Specifying Solar Rectangular Rapid Flashing Beacons: Key Factors for Reliable Performance

Street Name Signs 101: Retroreflective Street Name Signs

Rural Roadway Signage: When Brighter Is Not Always Better

Is It Time To Forgo Overhead Guide Sign Lighting in Florida?
Pelco Products became the industry leader by creating innovative solutions designed to exceed the expectations of our valued customers.

Our experienced and knowledgeable team of 16 engineers and technical experts provide a depth of design knowledge and understanding of how to take practical, efficient solutions from the drawing board to the field.

*Serving the traffic industry for more than 50 years...*
As America’s leading manufacturer of Service Pedestals and Traffic Signal Battery Backup Systems, you can count on TESCO products and solutions to provide the dependability you require for all your critical applications.

**Products Featuring**
- Retrofit and new installations
- 508A UL procedure
- 24v Parallel / Hot swap system
- Vandal-resistant construction
- Metered combination or stand-alone construction
- Small, low profile and attractive with no exposed fasteners
- Available both unmetered and metered up to 200 amps
- Diverse applications: street lighting, park lighting, tennis court lighting, irrigation and pump stations

Made in America, TESCO products are constructed with the highest grade materials using our standard anodized aluminum, optional stainless steel or hot dipped galvanized steel.
16 • The ABCs of Fire Alarm Systems — Part XXX
30 • Real-World Solutions for Improved Communication in High-Rises
42 • Fire Alarm Notebook: The Cost of Integrity
Eberle Design, Inc. is pleased to announce the introduction of the MMU2-16LEip and MMU2-16LE SmartMonitors®. Both models fully comply with the recently updated NEMA TS2-2003 (R2008) standard for traffic controller assemblies, Amendment #4-2012. This new standards update defines Flashing Yellow Arrow (FYA) operation for both the Controller Unit and the Malfunction Management Unit (MMU).

Like the original SmartMonitors®, the MMU2 series provides built-in Setup and Diagnostic Wizards to quickly and accurately configure the signal monitor programming and automatically pinpoint faulty signals, thus providing technicians with unprecedented amount of assistance and data.

To learn more about the new “MMU2” SmartMonitor® models, please contact us today! *Why guess when you can know!*
Greetings,

As I complete my term as president of IMSA at the 119th Annual Conference and 37th Annual School in Schaumburg, IL, I want to extend a special thank you to the entire Midwest section and all of the volunteers for their efforts and dedication in support of this year’s conference.

Relocation of the International office to Florida is underway. Our Executive Director Mike Volling and Deputy Executive Director Doug Aiken have been hard at work planning and overseeing some construction, along with all the various details required to get IMSA’s new home fully operational. Our new address is 597 Haverty Court, Suite 100, Rockledge, FL 32955. A grand opening and open house are being planned for the not-too-distant future. More details will be coming soon. Florida’s Space Coast is a vibrant thriving area for local, national, and international commerce. IMSA will be in good company in Florida’s Space Coast, home to Boeing, DRS, General Electric, Knight Armaments, L3, Lockheed Martin, Northrop Grumman, Raytheon, Embraer, and Rockwell Collins. It is also home to the world headquarters of Harris Corporation, a major player in public safety communication systems and equipment. We recently learned that Northrup Grumman has selected the area for Project Magellan, which is considered to be the nation’s largest single economic development project during the last five years. We look forward to an exciting period for IMSA as we relocate to our new home.

The Education Advisory Council (EAC) has been busy reviewing and approving new certification programs this past year. In addition to certification programs, the EAC is looking at other types of educational programs that can benefit all of our disciplines and new ways these programs can be delivered. The EAC has established a concept and model for a Web-based “Education Portal.” The Board of Directors has approved the recommendation and will be including it in specifications for the search and procurement of new association management software, which will begin this fall.

This year has certainly been full of change. As we move forward, it is important we remember that change is not new to IMSA. We have survived as an association since 1896 because we have progressed with everything from our name, location, and all of the disciplines and technologies we represent. These are exciting times for
Introducing Alpha’s “No Worries” Warranty

Alpha’s Outdoor Traffic Enclosure Systems have proven to be so reliable that we are able to increase standard warranty protection from 2 years to 5 years at no additional cost. Our new “No Worries” Warranty provides full coverage of your Alpha S6 enclosure system, Alpha FXM UPS module and AlphaCell GEL batteries for 5 years when purchased as a bundle.*

For more information, visit www.alpha.ca/no-worries-warranty

Alpha’s battery backup power systems have long ensured your traffic lights work even when the power is out. Now, enjoy even more value from your class-leading Alpha solution.


1.800.667.8743 • sales@alpha.ca • www.alpha.ca

*Safety Conditions: Effective or any new purchases as of November 1, 2013. Alpha’s new 5-year “No Worries” Warranty applies to bundled systems consisting of at least an Alpha S6 enclosure, an Alpha FXM UPS module, and AlphaCell GEL Batteries. Offer excludes surge suppressors and non-Alpha approved products. Offer available on systems installed in the United States and Canada only. To claim the five-year warranty, client must provide a valid proof of purchase (i.e., sales order number and/or serial number) showing that the Alpha S6 enclosure, Alpha FXM UPS and AlphaCell GEL batteries were purchased as a bundle. Standard warranty terms apply to non-bundled items.
our organization and we all look forward to the future and the good things it will bring to support the future needs of our growing association.

This is my last article as the president of IMSA. As my term comes to an end, there are many who I sincerely wish to thank. First, the Council of Delegates and the Strategic Plan Work Group for their perseverance in developing a living document that can easily be measured and adjusted as our association changes and grows. I would also like to offer my sincere gratitude to the entire IMSA Board of Directors: Lenny Addair, Ken Balltrip, Mike Flanigan, Perry Hill, Hans Kristensen, and Belinda Younger-Gurley for their wisdom, integrity, and dedication. This group of individuals has given up countless hours of their personal lives to carry out all the duties of the Board.

I would also like to take this time to thank our Deputy Executive Director Doug Aiken, who provided extraordinary service for nine months as our Interim Executive Director. Finally, a special thank you to all IMSA Members and Sustaining Members; all of you are an important part of the team that makes IMSA the great organization it is.

It has been an honor and a privilege to serve as President this year. It truly has been a treasured highlight of my professional career. I look forward to continuing to work on the IMSA mission.

SECTION CERTIFICATION CONTACTS

ARIZONA: Contact: Patrick McGreevy (W) 623-687-8060 (F) 623-386-9418 (E-mail) Patmcgreevy@msn.com

ATLANTIC: Contact: David Hutt (W) 902-490-4971 (E-mail) huttd@halifax.ca

BRITISH COLUMBIA: Contact: Graeme Kraft (W) 604-871-6210 (F) 604-873-7875 (E-mail) cktech@telus.net

CANADIAN PRAIRIE: Contact: James Bella (W) 780-327-5650 (E-mail) jbella@cityofgp.com

CENTRAL: Contact: John L. Hightower (W) 913-327-6670 (F) 913-327-5650 (E-mail) john.hightower@opkansas.org

FARWEST: Contact: Thomas Randal (P) 530-265-6551 (E-mail) randal@nccn.net

FLORIDA: Contact: Gary Scheuring (P) 813-310-3530 (E-mail) IMSADoc@aol.com

GREAT BASIN: Contact: Robert Strong (W) 801-599-9528 (H) 801-571-8924 (E-mail) rstrong46@msn.com

INDIANA: Contact: Clair E. Lang, Jr. (W) 574-243-0901 (F) 574-243-4622 (C) 574-876-0917 (E-mail) clang@trafficcontrolcorp.com

MICHIGAN: Contact: Bill Moroski (W) 248-890-1036 (F) 248-628-3458 (E-mail) IMSA-MIsector@Charter.net

MIDDLE ATLANTIC: Contact: Bert D’Amico (P) 757-447-6017 (E-mail) EduMASIMA@gmail.com

MIDWEST: Contact: Don Snider (P) 618-924-4211 (E-mail) dnsider@ci.carbondale.il.us

NEW ENGLAND: Contact: Jeff Knight (P) 617-658-7701 (F) 617-431-4827 (E-mail) jknight@imsasafety.org

NEW JERSEY: Contact: George Baureko, Jr. (C) 732-718-9144 (E-mail) IMSANJPA@aol.com

NEW MEXICO: Contact: Janine Lavigne (W) 505-907-4951 (E-mail) jlavigne@cabq.gov

NEW YORK STATE: Contact: Ron Leidner (P) 718-969-8067 (E-mail) rsleidner@aol.com

NORTHWEST: Contact: Kimberly Roberts (W) 206-396-3717 (F) 206-296-0175 (H) 206-296-3717 (E-mail) kim.roberts@kingcounty.gov

ONTARIO: Contact: Jim Pendlebury (W) 905-845-6601 x3953 (E-mail) jpendlebury@oakville.ca

ROCKY MOUNTAIN: Contact: Jay Heffelfinger (H) 303-233-7425 (C) 720-319-2675 (E-mail) jheffel@comcast.net 
Jim Bushnell (P) 303-853-7624 (F) 303-227-6984 (E-mail) jbusnell@myrgroup.com

SOUTHEASTERN: Contact: Jim Sollie (P) 205-482-3468 (F) 205-655-7522 (E-mail) jsollie7312@charter.net

SOUTHWESTERN: Contact: Ray & Lisa Purdy (Ray C) 972-768-1232 (Lisa C) 972-358-5110 (F) 903-739-9241 (E-mail) Ray: purdyray@gmail.com Lisa: imsasw@tx.rr.com

TRI-STATE: Contact: John Lachmann (H) 513-741-3741 (W) 937-435-8828 (C) 513-317-5634 (E-mail) jelachmann@earthlink.net
EASY-TO-CONFIGURE DETECTION CREATES SAFER ROADWAYS THROUGH THE ACCURATE DIFFERENTIATION OF

Autoscope®

Intelligent Detection for a Multi-Modal World

Follow the Signs: Visit www.econolite.com/bike-imsqrl
Stamm mfg
A Division of World Industrial Equipment, Inc.
"Designer & Manufacturer of Lift Equipment"

SIGNALIER
Designers & Manufacturers of the World's Finest Lifts

43 Years

SLT 21 - 12
29 FT. WORKING

41 OR 45 FT. WORKING
30 FT. WORKING / ELECTRIC

- Bucket Trucks - Cranes - Scissor Lifts - Platforms - Security Booths - Accessories - Utility Bodies -

4850 ORANGE AVENUE • FORT PIERCE, FL 34947
(772) 461-6056 MAIN PLANT • 1-800-226-5056 IN FLORIDA • (772) 464-2716 FAX
www.stamm-mfg.com • Email: liftinfo@stamm-mfg.com
PLCs from IDEC work with traffic light controllers to help light rail trains pass safely through intersections.

The City of Milpitas, California, wanted to integrate its new light rail system (Figure 1) with traffic light controls at four different 4-way intersections. The City wanted the trains to be able to pass through each intersection safely without slowing or stopping for auto traffic in normal operation. They also wanted to be able to tell the trains to stop when dictated by certain traffic signal and pedestrian conditions. Ideally, the new automation system would sense the approach of a train, change the traffic signals to stop cross traffic, and allow the light rail train to pass through without slowing.

Unfortunately, the existing traffic light system could not accommodate the trains, so a new automation system was needed that could perform the required functions.

The City of Milpitas purchased five IDEC MicroSmart Pentra PLCs with digital I/O modules, interfaced them to the traffic light controllers at each intersection, and achieved objectives. The City of Milpitas chose the Pentra PLC because it was reliable, cost-effective, and capable of performing the required control. The PLC also had an Ethernet port to allow remote monitoring and communication, and the capability to expand as necessary, two important features.

Sensing Trains

An approaching train activates the advance detector loop sensor, which sends a signal to the PLC. The PLC delays for 15–25 seconds, depending on the time before the train is due to arrive at the intersection (Figure 2), which is a function of the train’s speed and the sensor’s distance from the intersection.

The PLC instructs the traffic light controller to stop vehicular traffic through the intersection. As soon as the train hits the release loop sensor on the other side of the intersection, the PLC instructs the traffic signal controller to resume normal operations.

The PLC also detects all the traffic light changes made by the traffic light controller. If it sees that the traffic control system cannot change the lights in time — perhaps because pedestrian sensors detect the presence of people in the crosswalks — the PLC will send an output to a Stop signal on the track to stop the train via a Red-Yellow-Green train light. Each train has a human operator, who will manually stop the train when the red light appears.

If a train is coming from the opposite direction, the PLC will wait until both trains clear the intersection before allowing the traffic light controller to resume normal operation. The PLC can stop both trains if traffic congestion or other problems make it impossible to stop vehicular traffic.

After the PLC serves the trains, it waits until the traffic controller has served the opposing vehicle phases or directions. The PLC also monitors how long the red lights at the intersection have been on. As determined by a software algorithm, it can instruct the traffic light controller to release a lane that has been red for too long. This function is turned on during peak traffic hours by the PLC time clock.

Preparing the PLCs

The MicroSmart PLC is an open architecture device with 128K bytes user program capacity. It allows a user to store, transfer or upgrade the program memory using a miniature flash card. The PLC can handle up to
PCMT 2500 Calibration and Repair Services End Soon!

Repair and calibration services for the PCMT 2500 will end on 08/31/14. Please send your PCMT 2500 in for calibration before this date. The calibration is good for one year and includes a one year warranty.

Hmm..If I trade my old tester, I can avoid the end!

We will take your PCMT 2500 and cables in trade towards a PCMT 8000!

8157 US Hwy 50, Athens, OH 45701
Sales Phone: 740-592-2874 x1210
Service Phone: 740-592-2874 X1216

www.ati-tester.com
The Milpitas system required 52 discrete 24Vdc I/O, which were handled by IDEC MicroSmart discrete I/O modules. Each intersection has a PLC, input modules, output modules, and associated components.

Systems integrator Angelo Lombardo programmed the PLCs using IDEC’s PC-based Automation Organizer Suite, primarily using the WindLDR ladder logic software, which is part of the suite of available programming tools. WindLDR has a built-in simulation mode, which allowed Lombardo to completely test the logic prior to installing the PLCs at the intersections.

The City of Milpitas’ traffic department installed the four PLCs in the enclosures housing the traffic light control system (Figure 3), wired the track sensors to the PLCs, and wired I/O from the PLCs to the traffic control systems.

Initial testing of the system was done late at night when minimal vehicular traffic was present, and startup went very well. Thanks to the software simulation, the PLC performed perfectly, and the only difficulties involved sensors and wiring issues.

Commissioning and start-up also went very smoothly. Even the required rewiring was not a major issue because the new PLC I/O used the same wiring pins as the previous discrete logic box. A spreadsheet was provided showing the pin, function, and termination point on the PLC — further simplifying the required rewiring.

After startup and commissioning, the only changes made to the program were to enhance traffic flow. These changes were related to train delay times, locked detector timers and the time clock.

Because the IDEC PLC uses a miniature flash card to store program memory, it was a simple matter to download a fresh copy of the software for each of the PLCs (Figure 4). This was done by changing the program at the first PLC, removing the flash card from the PLC, and installing the flash card at each of the other four PLCs in turn so that each could write the new program to its memory.

One interesting aspect of the installation was how easy it was to program the PLC to perform traffic light functions, and how difficult it was to modify the existing traffic light controllers. This suggests the possibility of someday replacing the traffic light controllers with PLCs, which would add flexibility to the traffic control system, as well as improve communications from the control system to the central traffic control and monitoring system.

While the PLCs don’t actually change the vehicle lights, there is no reason why they couldn’t. Although literally millions of such traffic light controllers are being used around the world, it’s quite possible that PLCs could take over many tasks in that industry — especially if a city plans to add advanced functions, such as accommodating light rail train service.

Figure 3: The new automation system was installed in the outdoor enclosure housing the traffic light controller.

Figure 4: The IDEC PLC is installed next to the traffic light controller and connected to sensors and to the controller via 24Vdc I/O.

Obituaries

**Northwest Section**

Kevin Tucker with Snohomish County Public Works Traffic Operations in Everett, WA passed. Kevin had been a member of IMSA since 1998.

**Southwest Section**

Mike Fiske, a member since January 2000, with Endeavor Concepts, LLC in Fort Worth, TX recently passed.

**New York State Section**

Anthony Armenio was an Electrician with the Joint Industry Board. He joined IMSA in 2009.
DirecTime™ Retrofit Time Clock

DirecTime’s advanced two-way communication streamlines your traffic control device programming, slashing the time and labor required when using outdated time clocks.

No more manual key pad punching of old one-way time clocks. Intuitive, calendar-based programming confirms schedules.

Installation can be as simple as unplugging and removing your old time clock, then just plug in and hang the new DirecTime Clock.

**DirecTime Controller Features:**
- Plug-and-play Retrofit Time Clock
- Simple, rapid time clock replacement
- Calendar-based programming on-site, quickly and easily with your laptop
- No additional infrastructure required
- Change device flash intervals & duration
- Compatible with your ITS devices

**With BlinkLink Device Manager:**
- Cloud-based: no expensive hardware
- Remotely Program, Monitor & Control via web-enabled computer, tablet & phone
- Progressive calendar scheduling system
- Change device flash intervals & duration
- Monitors voltage, charge & temperature
- Programmable Text Alerts & Email Alerts

**PUBLIC WORKS DIRECTOR QUOTE:** “Updating or correcting the timing of the devices would take all day. It was time-consuming and labor-intensive.” Now, if something unexpected happens, such as school closures because of snow, technicians simply access the website and type in adjustments that are sent to all the flashing school signs at once. “It only takes a matter of minutes...this is much more efficient use of our small staff.”

TAPCO
TRAFFIC & PARKING CONTROL COMPANY, INC.
(800) 236-0112 www.tapconet.com

**BlenderLink™ Cloud-Based Traffic Device Manager**
**RRFB-XL™ Rectangular Rapid-Flash Beacons**
**BlinkerSign™ LED Signs**
**BlinkerRadar™ LED-enhanced Driver Feedback Radar Signs: Speed Limit and School Speed Limit Legends Available**

**SCHOOL**
**SPEED LIMIT**
20 WHEN FLASHING

**STOP**

14078003-U
Initiating circuits initially had only pull stations or normally open contact devices, such as heat detectors, connected to them and often were referred to as “box circuits.” These input circuits contained a normally energized relay connected in series with a dormant 115 volt relay, resulting in about 80 VAC on the initiating circuits. Shorting the End-of-Line resistor at the end of the initiating circuit caused full voltage to be placed on the alarm relay, energizing it, applying a “hot” output to the notification appliance sub panels which in those days operated what were known as Indicating Device Circuits, nick-named “Bell Circuits.” Zone coded systems had alternate box circuit panels that contained motor coders. An alarm signal caused the coder motors to operate, and their signaling contacts transferred in accordance with their assigned code.

A number of different control panels were on the market, but the better known were made by Gamewell, Edwards, and Simplex. I’m not completely certain, but I was led to believe they were designed by the same engineer, and indeed bore a striking similarity to each other. I examined a competitor’s panel once and could identify every sub panel and knew exactly what each relay was used for!

Smoke detectors were fairly unsophisticated and had somewhat limited use until the 1970s. Until then one approach was to employ a smoke detector input panel that had its own special smoke detectors which operated on 48VAC, with the input panel providing operating voltage and a dry contact alarm output to the bell circuits in parallel with the initiating circuit panels. In

Adaptive Traffic Control Systems (ATCS)

By Ron Whitelock

Sorry, but I am not able to include an ATCS article in this issue. I endeavored to run these articles in alphabetical order of system name (no bias). However, some organizations have either not responded to my request for information, simply did not want to participate at this time or the information provided did not conform to my format or outline.

The following organizations fell into one of those categories:
- McCain’s QuickTrac
- Miovision’s Spectrum
- Delcan’s MAC

In the next issue of the Journal, I will conclude this series with the final article on Trafficware’s Green.

Something to think about!
ROLL OUT THE RED CARPET

INNOVATION IN TRAFFIC TECHNOLOGY HAS ARRIVED.
More than 50 years as a leader in the development of traffic technologies.

www.peektraffic.com
later years, detectors that operated on line voltage came on the market, simplifying things.

The best-known smoke detectors of the day were by Pyrotronics and of a typically European design (and origin). These were ionization type detectors using cold cathode technology and operated on 220 VDC, a typical European line voltage. Again, these were connected to and powered by a separate control sub-panel which supplied the operating voltage, monitored the detectors, and provided a dry contact alarm output that connected to the main control panel.

Once the alarm was detected and processed by the “box circuit” panels, the output was channeled to the “Indicating Circuit” panel. This panel contained two bell circuits that truly supervised the bells as these were connected in series with supervisory current flowing through the bell (or horn) windings. A burned out winding would cause a trouble signal, but unfortunately would also disable the bell circuit.

If the panel was non-coded, the alarm circuit panel used 1.5 amp AC devices, while a coded panel used single stroke devices that drew 2.5 amps AC. Horns were mostly used for non-coded systems as the single stroke bells gave a clear, loud, coded signal, ideal for coded signals. Voltage ratings of the audibles could range from 4VAC to ten or more volts. The circuit had to have only audibles with the same current rating, while the voltage total of the devices could not exceed 115 Volts. Voltage ratings of the devices were irrelevant as long as all devices had the same current rating. Many installations didn’t require enough audibles to total the requisite 115 volts, so the systems had sub-panels containing humongous sliding-band wire-wound resistors that were adjusted so the proper current flowed through the circuit while the alarms were sounding.

Municipal master boxes were quite common and another master box panel was used to trip the box. This panel monitored the wiring of the box trip unit and had a cutoff switch to disconnect the box.

Indicating lamps were located on the door of the cabinet and key switches were often used to eliminate the need of opening the door to silence the alarms, trouble signals, etc.

Lamps were used to indicate the presence of operating AC, alarms, trouble signals, etc.

Annunciation was by means of dry contacts and annunciator lamps were also installed on the door.

