Drivers generally do not yield the right-of-way to pedestrians in marked crosswalks at uncontrolled sites. One alternative to in-roadway signs and yellow flashing beacons is to add yellow LED Rectangular Rapid-Flashing Beacons (RRFB) to pedestrian warning signs. These LED RRFBs are similar in operation to emergency flashers on police vehicles. The photo below shows an RRFB mounted below a W11-2 pedestrian warning sign at a crosswalk.

To provide a more objective understanding of the effects of RRFBs, FHWA conducted a study of these pedestrian warning devices to determine whether they increased driver yielding to pedestrians. This study was part of a larger FHWA research effort to quantify the effectiveness of existing and new engineering countermeasures in improving safety and operations for pedestrians and bicyclists.

The study report presents the results of five RRFB experiments, comparing variations in the features or installation of RRFBs. The report can be found at: http://www.fhwa.dot.gov/publications/research/safety/pedbike/10043/index.cfm.

Key findings are as follows:

- **Experiment 1: Two- and Four- Beacon Systems.** Installation of the two-beacon RRFB system increased yielding compliance at multilane uncontrolled crosswalk locations from 18% to 81%. Yielding compliance increased from 81% to 88% following the installation of the four-beacon system at these sites.
Rapid-Flashing Beacons continued from page 1

• **Experiment 2: RRFBs vs. Traditional Overhead and Side-Mounted Yellow Flashing Beacons.** Installation of a standard yellow overhead beacon increased yielding compliance from 11% to 16%. When side-mounted RRFBs replaced the overhead beacon, yielding compliance increased to 78%. Adding the RRFB to the median island increased yielding compliance to 88%. The installation of standard yellow side-mounted beacons increased yielding compliance from 0 to 16%. The installation of side-mounted RRFBs increased yielding compliance to 72%. The increases produced by the RRFB system were statistically significant.

• **Experiment 3: RRBD Effectiveness Over Time.** RRFBs were effective at 22 sites and showed that the effects were maintained over time at each location.

• **Experiment 4: LEDs Pointed at Traffic and Momentary Light Bars.** LEDs pointed at oncoming traffic increased yielding compliance. Further increases in yielding were not achieved by adding momentary light bars (MLB).

• **Experiment 5: Advance Warning Devices.** Using advance warning devices placed before the crosswalk along with RRFBs did not increase yielding compliance due to RRFBs alone, but may have increased the distance that drivers yielded in advance of the crosswalk.

These experiments show that the rectangular LED yellow rapid-flashing beacon appears to be an effective tool for increasing the percentage of drivers yielding right-of-way to pedestrians in crosswalks at sites where drivers rarely yield to pedestrians. For more information contact Ann Do at FHWA, 202-493-3319, ann.do@dot.gov.
In response to an emergency incident, multiple departments frequently need to coordinate their collective efforts. This often involves internal and external departments and/or jurisdictions. The National Incident Management System (NIMS) is designed to provide a consistent nationwide template to enable all government, private sector, and non-governmental organizations to work together during domestic incidents. The intent is to ensure that a collaborative management approach can be applied in response to incidents that require multiple jurisdictions, a combination of specialties or disciplines, several levels of government, non-government organizations and the private sector.

NIMS is implemented as a municipality-wide program and would probably include multiple departments within each jurisdiction, as well as agreements with adjacent jurisdictions. NIMS is intended to integrate best practices into a comprehensive, standardized framework that is flexible enough to be applicable across the full spectrum of potential incidents, regardless of cause, size, location or complexity. NIMS allows everyone to work together to prepare for, prevent, respond to, recover from, and mitigate the effects of incidents. NIMS is not to be construed as just another unfunded mandate from the Federal government. It is not a requirement for everyone. Federal departments and agencies must implement the program, and while other non-government entities and local governments are not required to implement it, they are encouraged to do so. Developing and adopting a program in accordance with NIMS qualifies State, tribal, and local organizations for Federal preparedness assistance through grants, contracts and other activities.

It also provides a guideline to follow in accordance with the Federal government’s incident management program, which agencies can use when developing their own program. NIMS achieves this through the integration of best practices and by providing mechanisms for further development and refinement of supporting national standards, guidelines, protocols, systems and technologies. It is intended to be dynamic, to allow each local government to choose the means that best support their needs. The goal of NIMS is for everyone to understand their roles and resources, and to be prepared should an incident occur. It is not a manual or resource to turn to once an event has already occurred.

The National Response Framework (NRF) is a guide to how the Nation conducts all-hazards response and builds upon the NIMS coordinating structure to align key roles and responsibilities Nationwide. The program is designed to be managed at the local level, with local jurisdictions retaining command, control and authority over response activities in their jurisdiction.

