



2726 OAK RIDGE COURT, SUITE 503
FORT MYERS, FL 33901-9356
OFFICE 239.278.3090
FAX 239.278.1906

TRAFFIC ENGINEERING
TRANSPORTATION PLANNING
SIGNAL SYSTEMS/DESIGN

MEMORANDUM

TO: Mr. Charlie Krebs, P.E.
Home Montes, Inc.

FROM: Ted B. Treesh, PTP
President

DATE: June 15, 2022

RE: Kings Brands Warehouse Expansion
9910 Bavaria Road
Lee County, Florida

TR Transportation Consultants, Inc. has completed a traffic analysis for the Development Order Application to expand the existing Kings Brands Warehouse/Manufacturing facility located at 9910 Bavaria Road in Lee County, Florida. This site is located on the west side of Treeline Avenue in the Airport Woods IPD located approximately one (1) mile north of Daniels Parkway.

EXISTING CONDITIONS

The site is currently occupied by the Kings Brands Warehouse and Manufacturing facility. The existing building contains approximately 36,018 total square feet. The site is bordered by Bavaria Road to the east, the I-75 right-of-way to the west, an FDOT storm water management pond to the north and additional development within the Airport Woods IPD to the south. Access to the site is provided directly to Bavaria Road via three access drive connections. With this Development Order, the loading docks are being relocated and an additional access drive to Bavaria Road is being created.

Bavaria Road is a two-lane divided local roadway that borders the subject site to the east. Bavaria Road has no posted speed limit so it was assumed be 30 mph per Florida Statute. Bavaria Road is under the jurisdiction of Lee County.

TRIP GENERATION& DISTRIBUTION

To be consistent with the TIS conducted with the previous expansion to this facility (DOS2015-00026), Land Use Code 140 (Manufacturing) was utilized from the Institute of Transportation Engineers (ITE) report titled *Trip Generation Manual*, 11th Edition, to estimate the trip generation of the proposed expansion. The site plan indicates that the total expansion will bring the building total floor area to 39,520 square feet, or an expansion of approximately 3,502 square feet. The trip generation equations utilized from this land use are attached to the end of this document for reference. **Table 1** provides a summary of the proposed development and its intensity.

Table 1
Land Use
Kings Brands Expansion

Land Use	Existing Floor Area	Proposed Floor Area	Expansion
Manufacturing (LUC 140)	36,018 Sq. Ft.	39,520 Sq. Ft.	3,502 Sq. Ft.

Table 2 provides a summary of the trip generation increase anticipated as a result of the expansion of the existing building.

Table 2
Trip Generation
Kings Brands Expansion

Land Use	Weekday A.M. Peak Hour			Weekday P.M. Peak Hour			Daily (2-way)
	In	Out	Total	In	Out	Total	
Proposed Floor Area (39,520 Sq. Ft.)	26	8	34	5	12	17	351
Existing Floor Area (36,018 Sq. Ft.)	-24	-8	-32	-4	-10	-14	-338
Trip Increase	2	0	2	1	2	3	13

LEVEL OF SERVICE ANALYSIS

In order to determine which roadway segments surrounding the site will be significantly impacted, **Table 1A**, in the Appendix, was created. This table indicates which roadway links will accommodate greater than 10% of the Peak Hour Level of Service "C" volumes. The Level of Service Threshold volumes were taken from the Lee County *Generalized Level of Service Tables* provided by the Lee County Department of Transportation for all roadways in the study area. Based on Table 1A, none of the roadway segments analyzed are anticipated to be significantly impacted by the proposed development.



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A Level of Service analysis was conducted on the surrounding roadway links. The roadway segments included in the analysis were Treeline Avenue north of Daniels Parkway. The existing 2020 peak hour peak season peak direction volumes for Treeline Avenue were obtained from the 2020 ***Lee County Public Facilities Level of Service and Concurrency Report***. In order to determine the projected Level of Service on the roadway links directly accessed by the proposed development, the project traffic was added to the existing 2020 peak hour peak season peak direction traffic volumes. **Table 2A**, located in the Appendix of this report indicates the methodology utilized to conduct the Level of Service Analysis.

From the analysis indicated in Table 2A, there is sufficient capacity on Treeline Avenue to accommodate the new trips anticipated to be generated by the proposed development that could result from the expansion of the existing building. Treeline Avenue north of Daniels Parkway is projected to operate at LOS "A" with the project trips added to the roadway.

TURN LANE ANALYSIS

A turn lane analysis was completed at the site access connections to Bavaria Road pursuant to the guidelines published in the Lee County Turn Lane Policy (Administrative Code 11-4). Based upon the results of the analysis, turn lanes will not be warranted at any of the site access connections. The criteria for turn lane warrants along a Local roadway is summarized below.

Left Turn Lane On Local Street – Bavaria Road

Posted speed limit on the local street is equal to or greater than thirty (30) mph and the peak hour left turning movement is sixty (60) or more – Criteria Met – No.
Assumed speed limit is 30 mph but the left turn volume is less than 60 as the entire project on generates 24 peak hour in-bound movements. All inbound movements will be left turns as Bavaria Road dead ends just to the north of this site. .

Number of Left Turning Movements:

On two-lane two-way facilities the number of left turning vehicles from the local street exceeds (60) sixty during either the peak hour of the local street and the opposing through and right turn traffic volume exceeds five hundred (500) vehicles during either the A.M. or P.M. peak hour of the local street. – Criteria Met – No.



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Available Sight Distance for left turning approaching traffic: or for approaching traffic moving in either direction to observe the left turning vehicle is less than the value shown in Table A-1 for the posted speed limit of the local street– Criteria Met – No.

Traffic Control of the intersecting street or access point connection is a traffic signal or is anticipated to meet MUTCD traffic signal warrants in the next five years– Criteria Met – N/A.

It is determined by the Lee County Department of Transportation that a turn lane is required for the health, safety, and welfare of the road users – Criteria Met – N/A.

At least two or more criteria need to be met to warrant a left turn lane. Since two or more criteria are not met, a left turn lane is **NOT** warranted at the any of the site access drives on Bavaria Road.

Since Bavaria Road dead ends immediately north of this site, there are no right turns at any of the site access drive connections. Therefore, a right turn lane is not warranted at any of the site access drive intersections.

