TO: BravoFlorida, LLC
4220 Edison Lakes Parkway
Mishawaka, Indiana 46545

FROM: Michael D. Raysor, P.E.
RAYSOR Transportation Consulting, LLC

Michael D Raysor, PE Digitally signed by Michael D Raysor, PE Date: 2020.03.10 23:08:25 -04'00'

SUBJECT: Burger King – City of Alachua
Transportation Concurrency Analysis

DATE: March 10, 2020 (Revision No. 2)

1.0 INTRODUCTION

This memorandum documents a Transportation Concurrency Analysis performed for the Burger King quick service restaurant proposed for development at 16130 NW U.S. Highway 441 in the City of Alachua, Florida. The subject site is planned for development consisting of a 3,349 square foot building with drive-through, with access to be provided via a single driveway connection to U.S. Highway 441.

2.0 PROJECT GENERATED TRAFFIC

The daily and PM peak hour trip generation for the subject development was estimated using trip characteristic data, as identified in the Institute of Transportation Engineers' *Trip Generation Manual* (ITE, 10th edition, 2017) and *Trip Generation Handbook* (ITE, 3rd edition, 2014), as shown in Table 1.0 and further documented in Attachment A.

TABLE 1.0 TRIP GENERATION ESTIMATE SUMMARY

ITE LUC	Land Use Description	Size	Daily		PM Peak Hour			
			Rate	Trips	Rate	Trips	Enter	Exit
934	Fast-Food Rest. w/DT	3,349 sf	470.95	1,578	32.67	109	57	52
Pass-By Trips			40.0%	630	50.0%	54	27	27
New External Trips			--	948	--	55	30	25

The distribution of *new external* project generated trips was estimated pursuant to discussions with the FDOT District Two Traffic Operations Office, resulting in a distribution of 20% westerly and 80% easterly from the project site. In addition, 10% of new external project traffic was assigned to I-75, both north and south of U.S. Highway 441, as recommended by City staff. The distribution of *pass-by* project traffic will be estimated based on current traffic patterns, which will subsequently be documented in the FDOT Site Access Traffic Analysis; noting that pass-by traffic does not add new traffic to the roadway network and is thus not included in this transportation concurrency analysis.

3.0 TRANSPORTATION CONCURRENCY STUDY AREA

Pursuant to the City of Alachua LDR §2.4.14(H)(2)(a): *For proposed developments generating less than or equal to 1,000 external average daily trips (ADT), affected roadway segments are all those wholly or partially located within one-half mile of the development's ingress/egress, or to the nearest intersecting major street, whichever is greater.*

In consideration that the subject development is estimated to generate 948 new external average daily trips (i.e., less than 1,000 external average daily trips), based on the above-referenced requirement, the transportation concurrency study area was determined to include the following roadway segments, as defined by the City of Alachua Comprehensive Plan:

- Segment 1: **Interstate 75** *from* NCL Alachua *to* U.S. Highway 441
- Segment 2: **Interstate 75** *from* U.S. Highway 441 *to* SCL Alachua
- Segment 5: **U.S. Highway 441** *from* State Road 235 *to* NCL Alachua

4.0 TRANSPORTATION CONCURRENCY ANALYSIS

The traffic data identified herein was evaluated in consideration of existing capacities, existing demand, and reserved capacities pursuant to the City of Alachua, January 2020 Development Monitoring Report, as provided by City staff as an attachment to the "Completeness Review" letter issued by the City on January 22, 2020 for the subject development. Table 2.0 documents the transportation concurrency analysis, which identifies that ***the subject development will not cause the study area roadways to fall below their applicable level of service (LOS) standards***.

