
COMMENTS RECEIVED FOR PROPOSED RULE REVISIONS:
PROPOSED REVISION OF CHAPTER 2 AND CHAPTER 10 –
EXTERIOR LIGHTING AND LIGHTED SIGN STANDARDS

The following pages include the written comments regarding the proposed Chapter 2 and Chapter 10 – Exterior Lighting and Lighted Sign Standards rulemaking submitted between May 29, 2024, and July 15, 2024.

Rebuttal Comments: The deadline for submissions in rebuttal to these comments is **July 29, 2024**. Rebuttal comments can be sent to stacy.benjamin@maine.gov or by postal mail to: Maine Land Use Planning Commission, 22 State House Station, Augusta, ME 04333-0022.

From: laycock@tidewater.net
Sent: Wednesday, June 12, 2024 10:38 AM
To: 'Stacy'
Subject: Proposed changes to LUPC Lighting and Lit Sign Standards

Hello, Ms. Benjamin.

This is to support the proposed updates and changes. To be able to see the stars at night is a healthy and calming activity and not available in so many places in the world. Also, to have hooded and shielded lights is so much better for sleep, and sleep is a healthy thing, too.

Lastly, being a bird watcher and lover, to have shielded lights is so good for preventing migrating birds to become confused and disoriented. We lose millions of birds each year due to glaring and upward shining lights.

Thank you for the work that you're doing on this.

Sincerely,

Lizz Laycock
Lincolntown

Dear Maine Land Use Planning Commission:

This letter is in response to the proposed updates to LUPC Lighting and Lighted Sign Standards.

As a citizen of Maine, and acknowledging that we are one of the few states east of the Mississippi where citizens can still view the Milky Way, I support the rule change:

"The proposed rule make aims to update the standards to reflect the changes in lighting technology since the standards were adopted and help ensure there are no undue adverse impacts to natural or scenic resources, including Maine's dark sky resource, from unnecessary or inappropriate lighting."

I agree that the current standards are 20 years old and are outdated. They need to reflect the changes in light in technology that have occurred since the standards were adopted in 2004.

Here are more reasons to change these rules:

Light pollution destroys critical wildlife habitat

<https://drive.google.com/file/d/1S2AjTB8exeNquycvMUp2J3RysDQeIPPL/view>

Harms human health

https://drive.google.com/file/d/1Cv2qEolcFi223PL12joHK2qH0gRYkuz_/view

Bright lights do not equate to greater safety

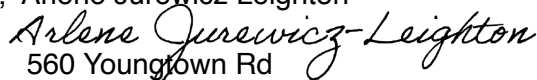
<https://drive.google.com/file/d/1CP3rcO8SNUOrnhdtSNrZOqcuYZ20s9Lc/view>

Wastes money and resources

<https://drive.google.com/file/d/1nG0oOQpDmudUYguveLAK6nHBLkGJrtO7/view>

Thank you for doing what is right for the dark skies of Maine.

Sincerely, Arlene Jurewicz Leighton


560 Youngtown Rd
Lincolnton, ME 04849

Benjamin, Stacy

From: Jennifer Temple <jennifer@team-temple.com>
Sent: Friday, July 5, 2024 8:00 AM
To: Benjamin, Stacy
Subject: Public Comment on Chapter 2 and Chapter 10: Exterior Lighting and Lighted Sign Standards

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Public Comment - Lighting

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning,

My name is Jennifer Temple. I live and work in Lincolnville, Maine, along Route 1. I am writing in support of the proposed updates to Chapter 2 and Chapter 10: Exterior Lighting and Lighted Sign Standards. These changes will help preserve the quality of life that Mainers and visitors enjoy. They will also help reduce light pollution and keep our skies as dark as possible.

