SHRP2 SOLUTIONS
STRATEGIC HIGHWAY RESEARCH PROGRAM




R06D Advanced Methods to Detect Pavement Delamination

Peer Exchange

(August 2, 2018)

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FHWA Resource Center

U.S. Department of Transportation
Federal Highway Administration

American Association of State Highway and Transportation Officials
AASHTO
The Voice of Transportation

TRB

Objectives

- Technology Demo – MnRoads
- Share Field Trial Results
- Share Vendor information
- Hear from other Guests
- Strengthen Partnerships & Communication
- **Post SHRP2 Advancement - Brainstorming**

Advanced Methods to Identifying Pavement Delamination (R06D)

CHALLENGE:

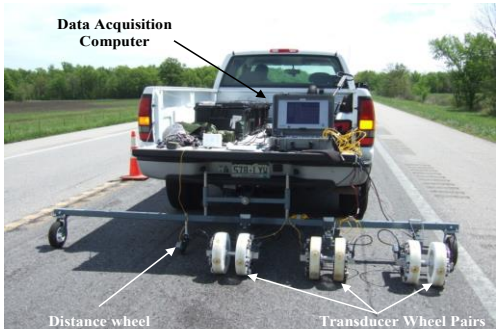
Asphalt pavements with delamination problems experience considerable early damage. Rapid detection of the existence and extent of delamination is key for determining appropriate rehab strategies and extending pavement life.

GPR Antenna Array (3-D Radar)

RESEARCH:

Identify and develop NDT technology that can:

- Detect & quantify delamination in HMA
- Operate at reasonable traveling speed
- Cover full-lane width



Impact Echo (IE) / Spectral Analysis of Surface Waves (SASW) Scanning System

ROUND 7 Proof-of-Concept Agencies:

- FL, TX, NM, MN, CA & KY
- Focused on field validation and assist in advancement of one or both technologies.

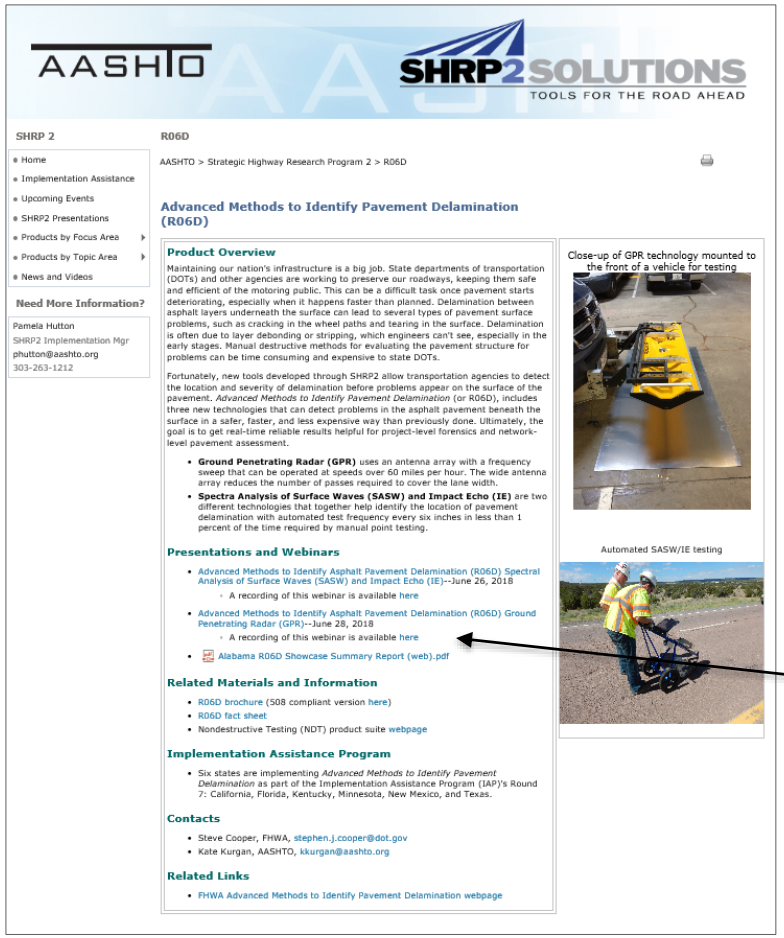
Remaining Contract Support

AASHTO R06D Task Order Support till April 30, 2018

- Summary of Peer Exchange
- Final Report of Findings
- Maintenance of Website

For More Information on SHRP2 and R06D

AASHTO: http://shrp2.transportation.org/Pages/R06C_RapidTechnologiestoEnhanceQualityControl.aspx



