Summary of FHWA Transportation Research Board (TRB) Stormwater Research – Completed and In-Progress

Mark McCabe
October 25-26, 2016
Session 21
Presentation Agenda

- Overview of TRB Research – TRID and RIP Pages

- Who Uses this Research and for What Purpose?

- How Do I Locate Research Within the TRB Database System?
  - Stormwater Management
Overview of TRB Stormwater Research

■ What is TRID?
  ■ TRID is an integrated database that combines the records from TRB’s Transportation Research Information Services (TRIS) Database + OECD’s Joint Transport Research Centre’s International Transport Research Documentation (ITRD) Database.

■ TRID provides access to more than one million records of transportation research worldwide.

■ Web site link: https://trid.trb.org
Home

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View a presentation on how to use the TRID Database

TRID: Leveraging Search Results with Reference Management Tools

Search

Enter search terms below or click Advanced Search for more options.

Keywords

In

- Exclude research in progress
- Limit results to free or fee-based full-text links

Languages
- English
- French
- Spanish

Submit

Advanced Search

Recent Records by Mode
- Aviation
- Highway
- Marine Transportation
- Motor Carriers
- Pedestrians and Bicyclists
- Pipelines
- Public Transportation
- Railroads
Overview of TRB Stormwater Research

What is RIP?

- Contains 14,000+ records of current or recently completed transportation research projects.
- Most are projects funded by Federal and State DOTs.
- Includes university transportation research projects.
- The RIP Database is copied into TRID so they can be searched via one interface.
- Web site link: https://rip.trb.org
Home

The Research in Progress website allows users to:

- Search the entire Research in Progress database by various fields
- Browse project records by subject category
- Use a look up for searching by index terms, individuals, organizations or location
- Subscribe to receive e-mail notification of new RiP records in specific subject areas

About RiP

The Transportation Research Board's Research in Progress (RiP) website contains the Research In Progress (RiP) Database and a data-entry system to allow users in State Departments of Transportation, the U.S. Department of Transportation, University Transportation Centers and other US DOT funded universities to add, modify and delete information on their current research projects. The RiP database now contains more than 13,000 current or recently completed transportation research projects. Most of the RiP records are projects funded by Federal and State Departments of Transportation. University transportation research is also included. The RiP Database now serves as a clearinghouse of University Transportation Centers ongoing research. International research projects from the TRIP file of the International Transport Research Documentation Database are now included in the RiP database. The Transportation Association of Canada supplies records from its Canadian Surface Transportation Research Database for RiP.
Who Uses this Research and for What Purpose?

TRB has developed reports that provide guidance on implementing research results.

- Improving usefulness of transportation research to produce successful implementation at scale:
  - Structure research
  - Involve stakeholders
  - Disseminate research results
  - Mitigate systematic impediments
  - Manage accelerators and impediments
  - Track research and implementation over the long haul

(Meyer; Meyer; Working Knowledge)
Who Uses this Research and for What Purpose?

One way to illustrate improving the usefulness of transportation research to produce successful implementation at scale.
Who Uses this Research and for What Purpose?

Applied Research requires a well-defined and documented implementation process that accounts for:

- Strategy
- Potential Users
- Potential for Use
- Ease of Transferability
- Resources to Support Transfer

![Well-Defined and Documented Implementation Processes Table]

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Potential Users</th>
<th>Potential for Use</th>
<th>Ease of Transferability</th>
<th>Resources to Support Transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well-Defined and Documented Implementation Processes</td>
<td>Researchers</td>
<td>Processes must be tailored to the organizational context to increase relevance and usability; some such processes are currently in use.</td>
<td>Implementation processes are documented to some degree in many research programs; refining and enhancing what can be done is easily transferrable.</td>
<td>Development of implementation model documentation that can be customized for implementation professionals.</td>
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Understanding the Trade-offs

There is a very clear trade-off to achieving greater and faster change in practice resulting from implementing research results and other innovations. These require commitments to change and the ability to adequately support and resource the change.
How Do I Locate Research within the TRB System?

Start with knowing something about your area of interest is key

Keywords: Insert search information here

Languages: English, German, French, Spanish

Recent Records by Mode:
- Aviation
- Highway
- Marine Transportation
- Motor Carriers
- Pedestrians and Bicyclists
- Pipelines
- Public Transportation
- Railroads
How Do I Locate Research within the TRB System?

