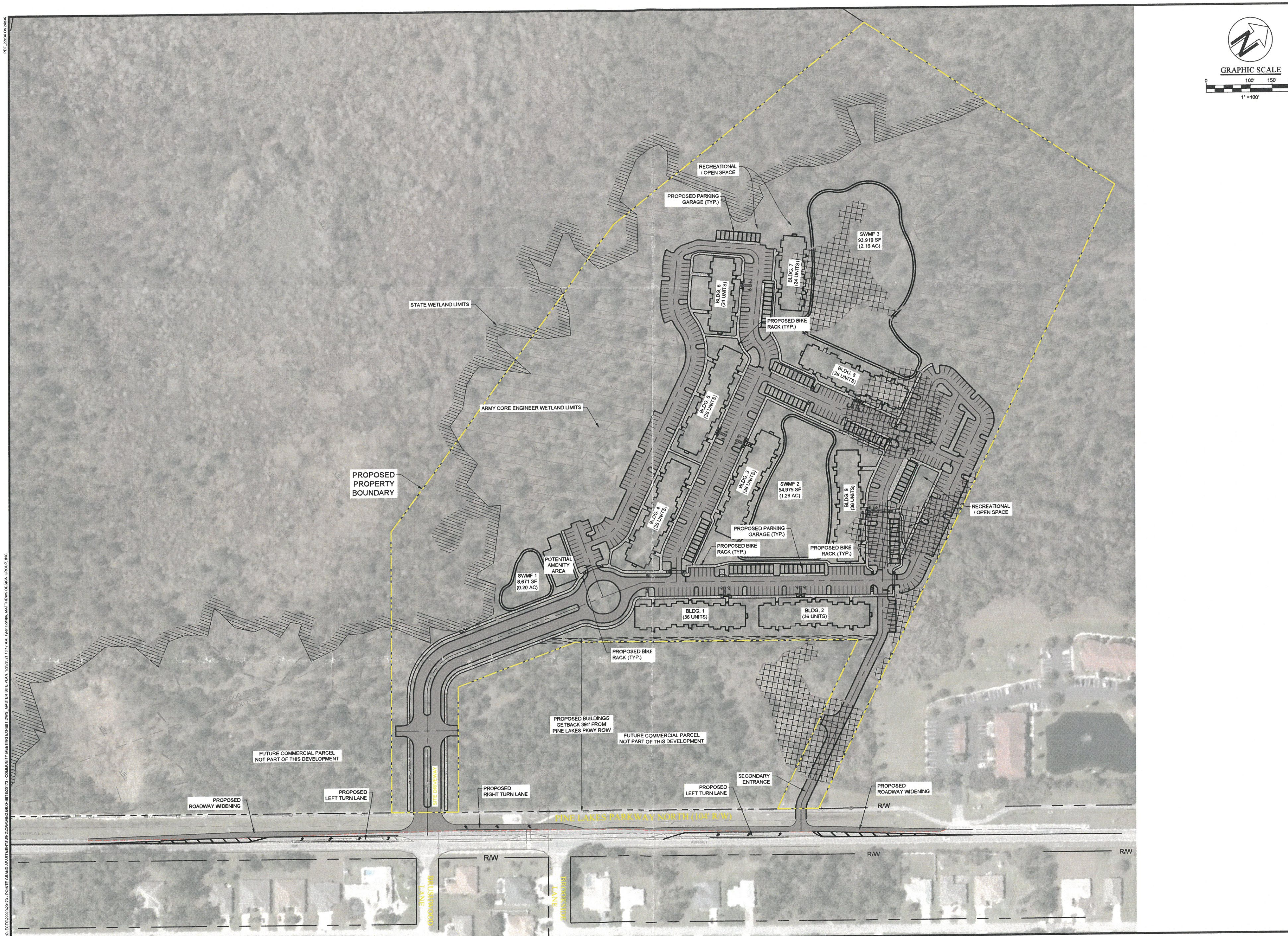
Map Provided By: Planning Division



GRAPHIC SCALE
0
100'
150'
200'
1" =100'
RECREATIONAL / OPEN SPACE
PROPOSED PARKING GARAGE (TYP.)
SWMF 3 93,919 SF (2.16 AC)
BLDG. 7 (24 UNITS)
BLDG. 6 (24 UNITS)
STATE WETLAND LIMITS
PROPOSED BIKE RACK (TYP.)
BLDG. 8 (36 UNITS)
ARMY CORE ENGINEER WETLAND LIMITS
BLDG. 5 (36 UNITS)
PROPOSED PROPERTY BOUNDARY
BLDG. 3 (36 UNITS)
SWMF 2 54,975 SF (1.26 AC)
BLDG. 9 (36 UNITS)
BLDG. 4 (36 UNITS)
RECREATIONAL / OPEN SPACE
PROPOSED PARKING GARAGE (TYP.)
PROPOSED BIKE RACK (TYP.)
PROPOSED BIKE RACK (TYP.)
POTENTIAL AMENITY AREA
SWMF 1 8,671 SF (0.20 AC)
BLDG. 1 (36 UNITS)
BLDG. 2 (36 UNITS)
PROPOSED BIKE RACK (TYP.)
PROPOSED BUILDINGS SETBACK 391' FROM PINE LAKES PKWY ROW
FUTURE COMMERCIAL PARCEL NOT PART OF THIS DEVELOPMENT
FUTURE COMMERCIAL PARCEL NOT PART OF THIS DEVELOPMENT
PROPOSED ROADWAY WIDENING
PROPOSED LEFT TURN LANE
PROPOSED RIGHT TURN LANE
PROPOSED LEFT TURN LANE
SECONDARY ENTRANCE
PROPOSED ROADWAY WIDENING
PINE LAKES PARKWAY NORTH
R/W

REGISTERED ENGINEER
CHRIS L. BUTTERMORE, P.E.
CA#26535 FL.#78811

REVISIONS		
NO.	DATE	DESCRIPTION

DSGN BY:	CLB
DWG BY:	DTS
CHK BY:	RAM
DATE:	XX-XX-XX
JOB No.:	20173

MATTHEWS DESIGN GROUP
P.O. BOX 3126, 7 WALDO STREET
ST. AUGUSTINE, FL 32084
PHONE: 904.826.1334 • FAX: 904.826.4547
INFO@MDGINC.COM

COMMUNITY MEETING EXHIBIT
POINTE GRAND APARTMENTS
CITY OF PALM COAST
PREPARED FOR
CLIENT

SHEET No.
1
OF 1

Pointe Grand Apartments

Transportation Analysis

City of Palm Coast Council Meeting

Tuesday, April 20, 2021

Rajesh Ramn K. Chindalur, P.E., PTOE
H. Walker, P.E., RSP, CPM

Study Area

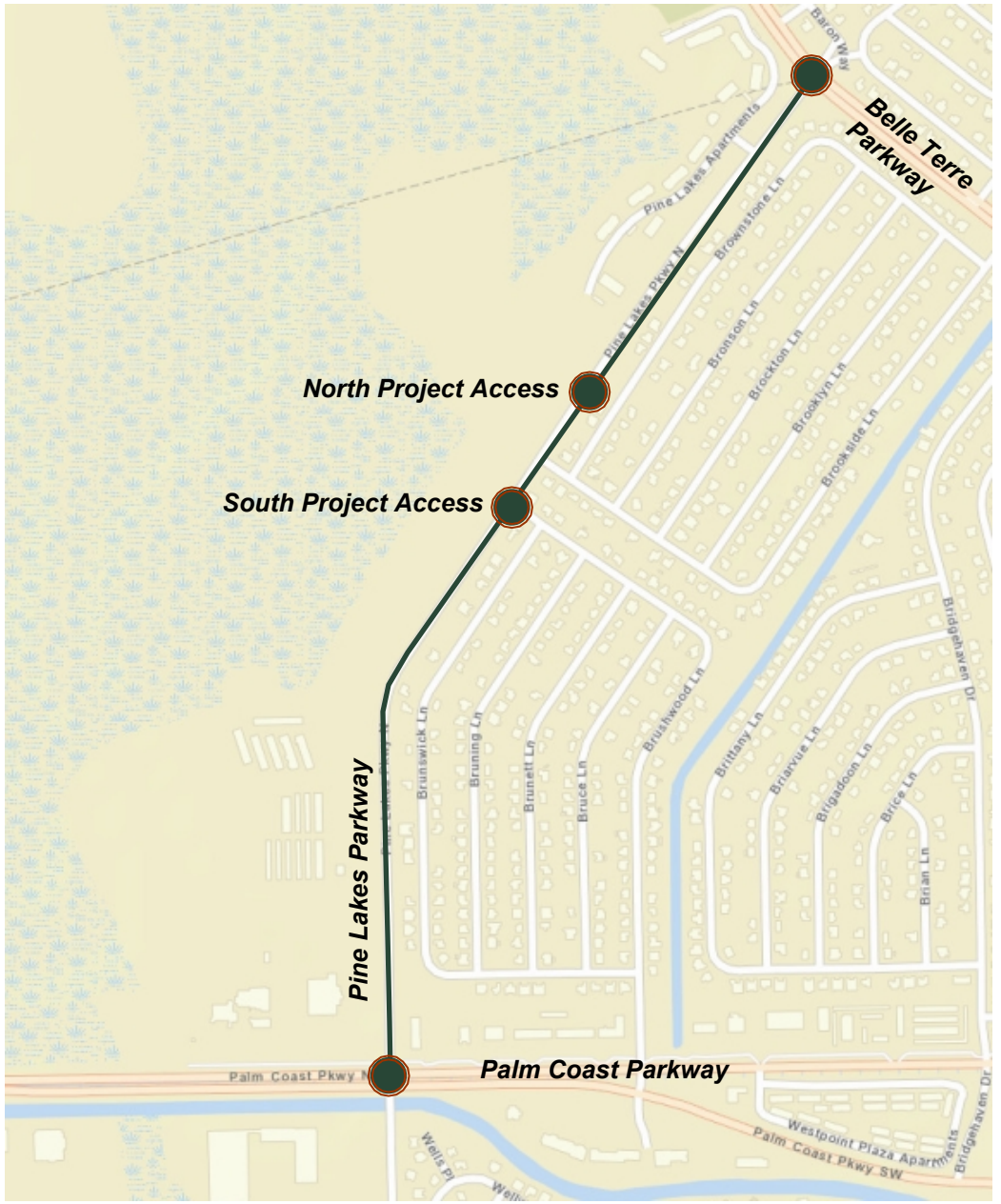
Segment ——

Pine Lakes Parkway

- Belle Terre Parkway (N) to Palm Coast Parkway

Intersections ●

- Pine Lakes Parkway at Palm Coast Parkway
- Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane
- Pine Lakes Parkway at North Project Access Driveway
- Pine Lakes Parkway at Belle Terre Parkway

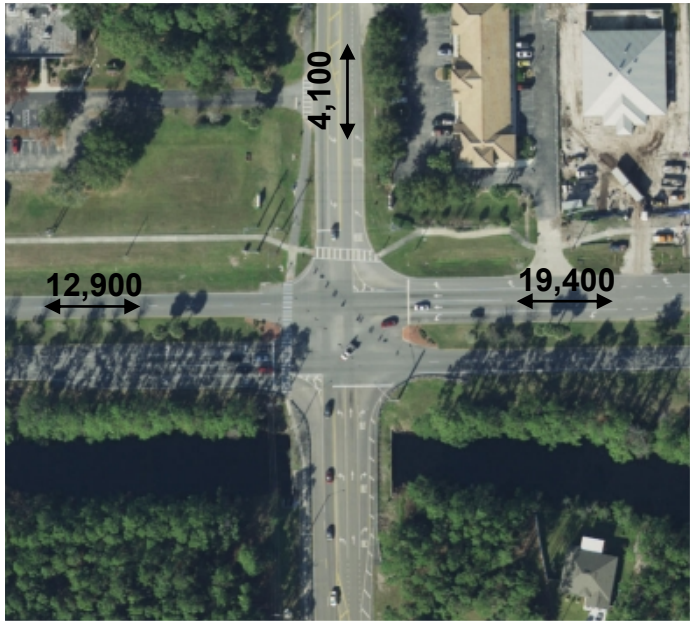


Existing Conditions

Pine Lakes Parkway
- 2-lane undivided roadway
- 45 mph posted speed
- 4,100 AADT (2019)

Palm Coast Parkway
- 4-lane divided roadway
- 45 mph posted speed
- 12,900 AADT (2019) - west
- 19,400 AADT (2019) - east

Belle Terre Parkway
- 4-lane divided roadway
- 45 mph posted speed
- 14,800 AADT (2019) - west
- 15,800 AADT (2019) - east



Segment Analysis

Link 3000: Pine Lakes Parkway from Belle Terre Parkway (N) to Palm Coast Parkway

	Trips					
Phase	Existing	Vested	Project	% of MSV	Total	% of MSV
01	365	221	132	8.3%	718	44.9%
02	365	221	294	18.4%	880	55.0%

	Level of Service (LOS)			
Phase	Adopted	w/o Vested Trips	w/ Vested Trips	Total Trips (Vested + Project)
01	D	C	C	C
02	D	C	C	C

≥ 45% Capacity Remains

Peak Hour Adopted LOS = D (1,600 MSV)

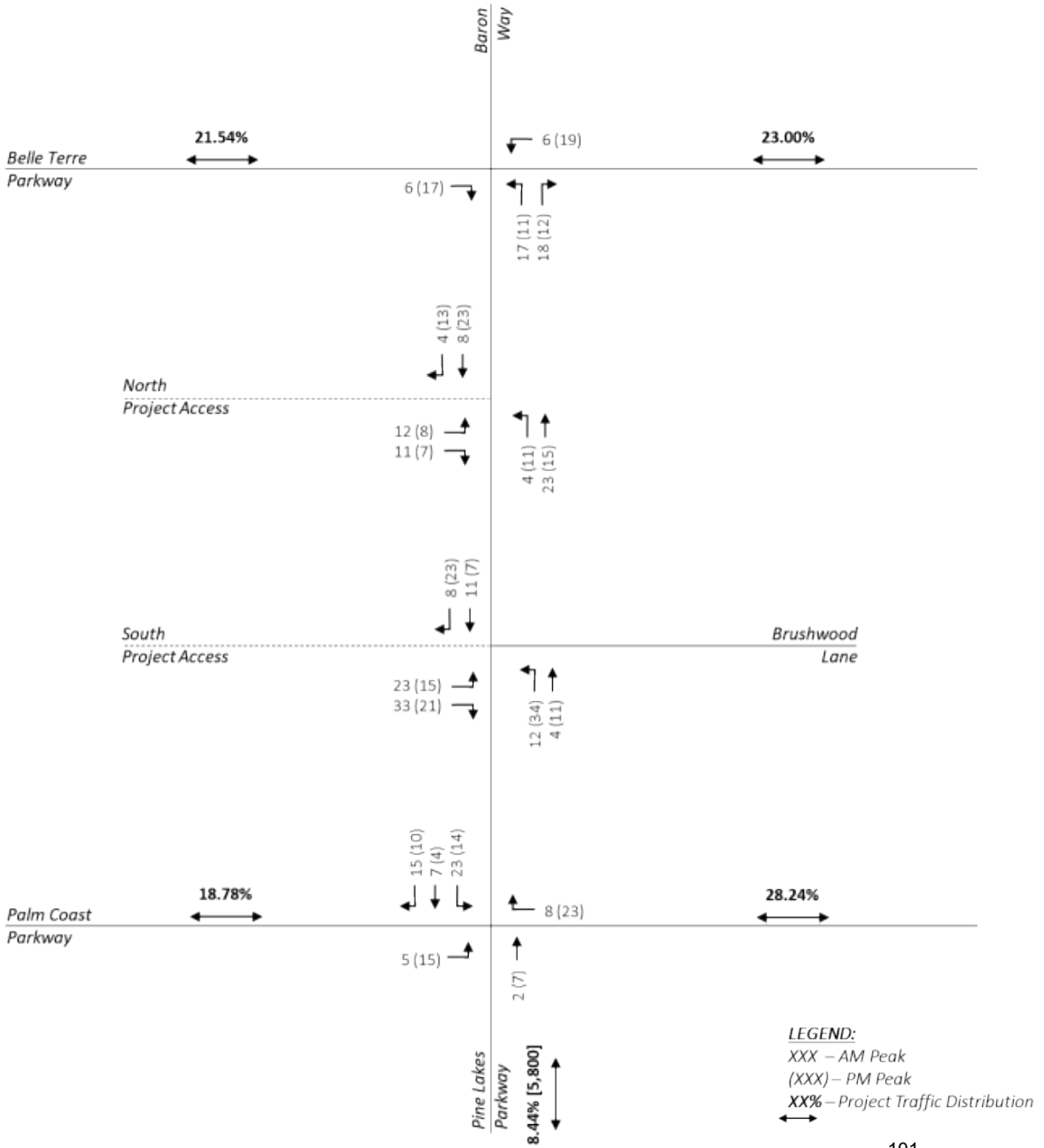
Project Traffic

Methodology

- Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition
- (LUC) 221 – Multifamily Housing (Mid Rise)
- 300 Dwelling Units (DU)

Generated Trips

Period	Entering	Exiting	Total
Daily	816 (50%)	816 (50%)	1,632
AM Peak	28 (26%)	80 (74%)	108
PM Peak	81 (61%)	51 (39%)	132



Traffic Projections

Growth factors applied to year 2020 existing traffic volumes

Traffic distribution developed using the City of Palm Coast Average Annual Daily Traffic (AADT)

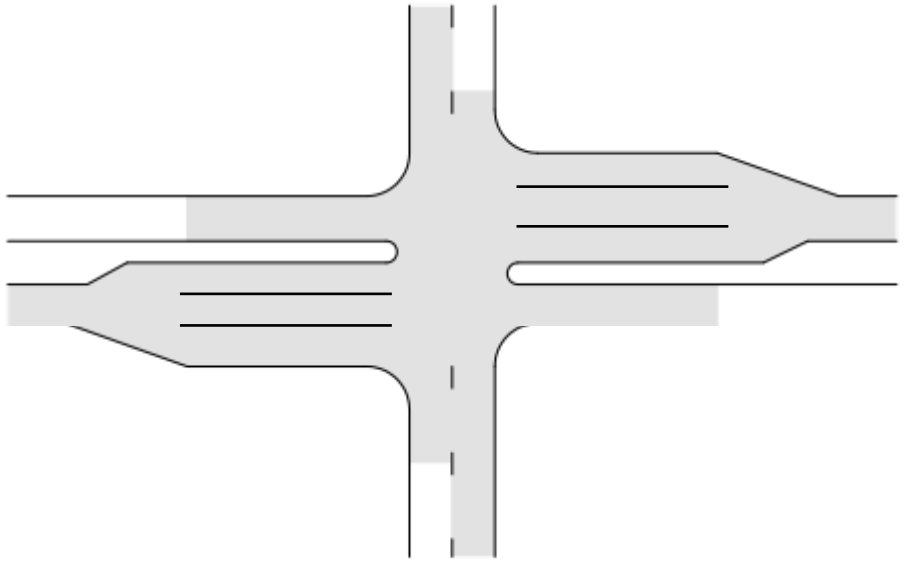
Turn Lane Evaluation

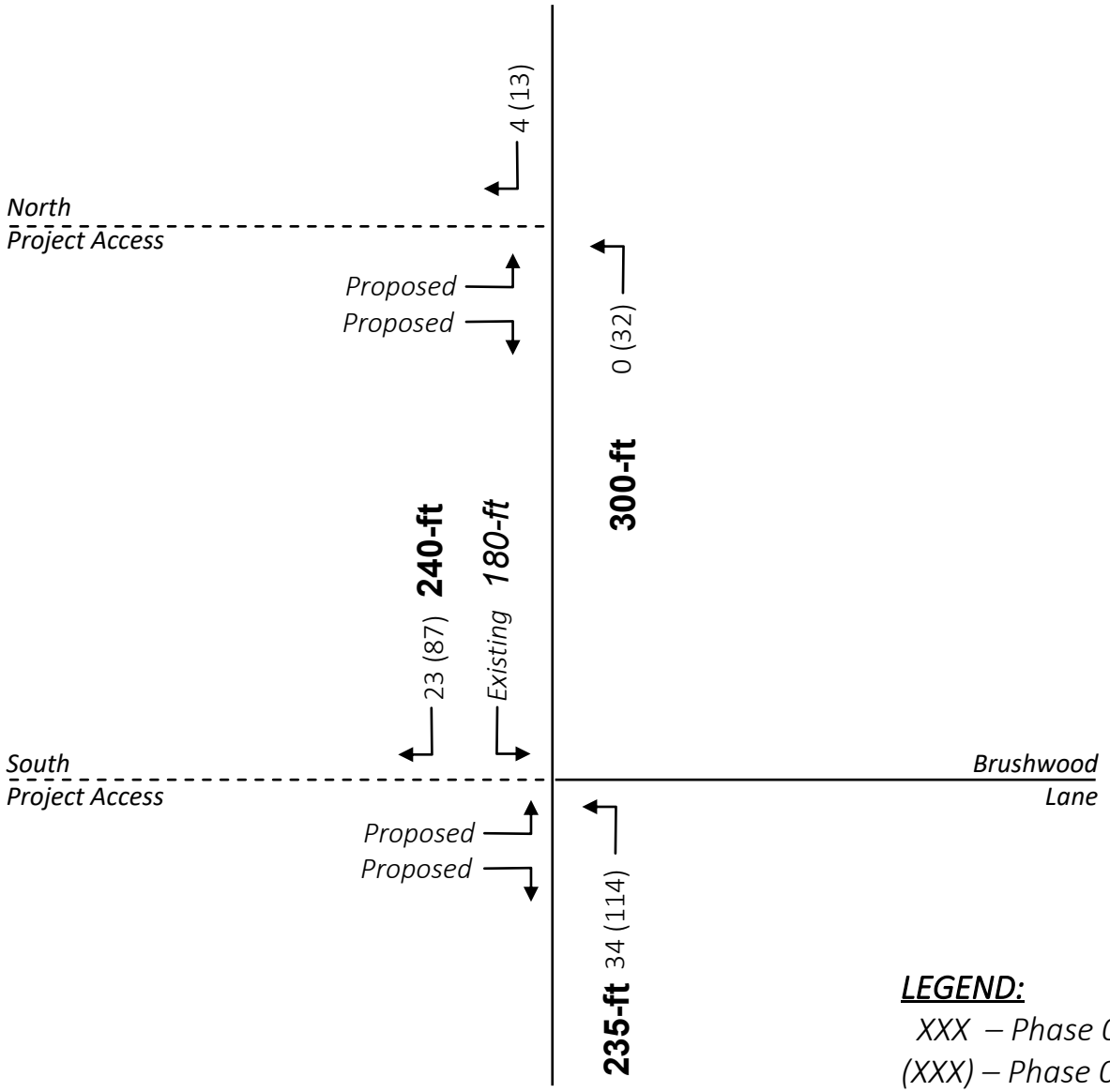
Goals

- Maintain/Improve throughput traffic
- Reduce conflicts

Requirements (peak hour)

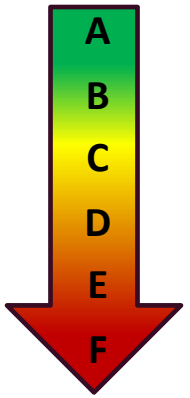
- Left turn lane ≥ 20 Left-Turning Vehicle (LTV)
- Right turn lane ≥ 70 Right-Turning Vehicle (RTV)



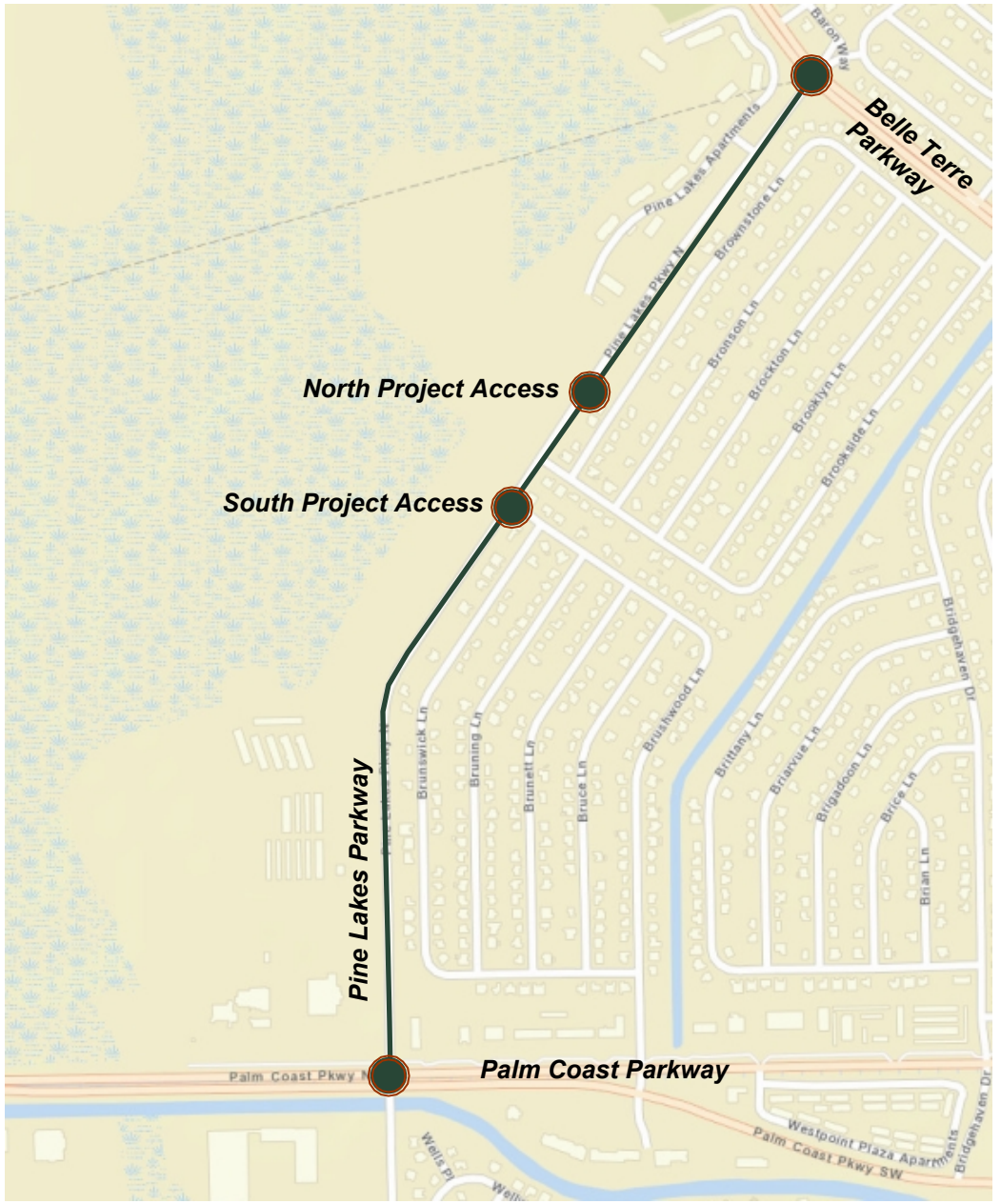


Operational Analysis

Level of service (LOS)
Analyze roadways and intersections by categorizing traffic flow and assigning **quality levels** of traffic based on performance measure like vehicle speed, density, congestion, etc.



	LOS		
	Existing	Phase 01	Phase 02
Pine Lakes Parkway	C	C	C
Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane	A / B	A / B	A /B
Pine Lakes Parkway at North Project Access Driveway	*N/A*		A / B



Alternative Mode Analysis

Sidewalk
- 5-feet (width)
- 240-feet (length) – isolated short segment

Shared use path
- 10-feet (width)
- Detoured approximately 65-feet at 45-degree angle to access
- Direct connect constrained by maintenance pad and landscaping features

Midblock crosswalk
- 40-feet crossing
- Traverse 2-travel lanes and southbound left turn lane gore

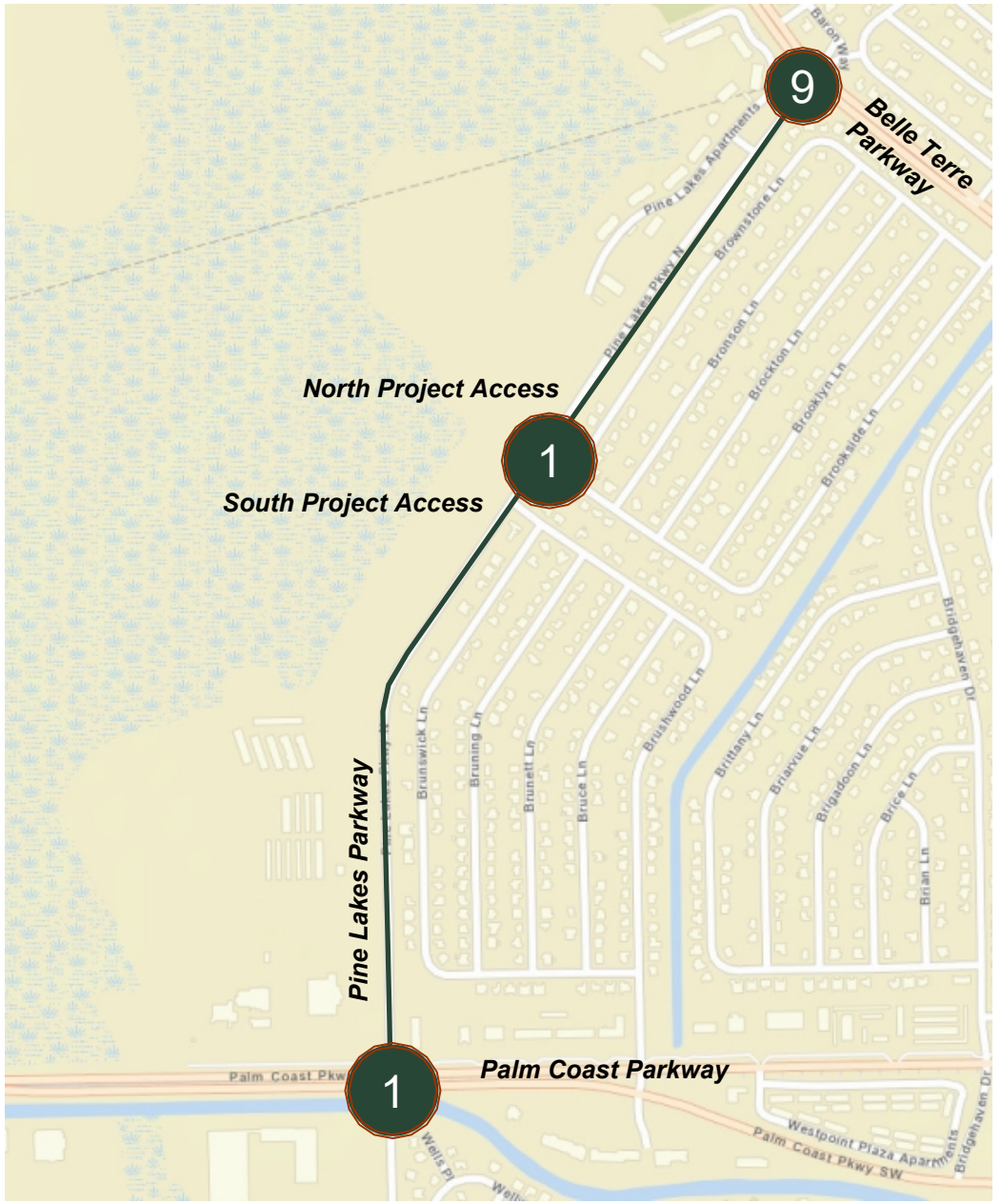
Crash Data Review

11 Crashes
- 5 Property Damage Only
- 6 Injuries

Bicycle Involved
- 2 Crashes (Belle Terre Parkway)

Pedestrian Involved
- 0 Crashes

Crash Type	2015	2016	2017	2018	2019
Rear-End	3		2		
Angle		1			
Sideswipe	1				
Lane Departure			1		
Other	1	2			
Total	**5**	**3**	**3**	**0**	**0**



Source: FDOT Data Hub All Crashes (2015 – 2019)

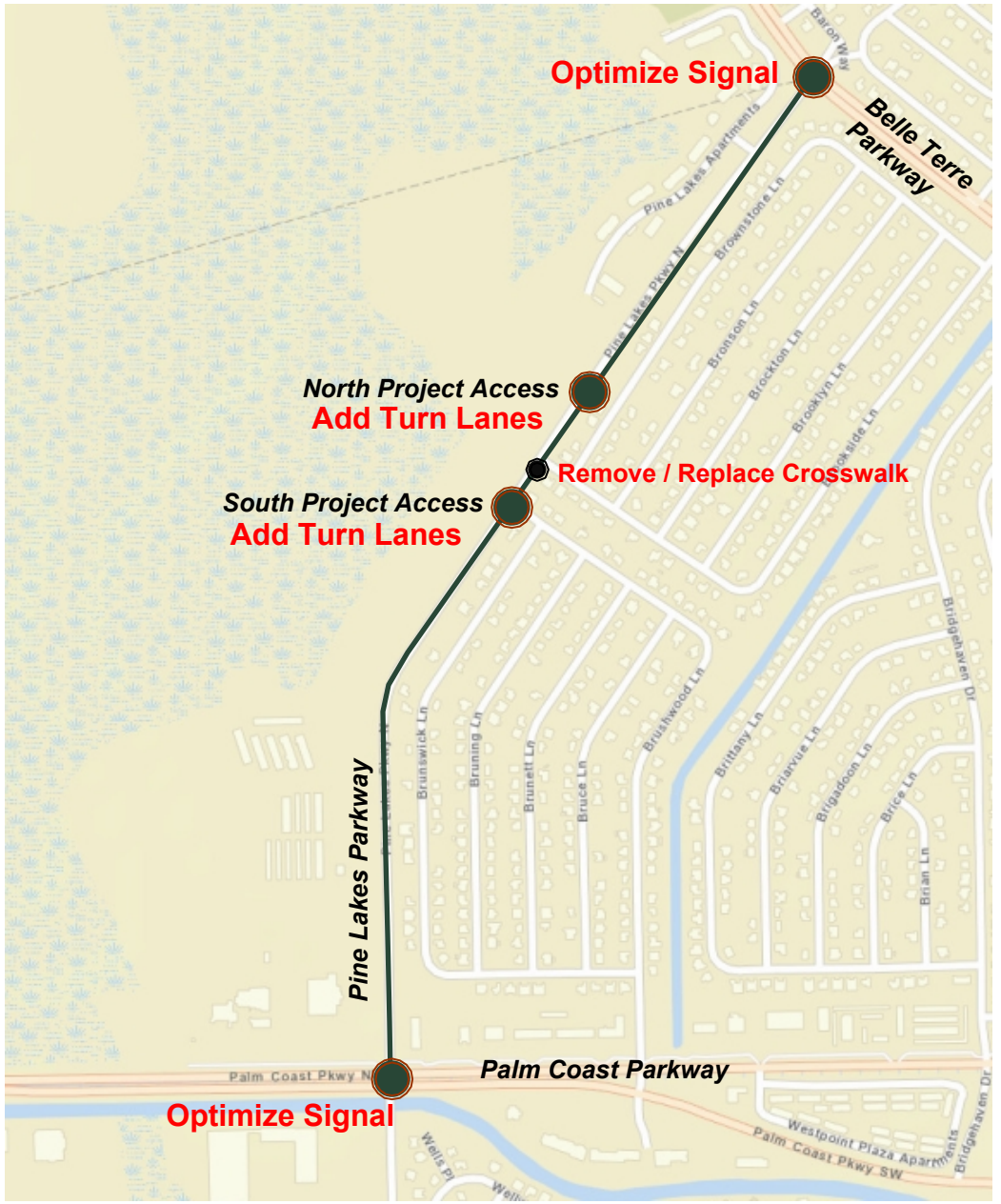
Recommendations

North Project Access
- Install 300-feet northbound left turn lane
- Maintain southbound left turn lane to Brookside Lane
- Construct dual eastbound exit lanes

South Project Access
- Install 235-feet northbound left turn lane
- Install 240-feet southbound right turn lane
- Maintain southbound left turn lane
- Construct dual eastbound exit lanes

Midblock crosswalk
- Remove existing
- Install high emphasis crosswalk at South Project Access OR northside of Brookside Lane

Traffic Signals
- Optimize cycle lengths and splits



Thank You

Any Questions

Pointe Grand Apartments

City of Palm Coast Council Meeting

Tuesday, April 20, 2021

Rajesh Ramn K. Chindalur, P.E., PTOE
H. Walker, P.E., RSP, CPM

POINTE GRAND APARTMENTS
TRAFFIC CONCURRENCY

City Council Public Hearing

April 20, 2021

Overview

- Chapter 7 of the LDC covers the City's concurrency standards and these are based on State Statutes and our Comprehensive Plan.

State Statute 163.3177 - Concurrency

- (5)(a) If concurrency is applied to transportation facilities, the local government comprehensive plan must provide the principles, guidelines, standards, and strategies, including adopted levels of service to guide its application.
- (5) (b) Local governments shall use professionally accepted studies to evaluate the appropriate levels of service.
- The schedule of facilities that are necessary to meet the adopted level of service shall be reflected in the capital improvement element.

State Statute 163.3177 Concurrency

- (5)(c) Local governments shall use professionally accepted techniques for measuring levels of service when evaluating potential impacts of a proposed development.
- (5)(d) The premise of concurrency is that the public facilities will be provided in order to achieve and maintain the adopted level of service standard.

Comprehensive Plan – Transportation Element

- Policy 2.1.1.1 – The City adopts a peak-hour level of service (LOS) of D for all collector roadways, arterials and highways. A LOS D is characterized by generally free-flowing conditions with measurable congestion during certain peak-hour periods and at other times of the day that may last for short periods of time.
- Policy 2.1.2.1 – The City shall continue to enforce, and update as necessary, the concurrency review management regulations in the LDC to require developers to mitigate for the impact of project traffic on roadways.

LDC and Development Orders

- Applicant will pay $1809 per unit (2021 rate) or a total of $542,700 in transportation impact fees.
- These fees will be used towards paying for transportation improvements in the City's 5-year CIE.
- LDC Section 7.04.04. *Standards for review.*
- A. The City shall not issue a final development order, or an extension or amendment to an approved development order, unless there is sufficient available capacity of public facilities to meet the established levels of service.

Questions

Prepared for:

MATTHEWS DESIGN GROUP

&

CITY OF PALM COAST, FLORIDA — PALM COAST — INCORPORATED 1999

Prepared by:

CTSI

Chindalur Traffic Solutions, Inc.
8833 Perimeter Park Boulevard, Suite 103
Jacksonville, FL 32216
904.619.3368

Pointe Grand Apartments

Traffic Study

City of Palm Coast, Florida

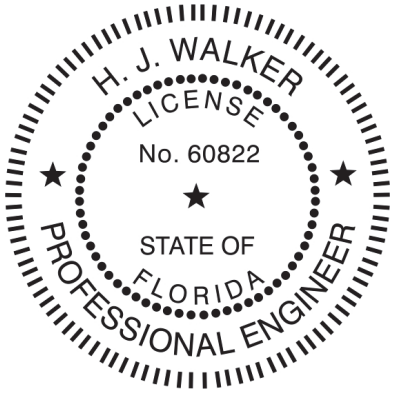
Project # 1055-200-035
Date: 01/21/2021

PROFESSIONAL ENGINEER CERTIFICATE

I, Holly J. Walker, PE #60822, certify that I currently hold an active license in the state of Florida and am competent through education or experience to provide engineering services in the civil discipline contained in this plan, print, specification, or report.

