The Minnesota Department of Transportation and the Metropolitan Council chose Cree® LED luminaires over metal halide fixtures for parking upgrades and new construction projects.

- Instant-on start up
- Significant energy and maintenance savings
- Optional photocell allows fixtures to turn off when there is ambient light
MASS TRANSIT PARKING SOLUTIONS

OPPORTUNITY

The Minneapolis 2030 Transportation Policy Plan projects that bus ridership will double with transportation investments and land development. As a result, new park and ride structures in outlying Minneapolis are being developed to serve rapid transit and arterial bus systems. Operated by Metro Transit, I-35W Park & Ride parking lots and structures are a joint effort of the Minnesota Department of Transportation (MDOT) and the Metropolitan Council.

The Twin Cities metropolitan area was one of only five regions nationwide to win competitive funding from a U.S. Department of Transportation program aimed at reducing congestion. The federal Urban Partnership Agreement (UPA) is a collaboration of federal, state and local entities working to improve traffic by reducing congestion on Interstate 35W, Highway 77/Cedar Avenue and in downtown Minneapolis. Of the $133 million UPA federal grant, about $86 million is allocated to transit projects.

SOLUTION

Construction of nearly 2,700 parking spaces at six new or expanded park and ride facilities along the Highway 77/Cedar Avenue and I-35W corridors north and south of downtown Minneapolis was completed in the fall of 2010. Metro Transit installed Cree® luminaires in park and ride ramps located in Lakeville, Roseville, Blaine and Cedar Grove. Each architecturally-unique structure has more than 600 parking garage luminaires illuminating interior, perimeter and surface parking spaces.

Bonestroo Inc. provided engineering design services for the Lakeville and Roseville parking structures. LED luminaires were selected for the value that energy efficient lighting products provide and the importance of using a sustainable light source.

“We analyzed pulse start metal halide, compact fluorescent and T5HO solutions and while they had a lower capital cost, everyone saw the value of energy and maintenance savings that LED provides. We took advantage of the photocell option that maximizes energy savings by allowing each fixture to turn off if the natural ambient lighting is high enough,” explained Mike FitzPatrick, PE, LEED AP associate for Bonestroo. “This is a better solution than the standard zone-controlled systems used on other projects. The LED fixtures allow us to do this because of the instant-on startup as compared to pulse start metal halide fixtures.”

BENEFITS

FitzPatrick noted additional advantages to using LED technology in unheated parking ramps. “Cold weather does not adversely affect LED fixtures as compared to the fluorescent lamps. The impressive lumen maintenance and controllability of the Cree® product provided us with a very maintenance-friendly project that is uniformly illuminated. Controlled illumination provided the Cree® luminaire with an advantage over induction which is sometimes considered to be a life-long solution. We selected Cree® because they were the first to have a reliable product in the LED market for parking garage applications,” he elaborated.

PARKING LOTS AND STRUCTURES

Kenrick Avenue Park & Ride
The Kenrick Avenue park and ride at Lakeville is a 750-space, three-level facility that was formerly a truck weigh station/park and pool lot. The Lakeville structure is adjacent to a highway which required city officials and the MDOT to meet local regulations for controlling light spill.

I-35W & County Road C Park & Ride
The I-35W and County Road C park and ride at Roseville is a 460-space, four-level parking ramp.

I-35W & 95th Avenue Park & Ride
The 95th Avenue park and ride at Blaine combines a new $8.5-million three-level parking structure and adjacent parking lot to accommodate more than 1,400 vehicles. Metal halide fixtures in the existing lot were upgraded with Cree® area luminaires with BetaLED® Technology. The 470-space structure is illuminated with Cree® parking and security luminaires.

Cedar Grove Park & Ride
Located in the Cedar Grove community of Eagan, Minn., a 164-space park and ride opened in October 2010 and serves as a hub for the Minnesota Valley Transit Authority. The green build site occupies a former brownfield that was once the Cedarvale shopping area.

Lakeville Cedar Surface Parking Lot
The Lakeville Cedar Avenue park and ride lot provides parking for 191 vehicles.
“We selected Cree® because they were the first to have a reliable product in the LED market for parking garage applications.”

Mike FitzPatrick, PE, LEED, AP Associate, Bonestroo
IN THIS CASE STUDY

**Cree Edge™ Series**

**AREA LUMINAIRE**
- Minimum 70 CRI
- CCT: 4000K (+/-300K), 5700K (+/-500K)
- Utilizes BetaLED® Technology
- UL wet listed
- Two-level options
- Modular, low-profile design

**Cree Edge™ Series**

**SECURITY LUMINAIRE**
- Minimum 70 CRI
- CCT: 4000K (+/-300K), 5700K (+/-500K)
- Utilizes BetaLED® Technology
- UL wet listed
- Multi-level options
- Modular, low-profile design

**Cree Edge™ Series**

**PARKING LUMINAIRE**
- Minimum 70 CRI
- CCT: 4000K (+/-300K), 5700K (+/-500K)
- Utilizes BetaLED® Technology
- UL wet listed
- Two-Level options
- Integrated occupancy sensor
- Modular, low-profile design

Cree BetaLED® Technology uses a total systems approach combining the most advanced LED sources, driver technologies, optics and form into each product. The patented NanoOptic® technology, available in more than 20 distributions, provides a level of optical control and thermal management that traditional light source technology cannot provide. Combined with the DeltaGuard® Finish, the finest industrial-grade finish available, the result is outstanding target illumination, lasting performance and optimum energy efficiency.

**PARTICIPANTS**

**End User:** Minnesota Department of Transportation and the Metropolitan Council

Cree IS LED Lighting

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CAT/CCS-C075 08/2013