Nondestructive Condition Evaluation of Main Street Bridge Over Chemung River in Elmira, New York by Infrasence

Infrasense carried out NCE of Main Street Bridge over Chemung River using Infrared thermography (IR), ground penetrating radar (GPR), and high-resolution video (HRV) imaging.

ELMIRA, N.Y. (PRWEB) November 30, 2017 -- Infrasense has recently performed a condition evaluation of the bridge deck carrying Main Street over the Chemung River in Elmira, New York. The evaluation was carried out using infrared thermography (IR), ground penetrating radar (GPR), and high-resolution video (HRV) imaging.

The Infrared Thermography (IR) survey was performed according to ASTM D 4788 – 03 (2013) using the latest technology mounted to an elevated platform on top of the survey vehicle and operated remotely from within the vehicle. Data was collected with maximum temperature differentials caused by delamination. The IR and HRV input was compiled in a series of passes across the roadway area of the deck, moving at approximately 30 mph. The Main Street deck required two passes - one for each lane. Each pass covered a deck width of 15 feet while the IR and HRV cameras were connected to an electronic distance measuring instrument (DMI) for accurate location referencing.

The GPR surveys were completed according to ASTM D 6087-08. The survey included 11 lines of data for the roadway area and 3 lines of data for the two shoulder areas; each representing a cross sectional slice of the deck at a particular offset. The DMI distance data was continuously recorded into each GPR record, so that each GPR data scan had an associated distance.

Ground penetrating radar surveys provide transportation agencies with accurate and comprehensive bridge deck condition information, enabling effective preservation, rehabilitation, and replacement decisions. With large bridge deck inventories, highway agencies have primarily relied on visual inspection at the network level. Since the mechanisms of deterioration occur below the surface, their manifestations are not readily seen in the visual inspections. As a result, visual deck assessments are often inaccurate, and do not provide a sound basis for planning repair and rehabilitation.

Traditionally, highway agencies have employed sounding (chain or hammer) to identify delaminated areas for project-level rehab. Although sounding has proven reliable, the labor and closures required for a sounding survey makes it prohibitive for obtaining data of a large number of decks. Also, sounding is not effective when there is an asphalt overlay. In response to these limitations, a number of highway agencies have utilized alternative methods such as ground penetrating radar.

About Infrasense, Inc.
Since 1987, Infrasense, Inc. has applied advanced technologies to address the most difficult challenges in subsurface scanning. Infrasense's engineers nondestructively extract critical information from a diverse range of structures. In addition to providing ongoing subsurface evaluation services to clients across the country, the firm has also conducted numerous research programs to advance the field of subsurface detection and nondestructive evaluation. To learn more about Infrasense and the services we provide, visit our website: http://www.infrasense.com

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