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Parking Justification Study

ATLANTIC DRIVE SELF STORAGE

150 ATLANTIC DRIVE, MAITLAND

SEMINOLE COUNTY, FLORIDA

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Prepared for

Nuvo Development Partners, LLC February 8, 2023

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A. Project Site Location

The project site is located at 150 Atlantic Drive, which is at the southwest corner of the intersection of Atlantic Drive and U.S. Highway 17-92 in Seminole County, Florida.

The site is in Section 19, Township 21S, and Range 30E and has a parcel ID No. 19-21-30-514-0B00-0080. A Site Location Map is provided in **Appendix A** of this report.

B. Development Description

The project site is approximately 1.42 acres. The site is proposed to be developed for an 89,481 S.F. of Mini- Warehouse/Self-Storage building with related parking and other related site infrastructure. Ten (10) parking spaces are proposed to serve the proposed project. A Site Plan is presented in **Appendix B** of this report.

C. Purpose of the Study

This study is intended to evaluate the anticipated parking demand for the proposed development and provide justification for the number of off-street parking, which is being proposed to serve the proposed development. Specifically, Seminole County Code requires one (1) parking space for each one thousand (1,000) square feet of building plus one (1) space for each two (2) employees on the largest shift for Warehouse. The code does not distinguish between "Mini-Warehouse/Self-Storage" use (ITE Code 151) and "Warehousing" use (ITE Code 150).

As such, the total number of parking spaces required by the code for this project would be 91 parking spaces based on the proposed building size of 89,481 S.F. and a maximum of two (2) employees on the largest shift. This required number of parking spaces is not, however, supported by actual parking needs for self-storage facilities based on 1.) review of similar facilities including facilities, which we have designed, facilities completed by the applicant, and facilities completed by other users in various jurisdictions; and 2.) review of published technical data.

D. Methodology

To evaluate the parking needs for the proposed self-storage development, FEG has reviewed trip generation and parking generation using the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th. Edition and ITE *Parking Generation*, 5th. Edition, respectively. In addition, FEG has reviewed parking requirements for three (3) similar developments in other neighboring local jurisdictions including City of Orlando, Orange County, and City of Ocoee. All these projects have been completed by FEG. One (1) of them is currently under construction and two (2) of them have been operational for numerous years without any parking concerns or problems.

E. Traffic Generation and Parking Needs Assessment

Trip generation and parking generation using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th. Edition* and ITE *Parking Generation, 5th. Edition* are being presented below for the proposed self-storage development. The self-storage use falls under ITE under Land Use Code 151 (Mini-Warehouse). Per the ITE *Parking Generation, 5th. Edition,* "a mini-warehouse is a building in which a number of storage units or vaults are rented for the storage of goods. They are typically referred to as "self-storage" facilities.

Each unit is physically separated from other units, and access is usually provided through an overhead door or other common access point." This Land Use description along with the Time-of-Day Distribution for Parking Demand is included **in Appendix C.**

1. TRIP GENERATION

The trip generation for the proposed project has been calculated using the *ITE Trip Generation Manual*, *11th. Edition*. **Table 1** below provides a summary of the average daily and P.M. Peak Hour trips anticipated from the project.

ITE	Land Use	Size	Daily Trips		P.M. Peak Hour of Generator			
coue			Rate	Trips	Rate	Enter	Exit	Total
151	Mini-Warehouse	89.48 KSF	1.45	130	0.18	8	8	16

Table 1 – ITE Trip Generation Summary – 11th. Edition

As can be seen from the table above, the average daily trips total 130 with 65 entering and 65 exiting for the entire day. During the P.M. Peak Hour of Generator, it is estimated that a maximum of 8 vehicles would enter the site and 8 vehicles would exit the site. Based on the *ITE Trip Generation Manual*, *11th. Edition*, the same number of vehicles would enter and exit the site during the A.M. Peak Hour of Generator as the P.M. Peak Hour of Generator.

Although the trip generation does not necessarily provide the parking requirements, the number of vehicles entering the site during the Peak Hour of Generator gives an order of magnitude of the parking needs for the project. **Appendix D** provides Data Plot and Equation charts for the average daily, P.M. Peak Hour of Generator, and A.M. peak Hour of Generator.