PROJECT:	**Pointe Grand Apartments –Traffic Study**
LOCATION:	City of Palm Coast, Florida
CLIENT:	Matthews Design Group, Inc.

I further certify that this plan, print, specification, or report was prepared by me or under my responsible charge as defined in Chapter 61G15-18.001 F.A.C. Moreover, if offered by a corporation, partnership, or through a fictitious name, I certify that the company offering the engineering services, Chindalur Traffic Solutions, Inc., 8833 Perimeter Park Boulevard, Suite 103, Jacksonville, Florida 32216, holds an active certificate of authorization #30806 to provide engineering service.



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Holly J Walker
2021.01.21 13:52:07 -05'00'

ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

CHINDALUR TRAFFIC SOLUTIONS, INC.
8833 PERIMETER PARK BOULEVARD, SUITE 103
JACKSONVILLE, FL 32216
CERTIFICATE OF AUTHORIZATION #30806
HOLLY J. WALKER, P.E. NO. 60822

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THIS DOCUMENT IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

Table of Contents

Figures

Tables

	Attachment
Attachment A	Project Site Plan (Matthews Design Group)
Attachment B	Methodology Document
Attachment C	ITE Information
Attachment D	City of Palm Coast Transportation Facility Status Report
Attachment E	Turning Movement Counts and FDOT Season Factors
Attachment F	City of Palm Coast Average Annual Daily Traffic (AADT)
Attachment G	Palm Coast Draft Turn Lane Technical Guidelines
Attachment H	Signal Timing and Phasing
Attachment I	Phase 01 Synchro Worksheets
Attachment J	Phase 02 Synchro Worksheets

Introduction

A mixed-use development is proposed for construction on Pine Lakes Parkway in the City of Palm Coast, Florida. The proposed development will be constructed in two (2) phases. Phase 01 consists of 300 apartments with an anticipated 2022 buildout. Phase 02 consists of a future commercial development of 86,640 square feet (SF) with an anticipated 2027 buildout. The location of the proposed development is shown in **Figure 01.** The main access to the proposed development will be provided via full access driveway on Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane as apart of Phase 01. A secondary full access driveway to the proposed development will be provided on Pine Lakes Parkway at North Project Access Driveway, approximately 850-feet to the east. A copy of the site plan provided by Matthews Design Group is included as **Attachment A**. A copy of the methodology document is included as **Attachment B**.

Trip Generation

Trip generation for the proposed development was estimated using the rates and equations for land use code (LUC) 221 – Multifamily Housing (Mid Rise) and LUC 820 – Shopping Center included in the Trip Generation Manual, 10th Edition published by the Institute of Transportation Engineers (ITE). The proposed development is anticipated to be built in two (2) Phases. Phase 01 is anticipated to include the apartments built by end of year 2022. Phase 02 includes commercial/retail built by end of year 2027. **Table 01** summarizes the trip generation from the proposed development. As shown in this table, the proposed development under Phase 01 is anticipated to generate a total of 108 AM peak/132 PM peak trips. Phase 02, the development is anticipated to generate 125 AM peak/410 PM Peak trips (cumulative). The ITE land use sheets are included as **Attachment C**.

Study Area

The details of the study area roadway segments were obtained from the City of Palm Coast. A copy of the City of Palm Coast Transportation Facility Status Report dated 02/11/2020 is included as **Attachment D**. The roadway study area link under investigation is shown in **Table 02**.

Existing Conditions

Pine Lakes Parkway is a two-lane undivided roadway with a posted speed of 45 miles per hour (mph). The annual average daily traffic (AADT) is 4,100 vehicles per day (vpd). Belle Terre Parkway is a four-lane divided roadway with a posted speed of 45 mph. The 2019 AADT is 14,800 vpd from the west approach and 15,800 vpd from the east approach of Pine Lakes Parkway. Palm Coast Parkway is a two-lane undivided roadway with a posted speed of 30 mph. The 2019 AADT is 12,900 vpd from the west approach and 19,400 vpd from the east approach of Pine Lakes Parkway. **Figure 02** shows existing conditions on Matanzas Woods Parkway, Belle Terre Parkway, and Old Terre Parkway at the Project Access Driveway locations.

Roadway Segment Analysis

The proposed project buildout conditions for Phase 01 and Phase 02 traffic volumes on the study roadway segment includes the existing traffic, exempt development traffic, and approved concurrency traffic data obtained from the City of Palm Coast Transportation Facility Status Report dated 02/11/2020 and the traffic from the proposed development. **Table 03** summarizes the segment analysis of the study area roadway segment. As shown in this table, the study area

roadway segment is currently operating at LOS C or better. This link is anticipated to continue operating at LOS C under Phase 01 and Phase 02 conditions.

Study Intersections

The following intersections and project site driveways were evaluated under Phase 01 and/or Phase 02 buildout conditions:

- Pine Lakes Parkway at Palm Coast Parkway
- Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane
- Pine Lakes Parkway at North Project Access Driveway
- Pine Lakes Parkway at Belle Terre Parkway

Planned and Programmed Improvements

A review of the River to Sea Transportation Planning Organization (TPO) Long Range Transportation Plan (LRTP), Priority Projects List (PPL), Transportation Improvement Program (TIP) and FDOT Work Program identified zero (0) projects within the one-mile study area of the proposed development.

Traffic Data Collection

Vehicle turning moving counts (TMCs) were collected during the AM peak period (7:00 AM – 9:00 AM) and PM peak period (4:00 PM – 6:00 PM) on December 16, 2020. The traffic counts were adjusted by applying a season factor of 1.05 to account for seasonal variations. The FDOT season factor was obtained from the FDOT Florida Traffic Online (FTO) website. **Figure 03** shows the year 2020 existing AM peak hour and PM peak hour traffic volumes at the study intersections. The turning movement counts and FDOT season factors are included as **Attachment E**.

Project Traffic Distribution and Assignment

Project traffic distribution on the study roadway segments and study intersections were developed using the City of Palm Coast Average Annual Daily Traffic (AADT) which is included as **Attachment F**. **Figure 02** includes the AADTs. Distribution was estimated based on the AADTs on the following roadway segments:

- Link 1205: Belle Terre Parkway from Bird of Paradise Drive to Pine Lakes Parkway
- Link 1210: Belle Terre Parkway from Pine Lakes Parkway to Bellaire Drive
- Link 2800: Palm Coast Parkway from US 1 to Pine Lakes Parkway
- Link 2810/2815: Palm Coast Parkway from Pine Lakes Parkway to Belle Terre Parkway
- Link 3000: Pine Lakes Parkway from Belle Terre Parkway to Palm Coast Parkway
- Link 3002: Pine Lakes Parkway from Palm Coast Parkway to Commerce Boulevard

Phase 01 Year 2022 Background Traffic Projections

The annual growth rate was obtained from the City of Palm Coast Transportation Facility Status Report dated 02/11/2020. The year 2022 background traffic volumes were obtained by applying growth factors to the year 2020 existing traffic volumes as follows:

- 1.100: Belle Terre Parkway from Bird of Paradise Drive to Pine Lakes Parkway
- 1.028: Belle Terre Parkway from Pine Lakes Parkway to Bellaire Drive
- 1.026: Palm Coast Parkway from US 1 to Pine Lakes Parkway
- 1.020: Palm Coast Parkway from Pine Lakes Parkway to Belle Terre Parkway

- 1.056: Pine Lakes Parkway from Belle Terre Parkway to Palm Coast Parkway
- 1.024: Pine Lakes Parkway from Palm Coast Parkway to Commerce Boulevard
- 1.020: Pine Lakes Parkway north of Belle Terre Parkway
- 1.020: Project driveways/side streets

Figure 04 shows the Phase 01 year 2020 background conditions traffic volumes.

Phase 01 Year 2022 Project Traffic

The trip distribution percentages were applied to the trip generation as shown in previously stated **Table 01** to obtain project traffic assignment at the study intersections. **Figure 05** shows the Phase 01 peak hour project traffic distribution and assignment.

Phase 01 Year 2022 Buildout Traffic Projections

The Phase 01 year 2022 buildout traffic volumes include year 2022 background traffic volumes and the project traffic assignment. **Figure 06** shows the Phase 01 year 2022 buildout conditions traffic volumes at each of the study intersections.

Phase 02 Year 2027 Background Traffic Projections

The year 2027 background traffic volumes were obtained by applying growth factors to the Phase 01 year 2022 traffic volumes as follows:

- 1.250: Belle Terre Parkway from Bird of Paradise Drive to Pine Lakes Parkway
- 1.070: Belle Terre Parkway from Pine Lakes Parkway to Bellaire Drive
- 1.065: Palm Coast Parkway from US 1 to Pine Lakes Parkway
- 1.050: Palm Coast Parkway from Pine Lakes Parkway to Belle Terre Parkway
- 1.140: Pine Lakes Parkway from Belle Terre Parkway to Palm Coast Parkway
- 1.060: Pine Lakes Parkway from Palm Coast Parkway to Commerce Boulevard
- 1.050: Pine Lakes Parkway north of Belle Terre Parkway
- 1.050: Project driveways/side streets

Figure 07 shows the Phase 02 year 2020 background conditions traffic volumes.

Phase 02 Year 2027 Project Traffic

The trip distribution percentages were applied to the trip generation as shown in previously stated **Table 01** to obtain project traffic assignment at the study intersections. **Figure 08** provides the Phase 02 year 2027 peak hour project traffic distribution and assignment.

Phase 02 Year 2027 Buildout Traffic Projections

The Phase 02 year 2027 buildout traffic volumes include year 2027 background traffic volumes and the project traffic assignment. **Figure 09** shows the Phase 02 year 2027 buildout conditions traffic volumes at each of the study intersections.

Left Turn Lane Evaluations

The turn lane evaluations were performed using the AM peak and PM peak traffic volumes under the buildout conditions of the proposed development at Phase 01 and Phase 02. The evaluation to determine the need and design for left turn lanes was performed using the Palm Coast Draft Turn

Lane Technical Guidelines on November 10, 2020. A copy of this criteria and guidance is included as **Attachment G**. **Table 04** summarizes the turn lane evaluations.

A left turn lane shall be provided at each access driveway of the project when a Left-Turning Vehicle (LTV) count during a Peak Hour from the City roadway entering that driveway meets or exceeds 20 left turns per peak hour for a 2-lane roadway with a posted speed limit of 45 mph.

Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane
As shown in **Figure 06** and **Figure 09**, a northbound left turn lane on Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane is anticipated be greater than the threshold of 20 LTV in the PM peak. A maximum of 34 northbound LTV is anticipated for Phase 01 Year 2022. A maximum of 114 northbound LTV is anticipated for Phase 02 Year 2027.

The required turn lane length of left turn lanes exiting the City street shall be determined by choosing the greater of:

- The minimum full width turn lane length shall be 75 feet.
- The sum of the deceleration length dimension from the Left Turn Lane Table plus the storage length dimension from the Storage Length Dimension Table - SLDT. Since Pine Lakes Parkway is a 2-lane roadway with less than 5,000 ADT, the storage length is based on 70% qualification.

A northbound 235-feet left turn lane is recommended on Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane.

There is an existing 175-feet (including 50-feet taper) southbound left turn lane on Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane. As shown in **Table 04**, a southbound left turn lane is not required. Hence, the existing length is adequate.

The development proposes a separate left turn exit lane, where any queue will be captured within the property.

Pine Lakes Parkway at North Project Access Driveway
As shown in **Figure 06** and **Figure 09**, a northbound left turn lane on Pine Lakes Parkway at North Project Access Driveway is anticipated be greater than the threshold of 20 LTV in the PM peak. A maximum of 32 northbound LTV is anticipated for Phase 02 Year 2027. A northbound 325-feet left turn lane is required. There is approximately 300-feet available to provide a northbound left turn lane due to an existing 180-feet southbound left turn lane accessing Brookside Lane. It is recommended that a northbound left turn lane be provided to fullest extent possible.

The development proposes a shared left/right turn exit lane, where any queue will be captured within the property. However, it is recommended that a separate left and right turn lane be provided as the maximum exiting volume exceeds 60 vehicles during the peak hours.

Right Turn Lane Evaluations
The turn lane evaluations were performed using the AM peak and PM peak traffic volumes under the buildout conditions of the proposed development at Phase 01 and Phase 02. The evaluation to determine the need and design for left turn lanes was performed using the Palm Coast Draft Turn

Lane Technical Guidelines on November 10, 2020. A copy of this criteria and guidance is included as **Attachment G**. **Table 04** summarizes the turn lane evaluations.

A right turn lane shall be provided at each access driveway of the project when a Right-Turning Vehicle (RTV) count during a Peak Hour from the City roadway entering that driveway meets or exceeds 70 right turns per peak hour for a 2-lane roadway with a posted speed limit of 45 mph.

Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane
As shown in **Figure 06** and **Figure 09**, a southbound right turn lane on Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane is anticipated be greater than the threshold of 70 RTV in the PM peak. A maximum of 23 southbound RTV is anticipated for Phase 01 Year 2022. A maximum of 87 southbound RTV is anticipated for Phase 02 Year 2027.

The required turn lane length of right turn lanes exiting the City street shall be determined by choosing the greater of:

- The minimum full width turn lane length shall be 75 feet.
- The sum of the deceleration length dimension from the Right Turn Lane Table plus the storage length dimension from the Storage Length Dimension Table - SLDT. The right turns were treated as free flow condition; therefore, storage length is based on 35% qualification.

A southbound 240-feet right turn lane is recommended on Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane. The recommended turn lane length is included in the intersection capacity analysis.

The development proposes a separate right turn exit lane, where any queue will be captured within the property.

Pine Lakes Parkway at North Project Access Driveway
As shown in **Figure 06** and **Figure 09**, a southbound right turn lane on Pine Lakes Parkway at North Project Access Driveway is anticipated be below the threshold of 70 RTV in the PM peak. A maximum of 48 southbound RTV is anticipated for Phase 02 Year 2027. Hence, a southbound right turn lane is not required.

The development proposes a shared left/right turn lane, where any queue will be captured within the property. However, it is recommended that a separate left and right turn lane be provided as the maximum exiting volume exceeds 60 vehicles during the peak hours.

Intersection Capacity Analysis
AM Peak and PM Peak capacity analysis of the study intersections were performed under the existing, background and buildout conditions of the proposed development for each of the project phases using Synchro 10 software. This software uses HCM 6th Edition procedures and methodologies in calculating LOS and delay at signalized intersections and un-signalized intersections. Existing signal timing and phasing information for the signalized study intersections were obtained from the City of Palm Coast and then optimized. The signal timings are included as **Attachment H.**

Year 2020 Existing and Phase 01

The HCM delay, LOS and 95th percentile queue lengths for all the critical approaches at the study intersections under the existing conditions, Phase 01 background conditions, and Phase 01 buildout conditions are summarized in **Table 05**. The Synchro worksheets are included in **Attachment I**.

As shown in **Table 05**, all the critical approaches of the study intersections are currently operating at LOS D or better and are anticipated to continue to operate at LOS D or better under year 2022 background and year 2022 buildout conditions.

Phase 02

As shown in **Table 06**, all the critical approaches of the project access driveways are anticipated to continue to operate at LOS D or better under the year 2027 background and year 2027 buildout conditions.

Alternative Mode Analysis

A 240-feet pedestrian sidewalk is provided on east side of Pine Lakes Parkway between Brushwood Lane and Brookside Lane. A shared use path is provided on the west side of Pine Lakes Parkway from Palm Coast Parkway to Belle Terre Parkway. An existing midblock crosswalk is provided approximately 65-feet south of Brookside Lane. Pedestrians and bicyclists are detoured approximately 65-feet at 45-degree angle to access the shared use path. A direct connect to the shared use path is constrained due to a maintenance pad and landscaping features including a park bench and trash cans. The crossing is 40-feet in width traversing two (2) travel lanes and the gore area for the southbound left turn lane to Brushwood Lane. The current configuration results in three (3) conflict points with the potential for pedestrians/bicyclists weaving between vehicles in the turn lane storage.

The turn lane evaluation identified that a 240-feet southbound right turn lane is required on Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane. This would increase midblock crosswalk crossing to 52-feet in width traversing two (2) travel lanes and the gore area for the southbound left turn lane to Brushwood Lane and the southbound right turn lane at South Project Access Driveway. The current midblock crosswalk and the addition of a southbound right turn lane results in four (4) conflict points and the potential for pedestrians/bicyclists weaving between two (2) turn lanes vehicle storage.

It is recommended that the existing midblock crosswalk be removed and relocated to the northside of the intersection of Brookside Lane. The relocation would increase visibility by placing the crossing in front of the southbound left turn lane on Lake Pines Parkway at Brookside Lane. Additionally, it will be before the beginning of the southbound right turn lane on Pine Lakes Parkway at South Project Access Driveway.

Proportionate Share Mitigation

As shown in **Table 05** and **Table 06** the buildout conditions for Phase 01 and Phase 02 do not adversely impact traffic. Hence, proportionate share mitigation is not required.

Summary and Conclusions

A mixed-use development is proposed for construction on Pine Lakes Parkway in the City of Palm Coast, Florida. The proposed development will be constructed in two (2) phases. Phase 01 consists of 300 apartments with an anticipated 2022 buildout. Phase 02 consists of a future commercial development of 86,640 square feet (SF) with an anticipated 2027 buildout. The following summarizes the findings of the analysis:

- The main access to the proposed development will be provided via full access driveway on Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane as apart of Phase 01. A secondary full access driveway to the proposed development will be provided on Pine Lakes Parkway at North Project Access Driveway, approximately 850-feet to the east apart of Phase 02.

- The proposed development under Phase 01 is anticipated to generate a total of 108 AM peak/132 PM peak trips. Under Phase 02, the development is anticipated to generate 125 AM peak/410 PM Peak trips (cumulative).

- The study area roadway segment is currently operating at LOS C or better and is anticipated to continue operating at LOS C under Phase 01 and Phase 02 conditions.

- Project traffic distribution on the study roadway segments and study intersections were estimated based on the existing AADT on each of the study roadway segments.

- Vehicle turning moving counts (TMCs) were collected during the AM peak period (7:00 AM – 9:00 AM) and PM peak period (4:00 PM – 6:00 PM) on December 16, 2020. The traffic counts were adjusted by applying a season factor of 1.05 to account for seasonal variations.

- Phase 01 year 2022 background traffic volumes were obtained by applying growth factors to the year 2020 existing traffic volumes.

- Phase 02 year 2027 background traffic volumes were obtained by applying growth factors to the Phase 01 year 2022 traffic volumes.

- A northbound 235-feet left turn lane is recommended on Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane.

  There is an existing 175-feet (including 50-feet taper) southbound left turn lane on Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane. A southbound left turn lane is not required. Hence, the existing length is adequate. A separate left and right turn lane is recommended exiting North Project Access Driveway where any queue will be captured within the property.

- A southbound 240-feet right turn lane is recommended on Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane. The development proposes a separate right turn exit lane, where any queue will be captured within the property.

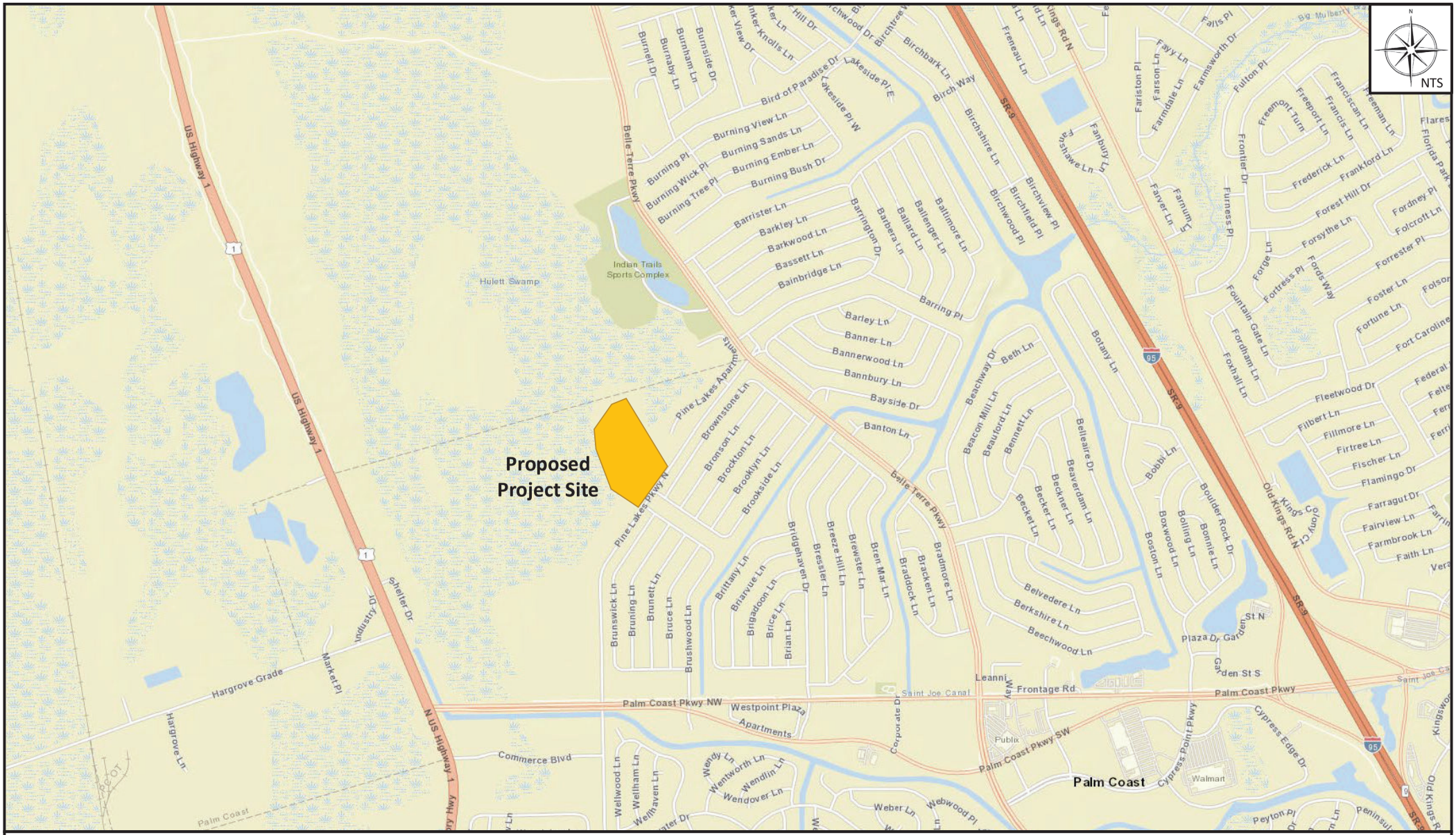
- A northbound 325-feet left turn lane is required on Pine Lakes Parkway at North Project Access Driveway. There is approximately 300-feet available to provide a northbound left turn lane due to an existing 180-feet southbound left turn lane accessing Brookside Lane. It is recommended that a northbound left turn lane be provided to fullest extent possible.

- All critical approaches of the study intersections are currently operating at LOS D or better and are anticipated to continue to operate at LOS D or better under Phase 01 year 2022 background and year 2022 buildout conditions.

- All critical approaches of the project access driveways are anticipated to continue to operate at LOS D or better under Phase 02 year 2027 background and year 2027 buildout conditions.

- It is recommended that the existing midblock crosswalk be removed and relocated to the northside of the intersection of Brookside Lane. The relocation would increase visibility by placing the crossing in front of the southbound left turn lane on Lake Pines Parkway at Brookside Lane. Additionally, it will be before the beginning of the southbound right turn lane on Pine Lakes Parkway at South Project Access Driveway.

- Proportionate share mitigation is not required.



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Jacksonville FL 32216
Phone: (904) 619-3368
www.ctrafficsolutions.com

Figure 01 – Location Map

Pointe Grand Apartments – Traffic Study
Palm Coast, Florida

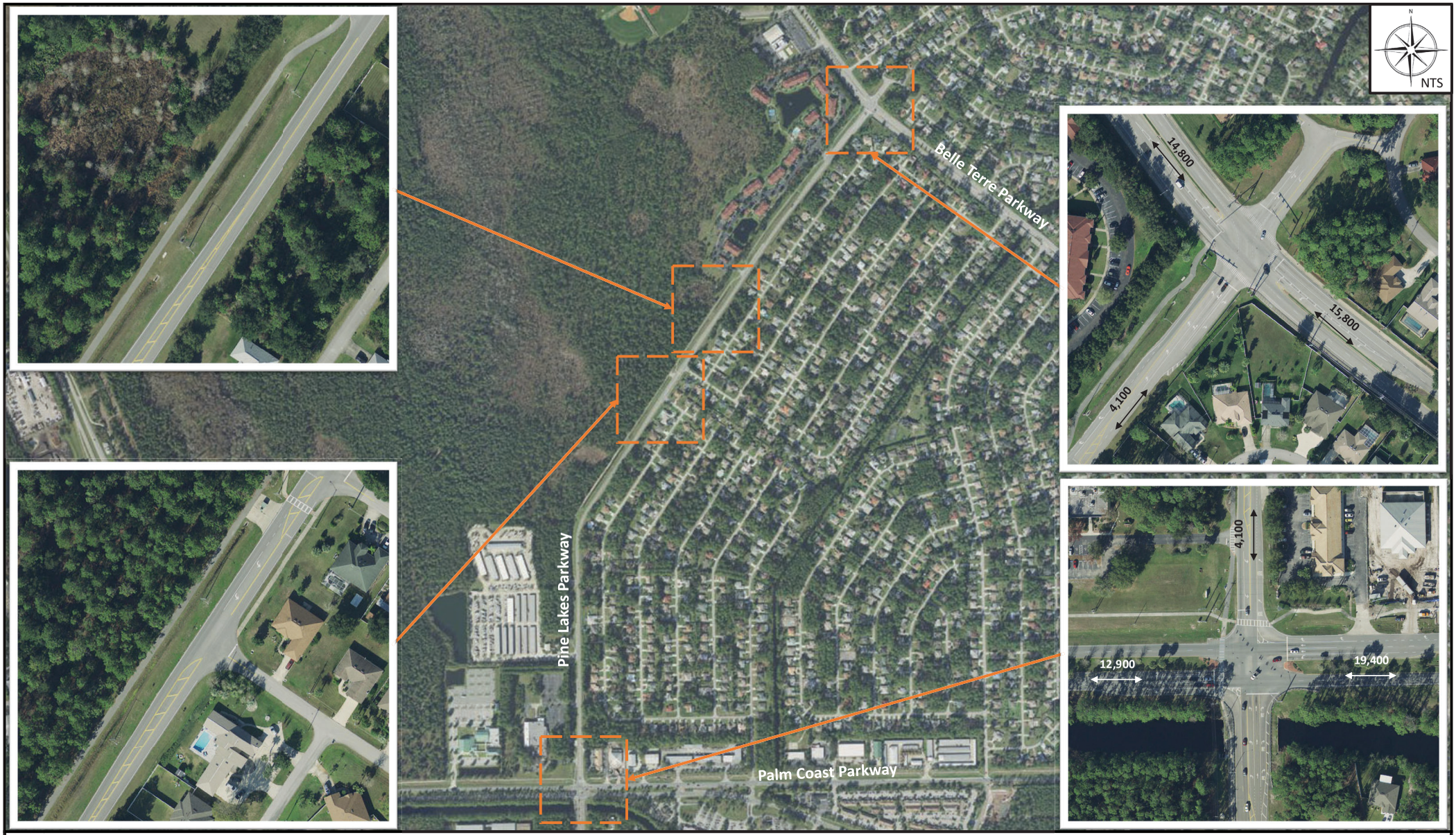

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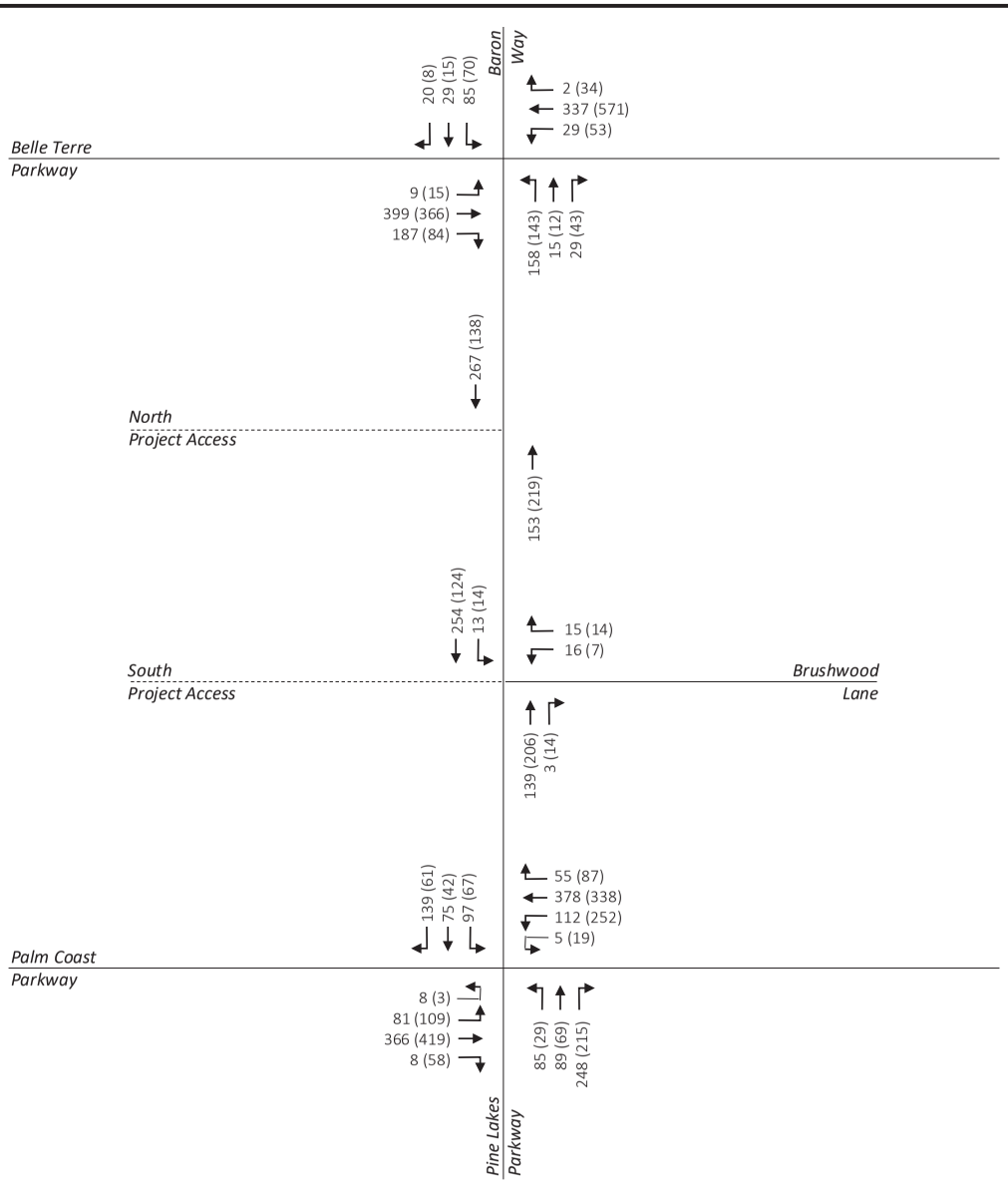
Figure 02 – Existing Conditions

Pointe Grand Apartments – Traffic Study
Palm Coast, Florida



NTS

LEGEND:

XXX – AM Peak

(XXX) – PM Peak

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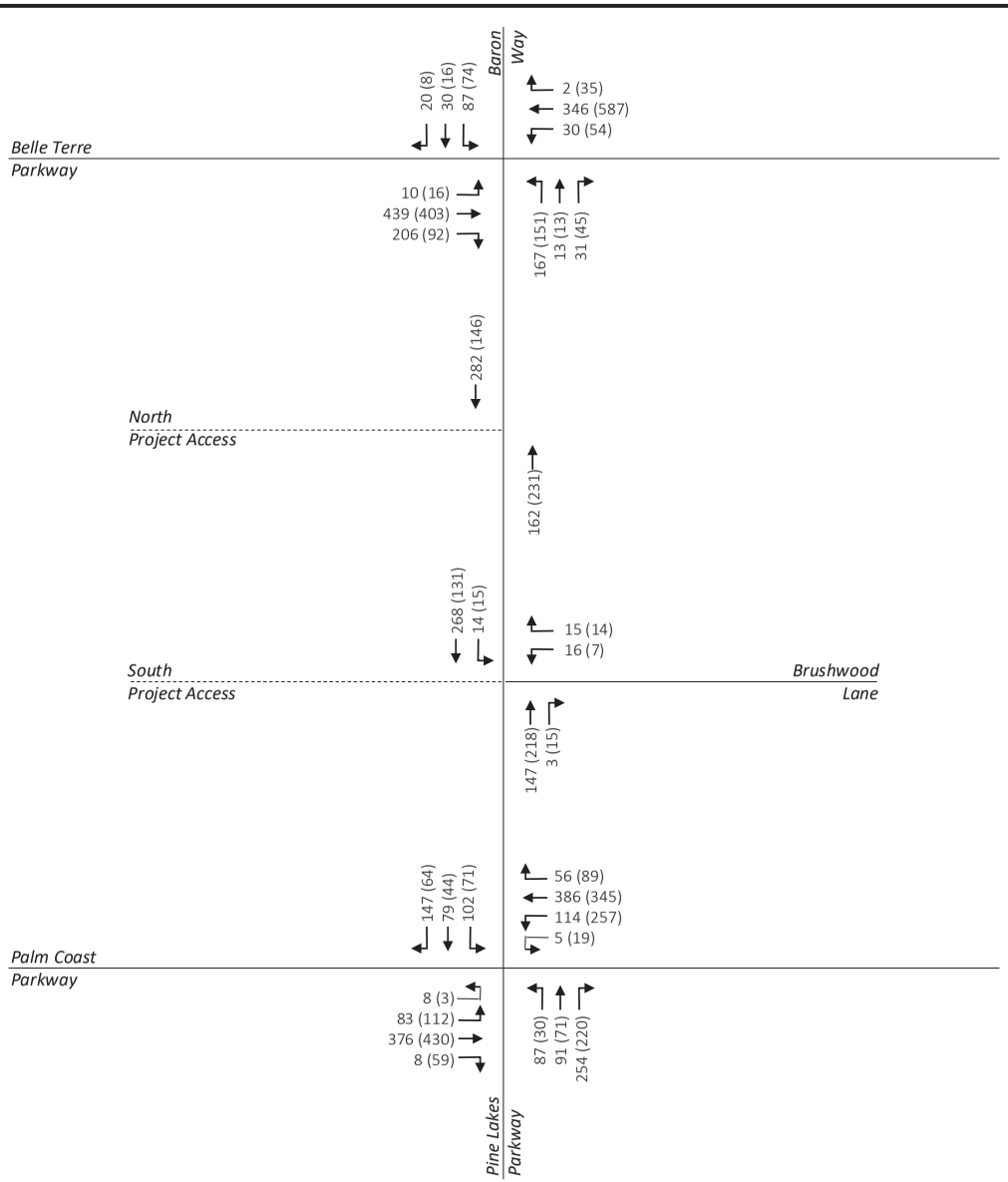
Figure 03 – Existing Year 2020 AM and PM Peak Hour Traffic Volumes

Pointe Grand Apartments – Traffic Study
Palm Coast, Florida



LEGEND:

XXX – AM Peak

(XXX) – PM Peak

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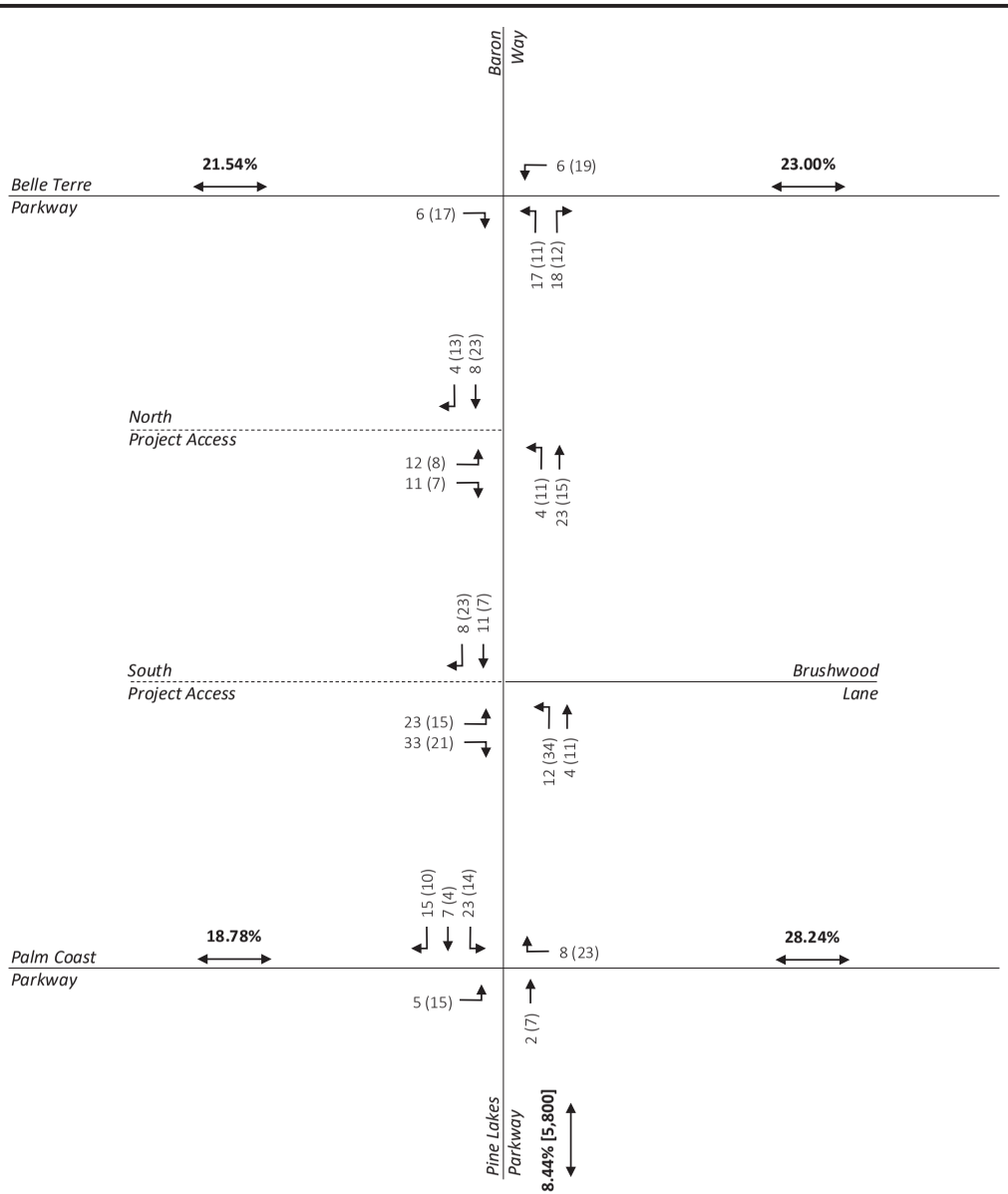
Figure 04 – Phase 01 Background Year 2022 AM and PM Peak Hour Traffic Volumes