TABLE 2.0 TRANSPORTATION CONCURRENCY ANALYSIS

Traffic System Category	Segment 1: I-75 (NCL Alachua to US 441)		Segment 2: I-75 (US 441 to SCL Alachua)		Segment 5: US 441 (SR 235 to NCL Alachua)	
	AADT	PM	AADT	PM	AADT	PM
Maximum Service Volume[1]	91,600	8,250	91,600	8,250	39,000	3,510
Existing Traffic[1]	36,000	3,780	59,457	6,243	25,926	2,463
Reserved Trips[1]	759	86	565	48	3,637	383
Available Capacity	54,841	4,384	31,578	1,959	9,437	664
Project Generated Traffic[2]	95	6	95	6	948	55
Available Capacity w/ Application Approval	54,746	4,378	31,483	1,953	8,489	609

[1] *Source: City of Alachua January 2020 Development Monitoring Report*

[2] *Note: Project trip distribution (new external trips) is estimated to be 10% for Segments 1 & 2, and 100% for Segment 5.*

ATTACHMENT "A"

Fast-Food Restaurant with Drive-Through Window
(934)

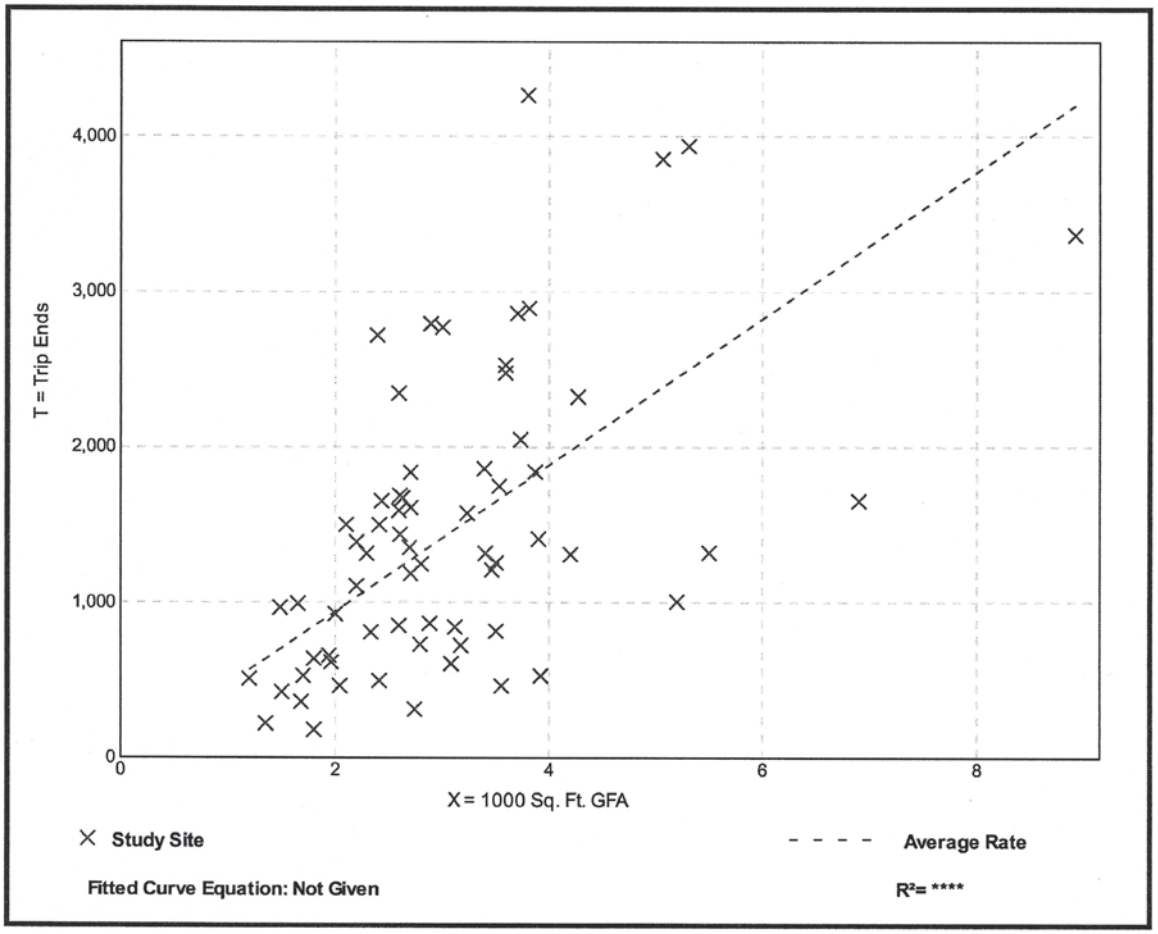
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location:	**General Urban/Suburban**
Number of Studies:	67
1000 Sq. Ft. GFA:	3
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
470.95	98.89 - 1137.66	244.44

