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September 2, 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) has reviewed the Transportation Impact Assessment (TIA) completed by Vanasse & Associates, Inc. (VAI) in December 2021 for the proposed residential development along Wright Road in Ayer, Massachusetts. The project proposes to construct 35 residential buildings, inclusive of 33 single-family units and four (4) duplex units. The Project site encompasses approximately 168± acres of land that is bounded by areas of open and wooded space to the north, Wright Road to the south, Lower Long Pond and wetlands to the east and residential properties and areas of open and wooded space to the west. A major portion of the site is proposed to be permanently designated as Open Space as defined in the Ayer Zoning Bylaw. Nitsch's comments regarding the provided TIA are provided as part of this review letter.

### **Project Description**

The Applicant indicated that the Project entails the construction of 35 single-family homes. However, from our conversations with the Town, we understand that the project consists of constructing 35 residential buildings, inclusive of 33 single-family units and four (4) duplex units. We don't believe that the trip generation values will be impacted substantially, but the Applicant should clarify the discrepancy, if any.

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

### **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).

***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.***

### **Existing Traffic Data**

Manual turning movement counts (TMCs) were completed on September 28, 2021 at the two study intersections. The Applicant did not collect ATR counts at any of the study roadways.

***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).***

### **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**

The Applicant examined Existing and projected No-Build and Build traffic conditions for both weekday morning and weekday evening peak hours at the study area intersections.

***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.***

## Conclusions

The Applicant indicated that the proposed Project will not impact the overall operations significantly. However, the Town would like for the Applicant to review the following mitigation measure options, if applicable:

- 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.
- 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; and
- 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.

***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.***

## Additional Comments

Generally, a discussion regarding parking is an integral part of a land development Traffic Impact Assessment. This TIA has not provided any information regarding parking generation and proposed number of parking.

***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.***

Similarly to the previous comment, a discussion about on-site features to determine if the accommodations will be provided per zoning codes and to determine if the analyses justify the requested waivers including:

- Vehicle and bicycle parking accommodations;
- Pedestrian and bicycle accommodations; and
- Loading and delivery operations.

***Nitsch requests that the applicant discuss any on-site accommodation features to be provided***

***for the development.***

A discussion about Transportation Demand Management (TDM) measures should be included in a Traffic Impact Assessment.

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

A discussion about construction-related impacts should be included in a Traffic Impact Assessment.

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

### **Summary**

A summary of the comments that need to be addressed are listed below.

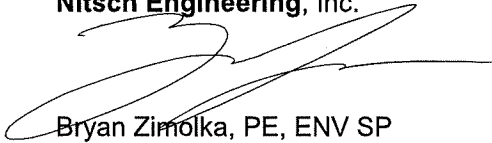
- ***Nitsch feels that the Applicant should clarify the discrepancy in the project program.***
- ***Nitsch agrees with the selected Study Area. However, based on conversations with the Town, we request that Cavin Street and the intersection of Calvin Street at Snake Hill Road to be included in the study.***
- ***After discussions with the Town, Nitsch believes that the intersection of Calvin Street at Snake Hill Road needs to be included in the counts. Also, the TMCs were collected off-season and do not include vehicular and pedestrian traffic associated with Sandy Pond Beach. Similarly, in the absence of ATRs, how can the peak traffic periods be verified? 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).***
- ***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.***
- ***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.***
- ***Nitsch feels it's pertinent for the Applicant to provide information on parking generation and proposed parking supply.***
- ***Nitsch requests that the applicant discuss any on-site accommodation features to be provided for the development.***
- ***Nitsch requests that the applicant discuss any TDM measures proposed.***
- ***Nitsch requests that the applicant discuss any construction impacts as it relates to trucking routes, equipment staging, and anticipated roadway impacts.***

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

Very truly yours,

**Nitsch Engineering, Inc.**

A handwritten signature in black ink, appearing to read 'Bryan Zimolka', with a long horizontal flourish extending to the right.

Bryan Zimolka, PE, ENV SP  
Project Manager