

# SOLUTIONS

## PROJECT HIGHLIGHTS

### Assessing the Extent and Determinates of Induced Growth

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

Transportation projects alone cannot change surrounding land use; land use and transportation are connected and transportation agencies often struggle to understand and respond to this linkage. Consideration of the potential indirect effects of transportation projects on land use is required for compliance with the National Environmental Policy Act (NEPA) and Montana Environmental Policy Act (MEPA), as implemented through regulations and interpreted by the courts. Due to this uncertainty involved in forecasting the effects of transportation projects on land use, transportation agencies nationally have grappled with identifying the appropriate level of analysis, in some cases resulting in litigation and project delays. In addition, many of the existing methodologies and guidance for assessing indirect effects do not take into consideration the rural environment in which many projects in Montana are located. The objectives of this research project were to address these issues, identify Montana-specific, consistent, legally defensible, and efficient process for assessing the indirect land use and environmental effects of transportation projects for the Montana Department of Transportation (MDT).



### RESEARCH PROGRAMS

Summer 2013

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Capital Interchange 2005



This project entailed a review of existing MDT practices to address indirect land use effects, including: review of MDT environmental documents, interviews of MDT staff, and a survey of resource agency staff. The review of existing environmental documents indicated indirect land use effects assessment in Montana is an ad hoc process. Several documents (particularly the more complex environmental impact statements) provided well-thought out explanations of the relationship between the project and potential future land development. However, none of the documents reviewed cited indirect effects guidance or research documents, or followed a clearly defined assessment process. The interviews identified a range of experience and beliefs related to indirect land use effects within MDT. Nearly all MDT interview participants indicated the need and desire for a standardized process to analyze induced growth to be used in-house on categorical exclusions and to provide to consultants for their use in preparing environmental impact statements and environmental assessments.

The review of case law, surveys, interviews, and reviews of existing MDT environmental documents were all taken into consideration in the development of an Indirect Effects Desk Reference. The Desk Reference provides an overview of key definitions and regulatory

requirements, and provides practitioners with a step-by-step screening process to determine if further analysis is warranted. The screening process relies on information on the characteristics and location of the project readily available early in the project development process. Where detailed analysis is necessary, a detailed analysis framework process is provided in the Desk Reference, which includes recommendations on the analysis methodologies most applicable to the data available in different portions of Montana. A final component of this research project was training on the processes developed, which was provided to MDT staff and consultants.

MDT will implement the use of the Desk Reference and screening process to determine analysis actions on transportation projects, as well as, incorporate them into MDT's Environmental Manual. Updates, evaluations, and changes to the assessing induced growth analysis process and Desk Reference will be coordinated and completed with the same procedures used to update MDT's Environmental Manual.

For more information, visit the [research project website](#) or contact Kris Christensen (406.444.6125 or [krchristensen@mt.gov](mailto:krchristensen@mt.gov)).

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## 2013 New Project Solicitation

During the May Research Review Committee (RRC) meeting, five new projects were approved to move forward to technical panels for further development. They include the following:

### [MAP 21: The Primary National Freight Network and Its Relationship to State Systems and Needs](#)

The U.S. DOT, under the current transportation legislation, MAP-21, is working to designate a Primary Freight Network (PFN). State Departments of Transportation are to provide input and designate the Rural Freight Corridors to the PFN and the rest of the Interstate System. This proposed research plan would assist MDT in providing input for this national freight strategy and gather information to develop tools and metrics to identify relevant state freight routes.

### [Safety Impact of Differential Speed Limits on Rural 2-lane Highways in Montana](#)

Montana law establishes a differential speed limit between commercial and passenger vehicles. Nationwide, research has been completed analyzing the safety impacts of differential speed limits between commercial and passenger vehicles; however, the research has focused on interstate or controlled access facilities. No research has been located discussing the safety impacts of differential speed limits on 2-lane facilities, especially those with limited passing opportunities. The proposed research will include a review of studies evaluating statutory speed differential completed by other states or at the national level. A review of historical, Montana specific crash and speed data on select corridors also will



be completed to determine the safety effects of the statutory, differential speed limit.

**Special Event Traffic**

Planned special events, such as sporting events, concerts, etc. produce nonrecurring congestion as attendees attempt to simultaneously exit the event, overloading the local transportation network. To a lesser extent, the arrival for special events can also overload parts of the local transportation network. These types of events can have a significant impact on traffic operations, particularly in small urban and rural environments, where limited infrastructure is available to access and egress the event venue. The proposed research will investigate three venues in Montana (MetraPark in Billings, Montana State University in Bozeman, and The University of Montana in Missoula) to evaluate past practices and determine additional possible future practices. Based on the development of best management practices, a traffic management strategy will be developed for each venue, as well as for special event traffic management strategies throughout the state.

