

CITY OF GRESHAM

LED CONVERSION

Case Study



LED STREETLIGHTS BALANCE THE BOOKS IN THE CITY OF GRESHAM, OREGON

SUMMARY

In order to balance the total costs of operating the streetlights with the revenue generated, the City of Gresham partnered with King Luminaire Co. Inc., a division of The StressCrete Group, to replace their high-pressure sodium (HPS) streetlights with high-efficiency light-emitting diode (LED) lights. The new cost-saving decorative LED fixtures allow Gresham to return their streetlight fund back to financial sustainability. The LED conversion also resulted in lowered maintenance costs. As a result, Gresham is one of the first cities in Oregon to complete the transition to LED luminaires and was recognized with the 2015 Sustainability Practices Award from the American Public Works Association.

PROJECT HIGHLIGHTS

Project Site: Gresham, OR

Energy Use Reduction: At least 50% (with potential for greater reduction due to field switchable wattage selector)

Energy Cost Savings: \$500,000/year

Value Added:

- Increased visibility
- Reduced glare
- Greater color rendition
- Reduced light pollution
- Reduced CO₂ emission



An example of the HPS streetlight
(photo: The StressCrete Group)

THE CHALLENGE

The City of Gresham was using revenue from their utility license fees on electricity and natural gas to power their streetlights. With power costs rising faster than the revenue generated, the Gresham streetlight fund was in danger of reaching zero by end of 2018. To address this issue, the City of Gresham needed to balance the revenue with the total costs of operating their streetlights.

THE SOLUTION

Gresham replaced 8,000 conventional high-pressure sodium (HPS) streetlights with new, state-of-the-art light-emitting diode (LED) lights. The City of Gresham's new street lighting system also incorporated a field-switchable wattage selector (with a range of 31-75W) to further increase energy efficiency.

- The City of Gresham partnered with King Luminaire to supply over 500 decorative LED fixtures
- The LED luminaires only need replacement after approximately 15-20 years, versus re-lamping the old HPS lights every 4-5 years and King Luminaire backs the LED lights with a 7-year warranty
- The new LED lights are twice as bright as the HPS lights while also increasing energy efficiency
- The total conversion of 8,000 HPS lights to LED produced a significant reduction in environmental emissions

“With the LED conversion, the imbalance between revenue and expenses is going to turn around. So not only are we saving money and helping the environment, the streetlight fund will be financially sustainable. This is a great thing for Gresham.”

John Dorst, Deputy Director, Department of Environmental Services (Retired), Gresham, OR

THE RESULTS

Electricity, Maintenance and Cost Savings:

- The City saves about \$500,000 a year in electricity costs by switching to LED because the new lights last much longer and use less energy
- Energy cost savings is equivalent to \$10 million over a 20-year lifetime
- The cost savings allow Gresham to finance the cost of the LED conversion and return the streetlight fund back to financial sustainability

Emission Reductions:

- The conversion to LED lights results in significant annual CO₂ emission reductions

Overall:

- LED luminaires increase light uniformity, visibility, colour rendition, and reduce glare, thereby increasing safety on roadways and sidewalks
- Gresham is one of the first cities in Oregon to completely switch over to LED and was recognized with the 2015 Sustainability Practices Award from the Oregon Chapter of the American Public Works Association



K118 Washington Decorative LED Luminaire (in Gresham)
(photo: The StressCrete Group)

References

- Stine, M. 2013. What a bright idea: Gresham switching to LED streetlights. Pamplin Media Group. Retrieved from: <http://portlandtribune.com/go/42-news/197471-what-a-bright-idea-gresham-switching-to-led-streetlights>
- Environmental Services Department. 2017. LED Streetlights. City of Gresham Oregon. Retrieved from: <https://greshamoregon.gov/LED-Streetlights/>



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THE STRESSCRETE GROUP

With manufacturing facilities in five North American locations, The StressCrete Group produces an extensive line of high performance decorative outdoor lighting fixtures, decorative spun concrete and metal poles, plus pole arms and accessories, bollards and site amenities. We also manufacture a vast range of spun concrete poles for power distribution and transmission, sports lighting, high-mast lighting, and specialty poles for the electrical and communications industries.

We are a family business that operates by the core values of honesty, integrity, compassion and respect to better the lives of our employees, their families, our customers and the communities we represent. The StressCrete Group services multiple market segments through two divisions:

- StressCrete Ltd., established in 1953, is the longest-operating, most experienced manufacturer of spun concrete poles in North America. With plants in Alabama, Kansas and Ontario, we offer the broadest, most diverse range of spun concrete poles and bollards in the industry, with quality second to none.
- King Luminaire Co. Inc. produces a comprehensive assortment of high performance outdoor luminaires, metal poles, pole arms and accessories, plus bollards and site amenities. With an array of state-of-the-art LED Technology and HID optical systems, and plants in Ohio and Ontario, King Luminaire is a North American leader in the outdoor lighting industry.

At The StressCrete Group, we provide every customer with the highest quality innovative products and work as a team to create and maintain life-long customers through world class service.