3.16 Noise

A Noise Evaluation was conducted for the proposed Silo Ridge Resort Community, located in the Town of Amenia, Dutchess County, New York. This Noise Evaluation analyzes existing noise sources in the area surrounding the project site, examines the potential impacts these existing noise resources may have on the proposed resort community, and identifies mitigation measures, where necessary, to reduce the significance of potential impacts.

The existing Silo Ridge Golf Club currently occupies the project site, which is located on the west side of Route 22 approximately one-half mile south of the Hamlet of Amenia. Land uses in the vicinity of the site are a mix of residential, agricultural, commercial, public and community service, and vacant land (see Figure 3.16-1, "Noise Measurement Locations").

3.16.1 Existing Conditions

Overview of Sound Measurement

Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

The sound pressure level is measured on a logarithmic scale, with the zero-decibel level (0 dB) based on the lowest sound pressure level that the human ear can perceive. Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase in noise of about 3 dB, and a sound that is 10 dB less than the ambient noise level has no effect on ambient noise. Because of the nature of human hearing, a sound must be about 10 dB greater than the reference noise level to be judged twice as loud. In general, a 3-dB change in noise levels is perceptible, while anything less than 3 dB is generally not noticeable.

Noise levels typically attenuate (or diminish) at a rate of 6 dB for every doubling of distance from point sources such as machinery. Noise from lightly traveled roads typically attenuates at 4.5 dB for every doubling of distance, while noise from heavily traveled roads diminishes at a rate of 3 dB per doubling of distance.

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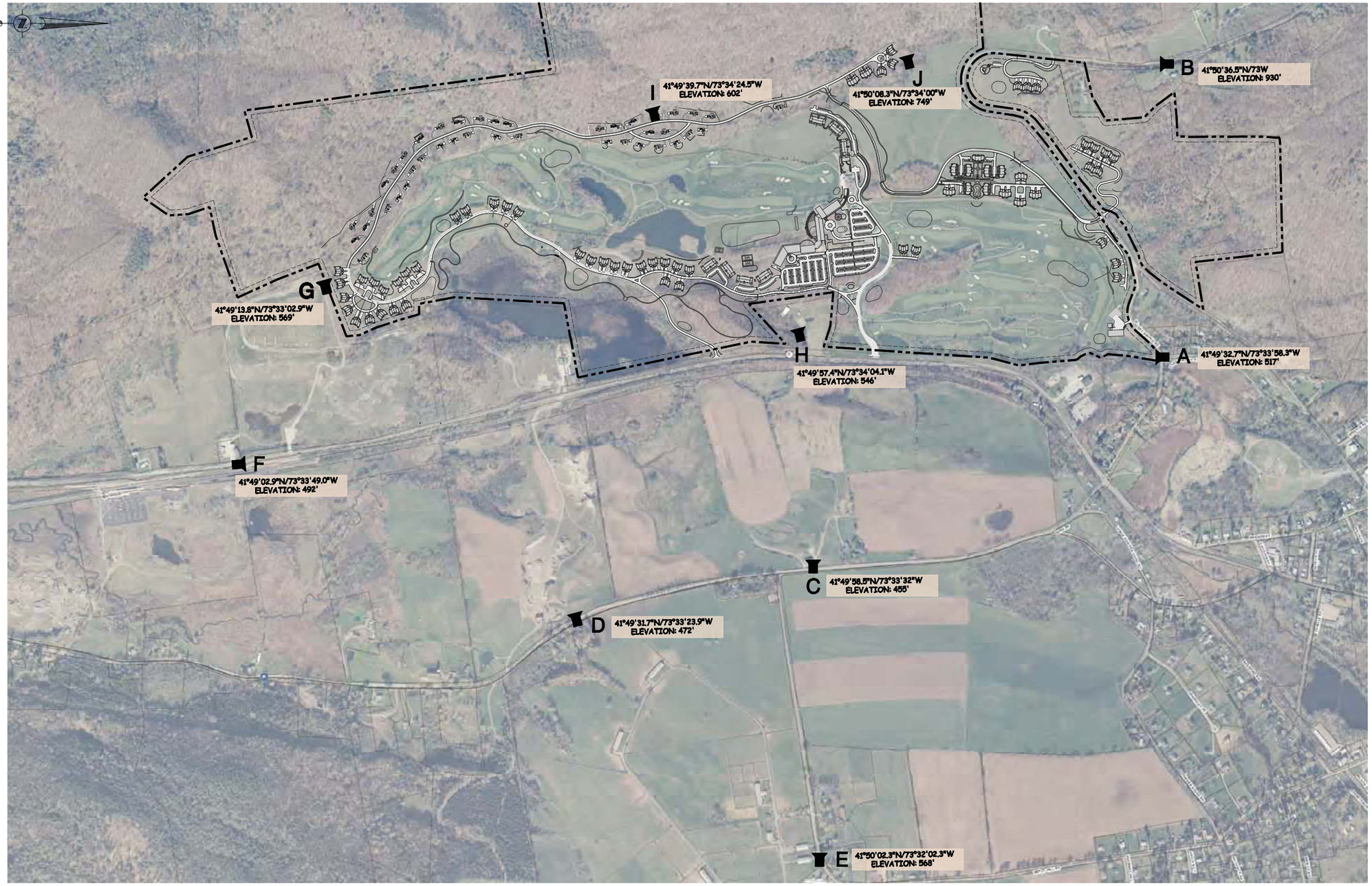

