The Complete NHI Catalog
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Sorted by Course Number

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ABOUT NHI

Who we are

The National Highway Institute (NHI) provides technical training to the highway transportation workforce to build skills and enhance job performance to improve the conditions and safety of our nations' roads, highways, and bridges.

As part of Federal Highway Administration's (FHWA) Office of Technical Services (OTS), NHI courses complement the targeted training and technical assistance of FHWA program offices, Resource Center, and Local and Tribal Technical Assistance Programs (LTAP/TTAP).

Our Training

NHI courses are instrumental in developing core competencies and new skills, as well as learning about leading technologies and current policies. Our instructors strive to ensure that participants leave training not only with additional knowledge, but also the ability to apply that knowledge directly to their work. NHI is an accredited training provider by the International Association of Continuing Education and Training (IACET), allowing participants to earn Continuing Education Units (CEUs) for completed coursework. NHI also is an approved provider of the American Institute of Certified Planners (AICP) certification maintenance (CM) credits.

NHI offers three types of training.

Instructor-led Training (ILT): These courses are held in-person and led by an instructor when an organization is available to host the session. Any organization may host a session by submitting a Host Request form on the NHI Web site.

Web-conference Training (WCT): These are live, online training sessions that take place at a set time. Web-conference Training sessions also require a host.

Web-based Training (WBT): These online courses are available 24/7 for six months after purchase by the registrant. Participants can control the pace at which they complete the course and may return to it as many times as they wish within the six-month access period.

LEARN MORE

For more information or to subscribe to our mailing list, please visit the NHI Web site at www.nhi.fhwa.dot.gov.

Customers with additional questions may also contact NHI Customer Service at NHICustomerService@dot.gov, or by phone during regular business hours, 7:30AM – 4:30PM Eastern Time, at (877) 558-6873.

NHI MAKES HOSTING EASY

HOSTING A COURSE

NHI partners with host organizations across the country to deliver training where it is needed most. NHI provides top-notch instructors and course materials, while hosting organizations provide the facilities and equipment.

WHO CAN HOST

Any United States-based organization can host Instructor-led Trainings (ILT), which are taught in classrooms, and/or Web-conference Trainings (WCT), which are taught online.

Our instructors may tailor individual sessions to meet the unique needs and array of experiences of the hosting organization, including covering local issues and topics of special interest. Instructors also may modify case studies and exercises based on their subject matter expertise to make them pertinent to the participant's experiences.

REQUESTING TO HOST

To host a course, domestic customers can go to the NHI Web site and complete the appropriate Host Request form (ILT or WCT). The process takes just a few minutes. First-time users will need to create a user profile and check the **INSTRUCTOR/ HOST BOX**.

If you run into any difficulty when you are logging in, filling out a Host Request form, or navigating the NHI Web site, please contact NHI Customer Service for help at (877) 558-6873 during normal business hours, 7:30am – 4:30pm Eastern time. Customers may also email NHI Customer Service at nhicustomerservice@dot.gov.

To assist the host in preparation for and coordination of the session, a hosting checklist is provided on the NHI Web site. This checklist includes important information about hosting your NHI training session, as well as valuable "best-practice" information based on NHI's 40 years of experience with our hosting partners.

CONFIRMING SESSION DATES/LOCATIONS/TIMES

After the Host Request form is received, an Instructor or a member of the NHI team will contact the host to discuss scheduling options. While preferred dates may be specified on the Host Request form, sessions are not official until the hosting organization receives formal confirmation from NHI. Once official, NHI will list the session publicly on its Web site.

Enrollment Options

The host's contact information is listed with the scheduled session. Interested participants from outside the host's organization may contact the host to enroll. Alternatively, the host may ask NHI to open public seats, which allow outside participants to enroll through NHI.

The NHI Scheduler will email all participant information to the host and instructor prior to the session start date.

HOSTING EXPENSES

To host a session, hosts are charged the per-participant price multiplied by the class-size minimum, or the host is charged per participant if the session class size exceeds the minimum. Pricing cannot be reduced if the minimum class size is not met. Therefore, if registration for a course is lower than anticipated, it is important for the host to contact NHI prior to the cancellation period (15 business days) to discuss a remedy. Please note that with sufficient notice, NHI may be able to offer marketing support for the session.

Three seats in every session are reserved for Federal Highway Administration (FHWA) employees until 15 days before the course begins. FHWA participants do not count toward the participant minimum, but should be considered in the course maximum. Hosts are not charged for FHWA personnel or participants who have paid via the NHI Web site. Hosts are not charged for any instructor expenses.

Course hosts may charge participants an additional fee to recover all or part of costs associated with hosting the course. However, we ask hosts to contact the NHI Scheduler at (703) 235-0534 with this information prior to the confirmation of the session.

Course fees, which include the cost of materials for each participant, are listed with every course description.

RECEIVING COURSE MATERIALS

NHI will ship course material to the host approximately three weeks prior to the session start date.

PROVIDING PAYMENT

Payment may be made to NHI by check, money order, or credit card. Checks and money orders must be made payable to the National Highway Institute. To make credit card payments, contact NHI Customer Service at NHICustomerService@dot.gov or 1-877-558-6873. You are not charged for any FHWA participants or for participants who paid via the NHI Web site.

CANCELLATION POLICY/REFUNDS

To avoid incurring the $1,500 cancellation fee, cancellation must be requested no later than 15 business days prior to the course start date. If a course must be cancelled, the host is required to contact NHI Customer Service at 1-877-558-6873 during normal business hours, 7:30AM – 4:30PM Eastern Time, or email NHICustomerService@dot.gov. If the course materials have been sent, the host must contact NHI Customer Service.

In the event of cancellation, it is the host's responsibility to contact all participants (including those registered for public seats). There must be verification that the registrants received the cancellation notice. Notice to out-of-state participants is especially important so that they may alter or cancel any travel arrangements.

In the case of an emergency or weather-related closing, the cancellation fee will not apply. NHI follows the host office's policy regarding weather and emergency closings.

RECEIVING COURSE CREDIT

Many of the courses offered at NHI can be used toward obtaining Continuing Education Units (CEUs), Certification Maintenance (CM) credits, and Professional Development Hours (PDHs). Please select the headers below for more information about receiving credits.

Continuing Education Units

NHI has been recognized as an Accredited Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, NHI has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of this Accredited Provider status, NHI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard. IACET is an independent, non-profit association whose goal is to ensure quality continuing education for professionals. For an organization to become an IACET approved CEU Accredited Provider, it must demonstrate that it designs, develops, and delivers training in accordance with proven adult learning theory and recognizes instructional systems design practices. Each course description in the NHI catalog includes the number of CEUs offered upon successful completion of the course.

One CEU is offered for every ten contact hours of training led by a qualified instructor and qualified instruction. In order to be offered CEUs, a course participant must attend 100% of the course and must pass the course examination with a score of 70% or greater.

CEUs are offered to each course participant who fulfills the above stated requirement. NHI will maintain individual training records for seven years for the CEUs offered. Individuals and their employers are also encouraged to maintain their own training records including course name, class date(s), instructor name, class roster, and CEUs offered.

For proof of your CEU record, please contact NHI at NHICustomerService@dot.gov or 1-877-558-6873 and request your official transcript. Your official transcript displays a record of your NHI course history as well as the CEUs offered for each CEU-accredited course. Please allow at least one month after the completion of your course before requesting your official transcript.

Certification Maintenance Credits

NHI providers Certification Maintenance (CM) credits to assist professional planners become and maintain their membership as certified planners through the American Planning Association (APA).

American Institute of Certified Planners (AICP) is APA's professional institute. Certified Planners have demonstrated a commitment to high standards of professional practice and a mastery of theories and tools of planning.

NHI recognizes that the certification carries a high mark of distinction and requires planners to meet rigorous standards and maintain their expertise through continuing education. Planners must earn 32 CM continuing education credits every two years in order to stay up to date on the latest trends, technologies, and best practices. NHI courses will now help them achieve that requirement.

CM credits are measured in contact hours, so that 30 minutes of instructional time equals 30 minutes of CM credit (30 minutes contact = 0.5 CM credits; 1.0 contact hours = 1.0 CM credits). An event must be at least 30 minutes in duration to be eligible for CM credit.

Contact NHI Customer Service at NHICustomerService@dot.gov or 877-558-6873 to ask for an official transcript to be used by AICP to calculate CM credits. Please allow at least one month after the completion of your course before requesting your official transcript.

Professional Development Hours (PDHs)

NHI does not officially offer PDHs; however, it is possible to receive PDHs for your completed NHI training courses. To receive PDHs, please submit your course certificate (which indicates the contact hours assigned to the course) and/or your official transcript (which indicates the CEUs granted for a course) to the respective licensing agency. Upon consent, the licensing agency may convert your hours and/or CEUs into PDHs and proceed with the PDH awarding process.

PDHs are offered on a ratio of one contact hour to one PDH. When converting from CEU to PDH, please note that one CEU is equal to ten PDHs (or one PDH is equal to one-tenth of a CEU).

To request your official transcript with proof of CEU record and/or contact hours, please contact NHI at NHICustomerService@dot.gov or 1-877-558-6873. Your official transcript displays a record of your NHI course history as well as

the CEUs offered for each CEU-accredited course. Please allow at least one month after the completion of your course before requesting your official transcript.

NHI CERTIFICATES OF ACCOMPLISHMENT

NHI's Certificate of Accomplishment program was designed to recognize individuals who have successfully enhanced their depth and breadth of knowledge and expertise in specific disciplines or topic areas. Students are eligible for the Certificate of Accomplishment when they have completed and passed a suite of related NHI course offerings.

Certificates of Accomplishment are available in the following disciplines, with more to come over the next year:

- Work Zone Safety
- Relocation Under The Uniform Act
- Incident Management
- Freight Management and Operations

For more information about the Certificates of Accomplishment, please visit the NHI Web site at www.nhi.fhwa.dot.gov/training/cert_programs.aspx.

FREE WEB-CONFERENCE TRAINING

NHI is excited to offer FREE Web-conference training. These trainings save both time and money, while covering the latest topics and techniques within the transportation industry. All transportation professionals in the public and private sectors are invited to participate in these trainings.

Real Solutions Seminar Series

This series of free monthly Webinars features a guest speaker who presents problems or issues faced in the field and what steps were taken to solve them. In some sessions, additional panelists join the guest speaker to further discuss that seminar's topic.

Some past topics include:

- Best Practices for Integrating Climate Change Considerations in the Transportation Planning Process
- eLearning and Distance Learning within the Transportation Industry
- Smart Corridors and Complete Streets: A Look at Some Situations and Strategies
- Solving Old Traffic Noise Ills: Tennessee Type II Noise Abatement Program

Visit the *Real Solutions Seminar Series* section of the Web site to register for the next *Real Solutions* Web conference or to listen to past Web conferences.

Learn More

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

Want to be notified when a free Web conference is scheduled? Email nhimarketing@dot.gov.

Course Number

FHWA-NHI-130053

Course Title

Bridge Inspection Refresher Training

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testing course description change The major goals of this course are to refresh the skills of practicing bridge inspectors in fundamental visual inspection techniques; review the background knowledge necessary to understand how bridges function; communicate issues of national significance relative to the nations' bridge infrastructures; re-establish proper condition and appraisal rating practices; and review the professional obligations of bridge inspectors.

This course is based on the "Bridge Inspector's Reference Manual," 2002 (updated in 2006) with reference to the AASHTO Manual as defined by the National Bridge Inspection Standards regulation.

