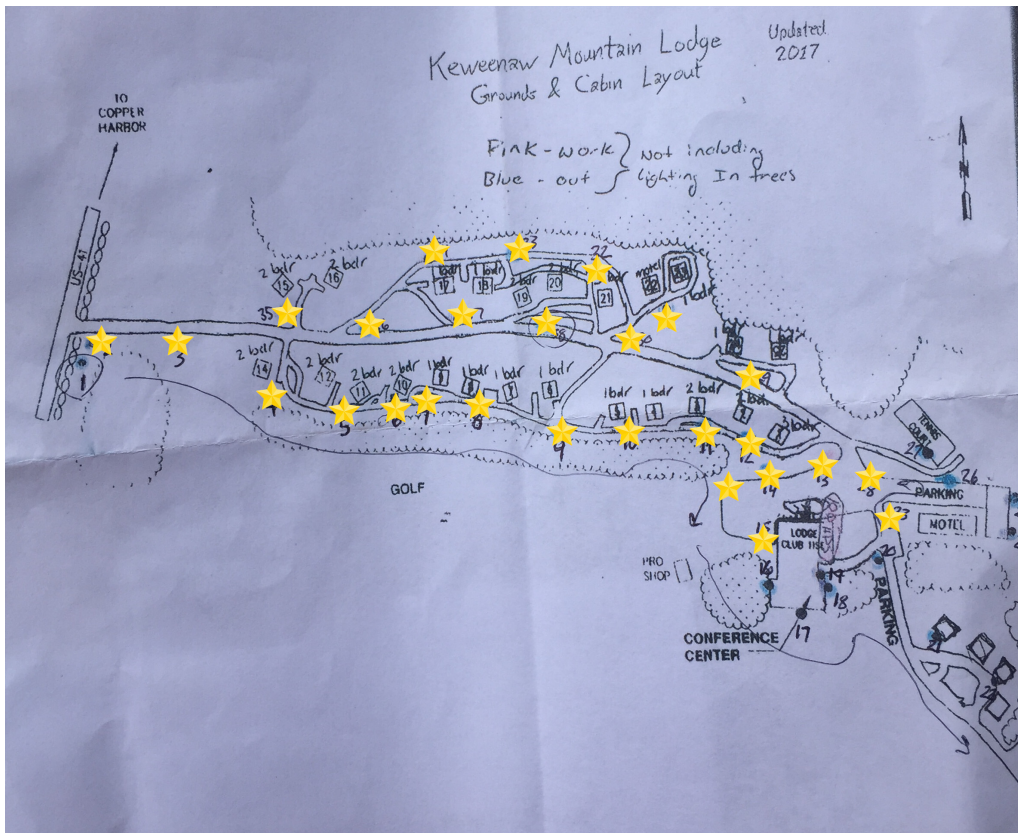


# Energy Efficient and Dark Sky Compliant Street Lighting

written by John Mueller | February 22, 2021

Over the past year we have been working on implementing better lighting at the Lodge which is more energy efficient and dark sky compliant. One of the projects we implemented was installing 28 new street light fixtures. This project was partially funded by a grant from [Michigan's Department of Environment, Great Lakes, and Energy \(EGLE\)](#) (project contact at EGLE: Jake Wilkinson).

The street lights that were replaced are around the parking lot of the Lodge, the streets lights along Golf Course Road (the entry road into the resort), the cabin road between Golf Course Road and the golf course, and the cabin road between Golf Course Road and the north side forest were . These were high pressure sodium light fixtures, and were not shielded.



Old Light  
Fixture

The high pressure sodium lighting used for the street lighting on the property was older technology. Since they had been installed, newer technology for street light fixtures have been developed that use less energy. We had an energy audit performed in 2018 / 2019 by [Michigan Energy Options](#) which highlighted the areas where we can be more energy efficient (audit performed via a grant provided by [WUPPDR](#)). One of the recommendations for improving our energy efficiency at the Lodge (ie. energy conservation measures) was to replace the high pressure sodium

light fixtures and bulbs with LED street lights.

As well, these street light fixtures were casting light in unnecessary areas. In other words, the older light fixtures were contributing to light pollution. This unnecessary light was taking away from the natural darkness that the Keweenaw is known for and stargazers crave at the Lodge.

Street lights around the world are one of the highest contributors to light pollution. Thus, the street light project was on the top of our list for addressing our dark sky initiatives.

We started working on it in the summer of 2020, with a sample of one fixture installed in August 2020 to see how the fixture would look and work on the property (on Golf Course Road, near cabins 24 and 25). After feeling comfortable with the sample light we selected, we ordered the remaining 27 fixtures. Due to a backlog of the lights we did not receive this order of lights until late Fall 2020. As well, the electrical contractor, [Bay Electric](#) was backlogged with multiple projects. This led to the light being installed in January and February 2021.



Bay Electric installing new street lighting at the Lodge – in the Lodge Parking Lot



Bay Electric installing new street lighting at the Lodge – in the Lodge Parking Lot

The light fixtures that we selected were from [Truly Green Solutions](#), a [Cobrahead RWL G2 model](#).



RWL2-S-30-30-D-7P7-3-G- ALUM ARM  
When ordered in 3K this is dark sky rated

## RWL™ G2

## Cobrahead

### DESCRIPTION

The RWL™ G2 fixture from TGS represents a new performance-based, forward-thinking design for roadway lighting for residential/commercial streets, intersections, and high-speed roadways. Designed for both retrofit and new construction, RWL™ G2 provides multiple lumen packages with field adjustability and distribution options. A Comfort view optic lens is applied to minimize glare and backlight while maximizing luminaire efficacy. RWL™ G2 has tool-less entry providing quick access for installation and maintenance. A variety of control options are available for future upgrades.

### APPLICATION

Roadway, Parking Lots, Walkways and General Outdoor Spaces



Here are the before-and-after pictures for when the street lights were replaced with dark-sky compliant street lights in the Lodge parking lot and along the cabin road on property (via our [webcams](#) from our web site).



Hole 1 / Brockway Webcam, with the old street lights in place. This shows how much light was being cast across hole number 1.





Hole 1 / Brockway Webcam, with the Hole 1 street light replaced with Dark-Sky Compliant light fixtures (but the cabin road street lights not yet changed out)



Hole 1 / Brockway Webcam, with the Hole 1 street light and cabin road street lights replaced with Dark-Sky Compliant light fixture (note: even with more street lights working on the cabin road, there is less light pollution on the golf course)

Why are we so focused and intentional in our lighting at the Lodge? It is because of the benefits of the dark skies to human beings, wildlife, and our natural surroundings in the Keweenaw.

The benefits of dark skies are:

- Improve one's circadian clock (or rhythm) – sleep patterns, hormone release, eating habits and digestion, and body temperature; for good health, we need sunshine as well as darkness [ i.e. better circadian clock means a better sleep, which contributes to better overall health ]
- Improving ecological integrity – many plants, wildlife, and insects rely on darkness to forage, breed and navigate, thus dark skies help them survive. [ e.g. many birds migrate at night, and the top of the Keweenaw is one of their byways ]
- Ensuring the full enjoyment of a wilderness experience



More research on how light affects humans and wildlife can be found on the IDA's website at:

- <https://www.darksky.org/our-work/grassroots-advocacy/resources/research/>

Watch the short film, [Losing the Dark \(2013\)](#), about the changes of the darkness and watch the trailer of the [Saving the Dark \(2019\)](#) movie produced by [savingourstars.org](http://savingourstars.org).



[John Mueller](#)

founder, golfer, runner, professor, entrepreneurship

