

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: December 21, 2011

Subject: 12/15/2011 RRC Meeting Notes

RRC members present: Debbie Alke, Mike Bousliman, Jeff Ebert, Dwane Kailey, Bob Seliskar, Sue Sillick, Jerry Stephens, Jon Swartz, and Lynn Zanto.

Others present: Craig Abernathy, Donna Belderrain, Kris Christensen, Brandi Hamilton, Cora Helm, Steve Jenkins, Janet Kenny, and Doug McBroom.

Action items are underlined

1. **Budget Report:** Attached

No discussion.

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

a. **Re-evaluation of Montana’s Air Quality Program (11-006) – Approval of Scope of Work**

Janet Kenny presented this project on behalf of the technical panel requesting approval-in-concept to issue an RFP.

The purpose of this project is to develop practical refinements to MDT’s current method for determining projects for this program, recommendations to improve and implement

the Montana Air and Congestion Initiative (MACI) program, and to keep the program oriented to high-value investments for Montana communities.

The benefits of this research project are improved project assessment and funding priorities, which may provide time and cost savings due to development of proactive projects that could prevent a non-attainment status, and funding transportation projects that provide the highest cost to air quality benefit.

Mike asked if alternative funding sources could be identified.

Dwane said he was concerned about how we communicate to local governments. Doug indicated the Missoula air quality individual is on the technical panel.

Dwane made a motion to approve this project in-concept and to issue an RFP. Mike seconded the motion. All present voted in favor of the motion.

Research staff will work with the project technical panel and purchasing to prepare and issue an RFP.

b. **Montana Oil Boom Highway Infrastructure Impact Study** – Research Project
Concept Approval

Doug presented this topic for approval to move forward in identifying and convening a technical panel and scope of work development.

Due to recent advances in technology and continued interest in US oil independence, several regions in Montana are experiencing rapid oil and gas development, including the Bakken region in northeast Montana and Glacier, Toole, and Liberty counties in north-central Montana. MDT is in the early stage of determining the impact of Montana oil development and production on our highway infrastructure. The recent use of hydraulic fracturing requires up to 1,100 heavy truckloads of water, sand, and construction materials per developed well. Given this information, MDT needs to develop an understanding of the hydraulic fracturing material origins and destinations, and the intended transport infrastructure to move product to market. This information is paramount to forecasting the highway impact from future oil development and production. Additionally, identifying potential infrastructure funding gaps and solutions will be critical to developing and implementing a comprehensive highway transportation plan that addresses the needs in Montana.

Dwane noted that Tim Reardon agreed work needs to be done in this area, but he cautioned that this topic affects other Montana state agencies and local governments as well. He said that a much broader group needs to be convened to discuss the issues. Tim also said he is willing to meet with the cabinet regarding this issue. Dwane noted there are two additional related projects: 1) road safety audit and a 2) corridor study. We need to make sure there is coordination among the three projects. Finally, Dwane stated that this project may result in a decision package for the next legislative session and, as a

result, this project needs to be fast-tracked so that we have the information when it is needed.

Kris indicated that, historically, origin and destination information has been hard to obtain. Doug said that in this case, the data is available.

Mike asked whether the Canadians are interested. The concern is this would broaden the scope too much, diluting MDT's needs and extending the research beyond the timeliness timeframe. We need to stay focused on the transportation infrastructure first and not get bogged down by other interests. The project can be staged/phased to help everyone get what they need, while still progressing in a timely manner.

Sue mentioned MDT can contract directly with North Dakota State University (NDSU), who conducted a similar study in North Dakota. This might help us to hit the ground running. Jerry indicated he is impressed with NDSU and they would do a good job.

This topic is considered a management high priority topic and is being moved forward outside of the research topic solicitation cycle. Given this, this project will come before the RRC again, if only for funding approval. Debbie made a motion to approve this project in-concept and move forward in developing a technical panel after speaking with Tim regarding his concerns. Dwane seconded the motion. All present voted in favor of the motion; the motion passed.