Data Plot and Equation



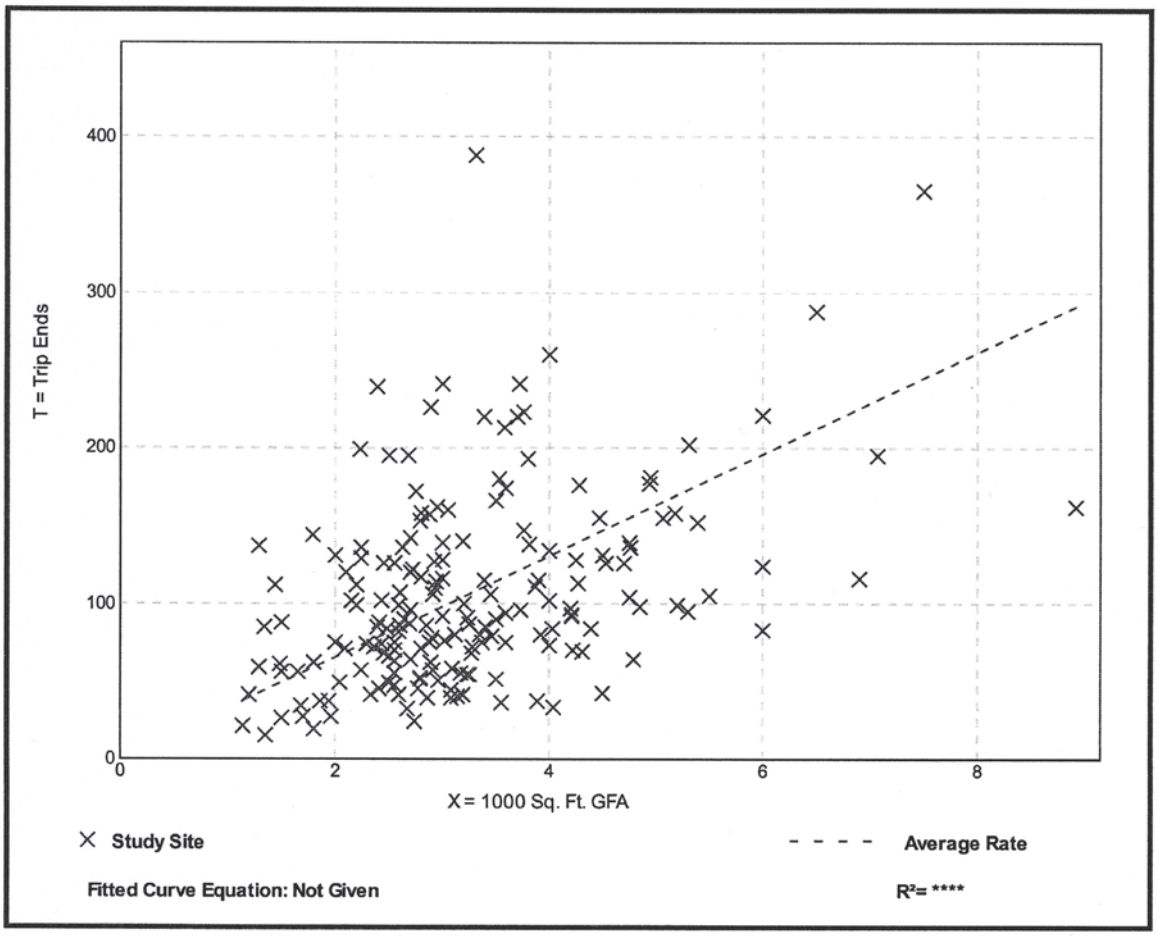
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
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: 185
1000 Sq. Ft. GFA: 3
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
32.67	8.17 - 117.22	17.87

