Improving the Performance of the Transportation Industry Through Training

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CATEGORY ICONS

These NHI category icons can assist users in identifying the course category or multiple course categories. The category icons are listed below for your reference.

**STRUCTURES**

- Pavement and Materials

**GEOTECHNICAL**

- Design and Traffic Operations

**CONSTRUCTION AND MAINTENANCE**

- Hydraulics

**INTELLIGENT TRANSPORTATION SYSTEMS (ITS)**

- Freight and Transportation Logistics

**REAL ESTATE**

- Environment

**TRANSPORTATION PLANNING**

- Business, Public Administration & Quality

**HIGHWAY SAFETY**

- Communications

**SITE AND PERSONAL SAFETY**

- Asset Management

**FINANCIAL MANAGEMENT**

- Transportation Performance Management
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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](http://www.nhi.fhwa.dot.gov).

_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](http://www.nhi.fhwa.dot.gov).

Customers with additional questions may also contact NHI Customer Service at [NHI.CustomerService@dot.gov](mailto:NHI.CustomerService@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 provides 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 Certificates 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 would be eligible for the Certificate of Accomplishment when they have completed and passed a suite of related NHI course offerings. Currently, this program has been put on hold, although it is expected to be re-initiated in the near future.

More Information will be released as soon as it is available.
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-131050A

COURSE TITLE
(Introduction to) Asphalt Pavement In-Place Recycling Techniques

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: 2019: $0 Per Person; 2020: N/A

LENGTH: 2 HOURS (CEU: 0 UNITS)

CLASS SIZE: MINIMUM: 20; MAXIMUM: 30

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
Course Number
FHWA-NHI-131110

Course Title
Asphalt Pavement Preservation Treatment Series (Modules A-K)

FHWA, in partnership with Caltrans, the National Center for Pavement Preservation, and the Transportation Curriculum Coordination Council (TCCC) created the Pavement Preservation Treatment Construction Guide (PPTCG) as a resource for agency and industry pavement preservation practitioners. The guide covers basic pavement preservation concepts, as well as information on specific treatments to extend the life of asphalt pavements.

This course includes a series of modules designed to provide participants with an introduction to the PPTCG, so that they can better use it to familiarize themselves with general information on pavement preservation concepts and techniques. The module topics include:

1. Introduction to Pavement Preservation (NHI-131110A)
2. Materials (NHI-131110B)
3. Crack Sealing, Crack Filling and Joint Sealing of Flexible and Rigid Pavements (NHI-131110C)
4. Patching and Edge Repairs (NHI-131110D)
5. Chip Seals (NHI-131110E)
6. Fog Seals (NHI-131110F)
7. Slurry Seals (NHI-131110G)
8. Micro-surfacing Projects (NHI-131110H)
9. Thin Functional and Maintenance Overlay Projects (NHI-131110I)
10. Ultra Thin, Hot-Mixed, Bonded Overlay Projects (NHI-131110J)
11. Selecting a Pavement Preservation Treatment (NHI-131110K)

Each of the modules is also offered as individual trainings and can be accessed by registering for the course number listed with each module.

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

- Identify the components and value of a Pavement Preventive Maintenance (PPM) program
- Identify pavement conditions and other attributes that suggest whether preventive maintenance is appropriate
- Identify various pavement preservation strategies, techniques and materials
- State the performance characteristics of various pavement preservation strategies, techniques and materials
- Select the appropriate strategy(ies), technique(s) and material to extend the service life and retard the development of pavement distress

Target Audience
The primary audience for the Pavement Preservation Treatment Construction WBT course is Federal, State, and local highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Although not in the primary audience, design engineers will also benefit from the online guide and the associated training. The training course is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.
**Training Level:** Intermediate

**Fee:** 2019: $50 Per Person; 2020: N/A

**Length:** 10 Hours (CEU: 0 Units)

**Class Size:** Minimum: 1; Maximum: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
COURSE NUMBER
FHWA-NHI-131110A

COURSE TITLE
Asphalt Pavement Preservation Treatment Series: Introduction to Pavement Preservation

This training is part of the “Asphalt Pavement Preservation Treatment” series which provides participants with an introduction to the Pavement Preservation Treatment Construction Guide (PPTCG) and the basics of pavement preservation. The PPTCG was created by FHWA, in partnership with Caltrans, the National Center for Pavement Preservation, and the Transportation Curriculum Coordination Council (TCCC) as a resource for agency and industry pavement preservation practitioners.

This module provides an introduction to basic pavement preservation concepts and the different treatments available and how they should be applied, so agencies can make informed decisions when determining which treatments best fit their pavement preservation needs. Topics include: pavement structure, distresses, and differentiating pavement preservation from preventive maintenance.

The training is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information. To take the entire series of trainings for the PPTCG, access the NHI website and register for NHI-131110.

OUTCOMES
Upon completion of the course, participants will be able to:
• Identify common surface distresses in pavements.
• Distinguish between distresses caused by surface failure and those caused by subsurface layer failure.
• Recognize the difference between pavement preservation and pavement maintenance.

TARGET AUDIENCE
The primary audience for the Pavement Preservation Treatment Construction WBT course is Federal, State, and local highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Although not in the primary audience, design engineers will also benefit from the online guide and the associated training. The training course is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

TRAINING LEVEL: Basic

FEE: 2019: $25 Per Person; 2020: $25 Per Person
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-131110B

COURSE TITLE
Asphalt Pavement Preservation Treatment Series: Materials

This training is part of the “Asphalt Pavement Preservation Treatment” series and is designed to provide participants with information on the materials used for preventive maintenance treatments. Topics include: materials comprising maintenance treatments, emulsions, and aggregates. This course is primarily intended for inspectors and technicians.

This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), which was created by FHWA, in partnership with Caltrans, the National Center for Pavement Preservation, and the Transportation Curriculum Coordination Council (TCCC) as a resource for agency and industry pavement preservation practitioners. It provides information on basic pavement preservation concepts and the different treatments available and how they should be applied, so agencies can make informed decisions when determining which treatments best fit their pavement preservation needs. The training is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

To take the entire series of trainings for the PPTCG, access the NHI website and register for NHI-131110.

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

• List the materials used in preventive maintenance treatments for flexible and rigid pavements.
• Recognize the differences between asphalt cement and emulsions and their use in pavement preservation treatments.
• List the six physical properties of aggregates that affect the performance of preservation treatments.

TARGET AUDIENCE
The primary audience for the Pavement Preservation Treatment Construction WBT course is Federal, State, and local highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Although not in the primary audience, design engineers will also benefit from the online guide and the associated training. The training course is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

TRAINING LEVEL: Intermediate

FEE: 2019: $25 Per Person; 2020: $25 Per Person

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-131110C

Course Title
Asphalt Pavement Preservation Treatment: Crack Sealing & Filling, and Joint Sealing

This training is part of the "Asphalt Pavement Preservation Treatment" series and is designed to provide participants with information on crack sealing, crack filling, and joint sealing of flexible and rigid pavements. Topics include: working and non-working cracks, fatigue and longitudinal cracks, correct temperatures for crack sealant, crack repair sequence, hot sealant, and crack sealing or filling criteria. This course is primarily intended for inspectors and technicians.

This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), which was created by FHWA, in partnership with Caltrans, the National Center for Pavement Preservation, and the Transportation Curriculum Coordination Council (TCCC) as a resource for agency and industry pavement preservation practitioners. It provides information on basic pavement preservation concepts and the different treatments available and how they should be applied, so agencies can make informed decisions when determining which treatments best fit their pavement preservation needs. The training is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

To take the entire series of trainings for the PPTCG, access the NHI website and register for NHI-131110.

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

- Describe the difference between a working crack and a nonworking crack.
- List the types of distresses that crack sealing, crack filling, and joint sealing treatments will repair.
- Describe how proper storage and handling of sealants and fillers affect their constructability and performance.
- Describe the procedure of repairing surface cracks and rigid joints.
- Identify common problems associated with crack sealing, crack filling, and joint sealing treatments and recognize their solutions.
- List the capabilities and limitations of crack sealing, crack filling, and joint sealing treatments.

Target Audience
The primary audience for the Pavement Preservation Treatment Construction WBT course is Federal, State, and local highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Although not in the primary audience, design engineers will also benefit from the online guide and the associated training. The training course is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

Training Level: Intermediate

Fee: 2019: $25 Per Person; 2020: $25 Per Person

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-131110D

Course Title
Asphalt Pavement Preservation Treatment Series: Localized Pavement Repair

This training is part of the “Asphalt Pavement Preservation Treatment” series and is designed to provide participants with information on localized pavement repair. Topics include: pothole formation and edge failure, seal or fill decisions, construction of, and problems with, pothole patching, dig outs, edge repairs, and skin patching, and capabilities and limitations of localized repairs. This course is primarily intended for inspectors and technicians.