CONCLUSION

The proposed Development Order to allow for the expansion of the Kings Brands facility on Bavaria Road will not cause the Level of Service on the adjacent roadway network to operate below the recommended minimum standards as identified in the County's Comprehensive Plan. Therefore, the Development Order is consistent with the Goals and Objectives of the transportation portion of the County's Comprehensive Plan and meets the Land Development Code requirements. No turn lanes are warranted at the site access drive connections to Bavaria Road based on the criteria outlined in the Lee County Turn Lane Polity.

Attachments

APPENDIX

TABLES 1A & 2A

TABLE 1A
PEAK DIRECTION PROJECT TRAFFIC VS. LOS C LINK VOLUMES
KINGS BRANDS WAREHOUSE/MANUFACTURING

TOTAL AM PEAK HOUR PROJECT TRAFFIC =		2 VPH	IN=	2	OUT=	0											
TOTAL PM PEAK HOUR PROJECT TRAFFIC =		3 VPH	IN=	1	OUT=	2											
		PROJECT														PROJ/ADOPTED	
ROADWAY	SEGMENT	ROADWAY		LOS A	LOS B	LOS C	LOS D	LOS E	TRAFFIC		PROJECT TRIPS		PROJ/LOS C		LOS E		
		CLASS	VOLUME	VOLUME	VOLUME	VOLUME	VOLUME	VOLUME	DISTRIBUTION	AM PEAK	PM PEAK	PROJ/LOS C	LOS E				
Treeline Ave.	N. of Bavaria Rd.	4LN	1530	2,980	2,980	2,980	2,980	2,980	50%	1	1	0.03%	0.03%				
	N. of Daniels Pkwy	4LN	1530	2,980	2,980	2,980	2,980	2,980	50%	1	1	0.03%	0.03%				

* Level of Service Volumes were obtained from Lee County's Link Specific Service Volume Tables

TABLE 2A
BUILD-OUT TRAFFIC VOLUMES AND 100TH HIGHEST HOUR LEVEL OF SERVICE ANALYSIS
KINGS BRANDS WAREHOUSE/MANUFACTURING

TOTAL AM PEAK HOUR PROJECT TRAFFIC =		2 VPH	IN=	2	OUT=	0
TOTAL PM PEAK HOUR PROJECT TRAFFIC =		3 VPH	IN=	1	OUT=	2
2020						
		PK HR	PERCENT			
		PK SEASON	PROJECT	AM PROJ	PM PROJ	
		PEAK DIR. ¹	TRAFFIC	TRAFFIC	TRAFFIC	
ROADWAY	N. of Bavaria Rd.	799	50%	1	1	
	N. of Daniels Pkwy	799	50%	1	1	
						2020
						CONCURRENCY
						ANALYSIS
						TRAFFIC
						LOS
						A
						A

¹The 2020 100th highest hour traffic volumes were obtained from the 2021 Lee County Public Facilities Level of Service and Concurrency Report.

LEE COUNTY LINK SPECIFIC PEAK HOUR DIRECTIONAL VOLUMES

LINK-SPECIFIC SERVICE VOLUMES ON ARTERIALS IN LEE COUNTY (2015 DATA)

