LINKING DATA TO TRANSPORTATION RESEARCH

PURDUE ROAD SCHOOL 2014

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#roadschool

Wednesday, March 12, 2014
PUBLICATIONS AND DATA
PAST PRACTICES
AASHTO Research Committee Awards 2013
Sweet Sixteen High Value Research Projects

The Research Advisory Committee (RAC) to the American Association of State Highway and Transportation Officials’ Standing Committee on Research (SCOR) awarded its 2013 Sweet Sixteen High Value Research Projects at the AASHTO Annual Meeting, held in last month in Denver.

Each year, RAC collects High Value Research highlights from state transportation departments across the nation to showcase projects that are providing transportation excellence through research. This year’s “Research Sweet 16” winners are:

Region 1
- Connecticut Department of Transportation: Use of Streaming Media and Digital Media Technologies at CTDOT
- District Department of Transportation: Innovative Bicycle Facility Research and Analysis
- Maine Department of Transportation: Use of Moisture Induced Stress Testing to Evaluate Stripping Potential of Hot Mix Asphalt (HMA)
- New Jersey Department of Transportation: Elimination of Weight Restrictions on Amtrak, NJ Transit, and Conrail Line

Region 2
- Arkansas State Highway and Transportation Department: Design, Construction and Monitoring of Roller Compacted Concrete Pavement in the Fayetteville Shale Play
- Florida Department of Transportation: Aging Driver and Pedestrian Safety: Human Factors Studies
- Georgia Department of Transportation: Recommended Guide for Next Generation of Transportation Design-Build Procurement and Contracting in the State of Georgia
- Louisiana Department of Transportation and Development: Louisiana Legislature Acts on Research to Add Additional Axle to Overloaded Sugar Cane Trucks

Region 3
- Indiana Department of Transportation: Analysis and Methods of Improvements of Safety at High-Speed Rural Intersections
- Iowa Department of Transportation: Evaluation of the RapidAIR 457 Air Void Analyzer
- Michigan Department of Transportation: Impact of Non-Freeway Rumble Strips – Phase 1

Region 4
- California Department of Transportation: Accident Risk Analysis Tool
- South Dakota Department of Transportation: Energy Management Program for SDDOT
- Utah Department of Transportation: Identifying Characteristics of High-Risk Intersections for Pedestrians and Cyclists
- Wyoming Department of Transportation: Variable Speed Limit System for I-80 Elk Mountain, Wyoming, Corridor
CASE STUDY
PURDUE LIBRARIES &
THE JOINT TRANSPORTATION
RESEARCH PROGRAM
COLLABORATORS

PUL AND JTRP

Meetings (March-June 2013):
• Purdue University Libraries (PUL)
• JTRP-PUL Meeting

Shared goals:
• Compliance with funder requirements
• Expose data
• Create an integrated publishing workflow linking tech reports and data

Actions:
• Identify use case
• Stage datasets in PURR
• Format and stage tech report
• Linking the data
A SERVICE MODEL OF COLLABORATION

Purdue e-Pubs and the Purdue University Research Repository (PURR)
EVOLVING WORKFLOWS
PURDUE UNIVERSITY PRESS/PURDUE E-PUBS/JTRP

From... To...
e-Pubs

This Web page portal lists over 1,300 technical reports published as part of the JHRP, and subsequently JTRP, collaborative venture between Purdue University and the Indiana Department of Transportation. Additional details regarding the history of JHRP, as well as current activities of the JTRP program, can be found by clicking on the respective hyperlinks.

Technical Reports from 2012

FHWA/IN/JTRP-2012/01. Analysis and Methods of Improvement of Safety at High-Speed Rural Intersections. Andrew P. Tarko, Samuel Lekkron, and Panagiotis Skalakopoulos, SPR-3316


FHWA/IN/JTRP-2012/04. Evaluation of Pavement Surface Friction Treatments. Shuo Li, Samy Nourredin, Yi Jiang, and Yanna Sun, SPR-3088

FHWA/IN/JTRP-2012/06. Application of Travel Time Information for Traffic Management. Christopher M.
EVOLVING WORKFLOWS

PURDUE LIBRARIES/PURR/JTRP

From...

To...

404 - Component not found

You may not be able to visit this page because of:
1. an out-of-date bookmark/favourite
2. a search engine that has an out-of-date listing for this site
3. a mistyped address
4. you have no access to this page
5. The requested resource was not found.
6. An error has occurred while processing your request.