Other specialty panels were used to contain auxiliary relays used for various purposes. One of the more clever designs used relays that were listed for use with either 24VDC or 110VAC, which made life much simpler for the system designer.

Believe it or not, to this day, many of these panels, even though obsolete, are still reliably operative. The main problem nowadays appears to be that the energized relays, after being energized for 40 years or more, may sometimes become magnetized so that they may stay in the energized position when the operating voltage is removed!
A funny thing happens when you combine friendly, expert support with the most innovative and reliable wireless products available. People tend to smile more and worry less.

At Intuicom, our goal is to keep customers happy with a complete line of robust wireless solutions and the most knowledgeable service around. With a support staff that will actually answer the phone – and won’t stop until you’re satisfied. Maybe that’s why more people every year are trusting Intuicom to solve their wireless problems.

Let Intuicom take the worry out of your next wireless project. Call (303) 449-4330 or email traffic@intuicom.com today. It just might put a smile on your face.
Rectangular Rapid Flashing Beacons (RRFBs) are becoming an important part of the toolkit and a top choice for transportation professionals looking to improve vehicle yield rates, pedestrian service levels, and multi-modal transportation access at uncontrolled, marked crossings. As demand for solar RRFBs continues to grow, it is important to consider the key factors that ensure reliable performance when specifying systems for projects and bids. Solar powered RRFBs offer a cost-effective, easy-to-install solution and provide a number of benefits to AC powered units. However, specifications sometimes focus on certain materials and size, instead of specifying how many pedestrian actuations the system must support each day (referred to as “operating capacity”). When specifying Solar Rectangular Rapid Flashing Beacons, an emphasis needs to be placed on operating capacity instead of prescribing solar panel wattage and battery size. Additionally, site-specific shading needs to be considered.

**About RRFBs**

Rectangular Rapid Flashing Beacons (RRFBs) are becoming a widely-recognized solution for increasing driver compliance and improving safety at crossings where existing signs and markings have been insufficient. Proven performance, as shown through research conducted by state and federal authorities, has these high-intensity crosswalk lights gaining attention. The United States Department of Transportation Federal Highway Administration (FHWA) has proven RRFBs to be an extremely effective device for driver yield compliance (between 72 and 96 percent) at uncontrolled marked crosswalks.¹ The *Manual on Uniform Traffic Control Devices* (MUTCD) interim approval for RRFBs states: “The Office of Transportation Operations has reviewed the available data and considers the RRFB to be highly successful for the applications tested (uncontrolled crosswalks). The RRFB offers significant potential safety and cost benefits because it achieves very high rates of compliance at a very low relative cost in comparison to other more restrictive devices that provide comparable results, such as full midblock signalization.”²

Often Rectangular Rapid Flashing Beacons are only considered for mid-block crossings. However, the majority of applications are at intersections with thru-lanes on the major legs. Locations often have four or five lanes and are commonly located at university and college campuses, school zones, greenways, bicycle boulevards, and trail crossings.

**Benefits of Solar RRFBs**

Solar powered Rectangular Rapid Flashing Beacons (RRFBs) provide a cost-effective and easy-to-install alternative to AC powered RRFBs. Installing solar powered RRFBs provides several benefits. There is no need for an overhead electrical power drop, eliminating electrical grid connections, metering, and electrical bills. Underground checks of every utility prior to installation are no longer necessary, saving time and money. Trenching is avoided because the system sends the activation wirelessly between units. Maintenance cycles and costs are minimal due to the excellent energy management system that prolongs battery life.


²FHWA Policy Memorandum Interim Approval for Optional Use of Rectangular Rapid Flashing Beacons (IA-11) http://mutcd.fhwa.dot.gov/resources/interim_approval/ia11/fhwamemo.htm

---

Solar RRFBs — cont. on page 22
THE RAZOR’S EDGE

The Temple Edge-Lit RAZOR IISNS (actual width)
Only 1.6” wide, double or single-sided.

60,000 hour LEDs
(13+ years on photocell)

5 lbs. per square ft.

3M™ Diamond Grade™
Reflective Sheeting

5 year Warranty

3M™ Electrocut™ Film

Ultra-low energy use;
Find a detailed chart at
www.templeedgelit.com

256.318.7549 | 800.633.3221 | www.TempleEdgeLit.com
AC powered RRFBs may be the appropriate choice. However, in typical locations solar RRFBs are very reliable.

### Key Considerations to Include When Specifying Solar RRFBs

Solar RRFB specifications sometimes neglect key factors that affect system performance, focusing on solar panel wattage and battery capacity alone. This is a major concern, as systems may not be capable of sustained, year-round operation. An RRFB system with a large solar panel and battery capacity does not guarantee reliable performance. Operating capacity needs to be included in the specification to ensure the system can function reliably in a given location. When considering operating capacity, several critical metrics need to be evaluated to ensure optimal performance: the Array-to-Load Ratio, autonomy, shading, and battery life.

#### Array-to-Load Ratio

Energy balance is crucial to the operation of an RRFB. The Array-to-Load Ratio (ALR) compares the energy collected by the system (energy in) to the total system load (energy out). This should be calculated using peak-sun-hours (PSH) for the worst month of the year. The calculated Array-to-Load Ratio must be greater than 1:1 in order to deal with system inefficiencies and often requires a significantly higher ratio to handle extra loads. Typical loads include the number of push button activations and whether the push button has features such as locate tone and voice message and how many times the message repeats. These loads have large energy draws on the system and need to be taken into consideration when specifying RRFBs to ensure there is a sufficient energy budget to operate the system reliably. Best practice dictates that an RRFB system should have a minimum Array-to-Load Ratio of 1.2:1. If there is shading at the location, the energy in will be lower and subsequently the ALR will be reduced. By considering the ALR for each system location, appropriate products can be selected to meet performance expectations.

#### Autonomy

System autonomy is defined as the number of days that a solar powered system can continue to operate if all sunlight or insolation is removed. Autonomy is essentially a measure of the system’s ability to operate without any charging. While it is an important metric, it is theoretical because all systems will receive some charging throughout the day, even in very cloudy conditions. System autonomy is calculated by the system’s battery capacity for a given period, divided by the total load on the system for the same period. The total system load must include the number of actuations and the flash duration in the calculation, otherwise the autonomy value will be meaningless:

\[
\text{Battery Capacity (Wh)} \div \text{Total System Load (Wh)} = \text{Autonomy (days)}
\]

In a detailed calculation, all system loads and efficiencies, including temperature effects and the usage model, are used in conjunction with the geographical location to obtain a final value. System autonomy typically considers an average value for no-sun or “black days” as defined by NASA’s meteorology department for a given location. It is very important to note that, no-sun days are based on monthly averages and as such, no-sun days are not considered consecutive events. Solar powered systems are designed to operate as if a number of consecutive no-sun days or a period of complete blackness was to occur. This approach provides an effective baseline for evaluating systems for a given location.

The autonomy value obtained through the system autonomy calculation is compared to the NASA no-sun days for the installation’s geographical location. For a solar RRFB system to function effectively, best practice dictates that the calculated number for autonomy must meet or exceed the NASA no-sun days. When sizing or evaluating a solar powered system, it is important to remember that system autonomy is a safety factor and is based on the theoretical condition of a complete removal of insolation.

#### Shading

Shading is a major factor not currently considered in some specifications, yet it is one of the biggest variables in the operating capacity of an RRFB. Proposed installation locations should be carefully analyzed before specifying a system. Site assessments can be easily determined using tools such as Google Street View and capacity calculators, which allow manufacturers to evaluate the site conditions.
BLUE EARTH ENERGY POWER SOLUTIONS (BE EPS)

BE EPS provides lead acid free, energy efficient, intelligent digital battery backup systems designed for signalized traffic intersections with its UltraPower-Stealth Battery Backup System (UPStealth™).

BENEFITS OF THE UPSTEALTH

Unique Form Factor:
- No external enclosures or piggyback cabinets required.
- Living-Hinge – Fits between cabinet wall and rack of 170/2070 33X traffic cabinets.
- NEMA battery panel installed on top or underneath NEMA cabinet shelf.
- Size – Approx. half the size and weight compared to lead acid.

Battery Management Software:
- Maintenance Free – Digital battery performance monitoring and management.
- Long Life – Built-in system protection.
- Re-charge Time – Full charge within 4 hours.
- Charge Monitoring – No Trickle/Float charging required.
- Power Conditioning – Inbound power monitoring and conditioning.
- Inverter LCD Interface – User manages performance parameters.

Nickel Zinc Battery Chemistry:
- Lead Acid Free.
- Broad Temperature Range – (-35°F/-37°C to 165°F/74°C).
- 98% Efficient – Little to no heat generation.
- No Corrosion – Liquid free battery.
- No Outgassing – No flammable or hazmat issues.
- 100% Recyclable and RoHS Compliant.

BLUE EARTH ENERGY POWER SOLUTIONS: A BATTERY BACKUP AND ENERGY STORAGE SOLUTIONS COMPANY

BE EPS family of UPStealth™ Batteries and Inverter/Controllers are designed to mix and match in either the NEMA or the 170 style traffic cabinets. In other words, the “Living Hinge” and the NEMA style batteries can be connected to the NEMA style or 170 style Inverter/Controllers. Truly allowing customers to mix and match batteries and Inverter/Controllers to fit their traffic cabinet needs.

Phone Number (503) 399-3517 | www.blueearthebps.com | beeps.info@blueearthinc.com
Automated Pedestrian Detection and Pedestrians Who Are Visually Impaired

By Billie Louise (Beezy) Bentzen and Janet M. Barlow
Accessible Design for the Blind

Installations of the pushbutton-integrated style of accessible pedestrian signals (APS) now specified by the MUTCD (4E.09-4E.13) are making it much easier for visually-impaired pedestrians to cross streets safely and confidently. These APS have a loudspeaker integrated into the pedestrian pushbutton, rather than being installed on the pedestrian signal head. They have tactually discriminable arrows aligned in the direction of travel on the associated crosswalk which vibrate during the walk interval. The standard walk indication is a tick or tone sounding at a rate of approximately 8/second.

Where possible, there must be two pushbuttons on corner installations separated by at least 10 feet. If pushbuttons are installed with two devices on one pole (or closer together than 10 feet), the walk indication must be a speech message providing the name of the street to be crossed. When speech messages are required, APS are also required to have a “pushbutton information message” normally actuated by a button press of more than one second, that begins with the word “Wait,” and then provides the name of the street to be crossed.

An important feature of pushbutton-integrated APS is a pushbutton locator tone comprised of a very short tone repeating once a second during the flashing and steady don’t walk intervals. Pushbutton locator tones let approaching pedestrians know they need to push a button to request pedestrian timing and to get a WALK indication. The tones come from the housing of the pushbutton, and thus help pedestrians who are visually impaired to locate the pushbutton.

APS pushbutton locator tones and walk indications are required to respond to ambient sound quieter when there is little traffic and louder when there is more traffic or a noisy vehicle passing. The sound level should be set so locator tones and walk indications are audible six to twelve feet from the pushbutton or to the building line, whichever is closer. This setting is intended to ensure visually-impaired pedestrians will hear the APS as they approach a crossing, but the APS will not be loud enough to be a neighborhood nuisance. For more information about APS, their use by pedestrians who are blind, and detailed installation information, see the information developed as part of National Cooperative Highway Research Program Project 3-62, Guidelines for Accessible Pedestrian Signals at www.apsguide.org.

Adjustment of the sound level is accomplished in different ways on devices by different manufacturers, but it always requires careful listening on the part of the installer, from different directions and distances. This is more art than science as loudness is a subjective judgment and is influenced by wind, nearby reflective surfaces, humidity, and the hearing of the listener. It is further complicated by the fact that the absolute level of the sound varies with passing traffic. Default settings are rarely appropriate.

Even with careful adjustment, however, some people find pushbutton locator tones objectionable. Automated or passive pedestrian detection used to actuate both the walk indications and pushbutton locator tones has the potential to decrease sound pollution and neighborhood objection. (See “Taking the Next Step” by D. Gibson, P. Burton, N. Boudreau, M. Bobinsky, J. Hoben, B. Ling, and B. Bentzen in IMSA Journal, September/October 2013, reprinted from Public Roads March/April 2013, Vol. 76, No. 5.)

The MUTCD 4E.09 says “Accessible pedestrian signal detectors may be pushbuttons or passive detection devices.” The use of passive detection to actuate locator tones is not specifically mentioned. However, in addition to resulting in a quieter environment, the actuation of APS by passive detection may have some benefits for those who use them. It could also have adverse consequences. As mentioned in “Taking the Next Step,” “…additional research is needed to fine-tune the system to optimize it for the needs of visually impaired individuals.” (Gibson et al, p. 46.)

Possible Benefits to Pedestrians Who are Visually Impaired

There may be benefits of automated pedestrian detection for pedestrians who are visually impaired. One of the primary clues that visually-impaired travelers use to judge the probable direction of a crosswalk is the direction they were walking as they approached the corner. If they need to deviate during that approach to find and push a button, their initial alignment to cross may be less accurate than when they do not have to deviate from their straight approach to the street. If alignment is more accurate, they are less likely to veer outside the crosswalk as they cross. Auto-
Possible Adverse Consequences for Pedestrians Who are Visually Impaired

A major concern with automated detection is visually-impaired pedestrians may be less certain that the onset of an audible walk indication is for the crosswalk they intended to cross because they do not have to go to the APS device and push a button. They may be more likely to mistakenly begin to cross with the audible walk indication for a crosswalk that is orthogonal to the one they wish to cross, taking them into the path of moving traffic.

Pedestrians who are visually impaired may feel more confident that they will know which walk indication is for their intended crossing if they have gone to the APS and know exactly where it is. Especially in very noisy situations or for visually-impaired pedestrians who have impaired hearing, including those having common age-related hearing loss, finding the pushbutton and resting the hand on the arrow until it gives the vibratory walk indication assures them that the walk indication they hear is for the crossing they wish to make.

In addition, visually-impaired pedestrians who do not have to push a button to request a pedestrian phase and an audible walk indication, may be less likely to be within the width of the defined crosswalk when they begin to cross, and they may be less sure they are in the correct location to begin crossing. Pushbuttons that are well-located can be a good indication of the location of the crosswalk. However, pushbutton location is still quite inconsistent in the US.

Visually-impaired pedestrians get general directional information from tactile arrows on APS that are correctly aligned with the direction of travel on the associated crosswalk. However, precise alignment with tactile arrows is not possible for most people (Scott et al., 2011).

Nonetheless, it is possible that pedestrians who are visually impaired may align more accurately with tactile arrows, at least at intersections where there is no little or no traffic parallel to the crosswalk, than with other available cues. They may also have more confidence in their alignment based on a tactile arrow than based solely on traffic moving parallel to their intended direction of travel. For this reason, they may wish to locate the APS to check the orientation of the arrow, even though they do not need to push the button to get a walk indication.

Challenges of Installing Automated Pedestrian Detection at Intersections Having APS

The combination of automated pedestrian detection and APS at an intersection results in installation

APD — cont. on page 26
challenges that require an understanding of the ways people who are blind or who have low vision travel. Individuals who are blind or who have low vision cross at intersections with which they are not familiar; they are not provided with instruction at every intersection they cross. Special care must be taken in setting detection zones so they include all paths where a pedestrian who is visually impaired may approach or wait to cross at an intersection. There is no “standard” location that can be assumed. The detection zones must be custom set for each corner and each approach.

People who are visually impaired may or may not cross from curb ramps and cannot be assumed to wait on the ramp or on the detectable warning surface (truncated domes). Many individuals prefer to avoid crossing from the ramp, particularly since curb ramps often are directed toward the center of the intersection. Many prefer to walk straight up to a corner and cross from wherever they contact the curb or curb line. Some prefer to travel following the edge of the sidewalk farthest from the street, while others do not intentionally stay close to either edge of a sidewalk. As shown in Figure 1, travel patterns vary depending on the street the pedestrian wants to cross, personal preference, whether the pushbutton is used, and the corner and intersection geometry.

**Detection Zones**

Automated pedestrian detection must not decrease the effectiveness of the information provided by APS. Passive detection zones must be individually set to meet the travel patterns of visually impaired pedestrians. Detection zones for actuating locator tones and/or walk indications must ensure that pedestrians who are visually impaired are detected from all directions of approach, on the full width of the sidewalk, and in all locations at which they may be waiting to cross.

If the automated detection system is used to actuate pushbutton locator tones, the detection system must detect approaching pedestrians in sufficient time for locator tones to begin sounding by the time pedestrians are a minimum of six feet from APS pushbuttons so the tones will be audible to most pedestrians a minimum of six feet from the associated APS, as required by MUTCD 4E.12. This means that detection zones for pushbutton locator tones must be relatively large, covering the full width of the sidewalk on both approaches to a corner, as shown in Figure 2.

The walk indication detection zone must cover the entire area

---

where pedestrians who are blind may wait to cross. At most corners, there will be some overlap in the location in which pedestrians who are blind will wait to cross in either direction, as can be seen in Figure 1.

Figure 3 shows the approximate area that needs to be covered by the detection zone for actuating the walk indication. The area needs to include the curb line itself, and extend back a minimum of six feet, or to the pushbutton, as pedestrians may wait to cross at varying distances from the curb line and some may wait beside the APS pushbutton. This is likely to be the case when pedestrians rely on the vibrotactile walk indication to be sure they are aware of when the walk indication begins, and to which crossing it applies.

**Need for Careful Evaluation, Extensive Field Testing, and Adjustment**

Careful evaluation is needed to determine whether vehicular and pedestrian volumes make installation of automated pedestrian detection with APS appropriate. At the corner shown, if the pedestrian timing is concurrent with vehicular timing, automated detection zones that are set adequately for APS will frequently actuate the pushbutton locator tones and pedestrian timings for both streets. Where two pushbuttons are on the same pole, there will often be some overlap near the apex of the corner, as shown.1

**Figure 3.** Detection zones for actuating walk indications must cover the entire area where visually impaired pedestrians may wait to cross each street. There will often be some overlap near the apex of the corner, as shown.1

---

**Earn IMSA Certification:** Fiber Optic Training for Traffic Systems

The Light Brigade’s *Fiber Optics for ITS, Traffic Systems, Fire Alarm, and Communication Systems* training program offers three levels of instruction. These courses provide a practical understanding of how fiber optic technology is integrated into modern traffic systems, and cover essential learning objectives for the IMSA certification testing. Courses updated for 2013.

**Technician Level I:** Two days of classroom training on the basic theory of fiber optics. A prerequisite for either Level II course.

**Field Technician Level II:** Two days of in-depth hands-on training to master the skills needed to work with fiber optic systems in the field.

**Design Technician Level II:** One day of classroom training focusing on advanced topics for transmissions systems. Designed for Operations and Maintenance Supervisors, Design Engineers, and ITS Managers.

If our regularly-scheduled programs do not fit your needs, we also offer a custom training program for six or more attendees at the time and location of your choice. Contact sales@lightbrigade.com for more details.

For a complete description of the course offerings and class schedules, visit our website at www.lightbrigade.com.

(800) 451-7128 • sales@lightbrigade.com • www.lightbrigade.com
locator tones and walk indications as well as pedestrian timing for both streets will be actuated by the presence of a single pedestrian. This may have negative impacts on vehicular timing.

Because all pedestrians, not just those who are visually impaired, will actuate the pushbutton locator tones and walk indications when they enter the detection zones, installation of automated pedestrian detection may not result in decreasing the annoyance of the pushbutton locator tones at intersections with high pedestrian usage. In addition, a single pedestrian wishing to cross a minor street may actuate the pedestrian phase for the intersecting major street, resulting in delay for vehicles traveling on the major street when there is no pedestrian wishing to cross.

Getting all parts of a passive detection system with APS to function correctly can be challenging. If, with any approach to a corner from either direction, pushbutton locator tones are not actuated in a timely fashion, pedestrians with visual impairments will not be getting the information they are intended to receive from the APS.

Each installation should be evaluated by approaching each corner from each direction along the center and the extremes of the path of travel that might be taken by a visually-impaired pedestrian, and waiting to cross in the center of the crosswalk as well as at each extreme of the area in which a visually-impaired pedestrian might wait to cross. On each approach, the following functional requirements should be documented.

• Pedestrian’s distance from pushbutton when locator tone begins to sound is no less than six feet
• Number of seconds after entering the walk indication actuation zone before hearing the pushbutton actuation message “Wait” or the pushbutton information message “Wait to cross (street name)” at (street name) is no more than two seconds.
• Audible and vibrotactile walk indications correspond to the timing of the pedestrian signal head display
• APS reverts to the pushbutton locator tone after the walk interval, for the full duration of the pedestrian clearance time
• Where APS provide speech messages, both the pushbutton information message and the speech walk indication are audible and understandable from one APS without interference by the other APS on the same corner

**Conclusion**

Careful evaluation is needed to determine whether the installation of passive detection will result in decrease of noise at an intersection without adversely affecting signal timing. It must be correctly installed to provide equal access to pedestrian timing as well as to audible and vibrotactile information about the signal status to pedestrians who are visually impaired. Care must be exercised in installation and adjustment of detection fields of passive pedestrian detection systems to be certain visually impaired pedestrians approaching from both directions at a corner, intending to cross either street, will have access to signal information in time to make accurate crossing decisions.

More research is needed on the effects of passive pedestrian detection on crossing safety and access to signal information for pedestrians who are blind or who have low vision. There has been no research to date on the effect on pedestrians who are visually impaired of passive pedestrian detection combined with APS at intersections at which the pedestrian phase is concurrent with vehicular green.

**References**


Janet M. Barlow, President, Accessible Design for the Blind is a certified Orientation and Mobility Specialist, with extensive experience teaching street crossing skills to individuals who are blind or who have low vision. She has been involved in research related to accessibility of sidewalks and street crossings to pedestrians with disabilities as part of NCHRP, TCRP, and NEI (National Eye Institute) projects and consults with municipalities on accessibility concerns.