Thank you for your time,

Jennifer Temple
2477 Atlantic Hwy, Lincolnville, ME 04849
207-542-0505

Jennifer Temple (she/her)

... We are bound together

In our desire to see the world

Become a place in which our children

Can grow free and strong - James Taylor

Benjamin, Stacy

From: John Pincince <jgpincince@gmail.com>
Sent: Saturday, July 6, 2024 4:18 PM
To: Benjamin, Stacy
Subject: Lights

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Public Comment - Lighting

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Ms. Stacy Benjamin,

What a good opportunity to set some very reasonable and effective outdoor lighting standards. I agree with all the recommendations except the exemption. The areas where forestry and agriculture exist are the areas, quite often, that are rural where the skies are or could be dark. Why the exemptions? It seems that some of the rules could apply to these activities without causing undue hardship or safety issues. I hope that this aspect of the rule change will be revisited and modified.

Sincerely,
John Pincince
Ashgrove Farm
Lincolntown



Stacy Benjamin, Chief Planner
Land Use Planning Commission
22 State House Station
Augusta, Maine 04333

July 15, 2024

RE: CHAPTER 2 AND CHAPTER 10, EXTERIOR LIGHTING AND LIGHTED SIGN STANDARDS

Dear Chief Planner Benjamin:

The Appalachian Mountain Club (AMC), Maine Audubon, and the Natural Resources Council of Maine appreciate the opportunity to comment on the Land Use Planning Commission's (LUPC) proposed modifications to its Chapter 2 and Chapter 10 rules related to exterior lighting and lighted sign standards. Our organizations are dedicated to the conservation of Maine's environment and natural resources, advocating for policies that benefit both human and wildlife communities.

We sincerely appreciate the LUPC's timely and proactive approach to modernizing exterior lighting and lighted sign standards, which were originally adopted two decades ago. Light pollution around the globe is becoming a critical issue for both people and wildlife, and it is heartening to see the LUPC take this issue seriously. It is essential that this update adequately considers recent advancements in lighting technologies and best practices to help address undue adverse impacts of artificial light on the unorganized territories's (UT) natural and scenic resources.

The LUPC's jurisdiction lies beneath some of the most impressive dark night skies east of the Mississippi River. Maine's North Woods have long stood as a bulwark against the encroachment of artificial light, but the impact of development pressure on remote and beautiful places and the forest and forest products industry risks increasing the encroachment of light pollution.

Concurrently, we are seeing a growing appreciation of dark skies as a unique natural resource. Both the Katahdin Woods and Waters National Monument and the Appalachian Mountain Club's property in

Piscataquis County have been recognized by Dark Sky International for the quality of their night skies. AMC's *See the Dark* festival¹ has consistently sold out, attracting visitors to rural Maine for an experience that's increasingly hard to find. The town of Rangeley is pursuing recognition as a Dark Sky Community, and has adopted a municipal lighting ordinance, while the Rangeley Lakes Heritage Trust will host regular Dark Sky Tours this summer. The town of Greenville has adopted a lighting ordinance to protect its small-town character, reduce light pollution, and save money on operating expenses by replacing its street lights with fixtures that do not cause light pollution.

Ecological Consequences of Artificial Light

The world is experiencing a biodiversity crisis. Scientists at NatureServe² estimate that about a third of all U.S. species are at risk of extinction. That percentage translates to more than 8,500 of our country's best-known plant and animal species. Notably, only 20 percent of the country's more than 200,000 identified species have been evaluated for extinction risk, so the true total might be much higher. Maine is no exception. Per Maine Department of Inland Fisheries and Wildlife's (DIFW) recommendation, eight new species were added to Maine's Endangered Species list last year – and we expect to add more in the coming years.³ As species' populations begin to drop or as once-common animal species become less common, it is imperative to consider the cumulative impacts of the many threats to Maine's natural resources – artificial lighting is one of those many threats.

Artificial lighting produces a broad range of ecological impacts. Wasteful and unnecessary lighting can produce demonstrable effects on the behavior and population ecology of wildlife. Like humans, animals and plants live by a rhythm that is attuned to our planet's 24-hour lightness and darkness cycle. Similar to what humans experience when their circadian rhythms are disrupted (such as when they change time zones and during daylight savings time), wildlife experience a disorientation of time when there is too much artificial light at night. This "disorientation" has population-level impacts and is fairly easily avoided.