Pointe Grand Apartments – Traffic Study
Palm Coast, Florida



LEGEND:

XXX – AM Peak

(XXX) – PM Peak

XX% – *Project Traffic Distribution*

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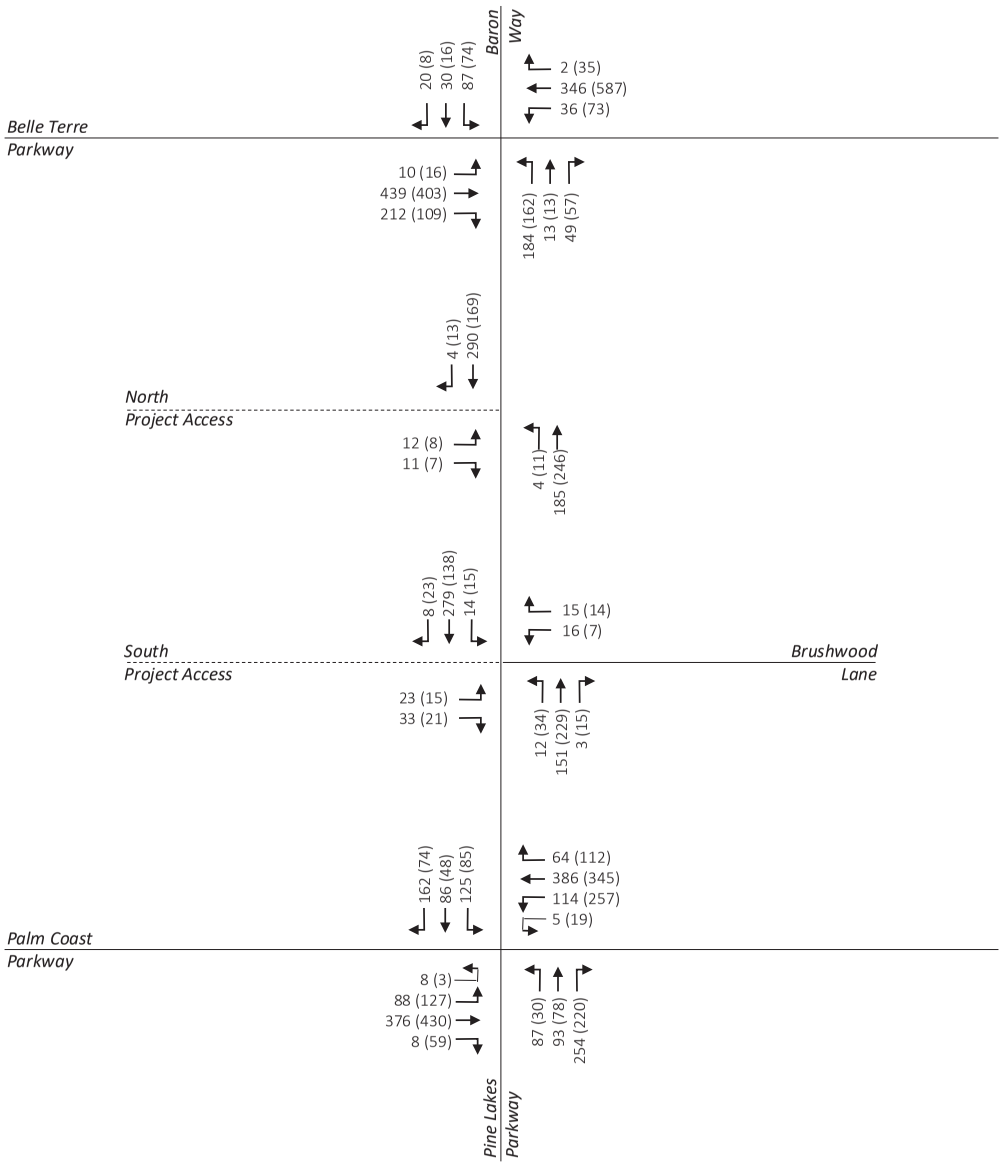
Figure 05 – Phase 01 Project Traffic Distribution and Assignment

Pointe Grand Apartments – Traffic Study
Palm Coast, Florida



LEGEND:

XXX – AM Peak

(XXX) – PM Peak

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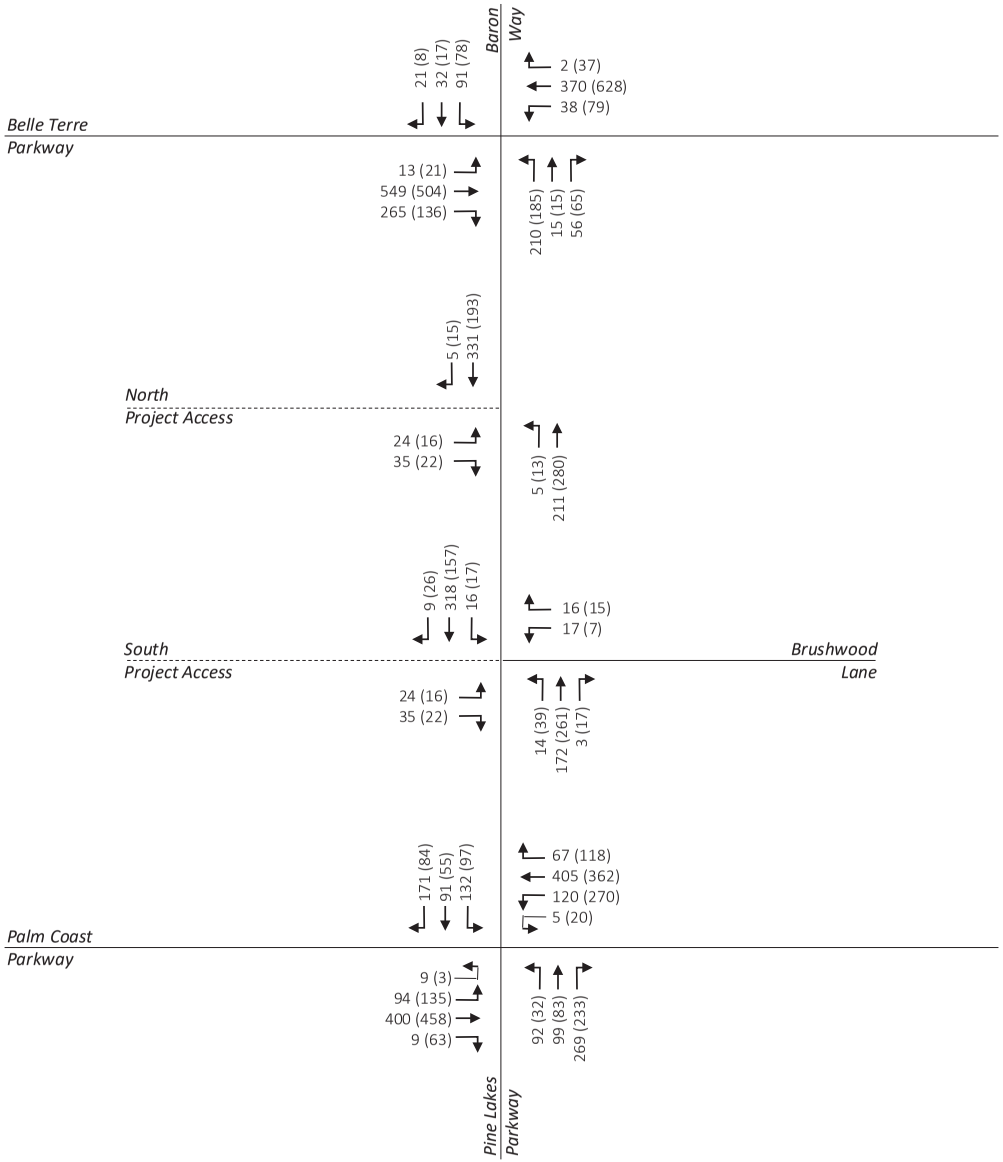
Figure 06 – Phase 01 Buildout Year 2022 AM and PM Peak Hour Traffic Volumes

Pointe Grand Apartments – Traffic Study
Palm Coast, Florida



NTS

LEGEND:

XXX – AM Peak

(XXX) – PM Peak

Figure 07 – Phase 02 Background Year 2027 AM and PM Peak Hour Traffic Volumes

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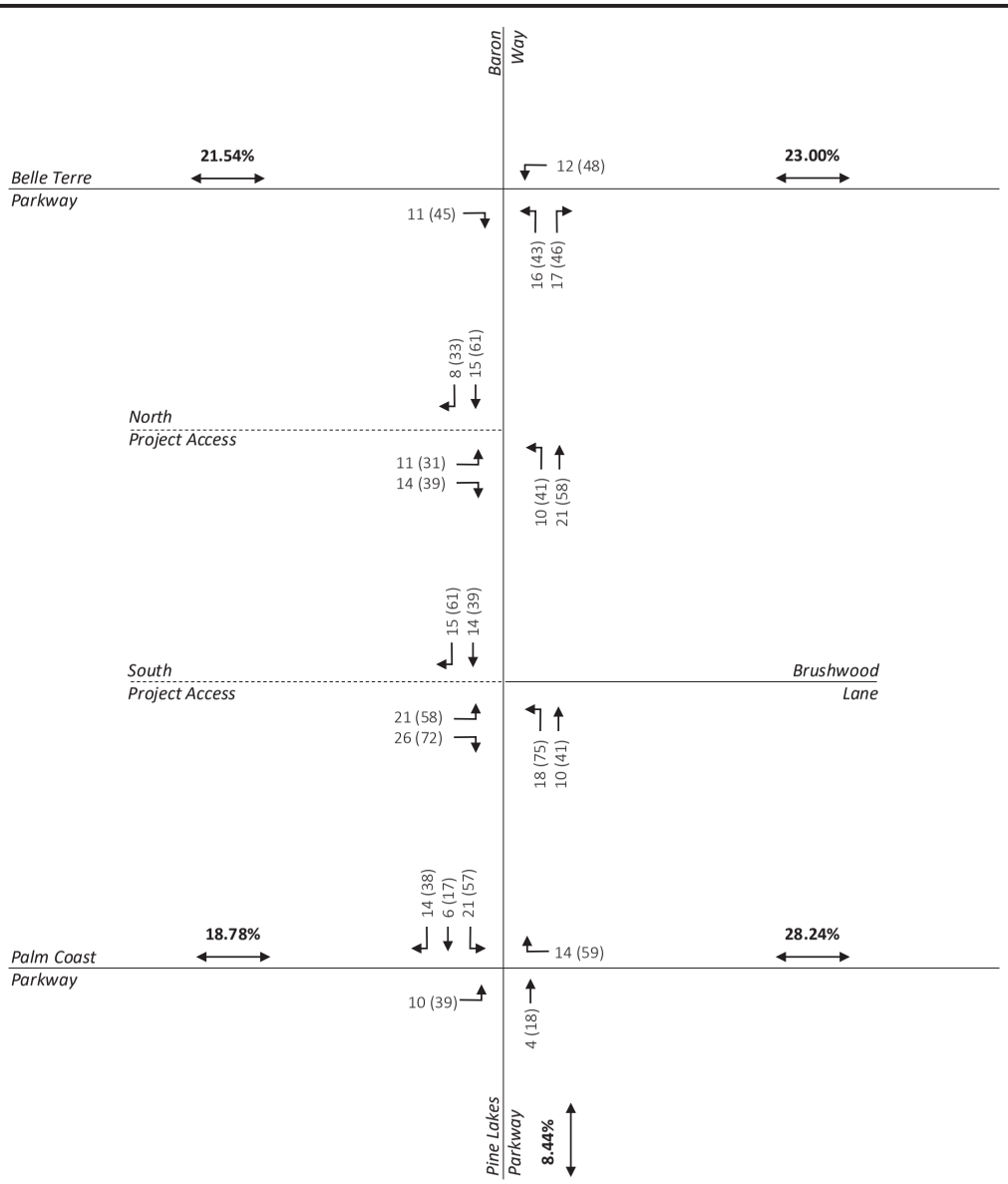
Pointe Grand Apartments – Traffic Study
Palm Coast, Florida



LEGEND:

XXX – AM Peak

(XXX) – PM Peak

XX% – *Project Traffic Distribution*

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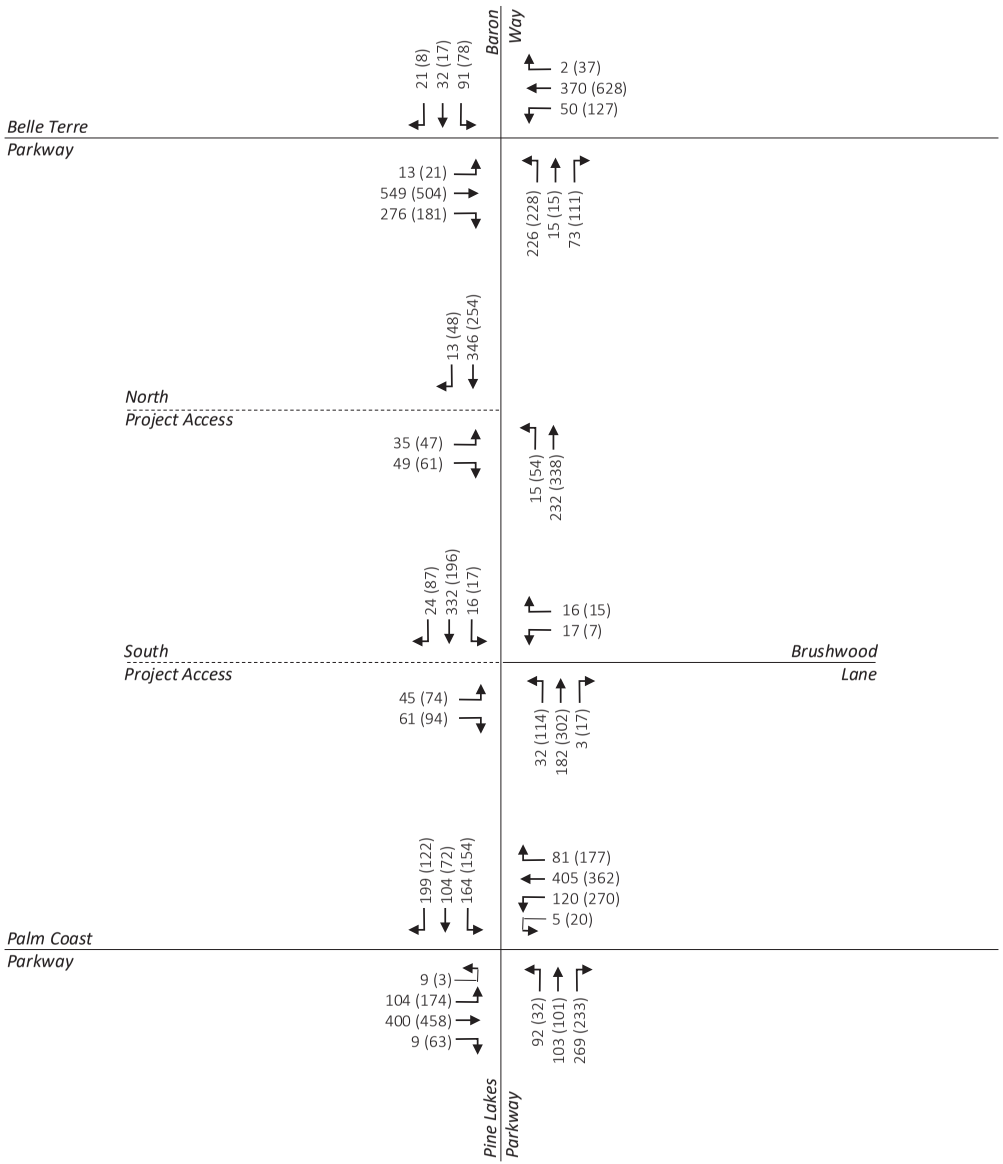
Figure 08 – Phase 02 Project Traffic Distribution and Assignment

Pointe Grand Apartments – Traffic Study
Palm Coast, Florida



NTS

LEGEND:

XXX – AM Peak

(XXX) – PM Peak

Figure 09 – Phase 02 Buildout Year 2027 AM and PM Peak Hour Traffic Volumes

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Pointe Grand Apartments – Traffic Study
Palm Coast, Florida

Table 01
Trip Generation
Pointe Grand Apartments, City of Palm Coast, FL

Phase 01

			Daily							AM Peak							PM Peak						
					Directional Splits		Trips					Directional Splits		Trips					Directional Splits		Trips		
ITE Code	Land Use	Quantity	Equation	Rate	Enter %	Exit %	Total	Entering	Exiting	Equation	Rate	Enter %	Exit %	Total	Entering	Exiting	Equation	Rate	Enter %	Exit %	Total	Entering	Exiting
221	Multifamily Housing (Mid Rise)	300 DU	T = 5.45(X) - 1.75	5.44	50%	50%	1,632	816	816	*Average Rate Used*	0.36	26%	74%	108	28	80	*Average Rate Used*	0.44	61%	39%	132	81	51

Phase 02

			Daily							AM Peak							PM Peak						
					Directional Splits		Trips					Directional Splits		Trips					Directional Splits		Trips		
ITE Code	Land Use	Quantity	Equation	Rate	Enter %	Exit %	Total	Entering	Exiting	Equation	Rate	Enter %	Exit %	Total	Entering	Exiting	Equation	Rate	Enter %	Exit %	Total	Entering	Exiting
221	Multifamily Housing (Mid Rise)	300 DU	T = 5.45(X) - 1.75	5.44	50%	50%	1,632	816	816	*Average Rate Used*	0.36	26%	74%	108	28	80	*Average Rate Used*	0.44	61%	39%	132	81	51
820	Shopping Center	86.640 KSF	Ln(T) = 0.68 Ln(X) + 5.57	62.94	50%	50%	5,453	2,727	2,727	*Average Rate Used*	0.94	62%	38%	81	50	31	Ln(T) = 0.74 Ln(X) + 2.89	5.64	48%	52%	489	235	254
			Total Gross Trip Generation				**7,085**	**3,543**	**3,543**	**Total Gross Trip Generation**				**189**	**78**	**111**	**Total Gross Trip Generation**				**621**	**316**	**305**
			Shopping Center Pass-By Trips			34%	2,409	1,205	1,205	Shopping Center Pass-By Trips			34%	64	27	38	Shopping Center Pass-By Trips			34%	211	107	104
			Total Net Trip Generation				**4,676**	**2,338**	**2,338**	**Total Net Trip Generation**				**125**	**51**	**73**	**Total Net Trip Generation**				**410**	**209**	**201**

Source: **Attachment C**
ITE Trip Generation, 10th Edition
ITE Trip Generation Handbook, 3rd Edition

Table 02
Roadway Study Area Link
Pointe Grand Apartments, City of Palm Coast, FL

Link	Roadway	From/To	Facility Type	Classification	Length (miles)	Number of Lanes	Divided	Turn Lanes		Signals	Signals / Mile	Speed Limit	2019 AADT	K (actual)	Background Growth %	PM PH Trips	PM PH Vested Trips	Total PM PH Trips	FDOT Current Service Volumes (2012)					Adopted LOS	LOS w/o Vested Trips	LOS with Vested Trips
								Left	Right										A	B	C	D	E			
3000	Pine Lakes Parkway	Belle Terre Parkway (N) to Palm Coast Parkway	Collector	Class 1	1.21	2	No	Yes	Yes	2	2	45	4,100	0.089	2.8%	365	221	586	*	**	1,510	1,600	***	D	C	C

Freeway = Interstate Highway, State = State Highway, UFH = Uninterrupted Flow Highway, Class 1 = 40 mph or higher speed limit, Class 2 = 35 mph or lower speed limit, PMPH = P.M. Peak Hour, K (actual) = Measured Peak Hour Factor.

Source: Attachment D

Table 03
Roadway Segment Analysis
Pointe Grand Apartments, City of Palm Coast, FL

Phase 01 Year 2022

Link	Roadway	From/To	Facility Type	Classification	Length (miles)	Number of Lanes	Divided	2019 AADT	K (actual)	Background Growth %	PM PH Trips	PM PH Vested Trips	PM PH Project Trips	PM PH Total Trips	Project Trips % of MSV	FDOT Current Service Volumes (2012) A	B	C	D	E	Adopted LOS	LOS w/o Vested Trips	LOS with Vested Trips	LOS with Project Trips
3000	Pine Lakes Parkway	Belle Terre Parkway (N) to Palm Coast Parkway	Collector	Class 1	1.21	2	No	Yes	Yes	2.8%	365	221	132	718	8.3%	*	**	1,510	1,600	***	D	C	C	C
Freeway = Interstate Highway, State = State Highway, UFH = Uninterrupted Flow Highway, Class 1 = 40 mph or higher speed limit, Class 2 = 35 mph or lower speed limit, PMPH = P.M. Peak Hour, K (actual) = Measured Peak Hour Factor.																								

Phase 02 Year 2027

Link	Roadway	From/To	Facility Type	Classification	Length (miles)	Number of Lanes	Divided	2019 AADT	K (actual)	Background Growth %	PM PH Trips	PM PH Vested Trips	PM PH Project Trips	PM PH Total Trips	Project Trips % of MSV	FDOT Current Service Volumes (2012) A	B	C	D	E	Adopted LOS	LOS w/o Vested Trips	LOS with Vested Trips	LOS with Project Trips
3000	Pine Lakes Parkway	Belle Terre Parkway (N) to Palm Coast Parkway	Collector	Class 1	1.21	2	No	Yes	Yes	2.8%	365	221	410	996	25.6%	*	**	1,510	1,600	***	D	C	C	C
Freeway = Interstate Highway, State = State Highway, UFH = Uninterrupted Flow Highway, Class 1 = 40 mph or higher speed limit, Class 2 = 35 mph or lower speed limit, PMPH = P.M. Peak Hour, K (actual) = Measured Peak Hour Factor.																								

Source: **Attachment D**

Table 04
Turn Lane Evaluations
Pointe Grand Apartments, City of Palm Coast, FL

Phase 01 Year 2022 Buildout Conditions

Intersection	Approach	SL (mph)	AADT	Threshold	AM PH Volume	PM PH Volume	Turn Lane Required	Taper (ft)	Decel Length (ft)	SLDT (ft)	SLDT Reduction	Truck Factor	Full Width Length (ft)	Lane Length
Pine Lakes Parkway at South Project Access Driveway/Brookside Lane	NBL	45	4,100	20	12	34	YES	100	100	50	0.7	1.0	135	235
	SBL	45	4,100	20	14	15	NO							
	SBR	45	4,100	70	8	23	NO							
Pine Lakes Parkway at North Project Access Driveway	NBL	45	4,100	20	4	11	NO							
	SBR	45	4,100	70	4	13	NO							

Phase 02 Year 2027 Buildout Conditions

Intersection	Approach	SL (mph)	AADT	Threshold	AM PH Volume	PM PH Volume	Turn Lane Required	Taper (ft)	Decel Length (ft)	SLDT (ft)	SLDT Reduction	Truck Factor	Full Width Length (ft)	Lane Length
Pine Lakes Parkway at South Project Access Driveway/Brookside Lane	NBL	45	4,100	20	32	114	YES	100	100	175	0.7	1.0	225	325
	SBL	45	4,100	20	16	17	NO				0.7	1.0		
	SBR	45	4,100	70	24	87	YES	100	100	100	0.35	1.0	140	240
Pine Lakes Parkway at North Project Access Driveway	NBL	45	4,100	20	15	54	YES	100	100	75	0.7	1.0	155	255
	SBR	45	4,100	70	13	48	NO							

Source: Attachment J
Queue Length: Synchro Worksheets

Table 05
Year 2020 Existing and Phase 01 HCM Delay and LOS
Pointe Grand Apartments, City of Palm Coast, FL

Year 2020 Existing Conditions

Intersection	Approach	Traffic Control	AM Peak			PM Peak		
			Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)
Pine Lakes Parkway at Palm Coast Parkway	Intersection	Signal	30.10	C		44.40	D	
	EB	Signal	39.50	D	175	66.10	E	200
	WB	Signal	25.20	C	125	33.60	C	300
	NB	Signal	29.40	C	75	34.60	C	50
	SB	Signal	25.20	C	100	26.30	C	75
Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane	WB	Stop	10.60	B	25	10.10	B	25
	SBL	Yield	7.50	A	0	7.70	A	0
Pine Lakes Parkway at Belle Terre Parkway	Intersection	Signal	19.20	B		18.40	B	
	EB	Signal	18.20	B	25	17.00	B	50
	WB	Signal	14.30	B	50	15.90	B	75
	NB	Signal	25.90	C	125	25.90	C	100
	SB	Signal	27.00	C	100	27.70	C	100

Phase 01 Year 2022 Background Conditions

Intersection	Approach	Traffic Control	AM Peak			PM Peak		
			Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)
Pine Lakes Parkway at Palm Coast Parkway	Intersection	Signal	28.10	C		39.40	D	
	EB	Signal	30.90	C	150	50.60	D	200
	WB	Signal	26.10	C	125	34.60	C	300
	NB	Signal	29.70	C	75	35.00	C	50
	SB	Signal	25.10	C	100	26.50	C	75
Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane	WB	Stop	10.70	B	25	10.20	B	25
	SBL	Yield	7.60	A	0	7.80	A	0
Pine Lakes Parkway at Belle Terre Parkway	Intersection	Signal	19.60	B		18.70	B	
	EB	Signal	18.70	B	25	17.50	B	50
	WB	Signal	14.30	B	50	16.20	B	75
	NB	Signal	26.60	C	125	26.10	C	100
	SB	Signal	27.70	C	125	27.90	C	100

Phase 01 Year 2022 Buildout Conditions

Intersection	Approach	Traffic Control	AM Peak			PM Peak		
			Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)
Pine Lakes Parkway at Palm Coast Parkway	Intersection	Signal	29.30	C		30.80	C	
	EB	Signal	34.40	C	175	31.60	C	175
	WB	Signal	26.80	C	125	28.80	C	300
	NB	Signal	30.30	C	75	35.70	D	50
	SB	Signal	25.10	C	100	26.80	C	100
Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane	NBL	Yield	7.90	A	0	7.60	A	25
	EBL	Stop	13.70	B	25	13.60	B	25
	EBR	Stop	10.20	B	25	9.20	A	25
	WB	Stop	11.80	B	25	11.10	B	25
	SBL	Yield	7.60	A	0	7.80	A	0
Pine Lakes Parkway at North Project Access Driveway	NBL	Yield	7.90	A	0	7.60	A	0
	EB	Stop	11.30	B	25	10.70	B	25
Pine Lakes Parkway at Belle Terre Parkway	Intersection	Signal	20.10	C		19.30	B	
	EB	Signal	19.00	B	25	18.30	B	50
	WB	Signal	14.60	B	75	16.20	B	100
	NB	Signal	27.10	C	125	26.90	C	125
	SB	Signal	28.20	C	125	28.50	C	100

Source: Attachment J

Table 06
Phase 02 HCM Delay and LOS
Pointe Grand Apartments, City of Palm Coast, FL

Phase 02 Year 2027 Buildout Conditions

Intersection	Approach	Traffic Control	AM Peak			PM Peak		
			Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)
Pine Lakes Parkway at South Project Access Driveway/Brushwood Lane	NBL	Yield	8.20	A	25	8.20	A	25
	EBL	Stop	17.00	C	25	25.60	D	50
	EBR	Stop	10.80	B	25	10.00	B	25
	WB	Stop	13.90	B	25	14.90	B	25
	SBL	Yield	7.70	A	0	8.00	A	0
Pine Lakes Parkway at North Project Access Driveway	NBL	Yield	8.10	A	0	8.10	A	25
	EBL	Stop	14.50	B	25	17.30	C	25
	EBR	Stop	10.90	B	25	10.40	B	25

Source: Attachment J

Attachment A

Project Site Plan

Source: Matthews Design Group


MASTER SITE PLAN
POINTE GRAND APARTMENTS
ST. JOHNS COUNTY
PREPARED FOR
CLIENT
MATTHEWS DESIGN GROUP
P.O. BOX 3126, 7 WALDO STREET
ST. AUGUSTINE, FL 32084
PHONE: 904.826.1334 • FAX: 904.826.4547
INFO@MDGINC.COM
REGISTERED ENGINEER
CHRIS L. BUTTERMORE, P.E.
REVISIONS
NUMBER OF POINTE GRAND APARTMENTS
24 UNITS PER BLD. X 2 BUILDINGS = 48 APARTMENTS
36 UNITS PER BLD. X 7 BUILDINGS = 252 APARTMENTS
TOTAL NUMBER OF APARTMENTS = 300 APARTMENTS
LEGEND
PARCEL BOUNDRY
ROAD WAY CENTERLINE
EXIST WETLAND
PROPOSED PAVEMENT
PROPOSED SIDEWALK
WETLAND 25' BUFFER
PROPOSED IMPACT WETLAND
GRAPHIC SCALE
PROVIDED PARKING
SITE DATA TABLE
DENSITY CALCULATIONS
HATCH LEGEND
POTENTIAL WETLAND IMPACT AREA
UPLAND BUFFER
SITE BENCH MARK
TOP CONCRETE
MONUMENT LS #4006
ELEV. = 28.91
PINE LAKES PARKWAY NORTH (104' R/W)
BLDG. 1 36 UNITS
BLDG. 2 36 UNITS
BLDG. 3 36 UNITS
BLDG. 4 36 UNITS
BLDG. 5 36 UNITS
BLDG. 6 36 UNITS
BLDG. 7 36 UNITS
BLDG. 8 36 UNITS
BLDG. 9 36 UNITS
SWMF 1
SWMF 2
SWMF 3
LIFT STATION
POTENTIAL AMENITY AREA
RECREATIONAL /OPEN SPACE
FUTURE DEVELOPMENT
FUTURE DRIVEWAY CONNECTION
UTILITY EASEMENT
PROPOSED DEVELOPMENT BOUNDARY
STATE JURISDICTIONAL WETLAND LINE
UPLAND AREA PER PRE-HENDERSON WETLAND DELINEATION
ARMY CORE OF ENGINEERS WETLAND LINE
25' UPLAND BUFFER
RIGHT IN/RIGHT OUT DRIVEWAY
R/W

Attachment B

Methodology Document

Gmail Holly Walker <hwalker@ctrafficsolutions.com>

RE: 200-035 Pointe Grand Apartments

1 message

Bill Hoover <BHoover@palmcoastgov.com> Mon, Dec 28, 2020 at 3:05 PM
To: Rajesh Ramn Chindalur <chindalur@ctrafficsolutions.com>, Michael Grunewald <MGrunewald@palmcoastgov.com>
Cc: Holly Walker <hwalker@ctrafficsolutions.com>, "Dennis R. Leap" <DLeap@palmcoastgov.com>, Chris Buttermore <chris@mdginc.com>

Rajesh,

There are no development projects going on between Pine Lakes Parkway on the segment between Palm Coast Parkway and North Belle Terre Parkway.

Bill Hoover,AICP

Senior Planner

City of Palm Coast

160 Lake Avenue
Palm Coast, FL 32164

Tel: 386-986-3744

www.palmcoastconnect.com

Questions or Concerns?

Register today at www.palmcoastconnect.com

From: Rajesh Ramn Chindalur <chindalur@ctrafficsolutions.com>
Sent: Monday, December 28, 2020 2:48 PM
To: Michael Grunewald <MGrunewald@palmcoastgov.com>
Cc: Holly Walker <hwalker@ctrafficsolutions.com>; Bill Hoover <BHoover@palmcoastgov.com>; Dennis R. Leap <DLeap@palmcoastgov.com>; Chris Buttermore <chris@mdginc.com>
Subject: Re: 200-035 Pointe Grand Apartments

Thank you Michael. "H" is out of the office for a few days.

Regards,

Raj

--

Rajesh Ramn K. Chindalur, P.E., PTOE

Chindalur Traffic Solutions, Inc.

8833 Perimeter Park Boulevard, Suite 103, Jacksonville, FL 32216

Office: (904) 619 3368 | Cell: (904) 422-6923 | Chindalur@ctrafficsolutions.com

On Mon, Dec 28, 2020 at 1:06 PM Michael Grunewald <MGrunewald@palmcoastgov.com> wrote:

> Hello H,
>
> I concur with your summary of the meeting content.

Attached, please find the timing reports for

- Belle Terre Pkwy @ Pine Lakes Drive
- Palm Coast Pkwy @ Pine Lakes Drive

The City has no construction projects in our build program in the vicinity of your project location.

Bill can advise if there is a private development that he is aware of that needs to be acknowledged in your study. On that front, I am not aware of a private development in the vicinity of your traffic impact study.

Michael Grunewald

Traffic Engineer

City of Palm Coast

160 Lake Avenue
Palm Coast, FL 32164

Tel: 386-986-3740

www.palmcoastconnect.com

From: Holly Walker <hwalker@ctrafficsolutions.com>
Sent: Wednesday, December 23, 2020 5:22 PM
To: Michael Grunewald <MGrunewald@palmcoastgov.com>
Cc: Bill Hoover <BHoover@palmcoastgov.com>; Dennis R. Leap <DLeap@palmcoastgov.com>; Chris Buttermore <chris@mdginc.com>; Rajesh Ramn Chindalur <chindalur@ctrafficsolutions.com>
Subject: 200-035 Pointe Grand Apartments

Thank you all for participating in the methodology meeting for the Pointe Grand Apartments traffic study.

Please find attached the methodology memorandum that addresses the items discussed. If you have any questions and/or comments, please feel free to let me know.

We will proceed with the traffic study pending concurrence with the methodology memorandum.

Thank you and Happy Holidays!

H. Walker, PE, RSP, CPM

Chindalur Traffic Solutions, Inc.

8833 Perimeter Park Boulevard, Suite 103

Jacksonville, Florida 32216

hwalker@ctrafficsolutions.com

PLEASE NOTE: Florida has a very broad public records law. Most written communications to or from City of Palm Coast officials and employees regarding public business are public records available to the public and media upon request. Your e-mail communications may be subject to public disclosure.

To: Mr. Michael Grunewald, P.E.
Traffic Engineer
City of Palm Coast
160 Lake Avenue
Palm Coast, Florida 32164

From: H. Walker, P.E., RSP, CPM
Project: Pointe Grand Apartments
Client: Matthews Design Group, Inc.
Project No.: 1055-200-035
Date: 12/23/2020

Introduction:

A is proposed for construction on Pine Lakes Parkway in the City of Palm Coast, Florida. The proposed development will be constructed in two (2) phases. Phase I consists of 300 apartments with an anticipated 2022 buildout. Phase II consists of a future commercial development of 86,640 square feet (SF) with an anticipated 2027 buildout.

The main access to the proposed development will be provided via full access driveway on Pine Lakes Parkway at South Project Access Driveway/Brookside Lane. A secondary full access driveway to the proposed development will be provided on Pine Lakes Parkway at North Project Access Driveway, approximately 850-feet to the east.

A traffic study confirming to the requirements of the City of Palm Coast will be required to be submitted for approval of the proposed access driveway. **Figure 01** shows the location of the proposed development and **Attachment A** shows the site plan for the proposed development. **Figure 02** shows the existing conditions of the roadways and intersections in the vicinity of the proposed development.

A traffic study confirming to the City of Palm Coast Traffic Study criteria and guidance is required to be submitted to the City of Palm Coast Traffic Engineering Department for approval.

Traffic Study Methodology:

As required by the City of Palm Coast, this memo outlies the traffic study methodology that will be adopted in evaluating the traffic impacts from the proposed development. A methodology discussion was held on December 22, 2020 with the following in attendance:

- Mr. Michael Grunewald – City of Palm Coast
- Mr. Bill Hoover – City of Palm Coast
- Mr. Jason DeLorenzo – City of Palm Coast
- Mr. Dennis R. Leap – City of Palm Coast
- Mr. Chris Buttermore – Matthews Design Group
- Mr. Rajesh Chindalur – Chindalur Traffic Solutions, Inc.
- Ms. H. Walker – Chindalur Traffic Solutions, Inc.

Trip Generation:

Trip generation for the proposed development will be estimated using rates and equations included in the Trip Generation Manual 10th Edition published by the Institute of Transportation Engineers (ITE). **Table 01** includes PM peak period trip generation for the proposed

development. As shown in this table, the Phase I proposed development is anticipated to generate a total of 127 PM peak trips.

Analysis Time Period:

Traffic impact evaluation for the proposed development will be performed during AM peak and PM peak time periods under the existing, background and buildout conditions for Phase I and buildout conditions for Phase II.

Study Area:

It was decided during the methodology meeting to focus the study area along Pine Lakes Parkway and therefore, the traffic analysis will include the following roadway segment and intersections:

Segment

- Link 3000: Pine Lakes Parkway – Belle Terre Parkway (N) to Palm Coast Parkway

Intersections

- Pine Lakes Parkway at Palm Coast Parkway (Phase I)
- Pine Lakes Parkway at South Project Access Driveway/Brookside Lane (Phase I and II buildout)
- Pine Lakes Parkway at North Project Access Driveway (Phase I and II buildout)
- Pine Lakes Parkway at Belle Terre Parkway (Phase I)

Planned and Programmed Improvements:

The River to Sea Transportation Planning Organization (TPO) Long Range Transportation Plan (LRTP), Priority Projects List (PPL), Transportation Improvement Program (TIP) and the Florida Department of Transportation (FDOT) Work Program will be reviewed to identify any roadway projects within the one-mile study area of the proposed development and incorporated in the analysis.

Roadway Segment Analysis:

Segment analysis of the above stated roadway segment will include existing traffic, reserved traffic from other developments and traffic from the proposed development to determine adversely impacted roadway segment for Phase I only. Existing traffic and reserved traffic from other developments will be obtained from the City of Palm Coast Concurrency Spreadsheet dated February 11, 2020. Roadway segments analysis for the study area roadway segment will be performed using FDOT/City of Palm Coast approved methodologies under future year background and buildout conditions of the proposed development. Any adverse impacts to the study area roadway segment will be identified and summarized.

Traffic Data Collection:

AM Peak and PM Peak traffic counts were collected on December 17, 2020. A Covid-19 Pandemic adjustment factor was deemed unnecessary. A seasonal adjustment factor will be obtained from the Florida Traffic Online (FTO) website and will be applied to the traffic counts.

Background Traffic Volumes:

Phase I (Year 2022) and Phase II (Year 2027) background traffic volumes will be estimated by applying a growth factor to the existing traffic volumes. The growth factor will be estimated using the historical AADT on the study area roadway segment. A minimum 1.0% growth factor will be applied for side streets.