Billie Louise (Beezy) Bentzen, Director of Research, Accessible Design for the Blind, is a Certified Orientation and Mobility Specialist and a human factors researcher specializing in wayfinding and accessibility for people who are blind or who have low vision. Her research has included projects on visibility of pedestrian signals, accessible pedestrian signals, detectable warnings (truncated domes), tactile maps, and tactile, visual and audible signage.
Introducing the FlashCube™ — RTC’s new Integrated School Zone Flasher System was created in response to an industry-wide need for a self-contained, energy-efficient warning flasher with the capacity to operate when needed. FlashCube™ is it — an all-in-one flasher solution, with an efficient and quick installation requiring no additional wiring. An RTC School Zone Flasher System can help ensure a safe and efficient way for students and drivers to get to where they need to be.

The FlashCube™ is highly customizable to fit into virtually any installation requirement for school zone safety.

Discover more at RTC-Traffic.com/FlashCube.
In the months following a deadly Hell’s Kitchen high-rise apartment fire, calls have steadily increased for improved fire safety legislation in New York City’s towering residential buildings. The horrible death of one man, and the hospitalization of his partner, seems to have mobilized an entire city to action; however, what is the best way to ensure that a tragedy like this never happens again?

The beauty of modern technology is that there are countless solutions available to building owners that could help first responders better communicate with residents during an emergency. The key will be identifying the systems best-suited for this all-important task.

What action to take in an emergency is a huge problem for people living in high-rise buildings. It is counter intuitive to decide to stay in a building that is on fire, but often times that is the safest place for the tenants of a non-combustible high-rise. People have died and been seriously injured simply because there is a lack of regulation around residential high-rise communication systems. In many emergencies, residents don’t know what to do: shelter in their apartment? Evacuate via a stairwell? Depending on the nature of the fire (or other emergency, such as a tornado or terrorist threat), the best course of action may vary. That’s why first responders must have a way to effectively communicate with everyone in a building — and I do mean everyone — tenants, delivery people, visitors, etc. We can’t just leave it up to the public to decide “to go or not to go” without giving them real-time information to base their decision on.

Strong notification systems are especially necessary for communicating to the most vulnerable members of our society, including young children, the elderly, and those with limited mobility. Some of these individuals may have very limited resources and, in many situations, aren’t able to save themselves. The more information we can give these populations to help themselves during emergencies, the better.

If new legislation does get passed requiring building owners to install an emergency communication system, there will be a lot of businesses touting their solution as the best option. So, let’s take a closer look at how some of the technology available might perform in a high-rise, residential setting.

**Paging system:** One-way or two-way paging is a good first step. This will enable, for example, fire fighters to notify residents about the location of a fire and advise them to stay in their apartments. However, your average PA system contains no redundant qualities for back-up, so when the system’s communication backbone is damaged, the system simply doesn’t work.

**Digital signage:** There are many options on the market for wall-mounted communication devices, many of which feature speakers, digital text, and flashing strobes. These displays could be useful on the lobby of each floor and/or by stairwell entrances, to quickly tell residents (and other people in the building) what to do in an emergency. Strobes and other visual communication are especially helpful for deaf residents.

**Social media integration:** A building’s communication technology could be integrated with social media sites, like Twitter and Facebook, to provide emergency updates in real-time. While this is a useful tool in some cases, it should not be a primary means of communicating with people in the event of an emergency. However, social media integration provides fantastic redundancy in cases where other systems, such as one-way paging systems or phone lines, fail.

**Fire alarm system with voice capabilities:** In my experience, a fire alarm system with voice capabilities is going to be a building owner’s best bet for emergency communication. This technology is built to survive
Solar RRFBs — cont. from page 22

location and determine product suitability.

Seattle, being one of the more challenging solar environments in North America, is a great example of how solar RRFBs can perform in areas of low insolation. The graph on page 22 illustrates the number of activations available for two different product models over a 24-hour period in Seattle, based on the available system capacity due to shading.

Performance, reliability, and sustainability are all major considerations for RRFBs. In order to achieve these desired factors, proper battery maintenance is important. It is true that in most cases, the bigger the battery, the more autonomy available. However, the number of activations, total system load, and amount of sunlight and shading all affect the battery’s daily depth of discharge. Proper system design and specification ensures the number of days the battery returns to a full state-of-charge is maximized. To maximize battery life, systems should be designed to use typically no more than 20% of the total available battery capacity. In many cases, less than 10% of the battery capacity should be used. This dramatically prolongs the service life of the battery and reduces overall system maintenance costs. When RRFB specifications leave out all of the factors that affect proper battery maintenance, focusing only on size, battery life will be shorter and subsequent maintenance costs will increase.

The graph below illustrates the number of available charge cycles based on a typical usage scenario incurring ~ 5–10% daily depth of discharge (DOD) for a well-designed RRFB. It is important to note DOD calculations are based on temperature data for the worst-month of the year for minimum temperature and sunlight. Warmer, brighter months will have a lower DOD and will have a greater effect in maintaining battery life.

Comparing systems using a performance-based approach often results in the conclusion that bigger is not always better. Smaller systems can be installed on standard sign poles, are much easier to install, and are aesthetically more appealing for urban locations. Additionally, smaller systems that are more efficient often outperform larger systems. When system specifications properly identify the performance requirements, operating capacity, and site-specific factors including shading and temperature, a reliable and sustainable system can be provided.

Greg has over a decade of experience with pedestrian devices for the traffic industry. He has been with Carmanah technologies since 2004 and has overseen the development of solar flashing beacons, including the rectangular rapid flashing beacon. Greg is currently managing director for the traffic division at Carmanah.

John Stofa is the Municipal Account Manager for Honeywell Fire Systems and has worked in the fire alarm and sprinkler industry for over 20 years in various management positions. In addition, he was a volunteer/call firefighter in the States of New York, Connecticut, and Vermont and was a professional EMS provider in New York State for 10 years. John holds a Bachelors degree in Fire Science, an Associates degree in Fire Protection Technology, and is currently studying Fire Protection Engineering. John is NICET certified and is a part-time Fire Alarm Instructor at Upper Cape Tech in Cape Cod, MA.
I am starting this article off with an everyday occurrence. Somewhere, in the US, an invitation is received for a social event. The hostess is called with a request for directions. Her response to the traveler is to enter the address 123 Orange St. into Google Maps. The traveler responds with “I do not have a smart device. Can you please give me the directions?” “Here goes… take exit 5 to left on Lime St. Go for about 5 miles and turn right onto Pineapple Ave. and make the first left onto Date St. 123 Orange St. is on the left 2 blocks.” What’s so important with this scenario? Street name signs — or lack of. This situation occurs daily and that is why I am writing this article.

The Federal Highway Administration has put a good bit of thought and research into the MUTCD and a small portion of that is street name signs. Be they retroreflective or illuminated, they play a major part in our everyday travels, not to mention — and more importantly — the ability of emergency vehicles to be able to find a location on the fly. I am going to first give an overview on retroreflective street name signs and then transition into internally-illuminated street name signs.

The MUTCD has dedicated a good bit of space to street name signs. Section 2D.43 is full of useful information. I am going to make it easy for you. There are 2 street name designation numbers. D3-1, which is a typical street name sign found in urban areas at all intersection and in rural areas at all important road. D3-1a is a street name sign that has a route shield to identify the route number such as Florida State Route A1A along with the street name of Coastal Highway.

Colors of street name signs are spelled out in the MUTCD. So forget the college colors. That is a no-no. The normal background color for guide signs is green (must use white text/legend). There are exceptions, but only for a D3-1 or D3-1a. The acceptable background alternates are blue, brown (must use white text/legend) or white (must use black text/legend). If you use an alternate color it needs to be used on all roadways within that agency’s territory. In a business or commercial area and on all principal roads, street name signs should be placed on opposite diagonal corners. In residential areas a sign should be placed at each intersection with the name of each street facing parallel to the street it names.

Material types are also spelled out in the MUTCD. Here is the link. http://mutcd.fhwa.dot.gov/htm/2009/part2/part2a.htm#section2A08. For easy reading in the FHWA Know Your Retro Brochure there is the sheeting ID chart (FHWA Publication SA-14-022) with specifics on minimum maintained retroreflectivity levels by color, sheeting type, and retroreflectivity minimum numbers. You can read more on retroreflectivity in the May-June IMSA Journal article “Are Your Signs In Compliance?”

What type of lettering/font should you use for a street name sign? This is a question that takes a good bit of thought and there are standards for lettering. The FHWA has a standard alphabet that is published in the MUTCD. It is titled Standard Alphabets for Traffic Control Devices. Here is the link: http://mutcd.fhwa.dot.gov/SHSe/Alphabets.pdf. I am often asked for the Clearview font. The requirement for the upper and lower case text on a street name sign is often confused with Clearview. There is no requirement anywhere that you must use Clearview and I get this question on a
regular basis. The Clearview font has interim approval and is an option. For more information here is the link. http://mutcd.fhwa.dot.gov/resources/clearviewdesignfaqs/index.htm#q3.

The lettering for street name signs is a standard that requires initial upper case letters with lower case combination that follows. This standard is explained in MUTCD Section 2A.13. The letter height varies by type of mounting, type of street or highway and speed limit. See table 2D-2 above.

Supplementary lettering to indicate Street, Avenue, or Road or the section of the city (such as NW) on the D3-1 and D3-1a signs may be in smaller lettering, composed of initial upper-case letters at least 3 inches in height and lower-case letters at least 2.25 inches in height. Conventional abbreviations may be used except for the street name itself (MUTCD Section 1A.15).

This is your basic street name sign and the gives you an idea of the chart to follow when producing a street name sign. There are variations and corresponding charts. Here is the link: http://mutcd.fhwa.dot.gov/shsm_interim/pdf_files/d03_01.pdf.

<table>
<thead>
<tr>
<th>Type of Mounting</th>
<th>Type of Street or Highway</th>
<th>Speed Limit</th>
<th>Recommended Minimum Letter Height</th>
<th>Initial Upper-Case</th>
<th>Lower-Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overhead</td>
<td>All types</td>
<td>All speed limits</td>
<td>12 inches</td>
<td>9 inches</td>
<td></td>
</tr>
<tr>
<td>Post-mounted</td>
<td>Multi-lane</td>
<td>More than 40 mph</td>
<td>8 inches</td>
<td>6 inches</td>
<td>4 inches</td>
</tr>
<tr>
<td>Post-mounted</td>
<td>Multi-lane</td>
<td>40 mph or less</td>
<td>6 inches*</td>
<td>4.5 inches*</td>
<td></td>
</tr>
<tr>
<td>Post-mounted</td>
<td>2-lane</td>
<td>All speed limits</td>
<td>6 inches*</td>
<td>4.5 inches*</td>
<td></td>
</tr>
</tbody>
</table>

*On local two-lane streets with speed limits of 25 mph or less, 4-inch initial upper-case letters with 3-inch lower-case letters may be used.

Table 2D-2.

Supplementary lettering to indicate Street, Avenue, or Road or the section of the city (such as NW) on the D3-1 and D3-1a signs may be in smaller lettering, composed of initial upper-case letters at least 3 inches in height and lower-case letters at least 2.25 inches in height. Conventional abbreviations may be used except for the street name itself (MUTCD Section 1A.15).

The FHWA specifies sizes for blanks just as they specify lettering criteria. The blank is to be 2 times the letter height so if you are using 6” text you need to use a 12” blank. If you look at the drawing above or at MUTCD Table 2D-1 Conventional Guide Sign Sizes you can easily see the size of the letter to the size of the blank.

What about a logo or as in the MUTCD a pictograph. This is allowable only on a D3-1 and to the left of the street name. It is to be the official seal or logo of the agency. The logo cannot exceed the height of the initial upper case letter of the street name sign (MUTCD Section 1A-13).

Overhead street name sign mounting will optimize visibility and this installation in urban or suburban

Name Signs — cont. on page 34

Protect important intersections from power outages.

TrafficTran®
Generator
Transfer Switches
For Traffic Signals

770.720.8230
www.cablequest.biz
Ball Ground, GA
areas should be considered. A street name sign may be placed above a regulatory STOP or YIELD.

An alternate to the retroreflective street name sign is the internally illuminated LED street name signs. They follow the MUTCD requirements but are composed of a box that is internally illuminated with LED’s or other acceptable sources.

**Why Use Internally-Illuminated LED Street Name Signs?**

Internally-illuminated LED street name signs are very helpful to tourists/visitors who are not familiar with an area as they search for a specific street, and they ease the burden of a slow moving driver looking for a specific street sign. How many times have you traveled through a city and found no street signs on the mast arms at all? Have you ever approached an intersection and noticed you were totally unable to read the retro-reflective metal blade sign directly ahead of your vehicle? Not being able to see a sign is just as problematic as a missing sign.

Right and left vehicle turns regularly cross the paths of pedestrians, affect downtown commerce, and even contribute to surface street traffic congestion. But what if you could see the street name sign from further away? What would it mean if you were in the correct lane to make that right or left hand turn with plenty of time?

Internally-illuminated LED street name signs are becoming an increasingly popular choice for traffic engineers and urban planners who want to: 1) enhance sign legibility for drivers at greater distances, 2) prepare for the growing number of drivers over 55 years of age, 3) improve streetscape aesthetics, 4) accommodate safer vehicle lane changes, and 5) illuminate signage for pedestrians and non-motorized vehicles.

**Benefits & Advantages**

1. **Higher visibility at much greater distances.**

   The location of the green horizontal rectangle is easy to see ahead as a driver approaches the intersection, though the metal street name (sign legend) may not yet be legible (Figure 1A). Modern vehicle headlights utilize Visually/Optically Aimable (VOA) technology to channel the headlight beam downward toward the roadway to avoid blinding oncoming drivers. The very purposeful direction of intense light to the roadway by VOA headlights also results in less ambient light reaching up to illuminate retro-reflective metal blade signs. This change in auto manufacturing has affected retro-reflective metal blade sign illumination by as much as 53% in common sign configurations. A study published by the Transportation Research Board indicates that retro-reflective sign luminance readings ranged from 3.2 cd/m² (3.2 Lux) to 80 cd/m² (80 Lux) on positive-contrast textual traffic signs.²

   In stark contrast, top-tier Internally-illuminated LED Sign manufacturers can produce LED signs with luminance ratings above 550 Lux for drivers approaching the intersection.

**FIGURE 1A**

---

Driver #2 is illuminating (and can see) the green rectangle ahead, but most likely cannot yet read the sign legend at the greater distance. Even thought the headlights from Driver #1 are now below and past the sign, Driver #1 has the benefit of retroreflective illumination from the headlights of Driver #2.

---

Change an LED as fast and easy as a light bulb using the QUICK CHANGE KIT for LED Traffic Signals

How you Benefit:
- Fast, convenient, easy to use
- No tools required to change LED
- Gloves on use...warm hands!
- Significant time savings per signal...$$$
- Improves safety...less time in bucket, reduces accident exposure
- No tools or parts to fall to the ground
- Pays for itself in first change out

QCK Features:
- Universal design fits most makes and models of round lens signals
- Retrofits your old signals when you re-lamp or can be ordered with new signals
- Custom polymer for long life under extreme temperature
- Easy to install
- Positive Latch Lock Mechanism
- Packaged with stainless steel screws
- Surpasses ITE Wind Loads
- Patented

SEND US AN EMAIL WITH YOUR CONTACT INFORMATION FOR A FREE SAMPLE!
QCK@thegetgoinc.com

Right, from The Get Go Inc.

To see the QCK in action, go to http://youtu.be/__SB-uadRzg

The Get Go Inc.
18 Aubrey Ave, P.O. Box 2182
Richmond Hill, ON, Canada
L4E 1A4

Phone: 416.849.2228
Fax: 416.849.2271
Email: info@thegetgoinc.com
Web: www.thegetgoinc.com
2. A quality Internally-illuminated LED Sign looks like your high beams are on it!

You can’t drive around with your vehicle’s high beams on. However, an Internally-Illuminated LED Street Name Sign with a luminance over 550 Lux looks very similar to a retro-reflective metal blade sign with a vehicle’s high beams shining on it.

3. Older drivers stay mobile

Drivers are getting older, and US Census data suggests that nearly 23% of Americans will be over 65 years of age in 2030. A 2009 study by University of Iowa and published by the Transportation Research Board finds that information transfer accuracy (a driver’s ability to read and comprehend a sign correctly in a specific time) is directly tied to brighter signs, particularly for a sample driver population over the age of 55 years. Internally-illuminated LED street signs help by displaying a high contrast, well-lit illuminated sign legend at a predictable location in the intersection.

4. Helping tourists and visitors ultimately helps everyone

Visitors and tourists are always moving through your City. Smart phones are great, but nobody wants a driver looking at his phone’s map app when he could be looking straight ahead at a street sign mounted over the roadway. When uniformly installed, they become a visible guide that visitors can look to when trying to find the City Zoo, Civic Center Arena or the shops just off or on Main Street.

5. Pedestrians can see right where they’re headed

Traffic engineering departments work to accommodate pedestrians on city streets using livable green transportation modes of mass transit, walking, and biking. Growing, vibrant, and daily pedestrian traffic is a pinnacle achievement for green transportation planners in the urban environment.

6. Mass transit riders—here’s your stop!

Internally-illuminated LED signs are also helpful when a rapid transit rider is looking for a specific street at which to exit the bus.

7. Bicyclists can finally see the signs, even with no headlights!

In almost all cities, bicyclists are required to use the roadway and not the sidewalk, despite the fact that they have no headlights. Designing sustainable alternate modes of transportation requires that traffic designers think of things like protected bike lanes, lane markings, lane use protocol, and even sensitive bicycle detection at the intersection. How many people either go to work or travel home in the dark? Urban designers who want sustainable modes of transportation know that you must plan for them. So why not use illuminates LED street signs for those riders who bike in the early morning hours or late in the afternoon?

NOTE: MUTCD Section 2A.07 Retroreflectivity and Illumination

Support:

01 There are many materials currently available for retroreflection and various methods currently available for the illumination of signs and object markers. New materials and methods continue to emerge. New materials and methods can be used as long as the signs and object markers meet the standard requirements for color, both by day and by night. Standard:

02 Regulatory, warning, and guide signs and object markers shall be retroreflective (see Section 2A.08) or illuminated to show the same shape and similar color by both day and night, unless otherwise provided in the text discussion in this Manual for a particular sign or group of signs.

03 The requirements for sign illumination shall not be considered to be satisfied by street or highway lighting.

In closing, we have touched on information that will help you decide how to best sign your streets and roads for ease of travel. The photos in the article are examples of what we see on the road, not necessarily right or wrong. The drawings provided are from the MUTCD or Standard Signs and Markings. I would like to thank Adrian for the information on Internally-Illuminated LED street name signs. We hope this has been informative and if you have any questions or need any assistance feel free to call us.

This article was co-authored by Adrian Baker of Temple and Joanne Conrad of TAPCO. Photo credit Mike Haley, Adrian Baker, Joanne Conrad

Joanne Conrad is the Digital Division Manager for Traffic & Parking Control Company, Inc. She oversees the marketing of products and services to maintain signage along the highways and byways of America. Joanne has over 20 years experience within the traffic control industry and serves on various industry-related committees including the NCUTCD. She has been both an IMSA sustaining member of the month and the 2006 Sustaining Member Award was presented her at Conference. Joanne has a passion for road safety and believes the education provided to the members of IMSA improves safety for the motoring public and foremost for the person in the field making the roads a safer place to be. She also can walk the beach for hours looking for shells as she watches her dog Mojo chase the sea gulls!

Adrian Baker is the National Accounts Manager for Temple Edge-Lit Internally-Illuminated LED Signs of Decatur, Alabama, serving customers in 43 U.S. States and Canada. He is a fan of the Andy Griffith Show, an aspiring fisherman, and cannot play a banjo to save his life. He can be reached at Adrian.baker@temple-inc.com.

---

OUR EVOLUTION...

IS YOUR SOLUTION!

NEMA 120VAC
Proven and Reliable

ATC 48VDC
Raising the Standard

21 Series

21H Series
With LED
Switching Confirmation!
- Hermetically sealed reliability

418 Series
Hybrid to
Replace Mercury Relays

428 and 429 Series
With Innovative
Hybrid Technology!
- Electromechanical and
Solid-State relays in parallel

For more information on these products, visit our website and click the “Traffic Relays” link.

www.struthers-dunn.com

(843) 346 - 4427

STRUTHERS-DUNN
Leaders in Relays & Controls Since 1923
McCain Traffic Cabinets

From San Francisco to New England, agencies nationwide are deploying McCain’s traffic cabinets. With more than 300 cabinet configurations available, it’s no wonder our cabinets are outshining the competition. Manufactured to comply with any industry standard, including ITS and NEMA, McCain’s flexible cabinet designs are sure to meet any agency’s specifications.

Leading the industry in technological advancements, McCain is the tour de force behind the cutting-edge ATC Cabinet. Combining the best of existing standards and the latest in advanced technology, the cabinet delivers unparalleled safety measures that reduce agency liability while boosting operational efficiency.

Join the cabinet revolution that’s taking the US by storm. Visit www.mccain-inc.com or call (888) 262-2246 to learn more.
YOUR LOOP SEALANT AND CABLE SOURCE.

(800) 238.7514
cablesales@ptsupply.com
www.ptsupply.com
I work as a fire inspector for a medium-sized city in the southwestern United States. I recently attended a conference where one of the speakers talked about the responsibility Authorities Having Jurisdiction (AHJs) have to their constituents to deal consistently and fairly in every situation. The speaker insisted that this was a matter of integrity. Have you ever encountered unfairness from either AHJs or fire protection contractors?

Sadly, yes I have. Please let me explain.

The caller at the other end of the phone serves as pastor at a small church in the south. He explained that at a recent pastor’s conference a friend of his had given him my name as someone who did consulting work in fire protection. After I acknowledged that I did such work, he told me this story.

It seems about fourteen years ago, the church he serves decided to build a new educational building on their property. The building would have a large central atrium that would serve as a fellowship space with room for banquet tables and chairs. The perimeter areas around the atrium on both floors would have classrooms for the church’s Christian Education Program.

