Montana Department of Transportation
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Memorandum

To: RRC Members
            Steve Albert/WTI
            Mike Bousliman, Administrator/Information Services Division
            Bobbi deMontigny, Research Programs
            Jeffrey M. Ebert, P.E./District Administrator-Butte
            Larry Flynn, Administrator/Administration Division
            Dwayne 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: January 30, 2019

Subject: December 4, 2018 Research Review Committee (RRC) Meeting Notes

Action items are in red.

RRC Members Present: Mike Bousliman, Sue Sillick, Jon Swartz, Duane Williams, Lynn Zanto

Others Present: Stephanie Brandenberger, Kevin Christensen, Bobbi deMontigny, Jake Goettle, Will Kline, Roy Peterson, Kirsten Seeber and Lesly Tribelhorn

Will Kline and Kirsten Seeber attended via phone and were introduced as the two new contract research project managers from CTC & Associates.

1) **Budget Report:** Attached

   No discussion.

2) [Research Projects – current listings](#)

   Bridge Deck Cracking Evaluation SOW Approval-in-Concept

This project is a follow up to a 2017 report that looked at the cause of cracks that were found in two bridges in 2016. The 2017 report made several recommendations, which MDT implemented. The purpose of this follow up project is to use the scientific method to look at the initial recommendations to determine which ones were successful. The project will review data from the deck pours that applied the 2017 recommendations, gather data on new deck pours, use modeling to demonstrate the benefit of modified curing on deck stresses and cracking risk, and make recommendations that can be quickly implemented on future projects.

Jon made a motion to approve this project. Lynn seconded the motion. All RRC members present voted in favor. The motion passed.

Will will prepare an RFP to be issued through Purchasing.

3) **Reports:** Available on Research website

   a. **Alkali-Silica Reactivity in the State of Montana (18-018) – Quarterly Progress Reports**
   b. **Concrete-Filled Steel Tube to Concrete Pile Cap Connection – further Evaluation/Improvement of analysis/Design Methodologies (18-017) – Quarterly Progress Report**
   c. **Effective Production Rate Estimation and Monitoring of Controlling Activities Using Daily Work Report Data (15-013) – Quarterly Progress and Tasks 1-3 Reports**
   d. **Feasibility of Non-Proprietary Ultra-High Performance Concrete (UHPC) for Use in Highway Bridges in Montana – Phase 2: Field Application (18-016) – Quarterly Progress Reports**
   e. **Guidelines for Chemically Stabilizing Problematic Soils Using Calcium-Based Stabilizers (15-008) - Quarterly Progress and Tasks 2-4 Reports**
   f. **Large Scale Laboratory Testing of Geosynthetics in Roadway Applications (18-007) - Quarterly Progress and Task 1 Reports**
   g. **LTAP – Quarterly Progress Report**
   h. **MDT Wildlife Accommodation Process (14-031) – Final Report**
   i. **Regional Regression Equations Based on Channel-Width Characteristics to Estimate Peak Flow Frequencies at Ungauged Sites Using Data Through Water Year 2011 (15-015) - Quarterly Progress Reports**
   j. **Testing Wildlife-Friendly Fence Modifications to Manage Wildlife and Livestock (18-009) - Quarterly Progress Report**
   k. **Traffic Safety Culture Pooled Fund**:
      I. **Effective DUIC Policy – Quarterly and Task 1 Reports**
      II. **Traffic Safety Citizenship Primer and Communication Tools – Quarterly and Task 1 Reports**
      III. **Traffic Safety Culture Primer – Quarterly Progress and Task 1 Reports**
      IV. **Understanding Law Enforcement Attitudes and Beliefs about Traffic Safety – Quarterly Progress Reports**

All reports, except Quarterly Progress Reports, are posted on the Research Programs website.

There was no discussion.

4) **Proposed Research Projects (attached)**
   a. **Developing a Methodology for Implementing Safety Improvements on Low-Volume Roads in Montana**

   Roy Peterson, as chair of the technical panel, attended this meeting to present this proposal, which is recommended by the project technical panel for funding.

   Montana doesn't differentiate between different roadway systems. In the last five years, there has been a push to emphasize safety dollars be spent on all public roads. It's difficult to obtain funding for local (non-state maintained) roads. The focus of this research, along with Everyday Counts and a recent LTAP Peer Exchange, is how to create a methodology to equitably put money towards all low-volume roads, including local roads. Also, the project will identify if there are states that have a methodology to assess local roads for safety improvements.

   Lynn Zanto stated the project title refers to low-volume roads, but the proposal refers to local roads. Should the project title be changed? Roy said the title should remain as is because low-volume roads include local roads. Roy wants this project to focus on low-volume roads that are not maintained by the state. He feels that the safety improvements will be less than $1M. Some counties don't like to be told what to do, to maintain signs or be held to federal requirements because they received federal dollars.

   Historically, there is no information on hazardous locations on low-volume roads, aside from citizen calls and information provided by the districts. County commissioners don't have this knowledge. The project will provide the information and develop a method to apply safety improvements to low-volume roads. This project is not looking at gravel roads.

   One challenge of the project is to develop a methodology that won't put an undue burden on any one local unit of government should they incorporate the methodology into their local roads program.

   This project will be presented at the county road meeting next year to get the word out.

   The project is being funded by MDT and the Rural Tribal Center on Mobility at the Western Transportation Institute.

   Lynn requested that Carol Strizich or Pam Langve-Davis be added to the technical panel for this project.

   Lynn made a motion to approve this project. Jon seconded the motion. All RRC members present voted in favor. The motion passed.

Will will add Carol or Pam to the technical panel. Sue will program the project. Will and Sue will prepare and execute the contract, respectively.

b. **AASHTOWare Project Data Analytics**

Lesly Tribelhorn attended this meeting to present this project to the RRC.

