BG CONSULTANTS, INC. / **Engineers-Architects-Surveyors**

1405 Wakarusa Drive • Lawrence, Kansas 66049 • (785) 749-4474 • Fax: (785) 749-7340 • www.bgcons.com

April 20, 2015

RE: Traffic Impact Study
24th Place Addition
4300 W. 24th Place, Lawrence

Several development scenarios have been analyzed in the recent past for the proposed 11 acre site on the southeast corner of 24th and Inverness. Most recently, in November 2013, a Traffic Impact Study (TIS) was prepared for a proposed development known as the *Family Fun Center at 24th and Inverness*. That development proposed a combination of entertainment and commercial land uses. The following estimate of peak hour trips generated by the site was used to analyze potential traffic impacts. No offsite improvement needs were identified as a part of that TIS.

Previous TIS: Family Fun Center
AM Peak Hour Trips = 180 vehicles per hour (vph)
PM Peak Hour Trips = 274 vph

The current development proposal, *24th Place Addition* proposes to improve this undeveloped property with 14 townhouses (duplexes) and 7 acres of neighborhood commercial improvements. Actual commercial users have not been identified yet so 35,000 square feet of general commercial uses was assumed for a Floor-Area-Ratio of 11%.

An estimate of AM Peak Hour (between 6:00 am and 8:00 am) and PM Peak Hour (between 4:00 pm and 6:00 pm) traffic generated by this site was developed using the *Trip Generation, 8th Edition* manual published by the Institute of Transportation Engineers (ITE). ITE Code 230 (Residential Condominium/Townhouse) was used to estimate trips generated by the residential portion of the site and ITE Code 820 (Shopping Center) was used to estimate trips generated by the commercial portion. Added together, the resulting estimate of peak hour trips are similar to the analysis performed in the prior TIS.

Current Site Development: 24th Place Addition
AM Peak Hour Trips = 97 vph
PM Peak Hour Trips = 315 vph

Based on this information, the traffic generated by the proposed *24th Place Addition* development will be similar in magnitude to the analysis in the prior TIS. Assuming access is provided via 24th Place, we do not anticipate the need for offsite transportation system improvements. The PM Peak Hour site generated trips are anticipated to occur at a time which will not coincide with the afternoon peak hour traffic generated by the nearby schools. Additional analysis of traffic impacts should be considered at a future date when a site plan is developed for the commercial improvements on Lot 1 and potential users are known.

If additional information is needed, please contact me.

Sincerely,
BG CONSULTANTS, INC.

Jason Hoskinson, P.E., PTOE
Principal

Trip Generation Calculation

Residential Condominium/Townhouse (ITE Code 230) **ITE Trip Generation, 8th Edition**

General Information		Site Information	
Analyst:	*Jason Hoskinson, PE, PTOE*	Area:	*24th Place Addition*
Agency:	*BG Consultants, Inc.*	Jurisdiction:	*Lawrence, KS*
Project Description:	Traffic Impact Study for 24th Place Addition		

X = 28	Dwelling Units			
Typical Weekday				
Number of Studies:	56			
Average Rate:	5.81			
Equation:	LN = 0.87 Ln(X) + 2.46	*a = 0.87*	*b = 2.46*	*R^2 = 0.80*
Pass-by Trips:	0%			
Method of Calculation (Selected by Analyst):	2	*(Enter 1 for Average Rate or 2 for Regression Equation)*		

Total Trips	Ingress/Egress	Entering Trips	Exiting Trips
213	50% 50%	107	107

Method Used: REGRESSION EQUATION

AM Peak Hour of the Adjacent Street (7:00 AM to 9:00 AM)				
Number of Studies:	59			
Average Rate:	0.44			
Equation:	LN = 0.80 Ln(X) + 0.26	*a = 0.80*	*b = 0.26*	*R^2 = 0.76*
Pass-by Trips:	0%			
Method of Calculation (Selected by Analyst):	2	*(Enter 1 for Average Rate or 2 for Regression Equation)*		

Total Trips	Ingress/Egress	Entering Trips	Exiting Trips
19	17% 83%	3	16

Method Used: REGRESSION EQUATION

PM Peak Hour of the Adjacent Street (4:00 PM to 6:00 PM)				
Number of Studies:	62			
Average Rate:	0.52			
Equation:	LN = 0.82 Ln(X) + 0.32	*a = 0.82*	*b = 0.32*	*R^2 = 0.80*
Pass-by Trips:	0%			
Method of Calculation (Selected by Analyst):	2	*(Enter 1 for Average Rate or 2 for Regression Equation)*		

Total Trips	Ingress/Egress	Entering Trips	Exiting Trips
22	67% 33%	15	7

Method Used: REGRESSION EQUATION

Trip Generation Calculation

Shopping Center (ITE Code 820) **ITE Trip Generation, 8th Edition**

General Information	Site Information
Analyst: *Jason Hoskinson, PE, PTOE*	Area: *24th Place Addition*
Agency: *BG Consultants, Inc.*	Jurisdiction: *Lawrence, KS*
Project Description: Traffic Impact Study for 24th Place Addition	

X = 35 | 1,000 Square Feet Gross Floor Area

Typical Weekday

Number of Studies:	302			
Average Rate:	42.94			
Equation:	LN = 0.65 Ln(X) + 5.83	*a = 0.65*	*b = 5.83*	*R^2 = 0.78*
Pass-by Trips:	7%			
Method of Calculation (Selected by Analyst):	2	*(Enter 1 for Average Rate or 2 for Regression Equation)*		

Total Trips	Ingress/Egress	Entering Trips	Exiting Trips
3,193	50% 50%	1,597	1,597

Method Used: REGRESSION EQUATION

AM Peak Hour of the Adjacent Street (7:00 AM to 9:00 AM)

Number of Studies:	101			
Average Rate:	1.00			
Equation:	LN = 0.59 Ln(X) + 2.32	*a = 0.59*	*b = 2.32*	*R^2 = 0.52*
Pass-by Trips:	7%			
Method of Calculation (Selected by Analyst):	2	*(Enter 1 for Average Rate or 2 for Regression Equation)*		

Total Trips	Ingress/Egress	Entering Trips	Exiting Trips
78	61% 39%	48	30

Method Used: REGRESSION EQUATION

PM Peak Hour of the Adjacent Street (4:00 PM to 6:00 PM)

Number of Studies:	412			
Average Rate:	3.73			
Equation:	LN = 0.67 Ln(X) + 3.37	*a = 0.67*	*b = 3.37*	*R^2 = 0.81*
Pass-by Trips:	7%			
Method of Calculation (Selected by Analyst):	2	*(Enter 1 for Average Rate or 2 for Regression Equation)*		

Total Trips	Ingress/Egress	Entering Trips	Exiting Trips
293	49% 51%	144	149

Method Used: REGRESSION EQUATION