Because the architect had designed a very simple rectangular building, the church decided to build this educational building detached from the existing church building with a 50-foot covered walkway between.

With only the very best intentions, the church soon found that they had stepped into an almost unreal fire protection nightmare.

Their nightmare began when they submitted the plans to the local fire marshal for the town in which the church resides. The fire marshal took over two months to review the plans and specifications. Then, the marshal returned the plans with demands that the church install an automatic sprinkler system and a complete Emergency Voice-Alarm Communications (voice evacuation) fire alarm system. The marshal specified that the church must also install smoke detectors throughout all areas of the building. And, the church would have to connect the alarm system to a listed central station.

Believing they had no choice in the matter, the church began the process of adding these protection features to the design of their building.

The first hurdle they encountered came from the local water department. The church received a letter from the attorney representing the water department informing them that they would have to apply for special permission to obtain a water connection for fire protection service. They needed to include a 1,500 tapping fee with their application. Furthermore, this connection would need a backflow preventer and a fire protection service water meter. The water department also enforced a regulation that set the minimum size of the connection at eight inches.

When the church leaders received the cost estimate for the water connection, they gulped in surprise. The backflow preventer would cost about $2,500 and the 8-inch fire protection service water meter would cost nearly $6,000. Their chagrin increased when the sprinkler contractor they had hired reported that the automatic fire sprinkler system for their 10,000 sq. ft. building would cost them over $30,000.

Since most readers of this article have little or no knowledge of automatic sprinkler systems, let me hasten to explain that an 8-inch water connection to serve the sprinkler system in a 10,000 sq. ft. building represents massive overkill. At the most conservative estimate, using 120 sq. ft. per sprinkler head, the 10,000 sq. ft. would need 84 sprinkler heads. Even with moderately low water pressure, a 4-inch connection to the water system would easily supply the needed volume and pressure. So, even if the water department wanted to standardize connections for small business occupancies, a 6-inch connection would prove a more reasonable requirement. In addition, for new construction at this time — now almost 20 years ago — an installation cost of $1.50/sq. ft. would represent a reasonable cost. Compare that cost to the $3.00/sq. ft. proposed cost from this particular sprinkler contractor.

One of the church leaders worked as an engineer at a nearby aircraft engine manufacturer. He noticed that the sprinkler contractor had specified a 3-inch sprinkler riser for the building. He wondered why the water department required an 8-inch connection to feed a 3-inch sprinkler riser. So, he telephoned the water department. The clerk who answered his call said the caller would have to submit such a question through the church’s attorney to the attorney for the water department. Since the church had not retained an attorney, the caller decided to just drop the matter.

The next blow came from the fire alarm contractor. The church had hired a local central station operating company to install the fire alarm system. Just part way through the installation, a very large national
**TRANSPORTATION POWER**

**CLEAN, STEADY & READY**

“Mission critical applications require the best transportation UPS systems available.”

---

**Multilink** has provided high quality, reliable products to the world’s largest network providers since 1983, including the most widely used double conversion UPS in telecommunications. Utilize the Multilink advantage when selecting UPSs, enclosures, and fiber management solutions.

---

**Announcing the**

**All-new EP 2200-T and EP 2200-A Uninterruptible Power Supplies for**

**ITS and Transportation Applications**

- Proven technology with enhanced features
- High efficiency for longer emergency power
- Featuring MultiBoost buck & boost conditioning
- Comprehensive five year warranty
- Web based monitoring

1. 440.366.6966 • IMSA@GOMULTILINK.COM • GOMULTILINK.COM
Ever since agencies started using uniform traffic signs, the conventional thinking concerning nighttime visibility is that brighter is better. But a recent Texas A&M Transportation Institute (TTI) research project revealed that signs along rural highways can be so bright they cause disability glare to the point of reduced hazard detection distances, which can be a significant safety concern.

The project, sponsored by the Federal Highway Administration (FHWA) and the Texas Department of Transportation, provided a unique opportunity for TTI Senior Research Engineer Paul Carlson to study a different aspect of retroreflective signage.

“This process started when FHWA published rulemaking on minimum maintenance requirements for traffic signs based on retroreflectivity — how bright signs needed to be to meet drivers’ needs,” explained Carlson. “During this time, there were some technology changes in the market and manufacturers and contractors started pushing for brighter signs while agencies were replacing those that were not in compliance with the minimum retroreflectivity rule. As a result of these brighter signs, we started hearing some complaints from agencies throughout the country asking if these signs can be too bright. And that’s never really been asked before, to my knowledge.”

According to Carlson, if signs are too bright there may be a loss of legibility or create a glare that limits the ability to see potentially hazardous objects near or on the road.

The researchers conducted the study by recruiting participants and conducting nighttime visibility studies on a closed-course facility at the Texas A&M University Riverside Campus. They then assessed how various levels of Speed Limit sign brightness impacted nighttime participants’ ability to read the Speed Limit signs and detect various types of potentially hazardous objects along the edge of the traveled way.

“After our research was conducted, we found that signs can be too bright,” said Carlson. “Interestingly, we found that legibility does not diminish; rather the brightest signs used in our study were correlated with the shortest detection distances with pedestrians, deer and other roadside obstacles that nighttime drivers would want to see. In other words, the brightest signs reduce the nighttime detection distance of obstacles on or near the roadside to the point where it could potentially be hazardous.”

The research team hopes to eventually develop recommendations for maximum retroreflective standards to partner with the minimum retroreflectivity levels that are already established. The team also plans on testing more headlight patterns to better understand how future technologies might impact the safety of nighttime travel.

“Organizations and agencies are interested in maximum retroreflectivity standards as well as guidelines for sign sheeting selection for specific scenarios. This study provides some information for such guidelines but more work is needed,” said Carlson.

fire alarm company absorbed the local company. The price for the fire alarm system suddenly jumped from $21,000 to $39,000. With a $64 per month monitoring fee, the church leaders reeled again from the sky rocketing costs of fire protection for their small addition.

Upon completion of the building, the fire marshal informed the church that they would have to contract for quarterly inspection of the fire alarm system and for quarterly inspection of the sprinkler system. The fire alarm contractor quoted a price of $5,000 per year for quarterly fire alarm system inspections. The sprinkler contractor quoted a price of $1,200 per year for quarterly sprinkler system inspections.

To add a further insult, the water department charges the church $150 per month just for the privilege of having the fire protection connection. Then, the water company adds any water usage charges on top of that fee. Now remember, this water connection only serves the automatic fire sprinkler system. Apart from quarterly tests, which at best flow 15 gpm for two minutes, no other water usage occurs from this connection.

Over the course of the last fourteen years, the church had spent nearly $40,000 additional on repairs to the fire alarm system. It seems that every time a lightning storm of any consequence occurs in the area, some portion of the fire alarm system sustains damage.

The testing contract with the fire alarm system installer did not include maintenance or parts. So each time, the church would have to pay for new circuit boards and the labor to install them. In fact, the pastor had collected two large cardboard boxes full of damaged circuit boards.

Now I wish I could tell you that my intervention into this situation brought immediate and prompt resolution. Sadly, it did not.

Oh, I contacted the main office of the manufacturer of the fire alarm equipment hoping that they would offer some assistance. They recomm
Is It Time To Forgo Overhead Guide Sign Lighting In Florida?
By Fan Ye, Ohio Northern University; Paul J. Carlson, Texas A&M Transportation Institute; and N. Mike Jackson, Georgia Southern University

Facts about Sign Lighting in Florida

Fact 1: More elderly drivers are in Florida. In 2012, 2.7 million licensed Florida drivers were older than 65, which is about 20 percent of the total drivers. The high number of elderly drivers makes nighttime visibility of highway signage especially important in Florida.

Fact 2: Sign lighting has been used in Florida. Like many agencies across the country, overhead sign lighting has been used by the Florida Department of Transportation (FDOT) to ensure overhead guide sign visibility.

Fact 3: Prismatic sheeting materials are available. The newer and more retroreflective sheeting materials result in a trend away from the use of overhead guide sign lighting. There is a national general consensus that sign lighting is not needed for overhead guide signs with prismatic sheeting in rural areas; but in developed areas or along highways with unique geometries, there is a concern about removing or turning off overhead guide sign lights.

Fact 4: There are no guidelines to qualify the needs of sign lighting. Without any warrants or guidelines to qualify the needs of sign lighting, FDOT is facing a new challenge in considering the need for sign lighting.

The four facts of sign lighting led to the development of research conducted by Texas A&M Transportation Institute (TTI) and University of North Florida from 2012 to 2013. The purpose of the research was to identify if high-performing retroreflective sign sheeting can replace the need for sign lighting and, if not, then determine where overhead guide signs with lights are needed.

Research Step 1: Minimum Required Luminance vs. Supplied Sign Luminance

In the study, the researchers modeled the visibility of overhead signs using luminance as the primary performance metric, and calculated sign legend luminance by a sign luminance computation model. By comparing the calculated luminance of a specific sign at a specific situation with the legibility luminance levels required by older drivers, sign lighting needs were assessed.

Minimum Required Luminance

In this study, researchers used the human factors research from previous overhead guide sign research conducted at TTI for the FHWA. This previous work identifies the luminance needed for legibility. The cumulative distribution graph on how much luminance is needed to accommodate the various percentages of elderly drivers (age 55 and older) is shown in Figure 1. Using Figure 1, researchers developed the luminance values needed for elderly drivers to read guide signs at a distance coinciding with the requirements of the 2009 MUTCD (i.e., using 50th percentile minimum luminance demands). Three ambient conditions were selected for analysis: one urban condition (roadway lighting with glare) and two rural conditions (no roadway lighting with and without glare), with the according threshold luminance levels as 4.7, 2.1, and 0.9 cd/m² for those three conditions.

Supplied Sign Luminance

Using a sign luminance computation model, by defining sheeting material type, headlamp type, sign position, sign height, geometry of the roadway, and luminance by sign lighting, supplied luminance of signs can be calculated. The effects of weather, dirt, and age degradation were also included in the model. Since sign luminance is determined by many influencing factors, it is economically infeasible to measure it under all types of scenarios. Therefore, the sign luminance computation model is a valuable way to evaluate the supplied luminance under many different conditions.

Some typical situations were selected for the model calculation. For overhead guide signs, the height of the
For almost 50 years, ELTEC has been in business designing and manufacturing programmable time clocks and traffic warning systems (AC and DC/solar). We’ll be here to provide service/support and to supply parts that keep your systems up and running.

Contact ELTEC to:
- **RETROFIT**: use existing parts and components
- **UPDATE**: outdated systems
- **REDESIGN**: failed systems or failed components
- **REPLACE**: out of business manufacturer or obsolete equipment

We’ll work with you to resolve your needs. For a quote, call or e-mail us today.
sign (from center of the sign to the ground) is assumed to be 23 ft, and the sign is above the middle of a driving lane. Two vehicle types were included in the study: a passenger car and a light truck (or SUV). Three types of sheeting materials are used in the study: ASTM Type IV, VIII and XI as prismatic sheeting, and ASTM Type III as a beaded material. Vehicle headlamps are US2004 and US2011 (i.e., use the 50th-percentile luminous intensities of low-beam headlamps on model year 2004 and 2011 passenger vehicles in the U.S.).

Lane width is set as 12 ft, and the vehicle is assumed to be always driving in the middle of a lane. In addition, the distance between overhead signs and vehicles is set to be 480 ft based on the legibility index of 30 ft/inch as stated before.

Therefore, supplied luminance values were calculated for various scenarios using the luminance computation model. By comparing the supplied luminance with the required legibility luminance, we can assess the adequacy of the sign performance in terms of nighttime legibility.

The result over time (i.e., based on different sheeting ages) is summarized in Figure 2 for light trucks, as an example.

The result indicates that ASTM Type VIII and XI sheeting are sufficient for up to 20 years in terms of the required legibility luminance in both rural and urban areas, but ASTM Type III and IV sheeting need to be supplemented with sign lighting in order to be used as long as 20 years in urban areas.

The above luminance analysis was based on straight and flat roadways. However, horizontal curves can have significant effects on sign

---


---

<table>
<thead>
<tr>
<th>Legend Sheeting</th>
<th>Both Vehicle and Sign In Curve</th>
<th>Sign In Curve (Distance from PC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(250 ft.)</td>
<td>(300 ft.)</td>
</tr>
<tr>
<td>Rural Area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type III</td>
<td>925</td>
<td>200</td>
</tr>
<tr>
<td>Type IV</td>
<td>920</td>
<td>335</td>
</tr>
<tr>
<td>Type VIII</td>
<td>810</td>
<td>330</td>
</tr>
<tr>
<td>Type XI</td>
<td>880</td>
<td>370</td>
</tr>
<tr>
<td>Urban Area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type III</td>
<td>3650</td>
<td>980</td>
</tr>
<tr>
<td>Type IV</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Type VIII</td>
<td>2500</td>
<td>1210</td>
</tr>
</tbody>
</table>

Table 1. Breakpoint Radii of Horizontal Curves in Both Rural and Urban Areas (ft.).
luminance. By running the luminance computation model, the breakpoint radii were achieved when the supplied luminance reached a point equal to the demand luminance. Table 1 shows the breakpoint radii of curves for different sheeting types in rural and urban areas. Two relative locations of the vehicle and sign were considered for the analysis: both the vehicle and sign are in the curve; the vehicle is on the approach tangent and the sign is in the curve (with three different distances to the point of curve (PC)).

The results in Tables 1 provide the information needed to develop a simple and conservative recommendation for when sign lighting is needed at curves. For instance, if ASTM Type XI material is used for overhead sign legends, then sign lighting would be needed in rural areas when the curve has a radius of 880 ft or less. In urban areas sign lighting would be needed when the curve has a radius of 2500 ft or less. Less restrictive criteria could be developed for other conditions where the vehicle is on the approach tangent and the sign is in the curve.

Research Step 2: Life-cycle Cost Analyses

A life-cycle cost study was conducted to calculate the cost of replacing the current sign sheeting in Florida with high reflective sheeting and the cost of installing/upgrading sign lighting. Based on the results from the comparison between minimum required luminance and supplied luminance addressed before, in order to meet sign luminance requirements for 20 years, there are various combinations of sheeting and lighting. Assuming the current FDOT practice is using ASTM Type III sheeting for legends, the annual costs of current practice with other possible sheeting/lighting options were compared, as shown in Table 2.

As shown in Table 2, the most cost effective approach to maintain overhead guide luminance is to use (installing or replacing with) induction or LED luminaires. The results also indicate that a viable alternative (in terms of maintaining luminance and being cost effective) would be to use either Type VIII or Type XI legend sheeting materials and forgo sign lighting.

Implementation by FDOT

Based on the research results, FDOT decided to forgo sign lighting for overhead guide signs unless the signs are located at special roadway geometries. A brief summary of the FDOT new sign lighting policy is addressed as below.

- For new overhead signs: No longer require external lighting unless located along a horizontal curve with radii of 880 ft or less in rural areas and 2500 ft or less in urban areas.
- For existing overhead signs without lighting: Replace existing panel when it no longer meets reflectivity requirements with new panel using Type XI sheeting.
- For existing overhead signs with sign lighting:
  - Continue to light until the lighting system or sign panel requires replacement;
  - Replace sign with Type XI sheeting and remove the existing lighting system;
  - If signs locate along a horizontal curve with radii of 880 ft or less in rural areas and 2500 ft or less in urban areas, replace the mercury vapor fixtures with induction or LED fixtures.

<table>
<thead>
<tr>
<th>Current Usage</th>
<th>Treatment</th>
<th>Annual Cost ($/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM Type III with no sign lighting</td>
<td>Install Induction or LED</td>
<td>275</td>
</tr>
<tr>
<td></td>
<td>Replace ASTM Type III with IV legends &amp; install Induction or LED</td>
<td>616</td>
</tr>
<tr>
<td></td>
<td>Replace ASTM Type III with IV legends</td>
<td>1703</td>
</tr>
<tr>
<td></td>
<td>Replace ASTM Type III with VIII legends</td>
<td>345</td>
</tr>
<tr>
<td></td>
<td>Replace ASTM Type III with XI legends</td>
<td>347</td>
</tr>
<tr>
<td>ASTM Type III with mercury vapor sign lighting</td>
<td>Replace Mercury vapor with Induction or LED</td>
<td>238</td>
</tr>
<tr>
<td></td>
<td>Replace ASTM Type III with IV legends &amp; no light</td>
<td>1703</td>
</tr>
<tr>
<td></td>
<td>Replace ASTM Type III with VIII legends &amp; no light</td>
<td>345</td>
</tr>
<tr>
<td></td>
<td>Replace ASTM Type III with XI legends &amp; no light</td>
<td>347</td>
</tr>
</tbody>
</table>

Note: The treatments assume an appropriate background material is used to provide adequate contrast.

Table 2. Life-Cycle Cost of Different Combinations of Legend Sheeting and Lighting on Straight and Flat Roadways.
NEW PRODUCTS

This section of the Journal is a service offered to Sustaining Members of IMSA to assist them in promoting their new products to our readers.

Pelco Products, Inc. Announces Texas Implementation of Copper Safe® Products

Pelco launched its line of Copper Safe® products in 2012 and has successfully demonstrated this product’s ability to keep copper cable safe in the light poles where it’s installed.

“We are happy to help any community protect the safety that these lights provide. This, coupled with the savings a city can enjoy by protecting their copper and keeping thieves safe from themselves, makes the entire community safer. We’re happy to have a solution for TxDOT Fort Worth District or any city that needs help with this innovative, affordable and effective product,” finished Lopez.

For more information on Pelco Products and its products and services, contact Mike Gilliland at (405) 340-3434.

Iteris Launches Its New IDM-M50 Integrated Detection Module for the Siemens® M50® Series Controller

The Iteris IDM-M50 Video Detection Platform started shipping in May 2014. It’s the world’s first (and only) detection module that actually installs right INTO a NEMA controller.

The popular Siemens M50 controller series, one of the most successful and advanced on the market, now has a VIDS module that can be inserted into its seldom-used and long-neglected on-board 3U expansion slot. This new product delivers all the power of Vantage® video detection in a form factor that is perfect for both legacy and new M52/M53 installations. If you have a space-challenged controller cabinet interior, the IDM-M50 yields the perfect small footprint controller + detector.

Iteris’ IDM-M50 accepts four analog camera inputs to provide up to 64 channels of detection. It also supports streaming full motion traffic video and data collection. The results are amazing:

• Simplicity at its best — integrated video detection from the worldwide VIDS market leader
• True “plug and play” module
• Having 64 detection channels eliminates the need for multiple Input/Output and Extension Modules, saving you money
• Reduces or eliminates the need for a detector rack and additional hardware in the traffic cabinet, allowing for smaller more compact cabinets that can be pole mounted
• Programming and mapping the detection to the correct phase in the controller is simple and intuitive using Iteris Vantage software
• Easy setup and remote access reduces time and cost of installation and maintenance of equipment

IDM-M50 combines the power of Iteris’ Edge®2 video detection processor with the Iteris EdgeConnect™ communications module to deliver a compact all-in-one solution for Siemens M50 series NEMA controllers.

• Built in external (front panel) 10/100 Base-T Ethernet port with user-configurable IP address
• MPEG4/H.264 video compression is scalable to fit the available bandwidth
• Get streaming video sent to your TMC with no extra cabinet hardware

The IDM-M50 is a Siemens-approved 3U module. Read more about this unique detection solution, and check out the detailed specs at iteris.com/products/processors/idm-m50. Call your Iteris Distributor or Direct Sales
“Don’t end up sleepin’ with the fishes” — Register Early!

We are drawing closer to our Annual Conference. We can now let you know a little about the networking event night and the banquet entertainment.

The Networking Event night is Monday evening July 28th. We will be enjoying A Taste of Chicago, a buffet of diverse local cuisine Chicago is known for. As we dine we will be entertained by the Chicago Tribute Band 25 or 6 to 4. So come join us, it will be fun!

The Banquet will be held on Tuesday July 29th and we will be getting a visit from Tommy Guns Garage. This is a local dinner theater that brings the roaring 20’s back to life with their unique, interactive brand of music, gangsters and speakeasy entertainment.

I know we’ve talked about the shopping at Woodfield Mall, but until recently I had not been there. My wife and I were in Schaumberg for the weekend and she took me to see the mall. All I can say is it was a shopper’s paradise with three floors of “Oh my wallet”! My favorite store was the Pepper Palace! If you like hot and spicy, they have it to season or grill with. Oh and my wife found some stores she liked too!

If you are looking for TARP points this year, IMSA has a wide range of technical sessions to enlighten participants on what’s new in equipment, software, and MUTCD updates and changes. We are also working on some technical tours that may interest you. All in all, a great conference is planned for you. So don’t be late, register early, as early registration ends July 16th.

Don Snider, IMSA Annual Conference Host

NEW PRODUCTS — Continued

ComNet Introduces High-Throughput Wireless Ethernet Model

New NetWave® NW-7 Model Supports 240 Mbps throughput and has PoE Source Capability

ComNet, Communication Networks of Danbury, CT, a USA-based manufacturer of fiber optic, wireless, and copper transmission and networking equipment, has introduced the NetWave® NW7 wireless Ethernet link that is designed for high throughput point-to-point or multi-point applications.

The NW7 supports up to 240Mbps throughput using MIMO technology and is ideal for use as a High Throughput Back Haul Link for installations that require connecting to more than one Ethernet device. It supports connected distances of greater than 2 miles in the FCC version and 4 km in the ETSI model. The NW7 is simple to use and a cost-effective alternative to physical connections to Ethernet edge equipment. The NW7 also supports IEEE802.3at PSE (Power Sourcing Equipment) for powering PoE connected devices, such as IP PoE cameras and simplifying installation.

“Wireless Ethernet gives our customers an incredible amount of flexibility. Our goal of making wireless as easy as Power, Point, and Play was step 1. Step 2 is to start examining different unique use scenarios and developing wireless products that solve those challenges. These high-throughput NetWave® NW7 products are the result and solve the challenge of transporting multiple devices or support the bandwidth high-definition cameras require,” said Don Snider, IMSA Annual Conference Host.

