

TRAFFIC IMPACT STATEMENT

Dragonfly Industrial Park
Port St. Lucie, FL

Prepared for:
Culpepper & Terpening, Inc.

Prepared by:



Engineering & Planning, Inc.

1172 SW 30th Street, Suite 500
Palm City, FL 34990
(772) 286-8030

EXECUTIVE SUMMARY

MacKenzie Engineering & Planning, Inc. was retained to prepare a traffic impact analysis for development of Dragonfly Industrial Park. Dragonfly Industrial Park is 405,508 square feet (SF) of warehouse use and is located within the approved Southern Grove Development of Regional Impact. The project is approved for traffic concurrency. The analysis was conducted in accordance with the requirements of the City of Port St. Lucie.

The project is located east of Village Parkway, north of Becker Road and west of Tom Mackie Boulevard in Port St. Lucie, Florida (Parcel ID: 4315-801-0003-000-9). Figure 1 illustrates the site location.

The proposed project is expected to generate the following net new external trips and driveway trips:

- 679 daily, 73 AM peak hour (48 in/25 out), and 81 PM peak hour (19 in/62 out) trips

Left-turn lanes into the project are provided at all driveways. Signalization is not warranted or needed at any driveways.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
TABLE OF CONTENTS.....	ii
LIST OF TABLES	iii
LIST OF FIGURES	iii
LIST OF EXHIBITS.....	iii
INTRODUCTION	1
INVENTORY AND PLANNING DATA	1
PROJECT TRAFFIC	3
Trip Generation.....	3
Internal & Pass-by Capture.....	3
ROADWAYS	4
TRAFFIC DISTRIBUTION	4
TRAFFIC ASSIGNMENT	5
DRIVEWAYS	6
Driveway Access	6
Driveway Spacing.....	8
Turn Lanes	10
CONCLUSION.....	11
APPENDICES	12

LIST OF TABLES

Table 1. Trip Generation..... 3
Table 2. Driveway Spacing Standards 8
Table 3. Driveway Standards* 9
Table 4. Driveway Turn-Lane Standards 10

LIST OF FIGURES

Figure 1. Site Location Map 2
Figure 2. Traffic Assignment..... 5
Figure 3. Driveway Volumes 7

LIST OF EXHIBITS

INTRODUCTION

MacKenzie Engineering & Planning, Inc. was retained to prepare a traffic impact analysis for development of Dragonfly Industrial Park. Dragonfly Industrial Park is located within the approved Southern Grove Development of Regional Impact. The project is approved for traffic concurrency. A trip generation and analysis of access is required to determine necessary laneage at the project driveways.

This document presents the methodology used and the findings of this traffic statement. The analysis was conducted in accordance with the requirements of the City of Port St. Lucie.

This analysis has been prepared to evaluate traffic impacts resulting from 405,508 square feet (SF) of warehouse use. The project is located east of Village Parkway, north of Marshall Parkway and west of Tom Mackie Boulevard in Port St. Lucie, Florida (Parcel ID: 4315-801-0003-000-9). Figure 1 illustrates the site location.

INVENTORY AND PLANNING DATA

The traffic data used in this analysis includes:

- Roadway geometrics

Culpepper & Terpening, Inc. provided site information.

Figure 1. Site Location Map



PROJECT TRAFFIC

Trip Generation

The study uses trip generation rates for Warehouse and Distribution (ITE Land Use 150) published in the Institute of Traffic Engineers' (ITE) report, *Trip Generation (11th Edition)*.

Proposed Site

The applicant proposes 405,508 SF of warehouse and distribution use. The proposed project is expected to generate the following driveway trips:

- 679 daily, 73 AM peak hour (48 in/25 out), and 81 PM peak hour (19 in/62 out) trips

Internal & Pass-by Capture

The site contains no internal or pass-by capture.

Table 1. Trip Generation

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
<u>Proposed Site Traffic</u>								
Warehousing	405.508 1000 SF	679	73	48	25	81	19	62
Note: Trip generation was calculated using the following data:								
Land Use	ITE	Unit	Daily Rate	Pass-by Rate	AM Peak Hour		PM Peak Hour	
	Code				in/out	Rate	in/out	Equation
Warehousing	150	1000 SF	$T = 1.58(X) + 38.29$	0%	66/34	$T = 0.11(X) + 28.55$	24/76	$T = 0.15(X) + 20.47$

Copyright © 2023, MacKenzie Engineering and Planning, Inc.

