



# Quarterly



## What's New at T<sup>3</sup>S?

By Jim Burati, T<sup>3</sup>S Director

### New Web Site Unveiled

With the year 2000 rapidly approaching, the SC Transportation Technology Transfer Service has finally been able to implement our first Internet web site. While it has been on our "to-do" list for quite a while, we were finally able to bring this about when we were able to find sufficient funds so that our program coordinator, Sandi Priddy, is now working full-time, as opposed to half-time, for T<sup>3</sup>S.

[www.ce.clemson.edu/t3s](http://www.ce.clemson.edu/t3s)

As part of her added time to devote to T<sup>3</sup>S activities, Sandi has developed the first draft of our web site. As with most web sites, ours will evolve over time as we get suggestions for improvement and identify additional items and services to include.

The current web site includes information on T<sup>3</sup>S staff members, links to other transportation web sites, recent issues of the T<sup>3</sup>S Quarterly, our newsletter, and, most impor-

tantly, the T<sup>3</sup>S workshop schedule. The web site provides information on each workshop to be offered along with brief biographical sketches for the workshop instructors. It is also now possible to register for workshops via our web site.

Future enhancements planned for the web site include addition of a listing of the T<sup>3</sup>S publication and video library, the ability to order videos and publications via the web site, additional transportation-related links, and a form for user feedback regarding T<sup>3</sup>S and its activities.

The address for the new T<sup>3</sup>S web site is [www.ce.clemson.edu/t3s](http://www.ce.clemson.edu/t3s). Please visit the web site and let us know what you think of it and how we can make it more useful for you, our customers.

### T<sup>3</sup>S Library Relocates

The T<sup>3</sup>S publication and video library, for the second time in three years, has moved into a new, and hopefully final, location. This new location provides us with more space for our current holdings, as well as additional storage space and some room for expansion. While

this move may be transparent to our customers, the "roomier" environment should allow us to serve you more efficiently.

### New Video Catalog

We are currently adding the finishing touches to an updated catalog of our videotape collection. All of the videos are available for loan, while

*(Continued on page 2)*

### Volume 10, Number 3

#### *In This Issue...*

**What's New at T<sup>3</sup>S?**  
*Page 1*

**Simple Solutions**  
*Page 2*

**Transportation Industrial Alliance**  
*Page 3*

**LED Traffic Lights**  
*Page 5*

**Timely Trivia**  
*Page 6*

**Publication and Video Order Form**  
*Page 7*

**SC-APWA Seminar**  
*Page 8*

(Continued from page 1)

some of them are available for purchase at the cost of duplication. We cannot duplicate copyrighted videos, but many videos from government sources can be duplicated and distributed to our customers at a very reasonable cost.

### Program Coordinator

We have been fortunate enough to find sufficient funds to allow Sandi Priddy, our program coordinator, to increase her T<sup>3</sup>S efforts from half-

time to full-time. This will allow us to serve you better and more efficiently. Sandi coordinates all of the activities associated with arranging our workshops, as well as all things related to our publication and video library. In addition to maintaining a current mailing list for workshop announcements and newsletter distribution, Sandi's is the friendly, often exuberant, voice that answers the phone when you call us.

Sandi's additional time has already led to the implementation of our

first web site (*see page 1*). Her additional time hopefully will also allow us to improve our database and workshop registration software, expand our web site services, and computerize our publication and video library holdings as well as the loan and distribution process for these holdings. Sandi has been a major factor in the success of our T<sup>3</sup>S program, and we are pleased to now have her services on a full-time basis.

## Inform — A Web Site with “Simple Solutions”

*Editor's Note: Information for this article is taken directly from the Inform Internet web site: <http://inform.enterprise.prog.org>*

The Inform project is sponsored by the Federal Highway Administration, the Minnesota Department of Transportation, and the ENTERPRISE consortium. ENTERPRISE is a group of U.S., Canadian, and European transportation agencies that specializes in promoting the use of advanced technologies in transportation.