Visit our website at www.aurora-illumination.com

Retrofit Any Fluorescent Internally Illuminated Street Name Sign to LED in less than 15 Minutes

- LED
- Single or Double Sided
- Easy to Install
- Rated at 60,000 Hours
- Five Year Warranty
- 5,000 K Bright White Light
- No Ballast or Power Supply
- UL/CUL listed
- Ideal for Regulatory Signs

July 2014
said Andrew Acquarulo Jr., ComNet President and COO.

“One mission at ComNet has always been to demystify transmission, be it fiber optic or Ethernet. NetWave® from ComNet simplifies wireless and gives our customers another solution,” Acquarulo concluded.

With the introduction of NetWave® wireless Ethernet products, ComNet has become a single-source solution offering transmission solutions over all media types.

“Our goal has always been to be a one-stop resource for all our customers, offering transmission solutions over copper, optical fiber and wireless,” said Skip Haight, ComNet VP of Marketing. “We believe having a one place to turn to for USA-made quality solutions as well as an exceptional level of support will be a huge benefit for anyone implementing a transmission network,” Haight continued.

ComNet offers an extensive line of fiber optic, copper and wireless video and data transmission equipment that is uniquely designed to meet the needs of the Security and Intelligent Transportation System market. Full product line details are available at www.comnet.net. Call direct 203-796-5300 or email sales@comnet.net for details.

Diablo Controls, Inc.
Introduces the New Triad® Detection System

Looking for an alternative to loops?

Diablo Controls, Inc. introduces the DSP-222M (Master) Tri-Axis Detection (Triad®) System. The Triad® System is designed to be installed down the center of the lane with a DSP-13S Sensor placed where you require vehicle detection. The DSP-222M Triad® System is a 2 Channel rack mounted unit capable of being connected to Four- DSP-13S sensors, only requiring a simple pair of wires for each channel. The Triad® System is compatible with existing detector lead-in cable allowing the end user to easily retrofit an existing intersection.

Contact Diablo Controls at 866-395-6677 Ext 105 and visit us at www.diablocontrols.com.

Collision Control Communications Launches Next Generation of the “Eliminator”™ Traffic Signal Preemption/Collision Avoidance System

Collision Control Communications, an industry leader in the development of state of the art traffic signal preemption systems, is launching the latest generation of the “Eliminator” traffic signal preemption and collision avoidance system for emergency vehicles with the creation of the “Riley Children’s Hospital Corridor” in downtown Indianapolis. Traffic signals between Riley Children’s Hospital, Eskenazi Hospital, I.U. Medical Center and I-65 will now be preempted by emergency vehicles using the latest generation of the “Eliminator,” allowing them to traverse the heavily congested traffic patterns between these hospitals and the interstate more expediently and safely. Using a superior preemption technology platform (Frequency Hopping Spread Spectrum FM in the 2.4 GHz and 900 MHz bands), it provides a more reliable method of preemption which is not susceptible to the drawbacks inherent in GPS, optical, and acoustic preemption systems. In addition to providing significant preemption advantages over other technologies, its most notable feature is the ability to detect impending collisions with other emergency vehicles.

Preemption

Preemption status is visually confirmed by “status” LEDs in figure 1 and audibly confirmed by means of a pre-recorded voice announcement, eliminating the need for confirmation beacons at each intersection. These also notify the driver of his “status” in the event that two or more emergency vehicles are competing for preemption of the same traffic signal. Preemption is effected using a wireless directional signal in the 2.4 GHz spectrum, and the use of its encrypted FHSS (Frequency Hopping Spread Spectrum) signal gives a superior layer of security (which is not susceptible to hacking), and also makes it impervious to interference. The use of FHSS gives the preemption side of the technology significant advantages over GPS, and optical preemption systems:

Advantages over GPS preemption systems:

While GPS systems have overcome the majority of drawbacks found in optical systems, most need to be “taught” when the vehicle has entered an area where preemption
is desired. The “Eliminator” has no such “learning curve” and is ready for use immediately upon installation. GPS systems also inherently have their own unique set of limitations. Unlike GPS systems, the “Eliminator” is not susceptible to failure due to:

- GPS satellite availability
- Atmospheric conditions (heavy cloud cover or severe weather) that may adversely affect satellite triangulation
- Tall buildings that may hinder satellite acquisition
- Single point of failure exposure (a single failure on the primary system controller can disable all traffic preemption functions within an entire network).

**Advantages over optical (infrared) preemption systems:**

- Preempts traffic signals reliably in: heavy fog, snow, rain, and dust.
- Cannot be “blinded” by direct sunlight
- Easier to install (plug and play)
- Only one “receiver” needs to be installed per intersection versus four optical “receivers.”
- Preempts traffic signals through: buildings, buses, semis, foliage, bridges and overpasses, and other visual obstructions which may be present.
- Maintenance: does not require routine maintenance to keep lenses clean, saving considerable man hours; does not require unscheduled maintenance to realign optical receivers following heavy winds.
- Preempts traffic signals around curves in roadway
- Maximum signal distance, up to one mile
- Variable power output allows the operator to adjust preemption distance on the fly.
- Smart Mode™ automatically engages and disengages preemption without any user intervention. Device automatically releases preemption upon arrival at destination, unlike some optical systems which can lock them up for extended periods of time.
- Supports software encryption to thwart pirating.
- Provides 360° protection against collisions with other emergency vehicles, even at unsignalized intersections.

**Collision Avoidance**

Unlike other preemption systems, the “Eliminator” provides emergency vehicles with advance warning of impending collisions with other emergency vehicles at blind intersections. This capability exists whether or not there is a traffic signal controlling the intersection.

New Products — cont. on page 54
New Products — cont. from page 53

(employing FHSS vehicle-to-vehicle communication in the 900 MHz spectrum). A ring of 40 LEDs on the user display interface visually alerts the driver to the direction of the impending collision with an accuracy of + 4½ degrees. The direction of the impending collision is also audibly announced to the driver by means of prerecorded voice announcements. The “Eliminator” is capable of calculating and displaying multiple impending collisions simultaneously, and distance to collision sensitivity can be adjusted from less than fifty feet to over one mile. This gives emergency vehicle drivers an extraordinary layer of collision protection that no other preemption system delivers.

Collision Control Communications, Inc. has its headquarters in Fort Wayne, IN and all products are manufactured entirely in the US. For more information on the “Eliminator” visit their website at: www.collisioncontrol.net or call 260-466-7655.

Multilink Announces The Release Of New Uninterruptible Power Supply For The Transportation Industry

Multilink, Inc. announces the release of the EP2200t T Uninterruptible Power Supply (UPS) for the Intelligent Transportation Systems (ITS) and Department of Transportation (DOT) markets. Designed to provide safe and reliable emergency power to traffic intersections and critical applications, such as variable message signs, surveillance and communications along the highway, Multilink’s EP2200t T High Efficiency Transportation Power UPS is now available to US markets.

“The use of a versatile, high-quality UPS is matter of public safety and asset protection,” explains Michael Shaw, Multilink’s Vice President of Transportation Products. “The Multilink EP2200-T is designed to enable continued use of critical systems during outages and to maintain consistent power quality to important intersection and highway electronics when commercial power fluctuates.”

The Multilink EP2200-T utilizes sophisticated surge protection and AVR circuitry to accept wide variations of incoming voltage, safely managing spikes and sags. “If incoming commercial power is outside of acceptable limits, or interrupted entirely,” said Shaw, “the Sine Wave inverter will immediately take over and continue to supply high quality power to the critical loads. Two very important functions are performed by one well designed UPS.”

Uninterruptible Power Supplies such as the Multilink EP2200-T kick in when utility power is lost to traffic intersections or highway fixtures. In the absence of a reliable, high quality UPS, valuable equipment controlling traffic signals, detecting vehicle traffic or providing Amber Alert, Silver Alert or timely weather information to motorists could be interrupted. When the Multilink EP2200-T is installed any loss of commercial power is detected and the unit regulates and delivers emergency power from a battery bank.

In addition to its advanced input and output stage design, the EP2200-T provides ease of use with such features as:

- Optional ITS — friendly remote access capability using Ethernet communication
- Front panel access to inputs and outputs to ensure efficient installation in traffic and ITS enclosures
- Ruggedized housing and powerful cooling system enabling safe and efficient operation in moderate and extreme climates

Additional details, and more information about other ITS / Transportation Power products, are available on the company website at www.gomultilink.com.

All Traffic Solutions Announces Conditional Sensor Messaging

New feature lets users display different messages based on live inputs

It is now possible to capture and display external device sensor or network data into messages on All Traffic Solutions’ variable message signs. In addition to the vehicle speed data from a built in sensor,
the information can now include digital inputs, analog inputs or serial strings.

With these inputs available, the signs can display such items as time-to-destination, road surface or air temperatures, timer values, vehicle weights, high winds, available parking spaces, and other information from a variety of device sensors. The flexible input capability of the system, combined with the simple messaging user interface, makes this functionality very useful to a variety of customers.

The data can be incorporated in any position within a message on the variable message sign, and a rules engine can display a specific message based upon the input value. There can be up to five different messages based upon sensor data values. The user simply sets up threshold value ranges that determine the message to display.

Some of the benefits include:

- Provides real-time awareness of various environmental conditions.
- Current All Traffic Solutions message sign customers can extend their messaging capabilities.
- This feature offers a new way to interface along with various applications to external equipment that uses sensors.

This capability will be available on our updated SmartApps release in spring 2014.

For more details or to upgrade your equipment, contact All Traffic Solutions at 866-366-6602 or sales@alltrafficsolutions.com.

**EtherWAN Expands Its Ethernet Extender Product Line With Cost-Effective Power Over Link™ (PoL™) solution**

The ED3238 is the latest addition to EtherWAN’s Ethernet Extender family, offering a cost-effective, industrial-strength Power over Link™ (PoL™) solution via single coaxial cable. Consisting of a pair of devices, the ED3238 delivers both power and data over single legacy coaxial cable such as RG6 or RG11 to connect and power remote PoE devices. The ED3238 solution consists of a pair of 10/100BASE-T Ethernet extenders with an IEEE802.3af PoE/PSE port, to extend data and power transmission distance from traditional Ethernet 100-meter limi-
NEW PRODUCTS — Continued

Trafficware Releases Synchro plus SimTraffic Version 9.0

Version 9.0 provides users with additional optimization enhancements

For Synchro plus SimTraffic’s 20th anniversary, Trafficware announces the release of version 9.0 of the most popular and widely-used traffic optimization and simulation tool. The latest version focuses on user features including the ability to create custom toolbars, view ports, and one-click intersection coding with the new template feature, all within an enhanced user interface. Added functionality for optimization includes weighting factors during the signal optimization routine to further refine signal timing plans aimed at improving arterial traffic flow. Additional detailed analysis can be performed using the new result summary table. Implementation of the HCM 2010 method is updated in Synchro 9 to include the analysis for pedestrians at two-way stop control intersections. “Trafficware is committed to bringing innovation and technology to the traffic industry, as well as a broad portfolio of products from planning and simulation through operations and optimization. Our customers rely on Trafficware to equip them with the ability to solve the most complex traffic management problems,” said Jon Newhard, CEO of Trafficware. “Improving traffic management starts with planning and optimization and with Synchro as an industry standard; Trafficware is continuing to invest in innovation for the sake of the industry, whether that investment is in organic product development, partnership, or acquisition. The release of version 9 is a major step forward and Trafficware is committed to additional investment in and enhancement of this industry-leading product” adds Newhard. After participating in Trafficware’s Synchro 9 beta program, Matthew Johnson PE, PTOE, PTP, and President of Johnson Traffic Design said, “I love the upgrades Trafficware made in Synchro 9. The user interface improvements are great, like view ports and dockable and customizable toolbars. Applying the new weighting factors during optimization make timing corridors and networks easier and produces a better coordinated timing plan. With the new ability to export the optimization results I am able to review the results of my modifications quickly and easily.”

For additional information go to www.trafficware.com.

McCain Inc. Introduces Rectangular Rapid Flashing Beacon for Pedestrian Safety

Unveiling McCain’s latest traffic control product for enhancing intersection safety

McCain Inc., a leading manufacturer and supplier of intelligent transportation systems, today announced the launch of its rectangular rapid flashing beacon (RRFB). The latest technology in pedestrian safety, the RRFB is widely recognized as a means to reduce crashes between vehicles and pedestrians at unsignalized intersections and mid-block crosswalks.

In the United States, 4,432 pedestrians were killed and an estimated 69,000 were injured in 2011, according to the latest report from National Highway Traffic Administration. Rising at an annual average rate of five percent since 2009, pedestrian deaths account for 14 percent of all traffic fatalities, claiming one life every two hours. Incidents are highest in urban areas, at non-intersections, and in the evening where driver focus is easily deterred from the cacophony of roadway phenomena. McCain’s RRFB helps curb these issues by commanding driver attention day and night at unsignalized intersections and mid-block...
crosswalks. When activated, high-intensity LEDs flash, alerting approaching vehicles that pedestrians are present.

Though public roads are primarily designed to accommodate vehicles, they are also used by people on foot, bicyclists, and skateboarders. “With a number of local and national initiatives encouraging these alternative means of transportation for health and environmental reasons, it’s more important than ever that we, as an industry, identify ways to protect all road users,” said Jim Fauconnier, technical sales representative at McCain Inc. “By increasing driver awareness, our RRFB does just that — protects lives and creates more livable streets.”

Following an extensive study confirming the effectiveness, the Federal Highway Administration issued an interim approval of the RRFB in the Manual of Uniform Traffic Control Devices (MUTCD). According to the approval, the RRFB offers “significant potential safety and cost benefits, because it achieves very high rates of compliance at a very low relative cost in comparison to other more restrictive devices that provide comparable results, such as full midblock signalization.”

For more information, visit www.mccain-inc.com or contact McCain at info@mccain-inc.com.

Siemens To Present New Generation Of Controllers For Traffic Management

The more complex traffic situations are at urban intersections, the greater the need for more intelligent control solutions. Siemens recently presented a new generation of controllers for traffic lights and detectors with the unveiling of Sitraffic sX. Downtimes are reduced and intersection safety increased thanks to brand-new developments in hardware and software. For the very first time, the new Siemens technology allows operators to extend the functions of controllers already deployed in the field by means of remote updates. There is no longer any need to interrupt ongoing operations. This is made possible by an additional real-time processor that can take over control of a set of traffic lights if required. Dangerous “lights out” situations are prevented and dangerous traffic conditions minimized. Remote maintenance can also be carried out without shutting down the system and also reduces time-consuming on-site call-outs.

The new Sitraffic smartCore configuration software allows efficient data provision for the sX controller and is easy to use and configure. Using Sitraffic Canto and the new plug and play functionality makes the new sX controller much quicker to commission; it also provides a link to the Siemens traffic control centers. Intuitive user guidance and integrated logic, which can also be used to create traffic-actuated signal programs, reduces the workload involved in testing and programming and automatically leads to an efficient signal program for controlling traffic flows.

The new Sitraffic sX generation of controllers is internationally compatible and can be extended by adding new modules. Sitraffic sX can be deployed as a stand-alone device with a low-cost virtual traffic management solution or for comprehensively optimized and coordinated traffic control systems. The controller
New Products — cont. from page 57

hardware represents a brand new development that can be installed with little cabling work. It can be extended up to 64 signal groups and 250 detectors. A new 230-volt low-power lamp switch for LED signal heads up to five watts ensures a particularly high level of energy efficiency and satisfies the most stringent requirements demanded for safety in road traffic (SIL 3).

Sitraffic smartGuard is the virtual control room for the Siemens controller

The Sitraffic sX is part of a Web-based, scalable Sitraffic family with which even smaller towns can realize efficient traffic control. Sitraffic smartGuard is the first Web-based traffic control center with a TÜV safety certificate, so towns using this system do not have to invest in their own local traffic control center. The key functions of a traffic computer can be used via a Web-based service platform. The town’s traffic managers can access a central traffic management system via Siemens’ privately operated cloud to efficiently control and manage their electronic traffic systems. Besides saving on hardware, our customers also benefit from the fact that they can log in at anytime from anywhere in the world via PC, tablet or smartphone. A multi-stage security procedure including Siemens’ own Sitraffic Canto interface and a TÜV-certified IT security concept ensures that only authorized persons receive access to data.

Wavetronix Introduces Revolutionary Controller Interface

The new Click 650 connects SmartSensor Advance and SmartSensor Matrix directly to traffic controllers while greatly reducing its cabinet footprint.

Wavetronix, the worldwide market leader in radar traffic detection and monitoring, is pleased to announce the release of the Click 650, a traffic cabinet interface device that provides up to 64 channels worth of data. The compact device allows SmartSensor Advance and SmartSensor Matrix to communicate directly to the traffic controller, effectively replacing up to 16 four-channel or up to 32 two-channel rack cards with a small box that occupies much less space.

Modern technologies have led to a wealth of advanced applications to make intersections safer and more efficient, and SmartSensor Advance and SmartSensor Matrix have been shown to provide the best data possible for these applications. Unfortunately, the power of SmartSensor data is often hindered by messy, overcrowded traffic cabinets. According to Kevin Burtt, a Wavetronix product manager, traffic cabinet interface technology has not kept up with these advancements.

“Often it’s impossible to take advantage of advancements in technology because there is no room in traffic cabinets,” Burtt says. “It’s one of the things we hear from traffic engineers. They want to utilize these new and innovative applications but the physical limitations of the cabinet are a major obstacle.”

The revolutionary Click 650 has the power to change that, providing advanced technology for even the most complicated applications with a drastically reduced footprint. In traditional intersection applications, SmartSensor data must first pass through a back plate where a power source, surge protection and communication ports are located; the data is then sent through input file rack cards to be converted to contact closures before heading to the controller. Normal applications require anywhere from two to 10 rack cards; more demanding applications require more rack cards and even more contact closure outputs.

The Click 650 can eliminate the need for rack cards and back plates, but still allows intersection applications to take advantage of SmartSensor’s powerful data. Measuring only 7.8 x 10.3 x 3.9 inches (19.8 x 26.2 x 9.9 cm), the device collects data from up to four SmartSensor units and communicates directly with the controller via SDL. It also provides USB, serial or T-bus connectivity and includes its own power supply, surge protection and Ethernet, so back plates are now a thing of the past.

“With the Click 650, traffic engineers have the power and the space for any conceivable traffic application and they are no longer hindered by out-of-control cabinets,” Burtt says.

To learn more about the Click 650 and other Wavetronix products, contact your local authorized Wavetronix dealer or visit www.wavetronix.com.

RTC Manufacturing Introduces Valuable Management Software for School Zone Flasher Systems

Platform Allows for Remote Programming and Maintenance of Time Clocks

Staying on top of customer needs and technological advances, RTC Manufacturing created RTC Connect™. Windows-based software designed to program, update and initiate special operations of time switches, such as those in school zone flashers.

RTC Connect™ works with many forms of two-way communication technologies, including M2M, IP, radio, direct connect or a combination of communication methods (i.e. IP and radio). The two-way communication allows technicians to verify that equipment is functioning correctly in real time without going into the field.

RTC’s central software platform uses Google Maps to display the exact location of devices and provides clear visualization of school zone flasher networks. The software also utilizes a Graphical User Interface (GUI) for both the school calen-
NEW PRODUCTS — Continued

dar and map of flasher locations to make designing and maintaining flasher networks simple. An update in the software has made this process of finding and programming quicker and easier for users.

RTC Connect™ has the ability to store programming information in the cloud and is compatible with the company’s AP22 and CPR2102 time switches.

Other features of the software include:
• Color-coded calendar that provides quick visual reference to day/week/month/annual programming
• Data storage on Cloud/SQL server that allows access by multiple team members on different computers
• Ability to override time switch to cancel or delay current day’s operation, which is useful for changes due to weather or other unexpected events
• Archive of all communication for easy troubleshooting

Committed to pedestrian and school zone safety, RTC Manufacturing, Inc., brings flexible, innovative products to the traffic signal industry in the U.S. and Canada. Since 1987 the Texas-based company has earned a reputation for delivering high-quality products and systems solutions.

For more information on RTC Connect™, call (800) 782-8721 or email info@rtc-traffic.com.

Introducing: Spinnaker™ ATMS

Spinnaker is a scalable, distributed, web-based Advanced Traffic Management System. It is designed for clean and precise delivery of your traffic system’s operational status. An edge-to-edge system map is at the center of the application. This provides the most clean and simple-to-read wall map for your traffic management center of any system. Base GIS maps are layered under your own geospatial datasets to provide a very rich view of the system. All devices are integrated directly into the map using scalable graphics — including the intersection phase geometry.

At its core are the Spinnaker Web and Database servers, which provide the main graphical user interface into the system map, device management views, and reporting. A scalable server system for device communications allows for distributed workload and a high level of cross-vendor, cross-platform Intelligent Transportation Systems (ITS) integration. By using a distributed device management server framework, the system is scalable from small to large customers. The Spinnaker system uses industry standard Microsoft SQL Server for all data storage.

Spinnaker supports multi-domain/multi-user networks. The central servers run continuously without requiring any users logged in.

Access Spinnaker through a web browser

Spinnaker offers simple web-based control and the convenience of off-the-shelf browser support. No browser plugins needed. This means that any Apple, Windows or other modern computer or tablet will be able to connect to the system seamlessly.

Spinnaker is a web-based map application, with true zoom and point and click access to regions, groups and individual intersections as well as full control of visible layers and device groupings.

A full-featured user role management system fits into any inter-agency system offering different levels of access by region for each user, with extensive web-based reporting and traffic analysis capabilities. All reports can be saved or emailed in a variety of formats for posting to agency websites and further analysis.

Spinnaker is an IT network friendly system. The technology used makes it easy to comply with the IT security policies of today.

The lightweight web browser interface, without the need to install any software, provides the majority of the functionality that most users need.

