



Memorandum

To: RRC Members
Steve Albert/WTI
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
Bob Seliskar/FHWA
Jon Swartz, Administrator/Maintenance Division
Mike Tooley/Director
Duane Williams, Administrator/Motor Carrier Services Division
Pat Wise/Deputy Director
Lynn Zanto, Administrator/Rail, Transit, and Planning Division

From: Susan C. Sillick, Manager
Research Programs

Date: April 8, 2015

Subject: March 31, 2015 RRC Meeting Notes

RRC Members Preset: Steve Albert, Mike Bousliman, Jeff Ebert, Dwane Kailey, Sue Sillick, Jim Skinner for Lynn Zanto, Jon Swartz, Duane Williams, and Pat Wise.

Others Present: Kent Barnes, Kris Christensen, Jack Dartman, and Jeff Jackson.

1. **Budget Report:** Attached

Jeff Ebert asked if research funds were in jeopardy due to the lack of a highway bill. Jim responded that all SPR funds were accounted for in projected expenditures.

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

a. **Statewide Land Mobile Radio Propagation Analysis and Modeling Along Major Highway Networks (14-020)** - Technical panel requests project cancellation

Steve Keller was unable to attend due to illness. However, he indicated to Sue that the proposal submitted by MSU came in at a higher cost than expected, and MDT could purchase the software and accomplish the same results for a much lower cost. Given this, the technical panel recommends this project be cancelled. Jon added that the software is placed in vehicles and ties into the radio. He suggested the image viewer vans might be way through which this data can be collected.

Dwane asked if the software/equipment could be purchased with Research funding. Sue indicated data collection efforts are operational rather than research. She added that data is collected in research

projects, but the data is collected for a research component. Dwane asked Jon and Steve to touch base with Sue when they are ready to proceed.

Jon made a motion to cancel this project. Mike seconded the motion. All RRC members present, except for Jeff Ebert, voted for cancelling the project. Jeff opposed cancelling this project. The motion passed.

b. **Traffic Safety Culture Pooled Fund Study** - Update (attached)

Sue provided an update on this pooled fund study championed by Mike Tooley. Sue stated that this study is a program through which a number of research projects will be conducted. The initial time frame for this program is five years. Sue added there are currently nine states (CT, IA, ID, LA, MT, NH, TX, UT, and WA) contributing a total of \$975,000 over this initial five-year period, with MDT contributing \$80,000. A couple of states are contributing \$50,000/year for a total of \$250,000. Each contributing state names one person to serve on the Board, through which all decisions are made. Also, Caltrans is interested in participating; the funding request is working its way through their process. In addition to the participating DOTs, there are a number of other interested individuals from state DOTs, FHWA, NHTSA, AAA, DMVs, etc., who attend the quarterly meetings; usually between 25 and 30 people attend these meetings.

Sue said there is a management support project currently funded to assist MDT in leading this pooled fund study, by keeping up with traffic safety culture activities, and providing support for work plan and project development, meetings and reimbursement, report writing, and outreach and awareness. Sue added that proposals are in preparation by WTI for the first two research projects: 1) Cannabis and Traffic Safety and 2) Engagement in Traffic Safety. Finally, Sue stated that the Board plans to issue a phased RFP, with the first phase gathering information on researchers in this field. These researchers can be used as a short list for future projects, peer reviewers, or for collaborators with WTI.

Steve mentioned his concern with research being awarded to other researchers when WTI was the impetus to initiate this pooled fund study. Sue responded that she appreciates this and has shared this with the Board; however, the Board makes the decisions. Sue stated she is the project manager and is not on the Board. Also, Sue reminded Steve that she brought this issue up when the pooled fund was first being discussed.

Mike asked who represents MDT on the Board; Sue responded that Audrey Alums does.

Dwane asked if the projects are funded with the contributions from all of the participants. Sue responded this is the case, with all participants transferring their funds and obligation authority to MDT.

3. **Reports:** Available on Research [website](#)

No discussion.

- a. **LTAP** - Progress report
- b. **Assessing the Effectiveness of Montana's Vehicle Occupant Protection Program (12-003)**- Final and project summary reports
- c. **US 93 North Wildlife Crossing Structure Monitoring** - Progress report
- d. **US 93 South Wildlife Crossing Structure Monitoring (04-016)** - Progress report

4. Proposals:

a. **Feasibility of Non-Proprietary Ultra-High Performance Concrete (UHPC) for Use in Highway Bridges in Montana** (14-002) (attached)

Kent Barnes was present to discuss this proposal, which the technical panel recommends for funding. Kent explained the need for accelerated bridge construction is increasing. We can use propriety mixes; however, the cost is high. Kent added that there was a national study on this topic that skipped over Montana and our immediate region. The purpose of this project is to develop and characterize non-proprietary UHPC mixes to determine if UHPC is a cost-effective, viable option for Montana bridges. UHPC components are much stronger than conventional concrete. Duane Williams asked about the strength of UHPC and what makes it strong. Kent explained what typical concrete, such as is used in driveways, is 3 K PSI; we specify 4 K PSI, but usually breaks at about 6 K PSI. Our prestress beams are 8 K PSI. UHPC is about 30 K PSI. He also described that the paste matrix is more uniform by using smaller rocks and limestone dust, making the mix stronger.