ROADWAYS

Tom Mackie Boulevard will be constructed concurrent with the project.

TRAFFIC DISTRIBUTION

Traffic distribution and assignment was determined using engineering judgment, trip lengths, surrounding uses and review of the roadway network. The overall distribution is summarized by general directions and is depicted below:

North	-	59 percent
South	-	41 percent

TRAFFIC ASSIGNMENT

The distributed external trips for the project were assigned to the roadway network within the radius of influence. The project assignment is shown in Figure 2.

Figure 2. Traffic Assignment



DRIVEWAYS

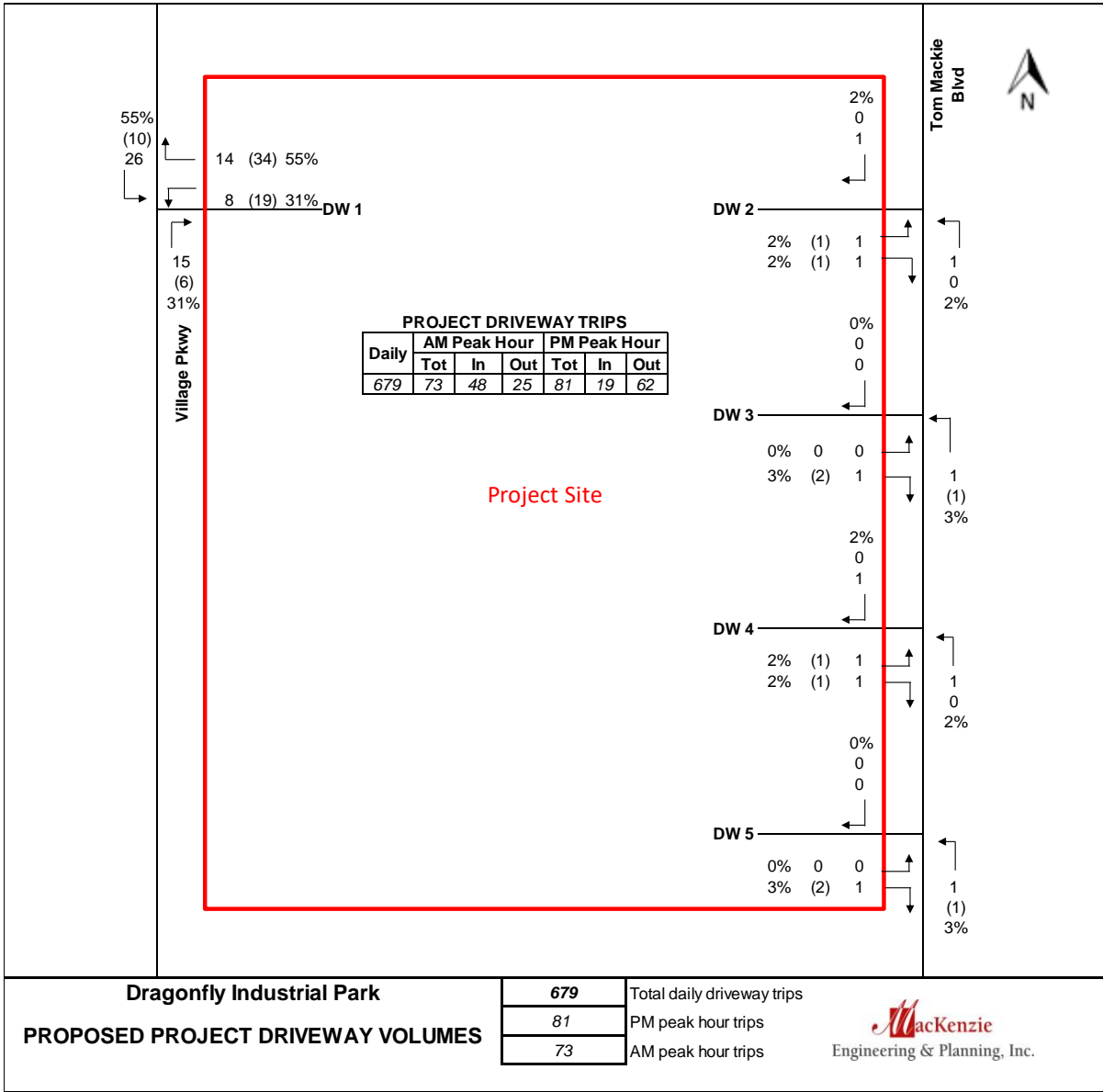
Driveway Access

The proposed site has five points of access:

