

## MEMORANDUM

To: RRC Members  
Debbie Alke, Administrator/Aeronautics Division  
Mike Bousliman, Administrator/Information Services Division  
Jeffery M. Ebert, P.E./District Administrator-Butte  
Larry Flynn, Administrator/Administration Division  
Dwane Kailey, Administrator/Highways and Engineering Division  
Tim Reardon, Director  
Bob Seliskar/FHWA  
Jerry Stephens, P.E./WTI MSU  
Jon Swartz, Administrator/Maintenance Division  
Duane Williams, Administrator/Motor Carrier Services Division  
Lynn Zanto, Administrator/Rail, Transit, and Planning Division

From: Susan C. Sillick, Manager  
Research Programs

Date: October 5, 2011

Subject: 9/28/2011 RRC Meeting Notes

Action items are underlined.

**RRC members present:** Mike Bousliman, Wade Cebulski (for Debbie Alke), Bill Cloud (for Lynn Zanto), Dwane Kailey, Bob Seliskar, Sue Sillick, and Jon Swartz.

**Others present:** Craig Abernathy, Stephanie Brandenberger, Kris Christensen, Justun Juelfs, Moriah Thunstrom, and Deb Wambach.

**RRC operations clarification:** Dwane informed the RRC members present that he spoke with Sue and then with Tim Reardon to clarify how the RRC will operate. This is an important committee and makes significant funding expenditure decisions. Sending delegates to attend RRC meetings instead of the official member should be limited as much as possible. All RRC members are equal. RRC meetings do not require a quorum of RRC members present. Voting decisions will be made by a majority of RRC members present. Also, WTI will continue on the RRC, but will not be on individual technical panels; however, technical panels can call on the expertise of WTI staff and others, with no voting rights, on an as needed basis. Finally, Bob Seliskar informed the RRC that he sees himself as representing FHWA as a non-voting member and does not intend to vote as an RRC member.

### 1. **Budget Report:** Attached

Sue explained the projects pending funding decisions at this meeting are included in the budget summary sheet. She also stated that the state budget authority (SBA) is currently projected in the red because the additional budget authority to cover the Geotech pooled-fund

study, for which MDT is the lead, has not yet been added, but should be soon. Once this is done, the SBA will be back in the black. Finally, Sue noted the automated crash notification research project, for which we did not request additional budget authority is still ongoing and projected to expend about \$245,000 this state fiscal year (SFY), which may put Research SBA in the red again sometime later this SFY.

2. **Research Projects – current listing:** Attached

a. **Assessing the Extent and Determinants of Induced Growth (10-016) – Update**

Moriah Thunstrom was present as the technical panel chair to give an update on this project.

The purpose of this project is to develop a uniform process that is specific to Montana for assessing induced growth.

Sue informed the RRC that this project has taken longer than usual to move through the RFP process as two of the three proposals submitted were excellent and the evaluation committee required a few rounds of clarification and an oral interview to make a clear distinction between the two proposals. The proposal from Louis Berger Group (LBG) was selected as they literally “wrote the book” on assessing induced growth. LBG developed general guidance through an NCHRP report, tailored this general guidance to specific guidance for a number of states, and has been called in when a state DOT’s induced growth decisions have been legally challenged. The proposal requires revisions to reflect the clarification and oral interview decisions; then it will be sent to the RRC through an e-mail ballot with a recommendation from the technical panel to fund this project; the project cost is approximately \$125,000.

b. **Evaluating Wildlife-Vehicle Collisions (WVC) and Wildlife Connectivity in the Madison Valley (11-007) – Scope of work approval**

Deb Wambach was present as the technical panel chair to give an update on this project.

The purpose of this project is to determine the effect of the highway in the Madison Valley on wildlife movement and mortality patterns. The results of which will be used for developing possible mitigation strategies that may reduce risk to motorists and provide a better understanding of connectivity issues in the area. This project is the first phase and covers a 100 mile area in the US 287 corridor from Norris Hill and includes the portion of MT 87 from the junction with US 287 to the Idaho border, with a focus on three areas: Norris Hill, Indian Creek, and Papoose Creek. This research will build on previous research conducted in this same area. The second phase of this research, if conducted, will include the Hebgen Lake area from the US 287/MT 87 junction to the junction of US 287 with US 191.

