Revised 4/30/2020

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April 28, 2020

Mrs. Tarren Barrett, P.E.
Transportation Planner
Knoxville – Knox County Planning
400 Main Street, Suite 403
Knoxville, TN 37902

RE: Transportation Impact Letter (TIL) for Rezoning Request (5-J-20-RZ / 5-A-20-SP)
Rowland Property (3324 Swafford Road)
Knox County, Tennessee

Dear Tarren:

This correspondence provides a summary of a transportation impact evaluation that was conducted for a single family residential development that is proposed to be located on the referenced Rowland Property in the Solway community of Knox County. More specifically, this property is located northwest of Sam Lee Road, southwest of Solway Road and east of Swafford Road. The property consists of 248.99 acres that is being considered for rezoning, with the maximum number of units not to exceed 750.

Project Site Access Description:

The proposed development is large and will thus require multiple access points. These are generally to be placed as follows;

1) Sam Lee Road in the large curve north of Narrow Leaf Drive – This access will serve the southeast quadrant of the site which is separated from the remainder of the property by Beaver Creek.
2) Sam Lee Road between the above access and Narrow Leaf Drive – This access, which will require a bridge over Beaver Creek, will serve the southern portions of the site, exclusive of the quadrant discussed in Item 1.
3) Swafford Road south of Guinn Road – This access will serve the northern portions of the site.

Traffic Volume Conditions for Roadways Surrounding Project Site:

The table below summarizes existing and anticipated future traffic volumes for the roadways around the project site that will be most impacted by site generated traffic. The values shown are Average Daily Traffic (ADT) volumes, based on the most recent ADT counts collected by the Metropolitan Planning Commission (MPC). A two percent annual growth rate was assumed to expand the ADT values to later years, and site generated trips were added to estimate full buildout conditions. These trips were based on trip generation for the maximum number of units anticipated (750), utilizing Institute of Transportation Engineer's trip generation rates for single-family detached housing (Land Use Code 210). This estimation assumed that each access point would serve one-third of the total site generated traffic. An ADT location figure is enclosed, as well as a trip generation summary sheet, and an MPC provided ADT summary sheet.

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AVERAGE DAILY TRAFFIC SUMMARY TABLE

Roadway (Location)	2018 ADT	2019 ADT	2020[1] Estimate	2029[2] Background	2029[3] Buildout
Sam Lee Road (W. of Solway)	646	-	672	685	5,109 [A]
Swafford Road (S. of Guinn)	-	510	520	530	2,742 [B]
Guinn Road (W of Solway)	-	1,390	1,418	1,446	3,658 [B]
Solway Road (W. of Pellissippi)	-	1,642	1,675	1,709	5,028 [C]
Solway Road (S. of Sam Lee)	4,000	-	4,162	4,245	7,564 [C]

[1] Growth Rate = 2% per year used to expand ADT counts to current year (2020)
[2] Growth Rate = 2% per year used to expand 2020 ADT Estimate to Background Year (2029)
[3] Site Generated Trips added as follows for Full Buildout (2029):
[A] 2/3 of total trips added from 2 of 3 access points
[B] 1/3 of total trips added from 1 of 3 access points
[C] 1/2 of total trips added – Assume ½ go north on Solway Road and ½ go south on Solway Road

As shown in the table and on the attached Average Daily Traffic Locations Figure, Solway Road will likely have some of the higher ADT values after buildout of the project site. These values are estimated to be over 5000, north of the project area approaching Pellissippi Parkway, and over 7500, south of the project area. Sam Lee Road is also anticipated to have a value over 5000, on the west side of Solway Road. These values do constitute significant increases, but are well within the accepted capacity levels of two-lane roadways.

Potential Transportation Issues:

Solway Road possesses the widest pavement widths and best horizontal and vertical alignment conditions of all the project area roadways. The other roadways shown in the above table are somewhat more narrow, possess more extreme horizontal and vertical alignments, and some lack edge-line striping. Primary issues for project design will be locating access points where sight distances will be acceptable and ensuring that physical conditions are conducive to safe and efficient traffic flow. This will be most especially true from the standpoint of pavement widths, alignments, pavement marking, signing and the condition of guardrail. In addition, since turning lanes do not exist at area intersections, the need for these will require evaluation.

Please do not hesitate to contact myself or Becky Bottoms if you should have any questions, comments, or require additional information. We appreciate the opportunity to submit this Transportation Impact Letter.