This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), which was created by FHWA, in partnership with Caltrans, the National Center for Pavement Preservation, and the Transportation Curriculum Coordination Council (TCCC) as a resource for agency and industry pavement preservation practitioners. It provides information on basic pavement preservation concepts and the different treatments available and how they should be applied, so agencies can make informed decisions when determining which treatments best fit their pavement preservation needs. The training is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

To take the entire series of trainings for the PPTCG, access the NHI website and register for NHI-131110.

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

- Describe the mechanisms of pothole formation and edge failure.
- Select the type of localized pavement repair best suited to a given condition.
- Describe the process of pothole patching, dig outs, edge repairs, and skin patching.
- Identify common problems associated with pothole patching, dig outs, edge repairs, and skin patching and recognize their solutions.
- List the key capabilities and limitations of localized pavement repairs.

Target Audience
The primary audience for the Pavement Preservation Treatment Construction WBT course is Federal, State, and local highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Although not in the primary audience, design engineers will also benefit from the online guide and the associated training. The training course is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

Training Level: Intermediate

Fee: 2019: $25 Per Person; 2020: $25 Per Person

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-131110E

Course Title
Asphalt Pavement Preservation Treatment Series: Chip Seals

This training is part of the “Asphalt Pavement Preservation Treatment” series and is designed to provide participants with information on chip seals. Topics include: project selection, pavement and weather condition requirements, storage, traffic control, construction sequence, aggregate spreading distance, brooming, chip spreading process, distributor preparation, and troubleshooting.

This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), which was created by FHWA, in partnership with Caltrans, the National Center for Pavement Preservation, and the Transportation Curriculum Coordination Council (TCCC) as a resource for agency and industry pavement preservation practitioners. It provides information on basic pavement preservation concepts and the different treatments available and how they should be applied, so agencies can make informed decisions when determining which treatments best fit their pavement preservation needs. The training is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

To take the entire series of trainings for the PPTCG, access the NHI website and register for NHI-131110.

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

• Recognize pavement conditions best suited to the chip seal treatment.
• Identify how proper storage and handling of chip seal materials affect their constructability and performance.
• Describe the construction of chip seals.
• Identify common problems associated with chip seals and recognize their solutions.
• Recognize key capabilities and limitations of chip seals.

Target Audience
The primary audience for the Pavement Preservation Treatment Construction WBT course is Federal, State, and local highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Although not in the primary audience, design engineers will also benefit from the online guide and the associated training. The training course is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

Training Level: Intermediate

Fee: 2019: $25 Per Person; 2020: $25 Per Person

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-131110F

Course Title
Asphalt Pavement Preservation Treatment Series: Fog Seals

This training is part of the “Asphalt Pavement Preservation Treatment” series and is designed to provide participants with information on fog seals. Topics include: uses of fog seals, suitable pavement surfaces, storage and handling of materials, application process, and problems and causation. This course is primarily intended for inspectors and technicians.

This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), which was created by FHWA, in partnership with Caltrans, the National Center for Pavement Preservation, and the Transportation Curriculum Coordination Council (TCCC) as a resource for agency and industry pavement preservation practitioners. It provides information on basic pavement preservation concepts and the different treatments available and how they should be applied, so agencies can make informed decisions when determining which treatments best fit their pavement preservation needs. The training is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

To take the entire series of trainings for the PPTCG, access the NHI website and register for NHI-131110.

Outcomes
Upon completion of the course, participants will be able to:
• Recognize pavement conditions most suitable for a fog seal.
• Describe how proper storage and handling of fog seal materials affect their constructability and performance.
• Describe the construction of a fog seal.
• Identify common problems associated with fog seals and recognize their solutions.
• List the key capabilities and limitations of fog seal treatments.

Target Audience
The primary audience for the Pavement Preservation Treatment Construction WBT course is Federal, State, and local highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Although not in the primary audience, design engineers will also benefit from the online guide and the associated training. The training course is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

Training Level: Intermediate

Fee: 2019: $25 Per Person; 2020: $25 Per Person

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-131110G

Course Title
Asphalt Pavement Preservation Treatment Series: Slurry Seals

This training is part of the “Asphalt Pavement Preservation Treatment” series and is designed to provide participants with information on slurry seals. Topics include: reasons to use slurry seals, gradations of slurry seal aggregate, preparation and application process, and problems and solutions. This course is primarily intended for inspectors and technicians.

This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), which was created by FHWA, in partnership with Caltrans, the National Center for Pavement Preservation, and the Transportation Curriculum Coordination Council (TCCC) as a resource for agency and industry pavement preservation practitioners. It provides information on basic pavement preservation concepts and the different treatments available and how they should be applied, so agencies can make informed decisions when determining which treatments best fit their pavement preservation needs. The training is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

To take the entire series of trainings for the PPTCG, access the NHI website and register for NHI-131110.

Outcomes
Upon completion of the course, participants will be able to:
• Identify the type of slurry seal appropriate to various traffic conditions.
• Describe the construction of slurry seals.
• Identify common problems associated with slurry seals and recognize their solutions.
• List the key capabilities and limitations of slurry seals.

Target Audience
The primary audience for the Pavement Preservation Treatment Construction WBT course is Federal, State, and local highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Although not in the primary audience, design engineers will also benefit from the online guide and the associated training. The training course is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

Training Level: Intermediate

Fee: 2019: $25 Per Person; 2020: $25 Per Person

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-131110H

COURSE TITLE
Asphalt Pavement Preservation Treatment Series: Micro-Surfacing

This training is part of the “Asphalt Pavement Preservation Treatment” series and is designed to provide participants with information on micro-surfacing. Topics include: pavement and traffic condition considerations, construction, and troubleshooting.

This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), which was created by FHWA, in partnership with Caltrans, the National Center for Pavement Preservation, and the Transportation Curriculum Coordination Council (TCCC) as a resource for agency and industry pavement preservation practitioners. It provides information on basic pavement preservation concepts and the different treatments available and how they should be applied, so agencies can make informed decisions when determining which treatments best fit their pavement preservation needs. The training is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

To take the entire series of trainings for the PPTCG, access the NHI website and register for NHI-131110.

OUTCOMES
Upon completion of the course, participants will be able to:
• Identify pavement conditions most suitable for a micro-surfacing treatment.
• Describe the construction of micro-surfacing.
• Identify common problems associated with micro-surfacing and recognize their solutions.
• List the key capabilities and limitations of micro-surfacing relative to various traffic conditions.

TARGET AUDIENCE
The primary audience for the Pavement Preservation Treatment Construction WBT course is Federal, State, and local highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Although not in the primary audience, design engineers will also benefit from the online guide and the associated training. The training course is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

TRAINING LEVEL: Intermediate

FEE: 2019: $25 Per Person; 2020: $25 Per Person

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-131110I

COURSE TITLE
Asphalt Pavement Preservation Treatment Series: Thin Functional HMA Overlay

This training is part of the “Asphalt Pavement Preservation Treatment” series and is designed to provide participants with information on thin functional hot-mix asphalt overlays. Topics include: proper usage, suitable pavement conditions, construction, and troubleshooting. This course is primarily intended for inspectors and technicians.

This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), which was created by FHWA, in partnership with Caltrans, the National Center for Pavement Preservation, and the Transportation Curriculum Coordination Council (TCCC) as a resource for agency and industry pavement preservation practitioners. It provides information on basic pavement preservation concepts and the different treatments available and how they should be applied, so agencies can make informed decisions when determining which treatments best fit their pavement preservation needs. The training is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

To take the entire series of trainings for the PPTCG, access the NHI website and register for NHI-131110.

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

• Identify pavement conditions best suited for a thin hot mix asphalt overlay.
• Describe the construction process for a thin hot mix asphalt overlay.
• Identify common problems associated with a thin hot mix asphalt overlay and recognize their solutions.
• List the key capabilities and benefits of a thin hot mix asphalt overlay relative to various traffic conditions.

TARGET AUDIENCE
The primary audience for the Pavement Preservation Treatment Construction WBT course is Federal, State, and local highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Although not in the primary audience, design engineers will also benefit from the online guide and the associated training. The training course is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

TRAINING LEVEL: Intermediate

FEE: 2019: $25 Per Person; 2020: $25 Per Person

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-131110J

COURSE TITLE
Asphalt Pavement Preservation Treatment Series: Ultra Thin HMA Bonded Wearing Course

This training is part of the “Asphalt Pavement Preservation Treatment” series and is designed to provide participants with information on ultra thin, hot-mixed asphalt bonded wearing course. Topics include: usage, distresses and application considerations, construction, and troubleshooting. This course is primarily intended for inspectors and technicians.