Project Traffic Distribution and Assignment:

The proposed development is anticipated to serve the nearby existing and proposed residential development. Project related traffic distribution percentages will be estimated based on existing traffic patterns on the study roadway segment and study intersections. The same project traffic distribution will be used for Phase I and Phase II.

Buildout Traffic Projections:

Phase I (Year 2022) and Phase II (Year 2027) buildout traffic projections will include background traffic volumes and project traffic assignment.

Intersection Capacity Analysis:

Intersection capacity analysis of the study area intersections of the proposed development will be performed using either Synchro 10 or the currently adopted Highway Capacity Software (HCS) software. Phase II analysis will be for the project access driveways under buildout conditions only.

Turn Lane Analysis:

Existing and proposed turn lane analysis of the study intersections will be performed using the Palm Coast Draft Turn Lane Technical Guidelines on November 10, 2020.

Alternative Mode Analysis:

Evaluation of relocating the existing midblock crosswalk location on Pine Lakes Parkway between Brushwood Lane and Brookside Lane to the intersection of Pine Lakes Parkway and Western Project Access Driveway/Brookside Lane.

Proportionate Share Mitigation

A proportionate share calculation for Phase I only will be conducted for study area roadway segment and intersections that may be adversely impacted due to the traffic from the proposed development.

Study Report:

A traffic study report summarizing the study procedures and the study findings will be prepared and submitted to City of Palm Coast for approval.

We request the City of Palm Coast, Traffic Engineering Department to provide the following information:

- Details of Planned and Programmed Improvements within the vicinity of the Proposed Development.
- Signal Timing and Phasing Data – Pine Lakes Parkway at Palm Coast Parkway
- Signal Timing and Phasing Data – Pine Lakes Parkway at Belle Terre Parkway

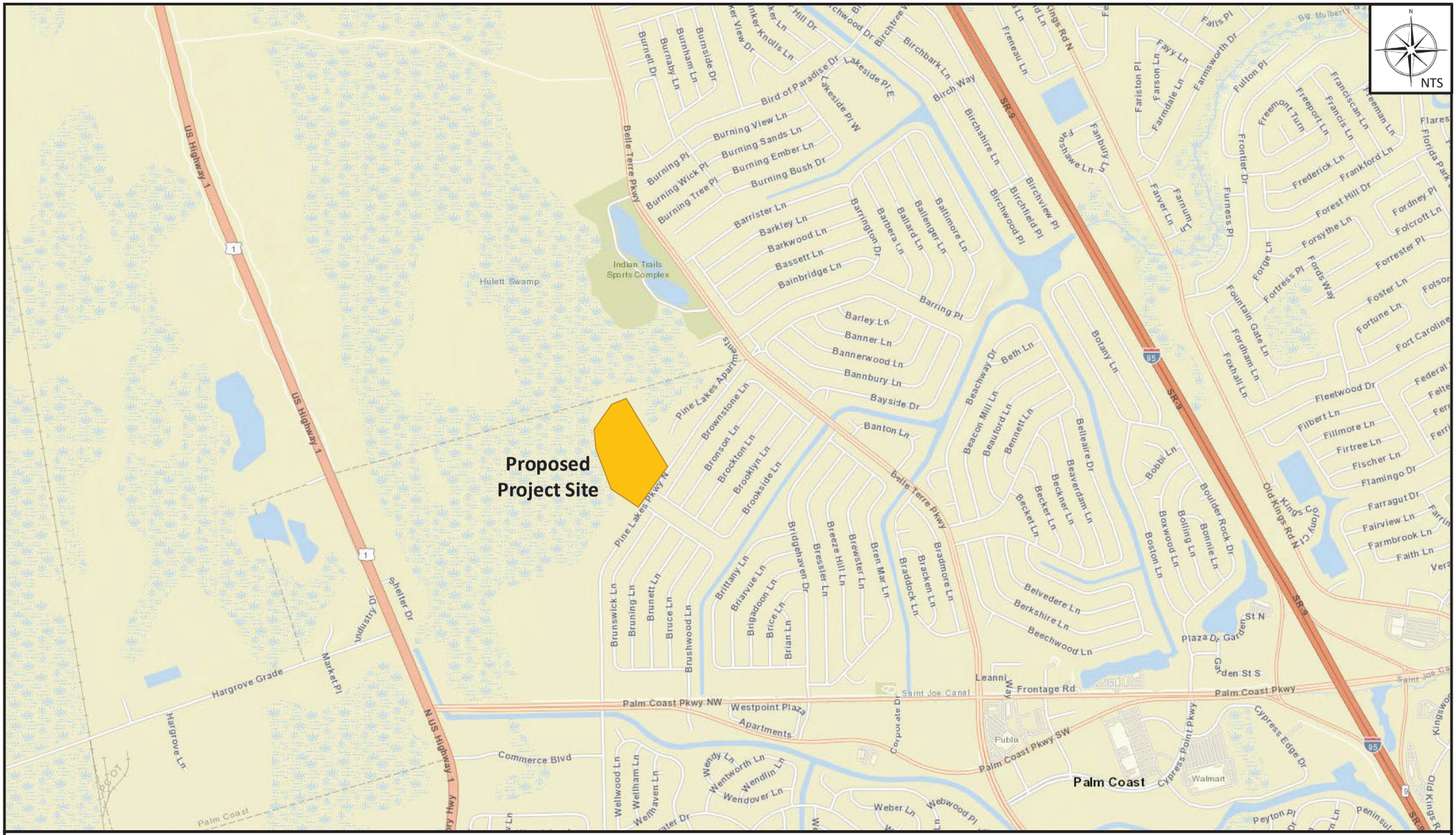
Thank you,

H. Walker, P.E., RSP, CPM
Chindalur Traffic Solutions, Inc.
8833 Perimeter Park Boulevard, Suite 103, Jacksonville, FL 32216
(904) 619-3368 | hwalker@ctrafficsolutions.com

Table 01
Trip Generation
Pointe Grand Apartments, City of Palm Coast, Florida

ITE Land Use Code	Description	Quantity	Units	Time Period	Rate or Equation	Percent Traffic		Project Trips		
						Entering	Exiting	Total	Entering	Exiting
221	Multifamily Housing (Mid Rise)	300	Units	Daily	T = 5.45(X) - 1.75	50%	50%	1,633	817	816
				AM Peak	Ln(T) = 0.98 Ln(X) - 0.98	26%	74%	100	26	74
				PM Peak	Ln(T) = 0.96 Ln(X) - 0.63	61%	39%	127	77	50

Source: Trip Generation Manual, 10th Edition, ITE



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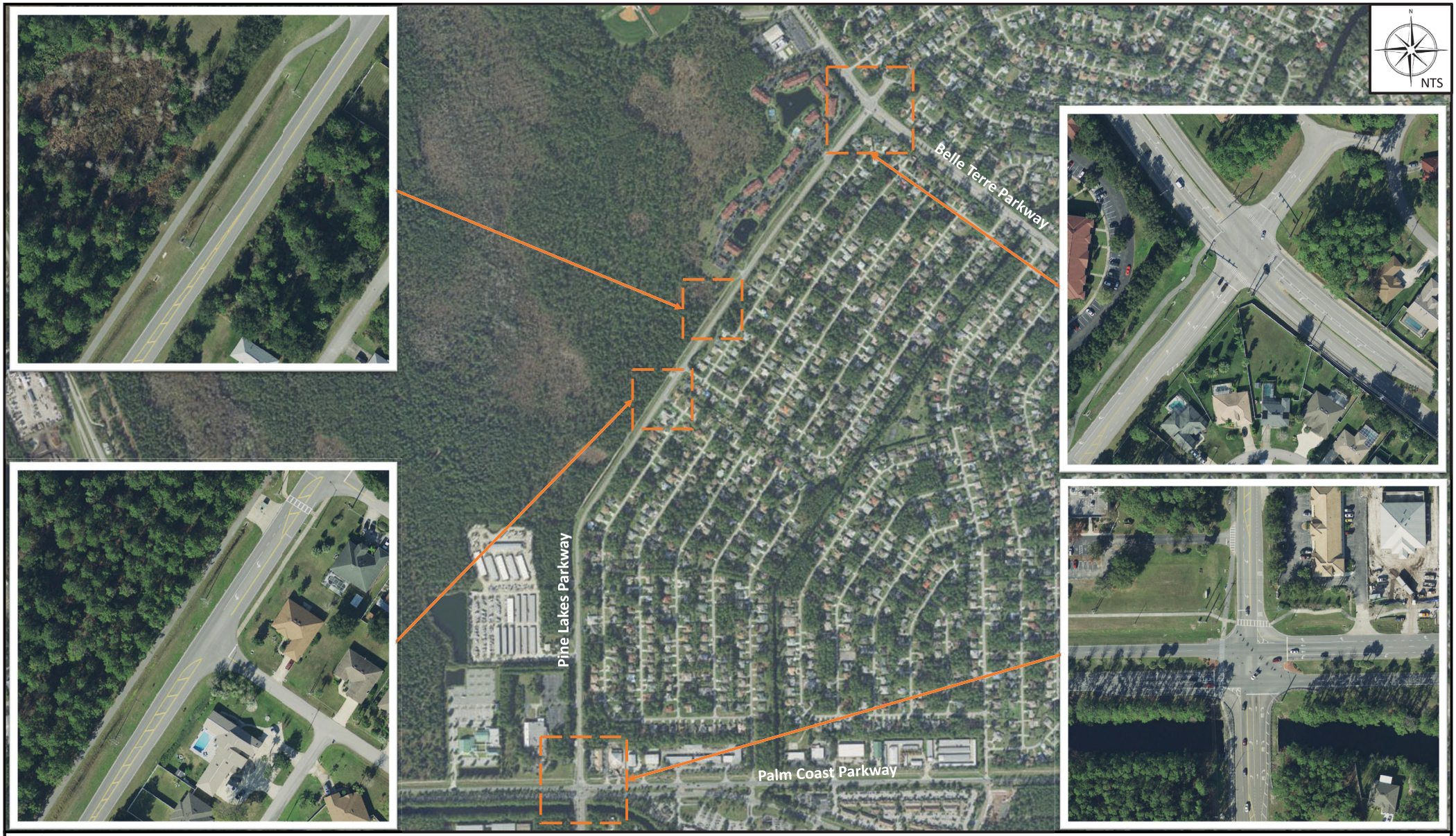
Jacksonville FL 32216
Phone: (904) 619-3368
www.ctrafficsolutions.com

Figure 01 – Location Map

Pointe Grand Apartments – Traffic Study
Palm Coast, Florida



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Jacksonville FL 32216
Phone: (904) 619-3368
www.ctrafficsolutions.com

Figure 02 – Existing Conditions

Pointe Grand Apartments – Traffic Study
Jacksonville, Florida

MASTER SITE PLAN
POINTE GRAND APARTMENTS
ST. JOHNS COUNTY
PREPARED FOR
CLIENT
MATTHEWS DESIGN GROUP
P.O. BOX 3126, 7 WALDO STREET
ST. AUGUSTINE, FL 32084
PHONE: 904.826.1334 • FAX: 904.826.4547
INFO@MDGINC.COM
REVISIONS
REGISTERED ENGINEER
CHRIS L. BUTTERMORE, P.E.
LEGEND
GRAPHIC SCALE
NUMBER OF POINTE GRAND APARTMENTS
24 UNITS PER BLD. X 2 BUILDINGS = 48 APARTMENTS
36 UNITS PER BLD. X 7 BUILDINGS = 252 APARTMENTS
TOTAL NUMBER OF APARTMENTS = 300 APARTMENTS
PROVIDED PARKING
SITE DATA TABLE
DENSITY CALCULATIONS
HATCH LEGEND
SITE BENCH MARK
TOP CONCRETE
MONUMENT LS #4008
ELEV. = 28.01
PINE LAKES PARKWAY NORTH (104' R/W)
UTILITY EASEMENT
PROPOSED DEVELOPMENT BOUNDARY
STATE JURISDICTIONAL WETLAND LINE
FUTURE DRIVEWAY CONNECTION
RIGHT IN/RIGHT OUT DRIVEWAY
RECREATIONAL / OPEN SPACE
LIFT STATION
SWMF 1
SWMF 2
SWMF 3
FUTURE DEVELOPMENT
R/W

Attachment C

ITE Information

Multifamily Housing (Mid-Rise)
(221)

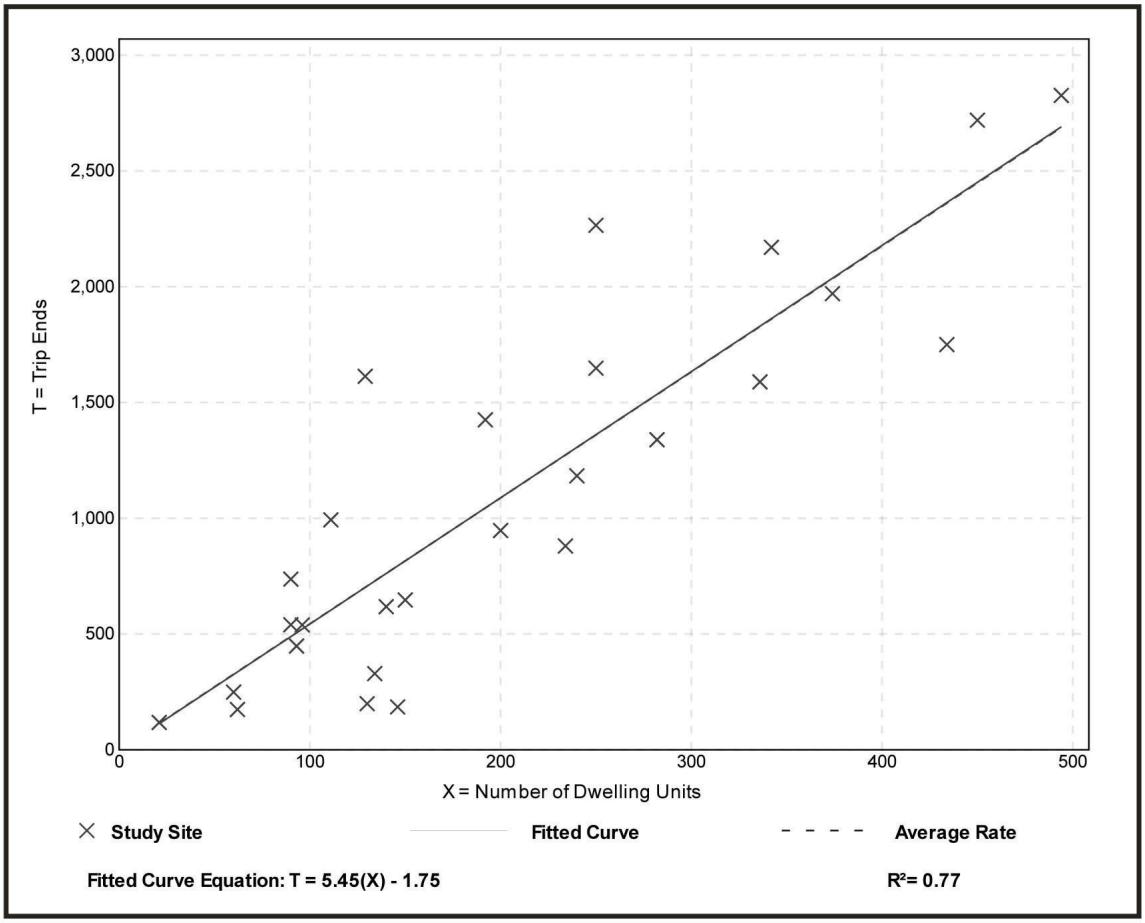
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 27
Avg. Num. of Dwelling Units: 205
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
5.44	1.27 - 12.50	2.03

Data Plot and Equation



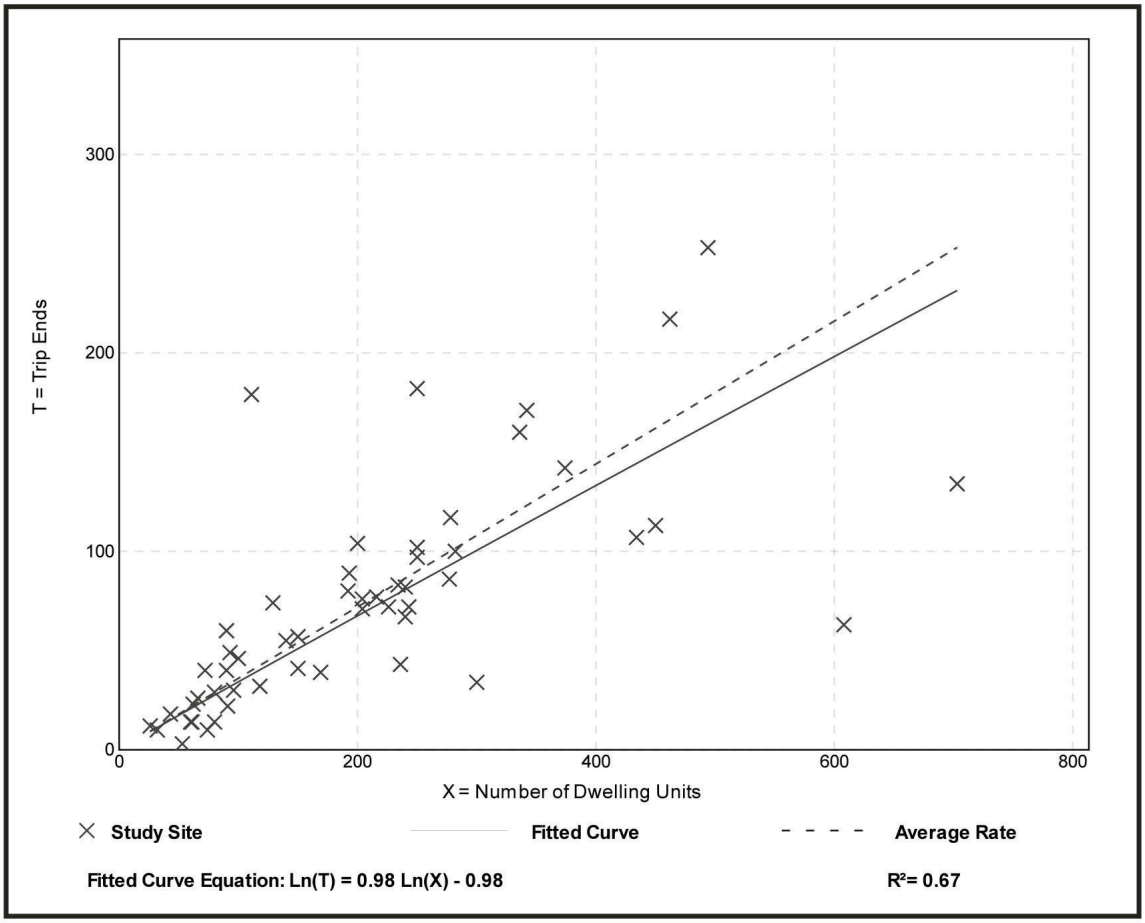
Multifamily Housing (Mid-Rise)
(221)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 53
Avg. Num. of Dwelling Units: 207
Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.36	0.06 - 1.61	0.19

Data Plot and Equation



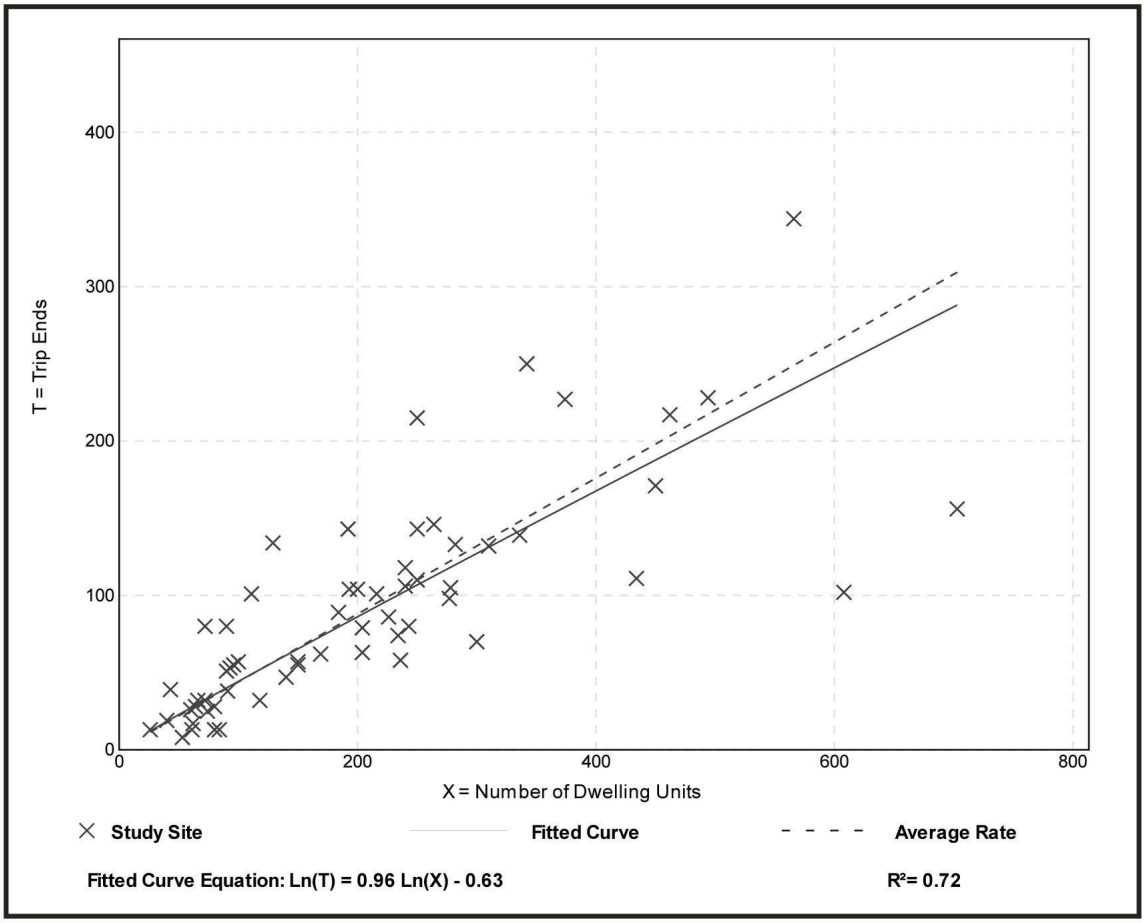
Multifamily Housing (Mid-Rise)
(221)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 60
Avg. Num. of Dwelling Units: 208
Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.44	0.15 - 1.11	0.19

Data Plot and Equation



Shopping Center
(820)

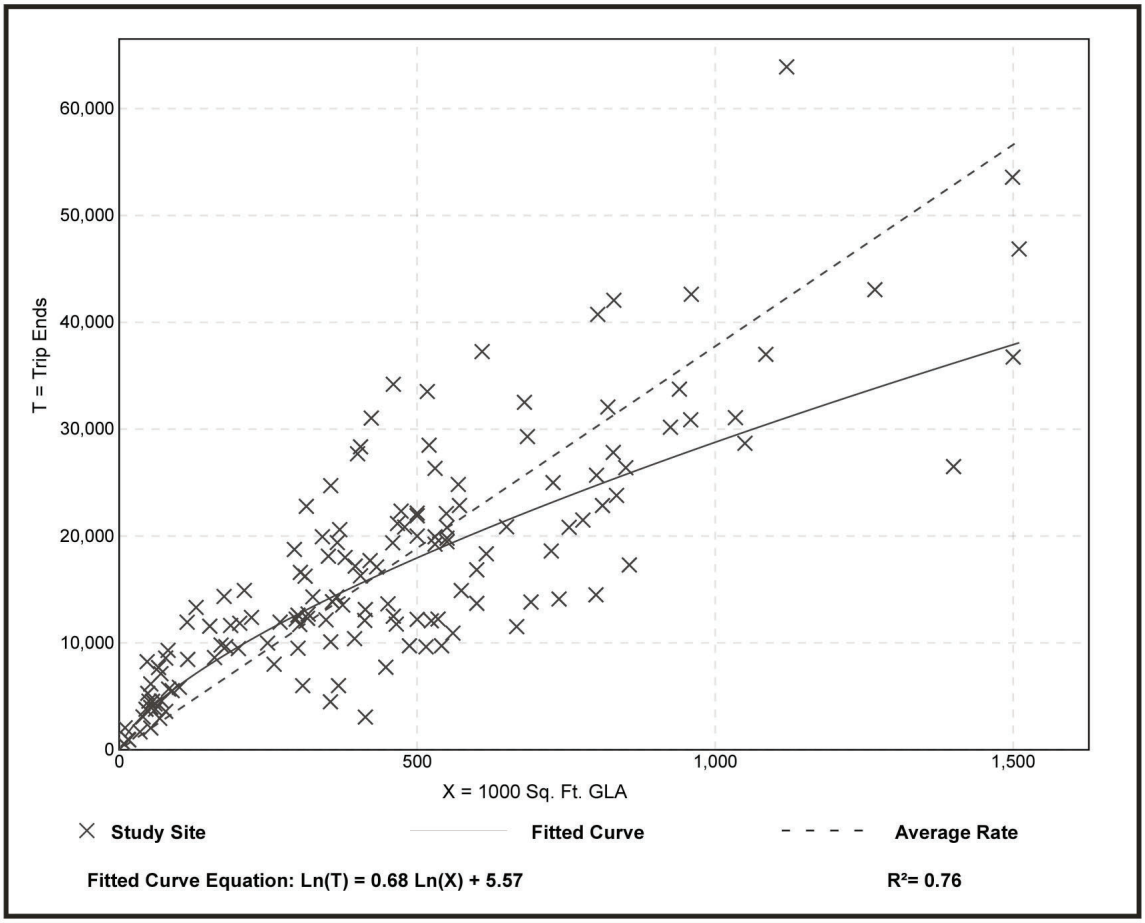
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 147
1000 Sq. Ft. GLA: 453
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.75	7.42 - 207.98	16.41

Data Plot and Equation



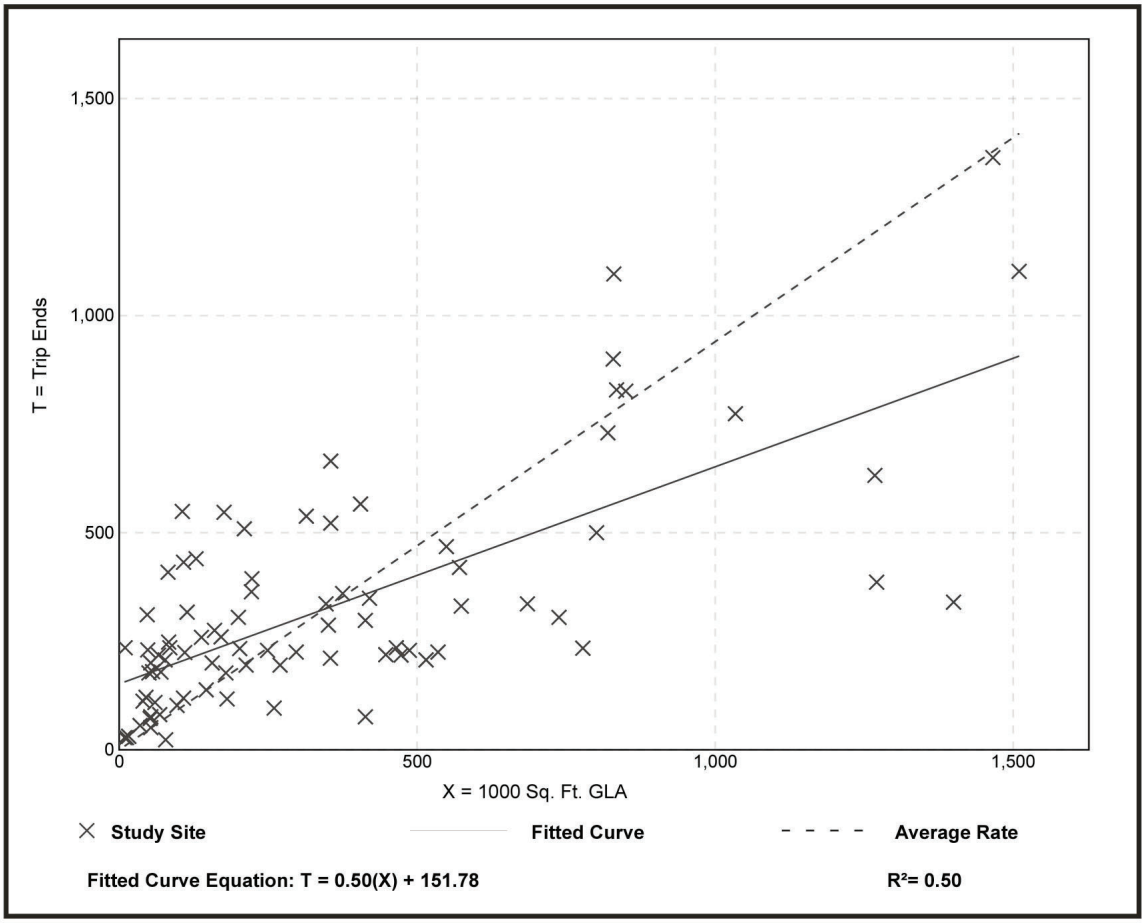
Shopping Center
(820)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	84
1000 Sq. Ft. GLA:	351
Directional Distribution:	62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.94	0.18 - 23.74	0.87

Data Plot and Equation



Shopping Center
(820)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 261
1000 Sq. Ft. GLA: 327
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.81	0.74 - 18.69	2.04

Data Plot and Equation

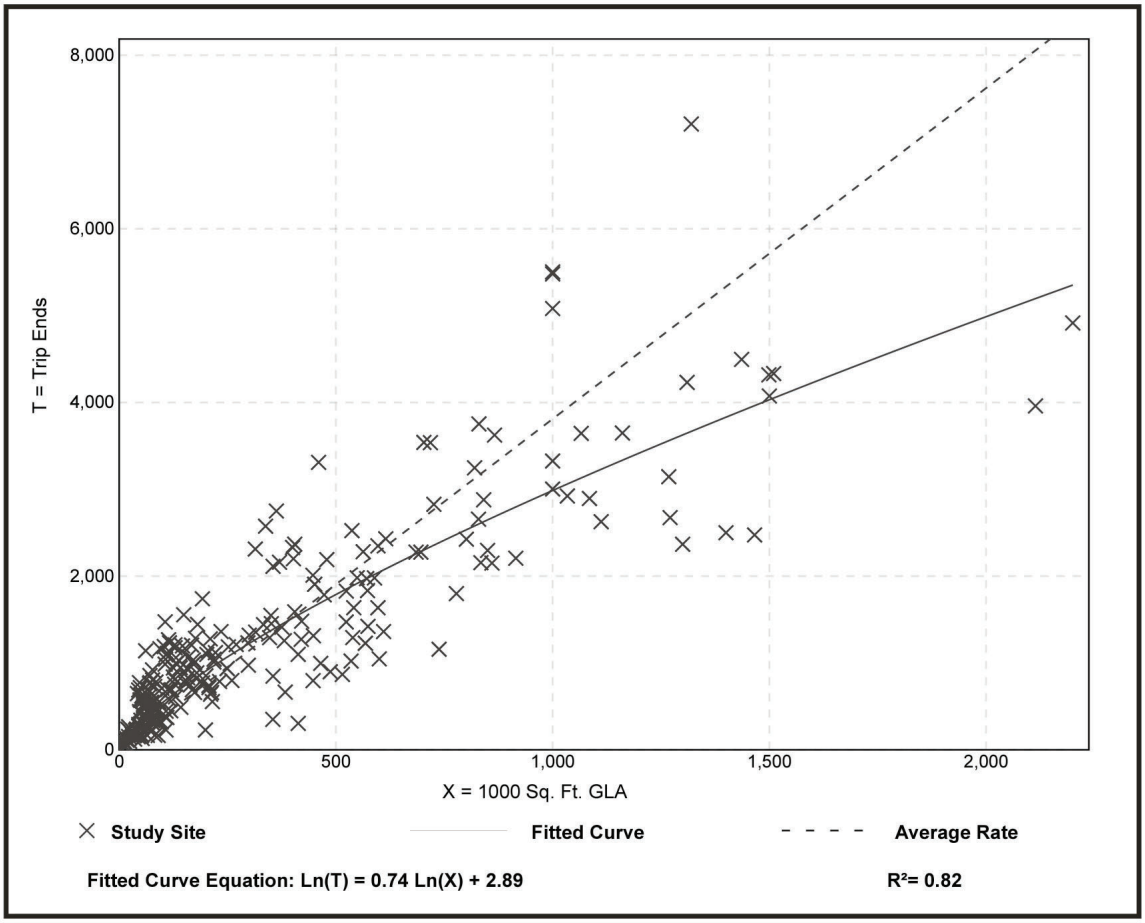


Table E.9 Pass-By and Non-Pass-By Trips Weekday, PM Peak Period
Land Use Code 820—Shopping Center

SIZE (1,000 SQ. FT. GLA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIP (%)			ADJ. STREET PEAK HOUR VOLUME	AVERAGE 24-HOUR TRAFFIC	SOURCE
						PRIMARY	DIVERTED	TOTAL			
53	Port Orange, FL	1993	162	2:00–6:00 p.m.	59	—	—	41	—	—	TPD Inc.
9	Kissimmee, FL	1994	107	2:00–6:00 p.m.	66	20	14	34	—	—	TPD Inc.
77	Edgewater, FL	1992	365	2:00–6:00 p.m.	46	—	—	54	—	—	TPD Inc.
82	Deltona, FL	1992	336	2:00–6:00 p.m.	34	—	—	66	—	—	TPD Inc.
78	Orlando, FL	1991	702	2:00–6:00 p.m.	55	23	22	45	—	—	TPD Inc.
45	Orlando, FL	1992	844	2:00–6:00 p.m.	56	24	20	44	—	—	TPD Inc.
50	Orlando, FL	1992	555	2:00–6:00 p.m.	41	41	18	59	—	—	TPD Inc.
52	Orlando, FL	1995	665	2:00–6:00 p.m.	42	33	25	58	—	—	TPD Inc.
17	Orlando, FL	1994	196	2:00–6:00 p.m.	66	—	—	34	—	—	TPD Inc.
60	Orlando, FL	1995	1,583	3:00–7:00 p.m.	40	38	22	60	—	—	TPD Inc.
158	Crestwood, KY	June 1993	129	4:00–6:00 p.m.	36	39	25	64	759	—	Barton-Aschman Assoc.
118	Louisville area, KY	June 1993	133	4:00–6:00 p.m.	22	51	27	78	3,555	—	Barton-Aschman Assoc.
74	Louisville, KY	June 1993	187	4:00–6:00 p.m.	30	43	27	70	922	—	Barton-Aschman Assoc.
59	Louisville area, KY	June 1993	247	4:00–6:00 p.m.	31	52	17	69	2,659	—	Barton-Aschman Assoc.
145	Louisville area, KY	June 1993	210	4:00–6:00 p.m.	53	30	17	47	2,636	—	Barton-Aschman Assoc.
104	Louisville area, KY	June 1993	281	4:00–6:00 p.m.	28	50	22	72	2,111	—	Barton-Aschman Assoc.
235	Louisville, KY	June 1993	211	4:00–6:00 p.m.	35	29	36	65	2,593	—	Barton-Aschman Assoc.
71	Louisville, KY	June 1993	109	4:00–6:00 p.m.	25	42	33	75	1,559	—	Barton-Aschman Assoc.
350	Worcester, MA	Apr. 1994	224	4:00–6:00 p.m.	18	45	37	82	2,112	—	ICSC
738	East Brunswick, NJ	Apr. 1994	283	4:00–6:00 p.m.	14	79	7	86	8,059	—	ICSC
294	Philadelphia, PA	Apr. 1994	213	4:00–6:00 p.m.	25	51	24	75	4,055	—	ICSC
256	Hamden, CT	Apr. 1994	208	4:00–6:00 p.m.	27	51	22	73	3,422	—	ICSC
418	Glen Burnie, MD	Apr. 1994	281	4:00–6:00 p.m.	20	51	29	80	5,610	—	ICSC
560	Harrisonburg, VA	Apr. 1994	437	4:00–6:00 p.m.	19	49	32	81	3,051	—	ICSC

Table E.9 (Cont'd) Pass-By and Non-Pass-By Trips Weekday, PM Peak Period Land Use Code 820—Shopping Center

SIZE (1,000 SQ. FT. GLA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIP (%)			ADJ. STREET PEAK HOUR VOLUME	AVERAGE 24-HOUR TRAFFIC	SOURCE
						PRIMARY	DIVERTED	TOTAL			
361	Glen Allen, VA	Apr. 1994	315	4:00–6:00 p.m.	17	54	29	83	2,034	—	ICSC
375	Shelby, NC	May 1994	214	4:00–6:00 p.m.	30	48	22	70	3,053	—	ICSC
413	Texas City, TX	May 1994	228	4:00–6:00 p.m.	28	52	20	72	589	—	ICSC
488	Texas City, TX	May 1994	257	4:00–6:00 p.m.	12	75	13	88	1,094	—	ICSC
293	Berwyn, IL	May 1994	282	4:00–6:00 p.m.	24	70	6	76	4,606	—	ICSC
667	Bourbonais, IL	May 1994	200	4:00–6:00 p.m.	16	53	31	84	2,770	—	ICSC
225	Bellevue, IL	May 1994	264	4:00–6:00 p.m.	35	32	33	65	1,970	—	ICSC
255	Bettendorf, IA	May 1994	222	4:00–6:00 p.m.	24	37	39	76	3,706	—	ICSC
808	Laguna Hills, CA	June 1994	240	4:00–6:00 p.m.	13	73	14	87	4,035	—	ICSC
450	Hanford, CA	May 1994	321	4:00–6:00 p.m.	23	49	28	77	2,787	—	ICSC
800	San Jose, CA	May 1994	205	4:00–6:00 p.m.	21	51	28	79	7,474	—	ICSC
598	Greeley, CO	May 1994	205	4:00–6:00 p.m.	17	55	28	83	3,840	—	ICSC
581	Pueblo, CO	May 1994	296	4:00–6:00 p.m.	18	53	29	82	2,939	—	ICSC
476	Bellevue, WA	May 1994	234	4:00–6:00 p.m.	26	54	20	74	3,427	—	ICSC
720	Framingham, MA	Dec. 1982	92	3:30–7:00 p.m.	23	39	38	77	—	73,628	Raymond Keyes Assoc.
890	Newark, DE	July 1984	179	3:00–8:00 p.m.	12	49	39	88	—	—	Raymond Keyes Assoc.
402	Manassas, VA	June 1984	87	4:00–6:00 p.m.	48	25	27	52	—	—	Raymond Keyes Assoc.
462	Ross, PA	June 1980	175	5:30–7:00 p.m.	36	—	—	64	—	27,200	Raymond Keyes Assoc.
234	Huntington LI, NY	Nov. 1985	181	4:00–7:00 p.m.	46	21	33	54	—	34,630	Raymond Keyes Assoc.
658	Wayne, NJ	Sept. 1984	243	3:00–6:00 p.m.	27	61	12	73	—	85,600	Raymond Keyes Assoc.
1,200	Washington, DC	1980	364	4:00–6:00 p.m.	25	35	40	75	—	—	Gorove-Slade
800	Southern CA	—	1,000	4:00–6:00 p.m.	12	45	43	88	—	—	Frischer
451	Portland, OR	—	—	5:00–6:00 p.m.	25	—	—	75	—	—	Buttke
113	Portland, OR	—	—	5:00–6:00 p.m.	17	—	—	83	—	—	Buttke

Table E.9 (Cont'd) Pass-By and Non-Pass-By Trips Weekday, PM Peak Period Land Use Code 820—Shopping Center

SIZE (1,000 SQ. FT. GLA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIP (%)			ADJ. STREET PEAK HOUR VOLUME	AVERAGE 24-HOUR TRAFFIC	SOURCE
						PRIMARY	DIVERTED	TOTAL			
622	Ramsey, MN	Nov. 1985	46	4:00–9:00 p.m.	44	26	30	56	—	36,370	Raymond Keyes Assoc.
736	Pensacola, FL	Oct. 1985	383	3:00–7:00 p.m.	26	35	39	74	—	—	Raymond Keyes Assoc.
84	Dover, DE	July 1985	218	3:30–7:00 p.m.	50	6	44	50	—	—	Raymond Keyes Assoc.
500	Meriden, CT	Apr. 1985	—	4:00–6:00 p.m.	8	—	—	92	—	—	Connecticut DOT
660	Enfield, CT	Apr. 1985	—	4:00–6:00 p.m.	22	—	—	78	—	—	Connecticut DOT
845	Waterford, CT	Apr. 1985	—	4:00–6:00 p.m.	14	—	—	86	—	—	Connecticut DOT
1,060	West Hartford, CT	Apr. 1985	—	4:00–6:00 p.m.	17	—	—	83	—	—	Connecticut DOT
131	Pr. Georges Co., MD	1982/83	88	4:00–6:00 p.m.	74	—	—	26	—	—	JHK
181	Pr. Georges Co., MD	1982/83	105	4:00–6:00 p.m.	36	—	—	64	—	—	JHK
100	Pr. Georges Co., MD	1982/83	93	4:00–6:00 p.m.	36	—	—	64	—	—	JHK
475	Pr. Georges Co., MD	1982/83	130	4:00–6:00 p.m.	20	—	—	80	—	—	JHK
60	Pr. Georges Co., MD	1982/83	72	4:00–6:00 p.m.	72	—	—	28	—	—	JHK
90	Pr. Georges Co., MD	1982/83	91	4:00–6:00 p.m.	58	—	—	42	—	—	JHK
78	Pr. Georges Co., MD	1982/83	113	4:00–6:00 p.m.	59	—	—	41	—	—	JHK
44	Pr. Georges Co., MD	1982/83	97	4:00–6:00 p.m.	51	—	—	49	—	—	JHK
467	Pr. Georges Co., MD	1982/83	99	4:00–6:00 p.m.	56	—	—	44	—	—	JHK
352	W. Orange, NJ	Mar. 1986	149	4:00–6:00 p.m.	38	19	43	62	—	21,520	Raymond Keyes Assoc.
176	Tarpon Springs, FL	May 1986	124	3:00–7:00 p.m.	37	28	35	63	—	34,080	Raymond Keyes Assoc.
762	Orlando, FL	Fall 1985	182	4:00–6:00 p.m.	25	52	23	75	—	—	Kimley-Horn and Assoc. Inc.
166	Orlando, FL	Fall 1985	124	4:00–6:00 p.m.	27	48	25	73	—	—	Kimley-Horn and Assoc. Inc.
129	Orlando, FL	Fall 1985	116	4:00–6:00 p.m.	28	50	22	72	—	—	Kimley-Horn and Assoc. Inc.
71	Orlando, FL	Fall 1985	81	4:00–6:00 p.m.	50	44	6	50	—	—	Kimley-Horn and Assoc. Inc.