Many species of birds migrate or hunt at night, making them extremely vulnerable to bright lights in areas that are naturally dark. Artificial night light can disrupt important visual cues, causing migrating birds to wander off course and either never reach their intended destination or reduce their energy

¹ See AMC's [See the Dark](#) festival.

² NatureServe, Inc. is a U.S.-based non-profit organization that provides wildlife conservation-related data, tools, and services to private and government clients, partner organizations, and the public.

³ See [LD 57](#), An Act to Amend Maine's Endangered and Threatened Species List.

stores that are needed to arrive at their final destination.⁴ As one recent documented example, night lights on display at the National September 11 Memorial & Museum attract thousands of migrating birds, causing them to swirl around in the lights, confused about where to go next.⁵ Similarly, artificial lights can interfere with amphibian movement, make breeding and migrating frogs and salamanders more vulnerable to predation, and affect foraging, breeding, growth and development.⁶

Artificial night lighting can also disrupt reproductive behaviors in birds by altering their natural circadian rhythms, leading to changes in mating calls, nesting times, and overall breeding success. A 2010 study comparing reproductive behavior of Blue Tits breeding in edge territories with and without street lights found that artificial light caused female Blue Tits to start laying eggs earlier, which may lead to a mismatch between the time of peak food demand from the offspring in the nest and the peak in food availability.⁷

Some taxa experience attraction to light. When excess artificial light is present, this tendency can cause unintentional movement. For example, moths and other insects are attracted to artificial lights and may stay near that light all night. This activity expends unnecessary energy, interferes with mating and migration, and leaves insects exceedingly vulnerable to predators.⁸ Studies have shown that light pollution is a driver of insect decline, along with habitat loss, pesticide use, invasive species, and climate change.⁹

Astronomical Consequences of Artificial Light

The view of the night sky is a natural resource enjoyed by humans for millennia. A dark night sky full of stars is a shared human heritage, an awe-inspiring experience which has sparked art, music, literature,

⁴ Catherine Rich and Travis Longcore, eds., *Ecological Consequences of Artificial Night Lighting* (Washington, DC: Island Press, 2006), Chapter 4.

⁵ Benjamin M. Van Doren et al., "High-Intensity Urban Light Installation Dramatically Alters Nocturnal Bird Migration," *Proceedings of the National Academy of Sciences* 114, no. 42 (2017): <https://doi.org/10.1073/pnas.1708574114>.

⁶ Catherine Rich and Travis Longcore, eds., *Ecological Consequences of Artificial Night Lighting* (Washington, DC: Island Press, 2006), Chapters 9 & 10.

⁷ Kempenaers, B., Borgstrom, P., Loes, P., Schlicht, E., Valcu, M., 12 October 2010, "Artificial Night Lighting Affects Dawn Song, Extra-Pair Siting Success, and Lay Date in Songbirds," *Current Biology*, Volume 20 (19): <https://pubmed.ncbi.nlm.nih.gov/20850324/>

⁸ Catherine Rich and Travis Longcore, eds., *Ecological Consequences of Artificial Night Lighting* (Washington, DC: Island Press, 2006), Chapter 13.

⁹ Owens, A., Cochard, P., Durrant, J., Farnworth, B., Perkin, E., Seymoure, B., January 2020, "Light pollution is a driver of insect declines," *Biological Conservation*, Volume 241: <https://www.sciencedirect.com/science/article/abs/pii/S0006320719307797>

and mythology. The positions of stars and constellations have served to track time, guided cultural and agricultural practices, and supported navigation by both people and wildlife since ancient times.

However, a comprehensive atlas of worldwide light pollution released in 2019 found that a third of humanity can no longer see the Milky Way, including nearly 80% of North Americans.¹⁰ The term “light pollution” describes the brightening of the night sky; light which falls where it is not intended; glare; and the clutter of bright, confusing, excessive groupings of light sources.¹¹ Together, these impacts prevent most people in the U.S. and Canada from enjoying the most basic of natural resources: the dark. Clearly, dark skies are a diminishing resource with appreciating values.