Data Plot and Equation



ATTACHMENT "A"

Table E.32 Pass-By and Non-Pass-By Trips Weekday, PM Peak Period
Land Use Code 934—Fast-Food Restaurant with Drive-Through Window

SEATS	SIZE (1,000 SQ. FT. GFA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIPS (%)			ADJ. STREET PEAK HOUR VOLUME	SOURCE
							PRIMARY	DIVERTED	TOTAL		
—	~2.6	Minn-St. Paul, MN	1987	50	3:00–7:00 p.m.	25	27	48	75	—	—
—	<5.0	Chicago suburbs, IL	1987	80	3:00–6:00 p.m.	38	—	—	62	—	Kenig, O'Hara, Humes, Flock
—	<5.0	Chicago suburbs, IL	1987	100	3:00–6:00 p.m.	55	—	—	45	—	Kenig, O'Hara, Humes, Flock
—	<5.0	Chicago suburbs, IL	1987	159	3:00–6:00 p.m.	56	—	—	44	—	Kenig, O'Hara, Humes, Flock
—	<5.0	Chicago suburbs, IL	1987	225	3:00–6:00 p.m.	48	—	—	52	—	Kenig, O'Hara, Humes, Flock
—	<5.0	Chicago suburbs, IL	1987	88	3:00–6:00 p.m.	35	—	—	65	—	Kenig, O'Hara, Humes, Flock
—	<5.0	Chicago suburbs, IL	1987	84	3:00–6:00 p.m.	44	—	—	56	—	Kenig, O'Hara, Humes, Flock
88	1.3	Louisville area, KY	1993	—	4:00–6:00 p.m.	68	22	10	32	2,055	Barton-Aschman Assoc.
120	1.9	Louisville area, KY	1993	33	4:00–6:00 p.m.	67	24	9	33	2,447	Barton-Aschman Assoc.
87	4.2	New Albany, IN	1993	—	4:00–6:00 p.m.	56	25	19	44	1,632	Barton-Aschman Assoc.
150	3.0	Louisville area, KY	1993	—	4:00–6:00 p.m.	31	31	38	69	4,250	Barton-Aschman Assoc.
—	3.1	Kissimmee, FL	1995	28	2:00–6:00 p.m.	71	—	—	29	—	TPD Inc.
—	3.1	Apopka, FL	1996	29	2:00–6:00 p.m.	38	—	—	62	—	TPD Inc.
—	2.8	Winter Springs, FL	1995	47	2:00–6:00 p.m.	66	—	—	34	—	TPD Inc.
—	4.3	Longwood, FL	1994	304	2:00–6:00 p.m.	62	—	—	38	—	TPD Inc.
—	3.2	Altamonte Springs, FL	1996	202	2:00–6:00 p.m.	40	39	21	60	—	TPD Inc.
—	2.9	Winter Park, FL	1996	271	2:00–6:00 p.m.	41	41	18	59	—	TPD Inc.
—	3.3*	several	1996	varies	4:00–6:00 p.m.	62	—	—	38	—	Oracle Engineering

*Average of several combined studies

Average Pass-By Trip Percentage: 50

— means no data were provided

Daily pass-by rate is not available through ITE nor other sources. Therefore, industry rule-of-thumb applied by reducing peak hour pass-by rate by "10%", resulting in 40% for LUC 934 [50% - 10% = 40%]