Knowing something about your area of interest is key!

- Using TRID will search both TRID and RiP projects.
- The more refined or detailed your search criteria is, the fewer records will appear.
- Each record will provide information associated with the area of interest entered into the search engine.
Knowing something about your area of interest is key.
How Do I Locate Research within the TRB System?

Stormwater Management yielded over 2,000 research records.

Check the box here – will generate project summary.

Project ID number: 2016-09

Agency, budget, status:
- North Carolina Department of Transportation, $437559, 2016, Active
Stormwater categories research categories – Stormwater Management, Water Quality, Best Management Practices (BMPs)

ODOT’s MS4 Program Tie-in – MCM 6 Pollution Prevention and Good Housekeeping, MCM 1 – Public Education and Outreach

ODOT Departments to Benefit from Research – Hydraulics, Facilities, Maintenance Administration
PROCEDURES FOR WASTE MANAGEMENT FROM STREET SWEEPING AND STORMWATER SYSTEMS

Accession Number: 01604095
Record Type: Monograph
Record URL: http://cdm16007.contentdm...%20systems/mapsto/showLink
Summary URL: http://cdm16007.contentdm...ction/p267401ccp2/id/13890

Abstract:

Street sweeping and storm water system cleaning activities are conducted regularly by Ohio Department of Transportation (ODOT) to comply with National Pollutant Discharge Elimination System (NPDES) permit requirements and to ensure roadway safety. Once collected, these materials are classified as solid waste and require cost-effective and sustainable management. This research report summarizes tools for tracking and quantifying the volume of material collected and associated management costs, comprehensive analytical testing of solid waste materials from multiple locations, design and construction of a prototype decanting facility, metal adsorption media testing at the prototype decanting facility, and the development of standard operating procedures to operate the new facility. Detailed analysis shows the solid waste disposal cost is less than 5% of the management activity and management priorities should focus on cost-effective collection and management versus disposal cost. Multiple factors were utilized to rank decanting facility location options for each District in Ohio. Metal adsorption media testing showed significant removal of many heavy metals and operational observations at the new prototype facility showed promise for effectively managing these waste materials.

Report/Paper Numbers: FHWA/OH-2016-14
Contract Numbers: SJN 134731
Language: English
Corporate Authors: University of Akron
Department of Civil Engineering
Akron, OH 44325 United States
Usefulness of Reports

- Stormwater management tie-in:
  - Provides information on ODOT’s current street sweeping and stormwater system waste management practices.
  - Contains information on contaminants of street sweepings/storm sewer wastes.
- Conclusions/Findings:
  - SOP for handling street sweeping/stormwater system waste materials.
  - Start actively tracking material activities and disposal using the SOP drafted as part of this project.
Stormwater categories research categories – Stormwater Management, Water Quality, Best Management Practices (BMPs)

- ODOT’s MS4 Program Tie-in – MCM 6 Pollution Prevention and Good Housekeeping, MCM 1 – Public Education and Outreach
- ODOT Departments to Benefit from Research – Hydraulics, Facilities, Maintenance Administration
Usefulness of Reports

- Stormwater BMP info tie-in:
  - Provides information on performance.
  - Provides pollutant removal information.
  - Literature review in all reports provides references to additional swale studies, support information and possible future presentation speakers.
  - Provides suggested activities and costs.
Usefulness of Reports

- Water quality associated with roadside ditch maintenance:
  - Environmental issues are a major concern for the department and need to be considered in the first phase by making recommendations for BMPs dealing with erosion and sediment control.
Usefulness of Reports

- Stormwater BMP information tie-in:
  - This will allow ODOT to better assess and determine new or revisions to the current post-construction water quality BMPs in ODOT's Location and Design Manual Volume 2.
  - This will allow ODOT to better demonstrate removal efficiencies specifically associated with Ohio roadway PM.
Moving Forward

Considerations for Optimization of Transportation Research

- Process that provides sufficient funding for research implementation
- Centralized planning and coordination
- Effective data collection and analysis
- Effective use of intellectual property tools
Wrap Up

- TRBs – TRID and RiP research databases and how to look for information

- How does the research process work?

- What type of research project information is available?
  - Preview abstract
  - Full document

- Importance of transferability