



Montana Department of Transportation
PO Box 201001
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Memorandum

To: RRC Members
Mike Bousliman, Administrator/Information Services Division
Kevin Christensen/Chief Operations Officer
Larry Flynn, Administrator/Administration Division
David Kack, Acting Director/WTI
Dwane Kailey, Administrator/Highways and Engineering Division
Shane Mintz, Administrator/Glendive District
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 *SCS*
Research Programs

Date: February 18, 2020

Subject: January 31, 2020 RRC Meeting Notes

Action items are in red.

RRC Members Present: Mike Bousliman, Kevin Christensen, David Jacobs (for Lynn Zanto), David Kack, Dwane Kailey, Shane Mintz, Sue Sillick, Jon Swartz, Mike Tooley and Duane Williams

Others Present: Stephanie Brandenberger, Andy Cullison, Bobbi deMontigny, Will Kline, Doug McBroom, Gabe Priebe, Kirsten Seeber, Matt Ulberg, and Jeremy Wilde

1. **Budget Report:** Attached
No discussion.
2. [Research Projects - current listing](#)
No discussion.
3. **Reports:** Available (except progress reports) on Research [website](#)

- a. Alkali-Silica Reactivity in the State of Montana (18-018) – Task 2 and Quarterly Progress Report
- b. Bridge Deck Cracking Evaluation (19-019) – Monthly Progress Reports
- c. Concrete-Filled Steel Tube to Concrete Pile Cap Connection – further Evaluation/Improvement of analysis/Design Methodologies (18-017) – Quarterly Progress Report
- d. Consultant Research Project Managers – Monthly Progress Reports
- e. Developing a Methodology for Safety Improvements on Low-Volume Roads in Montana (19-005) – Tasks 2, 3, 4 and Quarterly Progress Report
- f. Feasibility of Non-Proprietary Ultra-High Performance Concrete (UHPC) for Use in Highway Bridges in Montana – Phase 2: Field Application (18-016) – Quarterly Progress Report
- g. Guidelines for Chemically Stabilizing Problematic Soils (15-008) – Task 6 Report
- h. Large-Scale Laboratory Testing of Geosynthetics in Roadway Applications (18-007) - Quarterly Progress Report
- i. LTAP – Quarterly Progress Reports
- j. Monitoring Streamflow Using Video Equipment (19-011) - Quarterly Progress Report
- k. 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 Report
- l. Testing Wildlife-Friendly Fence Modifications to Manage Wildlife and Livestock (18-009) – Farm Bureau Presentation and Technical Panel Presentation
- m. Traffic Safety Culture Pooled Fund:
 - i. Guidance for Evaluating Traffic Safety Culture Strategies – Task 1 and Quarterly Progress Reports
 - ii. Guidance on Messaging to Avoid Reactance and Address Moral Disengagement – Task 1 and Quarterly Progress Reports
 - iii. Key Information for DUIC Policy – Webinar Recording and Presentation
 - iv. Traffic Safety Citizenship Primer and Communication Tools – Primer, Conversation Guide, Presentation PowerPoint, Poster, Final Report, and Webinar Recording and Presentation
 - v. Traffic Safety Culture Primer – Primer, Presentation PowerPoint, Poster, Final Report, Video, and Webinar Recording and Presentation

No discussion on reports.

4. Proposed Research Projects (attached):

a. Development of Deterioration Curves for Bridge Elements in Montana (20-011)

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

This project focusses on a bridge management system that includes deterioration forecasting for National Highway System bridge assets, required for all states by FHWA thru the National Highway Performance Program. MDT currently uses generic deterioration curves developed using component-level condition ratings for the deck, superstructure, and substructure from the National Bridge Inventory database. Results of this research will be based on bridge element-level inspections for Montana bridges

and will be compatible with MDT's bridge management software. Bridge Bureau engineers will be able to more accurately identify bridges for maintenance, rehabilitation, or replacement projects.

