

EXHIBIT X13  
ROSLYN RIDGE MINI GOLF  
IMPACT OF NOISE ON SURROUNDING PROPERTIES

Kittitas County CDS

*The transmission of noise in a mountainous forest landscape is a complex phenomenon that is influenced by various factors such as topography, vegetation, and meteorological conditions. Understanding how noise travels through a forest landscape is essential in managing and minimizing noise pollution in sensitive areas such as Roslyn Ridge Mini Golf, the proposed project.*

**Topography:** *The topography of a forest landscape plays a crucial role in determining the direction and distance of noise propagation. For example, noise tends to travel further in valleys than on hilltops or flatter lands due to the natural amplification of sound waves in valleys. An elevated land mass will diminish and reduce the distance that sound will travel as it acts to absorb, direct, and block the sound waves. The presence of dense vegetation will absorb and scatter noise, reducing its propagation distance. The proposed mini golf course is located on forested land with an increasing elevation from the southwest to the northeast. The property and all surrounding areas not owned by the applicant have some form of vegetation, which will reduce the distance that any noise will travel. Vegetation screenings implemented by the applicant within Roslyn Ridge Mini Golf will decrease noise.*

**Distance:** *The distance of noise propagation in a mountainous forest landscape is influenced by several factors, including the source of noise, the intensity of the noise, vegetation, and terrain. The intensity of the noise, without interruption, decreases with distance, following the inverse square law, which states that the intensity of sound decreases proportionally to the square of the distance from the source. Therefore, the further the noise travels, the weaker it becomes. For example, a noise source that is 60 feet away will be four times quieter than the same source at a distance of 30 feet away. Noise is further limited when interrupted by buildings, vegetation, and raised land masses. The closest adjacent property to Roslyn Ridge Mini Golf is greater than 300*

feet away and across the street from the center of activity of the proposed project. This means that the noise generated at the center of Roslyn Ridge Mini Golf will be greatly reduced as it travels further away from its origin towards the surrounding properties. Loud laughter would either not be detectable from the surrounding properties or be at a level equal to leaves rustling in the wind.

**Type of Noise:** The transmission distance of noise in a forest landscape can vary depending on the type of noise source and the terrain. For example, a low-frequency sound, such as the rumble of a distant thunderstorm, can travel several miles through a forest landscape. On the other hand, the sound of a car engine or a lawnmower may only travel up to 300 feet. The greatest amount of noise during the day will be from guests playing on the mini golf course when it is open from 10AM to 10PM, which will not likely be a measurable impact considering the activity itself mainly emits the sounds of a putter hitting a golf ball, walking on the course, conversations between guests, and music played at a reasonable volume. The main hours of lodging site activity will be from 10 AM to 7 PM. The applicant is proposing a quiet time from 10 PM to 7 AM every day, when the lodging facilities will be operational but will not produce noise that exceeds Kittitas County regulations.

**Mitigation Measures:** As the density of the mini golf course area is centrally located within the property and will be in an area enclosed by some vegetation, most of the noise impact will be contained within the boundaries of the proposed project with the exception of the lodging sites which will be on the northwest and east sides of the proposed project. The forested area and the local terrain will centralize most of the noise pollution within the proposed project and the applicant will add some additional vegetation screening to create blockage from noise. In general, any amount of noise will be reduced by the layout of the mini golf course, putting green, lodging sites, and buildings within the property, as well as instilling reasonable hours of operation from 10AM to 10PM and a quiet time from 10 PM to 7 AM.

*In an increased effort to minimize the impact of noise on the guest experience, surrounding properties, and ecosystem of the entire area, the proposed Roslyn Ridge Mini Golf project will implement several measures such as establishing reasonable hours of operation between 10AM and 10PM, instilling a quiet time from 10 PM to 7 AM for the lodging sites, adding some vegetation screening, avoiding the use of outdoor amplification systems, and eliminating construction at night. In this way, the noise generated by the mini golf course area will have limited, if any, impact on the surrounding properties.*