

SOLUTIONS



Montana Department of Transportation



RESEARCH PROGRAMS

FALL 2007

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PROJECT HIGHLIGHTS

EMULSIFIED ASPHALT TREATED AGGREGATE

<http://www.mdt.mt.gov/research/projects/sportsman.shtml>

Emulsified Asphalt Treated Aggregate (EATA) is a crushed aggregate course (CAC) material blended with emulsified asphalt. The Sportsman's Campground project, a reconstruct located in Deer Lodge and Silver Bow counties in Southwest Montana, served as an experimental feature testing the performance of EATA. The primary purpose of EATA is to reduce the use of chemical dust control products and provide an improved, temporary riding surface on highway projects, particularly during winter shut down, thus reducing maintenance. A secondary goal of this effort is to provide a firm, stable, and smooth platform on which to pave.

In this project, the CAC was pug mill blended with CSS-1H emulsified asphalt and applied in varying depths and percent of emulsion to the road base. The test sections (each approximately one mile in length), constructed in fall 2006 and evaluated approximately monthly until paved in summer 2007, are as follows:





- Section 1: 1.5% EATA at 100mm pug depth
- Section 2: 2.0% EATA at 100mm pug depth
- Section 3: 2.0% EATA at 200mm pug depth
- Section 4: 2.5% EATA at 100mm pug depth
- Section 5: 2.0% EATA at 100mm pug depth
- Section 6: Gravel control
- Section 7: 2.0% EATA at 100mm pug depth (shaded and supered section)

In general, those sections with a higher percentage of EATA exhibited better qualities of aggregate cohesion, dust suppression, and overall ride.

Section 1 (1.5%, 100mm) displayed the most raveling and traffic dust. The CAC used in this project contained a high level of fines. It may be more difficult to obtain homogeneous emulsion coating of aggregate during the pug milling process with a lower emulsion percentage and may be the cause of increased segregation and raveling.

Section 4 (2.5%, 100 mm) achieved performance over the other test sections; however, it should be noted, the 2.0% sections (Sections 2, 3, 5, and 7) performed almost as well as the 2.5% (section 4) site. With the rising cost of oil, 2.0% EATA may be a more cost effective application. There was no discernable difference in function between the 100mm (Sections 2, 5, and 7) and 200mm (Section 3) depths at 2.0% EATA. Water usage for dust suppression was lower than would be in a conventional project.

The gravel control (Section 6) exhibited the most dust and surface distress, and overall rougher ride.

The EATA treatment may be used in future projects in areas that have problems with base preparation, such as ease of consolidation, rollout, raveling, and any other constructability issues.

For more information, contact Craig Abernathy at 406.444.6269 or cabernathy@mt.gov.





SOLICITATION FOR RESEARCH PROJECT IDEAS

We need your ideas by December 31, 2007!



In support of its mission to serve the public by providing a safe, cost-effective transportation system, MDT sponsors a variety of research efforts. The goal of this research is to evaluate and advance new technologies, materials, and methods; develop design and analysis techniques; and study current transportation challenges.

Every year, Research staff solicits for new research topics. Topics can be submitted at

any time and by anyone; however, they are due by December 31st and may only be considered once a year during our annual solicitation.

At its February meeting, the MDT [Research Review Committee](#) decides which topics it will send to technical panels. The technical panels then determine if a research need exists and the most effective and efficient manner in which to conduct the research.

Research ideas are submitted on [research problem statement forms](#). For more information see the Research Projects: Idea to Implementation article below, or contact Sue Sillick at 406.444.7693 or ssillick@mt.gov.

RESEARCH PROJECT: IDEA TO IMPLEMENTATION

Have you ever wondered how your research ideas become research projects or how you can turn your ideas into research projects? The figure on page 4 diagrams the process. Projects can enter the process through any of the shaded boxes in the figure; however, most enter through our annual research solicitation. Research ideas are formally requested in November and are due by 12/31 of each year.

Research ideas are submitted on [problem statement forms](#). Information on various [past and current research](#) projects are linked to the Research Programs main page.

All research ideas must have a champion and a sponsor before moving forward to the prioritization process. A champion can be any MDT staff who feels strongly that the research will benefit the Department, and is willing to chair the Technical Panel and oversee the project as it progresses.

A sponsor is the Division Administrator(s) responsible for implementation of the particular research results. Champions for those research ideas with a sponsor present their topics to the Department's Research Review Committee (RRC) and District Administrators (DA's) at the January RRC meeting.