Doug will set up a meeting with Tim, Dwane, Lynn, Sue, and himself. Doug and Sue will set up a technical panel for this project and move forward with the direction Tim sets.

c. **Concrete Median Barrier** – Research Project Concept Approval

Dwane explained prior to the requirement that all roadside features meet NCHRP 350 crash test safety standards, MDT used a 2-loop concrete median barrier (CMB). Since the implementation of NCHRP 350 crash test safety standards, MDT moved to a 3 loop CMB. As projects occurred where the 2-loop CMB was in place, it would be replaced with the 3-loop barrier. MDT recently had a project where the 2-loop CMB was moved for road construction and it was discovered the wire connections in this 2-loop CMB were corroding, such that the CMB is not performing the intended safety function. Based on this discovery, FHWA issue a letter stating that if the 2-loop CMB is moved for any reason, it must be replaced. Dwane said we need to get a handle of the size of the issue and develop a transition plan.

This topic is considered a management high priority topic and is being moved forward expeditiously outside of the research topic solicitation cycle. Given this, this project will come before the RRC again, if only for funding approval. Jon made a motion to approve this project and move it forward to the technical panel stage. Jeff seconded the motion. All present voted in favor of the motion. The motion passed.

Sue will work with Dwane and Paul Ferry to develop a technical panel and a project scope of work.

3. **Reports:** Available Upon Request

- a. **Determination of Material Properties and Deflection Behaviors for Contemporary Prestressed Beam Design** (10.009) – September 2011 Progress Report
- b. **Evaluation of New Arch Bridge Technology for Short Spans** (10-002) – September 2011 Progress Report
- c. **Feasibility of Reclaimed Asphalt Pavement (RAP) in Portland Cement Concrete Pavements (PCCP)** (09.004) – October 2011 Progress Report
- d. **Flood Frequency Analysis** (10.013) – September 2011 Progress Report
- e. **Investigation of Pier Scour in Coarse-Bed Streams in Montana** – Final Report
- f. **Livability Benchmarks for Montana Transportation** (10-021) – October 2011 Progress Report
- g. **LTAP** - October 2011 Progress Report
- h. **Montana Intercity Bus Service** (10-015) – Monthly Progress Reports starting December 2010 and Tasks 1-5 Reports
- i. **Steel Pipe Pile/Concrete Pile Cap Bridge Support Systems** (09.016) – September 2011 Progress Report
- j. **US 93 North Post-Construction Wildlife-Vehicle Collisions and Wildlife Crossing Monitoring and Research** – 2011 Annual Report
- k. **US 93 South Wildlife Monitoring** (04.016) – 2010 Annual Report, and January and April 2011 Quarterly Progress Reports
- l. **2011 Summer Transportation Institute** - Final Report
- m. **Ground Penetrating Radar (GPR) Analysis: Phase II Field Evaluation** – Final Report
- n. **Montana Fuel Tax Refunds** – Final Report

4. **Contract Extensions:** None

5. **Proposals:** Attached

a. **North/West Passage Transportation Pooled-Fund Study**

Brandi Hamilton was present to request \$25,000 in funding for this pooled fund study in which MDT has previously participated and is entering its 9th year. States participating in this study include those along I-94 and I-90 from Wisconsin to Washington. The goals of the program are to implement and evaluate integrated traveler information systems and coordinate maintenance operations across state borders. The long-term vision of the North/West Passage (NWP) Corridor states is to utilize effective methods for sharing, coordinating, and integrating traveler information across state borders and to influence ongoing standards development.

This current request is for Work Plan 6 which includes:

1. Conducting an operational test to coordinate traveler information;
2. Investigating options to promote consistent application of the recently adopted federal rule regarding the real-time system management information program;
3. Implementing selected strategies to expand Wyoming's DOT's Enhanced Citizen Assistance Reporting (ECAR) System to other NWP member states;
4. Enhancing and improving the NWP cost/benefit tools for future coordination with the ENTERPRISE ITS warrants project;
5. Enhancing www.i90i94travelinfo.com by adding citizen comments on events to the website or uploading the ECAR entries from WY and ID;
6. Continuing to increase the efficiency of trucking in the corridor by reducing the confusion in regulations and requirements for oversize/overweight trips and by providing a single mechanism for obtaining permits for oversize/overweight loads moving over the corridor;
7. Establishing brand recognition for the NWP corridor and initiating outreach and education to the commercial vehicle operators (CVO) that travel the corridor regularly;
8. Researching current cross border traveler information efforts to create interaction with Canada to identify cross border traveler information opportunities; and
9. Using an advanced driving simulator to develop a virtual test bed within which to collect driver data in response to different types of advanced warning signals and timing algorithms.

