

2014

NHI Training in Action

Improving the Performance
of the Transportation Industry
Through Training



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About NHI

The National Highway Institute (NHI) is the training and education arm of the Federal Highway Administration (FHWA). NHI's team of talented Federal and contract employees are housed within FHWA's Office of Technical Services (OTS). NHI provides leadership and resources to guide the development and delivery of transportation-related training in many formats, including both classroom-based and distance learning. NHI is authorized to award continuing education units (CEUs) through the International Association of Continuing Education and Training (IACET).

For more information, please visit the NHI Web site at www.nhi.fhwa.dot.gov.

NHI Course Categories



Asset Management



Financial Management



Pavements and
Materials



Business, Public
Administration & Quality



Freight and
Transportation Logistics



Real Estate



Communications



Geotechnical



Structures



Construction and
Maintenance



Highway Safety



Transportation
Performance
Management



Design and Traffic
Operations



Hydraulics



Transportation
Planning



Environment



Intelligent Transportation
Systems (ITS)

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Delivering Training in the “Virtual Age”

NHI is using technology and innovation to reach more transportation professionals

After more than five decades of training the country’s transportation workforce, the National Highway Institute (NHI) is changing how it does business. Technology and innovation are propelling the training arm of the Federal Highway Administration (FHWA) forward into a technological revolution.

Programs like FHWA’s Every Day Counts and the Strategic Highway Research Program 2 have focused the industry on adopting technologies, innovations, and strategies that do more with less, faster and more sustainably. NHI is embracing this strategy by expanding distance learning opportunities and developing mobile apps.

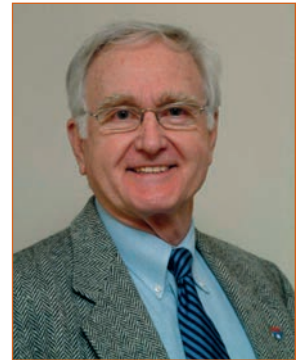
“We’re changing the way we do business to evolve with the industry,” says NHI Training Director Rick Barnaby. “There are a lot of new professionals in the workforce, but agencies don’t have a lot of extra money to devote to training. It’s our job to make the training we offer more accessible.”

NHI’s Web site is the hub for all the agency’s activities. In 2013, NHI overhauled the site’s search function to make it faster and easier to find scheduled sessions. More search criteria, including delivery type (such as instructor-led or Web-based sessions), program area, date, and location, enable users to select courses that meet their specific needs. In addition, a “Quick Search” feature shows site users popular searches, and a “Search for Scheduled Sessions” tab enables users to search for upcoming sessions of courses. Scheduled sessions now appear with the course descriptions as well.

Site users now can create their own customized catalogs. In just four easy steps, users select how they want the information organized, preferred delivery formats, and program areas of interest. Then they can download a PDF list of courses tailored to their training preferences.

Another way NHI is making its catalog more accessible is through use of a QR code—a barcode that can be read by a smartphone—that directs training participants to the online catalog. The QR code appears on handouts distributed at conferences and events.

“We no longer have to carry bulky printed versions of the catalog with us,” Barnaby says. “Anyone with a smartphone can scan the QR code and within seconds have all the training information at their fingertips.”



*NHI Training Director
Rick Barnaby.*

*Credit: Barbara Szostek
of Sevatec, Inc.*

NHI is going mobile in other ways, too. The organization recently released its first smartphone app featuring the *Pavement Preservation Checklist Series*. The app has a series of 14 checklists on topics such as crack sealing, chip sealing, hot and cold in-place recycling, diamond grinding, and full- and partial-depth repair of portland cement concrete. The app is available for download at no cost by searching “FHWA” in the Android™ and BlackBerry® app stores. A second app is in development for bridge inspections.

“Apps are point-of-use job aids to help folks be more efficient and effective,” Barnaby says. “They give people the ability to interact with content and data on the job site to achieve better results.”

Another new tech tool that NHI introduced recently helps train bridge inspectors on the finer points of field inspections, but does so from the comfort of a classroom. Using 3-D modeling and gaming-quality graphics, course 130055 Safety Inspection of In-Service Bridges exposes participants to bridge conditions and defects encountered in the field during real-world inspections. The first of its kind for NHI, the course earned an Excellence in Engineering Award from the American Council of Engineering Companies. NHI is now applying the technology to a course on tunnel inspections.

NHI also continues to add Web-based courses, webinars, and blended courses (with online and instructor-led components) to its catalog. “If you have a smartphone or tablet, you can take NHI Web-based training on it today,” Barnaby says. “We have about 150 Web-based courses available right now.”

The biggest indicator that these changes are making a difference is that NHI’s distance learning formats now

reach more participants than its traditional instructor-led sessions. “We’re certainly not going to stop doing traditional instructor-led training,” Barnaby says. “But by enhancing our virtual offerings and making information more accessible, we’re evolving with the industry and doing all we can to deliver training to everyone who needs it when they need it.”

FOR MORE INFORMATION OR
TO SCHEDULE A SESSION, VISIT
WWW.NHI.FHWA.DOT.GOV
OR SCAN THIS QR CODE
WITH YOUR SMARTPHONE.



Retooled Web Site Speeds Search and Sign-Up

New search feature and course description pages introduce simple, intuitive user interface

The National Highway Institute (NHI) is continually striving to find innovative ways to make training more accessible to transportation practitioners. “Over the past several years, the Web site has increasingly become the interface between NHI and our customers,” says NHI Training Director Rick Barnaby. “As such, it is vital that the Web site quickly and easily connect users with information about NHI’s course offerings.” Recent updates to the NHI Web site further streamline navigation and simplify the registration process, making it easier than ever to find and sign up for training.

