

**Follow-Up to Public Hearing for LD 1934,  
"An Act to Promote Responsible Outdoor Lighting"**

Maine State House  
Submitted in Response to Objections Raised at the Hearing on  
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By Jon Silverman  
14 Congress Street, Augusta, Maine 04330  
jonathan.d.silverman@gmail.com  
(781) 820-7644

These comments respond to objections raised during the public hearing against LD 1934, "An Act to Promote Responsible Outdoor Lighting." I welcome the objections, because they point to legitimate concerns deserving clarification.

I should clarify that although I hope to be a well-studied, careful, considerate advocate for dark skies, I am neither an attorney nor a lighting engineer. While I believe what I am saying to be true, including that the objections can be resolved, there may be technical details needing to be worked out by people with greater knowledge than mine. I welcome greater expertise. If any of what I say may be incorrect, I still hope that it will have advanced the conversation.

It can be hard to fathom just how much money dark sky lighting would save and how much better it would light our world. That notion must seem to be a scam, leading to objections to a future when these may be the only fixtures available to buy. Someday, when everywhere is lit better than it is now and the bills for that lighting are a fraction of current costs, no one will object. As I reported in my testimony today, even just eliminating the half of the light that currently heads skyward from a bare bulb in itself saves half the cost of running the light. That is a fifty-percent savings right off the top. Then, extend that to adopting more efficient technology. Municipalities are happy to have changed their expensive, old-school streetlights to modern, LED versions. Dark sky lighting saves a fortune, and is a real technology available to us today. Even better, LD1934 does not force any capital expenditures to replace fixtures now, but seeks instead to make better lighting Maine's readily available standard for our future.

## SKI MAINE

Attorney Dan Walker of the law firm PretiFlaherty objected on behalf of Ski Maine Association. According to its Website, Ski Maine is, "the non-profit trade association representing the Maine Alpine and Nordic Ski Industry." To my understanding, LD 1934 applies to public improvements, whether state, municipal, or funded with public grants, and so ought not to apply to privately owned ski areas. Nevertheless, I can see how Ski Maine would want to get ahead of any movement toward dark sky lighting, and so agree that its questions should be answered. Nobody wants to hurt the ski industry.

Attorney Walker relates that Ski Maine fears that LD 1934 would kill night skiing, citing "RP-6 rules" as applied to ski slopes. This appears to refer to the standard "ANSI/IES RP-6-20: Sports and Recreational Area Lighting" of the American National Standards Institute. Among the concerns Attorney Walker mentioned were that dark sky lighting should not to extend beyond the borders of the playing field, fearing that would make it impossible to light ski slopes safely. My amateur sense is that RP-6 was designed for athletic fields (football, soccer, baseball, and the like), and so may not properly apply here, although PretiFlaherty may wisely want to get ahead of any misapplication of the law that could harm Ski Maine.

Dark sky lighting assures that only the area needing to be lit should be lit. Ski Maine appears to raise the important point that, because skiers travel rapidly and accidents can occur, it would be necessary to extend the lighting some distance beyond the intended edge of the ski slope. I expect that that would be entirely fine within the principles of dark sky lighting.

If an extra fifty or one-hundred or however many feet needed to be lit so that errant skiers might be able to dodge the trees if they accidentally left the slope, I should think that that area would be included as part of the area needing to be lit.

Attorney Walker also mentioned that, for what may have been some technical reason in the design of the fixtures, the lights on ski slopes could not be shielded. He detailed the need to have rows of lights on both sides of the slope pointed inward toward each other, because it was important to the safety of skiers to have this “crossed lighting” to avoid shadowing hazards that might lead to accidents. Again, that should be fine within the principles of dark sky lighting, due to a philosophy that we should strive to do our best, even while knowing that some circumstances simply can not be lit as unobtrusively as others.

The safety of the skiers would come first. “Shielding” seeks to assure that light is not directed skyward, so it is unclear why fixtures that spread light far across slope might have to shine it above the horizontal, missing the ground. In cases where light needed to shine uphill, the presence of the mountain above should generally prevent it from straying skyward.

I wonder whether, somehow, Ski Maine worried that dark sky lighting would eliminate the necessary cross-lighting by insisting that each side of a ski slope would be lit separately. I would expect that because cross lighting is needed, it would be allowed, although in future installations there may be a request to have this horizontally shone light not veer needlessly skyward, wasting light and money.

Finally, Attorney Walker noted that, in order to be able to properly see hazards, skiers needed for ski slopes to be lit at a color temperature of 5000K. That is the “cool,” bluish lighting that is most damaging to the night sky. Apparently, this color allows discerning variations in the condition and smoothness of the snow that are not visible under warmer lighting. Presuming that understanding to be correct, 5000K lighting would be acceptable, because the limitation relates to the safety of the skiers. I’ll leave it to the lawyers to decide whether this needs to be codified into LD 1934.