- D/W 1 – Full – Village Parkway
- D/W 2 – Full – Tom Mackie Boulevard (North)
- D/W 3 – Full - Tom Mackie Boulevard (Center)
- D/W 4 – Full – Tom Mackie Boulevard (Center)
- D/W 5 – Full – Tom Mackie Boulevard (South)

The project driveway at Village Parkway is projected to be two-way stop controlled and will not generate enough traffic to warrant signalization consistent with the "Southern and Western Grove Traffic Signals Study". The Village Parkway driveway lays opposite the Telaro Community southern driveway. Telaro is constructing a traffic signal at their northern entrance and therefore few conflicting left-turns out of this entrance are expected.

Figure 3. Driveway Volumes



Driveway Spacing

The driveway spacing was analyzed to determine its adequacy relative to Code requirements. All driveways meet code required spacing as shown in Table 2. The driveways meet size requirements as shown in Table 3.

Table 2. Driveway Spacing Standards

Driveway	Road**	Type	Driveway Separation*	Driveway Code Spacing	Meets Code ?	Intersection Separation	Intersection Separation Code**	Meets Code ?
1	Village Pkwy	Full	-	-	Yes	-	-	Yes
2	Tom Mackie Blvd (North)	Full	314	250	Yes	-	-	Yes
3	Tom Mackie Blvd (Center)	Full	325	250	Yes	-	-	Yes
4	Tom Mackie Blvd (Center)	Full	344	250	Yes	-	-	Yes
5	Tom Mackie Blvd (South)	Full	401	250	Yes	347	250	Yes

* Measured from the midpoint - Sec. 158.222 (B)

** Measured from ROW to Center of Driveway - Sec. 158.222 (B)(4)



Table 3. Driveway Standards*

Driveway	Road*	Type	Width (feet)	Max Width	Meets Code ?
1	Village Pkwy	Full	35	40	Yes
2	Tom Mackie Blvd (North)	Full	26	40	Yes
3	Tom Mackie Blvd (Center)	Full	35	40	Yes
4	Tom Mackie Blvd (Center)	Full	26	40	Yes
5	Tom Mackie Blvd (South)	Full	35	40	Yes

* Sec. 158.222 (B)(2)

Turn Lanes

Each driveway was evaluated for turn lane needs. All driveways provide adequate entry laneage as shown in Table 4. Project peak hour driveway volumes are shown in Figure 3.

Table 4. Driveway Turn-Lane Standards

Driveway	Intersecting Road	Type	Peak Hour Left-Turn Volume	Left-Turn Lane Provided	Meets Code	Peak Hour Right-Turn Volume	Right-Turn Lane Req'd
1	Village Pkwy	Full	26	Yes	Yes	15	No
2	Tom Mackie Blvd (North)	Full	1	Yes	Yes	1	No
3	Tom Mackie Blvd (Center)	Full	1	Yes	Yes	0	No
4	Tom Mackie Blvd (Center)	Full	1	Yes	Yes	1	No
5	Tom Mackie Blvd (South)	Full	1	Yes	Yes	0	No

The City's Engineering Standards for Land Development requires left-turn lanes at all driveways serving left-turning traffic (8.12.8(a) and 8.12.8(b)).

CONCLUSION

MacKenzie Engineering & Planning, Inc. was retained to prepare a traffic impact analysis for development of Dragonfly Industrial Park. Dragonfly Industrial Park is 405,508 square feet (SF) of warehouse use and is located within the approved Southern Grove Development of Regional Impact. The project is approved for traffic concurrency. The analysis was conducted in accordance with the requirements of the City of Port St. Lucie.

The project is located east of Village Parkway, north of Becker Road and west of Tom Mackie Boulevard in Port St. Lucie, Florida (Parcel ID: 4315-801-0003-000-9). Figure 1 illustrates the site location.