**Speed Limits Set Lower than Engineering Recommendations**

Montana has various speed limits throughout the state set lower than the engineering recommendation. Before and after studies have indicated there is not voluntary compliance with these speed limits.

MDT would like to document compliance with limited enforcement present, determine the level of enforcement needed to obtain compliance with the set speed limit, and document the effect lower speed limits has had on the crash history both in the number of accidents and the severity of accidents.

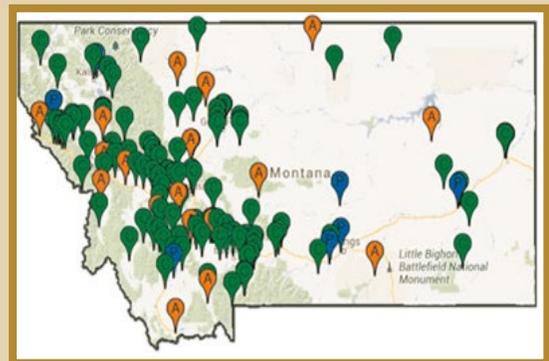
**Testing Woolen Roadside Reclamation Products**

Successful highway right-of-way management following construction, reconstruction, and other disturbances of MDT lands requires the creation of the proper environmental conditions conducive to the successful establishment of reclamation plantings, the control of soil erosion, and surface runoff and its sediment load into adjacent receiving waters (as regulated by the Clean Water Act). The development and testing of various wool matting, batting, and soil-seed-wool packets will allow MDT to address each of these issues with locally made products that provide an alternative use for a Montana agriculture “waste product” (wool rejected by clothing mills). The proposed research will consist of a series of side by side tests of these new woolen reclamation products with a comparable coconut or coir fiber product that is commercially available for the same purpose.

Information on these projects as they progress and other MDT research projects, both active and completed can be found at [http://www.mdt.mt.gov/research/projects/sub\\_listing.shtml](http://www.mdt.mt.gov/research/projects/sub_listing.shtml).

**Website Update**

Check out the new [map](#) to visualize research and experimental projects. This map has three sets of filters. The first filter allows users to view research projects, experimental projects, or both. The second filter allows users to view projects by status (active, pending, and/or completed). The third filter allows users to view projects by MDT district. For more information, contact Sue Sillick (406.444.7693 or [ssillick@mt.gov](mailto:ssillick@mt.gov)).





## TRB Sponsorship

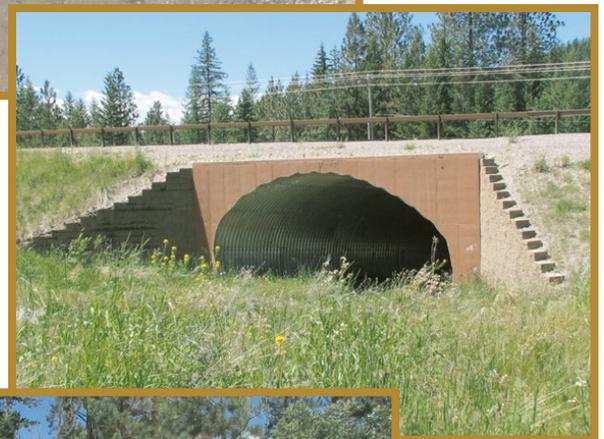
The Montana Department of Transportation (MDT) sponsors [Transportation Research Board \(TRB\)](#) core services. This sponsorship provides many benefits, including:

- Complimentary [TRB Annual Meeting](#) registrations & free exhibit space
- Complimentary, unlimited [webinar](#) attendance, many of which offer PDH
- Complimentary [publications](#)
- Complimentary access to the [Transportation Research Record](#)
- Reduced fees for other [TRB-sponsored conferences](#)
- Access to additional [resources and databases](#), including [practice-ready papers](#)

In addition, TRB staff visit all sponsors at least every other year to learn about new and exciting initiatives, issues and needs, and to identify areas where TRB can be of assistance to MDT. The information gained through these visits is shared with others, and connections are made. On June 26th and 27th, TRB representatives, Scott Babcock and Rick Pain, visited MDT. They met with the MDT [Research Review Committee \(RRC\)](#), gave an [overview presentation](#) to MDT staff, and met with staff from the following areas:

- Aeronautics Division
- Construction Engineering Bureau
- Materials Bureau
- Motor Carrier Services Division
- Rail, Transit, and Planning Division
- Traffic Engineering Bureau

The team also toured the [US 93 North wildlife crossing structures](#) with MDT Missoula District staff and a representative from the Confederated Salish and Kootenai Tribes. The team had the opportunity to view the overpass and a number of culverts, along with wildlife jumpouts. A fresh black bear print was seen in one of the culverts.