Mainers have an opportunity to protect this increasingly rare natural resource. We can act now to conserve our dark skies, particularly in LUPC’s unorganized territories, by minimizing the negative impacts of light pollution while ensuring the future of a resource that contributes to Maine’s natural resource-based economy. Such action is consistent with the LUPC’s statutory purpose and scope.

Recommendations for Modifications to the Ch. 2 and Ch. 10 Proposed Rules

The proposed revisions to the LUPC’s external lighting and lighted sign standards represent a welcome update to the commission’s current standards. However, our organizations respectfully offer several suggestions to the proposed changes for your consideration that would better serve both human and wildlife communities in the UT. In doing so, we note that the technology is readily available, not particularly expensive, and that selective lighting saves significant expense in electricity costs.

1) Reduce the maximum correlated color temperature (CCT) for new exterior lighting and replacement of existing sources for residential, commercial, and industrial developments (*Section 10.25,F,2,a*).

Most animals are sensitive to blue light. Lowering the CCT maximum for exterior lighting will help minimize the presence of blue light, as sources with lower Kelvin ratings emit warmer lights. Given the availability of comparable cost-effective options, to further reduce the presence of blue light, we suggest lowering the CCT maximum from the suggested 3000K to

¹⁰ Sarah Lewin, "Light Pollution Ruins Night-Sky Views for One-Third of Humanity," *Space.com*, November 4, 2019: <https://www.space.com/43231-light-pollution-night-sky.html>.

¹¹ Fabio Falchi et al., "The New World Atlas of Artificial Night Sky Brightness," *Science Advances* 2, no. 6 (June 10, 2016): <https://doi.org/10.1126/sciadv.1600377>.

2700K, which is more in line with current trends and widely used industry standards to reduce unnecessary artificial lighting.

To help ensure that this maximum is not inadvertently exceeded by an aggregation of exterior lights, we suggest that the new standards include language that addresses the cumulative impact of multiple lighting sources.

2) Lower the threshold for fully shielded light fixtures for new, updated, and replacement exterior lighting sources for residential, commercial, and industrial developments (*Section 10.25,F,2,b*).

We encourage LUPC to lower the shielding threshold from the proposed 1800 lumens or less and assign specific thresholds for the different kinds of developments to which the standard applies. In line with Dark Sky International guidelines, we recommend 1000 lumens or less for commercial and industrial and 500 lumens or less for residential developments. Even with adaptive control features, 1800 lumens is a high threshold for permanent lighting installations for residential developments especially.

3) Apply standards to replacement of existing lighting (*Section 10.25,F,2,a; Section 10.25,F,2,b; and Section 10.25,F,2,b[5]*).

As proposed, these new standards only apply to new developments in the UT. To adequately protect both natural and scenic resources within this area, we recommend that new lighting standards apply to replacements and upgrades of existing lights and fixtures in operation prior to the effective date of these rules. By extending these standards to *all* new lighting, we can achieve a more consistent application of best practices, reducing energy consumption and more comprehensively addressing the ecological and astronomical consequences of excess artificial night lighting.

In Section 10.25,F,2,a, and Section 10.25,F,2,b, we recommend amending these items to read: “All new, updated, or replacement exterior lighting sources for residential, commercial, and industrial development...”. Additionally, in Section 10.25,F,2,h(5), we recommend including language that specifies that updates and replacements to lighting that was in place before these rules take effect are now subject to the new standards and not exempt.

4) Clarify standards regarding commercial awnings or canopies (*Section 10.25,F,2,c*).

In addition to requiring that light fixtures mounted on canopies and awnings be recessed, the rules should address the structures themselves, which frequently are internally lit. Clarifying whether or not these lighted elements surrounding canopies and awnings are considered signs is important. They are certainly a lateral lighting source, non-essential, and should be turned off after business hours.

5) Develop standards for temporary lighting exemptions associated with road construction or repair; or agricultural management or forest management activities (*Section 10.25,F,2,h[6]*).

In this section, we recommend clearly defining the term “temporary” for both Section 10.25,F,2,h(2) and Section 10.25,F,2,h(6). Temporary lighting installed for road construction or repair, agricultural management, and/or forest management activities, should not exceed 60 days and be completely removed and not operated again for at least 30 days in order to qualify for the exemption.