Spinnaker supports Peek ATC controllers running GREENWave and controllers running NWSVoyage and NWSVoyageL traffic controller software. Spinnaker also provides basic NTCIP support for any NTCIP compliant traffic controller to the extent of the standard object definitions.

GREENWave Update

Peak Traffic has taken the power of its ATC engine board and added a web server application running right on the controller so that the front panel can be accessed remotely via any device on the same network with a browser. Robust security has been implemented to ensure only authorized users can access any portion of the ATC database. Once logged in, the browser will show a web page mirroring the controller’s front panel. This includes all real time displays, full database editing, uploading, and downloading. Any laptop, tablet or handset can be used to remotely manage the intersection as long as they run a compatible browser, including Internet Explorer, Google Chrome, and Apple Safari.
RTC Manufacturing and Consolidated Traffic Controls Conquer Mammoth School Zone Flasher Project

By Lindsey Perkins Wade

Two years ago the city of San Antonio called on RTC Manufacturing and distributor Consolidated Traffic Controls (CTC) to complete a task so large that few professionals in the industry — if any — had ever tackled: upgrade parts in nearly 1,000 school zone flashers while creating and installing a new communication system that covered more than 400 square miles. And get it done in 11 months.

If the sheer size of the project wasn’t challenging enough, the RTC and CTC crews faced hilly terrain in parts of the city that made it more difficult to map out the radio signals. They also were doing what’s called a “live replacement,” upgrading parts and installing new equipment while school was in session. This meant that everything had to be done without compromising the operational integrity of the existing system.

With cutting-edge equipment, careful planning and a determined team skilled in project management and engineering, both companies not only managed to meet San Antonio’s goals but also finished the project ahead of schedule while respecting the job’s $1.4 million budget.

A Quantum Leap Forward

When San Antonio, home of the 25th largest metro area in the U.S., first made contact about the upgrade, their school zone flasher system had been in place for about 10 years using an analog pager communication system. The city programmed the time switches that controlled the operational on and off times of the flashing beacons by sending the data through the pager network every Sunday morning. Since paging is one-way communication, technicians never could remotely obtain confirmation that the flashers received the data.

In part, what prompted the city to reach out was notice from the Federal Communications Commission that its narrowbanding effort to clear up congestion on certain bandwidths had the potential to disrupt San Antonio’s ability to communicate with the time switches.

After evaluating the possible options, the city opted for a monumental change — switch communication methods from pager technology to a 900 MHz radio system. This way San Antonio would have total control of the communication system and its infrastructure.

Besides avoiding future communication interruptions, installing the radio system meant the city reduced the amount of onsite maintenance and gained the ability to remotely program schedules and validate the operational status of each flasher in real time. All of this was possible with the radio’s two-way communication technology and RTC Connect™, a time switch programming and maintenance software package.

Field engineer Patrick Walker called the proactive move a quantum leap forward. “It’s a big change from what they had before as far as capability and technology go.”

No longer would a technician have to go into the field to verify that a beacon was working. No longer would the city have to send out schedules and hope the flashers received the information. Soon, they could do all this remotely and receive confirmation that everything was working.

How The Communication System Works

The interaction starts with an engineer at the traffic management office sending out commands with the RTC Connect™ software. The data travels across Ethernet lines to one of 31 master radios installed in traffic signal cabinets across the city. The master radios then rebroadcast the commands to beacons in their designated groups.

Since radio communication relies on a clear line of sight, some flashers were designated as repeaters that rebroadcast commands to flashers that couldn’t be reached by a master radio because of an obstruction. Repeaters ensure that every beacon receives the command.

Once a flasher receives data, the message route is reversed, and the engineer at the traffic office can see the operational status of a flasher without going into the field, a valuable and cost-effective feature to have.

Making It Happen

Both Featherston and Walker are the first to tell everyone that this endeavor was a team effort, with sup-
port from everyone across their companies and from the city of San Antonio.

Throughout the project, Arlington’s CTC staff fitted new processing chips in the 958 time switches and made sure Walker always had the parts he needed to do his job in the field, while RTC’s personnel assisted whenever called upon.

While upgrading parts in 958 flashers is a large project, the creation, installation and testing of the new communication infrastructure added more layers of complexity.

Project manager Featherston created a game plan and timeline, but his work didn’t stop there. He converted the existing scheduling data into a different format for the new system, and using a combination of common tools and software supplied by partners, he created the plan for the incoming radio communication system from scratch.

“We really had to look at the big picture, which at times was a little daunting,” Featherston explained. “The City of San Antonio furnished the GPS locations of the flashers, which was a critical turning point in the design and layout of the network. As the project developed, several adjustments were made to streamline the process and ensure a successful deployment that was on time and on budget.”

Even with thorough planning and pre-engineering, a two-man crew led by Walker still had to fine-tune the network in the field.

“There’s a lot of planning involved, but there’s also a lot of adjusting,” Walker said. “It’s not like an office environment, where things are controlled.” In this case hilly terrain, which varies from 600 feet to 1,340 feet in San Antonio’s Bexar County, and electromagnetic interference were a few of the things that affected the original layout.

For each flasher, there was a routine. Walker and his colleague installed the upgraded time switches and radio infrastructure. After configuring the radio — each had unique characteristics — he validated the equipment was working at the local level by connecting his laptop and checking with RTC Connect™. If everything worked, he would check again at the traffic management office. If not, he and his crewmember diagnosed the problem and solved it.

While this was going on, Walker and his colleague always ensured that each beacon was working when it should, especially on the first day of school. “It was one of the best opening days they’ve ever had,” Walker recounts. “I felt like that reflected well on us and what we did.”

**Transition Complete**

After 1,500 hours spent on planning and engineering management and 1,850 hours spent installing, the teams finished the project one month ahead of schedule in September of 2013.

“The project was an absolute success,” Featherston remarked. “It turned out better than we imagined.”

Walker, who is currently adding six more flashers to the limitless system, agrees.

“When you look at the complexity of the thing and the amount of time it was done in, and then you look at the fact that it works … to build, test, train and hand it off in 10 months — no one has ever done anything like this.”

For more information about RTC Manufacturing, visit rtc-traffic.com. To learn more about Consolidated Traffic Controls, go to ctc-traffic.com.

Lindsey Perkins Wade is RTC Manufacturing’s communications specialist. You can reach her at 214-499-7001.

**City of Palmdale Selects Transparity® TMS for Traffic Management System Upgrade**

Project to showcase McCain’s latest standards-compliant intelligent transportation solutions

McCain Inc., a recognized leader in the supply of advanced transportation solutions for safety and

News — cont. on page 62
News — cont. from page 61

mobility, announced today that the City of Palmdale, California has selected Transparity® TMS to update the City’s central traffic management software. Transparity TMS will replace McCain’s first-generation central software, which the City of Palmdale has been utilizing since 2003.

The City of Palmdale elected to adopt Transparity TMS as part of a citywide effort to modernize infrastructure by leveraging innovative technology that complies with national industry standards, namely ATC and NTCIP. The upgrade will provide an increased capacity for centrally monitoring and controlling the agency’s signal communication system. In addition, engineers will be equipped with more robust data collection and analysis tools necessary for improving overall traffic flow.

“We are excited to partner with Palmdale on this landmark project showcasing the benefits of adopting industry standards and cutting-edge products,” said Nathan Welch, director of sales at McCain. “The win affirms McCain’s capabilities as a safe, reliable, and flexible provider of traffic management systems.”

The project also outlines the integration of the City of Palmdale’s signal network into the County of Los Angeles Information Exchange Network (IEN). The LA County IEN allows member agencies to connect and communicate via an open architecture, enabling the sharing of real-time intersection data and control between jurisdictions. In conjunction with McCain’s ATC eX 2070 controller and Omni eX® intersection control software, secured under the same contract, the City will also be among an exclusive group of early adopters deploying comprehensive intelligent transportation solutions based on the latest standards-compliant technology.

To learn more, visit www.mccain-inc.com.

Eberle Design Announces New VP Of Development

Eberle Design, Inc. (EDI), the broad-line industry leader in traffic and access control products, announced the appointment of Dr. Bill Sowell, as its Vice President of Business Development, for both Eberle Design and Reno A&E with responsibilities for managing the company’s sales, marketing and the development of new business opportunities for both organic and external growth worldwide.

Dr. Sowell has been involved with Intelligent Transportation Systems (ITS) and the development of domestic and international sales channels and the formation of strategic alliances for more than 24 years. He has held senior management positions with such firms as Iteris, Swarco AG, Image Sensing Systems, Econolite and Peek Traffic. Dr. Sowell has sold ITS solutions in more than 78 countries, and he played a key role in the early adoption of the NTCIP open communications protocol in Chile, Brazil, Saudi Arabia and China. Dr. Sowell has an extensive background in several vehicle detection and traffic data collection technologies over his career. He earned a Bachelor’s degree in Communications and Advertising from the California State University, and MBA and PhD degrees from the University of Oklahoma in International Marketing. Most recently, he served on the Board of Directors of the International Road Federation.

Bill Russell, President and CEO of Eberle Design, said, “Dr. Bill Sowell’s joining the EDI team brings a broad range of domestic and international business development, sales and marketing capabilities that increases our level of strategic focus to achieve our company’s growth initiatives.”

Eberle Design, Inc., founded in 1980, is a privately held firm that provides traffic and access control professionals with reliable, high-tech safety monitoring and vehicle detection component products that offer value added and significant lifecycle cost benefits. For additional information please visit www.editrack.com.

For more information contact: Bill Russell, CEO EDI at 602-437-1955.

Peek Traffic and Northwest Signal Expand Their Sales Footprint

Peek Traffic, a Signal Group company, announced recently that it has formed a new sales group with their distributor Northwest Signal. The new sales group will support Peek’s aggressive growth strategy demonstrating its ongoing commitment to strengthen its position in the industry.

Northwest Signal is a recognized manufacturer and distributor of traffic control products with operations in the Northwestern United States and represents Peek’s line of products including its ATC controllers, its video line VideoTrak IQ, software from both companies Voyage and IQ Central, and traffic signals as well as products from other leading brands in the traffic industry.

As a result, Peek Traffic and Northwest Signal will directly serve the needs of its customers in the following states:

- Peek Traffic will focus its direct sales and support efforts in the territories of Alabama, Florida, Georgia, Illinois (except Cook County), Indiana, Kentucky, Louisiana, Michigan, Mississippi, North Carolina, Ohio, Puerto Rico, South Carolina, Tennessee, and West Virginia.
Northwest Signal will focus its direct sales and support efforts in the territories of Alaska, Arizona, Colorado, Idaho, Montana, New Mexico, Oregon, Utah, Washington, and Wyoming.

We want to take the opportunity to thank Don Maas for more than 25 years of service to the company. Don participated in numerous traffic control projects all over the United States, such as New York, Chicago and Toronto. With Don’s participation, Peek Traffic accomplished the approval of the Toronto Transit Signal Priority specification, which is a feature of the ATC-1000 controller. We wish Don all the best as he steps into a new phase of his career.

For more information contact Gustavo De La Pena, Sales Eastern Region. Tel: 281-928-4497. Email: gustavo.delapena@peektraffic.com or Joaquin Segl, Sales Western Region. Tel: 408-657-7345. Email: joaquin.segl@teknotraffic.com.

Econolite Group Launches New Website

Website designed to provide customers improved navigation and function in mobile computing environments

Econolite Group, Inc. recently launched a new corporate website designed to provide enhanced interactive experiences with simplified navigation and access to detailed information and training. The new site features extensive product information, documentation, case studies, videos and updates to help customers better understand and make informed decisions about the solutions the Econolite Group of companies have to offer. Developed foremost with user ease of navigation and functionality in mind, the new website has been designed with the latest HTML5 responsive technology, making it highly compatible with the latest browsers and mobile devices — smartphones and tablets of all sizes. In addition, the reorganization of the website content will also reduce user clicks required to reach desired information. On the new website, visitors can also stay informed on the latest news and events for Econolite Group and the Intelligent Transportation Systems (ITS) industry. The new website also provides visitors a deeper level of industry engagement with Econolite via its social media network, including Facebook, Twitter, YouTube, and LinkedIn. Econolite Group invites visitors to explore its new website and experience the ease of navigation and share feedback at: www.econolitegroup.com.

Leddar™ Software Development Kit Now Compatible with Linux

LeddarTech, owner of the patented Leddar™ LED-based detection technology, is pleased to announce the release of its Software Development Kit for Linux, further enhancing the ease with which Leddar™ technology can be integrated into various applications.

This new kit allows Linux developers to interface with Leddar™ sensors through USB connections, providing them with all the same functionalities currently offered to Windows developers. Examples of such capabilities include reading/writing sensor configuration parameters, acquiring detections and measurements, starting/stopping/reading data records and much more.

The release of the Software Development Kit means all Leddar™ modules can now be integrated using Linux (including the Evaluation Kit).

The Linux Software Development Kit includes shared objects (.so files) and header files, a demo application with source code, makefile and executable file, as well as API documentation.

In terms of supported Linux distributions, the development kit was tested on Fedora 20 and Ubuntu 13.10 and is available for the x86 Intel family of processors (32-bit and 64-bit). A BeagleBone Black version is also available upon request.

“The release of this new development platform further facilitates the integration of Leddar™ technology into a wide range of applications, and it will also increase the adoption of our technology,” mentioned Sonia Bélanger, Vice-President of Sales and Marketing at LeddarTech. “What’s more, we see it as yet another way we please customers, make their job easier and maximize the ease of doing business,” adds Ms. Bélanger.

www.leddartech.com
News — cont. from page 63


Intuicom Inc., a leading provider of high-performance wireless solutions for the Intelligent Transportation market announced shipment of another significant order to Lubbock, Texas as the city continues to build out its wireless network for traffic operations. Lubbock has a population of 236,065, making it the 84th most populous city in the United States of America and the 11th most populous city in the state of Texas.

“The BBS-5824™ is an ideal solution for a city like Lubbock that wants to increase the efficiency of their field operations. A technician can pull up to an intersection, connect wirelessly to an individual radio or the entire network, and make any necessary adjustments without the need to open a cabinet or even leave their vehicle. Combined with our BroadbandPro™ Enterprise software which displays connection information in both directions at once, managing and optimizing a wireless network has never been easier,” stated Joe Tradii, Intuicom Director of Marketing.

www.intuicom.com

Multicom teams up with Signal Safe™ for Hurricane Protection of Traffic Signals

Multicom, Inc., now stocks and distributes Signal Safe, Inc’s traffic signal pivotal mounting kits which provide hurricane force wind protection of traffic signals. The Signal Safe Retrofit Kit (awarded 4 US patents) is comprised of five primary devices, engineered to work together to reduce or prevent the flexural failures now experienced with the currently installed dual span-wire system for traffic signals.

Signal Safe devices are intended to prevent the problems and dangers associated with missing or damaged traffic signals following high windstorm events. The State of Florida, like many other coastal states, has been severely impacted by lost traffic signalization due to hurricane force winds. Over half of Florida’s 10,000+ span wire intersections sustained damage during the 2004-05 storm season, resulting in statewide injuries and fatalities due to uncontrolled intersections. Hurricane protection of traffic signalization is critical to maintaining a safe and efficient roadway system. Signal Safe Retrofit Kits address these problems and reduce or eliminate many costly repairs.

Multicom also stocks LED traffic signal modules, pedestrian and countdown lights, IMSA cable, composite camera cable, fiber optic cable, pull boxes, and many other traffic related products.

Established in 1982 and headquartered in Orlando, FL, Multicom maintains sales offices, and sub-distributors throughout North and Latin America. Multicom stocks over 13,000 products from more than 270 of the world’s major manufacturers which are used to acquire, process, and distribute traffic control signals, audio, video, data, voice, and energy over fiber optic, copper, composite camera, coax cable, and WiFi. Its affiliate company, Mconnect, Inc. provides Next Level VoIP residential and business telephone services through resellers and cable operators.

For more information, call 1-800-423-2594, e-mail to multicom@multicominc.com or visit www.multicominc.com/traffic.

Skyline Product Announces Statewide Contract with Texas DOT

Skyline LED signs have been installed throughout Texas

Skyline Products is proud to announce their statewide contract with the Texas Department of Transportation (TxDOT), which allows Skyline to provide LED signs throughout the state.

Traffic messages will help keep the flow of traffic more organized and drivers aware of traffic conditions with the superior readability of Skyline’s LED Dynamic Message Signs. Over the years, Skyline has installed signs throughout Texas in areas such as Dallas-Ft. Worth, Houston, and El Paso.

“Skyline Products is proud to be one of the statewide suppliers for LED Dynamic Message Signs throughout Texas,” said Chip Stadjuhar, CEO of Skyline Products Inc.

We are delighted to help TxDOT create a better means of providing traffic information to their motorists.”

Skyline has been manufacturing ITS-Grade® DMS since 1971 and ITS-Grade® LED DMS signs since 1994. With over 2,200 ITS-Grade® LED DMS installed across North America, Skyline is an industry leader and considered to produce the most legible and reliable LED DMS in the industry. Products include LED DMS, Rotary Drum CMS, Scrolling Film CMS and EnvoyDMS Central Control Software. Skyline’s LED DMS are available in amber and full color with both Walk-in and Lift-face configurations. The central control software, EnvoyDMS, is an extremely robust, easy-to-use, NTCIP-compliant sign control software solution, compatible with all DMS.

www.skylineproducts.com

TAPCO Awarded National U.S. Communities Contract for Traffic Control Products & Solutions

More than 55,000 state and local agencies can enjoy the benefits of cooperative buying power through contract with lead public agency Barron County, WI.

TAPCO announced it has been awarded a multi-year contract to supply traffic control products and solutions to participants in the U.S. Communities Government Purchasing Alliance (www.uscommunities.org). Barron County, WI served as the lead public agency and awarded TAPCO the contract after carefully evaluating proposals from other manufacturers.
This is the first time the U.S. Communities cooperative purchasing program has provided access to a competitively solicited contract for traffic control and related products and solutions. Through the new contract, registered users of U.S. Communities will benefit from a full suite of traffic, parking and safety products, and services to help drive efficiencies and make roadways safer.

The exclusive contract gives more than 90,000 public sector entities such as state agencies, local governments, special districts, school districts, and public and nonprofit higher education institutions access to TAPCO’s products and services.

“TAPCO was selected in a competitive solicitation process based on their proposal, offering a comprehensive range of traffic and parking related products and systems,” said Mark Servi, Highway Commissioner, Barron County, WI and President of NACE (National Association of County Engineers). “We are excited that Barron County is able to provide the contract vehicle for these diverse products and services on a nationwide basis.”

For more information, visit www.tapconet.com/contracts/details/u-s-communities/raab.

City of St. Louis Implements First Responder Technology

City to Use CommandScope™ to Document Critical Information in More than 2,000 Initial Landmarks and Buildings

The City of St. Louis is implementing new technologies to strengthen city-wide emergency response including the all-digital CommandScope™ pre-plan technology. St. Louis fire fighters will now have critical knowledge of more than 2,000 “target hazard” buildings across the municipality, vastly improving their chances of saving lives and reducing property damage in cases of emergency.

The broader technology installation is a collaborative effort in which NewComm Wireless Services, based outside of Boston, provided hardware and system integration. More than 1 million people will benefit from the use of the software program.

“The CommandScope installation is an investment to better serve firefighters for the collective safety of building occupants and the public,” says St. Louis Deputy Fire Chief Michael Arras. “The technology is simple and easy to use so firefighters get quick access to critical building information. Now, information is all in paper notebooks that are hard to update and are not practical to use in an emergency. Trying to remember a building’s information a year or two after a survey was completed isn’t easy.

“In addition, it is almost impossible to update and keep current,” he continues. “We need to keep our data up to date otherwise the information becomes somewhat useless.”

The city is first installing in primarily high-occupancy and high cost-buildings that impact the city’s health, safety and economy. Busch Stadium has already undergone its installation. Other prominent buildings include landmarks such as City Museum, the Gateway Arch and City Hall, but also will include the AT&T building, the Metropolitan Square Building and the US Bank Building.

By activating CommandScope, St. Louis provides its fire department with instant en route and on-site access to site plans, floor plans, hazardous material details, utility shut-off locations, geographical maps, fire hydrants locations, lists of persons with special needs and other critical building and infrastructure information. St. Louis first responders can upload and sync building information that is then shareable across organizations and can be updated in real-time.

“A lot is asked of our nation’s first responders and we understand they work with limited resources,” says David Howorka, executive vice president of RealView. “CommandScope provides easy to use, inexpensive technology that quickly educates responders and protects all stakeholders. First responders, then, are prepared to act with knowledge rather than trial and error, saving lives and reducing property damage.”

www.RealViewLLC.com

2013 Excellence in Operations Management Awards

Cartegraph recognizes 10 municipal organizations

Cartegraph, a leading provider of Operations Management System (OMS) technologies for the public sector, is pleased to announce the winners of its first annual Excellence in Operations Management Awards, an initiative recognizing municipal organizations that use technology to work smarter and improve their communities.

Nominees will be judged on their municipal operations management achievements in any of these five key areas:

• Effective Methods of Work and Data Management
• Tech Savvy Approaches to Citizen Engagement
• Proactive Solutions for Public Infrastructure Management
• Demonstrated Leadership in the Municipal Industry
• Data Driven Methods of Achieving ROI

Of the 31 nominations received, Cartegraph chose 10 municipal organizations that most exemplified these core tenets. Four of these organizations were also awarded a special Pioneer designation in recognition of their early adoption of municipal technology and long-standing commitment to helping other public sector organizations develop technology strategies.

2013 Excellence in Operations Management Awards Winners (listed alphabetically by state):

City of Santa Barbara, CA

The City of Santa Barbara Public Works Department has achieved much success in its use of technology. This success is especially evident in the city’s wastewater collection system maintenance and capital planning activities. Using

News — cont. on page 66
News around the

Cartegraph and ArcGIS in tandem, the city has been extraordinarily proactive in the maintenance and management of its wastewater system infrastructure. The city has also made technology an integral part of its restaurant fats, oil, and grease (FOG) management program, using it to streamline planning activities and manage inspection data.

