

## **Ground Penetrating Radar Survey Saves over \$500k on New York State Thruway Bridge Deck Rehab Project**

*Infrasense, Inc. recently performed ground penetrating radar (GPR) surveys of two asphalt overlaid concrete bridge decks on I-87 in Rockland County, New York. The increased efficiency provided by GPR saved over \$500k in traffic control, labor, and material costs; which was split between the owner and contractor as part of a “value engineering” initiative.*

([PRWEB](#)) January 27, 2016 -- Infrasense, Inc. recently performed ground penetrating radar (GPR) surveys of two asphalt overlaid concrete bridge decks on I-87 in Rockland County, New York. The GPR surveys resulted in concrete deterioration quantities and maps, which were calibrated using cores at 24 select locations, and then combined with results from visual inspection and targeted underside sounding to produce the partial and full-depth repair plans. The ability of GPR to penetrate through the asphalt overlay and detect the condition of the subsurface concrete deck provided significant time and cost savings to the original design methodology. Given the lane closure constraints and time associated with managing the nightly removal and replacement of the asphalt overlay, approximately 30 nights of sounding would have been required to cover the full deck area. The relatively efficient GPR survey saved over \$500k in traffic control, labor, and material costs; which was split between the owner and contractor as part of a “value engineering” initiative.

In addition to the deterioration quantities and maps, the GPR surveys also produce rebar depth and asphalt overlay thickness contour maps for each bridge deck. Ground penetrating radar (GPR) data can be collected at highway speeds to estimate rebar depth, corrosion conditions and deteriorated concrete. The GPR survey for this particular project was carried out at a rolling speed (i.e. approximately 10 mph) to obtain higher resolution data. The data was collected in a series of lines spaced 2 feet transversely across the width of the deck, with each line representing a cross sectional slice of the deck at a particular offset. For reference, decks in good condition consist of strong and uniform radar reflections from the rebar; whereas GPR data with weak and inconsistent reflections indicate rebar-level deterioration. Infrasense uses proprietary software to analyze the GPR data to quantify and map the deck conditions.

Ground penetrating radar surveys provide transportation agencies with accurate and comprehensive bridge deck condition information, enabling effective preservation, rehabilitation, and replacement decisions. 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 and private consulting firms, including the New York State Thruway Authority, have utilized alternative methods such as ground penetrating radar.

About Infrasense, Inc.

Since 1987, Infrasense, Inc. has applied the most current technologies to the most difficult challenges in subsurface scanning. Infrasense’s engineers are able to nondestructively extract critical information from a diverse range of structures. The firm has conducted research to advance the field of subsurface detection, while also providing valuable information to clients across the country. Learn more about Infrasense, Inc. and its services at <http://www.infrasense.com>.



**Contact Information**

**Sarah Kelly**

Infrasense, Inc.

+1 (781) 648-0440

**Online Web 2.0 Version**

You can read the online version of this press release [here](#).