

BRIGHT IDEA

LED CHANGE-OUT HELPS TANNER ELECTRIC ON TRUCK ROLLS, BOTTOM LINE

BY JOHN VANVIG

Tanner Electric Cooperative prides itself on being a good corporate neighbor to the 4,700 or so consumer-members it serves in the suburbs east of Seattle. But that neighborliness sometimes comes at a price, and the co-op's generous but increasingly cumbersome and costly policy on outdoor lighting was a clear example.

The co-op maintains neighborhood lighting under a range of ownership and operating agreements with homeowners groups, municipalities, and neighborhood associations throughout its service territory. Varying provisions covering who owns what can complicate their helpful approach, but those questions are generally manageable.

More aggravating, and expensive, was the mish-mash of lights themselves: a bewildering array of energy-hungry halogen and mercury vapor fixtures, differing ballasts, and balky, temperamental photosensor controls that required all-too-frequent servicing.

"I'd been running a truck probably one or two times a week, and that's being conservative," says Jim Anderson, the co-op's manager of operations & engineering. "It costs us probably \$100 an hour to run a truck with one guy in it, and if it's a busy street, you need to send a flag-man along too. I could spend, for one light in a busy area, somewhere in the neighborhood of \$400."

Light-emitting diodes (LEDs) looked like a promising answer to most of his problems, Anderson recalls. "I started poking around and looking at LED solutions to see what was right for Tanner," he says. "I knew they were out there, but I didn't know if they would be right for us."

He called another Washington co-op and was told to look into Evluma (evluma.com), a lighting design and manufacturing company based, conveniently, just outside of Seattle.

"If I've got a problem, I can get hold of somebody," Anderson says.

Tanner went with Evluma's AreaMax LED package. The lights dramatically cut energy use, have photo-sensor controls that reduce maintenance trips, and boast

a projected service life that far exceeds the two to three years Anderson was getting out of the older models dotting Tanner Electric's territory.

"When I looked at these, with a 20-year lifespan, it was definitely a no-brainer," he says.

Evluma's AreaMax replaces 100- to 200-watt fixtures with 40- or 70-watt LED units. Its "Photocontrol Failsafe" option backstops sensors and greatly reduces service stops.

PAYBACK IN FIVE YEARS

Anderson put together a cost-of-service study for Tanner Electric's general manager and board of directors that provided some eye-opening statistics and projections:

- The average annual energy use of the old lights was 786 kWh; the LED replacement units would use 172 kWh.
- Changing out an estimated total of 400 lights would cut the co-op's neighborhood lighting use from more than 314,000 kWh to less than 69,000. The cost of that power would drop from about \$28,300 to less than \$6,200.

In addition, promotional packages from the vendor and a conservation rebate from Tanner Electric's wholesale supplier, the Bonneville Power Administration, would shave a bit off the cost of changing out the old lights across the co-op's territory.

As a result, according to the bottom line of Anderson's light-changing study, "Payback will be reached in an estimated five years."

"If I can get the cooperative's money back in five years, it works very well," he says. "Then, at the end of five years, we'll address lighting rates accordingly."

Anderson says they had one small stumble early in the change-out effort.

"When we started to put this in, we set out to do what we thought was going to be the full system," he says. "We estimated 400 lights. When we actually got in there and



Tanner Electric LED street light

Photo by Cathleen Shattuck

MEET A MAG MEMBER

KEVIN SHORT



Kevin Short has been general manager at Anza Electric Cooperative in Anza, Calif., for less than five years, and he's already put his co-op on track to get more than a third of its energy from renewable sources by the end of this year.

But then, he's been at this for a long time. He specialized in photovoltaic installations and wind turbines as owner of Short Electric contracting from 1989 to 2006, and he brought that interest in renewables to Anza Electric when he joined the co-op as manager of member & energy services in 2006.

More recently, Short has shared his long experience with NRECA's Business & Technology Strategies unit as a member of its Renewable & Distributed Energy Member Advisory Group (MAG).

"I was interested in serving on this particular MAG because of my background in renewables and energy efficiency," he says. "I feel the utility industry is on the verge of substantial change as more distributed energy and storage become mainstream thinking."

Anza Electric is well on its way, with a hydro-power contract, a solar farm of its own, and 5 MW of solar power coming soon from its G&T, Arizona Electric Power Cooperative. And Short has found that his MAG work helps him stay ahead of the curve.

"The interaction with the group has been extremely helpful to our efforts," he says. "Knowing how Kaua'i Island Utility Cooperative [in Hawaii] has learned from their storage battery deployments has enabled us to fast-forward to a possible deployment of our own in the near future."

started replacing them, it turned out to be closer to 480."

The co-op also had to do a bit of member education as the new lights rolled out.

"It was kind of a learning curve for us, educating members on the different kind of light. A lot of people aren't used to having the true, white light you get from LEDs. But they grabbed on really, really quick."

Anderson had helped pave the way toward that understanding with a sly approach to the installation campaign. The first light he and his crews replaced was right outside the home of one of Tanner Electric's board members.

"The first thing I do," he says, "is try to get the board on board with me. So I went right out to a board member's house. I also put them in at intersections where members had complained about poor light."

One of the unit's features helps address member concerns, he adds: The intensity of the LED units can be changed with a touch of a button on an iPad.

"When people say, 'Oh, it's too bright,' we could actually go out there and dim it down," he says. "If we get a member who doesn't want the light, all we have to do is go out there and turn it off. It definitely gets rid of a big headache for the service guys."

But the majority of members by far have approved of Tanner Electric's new approach to neighborhood lighting, Anderson says. The new lights "have just met with really positive feedback."

'GOOD STEWARDS'

Other than a mandate to be Dark Sky compliant, the co-op is exempt from any conservation targets to meet environmental or regulatory goals. But Tanner Electric and its members have goals of their own.

"Tanner's not obligated at this point through any regulation," Anderson says. "But we consider ourselves to be fairly good stewards, trying to help our members on conservation, and this helps with that. We can say, 'We're doing our part on energy conservation'" with the co-op's new LED approach to outdoor lighting.

"Now, we can say to our members, 'We're trying to conserve as much as we can and also give you the best solution we can provide,'" Anderson continues. "This can do it and also give a payback. That looks good for Tanner, and we feel good doing it. And I know our members appreciate it as well."

And then, of course, there are all those truck rolls that don't have to happen because a finicky light somewhere is acting up again.

"These lights actually maintain themselves," Anderson says. "Manpower is big for us; it's a large part of the budget. If I can free up that time, it opens up a little more time for service work that's more essential than changing a lightbulb." **RE**