

TCCC
Training Course
Development Report
Updated for January 2005

AVAILABLE TRAINING

Hot-Mix Asphalt Construction 131032

The course was originally developed by the AASHTO Joint Asphalt Industry/Agency Committee in 1991/92. The course was revised for NHI. The course is targeted for contractor project superintendents, foremen, SHA project engineers, and lead inspectors. The participant manual was revised in July 2002. The course is available for scheduling, with instructors provided by ERES Consultants. The *Hot Mix Asphalt Handbook 2000*, the revised reference for the course, has been published by TRB and is also now available.

- FHWA Contact: Jim Sorenson 202-366-1333
- FHWA Contact: Matt Corrigan 202-366-1549
- NHI Contact: John Taylor 703-235-0524
- NRC Contact: Monte Symons 404-562-4782

Construction of Portland Cement Concrete Pavements 131033

This joint industry/agency training is divided into 6 modules: 1) Introduction/ Quality PCC Pavements; 2) PCC Production (ready-mix and central); 3) Slipform paving operations; 4) Fixed Form paving operations; 5) Pavement curing, sawing, and sealing operations; and 6) Concrete Pavement Rehabilitation (CPR) techniques. The course is available for delivery, with instructors provided by the American Concrete Paving Association.

- FHWA Contact: Mike Rafalowski 202-366-1371
- NHI Contact: John Taylor 703-235-0524
- NRC Contact: Angel Correa

Hot Mix Asphalt Production Facilities 131044

This 2-day course is designed to give participants the background information on HMA plant production to adequately inspect the HMA plant production process to ensure minimum standards of product quality are met. It is designed for project engineers, lead inspectors, plant supervisors, foremen, and all others involved with the HMA plant production. This is a joint industry/agency effort developed by the Asphalt Joint Training Committee. Course materials were updated and completed in July of 2002. This course has been awarded to APTECH for delivery.

- FHWA Contact: Chris Newman 202-366-2023
- FHWA Contact: Matt Corrigan 202-366-1549
- NHI Contact: John Taylor 703-235-0524

Hot-Mix Asphalt Materials, Characteristics & Control 131045

This training course is the result of a partnership between AASHTO, FHWA, and the Hot-Mix Asphalt (HMA) Industry. It combines lectures and problem solving workshop sessions to provide participants with a working knowledge of HMA materials, their characteristics and controls. The course focuses on two areas. The first provides technical information on the material properties of HMA, the processes used to measure these properties, and the effect that these properties have on the final, compacted pavement. The second involves achieving these properties in the field, with discussions

on quality management, and analyzing the impact of segregation and density on HMA pavement performance. The course concludes with an examination, which reviews the key elements of HMA materials, characteristics and control. Course materials were updated and completed in July of 2002. Available for scheduling with instructors provided ERES.

- FHWA Contact: Jim Sorenson 202-366-1333
- FHWA Contact: Matt Corrigan 202-366-1549
- NHI Contact: John Taylor 703-235-0524

Pavement Preservation: The Preventive Maintenance Concept 131054

The Pavement Preservation Expert Task Group (PP ETG) supports the development of the joint FHWA/Industry NHI short course on pavement preservation. This course makes the case for preventive maintenance and pavement preservation programming for upper and mid-level managers. In addition, it provides an overview on effective preventive maintenance techniques and their cost effectiveness. The course discusses the importance of preventive maintenance (PM) and show how PM techniques can be used to effectively preserve the pavement performance and prolong its life. The demonstration of preventive maintenance techniques enables the State to plan, design, and apply the right technique, at the appropriate time, to preserve their highway system. Available for scheduling, with instructors provided by Applied Pavement Technologies.

- FHWA Contact: Jim Sorenson 202-366-1333
- NRC Contact: Keith Herbold 708-283-3548
- NRC Contact: Luis Rodriquez 404-562-3681
- NHI Contact: John Taylor 703-235-0524

Pavement Preservation: Selecting Pavements for Preventive Maintenance 131058

This short course focuses on selecting the right pavement for the various preservation treatments by evaluating the merits of each treatment under various field conditions. This course illustrates in detail pavement evaluation, project selection, and materials considerations for the various preventive maintenance applications. It is intended for field manager and practitioners for both the owner and the industry. The course is complete and available for scheduling, with instructors provided by Applied Pavement Technologies.