A redesigned search feature introduces a new user interface that facilitates access to training information with a few clicks. Now users can search for a particular course or scheduled session using a variety of criteria to refine results, such as delivery type, program area, date, or State. Alternatively, by selecting the “Quick Search” tab, users can view a list of popular search terms for quick selection or search by individual program areas. Customized NHI course catalogs are also available for download through the “Download Catalog” tab.

Another key enhancement to the search feature is an improved filter. The new search filter detects misspelled words and matches keywords with the frequency they are used in course descriptions to display courses that best match user needs.

In addition to these functional changes, the redesigned search results page has a new look and feel that provides at-a-glance information about courses and sessions. The “Sort By” feature displays search results according to preferences such as course number, relevance, price, and program type. The “Scheduled Sessions” link provides users with a real-time count of seats available in upcoming training sessions.

NHI also overhauled the course description pages, which now provide links to registration options as well as detailed course information. Users now can access all relevant information and related links, such as course details, session registration, and hosting information, all on one page. Each course description page also now features icons for quick visual reference indicating the type of course (instructor-led training, Web-based training, or Web-conference training) and the subject matter area the course covers (such as asset management, hydraulics, or structures).

These improvements to the Web site further NHI’s mission to improve the performance of the transportation industry through training. “These new features expedite access to information, streamline the registration process, and facilitate navigation through the site,” Barnaby says, “which ultimately better connect our customers to the training they need.”

VISIT THE NHI WEB SITE AT WWW.NHI.FHWA.DOT.GOV.

Red Light, Green Light

Four new courses help practitioners improve traffic signal management and operation

Arterial roadways are critical to the national transportation system, accounting for more than 1 million lane miles of roadway connecting local and collector roads to national highways. These roadways, in turn, rely on the management and operation of an estimated 311,000 traffic signals in the United States.

Despite advances in the state of the art of traffic signal operation over the last several decades, in practice, traffic signal operators at agencies across the country are struggling to set priorities and build and manage signal systems that are sustainable and meet stakeholder needs. The National Transportation Operations Coalition's *National Traffic Signal Report Card* and *Traffic Signal Operations Self Assessment* and other studies have shown that many agencies lack clearly stated operational objectives. As a result, signal operators find it increasingly difficult to meet the expectations of policymakers and the public. Instead, traffic signal management is often a reactive and complaint-driven process by which operators work to maintain minimum standards with limited budgets.

Through its Arterial Management Program, the Federal Highway Administration (FHWA) works to advance management practices and operations strategies that ensure the safe and efficient use of arterials. One of the program's focus areas is improving management of traffic signals. To support the program, the National Highway Institute (NHI) developed four new courses designed to help practitioners improve the timing design, operation, and maintenance of traffic signals.

The courses that make up the new traffic signal series are as follows:

- 133122 Traffic Signal Timing Concepts
- 133123 Systems Engineering for Signal Systems Including Adaptive Control
- 133124 Evaluating the Performance of Traffic Signal Systems
- 133125 Traffic Signal Management: The Basic Service Approach

The courses provide a continuation of the concepts currently taught in the longstanding NHI course 133121 Traffic Signal Design and Operations. The new courses incorporate an objectives- and performance-based approach that encourages practitioners to examine their **goals**, **objectives**, **strategies**, and **tactics**—or GOST—to ensure alignment between



NHI developed four new courses designed to help practitioners improve the timing design, operation, and maintenance of traffic signals like these.

Credit: John Sullivan, ICF International

what is most important and what is achievable within resource and capability constraints.

“In other words, let’s be more deliberate about how we design and build traffic signal systems to ensure that we can effectively operate and maintain these systems to meet the expectations of our most important stakeholders,” says Eddie Curtis, who works for FHWA’s Resource Center and Office of Operations and helped develop the courses.

Curtis offers the following example to illustrate how an agency might use the GOST model to reach its goals:

- Goal – Keep the cars moving on Main Street. If they stop, it will be for obvious reasons that are both equitable and consistent with surrounding land use and user expectations.
- Objective – Provide smooth flow on Main Street during peak hours to minimize stops.
- Strategy – Coordinate signals on Main Street to minimize stops in the dominant direction of flow, while allowing access from side streets with minimal delays.
- Tactic – Use the minimum resonant cycle length and offsets to minimize arrivals on red.

Rick Denney, an instructor with FHWA's Resource Center who helped develop the courses, emphasizes the importance of this objectives-driven approach: "With these courses, we have focused on the importance of agencies understanding, articulating, and documenting their operational objectives, based on the goals placed before them by their agency leaders. With these objectives clearly understood and articulated, we show practitioners how to select strategies and tactics to help achieve those objectives."

In addition to defining objectives, practitioners must establish performance measures to help determine whether they are achieving those objectives. (In the previous GOST example, a performance measure could be the percentage of traffic arrivals on red, or the percentage of time that traffic is moving over a detector when the light is green.) Establishing performance measures also helps traffic signal managers more easily define the value their programs offer to the public, and the importance of resources needed to maintain good basic service.

The new courses show practitioners how to balance objectives with resources and capabilities, and how to optimize the use of limited resources. The latter involves evaluating operations by identifying performance measures and collecting operational performance information, and then relating the need for resources to meaningful and achievable operational objectives. It is also important to articulate agency objectives to the public and policymakers to let them know what resources are needed for—and which services might be eliminated or deferred if adequate resources are not available.