2. PARKING GENERATION

The parking generation for the proposed development has been calculated using the *ITE Parking Generation Manual, 5th. Edition*. For each land use defined in this publication, empirical parking data that has been collected on sites throughout the country is compiled to develop rates and/or equations to estimate parking demand at similar sites. **Table 2** below provides the Peak Parking Demand anticipated for the project. We have evaluated both the Weekday and Saturday demands, since this use can generate peak demands during weekdays and on Saturday.

ITE Code	Land Use	Size (KSF)	Peak Parking Demand (Weekday)	Peak Period of Parking Demand (Weekday)	Peak Parking Demand (Saturday)	Peak Period of Parking Demand (Saturday)
151	Mini-Warehouse	89.48	9	4:00 – 6:00 P.M.	9	1:00 – 5:00 P.M.

Table 2 – ITE Parking Generation Summary – 5th. Edition

As can be seen from the table above, the peak parking demand for the proposed development would be 9 parking spaces during weekdays and 9 parking spaces on Saturday. **Appendix E** provides charts for the Weekday and Saturday Peak Period Parking Demand based on the *ITE Parking Generation Manual, 5th. Edition*.

F. Review of Similar Developments

FEG has reviewed parking requirements for three (3) similar developments in other neighboring local jurisdictions including City of Orlando, Orange County, and City of Ocoee. All these projects have been completed by FEG. One (1) of them is currently under construction and two (2) of them have been operational for numerous years without any parking concerns or problems. **Table 3** below provides a summary of these requirements.

Project Location	Building GFA (S.F.)	Required Parking	Provided Parking	Jurisdiction	Status
1600 Sun Life Path	90,625	6	7	Orange County	In operation
					since 2017
3820 S. Orange Avenue	99,123	3	6	City of Orlando	In operation
					since 2018
Tomyn Boulevard	103,788	10	13	City of Ocoee	Under
					Construction

Table 3 – Summary of Parking Requirements for Similar Self-Storage Projects in Neighboring Jurisdictions

Avg. Required Parking for above listed Similar Projects: 19 Spaces/293,536 S.F. = 0.0647 spaces per 1000 S.F. or approximately 1 space per approximately 15,000 S.F. Based on the average required parking for the above listed similar projects, the proposed development would require 6 parking spaces.

Avg. Provided Parking for above Listed Similar Projects: 26 spaces/293,536 S.F. = 0.0886 spaces per 1000 S.F. or approximately 1 space per 11,300 S.F. Based on the average parking provided for the above listed similar projects, the proposed development would require 8 parking spaces.

Appendix F provides copies of the approved site plan for each of the above listed developments.

E. Conclusion and Recommendations

The proposed development consists of a self-storage facility with a total gross floor area of 89,481 square feet. Based on our review of *ITE Trip Generation Manual*, 11th. Edition and *ITE Parking Generation*, 5th. Edition; and review of parking requirements for similar developments in other neighboring local jurisdictions, we offer the following conclusions and recommendations:

- 1. The proposed project will generate a total of eight trips in the weekday morning peak hour and eight trips in the weekday evening peak hour per the *ITE Trip Generation Manual, 11th. Edition*.
- 2. The peak period parking demand occurs on weekdays in the afternoon between the hours of 4:00 and 6:00 PM and on Saturday between the hours of 1:00 and 5:00 PM, and a maximum of 9 parking spaces would be required for the proposed development per the *ITE Parking Generation, 5th. Edition.*

- 3. Based on review of similar developments in neighboring jurisdictions, 6 parking spaces would be required for the proposed development.
- 4. Based on review of similar projects in neighboring jurisdictions, an average of 8 parking spaces were provided for similar developments.

As part of the permitting for the proposed development, the following computation was used to determine the parking needs for the project: *1 parking space per 10,000 S.F. plus 1 parking space for each 2 employees*. Based on this computation, a total of 10 parking spaces would be required, and a total of 10 parking spaces are proposed for the development.

The proposed 10 parking spaces exceeds the number of parking spaces (i.e.; 9 parking spaces), which would be required per the *ITE Parking Generation, 5th. Edition.* This number also significantly exceeds the average parking (i.e.; 6 parking spaces), which would be required based on review of parking requirements for three (3) neighboring jurisdictions. As such, it is our opinion and conclusion that 10 parking spaces for the proposed development would be more than adequate to meet the parking needs for the proposed development.

Appendix A – Site Location Map



Appendix B – Site Plan



Appendix C – ITE Land Use Description and Time of Day Distribution

Land Use: 151 Mini-Warehouse

Description

A mini-warehouse is a building in which a number of storage units or vaults are rented for the storage of goods. They are typically referred to as "self-storage" facilities. Each unit is physically separated from other units, and access is usually provided through an overhead door or other common access point.