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THE Chazen COMPANIES

Silo Ridge Resort Community
Proposed Action

NOISE MONITORING LOCATIONS

Town of Amenia, Dutchess County, New York

SCALE: 1"=650'

Figure 3.16-1

JOB NUMBER: 10454.00

Regulatory Setting

The United States Environmental Protection Agency's (USEPA) "Protective Noise Levels" guidance found that a noise level of 55 dB was generally considered sufficient to protect public health and welfare. In areas with mixed land uses, a higher level of 65 dBA is considered acceptable. As noted in the NYSDEC program policy for Assessing and Mitigating Noise Impacts, a sound level of "65 dB(A) allows for undisturbed speech at a distance of approximately three feet." This policy further notes such typical sound levels for comparison[70]:

- Living Room/Bedroom – 40 dBA
- Light Auto Traffic at 50 feet – 50 dBA
- Typical Suburban Daytime – 50 dBA
- Air Conditioning Unit at 20 feet – 60 dBA
- Garbage Truck at 50 feet – 71 to 83 dBA
- Commercial Truck at 50 feet – 91 dBA

Existing Noise Conditions

During field site visits, sound levels were recorded from ten receptor points during both morning and afternoon peak periods to measure noise levels that would be experienced by residents in morning and afternoon hours (see Figure 3.16-1, "Noise Measurement Locations"). Points were chosen in conjunction with the Town of Amenia Planning Board and in accordance with the final adopted Scoping Document, in an effort to identify a comprehensive understanding of noise levels in relation to the site and adjacent land uses. The equipment used for conducting the Noise Study was a type 2238 Digital Sound Level Meter manufactured by Bruel & Kjaer (model BK-2236DSYS). An A-weighting setting was used for this study, as it most successfully represents human hearing at normal sound levels. Table 3.16-1 identifies the distances of each location from the project site.

The expression of overall sound levels, as it relates to the listener, is a single value of sound over a period of time that provides an indicated average of the sound in an area; this is known as the equivalent noise level (Leq). The Leq integrates fluctuating sound levels over a period of time as a steady sound level and as they relate directly to the effects of sounds on people.

[70] *Assessing and Mitigating Noise Impacts*, New York State Department of Environmental Conservation, Revised February 2, 2001.

