



Lake Standstill near Shelton, Washington, home of Mason

New LED Area Lights Will Cut Maintenance Costs for Mason County PUD 3

Keeping up with the maintenance of outdoor high pressure sodium (HPS) light fixtures has required a lot of effort for Shelton, WA based Mason PUD 3, a Washington State Public Utility District, since they were first installed in the early 1980s. Like most rural utilities, PUD 3 provides area security lights to customers on request for a low, flat daily rate. The PUD supplies the energy, fixture, and installation, and maintains the lights, sending a serviceman and a bucket truck to respond to any failures in the field. The trucks have rolled too often for Justin Holzgrove, PUD 3 Energy Resources Manager. “A lot can go wrong with HPS fixtures,” said Holzgrove. “The bulb can fail, the ballast too, or the photocell can stop working.” According to Holzgrove, as long as the old HPS fixture is in place, something within the unit is likely to fail every five years or less, causing the PUD to send a truck to fix the problem.

To avoid these frequent trips, PUD 3 decided to replace all of the old HPS fixtures with new ones that will be service-free for a much longer period. Rather than perform wholesale upgrades of lights in the field, however, PUD personnel will only upgrade old HPS lights to LED area lights when a lineman is already scheduled to go out to make the repair (when

a customer calls in saying their light isn't working properly). “In this way, we are saving thousands of dollars and many hours of lineman time,” said Holzgrove. “We are upgrading the system more slowly, but our capital cost is next to nothing.” Now, when the PUD serviceman replaces the HPS fixture, they install a new LED-based AreaMax outdoor luminaire manufactured by Evluma, of Renton, Washington. “We really like the fact that the fixtures are made in the USA by a local Washington State company,” said Holzgrove. “The best part for us is the reduced maintenance that the Evluma lights require.”

LEDs typically last much longer as an alternative light source, as much as 20 years or more, according to the manufacturer. They use about one third the power of HPS lights at an equivalent effective illumination, and the light that they emit remains relatively constant for the whole life of the luminaire, whereas HPS light output degrades over time.

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Mason PUD 3 Case Study



Figure 2. Mason PUD 3 lineman, John Donovan, replacing an old HPS area light with AreaMax. It's easy to see from these photos how the smaller and sleeker AreaMax housing.

“One of the things our customers like best about the new LED area lights is the natural white color, just like the light of a full moon,” said Holzgrove.

Evluma lights were chosen by Holzgrove and his team after an exhaustive comparison of LED-based products from many vendors. “We ranked them all according to performance, projected maintenance savings, energy efficiency, illumination pattern, and light quality,” said Holzgrove. “The Evluma source performed more consistently than the other LEDs at 0, 15 and 30 feet from the pole. We made sure that we were saving at least 65% of the energy used compared to the 100 watt HPS alternatives. We also asked the linemen,” continued Holzgrove. “They really liked the smaller, sleeker AreaMax fixture compared to the old, bulky HPS fixtures. So did our warehouse people.”

AreaMax supports features other LED luminaires don't. One of these is Photocontrol FailSafe operation. Because of its smart internal control system, which is calibrated to the local day/night time cycle, the AreaMax will continue to operate normally if the photocell fails. “This removes a common failure mode that plagues other outdoor luminaires,” said Holzgrove. “It allows us to install the lights with our choice of photocells. We won't have to worry about how they will

function for the life of the fixture.” The AreaMax is designed for a maintenance-free lifetime of 24 years, and Evluma backs up its reliability claims by offering a 10-year warranty.

The LED-based AreaMax luminaires have been functioning as advertised. The experience is still relatively new for Mason PUD 3, which has upgraded about 300 fixtures to date. There are another few years to go before all the old outdoor area lights are replaced. “Once the system upgrade is complete, several of our linemen will be freed from the task of changing lightbulbs, which will enable them to do other service-related work and we can become more efficient as a utility,” says Holzgrove.

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