The goal of Inform is to perform outreach and “technology transfer” using the findings of an initiative which identified a series of low-cost, low-tech “simple solutions” to transportation needs. All the simple solutions were developed by local transportation professionals, such as city or county engineers, and have been proven effective in the real world.

By promoting these simple solutions, Inform hopes that other transportation professionals can benefit from the technologies developed or applied by their peers across the country.

Descriptions of the “simple solutions” can be viewed at the web site, and can also be downloaded as pdf files. Over 50 proven solutions are available at the web site.

The following information is provided for each solution:

- ◆ Why the solution was developed
- ◆ Where it was implemented
- ◆ Who developed and implemented it
- ◆ What the solution cost.

A partial sample of the solutions that can be viewed and downloaded is shown in list in the right hand column.

- Coordinated rural transit systems
- Low cost visibility sensor
- Speed advisories during fog
- Automated visibility warning system
- Speed warning systems
- Weather by telephone
- Low cost vehicle detection
- Lane drop driver awareness
- Wireless pagers to activate warning beacons
- Transportation operations optimization
- Grade-crossing GIS database
- Smart-key payment for parking meters
- Sign inventory
- “Total stations” for accident investigation
- GPS location system for maintenance vehicles
- Interfacing information for highway safety
- Automated field reporting

## New LTAP/T<sup>3</sup> National Transportation Alliance Responds To Local Road & Bridge Agency Issues

The Transportation Industrial Alliance (TIA) has been developed by the National Association of Transportation Technology Transfer Centers (NATTTTC), the national coordinating body for all 57 Local Technical Assistance Program (LTAP) Centers. LTAP is a technology transfer program for local road and bridge agencies and is sponsored by individual State Highway Agencies and the Federal Highway Administration. The SC T<sup>3</sup>S is part of LTAP, and an active member of NATTTTC.

TIA is part of a national LTAP strategic initiative to help local agencies deal with technology implementation issues. While there are three programs discussed below that demonstrate TIA's commitment to improve the technology information exchange process, the most important step now is registration. You can sign up by calling the SC T<sup>3</sup>S or the TIA Center.

### Test Site Registration Program (TSRP)

This program has been developed by TIA to increase local agency participation in the technology development process. Historically, by the time advanced research products reach the field-testing stage, laboratory results have indicated reasonable benefit should be expected. At this point, sites are sought to reinforce anticipated benefits or fine-tune the final product.

Public and private national and international researchers constantly seek field sites willing to test new technologies or upgrades to products and services. Often, agencies that may realize long-term benefits are unaware of pending field-testing, and therefore rarely participate in the test phase.

Pavement management, unpaved roads, dust control, storm-water management, asphalt recycling, and work zone safety, are but a few research areas where participation in field-testing could benefit communities and leave a lasting residual benefit. In addition, municipalities will be able to gain hands-on ex-

perience at the front end of a technological advancement rather than at the tail end of its effective life.

The national Test Site Registration Program (TSRP), coordinated by the TIA, offers urban and rural agencies an opportunity to participate in this test phase and reap the resulting benefits. Under TSRP, interested agencies can register as a possible test site in any area of need.



TIA's Service Center will coordinate, maintain, and distribute the TSRP test site registrant information to researchers. To participate, just contact SC T<sup>3</sup>S or the TIA Center for an application.

### Product Demonstration Program (PDP)

The best way to evaluate new technology is to *actually use it*. In the ideal situation every department would be able to evaluate new training, products, and services under every day local conditions. This simply is not always practical, timely, or cost effective. The safe alternative is to stay with "tried and true" methods.

TIA's Product Demonstration Program (PDP) is specifically designed to provide a comfortable format for local agency personnel, and elected officials, to evaluate in-use new technologies in a user environment. PDP is unique because the workshops are conducted with **both** vendor and agency personnel actively participating. Each workshop details why and how implementation was undertaken, agency satisfaction to-date, a benefit/cost analysis, and a hands-on experience of the service or equipment in operation. Thus, participants are able to make a practical assessment of a product or service. This provides a balanced

(Continued on page 4)

(Continued from page 3)

experience in which to evaluate whether or not a new technology can improve a local situation.