The overall objective of the research is to develop deterioration curves for bridge elements in Montana. Specific objectives are to 1) Create families of deterioration curves for Montana bridges in different geographic locations using explanatory variables such as traffic volume, climate conditions, and design type, 2) Establish modifications to the deterioration curves to represent 'performance jumps' in bridge conditions created after maintenance or rehabilitation activities take place, and 3) Create a process to easily revise and implement the data with MDT's bridge management software.

The researchers will structure the project, so they step through the process systematically. They will review what other states are doing to learn what is working and what is not, which options would be most beneficial and how to set expectations with the deterioration models. The researchers will determine what confidence interval the model provides and then develop the deterioration curve.

The cost of the project is \$74,900.

Mike Bousliman asked if the timing of this project is in sync with obtaining AASHTOWare BRM. Andy indicated he wasn't concerned as implementation assistance is a part of the contract.

Dwane Kailey made a motion to approve funding for the project. The motion was seconded by Kevin Christensen, and all RRC members present voted in favor. The motion passed.

Research staff will program the project and write and execute the contract.

b. **Effectiveness of Highway Safety Public Education at Montana Motor Vehicle Division and Registration Stations by Streaming a Variety of Safety Content (19-001)**

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

This project focusses on educating the public about safety initiatives. Education is part of the 4E approach (engineering, emergency management services, enforcement, and education) to improve traffic safety. The project proposes to show safety videos at Motor Vehicle Division driver license stations and County Treasurer Offices where there are wait times of greater than five minutes.

Researchers will evaluate this strategy to see if it's a successful way to encourage drivers to change their behavior. Currently, there are limited examples of this method throughout the U.S., so this study would break new ground. Benefits of the project include increased safety, improved efficiency/service of proven safety countermeasures, and increased public awareness of safety countermeasures. This form of education has the potential to reach rural residents who would not otherwise hear this information via other means. It is also an efficient use of space and messaging.

The research project consists of five separate tasks: project management; pre-deployment planning; deployment; evaluation & support; and documentation. The researchers will figure out the project logistics including equipment to use, installing the equipment, training the employees and dealing with any issues that arise. Researchers will survey visitors as they leave the stations/offices and mail follow up surveys to the visitors. Five locations are suggested. The researchers plan to present this project at the 2022 TRB Annual Meeting.

Jon Swartz asked if it would make more sense to send out surveys electronically. Gabe indicated the Technical Panel also raised this question. He stated there may be an opportunity for an email survey. MDT uses Opiniator survey tool at rest areas. **Gabe will talk to the researchers about including an email survey.**

Duane Williams asked about the impact the repetitive videos would have on the staff who are at the stations/offices all day. Also, visitors taking tests could be bothered by the video. Gabe stated the videos will have closed captioning so they can be silenced.

Mike Tooley asked about the response rate to the mailed surveys. The project proposal states a 50% return rate, which seems high. The researchers looked at the average response rate to these types of survey and scaled down the response rate. A dollar is being offered to each respondent for completing a survey.

The project budget is \$150,000 in MDT SPR-II funds and \$75,000 in UTC funds.

Jon Swartz made a motion to approve, which was seconded by Dwane Kailey. All RRC members present voted in favor and the motion passed.

Research staff will program the project and write and execute the contract.

c. **Use of Fluorescent Orange Delineators in Temporary Traffic Control Work Zones (19-006)**

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

The main objective of this project is to assess the effectiveness of new proposed delineation devices for better guiding traffic through work zones. MDT-proposed delineators are larger in size (6" X 12" versus 4" X 4") and different in color (orange versus white and yellow per the Manual on Uniform Traffic Control Devices). The study will provide the necessary documentation for the National Committee of Uniform Traffic Control Devices for inclusion in the MUTCD. The proposed research is also expected to have a very high pay-off for MDT given the extensive highway network and associated maintenance and reconstruction operations in the state.

The MUTCD delineators are good when pavement markings are present in a work zone. The MDT-proposed delineators work better when pavement markings aren't present. This study will also look at vehicle speed and vehicle position. The research will benefit MDT and have national benefits. Some states are looking at orange stripes and the MDT-proposed delineators would supplement that striping.