Deb was asked about the GIS data maintenance. Deb responded the data will be drawn from and used collaboratively among a number of entities, including FWP and NRIS. This

is also an opportunity for the Environmental Services Bureau to develop a long-term strategy for this type of data. Details regarding this topic will need be discussed in the proposal.

Sue asked Deb about the great distances involved in Phase 1. Deb said that the research would focus on the three areas listed above.

Deb was asked an approximate cost; she indicated it would be about \$150,000.

Dwane made a motion to approve the scope of work; Mike seconded the motion. All present and Jeff Ebert voted for the motion; the motion passed.

c. **Relative Operational Performance of Geosynthetics Used in Subgrade Stabilization (10-008)** – Update

Sue and Craig gave an update on the project. This project is scheduled to begin in October or November 2011 after the panel finalizes the details of the proposal. This project is fully funded with the following partners: Idaho TD, Montana DOT, New York State DOT, Ohio DOT, Oklahoma DOT, Oregon DOT, South Dakota DOT, Texas DOT, Western Federal Lands (non-funding partner), and Wyoming DOT. The funds to cover the first federal fiscal year (2011) and part of the second (2012) have been transferred to MDT and are obligated.

3. **Reports:** Available Upon Request

- a. **Automatic Crash Notification** – July 2011 Progress Report and Test Site Options memo
- b. **Evaluation of New Arch Bridge Technology for Short Spans (10-002)** – April 2011 Progress Report
- c. **Feasibility of Reclaimed Asphalt Pavement (RAP) in Portland Cement Concrete Pavements (PCCP) (09.004)** – July 2011 Progress Reports
- d. **Investigation of Pier Scour in Coarse-Bed Streams in Montana** – Final Report
- e. **Livability Benchmarks for Montana Transportation (10-021)** – July 2011 Progress Report
- f. **LTAP** – July 2011 Progress Reports
- g. **Montana Intercity Bus Service (10-015)** – Monthly Progress Reports starting December 2010 and Tasks 1-4 Reports
- h. **US 93 North Post-Construction Wildlife-Vehicle Collisions and Wildlife Crossing Monitoring and Research** – April and July 2011 Progress Report
- i. **US 93 South Wildlife Monitoring (04.016)** – 2010 Annual Report, and January and April 2011 Quarterly Progress Reports

4. **Contract Extensions:** None

5. **Proposals:** Attached

a. **Evaluation of Lateral Pile Resistance Near MSE Walls at a Dedicated Wall Site Pooled-Fund Study**

Stephanie Brandenberger was present to champion this pooled-fund study.

An abutment design technique gaining popularity in Montana is the use of abutment piles surrounded by mechanically stabilized earth (MSE) walls, rather than a soil slope. There are no design methods available to predict the reduction in pile resistance or the increase in forces in the wall system for these situations. Recent tests in Utah indicate a significant decrease in lateral pile resistance and increase in soil reinforcement forces as piles are placed closer to the MSE wall. Understanding the performance of the piles and soil reinforcements could benefit Montana by providing engineers with a way to quantify the forces in the MSE abutment systems, develop construction specifications to ensure long term performance, and design these types of structures with more confidence and cost effectiveness.

This research is very pragmatic and the results will be of value to MDT. Dwane indicated we are using the MSE design for wildlife connectivity in the Sheridan bridges.

Dwane made a motion to support this pooled-fund study for a total of \$20,000, with \$10,000 for each of the two years of the study duration. All present and Jeff Ebert voted in favor of the motion; the motion passed.

b. **Passive Force-Displacement Relationships for Skewed Abutments Pooled-Fund Study**

Stephanie Brandenberger was present to champion this pooled-fund study.

