

MINUTES
December 18, 2013
LRRB - Research Implementation Committee
10:00 am - 3:00 pm
MnDOT Training Center, Room #11
Shoreview, Minnesota 55126

Attendees:

Jeff Hulsether, Chair, City of Brainerd
Merle Earley (for Walter Leu), MnDOT - DSAE4
Klayton Eckles, City of Woodbury
Maureen Jensen, MnDOT - Materials
Hafiz Munir, MnDOT - Research
Mel Odens, MnDOT - State Aid
Mitch Rasmussen, Scott County
Dave Robley, Douglas County
Rich Sanders, Polk County
Joel Urling, MnDOT - Materials
Jim Grothaus, U of M - CTS

Staff:

Farideh Amiri, MnDOT – Research
Tina Folch, MnDOT - Research

Consultant:

Mike Marti, SRF Consulting Group, Inc.
Rena Kuehl, SRF Consulting Group, Inc.

Guests:

Mihai Marasteanu, UMN
Brian Brashaw, UMD

Absent:

Walter Leu, MnDOT - DSAE1
Tim Stahl, Jackson County
Rick Kjonaas, MnDOT - State Aid

I. Chairman's Report

Mr. Chair welcomed everyone, thanked them for attending, and introduced the guest speakers. Attendees introduced themselves.

Agenda Review:

Motion: A motion to approve the agenda was made by Rich Sanders and seconded Klayton Eckles. Motion Approved.

Review of September 2013 Meeting Minutes:

Motion: A motion to approve the September 2013 meeting minutes was made Mel Odens and seconded by Rich Sanders. Motion Approved.

RIC March Meeting:

The March 2014 meeting is scheduled for March 12th, 10:00 am at SRF.

Roster – New Members and Goodbye to Leaving Members:

New RIC member - Merle Earley, MnDOT - D4 DSAE; Mike Flaagen, Pennington County
Departing RIC Member - Rich Sanders, Polk County. Rich was thanked for his time on the board and presented with a plaque. Walter Leu, MnDOT DSAE. Walter was not present and his plaque will be sent to him.

Conferences:

Road Dust/TERRA Conference, February 4-5, 2014. All members are welcome to attend.

Minnesota Transportation Conference, March 4-6, 2014. All members are welcome to attend.

Budget Review:

- Tina Folch went over the budget for all existing RIC contracts. There is \$1,239.27 remaining in the RIC contract.
- \$440,000 is available for the consultant contract amendment. A meeting is scheduled for January 28th to discuss tasks for this contract.

II. LRRB Updates

- The LRRB approved the Gravel Road Management (\$25,237.09) and Traffic Sign Resource Manual update (\$49,988.50) contracts.
- For the Pedestrian Crossing project, \$20K from RIC budget, \$44K from LRRB.
- LRRB is interested to know how the TZD videos will be distributed. Will discuss this in the consultant portion of the meeting. This topic moved to consultant update in the afternoon.

III. FY 15 LRRB Funded Projects Presentations

- The December 4th and 5th presentations were given by PI's for FY 15 Projects. Hafiz Munir reviewed the approved project list that was provided in the meeting binders.
- PI's will be notified in the next week.
- If anyone wants to be a TAP member for any of the LRRB funded projects, let Farideh Amiri know.
- Local agencies Technical Liaisons (TL) need to be assigned for each project.
- "Prevention of Stripping under Chip Seals" project was presented by Montana State. This project is on hold. Research Services, TAP and City of Woodbury will present a revised scope at March LRRB meeting. Montana State may not be the right fit, may be better suited for a pavement consultant. Klayton is working with other cities to get their input on the needs for this study before determining PI.
- "Optimal RAP content for MN Gravel Roads" project. Iowa State is the PI and the U of MN proposed as well. Iowa had a better scope and budget and offered an economic feasibility component to their proposal, which the board liked.
- Goal is to have all of these projects under contract by the end of this fiscal year (June 30, 2014). Projects should start in July 2014.
- To determine RIC project for the new contract, the RIC references the LRRB project proposals and also pressing issues that were presented by the board members, based on issues their peers are dealing with. Consider looking at LRRB projects that will be wrapping up soon for implementation.