None of this means that the ski areas could not contribute to protecting Maine’s dark skies, even if their help had to be voluntary. As well-lit attractions in wilderness areas, they could contribute greatly to advancing other sectors of Maine’s tourist economy. Careful pointing of lights, switching off lights when they are not in use, or lighting common areas off the slopes with dark sky lighting might all help. But, for the record, in discussions at board meetings of Dark Sky Maine, I have only ever heard a unanimous agreement that we oppose mandates, because we know that people would oppose them back. That is why we seek help from the state in creating a marketplace where the benefits of dark sky lighting will become so apparent that the citizens of Maine will want to adopt them.

## MAINE MUNICIPAL ASSOCIATION

Rebecca Lambert of the Maine Municipal Association relates the concern that LD 1934 could become an unfunded mandate. Everyone hates unfunded mandates, so I respect the concern.

LD 1934 allows all currently installed lighting to be used indefinitely, so there is no danger of forced capital expense. For the long term, the dramatic cost savings of dark sky lighting are intended to drive its acceptance. When current fixtures must someday be replaced, or when new construction or remodeling requires new lighting, lowered cost-of-ownership will benefit municipalities. Far from being an “unfunded mandate,” properly understood, this law will be seen to save money.

A member of the committee asked of Ms. Lambert, “Who will be the light police?” She replied that LD 1934 would be “tough to enforce.” I can see the concern, yet the exchange misses the point of the law. I am unaware of any provision for scouting and punishing imperfections in the selection of light fixtures. The idea is simply to grow a marketplace such that, just as easily as we might buy bad lighting today, we would become able to buy good lighting tomorrow, and save money doing so.

A summary that I wrote of the law and sent to the members of my astronomy club illustrates how LD 1934 has been designed to ease any burden of transition for municipalities, so I shall copy it below:

## TECHNICALITIES, SIMPLIFIED

LD 1934, "An Act to Promote Responsible Outdoor Lighting," is a proposed law for the State of Maine that:

Requires public improvements (whether state, municipal, or funded with public grants) to be dark-sky friendly going forward, including renovations. It absolutely does not require anyone to replace existing fixtures now.

Directs the Maine Office of Community Affairs to draft a model ordinance in 2026. That helps municipalities, so that they will not have to determine on their own how to select dark sky lighting.

Requires municipalities to adopt outdoor lighting ordinances by 2028. The aforementioned model ordinance simplifies this process, by delivering a menu of good ideas that can be applied as appropriate to each municipality's needs.

Since we all dislike “requirements,” consider how this would actually work. The Maine Office of Community Affairs would supply a model ordinance for the municipalities, easing the process for municipalities as they transition to better, safer, less expensive lighting. If that remains unpersuasive, consider the option: We could allow municipalities to refuse to someday have less expensive lighting, resulting in higher tax bills and the destruction of the dark skies that are a major draw for tourism, resulting in further financial loss to the citizens of Maine. The objective is to find the least intrusive means to usher in an era of better lighting at lower cost, with help from the State needed to guide this future into being.

## BUREAU OF PROPERTY MANAGEMENT

Anya Trundy of the Bureau of Property Management reported that the Bureau did not object to LD 1934, but had several questions about how the law would affect it. When I spoke with her after the hearing, she replied that if what I told her were correct, it would answer the Bureau’s questions, so that she expected the Bureau would then be okay with the law.

The Bureau wanted for LD 1934 to include exemptions for secure facilities such as psychiatric hospitals, military bases, police stations, and prisons. This gets to the heart of why it can be so difficult to gain universal support for policies and laws promoting dark sky lighting. People intuitively presume that “brighter” lighting somehow makes it easier to see at night. That is dead wrong, yet the complexities of how night vision works in relation to lighting at night make this a completely honorable concern. Light at once enables us to see, and also harms our ability to see in dark conditions. As examples, consider the well-know cases of flipping on the bedroom light in the middle of the night and then being unable to see in a dimmer hallway, or being blinded by oncoming headlights while driving. Dark sky lighting achieves a remarkable balance by directing only the right amount of the right color of light to exactly where it needs to be. In all cases, secure facilities will be more secure with dark sky lighting than they were before, because those supervising the areas will be able to see much better. This includes both seeing into the lit area, and suddenly switching to see into the darkness beyond. Dark sky lighting is not an inadequate, dim version of ordinary lighting. It is something different and altogether better, if difficult to imagine if one has never seen it.

Ms. Trundy also commented that flagpoles “need to be uplit,” where “uplighting” would seem to violate dark sky standards. There are two answers to that. First, there is a trend of lighting flagpoles from the top, with the light shining down onto the flag. Many such lights are solar powered, to make them easy to install on existing flagpoles. It looks so impressive as to perhaps become the preferred standard. Second, if for some reason a flagpole were to be lit from below with uplights, dark sky policies typically accept that there are not enough flagpoles to make this admittedly difficult problem worth solving, and so simply ignore the issue.