Table 3.16-1 Noise Measurement Test Locations

Noise Measurement Test Locations	Approximate Location	Approx. Distance to Closest Site Boundary
Location A	West Lake Amenia Road between Routes 44 and 22	45'
Location B	Route 44 west of hairpin turn	275'
Location C	Route 81 north of Depot Hill Road	2,120'
Location D	Route 81 south of Depot Hill Road	2,320'
Location E	Depot Hill Road	4,900'
Location F	Route 22 near south end of project site	1,600'
Location G	Near project site boundary	20'
Location H	Route 22 near Amenia Rod and Gun Club	155'
Location I	Onsite near proposed townhome location	--
Location J	Onsite near proposed townhome location south of Route 44	100'*
* Distance to property boundary measured from within the project site.		

Measurements were obtained from each of the 10 locations to record existing noise levels generated near the project site and by existing activities within close proximity to the site. The measurements were then compared to see what, if any, impacts could be associated with the proposed resort community upon its completion.

Noise levels were recorded at ten-minute intervals during both the AM and PM peak hours. On Wednesday March 29, 2006 and Thursday March 30, 2006, peak AM sound levels were measured between 7:45 AM and 11:00 AM, and peak PM sound levels were measured between 3:00 PM and 6:15 PM, from noise receptors on and in the vicinity of the project site.

Table 3.16-2 summarizes the measured noise levels and sources. During the morning readings, the overall sound levels (Leq) ranged from 41.8 dBA to 57.6 dBA. The PM readings measured overall noise levels (Leq) that ranged from 40.5 dBA to 56.2 dBA.

Table 3.16-2 Noise Measurements

Noise Measurement Locations	Length of Noise Exposure	Leq* (dBA)	Noise Source (observed during noise measurements)
Location 1			
AM Time	10 Minutes	49.6	○ Traffic sounds from passenger vehicles, larger commercial / construction trucks, and school buses along Lake Amenia Road and Route 44. ○ Construction, and ○ Nature sounds, including wind, birds, and a running stream/brook.
PM Time	10 Minutes	48.3	
Location 2			
AM Time	10 Minutes	51.7	○ Traffic sounds from passenger vehicles, larger commercial / construction trucks, and school buses along Route 44.
PM Time	10 Minutes	53.0	
Location 3			
AM Time	10 Minutes	51.8	○ Farm equipment ○ Traffic sounds from passenger vehicles, larger commercial / construction trucks, and school buses along County Road 81.
PM Time	10 Minutes	51.7	
Location 4			
AM Time	10 Minutes	52.9	○ Farm animals ○ Transfer station operations, and ○ Traffic sounds from passenger vehicles, larger commercial / construction trucks, and school buses along County Road 81.
PM Time	10 Minutes	55.9	
Location 5			
AM Time	10 Minutes	49.6	○ Farm animals, and ○ Traffic sounds from passenger vehicles and school buses along Depot Hill Road.
PM Time	10 Minutes	46.0	
Location 6			
AM Time	10 Minutes	57.6	○ Train station announcements ○ Traffic sounds from passenger vehicles, larger commercial / construction trucks, and school buses along Route 22.
PM Time	10 Minutes	56.2	
Location 7			
AM Time	10 Minutes	41.8	○ Golf course operations ○ Limited traffic sounds from passenger vehicles, larger commercial / construction trucks, and school buses along Route 22.
PM Time	10 Minutes	40.5	
Location 8			
AM Time	10 Minutes	49.6	○ Traffic sounds from passenger vehicles, larger commercial / construction trucks, and school buses along Route 22.
PM Time	10 Minutes	52.1	
Location 9			
AM Time	10 Minutes	42.1	○ Golf course operations ○ Limited traffic sounds from passenger vehicles, larger commercial / construction trucks, and school buses along Route 22.
PM Time	10 Minutes	44.4	
Location 10			
AM Time	10 Minutes	43.3	○ Limited traffic sounds from passenger vehicles, larger commercial / construction trucks, and school buses along Route 44.
PM Time	10 Minutes	43.6	

* Leq = Equivalent continuous decibel level for the duration of the ten-minute measurement.

3.16.2 Potential Impacts

Short-Term Impacts (Construction)

Short-term noise impacts will occur from construction equipment and earth-moving activities during construction of the proposed development. It is not possible to predict the exact magnitude of this impact on ambient noise levels in adjacent residential areas due to the variability in many of the factors needed to make such an assessment. These factors include the number and types of construction equipment, construction methods, and scheduling of construction work.