ROAD SEGMENT	FROM	TO	TRAFFIC DISTRIC	LENGTH (MILE)	ROAD TYPE	SERVICE VOLUMES (PEAK HOUR PEAK DIRECTION)			SERVICE VOLUMES (PEAK HOUR--BOTH DIRECTIONS)						
						A	B	C	D	E	A	B	C	D	E
SUMMERLIN RD	McGREGOR BLVD	SAN CARLOS BLVD	4	2.2	4LD	1,620	1,980	1,980	1,980	1,980	2,850	3,490	3,490	3,490	3,490
	SAN CARLOS BLVD	PINE RIDGE RD	4	0.5	6LD	2,520	3,000	3,000	3,000	3,000	4,430	5,270	5,270	5,270	5,270
	PINE RIDGE RD	BASS RD	4	1.7	6LD	2,520	3,000	3,000	3,000	3,000	4,430	5,270	5,270	5,270	5,270
	BASS RD	GLADIOLUS DR	4	1.8	6LD	2,520	3,000	3,000	3,000	3,000	4,430	5,270	5,270	5,270	5,270
	GLADIOLUS DR	CYPRESS LAKE DR	4	1.8	4LD	0	1,450	1,900	1,900	1,900	0	2,590	3,400	3,400	3,400
SUNSHINE BLVD	CYPRESS LAKE DR	COLLEGE PKWY	4	0.7	6LD	0	2,250	2,880	2,880	2,880	0	4,020	5,140	5,140	5,140
	COLLEGE PKWY	BOY SCOUT	4	1.9	6LD	0	2,250	2,880	2,880	2,880	0	4,020	5,140	5,140	5,140
	BOY SCOUT	COLONIAL BLVD	1	1.1	4LD	0	0	0	1,370	1,820	0	0	2,450	3,250	3,250
	SR 82	LEE BLVD	3	3.6	2LN	150	310	500	700	1,010	250	500	810	1,130	1,630
	LEE BLVD	W 12TH ST	3	3.2	2LN	150	310	500	700	1,010	250	500	810	1,130	1,630
THREE OAKS PKWY	COCONUT RD	CORKSCREW RD	4	2.6	4LD	650	1,940	1,940	1,940	1,940	1,130	3,360	3,360	3,360	3,360
	CORKSCREW RD	SAN CARLOS BLVD	4	3.1	4LD	650	1,940	1,940	1,940	1,940	1,130	3,360	3,360	3,360	3,360
	SAN CARLOS BLVD	ALICO RD	4	1.7	4LD	650	1,940	1,940	1,940	1,940	1,130	3,360	3,360	3,360	3,360
TREELINE AVE	ALICO RD	DANIELS PKWY	3	3.8	4LD	1,530	2,980	2,980	2,980	2,980	2,600	3,360	3,360	3,360	3,360
	DANIELS PKWY	COLONIAL BLVD	3	4.5	4LD	1,530	2,980	2,980	2,980	2,980	2,600	3,360	3,360	3,360	3,360
	COLLIER CO. LINE	BONITA BEACH RD	8	1.0	6LD	0	2,400	2,740	2,740	2,740	0	4,220	4,830	4,830	4,830
US 41	BONITA BEACH RD	TERRY ST	8	1.1	6LD	0	2,580	3,040	3,040	3,040	0	4,610	5,430	5,430	5,430
	TERRY ST	OLD 41	8	2.3	6LD	0	2,580	3,040	3,040	3,040	0	4,610	5,430	5,430	5,430
	OLD 41	CORKSCREW RD	8	3.5	6LD	0	2,580	3,040	3,040	3,040	0	4,610	5,430	5,430	5,430
	CORKSCREW RD	BROADWAY	4	0.7	6LD	480	2,940	2,940	2,940	2,940	860	5,260	5,260	5,260	5,260
	BROADWAY	SANIBEL BLVD	4	1.9	6LD	480	2,940	2,940	2,940	2,940	860	5,260	5,260	5,260	5,260
	SANIBEL BLVD	ALICO RD	4	2.2	6LD	480	2,940	2,940	2,940	2,940	860	5,260	5,260	5,260	5,260
	ALICO RD	ISLAND PARK RD	4	1.0	6LD	480	2,940	2,940	2,940	2,940	860	5,260	5,260	5,260	5,260
	ISLAND PARK RD	JAMAICA BAY W.	4	1.6	6LD	480	2,940	2,940	2,940	2,940	860	5,260	5,260	5,260	5,260
	JAMAICA BAY W.	SIX MILE PKWY	4	0.5	6LD	480	2,940	2,940	2,940	2,940	860	5,260	5,260	5,260	5,260
	SIX MILE PKWY	ANDREA LN	4	0.5	6LD	0	0	2,130	2,880	2,880	0	0	4,220	5,710	5,710
	ANDREA LN	DANIELS PKWY	4	0.8	6LD	0	0	2,130	2,880	2,880	0	0	4,220	5,710	5,710
	DANIELS PKWY	COLLEGE PKWY	4	0.7	6LD	0	0	2,130	2,880	2,880	0	0	4,220	5,710	5,710
	COLLEGE PKWY	SOUTH RD	4	1.4	6LD	0	0	2,130	2,880	2,880	0	0	4,220	5,710	5,710
	SOUTH RD	BOY SCOUT RD	4	0.4	6LD	0	0	2,130	2,880	2,880	0	0	4,220	5,710	5,710
	BOY SCOUT RD	NORTH AIRPORT RD	1	0.8	6LD	0	0	2,130	2,880	2,880	0	0	4,220	5,710	5,710
	NORTH AIRPORT RD	COLONIAL BLVD	1	0.2	6LD	0	0	2,130	2,880	2,880	0	0	4,220	5,710	5,710
	FORT MYERS CITY LIMIT	NORTH KEY DR	1	0.4	4LD	0	1,790	2,160	2,160	2,160	0	2,890	3,500	3,500	3,500
	NORTH KEY DR	HANCOCK BRIDGE PKWY	2	0.7	4LD	0	1,790	2,160	2,160	2,160	0	2,890	3,500	3,500	3,500
	HANCOCK BRIDGE PKWY	PONDELLA RD	2	0.3	4LD	0	1,790	2,160	2,160	2,160	0	2,890	3,500	3,500	3,500
	PONDELLA RD	SR 78	2	1.3	4LD	0	1,790	2,160	2,160	2,160	0	2,890	3,500	3,500	3,500
	SR 78	LITTLETON RD	2	1.0	4LD	900	2,000	2,000	2,000	2,000	1,460	3,240	3,240	3,240	3,240
	LITTLETON RD	BUS 41	2	1.2	4LD	900	2,000	2,000	2,000	2,000	1,460	3,240	3,240	3,240	3,240
BUS 41	DEL PRADO BLVD	2	0.8	4LD	900	2,000	2,000	2,000	2,000	1,460	3,240	3,240	3,240	3,240	
DEL PRADO BLVD	TRAIL DAIRY	2	0.8	4LD	900	2,000	2,000	2,000	2,000	1,460	3,240	3,240	3,240	3,240	

**LEE COUNTY PUBLIC FACILITIES
LEVEL OF SERVICE AND
CONCURRENCY REPORT**

9/23/2021

LEE COUNTY Road Link Volumes (County- and State-Maintained Roadways)