6) Further consider night light generated by outdoor winter recreational facilities (*Section 10.25,F,3*).

While we support the lighting standards proposed for ski resorts and other outdoor recreational facilities, we encourage the Commission to specify that exterior lighting must be turned off after business hours.

7) Strengthen lighted sign standards (*Section 10.27,J*).

We strongly support the prohibition of signs with animated or moving parts. Such elements are deeply out of character in a place prized for its natural beauty. We note that internally lit signs emit lateral light, less controlled than those which are externally lit, and suggest that their use, if allowed at all, should be limited to Community Center Development Subdistricts (D-GN2). As above, we encourage the Commission to clarify whether light fixtures internal to canopies and awnings, such as found at gas stations and convenience stores, are signs or external lighting. In all cases, signs and canopies/awnings should be turned off after business hours.

8) Include criteria regarding brightness and timing.

Whenever possible, all exterior lighting and lighted signs should be dimmed or, preferably, extinguished. This expectation should apply to all lighting and not just “non-essential”

lighting. Aside from energy savings, these actions offer opportunities to minimize both ecological and astronomical consequences of excess artificial light. Requiring that new exterior lighting sources have adaptive control features, such as dimmers, timers, and motion sensors, will help ensure that lights are utilized efficiently and only when needed. Control technology is readily available and can substantially lower electricity costs.

9) Develop a specific compliance and enforcement response policy to address exterior lighting and lighted sign standard violations.

Per the LUPC’s recently adopted *Compliance and Enforcement Response Policy*, “[i]t is the policy of the Commission, whenever feasible, to bring noncomplying activities into full compliance with applicable Commission standards, and require appropriate remediation or restoration.”¹² We urge LUPC to establish a specific policy to respond to acts of noncompliance for exterior lighting and lighted sign standards including explicit administrative enforcement mechanisms and penalty calculations, among others. We believe that those in violation of standards should be afforded time to correct deficiencies, and that those who do not comply after notification should be held accountable. Unlike other kinds of pollution, excess artificial lighting is immediately remedied when unnecessary light is extinguished or contained. Whenever possible, it is imperative that we decisively address preventable and tangible threats – such as artificial lighting – to the human and wildlife communities of the UT. Establishing a specific compliance and enforcement response policy for these new standards will help ensure that they and the work of LUPC staff and Commissioners to serve the unorganized and deorganized areas of Maine are taken seriously.

The dark sky visible within much of the LUPC’s jurisdiction is a natural resource unparalleled in the eastern United States. The crisis of biodiversity loss compels us to act decisively to protect wildlife by preserving the darkness critical to ecosystems, including insects, amphibians, and birds. Further, dark skies fire the human imagination, and as both AMC’s *See the Dark* festival and the April solar eclipse demonstrate, many people are willing to travel and to spend in order to witness an astronomical phenomenon that they cannot experience at home. The LUPC is acting responsibly in updating its lighting standards to reflect current technology and the growing understanding of dark skies as a natural resource.

¹² See the LUPC’s [Compliance and Enforcement Response Policy](#) posted in May, 2024.

We support the proposed changes to the lighting standards, strengthened by the amendments suggested above. Thank you again for the opportunity to comment.

Sincerely,

A handwritten signature in black ink, appearing to read "Eliza Townsend".

Eliza Townsend, Maine Conservation Policy Director
Appalachian Mountain Club

A handwritten signature in black ink, appearing to read "Francesca Gundrum".

Francesca Gundrum, Director of Advocacy
Maine Audubon

A handwritten signature in blue ink, appearing to read "Pete Didisheim".

Pete Didisheim, Senior Director of Advocacy
Natural Resources Council of Maine



Ms. Stacy Benjamin
22 State House Station
18 Elkins Lane, Harlow Building
Augusta, Maine 04333-0022

July 15, 2024

Subject: Comments on Proposed LUPC Chapter 2 and Chapter 10 Rule Revisions: Lighting and Lighted Sign Standards

Dear Ms. Benjamin,

Thank you for the opportunity to comment on the proposed LUPC Chapter 2 and Chapter 10 Rule Revisions: Lighting and Lighted Sign Standards. I write to offer comments on behalf of the National Parks Conservation Association (NPCA). NPCA is a nationwide nonprofit, nonpartisan organization dedicated to protecting and enhancing America's national parks for present and future generations. We have more than 1.6 million members and supporters nationwide, including more than 10,000 in Maine.

