

**JMB** TRANSPORTATION ENGINEERING, INC.

TRAFFIC/TRANSPORTATION ENGINEERING & PLANNING SERVICES

---

---

# TRAFFIC IMPACT STATEMENT

For

**Watermark**  
at  
**I75 Alligator Alley CPUD**  
(Collier County, Florida)

March 16, 2018

---

---

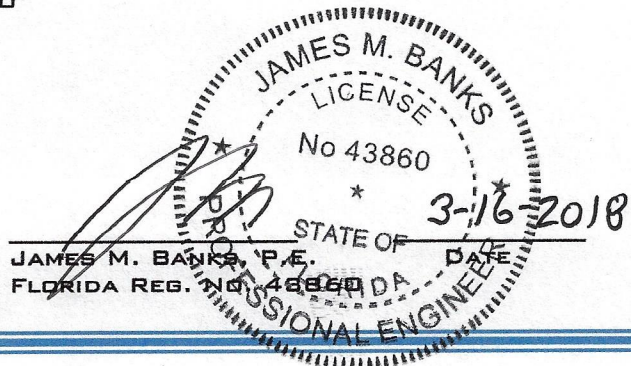
Prepared by:

**JMB** TRANSPORTATION ENGINEERING, INC.

4711 7TH AVENUE SW  
NAPLES, FLORIDA 34119

CERTIFICATE OF AUTHORIZATION NO. 27830

(PROJECT NO. 180220)



## **TABLE OF CONTENTS**

<b>Conclusions</b>	<b>2</b>
<b>Scope of Project</b>	<b>2</b>
<b>Table A - Project Land Allocation &amp; Land Uses</b>	<b>2</b>
<b>Table B - Approved vs. Proposed/Anticipated Build-out</b>	<b>3</b>
<b>Project Generated Traffic</b>	<b>4</b>
<b>Table C - Approved vs. Proposed Development Trips</b>	<b>4</b>
<b>Table 1A - Approved Land Use Trip Computations</b>	<b>5</b>
<b>Table 1B - Proposed Land Use Trip Computations</b>	<b>6</b>



## Conclusions

It was determined that the proposed land use amendment to the I-75 Alligator Alley CPUD will not result in any additional "net new" trips than previously approved by the Collier County Planning Commission and Board of County Commissioners. If the proposed amendment is approved, the project's total site-generated trips will not exceed what was previously approved of 948 new two-way PM peak hour trips. Because the project's net new trips will remain the same, it has been concluded that the CPUD's off-site impacts will remain the same. However, prior to acquiring final development approval, an assessment of the project's off-site impacts will need to be performed in order to ensure that any transportation-related deficiencies caused by the project are mitigated.

It should also be noted that the proposed amendment, which will add multi-family residential as a land use, will result in a lower traffic demand placed upon the project's accesses on Davis Boulevard, if the multi-family is developed. The volume of turning movements will be less because the proposed 425 multi-family dwelling units will displace a portion of the project's approved retail land uses that would otherwise capture a high volume of pass-by trips.

## Scope of Project

I-75 Alligator Alley CPUD is an approved mixed-use commercial development, which is located on the southwest corner of the Collier Boulevard & I-75 Interchange within Collier County, Florida. The site is 40.8 +/- acres in size that allows for 29.4 +/- acres of commercial development and the balance of the property is preserve, roads, etc. It is being proposed to amend the CPUD to allow up to 425 multi-family dwelling units to be developed on the CPUD's parent tract that is 19.1 +/- acres in size. If developed, the multi-family land use will displace the potential development of a significant portion of the approved commercial land uses. The current PUD does not have a trip cap. The proposed amendment will include a trip cap based upon the original PUD approval. The proposal to add multi-family to the PUD will be limited to the previously approved maximum trips of 948 two-way new PM peak hour trips.

