

TIM
MILLER
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March 10, 2023

Mr. Ross Winglovitz, P.E.
Engineering & Surveying Properties
71 Clinton Street
Montgomery, NY 12549

Re: **Noise Assessment**
KSH Route 211 Development
Union Street, Village of Montgomery, NY

Dear Mr. Winglovitz:

We are writing to provide the results of a noise assessment for the proposed KSH Route 211 Development on Route 211 (Union Street) in the Village of Montgomery, New York. The purpose of the study is to assess the potential impacts of the facility on residential neighbors to the property. The proposed warehouse facility would be constructed on the northeast side of Route 211, with the entrance driveway opposite Chandler Lane.

Introduction

The 33.87-acre property proposed for the KSH Route 211 Development is mostly wooded land bordered by open agricultural fields to the northwest and southwest, and by residential subdivisions to the northeast and southeast. Nearby residences are located on Weaver Street northeast of the site and are located southeast of the site across Route 211. Three single family residences and an auto body repair shop are located adjacent to the site on the northwest side of Route 211. The property is bordered by mostly agricultural and residential land uses. The site and nearby properties are shown in Figure 1 - Aerial Photograph.

The proposed warehouse development would include four buildings with a total square footage of 280,000 square feet. The subject property is located in the I-1 Industrial Park zoning district but abuts the R-4 Residential district to the northeast and the RA-3 Residential district to the southeast, across Route 211. One lot on the north side of Route 211 is zoned I-2 Village Industry District and adjoin the subject property. The topography of the property is generally level to gently sloping and a wetland corridor is located along the northeast and southeast portions of the site.

This noise assessment is intended to provide analysis of the potential noise impacts to the sensitive receptors or existing residential properties adjacent or near the proposed warehouse facility. We reviewed the Site Plan drawings prepared by Engineering & Surveying Properties last revised December 2, 2022.

Noise Background

Noise can be defined as undesirable or "unwanted sound". Even though noise is somewhat subjective, it affects the full range of human activities and must be considered in local and

regional planning. Most of the sounds heard in the environment are not composed of a single frequency, but are a band of frequencies, each with a different intensity or level. Levels of noise are measured in units called decibels. Since the human ear cannot perceive all pitches or frequencies equally well, these measures are adjusted or weighted to correspond to human hearing.

This adjusted unit is known as the A-weighted decibel, or dBA. Since dBA describes a noise level at just one instant and since ambient noise levels are constantly varying, other ways of describing noise levels, especially over extended periods, are needed. A commonly used descriptor is the Leq.

The Leq noise level is the level of a constant noise source which has been averaged over a period of time, based upon a measurement over a certain time period. A one decibel change in noise is the smallest change detectable by the human ear under suitable laboratory conditions. Under normal conditions, a change in noise level of two or three decibels is required for the average person to notice a difference. Table 1 shows the typical perception of noise change. Ten dBA represents a doubling or halving of the loudness of sound.

To the average person in an outside environment and close to the noise source, a noise level increase of 2 to 3 dBA is barely perceptible, an increase of 5 dBA is noticeable, and an increase of 20 dBA is perceived as a dramatic change. Annoyance frequently results from increases of 10 dBA or more, depending on the frequency and duration of the noise events.

Table 1 PERCEPTION OF NOISE CHANGES	
Change (dBA)	Human Perception of Change
2-3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of the loudness of sound
20	A dramatic change
40	Difference between a faintly audible sound and a very loud sound

SOURCE: Bolt Beranek and Neuman, Inc., Fundamentals and Abatement of Highway Traffic Noise, Report No. PB-222-703. Prepared for Federal Highway Administration, June 1973.

Noise Standards

The Village of Montgomery Zoning Code regulates noise in Chapter 77 – Noise and the chapter is titled “Village of Montgomery Noise Control Law”. The zoning code states:

“ It is hereby declared the policy of the Village of Montgomery to safeguard the right of its residents within the privacy of their homes to be free from intrusive and unwanted sounds. Problems concerning the disturbance of peace and quiet by noise from various activities are best solved by thoughtful discussions and cooperative agreements between effected parties. However, to resolve remaining problems of noise which are disturbing to others, it is the policy of the Village of Montgomery to establish standards, variance procedures, enforcement procedures and penalties”.