LINK NO.	NAME	ROADWAY LINK		ROAD TYPE	PERFORMANCE STANDARD		2020 100TH HIGHEST HOUR		FORECAST FUTURE		NOTES
		FROM	TO		LOS	CAPACITY	LOS	VOLUME	LOS	VOLUME	
20900	PINE ISLAND RD	STRINGFELLOW RD	BURNT STORE RD	2LN	E	950	E	594	E	644	Constrained
21400	PINE ISLAND RD (SR 78)	CITY LIMITS E OF BARRETT RD	US 41	4LD	D	2,100	C	1,621	D	2,037	
21500	PINE ISLAND RD (SR 78)	US 41	BUS 41	4LD	D	2,100	C	1,580	C	1,855	
21600	PINE RIDGE RD	SAN CARLOS BLVD	SUMMERLIN RD	2LN	E	860	C	489	C	535	*
21700	PINE RIDGE RD	SUMMERLIN RD	GLADIOLUS DR	2LN	E	860	C	293	D	552	Heritage Isle*
21800	PINE RIDGE RD	GLADIOLUS DR	McGREGOR BLVD	2LN	E	860	C	293	C	308	
21900	PLANTATION RD	SIX MILE PKWY	DANIELS PKWY	2LN	E	860	C	285	C	414	Intermed Park
22000	PLANTATION RD	DANIELS PKWY	IDLEWILD ST	2LN	E	860	D	740	D	778	FDOT Metro Pkwy 6-laning
22050	PLANTATION RD	IDLEWILD ST	COLONIAL BLVD	4LN	E	1,790	C	510	C	536	
22100	PONDELLA RD	SR 78	ORANGE GROVE BLVD	4LD	E	1,890	B	736	B	774	*
22200	PONDELLA RD	ORANGE GROVE BLVD	US 41	4LD	E	1,890	B	1,101	B	1,176	
22300	PONDELLA RD	US 41	BUS 41	4LD	E	1,890	B	1,094	B	1,150	
22400	PRITCHETT PKWY	SR 78	RICH RD	2LN	E	860	C	73	C	541	old count, Stoneybrook North(2009)
22500	RANCHETTE RD	FENZANCE BLVD	IDLEWILD ST	2LN	E	860	C	93	C	98	
22600	RICH RD	SLATER RD	PRITCHETT PKWY	2LN	E	860	C	55	C	62	old count projection(2009)
22700	RICHMOND AVE	LEELAND HEIGHTS	E 12TH ST	2LN	E	860	C	77	C	89	
22800	RICHMOND AVE	E 12TH ST	GREENBRIAR BLVD	2LN	E	860	C	77	C	81	
23000	SAN CARLOS BLVD (SR 865)	MANTANZAS PASS B.	MAIN ST	2LD	D	970	B	1,022	B	1,151	Constrained
23100	SAN CARLOS BLVD (SR 865)	MAIN ST	SUMMERLIN RD	4LD	D	2,100	C	1,022	C	1,151	PD&E Study
23180	SAN CARLOS BLVD (SR 865)	SUMMERLIN RD	KELLY RD	2LD	D	970	C	689	C	767	
23200	SAN CARLOS BLVD (SR 865)	KELLY RD	GLADIOLUS DR	4LD	D	2,100	C	689	C	767	
23230	SAN CARLOS BLVD	US 41	THREE OAKS PKWY	2LN	E	860	C	448	C	471	*
23260	SANIBEL BLVD	US 41	LEE RD	2LN	E	860	D	591	D	621	
23300	SANIBEL CAUSEWAY	SANIBEL SHORELINE	TOLL PLAZA	2LN	E	1,140	E	937	E	985	
23400	SHELL POINT BLVD	McGREGOR BLVD	PALM ACRES	2LN	E	860	C	294	C	309	*
23500	SIX MILE PKWY (SR 739)	US 41	METRO PKWY	4LD	D	2,100	C	1,512	C	1,764	
23600	SIX MILE CYPRESS	METRO PKWY	DANIELS PKWY	4LD	E	2,000	B	1,481	B	1,556	
23700	SIX MILE CYPRESS	DANIELS PKWY	WINKLER EXT.	4LD	E	1,900	B	1,069	B	1,272	
23800	SIX MILE CYPRESS	WINKLER EXT.	CHALLENGER BLVD	4LD	E	1,900	B	1,038	B	1,091	
23900	SIX MILE CYPRESS	CHALLENGER BLVD	COLONIAL BLVD	6LD	E	2,800	A	1,038	A	1,091	
24000	SLATER RD	SR 78	NALLE GRADE RD	2LN	E	1,010	C	399	C	419	*
24100	SOUTH POINTE BLVD	CYPRESS LAKE DR	COLLEGE PKWY	2LD	E	910	D	640	D	673	*
24200	SR 31 (ARCADIA RD)	SR 80	SR 78	2LN	D	970	C	652	C	831	PD&E/SEIR Study
24300	SR 31 (ARCADIA RD)	SR 78	COUNTY LINE	2LN	C	820	B	460	B	669	PD&E/SEIR Study
24400	STALEY RD	TICE	ORANGE RIVER BLVD	2LN	E	860	C	211	C	237	*
24500	STRINGFELLOW RD	1ST AVE	BERKSHIRE RD	2LN	E	1,060	B	315	D	672	Constrained
24600	STRINGFELLOW RD	BERKSHIRE RD	PINE ISLAND RD	2LN	E	1,060	B	315	C	448	Constrained
24700	STRINGFELLOW RD	PINE ISLAND RD	PINELAND RD	2LN	E	1,060	D	712	E	813	Constrained
24800	STRINGFELLOW RD	PINELAND RD	MAIN ST	2LN	E	1,060	D	712	E	809	
24900	SUMMERLIN RD	McGREGOR BLVD	KELLY COVE RD	4LD	E	1,980	A	1,243	A	1,306	
25000	SUMMERLIN RD	KELLY COVE RD	SAN CARLOS BLVD	4LD	E	1,980	A	1,243	A	1,306	
25100	SUMMERLIN RD	SAN CARLOS BLVD	PINE RIDGE RD	6LD	E	3,000	A	1,896	A	2,126	
25200	SUMMERLIN RD	PINE RIDGE RD	BASS RD	6LD	E	3,000	A	1,896	A	1,993	
25300	SUMMERLIN RD	BASS RD	GLADIOLUS DR	6LD	E	3,000	A	1,896	A	1,993	
25400	SUMMERLIN RD	GLADIOLUS DR	CYPRESS LAKE DR	4LD	E	1,900	C	1,517	C	1,618	
25500	SUMMERLIN RD	CYPRESS LAKE DR	COLLEGE PKWY	6LD	E	2,880	B	1,489	B	1,565	
25600	SUMMERLIN RD	COLLEGE PKWY	PARK MEADOW DR	6LD	E	2,880	B	1,526	B	1,604	
25700	SUMMERLIN RD	PARK MEADOW DR	BOY SCOUT	6LD	E	2,880	B	1,526	B	1,604	
25800	SUMMERLIN RD	BOY SCOUT	MATHEWS DR	4LD	E	1,820	D	1,189	D	1,250	
25900	SUMMERLIN RD	MATHEWS DR	COLONIAL BLVD	4LD	E	1,820	D	1,189	D	1,250	
26000	SUNRISE BLVD	BELL BLVD	COLUMBUS BLVD	2LN	E	860	C	42	C	53	Old Count
26100	SUNSHINE BLVD	SR 82	23RD ST SW	2LN	E	1,010	C	443	C	466	*
26150	SUNSHINE BLVD	23RD ST SW	LEE BLVD	2LN	E	1,010	C	443	C	466	*
26200	SUNSHINE BLVD	LEE BLVD	W 12TH ST	2LN	E	1,010	E	730	E	767	*
26300	SUNSHINE BLVD	W 12TH ST	W 75TH ST	2LN	E	860	D	600	D	630	
26400	SW 23RD ST	GUNNERY RD	SUNSHINE BLVD	2LN	E	860	E	855	B	1,012	Copperhead
26500	THREE OAKS PKWY	COCONUT RD	ESTERO PKWY	4LD	E	1,940	B	1,502	B	1,685	
26600	THREE OAKS PKWY	ESTERO PKWY	SAN CARLOS BLVD	4LD	E	1,940	B	855	B	964	
26700	THREE OAKS PKWY	SAN CARLOS BLVD	ALICO RD	4LD	E	1,940	B	855	B	1,198	
26800	TICE ST	SR 80	ORTIZ AVE	2LN	E	860	C	199	C	209	
26900	TICE ST	ORTIZ AVE	STALEY RD	2LN	E	860	C	188	D	701	Elementry U.
27000	TREELINE AVE	TERMINAL ACCESS RD	DANIELS PKWY	4LD	E	1,980	A	1,050	A	1,288	Harley Davidson
27030	TREELINE AVE	DANIELS PKWY	AMBERWOOD RD	4LD	E	1,980	A	799	A	840	
27070	TREELINE AVE	AMBERWOOD RD	COLONIAL BLVD	4LD	E	1,980	A	793	A	833	
29800	US 41 (S TAMIAI TR)	OLD 41	CORKSCREW RD	6LD	D	3,171	C	2,020	C	2,273	
29900	US 41 (S TAMIAI TR)	CORKSCREW RD	SANIBEL BLVD	6LD	D	3,171	C	1,901	C	2,354	
30000	US 41 (S TAMIAI TR)	SANIBEL BLVD	ALICO RD	6LD	D	3,171	C	2,069	C	2,812	
30100	US 41 (S TAMIAI TR)	ALICO RD	ISLAND PARK RD	6LD	D	3,171	C	2,069	C	2,467	

