



NATIONAL HIGHWAY INSTITUTE

## **NATIONAL HIGHWAY INSTITUTE USES TECHNOLOGY TO REDUCE TRAVEL COSTS AND INCREASE EFFICIENCY**

**By Samantha Wasserman**

The National Highway Institute (NHI) has leveraged the power of virtual and mobile solutions, as well as distance learning options, to complement its traditional training role and respond to the challenges its partners and stakeholders face. These new electronic learning tools allow NHI to solve issues such as travel restrictions and time and budget constraints while maintaining high-quality instruction. Over the past few years, NHI has used these new technologies and delivery formats to provide training to students in a more cost-efficient manner, reaching a wider audience.

Virtual worlds are an innovative way to reach participants who face budgetary barriers. For instance, Geotechnical Engineers in State Departments of Transportation (DOT) require access to the equipment, experts, and general discussions that they would gain at the International Association of Foundation Drilling trade show. Many engineers were unable to attend this event in person, which is why NHI developed the Virtual Foundation Expo, a 2-day, virtual version of the trade show that consisted of panel sessions, presentations, and Q&A forums that connected participants with 20 industry experts. Each State's assigned avatar interacted with other avatars in the virtual world, developing networks for both formal and informal learning. Twenty-one State DOTs and two Federal Lands Highway offices participated, totaling 150 learners.

NHI also created the Virtual Bridge Inspection computer-based program to provide students a cost- and time-effective alternative to the physical field trips that are a required part of the corresponding instructor-led training. This 3D training allows participants to examine two virtual bridges—one over a roadway and another over water—using dedicated laptops provided at the requested training location. Each virtual bridge includes typical bridge defects, designated among 15 checkpoints. Participants investigate and evaluate both bridges using 14 commonly used virtual tools (such as a hammer, grinder, chain drag, bucket truck, or flashlight). By conducting the bridge inspection virtually, NHI can control bridge defects and enable participants' exposure to a comprehensive array of

bridge conditions. In addition, using the inspection program allows NHI to offer this training all year round regardless of weather conditions.

As technology advances, NHI continues to provide new solutions in order to reach more participants and provide tools they can apply in the field. This year NHI launched its first mobile app, the FHWA Pavement Preservation Virtual Checklists. The app replaces the need for construction and maintenance teams to carry the 14 spiral-bound paper guides. This job aid gives mobile teams the needed information at their fingertips. The app also provides greater flexibility for individuals to focus on the issue at hand and better select the appropriate solution. NHI has identified several additional mobile app projects that are currently in the beginning stages of development.

While virtual and mobile solutions are newer methods for engaging and educating the transportation community, NHI also continues to employ more traditional distance learning tools to deliver valuable and less costly training to more learners. NHI has expanded its Web-based training (WBT) courses, Web-conference training (WCT) courses, Webinars, and Video-conference training (VCT) to do just that. Last year marked the first year in which NHI's distance learning program reached more participants than its traditional instructor-led classroom deliveries. NHI is proud of this accomplishment and has several project plans in place to continue its distance learning growth.

NHI has dramatically expanded the number of WBT offerings, with nearly 150 WBT sessions reaching more than 16,000 participants in Fiscal Year 2012. These self-paced courses enable participants to access the course when it is most convenient for them. With only an Internet connection to the NHI Web site required, WBT sessions are proven cost-effective training solutions.

WCTs also provide instruction without participants incurring travel costs. WCT courses are live, online training sessions that are presented by an instructor, at a scheduled time, in a virtual classroom. All that is needed is an Internet connection and a phone line. This year NHI increased the number of WCT sessions for six of the safety courses. NHI offers four to six sessions annually for each course, totaling approximately 36 new safety training WCT sessions that are available without ever having to get on a plane or pay for a hotel.

Finally, NHI expanded VCT courses enabling instructors to teach classes through live broadcasts in multiple local offices. Recently, a VCT course in North Dakota reached 35 participants in three rural, less populated States. This technology provided training to participants who may not have received it due to registration minimums for a course to be scheduled. It also eliminated the extra cost to travel between States to reach the threshold. NHI is working with several States to implement more VCT sessions in 2013.

With fewer resources, more travel restrictions, and smaller training budgets, NHI has effectively leveraged new and existing technology to continue to reach more of the transportation community year after year. NHI will continue to find new, innovative ways to deliver more training for the benefit of the transportation community.