Participant feedback following the pilot sessions has been positive. Instructor Paul Olson, who also helped develop the courses, notes that most of the participants who attended pilot sessions were interested in applying the course's lessons to active projects that their agencies were pursuing. "There was a lot of interactivity and discussion in the working groups on those particular projects," Olson says.

Bala Akundi, principal transportation engineer for the Baltimore Metropolitan Council, along with other representatives on the regional traffic signal subcommittee of the Baltimore Regional Transportation Board, attended a session of the pilot for 133125 Traffic Signal Management: The Basic Service Approach. Akundi says the course's help in developing a signal management plan with specific goals, objectives, and strategies was particularly useful.

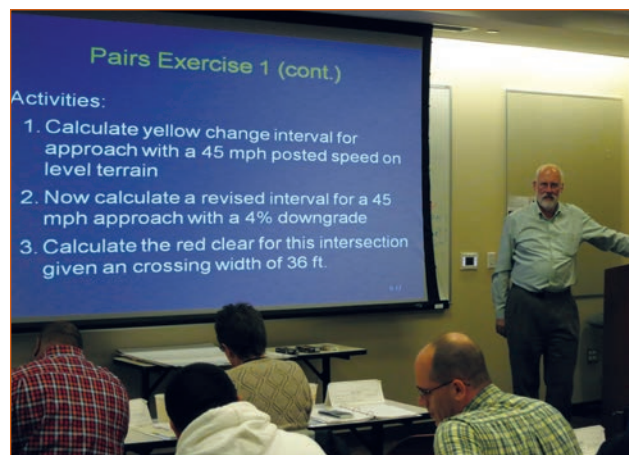
Dean Harris, a signal systems engineer who manages the Central Office System Timing Section of the North Carolina Department of Transportation, says the session of the pilot for 133122 Traffic Signal Timing Concepts he participated in provided an excellent overview of signal system timing concepts. Specifically, the course provided "a good background on the general aspects of signal timing, when to consider coordinating adjacent signals, and low-tech ways of developing coordination for traffic and transportation engineers who may not be exposed to signal and system timing development and implementation on a daily basis."

Harris adds, "It helped my staff and other traffic engineers understand that signal system timing can be more of an art than a science, and that field experience is very valuable in signal and system timing."

The four signal series courses complement one another, and the GOST model is common to all of them. Although the courses do not necessarily need to be taken in any particular order, and there are no mandatory prerequisites, participants should have a grasp of the concepts of 133121 Traffic Signal Design and Operations before taking 133122 Traffic Signal Timing Concepts in particular.

NHI will offer a certificate of accomplishment for participants who take all four courses. Course rollout is expected in the spring of 2014.

FOR MORE INFORMATION OR TO SCHEDULE A SESSION, VISIT WWW.NHI.FHWA.DOT.GOV.



Instructor Paul Olson presents a session of 133122 Traffic Signal Timing Concepts in Kansas City, MO.

Credit: Paul Olson, FHWA

NHI Wins National Awards From ACEC

Two bridge-related initiatives earn recognition for excellence in engineering

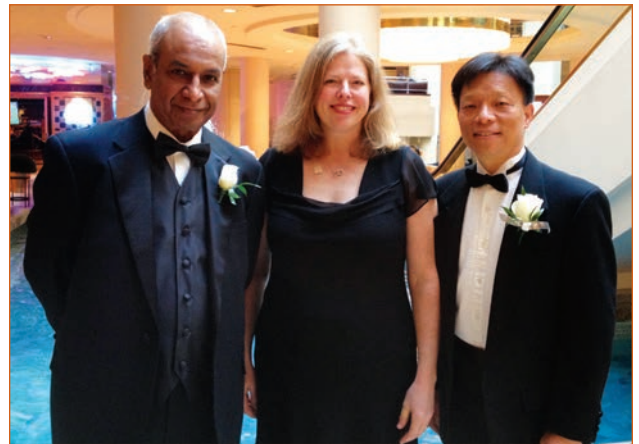
The American Council of Engineering Companies (ACEC) selected two National Highway Institute (NHI) projects for national recognition in its 2013 Engineering Excellence Awards. Dr. Firas I. Sheikh Ibrahim, team leader for infrastructure management and lead engineer in the Federal Highway Administration's (FHWA) Office of Infrastructure Research and Development, says, "The awards demonstrate the bridge community's recognition of the contributions and leadership of FHWA and NHI to the field of practice."

The initiatives each received a State ACEC award as well. Under contract with FHWA and NHI, Parsons Brinckerhoff developed *Design Guidelines for Arch and Cable-Stayed Signature Bridges* (FHWA-NHI-11-023), which earned a Diamond award in the category of Excellence in Studies, Research, and Consulting from ACEC New York. NHI's virtual bridge inspection training, developed with contracting firm Michael Baker Jr., Inc., received a Diamond Honor award from ACEC of Pennsylvania.

With *Design Guidelines for Arch and Cable-Stayed Bridges*, specialists at NHI and FHWA tackled the problem of a lack of existing guidance and specifications for these types of structures. These bridges offer an alternative to girder bridges supported by multiple piers, when site conditions limit the locations where piers can be placed to support longer spans.

"The guide promotes a uniform, safe, and efficient practice in designing these highly visible bridges that are often considered iconic and a source of pride for the communities they serve," says Ibrahim, who was the FHWA project manager.