The proposed project is expected to generate the following net new external trips and driveway trips:

- 679 daily, 73 AM peak hour (48 in/25 out), and 81 PM peak hour (19 in/62 out) trips

Left-turn lanes into the project are provided at all driveways. Signalization is not warranted or needed at any driveways.

APPENDICES

- A- ITE Trip Generation 11th Ed.: Warehouse (Land Use 150)
- B- Site Plan
- C- Property Card

Warehousing (150)

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

Setting/Location: General Urban/Suburban

Number of Studies: 31

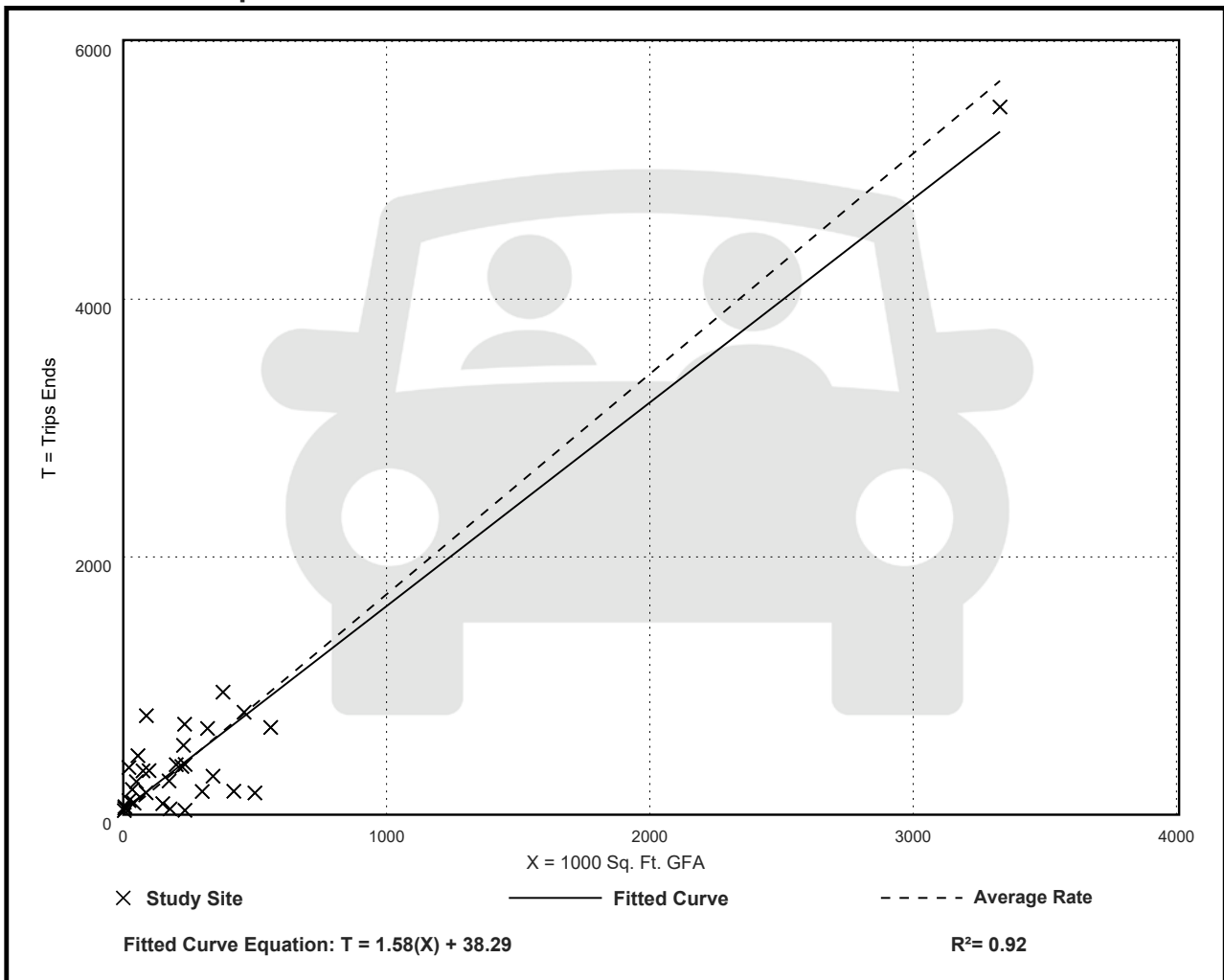
Avg. 1000 Sq. Ft. GFA: 292

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.71	0.15 - 16.93	1.48

Data Plot and Equation



Warehousing (150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

**On a: Weekday,
AM Peak Hour of Generator**

Setting/Location: General Urban/Suburban

Number of Studies: 25

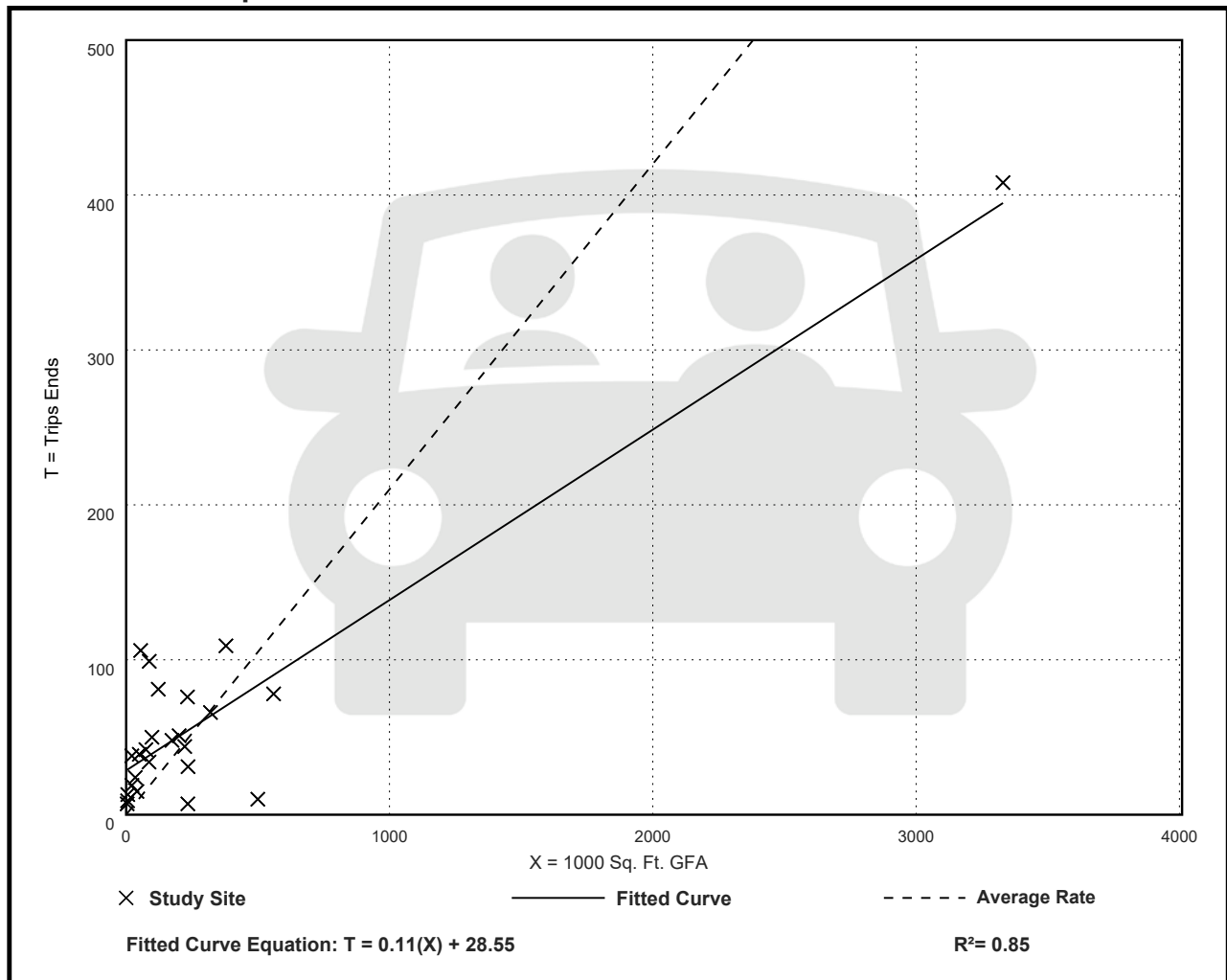
Avg. 1000 Sq. Ft. GFA: 284

Directional Distribution: 66% entering, 34% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.21	0.02 - 2.08	0.26