**Table A**  
**Project Land Allocation & Land Uses**

Land Use	Approved	Proposed	Net Change
Preserve, Roads, etc.	11.4 +/- acres	11.4 +/- acres	None
Multi-Family	0 acres	19.1 +/- acres	19.1 +/- acres (65% reallocation)
Office/Retail (265,000 s.f.) & Hotel (107 rooms)	29.4 +/- acres	10.3 +/- acres	19.1 +/- acres (65% less)
Total	40.8 +/- acres	40.8 +/- acres	None

To date, three (3) lots have been developed with two (2) fast food restaurants and one (1) hotel (107 rooms). To be traffic neutral, the development of 425 multi-family dwelling units will require that 82,000 s.f. of commercial/retail land uses be displaced by the residential use.

**Table B**  
**Approved vs. Proposed/Anticipated Build-out Land Uses**

<b>Land Uses</b>	<b>Approved</b>	<b>Proposed/Anticipated</b>	<b>Net Change</b>
Multi-Family	0 d.u.'s	425 d.u.'s	<b>425 d.u.'s</b>
Hotel	107 rooms	107 rooms	<b>None</b>
Office/Retail	265,000 s.f.	183,000 s.f.	<b>Less 82,000 s.f.</b>



### Project Generated Traffic

Trips that can be expected to be generated by I-75 Alligator Alley CPUD's "approved" and "anticipated build-out" land uses were estimated based upon the guidelines established by the Institute of Transportation Engineers, Trip Generation Manual, 10<sup>th</sup> Edition. That is, historical traffic data collected at similar land uses was relied upon in estimating the project's traffic. It was concluded that land use codes "Multi-Family" (LUC 220), "Hotel" (LUC 310), and "Shopping Center" (LUC 820) were most appropriate in estimating the approved and anticipated land uses' trips. Trip generation computations for the "approved" land uses are shown in Table 1A, and for the "anticipated build-out" land uses are depicted in Table 1B. The results are summarized below in Table C.

**Table C**  
**Approved Development Trips vs. Proposed Development Trips**

Land Use	New PM Pk Hr (vph)
Approved Land Uses (Hotel, Office/Retail)	948 (see Table 1A)
Anticipated Build-Out Land Uses (Multi-Family, Hotel, Office/Retail)	948 (see Table 1B)
<b>Net Change</b>	<b>None</b>

As determined, the proposed amendment will not result in any additional "net new" trips above what was previously approved by the Collier County Planning Commission and Board of County Commissioners. More specifically, if the proposed amendment is approved, the project's total site-generated trips will not exceed the previously approved trip cap of 948 two-way PM peak hour trips. Furthermore, it is concluded that the project's potential off-site impacts will remain the same. Therefore, no further analysis is needed at this time. However, at the time of acquiring final development approval, an assessment of the project's off-site impacts will need to be performed in order to ensure that any transportation-related deficiencies caused by the project are mitigated.

**TABLE 1A**  
**TRIP GENERATION COMPUTATIONS**  
Watermark Apartments @ I-75 Alligator Alley CPUD

**APPROVED LAND USES**

Land Use

<u>Code</u>	<u>Land Use Description</u>	<u>Build Schedule</u>
<b>310</b>	<b>Hotel</b>	107 Rooms
<b>820</b>	<b>Shopping Center</b>	265,000 s.f.

Land Use

<u>Code</u>	<u>Trip Period</u>	<u>Trip Generation Equation</u>	<u>Total Trips</u>	<u>Trips Enter/Exit</u>
<b>LUC 310</b>	Daily Traffic (ADT) =	$T = 11.29(X) - 426.97 =$	<b>781 ADT</b>	
	AM Peak Hour (vph) =	$T = 0.50(X) - 5.34 =$	<b>48 vph</b>	28 / 20 vph
		59% Enter/ 41% Exit =		
	PM Peak Hour (vph) =	$T = 0.75(X) - 26.02 =$	<b>54 vph</b>	27 / 27 vph
		51% Enter/ 49% Exit =		
*****				
<b>LUC 820</b>	Daily Traffic (ADT) =	$\ln(T) = 0.68\ln(X) + 5.57 =$	<b>11,663 ADT</b>	
	AM Peak Hour (vph) =	$T = 0.5(X) + 151.78 =$	<b>284 vph</b>	176 / 108 vph
		62% Enter/ 38% Exit =		
	PM Peak Hour (vph) =	$\ln(T) = 0.74\ln(X) + 2.89 =$	<b>1,118 vph</b>	536 / 581 vph
		48% Enter/ 52% Exit =		
		48% Enter/ 52% Exit =		

