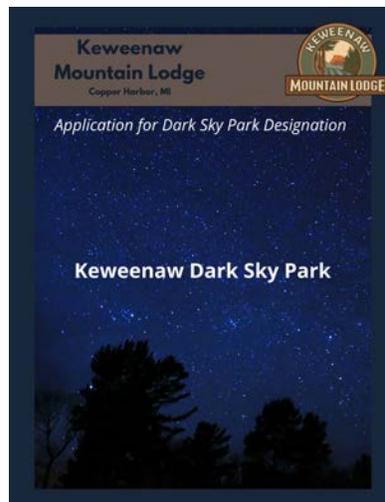


Keweenaw Mountain Lodge Application for Dark Sky Park Designation Version: 4.1 Change Log

Date: May 20, 2022

The following is a summary of the changes that were made between version 4.0 and version 4.1 of this application.

In this version of the application, we addressed the feedback received on May 19, 2022 from Ashley Wilson. We are grateful for the feedback that Ashley Wilson and the DSPC has provided, and as well as the feedback that John Barentine provided last year, as it has been helpful in improving our dark sky activities and our Dark Sky Park application.



Addressing the Dark Sky Park Committee Feedback

From the Ashley Wilson:

The only item that I see that needs to be updated is the compliance rate on page 46. I currently count 93 compliant fixtures or 82% compliant when you still have 88 fixtures or 78% compliant. I would double check and then revise this section and the changelog to the final number.

KML Response:

Thank you for catching this inconsistency in the number of compliant fixtures. We updated the lighting inventory table with the changes in the employee housing / hotel facilities (5 light fixtures). And we updated the percentage. However, we forgot to change 88 to 93 when we changed those 5 light fixtures in the employee housing / hotel facilities. This is now fixed and reads:

“Below is a table showing the lighting inventory on the Keweenaw Mountain Lodge property as of April 21, 2022. We inventoried 113 outside lights, with 93 of them (82%) being dark-sky compliant.”

From the Ashley Wilson:

I would also recommend updating the summary on page 47 with the notes you have in the changelog about the trial and error system to reduce unnecessary lumens with the wall packs (pp. 15-16 in the changelog). That will be helpful to anyone who reads your application and can fully understand the process behind selecting optimal fixtures.

KML Response:

Good point. We have added to the application the following text (from the previous changelog)

In addition, we continue to examine the lumen level of our lights. An example are the two wall packs on the Lodge building which are close to 10,000 lumens. As is explained:

“We wanted to make sure the areas the wall packs cover were sufficiently lit. The one on the conference center covers two entrances that are spaced fairly far apart. The service entrance is probably our most important area to remain lit, it is the most frequently used, as well as having the emergency firehose connection in that area. Also, even coming in at nearly 10,000 lumens it is significantly less than the old fixtures.” – Mike Miller, KML team member responsible for lighting selection

As Mike mentions, installing the two wall packs on the lodge building have greatly reduced the light pollution around those two outside areas. That said, we will continue to improve our lighting and will research other options of wall packs that can provide the same level of safety for our guests and staff members. The goal will be to have lumens closer to 1-3,000 lumens. This will be a trial-and-error process as these are two critical areas of activity for our staff and guests at the Lodge.

As we continue to get better at dark-sky compliant lighting, there will be options to find better solutions each year for every light on property (for example, modifying dimming settings of the new street lights, which means the light will emit less lumens). This continuous improvement is a process we follow on a regular basis when we are considering lighting at the Lodge. Such continuous improvement will lead to us changing lights on the property in the future with lights that have lower lumens or automatically dim at a certain time of night. Continuous improvement is important for us and for the dark sky park to succeed.

Additional Updates

In addition to the feedback we received from the DSPC, we have made the following updates. We think these updates also help improve our dark sky activities and our Dark Sky Park application.

None.