

# Nyberg Woods LED Lighting Upgrades Case Study



*Centercal Properties installs LED lights for multiple shopping centers including Nyberg Woods*

## Project Background & Scope

In the Portland, Oregon area, three shopping malls owned by Centercal Properties – Nyberg Woods, Bridgeport Village and Cascade Station – had metal halide (MH) parking lot lighting systems near end-of-life. Ron Audette, Regional General Manager for Centercal Properties, was curious about LED lighting being used in similar applications. Finding many LED lighting products on the market, Audette enlisted the consulting services of Light-Waves Electronics Inc. to help with product selection. This report highlights the conversion to LED lighting at Nyberg Woods, though similar LED lighting retrofits were completed at the other two properties and all are available to view.

Steve Karuss at Light-Waves identified possible LED lighting products using the Design Lights Consortium Qualified Product List as a resource, and installed samples of the best candidates from reputable companies. The Philips Wide-Lite, with a color-rendering index (CRI) of 80 and color temperature of 4000K, performed better than the existing lighting. Both the LEDs and drivers are made by Philips (an important factor in controlling supply and costs), and a solid five-year warranty made them the first choice. Light-Waves prepared photometric layouts and economic analysis, and researched economic incentives from the Energy Trust of Oregon. Energy savings came from one-for-one replacement of 1000-Watt MH to 254-Watt dimmable LED fixtures. Dimming control provides additional savings beyond the reduction in wattage. Finally, significantly reduced maintenance costs are expected from the longer life of the LED sources, making the project even more attractive. An expected 28% return on investment made it “the right thing to do” according to Audette.



Nyberg Woods Shopping Center

## Results

A total of 67 Wide-Lite fixtures were installed, with Type V distribution and dimming drivers adjustable for 10% to 100% output. Only one catastrophic failure involving water intrusion was encountered, which the warranty covered without question.

A wireless control system was obtained through a local company, Virticus, since acquired by LSI industries. This company manages the programming of the control system. Initial settings turn the lights on at dusk, reduce light output by about 30% an hour after closing and then reduce output another 30% after midnight. The changes, which occur smoothly over about five seconds, are not obvious to viewers. Initial savings before the dimming was activated were 44%. Since dimming has been recently activated, total savings of approximately 65% compared to the previous system are expected.



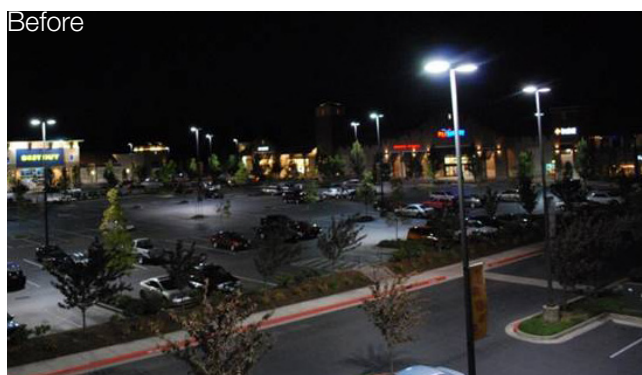
The fixtures are zoned to accommodate the needs of individual store operations. If one of the mall businesses has an unusual late night event, such as a movie opening or new electronics offering, the control system programming can be adjusted so the parking lot lights in that area are at full brightness for the event.

Everyone is very pleased with the new lighting. Visibility is improved and the lighting distribution is much more even because hot spots below the MH fixtures have been eliminated. Light trespass off the property is not an issue because the lamps are aimed to illuminate only the mall's property. The security staff is especially pleased because the security cameras can now clearly discern the color of vehicles.

## Lessons Learned

Based on the high-quality lighting performance, energy savings and incentives, Audette anticipates that LED lighting will replace all of the exterior lighting at their many properties over the next ten years or so. Upcoming projects include replacing a high-pressure sodium (HPS) system at another Portland area mall and replacing 25,000 decorative strings lights with LED sources in the near future.

Audette definitely believes it is important to have an experienced team to help guide the decisions-making and installation process. He was very pleased with the service provided by Light-Waves, which included processing the required paperwork for utility incentives.



Experienced professionals can also perform photometric layouts and economic analysis, which are critical for success, as is dealing with reputable suppliers. Keeping up with evolving products is a constant challenge; solutions that worked last year likely will not be the best option available for this year's projects.

## Additional Resources

Others interested in lighting upgrades are welcome to visit these sites to view the parking lot lighting:

- **Nyberg Woods**  
7061 SW Nyberg St., Tualatin, OR, 97062
- **Cascade Station** (at the Portland International Airport)  
9801 NE Cascades Parkway, Portland, OR 97218
- **Bridgeport Village**  
7455 SW Bridgeport Rd., Tigard, OR 97224

### Product

Philips Wide-Lite: <http://www.widelite.com>

### Consultant

Steve Karuss, 503-245-8830

Light-Waves Electronics, Inc.: <http://www.light-waves.net/>

### Installer

Stoner Electric Controls, LSI Verticus: <http://www.lsi-industries.com/virticus/>

### Utility Incentives

Energy Trust of Oregon

## Considerations for Purchase

Before purchasing LED lighting:

- Understand warranty coverage and length. Coverage might include various components, field repair, shipping and labor, over 5 to 10 years. Warranty eligibility may require multiple LEDs to fail before replacement.
- Install a sample before committing to a purchase.
- Check your local utility for available incentives.
- Engage a professional to provide lighting that meets your needs, complies with energy code, and is compliant with utility incentive requirements.

Most utility incentives for LED lights use a qualified list:

- For light bulbs, look for ENERGY STAR products: [http://www.energystar.gov/index.cfm?c=manuf\\_res.pt\\_lighting](http://www.energystar.gov/index.cfm?c=manuf_res.pt_lighting)
- For commercial light fixtures, refer to Design Lights Consortium qualified product lists: <http://www.designlights.org>

Additional questions to ask are listed at this U.S. Department of Energy website: <http://www.eere.energy.gov/buildings/ssl/what-to-ask.html>