Duane asked about the disadvantage of UHPC. Kent responded that it is more expensive.

Steve asked why the study skipped over Montana. Kent responded it was likely due to the lower population density in the area.

Jeff Ebert asked if we have the necessary materials for UHPC in Montana. Kent responded that we do.

Dwane made a motion to fund this project at \$129,936. Jon seconded the motion. The motion passed by acclamation.

b. **Survey of Micropile Use in Neighboring Western States MPART Small Project** (attached)

Jeff Jackson was present to discuss this proposal, which the technical panel recommends for funding. MDT's use of micropiles is limited, yet they are a foundation alternative that is cost-effective in a variety of conditions. The purpose of this project is to gain knowledge of the state-of-the-practice in neighboring western state departments of transportation regarding the use of micropiles for bridge foundation retrofits and earthen slope repair.

Dwane made a motion to fund this project at \$20,631. Steve seconded the motion. The motion passed by acclamation.

c. **Rockfall Hazard Process Assessment**

This project is nearing the completion of the RFP process. Jeff Jackson presented this project, on behalf of the technical panel, for funding approval via e-mail ballot when the proposal is ready. Jeff explained through a previous research project completed in 2005, a rockfall hazard rating system was developed. Over 2500 sites were evaluated, resulting in about 100 highest priority slopes requiring mitigation. The purpose of this project is four-fold. First, the rating criteria will be updated for about 400 slopes to include both condition and risk assessments compatible with current state-of-the-practice and future transportation asset management (TAM) plans. Secondly, critical sites and groupings of sites will be determined to create a selection process and prioritize potential rockfall mitigation projects suitable for long-range planning strategies. Thirdly, cost/benefit scenarios, including safety considerations, highway use, and maintenance components to help prioritize the State's most critical sites will be developed. Lastly, the compatibility of the current rockfall hazard evaluation process will be evaluated with respect to future TAM plan and IT requirements.

Jeff added that this project will take about two years and cost about \$450,000.

Duane asked about including a safety element. Jeff confirmed this is one of the factors. Duane added the factors should be weighted. For example, rockfall areas on the interstate should rate higher than on the Beartooth Highway.

Steve asked about planning and preparedness and mentioned that WTI has developed a hardened tablet for field collection.

Dwane stressed the importance of looking at this issue holistically. Jeff added that the consulting firm Landslide, Inc. has experience working with Washington and Oregon; being involved with the fatal slide in Washington last year. In addition, one of the team members has extensive experience with asset management.

Jeff Ebert asked why 400 sites were chosen versus the 2500 hundred in the initial project. Jeff Jackson responded that about 400 of the initial 2500 were identified as high priority, with 100 of those being the highest priority.

d. Development of Strategic Enterprise Architecture Design and Implementation Plan for MDT

This project is nearing the completion of the RFP process. Jack Dartman presented this project, on behalf of the technical panel, for funding approval via e-mail ballot when the proposal is ready. Jack explained the purpose of this project is to develop a customized, executable, strategic enterprise architecture design for MDT, geared for addressing MDT business needs. Jack added that there were eight proposals submitted in response to this RFP. Four were invited for oral presentations. E-vision was chosen as the top proposer. Jack stated the strengths of this proposal include experience with DOTs and low cost. He added that he has a fairly high confidence level that we will receive an actionable plan. Mike added that E-vision has appropriate IT experience, in addition to the experience in working with DOTs, and the scoring committee believes as Jack does, that we will receive an actionable plan. Proposal costs ranged from about \$250,000 to \$2.5 M, with the E-vision proposal about \$320,000.

Dwane asked why the large cost range. Jack stated the proposals offered different levels of granularity. The higher cost proposals offered the greatest level of detail, which we do not need. Also, those companies with the higher cost proposals are not in our region. One of the companies with a \$2.5 M proposal offered the Cadillac version; this company typically works with multi-billion \$ private companies. The other doesn't have the experience necessary to conduct the project and was managing risk with cost. Jack added that E-vision proposes to spend quite a bit of time on-site in Helena.

5. Implementation/Performance Measures/Technology Transfer

No discussion.

6. Department/Division Hot Topics - RRC Members Roundtable Discussion

Sue asked if the RRC would be amenable to e-agendas, rather than hard copies. The answer was yes.

Steve reminded the RRC that WTI was successful in obtaining the contract for a Workforce Development Center. He stated there is a 14-16 month project with the USFS regarding millennials; he was asked to

provide the scope for this project. Steve added that this project could be expanded to a pooled fund study. Mike added that this is a current issue. Pat added that she is also concerned with retention.

Copies: Craig Abernathy/Research Section
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Kent M. Barnes, P.E./Bridge Bureau
Katy Callon/Research Section
Kevin Christensen/Highways and Engineering Division
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