AASHTO

SHRP2 SOLUTIONS
TOOLS FOR THE ROAD AHEAD

SHRP 2

- Home
- Implementation Assistance
- Upcoming Events
- SHRP2 Presentations
- Products by Focus Area
- Products by Topic Area
- News and Videos

Need More Information?

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R06D

AASHTO > Strategic Highway Research Program 2 > R06D

Advanced Methods to Identify Pavement Delamination (R06D)

Product Overview

Maintaining our nation's infrastructure is a big job. State departments of transportation (DOTs) and other agencies are working to preserve our roadways, keeping them safe and efficient of the motoring public. This can be a difficult task once pavement starts deteriorating, especially when it happens faster than planned. Delamination between asphalt layers underneath the surface can lead to several types of pavement surface problems, such as cracking in the wheel paths and tearing in the surface. Delamination is often due to layer debonding or stripping, which engineers can't see, especially in the early stages. Manual destructive methods for evaluating the pavement structure for problems can be time consuming and expensive to state DOTs.

Fortunately, new tools developed through SHRP2 allow transportation agencies to detect the location and severity of delamination before problems appear on the surface of the pavement. *Advanced Methods to Identify Pavement Delamination* (or R06D), includes three new technologies that can detect problems in the asphalt pavement beneath the surface in a safer, faster, and less expensive way than previously done. Ultimately, the goal is to get real-time reliable results helpful for project-level forensics and network-level pavement assessment.

- **Ground Penetrating Radar (GPR)** uses an antenna array with a frequency sweep that can be operated at speeds over 60 miles per hour. The wide antenna array reduces the number of passes required to cover the lane width.
- **Spectra Analysis of Surface Waves (SASW) and Impact Echo (IE)** are two different technologies that together help identify the location of pavement delamination with automated test frequency every six inches in less than 1 percent of the time required by manual point testing.

Close-up of GPR technology mounted to the front of a vehicle for testing

Automated SASW/IE testing

Presentations and Webinars

- Advanced Methods to Identify Asphalt Pavement Delamination (R06D) Spectral Analysis of Surface Waves (SASW) and Impact Echo (IE)--June 26, 2018
  - A recording of this webinar is available here
- Advanced Methods to Identify Asphalt Pavement Delamination (R06D) Ground Penetrating Radar (GPR)--June 28, 2018
  - A recording of this webinar is available here
- Alabama R06D Showcase Summary Report (web).pdf

Related Materials and Information

- R06D brochure (508 compliant version here)
- R06D fact sheet
- Nondestructive Testing (NDT) product suite webpage

Implementation Assistance Program

- Six states are implementing *Advanced Methods to Identify Pavement Delamination* as part of the Implementation Assistance Program (IAP)'s Round 7: California, Florida, Kentucky, Minnesota, New Mexico, and Texas.

Contacts

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Related Links

- FHWA Advanced Methods to Identify Pavement Delamination webpage

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FHWA Support

- Provide continued support to agencies in advancing efforts post SHRP2.
  - FHWA Involvement/Support subject to detailed planning and national interest.

Post SHRP2 Brainstorming (FHWA Interest)

- **Did we walk away with clear direction on what we as a group want to accomplish Post SHRP2?**

- What are our needs (more research, more field validation, spec development, technology advancement, etc.)?
- Future Communication (Working Groups, Peer Exchanges, Webinars, etc.)?
- Who will do what?

Special Thanks

- AASHTO / NCAT
- MN DOT