Typically, a new project would be presented at the next funding cycle, but this project is time sensitive. The cost is $750K over three years. There are not enough remaining FFY 2019 funds. If the RRC approves this project, Sue proposes $250K be allotted for each FFY 2020, 2021, and 2022.

The proposal is for the development of project data analytics software to be delivered as both web-based and Software-as-a-Service platforms, providing decision support and analysis functionality, including two construction dashboard components. Features will include such items as the ability to find patterns, draw conclusions, and make better data-driven decisions. The software will be released to the funding states every two to four weeks over a 48-month period, allowing participating states to test and use the software immediately. The code is built for much of it, but the processes and best practices need to be developed.

There is a lot of data available, but MDT staff can't benefit from it because they are unable to access it or don't know it exists. Lesly's team receives questions on contracting and prices, as well as questions from the public. They have lots of data specific to construction, contracting, projects, etc. and are continually adding to their database, but they need an improved database. The data with this new system would be available for more than just engineering purposes, such as planning, and will be available to all MDT staff. Also, this software will help the department eliminate data silos.

Lynn and Mike commented that this software fits into the enterprise data architecture. Also, there is a need in the Department for analytics software. Lynn wants to make sure there aren't multiple analytics tools in the Department. If this project is limited to AASHTOWare data only, then the Department is going to need another tool for non-AASHTOWare data at some point. Currently there is a project that is looking at how to incorporate AASHTOWare data into other systems, so it is not so limited. More will be known about this other project in January 2019. Do we spend the money now on something that meets partial needs or wait for something that meets all their needs when it's done?

Lynn pointed out that this project is outside of the typical process for software projects. The data governance committee is supposed to help staff make these kinds of decisions. The RRC isn't looking at everything from an agency perspective. Mike said the department will have to make some sort of investment sometime and the end product will look like what's in the AASHTOWare products. He doesn't feel the data governance committee will move fast enough to satisfy immediate needs.

If MDT doesn't join this project now, the Department won't have access to it until it's complete, at least four years from now. Also, it will be more expensive then. States that join now will receive a 25% discount on the annual licensing fee. That will save MDT $60K over three years. There is also a piece of software that will no longer be needed and that will save $200K of state funds each year. Lesly feels the project will pay for itself in the long run.

Sue said that if the committee funds this project, it will not put other research projects on hold. However, there will be less money available in the next three funding cycles for other projects. This project will be $250K for the next three years (beginning in FFY20), which is about 10% of the annual research appropriation. Sue has added this project to the budget for the next three years on the pending projects line. Mike stated the committee has previously discussed not spending research money on software. Sue acknowledged this but pointed out that this project was specifically approved for the use SPR-B (research funds, formerly SPR-II) funds.

The biggest obstacle to using this product when it's ready will be the ITPR because it will be used on the cloud. The interface will be the issue and that is being developed now. Some committee members have concerns about the efforts that will be needed on the backend, when the project is ready to be implemented at MDT.

Lesly said that MDT can start participating in the development and tech exchanges now but won't begin paying until FFY20. Eight states have committed to the project and AASHTO needs four more agencies to commit to reach full funding. If the project doesn't get all commitments, then AASHTO will have to relook at it (cut down the scope, make the project longer, etc.)

Mike pointed out that MDT has been using AASHTOWare products for a long time and has not contributed to the solicitations. He feels MDT should contribute to this project because the Department has benefited from the other AASHTOWARE-developed products.

A motion was made, and seconded, to approve this project. However, voting was not completed as the members had further discussion about the January IT governance meeting and whether this project should be brought up there since that group is deciding what constitutes good IT investments for the Department. Lesly said she can wait two weeks for a decision from the RRC on funding this project.

A second motion was made to defer the vote two weeks pending the outcome of next week's IT portfolio management meeting. All RRC members present voted in favor. The motion passed. **Sue will send the committee an email ballot after this meeting.**

5) **Implementation/Performance Measures/Technology Transfer:**

   Implementation Process, Planning, and Documentation

The new implementation process came out of the 2017 Research Peer Exchange. The biggest thing is the new Implementation Planning and Documentation form. This is a living document that creates a specific plan for implementing a project's results, until all results are implemented, or it is clear that no more will be implemented. Sue asked the committee to review the document and provide her with comments.

Sue's next focus will be to look at implementation of innovations and research performance measures.

6) **Department/Division Hot Topics – RRC Members Roundtable Discussion**

No discussion.

Copies: Craig Abernathy/Research Section
    Audrey Allums/Grants Bureau
    Stephanie Brandenberger, P.E./Bridge Bureau
    Kevin Christensen/Highways and Engineering Division
    Ryan Dahlke, P.E./Consultant Design Bureau
    Lisa Durbin/Engineering Operations Bureau
    Ed Ereth/Data and Statistics Bureau
    Jeff Jackson, P.E./Materials Bureau
    Paul Jagoda, P.E./Construction Engineering Services Bureau
    Tom Martin, P.E./Environmental Services Bureau
    Kraig McLeod/Multimodal Planning Bureau
    Shane Mintz/District Administrator-Glendive
    Roy Peterson, P.E/Traffic & Safety Bureau
    Jake Goettle, P.E./Contract Plans Bureau
    Dustin Rouse, P.E./Highways and Engineering Division
    Ed Toavs/District Administrator-Missoula
    James Combs, P.E./Highways Bureau
    Jim Skinner/Planning and Policy Analysis Bureau
    Rob Stapley/Right of Way Bureau
    Jerry Stephens, P.E./WTI MSU
    Stefan Streeter, P.E./District Administrator-Billings
    Matt Ulberg, P.E./LTAP
    Doug Wilmot/District Administrator-Great Falls
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