

SHRP2 R06A Round 7

Nondestructive Testing for Concrete Bridge Decks

DeIDOT Final Report

Original Objective/Goal:

We want to have a better understanding of the true condition of our bridge deck inventory. Currently, we have used IE through consultant agreements with success and believe the technology is a good tool for determining deck condition.

Bridge Management would like to improve in-house inspectors' knowledge and use of bridge deck NDT technology and techniques. The main focus of this will be related to learning the use of our infrared camera (IR) and gain a better understanding of impact echo (IE) equipment. The goal would be to train some inspectors to eventually incorporate these techniques into our inspection practice at specified intervals.

Final Updates to Objective/Goals:

It became apparent that we didn't have enough funds for BDI to build and provide training on an Impact Echo device as well as training on the IR camera. Therefore, it was decided that we would conduct the field work with the IR camera on a bridge that already had IE testing completed.

In order for in-house staff to generate better plots of the decks, it was decided that BDI would provide DeIDOT with a cart to hold the camera overhead and a laptop for seeing and recording data.

Specific Work Tasks:

BDI completed the following tasks with DeIDOT inspectors:

1. Classroom and field training of DeIDOT owned infrared camera
2. Provide DeIDOT with cart for overhead use of IR camera
3. Train DeIDOT inspectors in use of cart by attaching IR camera and scanning a bridge
4. Show inspectors how to generate IR deck plots using software

Project Locations:

Classroom training completed at DeIDOT Administration Building in Dover, DE. Bridge 1-130 (Mt Cuba Rd over Red Clay Creek) was chosen for the field training. This is a low speed, low volume traffic location that had IE testing completed on the deck. There are also multiple areas of deck delamination.

Schedule:

June 4th, 2018 – BDI provided classroom training on general knowledge of IR technology and use of DeIDOT's IR camera.

June 5th, 2018 – BDI provided field training on use of cart and IR camera followed by classroom training on generating deck plots.

Budget:

Proposal was for \$29,976.42; Invoiced for \$28,417.55.