

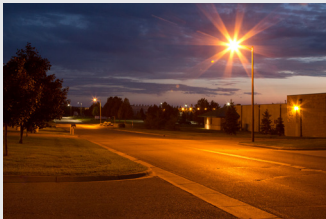
# LED street and area lighting upgrade

## Benefits of upgrading street and area lighting are numerous

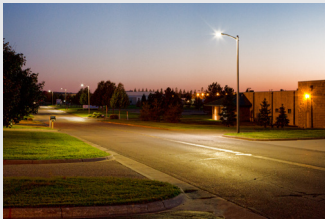
Through our new light-emitting diode (LED) lighting program we'll retrofit all company-owned street and area light fixtures—used in providing illumination services for our Minnesota retail customers—from high-intensity discharge (HID) to LED technology. We've carefully researched and evaluated the feasibility of adopting LED lighting systems and the benefits are numerous:

- Compared to other available lighting sources, LEDs are more energy-efficient using about 70 percent less energy than HIDs.
- LEDs have a longer life—lasting four to five times longer than HIDs—resulting in increased reliability and reduced maintenance costs.
- Today's LEDs operate at a much higher color rendering index than HIDs, enabling drivers and pedestrians to observe night time conditions more safely due to improved light quality.
- LEDs provide increased illumination, more uniform and even lighting distribution on roadways and surfaces, and less light pollution spilling into the night sky.

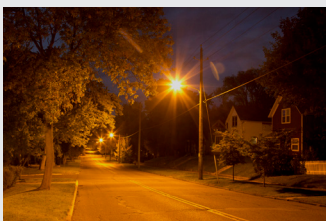
## LED street lights impact both business and residential areas



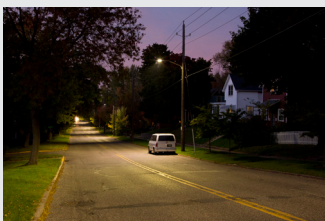
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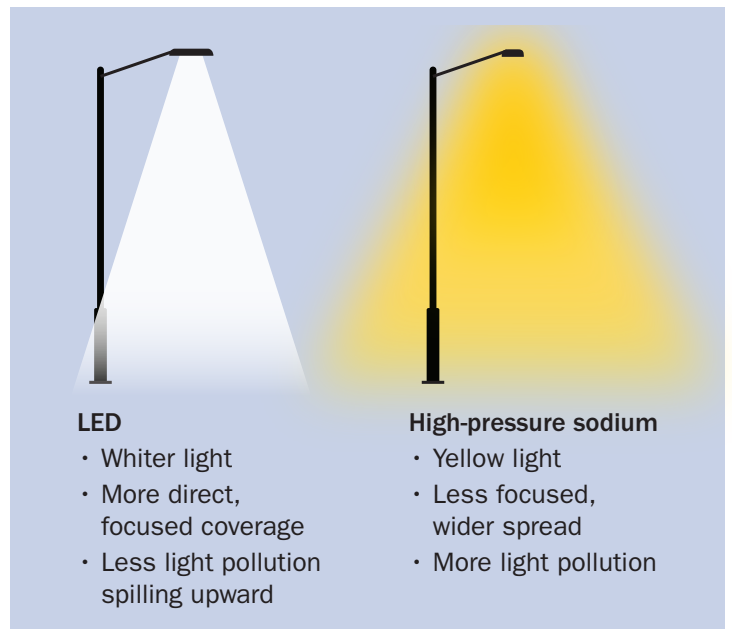
BEFORE



AFTER

## FAQs

- Q.** Why are we upgrading our street and area lighting to LED technology?
- A.** We're converting our outdoor lighting systems to LED technology to enhance the quality of outdoor lighting service we provide in the communities we serve. LEDs are more energy-efficient, require less maintenance, and will improve light quality and safety.
- Q.** Will residents notice a difference compared to the existing lights?
- A.** Yes, new LED street lighting technology has a more efficient lighting pattern that reduces glare and focuses the light directly on the area to be lit. HID street lighting has a less efficient light pattern that causes glare, light trespass, and increased light pollution.



- Q.** Will the new lights be as bright as the old lights?
- A.** Yes, the light output, or illumination levels, of the new LEDs is equivalent to the old HIDs.



## Rate comparison

EXISTING FIXTURE		REPLACEMENT FIXTURE	
Unit type	Rate	Unit type	Rate
HPS9	\$9.39	LED5	\$9.39
HPS14	\$14.56		
MH8	\$9.60		
MV6	\$8.44		
HPS19	\$16.87	LED8	\$17.62
MH14	\$18.29		
HPS23	\$19.05	LED10	\$18.91
MH20	\$20.88		
MV11	\$15.78		
MV21	\$20.41		
HPS44	\$23.61	LED13	\$23.68
MH110	\$43.74		
MH36	\$20.49		
MV35	\$30.75		
MV55	\$42.24		
HPS9PT	\$11.34	LED3PT	\$11.30
MV6PT	\$11.02		
HPS14PT	\$14.54	LED5PT	\$14.53
MH8PT	\$13.65		
400MV Flood	\$20.41	LED 20 Flood	\$23.67
400HPS Flood	\$23.61		
400MA Flood	\$23.94		
1000MA Flood	\$44.36	LED 30 Flood	\$44.21
1000MV Flood	\$40.13		

**Q.** How will the new LED rate compare to current rates?

**A.** In most cases, we anticipate customers will see a slight decrease in costs. Depending on the type of fixture used for lighting service, customers may see a change in their monthly bill. See chart at left. Our most commonly used fixture—the 100-watt high-pressure sodium fixture, or HPS9—will see no price change. We anticipate no net change in revenue collected from street and area lighting customers.

**Q.** If LED fixtures last longer and use less energy, why aren't customer costs decreasing even more?

**A.** Outdoor lighting service rates consist of three cost components—electricity to energize the light fixture, maintenance to keep the fixture operating, and labor and material costs to purchase and install the light fixture, pole, wiring, and other necessary components of the actual lighting system. LED fixtures provide illumination for streets, sidewalks, and other areas at significantly lower energy and maintenance costs, which helps keep outdoor lighting rates lower for customers. However, LED fixtures cost more than HID fixtures, which tends to offset some of the cost savings attributable to reduced energy and maintenance costs. Integrating LED lighting into our outdoor lighting services will keep long-term costs more stable for customers as fixtures and lamps for HID systems become obsolete and more expensive for us to procure.

**Q.** When will the work take place?

**A.** Installation of LED street and area lights began during the spring of 2018. Stay tuned for updates from your city for more information on timing and dates.

## Additional questions?

For more information visit our website at [otpc.com/LEDStreetLighting](http://otpc.com/LEDStreetLighting) or contact your local city administration.