This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), which was created by FHWA, in partnership with Caltrans, the National Center for Pavement Preservation, and the Transportation Curriculum Coordination Council (TCCC) as a resource for agency and industry pavement preservation practitioners. It provides information on basic pavement preservation concepts and the different treatments available and how they should be applied, so agencies can make informed decisions when determining which treatments best fit their pavement preservation needs. The training is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

To take the entire series of trainings for the PPTCG, access the NHI website and register for NHI-131110.

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

• Identify pavement conditions best suited to ultra thin, hot-mixed asphalt bonded wearing course.
• Describe the construction of ultra thin, hot-mixed, asphalt bonded wearing course.
• Identify common problems associated with ultra thin, hot-mixed, asphalt bonded wearing course and recognize their solutions.
• List key capabilities and benefits of ultra thin, hot-mixed, asphalt bonded wearing course relative to various traffic conditions.

TARGET AUDIENCE
The primary audience for the Pavement Preservation Treatment Construction WBT course is Federal, State, and local highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Although not in the primary audience, design engineers will also benefit from the online guide and the associated training. The training course is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

TRAINING LEVEL: Intermediate

FEE: 2019: $25 Per Person; 2020: $25 Per Person

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-131110K

Course Title
Asphalt Pavement Preservation Treatment Series: Selecting the Right Treatment

This training is part of the “Asphalt Pavement Preservation Treatment” series and is designed to provide participants with information on preservation treatment selection. This course is primarily intended for inspectors and technicians.

The training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), which was created by FHWA, in partnership with Caltrans, the National Center for Pavement Preservation, and the Transportation Curriculum Coordination Council (TCCC) as a resource for agency and industry pavement preservation practitioners. It provides information on basic pavement preservation concepts and the different treatments available and how they should be applied, so agencies can make informed decisions when determining which treatments best fit their pavement preservation needs. The training is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

To take the entire series of trainings for the PPTCG, access the NHI website and register for NHI-131110.

Outcomes
Upon completion of the course, participants will be able to:
• Select the appropriate pavement preservation treatment(s) after analyzing given pavement and traffic conditions.

Target Audience
The primary audience for the Pavement Preservation Treatment Construction WBT course is Federal, State, and local highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Although not in the primary audience, design engineers will also benefit from the online guide and the associated training. The training course is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

Training Level: Intermediate

Fee: 2019: $25 Per Person; 2020: $25 Per Person

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-131117

COURSE TITLE
Basic Materials for Highway and Structure Construction and Maintenance

This training is provided by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to review basic materials for highway and structure construction and maintenance. The training was prepared by State DOT personnel for State DOT personnel. It contains good practices from various agencies. Each State agency/company has its own specifications, which the viewer needs to review and follow. This course is primarily intended for inspectors and technicians.

Although there are a number of materials used in the construction and maintenance process for both highways and structures, this course is focused on the three basic materials. They are Aggregate, Portland Cement Concrete (referred to as PCC), and Hot Mix Asphalt (referred to as HMA).

This training is directed toward entry level technicians, to give them a general view of the basic materials used in construction and maintenance. The course modules will address the procedures used in the production and sampling of aggregates.

Module 1 is called Basic Aggregates and includes quarry inspection, sand operation, stockpiling, and sampling. Module 2 covers Portland Cement, including the production of Portland Cement, the hydration process, as well as other cementing materials used in concrete such as water, admixtures, and aggregates. Module 3 reviews Hot Mix Asphalt, including the asphalt binder and aggregates used in the production.

OUTCOMES
Upon completion of the course, participants will be able to:
• Identify aggregate production and sampling procedures
• Recognize the ingredients of PCC and the part each plays in concrete production
• Recognize the ingredients of HMA and the part each plays in hot mix asphalt production

TARGET AUDIENCE
This training is designed for Level I and Level II State/local public agency personnel and their industry counterparts involved in the construction, maintenance and testing process for highways and structures. Level I or Entry refers to employees/trainees with little to no experience in the subject area and perform his/her activities under direct supervision. Level II or Intermediate refers to employees that understand and demonstrate skills in one or more areas of the entry level and perform specific tasks under general supervision.

TRAINING LEVEL: Basic

FEE: 2019: $25 Per Person; 2020: $25 Per Person
LENGTH: 3 HOURS (CEU: 0 UNITS)
CLASS SIZE: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
Course Number
FHWA-NHI-131121

Course Title
Construction of Portland Cement Concrete Pavements

Improving and maintaining the quality of concrete is an important aspect of keeping pavements safe and long lasting. This training provides participants with an overview of the entire Portland cement concrete (PCC) paving and restoration process: setting forms, mixing, hauling, curing and applicable repair techniques. This training is presented in several modules:

1. Construction Quality
2. PCC Production Overview
3. Slipform Paving
4. Fixed Form Paving
5. Pavement Curing, Sawing, and Joint Sealing Operations
6. Concrete Pavement Restoration

This self-paced, Web-based training is designed for participants to progress at their own pace. The training focuses on the proper methods for construction of concrete paving and pavement restoration techniques with an emphasis on cause and effect.

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

• Describe the differences between truck-mixed and ready-mixed concrete
• Identify factors in production and paving operations that contribute to achieving a smooth ride
• Describe the differences between slip-form and fixed-form paving
• Identify the factors that impact saw timing and crack control
• Recognize the importance and key factors in placing joint sealant materials
• Identify the components of concrete pavement restoration application and construction techniques
• Describe the purpose and appropriate use of full depth and partial depth repairs
• Identify critical factors for curing and sawing operations that affect pavement performance
• Describe the purpose of grinding and dowel bar retrofit
• Identify applicable repair techniques for concrete pavement restoration
• Describe purpose of slab stabilization and joint and crack resealing

Target Audience
This training is designed for contractors, technicians, and inspectors who are involved in daily pavement operations for the placement and restoration of PCC pavements. Participants should have some working knowledge of concrete pavement construction.

Training Level: Intermediate

Fee: 2019: $50 Per Person; 2020: $25 Per Person

Length: 10 Hours (CEU: 0 Units)

Class Size: Minimum: 1; Maximum: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
COURSE NUMBER
FHWA-NHI-131122

COURSE TITLE
Portland Cement Concrete Paving Inspection

This training is provided by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to review inspection practices for Portland cement concrete paving projects. The training was originally developed by the Iowa Department of Transportation and more currently updated and reviewed by the TCCC and NHI. This course is recommended for the Transportation Curriculum Coordination Council levels I and II. This course is primarily intended for inspectors and technicians.

This training course has been prepared to provide guidance and instruction to inspectors involved in the construction of Portland cement concrete (PCC) pavements. The important tasks involved in this work are explained and proper procedures are described. The material is targeted for those who have not had experience in PCC paving construction.

OUTCOMES
Upon completion of the course, participants will be able to:
• Identify the materials in a PCC mixture and the concrete properties
• Comprehend Design Project Plans and recognize the joints types and saw cuts
• Identify the safety requirements and recognize safe Traffic Control practices
• Recognize and comprehend the use of the equipment in a PCC Paving project
• Recognize various sub grade treatments
• Inspect project tasks for compliance with pre-paving requirements, i.e., survey stakes, proof rolling, subgrade, and dowel baskets
• Inspect project tasks for compliance with PCC Paving requirements, i.e., string line, place and consolidate, finish, and texture
• Perform post-construction checks

TARGET AUDIENCE
This training is designed for FHWA, State, and local agencies and their industry counterparts involved in the process of placement and inspection of Portland cement concrete paving. It is applicable to anyone desiring a better understanding of activities and inspection procedures on Portland cement concrete paving projects.

TRAINING LEVEL: Intermediate

FEE: 2019: $50 Per Person; 2020: $50 Per Person

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-131126

Course Title
Concrete Pavement Preservation Series (Modules A-K)

NHI in partnership with the Transportation Curriculum Coordination Council (TCCC) is pleased to offer this comprehensive training series for concrete pavement preservation. The training was developed by the National Concrete Pavement Technology Center at Iowa State University in cooperation with FHWA.

The NHI-131126 Concrete Pavement Preservation Series presents current guidelines and recommendations for the design, construction, and selection of cost-effective concrete pavement preservation strategies. It concentrates primarily on strategies and methods that are applicable at the project level, and not at the network level, where pavement management activities function and address such issues as prioritizing and budgeting.

Registration in NHI-131126 enrolls you in all 11 courses in the Concrete Pavement Preservation Series (NHI-131126A-K) plus gives you access to a downloadable version of the FHWA Concrete Pavement Preservation Guide! You can take some or all of these courses when it best suits your schedule.