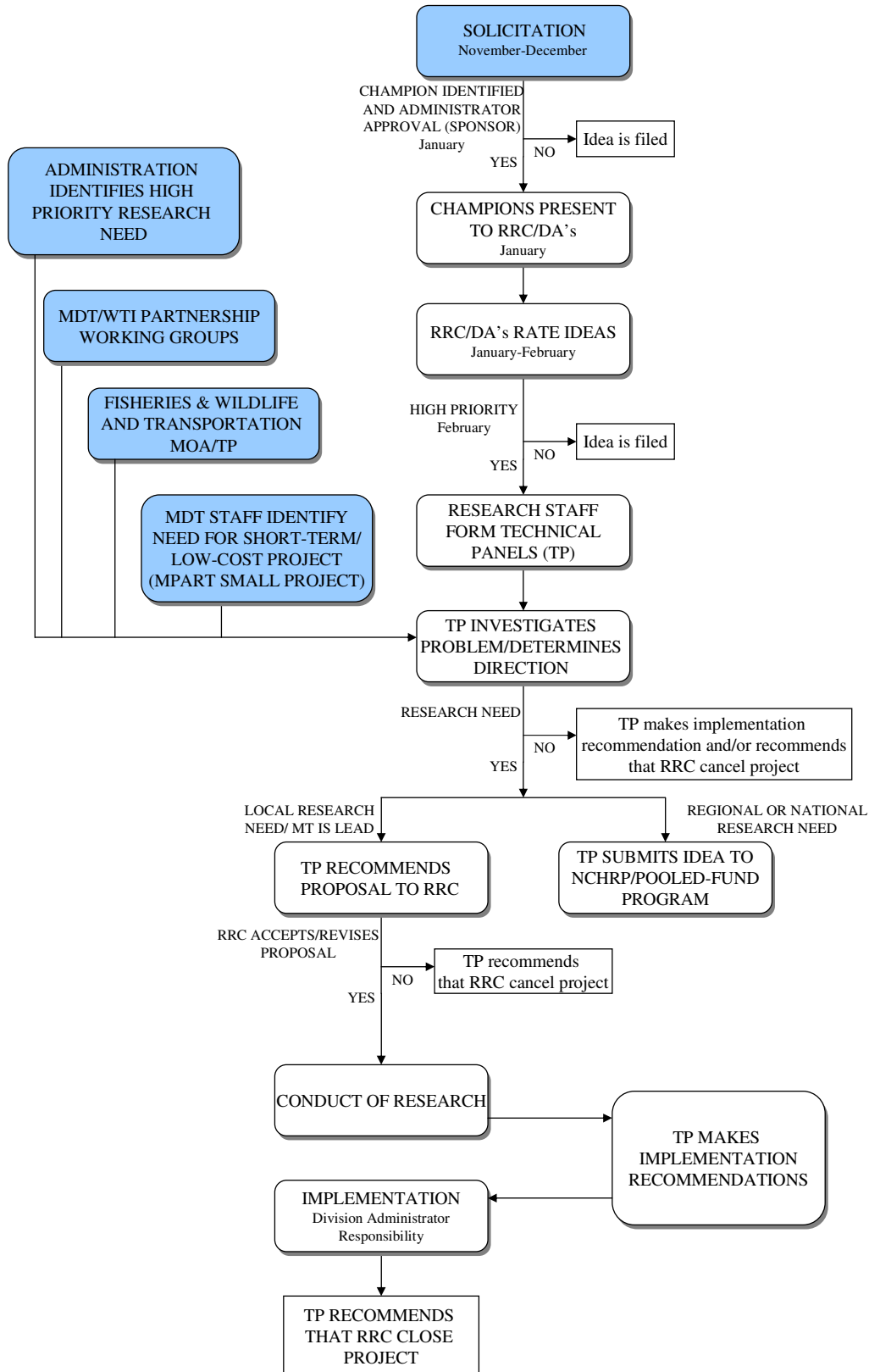
The RRC and DA's rate each idea with regards to worth, timeliness, and attainability. The RRC then decides which projects will move forward to the technical panel stage at their February meeting.

Technical panels are formed to investigate the problem and determine its direction. First, technical panels determine the extent of the research need, who should conduct the research, and make sure the research stays on track and the results are implemented once the project is contracted.

For more information, contact Sue Sillick at 406.444.7693 or ssillick@mt.gov.