Table E.9 (Cont'd) Pass-By and Non-Pass-By Trips Weekday, PM Peak Period Land Use Code 820—Shopping Center

SIZE (1,000 SQ. FT. GLA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIP (%)			ADJ. STREET PEAK HOUR VOLUME	AVERAGE 24-HOUR TRAFFIC	SOURCE
						PRIMARY	DIVERTED	TOTAL			
921	Albany, NY	July & Aug. 1985	196	4:00–6:00 p.m.	23	42	35	77	—	60,950	Raymond Keyes Assoc.
108	Overland Park, KS	July 1988	111	4:30–5:30 p.m.	26	61	13	74	—	34,000	—
118	Overland Park, KS	Aug. 1988	123	4:30–5:30 p.m.	25	55	20	75	—	—	—
256	Greece, NY	June 1988	120	4:00–6:00 p.m.	38	62	—	62	—	23,410	Sear Brown
160	Greece, NY	June 1988	78	4:00–6:00 p.m.	29	71	—	71	—	57,306	Sear Brown
550	Greece, NY	June 1988	117	4:00–6:00 p.m.	48	52	—	52	—	40,763	Sear Brown
51	Boca Raton, FL	Dec. 1987	110	4:00–6:00 p.m.	33	34	33	67	—	42,225	Kimley-Horn and Assoc. Inc.
1,090	Ross Twp, PA	July 1988	411	2:00–8:00 p.m.	34	56	10	66	—	51,500	Wilbur Smith and Assoc.
97	Upper Dublin Twp, PA	Winter 1988/89	—	4:00–6:00 p.m.	41	—	—	59	—	34,000	McMahon Associates
118	Tredyffrin Twp, PA	Winter 1988/89	—	4:00–6:00 p.m.	24	—	—	76	—	10,000	Booz Allen & Hamilton
122	Lawnside, NJ	Winter 1988/89	—	4:00–6:00 p.m.	37	—	—	63	—	20,000	Pennoni Associates
126	Boca Raton, FL	Winter 1988/89	—	4:00–6:00 p.m.	43	—	—	57	—	40,000	McMahon Associates
150	Willow Grove, PA	Winter 1988/89	—	4:00–6:00 p.m.	39	—	—	61	—	26,000	Booz Allen & Hamilton
153	Broward Cnty., FL	Winter 1988/89	—	4:00–6:00 p.m.	50	—	—	50	—	85,000	McMahon Associates
153	Arden, DE	Winter 1988/89	—	4:00–6:00 p.m.	30	—	—	70	—	26,000	Orth-Rodgers & Assoc. Inc.
154	Doylestown, PA	Winter 1988/89	—	4:00–6:00 p.m.	32	—	—	68	—	29,000	Orth-Rodgers & Assoc. Inc.
164	Middletown Twp, PA	Winter 1988/89	—	4:00–6:00 p.m.	33	—	—	67	—	25,000	Booz Allen & Hamilton
166	Haddon Twp, NJ	Winter 1988/89	—	4:00–6:00 p.m.	20	—	—	80	—	6,000	Pennoni Associates
205	Broward Cnty., FL	Winter 1988/89	—	4:00–6:00 p.m.	55	—	—	45	—	62,000	McMahon Associates

Table E.9 (Cont'd) Pass-By and Non-Pass-By Trips Weekday, PM Peak Period Land Use Code 820—Shopping Center

SIZE (1,000 SQ. FT. GLA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIP (%)			ADJ. STREET PEAK HOUR VOLUME	AVERAGE 24-HOUR TRAFFIC	SOURCE
						PRIMARY	DIVERTED	TOTAL			
237	W. Windsor Twp, NJ	Winter 1988/89	—	4:00–6:00 p.m.	48	—	—	52	—	46,000	Booz Allen & Hamilton
242	Willow Grove, PA	Winter 1988/89	—	4:00–6:00 p.m.	37	—	—	63	—	26,000	McMahon Associates
297	Whitehall, PA	Winter 1988/89	—	4:00–6:00 p.m.	33	—	—	67	—	26,000	Orth-Rodgers & Assoc. Inc.
360	Broward Cnty., FL	Winter 1988/89	—	4:00–6:00 p.m.	44	—	—	56	—	73,000	McMahon Associates
370	Pittsburgh, PA	Winter 1988/89	—	4:00–6:00 p.m.	19	—	—	81	—	33,000	Wilbur Smith
150	Portland, OR	—	519	4:00–6:00 p.m.	68	6	26	32	—	25,000	Kittelson and Associates
150	Portland, OR	—	655	4:00–6:00 p.m.	65	7	28	35	—	30,000	Kittelson and Associates
760	Calgary, Alberta	Oct.-Dec. 1987	15,436	4:00–6:00 p.m.	20	39	41	80	—	—	City of Calgary DOT
178	Bordentown, NJ	Apr. 1989	154	2:00–6:00 p.m.	35	—	—	65	—	37,980	Raymond Keyes Assoc.
144	Manalapan, NJ	July 1990	176	3:30–6:15 p.m.	32	44	24	68	—	69,347	Raymond Keyes Assoc.
549	Natick, MA	Feb. 1989	—	4:45–5:45 p.m.	33	26	41	67	—	48,782	Raymond Keyes Assoc.

Average Pass-By Trip Percentage: 34
"—" means no data were provided

Attachment D

City of Palm Coast Transportation
Facility Status Report

Transportation Facility Status Report

February 11, 2020

Link	Facility	Facility Type	Classification	Length (miles)	Number of Lanes	Divided	Turn Lanes Left	Turn Lanes Right	Signals	Signals / Mile	Speed Limit	2019 AADT	K (actual)	Background Growth %	PMPH Trips	PMPH Vested Trips	Total PMPH Trips	FDOT Current Service Volumes (2012) A	B	C	D	E	Adopted LOS	LOS w/o Vested Trips	LOS with Vested Trips
	Belle Terre Parkway																								
1200	Matanzas Woods Parkway to Bird of Paradise Drive	Arterial	Class 1	1.86	4	Yes	Yes	Yes	5	1.28	45	7,100	0.091	3.3%	646	577	1,223	*	**	3,420	3,580	***	D	C	C
1205	Bird of Paradise Drive to Pine Lakes Parkway (North)			0.71								14,800	0.091	5.0%	1,347	675	2,022							C	C
1210	Pine Lakes Parkway (North) to Bellaire Drive			0.85								15,800	0.093	1.4%	1,469	348	1,817							C	C
1215	Bellaire Drive to Palm Coast Parkway(WB)			0.48								18,600	0.093	1.0%	1,730	523	2,253							C	C
			Segment Length:	3.90																					
1220	Palm Coast Parkway (WB) to Palm Coast Parkway (EB)			0.22								2,300	0.083	1.3%	191	371	562							C	C
1225	Palm Coast Parkway (EB) to Cypress Point Parkway		Class 1	0.13	4	Yes	Yes	Yes	5	8.06	45	25,300	0.104	2.6%	2,631	761	3,392	*	**	3,420	3,580	***	D	C	C
1230	Cypress Point Parkway to Pine Lakes Parkway (South)			0.27								38,300	0.085	1.0%	3,256	717	3,973							C	C
			Segment Length:	0.62																					
1240	Pine Lakes Parkway (South) to Parkview Drive	Arterial	Class 1	1.03	4	Yes	Yes	Yes	7	1.38	45	24,600	0.073	1.0%	1,796	608	2,404	*	**	3,420	3,580	***	D	C	C
1245	Parkview Drive to White View Parkway			1.02								25,600	0.09	1.0%	2,304	464	2,768							C	C
1250	White View Parkway to Rymfire Drive			0.92								25,500	0.089	1.6%	2,270	475	2,745							C	C
1252	Rymfire Drive to Royal Palms Parkway			0.53								28,200	0.089	3.8%	2,510	474	2,984							C	C
1254	Royal Palms Parkway to East Hampton Boulevard			0.52								27,000	0.087	2.1%	2,349	570	2,919							C	C
1260	East Hampton Boulevard to SR 100			1.04								24,500	0.091	4.8%	2,230	291	2,521							C	C
			Segment Length:	5.06																					
	Belle Terre Blvd.																								
1263	SR 100 to Zebulas Trail	Arterial	UFH	0.21	2	No	n.a.	n.a.	n.a.	n.a.	50	7,200	0.072	1.0%	518	142	660	*	770	1,530	2,170	2,990	D	B	B
1265	Zebulas Trail to Zaun Trail			0.84								6,900	0.091	2.8%	628	122	750							B	B
1270	Zaun Trail to Citation Parkway			1.37								6,200	0.135	3.9%	837	122	959							B	B
1275	Citation Parkway to US 1			1.31								4,500	0.119	3.8%	536	122	658							B	B
			Segment Length:	3.73																					
	Bird of Paradise Drive																								
2420	Matanzas Woods Parkway to Birchwood Drive	Collector	UFH	1.31	2	No	n.a.	n.a.	n.a.	n.a.	30	3,500	0.099	1.0%	347	1	348	*	770	1,530	2,170	2,990	D	B	B
2430	Birchwood Drive to Belle Terre Parkway			1.01								5,100	0.088	1.4%	449	45	494							B	B
			Segment Length:	2.32																					
	Bulldog Drive																								
4300	SR 100 to Central Avenue	Collector	Class 2	0.54	2	No	No	No	1	1.11	25	2,900	0.12	1.0%	348	167	515	*	**	660	1,330	1,410	D	C	C
4310	Central Avenue to Lake Avenue			0.28																					
4320	Lake Avenue to terminus			0.08																					
			Segment Length:	0.90																					
	Central Avenue																								
4400	Belle Terre Parkway to Market Avenue	Collector	Class 2	0.35	4	Yes	Yes	No	2	2.90	25	3,100	0.096	1.0%	298	215	513	*	**	1,310	2,920	3,040	D	C	C
4410	Market Avenue to Lake Avenue			0.11								3,300	0.093	1.0%	307	215	522							C	C
4420	Lake Avenue to Landings Blvd.			0.23								3,500	0.094	1.0%	329	215	544							C	C
			Segment Length:	0.69																					
4430	Landings Blvd to Park Street	Collector	Class 2	0.33	2	no	no	no	0	0.00	20	3,300	0.092	1.0%	304	215	519	*	**	660	1,330	1,410	D	C	C
4440	Park Street to Bulldog Drive			0.16								3,300	0.093	1.0%	307	215	522							C	C
4450	Bulldog Drive to Brookhaven Drive			0.29								2,200	0.097	1.0%	213	215	428							C	C
4460	Brookhaven Drive to Town Center Blvd.			0.41								1,900	0.097	1.0%	184	215	399							C	C
			Segment Length:	1.19																					
	Citation Parkway																								
3312	Belle Terre Parkway to Laguna Forest Lane	Collector	UFH	0.77	2	No	n.a.	n.a.	n.a.	n.a.	35	600	0.115	1.0%	69	0	69	*	770	1,530	2,170	2,990	D	B	B
3315	Seminole Woods Parkway to Sesame Boulevard			0.41							40	2,900	0.085	1.0%	247	0	247							B	B
			Segment Length:	1.18																					
	Club House Drive																								
1300	Palm Harbor Parkway to Palm Coast Parkway (WB)	Collector	Class 2	1.65	2	No	Yes	No	1	0.56	35	4,200	0.085	1.0%	357	192	549	*	**	660	1,330	1,410	D	C	C
1310	Palm Coast Parkway (WB) to Palm Coast Parkway (EB)			0.15								3,500	0.094	1.0%	329	118	447							C	C
			Segment Length:	1.80																					
	Colbert Lane																								
3105	Palm Coast Parkway (WB) to Palm Coast Parkway (EB)		Class 2	0.20							30	4,700	0.092	1.4%	432	98	530	*	**	660	1,330	1,410		C	C
3110	Palm Coast Parkway (EB) to Waterside Parkway (N)			1.70							45	7,800	0.095	1.0%	741	99	840							B	B

Link	Facility	Facility Type	Classification	Length (miles)	Number of Lanes	Divided	Turn Lanes Left	Turn Lanes Right	Signals	Signals / Mile	Speed Limit	2019 AADT	K (actual)	Background Growth %	PMPH Trips	PMPH Vested Trips	Total PMPH Trips	FDOT Current Service Volumes (2012) A	B	C	D	E	Adopted LOS	LOS w/o Vested Trips	LOS with Vested Trips
3120	Waterside Parkway (N) to Waterside Park (S)	Arterial	UFH	1.40	2	No	n.a.	n.a.	n.a.	n.a.	55	5,400	0.088	1.0%	475	99	574	*	770	1,530	2,170	2,990	D	B	B
3125	Waterside Park (S) to South Park Road			0.60								3,900	0.077	1.0%	300	114	414							B	B
3130	South Park Road to Roberts Road			1.87								5,800	0.087	1.0%	505	124	629							B	B
3135	Roberts Road to SR 100			1.29								4,200	0.085	1.0%	357	124	481							B	B
		Segment Length:		7.06																					
	Cypress Point Parkway																								
4200	Belle Terre Parkway to Pine Cone Drive	Arterial	Class 2	0.22	4	Yes	Yes	No	3	3.80	35	22,100	0.084	1.0%	1,856	105	1,961	*	**	1,310	2,920	3,040	D	D	D
4205	Pine Cone Drive to Cypress Edge (S)			0.29								18,800	0.083	1.0%	1,560	76	1,636							C	C
4210	Cypress Edge (S) to Cypress Edge (N)			0.16								17,000	0.085	1.0%	1,445	65	1,510							D	D
4215	Cypress Edge (N) to Palm Coast Parkway			0.12								26,100	0.089	1.0%	2,323	58	2,381							D	D
		Segment Length:		0.79																					
	Farmsworth Drive																								
2716	Old Kings Road to Florida Park Drive	Collector	Class 2*	0.90	2	No	n.a.	n.a.	n.a.	n.a.	30	1,900	0.086	1.0%	163	34	197	*	**	600	1,200	1,270	D	C	C
	Farragut Drive																								
2717	Old Kings Road to Florida Park Drive	Collector	Class 2*	0.97	2	No	n.a.	n.a.	n.a.	n.a.	30	200	0.15	1.0%	30	0	30	*	**	600	1,200	1,270	D	C	C
	Fleetwood Drive																								
2714	Old Kings Road to Florida Park Drive	Collector	Class 2*	0.94	2	No	n.a.	n.a.	n.a.	n.a.	30	1,000	0.081	1.0%	81	0	81	*	**	600	1,200	1,270	D	C	C
	Florida Park Drive																								
2090	Palm Harbor Parkway to Forest Hill Drive	Collector	Class 1	0.32	2	No	Yes	No	1	0.52	30	5,800	0.081	1.0%	470	36	506	*	**	660	1,330	1,410	D	C	C
2100	Forest Hill Drive to Fleetwood Drive			0.64								6,700	0.082	1.0%	549	31	580							C	C
2105	Fleetwood Drive to Farragut Drive			0.25								8,600	0.078	1.0%	671	57	728							D	D
2110	Farragut Drive to Palm Coast Parkway (WB)			0.63								11,000	0.076	1.0%	836	43	879							D	D
2120	Palm Coast Parkway (WB) to Palm Coast Parkway (EB)			0.08								6,100	0.091	1.0%	555	82	637							C	C
		Segment Length:		1.92																					
	Forest Grove Drive																								
4000	Old Kings Road (W) to Old Kings Road (E)	Collector	Class 2*	0.59	2	No	n.a.	n.a.	n.a.	n.a.	30	0	0.081	1.0%	-	454	454	*	**	600	1,200	1,270	D	C	D
4010	Old Kings Road (E) to Palm Harbor Parkway			0.41								0	0.094	1.0%	-	289	289							C	D
		Segment Length:		1.00																					
	Frontier Drive																								
2712	Old Kings Road (E) to Palm Harbor Parkway	Collector	Class 2*	1.14	2	No	n.a.	n.a.	n.a.	n.a.	30	1,700	0.086	1.0%	146	0	146	*	**	600	1,200	1,270	D	C	C
	Hargrove Grade Road																								
3707	US 1 to RR Xing	Collector	Class 2*	1.00	2	No	n.a.	n.a.	n.a.	n.a.	35	3,700	0.097	1.0%	359	732	1,091	*	**	600	1,200	1,270	D	C	D
	I-95 (SR 9)																								
251	Palm Coast City Limit to Palm Coast Parkway	Arterial	Freeway	7.64	6	Yes	n.a.	n.a.	n.a.	n.a.	70	49,000	0.09	1.0%	4,410	75	4,485	*	6,130	8,370	10,060	11,100	C		
292	Palm Coast Parkway to SR 100			5.80								63,700	0.09	1.5%	5,733	995	6,728								
255	SR 100 to Old Dixie Highway			5.26								47,000	0.09	1.7%	4,230	824	5,054								
		Segment Length:		18.70																					
	Lakeview Boulevard																								
3925	London Drive to Matanzas Woods Parkway	Collector	UFH	1.33	2	No	n.a.	n.a.	n.a.	n.a.	n.a.	3,800	0.089	1.0%	338	35	373	*	770	1,530	2,170	2,990	D	B	B
	Landings Blvd.																								
4500	SR 100 to Central Avenue	Collector	UFH	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			1.0%	-	0	-								
4510	Central Avenue to Lake Avenue			n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			1.0%	-	0	-								
	Lake Avenue																								

Link	Facility	Facility Type	Classification	Length (miles)	Number of Lanes	Divided	Turn Lanes Left	Turn Lanes Right	Signals	Signals / Mile	Speed Limit	2019 AADT	K (actual)	Background Growth %	PMPH Trips	PMPH Vested Trips	Total PMPH Trips	FDOT Current Service Volumes (2012) A	B	C	D	E	Adopted LOS	LOS w/o Vested Trips	LOS with Vested Trips
4550	Market Avenue to Landings Blvd.			n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			1.0%	-	0	-								
4560	Landings Blvd.to City Place Drive	Collector	UFH	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			1.0%	-	0	-								
4570	City Place Drive to Town Center Blvd.			n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			1.0%	-	0	-								
	Market Avenue																								
4600	Belle Terre Parkway to Central Avenue	Collector	UFH	0.28	2	No	n.a.	n.a.	n.a.	n.a.	25	500	0.106	1.0%	53	0	53	*	770	1,530	2,170	2,990	D	B	B
4610	Central Avenue to Lake Avenue													1.0%	-	0	-								
		Segment Length:		0.28																					
	Matanzas Woods Parkway																								
2400	US 1 to Belle Terre Parkway			1.06								4,200	0.103	5.8%	433	795	1,228							C	C
2410	Belle Terre Parkway to Bird of Paradise Drive			0.80								7,300	0.098	1.0%	715	305	1,020							C	C
2415	Bird of Paradise Drive to I-95 SB	Arterial	Class 1	0.10	2	No	Yes	No	3	0.33	45	14,000	0.09		1,260	305	1,565	*	**	1,510	1,600	***	D	C	C
2416	I-95 SB to I-95 NB			0.29								12,000	0.71		8,520	305	8,825							C	C
2417	I-95 NB to Old King Rd Extension			0.23								10,700	0.69		7,383	305	7,688							C	C
2418	Old Kings Rd Extension at Matanzas HS Entrance			0.52								7,300	0.107	3.1%	781	372	1,153							C	C
		Segment Length:		3.00																					
	Old Kings Road																								
2700	US 1 to Princess Place Preserve Entrance			1.55							55	1,400	0.077	1.0%	108	61	169							B	B
2702	Princess Place Preserve Entrance to Forest Grove Drive			3.01								1,100	0.084	1.0%	92	86	178							B	B
2705	Forest Grove Drive to Farmsworth Drive	Arterial	UFH	1.55	2	No	n.a.	n.a.	n.a.	n.a.	45	5,300	0.085	5.5%	451	384	835	*	770	1,530	2,170	2,990	D	B	B
2707	Farmsworth Drive to Frontier Drive			0.39								8,500	0.08	6.0%	680	452	1,132							B	C
2710	Frontier Drive to Fleetwood Drive			0.46							35	11,400	0.082	1.0%	935	440	1,375							C	C
2715	Fleetwood Drive to Farragut Drive			0.65								13,200	0.081	1.0%	1,069	454	1,523							C	C
		Segment Length:		7.61																					
2720	Farragut Drive to Palm Coast Parkway	Arterial	Class 1	0.39	4	Yes	Yes	Yes	1	2.56	35	16,000	0.08	1.0%	1,280	468	1,748	*	**	3,420	3,580	**	D	C	C
		Segment Length:		0.39																					
2730	Palm Coast Parkway to Utility Drive			0.63							35	11,100	0.079	1.3%	877	396	1,273							B	C
2735	Utility Drive to Oak Trails Boulevard			0.25	2	No						9,500	0.083	1.7%	789	376	1,165	*	770	1,530	2,170	2,990		B	C
2740	Oak Trails Boulevard to Hidden Lake Blvd	Arterial	UFH	3.35			n.a.	n.a.	n.a.	n.a.	45	9,000	0.083		747	572	1,319						D		
2743	Hidden Lake Blvd to Town Center Drive			0.20								9,400	0.085	4.2%	799	572	1,371							B	C
2745	Town Center Boulevard to SR 100			1.61	4	Yes						8,500	0.087	2.6%	740	1,009	1,749	*	3,300	4,660	5,900	6,530		B	B
2750	SR 100 to Palm Coast City Limit			0.30	2	No					50	4,900	0.081	4.4%	397	122	519	*	770	1,530	2,170	2,990		B	C
		Segment Length:		6.34																					
	Palm Coast Parkway																								
2800	US 1 to Pine Lakes Parkway	Arterial	Class 1	0.53	4	Yes	Yes	Yes	1	1.89	45	12,900	0.087	1.3%	1,122	2,360	3,482	*	**	3,420	3,580	***	D	C	C
	Palm Coast Parkway (Eastbound)																								
2815	Pine Lakes Parkway to Belle Terre Parkway	Arterial	Class 1 (One Way)	1.22	2	One Way	Yes	No	2	1.06	45	9,100	0.087	1.0%	792	1,393	2,185	*	**	2,050	2,150	***	D	C	F
2825	Belle Terre Parkway to Cypress Point Parkway			0.66	3						40	18,300	0.079	1.0%	1,446	965	2,411	*	**	3,150	3,240	***		C	C
		Segment Length:		1.88																					
	Palm Coast Parkway (Westbound)																								
2820	Cypress Point Parkway to Belle Terre Parkway	Arterial	Class 1 (One Way)	0.65	3	One Way	Yes	No	2	1.10	40	17,300	0.085	1.0%	1,471	973	2,444	*	**	3,150	3,240	***	D	C	C
2810	Belle Terre Parkway to Pine Lakes Parkway			1.16	2						45	10,300	0.08	1.0%	824	1,393	2,217	*	**	2,050	2,150	***		C	D
		Segment Length:		1.81																					
	Palm Coast Parkway																								
2826	Cypress Point Parkway to I-95 South Bound Ramps			0.27								50,600	0.083	1.0%	4,200	1,323	5,523							C	C
2827	I-95 South Bound Ramps to I-95 North Bound Ramps	Arterial	Class 1	0.39	6	Yes	Yes	Yes	3	3.33	40	50,700	0.084	1.0%	4,259	837	5,096	*	**	5,250	5,390	***	D	C	C
2830	I-95 North Bound Ramps to Old Kings Road			0.24								53,300	0.082	1.0%	4,371	822	5,193							C	C
		Segment Length:		0.90																					
	Palm Coast Parkway (Eastbound)																								
2845	Old Kings Road to Florida Park Drive			0.34								13,600	0.083	1.0%	1,129	474	1,603							C	C
2855	Florida Park Drive to Club House Drive	Arterial	Class 1 (One Way)	0.26	2	One Way	Yes	Yes	3	1.69	45	12,600	0.086	1.0%	1,084	502	1,586	*	**	3,150	3,240	***	D	C	C
2865	Club House Drive to Colbert Lane			0.25								10,600	0.088	1.0%	933	342	1,275							C	C
2875	Colbert Lane to Palm Harbor Parkway			0.93								7,400	0.079	1.0%	585	283	868							C	C

Link	Facility	Facility Type	Classification	Length (miles)	Number of Lanes	Divided	Turn Lanes Left	Turn Lanes Right	Signals	Signals / Mile	Speed Limit	2019 AADT	K (actual)	Background Growth %	PMPH Trips	PMPH Vested Trips	Total PMPH Trips	FDOT Current Service Volumes (2012) A	B	C	D	E	Adopted LOS	LOS w/o Vested Trips	LOS with Vested Trips
		Segment Length:		1.78																					
	Palm Coast Parkway (Westbound)																								
2870	Palm Harbor Parkway to Colbert Lane			0.65								8,000	0.091	1.9%	728	283	1,011							C	C
2860	Colbert Lane to Club House Drive	Arterial	Class 1 (One Way)	0.32	2						45	10,200	0.08	1.0%	816	323	1,139	*	**	2,050	2,150	***	D	C	C
2850	Club House Drive to Florida Park Drive			0.28								12,700	0.087	1.0%	1,105	441	1,546							C	C
2840	Florida Park Drive to Old Kings Road			0.33		One Way	Yes	No	3	1.90	40	15,600	0.083	1.0%	1,295	448	1,743							C	C
		Segment Length:		1.58																					
	Palm Coast Parkway (Hammock Dunes Parkway)																								
2880	Palm Harbor Parkway to SR A1A	Arterial	Class 1	1.11	2	No	Yes	Yes	1	0.90	45	12,400	0.081	1.0%	1,004	152	1,156	*	**	1,510	1,600	***	D	C	C
	Palm Harbor Parkway																								
2890	Matanzas HS Entrance to Cris Lane			0.60								6,100	0.084	4.1%	512	271	783							B	B
2895	Cris Lane to Fellowship Lane	Collector	UFH	0.70	2	No	n.a.	n.a.	n.a.	n.a.	45	5,600	0.091		510	271	781	*	770	1,530	2,170	2,990	D		
2900	Fellowship Lane to Florida Park Drive			0.70								5,900	0.09		531	271	802								
2910	Florida Park Drive to Club House Drive			1.78								5,300	0.081	1.0%	429	333	762							B	B
		Segment Length:		3.78																					
2920	Club House Drive to Palm Coast Parkway	Collector	Class 2	0.75	2	No	No	No	2	2.67	35	5,800	0.083	1.0%	481	339	820	*	**	660	1,330	1,410	D	C	C
	Pine Lakes Parkway																								
3000	Belle Terre Parkway (N) to Palm Coast Parkway			1.21								4,100	0.089	2.8%	365	221	586							C	C
3002	Palm Coast Parkway to Commerce Boulevard	Collector	Class 1	0.15	2	No	Yes	Yes	2	0.40	45	5,800	0.137	1.2%	795	126	921	*	**	1,510	1,600	***	D	C	C
3010	Commerce Boulevard to White Mill Drive			1.85								5,900	0.08	1.0%	472	126	598							C	C
3020	White Mill Drive to Belle Terre Parkway (S)			1.81								8,600	0.079	1.0%	679	107	786							C	C
		Segment Length:		5.02																					
	Ravenwood Drive																								
3911	White View Parkway to Rymfire Drive	Collector	UFH	0.56	2	No	n.a.	n.a.	n.a.	n.a.	45	5,100	0.077	4.6%	393	0	393	*	770	1,530	2,170	2,990	D	B	B
	Royal Palms Parkway																								
3200	US 1 to Rymfire Drive			0.68							55	6,200	0.083	5.9%	515	550	1,065							C	C
3210	Rymfire Drive to Belle Terre Parkway	Arterial	Class 1	2.05	2	No	Yes	No	1	0.23		4,500	0.078	5.4%	351	576	927	*	**	1,510	1,600	***	D	C	C
3212	Belle Terre Parkway to Town Center Boulevard			1.57							45	9,400	0.078	1.0%	733	416	1,149							C	C
		Segment Length:		4.30																					
	Rymfire Drive																								
3215	Royal Palms Parkway to Ravenwood Drive	Collector	UFH	1.71	2	No	n.a.	n.a.	n.a.	0.00	45	3,900	0.083	1.0%	324	0	324	*	770	1,530	2,170	2,990	D	B	B
3225	Ravenwood Drive to Belle Terre Parkway			1.34								6,300	0.079	1.0%	498	0	498							B	B
		Segment Length:		3.05																					
	Seminole Woods Parkway																								
3325	SR 100 to Ulatum Place			0.95	4							10,900	0.095	1.0%	1,036	327	1,363	*	3,300	4,660	5,900	6,530		B	B
3300	Ulatum Place to Citation Parkway	Collector	UFH	1.45		Yes	n.a.	n.a.	n.a.	n.a.	50	7,900	0.083	1.0%	656	231	887						D	B	B
3310	Citation Parkway to Sesame Boulevard			1.15	2							6,000	0.096	1.0%	576	180	756	*	770	1,530	2,170	2,990		B	B
3305	Sesame Boulevard to US 1			1.37		No						5,600	0.107	1.0%	599	173	772							B	B
		Segment Length:		4.92																					
	Sesame Boulevard																								
3320	Seminole Woods Parkway to terminus	Collector	UFH	2.92	2	No	n.a.	n.a.	n.a.	n.a.	45	1,500	0.096	1.0%	144	0	144	*	770	1,530	2,170	2,990	D	B	B
	State Road 100																								
3560	John Anderson Drive to Colbert Lane			1.17								11,800	0.05	1.5%	590	426	1,016							C	C
3550	Colbert Lane to Tuscany Blvd.	Arterial	State Class 1	0.46	4	Yes	Yes	No	2	0.74	55	19,700	0.088	1.0%	1,734	742	2,476	*	**	3,420	3,580	***	D	C	C
3540	Tuscany Blvd. to Old Kings Road			1.07								20,600	0.091	1.0%	1,875	1,136	3,011							C	C
		Segment Length:		2.70																					
3530	Old Kings Road to I-95			0.49							55	23,400	0.063	2.0%	1,474	2,049	3,523						D	C	F
3525	I-95 to Memorial Medical Parkway			0.27								33,700	0.096	1.0%	3,235	1,487	4,722							C	F
3520	Memorial Medical Pkwy to Seminole Woods Parkway			0.35							50	28,000	0.082	1.0%	2,296	1,109	3,405							C	D

Link	Facility	Facility Type	Classification	Length (miles)	Number of Lanes	Divided	Turn Lanes Left	Turn Lanes Right	Signals	Signals / Mile	Speed Limit	2019 AADT	K (actual)	Background Growth %	PMPH Trips	PMPH Vested Trips	Total PMPH Trips	FDOT Current Service Volumes (2012) A	B	C	D	E	Adopted LOS	LOS w/o Vested Trips	LOS with Vested Trips
3515	Seminole Woods Pkwy to Bulldog Drive	Arterial	State Class 1	0.27	4	Yes	Yes	No	6	1.96	55	32,800	0.112	1.0%	3,674	673	4,347	*	**	3,420	3,580	***	C	C	C
3510	Bulldog Drive to Landings Blvd.			0.78								29,800	0.089	1.7%	2,652	533	3,185							C	C
3505	Landings Blvd. to Belle Terre Parkway			0.45								27,900	0.085	1.4%	2,372	439	2,811							C	C
3500	Belle Terre Parkway to Palm Coast City Limits			0.45								17,900	0.089	1.0%	1,593	352	1,945							C	C
			Segment Length:	3.06																					
	Town Center Blvd.																								
4100	SR 100 to Hospital Drive	Collector	UFH	0.29	4	Yes	n.a.	n.a.	n.a.	n.a.	25	6,700	0.107	1.0%	717	571	1,288	*	3,300	4,660	5,900	6,530	D	B	B
4110	Hospital Drive to Central Avenue			0.39								7,000	0.108	1.0%	756	636	1,392							B	B
4120	Central Avenue to Lake Avenue			0.30	2	No						8,400	0.081	1.0%	680	300	980	*	770	1,530	2,170	2,990		B	B
4130	Lake Avenue to Royal Palm Parkway			0.59								6,300	0.085	1.0%	536	492	1,028							B	C
4140	Royal Palm Parkway to Old Kings Road			0.25								10,000	0.087	1.0%	870	728	1,598							B	C
			Segment Length:	1.82																					
	Tuscany Blvd.																								
4145	Old Kings Road to SR100	Collector	Class 1	2.01	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			1.0%	-	0	-								
	US1 (SR5)																								
3700	St. Johns County Line to Old Kings Road	Arterial	State Class 1	0.76	4	Yes	Yes	No	3	0.25	60	12,000	0.088	5.3%	1,056	710	1,766	*	**	3,420	3,580	***	D	C	C
3702	Old Kings Road to Matanzas Woods Parkway			2.61							65	11,900	0.097	3.4%	1,154	989	2,143							C	C
3705	Matanzas Woods Parkway to Palm Coast Parkway			3.65								11,100	0.107	1.1%	1,188	2,526	3,714							C	C
3710	Palm Coast Parkway to White View Parkway			2.11								11,700	0.079	1.0%	924	1,040	1,964							C	C
3720	White View Parkway to Royal Palms Parkway			1.78							60	12,800	0.086	1.0%	1,101	1,543	2,644							C	C
3725	Royal Palms Parkway to Espanola Road			1.07								18,800	0.09	1.0%	1,692	942	2,634							C	C
			Segment Length:	11.98																					
101	Palm Coast City Limit to Belle Terre Parkway	Arterial	State Class 1	0.57	4	Yes	Yes	No	2	0.69	60	14,100	0.103	1.4%	1,452	470	1,922	*	**	3,420	3,580	***	D	C	C
3750	Belle Terre Parkway to DuPont Road			0.9								14,000	0.08	1.6%	1,120	490	1,610							C	C
3755	DuPont Road to Seminole Woods Parkway			1.04								12,900	0.087	2.8%	1,122	420	1,542							C	C
235	Seminole Woods Parkway to Palm Coast City Limit			0.37								15,500	0.09	1.0%	1,395	490	1,885							C	C
			Segment Length:	2.88																					
	White Mill Drive																								
3915	Pine Lakes Parkway to White View Parkway	Collector	UFH	0.39	2	No	n.a.	n.a.	n.a.	n.a.	40	4,000	0.084	2.6%	336	66	402	*	770	1,530	2,170	2,990	D	B	B
	White View Parkway																								
3920	US 1 to White Mill Drive	Arterial	Class 1	0.88	4	Yes	Yes	No	1	0.28	45	6,600	0.09	3.9%	594	121	715	*	**	3,420	3,580	***	D	C	C
3910	White Mill Drive to Belle Terre Parkway			1.53	2	No					50	6,800	0.09	4.8%	612	30	642	*	**	1,510	1,600	***		C	C
3900	Belle Terre Parkway to Pritchard Drive			1.11							45	4,000	0.087	2.6%	348	14	362							C	C
			Segment Length:	3.52																					

Freeway = Interstate Highway, State = State Highway, UFH = Uninterrupted Flow Highway, Class 1 = 40 mph or higher speed limit, Class 2 = 35 mph or lower speed limit, PMPH = P.M. Peak Hour, K (actual) = Measured Peak Hour Factor.