NHI-131126 includes:
- Introduction module with downloadable version of the FHWA Concrete Pavement Preservation Guide
- NHI-131126A: Pavement Preservation Concepts
- NHI-131126B: Concrete Pavement Evaluation
- NHI-131126C: Slab Stabilization
- NHI-131126D: Partial-depth Repairs
- NHI-131126E: Full-depth Repairs
- NHI-131126F: Retrofitted Edge Drains
- NHI-131126G: Dowel Bar Retrofit
- NHI-131126H: Diamond Grinding and Grooving
- NHI-131126I: Joint Resealing and Crack Sealing
- NHI-131126J: Concrete Overlays
- NHI-131126K: Strategy Selection

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

• Define pavement preservation
• List the major components of a pavement evaluation and the types of information gained from each
• Identify the purpose and suitable application of various concrete pavement preservation treatments
• Describe recommended materials and construction/installation practices for each treatment
• List factors to consider in the selection of concrete pavement preservation treatments

Target Audience
The Concrete Pavement Preservation Series meets the needs of a diverse audience to include design engineers, quality control personnel, contractors, suppliers, technicians, and trades people. While the course is aimed at those who have some familiarity with concrete pavements and pavement preservation, it should also be of value to those that are new to the field. This course is recommended for the Transportation Curriculum Coordination Council levels I - IV.
TRAINING LEVEL: Intermediate

FEE: 2019: $50 Per Person; 2020: $50 Per Person

LENGTH: 11 HOURS (CEU: 0 UNITS)

CLASS SIZE: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
Course Number
FHWA-NHI-131126A

Course Title
Concrete Pavement Preservation Series: Pavement Preservation Concepts

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to provide guidance on critical concrete pavement preservation issues. The training was developed by the National Concrete Pavement Technology Center at Iowa State University in cooperation with FHWA.

This module discusses how preventative maintenance impacts pavement preservation, good candidates for preservation, and the benefits to pavement preservation.

This module is part of the curriculum from the Concrete Pavement Preservation Series (FHWA-NHI-131126) which presents current guidelines and recommendations for the design, construction, and selection of cost-effective concrete pavement preservation strategies. The other Web-based training modules are:
- NHI-131126 Concrete Pavement Preservation Series with downloadable version of the FHWA Concrete Pavement Preservation Guide
- NHI-131126A: Pavement Preservation Concepts
- NHI-131126B: Concrete Pavement Evaluation
- NHI-131126C: Slab Stabilization
- NHI-131126D: Partial-depth Repairs
- NHI-131126E: Full-depth Repairs
- NHI-131126F: Retrofitted Edge Drains
- NHI-131126G: Dowel Bar Retrofit
- NHI-131126H: Diamond Grinding and Grooving
- NHI-131126I: Joint Resealing and Crack Sealing
- NHI-131126J: Concrete Overlays
- NHI-131126K: Strategy Selection

Outcomes

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

• Define pavement preservation and preventive maintenance
• Describe characteristics of suitable pavements for preventive maintenance
• Describe the importance of selecting and placing the “right” treatment and placing it at the “right” time
• List the benefits of pavement preservation

Target Audience

The intended audience is quite diverse, and includes design engineers, quality control personnel, contractors, suppliers, technicians, and trades people. While the course is aimed at those who have some familiarity with concrete pavements and pavement preservation, it should also be of value to those that are new to the field. This course is recommended for the Transportation Curriculum Coordination Council levels I - IV.
TRAINING LEVEL: Intermediate

FEE: 2019: $25 Per Person; 2020: $25 Per Person

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-131126B

Course Title
Concrete Pavement Preservation Series: Concrete Pavement Evaluation

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to provide guidance on critical concrete pavement preservation issues. The training was sponsored by the FHWA and developed by the National Concrete Pavement Technology Center at Iowa State University in cooperation with FHWA.

This module discusses how preventative maintenance impacts pavement preservation, good candidates for preservation, and the benefits to pavement preservation. This module also describes the common procedures associated with conducting thorough pavement evaluations.

This module is part of the curriculum from the Concrete Pavement Preservation Series (FHWA-NHI-131126) which presents current guidelines and recommendations for the design, construction, and selection of cost-effective concrete pavement preservation strategies. The other Web-based training modules are:

- NHI-131126 Concrete Pavement Preservation Series with downloadable version of the FHWA Concrete Pavement Preservation Guide
- NHI-131126A: Pavement Preservation Concepts
- NHI-131126B: Concrete Pavement Evaluation
- NHI-131126C: Slab Stabilization
- NHI-131126D: Partial-depth Repairs
- NHI-131126E: Full-depth Repairs
- NHI-131126F: Retrofitted Edge Drains
- NHI-131126G: Dowel Bar Retrofit
- NHI-131126H: Diamond Grinding and Grooving
- NHI-131126I: Joint Resealing and Crack Sealing
- NHI-131126J: Concrete Overlays
- NHI-131126K: Strategy Selection

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

- Describe the need for a thorough pavement evaluation
- Name the common pavement evaluation components
- Describe what information is obtained from each pavement evaluation component

Target Audience
The intended audience is quite diverse, and includes design engineers, quality control personnel, contractors, suppliers, technicians, and trades people. While the course is aimed at those who have some familiarity with concrete pavements and pavement preservation, it should also be of value to those that are new to the field. This course is recommended for the Transportation Curriculum Coordination Council levels I - IV.
TRAINING LEVEL: Intermediate

FEE: 2019: $25 Per Person; 2020: $25 Per Person

LENGTH: 2 HOURS (CEU: 0 UNITS)

CLASS SIZE: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
COURSE NUMBER
FHWA-NHI-131126C

COURSE TITLE
Concrete Pavement Preservation Series: Slab Stabilization

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to provide guidance on critical concrete pavement preservation issues. The training was developed by the National Concrete Pavement Technology Center at Iowa State University in cooperation with FHWA.

This module covers the use of slab stabilization (also known as undersealing) and slab jacking of concrete pavements. Slab stabilization restores support beneath slabs where voids have been detected, and slab jacking is used to raise depressed or settled slabs.

This module is part of the curriculum from the Concrete Pavement Preservation Series (FHWA-NHI-131126) which presents current guidelines and recommendations for the design, construction, and selection of cost-effective concrete pavement preservation strategies. The other Web-based training modules are:
- NHI-131126 Concrete Pavement Preservation Series with downloadable version of the FHWA Concrete Pavement Preservation Guide
- NHI-131126A: Pavement Preservation Concepts
- NHI-131126B: Concrete Pavement Evaluation
- NHI-131126C: Slab Stabilization
- NHI-131126D: Partial-depth Repairs
- NHI-131126E: Full-depth Repairs
- NHI-131126F: Retrofitted Edge Drains
- NHI-131126G: Dowel Bar Retrofit
- NHI-131126H: Diamond Grinding and Grooving
- NHI-131126I: Joint Resealing and Crack Sealing
- NHI-131126J: Concrete Overlays
- NHI-131126K: Strategy Selection

OUTCOMES
Upon completion of the course, participants will be able to:
• List benefits of slab stabilization and slab jacking
• Describe recommended materials and mixtures
• Describe recommended construction steps for both procedures
• Identify typical construction problems and remedies for slab stabilization

TARGET AUDIENCE
The intended audience is quite diverse, and includes design engineers, quality control personnel, contractors, suppliers, technicians, and trades people. While the course is aimed at those who have some familiarity with concrete pavements and pavement preservation, it should also be of value to those that are new to the field. This course is recommended for the Transportation Curriculum Coordination Council levels I - IV.
**TRAINING LEVEL:** Intermediate

**FEE:** 2019: $25 Per Person; 2020: $25 Per Person

**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-131126D

Course Title
Concrete Pavement Preservation Series: Partial-depth Repairs

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to provide guidance on critical concrete pavement preservation issues. The training was developed by the National Concrete Pavement Technology Center at Iowa State University in cooperation with FHWA.

This module covers the procedures for partial-depth repairs (PDR) on PCC pavements. PDR is the removal and replacement of small, shallow areas of deteriorated PCC at spalled or distressed joints.

