

**TOWN OF FRANCESTOWN**  
OFFICE OF SELECTMEN  
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**ZONING BOARD OF ADJUSTMENT MEETING MINUTES**

**September 25, 2013**

Board Members Present: Chair Silas Little, Mike Jones, Tom Lowery, and Sue Jonas (Charlie Pyle absent)

Staff Present: Town Administrator Michael Branley

Also present: Scott Carbee, BJ Carbee, Pat Terry, Attorney Michael Tierney, Mike Tartalis, Karen St. Cyr, Vic Reno, Betty Behrsing, Polly Freese, Larry Laber, Tony Laber, Fred Ward, Pat Terry, Lindsey Arceci from the Monadnock Ledger Transcript, Kelly Beatty, Dr. Mario Motta, Monica Redente, Luke Robbins, and others unknown to the minute taker.

**CALL TO ORDER:** Silas called the meeting to order at 7:30 p.m.

Silas stated that Charlie Pyle had a conflict tonight that he could not reschedule. He asked the applicant if they objected to going forward with the meeting with the understanding that the Board did not anticipate that a decision would be made tonight and the applicant agreed that they did not object under those assumptions. Silas asked if any abutters objected with going forward under these conditions and no one came forward.

Mr. Tierney asked the applicant's consultant Vic Reno to present the information to the Board at the prior meeting. He provided the Board with documents, including a drawing of the mountain with the poles, fixtures, tilt angles, a summary of information discussed and submitted to the Board. Vic pointed out that the ending angles listed on the chart come from a photometric study which attempts to identify how many lights to use and at what angles; the angles on the documents are maximum not to exceed angles and each actual fixture he inspected were lower than the simulations. Silas asked and Vic responded that all of the new poles are 30 feet tall and the lights are at the top of the pole and the lift towers are up to 50 feet. Silas asked if the heights of the fixtures on the lift towers were listed and Pat stated they were not but he could get them to the Board by the end of the week. Silas asked if the documents provided were only related to new lights and Vic stated that is correct. There was a discussion about the angles of the light fixtures and how the light spreads from the fixtures. Mike asked if the lights are all pointing down or across the slope and Vic stated they are, in accordance with lighting standards. Sue asked why in some areas the lights are identified as LLF and Vic explained that this is light loss factor, which is a way to calculate the light output. There was a discussion about the lights; Pat stated that the lights do need to be adjusted for wind and are checked at least once per year. Sue stated she noticed that the Board has been presented with two plans, one stating as installed and

one stating with visors so did Juno present a proposal for lights with visors? Vic stated they ran a photometric study using the same locations simulating visors and they found the average foot candles increased in some locations but less coverage on the edges of the trails. Sue asked if there are mountains that use mixed lights with a combination of with and without visors because it appears that is what Steamboat Springs is doing; Vic responded that he does not know but the mountains he has experience with have not used visors. Sue stated some mountains she's found, mainly members of the green slope movement, have used visors to slightly reduce the amount of glare, such as Park City and Sunday River. Vic stated a visor will limit the amount of light and the view of the light at a similar elevation but it will not have any impact on reflected light. Silas stated that based on a scan of the simulation documents provided it appears to have essentially the same lighting coverage with and without visors and Vic stated he did not know. Silas asked if Vic had a sense of what the light visors in the simulation look like and Vic presented the Board with an image. Mike asked if the visor could be installed on the lights on the mountain and Vic stated he wasn't sure but he thought they could. Tom asked if more lights would be required if visors were installed and Silas stated not based on the simulation presented. Sue stated the Board had been previously told that installing visors were not regular practice but now it appears that many mountains are using visors. Vic stated he did not say visors were not industry standards, just that you get better uniformity and coverage with fewer fixtures at a lower cost without visors. Sue asked if the Juno drawings were presented as part of a quotation package and Pat stated they were used for a quote and design of their system. Silas asked if the applicant could confirm if the labels on the Juno drawings are correct and Pat stated he could get that information by the end of the week.

Silas asked the Board if they wanted to open the floor to the public and the Board agreed that they did. Silas asked if anyone wanted to speak in favor of the application and no one stepped forward.

Silas asked if anyone else wanted to speak to the application. Fred Ward from Stoddard presented Dr. Mario Motta who is a cardiologist and the author of a study on the health impacts of light pollution. Dr. Motta stated he is not opposed to skiing or lighting but wanted to inform the Board on some of the consequences of light pollution. He stated one of the major issues is associated with glare. He stated he took exception to the comments regarding visors because they do focus the light where it is needed as opposed to shining upwards. Dr. Motta stated New Hampshire passed a law encouraging municipalities to adopt local ordinances to control light pollution and quoted from that law. He discussed several of the negative health impacts of bad lighting. He stated a lot of the issues can be mitigated by installing shields and turning off the lights when the mountain is not open. Tom Lowery asked if the Illuminating Engineering Society of North America supported his opinion, Dr. Motta stated he is a member of the IDA board and we are all in agreement.