- FHWA Contact: Jim Sorenson 202-366-1333
- NHI Contact: John Taylor 703-235-0524
- NRC Contact: Keith Herbold 708-283-3548

Principles of Writing Highway Construction Specifications 134001

This course addresses the engineering, legal aspects, and linguistics of writing specifications. This is not a course in technical writing. The course, however, addresses the issues of how to draft new specifications or rewrite existing ones into clear, readable, and definitive statements of contract requirements. Classroom activities include lectures, case studies, workshops and writing assignments. The course materials were revised in 2003, and the course is currently available for delivery with instructors provided from Trauner Consulting Services.

- FHWA Contact: Roger Surdahl 303-716-2158
- NRC Contact: Gene Hoelker 708-283-3520
- NHI Contact: John Taylor 703-235-0524

Materials Control and Acceptance-Quality Assurance (General Course) 134042

The course was updated and revised by the University of Nevada, Reno, as part of the revisions to course 131023, the 6-week Materials Engineering Course. Final draft materials have been delivered to NHI. The revision incorporated the elements of specification development and analysis, process control, acceptance sampling testing and inspection, quality assurance, independent assurance sampling, developing acceptable risk limits, project quality analysis and bidding with respect to specifications, interpreting and reporting data, evaluating risk in acceptance specifications, and dispute resolution. The course integrates each of the elements and demonstrates how they work to deliver a quality asphalt pavement that will serve well for the design life. In addition the course has been designed to provide insight in developing solid, practical specifications that yield good performance along with equipping contractors to analyze their production capability to meet required criteria and assure a reasonable return for their work.

- FHWA Contact: Mike Rafalowski 202-366-1571
- FHWA Contact: Ken Jacoby 202-366-6503
- NRC Contact: Gene Hoelker 708-283-3520
- NHI Contact: John Taylor 703-235-0524

Instructor Development Course for Technicians

The Instructor Development Course (IDC) for technicians is a 2 ½ day course that assists participants in conducting technical training. The course is intended to improve participants' presentation skills, communication skills, and adult learner skills. In addition the course includes demonstrations of the proper methods of instructing laboratory test procedures to new technicians. The course also covers administering written and proficiency exams for qualifications. The participants demonstrate a 15-minute training that is critiqued by the instructor and fellow participants to ensure mastery of the course learning outcomes. The pilot was successfully conducted in September 2004 and the course materials will be available for distribution in November 2004.

- FHWA Contact: Chris Newman 202-366-2023
- NRC Contact: Douglas Townes 404-562-3914
- NHI Contact: Debbie Gwaltney 703-235-1199

Use of CPM for Estimating, Scheduling and Timely Completion 134049

This training course is designed to educate State Highway, FHWA, and Industry project staff about the availability of effective construction and maintenance planning and scheduling tools that can help in providing visual representation of current project status, completed tasks, and expected completion of all activities. These tools can be focused to accelerate construction and minimize impact on the traveling public. Available for delivery with instructors provide by Trauner Consulting Services.

- FHWA Contact: Celso Gatchalian 202-366-1342
- NRC Contact: Rob Elliott
- NHI Contact: John Taylor 703-235-0524

Design and Implementation of Erosion and Sediment Control 134054

This course addresses management techniques for controlling erosion and sedimentation on highway construction and maintenance operations. Methods to identify the source of erosion and sedimentation will be presented, including best management practices to insure the current legislative and regulatory requirement of FHWA, EPA, and local governments are met. Joint development between HIAM/Environment. The course is available for delivery with instructors provided by Nichols Consulting Engineers.

- FHWA Contact: Chris Newman 202-366-2023
- FHWA Contact: Patricia Czenas 202-366-4085
- NRC Contact: Joe Huerta 410-962-2298
- NHI Contact: Mila Plosky 703-235-0527

Avoiding and Handling Claims and Claims Management 134037

The NHI Contract claims course is under revision to update its technical content, case studies, and delivery methods. FHWA and State DOT held the technical walk through with the consultant in March 2004, and the pilot presentation was held in Helena Montana on April 27-28, 2004.