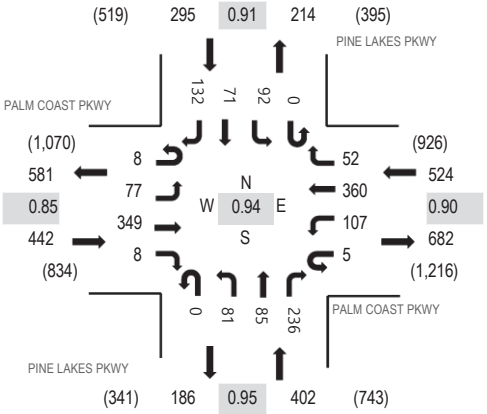
Attachment E

Turning Movement Counts
FDOT Season Factors

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

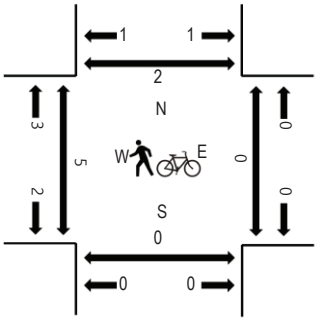
Location: 1 PINE LAKES PKWY & PALM COAST PKWY AM
Date: Wednesday, December 16, 2020
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	PALM COAST PKWY Eastbound				PALM COAST PKWY Westbound				PINE LAKES PKWY Northbound				PINE LAKES PKWY Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	15	46	0	1	14	67	8	1	16	21	27	0	10	9	29	264	1,397	0	0	0	0
7:15 AM	2	23	75	6	0	18	74	6	0	17	26	38	0	1	17	33	336	1,532	0	0	0	0
7:30 AM	3	12	69	2	0	18	81	10	0	24	14	51	0	16	15	40	355	1,605	0	0	0	1
7:45 AM	7	13	89	2	0	29	109	7	0	30	19	56	0	20	18	43	442	1,663	0	0	0	1
8:00 AM	1	19	85	2	3	21	91	17	0	20	16	53	0	18	20	33	399	1,625	0	0	0	1
8:15 AM	0	27	90	2	1	19	75	19	0	15	28	60	0	32	13	28	409		0	0	0	0
8:30 AM	0	18	85	2	1	38	85	9	0	16	22	67	0	22	20	28	413		0	0	0	0
8:45 AM	0	19	115	5	1	36	62	6	0	16	21	69	0	15	14	25	404		0	0	0	0

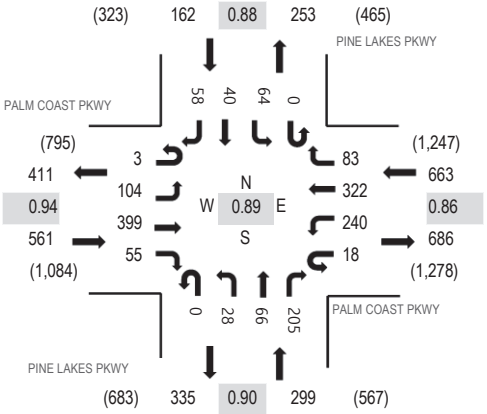
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	7
Lights	8	64	335	8	5	105	352	49	0	79	84	232	0	90	70	128	1,609
Mediums	0	13	12	0	0	2	3	3	0	2	1	4	0	2	1	4	47
Total	8	77	349	8	5	107	360	52	0	81	85	236	0	92	71	132	1,663

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

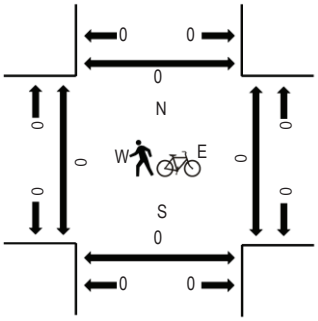
Location: 1 PINE LAKES PKWY & PALM COAST PKWY PM
Date: Wednesday, December 16, 2020
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	PALM COAST PKWY Eastbound				PALM COAST PKWY Westbound				PINE LAKES PKWY Northbound				PINE LAKES PKWY Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	2	22	102	15	3	53	80	14	0	7	15	52	0	9	20	12	406	1,617	0	0	0	0
4:15 PM	2	30	91	5	2	72	83	17	0	7	9	44	0	10	13	13	398	1,684	0	0	0	0
4:30 PM	0	22	102	11	6	58	64	20	0	11	9	62	0	15	7	13	400	1,685	0	0	0	0
4:45 PM	1	32	102	12	3	51	84	20	0	3	17	41	0	23	11	13	413	1,668	0	0	0	0
5:00 PM	1	27	108	14	6	69	93	28	0	9	23	51	0	15	10	19	473	1,604	0	0	0	0
5:15 PM	1	23	87	18	3	62	81	15	0	5	17	51	0	11	12	13	399		0	0	0	0
5:30 PM	3	26	91	18	1	66	68	13	0	8	9	42	0	13	12	13	383		0	0	0	0
5:45 PM	6	31	71	8	2	49	49	12	0	15	14	46	0	13	17	16	349		0	0	1	0

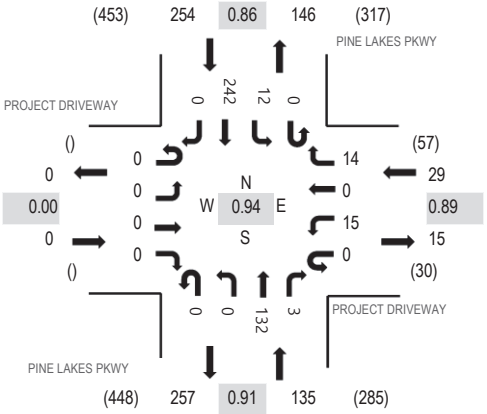
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2
Lights	3	104	392	55	18	237	315	82	0	26	65	203	0	64	39	56	1,659
Mediums	0	0	6	0	0	3	6	1	0	2	1	2	0	0	1	2	24
Total	3	104	399	55	18	240	322	83	0	28	66	205	0	64	40	58	1,685

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

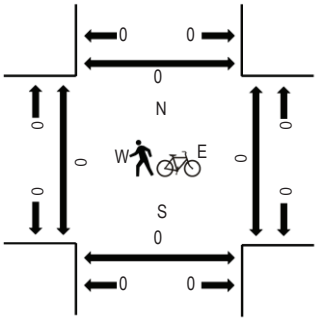
Location: 2 PINE LAKES PKWY & PROJECT DRIVEWAY AM
Date: Wednesday, December 16, 2020
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	PROJECT DRIVEWAY Eastbound				PROJECT DRIVEWAY Westbound				PINE LAKES PKWY Northbound				PINE LAKES PKWY Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	2	0	5	0	0	35	0	0	1	47	0	90	412	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	5	0	0	44	1	0	5	53	0	109	418	0	0	0	0
7:30 AM	0	0	0	0	0	5	0	3	0	0	29	0	0	2	63	0	102	393	0	0	0	0
7:45 AM	0	0	0	0	0	3	0	4	0	0	30	0	0	4	70	0	111	388	0	0	0	0
8:00 AM	0	0	0	0	0	6	0	2	0	0	29	2	0	1	56	0	96	383	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	8	0	0	35	0	0	1	39	0	84		0	0	0	0
8:30 AM	0	0	0	0	0	2	0	5	0	0	40	0	0	2	48	0	97		0	0	0	0
8:45 AM	0	0	0	0	0	2	0	3	0	0	40	0	0	11	50	0	106		0	0	0	0

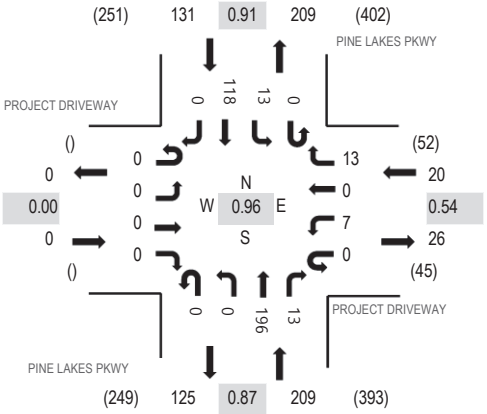
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3
Lights	0	0	0	0	0	15	0	14	0	0	118	2	0	9	238	0	396
Mediums	0	0	0	0	0	0	0	0	0	0	12	1	0	3	3	0	19
Total	0	0	0	0	0	15	0	14	0	0	132	3	0	12	242	0	418

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

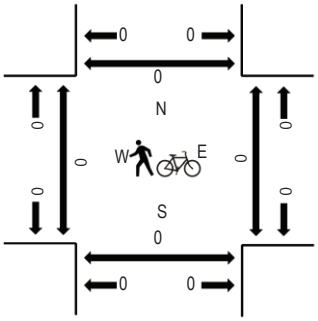
Location: 2 PINE LAKES PKWY & PROJECT DRIVEWAY PM
Date: Wednesday, December 16, 2020
Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	PROJECT DRIVEWAY Eastbound				PROJECT DRIVEWAY Westbound				PINE LAKES PKWY Northbound				PINE LAKES PKWY Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	4	0	10	0	0	36	3	0	2	28	0	83	353	0	0	0	0
4:15 PM	0	0	0	0	0	3	0	6	0	0	50	3	0	5	27	0	94	360	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	3	0	0	43	3	0	3	30	0	82	339	0	0	0	0
4:45 PM	0	0	0	0	0	3	0	1	0	0	57	3	0	1	29	0	94	347	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	3	0	0	46	4	0	4	32	0	90	343	0	0	0	0
5:15 PM	0	0	0	0	0	2	0	1	0	0	46	3	0	0	21	0	73		0	0	0	0
5:30 PM	0	0	0	0	0	1	0	7	0	0	41	6	0	2	33	0	90		0	0	0	0
5:45 PM	0	0	0	0	0	2	0	5	0	0	47	2	0	1	33	0	90		0	0	0	0

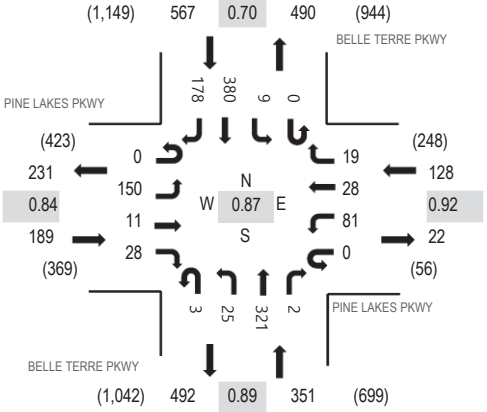
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	0	0	0	7	0	13	0	0	196	13	0	13	116	0	358
Mediums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	0	0	0	0	0	7	0	13	0	0	196	13	0	13	118	0	360

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

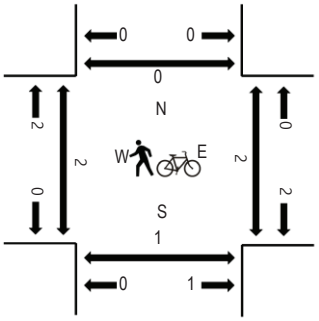
Location: 3 BELLE TERRE PKWY & PINE LAKES PKWY AM
Date: Wednesday, December 16, 2020
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	PINE LAKES PKWY Eastbound				PINE LAKES PKWY Westbound				BELLE TERRE PKWY Northbound				BELLE TERRE PKWY Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	38	2	9	0	20	6	6	2	3	90	0	0	2	77	35	290	1,235	0	0	0	0
7:15 AM	0	47	4	5	0	18	5	4	0	7	92	0	0	2	123	47	354	1,194	0	0	1	0
7:30 AM	0	34	2	4	0	23	8	2	1	11	68	2	0	0	108	43	306	1,120	0	0	0	0
7:45 AM	0	31	3	10	0	20	9	7	0	4	71	0	0	5	72	53	285	1,133	0	0	0	0
8:00 AM	0	20	3	12	0	22	10	4	0	3	63	3	0	1	69	39	249	1,230	1	0	0	0
8:15 AM	0	28	6	13	0	15	3	4	0	8	89	2	0	2	89	21	280		0	0	0	0
8:30 AM	0	37	2	8	0	22	4	1	0	4	86	3	0	2	112	38	319		0	0	0	0
8:45 AM	0	38	3	10	0	26	4	5	1	7	77	2	2	5	151	51	382		0	0	0	0

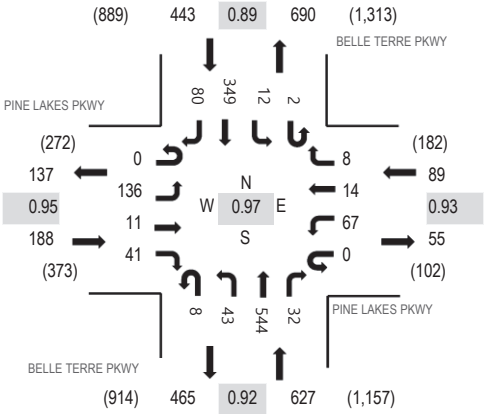
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	1	0	0	0	0	1	0	0	2	0	0	0	1	1	7
Lights	0	139	6	28	0	80	28	14	3	24	309	2	0	7	374	174	1,188
Mediums	0	10	4	0	0	1	0	4	0	1	10	0	0	2	5	3	40
Total	0	150	11	28	0	81	28	19	3	25	321	2	0	9	380	178	1,235

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

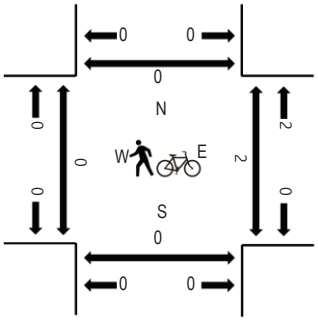
Location: 3 BELLE TERRE PKWY & PINE LAKES PKWY PM
Date: Wednesday, December 16, 2020
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	PINE LAKES PKWY Eastbound				PINE LAKES PKWY Westbound				BELLE TERRE PKWY Northbound				BELLE TERRE PKWY Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	30	6	10	0	15	3	5	0	12	112	4	0	5	94	23	319	1,254	0	0	0	0
4:15 PM	0	39	4	7	0	19	4	2	0	8	130	8	0	3	75	23	322	1,279	0	0	0	0
4:30 PM	0	26	2	12	0	18	1	2	0	7	130	4	0	2	77	23	304	1,299	0	0	0	0
4:45 PM	0	38	5	6	0	18	2	4	2	7	105	1	0	3	96	22	309	1,341	0	0	0	0
5:00 PM	0	32	6	9	0	13	4	1	2	11	126	8	1	1	104	26	344	1,347	0	0	0	0
5:15 PM	0	32	2	9	0	16	0	2	2	8	152	9	1	3	86	20	342		0	0	0	0
5:30 PM	0	37	0	13	0	15	5	4	3	14	143	7	0	6	80	19	346		0	0	0	0
5:45 PM	0	35	3	10	0	23	5	1	1	10	123	8	0	2	79	15	315		0	1	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	134	11	41	0	67	13	8	8	42	542	32	2	12	349	78	1,339
Mediums	0	2	0	0	0	0	1	0	0	1	2	0	0	0	0	2	8
Total	0	136	11	41	0	67	14	8	8	43	544	32	2	12	349	80	1,347

2019 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 7300 FLAGLER COUNTYWIDE

MOCF: 0.95

WEEK	DATES	SF	PSCF
1	01/01/2019 - 01/05/2019	1.05	1.11
2	01/06/2019 - 01/12/2019	1.04	1.09
3	01/13/2019 - 01/19/2019	1.03	1.08
4	01/20/2019 - 01/26/2019	1.02	1.07
5	01/27/2019 - 02/02/2019	1.00	1.05
6	02/03/2019 - 02/09/2019	0.98	1.03
* 7	02/10/2019 - 02/16/2019	0.96	1.01
* 8	02/17/2019 - 02/23/2019	0.95	1.00
* 9	02/24/2019 - 03/02/2019	0.94	0.99
*10	03/03/2019 - 03/09/2019	0.93	0.98
*11	03/10/2019 - 03/16/2019	0.92	0.97
*12	03/17/2019 - 03/23/2019	0.93	0.98
*13	03/24/2019 - 03/30/2019	0.93	0.98
*14	03/31/2019 - 04/06/2019	0.94	0.99
*15	04/07/2019 - 04/13/2019	0.95	1.00
*16	04/14/2019 - 04/20/2019	0.96	1.01
*17	04/21/2019 - 04/27/2019	0.96	1.01
*18	04/28/2019 - 05/04/2019	0.97	1.02
*19	05/05/2019 - 05/11/2019	0.97	1.02
20	05/12/2019 - 05/18/2019	0.98	1.03
21	05/19/2019 - 05/25/2019	0.99	1.04
22	05/26/2019 - 06/01/2019	0.99	1.04
23	06/02/2019 - 06/08/2019	1.00	1.05
24	06/09/2019 - 06/15/2019	1.01	1.06
25	06/16/2019 - 06/22/2019	1.01	1.06
26	06/23/2019 - 06/29/2019	1.01	1.06
27	06/30/2019 - 07/06/2019	1.02	1.07
28	07/07/2019 - 07/13/2019	1.02	1.07
29	07/14/2019 - 07/20/2019	1.02	1.07
30	07/21/2019 - 07/27/2019	1.02	1.07
31	07/28/2019 - 08/03/2019	1.02	1.07
32	08/04/2019 - 08/10/2019	1.02	1.07
33	08/11/2019 - 08/17/2019	1.01	1.06
34	08/18/2019 - 08/24/2019	1.03	1.08
35	08/25/2019 - 08/31/2019	1.04	1.09
36	09/01/2019 - 09/07/2019	1.05	1.11
37	09/08/2019 - 09/14/2019	1.06	1.12
38	09/15/2019 - 09/21/2019	1.08	1.14
39	09/22/2019 - 09/28/2019	1.06	1.12
40	09/29/2019 - 10/05/2019	1.04	1.09
41	10/06/2019 - 10/12/2019	1.02	1.07
42	10/13/2019 - 10/19/2019	1.00	1.05
43	10/20/2019 - 10/26/2019	1.00	1.05
44	10/27/2019 - 11/02/2019	1.01	1.06
45	11/03/2019 - 11/09/2019	1.01	1.06
46	11/10/2019 - 11/16/2019	1.02	1.07
47	11/17/2019 - 11/23/2019	1.03	1.08
48	11/24/2019 - 11/30/2019	1.03	1.08
49	12/01/2019 - 12/07/2019	1.04	1.09
50	12/08/2019 - 12/14/2019	1.04	1.09
51	12/15/2019 - 12/21/2019	1.05	1.11
52	12/22/2019 - 12/28/2019	1.04	1.09
53	12/29/2019 - 12/31/2019	1.03	1.08

* PEAK SEASON

14-FEB-2020 15:39:28 830UPD 5_7300_PKSEASON.TXT

Attachment F

City of Palm Coast Average
Annual Daily Traffic (AADT)

CITY OF PALM COAST AVERAGE ANNUAL DAILY TRAFFIC (AADT)												6 year
		AADT										Annual
Link		1997	2002	2004	2006	2008	2011	2013	2015	2017	2019	% difference
Number	Link Description											
	Belle Terre Parkway											
1200	Matanzas Woods Parkway to Bird of Paradise Drive	6,000	3,800	4,700	7,700	5,300	6,200	7,400	8,600	6,600	7,100	-0.69%
1205	Bird of Paradise Drive to Pine Lakes Parkway	-	3,800	11,000	15,000	12,000	11,000	15,300	14,800	14,100	14,800	-0.55%
1210	Pine Lakes Parkway to Bellaire Drive	10,500	10,500	12,500	16,000	13,000	13,000	15,800	15,700	14,700	15,800	0.00%
1215	Bellaire Drive to Palm Coast Parkway(WB)	-	15,500	17,000	20,500	15,000	16,500	18,700	18,000	17,400	18,600	-0.09%
1220	Palm Coast Parkway (WB) to Palm Coast Parkway (EB)	9,500	14,000	17,500	18,500	9,300	23,000	18,500	23,000	24,700	23,000	3.70%
1225	Palm Coast Parkway (EB) to Cypress Point Parkway	11,500	12,000	15,000	21,000	14,000	19,500	21,300	20,700	21,100	25,300	2.91%
1230	Cypress Point Parkway to Pine Lakes Parkway	17,500	26,000	30,000	41,500	31,000	26,000	32,400	34,700	34,000	38,300	2.83%
1240	Pine Lakes Parkway to Parkview Drive (S)	1,300	16,000	22,500	33,000	21,000	21,000	24,000	25,000	26,300	24,600	0.41%
1245	Parkview Drive (S) to White View Parkway	-	16,000	20,500	40,000	20,500	18,000	24,200	24,900	22,800	25,600	0.94%
1250	White View Parkway to Rymfire Drive - Northbound	10,000	14,500	18,500	25,500	18,500	19,500	22,200	23,900	23,500	25,500	2.34%
1252	Rymfire Drive to Royal Palms Parkway - northbound	-	13,500	17,500	26,000	20,000	23,500	25,100	26,000	25,700	28,200	1.96%
1254	Royal Palms Parkway to East Hampton Boulevard	-	14,500	19,500	25,500	22,000	19,000	24,000	25,500	25,400	27,000	1.98%
1260	East Hampton Boulevard to SR 100	8,800	13,000	12,000	21,500	19,000	20,500	24,100	22,800	22,000	24,500	0.27%
	Belle Terre Blvd.											
1263	SR 100 to Zebulas Trail	-	6,800	5,300	6,000	5,900	4,900	5,400	6,700	8,400	7,200	4.91%
1265	Zebulas Trail to Zaun Trail	-	3,400	5,300	4,700	5,900	4,800	6,200	5,600	6,600	6,900	1.80%
1270	Zaun Trail to Citation Parkway	-	2,500	3,300	3,700	4,700	3,200	3,500	5,200	4,000	6,200	10.00%
1275	Citation Parkway to US 1	-	1,700	3,500	4,200	4,200	2,900	3,600	3,600	3,800	4,500	3.79%
	Bird of Paradise Drive											
2420	Matanzas Woods Parkway to Birchwood Drive	-	700	1,000	1,000	1,600	2,100	2,200	2,100	2,900	3,500	8.05%
2430	Birchwood Drive to Belle Terre Parkway	-	3,000	2,400	1,500	2,800	3,000	4,100	4,000	3,000	5,100	3.70%
	Bulldog Drive											
4300	SR 100 to Central Avenue	-	-	-	-	-	1,700	1,700	2,900	2,800	2,900	9.31%
	Central Avenue											
4400	Belle Terre Parkway to Market Avenue	-	-	-	-	-	4,700	4,900	5,400	3,200	3,100	-7.35%
4410	Market Avenue to Lake Avenue	-	-	-	-	-	2,600	2,200	2,800	3,500	3,300	6.99%
4420	Lake Avenue to Landings Blvd.	-	-	-	-	-	2,600	2,200	2,800	3,600	3,500	8.05%
4430	Landings Blvd to Park Street	-	-	-	-	-	2,300	2,300	2,800	3,300	3,300	6.20%
4440	Park Street to Bulldog Drive	-	-	-	-	-	2,600	2,300	2,900	3,100	3,300	6.20%
4450	Bulldog Drive to Brookhaven Drive	-	-	-	-	-	1,300	1,500	1,900	2,300	2,200	6.59%
4460	Brookhaven Drive to Town Center Blvd.	-	-	-	-	-	1,600	1,500	1,600	1,900	1,900	4.02%
	Citation Parkway											
3312	Belle Terre Parkway to Laguna Forest Lane	-	500	500	900	700	400	200	500	600	600	20.09%
3315	Seminole Woods Parkway to Sesame Boulevard	-	500	1,000	2,700	1,900	2,500	2,900	2,500	3,000	2,900	0.00%
	Club House Drive											
1300	Palm Harbor Parkway to Palm Coast Parkway (WB)	2,300	2,400	4,200	4,000	2,400	2,800	2,900	3,600	3,400	4,200	6.37%
1310	Palm Coast Parkway (WB) to Palm Coast Parkway (EB)	3,300	3,900	3,600	5,100	3,200	2,800	3,100	3,100	3,400	3,500	2.04%
	Colbert Lane											
3105	Palm Coast Parkway (WB) to Palm Coast Parkway (EB)	-	3,700	4,000	4,300	3,600	4,800	5,100	4,600	5,500	4,700	-1.35%
3110	Palm Coast Parkway (EB) to Waterside Parkway (N)	3,200	5,100	6,300	7,000	6,100	5,800	6,900	7,100	7,900	7,800	2.06%
3120	Waterside Parkway (N) to Waterside Park (S)	-	4,200	4,800	4,900	4,200	4,100	4,800	4,600	5,500	5,400	1.98%
3125	Waterside Park (S) to South Park Road	-	3,800	5,500	5,400	4,300	4,700	5,300	5,000	6,300	3,900	-4.98%
3130	South Park Road to Roberts Road	-	-	5,200	5,400	4,200	4,700	5,200	5,200	6,200	5,800	1.84%
3135	Roberts Road to SR 100	-	-	5,200	5,400	4,200	3,300	3,500	4,200	4,500	4,200	3.09%
	Cypress Point Parkway											
4200	Belle Terre Parkway to Pine Cone Drive	-	15,500	17,000	30,500	18,500	15,500	19,500	17,100	19,000	22,100	2.11%
4205	Pine Cone Drive to Cypress Edge (S)	-	14,000	17,000	20,500	16,500	14,500	16,100	17,000	18,100	18,800	2.62%
4210	Cypress Edge (S) to Cypress Edge (N) - eastbound	-	14,000	17,000	20,500	16,500	11,500	17,200	16,500	16,900	17,000	-0.19%
4215	Cypress Edge (N) to Palm Coast Parkway - eastbound	-	20,500	21,500	29,500	16,500	24,500	30,100	28,300	31,100	26,100	-2.35%
	Farmsworth Drive											
2716	Old Kings Road to Florida Park Drive	-	1,400	3,000	1,800	1,500	1,800	2,000	2,200	1,700	1,900	-0.85%
	Farragut Drive											
2717	Old Kings Road to Florida Park Drive	-	900	900	1,400	800	500	260	370	400	200	-4.28%
	Fleetwood Drive											
2714	Old Kings Road to Florida Park Drive	-	2,500	2,500	2,500	900	1,200	920	950	1,000	1,000	1.40%
	Florida Park Drive											
2090	Palm Harbor Parkway to Forest Hill Drive	-	4,800	4,500	6,900	5,100	4,900	5,400	5,500	5,700	5,800	1.20%
2100	Forest Hill Drive to Fleetwood Drive	-	5,400	5,400	7,200	5,100	5,700	6,300	6,400	6,600	6,700	1.03%
2105	Fleetwood Drive to Farragut Drive	-	5,400	7,500	7,600	5,100	7,000	7,800	8,000	8,100	8,600	1.64%
2110	Farragut Drive to Palm Coast Parkway (WB)	8,800	10,000	7,500	11,000	7,300	8,600	8,500	8,900	8,100	11,000	4.39%
2120	Palm Coast Parkway (WB) to Palm Coast Parkway (EB)	4,400	5,400	3,200	6,300	4,900	4,500	5,200	6,300	5,600	6,100	2.70%
	Forest Grove Drive											
4000	Old Kings Road (W) to Old Kings Road (E)	900	1,100	1,800	2,400	3,400	2,900	3,500	3,900	-	-	#VALUE!
4010	Old Kings Road (E) to Palm Harbor Parkway	-	500	1,300	1,300	3,200	3,600	4,700	4,100	-	-	#VALUE!
	Frontier Drive											
2712	Old Kings Road to Florida Park Drive	-	2,800	4,000	3,000	2,100	1,400	1,400	1,900	1,800	1,700	3.29%
	Hargrove Grade Road											
3707	US 1 to Otis Stone Hunter Road	-	3,000	3,000	3,100	1,900	2,400	3,500	5,100	3,400	3,700	0.93%
	I-95 (SR 9)											
251	Palm Coast City Limit to Palm Coast Parkway	34,500	43,000	54,500	45,500	51,000	45,500	45,000	46,000	49,500	49,500	1.60%
292	Palm Coast Parkway to SR 100	47,500	52,500	63,500	46,500	60,000	64,500	63,200	67,300	63,700	63,700	0.13%
255	SR 100 to Old Dixie Highway	43,500	53,500	67,500	54,000	67,000	67,000	39,000	44,500	47,000	47,000	3.16%
	Lakeview Boulevard											
3925	London Drive to Matanzas Woods Parkway	-	-	2,100	2,500	1,900	2,500	3,200	3,000	3,500	3,800	2.91%
	Market Avenue											
4600	Belle Terre Parkway to Central Avenue	-	-	-	-	-	200	280	360	500	-	#VALUE!

	Matanzas Woods Parkway											
2400	US 1 to Belle Terre Parkway	1,100	2,100	3,000	6,200	5,200	3,700	4,500	4,800	4,000	4,200	-1.14%
2410	Belle Terre Parkway to Bird of Paradise Drive	500	700	900	1,600	3,600	4,000	4,700	5,200	8,200	7,300	7.61%
2415	Bird of Paradise Drive to I-95 SB	-	-	-	-	4,100	4,500	5,100	5,900	10,700	14,000	18.33%
2416	I-95 SB to I-95 NB	-	-	-	-	4,100	4,500	5,100	5,900	10,100	12,000	15.33%
2417	I-95 NB to Old Kings Rd Extension	-	-	-	-	4,100	4,500	5,100	5,900	9,300	10,700	13.15%
2418	Old Kings Rd Extension to Old Kings Rd/Matanzas HS Entrance	-	-	-	-	4,100	4,500	5,100	5,900	6,800	7,300	6.16%
	Old Kings Road											
2700	US 1 to Princess Place Preserve Entrance	200	200	200	400	1,500	1,700	1,900	2,600	1,400	-	#VALUE!
2702	Princess Place Preserve Entrance to Forest Grove Drive	-	200	1,200	400	1,600	1,700	2,000	2,700	1,300	1,100	-9.48%
2705	Forest Grove Drive to Farmsworth Drive	-	2,700	2,100	6,600	4,000	5,000	3,600	6,500	4,900	5,300	6.66%
2707	Farmsworth Drive to Frontier Drive	-	2,700	5,200	6,800	6,800	6,800	8,000	8,900	8,600	8,500	1.02%
2710	Frontier Drive to Fleetwood Drive	3,400	9,300	8,700	11,000	9,300	9,700	10,500	12,300	11,600	11,400	1.38%
2715	Fleetwood Drive to Farragut Drive	10,000	9,300	12,000	16,500	12,000	11,500	12,600	15,000	13,700	13,200	0.78%
2720	Farragut Drive to Palm Coast Parkway	20,000	15,500	14,000	18,500	14,500	15,000	15,600	15,600	18,700	16,000	0.42%
2730	Palm Coast Parkway to Utility Drive	4,400	6,600	6,200	6,900	6,900	7,200	8,400	9,600	10,700	11,100	4.75%
2735	Utility Drive to Oak Trails Boulevard	-	4,300	4,300	6,200	5,400	4,700	7,300	7,800	9,000	9,500	4.49%
2740	Oak Trails Boulevard to Hidden Lakes Entrance	1,800	3,400	3,500	5,500	4,700	5,400	6,700	7,800	8,400	9,000	5.04%
2743	Hidden Lakes Entrance to Town Center Boulevard	1,800	3,400	3,500	5,500	4,700	5,400	6,700	7,800	8,700	9,400	5.81%
2745	Town Center Boulevard to SR 100	-	3,400	3,500	5,500	3,900	4,800	6,500	6,800	8,900	8,500	4.57%
2750	SR 100 to Palm Coast City Limit	3,400	3,900	4,100	3,800	3,600	8,000	8,400	8,500	7,600	4,900	-8.59%
	Palm Coast Parkway											
2800	US 1 to Pine Lakes Parkway	7,700	9,600	11,500	12,000	14,000	9,900	10,400	12,300	12,700	12,900	3.66%
	Palm Coast Parkway (Eastbound)											
2815 EB	Pine Lakes Parkway to Belle Terre Parkway	6,600	9,000	9,400	9,300	8,700	9,900	10,200	10,800	10,600	9,100	-1.88%
2825 EB	Belle Terre Parkway to Cypress Point Parkway	11,500	15,000	15,500	30,500	14,500	18,000	16,300	17,600	17,000	18,300	1.95%
	Palm Coast Parkway (Westbound)											
2810 WB	Belle Terre Parkway to Pine Lakes Parkway	6,900	15,000	15,500	18,000	14,500	16,000	9,800	9,700	10,100	10,300	0.83%
2820 WB	Cypress Point Parkway to Belle Terre Parkway	11,500	8,600	9,200	10,500	8,200	9,700	17,700	18,800	18,500	17,300	-0.38%
	Palm Coast Parkway											
2826	Cypress Point Parkway to I-95 South Bound Ramps	17,000	42,500	42,500	49,500	39,000	42,000	42,600	-	47,900	50,600	2.91%
2827	I-95 South Bound Ramps to I-95 North Bound Ramps	34,500	42,500	45,000	49,000	40,500	39,000	41,600	-	45,400	50,700	3.35%
2830	I-95 North Bound Ramps to Old Kings Road	36,500	44,500	41,000	49,000	38,000	40,000	42,600	-	42,100	53,300	3.81%
	Palm Coast Parkway (Eastbound)											
2845 EB	Old Kings Road to Florida Park Drive	11,000	12,000	14,500	13,000	13,500	14,000	15,000	-	12,900	13,600	-1.62%
2855 EB	Florida Park Drive to Club House Drive	8,300	10,500	10,500	13,000	12,000	10,000	11,800	12,600	12,500	12,600	1.10%
2865 EB	Club House Drive to Colbert Lane	6,500	8,200	11,000	13,000	5,800	8,900	9,500	10,300	9,900	10,600	1.84%
2875 EB	Colbert Lane to Palm Harbor Parkway	3,800	5,700	4,500	8,900	5,300	5,100	6,000	6,300	7,300	7,400	3.56%
	Palm Coast Parkway (Westbound)											
2870 WB	Palm Harbor Parkway to Colbert Lane	3,300	4,400	4,900	6,400	5,100	5,800	6,000	7,100	7,500	8,000	4.91%
2860 WB	Colbert Lane to Club House Drive	5,800	7,400	7,900	12,500	8,100	6,500	9,400	9,700	9,600	10,200	1.37%
2850 WB	Club House Drive to Florida Park Drive	9,000	10,500	10,500	12,000	10,000	10,000	11,800	11,500	11,800	12,700	1.23%
2840 WB	Florida Park Drive to Old Kings Road	9,800	13,000	13,000	22,500	12,500	15,000	15,400	-	14,600	15,600	0.22%
	Palm Coast Parkway (Hammock Dunes Parkway)											
2880 EB	Palm Harbor Parkway to SR A1A	6,000	6,400	8,700	9,100	7,700	11,000	10,400	12,000	12,500	12,400	2.97%
	Palm Harbor Parkway											
2890	Old Kings Rd/Matanzas HS Entrance to Cris Lane	-	-	-	-	-	-	-	-	5,200	6,100	#VALUE!
2895	Cris Lane to Fellowship Drive	-	-	-	-	-	-	-	-	5,300	5,600	#VALUE!
2900	Forest Grove Drive to Florida Park Drive	1,500	3,100	3,300	1,200	3,400	5,100	4,900	5,700	7,100	5,900	3.14%
2910	Florida Park Drive to Club House Drive	4,500	3,400	3,300	3,900	7,400	4,600	4,400	6,900	4,700	5,300	3.15%
2920	Club House Drive to Palm Coast Parkway	3,600	4,400	5,200	4,500	4,000	4,900	5,200	5,400	5,100	5,800	1.84%
	Pine Lakes Parkway											
3000	Belle Terre Parkway (N) to Palm Coast Parkway	1,700	2,100	2,900	4,000	2,800	3,500	3,600	4,500	4,300	4,100	2.19%
3002	Palm Coast Parkway to Commerce Boulevard	-	7,100	8,000	10,000	8,400	8,400	9,000	9,500	9,500	5,800	-7.06%
3010	Commerce Boulevard to White Mill Drive	9,800	7,100	4,000	10,500	5,200	5,700	8,500	5,000	6,500	5,900	-5.90%
3020	White Mill Drive to Belle Terre Parkway (S)	-	6,500	4,600	5,300	3,600	6,400	12,300	12,800	8,300	8,600	-5.79%
	Ravenwood Drive											
3911	White View Parkway to Rymfire Drive	-	1,400	2,700	3,900	2,200	4,200	4,500	4,800	5,200	5,100	2.11%
	Royal Palms Parkway											
3200	US 1 to Rymfire Drive	600	1,200	3,500	5,200	4,200	4,000	5,400	6,300	6,600	6,200	2.33%
3210	Rymfire Drive to Belle Terre Parkway	-	1,900	2,200	2,800	3,100	3,600	5,200	5,700	5,900	4,500	-2.38%
3212	Belle Terre Parkway to Town Center Boulevard	-	-	-	-	-	2,100	7,000	8,000	8,900	9,400	5.04%
	Rymfire Drive											
3215	Royal Palms Parkway to Ravenwood Drive	-	800	1,900	3,600	3,200	3,300	3,300	4,000	4,000	3,900	2.82%
3225	Ravenwood Drive to Belle Terre Parkway	-	1,400	2,800	4,200	4,400	4,700	5,000	5,700	5,700	6,300	3.93%
	Seminole Woods Parkway											
3325	SR 100 to Ulaturn Place	1,500	2,000	3,100	5,700	5,400	5,700	7,600	8,900	10,100	10,900	6.19%
3300	Ulaturn Place to Citation Parkway	-	1,200	2,600	4,100	4,100	4,600	5,500	7,400	8,500	7,900	6.22%
3310	Citation Parkway to Sesame Boulevard	-	900	1,600	3,000	2,700	4,500	4,000	4,500	5,200	6,000	6.99%
3305	Sesame Boulevard to US 1	-	1,200	2,400	3,700	3,600	3,700	4,200	5,000	5,500	5,600	4.91%
	Sesame Boulevard											
3320	Seminole Woods Parkway to terminus	-	700	1,900	3,600	3,300	1,100	1,300	1,000	1,300	1,500	2.41%
	State Road 100											
3560	John Anderson Drive to Colbert Lane	-	14,500	11,000	26,000	14,500	16,500	17,500	20,300	21,100	11,800	-6.36%
3550	Colbert Lane to Tuscany Blvd.	-	19,500	17,500	18,500	13,500	17,500	18,200	21,200	22,600	19,700	1.33%
3540	Tuscany Blvd. to Old Kings Road	-	19,500	17,500	18,500	13,500	17,500	18,500	21,800	22,500	20,600	1.81%
3530	Old Kings Road to I-95	1,600	19,500	17,500	23,000	21,000	23,000	25,700	27,700	31,100	23,400	-1.55%
3525	I-95 to Memorial Medical Parkway	16,000	25,000	19,500	24,500	18,500	27,500	31,200	30,700	27,900	33,700	1.29%
3520	Memorial Medical Pkwy to Seminole Woods Parkway	13,500	25,000	19,500	24,500	18,500	25,000	28,400	28,900	28,200	28,000	-0.24%
3515	Seminole Woods Pkwy to Bulldog Drive	-	19,500	23,000	29,000	18,000	23,000	27,000	27,400	28,100	32,800	3.30%
3510	Bulldog Drive to Landings Blvd.	4,100	19,500	18,500	28,000	19,500	24,500	29,700	29,500	26,900	29,800	0.06%
3505	Landings Blvd. to Belle Terre Parkway	-	19,500	18,500	28,000	19,500	23,500	26,100	25,000	25,800	27,900	1.12%
3500	Belle Terre Parkway to Palm Coast City Limits	9,300	14,500	18,500	15,500	11,500	16,000	17,900	19,600	17,200	17,900	0.00%

	Town Center Blvd.											
4100	SR 100 to Hospital Drive	-	-	-	-	-	4,400	3,800	5,400	5,600	6,700	9.91%
4110	Hospital Drive to Central Avenue	-	-	-	-	-	5,400	4,000	5,100	5,800	7,000	9.78%
4120	Central Avenue to Lake Avenue	-	-	-	-	-	3,800	4,400	5,100	5,700	8,400	11.38%
4130	Lake Avenue to Royal Palm Parkway	-	-	-	-	-	3,500	4,300	5,000	5,400	6,300	6.57%
4140	Royal Palm Parkway to Old Kings Road	-	-	-	-	-	5,400	6,900	7,800	9,500	10,000	6.38%
	US1 (SR5)											
3700	St. Johns County Line to Old Kings Road	-	6,500	4,500	9,500	9,100	9,400	11,300	12,300	11,800	12,000	1.01%
3702	Old Kings Road to Matanzas Woods Parkway	4,200	6,600	4,500	11,500	7,900	8,100	10,000	9,700	10,400	11,900	2.94%
3705	Matanzas Woods Parkway to Palm Coast Parkway	6,600	5,500	8,500	7,900	7,300	7,600	8,900	10,000	10,200	11,100	3.75%
3710	Palm Coast Parkway to White View Parkway	7,000	11,000	15,000	13,500	12,500	11,500	13,000	14,600	15,500	11,700	-1.74%
3720	White View Parkway to Royal Palms Parkway	9,900	14,000	15,000	19,000	12,500	12,000	14,400	15,300	15,700	12,800	-1.94%
3725	Royal Palms Parkway to Espanola Road	8,400	14,500	18,000	18,500	14,500	15,500	15,200	17,200	18,100	18,800	3.61%
101	Palm Coast City Limit to Belle Terre Parkway	9,500	11,000	11,500	18,000	10,500	15,000	10,200	11,600	11,700	14,100	5.54%
3750	Belle Terre Parkway to CR 304	9,300	11,000	14,000	18,000	13,500	15,000	12,700	13,300	13,500	14,000	1.64%
3755	CR 304 to Seminole Woods Parkway	9,700	11,500	14,500	18,500	14,000	18,500	12,700	14,600	13,300	12,900	0.26%
235	Seminole Woods Parkway to Palm Coast City Limit	8,200	11,000	19,000	19,000	15,500	16,500	13,400	15,300	14,500	15,500	2.46%
	White Mill Drive											
3915	Pine Lakes Parkway to White View Parkway	-	2,000	2,400	3,100	2,400	3,000	3,300	3,600	4,100	4,000	3.26%
	White View Parkway											
3920	US 1 to White Mill Drive	-	3,000	4,100	7,400	5,400	5,000	5,300	5,700	6,500	6,600	3.72%
3910	White Mill Drive to Belle Terre Parkway	-	3,200	3,800	5,700	4,700	6,300	6,100	6,400	7,600	6,800	1.83%
3900	Belle Terre Parkway to Pritchard Drive	600	1,400	2,000	4,300	1,700	2,800	2,900	3,400	3,800	4,000	5.51%

EB = Eastbound; WB = Westbound; SB = Southbound; NB = Northbound; E = East; W= West; S= South; N= North

Attachment G

Palm Coast Draft Turn Lane Technical Guidelines

Palm Coast Draft Turn Lane Technical Guidelines on November 10, 2020

The purpose of this document is to assist the City and design professionals regarding turn lane design as part of a development for a property accessing a City street. It determines:

a) when a turn lane is required to be built as a condition of access to the City street, and
b) the required dimensions of the turn lane.