If difficulties persist, please contact the System Administrator of this site.
LINKING TECHNICAL REPORTS AND DATA
COHESIVE PUBLICATION WORKFLOW

1. DMP
2. DOI
3. Metadata

PI = principal investigator
SAC = study advisory committee
PA = project administrator
PURR = Purdue University Research Repository
SSL = Subject Specialist Liaison

1. PI drafts proposal
2. Data Management Plan Created
3. PI submits proposal to funding agency
4. Proposal accepted by funding agency
5. PI submits draft report
6. SAC reviews draft report
7. PI revises draft report
8. PA/PI & SAC confer
9. Final report production process
10. PI creates project in PURR
11. Project group collaborates in PURR
12. PI submits data set
13. SSL verifies data set
14. Data set published/archived with DOI
15. Data DOI submitted to publishing
16. PURL and e-Pubs links established (metadata)

q) Post Production:
- Data/Tech Report Link
- Tech Summary
- DOIs
- Persistent URL
- Indexing
- Archiving
- Print on Demand

r) Measurements of Impact:
- Altmetrics
- Citations
- Downloads
- Access
JTRP LINKED PUBLICATIONS

TECHNICAL REPORT


DATA

Effects of Realistic Heat Straightening Repair on the Properties and Serviceability of Damaged Steel Beam Bridges

Amit H. Varma, Purdue University
Youngmoo Sohn, Purdue University

DOI: 10.5703/1288284315184

Recommended Citation

Citations
Effects of Realistic Heat Straightening Repair on the Properties and Serviceability of Damaged Steel Beam Bridges

Amit H. Varma
Youngmoo Sohn
MEASURING IMPACT
Archiving of Conference Proceedings is an emerging opportunity.
MEASURING DATASET IMPACT

**ADJUSTING FORCE - Supplementary Materials for the Report: Effects of Realistic Heat Straightening Repair on the Properties and Serviceability of Damaged Steel Beam Bridges**

By Amit H. Varma¹, Youngmin Suh¹
Purdue University

Supplementary Materials for the Report: Effects of Realistic Heat Straightening Repair on the Properties and Serviceability of Damaged Steel Beam Bridges

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**Abstract**

Guidelines for conducting heat straightening repair have been developed by FHWA and many DOTs. The guidelines establish limits for: (a) the maximum damage that can be repaired; (b) the maximum restraining force; and (c) the maximum heating temperature to prevent the side effects of heat straightening repair. However, the heat straightening guidelines are isolated in the field due to time and economic issues. These challenges include, but are not limited to: (a) under heating below 1200°F, (b) over heating above 1200°F, (c) over straining above restraining force limit (0.5%); and (d) multiple heat straightening of the same beam more than two times.

Currently, there is a lack of knowledge of the effects of these imperfections in the heat straightening repair process on the condition and serviceability of the damaged- repaired beams. This knowledge is needed to develop more realistic guidelines for evaluating and replacing bridge members subjected to damage followed by imperfect heat straightening repair.

The overall goal of this research is to develop recommendations and guidelines for evaluating steel beam bridges in Indiana subjected to damage followed by heat straightening repair with imperfections (overstraining, overheating, or multiple heat straightening).

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**Cite this work**

Researchers should cite this work as follows:


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**Tags**

- Damaged Steel Beam Bridge
- Heat straightening repair
- Construction Research Program
- JTIP

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*since Jun 01, 2013
RESEARCHERS PERSPECTIVE

• Metadata
  • Enriching research reports and technical dissemination
  • Recordings of experimental behavior, failure
  • Data streams
  • Analytical models and predictions

• Dissemination with knowledge transfer

• DOI: Digital Object Identifier
  • Most important aspect… permanent address on the web
  • Reference, one click away
The most important development in research dissemination

Don’t stop here… Consider adding

- Presentations by the researchers
- Elsevier
- Videos of final SAC closeout meeting
- Interactive Forum (moderated) for discussion of research – Discussion and Closure
- Smart phone version
- Apps that make it easier to navigate
MOVING FORWARD
BEST PRACTICES
BEST PRACTICES

• Linked work flows
  • Coordinate resources
  • Anticipate needs

• Early interaction with the data repository
  • Employ good data management principles and practices
  • Ease citation management
  • Increase impact

• Traditional publication attributes
  • Increase visibility and discoverability
  • Meet funder requirements
  • Measure and assess impact

• Usage and access metrics
  • Monitor and evaluate through quantitative and qualitative measurements
  • Communicate impact
**DOT RESPONSE TO OSTP MEMO**

**SHARING RESEARCH**

**Publications:**
- Submit final manuscripts to the National Transportation Library (NTL)
- NTL will be the central repository for U.S. DOT research and technical reports and a clearinghouse for transportation data.

**Data:**
- Intramural researchers will follow U.S. DOT’s existing Data Release Policy
- Extramural researchers will have to submit a data management plan for approval.

**Projects:**
- Link individual research projects to resulting publications and data sets
- Required submission of Project Records to TRB’s RiP database and DOT’s Research Hub.
Thank You

This work was supported in part by the Joint Transportation Research Program administered by the Indiana Department of Transportation and Purdue University. The contents of this paper reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein, and do not necessarily reflect the official views or policies of the sponsoring organizations. These contents do not constitute a standard, specification, or regulation.
RESOURCES

- Joint Transportation Research Program. https://engineering.purdue.edu/JTRP
- Purdue e-Pubs. http://docs.lib.purdue.edu/
- Purdue University Research Repository (PURR). https://purr.purdue.edu/