Core course topics include inspector qualifications and duties, bridge mechanics, record keeping and documentation, fatigue and fracture in steel bridges, traffic safety features, safety, National Bridge Inventory (NBI) component ratings, superstructure type identification, inspection techniques and case studies for decks, superstructures, bearings, substructures, channels and culverts, and a mock bridge inspection classroom exercise.

Optional topics include fiber reinforced polymer, inspection of truss gusset plates, inspection of adjacent box beams, bridge site signing, structure inventory and appraisal overview, common NBI miscodings, element level ratings and timber superstructures.

For this version of the course (3-day), the host agency will need to select four (4) desired optional topics. Course instructors will contact the host prior to the course to complete a pre-course questionnaire, determine optional topics to be taught, and discuss the course schedule.

Outcomes

Upon completion of the course, participants will be able to:

- Describe the current overall condition and condition trends for the nation's bridges
- Identify the recent National Bridge Inspection Standards (NBIS) revisions
- Accurately code National Bridge Inventory (NBI) items
- Identify and document inspection observations using standard methods
- Evaluate defects based on the 2008 AASHTO Manual for Bridge Evaluation
- Code NBI components using the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges
- Determine if overall structure/structural member is fracture critical prone
- Accurately inspect and evaluate a bridge's four traffic safety features
- List the keys to ensuring a safe work environment
- Explain bridge responses and bridge mechanic principles

Target Audience

The target audience for this course includes Federal, State, and local agencies and private sector personnel employed in inspecting bridges or managing bridge inspection programs. The course is built to accommodate those that have completed comprehensive bridge inspection training (130055 or similar) or met the criteria for a bridge inspector under the State's procedures or requirements.

Training Level: Intermediate

Fee: 2016: $2 Per Person; 2017: N/A

Length: 1 DAYS (CEU: 4 UNITS)

Class Size: MINIMUM: 7; MAXIMUM: 14

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-130053

Course Title

Bridge Inspection Refresher Training

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Target Audience

The target audience for this course includes Federal, State, and local agencies and private sector personnel employed in inspecting bridges or managing bridge inspection programs. The course is built to accommodate those that have completed comprehensive bridge inspection training (130055 or similar) or met the criteria for a bridge inspector under the State's procedures or requirements.

Training Level: Intermediate

Fee: 2016: $2 Per Person; 2017: N/A

Length: 1 DAYS (CEU: 4 UNITS)

Class Size: MINIMUM: 7; MAXIMUM: 14

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-130055

Updated Training

Course Title

Safety Inspection of In-Service Bridges

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Testt---NOTE: This course was updated in 2012 and now contains mandatory prerequisite requirements for participants and host requirements in preparation for the field exercises. See details below.

This course is based on the 2012 FHWA "Bridge Inspector's Reference Manual (BIRM)" and provides training on the safety inspection of in-service highway bridges. The course includes two virtual bridge inspection exercises* facilitated using NHI's virtual bridge inspection computer-based training (CBT) technology; instruction on critical findings, their identification and response; curriculum on the American Association of State Highway and Transportation Officials element level inspection approach; and activities that maximize participant engagement throughout the course. This course does not go into depth on fracture critical, underwater, or complex bridge inspections. Other specialty courses, 130078 Fracture Critical Inspection Techniques for Steel Bridges and 130091 Underwater Bridge Inspection, cover these topics.

Participants will be asked to complete mid-term and end-of-course assessments each with a cumulative score of 70% or better to successfully complete the course and receive a certificate of completion. The sponsoring agency/State may monitor the examinations and retain the scores to qualify or certify bridge inspectors. Satisfactory completion of this course will fulfill the comprehensive bridge inspection training requirements of the National Bridge Inspection Standards. Note: Many States have additional requirements to become a bridge inspection team leader.

Participant Prerequisite Requirement: ALL participants must have met one of the three prerequisite requirements for participation in this course** and bring a course completion certificate bearing their name to the first day of the class. The passing score for all prerequisites is 70% or better. Individuals have the option to complete one of the following three prerequisite requirements: 1) 130054 Engineering Concepts for Bridge Inspectors, a 5-day Instructor-led course; 2) 130101 Introduction to Safety Inspection of In-Service Bridges, a 14-hour Web-based training and assessment; and/or 3) 130101a Prerequisite Assessment for Safety Inspection of In-Service Bridges, a Web-based assessment.

Host Requirements: Hosts must provide a training room large enough to accommodate at least 30 participants as well as the 15 NHI virtual bridge laptops that will be used for the virtual bridge exercises. Additionally, the host must ensure that ALL students have successfully met the prerequisite requirement** and have a valid course completion certificate for one of the three prerequisite options.

*Alternatively, the State can exercise the option to request to have a physical field trip in lieu of one or both virtual bridge exercises. If this option is exercised, the host/sponsoring agency is required to provide transportation for course participants to attend the field trip portion of this course at the host/sponsoring agency's own expense. The host must coordinate with the instructor to identify bridges for inspection during the field trip exercises, in advance of the course delivery.

**Please note: prerequisite must be completed within two years of the course start date. Additionally, it is recommended that prior to attending this course participants spend some time in the field, at bridge inspection sites, but not required.

Outcomes

Upon completion of the course, participants will be able to:

- Discuss the duties and responsibilities of a bridge inspector and define inspection concepts including personal and public safety issues associated with bridge inspections
- List the inspection equipment needs for various types of bridges and site conditions
- Describe, identify, evaluate, and document the various components and deficiencies that can exist on bridge components and elements
- List design characteristics and describe inspection methods and locations for common concrete, steel, and timber structures
- Identify and evaluate the various culvert and waterway deficiencies
- Discuss the need to inspect underwater portions of bridges
- Describe nondestructive evaluation methods for basic bridge materials
- Demonstrate how to field inspect and evaluate common concrete, steel, and timber bridges

Target Audience

Federal, State, and local highway agency employees; and consultants involved in inspecting bridges or in bridge inspection management and leadership positions. A background in bridge engineering is strongly recommended. All participants must successfully complete (score 70% or better) one of the following three prerequisite requirements within two years prior to attending this training: 1)130054 Engineering Concepts for Bridge Inspectors ; 2) 130101 Introduction to Safety Inspection of In-Service Bridges ; or 3) 130101a Prerequisite Assessment for Safety Inspection of In-Service Bridges .

Training Level: Intermediate

Fee: 2016: $1 Per Course; 2017: N/A

Length: 1 DAYS (CEU: 1 UNITS)

Class Size: MINIMUM: 26; MAXIMUM: 33

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-130087

Course Title

Inspection and Maintenance of Ancillary Highway Structures

This course provides training in the inspection and maintenance of ancillary structures, such as structural supports for highway signs, luminaries, and traffic signals. Its goal is to provide agencies with information to aid in establishing and conducting an inspection program in accordance with the FHWA "Guidelines for the Installation, Inspection, Maintenance, and Repair of Structural Supports for Highway Signs, Luminaries, and Traffic Signals."

Outcomes

Upon completion of the course, participants will be able to:

- List and identify common visible weld defects
- Identify appropriate nondestructive testing techniques
- Identify factors that lead to corrosion and explain mitigation methods used in ancillary structures
- Define the severity of observed defects in accordance with the FHWA guidelines
- Identify defects in base/anchor rod installations
- List key issues in construction inspection of ancillary structures
- Identify repair techniques and discuss their use

Target Audience

Structural engineers, material engineers, traffic engineers, field inspectors, construction supervisors, maintenance personnel, and other technical personnel involved in the installation, inspection, maintenance, and repair of ancillary highway structures. This course is not a design course; however, the information should be helpful to those working in design and specification of ancillary structures.

Training Level: Basic

Fee: 2016: $650 Per Person; 2017: N/A

Length: 2 DAYS (CEU: 1.2 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-130092A

Course Title

Load and Resistance Factor Rating for Highway Bridges

This course provides novice and experienced bridge engineers with the fundamental knowledge necessary to apply the most recent AASHTO Load and Resistance Factor Rating (LRFR) Specifications to bridge load rating.

Outcomes

Upon completion of the course, participants will be able to:

- Describe the purpose of performing a load rating
- Identify the benefits of the LRFR methodology
- Demonstrate the LRFR process and the general load rating equations
- Explain legal loads and their use in load rating
- Determine distribution factors for load rating
- State the LRFR limit states
- Select evaluation factors for rating
- Describe the process for load posting and importance of load posting
- Describe the procedure for checking overload permits
- Demonstrate the application of LRFR requirements by completing load rating exercises

Target Audience

Bridge engineers with 0-20 years of experience.

Training Level: Basic

Fee: 2016: $875 Per Person; 2017: N/A

Length: 2 DAYS (CEU: 1.2 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 40

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-130101

WBT

Course Title

Introduction to Safety Inspection of In-Service Bridges - WEB-BASED

This training is a prerequisite of another NHI training and is offered at no cost.

Introduction to Safety Inspection of In-Service Bridges is designed to prepare participants with the necessary fundamentals required for a more intensive course in bridge inspection. This WBT introduces the elementary concepts of bridge inspection, bridge functions, and bridge inspection terminology. Participants who complete this WBT will be prepared for more intensive courses in bridge inspection, which focus on documentation, rating, assessment, and field inspection.

Introduction to Safety Inspection of In-Service Bridges covers bridge components and elements, bridge mechanics, design features, bridge materials, decks, superstructures, bearings, substructures, channels, inspection preparations, inspection reporting activities, and work area safety.

This course prepares participants for the 2-week, intensive Instructor-led course in bridge inspection, 130055 Safety Inspection of In-Service Bridges.

Upon successful completion of 130101, participants will have met the prerequisite requirement for participation in the 130055 course (for sessions beginning March 5, 2012 or later).* If participants would like to enroll in the 130055 course, they will be required to demonstrate their certificate of completion for 130101 as proof that the prerequisite requirement has been fulfilled.

Participation in 130101 is not the only option to fulfill the prerequisite requirement for 130055.* Individuals have the option to 1) successfully complete NHI-130054 Engineering Concepts for Bridge Inspectors (Instructor-led course) or 2) for those with engineering backgrounds or prior knowledge and experience in the field of bridge inspection may "test-out" through a Web-based assessment (130101A Introduction to Safety Inspection of In-Service Bridges).

*Please note: Upon successful completion of this prerequisite course, you will be eligible to take the 130055 training course for up to 2 years.

Outcomes

Upon completion of the course, participants will be able to:

- Describe the basis for bridge inspection
- Identify the three major bridge components and various culvert types
- Identify the various elements that comprise bridge components
- Describe standard highway bridge loadings
- Describe the basic concepts of elasticity of materials, response of materials to an applied force, response of structural members to a variety of loadings, the relationship between stresses and strains, and load rating
- Describe span arrangements, deck-superstructure interaction, and redundancy
- Describe the basic properties, strengths and weaknesses of steel, concrete, and timber
- Describe the types, signs and causes of structural distress in steel, concrete, and timber
- Describe the general purpose of decks, superstructures, and bearings
- Describe the general purpose and function of substructure units
- Describe waterway features and the effect of scour
- Describe the requirements for preparing for an inspection
- Describe the basic bridge inspection reporting requirements
- Name protective measurements to mitigate the hazards involved when working in the field performing bridge inspection

Target Audience

This training has been developed for Federal, State, and local highway agency employees and consultants involved in inspecting bridges or in charge of a bridge inspection unit. A background in bridge engineering is strongly recommended.

