PAVEMENT ENGINEERING

& Non-Destructive Testing Services

RESOURCE INTERNATIONAL, INC.

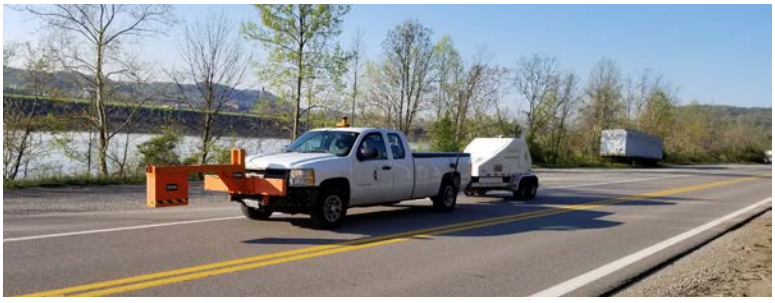
REDEFINING WHAT IT MEANS TO BE A RESOURCE SINCE 1973

Pavement Engineering
& Non-Destructive Testing Services

RESOURCE INTERNATIONAL, INC.

Resource International, Inc. (Rii) is a multi-disciplined professional engineering consulting firm specializing in construction management, information technology, and the planning and design of building and transportation infrastructure projects valued in excess of $1 billion annually.

Rii has been operating as a woman-owned business since 1973, providing innovative and quality engineering solutions to assist public and private clients to find optimal solutions to improve their environment and infrastructure. Rii has been an expert in ground penetrating radar services since 2002.



PAVEMENT EVALUATION / ENGINEERING

Rii specializes in non-destructive testing (NDT) and evaluation of pavements, pavement management, design development, and pavement maintenance for roadways, parking lots, airport runways, aprons and taxiways.

Rii has installed a large number of Pavement Management Systems (PMS) packages with various government organizations. Over time, PMS technology has evolved and progressed considerably. The earliest PMS technology provided was, in essence, an information management system in which pavement conditions were used to determine maintenance strategies. Current enhancements have been added to greatly increase efficiency and effectiveness.

REPRESENTATIVE CLIENTS

Colorado
- City of Golden, Colorado
- Pitkin County, Colorado
- Town of Superior, Colorado

Florida
- Brevard County, Florida
- Collier County, Florida

Indiana
- City of Lafayette, Indiana

Kansas
- City of Lawrence, Kansas

Missouri
- City of Kansas City, Missouri

North Carolina
- City of Charlotte, North Carolina

Ohio
- City of Columbus, Ohio
- City of Dublin, Ohio
- City of Hilliard, Ohio
- Delaware County, Ohio

Texas
- University Park, Texas
- Bexar County, Texas

Departments of Transportation
- ODOT, Caltrans, ConnDOT, INDOT, MDOT, MnDOT, MoDOT, NMDOT, NYSDOT, PennDOT, WisDOT, WVDOT, WYDOT

Transportation Authorities
- Ohio Turnpike & Infrastructure Commission
- Illinois State Toll Highway Authority
- New York State Thruway Authority
- Puerto Rico Toll Highway Authority

USACE
- Vicksburg District

ODOT, VARIOUS DISTRICTS

Performed bridge deck condition surveys using GPR and IR, evaluating more than 400 bridges of varying types

CITY OF DUBLIN, OH

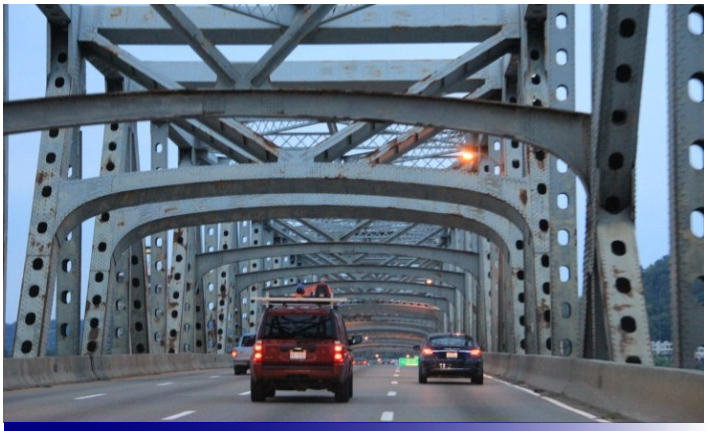
Performed non-destructive testing and pavement evaluation on 185 miles of roadway using FWD and GPR

CITY OF FORT WAYNE, IN

Used GPR to evaluate the conditions of the concrete and the transverse contraction joints (6 lane miles) for the Coldwater Road Concrete Street Rehabilitation project.