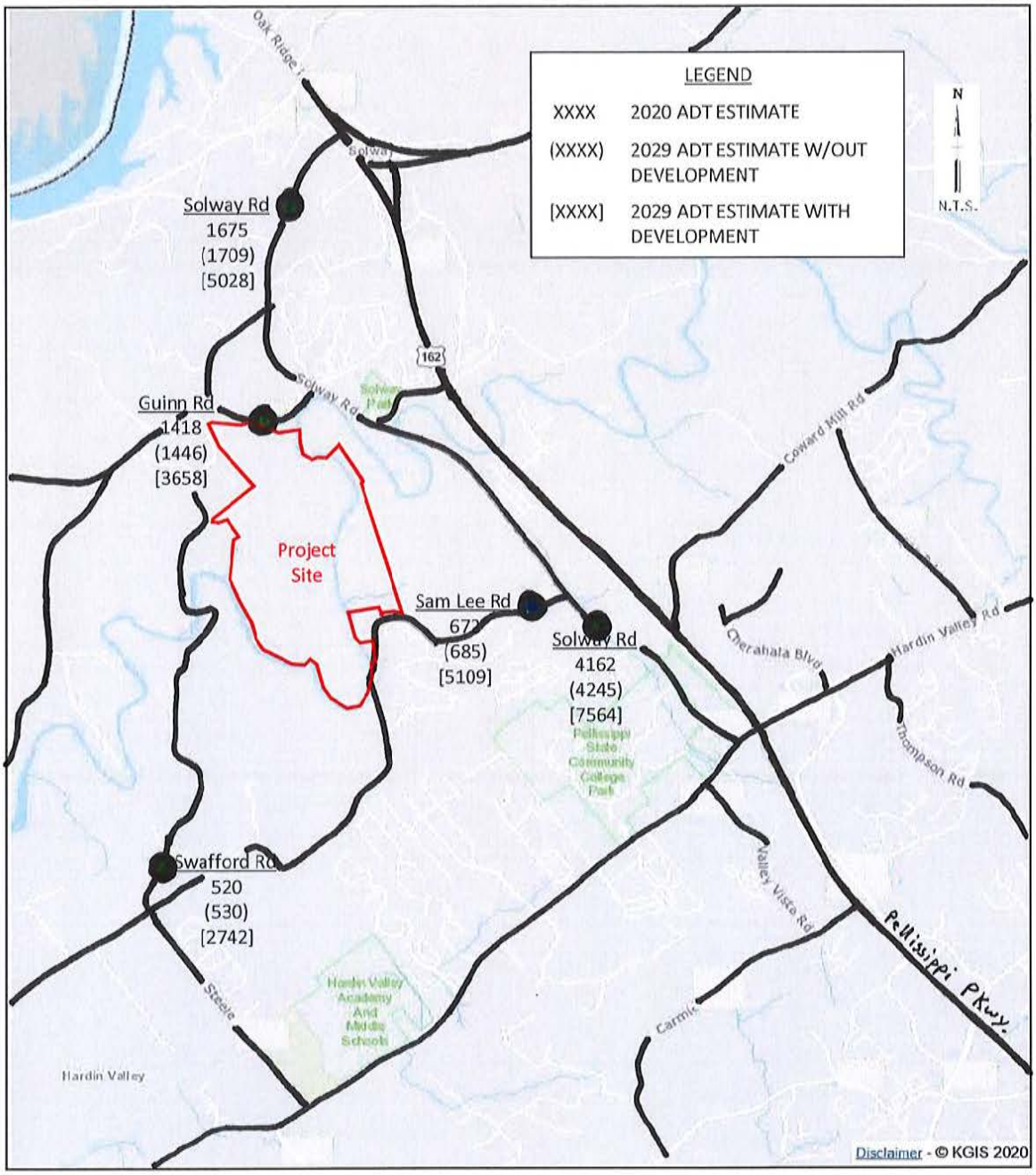
Sincerely,

Alan L. Childers, P.E.
Director Emeritus

Enclosures

ALAN L. CHILDERS
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 018881
STATE OF TENNESSEE
4-28-20

AVERAGE DAILY TRAFFIC LOCATIONS



Single-Family Detached Housing
(210)