Training Level: Basic

Fee: 2016: $0 Per Person; 2017: N/A

Length: 14 HOURS (CEU: 2 UNITS)

Class Size: MINIMUM: 0; MAXIMUM: 0

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-131014

Course Title

Highway Pavements

The course presented at Michigan State University provides intensive study in highway pavements and microcomputer applications. The six major subject areas to be addressed are: 1. Pavement Design. 2. Pavement Monitoring & Evaluation 3. Pavement Rehabilitation & Maintenance 4. Quality Assurance 5. Pavement Research 6. Pavement Management TEST2

Outcomes

Upon completion of the course, participants will be able to:

- Testing---Upon completion of the course, the participants should be able to: 1. Identify and describe empirical and mechanistic/empirical design concepts including those found in the AASHTO Guide for Design of Pavement Structures and elastic layer design systems. 2. Describe how planning, design, budgeting, programming, construction, maintenance, rehabilitation, monitoring, evaluation, and research interact to create a Pavement Management System (PMS). 3. Differentiate between network and project level pavement management considerations and develop the elements of a well designed feedback system for evaluating performance as it relates to design and construction. 4. Emphasize the economic impact of good design on life cycle costs and how these costs are affected by construction and maintenance practices. 5. Discuss several of the more prominent rehabilitation techniques available to highway agencies. Develop an understanding of the data, assumptions, and design methods used as input. Explain how input may range widely in complexity, scope, and cost. 6. Understand the purpose of a network level PMS. Define the basic elements of a PMS which are the inventory, pavement data and traffic data collection process, integrated data base, data analysis capabilities, outputs, and products. Develop and implement a PMS through the state development process. Explain the engineering, management, and cost benefits of a PMS. 7. Understand the roles and applications of microcomputer in the various activities required for designing, evaluating, rehabilitating, and managing the pavement network.test2

Target Audience

Testing---This course will provide training for engineers, planners, and administrators at the Federal, State, and local agencies who by virtue of education and/or experience have a basic knowledge of pavementprinciples. Applicants should be staff professionals and managers or individuals with potential to be promoted, who anticipate working in a pavement related position.

Training Level: Basic

Fee: 2016: $3 Per Person; 2017: N/A

Length: 33 DAYS (CEU: 3 UNITS)

Class Size: MINIMUM: 17; MAXIMUM: 23

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-131050A

WBT

Course Title

Asphalt Pavement In-Place Recycling Techniques--WEB-BASED

This training is a prerequisite of another NHI training and is offered at no cost.

Transportation agencies focusing on the use of sustainable, cost-effective, and environmentally conscious construction practices often consider in-place recycling techniques as a viable alternative to the more traditional rehabilitation techniques used on asphalt-surfaced pavements. NHI training 131050 Asphalt Pavement In-place Recycling Techniques is designed to help participants acquire necessary skills for selecting the appropriate in-place recycling technique for a given set of conditions, choosing the appropriate materials for the project, developing suitable specifications, and constructing those projects effectively.

The Asphalt Pavement In-place Recycling Techniques course includes two brief Web-based training (WBT) modules, and two days of instructor-led, classroom-based training (ILT). Through independent study, classroom interaction, and workshop activities, participants explore the current technologies available in the area of asphalt pavement in-place recycling. Two WBT lessons introduce pavement evaluation techniques and the three potential recycling techniques, along with the types of equipment commonly used for each. The classroom session focuses on project and technique selection and justification, materials considerations and mix design, construction specifications, and project control considerations during construction.

Outcomes

Upon completion of the course, participants will be able to:

- Describe the economic, environmental, and engineered performance benefits associated with using in-place asphalt recycling
- Identify the key factors that contribute to the selection of appropriate in-place asphalt recycling techniques under different traffic levels, pavement conditions, and environments
- Identify the key requirements in developing effective in-place asphalt recycling construction specifications, including method specification and end-result or performance specifications
- Demonstrate the ability to select the appropriate new materials and additives needed for each of three HMA pavement in-place recycling techniques
- List steps that can be taken to address a variety of issues that may impact the constructability of a project

Target Audience

This course is intended for State and local transportation agency engineers, such as pavement managers and maintenance engineers, and other agency personnel who are responsible for selecting, designing, or constructing the agency's asphalt pavement maintenance, resurfacing, rehabilitation, and reconstruction alternatives. The course particularly benefits those individuals responsible for selecting and designing asphalt in-place recycling projects, for writing effective specifications, or for inspecting asphalt in-place recycling projects during their construction. Contractors, consulting engineers, and industry representatives involved in asphalt pavement in-place recycling also will benefit from this course.

Training Level: Basic

Fee: 2016: $0 Per Person; 2017: N/A

Length: 1 HOURS (CEU: 1 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 35

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-131133

WBT

Course Title

TCCC Roller Compacted Concrete Pavements - WEB-BASED

This training is provided to you at no cost by the Transportation Curriculum Coordination Council in partnership with NHI.

The Roller Compacted Concrete (RCC) Pavements course provides detailed overviews of RCC properties and materials, mixture proportioning, structural design issues, and production and construction considerations, plus troubleshooting guidelines and an extensive reference list for more comprehensive information.

This course contains six modules. Module 1 is an introduction in RCC covering the characteristics, benefits, limitations, selection considerations, and typical uses. Module 2 discusses the property differences between RCC and conventional mixes, material requirements and testing. Module 3 covers mix proportioning of RCC, while Module 4 gets into structural design of RCC pavements. Module 5 acquaints the student with production and the proper handling and storage of materials, mixing and batching, and production planning. Module 6 covers the actual construction of a RCC pavement. All of the modules for this training were developed from the August 2010 "Guide for Roller-Compacted Concrete Pavements" which is available from the Portland Cement Association website www.cement.org/pavements.

Outcomes

Upon completion of the course, participants will be able to:

- Define RCC key elements and common uses
- Define RCC properties and materials
- Describe RCC mix proportioning
- Describe structural design of RCC pavement
- Identify RCC production
- Identify RCC pavement construction

Target Audience

This training provides agencies, contractors, materials suppliers, and others with a thorough introduction to and updated review of RCC and its many paving applications. This training is recommended for the Transportation Curriculum Coordination Council levels II through IV.

Training Level: Basic

Fee: 2016: $50 Per Person; 2017: N/A

Length: 6 HOURS (CEU: 0 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-134094

Course Title

Baker Delivery Task Order Funding (Dummy Course)

flidf;lidsjf;slkdjf;lkdsjf;lkafna;cvk

Outcomes

Upon completion of the course, participants will be able to:

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Target Audience

Training Level: Basic

Fee: 2016: $0 Per Person; 2017: N/A

Length: 3 DAYS (CEU: 3 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-134097

WBT

Course Title

TCCC Fresh Concrete Properties - WEB-BASED

This training is provided to you at no cost by the Transportation Curriculum Coordination Council in partnership with NHI.

This training is provided by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to review integrated materials and construction practices for concrete pavement. The training was developed by the National Concrete Pavement Technology Center at Iowa State University. This training is recommended for the Transportation Curriculum Coordination Council levels III and IV.

This module covers the properties of fresh concrete needed to produce high-quality, long lasting pavements and how to monitor these properties.

This module is part of a curriculum from the "Integrated Materials and Construction Practices for Concrete Pavement" manual developed through the National Concrete Pavement Technology Center at Iowa State University. The other Web-based training modules include:

FHWA-NHI-134075 TCCC Hardened Concrete Properties - Durability

FHWA-NHI-134084 TCCC Fundamentals of Materials Used for Concrete Pavements

FHWA-NHI-134085 TCCC Incompatibility in Concrete Pavement Systems

FHWA-NHI-134087 TCCC Mix Design Principles

FHWA-NHI-134095 TCCC Early Age Cracking

FHWA-NHI-134096 TCCC Basics of Cement Hydration

FHWA-NHI-134098 TCCC Construction of Concrete Pavements

FHWA-NHI-134100 TCCC QCQA for Concrete Pavements

FHWA-NHI-134101 TCCC Design of Pavement

FHWA-NHI-134102 TCCC Troubleshooting for Concrete Pavements

Outcomes

Upon completion of the course, participants will be able to:

- List the main properties of fresh concrete
- Describe what affects each property
- Recognize how to monitor these properties through concrete testing

Target Audience

This training is designed for FHWA, State, and local agencies and their industry counterparts involved in the process to assure that the properties of a concrete mixture provide ease in placement, ease of consolidation, and long lasting pavement. It is applicable to anyone desiring a better understanding of the properties of Portland cement concrete.

Training Level: Intermediate

Fee: 2016: $0 Per Person; 2017: N/A

Length: 1 HOURS (CEU: 0 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-132097A

Course Title

Integrating GeoTechTools into Project Planning and Delivery (1-Day ILT)

NHI-132097A, Integrating GeoTechTools into Project Planning and Delivery, is a 1-day instructor-led course designed to promote the integration of GeoTechTools into your agency's practice, in both program development and project delivery. This course will teach you how to use GeoTechTools to make better informed and innovative decisions with geotechnologies, factor project constraints into geotechnology selection, and mitigate project and geotechnical risks with geotechnology selection.

Outcomes

Upon completion of the course, participants will be able to:

- State what is GeoTechTools (GTT)
- Identify who (agency and role) can benefit from the use of GTT
- Identify the types of projects where using GTT would be appropriate
- Identify at which stage(s) of the project development and delivery process GTT should be employed
- Explain how and why GTT was developed
- Identify the scope and limitations of GTT
- Demonstrate how to navigate and explore within GTT
- State how your agency will incorporate GTT into project planning and delivery

Target Audience

The target audience for this 1-day course includes agency program managers, geotechnical engineers, pavement engineers, bridge engineers, project planners, and project managers.

Training Level: Basic

Fee: 2016: $425 Per Person; 2017: N/A

Length: 1 DAYS (CEU: .6 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 40

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-380079

WBT

Course Title

AASHTO Roadside Design Guide - WEB-BASED

This training is undergoing revisions and this version is offered to you at no cost.

This course provides an overview of the AASHTO "Roadside Design Guide." Emphasis is on current highway agency policies and practices. The AASHTO "Roadside Design Guide" is the textbook for this course. You may purchase a copy of the "Roadside Design Guide" directly from the AASHTO bookstore at http://www.transportation.org/.

Outcomes

Upon completion of the course, participants will be able to:

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

Target Audience

Federal, State and local highway engineers involved in the formulation and/or application of policies and standards relating to the design of safer roadsides.

Training Level: Intermediate

Fee: 2016: $2 Per Person; 2017: N/A

Length: 22 DAYS (CEU: 2 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-131133

WBT

Course Title

TCCC Roller Compacted Concrete Pavements - WEB-BASED

This training is provided to you at no cost by the Transportation Curriculum Coordination Council in partnership with NHI.

The Roller Compacted Concrete (RCC) Pavements course provides detailed overviews of RCC properties and materials, mixture proportioning, structural design issues, and production and construction considerations, plus troubleshooting guidelines and an extensive reference list for more comprehensive information.

This course contains six modules. Module 1 is an introduction in RCC covering the characteristics, benefits, limitations, selection considerations, and typical uses. Module 2 discusses the property differences between RCC and conventional mixes, material requirements and testing. Module 3 covers mix proportioning of RCC, while Module 4 gets into structural design of RCC pavements. Module 5 acquaints the student with production and the proper handling and storage of materials, mixing and batching, and production planning. Module 6 covers the actual construction of a RCC pavement. All of the modules for this training were developed from the August 2010 "Guide for Roller-Compacted Concrete Pavements" which is available from the Portland Cement Association website www.cement.org/pavements.

Outcomes

Upon completion of the course, participants will be able to:

- Define RCC key elements and common uses
- Define RCC properties and materials
- Describe RCC mix proportioning
- Describe structural design of RCC pavement
- Identify RCC production
- Identify RCC pavement construction

Target Audience

This training provides agencies, contractors, materials suppliers, and others with a thorough introduction to and updated review of RCC and its many paving applications. This training is recommended for the Transportation Curriculum Coordination Council levels II through IV.