Benefits to Montana resulting from the pooled-fund study have included:

1. Development of the NWP traveler information website;
2. Corridor-wide consistent event descriptions to facilitate consistent messages and phrases when sharing messages corridor-wide;
3. 511 system enhancements;
4. Information sharing among multiple agencies statewide; and
5. CLARUS, an integrated surface transportation weather observing, forecasting, and data management system.

Bob indicated MDT should consider funding of the NWS pooled-fund study a standard part of the 511 budget, whether funding continues to come from Research or is a part of operational funding.

Mike said expanding technology beyond websites, such as Twitter, should be considered. He indicated we shouldn't spend a lot of money expanding the website. Brandi replied the NWP group is considering other technology, but added that many travelers use the website. She also said a survey was conducted through which they received good information as to how to continue to push out information. She said only 3% of users wanted mobile applications.

Mike then broadened his point saying that MDT hasn't done much to keep current with the times; we haven't created a mobile app. Lynn commented that in their customer survey when asked the best method to keep customers informed, the response was

MDT's website. She indicated they would add other new tools to the next survey. Bob said this was the biggest discussion at a recent Rural ITS conference.

Mike asked if our CVOs are involved in NWS. Brandi said they are involved.

Dwane made a motion to fund Work Plan 6 of the NWS pooled-fund study with \$25,000. Mike seconded the motion. All voted in favor; the motion passed.

Sue will obligate \$10,000 of FFY 2012 funds to this pooled-fund study.

b. Renewing Commitment to Tire/Pavement Noise Pooled-Fund TPF-5(135)

Cora Helm was present to request continued funding of this pooled-fund study with \$10,000.

The scope of work includes:

1. Development of National Instruments On-Board Sound Intensity (OBSI) measurement system, data acquisition and processing;
2. Evaluate commercial options for developing a system to verify the accuracy of complete sound intensity measurement systems used by pooled-fund members for conducting OBSI measurements;
3. Investigate methods for simplifying the export of OBSI data from the B&K PULSE system to Excel in a manner that speeds the process and minimizes the possibility of errors and develop an appropriate routine for exporting the data;
4. Evaluate the ASTM Standard Reference Test Tires (SRTT) used in the AASHTO OBSI procedure to identify any differences in noise performance that can be attributed to the production of the tire in a new manufacturing facility;
5. Plan and manage an OBSI rodeo among pooled-fund members and others;
6. Support efforts of the pooled-fund to expand the base of interest in quieter pavements to a larger base of stakeholders;
7. General consultation; and
8. Travel to meetings.

Cora indicated MDT has gained benefits from our participation in the first five years of the program at a total cost of \$10,000, including: OBSI study conducted on many of our pavements, development of a fact sheet on quieter pavements, and travel to meetings. Cora said if we continue our involvement in the pooled-fund study, we could petition for the OBSI equipment to return to Montana to measure our pavements again to determine how the sound characteristics hold up over time. This will help MDT determine cost/benefit in using quieter pavements as compared to less expensive and louder pavements. We may also be able to examine more closely how studded tire wear acoustically affects Montana pavements. Cora stated FHWA is considering incorporating pavement test data into the TNM noise model so states can better model their pavements in noise studies.

Mike asked if the research part of the pooled-fund study is complete and it is now focusing on data collection or if research is continuing. Cora replied that research is continuing, such as determining how quieter pavements hold up in regards to the sound produced by the tire/pavement interaction.

