

# ODOT Region 1 LED Replacement Pilot

## Frequently Asked Questions

(last updated 5/13/2020)



Project website: [tinyurl.com/odotR1LEDpilot](https://tinyurl.com/odotR1LEDpilot)

Interactive GIS map: <https://services.evri.io/OregonDOTLEDViewer/>

### **Q: Why is ODOT replacing the existing roadway lights with new LED roadway lights?**

A: Light-emitting diode (LED) roadway lights provide improved illumination and use less energy than the current standard high-pressure sodium lights. ODOT is replacing the existing roadway lights with LED lights to improve illumination, save both energy and maintenance costs, and reduce the amount of carbon our energy needs create.

The LED street light market is mature enough now that we can reliably predict their durability and energy requirements. ODOT has reliable data about our existing lighting energy needs that we can use to predict how much money and carbon output we will save with the new LED fixtures. Our innovative partnering contract with Ameresco allows us to pay for the replacement project with the future energy cost savings, which means we can complete this project without taking funding away from other projects.

### **Q: How much energy will be saved with the LED conversion?**

A: The new LED lights will consume about half the electricity of the existing lights, reducing costs and helping ODOT achieve its sustainability and carbon reduction goals. We estimate that ODOT will save \$700,000 to \$800,000 each year on energy costs.

### **Q: How will the LED conversion impact ODOT maintenance costs?**

A: The current high-pressure sodium lights require significant maintenance every two to four years. High-pressure sodium lights have multiple parts including bulbs that sometimes wear out at different rates, requiring only parts of the light to be replaced or fixed at different times. The new LED lights come as one electrical unit and last longer than high-pressure sodium lights. We expect to replace the LED lights every 15-20 years. The LED conversion will result in reduced maintenance costs. The longer lifecycle of the LED lights will allow ODOT to close traffic lanes for light fixture replacement less often, which means fewer impacts to the public.

### **Q: Why is ODOT replacing some, but not all, of the roadway lights in Region 1?**

A: There are three reasons why we would not replace a roadway light with an LED.

1. The light doesn't belong to ODOT. Only about 10 percent of the roadway lights in Region 1 belong to ODOT. The rest belong to city or county governments or private entities.
2. The light is already an LED. This project is replacing existing high-pressure sodium lights with LEDs.

3. The light is scheduled to be replaced with an LED during a different ODOT construction project. Some planned ODOT projects include roadway light replacement, so to save time and money, we will not be replacing those lights with LEDs as part of this pilot project.

**Q: When is construction taking place?**

A: The LED replacement will begin in late May 2020 and will last through summer 2021.

Most of the work for this project will take place at night. This allows work crews to replace the LED lights during lower traffic periods, which means fewer opportunities for conflicts between travelers and workers and fewer significant traffic impacts.

Each LED fixture takes about 20 minutes to replace. In most cases, crews will turn off several lights in a row and move a lift truck from one light pole to the next as fixtures are replaced.

Check out our [interactive map](#) where can see which fixtures we have already replaced for this project and which highway sections we will be working on in the coming weeks.

**Q: What “color” are the LED roadway lights that ODOT is installing?**

A: This question refers to the Correlated Color Temperature of an LED light, measured in degrees Kelvin (abbreviated K). Existing high-pressure sodium lights have a color temperature of approximately 2,200K and have a yellow cast. The new LED lights provide full spectrum white light with a color temperature of 3,000K. This light temperature is considered dark sky friendly and has a warmer look than 4,000K street lights.

Note: Most pedestrian and bicycle pathway lighting will use 2,700K LED fixtures.

Note: Tunnels are not considered a dark sky concern. ODOT is using 4,000K LED lights in tunnels.

**Q: Do 3,000K LED lights use more energy than 4,000K?**

A: Yes, but the difference is very small. 3,000K LED lights still present a significant energy and cost savings compared to high-pressure sodium lights.

**Q: Why is ODOT installing 4,000K lights in tunnels?**

A: 4,000K is still a standard across many jurisdictions. The Oregon Department of Transportation has decided to use 3,000K lights in most cases after reviewing recommendations from the public, the Portland Audubon Society, the International Dark Sky Association, and others. 4,000K lights in tunnels will allow us to provide the best illumination possible in tunnels while still meeting those recommendations.

**Q: How will the new LED roadway lights impact viewing night sky?**

A: The International Dark Sky Association recommends LED lights that have no uplight, meaning no light shines above the fixture, with a color temperature of 3,000K or less. The goal of these recommendations is to reduce upward light pollution, resulting in a better view of the night sky. ODOT is installing new LED lights that meet these recommendations.

**Q: How will I know when the roadway lights have been replaced?**

A: You may or may not notice changes. The new LED fixtures cast light differently than the existing lights, so you may notice a different look or feel. Some people may notice a visual difference in the color of the light from 3,000K LED lights compared to the 2,200K high-pressure sodium lights.

This project will last through summer 2021. If you are not sure whether a light near you has been replaced yet, track the project on our interactive map to see which fixtures we have already replaced and which will be replaced soon.

**Q: How will traffic be impacted by the installation of the LED roadway lights?**

A: For the safety of the traveling public and the crews installing new lights, some lane closures will be required when roadway lights are being replaced. To minimize traffic impacts, much of this work will happen at night. Most lane closures will be short duration; longer lane closures or full closures will be required to replace the lights and control systems in tunnels.

**Q: What will happen to all those old lightbulbs and fixtures?**

A: We will recycle lighting and materials removed during this replacement project as much as possible. We will also properly dispose of any hazardous materials according to applicable laws.

**Q: How will you handle special or historic lights such as the ones on the St. Johns Bridge?**

A: We will match or maintain existing specialty fixtures. We are working with our Region 1 Historian to ensure the new fixtures or retrofits to existing fixtures meet historical requirements. In some cases, matching replacements exist in the market, in other cases we typically can find a reliable internal retrofit kit.