Training Level: Basic

Fee: 2016: $50 Per Person; 2017: N/A

Length: 6 HOURS (CEU: 0 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-134073A

WCT

Course Title

Leap Not Creep: Accelerating Innovation Implementation (WCT)

This is a blended training solution designed to provide transportation employees with the necessary tools to implement innovations quickly and successfully and mainstream the innovations into an agency's standard practice. The training discusses the features of successful deployments, provides information on the components of a deployment plan, lists resources for locating innovations and funding for implementation, and discusses strategies for neutralizing challenges to implementing innovations. The course is taught in two formats: first participants attend a two-hour Web conference to introduce the course and set expectations. One-to-two weeks following the Web conference, participants attend two days of training to complete the course.

Outcomes

Upon completion of the course, participants will be able to:

- Identify the benefits of implementing innovations.
- Describe the evolution of an innovation from the identification of a need to mainstreaming an innovation into standard practice.
- Describe the key factors of successful innovation implementation.
- Develop a deployment plan for implementing an innovation.
- List three strategies that could be employed by agency decision-makers to support innovation implementation.
- Determine resources required to mainstream the innovation into standard practice.
- Identify strategies for overcoming barriers to implementing an innovation.
- Locate resources to support the deployment of innovations, such as funding resources.

Target Audience

The target audience for this course will be people are responsible for: Leading a team, or are preparing to lead a team, that's responsible for deploying an innovation. Selecting innovations that will be implemented within the organization. Promoting the use of innovations within an organization.

Training Level: Basic

Fee: 2016: $200 Per Person; 2017: N/A

Length: 2 DAYS (CEU: 2 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-134094

WCT

Course Title

Baker Delivery Task Order Funding (Dummy Course)

flidf;lidsjf;slkdjf;lkdsjf;lkafna;cvk

Outcomes

Upon completion of the course, participants will be able to:

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Target Audience

Training Level: Basic

Fee: 2016: $0 Per Person; 2017: N/A

Length: 3 DAYS (CEU: 3 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-134097

WBT

Course Title

TCCC Fresh Concrete Properties - WEB-BASED

This training is provided to you at no cost by the Transportation Curriculum Coordination Council in partnership with NHI.

This training is provided by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to review integrated materials and construction practices for concrete pavement. The training was developed by the National Concrete Pavement Technology Center at Iowa State University. This training is recommended for the Transportation Curriculum Coordination Council levels III and IV.

This module covers the properties of fresh concrete needed to produce high-quality, long lasting pavements and how to monitor these properties.

This module is part of a curriculum from the "Integrated Materials and Construction Practices for Concrete Pavement" manual developed through the National Concrete Pavement Technology Center at Iowa State University. The other Web-based training modules include:

FHWA-NHI-134075 TCCC Hardened Concrete Properties - Durability

FHWA-NHI-134084 TCCC Fundamentals of Materials Used for Concrete Pavements

FHWA-NHI-134085 TCCC Incompatibility in Concrete Pavement Systems

FHWA-NHI-134087 TCCC Mix Design Principles

FHWA-NHI-134095 TCCC Early Age Cracking

FHWA-NHI-134096 TCCC Basics of Cement Hydration

FHWA-NHI-134098 TCCC Construction of Concrete Pavements

FHWA-NHI-134100 TCCC QCQA for Concrete Pavements

FHWA-NHI-134101 TCCC Design of Pavement

FHWA-NHI-134102 TCCC Troubleshooting for Concrete Pavements

Outcomes

Upon completion of the course, participants will be able to:

- List the main properties of fresh concrete
- Describe what affects each property
- Recognize how to monitor these properties through concrete testing

Target Audience

This training is designed for FHWA, State, and local agencies and their industry counterparts involved in the process to assure that the properties of a concrete mixture provide ease in placement, ease of consolidation, and long lasting pavement. It is applicable to anyone desiring a better understanding of the properties of Portland cement concrete.

Training Level: Intermediate

Fee: 2016: $0 Per Person; 2017: N/A

Length: 1 HOURS (CEU: 0 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-134112

WCT

Course Title

Principles and Practices for Enhanced Maintenance Management Systems - WEB-CONFERENCE

Is your agency in the process of enhancing its maintenance management capabilities?

Are you interested in learning more about developing effective performance measures for maintenance activities?

If so, join us for a blended training course that features both independent study material and facilitated Web conferences. Now you can learn all of the information provided in the 3.5-day instructor-led course (NHI-131107), without leaving your office!

This course is an introduction to the methods and practices used in an enhanced maintenance management system (MMS) to effectively maintain and operate a highway network. It provides participants with the principles and practices of using MMS effectively and illustrates efficient maintenance and operation of a highway network. Throughout the course, participants are provided with activities and assignments specific to using MMS.

The course materials rely heavily on the recently developed AASHTO Guidelines for Maintenance Management Systems, the Transportation Asset Management Guide, along with several other recent publications on the topic. The materials will be supplemented with examples from State and local highway agencies to illustrate the application of the principles in transportation agencies. This course has the same content and outcomes as FHWA-NHI-131107, Principles and Practices for Enhanced Maintenance Management Systems.

Responsibilities:

You will be expected to complete seven online lessons and three facilitated Web conferences. You must complete all 7 of the online lessons and participate in the Web conferences to obtain your certificate. By passing the online test at the end of the course, you can also receive Continuing Education Units (CEUs) for the course. All participants will need their own computer with internet connection and a telephone line to participate in the Web conference.

Outcomes

Upon completion of the course, participants will be able to:

- Compare and contrast a first generation MMS with an enhanced MMS
- Describe the terms “outcome-based” and “performance-based” and how they pertain to an enhanced MMS
- Describe the use of service levels to support the programming and budgeting activities incorporated into an MMS
- Identify the types of systems that should be integrated with an MMS and provide several examples of the types of data that should interface between each system
- List the potential benefits to be realized by fully integrating an enhanced MMS
- Identify several steps that will advance an agency’s current maintenance management practices now and in the future

Target Audience

The target audience for this course includes State and local maintenance engineers, maintenance supervisors, asset managers, and their industry counterparts. The course is specifically for individuals who are responsible for directing and managing maintenance operations and budgets, maintenance project and treatment selection, and/or the monitoring of system conditions.

Training Level: Basic

Fee: 2016: $300 Per Person; 2017: N/A

Length: 1 DAYS (CEU: 1 UNITS)

Class Size: MINIMUM: 15; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-135095

New Training

Course Title

Two-Dimensional Hydraulic Modeling of Rivers at Highway Encroachments

THIS AN UPDATE OF COURSE NO. 135071.

The course provides a well-balanced mix of lessons, demonstrations, and exercises for a comprehensive introduction to two-dimensional modeling concepts, including; background data necessary to support a model, hydraulic modeling parameters, mesh development, model simulation parameters, model calibration, hydraulic structures, and reviewing two-dimensional model results. Extracting hydraulic parameters for use in bridge scour evaluation is also discussed. Each concept is demonstrated and participants are given hands-on exercises to apply what they have learned. Once all modeling concepts are covered a comprehensive exercise is provided for participants to apply their skills on a project from start to finish.

Participants will receive a participant workbook that includes hard copies of presentation slides and step-by-step exercises. Electronic data needed for the exercises will also be provided.

Following completion of this course, participants should recognize situations where two-dimensional modeling is preferred and use SMS to successfully compile, execute, and review results for a SRH-2D model on a bridge or other hydraulic structure project.

PREREQUISITE NOTE: Course participants should have knowledge of the fundamentals of open channel flow hydraulics. The free web-based training course, NHI 135091 "Basic Hydraulic Principles Review" is available for those wishing to refresh their knowledge.

HOST NOTE: The host is responsible for providing a minimum of one computer for each pair of students. The computers shall have the following minimum specifications: Microsoft Windows XP with 512 MB of RAM (2 GB recommended) or Windows Vista, Windows 7, or Windows 8 with 1 GB of RAM (4 GB recommended), graphics card (OpenGL 1.5 or higher must be supported). The use of a dedicated graphics card is strongly recommended, display resolution of 1024 x 768 or greater.

Outcomes

Upon completion of the course, participants will be able to:

- Recognize the differences between 1D and 2D hydraulic models
- Use background data in SMS for 2D modeling projects
- Use SMS to setup and run 2D models
- Visualize and review 2D model results
- Add structures to 2D models
- Evaluate 2D hydraulic parameters for use in bridge scour analysis

Target Audience

The target audience for this course is FHWA and state Department of Transportation hydraulicspersonnel and other Federal, state, local or consulting engineers who have responsibility for, or desire to work with, the hydraulic analysis and design of highway river crossings.

Training Level: Intermediate

Fee: 2016: $775 Per Person; 2017: N/A

Length: 3 DAYS (CEU: 1.8 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 26

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-134112

WCT

Course Title

Principles and Practices for Enhanced Maintenance Management Systems - WEB-CONFERENCE

Is your agency in the process of enhancing its maintenance management capabilities?

Are you interested in learning more about developing effective performance measures for maintenance activities?

If so, join us for a blended training course that features both independent study material and facilitated Web conferences. Now you can learn all of the information provided in the 3.5-day instructor-led course (NHI-131107), without leaving your office!

This course is an introduction to the methods and practices used in an enhanced maintenance management system (MMS) to effectively maintain and operate a highway network. It provides participants with the principles and practices of using MMS effectively and illustrates efficient maintenance and operation of a highway network. Throughout the course, participants are provided with activities and assignments specific to using MMS.

The course materials rely heavily on the recently developed AASHTO Guidelines for Maintenance Management Systems, the Transportation Asset Management Guide, along with several other recent publications on the topic. The materials will be supplemented with examples from State and local highway agencies to illustrate the application of the principles in transportation agencies. This course has the same content and outcomes as FHWA-NHI-131107, Principles and Practices for Enhanced Maintenance Management Systems.

Responsibilities:

You will be expected to complete seven online lessons and three facilitated Web conferences. You must complete all 7 of the online lessons and participate in the Web conferences to obtain your certificate. By passing the online test at the end of the course, you can also receive Continuing Education Units (CEUs) for the course. All participants will need their own computer with internet connection and a telephone line to participate in the Web conference.

Outcomes

Upon completion of the course, participants will be able to:

- Compare and contrast a first generation MMS with an enhanced MMS
- Describe the terms “outcome-based” and “performance-based” and how they pertain to an enhanced MMS
- Describe the use of service levels to support the programming and budgeting activities incorporated into an MMS
- Identify the types of systems that should be integrated with an MMS and provide several examples of the types of data that should interface between each system
- List the potential benefits to be realized by fully integrating an enhanced MMS
- Identify several steps that will advance an agency’s current maintenance management practices now and in the future

Target Audience

The target audience for this course includes State and local maintenance engineers, maintenance supervisors, asset managers, and their industry counterparts. The course is specifically for individuals who are responsible for directing and managing maintenance operations and budgets, maintenance project and treatment selection, and/or the monitoring of system conditions.

Training Level: Basic

Fee: 2016: $300 Per Person; 2017: N/A

Length: 1 DAYS (CEU: 1 UNITS)

Class Size: MINIMUM: 15; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-136106

Course Title

Introduction to Transportation Asset Management

Asset management principles are becoming increasingly important to help agencies manage their assets as they face fewer available resources, higher expectations for customer service, and increased demand for more transparency in the decision process. In an asset management environment, investment decisions are linked to targeted performance levels that have been established based on current and expected asset conditions. Trade-offs between investments in different types of assets and different investment priorities can be assessed because of the availability of reliable data and a clear set of performance metrics that the agency hopes to achieve. As a result, agencies are better able to use their funding effectively and to defend their need for additional resources.

