



## Denver International Airport lights up the lot

### New energy-efficient LEDs brighten up the covered parking structure



“The parking garage project is a great example of a true sustainability triple-bottom-line success.”

—Scott Morrissey  
Director of Environmental Services  
Denver International Airport

When a capital investment saves you money and makes people happier, it almost becomes a no-brainer to complete it. That was the case at Denver International Airport (DEN) where the maintenance team opted to replace old lighting technology with LEDs in the parking garages. The project ultimately saved energy, money and made parking an easier, safer and more comfortable experience for travelers coming from all over the world.

#### The selection process

It took a little time to figure out the right lights. Energy Manager, Ed Keegan, considered fluorescent fixtures, but was concerned about their performance in cold weather. At the time, LED technology was still too expensive to be viable.

“We stepped back to really consider what would be the best solution long term and decided that our electrical engineers could do the design in-house, which saved us money,” explains Keegan. “While we were waiting, LED technology and performance improved and the cost came down dramatically.”

#### The solution

Keegan is part of a 16-member sustainability team constantly looking at ways the airport can be more environmentally friendly. Using LEDs fit in perfectly with existing efforts to reduce the impact on the environment.

Airport officials ultimately replaced approximately 5,500 high-intensity discharge light fixtures with energy-efficient LED fixtures. A rebate from Xcel Energy covered roughly 26 percent of the cost, providing excellent incentive for them to complete the project.

They are now saving 4.2 million kilowatt-hours of electricity annually. Using the Environmental Protection Agency Greenhouse Gas Equivalency calculator, that’s enough energy to power 400 homes. The payback term is about four years, and the lights are expected to last 20 years.



#### Project Snapshot

Project	Replace 5,500 HID light fixtures with LEDs in parking garage
Xcel Energy Rebate	\$754,000 (26% of cost)
Annual Energy Savings	4.2 million kWh
Annual Electric Savings	\$294,000
Payback Term	4 years

“We talk about the parking garage project as being a great example of a true sustainability triple-bottom-line success,” says Scott Morrissey, Director of Environmental Services. “In addition to saving a significant amount of electricity to reduce energy and maintenance costs, there’s also a positive customer service benefit of making it a more pleasant space for our customers who can more easily find their cars after a long trip.”

Keegan estimates they’ll save over 4,000 hours over the course of the next five years in maintenance time where they’ll no longer need to change lamps and ballasts.

“LED light is much more attractive than the yellow light from the old high-pressure sodium fixtures,” Keegan says. “LED lights also have much better light distribution so there are fewer dark spots and hot spots.”

### More to come

With the lighting project behind them, Keegan also considered other ways to save energy and money. He and his Xcel Energy account manager, Mark Schwartz, talk regularly about what else can be done and what rebates may apply.

“Ed and I talk several times a week. With the size and scope of the airport and their focus on efficiency, we’ve always got something to discuss,” Schwartz says.

In addition to the completion of the lighting project, the team has added new chillers and upgraded air handling units with motors and variable frequency drives within the main terminal. They upgraded the HVAC system by removing pumps, installing plate and frame heat exchangers and implementing a hydronic optimization system of valves and controls, which helps make the HVAC system run more efficiently.

“These guys are smart about efficiency and luckily we can rebate a lot of the work they’re doing to help offset the cost,” Schwartz says.

Keegan and the team will continue looking for ways to save throughout the airport, one project and one rebate at a time.



For more information about Xcel Energy’s rebate and energy efficiency programs, please visit [xcelenergy.com/Business](https://www.xcelenergy.com/Business) or contact an energy efficiency specialist at **855.839.8862**.