Two study sites will be selected from a list of five candidate sites. The total project budget is \$200,000. MDT will fund \$90,000 of the project and the rest of the budget will come from the Small Urban, Rural and Tribal Center on Mobility at the Western Transportation Institute.

Mike Tooley expressed a concern about lane departure and head-on collisions with these devices. The project will look at how far cars move over and where they are located in the lane.

Sue indicated MDT had to obtain approval by FHWA-DC to use traffic control devices not in the MUTCD.

Dwane Kailey made a motion to approve funding for this project. The motion was seconded by Mike Tooley and all RRC members present voted in favor. The motion passed.

Research staff will program the project and write and execute the contract.

5. Implementation/Performance Measures/Technology Transfer: (none)

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

★ Matt Ulberg - Montana LTAP update

- The National Local Technical Assistance Program Association will be releasing a new strategic plan this spring, which will be the strategic direction for LTAPs. Sue will distribute the plan for MDT input.
- The rural centers are worried about the strategic direction because of the recent elimination of regional TTAP centers.
- Matt is putting together the MT LTAP annual report, which will showcase all of the facts and statistics about the program.
- Matt has been very busy. They recently filled their coordinator position, which has been vacant for eight months. This will lighten his workload.
- They are seeing an increased demand for the LTAP's services. This results in more dissatisfied counties because the LTAP can't get to them quickly. Matt feels the problem will worsen as counties experience staff turnover but the LTAP bandwidth doesn't grow. Demand for their services is very high in eastern Montana.
- Matt has been elected to the Executive Committee of NLTAPA. He will serve as a vice president for two years and then become the president. This post takes him away from Montana more, but the travel is paid for by national funds.
- Matt expressed his appreciation for MDT's support of the LTAP and indicated he would work on more coordination with MDT.
- Matt stated the MACRS meeting is in two months and expressed the hope that MDT staff can attend.
- Sue Sillick - Matt presented an update at this RRC meeting, so the members have the information when the LTAP proposal comes in likely as an email ballot.
- Dwane Kailey asked about the nervousness of LTAP moving out of states. The TTAP program moved from a regional to a national program, much to the dismay of the tribes. They do not feel they are getting the same attention now with only one national center. Matt stated the rural LTAP's are nervous the same will happen with LTAP. If

this were to happen, Matt believes a national LTAP would focus less on rural issues. Dwane stated the RRC recognizes the benefit of LTAP and the state gas tax funds are codified in the MCA. SPR funds would still be available; however, the federal funds would not. Matt – Some DOTs will move forward with a state LTAP using state funds only, if they don't like the new strategic plan. Their perspective is they (the national LTAP) controls all of the MDT and LTAPs budgets. MT LTAP has a contract with MDT. Matt is nervous about heavy-handed tactics. No LTAPs were reached out to with regards to the strategic plan, only local agencies.

- Sue Sillick – After MDT approves the work plan each year (of the last two years), it must then be submitted to FHWA-DC in order to obtain the appropriation code to program LTAP each year.
- ★ Sue Sillick – She sent out the research project solicitation this morning. Stage 1, research ideas, are due at the end of March. If the RRC members have hot topics, things they should be focusing on, let Sue know.

Copies: Craig Abernathy/Research Section
Stephanie Brandenberger, P.E./Bridge Bureau
James Combs/Highways Bureau
Ryan Dahlke/Consultant Design Bureau
Jim Davies/Materials Bureau Chief
Bobbi deMontigny/Research
Lisa Durbin/Engineering Operations Bureau
Ed Ereth/Data and Statistics Bureau
Bill Fogarty/District Administrator-Butte District
Jake Goettle/ Highways and Engineering Division
Jeff Jackson/Geotech and Pavements Bureau
Paul Jagoda/Construction Engineering Services Bureau
Will Kline/Consultant Research Project
Manager Tom Martin/Environmental Services
Bureau Rod Nelson/District Administrator-
Billings Gabe Priebe/Traffic & Safety Bureau
Darin Reynolds/Construction Contracting Bureau
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