The Transportation Asset Management course introduces a strategic approach to managing physical transportation infrastructure. This 1-day course covers the principles of asset management and introduces the five core questions every agency should be able to answer about its assets. The course contains modules on the following topics: asset management principles, performance measures, long-term financial planning, and risk assessment. Through a series of workshops, the course material introduces the participants to the application of asset management principles in real life situations.

This course can be delivered with the addition of a half-day workshop. During the workshop, participants review self-assessments to identify agency gaps between the desired and actual application of asset management principles. The workshop also includes recommendations for advancing the implementation of asset management practices within the agency. Refer to 131106A "Introduction to Transportation Asset Management with Workshop" on the NHI Web site for additional information.

This course is the first in a series. The other courses in this series are 131106B "Development of a Transportation Asset Management Plan" and 131106C "Introduction to Transportation Asset Management Plans", which is Web-based. See the NHI Web site for additional information on each of these courses.

Outcomes

Upon completion of the course, participants will be able to:

- Champion the use of asset management principles and concepts within the organization.
- Define their role in supporting the agency's asset management efforts.
- Describe the maturity of the agency's asset management program.

Target Audience

Senior-level and mid-level managers from State departments of transportation and other transportation agencies, who typically have the responsibility for decision-making in one or more areas addressed by transportation asset management. Participants should represent a number of organizational units, including (but not limited to) planning, engineering (e.g., facility management, design, construction), capital programming, maintenance and operations, financial management, traffic and safety engineering, system operation and management, and information technology. The course is also intended for individuals who manage or provide critical information to senior managers, or who have direct responsibility for meeting specific transportation system performance or program delivery targets.

Training Level: Intermediate

Fee: 2016: $310 Per Person; 2017: N/A

Length: 1 DAYS (CEU: 0 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-136106

Course Title

Introduction to Transportation Asset Management

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- Champion the use of asset management principles and concepts within the organization.
- Define their role in supporting the agency's asset management efforts.
- Describe the maturity of the agency's asset management program.

Target Audience

Senior-level and mid-level managers from State departments of transportation and other transportation agencies, who typically have the responsibility for decision-making in one or more areas addressed by transportation asset management. Participants should represent a number of organizational units, including (but not limited to) planning, engineering (e.g., facility management, design, construction), capital programming, maintenance and operations, financial management, traffic and safety engineering, system operation and management, and information technology. The course is also intended for individuals who manage or provide critical information to senior managers, or who have direct responsibility for meeting specific transportation system performance or program delivery targets.

Training Level: Intermediate

Fee: 2016: $310 Per Person; 2017: N/A

Length: 1 DAYS (CEU: 0 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-137046

WBT

Course Title

ITS Deployment Analysis System (IDAS) - WEB-BASED

This course is a Web-based training session on the newly developed ITS Deployment Analysis System (IDAS) software. IDAS provides ITS sketch planning capability to calculate the relative costs and benefits of ITS investments. IDAS incorporates a cost module, a benefit module and an internal travel demand model to generate cost/benefit comparisons for alternative ITS deployment scenarios. IDAS uses the output from an existing transportation planning model to establish a best-case scenario on which the user can deploy ITS services on specific links in the regional transportation network model.

The participant's computer should have the following recommended requirements: 500 MHz Intel Pentium II Processor or equivalent with 128 MB of RAM, Windows 2000, Windows NT, or Windows XP, color monitors, 2 GB of available disk space.

Outcomes

Upon completion of the course, participants will be able to:

- Explain the importance of integrating operations/ITS into the planning and decision-making processes
- Explain that IDAS software can be used to link operations to the planning process
- Demonstrate how IDAS uses the network and output from an existing regional travel demand model
- Employ IDAS to screen ITS alternatives and produce a cost/benefit analysis.
- Interpret IDAS results
- Review and refine IDAS defaults

Target Audience

FHWA, State DOT, metropolitan planning organization, and local government transportation planning staff members who are involved in the day-to-day elements of transportation planning and modeling would benefit for this course. Operations Engineers, ITS Project Managers, and Transit Agency Personnel (this includes individuals who: 1. develop inputs for, set up, and carry out analyses of operations/ITS alternatives and/or 2. examine results, conduct sensitivity analyses, and explore tradeoffs of such analyses created by others) would also benefit for this course.

Training Level: Basic

Fee: 2016: $50 Per Person; 2017: N/A

Length: 5 HOURS (CEU: .5 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-137048

WBT

Course Title

Turbo Architecture-Web-Based

This course is based upon Turbo Architecture Version 5.0. The current version is 7.0 (as Turbo Architecture jumped directly from Version 5.0 to Version 7.0 to align the Turbo Architecture version with the corresponding version of the National ITS Architecture.) There are some minor differences in the versions but the information presented in this course is still applicable to Version 7.0. For more information on the differences in version 7.0, see the Turbo Architecture page on The National ITS Architecture 7.0 website, http://www.iteris.com/itsarch/html/turbo/turbomain.htm.

Turbo Architecture is an interactive software program that assists transportation planners and system integrators in the development of regional and project architectures. This Web-based training (WBT) provides ITS professionals with a hands-on experience using the Turbo software. Participants will work with simulated examples and practice exercises to create, maintain, and use regional and project ITS architectures.

At the end of the training, participants will be able to use the Turbo software to create and modify a regional or project architecture including providing a link to planning, entering stakeholders, entering inventory data, selecting ITS services, creating operational concepts, tailoring functional requirements, building and customizing interfaces, customizing standards mappings, entering agreements, creating outputs, and applying features to new projects.

Outcomes

Upon completion of the course, participants will be able to:

- Recall training objective and delivery elements
- Verify the correct installation of Turbo
- Explain the use and importance of Turbo
- Explain Turbo's support of the ITS project life cycle

Target Audience

The Turbo Architecture WBT is designed for ITS professionals employed by MPOs, transit agencies, municipalities, State DOTs, FHWA Division Offices, or consultants and system integrators who use and/or maintain an ITS architecture and are involved with ITS planning, deployment, and operations.

Training Level: Basic

Fee: 2016: $50 Per Person; 2017: N/A

Length: 5 HOURS (CEU: 0 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-139005

Course Title

Linking Freight to Planning and the Environment

Linking Freight to Planning and the Environment is a two-day course designed to assist public and private sector transportation planners and engineers, environmental planners, and freight planners in the public and private sectors better address and more effectively integrate freight and environment considerations in the public sector planning and project development processes. The course will also emphasize applicable and recent case studies from all modes to demonstrate the range of practices that are available to small, medium and large MPOs and urban and rural state DOTs, as well as exercises on analysis techniques and tool application.

This course is part of the Certificate of Accomplishment in Freight Management and Operations. To learn more about how you can achieve a certificate in Freight Management and Operations visit the NHI Web site at http://www.nhi.fhwa.dot.gov/training/cert_programs.aspx.

Outcomes

Upon completion of the course, participants will be able to:

- Explain to transportation decision-makers the importance of addressing freight and environmental considerations within the transportation planning, programming, and project development process
- Incorporate freight and environmental issues earlier and more consistently within the transportation planning and programming process
- Identify strategies that balance statewide, regional, or metropolitan freight mobility needs with community and environmental goals
- Identify potential transportation improvement projects that balance freight mobility and community and environmental impacts
- Locate the resources and tools available to address freight and environmental considerations within the transportation planning and programming process

Target Audience

Mid-level State DOT transportation planners, freight planners, environmental planners and engineers; City and County transportation planners, freight planners and environmental planners; MPO transportation planners, freight planners and environmental planners; Mid- and high-level public sector transportation and freight planners; FHWA transportation planners, freight planners and environmental planners; U.S. DOT transportation planners, freight planners and environmental planners; State and Federal Resource Agencies transportation planners, freight planners and environmental planners, such as the Environmental Protection Agency, U.S. Fish and Wildlife, Army Corp of Engineers, etc.; and Consultants.

Training Level: Basic

Fee: 2016: $455 Per Person; 2017: N/A

Length: 2 DAYS (CEU: 1.2 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-141031

Course Title

Business Relocation under the Uniform Act

This course provides comprehensive information on the various aspects of business relocation and is designed to address the relocation of businesses, farms and nonprofit organizations. The main topics include eligibility, moving payments and benefits, advisory services, actual direct loss of tangible personal property, substitute personal property payments, reestablishment expenses, and fixed payment in lieu of (ILO) payments. A module about the move process includes the move option available to a business, as well as the need for an inventory and move specifications.

This course is part of the Certificate of Accomplishment in Relocation under the Uniform Act. To learn more about how you can achieve a certificate in Relocation visit the NHI Web site at http://www.nhi.fhwa.dot.gov/training/cert_programs.aspx.

Outcomes

Upon completion of the course, participants will be able to:

- Provide advisory services for businesses
- Determine moving and related expense payments for businesses, farms and non-profit organizations
- Determine reestablishment expenses for small businesses
- Determine fixed payments for businesses, farms and non-profit organizations
- Evaluate the move process for businesses
- Determine how to move hazardous materials for businesses

Target Audience

State departments of transportation, local public agencies, FHWA personnel, and other Federal agency personnel. Suggest that participants have at least two years general relocation experience.

Training Level: Accomplished

Fee: 2016: $650 Per Person; 2017: N/A

Length: 3 DAYS (CEU: 1.8 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 35

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-141052

Course Title

Successful Acquisition under the Uniform Act

This course will provide the knowledge and skills that a public agency negotiator needs to complete acquisitions that comply with the Uniform Act.

Outcomes

Upon completion of the course, participants will be able to:

- Explain the legal basis for land acquisition by a governmental entity
- Identify the pre-acquisition materials necessary for property acquisition
- Explain the basics of the valuation process
- Describe the acquisition process under the Uniform Act
- Formulate effective negotiation skills, using best practices
- Discuss legal aspects of real property acquisition
- Discuss the role and limitations of consultants in the acquisition process

Target Audience

Federal, State, and local public agencies, FHWA personnel, contractors, and other interested persons.

Training Level: Basic

Fee: 2016: $650 Per Person; 2017: N/A

Length: 3 DAYS (CEU: 1.8 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-139005

Course Title

Linking Freight to Planning and the Environment

Linking Freight to Planning and the Environment is a two-day course designed to assist public and private sector transportation planners and engineers, environmental planners, and freight planners in the public and private sectors better address and more effectively integrate freight and environment considerations in the public sector planning and project development processes. The course will also emphasize applicable and recent case studies from all modes to demonstrate the range of practices that are available to small, medium and large MPOs and urban and rural state DOTs, as well as exercises on analysis techniques and tool application.

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Outcomes

Upon completion of the course, participants will be able to:

- Explain to transportation decision-makers the importance of addressing freight and environmental considerations within the transportation planning, programming, and project development process
- Incorporate freight and environmental issues earlier and more consistently within the transportation planning and programming process
- Identify strategies that balance statewide, regional, or metropolitan freight mobility needs with community and environmental goals
- Identify potential transportation improvement projects that balance freight mobility and community and environmental impacts
- Locate the resources and tools available to address freight and environmental considerations within the transportation planning and programming process

Target Audience

Mid-level State DOT transportation planners, freight planners, environmental planners and engineers; City and County transportation planners, freight planners and environmental planners; MPO transportation planners, freight planners and environmental planners; Mid- and high-level public sector transportation and freight planners; FHWA transportation planners, freight planners and environmental planners; U.S. DOT transportation planners, freight planners and environmental planners; State and Federal Resource Agencies transportation planners, freight planners and environmental planners, such as the Environmental Protection Agency, U.S. Fish and Wildlife, Army Corp of Engineers, etc.; and Consultants.