Field observations of bridges following the 2010 magnitude 8.8 earthquake in Chile suggest that skewed bridge abutments are more likely to experience damage during an earthquake than non-skewed abutments. Skewed abutments and bridge connection details, similar to those in Chilean bridges, are frequently used in Montana. Understanding the soil-structure interaction at skewed bridge abutments could benefit Montana by providing engineers a means to design earthquake resistant structures with confidence and cost effectiveness. In fact, the fairly recent earthquake near Dillon resulted in damage of skewed bridge abutments; the results of this research may help MDT prevent this type of damage in the future.

This pooled fund study is a logical continuation to the Dynamic Passive Pressure on Abutments and Pile Caps study completed in August 2010 with MDT's financial support. The principal investigator for this study has experience with lateral passive force tests, is responsive to the study's financial partners, and develops pragmatic solutions for implementation of results. Also, this project can be completed with some economies; all the equipment is available from the previous study.

Dwane made a motion to support this pooled-fund study for a total of \$30,000, with \$15,000 for each of the two years of the study duration. Mike seconded the motion. All present and Jeff Ebert voted in favor of the motion; the motion passed.

**c. Clear Roads Winter Highway Operations Pooled-Fund Study**

Justun Juelfs was present to champion this pooled-fund study.

The Clear Roads pooled fund project began in early 2004 in response to a need for real-world testing in the field of winter highway operations. This ongoing research program has already attracted 23 member states and is funding practical, usable winter maintenance research. MDT is already a member of the Pacific Northwest Snowfighters (PNS). Colorado, Idaho, and Washington are members of both PNS and Clear Roads. Since these two projects are now linked, there is more coordination between the two to prevent duplication of efforts.

Benefits to MDT from joining Clear Roads include the ability to: influence which research projects are selected for funding, evaluate technical proposals, oversee the research projects, and collaborate with winter maintenance experts on a national level. MnDOT has reported a saving of \$2.4 M per year as a result of participation in the Clear Roads project.

Justun proposed MDT support this pooled-fund study for a total of \$75,000, with \$25,000 each year for three years. At that point, MDT can evaluate the return on investment and determine whether to fund this program further. The project funds cover investigator work, administrative management of the pooled fund, and travel for Technical Advisory Committee members to committee meetings.

Jon made a motion to support this pooled-fund study for \$75,000; Dwane seconded the motion. All present and Jeff Ebert voted in favor of the motion; the motion passed.

Dwane encouraged Justun to bring projects to the RRC that are important to Montana, but are not being conducted elsewhere, such as through the PNS or Clear Roads pooled-fund studies.

**6. Implementation/Technology Transfer: None**

**7. Department/Division Hot Topics – RRC Members Roundtable Discussion**

It was asked if Jeff Ebert wanted to continue of the RRC or if he thought it would be better if the District membership rotated. Sue said she would ask Jeff.

Mike asked about the status of sending MDT staff to the TRB Annual Meeting; Dwane asked Sue to set up a meeting with Tim, Dwane, Lynn, Jon, and Sue to discuss the topic. Note: After the RRC meeting, Mike asked to be scheduled for this meeting as well as he may want to send someone from ISD to the TRB Annual Meeting in January.

If you have any additions to the agenda, please contact me no later than 9/26/2011 at 444-7693 or ssillick@mt.gov. You will be notified of any last minute additions to the agenda by E-mail

cc: Craig Abernathy/Research Programs w/attachments  
Kent M. Barnes, P.E./Bridge Bureau  
Kevin Christensen/Highways and Engineering Division  
Kris Christensen/Research Programs w/attachments  
Bill Cloud/Data & Statistics Bureau  
Tim Conway, P.E./Consultant Design Bureau  
Lisa Durbin/Construction Administration-Bureau  
Mike Dyrdaahl/Highways and Engineering Division  
Paul R. Ferry, P.E./Highways Bureau  
Paul Jagoda, P.E./Construction Engineering Bureau  
Michael P. Johnson/District Administrator-Great Falls  
Tom Martin, P.E./Environmental Services Bureau  
Shane Mintz/District Administrator-Glendive  
Doug McBroom/Multimodal Programs Bureau  
Doug Moeller/District Administrator-Missoula  
Roy Peterson, P.E./Traffic & Safety Bureau  
Suzy Price/Contract Plans Bureau  
Jim Skinner/Planning and Policy Analysis Bureau  
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