

# Fox Property

## Traffic Impact Statement



Prepared for:  
Neal Communities  
5800 Lakewood Ranch Boulevard  
Sarasota, Florida 34240

Prepared by:  
Stantec Consulting Services Inc.  
6900 Professional Parkway East  
Sarasota, Florida 34240

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# Fox Property Traffic Impact Statement

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## Professional Engineer's Certification

I hereby certify that I am a Licensed Professional Engineer in the State of Florida practicing with Stantec Consulting Services Inc. and that I have supervised the preparation of and approve the evaluations, findings, opinions, conclusions, and technical advice hereby reported for:

**PROJECT:** Fox Property  
Traffic Impact Statement  
215611878

**LOCATION:** West side of Lockwood Ridge Boulevard between Tallevast Road and Whitfield Avenue, Manatee County, Florida.

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Prepared by:

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Matthew R. Crim, P.E., PTOE  
Transportation Engineer  
Florida Licensed Engineer No. 68297

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Date

Reviewed by:

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Francisco B. Domingo, P.E.  
Senior Project Manager

## Introduction

The purpose of this study is to document Manatee County's Traffic Impact Statement (TIS) criteria and evaluate the site access of the proposed Fox Property residential development. The petitioner proposes to construct 37 single-family dwelling units on the site. The proposed development is located at the west side of Lockwood Ridge Road between Tallevast Road and Whitfield Avenue and is shown in Figure 1.



Source: Google 2014

**Figure 1: Project Location**

Prior to undertaking the study, a methodology statement was submitted to Manatee County and approved on January 28, 2014. A copy of the proposed methodology is attached in Appendix A.

**Manatee County TIS Criteria Evaluation**

Manatee County has three criteria to determine if a TIS is applicable:

- The total (gross) trip generation of the development is equal to or less than 50 PM peak-hour trips.
- The project traffic (i.e., net new trips) does not exceed 5% of the PM peak-hour, two-way Level of Service (LOS) Standard Service Volume for the first directly accessed functionally classified (concurrency regulated) roadway segment adjacent to the site.
- The project is not located on a roadway segment identified as having an “existing” concurrency issue which pertains to current traffic conditions only.

The following analysis evaluates the aforementioned criteria for the Fox Property residential development.

**Criteria 1**

Criteria 1 requires that the trip generation by the proposed development be equal to or less than 50 PM peak-hour trips. Traffic volumes generated by the Fox Property residential development were estimated using the Institute of Transportation Engineers (ITE), *Trip Generation Manual – the 9<sup>th</sup> Edition (2012)*. Land Use 210 (Single-Family Detached Housing) was used to estimate the PM peak-hour trip generation potential. The estimated external trips generated by the development are 43 PM peak-hour two-way trip ends (27 entering; 16 exiting). As Table 1 demonstrates, the Fox Property will generate less than 50 PM peak-hour trips and not trigger Manatee County’s threshold requiring a Traffic Impact Analysis.

**Table 1: PM Peak-Hour Trip Generation**

ITE Land Use Category	Variable	Size	PM Peak Trip Rate/ Equation	PM Enter Split	PM Exit Split	PM Peak Total Trips		
						Total	Enter	Exit
Single-Family Detached Housing - 210	Per Unit	37	$\ln(T) = .90\ln(x) + .51$	63%	37%	43	27	16

## Criteria 2

Criteria 2 requires the project traffic not to exceed 5% of the PM peak-hour, two-way LOS Standard Service Volume for the first directly accessed functionally classified roadway segment adjacent to the site. The segment that development directly connects to is Lockwood Ridge Road from Tallevast Road to Whitfield Avenue. As Table 2 demonstrates, the projected traffic from the Fox Property will not exceed 5% of the peak-hour LOS Standard Service Volume.

**Table 2: Significant Impact Determination**

Road Name and Segment	Adopted LOS			Percent Project Traffic	New Project Traffic		Significant Impact? (>5%)
	LOS Standard	Number of Lanes	Service Volume <sup>1</sup>		Trips	% Impact	
<b>Lockwood Ridge Road</b>							
Tallevast Rd to Whitfield Ave E	D	4	3,220	100%	43	1.3%	No

*1. The Service Volume was obtained from Table 4 of the FDOT Generalized Service Volume Tables. A 10% non-State roadway reduction was applied to a Class I arterial.*

## Criteria 3

Criteria 3 requires the project to be located on a roadway segment that does not have an "existing" concurrency issue which pertains to current traffic conditions only. Existing traffic data were obtained from turning movement counts collected at the Lockwood Ridge Road/70<sup>th</sup> Drive E intersection during the PM peak-hour on February 4, 2014. As Table 3 demonstrates, Lockwood Ridge Road is currently operating within Manatee County adopted LOS standard.

