



TRAFFIC PLANNING AND DESIGN, INC.

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May 12, 2023

Mr. Tim Duerr, AICP, BCO – Director of Community Development/Zoning Officer/Planning Director  
South Middleton Township  
520 Park Drive  
Boiling Springs, PA 17007

### **RE: Trip Generation Comparison**

Smith Farm Master Plan

*South Middleton Township, Cumberland County, PA*

Mr. Duerr:

Traffic Planning and Design, Inc. (TPD) has completed a trip generation comparison for the proposed Smith Farm Master Plan Development in South Middleton Township, Cumberland County, PA. The purpose of this evaluation is to compare the projected trip generation of the current Smith Farm Master Plan development to the assumptions made in TPD's previously submitted 8/19/20 Transportation Impact Study (TIS).

The project site is located on the eastern side of S. Spring Garden Street, between E. Willow Street and Heatherfield Road and is currently occupied by undeveloped farmland. Upon full build-out, the proposed development was anticipated to consist of the following at the time the 8/19/2020 TIS was prepared:

- » Multifamily Housing – 384 units;
- » Senior Adult Housing – 51 units;
- » General Office (Lot 5) – 45,000 s.f.;
- » Medical Office (Lot 1) – 30,000 s.f.

The current site plan has been slightly modified and the following revisions are now proposed:

- » (Lot 1) will now consist of 48 Multifamily Housing Units;
- » (Lot 5) will now consist of 48 Multifamily Housing Units.

## **TRIP GENERATION**

### *Methodology*

The trip generation data were obtained from the manual *Trip Generation*, Tenth Edition, 2017, an Institute of Transportation Engineers (ITE) Informational Report. To be consistent for this evaluation, TPD maintained the methodologies and assumptions from the previously submitted TIS.

For the proposed development, Land Use Codes #220 (Multifamily Housing - Low-Rise), #720 (Medical-Dental Office Building), and #710 (Office Building) were used to calculate the number of vehicular trips the

development will generate during the following time periods: (1) average weekday; (2) weekday A.M. peak hour, and (3) weekday P.M. peak hour.

**Table 1** shows the ITE trip generation data for the analyzed time periods.

TABLE 1  
ITE TRIP GENERATION DATA

Land Use	ITE #	Time Period	Equations	Splits	
				Enter %	Pass-By%
Multifamily Housing (Low-Rise)	220	Average Weekday	$T = 7.56*(X) - 40.86$	50%	--
		Weekday A.M. Peak Hour	$\ln(T) = 0.95*\ln(X) - 0.51$	23%	0%
		Weekday P.M. Peak Hour	$\ln(T) = 0.89*\ln(X) - 0.02$	63%	0%
Medical-Dental Office Building	720	Average Weekday	$T = 38.42*(X) - 87.62$	50%	--
		A.M. Peak Hour	$\ln(T) = 0.89*(X) + 1.31$	78%	0%
		P.M. Peak Hour	$T = 3.39*(X) + 2.02$	28%	0%
General Office	710	Average Weekday	$\ln(T) = 0.97*\ln(X) + 2.50$	50%	--
		A.M. Peak Hour	$T = 0.94*(X) + 26.49$	86%	0%
		P.M. Peak Hour	$\ln(T) = 0.95*\ln(X) + 0.36$	16%	0%

*T = number of site-generated vehicular trips*

*X = independent variable (dwelling units or ksf = 1,000 s.f. gross leasable/floor area)*

**Table 2** summarizes the trip generation of the previously proposed development (Lots 1 and 5) for the analyzed time periods.