IV. Project Presentations

Performance of Recycled Asphalt and High RAP Asphalt Mix (Mihai Marasteanu, UMN)

- Mihai gave a presentation on the findings of UMN's recent project on Recycled Asphalt and High RAP asphalt mix. The goal of this project was to test eight asphalt mixtures at low temperatures. The experimental results and analyses were provided to assist MnDOT engineers to fine-tune the design of asphalt mixture containing various amounts of RAP (0%, 25%, 40% and 55%) and two different

binders (PG 58-28 and PG 58-34). The temperatures tested were -18C and -28C for binder PG 58-28; -24C and -34C for binder PG 58-34.

- Study conclusions:
 - IST creep stiffness results showed that stiffness increase with RAP content, which may negatively affect cracking
 - A comparison of creep stiffness across binder grade showed that performance benefits from substituting low PG-34 for low PG-28 persist when using more than 25%, but less than 40% RAP. “High RAP” mixtures experience no benefit from grade substitution.
 - The addition of RAP substantially increased the critical temperature for the PG 58-34 binder, predicting less crack resistance
 - A comparison of T_{cr} across binder grade at the rate of 1 degree C/hour showed that performance benefits from substituting low PG-34 for low PG-28 persist when using up to the 40% RAP. Thus, “high RAP” mixtures experienced a benefit from grade substitution.
 - SBC fracture testing showed that the addition of RAP lowered the fracture energy and increased the fracture toughness, in particular at the lowest test temperature.
 - For the most case, the highest RAP content appeared to be the most detrimental to fracture properties, in particular at the lowest temperature.
 - None of the mixtures met minimum recommended levels for fracture toughness or energy.

Development and Integration of Advanced Timber Bridge Inspection Techniques for NBIS (Brian Bradshaw, UMD)

- Brian gave a presentation on the status of this UMD study about US timber bridges.
- He went over different type of wood bridge inspection technologies available over the counter, how they work and their cost.
- He also presented the step by step in-depth bridge inspection protocols and training for MnDOT Districts. First training is planned for Spring 2014. Future trainings will be managed by LTAP.

Lunch (recently developed YouTube video on Work Zone Safety was shown during lunch)

V. Project Updates:

Truck Weight Enforcement project

- MnDOT just signed a contract for a 3 year compliance and training program through State Aid for law enforcement and truckers. Rich Sanders has a WIM station that requires dialing in to access the data. Can web access be provided rather than dial in access in future? If there is good cell coverage, may be able to modify it. It was likely setup with a hard line if cell coverage was not good when setup.

Task 14 (94288) – Integrated Tool for Pavement Design and Management

- Training materials were developed by Dr. Wilde to use the viewer tool and calculator that he developed. Two trainings have been completed so far. The remaining trainings (one in each district) are planned to be completed yet this winter. It was found that many agencies don't have all of their FWD data input into their system. The training was well received.

Task 16 (98319) – TONN 2010

- The two contracts INV 645 (94288) and INV 918 (98319) were set up that one is to develop the tools, the other is to present the training. Both contracts will be completed when the rest of the training sessions are complete in February of 2014.

VI. Future projects

MN Best Practices for Traffic Sign Maintenance Manual Update

- This project is an update to the original manual that was developed in 2010, to provide insight and suggested best practices for local agencies to deal with new FHWA guidelines regarding retroreflectivity and traffic sign management.
- Maureen Jensen suggested that a TAP member who is on the Sign Life study that will be completed in May 2014 also be on this TAP so that information is properly shared. Mark Vizecky is on both TAPs and can fill this role.