To help agencies better understand NIMS, the Federal Emergency Management Agency (FEMA) has updated its course offerings. The course entitled IS-700.a NIMS An Introduction is recommended for all who are interested in or required to respond during an unforeseen incident. This no-cost, webbased interactive course describes the intent of NIMS, key concepts and principles underlying NIMS, the purpose of the various NIMS components, and the purpose of the National Integration Center. The course does not require any previous training or knowledge. It provides a basic introduction to NIMS, and is not designed to replace Incident Command System and position-specific training. It is an independent study program that takes approximately three hours to complete, and can be taken at any time. It includes handouts for the classroom, and a final exam. This and many other related course offerings are available on the FEMA training website.

http://training.fema.gov/emiweb/is/is700a.asp

.....continued on page 4
The Emergency Management Institute (EMI) offers self-paced courses designed for people who have emergency management responsibilities and the general public. EMI replaced its Incident Command System (ICS) curricula with courses that meet the requirements specified in the National Incident Management System (NIMS). All courses are offered free-of-charge to those who qualify for enrollment. To get additional information on all EMI courses, visit: http://training.fema.gov/IS. Below are the new NIMS compliant courses that follow NIMS guidelines. EMI encourages organizations to begin using the NIMS compliant courses immediately.

IS-100.b - (ICS 100) Introduction to Incident Command System
IS-100.FDA Introduction to Incident Command System (ICS 100) for Food and Drug Administration
IS-100.HCb Introduction to the Incident Command System for Healthcare/Hospitals
IS-100.HE Introduction to the Incident Command System for Higher Education
IS-100.FWa Introduction to the Incident Command System for Federal Workers
IS-100.LEb Introduction to the Incident Command System for Law Enforcement
IS-100.PWb Introduction to the Incident Command System for Public Works Personnel
IS-100.SCa Introduction to the Incident Command System for Schools
IS-200.b (ICS 200) ICS for Single Resources and Initial Action Incidents
IS-700.a National Incident Management System (NIMS), An Introduction
IS-701.a NIMS Multiagency Coordination System (MACS) Course
IS-702.a National Incident Management System (NIMS) Public Information Systems
IS-703.a NIMS Resource Management Course
IS-704 NIMS Communications and Information Management
IS-800.b National Response Framework, An Introduction

NIMS is applicable to State, tribal and local governments, private sector organizations, critical infrastructure owners and operators, nongovernmental organizations and other organizations with an active role in emergency management and incident response. REMEMBER: Public works, utilities and heavy equipment operators are considered first-responders.

Floods are one of the most common hazards in the United States according to FEMA. Flood effects can be local, impacting a neighborhood or community, or very large, affecting entire river basins and multiple states.

However, all floods are not alike. Some floods develop slowly, sometimes over a period of days. But flash floods can develop quickly, sometimes in just a few minutes and without any visible signs of rain. Flash floods often have a dangerous wall of roaring water that carries rocks, mud, and other debris and can sweep away most things in its path. Overland flooding occurs outside a defined river or stream, such as when a levee is breached, but still can be destructive. Flooding can also occur when a dam breaks, producing effects similar to flash floods.

Be aware of flood hazards no matter where you live, but especially if you live in a low-lying area, near water or downstream from a dam. Even very small streams, gullies, creeks, culverts, dry streambeds, or low-lying ground that appear harmless in dry weather can flood. Every state is at risk from this hazard.

FEMA provides precautions and guidance for Before, During, and After a flood on their website at: http://www.fema.gov/hazard/flood/index.shtm

Many states in our region are dealing with an exponential decline in local road conditions due to the worst flooding on record. This photo was submitted by SD LTAP Manager, Ken Skorseth. Contrary to what this aerial photo implies, this is normally South Dakota farmland with NO natural lakes!
At the annual Local Road Coordinators Conference in Rapid City, SD, one local County provided this parking lot exhibit of a system that allows the agency to quickly convert Class 8 heavy trucks from end dump beds to sanders to semi-tractors with a kit that allows quick attach/detach of the units placed on the frame. This is a county highway department exhibit, not a vendor. Folks love to see and hear what their peers are doing and this was a very popular exhibit last fall.

Join us in Rapid City this year - October 26 - 27, 2011!
Spring Training Program Graduates
We would like to congratulate all the graduates for their hard work and dedication.