- FHWA Contact: Chris Newman 202-366-2023
- NRC Contact: Mary Lou Masko 404-562-3570
- NRC Contact: Jerry Jones 817-978-4358
- NHI Contact: John Taylor 703-235-0524

Geotechnical Inspector Certification Program

- Drilled Shaft Foundation Inspector 132070
- Driven Piles Inspector 132069

Certification materials and training documents for these NHI courses were completed and courses began Jan 03. The Drilled Shaft Foundation Inspector Course was piloted in Portland, OR and Kansas City, MO and the Driven Piles Inspector Course was piloted in Milford, MA. From January to October '03 a total of 10 presentations were conducted nationwide.

- FHWA Contact: Peter Osborn 401-528-4550
- NHI Contact: Larry Jones 703-235-0523

COURSES UNDER DEVELOPMENT

Field Structural Coatings Inspection Certification Course

During the winter of 2001/2002, an Expert Task Group (ETG) was established to guide the development of this course. The ETG is comprised of representatives from 8 State DOTs, SSPC, and FHWA. It is envisioned that the "course" will likely be a basic level course providing a baseline certification. Other course modules dealing with various specialty topics in coatings (lead paint removal, abrasive blasting, high pressure water blasting, metalizing, 100% solids coatings, shop coatings, etc.) will be subsequently developed. The development of the basic curricula and certification requirements is the initial goal of the ETG and 2-3 pilot training courses are scheduled to be presented during the summer of 2004. It is expected that The Society for Protective Coatings (SSPC) will also offer this course to the industry and will be the organization that grants and maintains the actual certification. This certification program has already received widespread buy-in from the SHA community and industry stakeholders.

- FHWA Contact: Bob Kogler 202-493-3080
- FHWA Contact: Mike Praul 207-622-8350 ext. 109
- NHI Contact: Larry Jones 703-235-0523

Principles and Practices for Cost-effective Maintenance Management Systems 131107

Building on the successful, "Maintenance Management Forum for the 21st Century," the three day NHI short course will detail the state of the practice and will define the necessary components and measures necessary for a state of the art maintenance management system. The Phase 1 work for the creation of a comprehensive AASHTO Maintenance Management Guide for the 21st Century has been completed. The Guide will serve as the basis for the NHI course development.

- FHWA Contact: Celso Gatchalian 202-366-1342
- NRC Contact: Keith Herbold 708-283-3548
- NHI Contact: John Taylor 703-235-0524

Managing Construction Workmanship 134055

This training effort is a short course on construction workmanship for inspectors, project engineers, foreman and superintendents. The target audience includes FHWA, SHA and industry personnel. The course is aimed at improving workmanship decision making for quality highway construction projects. The intention of this course is not to replace the individual training SHA's are doing but rather establish a knowledge baseline for construction managers on a national level. The first phase of course development, preparing a course outline, target audience, and course objectives, is complete. This contract will take the results of Phase I and work closely with the technical panel to develop course materials. The development of the training and the technical panel is awaiting contract award.

- FHWA Contact: Chris Newman 202-366-2023
- NRC Contact: Rob Elliott 404-562-3941
- NHI Contact: John Taylor 703-235-0524

Bridge Construction Inspection 130088

This training course will present bridge construction topics for the inspector level, and will be developed in modular fashion. The contract for course development was awarded to WJE, Inc. and the review panel has submitted their review comments to the lesson plans.. This course will include four days of material, and will be made available to state and local government upon completion. A pilot course is being planned for January 2005.