City of Colorado Springs, CO

Colorado Springs is recognized as an early adopter of Operations Management technology and uses it to manage work, assets, and processes in many of its public service departments including Traffic Engineering, Pavement, City Parks, City Clerk Licensing, GIS, and many others. Even in the midst of limited resources, Colorado Springs is able to maintain a steady level of customer service, infrastructural integrity, and return on its technology investments. Among its many accomplishments, Colorado Springs recently concluded a technology and data driven Forestry division project that saved the city well above half a million dollars.

Central Massachusetts Regional Planning Commission (CMRPC)

One of the core themes of CMRPC’s transportation planning program is maintaining its infrastructure at its current state or better. To help accomplish this, CMRPC manages its pavement using Cartegraph and Esri technology. This combination of technology allows CMRPC to accurately collect and analyze asset data, perform various budget scenarios, clearly communicate data-driven priorities to non-technical decision makers, and transparently validate its use of funds to the public.

Boone County, MO

Boone County earned its award for successfully implementing a multi-department Operations Management System. In doing so, the county has steadily improved the integrity of its collected data and renewed its commitment to citizen engagement and transparency. In addition, Boone County says it has experienced notable improvements to its methods of internal communication, particularly between its departments of Public Works and Resource Management.

City of Mankato, MN

Mankato was recognized for its forward thinking approach to managing infrastructure and day-to-day operations in its Water, Wastewater, and Public Works departments. The city leverages its Cartegraph technology to accurately track assets, labor, equipment, and materials, and a fleet of more than 300 vehicles. This use of technology allows departments to bill their services more accurately and demonstrate to upper management, city council, and citizens exactly how tax dollars are being spent.

The Lewis and Jefferson County, NY Joint Infrastructure Management Initiative (JIMI) — Pioneer Award

The JIMI group’s unique model, which began as a 2010 service demonstration project, shares operations management technology and data among 15 project participants. Participants also share reports, forms, and training with one another, helping to eliminate redundancy and lower the costs of the initiative. The JIMI group was also an early adopter of the Cartegraph Operations Management System, which has helped the group be more mobile and flexible in maintaining assets.

Enid, OK — Pioneer Award

The City of Enid has emerged as a thought leader in the municipal industry through its focused, data-driven approach to achieving a return on their organization’s technology investment. Enid understands the importance of sharing data among multiple departments and levels of management, and has been an extremely enthusiastic about creating new processes and developing best practices. Most recently, Enid worked closely with to Cartegraph in the development of the solid waste app that helps the city be more proactive in its approach to work, asset, resource, and request management.

Anderson County, SC — Pioneer Award

Anderson County was recognized for its commitment to creating and implementing a multi-department system for managing the county’s day-to-day operations. In addition to the best practice processes and overall data integrity that this system has created, Anderson County is leveraging its technology to engage citizens and provide a higher level of transparency with regard to how it manages its operations.

City of Waynesboro, VA

Waynesboro’s Public Works Department and its associated Transportation Safety Commission, City Council and City Management were recognized for using technology to improve the delivery of government services. Having evolved from a single application for tracking work performed on water network assets, Waynesboro now uses Cartegraph technology to manage the day-to-day operation of its Engineering division and Water and Wastewater Treatment plants. This approach allows supervisors to effectively schedule work, track requests and work orders, manage assets, and budget for the future. Waynesboro has plans to take its technology effort even further by adopting tablets for workers to use in the field.

City of Auburn, WA — Pioneer Award

Auburn’s approach to municipal technology is proactive and comprehensive. The city has continually evolved its operations management and GIS technology, giving it a unique ability to manage a wide array of operations and services, including citizen request management, asset inventory and data collection, NPDES permit compliance, and interdepartmental billing. Auburn was also one of the first municipal organizations to begin implementing the Cartegraph Operations Management System.
ENCOM Wireless Data Solutions appoints Mrs. Clara Alarcon as Director of Sales for North America

ENCOM Wireless Data Solutions, Pioneer and trendsetting manufacturer of Wireless Technology for ITS, is pleased to announce that Clara Alarcon has accepted a new position as Director of Sales for North America. Alarcon is being promoted from Business Development Manager into this new role. She has consistently surpassed her goals and has become a valuable asset to the company with seven years of experience in Sales and Business Development in both Domestic and International markets.

Ken Szgatti, CEO and President at ENCOM Wireless said, “We are convinced that her expertise, technical abilities and marketing skills will make her very successful in her new role with the company.”

www.encomwireless.com

Leddar™ Technology for Arduino Projects

LeddarTech, owner of the patented Leddar™ LED-based detection technology, is pleased to announce that its leading-edge sensors are now readily available to the Arduino community.

In honor of Arduino’s tenth anniversary, and as a proud supporter of all innovation, LeddarTech is enabling Arduino users to easily and cost-effectively integrate detection and ranging capabilities into their unique projects.

The Leddar™ detection and ranging module can be utilized in conjunction with the Arduino platform and other shields to effortlessly add on capabilities such as object/people detection, distance measurement, object/people-counting and many more. As the module is available in different forms, it is highly configurable and can be adapted to countless applications.

In addition to full-fledged detection and ranging capabilities, the Leddar™ module comes with a software development kit (with .NET and C libraries, LabVIEW and MATLAB examples, and sample RS-485 code for Windows and Linux), a downloadable Arduino library, Arduino-specific video demonstrations on YouTube, as well as ongoing support from LeddarTech experts.

“The detection applications described above are just a few examples of how the Leddar™ module could be used in Arduino projects. There are in fact a wide variety of possibilities,” mentioned Sonia Bélanger, Vice-President of Sales and Marketing at LeddarTech. “We encourage Arduino developers to experiment with our technology, to see how they can benefit from its easy-to-integrate value-added features,” adds Ms. Bélanger.

www.leddartech.com

Transportation Control Systems, Inc. Joins the McCain Inc. Distributor Network

Two Industry Leaders Team Up to Provide Advanced Traffic Control Products

McCain Inc. and Transportation Control Systems (TCS), two recognized leaders in the supply of advanced transportation solutions for safety and mobility, today announced they have joined forces to deliver first-class traffic control products in the southeast.

The agreement enables both companies to better meet the growing demand for intelligent transportation systems by making TCS the exclusive supplier of McCain’s traffic controllers, cabinets, signs, and software in Florida and the Caribbean. Through the recent acquisition of Quality Traffic Systems, another McCain distributor, TCS will also have distribution rights in Georgia, Kentucky, Tennessee, and Indiana.

Today more than ever, traffic agencies require technologically-advanced solutions that can adapt to the fast-paced demand of modern transportation networks. “We’ve been impressed with McCain’s ability to continually augment their product offering to incorporate the latest technology and adhere to national standards,” said Transportation Control Systems president, Steven Gillis, P.E. “With products like the ATC eX controller and Transparity® Traffic Management System, we are confident that McCain will meet our needs, and those of our customers, well into the future.”

“With common core values that put the customer first and a resolute commitment to product quality, McCain’s partnership with TCS enables us to better serve the market,” said Nathan Welch, director of sales at McCain. “TCS has a rich history and deep-rooted relationships in the region that will allow us to more quickly respond to customer needs.”

TCS has begun filling orders and maintaining inventory of McCain’s traffic equipment.

www.tcstraffic.com
www.mccain-inc.com

Multilink Announces Appointment Of Michael Shaw, Creates New ITS Transportation Power Division

Multilink, Inc. is pleased to announce the appointment of Michael Shaw to the position of Vice President for Transportation Products, and the establishment of an ITS Transportation Power Division. The appointment punctuates Multilink’s dedication to rapidly expanding its Intelligent Transportation Systems (ITS) and Department of Transportation (DOT) business to

News — cont. on page 68
News — cont. from page 67

meet growing demand for high quality products and services in transportation related markets.

Shaw, who has held leadership positions at Peek Traffic and the management consulting firm Goldsmith Payne & Company, is a technology executive whose Vice President level positions at Tollgrade Communications and Cheetah Technologies lead to the widespread use of centralized monitoring of data, video and voice networks in North America, South America, Europe, Africa and Asia. “Michael has already become a driving force in establishing a strong product lineup to meet the needs of our ITS customers,” said Steve Kaplan, Multilink Chief Executive Officer. “Michael’s previous successes, and Multilink’s engineering expertise in emergency power, fiber management and cabinet manufacturing have come together to create a powerful and respected choice for our growing base of government clients.”

Multilink’s newly established ITS Transportation Power division will focus on the needs of government agencies deploying Uninterruptible Power Supplies (UPS) or Battery Backup Systems (BBS) at the intersection, and major transportation corridors and tributaries equipped with surveillance, communication, detection and messaging systems. “Our product lineup,” explained Shaw, “is focused on the requirements of the most exacting clients in the transportation industry, such as those who require military grade UPS systems to provide emergency power to critical applications, sunshielded ITS enclosures, and fiber optic management.”

The ITS Transportation Power division,“ said Shaw, “is assembling a select group of solution integrators who are highly focused on providing emergency power and network communications to intersections, highway corridors, tolling stations and high security applications. We are very encouraged by the number and quality of market-leading integrators attracted to our new products and business philosophy.”

www.gomultilink.com

King County Turns to RTC Manufacturing to Create Retrofit Panel for Existing School Zone Flasher Cabinets

At the beginning of 2014, Washington’s King County faced a dilemma with their school zone flashers. The recent acquisition of a vendor disrupted the county’s ability to connect with and operate the flashers.

After careful consideration, King County decided to retrofit their current cabinets with RTC Manufacturing’s steady AP22 Time Switch. “We already had a few of them and we were very comfortable with their reliability,” traffic signal technician Kim Roberts said. “We haven’t had any time clock failures with them. For our job, that’s important.”

To streamline the process and reduce the number of hours needed to install the new equipment, RTC worked with King County to create a panel that fits perfectly in the existing cabinets.

The retrofit panel has mounting brackets and a cable harness for the AP22 Time Switch, along with a flasher and solar regulator. Its screw holes also line up perfectly with the existing cabinet’s infrastructure, making it easy and efficient to swap out the old panel for the new one.

King County’s original plan was to purchase more AP22s and manually program all the clocks. But the situation improved when the county found out about RTC Connect™ software, which allows users to remotely operate the time switches.

“The software made it so much simpler. Once you program the schedule for one school and it’s loaded into the cloud, you can download it into each one easily,” Roberts said.

Since King County covers 2,307 square miles and has some school zone flashers located on islands, the ability to install M2M devices and use the RTC Connect™ software was a big bonus. “That made it even better,” Roberts said.

For more information on the AP22 Time Switch or RTC Connect™ software, call (800) 782-8721 or email info@rtc-traffic.com.

U.S. Patent Issued to SkyWave Antennas, Inc.

SkyWave Antennas, Inc., a Huntsville-based antenna design and engineering company, has been awarded patent protection for an Antenna trademarked as the SkyMax Antenna.

SkyMax is a vertically polarized, low profile (6 inch tall), rugged, UV and tamper-resistant antenna that is designed specifically for industries focused on Traffic Control, Smart Grid, Metering, Remote Monitoring, Security and Green Energy. SkyMax is unique in that it does not have to be re-tuned regardless of the mounting surface, overcoming a glitch in many competitor’s antenna designs. According to current clients, SkyMax is “the most tamper-proof Antenna they have ever seen” and “it works like no other.”

www.skywaveantennas.com
IMSA SCHOLARSHIP APPLICATION

Applicant’s Name ____________________________________________ Date ____________
Permanent Address ___________________________________________________________
City, State, Zip ______________________________________________________________
Social Security No. ________________________________ Phone (____)_________________
Applicant E-mail _____________________________________________________________
Educational Institution _________________________________________________________
City, State, Zip ______________________________________________________________
Name Financial Advisor ________________________________________________________
Advisor Phone No. _____________________________________________________________
Advisor Email _______________________________________________________________
Field of Study ___________________________________________ Grade Average ________
Major/Degree Sought _________________________________________________________
If currently enrolled, what is your GPA? __________________________________________
Academic Classification (Check One)

☒ High School Senior ☒ College Freshman ☒ Sophomore ☒ Junior ☒ Senior ☒ Graduate

☒ Student ☐ Other (Specify) ______________________________________________________

Identification of IMSA Member

Name of Member ______________________________________________________________
Relationship _________________________________________________________________
Address ___________________________________________________________________
City, State, Zip ______________________________________________________________
Place of Employment _________________________________________________________
Phone (____)_________________
E-mail ____________________________________________________________

Application Period: September 1, 2014—April 30, 2015

Eligibility Requirement: All applicants must meet one of the following criteria:

• An active member or life member of IMSA, in good standing for a minimum of two years as of December 31 of the year of application.
• A son, daughter, grandchild, stepchild, or legally adopted child of a current or deceased member (the sponsor). The sponsor must have two years of continuous good-standing membership as of December 31st of the year of application. Applicants are eligible to apply when entering college as a freshman or at any point while attending college.
• Applicants must pursue a course of study at an accredited college or university leading to an Associate, Bachelor, Master, or Doctoral degree in a field of public safety in which IMSA is involved.

How to Apply:

• Application must be completed by applicant. Please type or print clearly.
• Attach a transcript of any courses you have already completed.
• Submit a written essay (not more than 500 words) on why you have chosen your field of study and what your career goals are in the public safety field. Include any special qualities, interests or accomplishments.
• Submit your complete application package to:

  IMSA Scholarship
  597 Hattery Court, Suite 100
  Rockledge, FL 32955-3613

Alinco Electric Sales
All One Piece Construction

Rick Harris
President
Office 207-232-0121
Fax 207-636-3747
E-mail rick@alincoelectric.com
Website www.alincoelectric.com
Necessity is truly the mother of invention. Earlier this year the traffic crew of the City of Carbondale, Illinois determined the need for a trailer to carry barricades, cones, signs, etc. to handle emergency traffic control setups. We have such a trailer but the design was never very practical. The current trailer was in need of repairs, repainting and new floors. Utilizing a standard sixteen-foot utility trailer the city allowed the people that use the trailer regularly to have a free hand in its redesign. The team of Tom Heil traffic foreman, Louis Butcher traffic field worker, and Allen Moore garage technician came up with some very cost effective designs and additions. Some of these include swing arms for traffic cones, upright storage for type one and type three barricades as well as organized storage for signs and tripods. The modifications made to this trailer increase the efficiency with which we can set up work zone scenarios. These gentlemen truly went above and beyond their normal duties on this project. They were able to bring this project in for around a thousand dollars not counting the cost of the trailer we already had, and best of all the additions are removable so the trailer could be used to haul other equipment if needed. Hats off to our traffic crew!

Signs of the Month

I have found the worst stop sign in North American! This thing is so ugly, it might break one of the retroreflectivity testers!

Ted Gilfert, ATSI
Sustaining Member

This sign was seen on Facebook.
Submitted by
Bill Moroski
Michigan Section
Photos & Signs of the Month

Left: These photos were taken in sunny Arizona. This is on Ellsworth Road south of Ray Road for the newly-opened SR24 freeway. The overall height is approximately 17’6”!

Sanja Grujakovic
Arizona Section

Below: I saw this at an intersection while on vacation. “101 Uses For Duct Tape?”

Rich Marsanico, Jr., VP
Traffic Systems, Inc.

CONFERENCES/MEETINGS

Sunshine Safety Council
July 15–17, 2014
Traffic Signal Technician Level I
July 22–24, 2014
Traffic Signal Field Technician Level II
Daytona Beach, FL
Contact at Sunshine Safety Council is Sherie Garcia 386.253.6400

Rocky Mountain
Board & Committee Meetings
1st Tues. of every month
in August: Saturday, August 3

IMSA Southeast Section
August 19–20, 2014
Work Zone Temporary Traffic Control Technician
Traffic Signal Inspector Level I
August 20–22, 2014
Traffic Signal Technician Level I
Traffic Signal Field Technician Level II
Sign and Pavement Marking Technician Level I
August 21–22, 2014
Sign and Pavement Marking Technician Level II
Powder Springs, GA

New England Section
September 25, 2014
Mansfield, MA
2014 Technology Expo & Forum
(978) 388-0023
September 26, 2014
Bruce Allen Memorial Golf Tournament
North Hampton, NH
(603) 964-8140

ONTARIO
October 14, 2014
Ontario Traffic Expo
Contact Ron Whitelock
ron.whitelock@bell.net

PTEC
November 12–13, 2014
St. Petersburg, FL
Sign & Pavement Marking Technician Level II
Contact Rohland Bryant at 813.893.2500 ext. 1082

Local Section Certification contacts see page 8.

Polywater® FST-250
FOAM DUCT SEALANT MULTI-USE CARTRIDGE

- Seals Out Water, Sewer Gases, & Rodents From Conduits
- Reenterable
- Holds High Water-Head Pressures
- Kit Seals Five 2” (or 5 cm) Conduits
- Compatible with Cables & Conduits
- Creates Airtight Watertight Seals

www.polywater.com/ductseal2.html
Welcome New Members

Don’t forget to pass on the IMSA Membership Application!
Find it on the web at: https://www.destek.net/imsa/membershipapplication.html

| Arizona                                                                 |
|                                                                       |
| Avila, Salvador                                                        |
| Camarena, Victor                                                      |
| Gonzalez, Jesus                                                       |
| Halas, Vance                                                          |
| Indolino, Anthony                                                     |
| Lloyd, Bruce                                                          |
| McDaniell, Darrell                                                   |
| Noorzad, Sean                                                         |
| Richards, James                                                       |
| Rodriguez, Pedro                                                      |
| Tenette, John                                                         |
| Toral, Jose                                                           |
| Tracy, Spencer                                                        |
| Wagner, Valerie                                                       |
|                                                                   |
| Florida                                                                |
|                                                                       |
| Acker, David                                                          |
| Andt, Zachary                                                         |
| Bailey, Jonathan                                                      |
| Braud, Cade                                                           |
| Bravo, Milton                                                         |
| Cates, Allen                                                          |
| Clements, Brian                                                       |
| Cooley, Sean                                                          |
| Cranmer, Kenneth                                                     |
| Dallas, Debbie                                                        |
| Dardaus, Richard                                                     |
| Day, Graham                                                           |
| Eastburn, Edward                                                     |
| Elliot, David                                                         |
| Eschman, Chad                                                         |
| Ewald, Karl                                                           |
| Fordon, Brian                                                         |
| Fitte, Samuel                                                         |
| Gomez, Rene                                                          |
| Goodman, Andrew                                                      |
| Grande, Patrick                                                      |
| Hawk, Sr., Matthew                                                   |
| Kamarajugadda, Ravi                                                  |
| Karr, Timothy                                                        |
| Knag, Donald                                                          |
| Kurth, Philip                                                        |
| Lascaux, Francois                                                    |
| Maddox, Robert                                                       |
| Martin, Felix                                                        |
| McKenzie, Ray                                                        |
| Mirabella, Jacob                                                     |
| Perez, Freddie                                                       |
| Phillips, Jesse                                                      |
| Pillas, Luis                                                         |
| Plasencia, Rafael                                                    |
| Riffe, Stuart                                                        |
| Suduth, Kevin                                                        |
| White, Jr., Theodore                                                 |
| Williams, John                                                       |
|                                                                   |
| Great Basin                                                           |
|                                                                       |
| Hesseimer, Richard                                                   |
| Hyer, Matthew                                                        |
| Montoya, Daniel                                                      |
| Wright, Craig                                                        |
| Addair, Jarred                                                        |
| Brennan, Robert                                                      |
| Collins, Scott                                                       |
| DeJaegher, Robert                                                    |
| Fribley, Larry                                                       |
| Gleckler, Edward                                                     |
| Hernandez, Raymond                                                   |
| Jewett, Ernest                                                       |
| Kati, John                                                            |
| Ludwig, Timothy                                                      |
| Shanks, John                                                         |
| Shipley, Aaron                                                       |
| Shipley, Darwin                                                      |
| Turner Jr., Roy                                                      |
| Vargo, Michael                                                       |
|                                                                   |
| New England                                                           |
|                                                                       |
| Benjimin, Dana                                                        |
| Champoux, David                                                      |
| DiFranco, Anthony                                                    |
| Ellard, Jr., Clifford                                                |
| Guyer, Kevin                                                         |
| Harnois, Steven                                                      |
| Korman, Joseph                                                      |
| McConnell, Stanley                                                  |
| Nagle, Joseph                                                        |
| Whaley, Lance                                                       |
|                                                                   |
| New Jersey                                                            |
|                                                                       |
| Edris, Galen                                                         |
| Fleischner, David                                                    |
| McGough, Parker                                                      |
| Reed, Eugene                                                        |
| Soltis, Kevin                                                       |
|                                                                   |
| New Mexico                                                            |
|                                                                       |
| Baca, John                                                          |
| Grijalva, Danny                                                      |
|                                                                   |
| International                                                        |
|                                                                       |
| Baak, Charles                                                        |
|                                                                   |
| Michigan                                                              |
|                                                                       |
| Alexander, Duane                                                     |
| Pittman, Jason                                                       |
| Vogel, Eric                                                          |
|                                                                   |
| Middle Atlantic                                                       |
|                                                                       |
| Boyle, Robert                                                        |
| Dixon, Mark                                                          |
| Dodson, Jr., Gerald                                                  |
| Dunnmyer, Sandi                                                      |
| Funchess, Terrance                                                  |
| Jones, Ronald                                                        |
| Martin, Matthew                                                     |
| Mitchell, Gregory                                                   |
| Ranck, Jessica                                                       |
| Richards, Valerie                                                   |
| Umamathy, Vighnesh                                                  |
|                                                                   |
| Northwest                                                             |
|                                                                       |
| Crain, Joshua                                                        |
| Duhy, Andrew                                                         |
| Forsman, Larry                                                       |
| Moxley, William                                                     |
| Quayle, Shaun                                                        |
| Swake, Joshua                                                       |
| Vayle, Benjamin                                                     |
| Walters, Michael                                                    |
|                                                                   |
| Ontario                                                               |
|                                                                       |
| Baarda, Anthony                                                      |
| Bermuhler, Fred                                                      |
| Chamorro, Juan                                                       |
| Seng, Matthew                                                        |
| Senn, Sr., Philip                                                    |
| Mcguire, Michael                                                    |
| Minchin, Al                                                          |
| Patrick, H. Ross                                                    |
| Robertson, Sean                                                     |
| Saari, Brett                                                        |
| Veilieux, Jacques                                                   |
| Walhout, Dave                                                        |
|                                                                   |
| Rocky Mountain                                                        |
|                                                                       |
| Bakken, Robert                                                       |
| Banghart, David                                                      |
| Black, Kevin                                                        |
| Browning, Lance                                                      |
| Christenssen, Kyle                                                  |
| Culey, Jacob                                                        |
| Duran, Mark                                                         |
| Egan, Jr., Timothy                                                  |
| Fuller, Jon                                                          |
| Hamilton, Daniel                                                    |
| Hazen, Ronald                                                       |
| Jungmeyer, Larry                                                    |
| Koons, Chade                                                        |
| Kopasz, Jeremy                                                      |
| Kulow, Michael                                                      |
| Marquez, Annette                                                   |
| Marquez, Glen                                                       |
| Medina, Ronnie                                                      |
| Medrano, Jr., John                                                  |
| Neal, Phil                                                          |
| Nordstrom, Mark                                                     |
| Northrup, Michael                                                   |
| Oguin, Myron                                                        |
| Otto, Steven                                                        |
| Perez, Vince                                                        |
| Rick, Jacob                                                         |
| Schmidt, Adam                                                      |
| Stecyk, Amy                                                         |
| Strom, Matthew                                                      |
| Ward, Nyles                                                         |
| Waters, Earl                                                        |
|                                                                   |
| Sustaining                                                            |
|                                                                       |
| Barrett, David                                                       |
| Campbell, France                                                    |
| Clay, Dale                                                          |
| Cortes, Gerardo                                                     |
| Dickerson, Jason                                                    |
| Holt, Matthew                                                       |
| Simmons, Alex                                                      |
| Tabor, Zilvin                                                       |
|                                                                   |
| Southernwestern                                                       |
|                                                                       |
| Alexander, Clinton                                                  |
| Andrews, James                                                      |
| Barbossa, Jose                                                       |
| Chapa, Blanca                                                      |
| Coplan, Denver                                                      |
| DeLeon, Victor                                                      |
| Elizondo, Horacio                                                   |
| Garza, Emilio                                                      |
| Glasco, David                                                        |
| Gomez, Hector                                                      |
| Jarecki, Curtis                                                    |
| Jefferson, Luke                                                    |
| Lowman, Joseph                                                      |
| Mack, Jr., Ricky                                                   |
| Maupin, Joseph                                                      |
| McKinnon, Darrell                                                  |
| Merritt, Travis                                                    |
| Ramirez, Eric                                                     |
| Resendez, Ramiro                                                  |
| Rodriguez, Jeffrey                                                  |
| Soto, Matt                                                          |
| Tillman, Preston                                                   |
| Villarreal, Saul                                                   |
|                                                                   |
| New Sustaining Members with Existing Companies                      |
|                                                                       |
| ENCOM wireless                                                       |
| Data Solutions                                                      |
| Belanger, Sonia                                                      |
| Trudeau, Sylvain                                                   |
| Siemens Industry, Inc.                                               |
| Miller, David                                                       |
|                                                                   |
| Conroy, John                                                          |
| Knutson, Michael                                                   |
| Page, Lisa                                                           |
| Oldcastle Enclosure Solutions                                       |
| Miller, Richard                                                    |
| Tip Indications                                                    |
| Brustele, Darrell                                                  |
| Klein, Sally                                                       |