Dwane asked about the benefit/cost of the pooled-fund study and questioned the emphasis on the pooled-fund study supporting MDT staff to attend meetings. He added the goal of the pooled-fund study should be to decrease noise associated with our pavements, rather than attendance at meetings. Cora replied that we have used the results in MDT projects creating quieter pavements. She also stated the goal is to learn how long quieter pavements continue to be quieter.

Jeff questioned the priority ranking of the projects to be funded by this pooled-fund study.

Jeff made a motion to continue to support this pooled-fund study with an additional \$10,000. Lynn seconded the motion. Lynn, Jeff, Jerry, and Debbie voted in favor of the motion. Jon, Dwane, and Mike voted against the motion. With four votes in favor of the motion and three votes against, the motion passed. Dwane stressed his concern was to show the benefits of participating in this pooled-fund study other than allowing MDT staff to attend meetings. Mike said he wants us to be clear about what we are doing with the results. Jon said he wanted to know more about what benefits we can expect from the pooled-fund study in the future. Lynn indicated they would document the benefits before coming back to the RRC to request additional funding. It was mentioned that Pavement Management can help to quantify the benefits.

Sue added that benefit/cost is not the most appropriate performance measure for all cases. There are other performance measures, both quantitative and qualitative, and some research projects don't lend themselves to performance measures at all. Program-wide, a few projects can justify the entire program. Jerry added that this work is one step removed from the actual benefits and because of this it will be harder to quantify the benefits and costs for this pooled-fund study. Dwane said that nationally we are heading to more standardized performance measures.

Sue will obligate \$10,000 of FFY 2012 funds to this pooled-fund study.

6. Implementation/Technology Transfer:

- a. **Ground Penetrating Radar Analysis: Phase II Field Evaluation**
- b. **Montana Fuel Tax Refunds**

Sue announced that Research is now publishing implementation reports for research projects. In addition, she would like to follow research projects until the results are implemented, as appropriate. Finally, she said Research staff is working on an implementation plan for research projects. These reports will be just one part of the plan.

Dwane said the implementation reports, especially for the politically sensitive projects should be approved by the Division Administrator. Sue said this was being done. Dwane also said that for these more politically sensitive projects, it doesn't make sense to use the wording "Technical Panel Response"; he thought "MDT Response" may be more appropriate. Finally, Dwane said the audit responses are called "Management Action Plans" and since the Department is already used to this terminology, perhaps the "Implementation Reports" should also be called "Management Action Plans". Sue said she would look into this.

7. LTAP Presentation

Steve Jenkins was present to provide a mid-year review of LTAP. Sue informed the RRC LTAP is run on the state fiscal year, nine months after each FFY begins. The reason being is that federal funding, which requires a 1:1 match should be appropriated by nine months into the year. The LTAP work plan is presented to the RRC in May of each year for approval of SPR funding. FFY 2012 funds are \$141,000, SFY state gas tax funds are \$100,000, and SPR funds are \$80,000 for a total of \$321,000 funding for LTAP this year.

Steve discussed LTAP efforts through the first six months of the program this year. This included the numerous training sessions provided, a review of the results of LTAP's needs assessment in relation to the four federally-mandated LTAP focus areas: safety (worker and work zone/highway), infrastructure management, workforce development, and organizational excellence. Steve also discussed their role in helping to provide outreach at the state and local level for FHWA's Every Day Counts (EDC) Initiative. Finally, Steve asked the RRC for input for LTAP. None was provided, but the RRC will provide input to Research staff as needed.

8. Department/Division Hot Topics – RRC Members Roundtable Discussion

Sue announced Jeff Ebert will continue as the District representative on the Research Review Committee.

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 Dyrdahl/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
Doug McBroom/Multimodal Programs Bureau
Shane Mintz/District Administrator-Glendive
Doug Moeller/District Administrator-Missoula
Roy Peterson, P.E./Traffic & Safety Bureau
Suzy Price/Contract Plans Bureau
Jim Skinner/Planning and Policy Analysis Bureau
Rob Stapley/Right of Way Bureau
Stefan Streeter, P.E. /District Administrator-Billings
Matt Strizich, P.E./Materials Bureau
James A. Walther, P.E./Highways and Engineering Division
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