Training Level: Basic

Fee: 2016: $455 Per Person; 2017: N/A

Length: 2 DAYS (CEU: 1.2 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-139005

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This course is part of the Certificate of Accomplishment in Freight Management and Operations. To learn more about how you can achieve a certificate in Freight Management and Operations visit the NHI Web site at http://www.nhi.fhwa.dot.gov/training/cert_programs.aspx.

Outcomes

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- Explain to transportation decision-makers the importance of addressing freight and environmental considerations within the transportation planning, programming, and project development process
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Training Level: Basic

Fee: 2016: $455 Per Person; 2017: N/A

Length: 2 DAYS (CEU: 1.2 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-141052

Course Title

Successful Acquisition under the Uniform Act

This course will provide the knowledge and skills that a public agency negotiator needs to complete acquisitions that comply with the Uniform Act.

Outcomes

Upon completion of the course, participants will be able to:

- Explain the legal basis for land acquisition by a governmental entity
- Identify the pre-acquisition materials necessary for property acquisition
- Explain the basics of the valuation process
- Describe the acquisition process under the Uniform Act
- Formulate effective negotiation skills, using best practices
- Discuss legal aspects of real property acquisition
- Discuss the role and limitations of consultants in the acquisition process

Target Audience

Federal, State, and local public agencies, FHWA personnel, contractors, and other interested persons.

Training Level: Basic

Fee: 2016: $650 Per Person; 2017: N/A

Length: 3 DAYS (CEU: 1.8 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-130053

Course Title

Bridge Inspection Refresher Training

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testing course description change The major goals of this course are to refresh the skills of practicing bridge inspectors in fundamental visual inspection techniques; review the background knowledge necessary to understand how bridges function; communicate issues of national significance relative to the nations' bridge infrastructures; re-establish proper condition and appraisal rating practices; and review the professional obligations of bridge inspectors.

This course is based on the "Bridge Inspector's Reference Manual," 2002 (updated in 2006) with reference to the AASHTO Manual as defined by the National Bridge Inspection Standards regulation.

Core course topics include inspector qualifications and duties, bridge mechanics, record keeping and documentation, fatigue and fracture in steel bridges, traffic safety features, safety, National Bridge Inventory (NBI) component ratings, superstructure type identification, inspection techniques and case studies for decks, superstructures, bearings, substructures, channels and culverts, and a mock bridge inspection classroom exercise.

Optional topics include fiber reinforced polymer, inspection of truss gusset plates, inspection of adjacent box beams, bridge site signing, structure inventory and appraisal overview, common NBI miscodings, element level ratings and timber superstructures.

For this version of the course (3-day), the host agency will need to select four (4) desired optional topics. Course instructors will contact the host prior to the course to complete a pre-course questionnaire, determine optional topics to be taught, and discuss the course schedule.

Outcomes

Upon completion of the course, participants will be able to:

- Describe the current overall condition and condition trends for the nation's bridges
- Identify the recent National Bridge Inspection Standards (NBIS) revisions
- Accurately code National Bridge Inventory (NBI) items
- Identify and document inspection observations using standard methods
- Evaluate defects based on the 2008 AASHTO Manual for Bridge Evaluation
- Code NBI components using the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges
- Determine if overall structure/structural member is fracture critical prone
- Accurately inspect and evaluate a bridge's four traffic safety features
- List the keys to ensuring a safe work environment
- Explain bridge responses and bridge mechanic principles

Target Audience

The target audience for this course includes Federal, State, and local agencies and private sector personnel employed in inspecting bridges or managing bridge inspection programs. The course is built to accommodate those that have completed comprehensive bridge inspection training (130055 or similar) or met the criteria for a bridge inspector under the State's procedures or requirements.

Training Level: Intermediate

Fee: 2016: $2 Per Person; 2017: N/A

Length: 1 DAYS (CEU: 4 UNITS)

Class Size: MINIMUM: 7; MAXIMUM: 14

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-134073A

WCT

Course Title

Leap Not Creep: Accelerating Innovation Implementation (WCT)

This is a blended training solution designed to provide transportation employees with the necessary tools to implement innovations quickly and successfully and mainstream the innovations into an agency's standard practice. The training discusses the features of successful deployments, provides information on the components of a deployment plan, lists resources for locating innovations and funding for implementation, and discusses strategies for neutralizing challenges to implementing innovations. The course is taught in two formats: first participants attend a two-hour Web conference to introduce the course and set expectations. One-to-two weeks following the Web conference, participants attend two days of training to complete the course.

Outcomes

Upon completion of the course, participants will be able to:

- Identify the benefits of implementing innovations.
- Describe the evolution of an innovation from the identification of a need to mainstreaming an innovation into standard practice.
- Describe the key factors of successful innovation implementation.
- Develop a deployment plan for implementing an innovation.
- List three strategies that could be employed by agency decision-makers to support innovation implementation.
- Determine resources required to mainstream the innovation into standard practice.
- Identify strategies for overcoming barriers to implementing an innovation.
- Locate resources to support the deployment of innovations, such as funding resources.

Target Audience

The target audience for this course will be people are responsible for: Leading a team, or are preparing to lead a team, that's responsible for deploying an innovation. Selecting innovations that will be implemented within the organization. Promoting the use of innovations within an organization.

Training Level: Basic

Fee: 2016: $200 Per Person; 2017: N/A

Length: 2 DAYS (CEU: 2 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-380079

WBT

Course Title

AASHTO Roadside Design Guide - WEB-BASED

This training is undergoing revisions and this version is offered to you at no cost.

This course provides an overview of the AASHTO "Roadside Design Guide." Emphasis is on current highway agency policies and practices. The AASHTO "Roadside Design Guide" is the textbook for this course. You may purchase a copy of the "Roadside Design Guide" directly from the AASHTO bookstore at http://www.transportation.org/.

Outcomes

Upon completion of the course, participants will be able to:

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

Target Audience

Federal, State and local highway engineers involved in the formulation and/or application of policies and standards relating to the design of safer roadsides.

Training Level: Intermediate

Fee: 2016: $2 Per Person; 2017: N/A

Length: 22 DAYS (CEU: 2 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-380122

Course Title

Test Course

course description

Outcomes

Upon completion of the course, participants will be able to:

- test

Target Audience

test

Training Level: Basic

Fee: 2016: $2 Per Person; 2017: N/A

Length: 3 DAYS (CEU: 2 UNITS)

Class Size: MINIMUM: 0; MAXIMUM: 0

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-134073A

WCT

Course Title

Leap Not Creep: Accelerating Innovation Implementation (WCT)

This is a blended training solution designed to provide transportation employees with the necessary tools to implement innovations quickly and successfully and mainstream the innovations into an agency's standard practice. The training discusses the features of successful deployments, provides information on the components of a deployment plan, lists resources for locating innovations and funding for implementation, and discusses strategies for neutralizing challenges to implementing innovations. The course is taught in two formats: first participants attend a two-hour Web conference to introduce the course and set expectations. One-to-two weeks following the Web conference, participants attend two days of training to complete the course.

Outcomes

Upon completion of the course, participants will be able to:

- Identify the benefits of implementing innovations.
- Describe the evolution of an innovation from the identification of a need to mainstreaming an innovation into standard practice.
- Describe the key factors of successful innovation implementation.
- Develop a deployment plan for implementing an innovation.
- List three strategies that could be employed by agency decision-makers to support innovation implementation.
- Determine resources required to mainstream the innovation into standard practice.
- Identify strategies for overcoming barriers to implementing an innovation.
- Locate resources to support the deployment of innovations, such as funding resources.

Target Audience

The target audience for this course will be people are responsible for: Leading a team, or are preparing to lead a team, that's responsible for deploying an innovation. Selecting innovations that will be implemented within the organization. Promoting the use of innovations within an organization.

Training Level: Basic

Fee: 2016: $200 Per Person; 2017: N/A

Length: 2 DAYS (CEU: 2 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

Course Number

FHWA-NHI-420051

WBT

Course Title

Instructor Introduction to Video Conference Training (VCT) - Web-Based

This training is provided to you at no cost by the National Highway Institute.

This training provides basic information on video conference training, or VCT, and tips on how to present information effectively during a VCT session. This training will also discuss some of the specific challenges in communicating at a distance using video conferencing and how to meet those challenges.

Outcomes

Upon completion of the course, participants will be able to:

- Identify video conference equipment
- Describe how to prepare for a VCT
- List characteristics of effective instructors in a VCT environment
- Explain how to interact from a distance

Target Audience

This course is intended for instructors who will be delivering interactive video conference training to adult learners.

Training Level: Basic

Fee: 2016: $0 Per Person; 2017: N/A

Length: 1 DAYS (CEU: 1 UNITS)

Class Size: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov

NHI STORE PROVIDES RESOURCES AND REFERENCE MATERIALS

Created based on customer feedback, the NHI Store is an online resource that enables users to order course materials through the NHI Web site. These materials can be used to plan a workshop, support train-the-trainer programs, or gather highway-related reference materials. The NHI Store offers both electronic downloads and hard copy versions.

To search for and purchase NHI course training materials, please visit www.nhi.fhwa.dot.gov. Easy directions are provided for ordering and payment; special instructions are provided for FHWA employees.

If you are unable to find the training materials you need, please contact us at nhitraining@dot.gov.

The following pages list all materials available for purchase at the time this catalog was published. For the most up-to-date listing, visit the NHI Store at www.nhi.fhwa.dot.gov. Credit card payment is accepted.

Legend

BK - Book
PW - Participant Workbook
RM - Reference Manual
PP - PowerPoint Presentation
OM - Other Materials
EF - Electronic File

Course Number	Material Name	Format	Type	Price
130053	Bridge Inspector's Reference Manual (December 2012) - File Size: 136 MB	Electronic Copy	RM	**Free**
130053	Bridge Inspector's Reference Manual-December 2012 (Compact Disc)	Hard Copy	RM	**$20.00**
130053	Test1	Hard Copy	BK	**$22.00**
130053A	Bridge Inspection Refresher Training (August 2014)	Hard Copy	PW	**$70.00**
130053A	Bridge Inspector's Reference Manual (December 2012) - File Size: 136 MB	Electronic Copy	RM	**Free**
130053A	Bridge Inspector's Reference Manual-December 2012 (Compact Disc)	Hard Copy	RM	**$20.00**
130054	Bridge Inspector's Reference Manual (December 2012) - File Size: 136 MB	Electronic Copy	RM	**Free**
130054	Bridge Inspector's Reference Manual-December 2012 (Compact Disc)	Hard Copy	RM	**$20.00**
130054	Engineering Concepts For Bridge Inspectors (September 2011)	Hard Copy	PW	**$40.00**
130078	Fracture Critical Inspection Techniques for Steel Bridges (September 2011)	Hard Copy	PW	**$50.00**
130081I	Load and Resistance Factor Design (LRFD) for Highway Bridge Superstructures-Examples (April 2007)	Hard Copy	OM	**$40.00**
130081I	Load and Resistance Factor Design (LRFD) For Highway Bridge Superstructures-SEC No. 1 (April 2007)	Hard Copy	RM	**$100.00**
130081J	Load and Resistance Factor Design (LRFD) for Highway Bridge Superstructures-Examples (April 2007)	Hard Copy	OM	**$40.00**
130081J	Load and Resistance Factor Design (LRFD) For Highway Bridge Superstructures-SEC No. 1 (April 2007)	Hard Copy	RM	**$100.00**
130087	Guidelines For The Installation, Inspection, Maintenance And Repair Of Structural Supports For Highw	Hard Copy	OM	**$50.00**