Data Plot and Equation



Warehousing (150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

**On a: Weekday,
PM Peak Hour of Generator**

Setting/Location: General Urban/Suburban

Number of Studies: 27

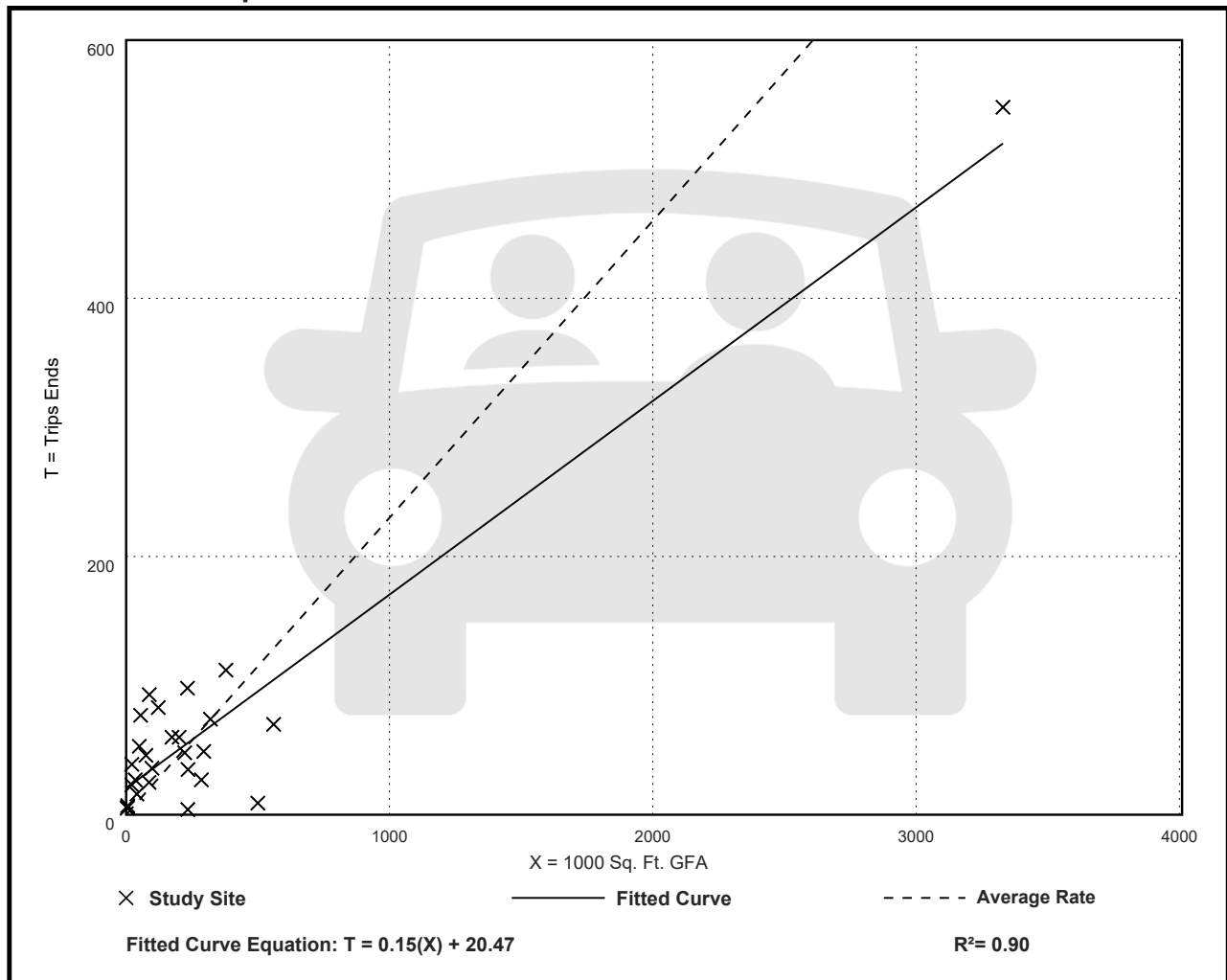