### Case Study Resource Program

Case study and research data are highly effective information for local planners to include in advanced technology presentations before Commissioners or top management. This information can, at times, be very difficult to locate. The TIA has established a one-stop national Case Study Resource Center for this information. Case histories will be available by general topic, [Traffic Calming, Pavement Management, Sign Management, etc.], specific

item [High Performance Concrete, SuperPave, speed humps, pothole patching machines, etc.], by state, and by region. Complete current-user and vendor contact information will also be available. More information will be provided about this program as the case history stockpile increases.

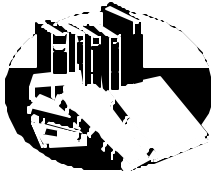
All public transportation and related agencies are automatic TIA members and eligible for services either through their state LTAP Center or directly from the Alliance at **no charge**. Private entities participate in TIA through various membership opportunities.

The TIA is a result of local agency feedback. Let us know what you

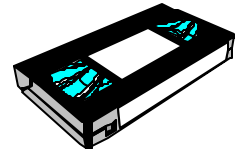
think, every response is important to us. For more information contact:

Gib Peaslee,  
TIA Membership Coordinator  
Transportation Industrial Alliance  
University of Florida  
512 Weil Hall, PO Box 116585  
Gainesville, FL 32611-6585  
Phone: (352) 392-2371 Ext. 245  
Fax: (352) 392-3224  
E-mail: Alliance@ce.ufl.edu

**No activity of the TIA or the SC Transportation Technology Transfer Service should be construed as an endorsement either implied or otherwise for any specific vendor, product, research, or service.**



## Publications and Video Tapes Available



The publications described below are free to individuals employed by any city or county government agency in South Carolina. You can obtain a free single copy of some publications, or borrow a copy of one of the "for loan" publications or videos.

### Publications

**Guide Book on Statewide Travel Forecasting.** FHWA-HEP-99-007, Jul 1999. State of the practice for practical methods of statewide travel forecasting.

**Road User Guide.** FHWA-SA-99-020, Revised HOTO/4-99(200M)E, 1999. Assists drivers in understanding important traffic regulations in the U.S., Mexico, and Canada.

**Pavement Preservation: A Road**

**Map for the Future.** FHWA-SA-99-015, 1999. Ideas, strategies, and techniques from an Oct 1998 forum.

**Workzone Safety Guidelines for South Carolina.** Apr 1997.

**Pavement Recycling Guidelines for State and Local Governments.** FHWA-SA-98-042, Dec 1997.

**Transportation Action: A Local Model to Engage Community Transportation Planning.** FHWA-SA-97-09, 1997.

**Seventh International Conference on Low Volume Roads.** TRB, TRR No. 1652, 1999

### Videos

**Construction Trenching and Shoring.** Coastal Safety and Environ-

mental, 10 min. Basic trenching and shoring safety guidelines.

**Construction Back Safety.** Coastal Safety and Environmental, 10 min. Easily-learned safety techniques to help maintain a healthy back for work and play.

**Safety Training for Repair Technicians.** Vista Videos, 22 min. Proper procedures, protection, and positions to prevent most common injuries

**Right of Way Mowing Safety.** Vista Videos, 25 min.

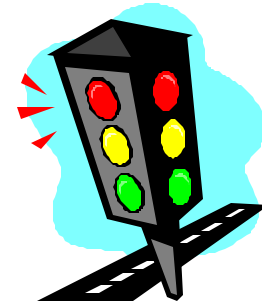
**Asphalt Emulsions and Their Use.** Asphalt Institute, 15 min.

**Editor's Note: the publications and videos shown here can be ordered by completing the form on page 7 and faxing it to us.**

# LED's — A Bright Idea for Energy and Cost Savings

by Rufus Coleman

**Editor's Note:** This article is reprinted, with permission, from *KUTC Newsletter*, Summer 1998.



Thomas Edison would be proud. Dialight, Inc has built the better, cheaper light bulb. The New Jersey-based company has created a traffic signal lamp that uses a sixth of the energy used by an incandescent bulb and has a life ten times as long.

