

#### 4.11 PUBLIC SAFETY

**The following comments are all related to general concerns regarding potential health impacts:**

**Written Comment 7B:**

We are concerned for all who live within 5 miles of the turbines. There are health problems associated with the turbines including, migraines, seizures, vibroacoustic disease (immune response of the body to low level frequency sound), nausea, joint pain, depression, and anxiety.

**Written Comment 9B:**

First by the large trucks, traffic, etc. of erecting the turbines, then by constant “hum” later on. One older couple (even though the turbines were way, way, off in the distance) couldn’t sleep at night and were always feeling sick (except when they were away on vacation). They had to sell their country dream home. Guess who bought it – the wind turbine people (probably to stop a law suit). We don’t want them.

**Written Comment 18A:**

The commentator submitted the following prepared by Nina Pierpont, MD, PhD on March 7, 2006: *Wind Turbine Syndrome; Testimony before the New York State Legislature Energy Committee.* According to this testimony, the symptoms of Wind Turbine Syndrome start when local turbines go into operation, and include: 1) sleep problems, 2) headaches, 3) dizziness, unsteadiness, and nausea, 4) exhaustion, anxiety, anger, irritability, and depression, 5) problems with concentrating/learning, and 6) tinnitus (ringing in the ears).

**Written Comment 23D:**

Why site in a residential area without regard to impacts on health? I have read of numerous claims of negative health impacts from chronic sleep disturbance: depression, anxiety, tinnitus, heart issues. Is it simply big business?

**Written Comment 35A:**

I reside at 1160 Chipmonk Road and I’m writing to tell you I’m against the wind turbine project for several reasons. My family is from this valley. My grandparent’s lived here until their deaths and my father was born and raised here. I moved here from Olean to raise my children here. We love the country, the peace and quiet, the beauty of nature and the wild life.

I don’t want turbines, the ugly monstrosities that they are, jutting out from the top of our hills ruining our view all around our homes. More importantly, I don’t want the turbines because of the

noise they generate because I suffer from migraines and have sleep issues as well. Reported health concerns documented by others living near turbines include sleep disturbance, headache, nausea, visual blurring, irritability, problems with concentration and memory. **How might this affect my three children? How might this affect their learning if their concentration and sleep is affected?** I truly believe this project will undermine the health and safety for my family and me and I think it is totally unfair for our town to subject us to this project without considering how the increased noise level and the shadow flicker will affect us.

**Written Comment 39A and Oral Comment 10A:**

I lived and grew up in Chipmonk as a kid until I went into the army from 1969-1972. I moved back to Chipmonk with my wife and family in 1991 for the peace and quietness that only country living can provide. I'm a Vietnam Veteran and I'm 100% disabled because I was diagnosed a few years ago with having severe and chronic post-traumatic stress disorder from my time spent in the military in Vietnam. The symptoms of PTSD include trouble with concentration or memory, feeling "on edge," being easily startled and most prominent is the nightmares and trouble sleeping. When compounded by the noise generated by having wind turbines on both sides of our ridges, I can just image how much more this will affect my symptoms, especially sleep disturbance.

**Written Comment 39C:**

I'm not the only Vet that lives in Chipmonk. I have a neighbor who is also a veteran, and I know of others who live in or near the project area. We also have veterans who have returned from Afghanistan and Iraq and more who will be returning from the military, many of whom will be starting to feel the effects [sic] from their PTSD. Please consider the consequences of having this industrial wind farm in our community and the impact this will have on us. Don't sell us out; you can't really put a price tag on a person's health and well being. Please keep our small town of Allegany and its quiet valleys, a calm peaceful haven for any and all. Please do not take this away from us, it's too precious to lose.

**Written Comment 41A and Oral Comment 22A:**

It has been brought to my attention that there have been proposals for windmills for the valley of Chipmunk in Allegany, New York. This has been brought to my attention by Shirley Boser of Allegany, New York. Shirley is a patient that I have seen for years. She has disabling migraines. After reviewing an article provided to me by Shirley and numerous articles on wind farms, wind turbines, and wind power on line, it is my opinion that this may very well be detrimental to my patient's medical condition.