These guidelines provide guidance for developers on what to expect for design and construction requirements on a roadway connecting to their driveway (entrance) when developing a property.

Turn lanes for left-turning and right-turning traffic are desirable for the safe execution of speed change maneuvers. Turn lanes also allow for the storage and protection of left-turning or right-turning vehicles while allowing through traffic to pass safely with minimal induced delay.

Deceleration lanes shall be provided at all intersection and/or access points adjacent to the project on all City-maintained and privately-maintained roadways as required by these guidelines. (Turn lanes along Flagler County owned roadways will be determined by Flagler County after receiving input from the City.) However, these guidelines shall not be construed in any manner to allow a left-turn lane and/or a right-turn lane into a project where such turning movement is not approved by the City.

All table values referenced in this document presume design of a single turn lane. The City will use the latest edition of the Florida Department of Transportation's (FDOT's) publication: "Standard Plans and Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways" (commonly referred to as the "Florida Greenbook") as a design reference. The City will be the sole judge, when backed by engineering analysis, to define whether a multi-lane turn lane design is adequate in dimension.

Turn Volume Thresholds that Require the Addition of a Dedicated Left Turn Lane from the City Street

A left turn lane shall be provided at each access driveway of the project when a Left-Turning Vehicle (LTV) count during a Peak Hour (Weekday AM, Weekday PM, Weekend Mid-Day) from the City roadway entering that driveway meets or exceeds the criteria below. The roadway column in the table below shall be utilized for the type and volume of traffic on the roadway from where the turn would originate and shall be based on the Average Annual Daily Traffic (AADT) from the City's bi-annual traffic counts and projected forward including background traffic from other projects, as determined by the City, until the time when the project and its driveway are reasonably expected to finish construction and be open.

Left Turn Lane Thresholds

Posted Speed Limit	2 Lane Roadways AADT of 5,000 or less	2 Lane Roadways AADT over 5,000	4+ Lane Roadways AADT of 10,000 or less	4+ Lane Roadways AADT over 10,000
Up to 25 mph	40 LTV/Peak Hour	35 LTV/Peak Hour	50 LTV/Peak Hour	40 LTV/Peak Hour
30 - 35 mph	30 LTV/Peak Hour	25 LTV/Peak Hour	35 LTV/Peak Hour	25 LTV/Peak Hour
40 + mph	20 LTV/Peak Hour	15 LTV/Peak Hour	25 LTV/Peak Hour	20 LTV/Peak Hour

Turn Volume Thresholds that Require the Addition of a Dedicated Right Turn Lane from the City Street

A right turn lane shall be provided at each access driveway of the project when a Right-Turning Vehicle (RTV) count during a Peak Hour (Weekday AM, Weekday PM, Weekend Mid-Day) from the City roadway entering that driveway meets or exceeds the criteria below. The roadway column in the table below shall be utilized for the type and volume of traffic on the roadway from where the turn would originate and shall be based on the AADT from the City's bi-annual traffic counts and projected forward including background

traffic from other projects, as determined by the City, until the time when the project and its driveway are reasonably expected to finish construction and be open.

Right Turn Lane Thresholds

Posted Speed Limit	2 Lane Roadways AADT of 5,000 or less	2 Lane Roadways AADT over 5,000	4+ Lane Roadways AADT of 10,000 or less	4+ Lane Roadways AADT over 10,000
Up to 25 mph	175 RTV/Peak Hour	150 RTV/Peak Hour	155 RTV/Peak Hour	120 RTV/Peak Hour
30 - 35 mph	120 RTV/Peak Hour	100 RTV/Peak Hour	100 RTV/Peak Hour	70 RTV/Peak Hour
40 + mph	70 RTV/Peak Hour	60 RTV/Peak Hour	60 RTV/Peak Hour	40 RTV/Peak Hour

Other Criteria

When a project's driveway meets at least 75% of the above thresholds for Peak Hour (Weekday AM, Weekday PM or Weekend Mid-Day) left or right turns and at least one of the following criteria is also present, the City, in its sole judgment, may require the developer to provide the turn lane.

1. Sight distance is limited due to curves or hills or other unalterable object.
2. The intersection or driveway is just after a signalized intersection where acceleration or driver expectancy would make a separate right turn desirable (this would also be the case downstream soon after a dual left-turn lane onto a four-lane roadway).
3. At least 50% higher than normal crash experience (or 33% above normal rear-end collisions) or the City has determined that this roadway section has a Level of Service (LOS) of D or lower.
4. Severe skewed angle of the intersection so that right-turn traffic has to slow more than would be expected for a 90-degree turn.
5. The turn-lane into the project occurs at an existing or proposed signalized intersection where adequate right-of-way exists or is available from the development.

Construction Timing

Turn lanes shall be constructed with the infrastructure and prior to the vertical construction of any buildings unless the City allows some of the vertical building construction prior to completion of the turn lanes. When a project is phased, the turn lanes shall be constructed with the earliest phase that the turn lane meets at least 50% of the criteria for requiring the turn lane.

Turn Lane Design Standards

A turn lane shall consist of the following components: A taper and a full width lane length of a turn lane. The total length of the turn lane shall be the taper length plus the full width lane length.

A taper shall be the longitudinal length of a development of a lane from zero width to full width. Find the length of taper required in the tables below (See Sections *Left turn Lane Table* and *Right Turn Lane Table*).

Turn lane widths shall be a minimum of 11 feet on roadways where the posted speed is 40 mph or less (see exceptions in next sentence).

Turn lane widths, when turn lanes are required, shall be a minimum of 12 feet on roadways where at least one condition below is present:

1. Where the posted speed is 45 mph or greater.
2. With more than two lanes of opposing traffic.
3. With medians at least 16 feet wide separating opposing traffic lanes.

Turn lane length shall be measured along the lane segment constructed at full lane width. The required turn lane length of right turn lanes and left turn lanes exiting the City street shall be determined by choosing the greater of:

1. The minimum full width turn lane length. The minimum full width turn lane length shall be 75 feet.
2. The calculation of full width turn lane length based on conditions in the following tables. Total required full width turn lane length shall be the sum of the deceleration length dimension (See Left Turn Lane Table; See Right Turn Lane Table) plus the storage length dimension (see Storage Length Dimension Table - SLDT).

Shorter turn lanes will not be allowed except under special circumstances as approved by the City.

Storage Length Dimension Table For Unsignalized Intersections*

Largest Peak Hour Volume in Vehicles Per Hour (vph)	Storage Length (feet)*
Up to 25	30
26 to 50	50
51 to 75	75
76 to 100	100
Every additional increment, or partial increment, of 50 vph	75

**Per FDOT Greenbook*

Dimensions in the SLDT presume the traffic in the turn lane consists of less than 5% heavy vehicles (where a heavy vehicle is any vehicle longer than 34 feet including a trailer). If heavy vehicle percentage will be between 5% and 20% of turning vehicles, increase storage length by 20%. If heavy vehicle percentage will be greater than 20% of turning vehicles, increase storage length by 100%.

Left Turn Lane Length

The requirements for lengths of tapers, deceleration and storage for left turn lanes are based on the speed limit of the road and are shown in the following table:

Left Turn Lane Table For Unsignalized Intersections*

Posted Speed Limit Of Roadway (mph)	Length of Taper (feet)	Length of Deceleration (feet)	Length of Storage (feet)*
Up to 25	50	0	100% of SLDT Value
30	75	0	100% of SLDT Value
35	75	75	100% of SLDT Value
40	90	75	100% of SLDT Value
45	100	100	100% of SLDT Value
50	100	135	100% of SLDT Value

**For 2 Lane Roadways less than 5,000 ADT and for 4-Lane Roadways less than 10,000 ADT, reduce the 100% qualification to 70%.Per FDOT Greenbook*

Total required full width turn lane length shall be the sum of the deceleration length dimension plus the storage length dimension. The taper is not considered part of the full width turn lane length.

Right Turn Lane Length

The requirements for lengths of tapers, deceleration and storage for right turn lanes are based on the speed limit of the road and are shown in the following table:

Right Turn Lane Table For Unsignalized Intersections*

Posted Speed Limit Of Roadway (mph)	Length of Taper (feet)	Length of Deceleration (feet)	Length of Storage (feet) Stop Condition	Length of Storage (feet) Free Flow
Up to 25	50	0	50% of SLDT Value	0
30	75	0	50% of SLDT Value	0
35	100	75	50% of SLDT Value	25% of SLDT Value
40	100	75	60% of SLDT Value	30% of SLDT Value
45	100	100	75% of SLDT Value	35% of SLDT Value
50 +	100	135	80% of SLDT Value	45% of SLDT Value

**Per FDOT Greenbook*

Total required full width turn lane length shall be the sum of the deceleration length dimension plus the storage length dimension. The taper is not considered part of the full width turn lane length. Right turn lane lengths at traffic signal controlled intersections shall be based on queue lengths determined through an engineering traffic study.

Deviations

The City may grant a deviation from these guidelines in part or in whole after determining that any of the following conditions make compliance infeasible:

1. Right-of-way constraints do not permit the installation of the turn lane or to its full dimensions. This does not include cases where the developer is unwilling to provide the developer's own property from the development under consideration for additional right-of-way to construct or compensate for the turn lane.
2. Existing topographic or roadway geometric features would cause construction of the turn lane to be prohibitively expensive if constructed to standards.
3. Unusual roadway features would cause a turn lane to be detrimental to the health, safety and general welfare of the public. This could include a case where a right-turn lane could negatively impact bicyclists or pedestrians.
4. Such turn lane or in its full dimension would require removal of a specimen or historic tree as described in Section 11.02.04.A of the Land Development Code or significantly impact a high quality wetland.

Calculation Examples

Example 1

A 30 mph 2 lane 2-way road. AADT of 4,000. Heavy Truck percentage into property: 15%. Largest Peak Hour projected left turns: 32 vph. Largest Peak Hour Projected Right Turns 62 vph.

Compare to Turn Volumes Threshold Tables

Is Left Turn lane required? 32 vph > 30 LTV threshold Yes. Left turn lane is required.

Is Right Turn lane required? 62 vph < 120 RTV threshold. No. Right turn lane is not required.

Calculate Left turn Length

See Left Turn Lane Table

For 30 mph,

Taper = 75 feet

Deceleration Length = 0 feet

SLDT for 32 vph = 50 feet

Truck factor for 5 to 20% trucks = 1.2

Full width length = 0 + (1.2 * 50) = 60 feet round up to nearest 10 feet → 60 feet

Final answer: Left turn lane length = 50 foot taper plus 60 feet full width lane = 110 feet.

Full width lane = 11 feet for 30 mph road with no special conditions.

Note: The transition from the typical two-lane width to the beginning of taper is covered in the FDOT Greenbook, which is referenced as the design guidelines for the transition.

Example 2

A 45 mph 4 lane road with divided median. AADT of 12,800. Heavy Truck percentage into property: 2 to 4%. Largest Peak Hour projected Left turns: 44 vph. Largest Peak Hour Projected Right Turns 164 vph.

Compare to Turn Volumes Threshold Tables

Is Left Turn lane required? 44 vph > 20 LTV threshold Yes. Left turn lane is required.

Is Right Turn lane required? 164 vph > 40 RTV threshold Yes. Right turn lane is required.

Calculate Left turn Length

See Left Turn Lane Table

For 45 mph

Taper = 100 feet

Deceleration Length = 100 feet (deceleration occurs in taper)

SLDT for 44 vph = 50 feet

Truck factor for 2-4% trucks = 1.0

Full width length = 100 + (1.0 * 50) = 150 feet round up to nearest 10 feet → 150 feet

Final answer: Left turn lane length = 100 foot taper plus 150 feet full width lane = 250 feet.

Full width lane = 12 feet for 45 mph road

Calculate Right Turn Length

See Right Turn Lane Table

For 45 mph

Taper = 100 feet

Deceleration Length = 100 feet (deceleration occurs in taper)

SLDT for 164 vph = 100 feet plus two units of 50 vph = 100 + (2.0*75) = 250 feet

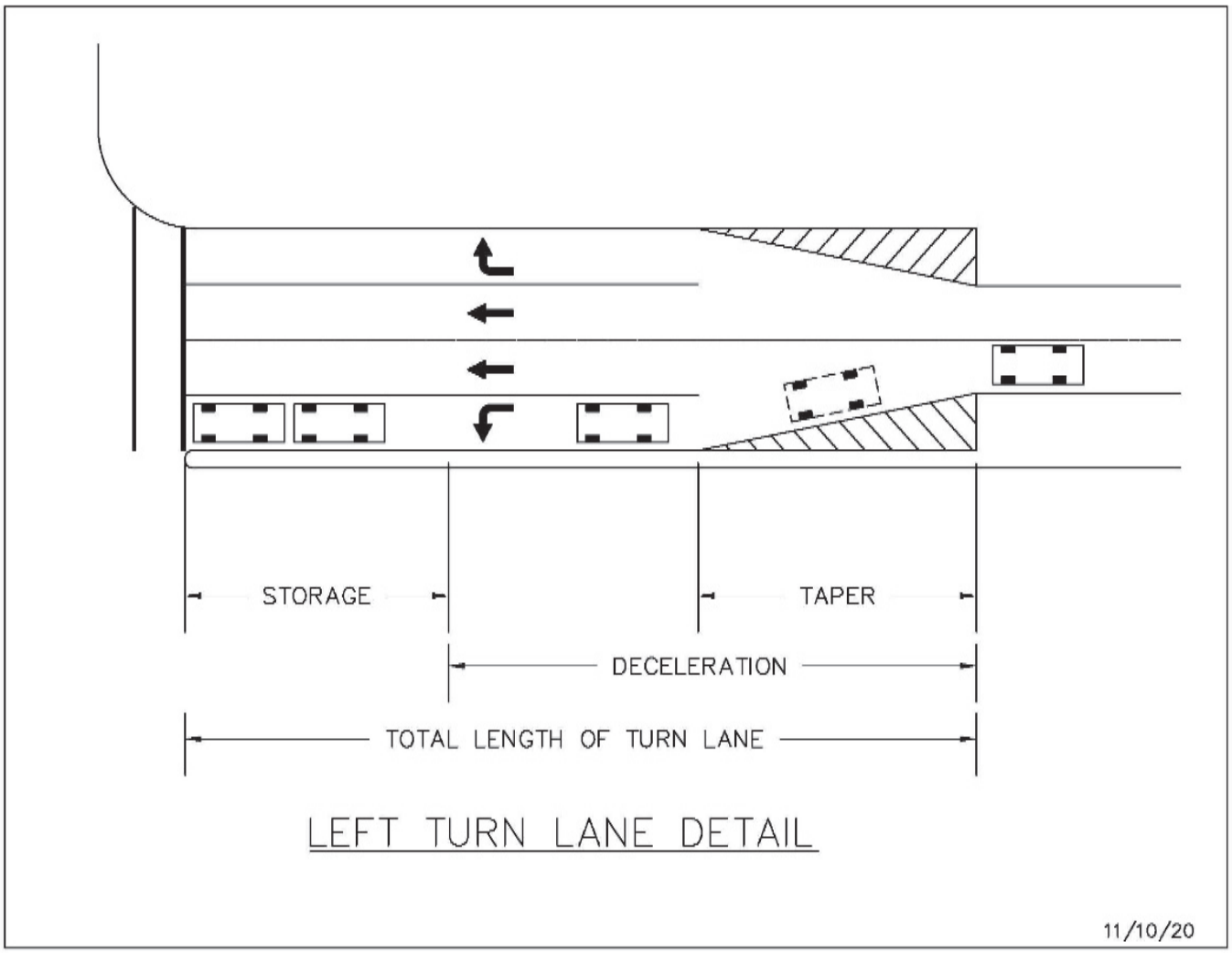
Truck factor for 2-4% trucks = 1.0

Full width length = 100 + (1.0 *((0.75) * 250)) = 100 + 187.5 feet = 287.5 feet round up to nearest 10 feet -> 290 feet

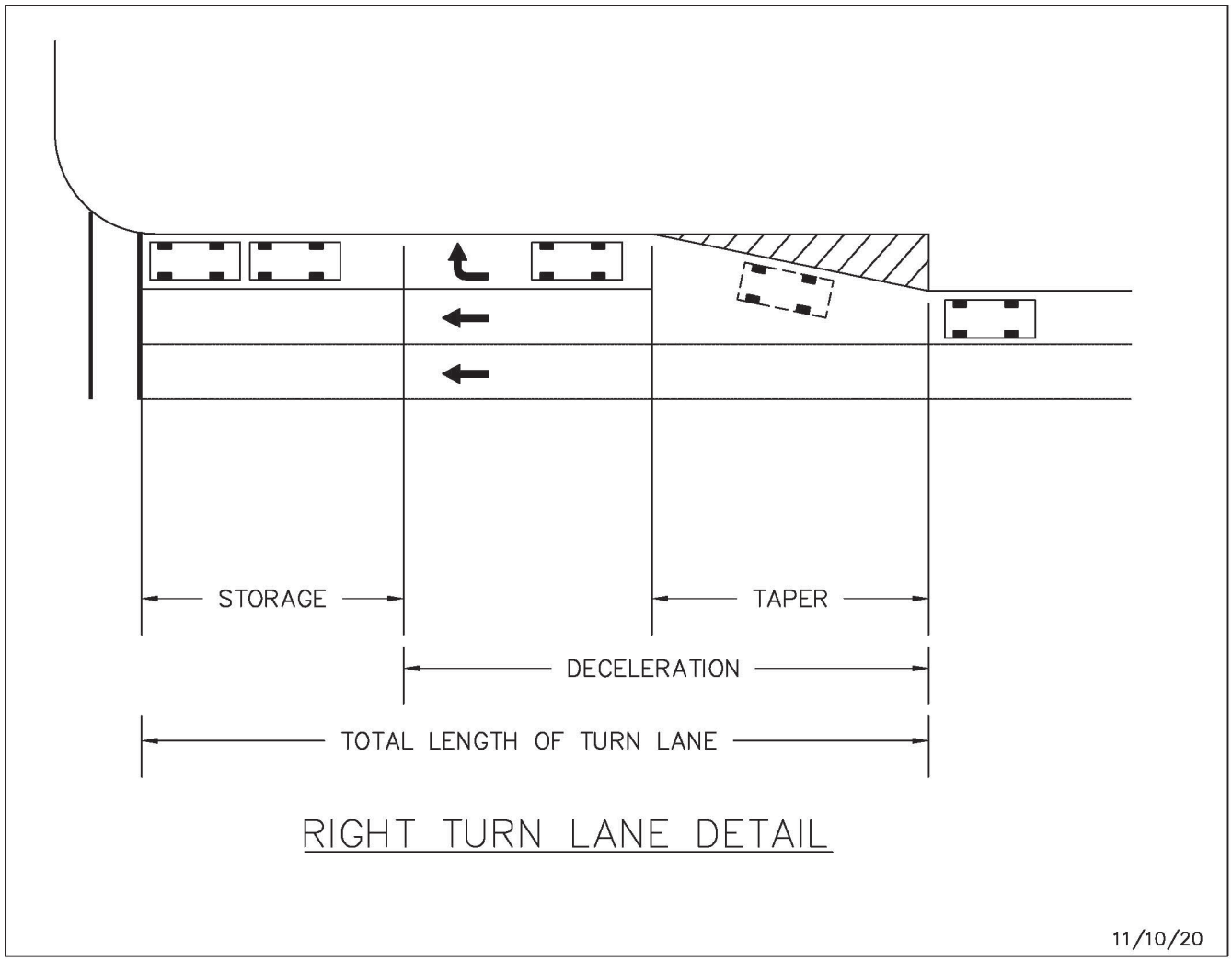
Final answer: Right turn lane length = 100 foot taper plus 290 feet full width lane = 390 feet.

Full width lane = 12 feet for 45 mph road.

Left Turn Lane Detail



Right Turn Lane Detail



Attachment H

Signal Timing and Phasing

Station : 15 - Palm Coast Pkwy. & Pine Lakes Pkwy. (Standard File)

Phase [1.1.1]

	1 (EL)	2 (WR)	3 (SL)	4 (NR)	5 (WL)	6 (ER)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Walk	0	12	0	0	0	0	0	12	0	0	0	0	0	0	0	0
Ped Clearance	0	35	0	0	0	0	0	20	0	0	0	0	0	0	0	0
Min Green	4	20	4	6	4	20	4	6	5	5	5	5	5	5	5	5
Passage	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	1
Max1	30	90	30	30	30	90	30	30	25	25	25	25	25	25	25	25
Max2	25	0	15	0	30	0	15	0	50	50	50	50	50	50	50	50
Yellow	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduce	10	40	10	10	10	40	10	10	0	0	0	0	0	0	0	0
Cars Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	10	1	10	10	10	1	10	10	0	0	0	0	0	0	0	0
Reduce By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	1.5	1.7	1.5	1.5	1.5	1.7	1.5	1.5	0	0	0	0	0	0	0	0
Dynamic Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Step	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Auto Exit																
Rest In Walk																

Phase Option [1.1.2]

	1 (EL)	2 (WR)	3 (SL)	4 (NR)	5 (WL)	6 (ER)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Auto Entry																
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	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	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0

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	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0

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	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0

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	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0

Station : 15 - Palm Coast Pkwy. & Pine Lakes Pkwy. (Standard File)

Unit Parameters [1.2.1]

StartUp Flash	Auto Ped Clear	Backup Time	Red Revert	Console Timeout	Tone Disable	Feature Profile	Phase Mode	Diamond Mode	SDLC Retry Time	TS2 Det Faults	Cycle Fault Action	Max Cycle Time	Max Seek Track Time	Max Seek Dwell Time	Enable Run	Local Flash Start	Start Red Time	Disable Init Ped	Yellow 3 Second Disable	Omit Yellow Enable	Free Ring Sequence
	OFF		3	10	OFF		STD8	4PH		ON	ALARM				ON	OFF	6	OFF	OFF	OFF	1

Station : 51 - Belle Terre Pkwy at Pine Lakes Pkwy (s) (Standard File)

Phase [1.1.1]

	1	2 (NWT)	3	4 (NER)	5 (NWL)	6 (SER)	7	8	9	10	11	12	13	14	15	16
Walk	0	0	0	12	0	12	0	0	0	0	0	0	0	0	0	0
Ped Clearance	0	10	0	29	0	22	0	10	0	0	0	0	0	0	0	0
Min Green	4	20	4	6	4	20	4	6	5	5	5	5	5	5	5	5
Passage	3	5.5	3	3	2	5.5	3	3	1	1	1	1	1	1	1	1
Max1	30	155	30	40	30	130	30	30	25	25	25	25	25	25	25	25
Max2	50	90	50	50	20	90	50	50	50	50	50	50	50	50	50	50
Yellow	3.5	4.8	3.5	4.8	4.8	4.8	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red	1.5	2.2	1.5	2	2.2	2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduce	0	30	0	10	10	30	0	0	0	0	0	0	0	0	0	0
Cars Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	1	0	10	10	1	0	0	0	0	0	0	0	0	0	0
Reduce By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0	4.2	0	1	0.1	4.2	0	0	0	0	0	0	0	0	0	0
Dynamic Max Limit	0	0	0	45	50	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Step	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0
Auto Exit																
Rest In Walk																

Phase Option [1.1.2]

	1	2 (NWT)	3	4 (NER)	5 (NWL)	6 (SER)	7	8	9	10	11	12	13	14	15	16
Enable		ON		ON	ON	ON										
Auto Entry																
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	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	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0

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	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0

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	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0

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	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0

Palm Coast Timing Sheet 12/22/2020 10:28:02 AM

Station : 51 - Belle Terre Pkwy at Pine Lakes Pkwy (s) (Standard File)

Unit Parameters [1.2.1]

StartUp Flash	Auto Ped Clear	Backup Time	Red Revert	Console Timeout	Tone Disable	Feature Profile	Phase Mode	Diamond Mode	SDLC Retry Time	TS2 Det Faults	Cycle Fault Action	Max Cycle Time	Max Seek Track Time	Max Seek Dwell Time	Enable Run	Local Flash Start	Start Red Time	Disable Init Ped	Yellow 3 Second Disable	Omit Yellow Enable	Free Ring Sequence
	OFF		3	10	OFF		QSEQ	4PH		ON	ALARM				ON	OFF	6	OFF	OFF	OFF	1

Attachment I

Phase 01 Synchro Worksheets

Attachment I1

Phase 01 Year 2020 Existing
Synchro Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	366	8	117	378	55	85	89	248	97	75	139
Future Volume (veh/h)	89	366	8	117	378	55	85	89	248	97	75	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	398	9	127	411	0	92	97	270	105	82	151
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	960	428	164	1085		321	385	326	377	136	251
Arrive On Green	0.06	0.27	0.27	0.09	0.31	0.00	0.06	0.21	0.21	0.06	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	589	1085
Grp Volume(v), veh/h	97	398	9	127	411	0	92	97	270	105	0	233
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	0	1675
Q Serve(g_s), s	4.0	6.8	0.3	5.2	6.7	0.0	3.0	3.2	12.1	3.4	0.0	9.2
Cycle Q Clear(g_c), s	4.0	6.8	0.3	5.2	6.7	0.0	3.0	3.2	12.1	3.4	0.0	9.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.65
Lane Grp Cap(c), veh/h	101	960	428	164	1085		321	385	326	377	0	387
V/C Ratio(X)	0.96	0.41	0.02	0.78	0.38		0.29	0.25	0.83	0.28	0.00	0.60
Avail Cap(c_a), veh/h	101	1772	790	378	2324		328	735	623	409	0	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.8	22.2	19.8	32.9	20.2	0.0	21.6	24.6	28.1	21.0	0.0	25.4
Incr Delay (d2), s/veh	76.3	0.3	0.0	7.7	0.2	0.0	0.5	0.3	5.3	0.4	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.8	4.7	0.2	4.3	4.5	0.0	2.1	2.4	8.2	2.4	0.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	111.1	22.5	19.8	40.5	20.4	0.0	22.1	24.9	33.5	21.4	0.0	26.9
LnGrp LOS	F	C	B	D	C		C	C	C	C	A	C
Approach Vol, veh/h		504			538	A		459			338	
Approach Delay, s/veh		39.5			25.2			29.4			25.2	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	29.4	11.6	22.0	13.6	26.8	9.7	23.9
Change Period (Y+Rc), s	6.8	6.8	6.8	6.8	6.8	6.8	5.5	6.8
Max Green Setting (Gmax), s	4.2	48.4	6.1	29.1	15.7	36.9	4.5	32.0
Max Q Clear Time (g_c+I1), s	6.0	8.7	5.4	14.1	7.2	8.8	5.0	11.2
Green Ext Time (p_c), s	0.0	2.6	0.0	1.2	0.2	2.5	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	399	187	29	337	2	158	12	29	85	29	20
Future Volume (veh/h)	9	399	187	29	337	2	158	12	29	85	29	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	434	203	32	366	2	181	0	32	92	32	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	807	374	49	1414	8	354	0	158	166	174	147
Arrive On Green	0.01	0.34	0.34	0.03	0.39	0.39	0.10	0.00	0.10	0.09	0.09	0.09
Sat Flow, veh/h	1781	2358	1093	1781	3624	20	3563	0	1585	1781	1870	1585
Grp Volume(v), veh/h	10	326	311	32	179	189	181	0	32	92	32	22
Grp Sat Flow(s),veh/h/ln	1781	1777	1674	1781	1777	1867	1781	0	1585	1781	1870	1585
Q Serve(g_s), s	0.3	8.6	8.8	1.0	4.0	4.0	2.8	0.0	1.1	2.9	0.9	0.7
Cycle Q Clear(g_c), s	0.3	8.6	8.8	1.0	4.0	4.0	2.8	0.0	1.1	2.9	0.9	0.7
Prop In Lane	1.00		0.65	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	18	608	572	49	693	729	354	0	158	166	174	147
V/C Ratio(X)	0.55	0.54	0.54	0.65	0.26	0.26	0.51	0.00	0.20	0.56	0.18	0.15
Avail Cap(c_a), veh/h	637	1100	1036	213	732	769	2510	0	1117	1066	1120	949
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	15.5	15.5	28.1	12.1	12.1	25.0	0.0	24.2	25.4	24.5	24.4
Incr Delay (d2), s/veh	23.1	2.0	2.2	5.2	0.5	0.5	1.1	0.0	0.6	2.9	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	5.7	5.5	0.8	2.5	2.6	2.0	0.0	0.7	2.2	0.7	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	17.5	17.8	33.4	12.6	12.6	26.1	0.0	24.8	28.2	25.0	24.8
LnGrp LOS	D	B	B	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		647			400			213			146	
Approach Delay, s/veh		18.2			14.3			25.9			27.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	29.8		12.6	8.6	26.8		10.4				
Change Period (Y+Rc), s	5.0	* 7		6.8	7.0	* 6.8		5.0				
Max Green Setting (Gmax), s	20.9	* 24		41.2	7.0	* 36		35.0				
Max Q Clear Time (g_c+I1), s	2.3	6.0		4.8	3.0	10.8		4.9				
Green Ext Time (p_c), s	0.0	3.7		0.7	0.0	8.3		0.4				

Intersection Summary		
HCM 6th Ctrl Delay		19.2
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

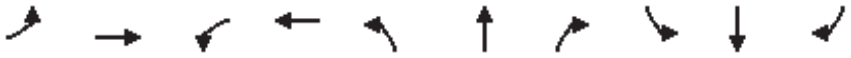
1: Pine Lakes Parkway & Palm Coast Parkway

Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	97	398	9	127	411	60	92	97	270	105	233
v/c Ratio	0.92	0.40	0.01	0.48	0.31	0.04	0.33	0.36	0.59	0.34	0.65
Control Delay	112.8	24.7	0.0	36.5	18.0	0.0	22.7	33.7	10.0	22.8	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.8	24.7	0.0	36.5	18.0	0.0	22.7	33.7	10.0	22.8	27.8
Queue Length 50th (ft)	45	77	0	54	69	0	30	41	0	35	65
Queue Length 95th (ft)	#156	140	0	113	117	0	66	88	63	76	142
Internal Link Dist (ft)		670			670			670			3351
Turn Bay Length (ft)	265		235	285			235		235	185	
Base Capacity (vph)	105	1845	929	392	2421	1583	279	766	809	311	804
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.22	0.01	0.32	0.17	0.04	0.33	0.13	0.33	0.34	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	10	637	32	368	93	92	32	92	34	20
v/c Ratio	0.06	0.49	0.21	0.23	0.38	0.37	0.09	0.36	0.13	0.06
Control Delay	38.4	19.7	40.2	14.6	36.8	36.5	0.5	36.6	32.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	19.7	40.2	14.6	36.8	36.5	0.5	36.6	32.0	0.3
Queue Length 50th (ft)	4	119	14	49	42	42	0	40	13	0
Queue Length 95th (ft)	22	196	47	114	102	101	0	97	46	0
Internal Link Dist (ft)		672		671		3677			190	
Turn Bay Length (ft)	350		325		415		200			
Base Capacity (vph)	579	1933	194	1669	1085	1095	1077	970	963	901
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.33	0.16	0.22	0.09	0.08	0.03	0.09	0.04	0.02

Intersection Summary

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	15	139	3	13	254
Future Vol, veh/h	16	15	139	3	13	254
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	16	151	3	14	276

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	457	153	0	0	154	0
Stage 1	153	-	-	-	-	-
Stage 2	304	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	562	893	-	-	1426	-
Stage 1	875	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	556	893	-	-	1426	-
Mov Cap-2 Maneuver	556	-	-	-	-	-
Stage 1	875	-	-	-	-	-
Stage 2	741	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	680	1426	-
HCM Lane V/C Ratio	-	-	0.05	0.01	-
HCM Control Delay (s)	-	-	10.6	7.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	419	58	271	338	87	29	69	215	67	42	61
Future Volume (veh/h)	112	419	58	271	338	87	29	69	215	67	42	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	455	63	295	367	0	32	75	234	73	46	66
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	884	394	333	1363		341	335	284	328	150	216
Arrive On Green	0.05	0.25	0.25	0.19	0.38	0.00	0.03	0.18	0.18	0.05	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	695	996
Grp Volume(v), veh/h	122	455	63	295	367	0	32	75	234	73	0	112
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	0	1691
Q Serve(g_s), s	4.2	8.9	2.5	13.0	5.7	0.0	1.2	2.8	11.4	2.7	0.0	4.5
Cycle Q Clear(g_c), s	4.2	8.9	2.5	13.0	5.7	0.0	1.2	2.8	11.4	2.7	0.0	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.59
Lane Grp Cap(c), veh/h	93	884	394	333	1363		341	335	284	328	0	366
V/C Ratio(X)	1.31	0.51	0.16	0.89	0.27		0.09	0.22	0.82	0.22	0.00	0.31
Avail Cap(c_a), veh/h	93	1631	728	348	2140		396	677	574	380	0	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.1	26.0	23.6	31.8	17.0	0.0	25.9	28.2	31.8	25.2	0.0	26.4
Incr Delay (d2), s/veh	197.5	0.5	0.2	22.3	0.1	0.0	0.1	0.3	6.0	0.3	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.9	6.3	1.6	11.6	3.8	0.0	0.9	2.1	8.0	1.9	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	235.6	26.5	23.8	54.2	17.1	0.0	26.0	28.5	37.8	25.5	0.0	26.9
LnGrp LOS	F	C	C	D	B		C	C	D	C	A	C
Approach Vol, veh/h		640			662	A		341			185	
Approach Delay, s/veh		66.1			33.6			34.6			26.3	
Approach LOS		E			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	37.6	10.6	21.2	21.8	26.8	7.5	24.2
Change Period (Y+Rc), s	6.8	6.8	6.8	6.8	6.8	6.8	5.5	6.8
Max Green Setting (Gmax), s	4.2	48.4	6.1	29.1	15.7	36.9	4.5	32.0
Max Q Clear Time (g_c+I1), s	6.2	7.7	4.7	13.4	15.0	10.9	3.2	6.5
Green Ext Time (p_c), s	0.0	2.3	0.0	1.0	0.1	3.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	44.4
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	366	84	53	571	34	143	12	43	70	15	8
Future Volume (veh/h)	15	366	84	53	571	34	143	12	43	70	15	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	398	91	58	621	37	164	0	47	76	16	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	28	981	222	74	1354	81	352	0	157	147	154	131
Arrive On Green	0.02	0.34	0.34	0.04	0.40	0.40	0.10	0.00	0.10	0.08	0.08	0.08
Sat Flow, veh/h	1781	2878	652	1781	3408	203	3563	0	1585	1781	1870	1585
Grp Volume(v), veh/h	16	244	245	58	323	335	164	0	47	76	16	9
Grp Sat Flow(s),veh/h/ln	1781	1777	1753	1781	1777	1834	1781	0	1585	1781	1870	1585
Q Serve(g_s), s	0.5	6.2	6.3	1.9	7.9	7.9	2.6	0.0	1.6	2.4	0.5	0.3
Cycle Q Clear(g_c), s	0.5	6.2	6.3	1.9	7.9	7.9	2.6	0.0	1.6	2.4	0.5	0.3
Prop In Lane	1.00		0.37	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	28	605	597	74	706	729	352	0	157	147	154	131
V/C Ratio(X)	0.57	0.40	0.41	0.78	0.46	0.46	0.47	0.00	0.30	0.52	0.10	0.07
Avail Cap(c_a), veh/h	634	1096	1081	212	730	753	2501	0	1113	1062	1115	945
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	14.8	14.8	27.9	13.0	13.0	25.0	0.0	24.6	25.8	24.9	24.8
Incr Delay (d2), s/veh	17.2	1.2	1.2	6.5	1.3	1.2	1.0	0.0	1.1	2.8	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	4.0	4.1	1.5	4.9	5.1	1.8	0.0	1.1	1.8	0.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	16.0	16.1	34.4	14.3	14.3	25.9	0.0	25.6	28.6	25.2	25.1
LnGrp LOS	D	B	B	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		505			716			211			101	
Approach Delay, s/veh		17.0			15.9			25.9			27.7	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	30.3		12.6	9.4	26.8		9.8				
Change Period (Y+Rc), s	5.0	* 7		6.8	7.0	* 6.8		5.0				
Max Green Setting (Gmax), s	20.9	* 24		41.2	7.0	* 36		35.0				
Max Q Clear Time (g_c+I1), s	2.5	9.9		4.6	3.9	8.3		4.4				
Green Ext Time (p_c), s	0.0	6.1		0.7	0.0	6.3		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		18.4
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