This module is part of the curriculum from the Concrete Pavement Preservation Series (FHWA-NHI-131126) which presents current guidelines and recommendations for the design, construction, and selection of cost-effective concrete pavement preservation strategies. The other Web-based training modules are:
- NHI-131126 Concrete Pavement Preservation Series with downloadable version of the FHWA Concrete Pavement Preservation Guide
- NHI-131126A: Pavement Preservation Concepts
- NHI-131126B: Concrete Pavement Evaluation
- NHI-131126C: Slab Stabilization
- NHI-131126D: Partial-depth Repairs
- NHI-131126E: Full-depth Repairs
- NHI-131126F: Retrofitted Edge Drains
- NHI-131126G: Dowel Bar Retrofit
- NHI-131126H: Diamond Grinding and Grooving
- NHI-131126I: Joint Resealing and Crack Sealing
- NHI-131126J: Concrete Overlays
- NHI-131126K: Strategy Selection

Outcomes

Upon completion of the course, participants will be able to:
- List benefits and appropriateness of partial-depth repairs
- List the advantages and disadvantages of different available repair materials
- Describe recommended construction procedures
- Identify typical construction problems and appropriate remedies

Target Audience

The intended audience is quite diverse, and includes design engineers, quality control personnel, contractors, suppliers, technicians, and trades people. While the course is aimed at those who have some familiarity with concrete pavements and pavement preservation, it should also be of value to those that are new to the field. This course is recommended for the Transportation Curriculum Coordination Council levels I - IV.
TRAINING LEVEL: Intermediate

FEE: 2019: $25 Per Person; 2020: $25 Per Person

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-131126E

COURSE TITLE
Concrete Pavement Preservation Series: Full-depth Repairs

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to provide guidance on critical concrete pavement preservation issues. The training was developed by the National Concrete Pavement Technology Center at Iowa State University in cooperation with FHWA.

This module covers the procedures for cast-in-place Portland cement concrete (PCC) full-depth repair (FDR) of jointed concrete pavements (JCP) including jointed plain (JP) and jointed reinforced concrete pavements (JRCP). FDR techniques for continuously reinforced concrete pavements (CRCP) are discussed separately toward the end of the presentation. FDR is the cast-in-place concrete repairs that extend the full-depth of the existing slab.

This module is part of the curriculum from the Concrete Pavement Preservation Series (FHWA-NHI-131126) which presents current guidelines and recommendations for the design, construction, and selection of cost-effective concrete pavement preservation strategies. The other Web-based training modules are:

- NHI-131126 Concrete Pavement Preservation Series with downloadable version of the FHWA Concrete Pavement Preservation Guide
- NHI-131126A: Pavement Preservation Concepts
- NHI-131126B: Concrete Pavement Evaluation
- NHI-131126C: Slab Stabilization
- NHI-131126D: Partial-depth Repairs
- NHI-131126E: Full-depth Repairs
- NHI-131126F: Retrofitted Edge Drains
- NHI-131126G: Dowel Bar Retrofit
- NHI-131126H: Diamond Grinding and Grooving
- NHI-131126I: Joint Resealing and Crack Sealing
- NHI-131126J: Concrete Overlays
- NHI-131126K: Strategy Selection

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

- List the benefits of full-depth repairs
- Describe primary design considerations in terms of dimensions, load transfer, and materials
- Describe recommended construction activities
- Identify typical construction problems and remedies

TARGET AUDIENCE
The intended audience is quite diverse, and includes design engineers, quality control personnel, contractors, suppliers, technicians, and trades people. While the course is aimed at those who have some familiarity with concrete pavements and pavement preservation, it should also be of value to those that are new to the field. This course is recommended for the Transportation Curriculum Coordination Council levels I - IV.
**Training Level:** Intermediate

**Fee:** 2019: $25 Per Person; 2020: $25 Per Person

**Length:** 2 Hours (CEU: 0 Units)

**Class Size:** Minimum: 1; Maximum: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
Course Number
FHWA-NHI-131126F

Course Title
Concrete Pavement Preservation Series: Retrofitted Edge Drains

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to provide guidance on critical concrete pavement preservation issues. The training was developed by the National Concrete Pavement Technology Center at Iowa State University in cooperation with FHWA.

This module presents design and construction information on retrofitted edge drains. This treatment is not as widely used as it once was, largely because it has limited applicability. Specifically, it must be targeted to those pavements that are (1) in good structural condition and (2) have bases with some degree of permeability that would allow water to be drained from beneath the pavement and to the edge drain.

This module is part of the curriculum from the Concrete Pavement Preservation Series (FHWA-NHI-131126) which presents current guidelines and recommendations for the design, construction, and selection of cost-effective concrete pavement preservation strategies. The other Web-based training modules are:

- NHI-131126 Concrete Pavement Preservation Series with downloadable version of the FHWA Concrete Pavement Preservation Guide
- NHI-131126A: Pavement Preservation Concepts
- NHI-131126B: Concrete Pavement Evaluation
- NHI-131126C: Slab Stabilization
- NHI-131126D: Partial-depth Repairs
- NHI-131126E: Full-depth Repairs
- NHI-131126F: Retrofitted Edge Drains
- NHI-131126G: Dowel Bar Retrofit
- NHI-131126H: Diamond Grinding and Grooving
- NHI-131126I: Joint Resealing and Crack Sealing
- NHI-131126J: Concrete Overlays
- NHI-131126K: Strategy Selection

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

- List benefits of drainage
- List components of edge drain systems
- Describe recommended installation procedures
- Identify typical construction problems and remedies

Target Audience
The intended audience is quite diverse, and includes design engineers, quality control personnel, contractors, suppliers, technicians, and trades people. While the course is aimed at those who have some familiarity with concrete pavements and pavement preservation, it should also be of value to those that are new to the field. This course is recommended for the Transportation Curriculum Coordination Council levels I - IV.
TRAINING LEVEL: Intermediate

FEE: 2019: $25 Per Person; 2020: $25 Per Person

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-131126G

Course Title
Concrete Pavement Preservation Series: Dowel Bar Retrofit

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to provide guidance on critical concrete pavement preservation issues. The training was developed by the National Concrete Pavement Technology Center at Iowa State University in cooperation with FHWA.

This module presents design and construction information on load transfer restoration (LTR), sometimes referred to as retrofitted load transfer. In the introduction we will describe the difference between load transfer restoration (generic term) and dowel bar retrofitting (DBR) which is a specific means of achieving LTR. There are other methods available, but DBR is the most proven.

This module is part of the curriculum from the Concrete Pavement Preservation Series (FHWA-NHI-131126) which presents current guidelines and recommendations for the design, construction, and selection of cost-effective concrete pavement preservation strategies. The other Web-based training modules are:
- NHI-131126 Concrete Pavement Preservation Series with downloadable version of the FHWA Concrete Pavement Preservation Guide
- NHI-131126A: Pavement Preservation Concepts
- NHI-131126B: Concrete Pavement Evaluation
- NHI-131126C: Slab Stabilization
- NHI-131126D: Partial-depth Repairs
- NHI-131126E: Full-depth Repairs
- NHI-131126F: Retrofitted Edge Drains
- NHI-131126G: Dowel Bar Retrofit
- NHI-131126H: Diamond Grinding and Grooving
- NHI-131126I: Joint Resealing and Crack Sealing
- NHI-131126J: Concrete Overlays
- NHI-131126K: Strategy Selection

Outcomes
Upon completion of the course, participants will be able to:
• List benefits and applications of load transfer restoration
• Describe recommended materials and mixtures
• Describe recommended construction procedures
• Identify typical construction problems and remedies

Target Audience
The intended audience is quite diverse, and includes design engineers, quality control personnel, contractors, suppliers, technicians, and trades people. While the course is aimed at those who have some familiarity with concrete pavements and pavement preservation, it should also be of value to those that are new to the field. This course is recommended for the Transportation Curriculum Coordination Council levels I - IV.
**Training Level:** Intermediate

**Fee:** 2019: $25 Per Person; 2020: $25 Per Person

**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-131126H

COURSE TITLE
Concrete Pavement Preservation Series: Diamond Grinding and Grooving

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to provide guidance on critical concrete pavement preservation issues. The training was developed by the National Concrete Pavement Technology Center at Iowa State University in cooperation with FHWA.

This module describes recommended procedures for surface restoration of Portland cement concrete (PCC) pavements, specifically diamond grinding and diamond grooving operations.