We strongly support updating the LUPC exterior lighting and lighted sign standards in Maine's unorganized territories. Stronger exterior lighting standards can serve to protect the dark night skies at our five national park sites in Maine including the Katahdin Woods and Waters National Monument, Acadia National Park, the Appalachian National Scenic Trail, Roosevelt Campobello International Historic Site, and Saint Croix Island International Historic Site. Each of these national park sites are adjacent to or near unorganized territories. Protecting the dark skies in and around these national park sites from light pollution is paramount to ensuring park visitors and local residents alike can fully experience the unique beauty of our dark skies.

In 2020, the Katahdin Woods and Waters National Monument was designated as an International Dark Sky Sanctuary by Dark Sky International. It is the only dark sky sanctuary East of the Mississippi River and only the second national park unit to achieve this designation¹. The national monument's foundation document reads, "*The monument has exceptional quality of starry nights. Night sky readings within the monument and surrounding communities have consistently shown to be some of the darkest skies east of the Mississippi River. Due to its remote location and undeveloped character, the monument has unparalleled opportunities for viewing the night sky, without the effects of smog or light pollution from urbanized areas.*"² Since its establishment in 2016, the monument has marketed itself as a dark skies oasis and prided itself on night sky tourism. The monument has hosted an annual "Stars Over Katahdin" event for the last decade, drawing thousands of dark sky enthusiasts to the region.

¹ [Katahdin Woods and Waters International Dark Sky Sanctuary designation](#)

² [Katahdin Woods and Waters National Monument Foundation Document](#)



To the southwest of the National Monument, the Appalachian Mountain Club's Maine Woods property in the Moosehead Lake region was designated as an International Dark Sky Park in 2021 for its exceptional dark night skies.³ The Appalachian National Scenic Trail bisects the property, affording hikers some of the darkest night skies in the country. At Acadia National Park, millions of visitors' flock to Cadillac Mountain, Sand Beach, Sewall Beach and other park destinations annually to enjoy the night skies. The millions of visitors to our national park sites here in Maine support both our statewide and regional economies. A 2023 report from the National Park Service demonstrated that in 2022, 3.97 million visitors to Acadia National Park contributed an estimated \$479 million into the local economy and supported 6,700 jobs.⁴ Protecting our dark skies is good for Maine's environment and economy.

Furthermore, wildlife at our parks and beyond depend on dark night sky for their survival. Thirty percent of vertebrates and sixty percent of invertebrates are nocturnal, and require dark skies to hunt, mate, or migrate.⁵ Our national park sites provide some of the darkest wildlife habitat in the state. Bats, fireflies, frogs, and several bird species are just a few examples of wildlife that depend on dark night skies for their survival.

Overall, we support the proposed changes outlined in the draft rule revisions and believe they will serve to protect the dark skies in and surrounding our national park sites. We do have some recommendations, which we believe, if adopted, would further protect dark skies and are easy to implement...

Section 2 – Exterior Lighting Standards:

A. Correlated Color Temperature: We support a change from rating light sources on a Correlated Color Temperature scale as proposed in the draft rules. While we appreciate the requirement that exterior lights not exceed 3,000 Kelvin (K), 2,700 K is now widely used as an industry standard reduce excessive lighting. We also suggest the rules explicitly require exterior lighting on new construction in the UT be LED light fixtures, as these are the only light fixtures capable of achieving the 2,700 K color rating. Lastly, the standards do not consider the cumulative impact of multiple exterior lights that may meet the 3,000 K standard. We suggest additional language in this section to ensure new development in the UT is not excessively illuminated.