**EXCERPTS FROM TIS FROM
PREVIOUS DEVELOPMENT ORDER
APPLICATION FOR EXPANSION OF
KINGS BRANDS
(DOS2015-00026)**

**TRAFFIC IMPACT STATEMENT
FOR A
PROPOSED MANUFACTURING WAREHOUSE EXPANSION**

King Brands Warehouse

PREPARED FOR:

**Mr. John King, Managing Member
King Brands Warehouse, LLC.
9910 Bavaria Road
Fort Myers, FL 33913**

PREPARED BY:



**43 Barkley Circle, Suite 200
Fort Myers, FL 33907
Phone 239-433-4231 Fax 239-433-9632
www.tdmcivilengineering.com**

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1. PURPOSE

OBJECTIVE

This report has been prepared in accordance with Lee County Department of Community Development criteria as outlined in the Lee County Traffic Impact Statement Guidelines and the Lee County Turn Lane Policy for projects seeking Development Order approval. This report analyzes the anticipated traffic conditions of the proposed development in order to determine any adverse roadway impacts associated with the addition of King Brands Warehouse Expansion.

The subject parcel is 3.29 acres (per Lee County Property Appraiser website).

This Traffic Impact Statement is based on the assumption that the proposed development will be completed in 2015.

2. SITE DESCRIPTION

SITE LOCATION

King Brands Warehouse Expansion is a 3.29-acre project located at 9910 Bavaria Road in Section 15, Township 45 South, Range 25 East, Lee County, Florida. The applicant proposes to construct a 12,000 square foot warehouse expansion to the existing manufacturing facility on the site.

The subject parcel currently contains approximately 17,393 square feet of offices and manufacturing (per Lee County Property Appraiser website).

Access to the existing development will be provided by two (2) existing full-access driveways on Bavaria Road. This report is based on these two (2) existing driveways.

It is worth noting that the existing development is currently served by a third driveway that provides access to the loading bays and is not expected to be impacted by the proposed expansion.

3. OBSERVATIONS

3.1 TRIP GENERATION CALCULATIONS

Vehicular trips generated by the existing and proposed development were calculated by using the equations provided by the Institute of Transportation Engineers, 9th Edition of the Trip Generation Manual, Land Use Code 140 (Manufacturing) using the average rates or the fitted curve equations shown in the tables. The manual gives the following description for this land use code: “Manufacturing facilities are areas where the primary activity is the conversion of raw materials or parts into finished products. Size and type of activity may vary substantially from one facility to another. In addition to the actual production of goods, manufacturing facilities generally also have office, warehouse, research, and associated functions.” Such a description is consistent with the existing and proposed development.

Table 1. Raw Trip Generation - LUC 140 (Existing Manufacturing Facility)

17,393 Square Feet Gross Floor Area:

- A.** Daily Average Vehicle Trip Ends, Weekday
 $T = 3.82 (17.393) = 66$ (33 entering, 33 exiting)
- B.** A.M. Peak Hour Average Vehicle Trip Ends (Adjacent Street)
 $T = 0.73 (17.393) = 13$ (10 entering, 3 exiting)
- C.** P.M. Peak Hour Average Vehicle Trip Ends (Adjacent Street)
 $T = 0.73 (17.393) = 13$ (5 entering, 8 exiting)

Source: TDM, 2015

Table 2. Raw Trip Generation – LUC 140 (Expanded Manufacturing Facility)

29,393 Square Feet Gross Floor Area:

- A.** Daily Average Vehicle Trip Ends, Weekday
 $T = 3.82 (29.393) = 112$ (56 entering, 56 exiting)
- B.** A.M. Peak Hour Average Vehicle Trip Ends (Adjacent Street)
 $T = 0.73 (29.393) = 22$ (17 entering, 5 exiting)
- C.** P.M. Peak Hour Average Vehicle Trip Ends (Adjacent Street)
 $T = 0.73 (29.393) = 22$ (8 entering, 14 exiting)

Source: TDM, 2015

Based on this, the proposed development will be analyzed using the criteria established for developments generating less than three hundred (300) vehicle trips during the peak hour as outlined in the Lee County Traffic Impact Guidelines.

Table 2 above will be used for the requisite turn-lane analysis.

Table 3 below accounts for the increase in traffic generated by the proposed warehouse expansion and will be used for the requisite concurrency analysis.

Table 3. Raw Trip Generation Increase Due to Expansion

Table 2 Less Table 1:

- | | |
|-----------|---|
| A. | Daily Average Vehicle Trip Ends, Weekday
$T = 112 - 66 = 46$ (23 entering, 23 exiting) |
| B. | A.M. Peak Hour Average Vehicle Trip Ends (Adjacent Street)
$T = 22 - 13 = 9$ (7 entering, 2 exiting) |
| C. | P.M. Peak Hour Average Vehicle Trip Ends (Adjacent Street)
$T = 22 - 13 = 9$ (3 entering, 6 exiting) |

Source: TDM, 2015

3.2 TRIP DISTRIBUTION

Traffic will enter and exit the existing development at the two (2) existing full-access driveways on Bavaria Road.