Avg. 1000 Sq. Ft. GFA: 284

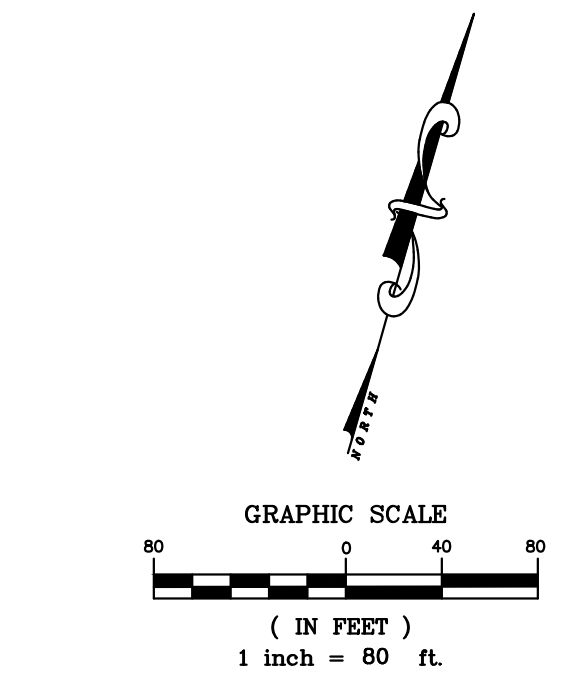
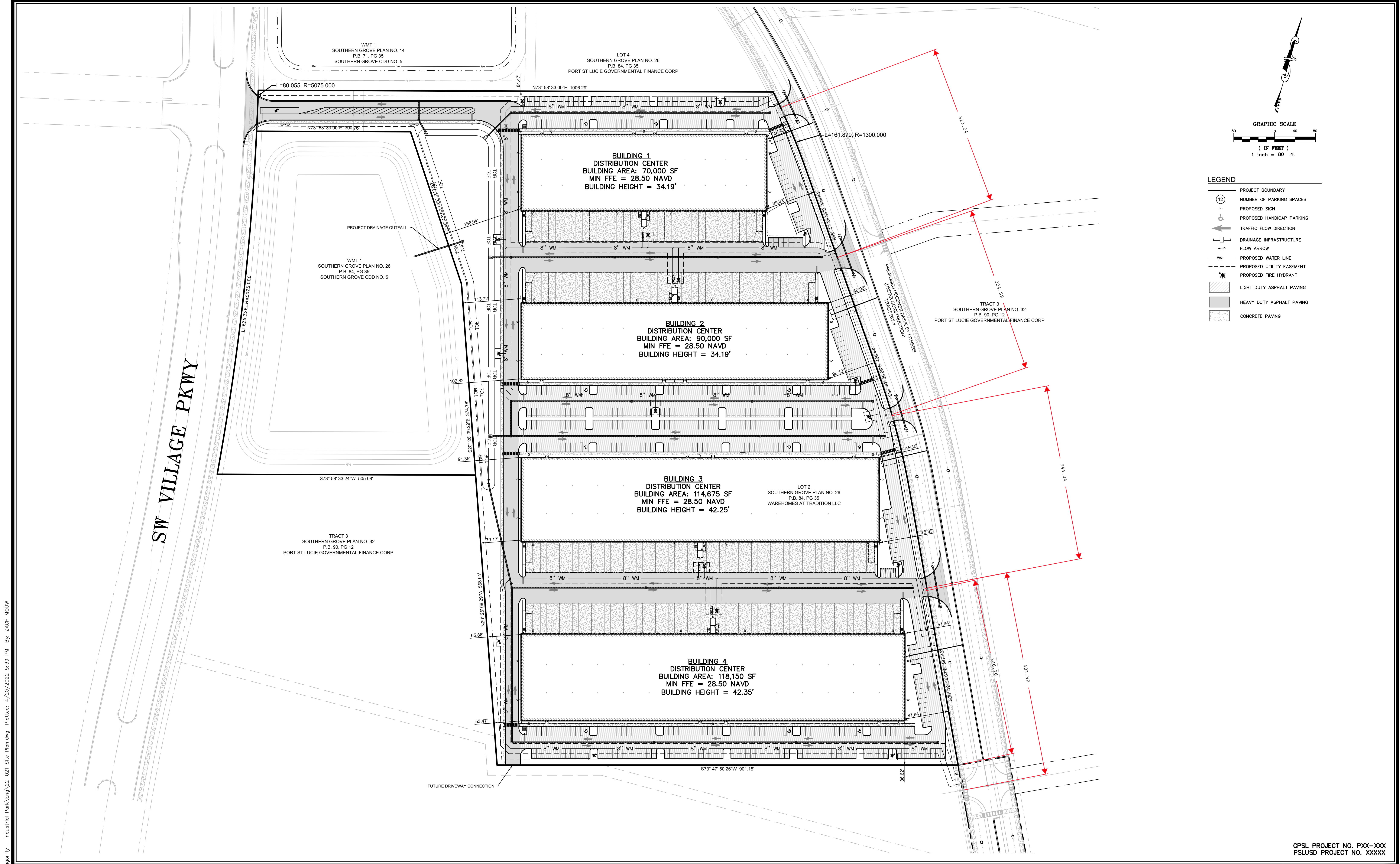
Directional Distribution: 24% entering, 76% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.23	0.02 - 1.80	0.23