Instead of a single bulb, these lamps use 200 smaller light emitting diodes (LED's). The lamps used in traffic signals are flat, 12-inch lamps with a hard shell and lens. These lamps easily fit into an ordinary traffic signal. The city of Lenexa, Kansas, has replaced all 50 of their red traffic lamps with LEDs.

"I think they're great," said Steve Schooley, Lenexa traffic engineer. "A driver can't tell the difference between these and regular bulbs. It's just fantastic. It's cost saving and energy saving. And there are fewer emergency calls to replace burned out bulbs. That costs us more than you think."

## Advantages

Major advantages of LED bulbs are:

**Less energy used.** The major advantage LED lamps have over regular incandescent bulbs is that they use 20 watts of energy, instead of 150 watts. The lamps cut Lenexa's electric bill in half.

"Normally, Lenexa spends over

\$60,000 in electricity," Schooley said. "Now, we're saving \$30,000 of that."

**Longer Life.** The LED's also have longer life spans. LEDs have a standard warranty of five to seven years, but they are expected to last longer — 100,000 hours or about 11 years.

**Flexible maintenance.** Unlike regular incandescent bulbs, LEDs fade slowly rather than burn out suddenly. One of Lenexa's largest costs associated with traffic signal maintenance is the money spent on paying a worker to change a traffic bulb at 3:00 am.

"When the LEDs burn out, it's in sections so that it's not an emergency," Schooley said. This gives more freedom to Lenexa's signal maintenance system. Because LEDs last 10 years or more, we can simply have a mass change as opposed to an emergency call during the night. And even that doesn't have to be done in one month; we can spend a couple of years doing it gradually."

## LED Standards Being Set

Curtis Gobeli, assistant state traffic engineer with the Minnesota Department of Transportation, said the LED lamps are far better than traditional bulbs. Gobeli is part of an eleven-member committee of the Institute of Traffic Engineers (ITE)

creating specifications for the new LEDs.

"I would say they're better than the incandescent bulbs," he said. "There are definitely huge advantages of less maintenance and energy saved."

Gobeli said the committee expects to have specifications out in the coming year. The ITE committee is attempting to determine minimum brightness levels and the point when the bulbs degrade to an unsafe level.

"We should have interim specs in six months," Gobeli said. "We hope these specs will be a tool for future users. We have created a minimum level of what we expect, and at the end of three years, these bulbs should be performing at this level."

## LED Technology

The technology for LEDs has existed since 1969, but only in the last five years have companies like Dialight been able to make the lamps bright enough for outside use. Originally, the bulbs were used in calculators and stereo tuners.

Since their move to the outdoors, the demand has been incredible. According to Dialight, there are 100,000 LED lamps used in North America, and the market is growing rapidly. And it's all due to two pri-

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(Continued from page 5)

mary advantages — energy and replacement savings.

In Kansas, the cities of Overland Park and Lawrence have also made the move to LEDs. Lawrence has replaced a few signal bulbs with LEDs and Overland Park has spent a quarter of a million dollars on LED lamps. Larger cities like New York, NY, and San Jose, CA, are making the switch to LEDs as well.

**How Much Do They Cost?**

The LED lamps can cost about \$140 to \$280 each depending on the color. The red lamps are the cheapest, because they are simpler to make. The more expensive green and yellow lamps require more LEDs and have a higher price — \$225 for the yellow and \$280 for the green. The material for the green bulb is the newest and the most costly. The yellow bulb requires more LEDs because of its high intensity. The more LEDs required, the higher the cost.

Incandescent bulbs can cost as little as \$3, but they only have a one-year life span at most, compared to a decade for the LEDs. Plus, regular bulbs use three times the energy of an LED.

“Our studies show that in the future we will eliminate the price differences and a lot will change once there are specifications for the LEDs,” said Gary Durgin, vice president of marketing and sales for transportation products for the Dialight Corporation. “Presently, our specs are based on those for incandescent bulbs.”

While LED lamps appear to be costly, Steve Schooley of Lenexa said that they make up for the expense with energy and time savings in just two years. Durgin said it’s one of the few transportation products with that kind of return.

