

Overview

With more than 40,000 parking spaces to light Cox Enterprises, owner of Manheim Pennsylvania Auto Auction, the world's largest auto auction carries a sizable electric load. The lot achieved 50% outdoor lighting energy savings through a retrofit of outdoor lighting—totaling 1.8 million kWh in annual savings over the 13.5 million square foot facility.

Cox's Lighting in Energy Efficiency in Parking (LEEP) Campaign Award winning project retrofitted high-wattage metal halide fixtures with reduced-wattage pulse-start metal halide lamps and a wireless control system. The controls enable further energy savings by allowing fixtures to be turned off when not needed. In addition to the energy savings, the longer rated life of the new lamps also reduces maintenance costs. The significant energy saving from the new fixtures and lighting controls resulted in a simple payback period of less than 4 years.

Keys to Success

The effort is aligned with Cox Conserves, the company's national sustainability program that focuses on reducing waste and conserving energy and water. Huiet Joseph, senior manager of environmental sustainability, along with others in Cox's Energy Conservation Department including staff active in the Better Building Alliance, led the project. Although energy cost savings was the primary goal, the team also focused on finding a solution that would not compromise lighting quality. Alliance, led the project.

“We are bound by only two requirements. The project needs to be good for the environment and for the bottom line.” Although better color rendering and lower maintenance costs are desirable, they generally do not determine project approval.”

Huiet Joseph, Senior Manager of Environmental Sustainability, Cox Enterprises

The Cox team worked with Venture Lighting, which developed the turn-key project and manufactured the lamps and ballasts. The project touched over 934 individual lighting fixtures.



Manheim Pennsylvania. Image courtesy Google Earth

Results	
Energy Savings	1,800,000 kWh, a savings of 50%
Lighting Power Density (W/sq. ft.)	0.04 a reduction of 33%
Utility Savings	\$176,000 at \$.10 per kWh
Simple Payback	Less than 4 years
Installation and Maintenance	The existing 1,000-watt probe-start metal halides were replaced with 575-watt pulse-start metal halide lamps and ballasts. Bi-level capacitors were also installed to allow the control system to dim the lights to 50% light output. Ongoing monitoring of the system allows Manheim to track performance and schedule maintenance.
Overall Performance	Feedback has been positive, with customers and staff commenting that they like the light quality.

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Lessons Learned

- ▶ Address electric system power quality and grounding issues prior to installing control equipment.
- ▶ System operators must receive initial training, and should be provided with ongoing training.
- ▶ Expect to modify your planned operating schedule to meet facility needs.

Next Steps

Cox envisions using a similar lighting strategy at additional sites. The company has completed about 15 similar projects in the last 2 years and plans to complete an additional 8 projects for 2014. Although metal halide is the lighting of choice for Cox, they continue to evaluate LEDs as a potential retrofit within the existing pole layout at their facilities.

In the meantime, the LEEP Award draws attention to a notable accomplishment at Manheim.

“The LEEP Campaign is a very worthwhile initiative because it creates awareness of an opportunity to save energy and money in exterior lighting. It’s a very important application. As we’ve demonstrated, adopting high efficiency approaches can benefit both the environment and a company’s bottom line.”

Huiet Joseph, Senior Manager of Environmental Sustainability, Cox Enterprises

LEEP Award Winning Site: Summary	
Location:	Manheim Auto Auction Manheim, PA
Parking Area:	13.5 million sq. ft. (934 fixtures)
Solution:	Replaced high-wattage metal halide with reduced-wattage lamps and wireless control system
LEEP Awards:	Highest Absolute Annual Energy Savings in a Retrofit at a Single Parking Area

Learn More

Through the [Better Buildings Alliance](#), members across different market sectors work with the U.S. Department of Energy’s (DOE) exceptional network of research and technical experts to develop and deploy innovative, cost-effective, energy-saving solutions that lead to better technologies, more profitable businesses, and better buildings in which we work, shop, eat, stay, and learn.

Learn more about how to join the Better Building Alliance’s Lighting Energy Efficiency in Parking Campaign, at www.leepcampaign.org/. LEEP Participants are collectively saving over 120 million kilowatt-hours and over \$10 million annually across 430 million square feet of lots and garages by upgrading to high efficiency parking lighting.

Find more resources and guidance on lighting in the [Better Buildings Solution Center](#).