Because Bavaria Road accesses Treeline Avenue (the nearest arterial road) to the south and because Bavaria Road dead-ends just north of the development, it is assumed for this report that 100% of traffic will enter and exit the existing development from the south.

Because the majority of parking spaces is in close proximity to the southern driveway, it is also assumed for this report that 90% of traffic will enter and exit the existing development from the southern driveway and the remaining 10% of traffic will enter and exit the existing development from the northern driveway.

3.3 EXISTING TRAFFIC CONDITIONS

Treeline Avenue is the nearest major roadway being impacted. It is classified by the Lee County Comprehensive Plan as a four-lane divided major collector road near the proposed development. Per the 2014 Lee County Concurrency Report, it has an "E" Level of Service near the proposed development with a 2013 peak direction of flow volume of five

hundred sixty-three (563) vehicles per hour, a Performance Standard “A” Level of Service, and a Performance Standard Capacity of one thousand nine hundred sixty (1,960) vehicles per hour.

Based on the 2013 Traffic Count Report prepared by the Lee County Department of Transportation, traffic on Treeline Avenue near the proposed development heads south 67% of the time and north 33% of the time during the A.M. peak. During the P.M. peak, traffic on Treeline Avenue near the proposed development heads north 56% of the time and south 44% of the time.

Bavaria Road is a private two-lane local road. It has no posted speed limit; therefore, the speed limit is thirty (30) miles per hour per Florida Statute 316.183(2).

3.4 TURN LANE ANALYSIS (BAVARIA ROAD)

A. Traffic Conditions on Bavaria Road (Local), Southern Driveway

- A.M. Peak Hour Vehicle Trip Ends - 20
- P.M. Peak Hour Vehicle Trip Ends - 20
- Assumed Speed Limit - 30 mph

B. Deceleration and Left Turn Lane

Based on the Turn Lane Policy, a deceleration and left turn lane is not required. Only one (1) of the required warrants is satisfied. The assumed speed limit of the local street is equal to the threshold. However, the number of left-turning movements from the local street during the peak hour of the local street is below the threshold, the available site distance for the assumed speed limit of the local street is above the threshold, and the access point connection is not controlled by a traffic signal.

C. Separate Left Turn Lane on the Access Point Connection

Based on the Turn Lane Policy, a separate left turn lane on the access point connection is not required. Only one (1) of the required warrants is satisfied. The assumed speed limit of the local street is equal to the threshold. However, the number of left-turning vehicles from the access point connection during the peak hour of the local street is below the threshold and the access point connection is not controlled by a traffic signal.

D. Deceleration and Right Turn Lane

Based on the Turn Lane Policy, a deceleration and right turn lane is not required. Only

one (1) of the required warrants is satisfied. The assumed speed limit of the local street is below the threshold. However, the number of right-turning movements from the local street during the peak hour of the local street is below the threshold, the available site distance for the assumed speed limit of the local street is above the threshold, and the access point connection is not controlled by a traffic signal.

E. Separate Right Turn Lane on the Access Point Connection

Based on the Turn Lane Policy, a separate right turn lane on the access point connection is not required. Only one (1) of the required warrants is satisfied. The assumed speed limit of the intersecting street is equal to the threshold. However, the number of right-turning movements from the access point connection during the peak hour of the local street is below the threshold and the access point connection is not controlled by a traffic signal.

F. Traffic Conditions on Bavaria Road (Local), Northern Driveway

- A.M. Peak Hour Vehicle Trip Ends - 2
- P.M. Peak Hour Vehicle Trip Ends - 2
- Assumed Speed Limit - 30 mph

G. Deceleration and Left Turn Lane

Based on the Turn Lane Policy, a deceleration and left turn lane is not required. Only one (1) of the required warrants is satisfied. The assumed speed limit of the local street is equal to the threshold. However, the number of left-turning movements from the local street during the peak hour of the local street is below the threshold, the available site distance for the assumed speed limit of the local street is above the threshold, and the access point connection is not controlled by a traffic signal.

H. Separate Left Turn Lane on the Access Point Connection

Based on the Turn Lane Policy, a separate left turn lane on the access point connection is not required. Only one (1) of the required warrants is satisfied. The assumed speed limit of the local street is equal to the threshold. However, the number of left-turning vehicles from the access point connection during the peak hour of the local street is below the threshold and the access point connection is not controlled by a traffic signal.

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J. Separate Right Turn Lane on the Access Point Connection

Based on the Turn Lane Policy, a separate right turn lane on the access point connection is not required. Only one (1) of the required warrants is satisfied. The assumed speed limit of the intersecting street is equal to the threshold. However, the number of right-turning movements from the access point connection during the peak hour of the local street is below the threshold and the access point connection is not controlled by a traffic signal.

3.5 RECOMMENDED IMPROVEMENTS (BAVARIA ROAD)

Two (2) typical full-access driveways are existing. No other improvements are required or proposed.