RESEARCH PROJECT PROCESS





LIBRARY CORNER

NATIONAL TRANSPORTATION LIBRARY WEB RESOURCES

U.S. Department of Transportation | Research and Innovative Technology Administration National Transportation Library

An updated edition (2007) of [Sources of Information in Transportation](#), available at the National Transportation Library, has newly completed chapters available on [Highways](#), [Intelligent Transportation Systems](#), and [Trucking](#). Sources of Information in Transportation is published online by the [National Transportation Library, Bureau of Transportation Statistics](#), which is a part of [U. S. Department of Transportation](#). The intent of this guide is to provide a core collection of the transportation literature in the United States, with added data from foreign sources, arranged in subject sections.

Other references at the same site can be found for [Air Transportation](#), [General Transportation](#), [Hazardous Materials](#), [Inland Water Transportation](#), [Maritime Transportation](#), [Pipelines](#), and [Urban Transportation](#).

The General Transportation page has a wealth of transportation-related references for energy, economics, intermodal, environmental, and engineering. Most of the subject areas have lists of print titles as well as internet websites or online books, also known as e-books, electronic reports, or electronic resources. Clicking on these links takes

the viewer immediately to the full report or a table of contents.

Another resource is the [Information Resources and Tools](#) website. Here one can find directories of state departments of transportation, trade associations, and legislative resources. For example, the [Federal Docket Management System](#) (FDMS), launched in the fall of 2005, enables the public and employees to access entire rulemaking dockets on issues being studied by participating agencies. A separate box includes many transportation statistics where visitors can find the [Pocket Guide to Transportation](#), the [Fatality Analysis Report, FHWA Highway Statistics](#), and the [TranStats](#) site of the Bureau of Transportation Statistics.

The National Transportation Library also hosts many core sites for transportation literature and research. The [Research in Progress](#) database, for example, currently hosts seventy Montana studies. The main transportation literature databases, [NTL Integrated Search](#), [TRIS Online](#), and [TLCat](#) (Transportation Libraries Catalog) are also linked here.

Contact Lisa Autio at 406.444.6125 or lautio@mt.gov for more information.



DID YOU KNOW?

MDT's Research Review Committee

Research projects are chosen by MDT's Research Review Committee (RRC), which is composed of the FHWA-MT Division Research Representative and the following MDT staff:

- Director;
- Deputy Director;
- Business Process Solutions Unit Supervisor;
- Butte District Administrator;
- Research Manager; and
- Division Administrators from:
 - Administration,
 - Aeronautics,
 - Highway and Engineering,

- Information Services,
- Maintenance,
- Motor Carrier Services, and
- Rail, Transit and Planning.

This committee meets at most once a month and determines the Department's high priority research needs, approves research projects, and reviews implementation recommendations and progress.

For more information, contact Sue Sillick at 406.444.7693 or ssillick@mt.gov.

CALENDAR OF EVENTS

December

FHWA Annual Accomplishments Report Due
MDT Research Project Ideas Due (12/31)
NCHRP Ballot for New Projects Distributed to SCOR and RAC

January

MDT RRC Meeting – Solicitation Research Ideas Presented by Champions (1/29)
RAC/SCOR Meeting (1/13)
TRB Annual Meeting (1/13-1/17)
TCRP Project Panel Nominations Due (1/18)

February

MDT RRC Meeting – Research Ideas to be Rated (2/26)
NCHRP Ballots on New Problem Statements Due
NCHRP Synthesis Topics Due (2/8)

March

AASHTO SCOR Meets to Select New NCHRP Projects
MDT RRC Meeting (3/25)
TCRP Synthesis of Practice Topics Due (3/31)

April

MDT RRC Meeting (4/29)
NCHRP Panel Nominations Solicitation
NCHRP Preliminary Program Announced

May

AASHTO Spring Meeting
MDT RRC Meeting (5/27)
NCHRP Synthesis of Practice Topics Selected
NCHRP Panel Member Nominations Due
TCRP Synthesis of Practice Topics Selected



NEW RESEARCH REPORTS

Industry Best Practices for Application Development

http://www.mdt.mt.gov/research/docs/research_proj/app_dev/ibp.shtml

Montana Summer Transportation Institute

<http://www.mdt.mt.gov/research/projects/admin/summer.shtml>

Find all past and current research projects at

http://www.mdt.mt.gov/research/projects/sub_listing.shtml.

REMINDER

Information on research services and products, such as research and experimental project processes and reports, and technology transfer services, including our library catalog can be found on the Research web site at www.mdt.mt.gov/research.

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