**Written Comment 46B:**

Who will pay for the medications that we will need just to sleep at night once these turbines start up?

**Written Comment 46E:**

Are you going to buy our house when we have to move out because of the health issues that are mentioned above. I don't know anyone that will be interested in buying a house that sits in the middle of turbines.

**Oral Comment 5C:**

The health risks from noise, vibration and pollution that has been noticed by people dealing with wind turbines will exist here no matter what EverPower is promising. Never did I think that the officials of Allegany would sell our souls for money. You're supposed to be protecting all citizens of Allegany, not some of them. Please reconsider your thoughts on wind turbines as a means to an end. Thank you.

**Oral Comment 6A:**

I live in Rock City. I'm opposed to the proposed wind farm in Allegany for many reasons, but I'm only going to concentrate on one tonight. There's been a lot of discussion about the decibel levels generated by the wind turbines, but I think by considering only decibels you may be missing an important point.

I have tinnitus and I'm constantly subjected to this noise in my ears. It's not loud, but always there. It's always at the edge of my consciousness and sometimes I just wish I could do anything to make it go away, but I am helpless to make that happen. The tension and anxiety caused by this have been well-documented. I am afraid that the turbine noise where be similar. Even if it isn't loud decibel-wise, it still travels through walls and there will be no escaping it. You are powerless to make it quit. This constant stress could cause – this would cause can not be good for health.

Unwelcome, unrelenting noise has been used as a form of torture. Please don't allow our friends and neighbors to be subjected to it.

**Response to Written Comments 7B, 9B, 18A, 23D, 35A, 39A, 39C, 41A, 46B, 46E and Oral Comments 5C, 6A, 10A,22A:**

As set forth in the DEIS, the Project is not anticipated to result in health-related impacts. Specifically, Section 3.7.2.2 of the DEIS addresses potential health-related impacts related to sound, and states:

*“...in response to concerns that sounds emitted from wind turbines cause adverse health consequences, AWEA and CanWEA established a scientific advisory panel to conduct a review of current literature pertaining to the perceived health effects of wind turbines (Appendix O). The multidisciplinary panel is comprised of medical doctors, audiologists, and acoustical professionals from the United States, Canada, Denmark, and the United Kingdom. The objective of the panel was to provide an authoritative reference document for legislators, regulators, and anyone who wants to make sense of the conflicting information pertaining to wind turbine sound. The panel evaluated peer-reviewed literature on sound and health effects, as well as sound produced by wind turbines. The panel concluded that there is no evidence that the audible or sub-audible sounds produced by operating wind turbines have any direct adverse physiological effects and the ground-borne vibrations from wind turbines are too weak to be detected by, or to affect, humans. In addition, based on the levels and frequencies of the sounds produced by operating wind turbines and the panel’s experience with sound exposures in occupational settings, the sounds produced from operating wind turbines are not unique and therefore do not likely cause direct adverse health consequences (Colby et al., 2009).”*

In addition, Section 3.10.1.8 of the DEIS states:

*“Low frequency sound is audible sound in the frequency range that overlaps the higher infrasound frequencies and lower audible frequencies, while somewhat arbitrarily defined, low frequency sound is generally considered to be between 10 Hz and 200 Hz (Colby et al., 2009). There has been much debate over the alleged negative health effects caused by low frequency sound produced by operating wind turbines. As stated in Colby et al. (2009), the National Research Council reports that low frequency sound is a concern for older wind turbines but not the modern type. While not a medical diagnosis, Dr. Nina Pierpont began calling the reported negative health effects “Wind Turbine Syndrome”, with symptoms that include headaches, nausea, sleep disturbance, tinnitus, ear pressure, vertigo, visual blurring, tachycardia, irritability, trouble with concentration and memory, panic attacks, internal pulsation, and quivering (Leventhall, 2009). Leventhall (2009) reviewed the book “Wind Turbine Syndrome”, authored and published by Dr. Nina Pierpont, as well as Dr. Pierpont’s website Wind Turbine Syndrome*

([www.windturbinesyndrome.com](http://www.windturbinesyndrome.com)) and in the review demonstrated flaws in the research and hypotheses presented by Pierpont (Appendix O). In addition, Roberts and Roberts (2009) and Colby et al. (2009) also evaluated the hypotheses and research presented by Pierpont in their reviews of literature published on the health effects of low frequency sound produced by wind turbines.

