

BRIDGE INSPECTION NON-DESTRUCTIVE EVALUATION SHOWCASE (BINS)

(Copy and fill out one for each registrant)

(Please print)

NAME: _____
TITLE: _____
ORGANIZATION: _____
STREET ADDRESS: _____
CITY: _____ STATE/ZIP: _____
PHONE: _____ FAX: _____
EMAIL: _____

MAIL/FAX REGISTRATION TO:

Tennessee Transportation Assistance Program
(TTAP)
Attn: Diana Webb
Center for Transportation Research
The University of Tennessee
Knoxville, Tennessee 37996-4133
Tel: 865-974-5255 Fax: 865-974-3889
Web: ctr.utk.edu/ttap

RETURN AS SOON AS POSSIBLE

CEUs/PDHs AVAILABLE

0.6 Continuing Education Units (CEUs)/6 Professional Development Hours can be granted for this course. A \$10 administrative fee is required if you want your CEUs registered with the University of Tennessee.

CANCELLATION POLICY

Due to commitments to our instructors and facilities, the registration fee is not refundable if a registrant withdraws less than forty-eight hours before the workshop. You may substitute registrants; please notify us in advance if possible. Please register early as attendance to our workshops have increased. We may not accommodate walk-ins on the day of the workshop.

REGISTRATION

This is a **FREE** NHI/FHWA grant-sponsored workshop. Space is limited. All attendees must pre-register for this workshop which is on a first come first served basis. Lunch is on your own.

Fax/mail registration to:

Tennessee Transportation Assistance
Program (TTAP)
Attn: Diana Webb
Center for Transportation Research
The University of Tennessee
Suite 309, Conference Center Building
Knoxville, TN 37996-4133
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**BRIDGE INSPECTION
NON-DESTRUCTIVE
EVALUATION
SHOWCASE (BINS)**

January 5, 2012 (Knoxville)



A Local Technical Assistance Program (LTAP) Center



NATIONAL HIGHWAY INSTITUTE



Federal Highway
Administration

WHAT THIS IS ABOUT

Approximately 600,000 bridges support, carry, and connect public roadways in the United States. These structures are critical components in a surface transportation system that is expected to support a thriving economy, provide for safe and efficient mobility, and ensure a high level of national security by facilitating rapid responses to emergencies, attacks, and natural disasters. These bridges and roads also serve as a conduit for a variety of personal travel needs, helping to ensure a satisfactory quality of life in the United States.

The requirements for periodic inspection of all bridges on public roads are well established and codified in regulations within the National Bridge Inspection Standards (NBIS). The 2004 legislation was in part a response to a series of major bridge failures over four decades. According to the NBIS, all publicly owned highway bridges (including culverts) located on public roads in the United States that are longer than 20 feet (6 meters) must be inspected at least once every 24 months.

The FHWA Office of Infrastructure R&D, in cooperation with the FHWA Office of Bridge Technology and the FHWA Resource Center, has identified that the need exists within state Departments of Transportation (DOT) for training on selected non-destructive evaluation (NDE) methods that can be used to assess existing conditions in highway bridge structures during routine inspections, supplementing visual inspections. The Bridge Inspectors NDE Showcase (BINS) is an informal, one-day training course which provides bridge inspectors the ability to see the latest in commercially available nondestructive tools and systems for use on bridges. The workshop is presented through a series of lectures, instructional videos, and live demonstrations showing basic operation of the equipment.

This seminar is designed to provide bridge inspection staff the opportunity to view efficient and effective inspection tools and techniques, with the ultimate goal of achieving safer bridges through more reliable bridge inspections. The following technical inspection tools are featured: Eddy Current, Ultrasonic, Infrared Thermography, Impact Echo, and Ground Penetrating Radar.

OUTCOMES:

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

- Summarize and demonstrate the basic principles and general operational procedures for five (5) hand-held nondestructive testing (NDT) systems used for inspection of bridge components, including:
- Eddy Current Testing (able to detect near-surface defects through paint)
- Ultrasonic Testing (Used for pin inspection, penetration welds, length and thickness measurements)
- Infrared Thermography (able to indicate percentage of deteriorated area in a surveyed region)
- Impact Echo (IE) (provides information on depth of defect and concrete quality)
- Ground Penetrating Radar (GPR) (detect embedded metals, thickness of materials mapping of reinforcement, and depth of cover)

WHO SHOULD ATTEND?

The primary audience for the Bridge Inspection Non-Destructive Evaluation Showcase (BINS) course is Federal, State, and local highway bridge inspectors, consultants, and bridge inspection staff. UT faculty, staff and students who are interested in this workshop may attend.

WHEN-WHERE

January 5, 2012 (Knoxville)

University of Tennessee

Science & Engineering Research Facility (SERF)

Room 307

1414 Circle Drive (building may be entered from Middle Drive)

Knoxville, TN 37996

Tel: 865-974-5255 for directions

PARKING

Parking is available at The Public Parking Garage & Plaza (fee \$5.00, bring parking stub for validation). Enter garage from Phillip Fulmer Way, take Pedestrian Bridge to the Hill and Circle Drive.

For a map of the UT campus, please go to:

<http://web.utk.edu/~pso/images/Parking%20Map%202011-12.pdf>

INSTRUCTOR

Mark Moore

Mark Moore is a senior consultant for Wiss, Janney, Elstner Associates Inc. and serves as the program manager for the NDE Validation Center project for FHWA. He has more than 16 years of engineering practice in the area of structural evaluations and investigations. Much of this practice has been related to evaluation and repair of highway bridges. From 1983 to 1987, Moore was the co-principal investigator on another FHWA-sponsored research program involving the design and testing of a two-span, three-girder, 0.4-model, steel-girder bridge designed using Alternative Load Factor Design, or Autostress. To date, the Autostress model bridge study is the largest structural test program to be completed at the Turner-Fairbank Highway Research Center. He has a bachelor's degree from Purdue University and a master's degree in engineering from the University of Texas at Austin. He is a registered PE in Florida, Georgia, New York, North Carolina, South Carolina, Tennessee, and Texas.

AGENDA

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| 8:00 am | Welcome, Opening remarks |
| 8:15 am | Overview of BINS |
| 8:30 am | NDE Tool 1 – Eddy Current Test
Methods |
| 9:45 am | NDE Tool 2 – Ultrasonic Test
Methods |
| 10:30 am | Break |
| 10:45 am | NDE Tool 3 – Infrared
Thermography |
| 12 noon | Lunch (on your own) |
| 1:30 pm | NDE Tool 4 – Impact Echo Test
Methods |
| 2:30 pm | Break |
| 2:45 pm | NDE Tool 5 – Ground Penetrating
Radar Test Methods |
| 4:00 pm | Summary, Question and Answers,
Final Learning Assessment |
| 4:30 pm | Closing |