TABLE 2  
TRIP GENERATION SUMMARY – PREVIOUSLY PROPOSED LOTS 1 & 5

Land Use	New Trips		
	Total	Enter	Exit
<b>Average Weekday</b>			
General Office (Lot 5)	490	245	245
Medical Office (Lot 1)	1,064	532	532
<b>Total</b>	<b>1,554</b>	<b>777</b>	<b>777</b>
<b>Weekday A.M. Peak Hour</b>			
General Office (Lot 5)	69	59	10
Medical Office (Lot 1)	76	59	17
<b>Total</b>	<b>145</b>	<b>118</b>	<b>27</b>
<b>Weekday P.M. Peak Hour</b>			
General Office (Lot 5)	53	8	45
Medical Office (Lot 1)	104	29	75
<b>Total</b>	<b>157</b>	<b>37</b>	<b>120</b>

As shown in **Table 2**, the previously proposed Smith Farm Master Plan development (Lots 1 and 5) were expected to generate 145 new weekday A.M. peak hour trips, 157 new weekday P.M. peak hour trips and 1,554 total daily trips.

**Table 3** summarizes the trip generation of the currently proposed development (Lots 1 and 5) for the analyzed time periods.

**TABLE 3**  
**TRIP GENERATION SUMMARY – CURRENTLY PROPOSED LOTS 1&5**

Land Use	New Trips		
	Total	Enter	Exit
<b>Average Weekday</b>			
<b>Total</b>	<b>684</b>	<b>342</b>	<b>342</b>
<b>Weekday A.M. Peak Hour</b>			
<b>Total</b>	<b>46</b>	<b>11</b>	<b>35</b>
<b>Weekday P.M. Peak Hour</b>			
<b>Total</b>	<b>57</b>	<b>36</b>	<b>21</b>

*Based on 96-unit Multifamily (Low-Rise) Housing Units*

As shown in **Table 2**, the currently proposed Smith Farm Master Plan development (Lots 1 and 5) are expected to generate 46 new weekday A.M. peak hour trips, 57 new weekday P.M. peak hour trips and 684 total daily trips.

### TRIP GENERATION COMPARISON

**Table 4** compares the trip generation of the current development land use assumptions (Lots 1 and 5) to the assumptions made for the Smith Farm Master Plan Development (Lots 1 and 5) in the previously submitted 8/19/20 TIS.

TABLE 4  
TRIP GENERATION COMPARISON – LOTS 1 & 5  
CURRENT ASSUMPTIONS VS. PREVIOUSLY SUBMITTED 8/19/20 TIS ASSUMPTIONS

Land Use	New Trips		
	Total	Enter	Exit
<b>Average Weekday</b>			
Current Land Use Assumptions <sup>1</sup>	684	342	342
Assumptions from 8/19/20 TIS	1,554	777	777
<b>Net Difference <sup>2</sup></b>	<b>-870</b>	<b>-435</b>	<b>-435</b>
<b>Weekday A.M. Peak Hour</b>			
Current Land Use Assumptions <sup>1</sup>	46	11	35
Assumptions from 8/19/20 TIS	145	118	27
<b>Net Difference <sup>2</sup></b>	<b>-99</b>	<b>-107</b>	<b>+8</b>
<b>Weekday P.M. Peak Hour</b>			
Current Land Use Assumptions <sup>1</sup>	57	36	21
Assumptions from 8/19/20 TIS	157	37	120
<b>Net Difference <sup>2</sup></b>	<b>-100</b>	<b>-1</b>	<b>-99</b>

<sup>1</sup> Trip Generation values taken from Table 3 of this letter

<sup>2</sup>Net Difference = (Current Land Use Assumptions) – (Previously Proposed Land Use Assumptions)

## CONCLUSIONS

As shown in **Table 4**, the currently proposed Lots 1 and 5 land use assumptions is expected to generate **99 fewer** new weekday A.M. peak hour trips, **100 fewer** new weekday P.M. peak hour trips and **870 fewer** daily trips when compared to the land use assumptions in the previously submitted TIS, dated 8/19/2020. Since the current land use assumptions are anticipated to generate less trips than accounted for in the 8/19/2020 TIS no further analysis or revisions to the TIS are necessary.

If you have any questions or require additional information, please call anytime.

Sincerely,

TRAFFIC PLANNING AND DESIGN, INC.



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