Roberts and Roberts (2009) used PubMed, a search engine maintained by the United States National Library of Medicine, to perform a search of the peer-reviewed scientific literature that has addressed the known or unknown health effects associated with infrasound and low frequency sound (Appendix O). Roberts and Roberts (2009) identified 156 articles relating to infrasound and low frequency sound, the 21 most relevant and scientifically appropriate articles were selected for the review, based on a relevancy selection criteria. As stated in Roberts and Roberts (2009), the peer-reviewed published articles have not reported any specific health conditions to be classified as a disease caused by exposure to sound levels and frequencies generated by the operation of wind turbines. While some people respond negatively to the noise levels generated by the operating wind turbines, there is no peer-reviewed, scientific data to support the claim that wind turbines are causing negative health conditions. Simply being annoyed about the wind turbines may be an underlying factor attributed to the majority of the health complaints (Roberts and Roberts, 2009)...Based on the reports from Leventhall (2009), Roberts and Roberts (2009), and Colby et al. (2009) (provided in Appendix O), there is no evidence to support the claim that the low frequency sound produced by operating wind turbines causes negative health effects. The widespread belief that wind turbines generate excessive or even harmful amounts of low frequency noise is evidently based on misinformation or a confusion of the amplitude modulation typical of wind turbines (i.e., the periodic swishing sound with a frequency of about 1 Hz) with low frequency sound. In addition, early wind turbines with the blades downwind of the support tower were prone to producing a periodic thumping noise each time a blade passed the tower wake, but this effect no longer exists with the upwind blade arrangement used today."

In addition to the information presented in the DEIS, additional research/analysis is now available. The Australian National Health and Medical Research Council (NHMRC) conducted a literature review on the potential impacts on human health associated with wind turbines, including low frequency sound. In a *Public Statement* issued in July 2010, the NHMRC states: "There is currently no published scientific evidence to positively link wind turbines with adverse health effects" (Australian NHMRC, 2010a).

Also in July 2010, the NHMRC issued *Wind Turbines and Health; A Rapid Review of the Evidence*, which concludes with: "This review of the available evidence, including journal articles,

surveys, literature reviews and government reports, supports the statement that: *There are no direct pathological effects from wind farms and that any potential impact on humans can be minimised by following existing planning guidelines*" (Australian NHMRC, 2010b). The NHMRC *Public Statement* and the NHMRC *Wind Turbines and Health; A Rapid Review of the Evidence* are provided in FEIS Appendix L.

In summary, the comments mostly provide only generalized claims not containing evidence of health effects. Study after study has refuted Dr. Pierpont's assertions and methodology.

**Written Comment 43A:**

I write to you with concerns regarding the proposed Wind Turbine Farm to be located in Chipmonk. I have lived in Chipmonk for the past 27 years, with my wife being a life long resident of the valley.

I am an epileptic. As some of you may be aware, there has been a higher than normal incidence of onset epilepsy in areas that have established wind turbine farms. During the presentation of April 7, 2010, one of the presenters on the panel shared about his neighbor experiencing some issues with seizures due to the strobe effect that these windmills give off.

I share with you that I can't afford to have a seizure due to the strobing effect caused by these windmills. My health and ability to drive to work is good due to medications I take. To date, I have been seizure free while on medication. However, should I have a seizure while on medication, I lose the ability to work and drive. Strobe effects such as those given off by windmills can cause a seizure to occur. I have enclosed a recent article on the issue. There are numerous studies out there on this subject.

