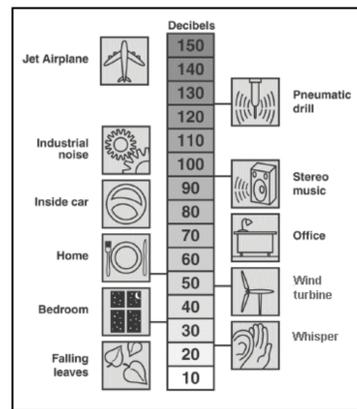
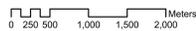
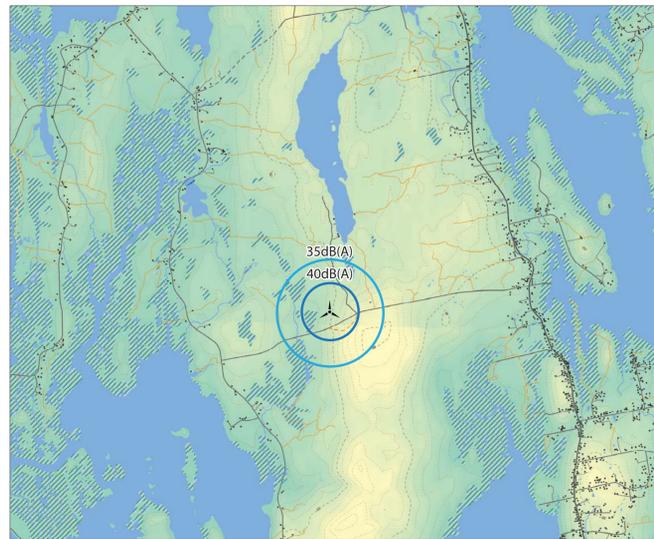


Right:  
Typical sound levels; wind turbines are usually regulated to be between 40 and 45 decibels at the nearest dwelling.



Below:  
Predicted sound levels.  
This is a general estimate.



# Sound

One of the most common concerns community members have when learning of a proposed wind energy project is the question of how the turbine will sound, and how noticeable it will be.

All turbines produce sound if they're producing electricity. Operating turbines are often described as producing an audible "woosh" sound as the blade passes in front of the tower. While the preference for the sound varies by personal taste, the power of the sound is measurable. Due to their size, a turbine's sound cannot be mitigated easily through engineered solutions, such as sound walls that are sometimes built along highways.

The most common method of ensuring wind turbine sound does not adversely affect quality of life is simply by locating them away from sensitive land uses, such as residences. Some debate exists over what distance is appropriate to achieve this, partially due to the fact that the distance sound travels can be affected by site specific factors, such as topography, amount of forest cover, and local weather conditions. A general rule of thumb is that the turbine will not be audible above background noise at a distance of 500m. However, due to variability, many municipalities adopt precautionary setback regulations to ensure sound is mitigated.

In Nova Scotia, set-back distances from houses vary by municipality, from around 200m up to 1000m. Our project location maintains a setback of 950m to the nearest dwelling. All additional dwellings are more than 1km away, including any structures on Goose Lake. At these distances we do not expect turbine noise to create any issues.

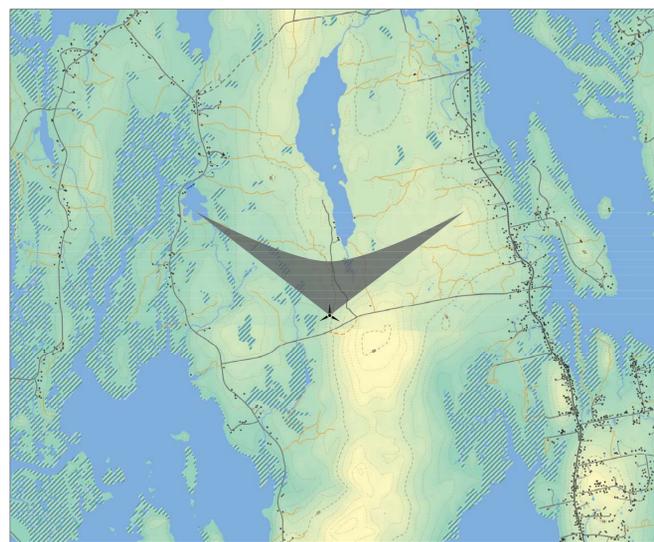


# Shadow

Another common concern with large scale wind energy projects is the potential for flickering shadows to be cast on neighbouring houses if the sun is shining directly through the rotating blades.

The zone of impact for this can be estimated relatively easily. Given the location of the turbine to the east of Comeaus Hill Rd, shadows cast by the turbine will fall mostly in an uninhabited area.

The graphic to the left shows an estimate of the maximum shadow zone; modeled for the winter solstice (approx Dec. 21) which is the day when the sun is lowest, and shadows are longest. The outer stretches of the shadow zone may overlap a small number of residential areas, but due to the limited time shadows are cast at that distance, the impact will be far below established provincial criteria of 30h/year.



# Environmental

Environmental Assessments are not required for projects of this size. However, a thorough Environmental Review document, which studies many of the same biophysical features and uses the same methodologies, has been completed. This work was done to follow up on the potential issues identified in earlier, less detailed, environmental impact assessment.

As the detailed design of the roads is finalized, necessary watercourse crossings will be reviewed and approved by NS Dept. of Environment. We do not anticipate having to alter any wetlands through careful avoidance and use of existing roads where possible.

The Environmental Review document can be found on our website, but here are some of the highlights:

The project is not expected to have impacts to important plant or land-based wildlife. Species of Conservation Interest are unlikely to be impacted as few records exist of such plant & animals in the area of the project, and none were sighted during field surveys.

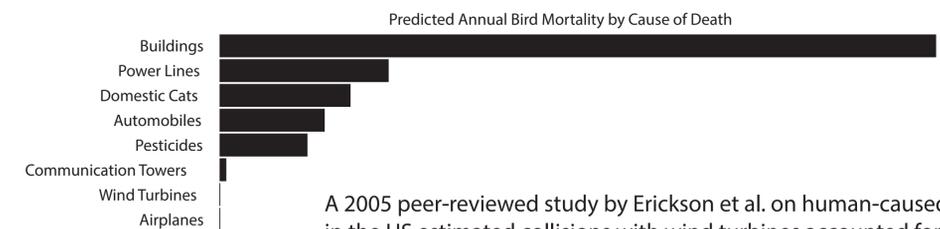
Bird and bat mortality are expected as a result of the operation of this project, however due to the scale of this project, they are not expected to be significant. Migratory bird surveys carried out on site provided no indication that the project is located in a major flyway. Furthermore, though coastal birds are found in the area, no evidence was found that the project site encompasses a local route between foraging and roosting habitat.

The greatest potential impacts result from the construction phase of this project. Implementing an Environmental Protection Plan, and an Erosion and Sediment Control Plan should adequately address these concerns.

Overall, reasonable mitigation strategies should help address potential impacts which are already low as the project consists of only one turbine, and makes use of an existing road.

# Impacts in Context

No development is without its adverse impacts. While we are trying our best to ensure this project is carried out in an environmentally sensitive way, any time people alter the natural world, there are going to be negative impacts. It is important to consider the context of those impacts. For example, wind turbines are known to be a cause of bird and bat kills, but the degree to which they affect bird populations is comparatively small to many other human activities. All things considered, wind energy is still among the most environmentally friendly forms of power generation.



A 2005 peer-reviewed study by Erickson et al. on human-caused bird fatalities in the US estimated collisions with wind turbines accounted for approximately 28,500 deaths out of 500,000,000.

