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June 29, 2022

Ref: 52917.00

Chad Branon
Fieldstone Land Consultants, PLLC
778 Elm Street, Suite C
Milford, NH 03055

Re: Trip-Generation Letter
Tax Map 4, Lot 145 Residential Development
Amherst, New Hampshire

Dear Mr. Branon:

Vanasse Hangen Brustlin, Inc. (VHB) has prepared this letter to summarize the trip-generation estimates associated with the proposed residential development to be located on the property identified as Tax Map 4, Lot 145 in Amherst, New Hampshire. The site is approximately 15.9 acres and is bordered by Upham Road to the north and County Road to the west. Upham Road and County Road are legislatively categorized as Class V Local Roads under Town of Amherst jurisdiction. As proposed, the site would be developed with six single-family homes. This letter summarize the trip-generation estimates and methodologies associated with the proposed residential development.

Trip Generation Methodology

To determine the vehicular trips that would be generated by the proposed development, trip-generation rates published by the Institute of Transportation Engineers (ITE)[1] were researched. Table 1 summarizes the trip-generation estimates of the proposed residential development. The trip-generation calculations are attached to this letter.

[1] Trip Generation Manual. 11th ed. Washington, DC: Institute of Transportation Engineers, 2021.

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2 Bedford Farms Drive
Suite 200
Bedford, New Hampshire 03110
P 603.391.3900
F 603.518.7495

Table 1 – Trip-Generation Summary

Time Period/Direction	Proposed Trips [a]
Weekday Daily	
Enter	29
Exit	29
Total	58
Weekday AM Peak Hour	
Enter	1
Exit	3
Total	4
Weekday PM Peak Hour	
Enter	4
Exit	2
Total	6
Saturday Daily	
Enter	29
Exit	29
Total	58
Saturday Peak Hour	
Enter	3
Exit	3
Total	6

a ITE Land Use Code 210 (Single-Family Detached Housing) for 6 dwelling units.

As shown in Table 1, the proposed residential development is estimated to generate 4 total trips (1 entering and 3 exiting) during the weekday AM peak hour, 6 total trips (4 entering and 2 exiting) during the weekday PM peak hour, and 6 total trips (3 entering and 3 exiting) during the Saturday peak hour.

In accordance with common traffic engineering practice, a development may have a noticeable impact if the addition of peak hour site trips would increase traffic volumes on an intersection approach by 100 vehicles or

more.[2] In addition, New Hampshire Department of Transportation (NHDOT) guidance[3] suggests that a development estimated to generate 100 vehicles per hour or more (total of entering and exiting trips) through an intersection may result in a change in vehicular operations (i.e., noticeably drop level of service or increase volume-to-capacity [v/c] ratios). In general, traffic increases less than these thresholds could be attributed to the fluctuation of vehicles due to driver patterns that occur during the day, on different days of a week, or different months of a year. As shown in Table 1, the proposed residential development is not anticipated to exceed these thresholds (i.e., entering trips <100 vehicles per hour, and exiting trips <100 vehicle per hour).

Conclusion

In summary, ITE and NHDOT methodologies suggest that a development may have a noticeable impact if the addition of site trips increases traffic volumes on an intersection approach or at an intersection by 100 vehicles per hour or more. Based on the findings of this trip-generation letter, the site trips for the proposed residential development do not trigger these thresholds. Therefore, the proposed six-lot residential development on Tax Map 4, Lot 145 is anticipated to result in minimal impacts to the adjacent roadway network.

Sincerely,

VHB

Jason R. Plourde, PE, PTP
Transportation Systems Team Leader
JPlourde@vhb.com

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2 Transportation Impact Analyses for Site Development: An ITE Proposed Recommended Practice. Washington, DC: Institute of Transportation Engineers, 2010.

3 Bollinger, Robert E. Inter-Department Communication. New Hampshire Department of Transportation, Bureau of Traffic. 17 Feb. 2010.

Attachments

Trip-Generation Calculations

ITE TRIP GENERATION WORKSHEET
(11th Edition, Updated 2021)

LANDUSE: Single-Family Detached Housing
LANDUSE CODE: 210
SETTING/LOCATION: General Urban / Suburban
JOB NAME:
JOB NUMBER:

Independent Variable --- Number of Dwelling Units

6 dwelling units

WEEKDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Low	High	Independent Variable Range Average	Low	High	Directional Distribution Enter	Exit
DAILY	174	0.95	9.43	4.45	22.61	246	10	2,945	50%	50%
AM PEAK OF GENERATOR	169	0.91	0.75	0.34	2.27	217	10	2,945	26%	74%
PM PEAK OF GENERATOR	178	0.92	0.99	0.49	2.98	203	10	2,945	64%	36%
AM PEAK (ADJACENT ST)	192	0.90	0.70	0.27	2.27	226	10	2,945	26%	74%
PM PEAK (ADJACENT ST)	208	0.92	0.94	0.35	2.98	248	10	2,945	63%	37%

TRIPS:

	BY AVERAGE Total	Enter	Exit	BY REGRESSION Total	Enter	Exit
DAILY	58	29	29	76	38	38
AM PEAK OF GENERATOR	5	1	3	11	3	9
PM PEAK OF GENERATOR	6	4	2	8	5	3
AM PEAK (ADJACENT ST)	4	1	3	6	1	4
PM PEAK (ADJACENT ST)	6	4	2	7	4	3

SATURDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Low	High	Independent Variable Range Average	Low	High	Directional Distribution Enter	Exit
DAILY	63	0.91	9.48	3.36	16.52	179	15	1,000	50%	50%
PEAK OF GENERATOR	42	0.89	0.92	0.41	1.78	152	15	644	54%	46%

TRIPS:

	BY AVERAGE Total	Enter	Exit	BY REGRESSION Total	Enter	Exit
DAILY	58	29	29	64	32	32
PEAK OF GENERATOR	6	3	3	15	8	7

SUNDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Low	High	Independent Variable Range Average	Low	High	Directional Distribution Enter	Exit
DAILY	60	0.94	8.48	2.61	16.44	186	15	1,000	50%	50%
PEAK OF GENERATOR	40	0.92	0.83	0.36	1.67	163	15	644	53%	47%

TRIPS:

	BY AVERAGE Total	Enter	Exit	BY REGRESSION Total	Enter	Exit
DAILY	52	26	26	-18	-9	-9
PEAK OF GENERATOR	5	3	2	10	5	4