Supervisory Skills

<table>
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<tr>
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<tbody>
<tr>
<td>Robert Winzent</td>
<td>S.E.M.S.A.</td>
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<td>Terry Dill</td>
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<td>Dan Thorne</td>
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<td>Kevin Pennartz</td>
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<td>Michael Griffiths</td>
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<td>Mike Morgan</td>
<td>Town of Mt. Crested Butte</td>
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<td>Pat Sanders &amp; Chris Wagner</td>
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<td>Clyde James &amp; John Pettrucka</td>
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<td>Daniel Ruiz &amp; Zack Wilkerson</td>
<td>City of Thornton</td>
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<tr>
<td>Kris Wood, Branden Friend, Vernon Layne &amp; Frank Castillo</td>
<td>City of Castle Rock</td>
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**Roads Scholars**

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<tr>
<td>Jay Ochoa</td>
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<tr>
<td>Joe Helm</td>
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<td>Tim Hecht</td>
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<td>Mike Hawley</td>
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<td>Brad Lewis</td>
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**Coming to a Workshop Near You – Interactive Clickers**

**WHAT IS CLICKER TECHNOLOGY?**

An Audience Response Clicker is a powerful data collection and assessment tool that collects real-time participant responses to assess learning. Clickers use a radio transmitter to collect data during the class PowerPoint presentation by submitting responses to interactive questions using a Response Card keypad. Multiple choice questions are presented, and each workshop attendee then answers (anonymously) by hitting the corresponding letter or number on his or her clicker. For example, at a grader workshop, the following question could be used: “When should a pre-op inspection be performed on a grader? A: Monthly, B: Weekly, C: Daily, D: Every shift.” At the workshop you would hit the corresponding button on your clicker to lock in your choice. When everyone has made their choice a chart appears to illustrate the data. The data collection is “open” while everyone selects their answer, then when the instructor decides to “close” the collection for the question no more answers can be locked in. While the voting period is open you can change your answer multiple times.

**THE BENEFIT OF CLICKERS**

Colorado LTAP sees the benefit of this new technology as an emerging tool to help our participants and our instructors. A number of LTAP centers and universities have adopted the use of clicker technology nationwide and have seen the teaching tool as extremely beneficial. The clicker software can be used for the pre and post assessments and is able to generate reports of responses received. The instructor is able to see pre-test results immediately and knows where to focus additional training time. The post-test allows the instructor to see the results of the day and re-emphasize areas that remain unclear. We hope to also use clickers to assist us in group exercises and possibly in training evaluations. Colorado LTAP has purchased 50 of these interactive clickers and will start to incorporate them into training classes this fall. We want to extend our appreciation to our colleagues at the Connecticut LTAP Center for introducing us to this cutting edge technology!
In September 2011, the Environmental Protection Agency (EPA) plans to release a new stormwater rule that will potentially impact all Phase I/Phase II/transportation/and non-regulated Municipal Storm Sewer Systems (MS4). The rule may develop performance standards for discharges from new, existing, and redeveloped areas by requiring green infrastructure usage in stormwater management by using infiltration, evapotranspiration, and harvesting/use. This will include such approaches as bioretention, permeable pavements, parking and street designs, and green roofs.

The EPA is considering whether to: expand the current MS4 boundary into non-regulated areas; to establish different requirements for transportation facilities; to set retrofit requirements on MS4s; and to add additional provisions specific to Chesapeake Bay.

Some of the options for expanding the current MS4 boundaries include: extending coverage to jurisdictional boundaries of the MS4 rather than using the urbanized boundary; extend coverage to urbanized clusters/Metropolitan Statistical Areas/Metropolitan Planning Areas; regulate based on population or impervious cover threshold/watershed boundaries; regulate all MS4s but allow states to exempt areas and/or require states to designate additional MS4s.

The EPA may also require MS4s to develop and implement a stormwater retrofit plan to include: a list of all “sensitive” waters; identify specifically where stormwater plays a large part in degradation and impairment of water quality; set goals and milestones to reduce stormwater pollution; pinpoint priority projects that meet long-term goals such as redevelopment retrofits or routine repair and maintenance; and create inducements for retrofits on private property.

The EPA intends to propose a rule in September 2011 and to take final action by November 2012. For more information visit the National Pollutant Discharge Elimination System (NPDES) website at: http://cfpub.epa.gov/npdes/stormwater/rulemaking.cfm.
LTAP Fall 2011 Training

September
13th Chainsaw, Mountain Village
15th Chainsaw, Pueblo
16th Chainsaw, Longmont
16th Legal and Liability Issues, Grand Junction
22nd Defensive Driving, Grand Junction

October
5th Drainage, Loveland
6th Drainage, Colorado Springs
11th Drainage, Glenwood
13th Drainage, Durango
25th Winter Maint, Frisco
26th Winter Maint, G.J.
28th Winter Maint, Durango

November
7th You’re a Supervisor Now, Denver
8th Successful Employees, Denver
8th Safety on the Job, Montrose
16th Safety on the Job, Pueblo
22nd Safety on the Job, Lakewood
29th Safety on the Job, Fort Morgan

December
8th Nuts & Bolts of Local Government, Grand Junction
Still to be scheduled... HET Motorgrader, Work Zone Set Up, and Retroreflectivity Maint. & Inspection

COMING SOON
ROADS SCHOLAR II
UNDER CONSTRUCTION

BEGINNING JANUARY 2012
Details to be posted this Fall