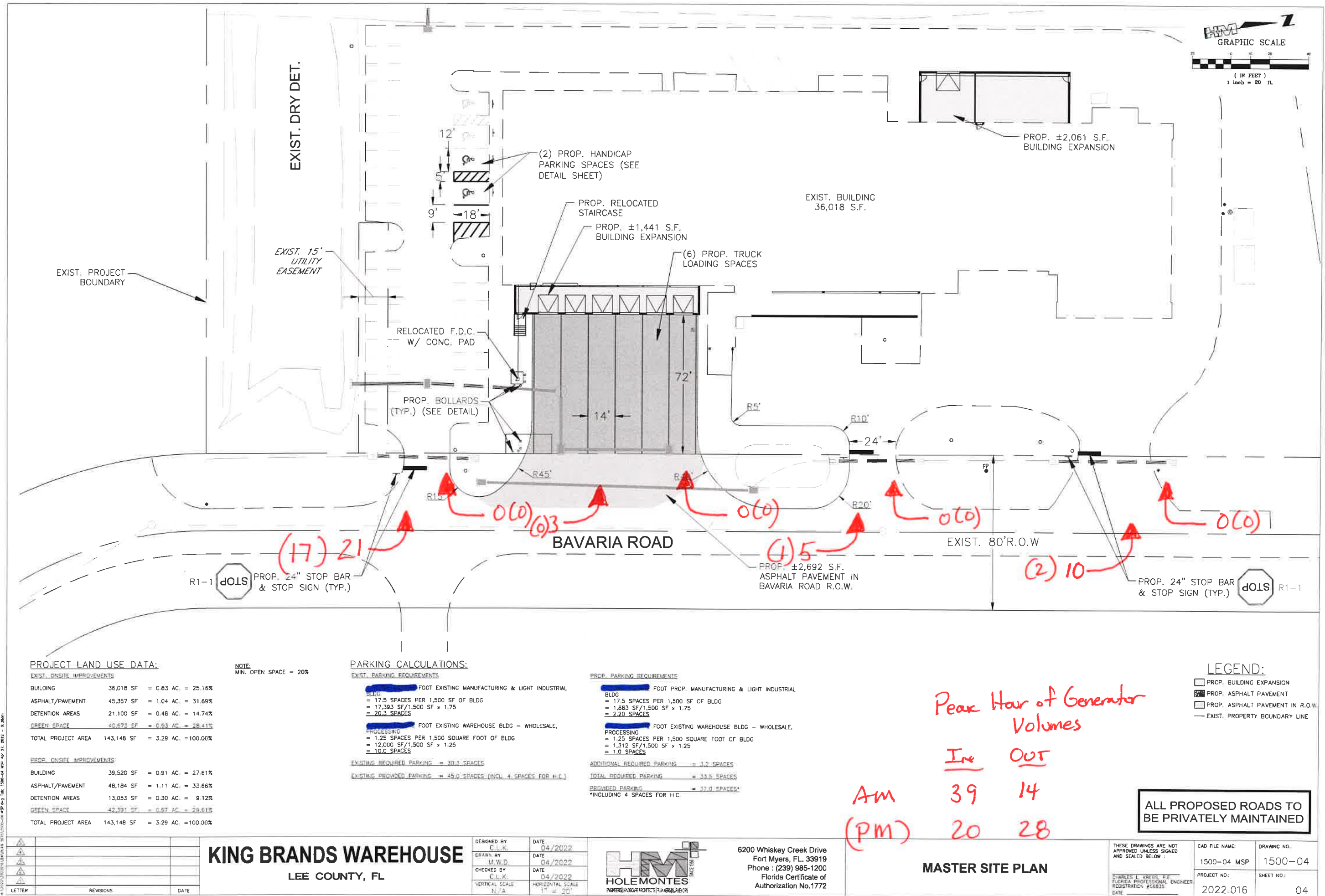
3.6 LEVEL OF SERVICE ANALYSIS (TREELINE AVENUE)

The proposed development will not introduce a significant increase in traffic flows and will not degrade the Level of Service of Treeline Avenue during the peak season below the Performance Standard Level of Service (see attached 100th Highest Hour Level of Service Calculation).

100TH HIGHEST HOUR LEVEL OF SERVICE CALCULATION TREELINE AVENUE

ENGINEER:	TDM Consulting, Inc. Dean Martin, P.E.
DATE:	March 25, 2015
PROJECT NAME:	King Brands Warehouse Expansion
PROJECT LOCATION:	Between Amberwood and Daniels
PERMANENT COUNTING STATION NUMBER:	62
100TH HOUR V.P.H.	
(Year & Rate) =	2013 563
YEAR FOLLOWING PROJECT CONSTRUCTION:	2016
ADJUSTMENT FACTOR =	
Count & Yr_{min}	5,600 2008
Count & Yr_{max}	8,900 2013
Adjustment Factor =	$(8900 / 5600^{0.20})^3$ 1.000
ADJUSTED 100TH HOUR V.P.H. =	563 x 1.000 563
EXISTING LEVEL OF SERVICE =	A
PROJECT V.P.H. =	7 (A.M. Entering) x 67% (South-Bound) 5
TOTAL V.P.H. =	563 + 5 568
LEVEL OF SERVICE =	A
COMMENTS:	No Adjustment is Required

**SITE PLAN
DEPICTING PEAK HOUR TURNING
MOVEMENTS**



TRIP GENERATION EQUATIONS

Manufacturing (140)