## SOLUTIONS Summer 2013

### MONTANA DEPARTMENT OF TRANSPORTATION RESEARCH PROGRAMS



TRB is a well-respected arm of the National Academies of Science and MDT's sponsorship is a win-win situation. In addition to the tangible benefits of sponsorship, there are many more intangible benefits MDT receives, including: access to interim or preliminary reports, access to expertise in all transportation modes, and networking opportunities.

For more information, please contact Sue Sillick at 406.444.7693 or [ssillick@mt.gov](mailto:ssillick@mt.gov).



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## LIBRARY CORNER

### Online Transportation Periodicals

The MDT Research Library offers print access to many transportation-related journals and magazines, with issues dating back several decades in some cases. Many of these publications also have websites that offer content either similar to or duplicating the print issue. While some websites offer digital content similar to news sites, published on a rolling basis, some continue to organize articles according to the print issue in which they appeared.

The following are some periodicals that have content freely available online, sorted by subject. Each title is a hyperlink to that publication's digital archives page.

### Construction and Equipment

- Asphalt Contractor - There is no dedicated archives page for this publication. Access back issues using the following URL template: <http://www.forconstructionpros.com/magazine/acon/issue/YYYY/month> [lower case, three letter abbreviation]

Example: <http://www.forconstructionpros.com/magazine/acon/issue/2010/jan>

- [Timberline Magazine](#)



**Engineers and Engineering**

- [CE News](#)

**Government and Regulation**

- [Governing](#)
- [Government Technology](#)

**Highways and Highway Engineering**

- [Better Roads](#) (scroll to bottom of page to read the current issue)
- [Public Roads](#)
- [Roads and Bridges](#)

**Land Management / Appraisal**

- [Right of Way](#)

**Materials**

- [Concrete Repair Bulletin](#)
- [Pavement Preservation Journal](#)

**Transportation**

- [AASHTO Journal Weekly Transportation Report](#)

**Transportation Technology**

- [Thinking Highways](#)

The library is currently working on creating a more complete list of transportation-related periodical publications with information about their online availability. This will be announced in MDT's employee newsletter, the Interchange. Also, look for it on the MDT Library website in the near future.

If you have any questions, please contact the library (406.444.6338 or by [mdtlibrary@mt.gov](mailto:mdtlibrary@mt.gov)).



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**Special Library Association (SLA) Annual Conference 2013 - Bridging the Gap between Customers and Information**

In June 2013, librarians and information specialists from around the country met in San Diego, CA for the Special Libraries Association (SLA) Annual Conference. [SLA](#) is an organization that serves the needs and interests of those information professionals who work in specialized library types, such as transportation libraries. This is a great opportunity to meet with other librarians who work in similar libraries and to learn from their knowledge and experiences.

One of the main points emphasized throughout the conference was the necessity for librarians to find ways of reaching out to their customers, discover the information people need, and meet those information needs in ways most convenient

for patrons. It may seem obvious that librarians should already be doing this, but for many, it may involve branching out and exploring new methods, processes, and technologies. Despite hindrances such as funding, institutional rules, and learning curves, librarians and information professionals need to find ways to be highly proactive in anticipating customer needs in order to stay relevant. Many of the conference sessions centered on ways librarians can stay ahead of the curve and new roles that are emerging in companies that information professionals can fill. Libraries serve to bridge the gap between customers and information, and it is important librarians stay connected with the information needs and habits of their customers.



Keynote speaker Mike Walsh, author of Futuretainment and CEO of innovation research lab Tomorrow, told a story of how a company distributed a new model of a washing machine in China. The company found that instead of using it for clothes, people were using it to wash vegetables. Instead of being frustrated with the customers, the company used this information to design a vegetable washer product. The point of this was librarians should take an honest look at what their customers are doing and build library services around that; again, it's vital we not be disconnected from the people we're trying to serve.

What does this mean for the MDT Library? We're currently in the process of meeting with MDT staff to find out what they want to see the library providing in terms of materials and services. We want to find

out what our customers need, so we can improve or change what we do in order to better meet those needs. We're gathering the information and will be working to incorporate this feedback.

The soon-to-be updated serials web page is a product of these meetings; we found that MDT staff generally prefer electronic format and want to be able to easily scan articles to find information relevant to their work. We're working to make this happen. This is just one example of how we're working to improve library services in response to feedback from our customers.

If you have any suggestions for improvement in terms of our services or the library collection, please let us know by contacting Katy Callon (406.444.0871 or [kcallon@mt.gov](mailto:kcallon@mt.gov)).



