Stantec Consulting Services Inc.
801 Jones Franklin Road, Suite 300, Raleigh, NC 27606

October 8, 2021
File: 171002516

Attention: **Meredith Gruber**
Town of Rolesville
502 Southtown Circle, Rolesville, NC 27571

Dear Ms. Gruber,

Reference: **Tucker-Wilkins Property**

The purpose of this letter is to provide trip generation and an evaluation of traffic for the subject development. The development, is located along Rolesville Road in Rolesville. The conceptual site plan, prepared by American Engineering Associates – Southeast, PA, proposes 27 detached single-family homes and 64 townhomes. Access to the site is envisioned to be provided by one full-movement driveway onto Rolesville Road as well as one stub connection to the planned Kalas Falls residential development. The site plan can be found in the attachments. This letter presents trip generation, distribution, and traffic analysis of the proposed driveway onto Rolesville Road.

TRIP GENERATION

The proposed development is anticipated to consist of 27 detached single-family homes and 64 townhomes (low-rise multifamily housing). Estimated weekday daily, AM peak hour, and PM peak hour trips for the proposed use were calculated using methodology contained within the Institute of Transportation *Trip Generation Manual, 10th Edition*. The methodology was supplemented using the North Carolina Department of Transportation Congestion Management Section *Rate vs Equation Spreadsheet* (July 1, 2018). Trip generation results are shown in Table 1. It should be noted that no reductions due to internal capture or pass-by trips are applicable to this type of development.

Table 1: Proposed Trip Generation

Proposed Use / Land Use Code	Size	Units	Daily Trips	AM Peak Hour			PM Peak Hour		
				Total	Enter	Exit	Total	Enter	Exit
Single-Family Housing (LUC 210)	27	d.u.	312	24	6	18	29	18	11
Multifamily Housing (LUC 220)	64	d.u.	443	31	7	24	40	25	15
Net New External Trips			**755**	**55**	**13**	**42**	**69**	**43**	**26**

Section 8 of the Town of Rolesville Land Development Ordinance (adopted June 1, 2021) establishes thresholds for when a Traffic Impact Analysis (TIA) is required for a particular development. Those are as follows:

- The proposed development could be expected to generate one hundred (100) or more added vehicle trips to or from the site during the peak traffic hour.

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- The proposed development could be expected to generate one thousand (1,000) or more added vehicle trips to or from the site during a twenty-four (24) hour period.

Accordingly, the subject development is anticipated to generate less traffic than the thresholds established in Section 8 of the Land Development Ordinance.

TRAFFIC EVALUATION

Traffic was evaluated at the driveway of the proposed development as well as along Rolesville Road. Weekday AM (7:00-9:00 AM) and PM (4:00-6:00 PM) turning movement counts were collected on Wednesday, September 12, 2018 at the intersection of Rolesville Road at Mitchell Mill Road. These traffic counts were grown by two-percent (2%) per year from 2018 to 2026 to account for future traffic growth along Rolesville Road. In addition to this background growth, the following nearby approved developments were accounted for:

- The Point (A.K.A. Young Street PUD)
- Wheeler Tract
- Kalas / Watkins Family Property

The trips generated by the proposed development (as shown in Table 1) were assigned to the surrounding roadway network using the distribution presented in the Kalas / Watkins Family Property TIA. That is, sixty-percent (60%) being assigned to/from the north along Rolesville Road. The remaining forty-percent (40%) is assigned to/from the south along Rolesville Road. Traffic volume calculations and figures are included as attachments.

PROPOSED DRIVEWAY

Primary access to the site will be provided by a driveway on Rolesville Road. This is anticipated to operate under the control of a stop-sign on the proposed driveway. The ultimate cross-section of Rolesville Road is a two-lane with a two-way left-turn lane. Accordingly, this analysis assumes a left-turn lane is installed by the development's build-out year (i.e. 2026).

Capacity analysis was performed for the proposed driveway onto Rolesville Road using Synchro (version 10) software. The level of service (LOS) for the study intersections is summarized in Table 2.

Table 2: Rolesville Road at Site Driveway Level of Service and Delay

Intersection / Approach	Intersection Control	2026 Build LOS (Delay in sec./veh.)	
		AM	PM
Overall Intersection	Stop Controlled	**A (0.6)**	**A (0.5)**
Eastbound Approach		C (16.5)	B (13.3)
Northbound Left-Turn		A (9.7)	A (8.6)

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Analysis indicates that this proposed driveway is expected to operate at an acceptable LOS in the study year 2026.

ROLESVILLE ROAD

Traffic generated by the proposed development during the AM and PM peak hours constitutes at most seven percent (7%) of the total volume of traffic at the site driveway. At the nearby intersection of Rolesville Road at Mitchell Mill Road, the proposed development is anticipated to add at most 27 vehicles per hour, or approximately one vehicle every two minutes, to the intersection. Therefore, increases in delays at nearby intersections are expected to be minimal with the addition of site traffic.

CONCLUSIONS

Based on the information presented herein, the following can be said of the proposed development:

- The subject development is anticipated to generate less traffic than the thresholds established in Section 8 of the Land Development Ordinance.
- The proposed driveway onto Rolesville Road is anticipated to operate at an acceptable level of service at project build-out.
- The proposed development is expected to result in minimal increases in traffic volume along Rolesville Road.

Feel free to contact me if you have any questions regarding the information presented herein.

Regards,

Stantec Consulting Services Inc.

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10/8/2021

Attachment: Conceptual Site Plan, Traffic Counts, Trip Generation, Traffic Volume Calculations, Traffic Volume Figures, Synchro Reports

c. Jay Gilleece (American Engineering)
Brad Haertling (American Engineering)