Section 77-5 Noise levels; exceptions, provides noise levels that cannot be exceeded beyond the boundaries of any premises. Noise level standards are provided in Section 77-5 B (1), as follows:

- (1) *No person in a residential zone shall emit noise beyond the boundaries of his/her premises exceeding the levels stated herein and applicable to adjacent residential, business and industrial zones.*

Emitter's Zone (dBA)	Receptor's Zone			
	Industrial (dBA)	Business (dBA)	Residential (day) (dBA)	Residential (night) (dBA)
Residential	62	55	55	45
Business	62	62	55	45
Industrial	70	66	61	51
Source: Village of Montgomery Zoning Code: Chapter 77 Noise				

The zoning code provides limitations for “High background noise levels and impulse noise”, in Section 77-5 C.

- 1) *In those individual cases where the background noise levels caused by sources not subject to these regulations exceed the standards contained herein, a source shall be considered to cause excessive noise if the noise emitted by such source exceeds the background noise levels by five dBA, provided that no source subject to the provisions of this chapter shall emit noise in excess of 80 dBA at any time, and provided that this section does not decrease the permissible levels of other sections of this chapter.*
- (2) *No person shall cause or allow the emission of impulse noise in excess of 80 dB peak sound pressure level during the nighttime to any residential noise zone.*
- (3) *No person shall cause or allow the emission of impulse noise in excess of 100 dB peak sound pressure level at any time to any zone.*

The United States Department of Housing and Urban Development (HUD) has adopted environmental criteria, and guidelines for determining acceptability of federally assisted projects. The standards consider an exterior noise level of 65 dBA to be “normally acceptable” for residential uses. These standards reflect an EPA goal that continuous exterior noise levels do not exceed 65 decibels. The 65-decibel criterion is more restrictive than the criteria used by the Federal Highway Administration road design standards for noise. The Federal Highway Administration uses 67 decibels as a noise criterion for residential areas.

The NYSDEC publication *Assessing and Mitigating Noise Impacts (Rev. Feb. 2, 2001)*, does not have specific noise criteria for residential settings but does reference EPA’s “Protective Noise Levels” of 55 dBA, as sufficient to protect public health and welfare.

Potential Noise Impacts

For this assessment, the site plan was reviewed (last revised December 2, 2022) as well as the location of residences near the proposed warehouse development. The NYSDEC Program Policy *Assessing and Mitigating Noise Impacts* (Rev. Feb. 2001) was referenced in our review.

Existing Conditions and Setting

The project site is located in the southwest portion of the Village in the I-1 Industrial Park zoning district. The property is mostly wooded land bordered by open agricultural fields to the northwest and southwest, and by residential subdivisions to the northeast and southeast. Four lots adjoin the property on the northwest side of Route 211 and include three single family homes and an auto body shop. The adjoining and nearby residences to the property can be considered sensitive noise receptors to proposed development. The Orange County Airport is located approximately 1,600 feet southwest of the project site.

Existing sources of noise in the vicinity of the site are from traffic noise on Route 211, and from residential noise sources such as lawn mowers, passenger vehicles and package deliveries. The Auto Body shop adjacent to the site may create some daytime vehicle and equipment noise, but it appears that vehicle work is conducted inside the garage buildings. Existing residences near the subject property experience intermittent noise from airplanes landing and taking off from the local airport and flying overhead heading to and from the Orange County Airport and Stewart International Airport-. *Ambient noise measurements were not collected for this assessment.*

Potential Noise from Warehouse Operations

The proposed warehouse development has been designed to locate the buildings and operations as far as practical from residential neighbors. A wetland corridor along the northeast and southeast property borders has been largely avoided and will be placed in a conservation easement, according to notes on the Site Plan. This wetland corridor will remain as a vegetated buffer between the warehouse buildings and residences to the northeast and southeast.

Determining the future noise levels at a proposed warehouse facility is complicated due to the many variables that could affect noise, such as: the number and type of trucks, truck circulation patterns, if back-up alarms will be used, and the warehouse heating, ventilation and air conditioning (HVAC) systems. The dominant source of noise is expected to be trucks circulating on the property.

In 2005, Tim Miller Associates, Inc. conducted a noise assessment at an existing large warehouse facility in Chester, New York, the C&S Warehouse facility near Route 94. The Chester warehouse facility consisted of approximately 176,870 square feet at the time of the study. That assessment involved monitoring the noise of the existing operations as part of a SEQRA review by the Town of Chester Planning Board for a proposed facility expansion. Therefore, the study was part of the public record for that SEQRA review process and can be referenced herein. Noise monitoring was done during active operations near the warehouse loading area, described as follows:

“Monitoring Location 2 was in front of the existing loading docks. This location reflects “worst case” noise levels since the location captures noise from numerous stationary refrigeration trucks as well as trucks entering and exiting the loading dock area. During the afternoon measuring period approximately 32 trucks were docked at the loading area and the majority of these trucks had refrigeration equipment running. The noise meter was stationed approximately 120 feet from the row of parked truck trailers at the loading dock. Eight trucks passed less than 50 feet from the noise meter during the 21-minute measurement period. The noise level during the afternoon and evening periods at this location were essentially the same at 74.2 dBA.”