**Mike Walsh, Keynote Speaker, (c) The Photo Group, 2013**



**MDT Librarian Katy Callon at SLA 2013**



## **DID YOU KNOW?**

### **SHRP 2 Implementation**

“The second Strategic Highway Research Program (SHRP 2) was authorized by Congress to address some of the most pressing needs related to the nation’s highway system: the high toll taken by highway deaths and injuries, aging infrastructure that must be rehabilitated with minimum disruption to users, and congestion stemming both from inadequate physical capacity and from events that reduce the effective capacity of a highway facility. These needs define the four research focus areas in SHRP 2:

- The Safety area is conducting the largest ever naturalistic driving study to better understand the interaction among various factors involved in highway crashes—driver, vehicle, and infrastructure—so that better safety countermeasures can be developed and applied to save lives.
- The Renewal area is developing technologies and institutional solutions to support systematic rehabilitation of highway infrastructure in a way that is rapid, presents minimal disruption to users, and results in long-lasting facilities.
- The Reliability area is developing basic analytical techniques, design procedures, and institutional approaches to address the events—such as crashes, work zones, special events, and inclement weather—that result in the unpredictable congestion that makes travel times unreliable.

- The Capacity area is developing a web-based tool to provide more accurate data and collaborative decision-making in the development of new highway capacity in order to expedite the provision of that capacity while simultaneously addressing economic, community, and environmental objectives associated with new construction.”<sup>1</sup>

[SHRP 2 research](#) is administered by the Transportation Research Board of the National Academies under a Memorandum of Understanding with the Federal Highway Administration (FHWA) and the America Association of State Highway and Transportation Officials (AASHTO).

As [products](#) are developed, the research is moving into the implementation phase. [FHWA](#), in conjunction with [AASHTO](#), is leading this phase of the research, with implementation funding available in three categories: 1) proof of concept, 2) lead adopter, and 3) user incentives.

The [first round of implementation funding](#) highlighted the products from six SHRP 2 projects and resulted in state departments of transportation, metropolitan planning organizations, federal lands, and other agencies receiving funding for 108 projects in 34 states and the District of Columbia. There were 2 proofs of concept, 74 lead adopters, and 24 user incentive awards. [Proposals](#) for the second round of funding are due September 6th, 2013.

<sup>1</sup>Text copied from the TRB SHRP 2 web page: <http://www.trb.org/>.



Projects – 1st Round	Projects – 2nd Round
Innovative Bridge Designs for Rapid Renewal	Expediting Project Delivery
Managing Risk in Rapid Renewal Projects	Performance Specifications for Rapid Renewal
Innovative Strategies for Managing Complex Projects Preservation on High Volume Roadways	Managing Risk in Rapid Renewal Projects
Implementing Eco-logical	Railroad-DOT Mitigation Strategies
Organizing for Reliability Tools	

For more information, please contact Sue Sillick at 406.444.7693 or [ssillick@mt.gov](mailto:ssillick@mt.gov).

## CALENDAR OF EVENTS

### September

SHRP 2 Implementation Assistance Grants - Due 9/6/13

NCHRP Problem Statements - Due 9/16/13

ACRP Legal Research Topics- Due 9/18/13

ACRP Synthesis Research Topics - Due 9/18/13

MDT RRC Meeting 9/25/13

### October

AASHTO Annual Meeting - 10/17/13-10/21/13

MDT RRC Meeting 10/30/13

### November

2013 AASHTO SCOPT and MTAP

Winter Meeting - 11/18/13 - 11/21/13

### December

MDT RRC Meeting

12/18/13

### January

AASHTO SCOR/RAC

Meeting - 1/12/14

TRB Annual Meeting -

1/12/14 - 1/16/14



## NEW RESEARCH REPORTS

[Assessing the Extent and Determinates of Induced Growth](#)

A listing of all past and current projects can be found at [www.mdt.mt.gov/research/projects/sub\\_listing.shtml](http://www.mdt.mt.gov/research/projects/sub_listing.shtml).



## **NEW EXPERIMENTAL REPORTS**

[MacDonald Pass Culvert Rehabilitation](#)

[Paving Fabrics to Mitigate Transverse Cracking](#)

[Seal Coat Asphalt Emulsion over Existing Chip Seal](#)

[Urethane Epoxy Pavement Markings](#)

A listing of all past and current projects can be found at  
[http://www.mdt.mt.gov/research/projects/exp\\_sub\\_listing.shtml](http://www.mdt.mt.gov/research/projects/exp_sub_listing.shtml).

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### **REMINDER**

Information on research services and products, such as research and experimental project processes and reports and technology transfer services, can be found on the Research web site at [www.mdt.mt.gov/research](http://www.mdt.mt.gov/research).

MDT's library collection can be searched through the [library catalog](#). The catalog and other information resources are available through the [MDT Library web site](#).

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