Course Number	Material Name	Format	Type	Price
130087	Inspection And Maintenance Of Ancillary Highway Structures-(March 2005)	Hard Copy	PW	**$50.00**
130088	Bridge Construction Inspection - Participant Workbook Volume 1 (March 2015)	Hard Copy	PW	**$50.00**
130088	Bridge Construction Inspection - Participant Workbook Volume 2 (March 2015)	Hard Copy	PW	**$40.00**
130091	Bridge Inspector's Reference Manual (December 2012) - File Size: 136 MB	Electronic Copy	RM	**Free**
130091	Bridge Inspector's Reference Manual-December 2012 (Compact Disc)	Hard Copy	RM	**$20.00**
130091	Underwater Bridge Inspection (January 2010)	Hard Copy	PW	**$40.00**
130091	Underwater Inspection of Bridges (June 2010)	Hard Copy	RM	**$40.00**
130091A	Bridge Inspector's Reference Manual (December 2012) - File Size: 136 MB	Electronic Copy	RM	**Free**
130091A	Bridge Inspector's Reference Manual-Compact Disc (December 2012)	Hard Copy	RM	**$20.00**
130091A	Underwater Bridge Inspection (January 2010)	Hard Copy	PW	**$40.00**
130091A	Underwater Inspection of Bridges (June 2010)	Hard Copy	RM	**$40.00**
130091B	Underwater Bridge Repair (December 2009)	Hard Copy	RM	**$40.00**
130091B	Underwater Bridge Repair, Rehabilitation, and Countermeasures (December 2009)	Hard Copy	PW	**$30.00**
130092	Fundamentals of LRFR and Applications of LRFR for Bridge Superstructures (September 2013)	Hard Copy	PW	**$40.00**
130092A	Load and Resistance Factor Rating for Highway Bridges (September 2013)	Hard Copy	PW	**$40.00**
130092B	Fundamentals of LRFR and Applications of LRFR for Bridge Superstructures (September 2013)	Hard Copy	PW	**$40.00**
130093	LRFD Seismic Analysis and Design of Bridges (February 2011)	Hard Copy	RM	**$75.00**
130093	LRFD Seismic Analysis and Design of Bridges (July 2013)	Hard Copy	PW	**$50.00**
130093	LRFD Seismic Analysis and Design of Bridges-Design Examples (July 2014)	Hard Copy	OM	**$50.00**
130093A	LRFD Seismic Analysis and Design of Bridges (February 2011)	Hard Copy	RM	**$75.00**
130093A	LRFD Seismic Analysis and Design of Bridges-Design Examples (July 2014)	Hard Copy	OM	**$50.00**
130095	LRFD and Analysis of Curved Steel Highway Bridges (February 2011)	Hard Copy	PW	**$70.00**
130095	LRFD and Analysis of Curved Steel Highway Bridges (February 2011)-Compact Disc	Hard Copy	RM	**$20.00**
130095A	LRFD and Analysis of Curved Steel Highway Bridges (February 2011)-Compact Disc	Hard Copy	RM	**$20.00**
130095B	LRFD and Analysis of Curved Steel Highway Bridges (February 2011)-Compact Disc	Hard Copy	RM	**$20.00**
130096	Design Criteria for Arch and Cable Stayed Signature Bridges (February 2012)	Hard Copy	RM	**$70.00**
130096	Design Criteria for Arch and Cable Stayed Signature Bridges (February 2012)	Electronic Copy	RM	**$20.00**

Course Number	Material Name	Format	Type	Price
130096	Design Criteria for Arch and Cable Stayed Signature Bridges (March 2013)	Hard Copy	PW	**$40.00**
131050	Asphalt Pavement In-Place Recycling Techniques (March 2013)	Hard Copy	PW	**$50.00**
132012	Soils And Foundations Workshop - Reference Manual Volume 1 (December 2006)	Hard Copy	RM	**$40.00**
132012	Soils And Foundations Workshop - Reference Manual Volume 2 (December 2006)	Hard Copy	RM	**$40.00**
132013	Geosynthetics Engineering Workshop (RM)	Hard Copy	RM	**$40.00**
132013A	Geosynthetic Design And Construction Guidelines (March 2009)	Hard Copy	PW	**$50.00**
132013A	Geosynthetics Engineering Workshop	Hard Copy	RM	**$40.00**
132013B	Geosynthetics Engineering Workshop	Hard Copy	RM	**$40.00**
132013C	Geosynthetics Engineering Workshop	Hard Copy	RM	**$40.00**
132013D	Geosynthetics Engineering Workshop	Hard Copy	RM	**$40.00**
132014	Drilled Shafts: Construction Procedures and LRFD Design Methods (May 2010)	Hard Copy	RM	**$50.00**
132033	Soil Slope and Embankment Design (September 2005)	Hard Copy	RM	**$40.00**
132035	Rock Slopes - Module 5 - Reference Manual	Hard Copy	RM	**$50.00**
132035	Rock Slopes - Module 5 - Student Exercises (August 1999)	Hard Copy	OM	**$50.00**
132036	Earth Retaining Structures (RM)	Hard Copy	RM	**$50.00**
132036	Soil Nail Walls Reference Manual-GEC 7 (February 2015)	Hard Copy	RM	**$40.00**
132037	Shallow Foundations - Module 7 - Reference Manual	Hard Copy	RM	**$50.00**
132037	Shallow Foundations (April 2012)	Hard Copy	PW	**$40.00**
132040	Geotechnial Aspects of Pavements (June 2010)	Hard Copy	RM	**$40.00**
132041	Geotechnical Instrumentation - Module 11 - Reference Manual	Hard Copy	RM	**$50.00**
132042	Corrosion/Degradation of Soil Reinforcements for MSE/RSS (November 2009)	Hard Copy	RM	**$40.00**
132042	Design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes-Vol 1 (March 2012)	Hard Copy	RM	**$40.00**
132042	Design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes-Vol 2 (March 2012)	Hard Copy	RM	**$40.00**
132043	Design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes-Vol 1 (March 2012)	Hard Copy	RM	**$40.00**
132043	Design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes-Vol 2 (March 2012)	Hard Copy	RM	**$40.00**
132069	Driven Pile Foundation Inspection - Participant Workbook (July 2006)	Hard Copy	PW	**$50.00**
132069	Plan Set Handout Driven Pile Foundation Inspection Course (October 2002)	Hard Copy	OM	**$60.00**
132070	Drilled Shaft Foundation Inspection - Participant Workbook (December 2002)	Hard Copy	PW	**$50.00**
132070	Drilled Shaft Inspector's Course - Plan Set Handout	Hard Copy	OM	**$50.00**

Course Number	Material Name	Format	Type	Price
132070B	Drilled Shaft Foundation Inspection - Participant Workbook (December 2002)	Hard Copy	PW	**$50.00**
132070B	Drilled Shaft Inspector's Course - Plan Set Handout	Hard Copy	OM	**$50.00**
132078	Micropile Design and Construction Reference Manual (December 2005)	Hard Copy	RM	**$30.00**
132081	Highway Slope Maintenance and Slide Restoration -- Participant Workbook	Hard Copy	PW	**$50.00**
132081	Highway Slope Maintenance and Slide Restoration -- Reference Manual	Hard Copy	RM	**$50.00**
132082	LFRD for Highway Bridge Substructures and Earth Retaining Structures (Feb 2012)	Hard Copy	RM	**$50.00**
132082	LFRD for Highway Bridge Substructures and Earth Retaining Structures (Feb 2014)	Hard Copy	PW	**$50.00**
132083	Implementation of LRFD Geotechnical Design for Bridge Foundations (February 2011)	Hard Copy	RM	**$20.00**
132094	LRFD Seismic Analysis and Design of Transportation Structures, Features and Foundations (Feb 2012)	Hard Copy	PW	**$50.00**
132094	LRFD Seismic Analysis and Design of Transportation Structures, Features and Foundations (Feb 2012)	Hard Copy	RM	**$75.00**
132094	LRFD Seismic Analysis and Design of Transportation Structures,...Design Examples (April 2012)	Hard Copy	OM	**$75.00**
132094A	LRFD Seismic Analysis and Design of Transportation Structures, Features and Foundations (Feb 2012)	Hard Copy	RM	**$75.00**
132094A	LRFD Seismic Analysis and Design of Transportation Structures,...Design Examples (April 2012)	Hard Copy	OM	**$75.00**
132094B	LRFD Seismic Analysis and Design of Transportation Structures, Features and Foundations(August 2011)	Hard Copy	PW	**$50.00**
132094B	LRFD Seismic Analysis and Design of Transportation Structures, Features and Foundations(August 2011)	Hard Copy	RM	**$75.00**
132094B	LRFD Seismic Analysis and Design of Transportation Structures,...Design Examples (April 2012)	Hard Copy	OM	**$75.00**
133075	Freeway Management And Operations - Participant Workbook (August 2005)	Hard Copy	PW	**$50.00**
133075A	Freeway Management And Operations - Participant Workbook (August 2005)	Hard Copy	PW	**$50.00**
133078	Access Management Location and Design (February 2007)	Hard Copy	PW	**$50.00**
133099	Managing Travel For Planned Events - CD (September 2005)	Hard Copy	OM	**$20.00**
133099	Managing Travel For Planned Events - Participant Workbook (September 2005)	Hard Copy	PW	**$50.00**
133099A	Managing Travel for Planned Special Events	Hard Copy	PW	**$50.00**
133115	Advanced Work Zone Management and Design (August 2007)	Hard Copy	PW	**$20.00**
133115	Advanced Work Zone Management and Design (August 2007)	Hard Copy	RM	**$40.00**
133120	WZ Traffic Analysis Applications and Decision Framework-PW	Hard Copy	PW	**$50.00**
133121	Traffic Signal Design and Operations (Dec 2011)	Hard Copy	PW	**$50.00**
133122	Traffic Signal Timing Concepts (May 2014)	Hard Copy	PW	**$50.00**

Course Number	Material Name	Format	Type	Price
133123	Implementing Successful Advanced Traffic Signal System Projects Including Adaptive Control	Hard Copy	PW	**$50.00**
133124	Performance Management of Traffic Signal Systems (March 2014)	Hard Copy	PW	**$50.00**
133125	Successful Traffic Signal Management: The Basic Service Approach (May 2014)	Hard Copy	PW	**$50.00**
134005	VALUE ENGINEERING (February 2013)	Hard Copy	PW	**$30.00**
134005A	VALUE ENGINEERING (AUGUST 2010)	Hard Copy	PW	**$30.00**
134005B	VALUE ENGINEERING (February 2013)	Hard Copy	PW	**$30.00**
134005C	VALUE ENGINEERING (February 2013)	Hard Copy	PW	**$30.00**
134037A	Managing Highway Contract Claims: Analysis And Avoidance - Participant Notes (September 2004)	Hard Copy	PW	**$50.00**
134042	MATERIALS CONTROL AND ACCEPTANCE QUALITY ASSURANCE (AUGUST 2009)	Electronic Copy	PW	**$60.00**
134042	MATERIALS CONTROL AND ACCEPTANCE QUALITY ASSURANCE (AUGUST 2009)	Hard Copy	PW	**$60.00**
134062A	Participant Workbook Volume I (November 2007)	Hard Copy	PW	**$40.00**
134062A	Participant Workbook Volume II (November 2007)	Hard Copy	PW	**$40.00**
134064	Transportation Construction Quality Assurance (June 2011)-1.5 Day Version	Hard Copy	PW	**$50.00**
134064	Transportation Construction Quality Assurance Reference Manual	Hard Copy	RM	**$50.00**
134064	Transportation Construction Quality Assurance Reference Manual	Electronic Copy	RM	**Free**
134064A	Transportation Construction Quality Assurance	Electronic Copy	RM	**Free**
135010	River Engineering For Highway Encroachments: Highways In The River Environment (December 2001)	Hard Copy	OM	**$50.00**
135027	Errata for HEC-22 dtd September 2009 (Included in September 2013 Revision)	Electronic Copy	OM	**Free**
135027	Urban Drainage Design Manual, HEC-22 (Revised September 2013)	Hard Copy	RM	**$50.00**
135027A	Highway Stormwater Pump Station Design (HEC-24)	Hard Copy	OM	**$40.00**
135028	Highway Stormwater Pump Station Design HEC-24	Hard Copy	OM	**$50.00**
135046	Evaluating Scour At Bridges, 5th Edition (HEC-18) (April 2013)	Hard Copy	OM	**$50.00**
135046	Stream Instability, Bridge Scour, and Countermeasures: A Field Guide for Bridge Inspectors (Feb2009)	Hard Copy	RM	**$20.00**
135046	Stream Stability at Highway Structures, 4th Edition (HEC-20)	Hard Copy	OM	**$50.00**
135047	Stream Instability, Bridge Scour, and Countermeasures: A Field Guide for Bridge Inspectors (Feb2009)	Hard Copy	RM	**$20.00**
135048	Countermeasure Design for Bridge Scour and Stream Instability	Hard Copy	OM	**$30.00**
135048	HEC-23 Bridge Scour And Stream Instability Countermeasures-Vol I	Hard Copy	RM	**$20.00**
135048	HEC-23 Bridge Scour And Stream Instability Countermeasures-Vol II	Hard Copy	RM	**$30.00**