This module is part of the curriculum from the Concrete Pavement Preservation Series (FHWA-NHI-131126) which presents current guidelines and recommendations for the design, construction, and selection of cost-effective concrete pavement preservation strategies. The other Web-based training modules are:
- NHI-131126 Concrete Pavement Preservation Series with downloadable version of the FHWA Concrete Pavement Preservation Guide
- NHI-131126A: Pavement Preservation Concepts
- NHI-131126B: Concrete Pavement Evaluation
- NHI-131126C: Slab Stabilization
- NHI-131126D: Partial-depth Repairs
- NHI-131126E: Full-depth Repairs
- NHI-131126F: Retrofitted Edge Drains
- NHI-131126G: Dowel Bar Retrofit
- NHI-131126H: Diamond Grinding and Grooving
- NHI-131126I: Joint Resealing and Crack Sealing
- NHI-131126J: Concrete Overlays
- NHI-131126K: Strategy Selection

OUTCOMES
Upon completion of the course, participants will be able to:
• Differentiate between diamond grinding and diamond grooving and list the benefits of each
• Identify appropriate blade spacing dimensions for grinding and grooving
• Describe recommended construction procedures
• Identify typical construction problems and remedies

TARGET AUDIENCE
The intended audience is quite diverse, and includes design engineers, quality control personnel, contractors, suppliers, technicians, and trades people. While the course is aimed at those who have some familiarity with concrete pavements and pavement preservation, it should also be of value to those that are new to the field. This course is recommended for the Transportation Curriculum Coordination Council levels I - IV.
Training Level: Intermediate

Fee: 2019: $25 Per Person; 2020: $25 Per Person

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-131126I

Course Title
Concrete Pavement Preservation Series: Joint Sealing and Crack Resealing

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to provide guidance on critical concrete pavement preservation issues. The training was developed by the National Concrete Pavement Technology Center at Iowa State University in cooperation with FHWA.

This module covers joint resealing and crack sealing for concrete pavements. Joint resealing and crack sealing is defined as placement of an approved sealant material in an existing joint or crack to reduce moisture infiltration and prevent intrusion of incompressibles.

This module is part of the curriculum from the Concrete Pavement Preservation Series (FHWA-NHI-131126) which presents current guidelines and recommendations for the design, construction, and selection of cost-effective concrete pavement preservation strategies. The other Web-based training modules are:
- NHI-131126 Concrete Pavement Preservation Series with downloadable version of the FHWA Concrete Pavement Preservation Guide
- NHI-131126A: Pavement Preservation Concepts
- NHI-131126B: Concrete Pavement Evaluation
- NHI-131126C: Slab Stabilization
- NHI-131126D: Partial-depth Repairs
- NHI-131126E: Full-depth Repairs
- NHI-131126F: Retrofitted Edge Drains
- NHI-131126G: Dowel Bar Retrofit
- NHI-131126H: Diamond Grinding and Grooving
- NHI-131126I: Joint Sealing and Crack Resealing
- NHI-131126J: Concrete Overlays
- NHI-131126K: Strategy Selection

Outcomes
Upon completion of the course, participants will be able to:
- List the benefits of joint resealing
- Describe desirable sealant properties and characteristics
- Describe recommended installation procedures
- Identify typical construction problems and appropriate remedies

Target Audience
The intended audience is quite diverse, and includes design engineers, quality control personnel, contractors, suppliers, technicians, and trades people. While the course is aimed at those who have some familiarity with concrete pavements and pavement preservation, it should also be of value to those that are new to the field. This course is recommended for the Transportation Curriculum Coordination Council levels I - IV.
TRAINING LEVEL: Intermediate

FEE: 2019: $25 Per Person; 2020: $25 Per Person

LENGTH: 1 DAYS (CEU: 0 UNITS)

CLASS SIZE: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
COURSE NUMBER
FHWA-NHI-131126J

COURSE TITLE
Concrete Pavement Preservation Series: Concrete Overlays

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to provide guidance on critical concrete pavement preservation issues. The training was developed by the National Concrete Pavement Technology Center at Iowa State University in cooperation with FHWA.

This module provides guidance on the selection of concrete pavement preservation strategies. Based on a collective review of a number of recent published documents, this module covers the seven step process that can be used to determine the most appropriate treatment (or combination of treatments) for a PCC pavement.

This module is part of the curriculum from the Concrete Pavement Preservation Series (FHWA-NHI-131126) which presents current guidelines and recommendations for the design, construction, and selection of cost-effective concrete pavement preservation strategies. The other Web-based training modules are:
- NHI-131126 Concrete Pavement Preservation Series with downloadable version of the FHWA Concrete Pavement Preservation Guide
- NHI-131126A: Pavement Preservation Concepts
- NHI-131126B: Concrete Pavement Evaluation
- NHI-131126C: Slab Stabilization
- NHI-131126D: Partial-depth Repairs
- NHI-131126E: Full-depth Repairs
- NHI-131126F: Retrofitted Edge Drains
- NHI-131126G: Dowel Bar Retrofit
- NHI-131126H: Diamond Grinding and Grooving
- NHI-131126I: Joint Resealing and Crack Sealing
- NHI-131126J: Concrete Overlays
- NHI-131126K: Strategy Selection

OUTCOMES
Upon completion of the course, participants will be able to:
• Describe the treatment selection process
• List the components of a life-cycle cost analysis
• List other factors that may enter the selection process

TARGET AUDIENCE
The intended audience is quite diverse, and includes design engineers, quality control personnel, contractors, suppliers, technicians, and trades people. While the course is aimed at those who have some familiarity with concrete pavements and pavement preservation, it should also be of value to those that are new to the field. This course is recommended for the Transportation Curriculum Coordination Council levels I - IV.
TRAINING LEVEL: Intermediate

FEE: 2019: $25 Per Person; 2020: $25 Per Person

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-131126K

Course Title
Concrete Pavement Preservation Series: Strategy Selection

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to provide guidance on critical concrete pavement preservation issues. The training was developed by the National Concrete Pavement Technology Center at Iowa State University in cooperation with FHWA.

This module provides guidance on the selection of concrete pavement preservation strategies. Based on a collective review of a number of recent published documents, this module covers the seven step process that can be used to determine the most appropriate treatment (or combination of treatments) for a PCC pavement.

This module is part of the curriculum from the Concrete Pavement Preservation Series (FHWA-NHI-131126) which presents current guidelines and recommendations for the design, construction, and selection of cost-effective concrete pavement preservation strategies. The other Web-based training modules are:
- NHI-131126 Concrete Pavement Preservation Series with downloadable version of the FHWA Concrete Pavement Preservation Guide
- NHI-131126A: Pavement Preservation Concepts
- NHI-131126B: Concrete Pavement Evaluation
- NHI-131126C: Slab Stabilization
- NHI-131126D: Partial-depth Repairs
- NHI-131126E: Full-depth Repairs
- NHI-131126F: Retrofitted Edge Drains
- NHI-131126G: Dowel Bar Retrofit
- NHI-131126H: Diamond Grinding and Grooving
- NHI-131126I: Joint Resealing and Crack Sealing
- NHI-131126J: Concrete Overlays
- NHI-131126K: Strategy Selection

Outcomes
Upon completion of the course, participants will be able to:
- Describe the treatment selection process
- List factors that might enter into the selection process
- Describe pavement deficiencies addressed by the different preservation treatments
- Describe how the benefits and costs of alternative treatment strategies are computed in a cost-effectiveness analysis
- Describe a process used to select the preferred treatment strategy

Target Audience
The intended audience is quite diverse, and includes design engineers, quality control personnel, contractors, suppliers, technicians, and trades people. While the course is aimed at those who have some familiarity with concrete pavements and pavement preservation, it should also be of value to those that are new to the field. This course is recommended for the Transportation Curriculum Coordination Council levels I - IV.
Training Level: Intermediate

Fee: 2019: $25 Per Person; 2020: $25 Per Person

Length: .3 Hours (CEU: 0 Units)

Class Size: Minimum: 1; Maximum: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
Course Number
FHWA-NHI-131127

Course Title
Concrete Series

The Transportation Curriculum Coordination Council (TCCC) in partnership with NHI is pleased to offer this comprehensive training series (FHWA-NHI-131127) for any engineer or supervisor working with Portland cement. The series 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.

This course is recommended for the Transportation Curriculum Coordination Council levels II - IV.

To streamline registration and enable you to take some or all of these courses when it best suits your schedule, we have created this new series option which automatically registers you for all 11 modules—it’s that easy. They are as follows:

Module 1 - TCCC Design of Pavement (FHWA-NHI-134101)
Module 2 - TCCC Fundamentals of Materials Used for Concrete Pavements (FHWA-NHI-134084)
Module 3 - TCCC Mix Design Principles (FHWA-NHI-134087)
Module 4 - TCCC Fresh Concrete Properties (FHWA-NHI-134097)
Module 5 - TCCC Basics of Cement Hydration (FHWA-NHI-134096)
Module 6 - TCCC Incompatibility in Concrete Pavement Systems (FHWA-NHI-134085)
Module 7 - TCCC Early Age Cracking (FHWA-NHI-134095)
Module 8 - TCCC Hardened Concrete Properties- Durability (FHWA-NHI-134075)
Module 9 - TCCC Construction of Concrete Pavements (FHWA-NHI-134098)
Module 10 - TCCC QCQA for Concrete Pavements (FHWA-NHI-134100)
Module 11 - TCCC Troubleshooting for Concrete Pavements (FHWA-NHI-134102)

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

• Explain concrete pavement construction as a complex, integrated system involving several discrete practices that interrelate and affect one another in various ways
• Recognize and implement technologies, tests, and best practices to identify materials, concrete properties, and construction practices that are known to optimize concrete performance
• Identify factors that lead to premature distress in concrete, and learn how to avoid or reduce those factors
• Apply appropriate how-to and troubleshooting information

Target Audience
This training is intended as both a training tool and a reference to help concrete paving engineers, quality control personnel, specifiers, contractors, suppliers, technicians, and tradespeople bridge the gap between recent research and practice regarding optimizing the performance of concrete for pavements.