In 2013, NHI developed course 130096 Cable-Stayed Bridge Seminar to help transportation professionals learn to apply the guidelines correctly. The course is a high-level introduction to cable-stayed signature bridges. It covers the cable-stayed portion of the material in the *Design Guidelines*, presenting an overview of the features of these structures, their construction and maintenance considerations, and analyses needed to design them, including special aerodynamics studies.



NHI's Louisa Ward (center) and Parsons Brinckerhoff's Vijay Chandra (left) and Joe Tse at the 2013 ACEC Engineering Excellence Awards Gala.

"The guidelines sum up the state of practice in designing arch, cable-stayed, and suspension bridges," says Joe Tse, the project manager for Parsons Brinckerhoff and a course instructor. "The course is designed to demystify the cable-stayed bridge and prepare participants to become design coordinators or members of a design or review team for these projects."

NHI developed the award-winning virtual bridge inspection technology as an alternative to the in-person exercises required for course 130055 Safety Inspection of In-Service Bridges. Each session requires two field trips, which sometimes pose logistical challenges. Hosts have to identify potential bridges and submit plans to the instructors in advance of the course, and then the instructors need to make a scouting trip to the

sites to ensure that each bridge has relevant defects for the participants to find and assess. Traffic control, transportation to the bridges, and safety equipment for course participants can add to the expense for hosts. Plus, most training occurs in the winter and spring, and weather conditions can adversely affect the field trips. But NHI's virtual bridge inspection technology makes all these travel logistics obsolete.

NHI now offers a 3-D, computer-based training alternative to traditional field inspection activities that features high-quality graphics, is easy to navigate, and is intuitive to use. The realism, including clouds, shadows, and airplanes overhead, enables participants to feel like they are physically present in the setting. The program also does not require connection to the Internet or a network, since training often is conducted at sites with no Internet access.

Participants appreciate the efficiency of the virtual inspection, and instructors like the consistency it brings to each session. The technology minimizes the cost, time, and variable effectiveness of the field trips. Participants can familiarize themselves with 30 bridge conditions and defects—more than could be found on any two bridges in the real world—in a realistic virtual setting.

“Both instructors and participants have welcomed the virtual ‘field trips,’” says Mary Rosick, an operations manager with Michael Baker Jr., Inc. “Ironically, maintenance and bridge improvements as a result of recent inspections have made it more difficult to find suitable real-world examples with instructive defects within a reasonable travel distance of the session location. The virtual technology has enabled us to present an entire range of potential defects at one time, right there in the classroom.”

The ACEC's Engineering Excellence Awards Gala was attended by more than 600 in Washington, DC, on April 23, 2013. Douglas Blades, a bridge engineer in FHWA's Office of Bridge Technology, and Louisa Ward, NHI training manager for structures programs, attended on behalf of FHWA and NHI, respectively. “The ACEC Engineering Excellence Awards are like the Academy Awards of the engineering industry,” Ward says. “They recognize preminent engineering achievements among projects from around the United States.”

FOR MORE INFORMATION OR TO ENROLL IN NHI TRAINING, VISIT WWW.NHI.FHWA.DOT.GOV. THE DESIGN GUIDELINES PUBLICATION IS AVAILABLE IN THE NHI BOOKSTORE AT WWW.NHI.FHWA.DOT.GOV/TRAINING/NHISTORE.ASPX.



NHI received these awards from ACEC for excellence in engineering in 2013.

Credit: ICF International

So, You Want to Host a Session of NHI Training?

Local coordinators are critical to bringing courses to a nationwide audience

Bringing NHI training to its intended audiences requires the help of a host—or local coordinator. The host is an individual who represents the organization requesting a training session, whether it's a State department of transportation (DOTs), consulting firm, or other local agency.

When NHI delivers training across the country, the host organizations provide the necessary facilities and equipment, and NHI provides the top-notch instructors and course materials. Because of this unique delivery model, host organizations play a significant role in coordinating delivery of NHI training.

During fiscal year 2013, NHI delivered more than 600 training sessions for public and private sector hosting organizations in 49 States, 2 territories, and the District of Columbia. Here is a sampling of what these local coordinators had to say about their experiences hosting NHI training:

- “NHI was very helpful and made our training a successful experience.”
- “Very satisfied with NHI’s assistance regarding all aspects of [the] course.”
- “Great coordination from NHI staff and instructors!”
- “NHI staff makes the process seamless.”

Any organization can host a session, including State and local DOTs, consultants, metropolitan planning organizations, professional associations, universities, and Federal Highway Administration division offices.

Hosting a course is an easy four-step process that starts with submitting a host request form. NHI then confirms the availability of an instructor. Once an instructor is scheduled for the requested date, you simply begin enrolling participants. Your instructor then shows up on the chosen date with the necessary course materials to deliver the training.

FOR MORE INFORMATION ON HOSTING A SESSION OF NHI TRAINING, VISIT WWW.NHI.FHWA.DOT.GOV.



NHI's headquarters facility is fully equipped for hosting training sessions. Spacious classrooms feature desktop computers and videoconferencing capabilities.

Credit: ICF International



During breaks, participants attending training at NHI's headquarters can relax in the lounge and check email at these computer stations.

Credit: ICF International

Host NHI Trainings in Your Area

Any organization can request to host an NHI training. Follow these four easy steps to host a training in your area.



1. Submit a Host Request Form

Select a course and complete the host request form on the NHI Web site.



2. Confirm Location, Date, and Time

NHI will verify that an instructor is available on the requested date, and then follow up with you to confirm the session date, location, and time.



3. Enroll Participants

Enroll participants from your organization in the course. NHI can assist with marketing any open seats to the public.