**Response to Written Comment 43A:**

Appendix L of the DEIS contains a *Shadow Flicker Report* prepared specifically for the Allegany Wind Power Project. The following is provided on pages 2 and 3 of that report, and directly addresses this issue:

*"Shadow flicker effects are expressed in terms of frequency (hours per year) on receptors. Effects are not expressed in terms of potential health-related impacts, as blade pass frequencies for modern commercial scale wind turbines are so low they are considered harmless. According to the British Epilepsy Association, approximately five percent of individuals with epilepsy have sensitivity to light, and most people with photosensitive epilepsy are sensitive to flickering around 16-25 Hz (Hertz or Hz = 1 flash per second), although some people may be sensitive to rates as low as 3 Hz and as*

*high as 60 Hz (British Epilepsy Association, 2007). Specific to wind power projects, the British Epilepsy Association (2007) states that there is no evidence that wind turbines can trigger seizures, and newer wind turbines are usually built to operate at a frequency of 1 Hz or less. Therefore, health effects due to projected shadow flicker are not anticipated or further evaluated. The primary concern with shadow flicker is the annoyance it could cause for adjacent homeowners.”*

**Oral Comment 36C:**

This is a new industry. You are going to see a lot more in the whole country, not just here. And I've never heard anybody saying anything about the video that's on You Tube about a wind turbine exploding. Okay. They don't just rust. You know. After -- you've got one or two people that work for this company full-time here and what happens after the braking system fails? You've got a 160 foot rotor. Okay. You've got three of them, you have the generator behind it and the tower. That can all explode. You can all look at that on the Internet tonight. Just watch the video of one in Denmark that exploded. It's not the only case. There's one in California that did the same thing. They had to shut down the whole highway system.

The company might say, well, that's rare. It's rare because this is such a new industry. Wait until we have a lot more. I don't want my kids up in the woods and have -- you know. Some of you might say there's not enough wind for this, then why is the company coming in? Okay. During a storm if that braking system fails, you're going to see it explode. Parts can go as far as a mile. I don't want to see that happen. Thank you.

**Response to Oral Comment 36C:**

The reasons for a turbine collapse or blade throw vary depending on conditions and tower type. Past occurrences of these incidents have generally been the result of design defects during manufacturing, poor maintenance, control system malfunction, or lightning strikes. Evidence suggests that the most common cause of blade failure is human error in interfacing with control systems. Manufacturers have reduced that risk by limiting human adjustments that can be made in the field. Most instances of blade throw and turbine collapse were reported during the early years of the wind industry. Technological improvements and mandatory safety standards during turbine design, manufacturing, and installation have largely eliminated such occurrences. The reduction in blade failures coincides with the widespread introduction of wind turbine design certification and type approval. The certification bodies perform quality control audits of the blade manufacturing facilities and perform strength testing of construction materials. These audits typically involve a dynamic test that simulates the life loading and stress on the rotor blade. This approach has largely eliminated blade design as a root cause of blade failures (Garrad Hassan, 2007).

A report by the California Wind Energy Collaborative (CWEC) provides a literature review of turbine blade failure. The range of blade throw is highly dependent on the release velocity, which is a function of the blade tip speed. Because the blade tip speed of wind turbines tends to remain constant with turbine size, turbine hub height has little effect on potential throw distance. When compared with the blade failure rates of earlier turbine models from the 1980's and 1990's, the overall blade failure rate of modern commercial turbines has declined by a factor of three. This is primarily due to the improved reliability of modern commercial wind turbines (CWEC, 2006). Contrary to the suggestion, this is not that new an industry; there are thousands of utility-scale turbines operating safely throughout the world in all manner of terrain and weather conditions.

Because all proposed turbines are located on private lands, and because of the distance between proposed turbines and non-participating residences (see DEIS Figure 4), it is anticipated that the public is adequately protected from the already minimal risk of blade throw and/or tower failure.