Training Level: Intermediate

Fee: 2019: $50 Per Person; 2020: $50 Per Person

Length: 12 Hours (CEU: 0 Units)

Class Size: Minimum: 1; Maximum: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
**COURSE NUMBER**
FHWA-NHI-131128

**COURSE TITLE**
Testing Self-Consolidating Concrete

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to review the properties and applications of self-consolidating concrete as well as the test methods used for measuring SCC properties according to ASTM test methods. This training is recommended for the Transportation Curriculum Coordination Council levels I, II, and III. This course is primarily intended for inspectors and technicians.

This training includes an overview of the fresh properties of self-consolidating concrete including terminology, target guidelines and quality control. In addition, ASTM test methods for slump flow and flow rate, passing ability using the j-ring, column segregation, static segregation and making self consolidated concrete test cylinders are reviewed.

**OUTCOMES**
Upon completion of the course, participants will be able to:
- Define self-consolidating concrete
- Understand the terminology associated with self-consolidating concrete
- Perform the tests associated with SCC
- Report the test results

**TARGET AUDIENCE**
This course is designed for anyone who would like to understand more about self consolidating concrete, including personnel running self-consolidating concrete tests in the field along with supervisors in charge of field testing technicians.

**TRAINING LEVEL:** Basic

**FEE:** 2019: $25 Per Person; 2020: $25 Per Person

**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-131129

**Course Title**
HMA Paving Field Inspection

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to provide guidance and instruction to inspectors involved in the construction of hot mix asphalt (HMA) pavements. The important tasks involved in this work are explained and proper procedures are described. This training is recommended for the Transportation Curriculum Coordination Council levels I, II, and III. This course is primarily intended for inspectors and technicians.

This training is arranged in a fashion to help the inspector first learn the various aspects of what is involved in a HMA paving operation and then become familiar with the duties that are a part of the HMA pavement grade inspection responsibilities. It also explains how to recognize the mix properties of a HMA mixture. The information included will assist the inspector in recognizing problems during a project and offering solutions to the problems. This training is not intended to cover every aspect of HMA paving.

**Outcomes**

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

- Know various aspects of what is involved in a HMA paving operation
- Understand the duties of a HMA paving inspector
- Recognize the mix properties of a HMA mixture
- Recognize the problems that may occur on HMA paving projects
- Understand the product and project so solutions can be recommended

**Target Audience**

This training would be beneficial to anyone that is involved with an HMA paving project, but focuses on technicians/inspectors that are involved with the production, placement, and inspection of HMA paving projects.

**Training Level:** Intermediate

**Fee:** 2019: $50 Per Person; 2020: $50 Per Person

**Length:** 4.5 HOURS (CEU: 0 UNITS)

**Class Size:** Minimum: 1; Maximum: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
COURSE NUMBER
FHWA-NHI-131130

COURSE TITLE
Advanced Self-Consolidating Concrete

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to review advanced concepts, properties, and applications of self-consolidating concrete. This training is recommended for the Transportation Curriculum Coordination Council levels II, III, and IV. This course is primarily intended for inspectors and technicians.

This training will cover the basic characteristics of self-consolidating concrete as well as advantages of using SCC as compared to conventional concrete. In addition, it will discuss SCC’s composition and proportioning as well as fresh and hardened properties. Finally, we will review specific examples where SCC has been used as well as the details of SCC use in slipform paving.

OUTCOMES
Upon completion of the course, participants will be able to:
• Define self-consolidating concrete
• List procedures for creating SCC
• Identify SCC performance characteristics
• Compare SCC and conventional concrete
• Recognize SCC applications

TARGET AUDIENCE
Anyone who would like to understand more about self-consolidating concrete, including personnel running self-consolidating concrete tests in the field along with supervisors in charge of field testing technicians.

TRAINING LEVEL: Intermediate

FEE: 2019: $25 Per Person; 2020: $25 Per Person

LENGTH: 1.5 HOURS (CEU: 0 UNITS)

CLASS SIZE: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
COURSE NUMBER
FHWA-NHI-131132

COURSE TITLE
Chip Seal Best Practices

The Chip Seal Best Practices course presents ways to assist in the development and implementation of pavement preservation programs by identifying the benefits of using chip seal as part of a preventive maintenance program.

This course has six modules. Module 1 is an introduction into chip seals, module 2 covers designing chip seal mixes, module 3 is selecting the proper materials for the chip seal mix, module 4 focuses on the use of the equipment, module 5 covers proper construction practices, and module 6 rounds out the course with performance measures of chip seals. The combination of all this information provides an excellent overview of successful chip seal practices worldwide.

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

• Define chip seal
• Describe how chip seals are used as a preventive maintenance treatment for pavement
• Identify materials used in chip seals
• Describe the characteristics of chip seal design
• Identify types of chip seal
• Identify the important considerations of aggregate and binder selection
• Describe aggregate-binder compatibility
• Describe equipments used in chip seal practices
• Identify important variables in construction practice
• Define the measures of control implemented over the quality of materials and construction
• Identify construction best practices
• Describe the components of engineering-based performance measures
• Identify qualitative performance indicators for chip seal
• Define common visible chip seal distresses

TARGET AUDIENCE
This training is recommended for the Transportation Curriculum Coordination Council levels I, II and III. This training would benefit entry level construction inspectors, maintenance employees and contractor personnel as well as serve as refresher training for those already well versed in the selection and application of a chip seal as a preventive maintenance treatment.

TRAINING LEVEL: Basic

FEE: 2019: $25 Per Person; 2020: $25 Per Person

LENGTH: 3 HOURS (CEU: 0 UNITS)

CLASS SIZE: MINIMUM: 1; MAXIMUM: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
Course Number
FHWA-NHI-131133

Course Title
Roller Compacted Concrete Pavements

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: 2019: $50 Per Person; 2020: $50 Per Person

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-131134

Course Title
Superpave for Construction

The Superpave for Construction Course contains information for field construction personnel on the Superpave mix design system and the control of field produced Hot Mix Asphalt.

There are two modules in this course. The first module introduces the Superpave Hot Mix Asphalt design testing and analysis. It will cover design testing procedures, design analysis methods, and will include calculations to analyze the volumetrics of paving samples. Module two includes relevant volumetric examples including the use of phase diagrams to calculate volumetric properties. Example problems are included. This course is an excellent learning tool to assist in understanding corrective actions for volumetric parameters.

Outcomes
Upon completion of the course, participants will be able to:
• Describe the benefits of Superpave over previous mix design methodologies
• Understand Superpave mix design procedures and testing
• Understand mix design analysis methods
• Perform the calculation necessary to analyze the volumetrics of paving samples for comparison
• Describe how to use phase diagrams to calculate volumetric properties
• Describe factors which can influence key mass-volume relationships and calculations
• Understand corrective action for volumetric parameters
• Calculate and evaluate volumetric properties through example problems

Target Audience
This training is targeted to intermediate and advanced technicians from both contractor and agency employment, which will be involved in construction of pavements using Superpave. This training is recommended for the Transportation Curriculum Coordination Council levels II and III.

Training Level: Basic

Fee: 2019: $25 Per Person; 2020: $25 Per Person

Length: 3.5 Hours (CEU: 0 Units)

Class Size: Minimum: 1; Maximum: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
COURSE NUMBER
FHWA-NHI-131135

COURSE TITLE
Aggregate Sampling Basics

Aggregate Sampling Basics course will cover the importance of proper sampling, why we need to sample aggregate, and why we need special procedures to do so. We will cover how to obtain a proper sample that will accurately represent the materials by utilizing sampling principles and preferred methods.

The specifications covered in the course are from the American Association of State Highway and Transportation Officials or AASHTO. The course starts at the beginning with what are aggregates, what are aggregate uses, and continues through proper sampling. It also has information on aggregate processing and sieving. The course contains interaction with the student and quizzes to make sure the material was understood.