- FHWA Contact: Chris Newman 202-366-2023
- NRC Contact: Jerry Jones 817-978-4358
- NRC Contact: Larry O'Donnell 708-283-3502
- NHI Contact: Larry Jones 703-235-0523

Pavement Preservation: Design and Construction of Quality Preventive Maintenance Treatments 131103

The training course is designed for the foreman on a road crew constructing preventive maintenance treatments, and for the agency or agency's representatives responsible for inspecting the project up to and including middle managers. The course will clearly distinguish between good and bad practices in the selection, design, and construction of quality preventive maintenance treatments. The following content areas are likely to be covered for each pavement preservation treatment in the presentations:

1. Material evaluation and selection.
2. Logical sequence of steps in the construction process.
3. Pre-construction inspection or evaluation to identify conditions that might have an adverse effect on treatment construction or performance.
4. Common problems and the troubleshooting procedures used to identify and correct them.
5. Post-construction inspection to verify that the project is constructed properly and ready to open to traffic.

This course is being developed in cooperation with the Foundation for Pavement Preservation, a longtime collaborator with FHWA on the development of courses in the Pavement Preservation series. A contract modification to develop video segments for use during the course presentations

has been incorporated into the course development contract. The pilot course was presented in Jackson, Mississippi in October 2003. The course is expected to be offered in the fall of 2004, after the visual aids are completed.

- FHWA Contact: Jim Sorenson 202-366-1333
- FHWA Contact: David Hawk 609-637-4213
- NRC Contact: Keith Herbold 708-283-3548
- NRC Contact: Luis Rodriquez 404-562-3681
- NHI Contact: John Taylor 703-235-0524

Pavement Preservation: Integrating Preventive Maintenance with Pavement Management Systems 131104

The course communicates the importance of integrating preventive maintenance activities with pavement management systems to highway agencies. The course identifies how preventive maintenance affects pavement performance, how preventive maintenance and pavement management can be integrated, and how enhanced or integrated pavement management systems can be used effectively to support asset management decisions. A contract has been awarded for the development of the course, and a pilot presentation was given to the North Carolina DOT in August 2003. The final course materials have been submitted to FHWA, and a teaching contract RFP is in the process of being awarded. The course will be offered during the summer of 2004.

- FHWA Contact: Jim Sorenson 202-366-1333
- NRC Contact: Keith Herbold 708-283-3548
- NHI Contact: John Taylor 703-235-0524

Conducting Reviews that Get Results 310111

This half-day to 1-day training course is intended for FHWA and State DOT employees to assist in developing and carrying out process reviews. The training course is envisioned as one to be presented by key FHWA staff on short notice, when a review is about to be initiated, to teach FHWA and State DOT staff the PR/PE review methodology. The main topics of the training course will be Clarification of the Review, Planning the Review, Data Collection, Analysis of Data, and Selling and Implementing Improvements. The course was successfully piloted July 2003 in Olympia, Washington, and is currently available with instructors provided by FHWA.

- FHWA Contact: Chris Newman 202-366-2023
- FHWA Contact: Denise Saunders 202-366-0438

Quality Assurance Technologist Certification Course 13050

The NETTCP is coordinating the development of the final course materials for this course. A Pilot Course was held November 2002 in Methuen, MA and comments from the review have been compiled by NETTCP. A final course review, involving members from the FHWA QA Focus Group as well as TCCC, is currently underway. Final comments from this review are due by the end of September, and a review meeting is tentatively scheduled for Oct. 15-16, 2003. Final course delivery is scheduled for January 2004. The course material content is being "generically structured" to permit use by any State or Region.

- FHWA Contact: Ken Jacoby 202-366-6503
- FHWA Contact: Greg Doyle 617-494-3279
- NRC Contact: Gene Hoelker 708-283-3520
- NHI Contact: John Taylor 703-235-0524

Inspection of Mechanically Stabilized Earth Walls (MSEW) and Reinforced Soil Slopes

This module will cover the Inspection of MSEW and RSS Construction. Topics include: Proper Construction Sequence; Backfill gradations, compaction, electrochemical properties; Reinforcement types, testing, and handling; Wall facing types, handling, attachments, and manufacturing; proper drainage details. The technical panel is working on the scope of work and preparation of a request for proposals, and expects contract award in the fall of 2004.

- FHWA/NRC Contact: Peter Osborn 410-962-0702
- NHI Contact: Larry Jones 703-235-0523

Partnering for Improved Construction Quality 134060

This course will be based on the current training course being used by Washington State DOT and others being used for claims mitigation. The NHI training course will focus on the improvement of construction quality. The focus of this course will be built upon the success of the "Get In Get Out and Stay Out" philosophy. The panel met in April 2004 to develop the RFP.