4. Host the Session

NHI sends a top-notch instructor and course materials to your facility on the designated date.

For more information, to search the course catalog, or to submit a host request, visit the NHI Web site at www.nhi.fhwa.dot.gov or scan this QR code with your smartphone.



Hydraulic Design of Safe Bridges

A new course emphasizes techniques to improve modeling and construction of water crossings

In 2011, more than 60 percent of fatalities related to flash and river floods in the United States were vehicle related. Public safety and property protection, therefore, are essential considerations in sound bridge design.

In 2010, Congress recommended that the Federal Highway Administration (FHWA) “use a more risk-based, data-driven approach to its bridge oversight” and directed the agency to identify new ways to enhance oversight and further improve safety. In response, in 2012, FHWA released *Hydraulic Design of Safe Bridges* (FHWA-HIF-12-018), an update to the technical manual the agency originally published in 1978. To support the rollout of the latest design manual, the National Highway Institute (NHI) launched a companion course, 135090 Hydraulic Design of Safe Bridges.

Finalized in 2013, the 3-day course is designed to provide participants with a comprehensive overview of hydraulic bridge design. This intensive training covers a variety of topics critical to safe bridge design, including a focus on optimizing cost-effectiveness and limiting the impacts on property and the environment. A customizable component enables instructors and hosts to incorporate regionally specific information that is directly transferable to real-world hydraulic design scenarios. A recent course participant said, “This course was a great comprehensive look at bridge hydraulic design. It reminded me of important design issues that I had not considered before.”



Flood waters are lapping at the bottoms of this bridge's pier caps. Instructors show this photo, along with floodplain maps and other hydraulic data, in one of the case studies for course 135090.

Credit: Ayers Associates

The data and inputs necessary for successful bridge design span several areas of expertise, including hydraulics, geotechnology, structures, environment, and roadway design. Each session of the course, therefore, provides an opportunity to bring to the table a diversity of transportation practitioners to learn, collaborate, and share their expertise.

The training also encourages the attendance of transportation professionals with a range of industry experience and career levels. With something for everyone from the veteran engineer to those new to the profession, the course provides the latest industry knowledge as well as a solid review of guiding principles in hydraulic design and bridge safety. For those that are new to transportation hydraulics, the course introduces a number of important design elements through scenarios that are applicable in the real world. “The course reinforced my skill sets and introduced me to topics I need to explore further,” commented one recent course participant.

Workshops during the course engage attendees in direct interaction with each other through discussions, case studies, and presentations. Instructors organize their breakout sessions to match up attendees with diverse backgrounds, considering both discipline and experience, to facilitate balanced discussions of the entire design process.

The training includes 12 standard lessons, and each host agency can pick one optional lesson to customize its session to the State's or region's particular needs. Although the mandatory lessons present common issues that will be relevant across the United States, the optional lessons provide an opportunity to address geographically distinct waterway features where the training is being delivered.

One optional lesson is intended for coastal States with bridges crossing tidal waterways. Another complements a standard lesson on unsteady flow modeling concepts and provides additional knowledge of the requirements for one-dimensional unsteady flow modeling. A third optional lesson complements a standard lesson on

scour and stream instability, enabling participants to identify situations requiring sediment transport computations as part of the bridge hydraulics analysis.

135090 Hydraulic Design of Safe Bridges was developed to provide a unique forum for discussing information critical to the design, evaluation, and analysis of bridges. The course will help transportation professionals learn how hydraulic design and safety

considerations should influence their design decisions, ultimately empowering them to build better bridges that improve safety for drivers and minimize property damage.

FOR THE FULL COURSE DESCRIPTION AND INFORMATION REGARDING THE RECOMMENDED PREREQUISITE, 135091 BASIC HYDRAULIC PRINCIPLES REVIEW (A NO-COST WEB-BASED TRAINING), VISIT WWW.NHI.FHWA.DOT.GOV.

Mapping Out Policy Changes

NHI's response to MAP-21 includes updates and new courses

On July 6, 2012, President Barack Obama signed the Moving Ahead for Progress in the 21st Century Act (MAP-21), which funds surface transportation programs at more than \$105 billion for fiscal years 2013 and 2014. The first long-term highway authorization since 2005, the legislation is a milestone for the surface transportation program. By transforming the program's policy and programmatic framework, MAP-21 creates a streamlined, performance-based approach for guiding growth and development of the U.S. road network. As the leading provider of transportation-related training, the National Highway Institute (NHI) is updating courses to reflect the new rules and policies in MAP-21.

"We are the ones delivering training for the industry," says NHI Training Director Rick Barnaby. "The policy changes are fed into the courses so that we are teaching with the most recent information available."

It isn't always a quick process. MAP-21 laid out a framework, but the program offices at the Federal Highway Administration (FHWA) and other U.S. Department of Transportation modal administrations need to develop those policies and put specific regulations in place. Until guidelines for compliance with the new law are in place, course content cannot be revised.

"We have a longer term strategy to update courses as the program changes are made," Barnaby says, "and we work closely with our program office counterparts to integrate those changes into our curricula."

The new legislation has a greater impact on some courses than others. However, courses dealing with infrastructure and State and metropolitan planning will require more extensive revamping to reflect criteria changes.

And, in some cases, entirely new classes will need to be developed. For example, new courses in the pipeline focus on transportation performance management, one of the foundations of MAP-21's policy framework.