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

• Define aggregates
• Describe aggregate processing
• Describe aggregate sampling

TARGET AUDIENCE
This training is targeted to the beginning technician that will be obtaining aggregate samples for testing during production or on a project for agency, industry or consultant. This training is recommended for the Transportation Curriculum Coordination Council levels I and II.

TRAINING LEVEL: Basic

FEE: 2019: $25 Per Person; 2020: $25 Per Person

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-131136

Course Title
Materials Testing: Reducing Aggregate Samples

The Materials Testing and Reducing Aggregate Samples course will cover the two methods for splitting a sample: using a mechanical splitter and quartering. The purpose of these procedures is to reduce large samples of aggregate to the appropriate size for testing. The end product should be a sample that is representative of the source.

The American Association of State Highway and Transportation Officials or AASHTO procedures and specifications are used throughout the course. The course covers two methods used for splitting, the mechanical method and the quartering method. Both of these processes are covered in detail. There are questions for the students as a review of the material. References are given for further information.

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

- Define aggregate reducing
- Describe the aggregate reducing method using mechanical splitter
- Describe the aggregate reducing method using quartering

Target Audience
This training is targeted to the beginning technician that will be reducing samples for testing using mechanical splitting and/or quartering for a contractor, producer, agency, or consultant. This training is recommended for the Transportation Curriculum Coordination Council levels I and II.

Training Level: Basic

Fee: 2019: $25 Per Person; 2020: 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-131137

Course Title
Special Mixture Design Considerations and Methods for Warm Mix Asphalt

Highway transportation agencies are exploring the use of warm mix asphalt (WMA) for pavement projects. Because of the potential environmental and engineering benefits that WMA provides, agency and industry personnel want to learn the proper design considerations for a quality WMA mixture design. Mixture design technicians and engineers are particularly interested in design differences between WMA and HMA.

The Special Mixture Design Considerations and Methods for Warm Mix Asphalt course explains the key differences between WMA and HMA design procedures. Participants in this course compare important elements of the mixtures and review the effects of those elements on the final WMA product. Learners also have an opportunity to apply AASHTO R35 standard practice to a WMA design modification, converting an HMA mixture design to WMA.

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

• Describe differences between warm mix asphalt (WMA) and hot mix asphalt (HMA) mixture design processes.
• Convert HMA mixtures to WMA mixtures.

Target Audience
This training was developed for experienced HMA mixture design technicians and engineers who are interested in using WMA. Participants should have basic computer skills, such as manipulating windows, using directories, and opening Web browsers.

Training Level: Basic

Fee: 2019: $25 Per Person; 2020: $25 Per Person

Length: 2 Hours (CEU: 0 Units)

Class Size: Minimum: 1; Maximum: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
**Course Number**  
FHWA-NHI-131138

**Course Title**  
AASHTO Designation: T 308

The TCCC AASHTO Designation: T308 course explains the importance of asphalt content, describes the equipment needed to perform the test procedure, shows how to perform the ignition furnace test procedure (both Method A - internal balance and Method B - external balance), and instructs how to calculate and apply the correction factors.

Some of the topics covered in this training include, background and purpose of asphalt content, apparatus, correction factors determination, test procedure, calculations, and wrap-up of the test procedure which includes reporting.

Upon completion of this course, participants will know why performing AASHTO T-308 is necessary, will know how to perform the test procedure, and can accurately calculate and apply the correction factors. This course is an excellent learning tool to demonstrate Asphalt Content by Ignition Oven to new technicians.

**Outcomes**

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

- Explain the impact that asphalt binder content can have on a pavement
- Define the purpose of the ignition method, as well as the benefits and limitations of the test procedure
- Understand the basic concepts behind the test procedure
- Identify the equipment needed to perform the test procedure for both Method A and Method B
- Understand why correction factors must be determined
- Explain how to determine the asphalt binder correction factor
- Explain how to determine the aggregate correction factor
- Describe how the ignition test is performed for either Method A, Internal Balance Method or Method B, External Balance Method
- Calculate the measured (corrected) asphalt binder content percent for both Method A and Method B
- Reporting the test results
- Preparing sample for a gradation analysis according to AASHTO T 30

**Target Audience**

This training is designed for plant technicians, private lab, or contractor employees who are qualified to sample hot mix, aggregate or asphalt cement, and perform acceptance tests including Asphalt Content by Ignition Oven (AASHTO Designation: T 308-10). It is also useful for laboratory and personnel assessment technicians.

**Training Level:** Basic

**Fee:** 2019: $25 Per Person; 2020: N/A

**Length:** 2 Hours (CEU: 0 Units)

**Class Size:** Minimum: 1; Maximum: 1

NHI Customer Service: (877) 558-6873 • nhicustomerservice@dot.gov
Course Number
FHWA-NHI-131140

Course Title
Hot In-place Recycling

This training was developed by the Transportation Curriculum Coordination Council (TCCC) in partnership with AASHTO and NHI. Hot in-place recycling (HIR) is a pavement preservation and corrective maintenance technique that consists of heating and softening the existing asphalt pavement. When combined with an asphalt overlay, HIR can be classified as structural rehabilitation.

The HIR techniques described in this training provide owner agencies with cost-effective and sustainable methods to repair their aging pavements. HIR processes have been used on all functional classes of roadways. When properly designed, specified, and constructed, HIR methods can result in significant cost savings as compared to conventional maintenance operations, while reducing carbon dioxide emissions.

This course contains three modules:
1. Introduction to Hot In-Place Recycling
2. Pre-Production Inspection
3. Full Production Pavement Recycling

Outcomes
Upon completion of the course, participants will be able to:
• Explain the purpose, benefits, and use of HIR;
• Identify the purpose and use of HIR designs and the equipment used for its applications;
• Identify the preparation and planning steps necessary for an HIR application; and
• Describe the production, evaluation, steps necessary for an HIR application.

Target Audience
This course is intended for local, county, and State owner agency technicians and inspectors. It is also useful for individuals who need awareness or basic understanding of hot in-place recycling. Training level: This training is recommended for the Transportation Curriculum Coordination Council levels I, II, III, and IV.

Training Level: Basic

Fee: 2019: $25 Per Person; 2020: N/A
Length: 2.5 HOURS (CEU: 0 UNITS)
Class Size: Minimum: 1; Maximum: 1

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

Full Depth Reclamation, or FDR, is a rehabilitation technique in which the full thickness of the asphalt pavement and a predetermined portion of the underlying materials (that is, the base, the subbase, and/or subgrade) is uniformly pulverized and blended to provide an upgraded, homogeneous material.

FDR was originally limited to low to medium traffic volume roadways; however, newer and larger equipment options means that FDR now can be used on high traffic volume roadways. There is no upper limit to roadway traffic volumes if a pavement structural design is undertaken as part of the rehabilitation process and traffic control allows for diversion of traffic or travel on a pulverized or stabilized surface without damage.

This Web-based training contains four modules. Module 1 introduces full depth reclamation of pavements. Module 2 presents pre-production activities associated with FDR, including the pre-production meeting, roadway preparation, and FDR equipment. Module 3 covers establishing a control strip and pulverizing material, and explores various methods and agents used for stabilizing reclaimed materials. Module 4 reviews post-production actions following reclamation. It takes approximately 4.5 hours to complete the four modules.

This training was developed by the Transportation Curriculum Coordination Council (TCCC) in partnership with AASHTO and NHI.

OUTCOMES

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

- Describe why a pre-production meeting is important
- Describe what preparation is needed for a full depth reclamation project
- List the equipment needed for a full depth reclamation project
- Identify the purposes of a control strip
- Describe the process used to pulverize existing pavement material for FDR
- List methods used to stabilize reclaimed materials
- Describe the stabilizing agents and additives used for stabilization of reclaimed materials
- Describe the finishing steps involved in full-depth reclamation
- Identify factors and actions that can affect yield and gradation result
- Describe the different methods of measuring compaction and the effect stabilizing agents may have on the results
- List factors affecting how various FDR mixtures should be cured
- Describe the steps involved in placing the final surface on a pavement
- List criteria for acceptance and payment for FDR pavements

TARGET AUDIENCE

This training is designed for local, county, and state owner agency technicians and inspectors. It is also useful for individuals seeking awareness or basic understanding of the topic. This training was developed by the Transportation Curriculum Coordination Council (TCCC) in partnership with AASHTO and NHI, and is recommended for TCCC levels II through IV.
Training Level: Basic

Fee: 2019: $50 Per Person; 2020: N/A

Length: 4.5 HOURS (CEU: 0 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

| PW | Participant Workbook | RM | Reference Manual | OM | Other Materials | EF | Electronic File |

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