“Very few products can offer a return in two years savings and also be environmentally correct,” he said.

Schooley saw the LED lamps at the ITE conference and arranged a trial deal with Dialight for Lenexa.

“We originally arranged for them to do an intersection,” Schooley said. “Overland Park had arranged a large purchase and got a good deal, so we just rode on their coat tails.”

**A Bug or Two**

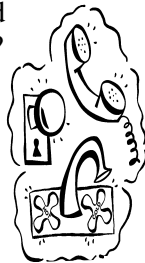
Schooley said that they’ve only experienced a few problems with the lamps, and in each case, the vendor responded quickly. One problem they experienced is that when one section begins to fade, it sets off the conflict monitor within the traffic signal.

“At the worst it just makes the red light flash if the draw on it is too low,” Schooley said. “But we haven’t had any major problems, just the kind you experience with new technology.”

For more information on LED lamps, contact Dialight, Inc. (732-528-8910) or visit [www.electrotechs.com](http://www.electrotechs.com).

**Keep Cold Spots Clean**

Contact with which common areas around the house can lead to the spread of colds? Doorknobs, telephone handsets, faucets, remote control clickers, refrigerator doors—anything that people touch throughout the day. During the cold season, wipe these surfaces clean every few days or more often if a family member has a cold.



**History of Jack-o'-Lanterns**

According to Irish legend, a renowned sinner named Jack trapped the devil up a tree and refused to release him until he promised never to tempt Jack to sin again. Upon Jack's death, his early sinning ways barred him from Heaven, and the devil wouldn't have him in Hell. Condemned to wander in darkness until Judgment Day, Jack begged the devil for embers to light his way and was given one coal. He put the coal in a hollowed turnip to make it last longer, thus forming "Jack's lantern."



Irish immigrants in America switched over from turnips to pumpkins, which were more plentiful in the New World.

## Information Request and Address Change Form

To order any of the publications, videos, or other materials listed in this or other issues of *T<sup>3</sup>S Quarterly*, complete this form and mail it or fax it to **Sandra Priddy** at the address or phone number shown below.

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**Phone: 864.656.1456**

**Fax: 864.656.2670**

### Publications

- Guide Book on Statewide Travel Forecasting
- Road User Guide
- Pavement Preservation: A Road Map for the Future
- Workzone Safety Guidelines for South Carolina
- Pavement Recycling Guidelines for State and Local Governments
- Transportation Action: A Local Model to Engage Community Transportation Planning
- Seventh International Conference on Low Volume Roads

### Videos

- Construction Trenching and Shoring
- Construction Back Safety
- Safety Training for Repair Technicians
- Right of Way Mowing Safety
- Asphalt Emulsions and Their Use

### Other

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***Please add my name to your mailing list***

### Suggestions for Possible Future Workshop Topics

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## **SC-APWA to Offer Seminar: “Effective Supervision for the New Millennium”**

The SC Chapter of the American Public Works Association will offer a seminar on “Effective Supervision for the New Millennium” on December 14, 1999 in Columbia. The cost of the seminar is \$75. The seminar will be led by Miles Hadley who has 30 years of experience in the supervision of government employees.

For more information, or to register for the seminar, contact Melissa Smith at 803-733-8232 or by FAX at 733-8674.

### ***Closing thoughts:***

We make a living by what we get, we make a life by what we give. —Winston Churchill

Failure? I never encountered it. All I ever met were temporary setbacks. —Dottie Walters

*T<sup>3</sup>S Quarterly* is published by the South Carolina Transportation Technology Transfer Service (T<sup>3</sup>S) for the benefit of county and municipal government agency personnel in SC. T<sup>3</sup>S, administered by the Clemson University Civil Engineering Department, is the Local Technical Assistance Program (LTAP) center for SC. T<sup>3</sup>S is part of a nation-wide network of LTAP centers established by the Federal Highway Administration (FHWA) in cooperation with state transportation agencies. T<sup>3</sup>S is jointly funded by FHWA and the SCDOT. The views, opinions, and recommendations contained in the newsletter do not necessarily reflect the views of the FHWA or the SCDOT.

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