

October 10, 2022

Mr. Mark Archambault, AICP
Ayer Town Planner
Town Hall
One Main Street
Ayer, MA 01432

RE: Nitsch Proposal #15199.
Stratton Hill Peer Review
Traffic Engineering Services
Ayer, MA

Dear Mr. Archambault:

Nitsch Engineering (Nitsch) is submitting this follow-up to responses contained in a response to comments letter pertaining to the Transportation Impact Assessment completed by Vanasse & Associates, Inc. (VAI) in October 6, 2022. We have listed the responses from the Applicant and additional comments and information if required.

Project Description

Comment 1: *Nitsch feels that the Applicant should clarify the discrepancy in the project program.*

Response 1: The Project proposes the development of 168± acres of land into 33 single-family homes and four duplex units. Off-street parking will be provided for a minimum of two (2) vehicles per unit in individual driveways and garages. This has been revised in the Updated TIA.

Second Comment 1: *Comment resolved.*

Study Methodology

Nitsch agrees with the Applicant's approach for study methodology.

Existing Conditions

STUDY AREA

The Applicant studied/examined the following three roadways and two intersections:

Roadways

- Sandy Pond Road;
- Snake Hill Road: and
- Wright Road.

Intersections

- Sandy Pond Road at Snake Hill Road (Stop Controlled); and
- Snake Hill Road at Wright Road (Stop Controlled).

Comment 2: *Nitsch agrees with the selected Study Area. However, based on conversations with the Town and a review of the Sandy Pond Area Heat Maps which indicates multi-modal transportation density (not including vehicles), we request that Calvin Street and the intersection of Calvin Street at Snake Hill Road to be included in the study.*

Response 2: As per Nitsch and the Town's request, the study area was expanded to include the intersection of Calvin Street at Snake Hill Road. Please see the updated TIA.

Second Comment 2: Comment resolved.

Existing Traffic Data

Comment 3: *After discussions with the Town, it was determined that the TMCs were collected in the off-season and do not include vehicular and pedestrian traffic associated with peak season for Sandy Pond Beach. Additionally, ATRs need to be collected to determine the peak traffic periods throughout the day. At the request of the Town, this issue was relayed to the Applicant prior to this review, so they can conduct new counts (ATRs and TMCs) before the end of the summer season (Labor Day Weekend).*

Response 3: As per Nitsch and the Town's request, the study area was expanded to include the intersection of Calvin Street at Snake Hill Road and new TMCs were conducted before the end of the summer season (Labor Day weekend). In addition, the intersection of Standish Avenue with Wright Road was also counted. The TMCs were conducted on Thursday, August 25, 2022 during the weekday morning (7:00 to 9:00 AM) and weekday evening (4:00 to 6:00 PM) peak periods. TMCs were also conducted on Saturday, August 27, 2022 during the midday (11:00 AM to 2:00 PM) peak period, as per the Town's request.

It is important to note that the critical traffic activities in a residential neighborhood are likely to occur during a weekday morning between 7:00 to 9:00 AM, when residents are traveling to work, and during the weekday evening between 4:00 and 6:00 PM, when residents are expected to arrive return work. The time periods analyzed in the TIA were selected as they are representative of the peak-traffic-volume hours for both the proposed Project and the adjacent roadway network.

Second Comment 3: Comment resolved.

SEASONAL ADJUSTMENT

The Applicant utilized data from MassDOT Continuous Count Station No. 34 and 4090 located on Interstate 495 (I-495) to quantify the seasonal variation of traffic volumes in the area and account for the impact on traffic volumes and trip patterns resulting from the COVID-19 pandemic.

Nitsch finds the Applicant's methodology to be conservative and thereby acceptable.

PEDESTRIAN AND BIKE FACILITIES

Nitsch finds the Applicant's discussion on existing pedestrian and bicycle facilities to be adequate.

PUBLIC TRANSPORTATION

Nitsch finds the Applicant's discussion on public transportation in the area to be adequate.

MOTOR VEHICLE CRASH DATA

The Applicant examined crash data from the MassDOT Crash Database for the years of 2014 to 2018 at all study area intersections.

Nitsch finds the crash data analysis appropriate.

Future Conditions

Traffic volumes in the study area were projected to the year 2028, reflecting a typical seven-year traffic-planning horizon consistent with the MassDOT guidelines.

Nitsch finds the Applicant's methodology to be acceptable.

FUTURE TRAFFIC GROWTH

Background traffic growth was estimated by examining the historic traffic data, planned development project-specific growth and roadway improvement projects. The Applicant determined that a growth rate of 1.5 percent to be appropriate for the study.

Nitsch finds the Applicant's methodology to be conservative and thereby acceptable.

PROJECT-GENERATED TRAFFIC

Projected trip generation for the proposed development was estimated using Land Use Code (LUC) 210 – Single-Family Detached Housing from the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition. Nitsch feels a discrepancy in the project description, therefore instead of 35 single-family (LUC-210), the data for 35 residential buildings, inclusive of 33 single-family units (LUC-210) and four duplex units (LUC-215) should have been used for the analysis. However, since the resulting values prove to be identical to the Applicant's projected trips, there will be no need to redo the analysis.

Nitsch finds the Applicant's trip generation estimation acceptable.

TRIP DISTRIBUTION AND ASSIGNMENT

Projected residential vehicle trips generated to the site were distributed to the study area network based on Journey-to-Work data for persons residing in the Town of Ayer.

Nitsch finds the Applicant's trip distribution estimation acceptable.

Sight Distance Analysis

Sight distance measurements were performed at the Project site intersection with Wright Road in accordance with MassDOT and American Association of State Highway and Transportation Officials (AASHTO) requirements.