1: Pine Lakes Parkway & Palm Coast Parkway

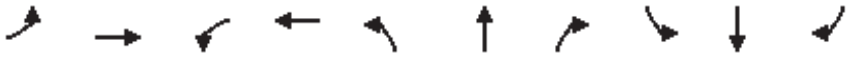
Timing Plan: PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	122	455	63	295	367	95	32	75	234	73	112
v/c Ratio	1.23	0.48	0.11	0.79	0.24	0.06	0.12	0.35	0.60	0.26	0.29
Control Delay	200.3	26.3	0.4	47.3	15.7	0.1	21.0	36.5	12.0	23.5	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	200.3	26.3	0.4	47.3	15.7	0.1	21.0	36.5	12.0	23.5	16.6
Queue Length 50th (ft)	~75	97	0	137	60	0	11	34	0	27	18
Queue Length 95th (ft)	#186	151	0	#283	96	0	30	73	61	57	65
Internal Link Dist (ft)		670			670			670			3351
Turn Bay Length (ft)	265		235	285			235		235	185	
Base Capacity (vph)	99	1754	894	373	2301	1583	256	728	761	280	765
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.23	0.26	0.07	0.79	0.16	0.06	0.13	0.10	0.31	0.26	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	16	489	58	658	84	84	47	76	17	8
v/c Ratio	0.09	0.33	0.33	0.34	0.35	0.35	0.13	0.32	0.07	0.02
Control Delay	34.1	20.2	38.4	15.0	34.1	34.0	0.8	34.0	29.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	20.2	38.4	15.0	34.1	34.0	0.8	34.0	29.1	0.1
Queue Length 50th (ft)	7	88	24	90	35	35	0	31	6	0
Queue Length 95th (ft)	26	150	66	205	85	85	0	76	27	0
Internal Link Dist (ft)		672		671		3677			190	
Turn Bay Length (ft)	350		325		415		200			
Base Capacity (vph)	586	1981	196	1933	1089	1099	1080	981	973	909
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.25	0.30	0.34	0.08	0.08	0.04	0.08	0.02	0.01

Intersection Summary

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	14	206	14	14	124
Future Vol, veh/h	7	14	206	14	14	124
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	15	224	15	15	135

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	397	232	0	0	239	0
Stage 1	232	-	-	-	-	-
Stage 2	165	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	608	807	-	-	1328	-
Stage 1	807	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	601	807	-	-	1328	-
Mov Cap-2 Maneuver	601	-	-	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	854	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	724	1328	-
HCM Lane V/C Ratio	-	-	0.032	0.011	-
HCM Control Delay (s)	-	-	10.1	7.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Attachment I2

Phase 01 Year 2022 Background
Synchro Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	376	8	119	386	56	87	91	254	102	79	147
Future Volume (veh/h)	91	376	8	119	386	56	87	91	254	102	79	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	99	409	9	129	420	0	95	99	276	111	86	160
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	949	423	166	1033		316	391	331	383	141	262
Arrive On Green	0.07	0.27	0.27	0.09	0.29	0.00	0.05	0.21	0.21	0.07	0.24	0.24
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	585	1089
Grp Volume(v), veh/h	99	409	9	129	420	0	95	99	276	111	0	246
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	0	1674
Q Serve(g_s), s	4.1	7.1	0.3	5.3	7.1	0.0	3.1	3.3	12.5	3.6	0.0	9.8
Cycle Q Clear(g_c), s	4.1	7.1	0.3	5.3	7.1	0.0	3.1	3.3	12.5	3.6	0.0	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.65
Lane Grp Cap(c), veh/h	124	949	423	166	1033		316	391	331	383	0	403
V/C Ratio(X)	0.80	0.43	0.02	0.78	0.41		0.30	0.25	0.83	0.29	0.00	0.61
Avail Cap(c_a), veh/h	124	1765	787	378	2273		316	709	601	412	0	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.3	22.7	20.2	33.2	21.4	0.0	21.9	24.7	28.4	21.0	0.0	25.3
Incr Delay (d2), s/veh	30.0	0.3	0.0	7.6	0.3	0.0	0.5	0.3	5.4	0.4	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.8	4.9	0.2	4.5	4.9	0.0	2.2	2.5	8.4	2.5	0.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	23.0	20.2	40.8	21.6	0.0	22.4	25.1	33.8	21.4	0.0	26.8
LnGrp LOS	E	C	C	D	C		C	C	C	C	A	C
Approach Vol, veh/h		517			549	A		470			357	
Approach Delay, s/veh		30.9			26.1			29.7			25.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	28.6	11.9	22.5	13.8	26.8	9.5	24.8
Change Period (Y+Rc), s	6.8	6.8	6.8	6.8	6.8	6.8	5.5	6.8
Max Green Setting (Gmax), s	5.2	47.9	6.3	28.4	15.9	37.2	4.0	32.0
Max Q Clear Time (g_c+I1), s	6.1	9.1	5.6	14.5	7.3	9.1	5.1	11.8
Green Ext Time (p_c), s	0.0	2.7	0.0	1.2	0.2	2.5	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	28.1
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	439	206	30	346	2	167	13	31	87	30	20
Future Volume (veh/h)	10	439	206	30	346	2	167	13	31	87	30	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	477	224	33	376	2	192	0	34	95	33	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	824	384	50	1441	8	351	0	156	165	173	147
Arrive On Green	0.01	0.35	0.35	0.03	0.40	0.40	0.10	0.00	0.10	0.09	0.09	0.09
Sat Flow, veh/h	1781	2352	1098	1781	3624	19	3563	0	1585	1781	1870	1585
Grp Volume(v), veh/h	11	360	341	33	184	194	192	0	34	95	33	22
Grp Sat Flow(s),veh/h/ln	1781	1777	1673	1781	1777	1867	1781	0	1585	1781	1870	1585
Q Serve(g_s), s	0.4	9.8	9.9	1.1	4.1	4.1	3.1	0.0	1.2	3.0	1.0	0.8
Cycle Q Clear(g_c), s	0.4	9.8	9.9	1.1	4.1	4.1	3.1	0.0	1.2	3.0	1.0	0.8
Prop In Lane	1.00		0.66	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	20	622	586	50	706	742	351	0	156	165	173	147
V/C Ratio(X)	0.55	0.58	0.58	0.66	0.26	0.26	0.55	0.00	0.22	0.58	0.19	0.15
Avail Cap(c_a), veh/h	135	1064	1002	180	1163	1222	2469	0	1098	497	522	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.2	15.7	15.8	28.6	12.0	12.0	25.5	0.0	24.7	25.9	24.9	24.8
Incr Delay (d2), s/veh	21.8	2.3	2.5	5.3	0.5	0.5	1.3	0.0	0.7	3.2	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	6.5	6.3	0.9	2.5	2.7	2.2	0.0	0.8	2.3	0.7	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.0	18.1	18.3	33.9	12.6	12.5	26.9	0.0	25.4	29.0	25.5	25.3
LnGrp LOS	D	B	B	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		712			411			226			150	
Approach Delay, s/veh		18.7			14.3			26.6			27.7	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	30.6		12.7	8.7	27.6		10.5				
Change Period (Y+Rc), s	5.0	* 7		6.8	7.0	* 6.8		5.0				
Max Green Setting (Gmax), s	4.5	* 39		41.2	6.0	* 36		16.6				
Max Q Clear Time (g_c+I1), s	2.4	6.1		5.1	3.1	11.9		5.0				
Green Ext Time (p_c), s	0.0	4.8		0.7	0.0	8.9		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		19.6
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

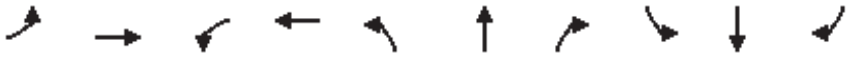
1: Pine Lakes Parkway & Palm Coast Parkway

Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	99	409	9	129	420	61	95	99	276	111	246
v/c Ratio	0.77	0.41	0.01	0.48	0.33	0.04	0.36	0.37	0.59	0.35	0.66
Control Delay	75.2	25.0	0.0	36.7	19.0	0.1	23.8	34.0	10.0	22.9	28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.2	25.0	0.0	36.7	19.0	0.1	23.8	34.0	10.0	22.9	28.0
Queue Length 50th (ft)	46	80	0	55	73	0	31	42	0	37	70
Queue Length 95th (ft)	#149	146	0	114	123	0	68	90	63	79	151
Internal Link Dist (ft)		670			670			670			3351
Turn Bay Length (ft)	265		235	285			235		235	185	
Base Capacity (vph)	129	1850	931	395	2382	1583	267	743	797	316	800
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.22	0.01	0.33	0.18	0.04	0.36	0.13	0.35	0.35	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	11	701	33	378	98	98	34	95	35	20
v/c Ratio	0.09	0.52	0.23	0.23	0.40	0.40	0.09	0.38	0.14	0.05
Control Delay	42.6	19.4	42.7	14.0	38.1	37.9	0.5	38.1	33.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	19.4	42.7	14.0	38.1	37.9	0.5	38.1	33.1	0.3
Queue Length 50th (ft)	5	133	15	51	46	46	0	43	14	0
Queue Length 95th (ft)	24	215	50	113	109	109	0	102	49	0
Internal Link Dist (ft)		672		671		2828			190	
Turn Bay Length (ft)	350		325		415		200			
Base Capacity (vph)	121	1866	162	2136	1061	1071	1066	450	447	529
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.38	0.20	0.18	0.09	0.09	0.03	0.21	0.08	0.04

Intersection Summary

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	16	0	15	0	147	3	14	268	0
Future Vol, veh/h	0	0	0	16	0	15	0	147	3	14	268	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	17	0	16	0	160	3	15	291	0

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	483	483	162	-	0	0	163	0	0
Stage 1	162	162	-	-	-	-	-	-	-
Stage 2	321	321	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	542	483	883	0	-	-	1416	-	0
Stage 1	867	764	-	0	-	-	-	-	0
Stage 2	735	652	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	536	0	883	-	-	-	1416	-	-
Mov Cap-2 Maneuver	536	0	-	-	-	-	-	-	-
Stage 1	867	0	-	-	-	-	-	-	-
Stage 2	727	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	662	1416	-
HCM Lane V/C Ratio	-	-	0.051	0.011	-
HCM Control Delay (s)	-	-	10.7	7.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	430	59	276	345	89	30	71	220	71	44	64
Future Volume (veh/h)	115	430	59	276	345	89	30	71	220	71	44	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	467	64	300	375	0	33	77	239	77	48	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	873	390	337	1319		341	340	288	332	152	222
Arrive On Green	0.06	0.25	0.25	0.19	0.37	0.00	0.03	0.18	0.18	0.05	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	687	1002
Grp Volume(v), veh/h	125	467	64	300	375	0	33	77	239	77	0	118
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	0	1690
Q Serve(g_s), s	5.2	9.3	2.6	13.4	6.0	0.0	1.2	2.9	11.8	2.8	0.0	4.8
Cycle Q Clear(g_c), s	5.2	9.3	2.6	13.4	6.0	0.0	1.2	2.9	11.8	2.8	0.0	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.59
Lane Grp Cap(c), veh/h	114	873	390	337	1319		341	340	288	332	0	373
V/C Ratio(X)	1.10	0.53	0.16	0.89	0.28		0.10	0.23	0.83	0.23	0.00	0.32
Avail Cap(c_a), veh/h	114	1624	724	348	2091		383	653	553	382	0	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.1	26.7	24.1	32.2	18.0	0.0	26.1	28.4	32.1	25.2	0.0	26.6
Incr Delay (d2), s/veh	113.3	0.5	0.2	23.1	0.1	0.0	0.1	0.3	6.1	0.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.9	6.6	1.7	12.0	4.1	0.0	0.9	2.2	8.2	2.1	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	151.4	27.2	24.3	55.3	18.1	0.0	26.2	28.8	38.2	25.6	0.0	27.0
LnGrp LOS	F	C	C	E	B		C	C	D	C	A	C
Approach Vol, veh/h		656			675	A		349			195	
Approach Delay, s/veh		50.6			34.6			35.0			26.5	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	37.0	10.8	21.6	22.2	26.8	7.6	24.8
Change Period (Y+Rc), s	6.8	6.8	6.8	6.8	6.8	6.8	5.5	6.8
Max Green Setting (Gmax), s	5.2	47.9	6.3	28.4	15.9	37.2	4.0	32.0
Max Q Clear Time (g_c+I1), s	7.2	8.0	4.8	13.8	15.4	11.3	3.2	6.8
Green Ext Time (p_c), s	0.0	2.4	0.0	1.0	0.1	3.1	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	39.4
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	403	92	54	587	35	151	13	45	74	16	8
Future Volume (veh/h)	16	403	92	54	587	35	151	13	45	74	16	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	438	100	59	638	38	174	0	49	80	17	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	29	978	222	75	1349	80	354	0	157	149	157	133
Arrive On Green	0.02	0.34	0.34	0.04	0.40	0.40	0.10	0.00	0.10	0.08	0.08	0.08
Sat Flow, veh/h	1781	2878	652	1781	3408	203	3563	0	1585	1781	1870	1585
Grp Volume(v), veh/h	17	269	269	59	332	344	174	0	49	80	17	9
Grp Sat Flow(s),veh/h/ln	1781	1777	1753	1781	1777	1834	1781	0	1585	1781	1870	1585
Q Serve(g_s), s	0.6	6.9	7.0	1.9	8.2	8.2	2.7	0.0	1.7	2.5	0.5	0.3
Cycle Q Clear(g_c), s	0.6	6.9	7.0	1.9	8.2	8.2	2.7	0.0	1.7	2.5	0.5	0.3
Prop In Lane	1.00		0.37	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	29	604	596	75	704	726	354	0	157	149	157	133
V/C Ratio(X)	0.58	0.45	0.45	0.79	0.47	0.47	0.49	0.00	0.31	0.54	0.11	0.07
Avail Cap(c_a), veh/h	136	1075	1060	182	1174	1212	2494	0	1110	502	528	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	15.1	15.2	27.9	13.2	13.2	25.1	0.0	24.6	25.9	24.9	24.8
Incr Delay (d2), s/veh	16.7	1.4	1.5	6.7	1.4	1.3	1.1	0.0	1.1	3.0	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	4.5	4.6	1.6	5.1	5.3	1.9	0.0	1.1	1.9	0.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.5	16.5	16.6	34.6	14.6	14.5	26.2	0.0	25.8	28.8	25.2	25.1
LnGrp LOS	D	B	B	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		555			735			223			106	
Approach Delay, s/veh		17.5			16.2			26.1			27.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	30.3		12.6	9.5	26.8		9.9				
Change Period (Y+Rc), s	5.0	* 7		6.8	7.0	* 6.8		5.0				
Max Green Setting (Gmax), s	4.5	* 39		41.2	6.0	* 36		16.6				
Max Q Clear Time (g_c+I1), s	2.6	10.2		4.7	3.9	9.0		4.5				
Green Ext Time (p_c), s	0.0	9.1		0.7	0.0	6.9		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		18.7
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

1: Pine Lakes Parkway & Palm Coast Parkway

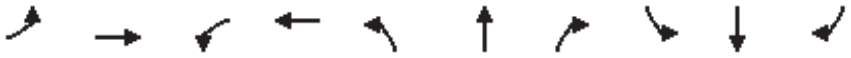
Timing Plan: PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	125	467	64	300	375	97	33	77	239	77	118
v/c Ratio	1.02	0.49	0.11	0.80	0.26	0.06	0.13	0.36	0.61	0.27	0.30
Control Delay	129.0	26.7	0.4	48.2	16.5	0.1	21.3	36.9	12.0	23.7	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	129.0	26.7	0.4	48.2	16.5	0.1	21.3	36.9	12.0	23.7	16.8
Queue Length 50th (ft)	~68	102	0	141	63	0	12	35	0	28	20
Queue Length 95th (ft)	#180	156	0	#291	101	0	31	75	62	60	68
Internal Link Dist (ft)		670			670			670			3351
Turn Bay Length (ft)	265		235	285			235		235	185	
Base Capacity (vph)	122	1756	895	375	2262	1583	245	706	748	285	760
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.27	0.07	0.80	0.17	0.06	0.13	0.11	0.32	0.27	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	538	59	676	89	89	49	80	18	8
v/c Ratio	0.14	0.35	0.35	0.34	0.37	0.37	0.13	0.34	0.08	0.02
Control Delay	39.4	20.2	40.6	14.2	35.4	35.2	0.7	35.3	30.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	20.2	40.6	14.2	35.4	35.2	0.7	35.3	30.4	0.1
Queue Length 50th (ft)	7	97	24	94	37	37	0	32	7	0
Queue Length 95th (ft)	30	170	70	201	93	93	0	83	29	0
Internal Link Dist (ft)		672		671		2828			190	
Turn Bay Length (ft)	350		325		415		200			
Base Capacity (vph)	124	1928	174	2141	1077	1088	1079	460	457	536
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.28	0.34	0.32	0.08	0.08	0.05	0.17	0.04	0.01

Intersection Summary

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	0	14	0	218	15	15	131	0
Future Vol, veh/h	0	0	0	7	0	14	0	218	15	15	131	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	8	0	15	0	237	16	16	142	0

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	419	419	245	-	0	0	253	0	0
Stage 1	245	245	-	-	-	-	-	-	-
Stage 2	174	174	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	591	525	794	0	-	-	1312	-	0
Stage 1	796	703	-	0	-	-	-	-	0
Stage 2	856	755	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	584	0	794	-	-	-	1312	-	-
Mov Cap-2 Maneuver	584	0	-	-	-	-	-	-	-
Stage 1	796	0	-	-	-	-	-	-	-
Stage 2	846	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	709	1312	-
HCM Lane V/C Ratio	-	-	0.032	0.012	-
HCM Control Delay (s)	-	-	10.2	7.8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Attachment I3

Phase 01 Year 2022 Buildout
Synchro Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	376	8	119	386	64	87	93	254	125	86	162
Future Volume (veh/h)	96	376	8	119	386	64	87	93	254	125	86	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	104	409	9	129	420	0	95	101	276	136	93	176
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	931	415	165	1019		310	390	330	402	147	277
Arrive On Green	0.07	0.26	0.26	0.09	0.29	0.00	0.05	0.21	0.21	0.08	0.25	0.25
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	579	1095
Grp Volume(v), veh/h	104	409	9	129	420	0	95	101	276	136	0	269
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	0	1673
Q Serve(g_s), s	4.4	7.3	0.3	5.4	7.3	0.0	3.2	3.4	12.7	4.5	0.0	10.9
Cycle Q Clear(g_c), s	4.4	7.3	0.3	5.4	7.3	0.0	3.2	3.4	12.7	4.5	0.0	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.65
Lane Grp Cap(c), veh/h	121	931	415	165	1019		310	390	330	402	0	424
V/C Ratio(X)	0.86	0.44	0.02	0.78	0.41		0.31	0.26	0.84	0.34	0.00	0.63
Avail Cap(c_a), veh/h	121	1732	773	371	2230		310	696	590	406	0	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.2	23.5	20.9	33.9	22.0	0.0	22.4	25.3	29.0	21.0	0.0	25.4
Incr Delay (d2), s/veh	41.8	0.3	0.0	7.7	0.3	0.0	0.6	0.3	5.5	0.5	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.8	5.1	0.2	4.6	5.0	0.0	2.3	2.6	8.6	3.1	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.0	23.8	20.9	41.6	22.3	0.0	23.0	25.6	34.5	21.5	0.0	26.9
LnGrp LOS	E	C	C	D	C		C	C	C	C	A	C
Approach Vol, veh/h		522			549	A		472			405	
Approach Delay, s/veh		34.4			26.8			30.3			25.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	28.7	12.9	22.7	13.9	26.8	9.5	26.1
Change Period (Y+Rc), s	6.8	6.8	6.8	6.8	6.8	6.8	5.5	6.8
Max Green Setting (Gmax), s	5.2	47.9	6.3	28.4	15.9	37.2	4.0	32.0
Max Q Clear Time (g_c+I1), s	6.4	9.3	6.5	14.7	7.4	9.3	5.2	12.9
Green Ext Time (p_c), s	0.0	2.7	0.0	1.2	0.2	2.5	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	439	212	36	346	2	184	13	49	87	30	20
Future Volume (veh/h)	10	439	212	36	346	2	184	13	49	87	30	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	477	230	39	376	2	210	0	53	95	33	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	816	391	57	1452	8	365	0	162	163	171	145
Arrive On Green	0.01	0.35	0.35	0.03	0.40	0.40	0.10	0.00	0.10	0.09	0.09	0.09
Sat Flow, veh/h	1781	2330	1116	1781	3624	19	3563	0	1585	1781	1870	1585
Grp Volume(v), veh/h	11	363	344	39	184	194	210	0	53	95	33	22
Grp Sat Flow(s),veh/h/ln	1781	1777	1669	1781	1777	1867	1781	0	1585	1781	1870	1585
Q Serve(g_s), s	0.4	10.1	10.2	1.3	4.2	4.2	3.4	0.0	1.9	3.1	1.0	0.8
Cycle Q Clear(g_c), s	0.4	10.1	10.2	1.3	4.2	4.2	3.4	0.0	1.9	3.1	1.0	0.8
Prop In Lane	1.00		0.67	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	20	622	584	57	712	748	365	0	162	163	171	145
V/C Ratio(X)	0.55	0.58	0.59	0.69	0.26	0.26	0.58	0.00	0.33	0.58	0.19	0.15
Avail Cap(c_a), veh/h	133	1048	985	177	1145	1203	2432	0	1082	490	515	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	16.0	16.1	28.9	12.1	12.1	25.8	0.0	25.1	26.3	25.4	25.3
Incr Delay (d2), s/veh	21.8	2.4	2.6	5.4	0.5	0.5	1.4	0.0	1.2	3.3	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	6.8	6.5	1.1	2.6	2.7	2.4	0.0	1.2	2.4	0.8	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.5	18.4	18.6	34.3	12.6	12.6	27.3	0.0	26.3	29.6	25.9	25.7
LnGrp LOS	D	B	B	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		718			417			263			150	
Approach Delay, s/veh		19.0			14.6			27.1			28.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	31.2		13.0	8.9	27.9		10.5				
Change Period (Y+Rc), s	5.0	* 7		6.8	7.0	* 6.8		5.0				
Max Green Setting (Gmax), s	4.5	* 39		41.2	6.0	* 36		16.6				
Max Q Clear Time (g_c+I1), s	2.4	6.2		5.4	3.3	12.2		5.1				
Green Ext Time (p_c), s	0.0	4.8		0.9	0.0	8.9		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		20.1
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

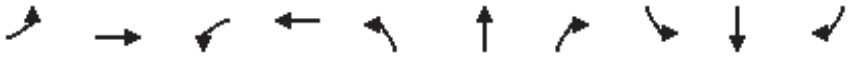
1: Pine Lakes Parkway & Palm Coast Parkway

Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	104	409	9	129	420	70	95	101	276	136	269
v/c Ratio	0.86	0.44	0.02	0.50	0.35	0.04	0.35	0.37	0.59	0.40	0.62
Control Delay	91.5	26.4	0.0	38.1	20.2	0.0	23.3	33.6	9.8	23.6	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.5	26.4	0.0	38.1	20.2	0.0	23.3	33.6	9.8	23.6	26.2
Queue Length 50th (ft)	49	82	0	56	75	0	31	43	0	46	81
Queue Length 95th (ft)	#161	150	0	118	127	0	68	91	63	94	168
Internal Link Dist (ft)		670			670			670			3351
Turn Bay Length (ft)	265		235	285			235		235	185	
Base Capacity (vph)	121	1743	890	372	2245	1583	274	700	767	338	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.23	0.01	0.35	0.19	0.04	0.35	0.14	0.36	0.40	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	11	707	39	378	106	108	53	95	35	20
v/c Ratio	0.09	0.53	0.27	0.24	0.41	0.42	0.13	0.38	0.14	0.05
Control Delay	43.0	19.8	43.9	14.3	38.1	38.1	0.7	38.4	33.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	19.8	43.9	14.3	38.1	38.1	0.7	38.4	33.4	0.3
Queue Length 50th (ft)	5	136	18	52	50	51	0	43	15	0
Queue Length 95th (ft)	25	219	57	114	116	117	0	103	49	0
Internal Link Dist (ft)		672		671		2828			190	
Turn Bay Length (ft)	350		325		415		200			
Base Capacity (vph)	122	1867	162	2140	1055	1064	1062	450	447	529
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.38	0.24	0.18	0.10	0.10	0.05	0.21	0.08	0.04

Intersection Summary

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	0	33	16	0	15	12	151	3	14	279	8
Future Vol, veh/h	23	0	33	16	0	15	12	151	3	14	279	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	235	-	-	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	0	36	17	0	16	13	164	3	15	303	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	538	531	308	548	534	166	312	0	0	167	0	0
Stage 1	338	338	-	192	192	-	-	-	-	-	-	-
Stage 2	200	193	-	356	342	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	454	454	732	447	452	878	1248	-	-	1411	-	-
Stage 1	676	641	-	810	742	-	-	-	-	-	-	-
Stage 2	802	741	-	661	638	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	439	444	732	418	443	878	1248	-	-	1411	-	-
Mov Cap-2 Maneuver	439	444	-	418	443	-	-	-	-	-	-	-
Stage 1	669	634	-	802	735	-	-	-	-	-	-	-
Stage 2	779	734	-	622	631	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.6	11.8	0.6	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1248	-	-	439	732	560	1411	-	-
HCM Lane V/C Ratio	0.01	-	-	0.057	0.049	0.06	0.011	-	-
HCM Control Delay (s)	7.9	-	-	13.7	10.2	11.8	7.6	-	-
HCM Lane LOS	A	-	-	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	11	4	185	290	4
Future Vol, veh/h	12	11	4	185	290	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	12	4	201	315	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	526	317	319	0	-	0
Stage 1	317	-	-	-	-	-
Stage 2	209	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	512	724	1241	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	510	724	1241	-	-	-
Mov Cap-2 Maneuver	510	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	826	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1241	-	594	-	-
HCM Lane V/C Ratio	0.004	-	0.042	-	-
HCM Control Delay (s)	7.9	0	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	430	59	276	345	112	30	78	220	85	48	74
Future Volume (veh/h)	130	430	59	276	345	112	30	78	220	85	48	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	141	467	64	300	375	0	33	85	239	92	52	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	847	378	350	1186		340	341	289	342	153	236
Arrive On Green	0.10	0.24	0.24	0.20	0.33	0.00	0.03	0.18	0.18	0.06	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	664	1022
Grp Volume(v), veh/h	141	467	64	300	375	0	33	85	239	92	0	132
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	0	1686
Q Serve(g_s), s	6.5	9.7	2.7	13.7	6.6	0.0	1.3	3.3	12.2	3.5	0.0	5.5
Cycle Q Clear(g_c), s	6.5	9.7	2.7	13.7	6.6	0.0	1.3	3.3	12.2	3.5	0.0	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.61
Lane Grp Cap(c), veh/h	180	847	378	350	1186		340	341	289	342	0	389
V/C Ratio(X)	0.78	0.55	0.17	0.86	0.32		0.10	0.25	0.83	0.27	0.00	0.34
Avail Cap(c_a), veh/h	683	1956	872	1235	3057		432	784	665	517	0	868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.8	28.0	25.4	32.6	20.8	0.0	26.8	29.4	33.0	25.6	0.0	26.9
Incr Delay (d2), s/veh	7.2	0.6	0.2	6.0	0.2	0.0	0.1	0.4	6.0	0.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.4	7.0	1.7	10.1	4.6	0.0	0.9	2.5	8.4	2.5	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.0	28.6	25.6	38.6	21.0	0.0	27.0	29.8	39.0	26.0	0.0	27.4
LnGrp LOS	D	C	C	D	C		C	C	D	C	A	C
Approach Vol, veh/h		672			675	A		357			224	
Approach Delay, s/veh		31.6			28.8			35.7			26.8	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	34.8	11.7	22.1	23.3	26.8	7.6	26.2
Change Period (Y+Rc), s	6.8	6.8	6.8	6.8	6.8	6.8	5.5	6.8
Max Green Setting (Gmax), s	32.2	72.2	13.2	35.2	58.2	46.2	6.5	43.2
Max Q Clear Time (g_c+I1), s	8.5	8.6	5.5	14.2	15.7	11.7	3.3	7.5
Green Ext Time (p_c), s	0.3	2.4	0.1	1.1	0.9	3.2	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	30.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	403	109	73	587	35	162	13	57	74	16	8
Future Volume (veh/h)	16	403	109	73	587	35	162	13	57	74	16	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	438	118	79	638	38	186	0	62	80	17	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	29	926	247	102	1379	82	351	0	156	148	155	132
Arrive On Green	0.02	0.33	0.33	0.06	0.40	0.40	0.10	0.00	0.10	0.08	0.08	0.08
Sat Flow, veh/h	1781	2773	741	1781	3408	203	3563	0	1585	1781	1870	1585
Grp Volume(v), veh/h	17	279	277	79	332	344	186	0	62	80	17	9
Grp Sat Flow(s),veh/h/ln	1781	1777	1737	1781	1777	1834	1781	0	1585	1781	1870	1585
Q Serve(g_s), s	0.6	7.4	7.6	2.6	8.2	8.2	3.0	0.0	2.2	2.6	0.5	0.3
Cycle Q Clear(g_c), s	0.6	7.4	7.6	2.6	8.2	8.2	3.0	0.0	2.2	2.6	0.5	0.3
Prop In Lane	1.00		0.43	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	29	593	580	102	719	742	351	0	156	148	155	132
V/C Ratio(X)	0.58	0.47	0.48	0.77	0.46	0.46	0.53	0.00	0.40	0.54	0.11	0.07
Avail Cap(c_a), veh/h	297	1756	1717	684	2195	2265	2866	0	1275	714	749	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	15.8	15.8	27.9	13.1	13.1	25.7	0.0	25.3	26.4	25.4	25.3
Incr Delay (d2), s/veh	16.8	1.6	1.7	4.6	1.3	1.2	1.2	0.0	1.6	3.1	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	5.0	4.9	2.0	5.1	5.3	2.1	0.0	1.5	2.0	0.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	17.4	17.5	32.5	14.3	14.3	26.9	0.0	27.0	29.4	25.7	25.5
LnGrp LOS	D	B	B	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		573			755			248			106	
Approach Delay, s/veh		18.3			16.2			26.9			28.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	31.2		12.7	10.4	26.8		10.0				
Change Period (Y+Rc), s	5.0	* 7		6.8	7.0	* 6.8		5.0				
Max Green Setting (Gmax), s	10.0	* 74		48.2	23.0	* 59		24.0				
Max Q Clear Time (g_c+I1), s	2.6	10.2		5.0	4.6	9.6		4.6				
Green Ext Time (p_c), s	0.0	11.1		0.8	0.1	8.5		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		19.3	
HCM 6th LOS		B	

Notes

User approved volume balancing among the lanes for turning movement.

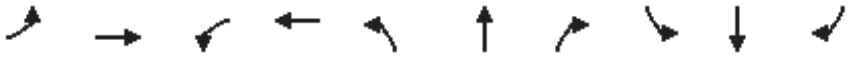
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

1: Pine Lakes Parkway & Palm Coast Parkway

Timing Plan: PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	141	467	64	300	375	122	33	85	239	92	132
v/c Ratio	0.54	0.55	0.12	0.71	0.32	0.08	0.12	0.40	0.61	0.28	0.33
Control Delay	45.6	34.7	0.5	42.1	24.6	0.1	26.4	46.5	13.1	28.5	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	34.7	0.5	42.1	24.6	0.1	26.4	46.5	13.1	28.5	27.4
Queue Length 50th (ft)	73	121	0	151	82	0	13	44	0	38	46
Queue Length 95th (ft)	159	215	0	284	146	0	41	108	75	92	117
Internal Link Dist (ft)		670			670			670			3351
Turn Bay Length (ft)	265		235	285			235		235	185	
Base Capacity (vph)	641	1838	908	1158	2873	1583	289	737	770	383	843
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.25	0.07	0.26	0.13	0.08	0.11	0.12	0.31	0.24	0.16

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	556	79	676	95	95	62	80	18	8
v/c Ratio	0.10	0.47	0.37	0.43	0.38	0.38	0.18	0.34	0.08	0.03
Control Delay	40.6	23.6	41.2	17.9	38.7	38.6	1.2	39.1	34.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	23.6	41.2	17.9	38.7	38.6	1.2	39.1	34.2	0.1
Queue Length 50th (ft)	8	112	36	100	44	44	0	36	7	0
Queue Length 95th (ft)	32	196	92	222	109	109	0	92	31	0
Internal Link Dist (ft)		672		671		2828			190	
Turn Bay Length (ft)	350		325		415		200			
Base Capacity (vph)	260	2677	598	3209	1130	1141	1105	623	619	619
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.21	0.13	0.21	0.08	0.08	0.06	0.13	0.03	0.01

Intersection Summary

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	21	7	0	14	34	229	15	15	138	23
Future Vol, veh/h	15	0	21	7	0	14	34	229	15	15	138	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	235	-	-	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	23	8	0	15	37	249	16	16	150	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	534	534	163	537	538	257	175	0	0	265	0	0
Stage 1	195	195	-	331	331	-	-	-	-	-	-	-
Stage 2	339	339	-	206	207	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	457	452	882	455	450	782	1401	-	-	1299	-	-
Stage 1	807	739	-	682	645	-	-	-	-	-	-	-
Stage 2	676	640	-	796	731	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	435	435	882	430	433	782	1401	-	-	1299	-	-
Mov Cap-2 Maneuver	435	435	-	430	433	-	-	-	-	-	-	-
Stage 1	786	730	-	664	628	-	-	-	-	-	-	-
Stage 2	645	623	-	766	722	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	11.1	0.9	0.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1401	-	-	435	882	614	1299	-	-
HCM Lane V/C Ratio	0.026	-	-	0.037	0.026	0.037	0.013	-	-
HCM Control Delay (s)	7.6	-	-	13.6	9.2	11.1	7.8	-	-
HCM Lane LOS	A	-	-	B	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	7	11	246	169	13
Future Vol, veh/h	8	7	11	246	169	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	8	12	267	184	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	482	191	198	0	-	0
Stage 1	191	-	-	-	-	-
Stage 2	291	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	543	851	1375	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	538	851	1375	-	-	-
Mov Cap-2 Maneuver	538	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	759	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1375	-	649	-	-
HCM Lane V/C Ratio	0.009	-	0.025	-	-
HCM Control Delay (s)	7.6	0	10.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Attachment J

Phase 02 Synchro Worksheets

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	0	61	17	0	16	32	182	3	16	332	24
Future Vol, veh/h	45	0	61	17	0	16	32	182	3	16	332	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	235	-	-	175	-	240
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	0	66	18	0	17	35	198	3	17	361	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	673	666	361	711	691	200	387	0	0	201	0	0
Stage 1	395	395	-	270	270	-	-	-	-	-	-	-
Stage 2	278	271	-	441	421	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	369	380	684	348	368	841	1171	-	-	1371	-	-
Stage 1	630	605	-	736	686	-	-	-	-	-	-	-
Stage 2	728	685	-	595	589	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	350	364	684	304	353	841	1171	-	-	1371	-	-
Mov Cap-2 Maneuver	350	364	-	304	353	-	-	-	-	-	-	-
Stage 1	611	598	-	714	665	-	-	-	-	-	-	-
Stage 2	692	664	-	531	582	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	13.9	1.2	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1171	-	-	350	684	440	1371	-	-
HCM Lane V/C Ratio	0.03	-	-	0.14	0.097	0.082	0.013	-	-
HCM Control Delay (s)	8.2	-	-	17	10.8	13.9	7.7	-	-
HCM Lane LOS	A	-	-	C	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.3	0.3	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	49	15	232	346	13
Future Vol, veh/h	35	49	15	232	346	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	235	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	53	16	252	376	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	667	383	390	0	-	0
Stage 1	383	-	-	-	-	-
Stage 2	284	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	424	664	1169	-	-	-
Stage 1	689	-	-	-	-	-
Stage 2	764	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	418	664	1169	-	-	-
Mov Cap-2 Maneuver	418	-	-	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	764	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1169	-	418	664	-	-
HCM Lane V/C Ratio	0.014	-	0.091	0.08	-	-
HCM Control Delay (s)	8.1	-	14.5	10.9	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	0.3	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	74	0	94	7	0	15	114	302	17	17	196	87
Future Vol, veh/h	74	0	94	7	0	15	114	302	17	17	196	87
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	235	-	-	175	-	240
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	80	0	102	8	0	16	124	328	18	18	213	95

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	842	843	213	933	929	337	308	0	0	346	0	0
Stage 1	249	249	-	585	585	-	-	-	-	-	-	-
Stage 2	593	594	-	348	344	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	284	300	827	246	268	705	1253	-	-	1213	-	-
Stage 1	755	701	-	497	498	-	-	-	-	-	-	-
Stage 2	492	493	-	668	637	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	254	266	827	197	238	705	1253	-	-	1213	-	-
Mov Cap-2 Maneuver	254	266	-	197	238	-	-	-	-	-	-	-
Stage 1	680	690	-	448	449	-	-	-	-	-	-	-
Stage 2	433	444	-	577	627	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.9	14.9	2.2	0.5
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1253	-	-	254	827	387	1213	-	-
HCM Lane V/C Ratio	0.099	-	-	0.317	0.124	0.062	0.015	-	-
HCM Control Delay (s)	8.2	-	-	25.6	10	14.9	8	-	-
HCM Lane LOS	A	-	-	D	B	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1.3	0.4	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	47	61	54	338	254	48
Future Vol, veh/h	47	61	54	338	254	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	235	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	66	59	367	276	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	787	302	328	0	-	0
Stage 1	302	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	360	738	1232	-	-	-
Stage 1	750	-	-	-	-	-
Stage 2	619	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	343	738	1232	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	619	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1232	-	343	738	-	-
HCM Lane V/C Ratio	0.048	-	0.149	0.09	-	-
HCM Control Delay (s)	8.1	-	17.3	10.4	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	0.3	-	-