Course Number	Material Name	Format	Type	Price
135048	Stream Instability, Bridge Scour, and Countermeasures: A Field Guide for Bridge Inspectors (Feb2009)	Hard Copy	RM	**$20.00**
135056	Culvert Design for Aquatic Organism Passage: HEC-26, First Ed. (October 2010)	Hard Copy	OM	**$50.00**
135056	Hydraulic Design of Highway Culverts-HDS 5 (April 2012)	Hard Copy	RM	**$50.00**
135065	Introduction to Highway Hydraulics-(June 2008)	Hard Copy	OM	**$50.00**
135065	Introduction to Highway Hydraulics-HDS No. 4 (June 2008)	Hard Copy	OM	**$50.00**
135067	Highway Hydrology, Hydraulic Design Series No. 2, Second Edition - (October 2002)	Hard Copy	OM	**$50.00**
135082	HEC-25 (Volume 2)-Highways in the Coastal Environment: Assessing Exposure to Extreme Events	Hard Copy	RM	**$30.00**
135082	Highways in the Coastal Environment (HEC-25)	Hard Copy	RM	**$40.00**
135085	PLAN OF ACTION (POA) FOR SCOUR CRITICAL BRIDGES - CD (MAY 2007)	Hard Copy	PP	**Free**
135090	Hydraulic Design of Safe Bridges-HDS-7 (April 2012)	Hard Copy	RM	**$50.00**
136106	TRANSPORTATION ASSET MANAGEMENT (June 2013)	Hard Copy	PW	**$50.00**
136106A	Introduction to Transportation Asset Management (June 2013)	Hard Copy	PW	**$50.00**
137030	Principles and Tools for Road Weather Management	Hard Copy	RM	**$50.00**
137030	Principles And Tools For Road Weather Management - Case Study Handout (November 2005)	Hard Copy	OM	**$40.00**
137030	Principles And Tools For Road Weather Management - Participant Workbook (November 2005)	Hard Copy	PW	**$50.00**
137046	NHI Using IDAS Data	Electronic Copy	EF	**Free**
139003	Advanced Freight Planning	Hard Copy	PW	**$50.00**
139004	Principles of Effective Commerical Motor Vehicle (CMV) Size and Weight Enforcement (Dec 2013)	Hard Copy	PW	**$50.00**
139005	Linking Freight to Planning and the Environment (PW)	Hard Copy	PW	**$50.00**
141029	Basic Relocation under the Uniform Act, Participant Workbook (September 2011)	Hard Copy	PW	**$40.00**
141030	Advanced Relocation (June 2006)	Hard Copy	PW	**$40.00**
141031	Business Relocation, Participant Workbook (February 2013)	Hard Copy	PW	**$30.00**
141043	Appraisal for Federal-Aid Highway Programs (May 2013)	Hard Copy	PW	**$30.00**
141050	Introduction to Federal-Aid Right-of-Way Requirements for Local Public Agencies (August 2010)	Hard Copy	PW	**$50.00**
142005	NEPA And The Transportation Decision Making Process (July 2011)	Hard Copy	PW	**$50.00**
142042	Fundamentals Of Title VI / Environmental Justice PW (February 2007)	Hard Copy	PW	**$50.00**
142046	Bicycle Facility Design (July 2013)	Hard Copy	PW	**$50.00**
142046	Bicycle Facility Design (July 2013)	Electronic Copy	PP	**$50.00**
142047	Water Quality Management of Highway Runoff PW/RM	Hard Copy	PW	**$50.00**

Course Number	Material Name	Format	Type	Price
142049	Beyond Compliance: Historic Preservation In Transporation Project Development - Exercise 4 (July 07)	Hard Copy	OM	**$20.00**
142049	Beyond Compliance: Historic Preservation In Transporation Project Development (July 2012)	Hard Copy	PW	**$50.00**
142049	Beyond Compliance: Historic Preservation In Transportation Project Development - Exercise 3(July 07)	Hard Copy	OM	**$20.00**
142049	Beyond Compliance: Historic Preservation In Transportation Project Development -Exercise 2 (July 07)	Hard Copy	OM	**$20.00**
142054	Design And Implementation Of Erosion And Sediment Control - Participant Workbook (December 2006)	Hard Copy	PW	**$30.00**
142054	Design And Implementation Of Erosion And Sediment Control - Reference Manual (December 2006)	Hard Copy	RM	**$30.00**
142055	Advanced Seminar on Transportation Project Development: Navigating the NEPA Maze (December 2008)	Hard Copy	PW	**$40.00**
152054	INTRODUCTION TO URBAN TRAVEL DEMAND FORECASTING (February 2012)	Hard Copy	PW	**$50.00**
231028	Using the AASHTO Audit Guide for the Procurement and Administration of A/E Contracts (Feb 2012)	Hard Copy	PW	**$35.00**
231029	Using AASHTO Audit Guide for Development of A/E Consultant Indirect Cost Rates (Feb 2012)	Hard Copy	PW	**$50.00**
231030	Using AASHTO Audit Guide for Auditing and Oversight of A/E Consultant Indirect Cost Rate (Feb2012)	Hard Copy	PW	**$50.00**
310110	Federal-Aid Highways-101 (April 2014)	Hard Copy	PW	**$50.00**
361032	Test Material Log	Hard Copy	BK	**$200.00**
380005	Railroad-Highway Grade Crossing Improvement Program - Participant Workbook (July 2011)	Hard Copy	PW	**$50.00**
380034	Design Construction And Maintenance Of Highway Safety Features And Appurtenances - Participant Workb	Hard Copy	PW	**$60.00**
380034A	Design Construction And Maintenance Of Highway Safety Features And Appurtenances - Participant Workb	Hard Copy	PW	**$60.00**
380034B	Design Construction And Maintenance Of Highway Safety Features And Appurtenances - Participant Workb	Hard Copy	PW	**$60.00**
380069	Desktop Reference for Crash Reduction Factors (September 2007)	Electronic Copy	OM	**Free**
380069	FHWA Road Safety Audit Guidelines (June 2006)	Electronic Copy	OM	**Free**
380069	Road Safety Audits/Assessements Participant Workbook (August 2008)	Hard Copy	PW	**$50.00**
380069	Road Safety Audits: Case Studies (December 2006)	Electronic Copy	OM	**Free**
380069	Toolbox of Countermeasures & Their Potential Effectiveness for Intersection Crashes (September 2007)	Electronic Copy	OM	**Free**
380069	Toolbox of Countermeasures & Their Potential Effectiveness for Pedestrian Crashes (September 2007)	Electronic Copy	OM	**Free**
380069	Toolbox of Countermeasures & Their Potential Effectiveness for Roadway Departure Crashes (Sept 2007)	Electronic Copy	OM	**Free**

Course Number	Material Name	Format	Type	Price
380069	Traffic Signals (September 2007)	Electronic Copy	OM	**Free**
380071	Interactive Highway Safety Design Model (December 2013)	Hard Copy	PW	**$50.00**
380073	Fundamentals of Planning, Design and Approval of Interchange Improvements...(February 2010)	Hard Copy	PW	**$50.00**
380075	Desktop Reference for Crash Reduction Factors (September 2007)	Electronic Copy	OM	**Free**
380075	New Approaches To Highway Safety Analysis - Reference Manual (February 2006)	Hard Copy	RM	**$50.00**
380075	New Approaches to Highway Safety Analysis Participant Workbook (April 2011)	Hard Copy	PW	**$50.00**
380075	Toolbox of Countermeasures & Their Potential Effectives for Intersection Crashes (September 2007)	Electronic Copy	OM	**Free**
380075	Toolbox of Countermeasures & Their Potential Effectives for Pedestrian Crashes (September 2007)	Electronic Copy	OM	**Free**
380075	Toolbox of Countermeasures & Their Potential Effectives for Roadway Departure Crashes (Sept 2007)	Electronic Copy	OM	**Free**
380075	Traffic Signals (September 2007)	Electronic Copy	OM	**Free**
380076	Desktop Reference for Crash Reduction Factors (September 2007)	Electronic Copy	OM	**Free**
380076	Low Cost Safety Improvements Workshop - Participant Workbook (February 2010)	Hard Copy	PW	**$50.00**
380076	Toolbox of Countermeasures & Their Potential Effectiveness for Intersection Crashes (September 2007)	Electronic Copy	OM	**Free**
380076	Toolbox of Countermeasures & Their Potential Effectiveness for Pedestrian Crashes (September 2007)	Electronic Copy	OM	**Free**
380076	Toolbox of Countermeasures & Their Potential Effectiveness for Roadway Departure Crashes (Sept 2007)	Electronic Copy	OM	**Free**
380076	Traffic Signals (September 2007)	Electronic Copy	OM	**Free**
380077	Desktop Reference for Crash Reduction Factors (September 2007)	Electronic Copy	OM	**Free**
380077	Toolbox of Countermeasures & Their Potential Effectiveness for Intersection Crashes (September 2007)	Electronic Copy	OM	**Free**
380077	Toolbox of Countermeasures & Their Potential Effectiveness for Pedestrian Crashes (September 2007)	Electronic Copy	OM	**Free**
380077	Toolbox of Countermeasures & Their Potential Effectiveness for Roadway Departure Crashes (Sept 2007)	Electronic Copy	OM	**Free**
380077	Traffic Signals (September 2007)	Electronic Copy	OM	**Free**
380089	Designing for Pedestrian Safety - Participant Workbook (April 2012)	Hard Copy	PW	**$50.00**
380090	Developing a Pedestrian Safety Action Plan Participant Workbook (January 2009)	Hard Copy	PW	**$50.00**

Course Number	Material Name	Format	Type	**Price**
380095	Highway Design: Applying Flexibility & Risk Management (January 2013)	Hard Copy	PW	**$50.00**
380100	Interactive Highway Safety Design Model - Web-based course-Participant Workbook	Electronic Copy	PW	**$50.00**
420050	How to Create and Deliver a Dynamic Presentation (April 2010)	Hard Copy	PW	**$30.00**
N/A	FHWA-NHI-132037 Shallow Foundations	Hard Copy	RM	**$50.00**