



# LED Lighting Brightens Community Display

Anyone visiting or driving past the 2010 Bentleyville “Tour of Lights” at Duluth’s Bayfront Park could not miss the new centerpiece—a 120-foot, steel-fabricated Christmas tree as tall as the Medical Arts Building in Duluth. It also was a shining example of energy-efficient lighting, illuminated with 50,000 bright, twinkling, light emitting diode (LED) holiday lights.

LED lights are becoming an attractive alternative for residential and large-scale holiday lighting displays as well as for interior and exterior signage, small-area lighting, spot lighting and retail product displays. Their growing popularity is due to their excellent light quality, energy-saving potential, durability and increasingly competitive cost. Ongoing advances in lighting technology may soon make it economical to use LEDs for additional applications, such as street lighting and task lighting for homes and offices.

Bentleyville creator Nathan Bentley began talking with Minnesota Power energy consultants in 2009 about potential energy savings and rebates available for LED holiday lights. When the time came to erect Bentleyville’s giant tree, there was no question that LEDs were the right decision.

“We were looking at purchasing a large number of lights for the tree, and there were significant incentives to go with LEDs,” Bentley said. He noted that the 50,000 LED holiday lights on the tree require 18 amps of electricity, while 45,000 incandescent bulbs on Bentleyville’s castle use almost 80 amps—a remarkable difference. “As a nonprofit looking for ways to generate revenue and continually improve this event, we were very interested in both energy savings and rebates to help offset the cost.”

Minnesota Power provided a PowerGrant rebate for LED holiday lights on Bentleyville's new tree as well as for thousands more installed on tunnel archways and trees lining the site's perimeter. Choosing LED rather than incandescent lights for these elements are expected to save Bentleyville nearly 12,000 kWh of electricity per year and reduce electric demand by 57.1 kW.

"Bentleyville is using about the same amount of energy as it did in the past, even though they made major expansions," said Tanuj Gulati, of Energy Management Solutions, a commercial energy consultant for Minnesota Power.

Bentley believes most of Bentleyville's three million lights eventually will be replaced with energy-efficient LED bulbs. In addition to the cost savings, they last longer and require less maintenance.

Minnesota Power has been promoting the use of LED lights in targeted applications for several years. Its parent company, ALLETE, uses LED signage on its Duluth headquarters, and Minnesota Power converted its holiday tree in downtown Duluth to LED lights in 2007. The utility has helped customers throughout the region integrate LED lighting into retail settings, auditoriums, conference rooms and exterior lighting exhibits, such as Bentleyville and the Little Falls "City of Lights" display, with brilliant results.

"I think these are great demonstrations that energy efficiency doesn't mean sacrificing beauty," said Tina Koecher, Manager—

Billing & Energy Efficiency, Minnesota Power. "These successful examples may inspire other communities, businesses and residential customers to consider LEDs for their holiday lighting, signage, spot lighting and display lighting needs."

Meanwhile, Bentley has received numerous inquiries from communities and business groups about his experience with LED holiday lights and is a strong advocate, encouraging others to invest in this technology.

Minnesota Power takes pride in brightening communities. In addition to rebates for LED lighting, the utility has helped sponsor Bentleyville with grants through the Minnesota Power Foundation.

"It is a wonderful community event that also promotes LED lighting and energy efficiency," said Peggy Hanson, director, Minnesota Power Foundation. "We are pleased to be part of it."

"Bentleyville would not exist without strong community partners and business sponsors like Minnesota Power," Bentley said. "Individual contributions are our largest source of income, but we need support from the local business community to put on this event, and Minnesota Power has continued to step forward and help make it possible."



*Little Falls "City of Lights" display*