Nitsch finds the Applicant's analysis to be acceptable.

Traffic Operations Analyses

Comment 4: ***Nitsch finds the Applicant's methodology to be acceptable. However, the capacity analysis shall be reconducted during the existing, no-build, and build conditions to reflect the new traffic volumes at the previously counted intersections and the additional volumes obtained at Calvin Street and Snake Hill Road.***

Response 4: The analysis was updated with new traffic counts conducted. Please see the updated TIA.

Second Comment 4: ***Comment resolved.***

Conclusions

Comments 5: ***For mitigation measures, Nitsch requests that the applicant discuss physical conditions and recommended road improvements at Wright Road, spot upgrades on street network in project vicinity, applicable lower intensity improvements, and a cost estimate for each improvement alternative.***

- **Wright Road – Physical Conditions and Recommended Road Improvements:**
Wright Road is in poor condition, and the increased traffic generated by the Stratton Hill subdivision will likely exacerbate this.
 1. How traffic generated from the subdivision will likely impact the road surface, and what improvements to Wright Road should be made, if any, to increase its ability to handle the increased traffic volumes. Provide graphic sketches for Wright Road improvements under the Subdivision Regulations, within the physical limitations of the right-of-way.
 2. Provide cost estimates at a broadly conceptual level.

Response: The traffic volumes from the development are minimal, residential in nature, and not anticipated to affect the road surface on Wright Road in a manner unlike existing traffic on the roadway. Intersection delays are indicated to be minimal under Existing through Build conditions, substantiating the effect of the project on the transportation system as minor. No improvements to Wright Road as a result of the project traffic volumes are necessary.

- **Spot Upgrades on Street Network in Project Vicinity:**
Identify concepts for offsite roadway improvements, as well as other mitigation measures, that might be justified because of traffic impacts from the proposed Stratton Hill subdivision to Wright Road and to the adjacent road network, as indicated in the preceding narrative and suggested traffic count locations. Provide general cost indicators for such improvements.

Response: See previous response. Both existing volumes and proposed traffic volumes from the development are minor in nature and represent vehicle flow rates of one vehicle every one to two minutes during peak hours.

- **Lower Intensity Improvements:**
Identify and provide graphic sketches for other potential improvements that might enhance public safety without major road construction such as signs, pavement markings, sight distance maintenance measures, traffic calming measures, or actions of a similar nature, referred to as “lower intensity improvements.” Provide general cost indicators for lower intensity improvements.

Response: See previous response. Appropriate signage exists at area intersections. Snake Hill Road and Wright Road are both posted for 25 mph, which is an appropriate speed limit for these roadways and observations are that many drivers travel at a lower speed. The STOP-sign on the Snake Hill Road southbound approach to the Wright Road intersection is located approximately 65 feet in advance of the intersection. While this placement would diminish the effectiveness of the sign in a more heavily trafficked area, counts indicate a minimal volume of between 3 and 6 vehicles (total of both directions) during the three peak hours studied on this segment of the road and therefore minimal traffic activity.

However, the Applicant is willing to provide a monetary contribution to the Town for the purposes of traffic calming devices such as solar-powered signs enhanced with flashing LEDs at the crosswalk over Sandy Pond Road or signage for other locations in the study area.

Second Comment 5: *Comment resolved. Nitsch recommends the Applicant coordinate directly with the Town to determine the most appropriate means for mitigation measures.*

Additional Comments

Comment 6: *Nitsch feels it’s pertinent for the Applicant to provide information on parking generation and the proposed parking supply. If the supply does not meet the zoning requirements, a discussion about the ITE parking methodology should be included to show the estimated parking demand and how the additional demand can be accommodated.*

Response 6: As part of this Project, off-street parking will be provided for a minimum of two (2) vehicles per unit in individual driveways and garages. The proposed parking supply is consistent with the minimum parking requirements of Section 9.1.2 Required Off-Street Parking Spaces, from the Town of Ayer Zoning Ordinance. See the Updated TIA.

Second Comment 6: *Comment resolved.*

Comment 7: *Nitsch requests that the applicant discuss any on-site accommodation features to be provided for the development.*

Response 7: It should be noted that the Project is a development of primarily single-family homes with a small number of duplex units. As such, on-site accommodation of vehicle and bicycle parking, pedestrian and bicycle accommodations, and loading and delivery operations will be addressed through the internal roadway and driveways for the residential homes.

Second Comment 7: *Nitsch agrees with these on-site accommodations. Comment resolved.*

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Comment 8: *Nitsch requests that the applicant discuss any TDM measures proposed.*

Response 8: In order to promote healthy transportation choices and to minimize the Project impact, a Transportation Demand Management (TDM) strategy was developed and will help to encourage future residents to use alternative modes of transportation. Please see updated TIA.

Second Comment 8: *Given the use, Nitsch agrees with the Applicant's TDM measures. Comment resolved.*

Comment 9: *Nitsch requests that the applicant discuss any construction impacts as it relates to trucking routes, equipment staging, and anticipated roadway impacts.*

Response 9: Prior to the construction period, the applicant will submit a Construction Management Plan consistent with local, state and federal guidelines. This plan will be developed in coordination with Town staff, including Planning, Building Inspector, Department of Public Works, and Police and Fire Departments, and will be prepared prior to the start of construction of the Project.

Second Comment 9: *Comment resolved.*

If we can be of any further assistance regarding this matter, please contact us at our office.

Very truly yours,

Nitsch Engineering, Inc.

Bryan Zimolka, PE, ENV SP
Project Manager