Data Plot and Equation





- LEGEND**
- PROJECT BOUNDARY
 - (12) NUMBER OF PARKING SPACES
 - ↑ PROPOSED SIGN
 - ♿ PROPOSED HANDICAP PARKING
 - ← TRAFFIC FLOW DIRECTION
 - DRAINAGE INFRASTRUCTURE
 - FLOW ARROW
 - PROPOSED WATER LINE
 - - - PROPOSED UTILITY EASEMENT
 - ⊙ PROPOSED FIRE HYDRANT
 - ▨ LIGHT DUTY ASPHALT PAVING
 - ▩ HEAVY DUTY ASPHALT PAVING
 - ▤ CONCRETE PAVING

CPSL PROJECT NO. PXX-XXX
PSLUSD PROJECT NO. XXXXX

P:\Proj-2022\22-021 Dragonfly - Industrial Park\Eng\22-021 Site Plan.dwg Plotted: 4/20/22 5:39 PM By: ZACH MOUW

COMPUTER FILE REF.	FIELD BK./PG.

COMPUTER FILE REF.	FIELD BK./PG.

CULPEPPER & TERPENING INC
 2980 SOUTH 25th STREET • FORT PIERCE, FLORIDA 34981
 PHONE 772-464-3537 • FAX 772-466-9497 • www.ct-eng.com
 STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4286

- REVISIONS -		BY	DATE

	BY	DATE
DESIGNED		
CALCS.		
DRAWN	TG	3/29/22
DETAILED	ZM	4/19/22
CHECKED	JPT	
APPROVED	JPT	

DRAGONFLY INDUSTRIAL PARK

OVERALL SITE PLAN

DATE: 4/20/22
 HORIZ. SCALE: 1" = 80'
 VERT. SCALE: N/A
 JOB No. 22-021
 SHEET **1 of 5**

Property Identification

Site Address: TBD
Sec/Town/Range: 22/37S/39E
Parcel ID: 4315-801-0003-000-9
Jurisdiction: Port Saint Lucie

Use Type: 6000
Account #: 186991
Map ID: 43/22N
Zoning:

Ownership

Warehomes at Tradition LLC
48 E Flagler ST Ph 105
Miami, FL 33131

Legal Description

SOUTHERN GROVE PLAT NO. 26 (PB 84-35) LOT 2 (25.23 AC - 1,099,019 SF)

Current Values

Just/Market Value: \$5,883,323
Assessed Value: \$6,935
Exemptions: \$0
Taxable Value: \$6,935



Total Areas

Finished/Under Air (SF): 0
Gross Sketched Area (SF): 0
Land Size (acres): 25.23
Land Size (SF): 1,099,019

Property taxes are subject to change upon change of ownership.

- Past taxes are not a reliable projection of future taxes.
- The sale of a property will prompt the removal of all exemptions, assessment caps, and special classifications.

Taxes for this parcel: [SLC Tax Collector's Office](#)
Download TRIM for this parcel: [Download PDF](#)

Building Design Wind Speed

Occupancy Category	I	II	III
Speed	140	150	160

Sources/links:

Permits

Number	Issue Date	Description	Amount	Fee
--------	------------	-------------	--------	-----

Notice: This does not necessarily represent all the permits for this property.
Click the following link to check for additional permit data in Port Saint Lucie