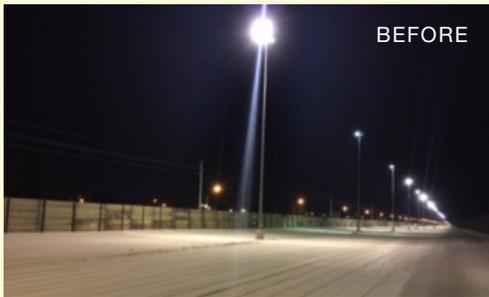




# Illuminating the Border with a Spotlight on Savings

Brighter, more efficient, and cheaper is a cost-effective approach to protecting the border



BEFORE



AFTER

## Asset Facts

Date Built	May–November 2016
Acres	135
Asset Type	Border Security Protection Zone

## Project Facts

Annual Energy Savings	2,701,194 kWh
Total annual building energy savings	74.9%
Annual Savings	\$247,851
Gross Investment	\$2,345,385
Funding	Performance Contract
Rebates	\$297,131
Rebates as % of Total Project Cost	12.7
Net Investment	\$2,048,254
Net Payback	8.26 years

**ROI 12%**

## Challenge

U.S. Customs and Border Protection (CBP) required cost savings and improved lighting along a ten-mile stretch of border near Yuma, Arizona. All work had to be completed without interruption of CBP operations.

## Our Solution

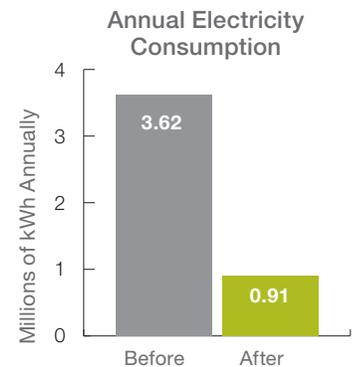
Our solution had three principal elements: (1) LED fixture replacement, (2) lumen output redistribution, and (3) lowering pole heights and reorienting fixtures. Our redesign reduced pole heights by a third, distributed the poles more efficiently, and directed the fixtures to minimize light loss factors. We replaced 1000W metal halide light fixtures with S33W Cooper-Lumark Galleon LED fixtures.

- Conducted on-site survey and Investment Grade Audit of lighting; coordinated with the CBP engineers and their O&M contractor
- Engineered site-specific photometric plans in conjunction with CBP engineering and on-site personnel to meet light level requirements for mission effectiveness coupled with energy efficient LED upgrades
- Delivered solution using formal test and acceptance procedures as outlined in DOE FEMP ENABLE process
- Secured financing that will ultimately be paid back through energy savings
- Project was delivered several weeks ahead of schedule, within budget, and with no impact on operations or effect on the CBP mission during the installation process.

## Energy Savings – 74.9%

- New LED fixtures allowed for much improved lighting of the border protection zone for Customs Border Protection and Border Patrol Agents for 10 miles of border zone while reducing energy consumption/costs by 75% in the first year.

kWh SAVINGS SUMMARY		
Before	After	Savings
3,606,995	905,801	2,701,194



ENVIRONMENTAL IMPACT SUMMARY			
kWh Savings Equivalents	1,965 Tons of greenhouse gas reductions	430 Cars removed from the road	86,438 Trees planted

**How can we help you?** Please contact Green Generation Solutions at [info@greengenerationsolutions.com](mailto:info@greengenerationsolutions.com) or 301.202.2930

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