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Acronyms in this issue

AASHTO American Association of State Highway and Transportation Officials

CTRE Center for Transportation Research and Education

FHWA Federal Highway Administration

Iowa DOT Iowa Department of Transportation

ISU Iowa State University

LTAP Local Technical Assistance Program

MUTCD Manual on Uniform Traffic Control Devices

Ames, Bettendorf switch to LED signal lamps

A NEW signal lamp technology is helping some cities reduce the cost of energy for traffic signals by as much as 85 percent.

What is LED?

This relatively new technology replaces incandescent lamps with small, light-emitting diodes (LEDs) that are grouped together to form red, yellow, and green lamps for traffic signals and pedestrian crossing signals.

Because 100 percent of an LED lamp’s emitted energy is visible light, an LED traffic signal lamp consumes less than 10 watts of electricity to provide the same amount of visible light provided by a 150-watt incandescent lamp. LED lamps also last up to five times longer than incandescent lamps (approximately 100,000 hours).

Decision makers must weigh the high initial purchase price of LED lamps against potential savings in energy and maintenance costs. Currently, red LED signal lamps cost about \$87; yellow lamps, about \$145; and green lamps, about \$125.

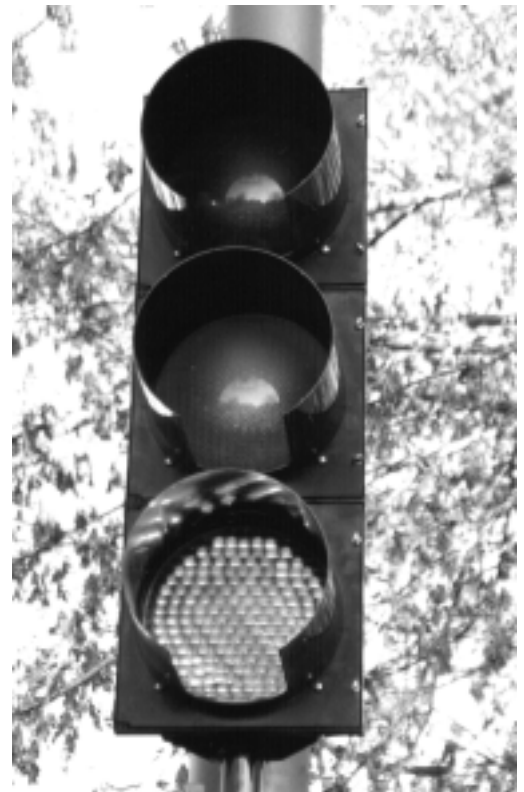
Ames

Ken Lang, Ames city maintenance manager, has developed a system for replacing incandescent lamps with LED lamps in Ames’s 68 signalized intersections and crossings. He

- staggers the amount of lamps installed at one time to maintain the current budget while

keeping time and costs associated with signal lamp maintenance reasonably low.

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The green LED signal lamp above in Ames uses significantly less energy to produce the same amount of light as its incandescent predecessor.

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The mission of Iowa's LTAP: To foster a safe, efficient, environmentally sound transportation system by improving skills and knowledge of local transportation providers through training, technical assistance, and technology transfer, thus improving the quality of life for Iowans.

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LED . . . continued from page 1

- is replacing all red signal lamps with LED lamps over four years. The red LED lamps are the least expensive of the three colors. One red LED lamp takes about nine months to pay for itself in energy savings.
- is replacing lamps at higher energy consuming intersections first. Lower energy consuming intersections are left until last or, if scheduled for an upgrade within a few years, passed over altogether.
- is installing green LED lamps and pedestrian crossing lamps during the next few years.
- does not plan to switch to yellow LED lamps. Yellow incandescent lamps already last significantly longer than their red and green counterparts because they are "off" most of the time. Therefore, Lang believes that switching to yellow LED lamps would not be cost effective.

Bettendorf

Bob Webster, Bettendorf city electrician, has taken a slightly different approach to replacing signal lamps. Webster

- has replaced red and green incandescent lamps with LED lamps over the past three years in Bettendorf's 38 signalized intersections.
- calculates energy savings of about \$52,000 since the switch to LED lamps. He projects that the entire \$85,000 project will pay for itself in energy savings in less than two years.
- has developed a plan to allocate money over the next five years to maintain and replace LED lamps.
- is installing yellow LED lamps because they will rarely need to be replaced.
- is installing LED lamps in pedestrian crossing lights and obsolete pedestrian signal heads during the coming year, which will save even more money in energy costs.

Webster says that installing LED lamps is relatively easy. Because Bettendorf crews installed the city's new lamps, the city received a \$40 per red lamp rebate from the utility company that supplied them.

For more information

Contact Ken Lang in Ames, 515-239-5535, klang@city.ames.ia.us, or Bob Webster in Bettendorf, 563-344-4055, tbob48@aol.com. •

Web-based course for 2002 roadside design

WOULD YOU like to take a professional course on AASHTO's roadside design guidelines but don't want the hassle and expense of out-of-state travel?

You can. Within 48 hours of signing up online, you can begin taking a new, web-based overview of the *2002 AASHTO Roadside Design Guide* offered by the National Highway Institute.

Completing the course will take approximately 14 hours. Take the course at your desk, at your leisure, and at your own pace; it's available 24 hours a day, 365 days a year. Earn 1.4 continuing education units for completing the course.

Objectives

Upon completing the online course, you will be able to

- apply the clear zone concept to all classes of roadways
- recognize unsafe roadside design features and elements and make appropriate changes
- identify the need for a traffic barrier
- select, design, and install a traffic barrier
- apply safety concepts to roadside features and appurtenance selection/use in work zone
- compare alternate safety treatments and select a cost-effective design
- identify policies and practices that are inconsistent with current state-of-the-art

Logistics

The course is free for FHWA staff. A "get-acquainted-with-web-based-training" special registration fee for state, local, and private sector personnel is \$80. (Compare this to the regular classroom fee of \$400 for two days of training, plus travel and lodging expenses.)

To register, see the NHI's website, www.nhi.fhwa.dot.gov/, and click on the ONLINE COURSE button on the left.

For more information

For registration or other logistical information, contact Eloise Freeman-Powell, course coordinator, 703-235-0553, eloise.freeman@fhwa.dot.gov.

For technical information about the course, contact Richard Powers, 202-366-1320, richard.powers@fhwa.dot.gov. •