INDOT

Performed GPR on more than 550 bridge decks to locate areas in need of repair and estimate quantities of deteriorated concrete



ODOT DISTRICT 8, BRENT SPENCE BRIDGE

Used infrared thermography to locate and map delamination in the top two inches of the concrete deck overlay

UNIVERSITY OF WYOMING

Performed GPR survey to measure continuous thicknesses of 2,511 centerline miles of pavement

Rii's Additional NDE Methods

FALLING WEIGHT DEFLECTOMETER (FWD)

Rii owns a JILS-20HF FWD, a high force FWD mounted on a two-axle trailer designed specifically for determining structural information of any type of pavement. FWD data can be used to:

- Back-calculate elastic moduli of pavement layers
- Determine subgrade resilient modulus (MR)
- Evaluate structural condition of the pavement
- Determine maintenance and/or rehabilitation needs of pavements

GROUND PENETRATING RADAR (GPR)

GPR is a non-destructive inspection method that uses radio waves to penetrate into pavements, structures, sub-structures and other mediums. It provides information on pavement layer structure and bridge deck conditions. Rii uses this technology to determine:

- Pavement thickness
- Pavement joint condition
- Unexpected air voids under concrete or asphalt pavement
- Asphalt density
- Bridge deck concrete condition
- Rebar spacing and depth
- Unknown utility locations

INFRARED THERMOGRAPHY SYSTEM

An Infrared/Visual System identifies and locates delamination/debonding in concrete bridge decks. Rii's system is mounted on a moving vehicle to scan the deck at highway speed. Piers and other bridge concrete structures are also scanned from the ground or a boat. Rii uses the latest FLIR system, FLIR A6700sc Thermal imaging camera with FLIR cooled InSb detector, with the following features:

- Excellent image quality
- High sensitivity
- High-speed image acquisition

BRIDGE DECK & PAVEMENT CORING

Rii conducts bridge deck and pavement coring to:

- Provide additional information on pavement type and thickness
- Assist in pavement rehabilitation and design
- Confirm GPR results
- Help determine concrete condition through lab testing
- Provide additional information on rebar diameter and depth

Rii's Additional NDE Methods

HIGH SPEED PROFILOMETER

Rii utilizes the Ames model 8300 High Speed Profiler to perform pavement smoothness testing and measure the International Roughness Index. This profiler model is designed as a portable system, and is front-mounted on a pick-up truck using a two-inch receiver hitch. Benefits of this technology include:

- Profile elevations can be collected at a speed range of 14-70 mph
- Graphical display of laser and profile data
- Easy step by step calibration procedures displayed on screen

ZORN LIGHT WEIGHT DEFLECTOMETER (LWD)

Rii's Zorn LWD for Asphalt (ZFG 2000A) is designed to assess the stability of existing asphalt layers and to determine the hardness for broken and stable layers. Rii's use of LWD for asphalt ultimately reduces the cost of testing, increases the reliability of results, and produces high-performance and low-maintenance pavements.

AUTOMATED DYNAMIC CONE PENETROMETER (ADCP)

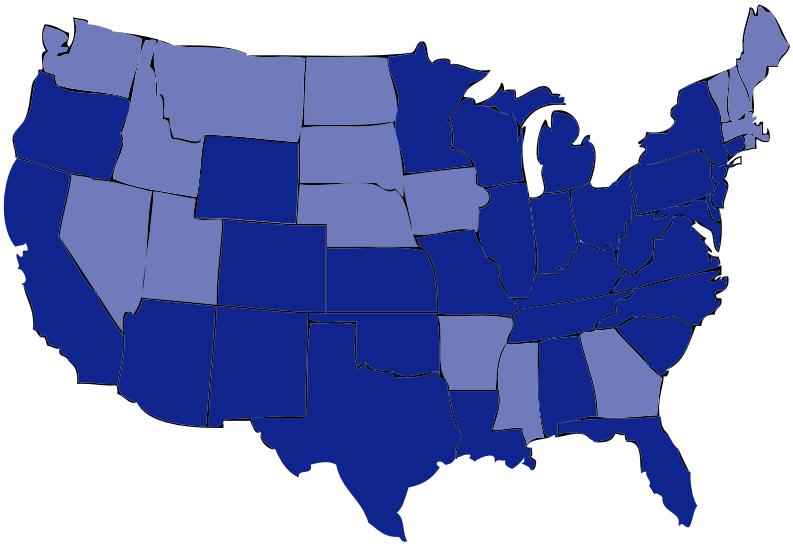
Rii's ADCP system, manufactured by Vertek, is equipped with an automatic lift / drop mechanism and Windows-based Data Acquisition System (DAS), providing an accurate, fast and efficient test method for evaluating in-situ conditions of new and existing highway and airfield pavements, as well as quality control of new pavement construction. The ADCP-DAS determines in-situ strength and thickness of soils, unbound granular base and subbase layers and subgrades.

DRONE TECHNOLOGY

Rii has a portable and powerful drone for project site assistance. Drones offer unparalleled professional aerial imaging, allowing trained Rii professionals to better assess storm damage and provide the best solutions possible. Evaluating storm damage on the ground is only one perspective, an aerial view may open new insights and generate new ideas for rebuilding. Using a UAV drone, professionals are now able to perform infrared scans of buildings and structures, which will help to quickly identify sources of energy efficiencies, destructive water damage and structural issues.

Rii's Pavement Experience is Nationwide

We have worked in 30 states and Puerto Rico



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An ISO 9001:2015 Certified QMS Firm

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