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

Setting/Location: General Urban/Suburban

Number of Studies: 53

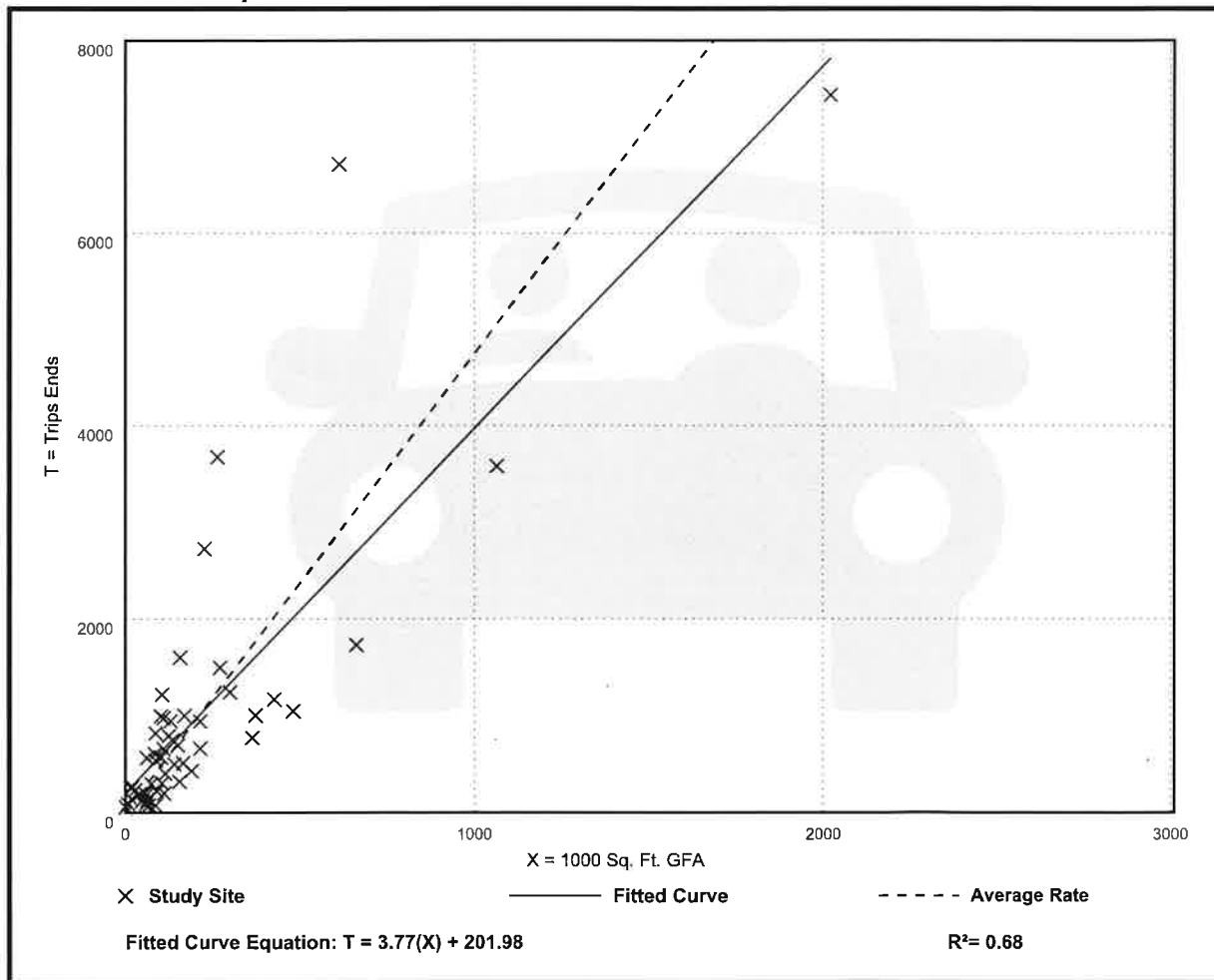
Avg. 1000 Sq. Ft. GFA: 208

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
4.75	0.83 - 49.50	3.20

Data Plot and Equation



Manufacturing (140)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 48

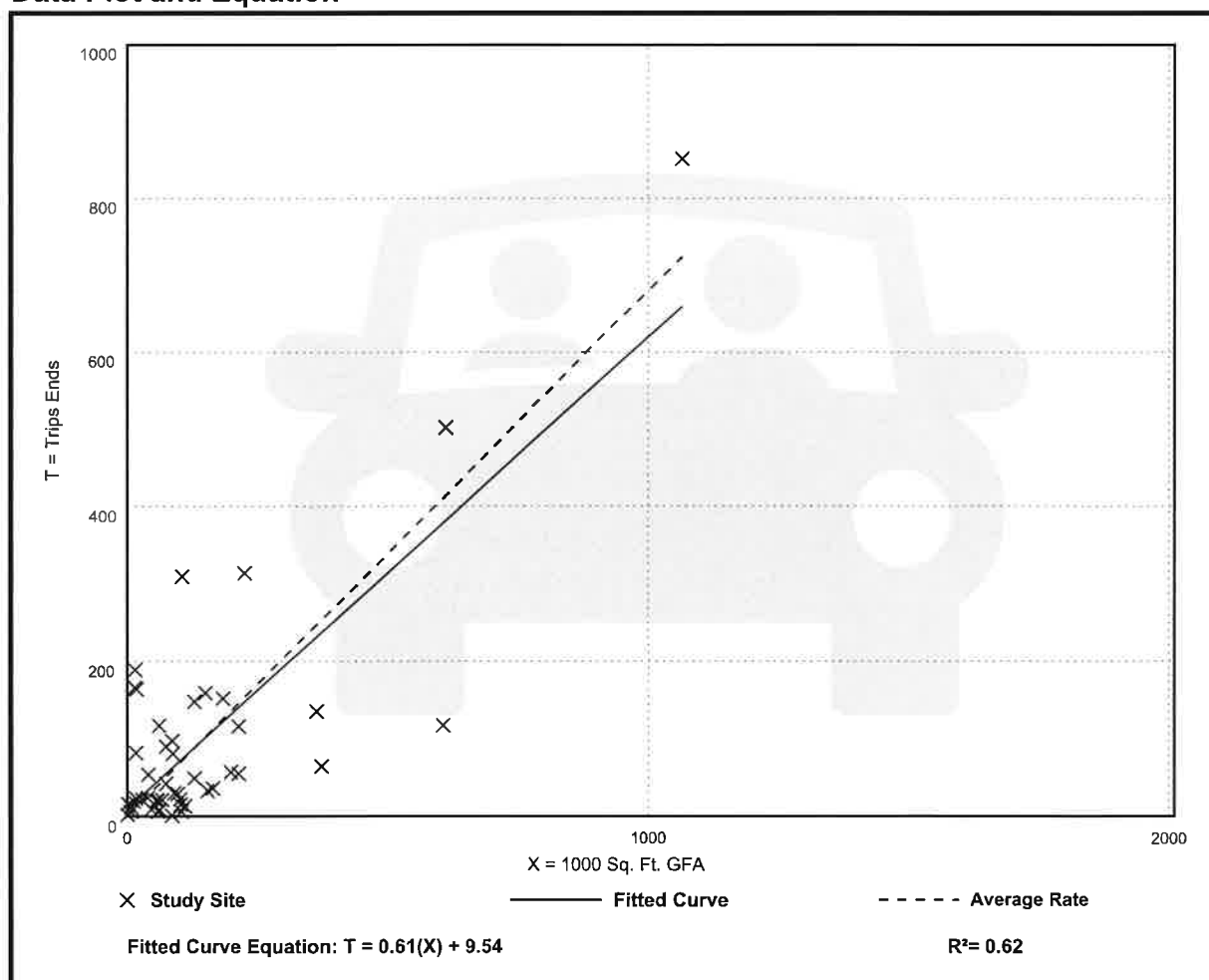
Avg. 1000 Sq. Ft. GFA: 138

Directional Distribution: 76% entering, 24% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.68	0.01 - 11.93	1.03

Data Plot and Equation



Manufacturing (140)

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: 55

Avg. 1000 Sq. Ft. GFA: 142

Directional Distribution: 31% entering, 69% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.74	0.07 - 11.37	0.93

Data Plot and Equation