The noise from trucks circulating in the loading area included back-up alarms, when trucks were docking or backing up. Measurements collected at an active large warehouse facility with refrigeration trucks can be considered a reasonable “noise source” level for the proposed Route 211 warehouse facility. The applicant has indicated refrigerated trucks are not anticipated for the proposed facility and therefore this noise source level of 74.2 dBA can be considered conservative.

Assuming a combined noise of 74.2 dBA at a source location, estimates can be made for potential noise at the nearest off-site sensitive noise receptor locations, or residences adjacent to the property. Sound decreases over distance according to the inverse square rule, where each doubling of distance from the noise source decreases the sound by 6 dBA¹.

Noise from multiple trucks can be expected in the loading dock area between the four warehouse buildings, as shown in Figure 2 Site Layout. This loading dock area is approximately 480 feet from the closest residences southwest of the site along Route 211. The nearest residential property line to the southern building is 329 feet according to the Site Plan (front yard setback).

Assuming a conservative operational noise level of 74.2, noise loss over distance results in a sound level of approximately 58 dBA at the nearest residential property line and approximately 55 dBA at the nearest residence. These levels are below the Village of Montgomery maximum noise level at a property line between an industrial property and a residential property of 61 dBA (see above table). This range of noise levels of 55 to 58 dBA are at or slightly above the EPA’s “Protective Noise Levels” of 55 dBA.

According to the NYSDEC Noise Policy, dense vegetation at least 100 feet in depth can reduce noise levels between 3 and 7 dBA, depending upon the density of the vegetation. A strip of wetland vegetation of trees and shrubs, a minimum of 200 feet in depth will be maintained between the project development and the nearest residences, further reducing noise levels from the development for neighbors.

The above-described noise levels at residential property lines represent homes closest to the loading dock area. Noise levels from the warehouse property at residential properties further from site, including those along Weaver Street and south of Route 211 will be lower.

Conclusions

Based upon our review, the proposed KSH Route 211 warehouse development is not expected to create adverse noise impacts to nearby residents.

¹ *Assessing and Mitigating Noise Impacts, NYSDEC, Rev. Feb. 2001*

Mr. Winglovitz, P.E
March 10, 2023

Please call me if you have any questions or comments.

Sincerely,

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

Jon P. Dahlgren
Principal/ Sr. Geologist
TIM MILLER ASSOCIATES, INC.



Figure 1: Aerial Photograph
KSH Route 211 Development
Village of Montgomery, NY
Source: Google Maps





No.	DATE	DESCRIPTION
1	01/14/22	REVISED PER PB COMMENTS 12/15/2021
2	05/13/22	REVISED LAYOUT PER TRAFFIC STUDY
3	06/16/22	REVISED PER PB COMMENTS
4	09/16/22	REVISED PER PB COMMENTS
5	12/02/22	REVISED PER PB COMMENTS 09/23/2022

DRAWING STATUS		ISSUE DATE:
THIS SHEET IS PART OF THE PLAN SET ISSUED FOR		12/02/2022
<input type="checkbox"/> CONCEPT APPROVAL	N/A OF N/A	SHEET NUMBER
<input type="checkbox"/> PLANNING BOARD APPROVAL	N/A OF N/A	
<input type="checkbox"/> OGDH REALTY SUBDIVISION APPROVAL	N/A OF N/A	
<input type="checkbox"/> OGDH WATERMAIN EXTENSION APPROVAL	N/A OF N/A	
<input type="checkbox"/> NYSDEC APPROVAL	N/A OF N/A	
<input type="checkbox"/> NYSDOT APPROVAL	N/A OF N/A	
<input checked="" type="checkbox"/> OTHER	1 OF 1	
<input type="checkbox"/> FOR BID	N/A OF N/A	
<input type="checkbox"/> FOR CONSTRUCTION	N/A OF N/A	

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STEVEN T. ESPOSITO, S.L.A.
NEW YORK LICENSE # 001169

Figure 2: Site Layout
KSH Route 211 Development
Village of Montgomery, New York
Source: Engineering & Surveying Properties