B. Fully Shielded Light Fixtures: We support requiring fully shielded light fixtures for new development as proposed in the rules. Combined with requiring cooler light temperatures, this will serve to protect our dark skies. However, we suggest only exempting lights 1,000 K or less from the full shielding requirement, as recommended by Dark Sky International.

H. Exemptions: We request the term "temporary" in this section be clearly defined to ensure bright exterior lights are not used longer than necessary for various temporary uses.

³ [Appalachian Mountain Club Dark Sky Park designation](#)

⁴ [2023 Acadia National Park economic impact study](#)

⁵ [Acadia's wildlife need dark night skies](#)



J. Signs: We request Section 2.b.1 be updated to also include other road users, including bicyclists and pedestrians to ensure illuminated signs do not interfere with their vision on the roadway. We also request section 2.b.3 be updated to ensure lighting for externally illuminated signs comply and does not exceed 2,700 K, in addition to requiring fully shielded fixtures and a downward orientation.

S. Commercial Businesses: We request section 4.b be updated to ensure exterior lighting does not exceed 2,700 K, in addition to requiring fully shielded fixtures and a downward orientation.

Sincerely,

Todd Martin



Todd Martin (he/him)
Northeast Senior Program Manager

National Parks Conservation Association
C: 646-799-1627 | tmartin@npca.org | npca.org

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Ms. Stacy Benjamin
22 State House Station
18 Elkins Lane, Harlow Building
Augusta, Maine 04333-0022

July 15, 2024

Re: Comments on Proposed LUPC Chapter 2 and Chapter 10 Rule Revisions:
Lighting and Lighted Sign Standards

Dear Ms. Benjamin,

My name is Brian Hinrichs, I'm writing on behalf of Friends of Katahdin Woods & Waters. We are an official philanthropic partner to the National Park Service in Patten, Maine. The mission of Friends of Katahdin Woods & Waters is to preserve and protect the outstanding natural beauty, ecological vitality and distinctive cultural resources of Katahdin Woods and Waters National Monument and surrounding communities for the inspiration and enjoyment of all generations.

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Katahdin Woods and Waters National Monument was designated an International Dark Sky Sanctuary in 2020 by Dark Sky International. In accordance with our mission and this Dark Sky Sanctuary status, we strongly support updating LUPC exterior lighting and lighted sign standards in Maine's unorganized territories. Protecting the dark skies in and around Katahdin Woods and Waters National Monument from light pollution is paramount to ensuring park visitors and local residents alike can fully experience the unique beauty of our dark skies.

Our beliefs also align with a multi-year visioning effort in the Katahdin Region, which had participation from all of the towns between Millinocket and Mt Chase and resulted in the publishing of *the Katahdin Gazetteer: A Roadmap to the Future*. This included Action 02.7 to "Adopt municipal lighting ordinances also known as dark sky ordinances across the region." All of these towns border lands under LUPC standards.

Please accept the following as comments for strengthening the proposed standards:

A. Correlated Color Temperature: We support a change from rating light sources on a Correlated Color Temperature scale as proposed in the draft rules. While we appreciate the requirement that exterior lights not exceed 3,000 Kelvin (K), 2,700 K is now widely used as an industry standard reduce excessive lighting. We also suggest the rules explicitly require exterior lighting on new construction in the UT be LED light fixtures, as these are the only light fixtures capable of achieving the 2,700 K color rating. Lastly, the standards do not consider the cumulative impact of multiple exterior lights that may meet the 3,000 K standard. We suggest additional language in this section to ensure new development in the UT is not excessively illuminated.



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B. Fully Shielded Light Fixtures: We support requiring fully shielded light fixtures for new development as proposed in the rules. Combined with requiring cooler light temperatures, this will serve to protect our dark skies. However, we suggest only exempting lights 1,000 K or less from the full shielding requirement, as recommended by Dark Sky International.

H. Exemptions: We request the term “temporary” in this section be clearly defined to ensure exterior lights are not used longer than necessary for various temporary uses.

J. Signs: We request Section 2.b.1 be updated to also include other road users including bicyclists and pedestrians to ensure illuminated signs do not interfere with their vision on the roadway. We also request section 2.b.3 be updated to ensure lighting for externally illuminated signs not exceed 2,700 K, in addition to requiring fully shielded fixtures and a downward orientation.