**Table 3: Existing Roadway Segment Conditions**

Road Name and Segment	Adopted LOS			Peak Hour Base	Exceeds LOS?
	LOS Standard	Number of Lanes	Service Volume		
<b>Lockwood Ridge Road</b>					
Tallevast Rd to Whitfield Ave E	D	4	3,220	1,637	No

## Site Access Analysis

The development will utilize a full access connection to Lockwood Ridge Road. The connection is approximately 550 feet south of the 70<sup>th</sup> Drive E intersection (centerline to centerline). In addition to the TIS criteria, Manatee County requested that an analysis be performed at the site access point to ensure that the location of the site access point does not impact the operations of the northbound left turn traffic at the Lockwood Ridge Road/70<sup>th</sup> Drive E intersection.

Vehicle turning movement counts were conducted at the Lockwood Ridge Road/70th Drive E intersection on Tuesday February 4 and Wednesday February 5, 2014. The turning movement counts were taken during the AM peak period (7:00 AM to 9:00 AM) and the PM peak period (4:00 PM to 6:00 PM) to quantify existing AM and PM peak-hour conditions. The turning movement counts at the intersection were then adjusted by the FDOT peak-season conversion factor. The peak-season factors, turning movement counts and existing lane are attached in Appendix B.

During the AM peak-hour one vehicle uses the northbound left turn lane at the Lockwood Ridge Road/70<sup>th</sup> Drive E intersection and during the PM peak-hour 21 vehicles use the northbound left turn lane. The northbound left turn lane is approximately 350 feet long. The posted speed on Lockwood Ridge Road is 40 mph. Based on FDOT *Standard Index 301*, 155 feet of deceleration length is required, leaving 195 feet of queue storage. The required unsignalized queue length for the left turn lane was calculated using procedures outlined in the AASHTO *Green Book*. The one vehicle using the turn lane during AM peak-hour and 21 vehicles using the turn lane during the PM peak-hour can be accommodated in the 195 feet of queue storage currently provided. The required queue storage for the 21 vehicles using the left turn lane during the PM peak-hour is less than one vehicle. The queue length calculation for the left turn lane is shown below.

**70<sup>th</sup> Drive E Northbound Left Turn Lane Queue Length:**

$$21 \frac{veh}{hr} \left( \frac{1 hr}{60 min} \right) \left( \frac{2 min}{1} \right) \left( \frac{25 ft}{veh} \right) \approx 18 ft$$

As demonstrated above, the proposed access will not interfere with the operations existing 350-foot northbound left turn lane since the proposed access is located 550 south of the intersection and the left turn lane at 70<sup>th</sup> Drive E has more than enough queue storage length to accommodate the northbound left turning volume.

At the proposed site access point, the amount of entering traffic does not warrant right nor left turn lanes. However, since a median opening is provided for left turning traffic entering the site, a left turn lane should be constructed for safety and operational reasons. FDOT *Standard Index 301* specifies a deceleration length of 155 feet for a speed of 40 mph. The AASHTO *Green Book* specifies that at a minimum, queue storage for at least two vehicles (50 feet) be provided. The amount of entering traffic will require less than 50 feet of queue; therefore, the left turn lane should be 205 feet (155 + 50).

## Conclusion

Manatee County's traffic impact statement (TIS) criteria were evaluated for the Fox Property residential development. All three criteria TIS were satisfied and a traffic impact analysis (TIA) is not required for the 37 single-family residential units.

In addition to the evaluation of the TIS criteria, the interaction between the Lockwood Ridge Road/70<sup>th</sup> Drive E intersection's northbound left turn lane and the proposed project access point was evaluated. It was determined that the proposed access will not interfere with the operation's existing 350-foot northbound left turn lane since the proposed access is located 550 south of the intersection and the left turn lane at 70<sup>th</sup> Drive E has more than enough queue storage length to accommodate the northbound left turning volume.

Lastly, the project access point was evaluated to identify if turn lanes into the site are warranted. Neither a southbound right turn lane nor a northbound left turn lane was warranted. However, due to safety and operational reasons associated with the new median cut, a 205-foot northbound left turn lane should be constructed. The left turn lane should be constructed in accordance with the FDOT Plans Preparation Manual and Standard Index 301.