- FHWA Contact: Celso Gatchalian 202-366-1342
- NRC Contact: Gene Hoelker 708-283-3520
- NHI Contact: John Taylor 703-235-0524

Subsurface Investigation Inspection

This module will cover the inspection of subsurface explorations. Topics will include: Soil Borings, Rock Coring, Standard Penetration Test (SPT), proper sampling and handling procedures, Safety, In-situ testing techniques, basic instrumentation. The technical panel is working on the scope of work and preparation of a request for proposals, and expects contract award in the fall of 2004.

- FHWA/NRC Contact: Peter Osborn 410-962-0702
- NHI Contact: Larry Jones 703-235-0523

UPCOMING COURSES

Improved Construction Program Management for FHWA and SHA's

This is a proposed NHI course on effective construction program management techniques. Course materials under development by CQIT team.

- FHWA Contact: Ken Jacoby 202-366-6503
- NRC Contact: Joe Huerta 410-962-2298

Dust and Noise Abatement

This will be training concerning techniques for minimizing and controlling dust and noise pollution created as a result of construction operations. The course will present design techniques and technological solutions.

- FHWA Contact: Chris Newman 202-366-2023
- NRC Contact: Bob Orthmeyer 708-283-3533

Contract Maintenance Concepts

Short Course to follow recently revised AASHTO Guide on Contract Maintenance. Scope of work under development.

- FHWA Contact: Lubin Quinones 787-766-5600 Ext. 223
- NRC Contact: Gene Hoelker 708-283-3520
- NRC Contact: Jerry Jones 817-978-4358
- SHA Contact: Jim Carney (MODOT)

Understanding Benchmarking and Performance Measures

No action had been taken yet on this proposed course. Scope of work under development.

- FHWA Contact: Jim Sorenson 202-366-1333
- SHA Contact: Mike Bousliman (MTDOT)

QA Specifications Development and Validation

A Technical Panel has been established. An initial meeting of the Technical Panel is scheduled for June 10, 2004 to begin finalizing the RFP for the course development contract.

- FHWA Contact: Ken Jacoby 202-366-6503
- NRC Contact: Gene Hoelker 708-283-3520

Work Zone Traffic Control Short Courses

NHI held a meeting in March 2004 with the FHWA Offices of Safety and Operations, as well as with TCCC representatives, to discuss the overall curriculum of work zone training for various audiences. The end result will be the development of several courses through NHI.

- FHWA Contact: Ben Gribbon 202-366-1809
- NHI Contact: Bill Williams 703-235-0539

Highway Maintenance Quality Assurance for State and Local Agencies 1340XX

This short course will be developed using the outcome and results of the NCHRP Project 14-12 completed in 1998 by ERES Consultants. This course will educate governmental agencies on how to evaluate the Level of Service (LOS) being provided by maintenance forces in comparison to the LOS targeted by the agency or expected by its customers. In addition, the quality assessment process will allow an agency to benchmark maintenance levels at the time LOS monitoring begins, thereby providing a numerical point of reference for evaluating maintenance conditions over time. RFP is under development.

- FHWA Contact: Jim Sorenson 202-366-1333
- NRC Contact: Gene Hoelker 708-283-3520
- NHI Contact: John Taylor 703-235-0524

Structural Bolting Course

A High Strength Bolting Course for the installers of Bolted Connections for Structural Steel, Overhead Traffic Structures, Guide Rail and other Miscellaneous Structures. This course will cover identification of bolt, nut and washer manufacturer, bolt/nut/washer designations, condition as received on project and the various equipment and methods used to assure the proper torque. Course can be used as a Training Course or to Certify Installers as required by agencies.

- FHWA Contact: Chris Newman 202-366-2023

Concrete Construction Inspector

The TCCC is currently exploring the formation of a new technical panel (including ACPA) to determine priorities in the development of core materials / curriculum for concrete paving inspector certification.

- FHWA Contact: Chris Newman 202-366-2023
- NRC Contact: Mike Arasteh 410-962-0678