S. Commercial Businesses: We request section 4.b be updated to ensure exterior lighting not exceed 2,700 K, in addition to requiring fully shielded fixtures and a downward orientation.

Thank you for your consideration and your work.

Sincerely,

Brian Hinrichs
Executive Director
Friends of Katahdin Woods & Waters
189B Houlton Street, Patten, ME
brian@friendsofkww.org

July 15, 2024

Stacy Benjamin
Chief Planner
Land Use Planning Commission
22 State House Station, Augusta, Maine 04333-0022

Re: LUPC Lighting Standards

Dear Stacy:

Thank you for the invitation to participate in the preliminary discussions of the Land Use Planning Commission as it considers topics for inclusion in a formal rulemaking proceeding later in the year. The comments below reflect the input of both Southern Maine Astronomers and Dark Sky Maine.

You identified six areas that the Commission is considering addressing as it goes forward:

- Correlated color temperature
- Fully shielded fixtures
- Lumen output levels
- Outdoor Lighting for Ski reports and other activities
- Exemptions
- Signs

We offer our comments as to each and have a few suggestions for other areas to be addressed.

Correlated Color Temperature: We support the Commission's proposed requirement that outdoor lighting not exceed a CCT of 3000K. We suggest that the Commission reserve authority to require fixtures of less than 3000K if particular circumstances warrant, such as in cases where the area being lit has a high albedo due highly reflective surfaces or where local environmental considerations compel a light temperature with even less blue in its spectrum.

Fully Shielded Fixtures: We support the concept of fully shielded lighting, such that no light is emitted above the horizontal plane and that the light source is not visible. You noted that "full cut-off" is being phased out for "fully shielded." There is a little confusion over terminology that can be addressed in rulemaking but we fully support the concept.

Lumen Output Level: We support the proposed change from wattage (power consumption) to lumens (light output) and your proposed standard of 1800 lumens as the triggering threshold for compliance. We note that many other regulations around the country have moved to the 1800 lumen level.

Outdoor Lighting for Ski Resorts and Other Recreation Facilities: We recognize the need to allow nighttime skiing facilities to be well lit and for the lighting levels to perhaps remain elevated after the facility has closed for the night to allow for ski slope grooming. We suggest that for other outdoor recreation facilities that are not ski areas that lighting either needs to be turned off within, say, an hour of closure or at least dimmed down significantly to some security lighting level.

Exemptions: We support your proposed exemptions. While you might have added illuminated church steeples and flagpoles, we think there is so little contribution to light pollution from those sources it does not justify the effort to try to define and regulate such uses.

Signs: We support the concepts you are considering incorporating into your sign ordinance. They are consistent with the dark-sky principles you are seeking to promote elsewhere in the proposed rules.

Other topics for consideration:

- Ganged or multiple fixtures in close proximity: where light is emitted from a fixture with more than one light source, or where there are multiple fixtures in close proximity to one another, we think it is important to declare that it is the combined effect of these multiple fixtures that gets measured, not each light source individually, to determine if compliance with the ordinance is required.
- Outdoor lighting after close of business: We recommend that you consider adding a requirement that businesses shut off or reduce their level of outdoor lighting to security level within, say, an hour after closing. Many newer ordinances contain such provisions. Topsham, ME has a requirement that gas station canopy lighting be reduced after 10 p.m. even if the facility remains open for business.
- Repairs or Upgrades to Existing Exterior Lighting: Any wholesale upgrade to new fixtures, like LEDs, should require full compliance with current lighting ordinances by all fixtures. Upgrades of only some fixtures, or the addition of some new fixtures, presents more challenging scenarios. Some kind of threshold should be established as to when the entire system needs to comply with new standards. It is suggested that if more than 25% of existing fixtures are upgraded, or if the addition of new fixtures is greater than 25% of the original fixtures, then all fixtures need to comply with the new standards.

We appreciate the opportunity to provide these comments and we look forward to working with the Commission whenever it begins formal rulemaking proceedings.

Sincerely,

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