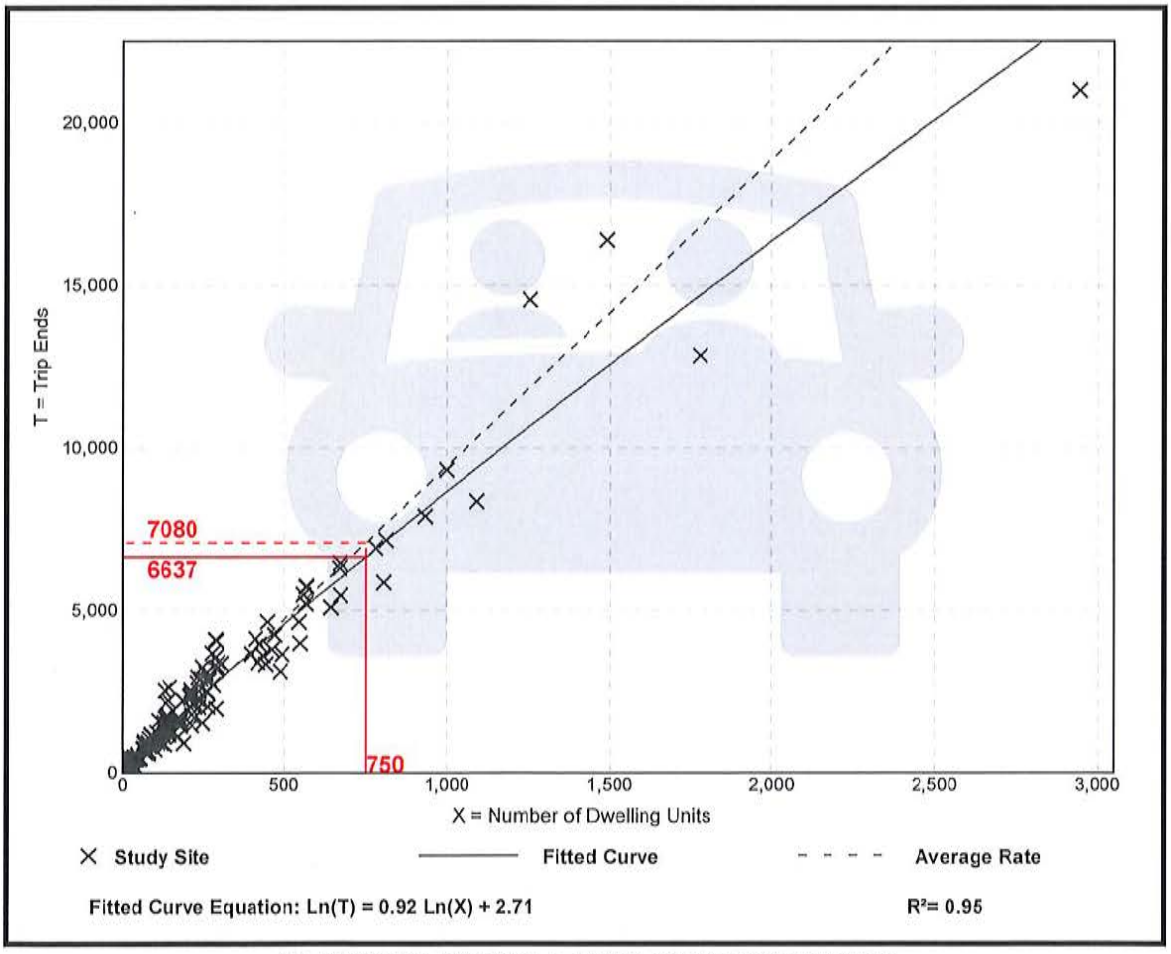
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 159
Avg. Num. of Dwelling Units: 264
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.44	4.81 - 19.39	2.10

Data Plot and Equation



MPC ADT Counts

Road	Location	2019	2018	2017	2016	2015
Swafford Rd	N of Sam Lee Rd	510			420	
Guinn Rd	W of Solway Rd	1390			690	
Solway Rd	N of Hardin Valley Rd	8780				7800
Solway Rd	N of Sandstone Rd, W of Pellissippi Pkwy	1642				
Steele Rd	N of Hardin Valley Rd	3150		2890		2810
Sam Lee Rd	W of Solway Rd		646	415	436	
Hardin Valley Rd	E of Marietta Church Rd	6920			5340	
Hardin Valley Rd	W of Valley Vista		18120	17969	17791	17615
Hardin Valley Rd	W of Brooke Willow Blvd	15010				
Solway Rd	N of Sam Lee Rd*		3400			
Solway Rd	S of Sam Lee Rd*		4000			
Solway Rd	N of Guinn Rd*		1600			
Solway Rd	S of Guinn Rd*		2800			
George Light Rd	E of Solway Rd					1120

*Estimate based on turning movement count and judgment