Time of Day Distribution for Parking Demand

The following table presents a time-of-day distribution of parking demand on a weekday (nine study sites) and a Saturday (one study site) in a general urban/suburban setting.

	Percent of Peak	Parking Demand
Hour Beginning	Weekday	Saturday
12:00–4:00 a.m.	0	-
5:00 a.m.	0	_
6:00 a.m.	0	-
7:00 a.m.	0	-
8:00 a.m.	14	-
9:00 a.m.	71	_
10:00 a.m.	50	-
11:00 a.m.	79	-
12:00 p.m.	57	_
1:00 p.m.	64	91
2:00 p.m.	64	27
3:00 p.m.	79	55
4:00 p.m.	71	100
5:00 p.m.	100	91
6:00 p.m.	14	27
7:00 p.m.	0	0
8:00 p.m.	0	_
9:00 p.m.	0	_
10:00 p.m.	0	_
11:00 p.m.	0	-

Additional Data

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in British Columbia (CAN), California, Massachusetts, Minnesota, and Texas.

Source Numbers

37, 314, 415, 556, 562



Appendix D – ITE Data Plot and Equation for Trip Generation

Mini-Warehouse (151)Vehicle Trip Ends vs: 1000 Sq. Ft. GFA On a: Weekday Setting/Location: General Urban/Suburban Number of Studies: 16 Avg. 1000 Sq. Ft. GFA: 55 Directional Distribution: 50% entering, 50% exiting Vehicle Trip Generation per 1000 Sq. Ft. GFA Average Rate Range of Rates Standard Deviation 1.45 0.38 - 3.25 0.92 **Data Plot and Equation** 200 \times X × 150



Trip Gen Manual, 11.1 Ed

• Institute of Transportation Engineers

Mini-Wa	arehouse
(1	51)
Vehicle Trip Ends vs: On a:	1000 Sq. Ft. GFA Weekday, PM Peak Hour of Generator
Setting/Location:	General Urban/Suburban
Number of Studies:	16
Avg. 1000 Sq. Ft. GFA:	56
Directional Distribution:	51% entering 49% eviting
Vehicle Trip Generation per 1000 Sg. Ft	. GFA

Average Rate	Range of Rates	Standard Deviation
0.18	0.06 - 1.05	0.14

Data Plot and Equation



Trip Gen Manual, 11.1 Ed

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Mini-Wa (1	arehouse 51)
Vehicle Trip Ends vs: On a:	1000 Sq. Ft. GFA Weekday, AP Meak Hour of Generator
Setting/Location:	General Urban/Suburban
Number of Studies:	11
6 Avg1 S0gqtgFq6∶ 5 ireDtiocna5 istributioc:	CG I 1% ectericv, 49% exiticv

Average Rate	Range of Rates	Standard Deviation
0.18	0.07 - 0.79	0.16

Data Plot and Equation



Trip Gen Manual, 11.1 Ed

• Institute of Transportation Engineers

Appendix E - Weekday and Saturday Peak Period Parking Demand

Mini-Warehouse (151)			
Peak Period Parking Demand vs:	1000 Sq. Ft. GFA		
On a:	Weekday (Monday - Friday)		
Setting/Location:	General Urban/Suburban		
Peak Period of Parking Demand:	4:00 - 6:00 p.m.		
Number of Studies:	14		
Avg. 1000 Sq. Ft. GFA:	60		

Peak Period Parking Demand per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.10	0.03 - 0.53	0.08 / 0.25	***	0.07 (70%)

Data Plot and Equation



Parking Generation Manual, 5th Edition

Institute of Transportation Engineers

Mini-Warehouse (151)			
Peak Period Parking Demand vs:	1000 Sq. Ft. GFA		
On a:	Saturday		
Setting/Location:	General Urban/Suburban		
Peak Period of Parking Demand:	1:00 - 5:00 p.m.		
Number of Studies:	3		
Avg. 1000 Sq. Ft. GFA:	109		

Peak Period Parking Demand per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.09	0.06 - 0.14	0.08 / 0.14	***	0.04 (44%)

Data Plot and Equation

Caution – Small Sample Size



Parking Generation Manual, 5th Edition • Institute of Transportation Engineers

Appendix F - Site Plans for Similar Developments