"There are an evolving number of courses affected by MAP-21 as new rules are put in place," Barnaby says. "We are dependent on many moving parts." As FHWA continues to flesh out the details of implementing the new law, NHI, with its mission to improve the performance of the transportation industry through training, will ensure that its course materials reflect the latest policy updates and guidance to help State and local agencies comply.

FOR MORE INFORMATION ABOUT MAP-21, VISIT WWW.FHWA.DOT.GOV/MAP21. FOR MORE ABOUT NHI TRAINING, VISIT WWW.NHI.FHWA.DOT.GOV.

Announcing the 2012 Instructors of Excellence Awards

NHI honors the year's top-rated trainers

Training the Nation's transportation workforce requires knowledgeable, talented instructors with years of real-world experience. The National Highway Institute (NHI), with more than 300 trainers and associated administrative teams, provides the technical training needed to keep the industry's workforce sharp and empowered to oversee construction, maintenance, and operation of the surface transportation system. Whether employees of the Federal Highway Administration (FHWA) or a contracting firm, these instructors offer the superior subject matter expertise that is the hallmark of NHI training.

NHI's annual Instructors of Excellence Awards recognize those who have gone above and beyond in delivering high-quality training. Once again, NHI is pleased to honor the year's top performers.

To earn this distinction, instructors must consistently achieve rankings of 4.5 or above (on a 5-point scale) for all training course presentations, be approved by an NHI training program manager, attend and successfully complete the NHI Instructor Development Course, and achieve or be in the process of achieving NHI Instructor Certification.

Evaluations completed by training participants at the end of each course reveal just what makes 2012's Instructors of Excellence so successful. Here is what participants are saying about these NHI instructors:

- "Both instructors engaged the students in the material and encouraged participation. Their knowledge of the material was excellent."
- "The material was well organized and presented in a manner that was easy to follow and understand. Very applicable to field work."
- "Both were excellent presenters. Confident and very knowledgeable. I look forward to attending future courses with them."
- "Both instructors were effective at tying topics to their own experiences."

"We recognized an extraordinary group of individuals this year as Instructors of Excellence," says NHI Instructor Liaison Carolyn Eberhard. "Many of the Instructors recognized for fiscal year 2012 have received the award in the past. This continued excellence in training delivery raises the bar for all of our instructors. I hope to see even more instructors achieve the recognition of Instructors of Excellence in the coming years. Congratulations on a job well done."

FOR MORE INFORMATION, VISIT THE NHI WEB SITE AT WWW.NHI.FHWA.DOT.GOV, OR CONTACT CAROLYN EBERHARD AT (703) 235-0952 OR CAROLYN.EBERHARD@DOT.GOV.

2012 Instructors of Excellence

Instructor	Organization	
Stephen Seeds	Applied Pavement Technology, Inc.	
Dean Testa		
Kathryn Zimmerman		
James Bakken	Ayres Associates	
Paul Clopper		
William DeRosset		
James Gundry		
John Hunt		
Peter Lagassee		
Jerry Richardson		
James Schall		
Terence Browne		
Thomas Collins	Collins Engineers, Inc.	
Eric Thorkildsen	Dan Brown and Associates, PC	
Robert Thompson		
Harvey Knauer	Environmental Acoustics, Inc.	
Richard Albin	Federal Highway Administration	
Craig Allred		
Daniel Alzamora		
Mark Doctor		
Thomas Elliott		
Peter Eun		
Veronica Ghelardi		
Keith Harrison		
Sonny Jadun		
Frank Julian, Jr.		
Justice Maswoswe		
John McFadden		
George Merritt		
R. Keith Moore		
MaryAnn Naber		
Richard Unkefer		
Kenneth Wood		
Mark Gardner		Fugro Consultants, Inc.
Stu Stein		GKY & Associates, Inc.
Chris Huffman		Huffman Corridor Consulting, LLC
Gregg Hostetler	Infrastructure Engineers, Inc.	
Christopher Howard		
Aaron McHan		
David Reser		
Jeffery Rowe		
Andrew Young		
Dennis Jackson	KBA, Inc.	

Instructor	Organization
A. Tamim Atayee	Kilgore and Associates
Roger Kilgore	
Joseph Buckovetsky	McCormick Taylor
Diane Nulton	Metric Engineering
Darrell Burnett	
Dennis Baughman	Michael J. Baker, Jr., Inc.
Andrew Fickett	
Philip Fish	
William R. Gardner	
Guy Lang	
J. Eric Mann	
Thomas Ryan	
John Wackerly	O.R. Colan Associates
Lisa Barnes	
Robert Kleinburd	
Robert Merryman	
Carol Myers	
Theodore Pluta	Parsons Brinckerhoff
Steve Ruegg	
Nancy Skinner	Perform Tech, Inc.
Dennis Eckhart	
William Fitzgerald	
LeAngela Ingram	
Dane Ismart	
Gerald Kennedy	
Maurice Masliah	
Dee Spann	
Gary Thomas	
Betty Wilkens	
Robert Bachus	Ryan R. Berg & Associates, Inc.
Allen Cadden	
Barry Christopher	Sprinkle Consulting, Inc.
Theodore Petritsch	SRI Foundation
Terry Klein	
Lynne Sebastian	The Collin Group, Ltd.
James Collin	The Keystone Center
Jodi Erikson	
Mike Hughes	Trauner Consulting Services, Inc.
Bruce Falk	
J. Scott Lowe	University of Tennessee
Frank Brewer	Wilbur Smith Associates
Paula Dowell	