Fred Ward also presented Kelly Beady from the Dark Sky Initiative. He stated he helped to draft the New Hampshire legislation Dr. Motta discussed. Kelly stated he has seen assertions that the Town's lighting ordinance is incompatible with the Illuminating Engineering Society and that is not the case. Kelly stated an important factor of the simulations presented that has been missed is that the simulations do not account for the reflection of the snow; they really need someone to go out when there is snow on the ground and use a light meter to measure the light. Kelly stated

there are numerous ski areas that have taken efforts to light in an environmentally friendly way. Kelly stated he has not physically seen the lights on the mountain although based on what he saw of Mr. Reno's designs it appears they are not well designed lights. He stated installing visors would be a band aid approach compared to installing appropriate lights. He stated lights provided by Musco lighting would be a better solution.

Polly Freese asked how many nights the lights are on; Pat stated the mountain is open 9 a.m. to 9 p.m. Monday through Saturday, Sunday 9 a.m. to 5 p.m., and during midnight madness 9 p.m. to 3 a.m. in addition. Pat stated the lights are also on during snow making, equipment repairs, and grooming. Pat stated the lights are not on all the time however the mountain needs the flexibility to be able to turn them on any time they need. Silas asked why the lights need to be on for snowmaking and Pat stated it is for employee safety. Silas asked how many nights last year the mountain made snow last year and Pat estimated 25 nights, but it is weather dependent. Silas asked and Pat responded that the timing is weather dependent. Silas asked how long snow guns run and Pat stated up to 50 or 60 hours depending on the temperatures.

Scott Blackburn stated that snowmaking utilizes multiple guns on the same trail, dealing with water, hydraulics, and electronics. Scott asked are we not just extending the length before the light travels above the horizontal plane.

Scott Carbee stated he was a snowmaker at Crotched in the 1980s and the operations of the current mountain are very efficient and safe. Vic Reno stated certainly there is good and bad light and he does not want to minimize the impacts of bad lighting. He stated the health impacts stated by Dr. Motta were overdramatized. Vic stated Kelly Beatty's comments about the lights based on looking over his shoulder were absurd and that they are well made fixtures designed for this use.

Monica Redente stated a comment was made that light travels straight however it actually travels in waves so it does bounce off snow directly. Silas asked what the percentage of blue light is in a halide light and Vic stated he needed to check and could get the Board the spectral distribution of a halide lamp.

Sue asked when Vic put together his report in 2009 if there was snow on the ground and he stated there was; Silas reminded the Board that the 2009 report was done prior to the 2012 expansion. Tom asked about the wind load effects on the lights if they had visors and Vic stated depending on the visor it should not have too much of an effect.

Luke Robbins clarified that the variance is for the new lights and Silas stated he understood that they were requesting a variance for the 27 new fixtures on poles and 38 new fixtures on towers.

Larry Labor from Bennington Road stated the lights prior to the 2012 expansion do not conform with the zoning ordinance. Larry stated at the last meeting he asked Pat Terry why they did not install the shields and Pat had responded that they could not be installed because they did not conform to the lighting ordinance. Larry wondered why Pat had told the Planning Board he would install them if he knew that they couldn't be and stated he thought Pat was just telling us what we wanted to hear. He stated another example of that was when Tim Boyd stated the lights

would be pointing down at a public hearing in Antrim when he knew that wasn't the case. He asked why the parking lights are using mountain lights instead of parking lot lights. Larry stated and demonstrated that shields minimize the amount of light shining up. Larry asked why the lights are pointing away from the mountain instead of at the mountain. Larry stated he has observed all of the lights on at the mountain when they are not making snow and times when they are making snow with no lights on. Larry stated everyone is worried about the nights with midnight madness and Larry stated they are on all the time.

Jake Rose addressed Larry's point that the lights pointing up at the mountain would blind skiers even though they do not blind them when they are skiing towards the sides of the trail.

**MOTION:** Mike made a motion to close the public input portion of the meeting for the Board to discuss the topic of a lighting expert, seconded by Tom. All in favor.

Silas stated he has spoken to an engineer in Colorado named Nancy Clanton and discussed some of her credentials, including being the Chairperson of the Illuminating Engineering Society of North America and worked on outdoor lighting at Snowmass and Vail. Silas stated he did not think it was realistic to have her travel out to Francess town. Silas stated the alternative is to not hire a consultant and try to make a decision in another fashion. He has spoken to Mark Ray from RPI and he suggested that the Board set a curfew for the lights. Silas stated he got Nancy's name from the Dark Sky Initiative when he asked them for someone who could provide objective, critical analysis. He stated he also contacted the Illumination Engineering Society and left a message for the president of the Boston Chapter and he did not call him back. He stated he was not able to get information on a retainer prior to the meeting. The Board discussed how they could provide documents to Nancy. Tom stated we have another list of deliverables and then we should have enough information for an expert to review the situation.

**MOTION:** Tom made a motion to retain Nancy Clanton's services, seconded by Sue. All in favor.

Silas stated when he had the information regarding her costs he would get it to the applicant, who would pay it prior to her starting her work. Silas made a motion to continue the public hearing on October 23<sup>rd</sup> at 7:30 p.m., seconded by Mike. All in favor

Mike Branley stated he had received another application for variance however he had not received the check or the labels yet. The Board agreed to address that application on the 23<sup>rd</sup> if it is received in time.

**ADJOURNMENT:** Tom made a motion to adjourn the meeting at 9:25 p.m., seconded by Mike. All in favor.

Respectfully Submitted by Michael Branley