Page 72 IMSA Journal
MEMBERSHIP APPLICATION

Questions? Call 1-800-723-4672 or email Membership@IMSAsafety.org

Prefix (Mr., Ms., Mrs.) First Name M.I. Last Name Suffix (Jr., Sr., III, etc.)
Informal First Name Job Title
Organization Department

Work Address
City Province/State Postal Code Country
Work Phone Work Fax Email Address
Home Phone (Optional) Cell Phone (Optional) SSN#/SI#

Home Address
City Province/State Postal Code Country

Preferred Billing Address:  □ Work  □ Home
Preferred Mailing Address:  □ Work  □ Home

MEMBERSHIP CLASS
(PLEASE CHECK ONE BOX)

□ ACTIVE — Employee or official of a Government agency or employee of a private contractor actively involved with public safety systems or operations.
Annual Dues (In US Funds) $80.00

□ PUBLIC AGENCY — Any Governmental body or agency with three (3) or more personnel who qualify for active membership. All personnel must be affiliated with a single agency or body.
Per Member $70.00

□ ASSOCIATE — Individuals not eligible for active membership or those associated with commercial or non-profit organizations who have knowledge, experience or interest in public safety.
Per Member $80.00

□ STUDENT — Full-time students of an accredited college or university enrolled in a field related to IMSA activities.
Name of School: _____________________________________________________________________ Projected Date of Graduation __________
Annual Dues $35.00

AREAS OF INTEREST — CHECK ALL THAT APPLY

□ FCC Licensing and Frequency Coordination □ Public Safety Telecommunications □ Traffic Signal Systems
□ Interior Fire Alarm Systems □ Roadway Lighting □ Wireless Data
□ Land Mobile Radio □ Sign and Pavement Marking □ Work Zone Temporary Traffic Safety
□ Public Reporting Systems □ Traffic Signal Inspection

METHOD OF PAYMENT

□ Check Enclosed. Check No. __________ Amount $ __________ □ Employer Check □ Personal Check
□ Bill Agency/Organization (Attach Purchase Order) P.O. # ____________________________ All returned checks incur a $50 fee.

□ AMEX/DISCOVER/MASTERCARD/VISA Payments require the following information:
Card Number: ____________________________________________________________________ Security Code # ________ Exp. Date ________
□ Employer Credit Card □ Personal Credit Card □ Card Holder’s Name: ____________________________
Authorized Signature: __________________________________________________________________________________ PLEASE PRINT

Card Holder’s Billing Address: ___________________________________________________________________________
Card Holder’s City/State/Zip: _____________________________________________________________________________

ALL INFORMATION MUST BE PROVIDED IN ORDER TO PROCESS CREDIT CARD PAYMENT

Please indicate how you learned about IMSA:

□ From an individual ____________________________ (Name) □ Mailing from International Office
□ Mailing from Section of IMSA _________________________ (Section) □ Other
Recommended By (if applicable): ____________________________ Signature of Applicant: ____________________________ Date ____________________

INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION
597 Haverty Court, Suite 100, Rockledge, FL 32955-3613 • (321) 392-0500 • (800) 723-4672 • Fax (321) 806-1400 • www.IMSAsafety.org
ITERIS, INC. IS SEEKING A DIRECTOR OF BUSINESS DEVELOPMENT, FOR OUR ROADWAY SENSORS BUSINESS

As Director of Business Development you will be responsible for identifying and pursuing partnership opportunities in the Traffic Management and Intelligent Transportation Industry (ITS) worldwide. This will include identifying prospects, developing strategies, performing business analyses, engaging contacts and managing partnership activities.

Must have at least 15 years of experience within the Traffic Management and Intelligent Transportation (ITS) Industry.

To apply, please contact Thao Lim at tnl@iteris.com

Traffic Control Devices, Inc. is seeking an experienced Project Manager for our Sarasota FL Office.

As Project Manager you will be responsible for all operations handled from your local office.

Must have at least 5 years of experience in Management. Must be IMSA Level II Certified or equivalent.

Please contact Bert Barnes at 407-448-4699 or email at bertbarnes@tcd-usa.com

EOE & Drug Free Workplace
Females are encouraged to apply!
Install, Maintain, and Program Traffic Control Cabinets. Inspects, Repairs and Replaces Traffic Control Devices…

Working knowledge of a Closed Loop Traffic System. High School/Trade School Graduate plus one year experience.
Must possess I.M.S.A. Certification Level I, Work Zone Safety and a Pennsylvania CDL class B drivers with Air Brake endorsement license.
Starting Salary $25.269/hour $49,464 Annual plus benefits.
Apply to Township of Lower Merion, 75 E. Lancaster Avenue, Ardmore, PA 19003 Attn: Human Resources. Email resume/application tohumanresources@lowermerion.org

Traffic Signal/Street Light Technician

The City of Tumwater is currently recruiting for a Traffic Signal/Street Light Technician.

Essential Duties:
Install, maintain, test and repair traffic signals, other traffic control devices and street lights.

Minimum Requirements:
3 year’s experience IMSA level II Traffic Signal Technician.
The ability to obtain a Washington State commercial driver’s license, class B w/air brake.
Salary:
$22.78-$28.08 plus benefits. Alternative work schedule available, 4-10’s Tuesday–Friday.
Visit www.ci.tumwater.wa.us to apply.

Traffic Engineering Technician

The purpose of this position is to provide support to the Traffic Engineer and Transportation Services Director. This is accomplished by responding to citizen requests, scheduling, conducting and reviewing traffic studies and field observations. Making recommendations to the Traffic Engineer for corrective actions and submitting service requests for work to be completed.

Other duties include close working relationship with Union Pacific Railroad, and multiple School Districts within City of Grand Prairie. Assist traffic Engineer with various traffic related issues such as traffic sign, pavement marking, and work zone traffic control. Issue Service Requests for corrective actions, preparing design drawings, striping plans, and traffic control plans using C.A.D.D. software. IMSA certifications in Signs and Marking Levels I and II and Work Zone Levels I and II with ability to obtain Level III certification in Signs & Markings within one year of employment and Level I in Traffic Signals within two years.

Work requires knowledge of a specific vocational, administrative, or technical nature which may be obtained with a two year associate’s degree, diploma or equivalent from a college, technical, business, vocational, or correspondence school. Appropriate certification may be awarded upon satisfactory completion of advanced study or training.

Over Five years’ experience as a Traffic Engineering Technician.
 Valid Class C Driver’s License
Must have (IMSA) International Municipal Signal Association Certifications in Signs & Marking Levels I and Level II, and Level I & Level II in Work Zone with ability to obtain Level III certification in Signs & Marking within one year of employment. Also, IMSA certification in Traffic Signal Level I within two years of employment.

Must be familiar with TMUTCD.
Open to filled.

City of Grand Prairie
Human Resources
972-237-8192
To apply for this position, please fill out our online application at www.gptx.org

CHIEF OF TRAFFIC ENGINEERING CITY OF JACKSONVILLE, FL

The City of Jacksonville, FL is looking for a Chief of Traffic Engineering.

This position is responsible for:
• traffic engineering services
• traffic signals and other traffic-control devices, including railroad crossing signals and for operating the streets and highways of the Consolidated Government.

For additional information and to apply please visit COJ.net.

Signal Technician

Wanted: Signal Technician for Maintenance, new installations and Sales in Oklahoma. The Company will furnish vehicle, pay per diem and pay Insurance. Pay will be determined by qualification and compatibility.

Company will consider assisting in moving expenses. Traffic Signals, Inc. Edmond, Ok. 405-341-3101, E-Mail: tsisig@yahoo.com.
Website: tsisignals.com. Dan Meadors
**SENIOR SIGNAL TECHNICIAN**

**SUMMARY:**
Responsible for serving as a lead in the installation, maintenance, and repair of electronically controlled traffic control devices; trains signal crews in proper application of rules and regulations; performs contractor inspections. Work is performed with limited supervision.

**SUPERVISORY/BUDGET RESPONSIBILITIES:**
- Lead responsibility over Signal Crew Members and Signal Technicians.

**KNOWLEDGE, SKILLS, AND ABILITIES:**
- Knowledge of construction principles;
- Knowledge of basic electronic principles;
- Knowledge of general design standards;
- Skilled in prioritizing and assigning the work of lower level staff;
- Skilled in preparing and maintaining a variety of records related to operational activities;
- Skilled in reading and interpreting schematics and blueprints;
- Skilled in troubleshooting and resolving problems related to traffic signals;
- Skilled in applying independent judgment, personal discretion, and resourcefulness in interpreting and applying guidelines;
- Skilled in operating applicable tools and equipment of the trade;
- Skilled in performing routine repair and maintenance activities;
- Skilled in performing basic construction activities;
- Skilled in performing manual labor;
- Skilled in observing safety rules and regulations;
- Skilled in operating a computer and related software applications;
- Skilled in communicating effectively with a variety of individuals.

**MINIMUM QUALIFICATIONS:**
- High School Diploma or G.E.D
- Two years of related traffic signal installation experience
- One year of team lead or supervisory experience
- Work Zone Safety Certification or ability to obtain certification within 1 year of employment
- IMSA Level I Certification
- IMSA Level II Certification or ability to obtain certification within 1 year of employment
- Class A CDL or ability to obtain within 3 months of employment

**PAY RANGE:**
$18.08 - $19.40 Hourly
Seasonal “flex scheduling” during the summer months as a benefit.

Please copy & paste this link in your browser to view our benefits:

**SIGNAL TECHNICIAN**

**SUMMARY:**
Responsible for assisting in the installation, repair, and maintenance of electronically controlled traffic control devices; responds to emergency situations regarding signals, flashers and downed stop signs; assists in training signal crew members. Work is performed with limited supervision.

**SUPERVISORY/BUDGET RESPONSIBILITIES:**
- Knowledge of basic electronic principles;
- Knowledge of safe work methods;
- Skilled in reading and interpreting schematics and blueprints;
- Skilled in troubleshooting and resolving problems related to traffic signals;
- Skilled in applying independent judgment, personal discretion, and resourcefulness in interpreting and applying guidelines;
- Skilled in operating applicable tools and equipment of the trade;
- Skilled in performing routine repair and maintenance activities;
- Skilled in performing basic construction activities;
- Skilled in performing manual labor;
- Skilled in observing safety rules and regulations;
- Skilled in operating a computer and related software applications;
- Skilled in communicating effectively with a variety of individuals.

**MINIMUM QUALIFICATIONS:**
- High School Diploma or G.E.D
- One year of related traffic signal installation experience
- Work Zone Safety Certification or ability to obtain certification within 1 year of employment
- IMSA Level I Certification or ability to obtain certification within 1 year of employment
- Class A CDL or ability to obtain within 3 months of employment

**PAY RANGE:**
$15.79 – $16.95
Seasonal “flex scheduling” during the summer months as a benefit.

Please copy & paste this link in your browser to view our benefits:

**BUCKHOLZ TRAFFIC**

3585 Keri Road
Jacksonville, Florida 32217
(904) 382-2171 (Office)
(904) 695-5508 (Cell)
www.buckholztraffic.com

If you need a traffic engineering expert to help in the defense of a lawsuit, I would be happy to assist.
- Traffic Signals
- Signing & Pavement Markings
- Work Zones
- Autos, Trucks, Bikes, Pedestrians

Jeffrey W. Buckholz, PhD, PE, PT/CE
Unemployed?

IMSA members, if you find yourself unemployed, please let us know by filling out the form below and getting it submitted to the IMSA Journal. Your listing will be placed in three consecutive issues of the magazine.

Also, for up-to-date listings on job opportunities, visit our website at www.IMSAsafety.org and click on “Job Opportunities,” found on the left hand side of your screen. There you will find all the current job listings that are open.

Job Mart Application

The International Office of IMSA has established a program to assist unemployed members in securing employment. This service is being offered only to IMSA members. There is no charge for the listing and your notice will be run in the IMSA Journal for three issues. This service may be used only once each calendar year or until the service is withdrawn. All contacts will be made directly to you by interested parties.

Complete the form below and return to: IMSA ATTN: IMSA Job Mart, 597 Haverty Court, Suite 100, Rockledge, FL 32955-3613, or email the information below to jobmart@imsasafety.org.

The International Office, Board of Directors and staff assume no responsibility or liability in this matter. IMSA reserves the right to edit the entry to conform to style.

Job Classification (45 letters minimum):

____________________________________________________
____________________________________________________

Background:

____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________

Contact: ____________________________________________

Signature: ___________________________________________

Date: ________________________________________________

From the Desk of...

As I write this, preparations are well underway for the 2014 Annual Conference and School to be held July 26–29 in Schaumburg, Illinois, just outside of Chicago.

As an IMSA member for over 20 years, I looked forward to our conference. As a sustaining member, I placed high value in the IMSA Conference and believed it to be a must-attend event. From a sustaining member’s point of view, I always believed IMSA offered strong networking opportunities — attendees who wanted to be on the exhibit floor to learn the latest and greatest innovations in the industry. It gave me the opportunity to directly interact with our customers who were actively purchasing, deploying, and maintaining the products I sold and promoted.

As our staff actively prepares for this conference, I will be looking at the conference from a completely different perspective. How can we make this conference the best for all our attendees? This year’s conference will offer many opportunities for our members to grow their knowledge base and their relationships, including:

• Opportunity to get certified in one or more of our many areas of certification;

• Keep up with the latest trends in the industry by attending one or more of our 55 technical sessions;

• Take a look at our internal leadership structure by attending several of our open leadership meetings, including the Council of Delegates Meeting, the Joint Board of Directors & Council of Delegates meeting, the Certification Forum, and many more.

• Visit our largest Exhibition area ever. We have expanded the Exhibit Hall to 50,000 square feet complete with vehicles inside several exhibits!

• Earn numerous TARP points to facilitate your certification renewals

• Ability to network with your peers from across North America

We will also have some fun and entertainment at the conference. Our Theme Night will feature A Taste of
**OBITUARY**

**Harold Glerum**

IMSA experienced a great loss in the passing of Harold Glerum. Mr. Glerum took over the reins of the association at a turbulent time. He was named Executive Director and was tasked by IMSA leadership to restart the association in a new location. He physically drove a rental truck to Texas to retrieve whatever assets he could obtain and returned to New York State to set up operations temporarily in his home. He was responsible for creating the business operation, hiring the staff, and locating a suitable building for the hobbled IMSA. The current success of this association is due in most part to the efforts of this man. He ensured the association quickly recovered and began to flourish.

This was also the time when the Certification Program was in its infancy. While Harold had the normal concerns for association management, he also had the blessing — and curse — of dealing with the certification process. The curse was the upgrading, error checking, printing, tracking, testing, and grading of all certification materials. The blessing was having an alternate income to membership dues to help establish and grow the association. The IMSA Board of Directors couldn’t have picked a better man for the job. Mr. Glerum brought the association back from the brink in record time. I like to think of him as the father of the modern day IMSA.

Mr. Glerum had retired from a career as Fire Chief. He didn’t speak of the past, he was always focused on the present and looking to the future. He personally encouraged members to become more active and involved in the work of IMSA. He once told me how much he enjoyed traveling around the US and Canada; when he saw technicians setting up work zones, maintaining roadway lights or servicing traffic signals he would stop and thank them for the work they were doing. He would be especially pleased if they recognized him from his IMSA Journal photo.

Harold wanted the association to be a professional organization that held its leadership in high regards. He created a formal procession, very pomp and circumstance, to seat the Executive Committee at the conference banquet head table. This process, which most of the members of this committee were somewhat embarrassed by, served to recognize the importance of IMSA leadership and the association as a whole.

Mr. Glerum never missed an opportunity to recognize staff and their efforts. Harold nurtured and developed the staff, he knew them and their families. He was strict in his management style, but caring. This resulted in a loyal, hardworking, productive group of individuals. Mr. Glerum emphasized the importance of quality work and unprecedented customer service.

Unfortunately, many of our current membership and leaders did not have the opportunity to know Harold and the important role he played in the association. That’s truly their loss. But I speak for myself and those members who did have the pleasure of knowing him when I say I’m so thankful I had that chance and can say that I lost a great mentor and friend.

*Jan Siedler*

---

**From the Desk of — cont. from page 77**

Chicago evening. We will have Chicago-style food and a Chicago Tribute Band performing a 90-minute concert.

At our banquet, we will be mixing ceremony and fun! We will swear in our newly-elected Board of Directors, then celebrate with live entertainment from Tommy Gunn’s Garage with a gangster-themed show.

Schaumburg is located in the western suburbs of Chicago, just west of O’Hare airport. It is home to many large corporations, including Motorola. There is a wealth of shopping and restaurants within a very short distance of the hotel. Chicago offers world-class museums, including my personal favorite, the Museum of Science and Industry.

These are all important reasons why you should attend our Conference in Schaumburg. If you do decide to attend, please introduce yourself to me and let me know why IMSA is important to you and what we can do to make it a better experience for you.

I have been receiving many suggestions on how to improve our Association and I take each one seriously. Some of the suggestions are easy to implement while others will take some time. My goal is very simple: to make IMSA the best association it can be for our Membership.

I look forward to seeing and meeting you in Schaumburg!

*Michael T. Volling, Executive Director*
The Archer

The sport of archery demands accuracy. At 295 feet away, the 10-ring target face is just 4.8 inches in diameter, this is comparable in size to the head of a thumbtack held at arms length.

Accurate. Intuitive. Precise.

Vantage Vector

The new hybrid video + radar vehicle detection sensor from Iteris, accurately detects vehicles up to 600 feet away.

All the advantages of proven Iteris video detection ... plus:

- Enhanced dilemma-zone precision
- Extended range for higher speed approaches
- Advanced safety and adaptive control applications
- Richer count, speed, and occupancy data

Visit Iteris at the IMSA Annual Conference
Booth #402-404

Innovation for better mobility
Distributors of IMSA Cable and Installation Hardware for over 30 years

- Cable Cutting Available
- Wire & Cable - In Stock
  - Traffic Signal Cable
  - Fiber Optic Cable
  - Loop Detector Wire
  - Shielded Lead In Wire
  - Airport & Street Lighting Cable
  - Interconnect & Telephone Wire & Cable
- Enclosures & Junction Boxes
- Pole Line Hardware
- Loop Sealant

...and much much more!

Certifications provided on all shipments

TW Cable, LLC
Your Wire & Cable Specialists!
P: 631.293.0000
F: 631.531.9400
www.TWCableLLC.com

Your Partner in PUBLIC SAFETY