Typically, construction equipment generates noise levels (when measured at 50 feet from the source) that range from 70 to over 95 dBA.[71] These levels can be compared to a shouting voice at six feet (70 dBA) or to a lawn mower at three feet (95 dBA). Since noise from stationary sources attenuates at a rate of 6 dB per doubling of distance, a 90-dB noise level at 50 feet from the source would be reduced to 84 dB at 100 feet, 78 dB at 200 feet, 72 dB at 400 feet, and 68 dB at 800 feet. Thus, the actual noise level at receptors within the surrounding developments will vary depending on the specific areas within the project site in which construction is taking place.

The proposed Silo Ridge development will leave approximately 75% of the site undeveloped, the majority of which will be open space and wooded areas, which will help to attenuate noise from construction and shield adjacent areas from potential impacts. Construction activities would typically occur during the primary daylight hours of 8:00 AM to 6:00 P.M. The Town of Amenia Zoning Law §121-40C exempts from noise level regulations construction- and maintenance-related noise occurring between 8:00 AM and sunset, Monday through Friday. Furthermore, construction of the project will occur in phases, such that development will generally be limited to one portion of the site at a time.

Long-Term Impacts

As demonstrated by noise measurements taken onsite, the average sound level experienced within the project site during the AM period ranges from 42.1 to 57.6 dBA during normal conditions. The average sound level experienced within the project site during the PM period ranges from 40.5 to 56.2 dBA. Based on guidelines accepted by USEPA and the NYSDEC, which set a goal that exterior noise levels do not exceed 65 decibels in mixed land use areas, noise levels resulting from existing land uses and activities adjacent to the project site are not expected to adversely

[71] *Assessing and Mitigating Noise Impacts*, New York State Department of Environmental Conservation, Revised February 2, 2001.

impact the proposed resort community, and no noise mitigation measures are necessary.

As future traffic conditions will remain at acceptable conditions upon full buildout of the proposed Silo Ridge Resort Community, there will be no significant change in noise levels from traffic flow (see Section 3.7, "Transportation"). Further, it is reasonable to assume that cars driven by new residents and patrons to the hotel, golf course, and spa will be similar in make and variety to those found presently on the road system, thus producing similar levels of sound. Also, the activities of new residents are expected to be comparable to existing activities in the area of the proposed project, with no notable differences in sound levels.

Hence, in analyzing cumulative noise levels of additional activities, it is expected that the difference between present and anticipated future sound levels will not exceed 3 dB. According to the NYSDEC, increases ranging from 0 dB to 3 dB should are not generally perceptible.[72] Thus it is reasonable to assert that the proposed development is not expected to cause notable increases in sound levels from present levels and will not have an appreciable effect on noise receptors.

3.16.3 Proposed Mitigation Measures

Short-Term (Construction)

Construction related noise is an unavoidable impact of development. However, it is short-term in duration and confined to normal business hours. The impact to surrounding residences and other land uses will be buffered from construction noise by portions of the area that will remain wooded and variations in topography throughout the site. In addition, the gradual phased construction of the Silo Ridge Resort Community will lessen the potential for noise impacts at any given time. Construction activities would typically occur during the primary daylight hours of 7:00 AM to 6:00 P.M.

Long-Term

Occupancy of the site is not expected to cause any significant noise impacts that would affect the surrounding community, and therefore, no mitigation measures are recommended. A combination of landscaping, existing trees, and variations in topography will serve to attenuate noise generated on the property once it is occupied. However, as the surrounding area is primarily comprised of a mix of residential, agricultural, commercial, public and community service, and

[72] NYSDEC, Division of Environmental Permits; *Assessing and Mitigating Noise Impacts*, Articles 3, 8, 23 & 27, revised February 2, 2001.

undeveloped land, noise levels generated by the proposed development will be compatible with existing noise levels and types in the area. Traffic on and off the site is not expected to generate significant noise levels above current noise generated by traffic in the area.