Instructor Profile: Kathryn Zimmerman

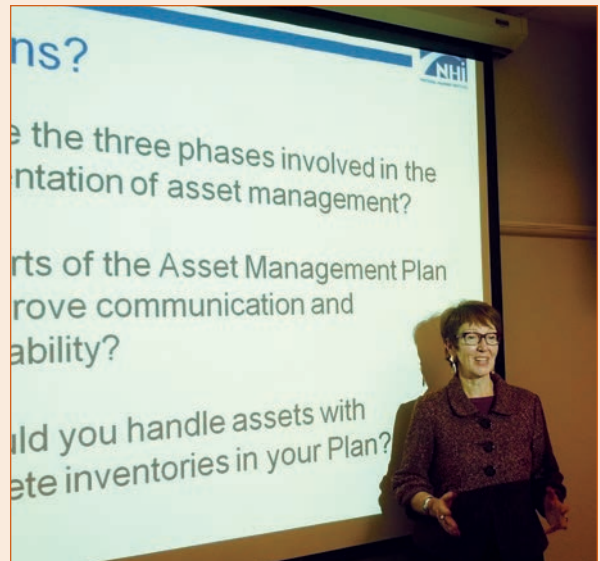
Kathryn (Katie) Zimmerman has no trouble staying busy these days. She teaches two courses on transportation asset management for NHI, 131106A Introduction to Transportation Asset Management with Workshop and 131106B Development of a Transportation Asset Management Plan, and has been supporting a record number of courses since passage of the Moving Ahead for Progress in the 21st Century Act (MAP-21) in July 2012. The Act funded surface transportation programs for fiscal years 2013 and 2014, and requires States to develop an asset management plan for their pavements and bridges that are part of the National Highway System. "By the end of 2013, NHI will have delivered the introductory course 16 times," says Zimmerman.

It's a good thing the work suits this Instructor of Excellence so well! Zimmerman, who's been teaching for NHI since the 1990s, enjoys public speaking and interacting with practitioners. "I really enjoy teaching and developing training materials for adult learners," she says. "It's really satisfying to see a participant grasp a new idea or concept. It's fabulous!"

In addition to instructor-led courses on transportation asset management, Zimmerman teaches the Web-conference course 131112 Principles and Practices for Enhanced Maintenance Management Systems and one module for the new course 134063 Maintenance Leadership Academy.

In her work as a consultant for Applied Pavement Technology, Inc., Zimmerman helps her clients use software tools and performance data to make better decisions. "A large part of my work involves helping clients change their existing business processes to better utilize the data and tools available to them," she says. "In some cases, this involves developing guidelines or roadmaps, and in other cases it involves facilitation and training." Her professional experience translates well in the classroom, where she's able to share practical, real-world examples related to each course's subject matter.

Zimmerman's experience teaching over the years has enabled her to witness firsthand how the training industry is changing. She's found that travel restrictions and work demands have made it more difficult for people to get together for instructor-led training, making it necessary to rely more on



Katie Zimmerman, a 2012 Instructor of Excellence, is presenting a course on transportation asset management.

Credit: Katie Zimmerman

online training. Although online training offers many advantages (cost savings and convenience, for example), Zimmerman prefers working together with practitioners in person, where it's easier to engage participants and get them involved in the lessons.

Advances in mobile technology have led to some frustration, as well: "It's become too easy for participants to check their emails using their smartphones instead of participating in training!" But she takes everything in stride, and always has fun. "I think the key to being a good instructor is to involve the participants in the learning. When you do that, they get a feel for how the techniques they're learning can be applied to their jobs. For the most part, participants seem really appreciative of the information they're provided, which makes each course a great experience."

In her spare time Zimmerman pursues many interests, including traveling, reading, and various creative projects. Lately she's enjoyed working on decorating projects at her house.

NHI congratulates Katie Zimmerman for her years of service and for being honored with a 2012 Instructor of Excellence Award.

Instructor Profile: Gregg Hostetler

When Gregg Hostetler began instructing courses for NHI a little more than 5 years ago, he was surprised to discover how much he liked the work. “Truthfully, for most of my life I have held firmly to the belief that teaching is not for me,” he says. He agreed to give it a try, though, when his company needed additional instructors and his training and expertise were a good fit. It has worked out well for everyone: Hostetler came to find that he loves teaching, and he’s twice been named an NHI Instructor of Excellence.

Hostetler teaches about 12 sessions a year, drawing on his experience as a professional engineer specializing in bridge management services. He has invested much of his time in safety inspection, making him a natural fit as an instructor of the NHI course 130053 Bridge Inspection Refresher Training. He also teaches a bridge preservation module of course 134063 Maintenance Leadership Academy. With his boots-on-the-ground experience as an inspection team leader and program manager, Hostetler feels well equipped to instruct and lead discussions on a wide range of topics.

While he shares his expertise in the classroom, participants share their knowledge in return. Hostetler appreciates the opportunities teaching offers to interact with his peers in other parts of the country, exchanging information, ideas, and knowledge. But the work isn’t easy: “Instructing requires a significant investment of time and energy,” Hostetler says. “One of the biggest challenges for me is keeping up with my other project-related and administrative responsibilities in the evenings and early mornings, while instructing

during the day.” Despite these challenges, Hostetler says, instructing fits nicely with his overall career objectives. “I really enjoy public speaking in any format, and teaching is no exception. As an NHI instructor I have a chance to share with and gain knowledge from my peers, allowing me to give back to the profession in a meaningful way.”

