



Ron Schultz, left, and Goldendale Public Works Director Karl Enyeart worked together to secure more than \$200,000 to upgrade Goldendale streetlights to LEDs.

Shedding Light on Savings

Klickitat County's new LED streetlights save money and decrease light pollution

By Jeanie Senior

Goldendale's new LED streetlights—installed last autumn—have two advantages, according to Goldendale Public Works Director Karl Enyeart.

He says they use less power and last longer than the high-pressure sodium fixtures that were replaced.

For Goldendale and communities everywhere, less energy consumption and longer life are good things.

The streetlights offer another benefit important to the town that is home to the Goldendale Observatory State Park. Unlike sodium streetlights, LEDs do not bleed light into the night sky. They also are easily dimmed when there are special events.

The International Dark Sky Places Conservation Program, according to its website, recognizes and promotes excellent stewardship of the night sky.

Photos of the night sky over Goldendale in 2014 and 2018 taken at the observatory by Troy Carpenter—the facility's administrator—illustrate the difference the new streetlights make. Pre-LED,

the sky over Goldendale glows red. Post-LED, it is notably darker.

"I have to admit that I didn't expect the change to be obvious, but it very much is," Troy said when he emailed his photographs to Karl. "In addition to a clearly darker sky, the cooler color temperature of the LEDs is highly apparent."

Klickitat PUD owns the majority of the streetlights in every city and community in Klickitat County. PUD Engineering Manager Ron Schultz says he and Karl started discussing the streetlight upgrades about 10 years ago when Karl was a consultant to the city of White Salmon.

"The city was really pushing for us to be dark sky compliant," Ron says, referring to Goldendale.

Dark sky standards for streetlights address color, upright, backlight and glare. When it was time to draft plans for the new lights, the technology had improved markedly, and the price of LEDs had dropped.

A \$220,000 grant from the state Transportation Improvement Board—part of the Washington



This photo comparison shows the night sky over Goldendale in 2014 with traditional streetlights, left, and 2018 with mostly LEDs.

Above photos by Troy Carpenter

Department of Transportation—covered most of the Goldendale project’s \$256,000 cost, along with a \$17,000 rebate from the Bonneville Power Administration. The city paid for the cost of the controls—almost \$37,000.

The more efficient streetlights were covered by the improvement board’s Relight Washington initiative, which has paid to install 43,563 LED streetlights statewide, from Aberdeen to Zillah, which represents about 80 percent of the cities and communities available for upgrade.

Installing more energy-efficient streetlights frees up money to pay for street repairs and street improvements, Karl says.

“The idea behind it is to reallocate funds from power to pavement,” he adds.

Ron and Karl worked on final specifications for the streetlight project for two years before it was approved. Ron says PUD executive assistant and board clerk Luann Mata was very helpful with the project.

The application for funding was submitted in 2015. KPUD had until the end of 2017 to implement the upgrades.

Sodium lights notoriously tend to flatten details, wash out colors and lend an overall brownish tinge. Colors and details stay sharp under LEDs, but the two engineers wanted the right color balance. To make sure that happened they chose the latest LED model designated as dark sky compliant in 2016.

Other Washington cities opted for blue-tinged lights when they switched their streetlights to LEDs, and they have not been popular.

Once the funds for Goldendale were secured, Karl suggested the cities of White Salmon and Bingen follow Goldendale’s lead and get grants for new streetlights. To date, 584 streetlights have been replaced in Klickitat County.

The PUD hired a subcontractor to install the lights in all three towns; a task Karl says went surprisingly fast.

The new streetlights use up to 80 percent less power, Karl and Ron say, and the controls allow the city to adjust the level of lighting according to the time of night.

The control program, which Karl says is quite simple, is on a computer in City Hall.

Switching to LED lights was a giant advance from high pressure sodium on several fronts, Karl says.

Those lights, installed in the mid-1980s, were notably short-lived. Sodium lights start to degrade after about two years, Ron says, and the light emitted slopes off dramatically after that.

The LED lights, by contrast, are guaranteed for 10 years and should last longer if operated at less than full power.

The Transportation Improvement Board grants “were purely for power savings,” Ron says. “And that turned out to be pretty awesome.”

The PUD offered the old streetlights to other agencies but got no takers. The fixtures were scrapped, and the bulbs were removed and sent to an approved disposal site.

Ron says the project was a great opportunity to work with Karl and to upgrade a significant number of county streetlights to more efficient LEDs. ■