*Pass-by Trips per ITE =  $\ln(T) = -0.29\ln(X) + 5.00 = 30\%$*

**20% Pass-by Rate**

New Daily Traffic (ADT) =	(ADT) x (% of New Trips)	<b>9,331 ADT</b>	
New AM Peak Hour (vph) =	(AM) x (% of New Trips)	<b>227 vph</b>	141 / 86 vph
	62% Enter/ 38% Exit =		
New PM Peak Hour (vph) =	(PM) x (% of New Trips)	<b>894 vph</b>	429 / 465 vph
	48% Enter/ 52% Exit =		

\*\*\*\*\*  
 \*\*\*\*\*

**Total Trips**

Daily Traffic (ADT) =	<b>10,112 ADT</b>	
AM Peak Hour (vph) =	<b>276 vph</b>	169 / 106 vph
PM Peak Hour (vph) =	<b>948 vph</b>	456 / 492 vph



**TABLE 1B**  
**TRIP GENERATION COMPUTATIONS**  
Watermark Apartments @ I-75 Alligator Alley CPUD

**PROPOSED LAND USES**

Land Use

<u>Code</u>	<u>Land Use Description</u>	<u>Build Schedule</u>
<b>220</b>	<b>Multi-Family (Low Rise)</b>	425 Units
<b>310</b>	<b>Hotel</b>	107 Rooms
<b>820</b>	<b>Shopping Center</b>	183,000 s.f.

<u>Code</u>	<u>Trip Period</u>	<u>Trip Generation Equation</u>	<u>Total Trips</u>	<u>Trips Enter/Exit</u>
<b>LUC 220</b>	Daily Traffic (ADT) =	$T = 7.56(X) - 40.86 =$	<b>3,172 ADT</b>	
	AM Peak Hour (vph) =	$\ln(T) = 0.95\ln(X) - 0.51 =$ 23% Enter/ 77% Exit =	<b>189 vph</b>	43 / 145 vph
	PM Peak Hour (vph) =	$\ln(T) = 0.89\ln(X) - 0.02 =$ 63% Enter/ 37% Exit =	<b>214 vph</b>	135 / 79 vph
*****				
<b>LUC 310</b>	Daily Traffic (ADT) =	$T = 11.29(X) - 426.97 =$	<b>781 ADT</b>	
	AM Peak Hour (vph) =	$T = 0.50(X) - 5.34 =$ 59% Enter/ 41% Exit =	<b>48 vph</b>	28 / 20 vph
	PM Peak Hour (vph) =	$T = 0.75(X) - 26.02 =$ 51% Enter/ 49% Exit =	<b>54 vph</b>	27 / 27 vph
*****				
<b>LUC 820</b>	Daily Traffic (ADT) =	$\ln(T) = 0.68\ln(X) + 5.57 =$	<b>9,067 ADT</b>	
	AM Peak Hour (vph) =	$T = 0.5(X) + 151.78 =$ 62% Enter/ 38% Exit =	<b>243 vph</b>	151 / 92 vph
	PM Peak Hour (vph) =	$\ln(T) = 0.74\ln(X) + 2.89 =$ 48% Enter/ 52% Exit =	<b>850 vph</b>	408 / 442 vph
*****				
<i>Pass-by Trips per ITE= <math>\ln(T) = -0.29\ln(X) + 5.00 = 30\%</math></i>			<b>20% Pass-by Rate</b>	
	New Daily Traffic (ADT) =	(ADT) x (% of New Trips)	<b>7,254 ADT</b>	
	New AM Peak Hour (vph) =	(AM) x (% of New Trips)	<b>195 vph</b>	121 / 74 vph
	New PM Peak Hour (vph) =	(PM) x (% of New Trips)	<b>680 vph</b>	326 / 354 vph
*****				
*****				

**Total Trips**

Daily Traffic (ADT) =	<b>11,207 ADT</b>	
AM Peak Hour (vph) =	<b>431 vph</b>	192 / 239 vph
PM Peak Hour (vph) =	<b>948 vph</b>	488 / 460 vph