He encourages other instructors to have fun and not take themselves too seriously. “Never fake your way through answering a question,” he says, and build trust with participants. He identifies with a quote he once heard, “People must know that you care before they will care what you know.” To foster trust, Hostetler tells participants in his classes early on that he’s there not to teach them how to do their jobs, but to facilitate a discussion among peers and tap into the collective experience and knowledge of the group. He’s found this is a good way to break the ice and let participants know that their input is valuable.

In his spare time, Hostetler focuses on his faith and his family, with whom he likes to travel. In 2010 he and his wife, Julie, and their three kids, Alyssa, Aubrey, and Cameron, spent 9 weeks exploring the country, including 6 weeks touring in an RV. They traveled through 17 States, visiting numerous cities, national and State parks, historic landmarks, amusement parks, and countless other places of interest. Hostetler even found time to teach an NHI class in Austin, TX, along the way.

NHI congratulates Gregg Hostetler for his years of service and for being honored with a 2012 Instructor of Excellence Award.



Gregg Hostetler (second from left), a 2012 Instructor of Excellence, is shown with his wife, Julie, and their three kids, Alyssa, Aubrey, and Cameron horseback riding near Park City, UT.

Credit: Gregg Hostetler

More Than Facts

NHI training helps build relationships that matter

Delivered in classrooms and online, covering subjects across the full lifecycle of the highway transportation system, the National Highway Institute's (NHI) courses bring industry experts and practitioners together to transfer knowledge and gain from each other's experiences.

But these courses offer so much more than just facts. They offer opportunities to learn from other practitioners and build connections that matter. It was these opportunities that David Butterbaugh, director of survey services at P. Joseph Lehman, Inc., Consulting Engineers, appreciated most when he attended a session of NHI's course 141050 Introduction to Federal-Aid Right of Way Requirements for Local Public Agencies.

Butterbaugh enrolled to gain a better understanding of the right of way (ROW) acquisition process and his role as a land surveyor. His team works on all types of surveys, ranging from small boundary retracements to extensive road and bridge projects.

The course provides participants with a working knowledge of requirements and procedures for acquiring property for federally assisted transportation projects. In some cases, government programs designed to benefit the public result in acquisition of private property or displacement of people from their residences, businesses, or farms. Acquisitions of this kind occur under the power of eminent domain. Provisions under the fifth amendment of the U.S. Constitution and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 protect property owners by requiring just compensation and uniform and equitable treatment in the event of an acquisition.

For Butterbaugh and his team, preparing ROW acquisition plans involves researching deeds, property ownership, and rights of way. It also entails ensuring that the engineers and acquisition teams have the information necessary to properly and efficiently meet the needs of the project and each property owner involved.

Communicating effectively with property owners is an important part of the job, Butterbaugh says. "Conveying the importance of our transportation needs to the people who live in or near project areas is crucial to the success of every project. We need to do all we can to protect landowners' rights and ensure that the process is efficient and cost effective. If we can successfully market the importance of safe travel and efficient transportation, we can continue to improve the standard of living in our communities."



"I was impressed by the number of opportunities we had to learn from the experiences of others taking the course."

– David Butterbaugh, P. Joseph Lehman, Inc., Consulting Engineers

Credit: Provine Studios

Butterbaugh says NHI's course not only helped build his knowledge of Federal requirements and procedures, but it also nurtured relationships that will help improve his ability to communicate with stakeholders. "Anytime we can improve the lines of communication and get the right people involved in the process," he says, "everybody wins."

Interacting with the instructors and other participants gave Butterbaugh an opportunity to learn from their experiences and to consider his work from different perspectives. Instructors convey the course content along with their own knowledge and experiences, and they keep the class involved in the discussions.

Butterbaugh works hard to ensure that his survey department serves its clients well. This means staying up to date on changing laws and rules concerning private and public projects, as well as building great leadership skills. "Goals cannot be reached alone," he says. "Taking advantage of quality continuing education opportunities, such as those offered by NHI, is an essential part of growth and reaching goals."

This commitment to growth and professional excellence drives other aspects of his life, as well. Butterbaugh has just begun serving his second 4-year term on the city council in Altoona, PA, and he has been part of the local ministry for more than 20 years. "Helping people and improving infrastructure makes our daily lives better," he says, "and I want to continue to have a bigger role in that process."

HOW HAVE NHI COURSES HELPED YOU ADVANCE YOUR SKILLS AND CAREER? SHARE YOUR STORY BY CONTACTING NHI MARKETING AT NHIMARKETING@DOT.GOV.

New and Updated Courses Launched in 2013

The National Highway Institute (NHI) is continuously developing and delivering new and updated courses to ensure the highest quality training and help improve the transportation industry. Listed below are just a few examples of the courses NHI launched or updated in 2013.

Instructor-Led Training	
Course Title	Course Number
Introduction to Transportation Asset Management	131106
Introduction to Transportation Asset Management with Workshop	131106A
Development of a Transportation Asset Management Plan	131106B
Risk Management	134065
Hydraulic Design of Safe Bridges	135090
Freight and Land Use Workshop	139008
Engaging the Private Sector in Freight Planning	139009

Web-Based Training	
Course Title	Course Number
Introduction to the Development of a Transportation Asset Management Plan	131106C
Drilled Shaft Inspector Tutorial	132070B
TCCC Earthwork Series: Excavation	132092
TCCC Earthwork Series: Fill Placement	132093
Real Estate Acquisition Under the Uniform Act: An Overview	141045
Local Public Agency Real Estate Acquisition	141047
Outdoor Advertising Control: Bonus States	141048
Outdoor Advertising Control: Non-Bonus States	141049
Introduction to NEPA and Transportation Decisionmaking	142052



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