ACTION ITEM #1: Farideh will follow up with Mark Vizecky and ask him to give a presentation on the Sign Life and Traffic Sign Maintenance Manual update studies at the next RIC meeting.

Other Recommendations for Implementation:

- “Integrated Pavement Analysis” Project Needs Statement, presented by Rich Sanders and Joel Ulring.
 - This project will assist local agencies that do not have a sophisticated pavement management system, in using the FWD data. Make better use of the FWD data that exists in a basic format for local agencies to make better decisions.
 - The goal of this project is to conduct a comprehensive survey (electronic and listening sessions) of local agencies to determine what tools they are using, determine barriers to using them, what their needs are and then develop the next steps to address the barriers.
 - This project was identified as a need from the Systems Preservation project pilot counties as they are aware of the tools available but are not clear on how to use them. Better direction needs to be provided to local agencies on how to use the tools.
 - Use of FWD data is an issue as all agencies use it differently and none are completely satisfied with the results. It is unclear if this project will address the issue as stated.
 - This proposed study is tied well with the Pavement Resource Center study.
 - An estimate of the funding needed for this study is ~\$30,000.
 - ***Motion: A motion to forward the needs statement onto the LRRB for funding, as a new project or an amendment to the Pavement Resource Center project, was made Rich Sanders and seconded by Mitch Rasmussen. Motion Approved.***

ACTION ITEM #2: Joel Ulring will develop a scope, budget and schedule for the “Integrated Pavement Analysis” project Needs Statement to present to the LRRB.

- Safety equipment training was identified as a potential need. Jim is working on investigating if training exists on this topic.
 - Bridgewater School in Willmar just advertised training on the same topic.
- Do any agencies have distracted driving policies internal to their agencies for equipment operators? Lisa Kons at NETS is a great resource for this.

VI. 2012-2014 “Consultant Contract” Update

Website tracking

- Farideh Amiri gave a report to the board on the number of hits a few of the RIC products have had. Is this information that we should continue to request and pay for?
- The RIC members would like the Outreach committee to decide how to move forward at the June 2014 meeting.

ACTION ITEM #3: Farideh Amiri will talk to Nick Busse to see if there is a way that he can monitor the website hits without the consultant's assistance,

Task 4: TZD:

- Renae Kuehl presented and reviewed the revised scope with the board.
- ***Motion: A motion to approve the revised TZD scope, was made Rich Sanders and seconded by Mel Odens. Motion Approved.***
- Research was conducted to find similar videos to show to the TAP as examples. Historic crash data (national and state) was reviewed to determine which contributing factors (driver distraction, speeding, wearing seatbelts and drinking and driving) are overrepresented in fatal and serious injury crashes and to determine the target audience, based on the drivers involved in these crashes. A more in depth analysis of the crash data was completed by pulling crash data from the past 5 years using MnCMAT.
- A TAP meeting was held 9/16/13 to discuss the concept, topics and target audience. Sample videos were shown, and additional TAP members to invite were identified. TAP approved video concept.
- A TAP meeting was held 10/24/13 to review the video topics considered at the previous meeting, and determine which three to move forward with. Historic crash data was presented to the TAP for contributing factors overrepresented in fatal and serious injury crashes, based on the drivers involved in these crashes. The TAP decided to move forward with driver distraction, speeding and wearing seatbelts. Drinking and driving is an issue, but there are already numerous messages/campaigns in place for this topic. Additional TAP members within DPS and MnDOT Communications were identified to be invited to the TAP. The TAP asked for more in depth analysis of the crash demographics for the three identified topics, to ensure we are targeting the correct audience.
- The LRRB asked for input on how these videos will be distributed. This has been discussed with the TAP and will be discussed in further detail at the next meeting (January) and solidified as the project progresses. Ideas discussed so far include the use of various social media venues and news media.
- Tina Folsh suggested that Lisa Kons (NETS) and Nathan Bowie (DPS) be considered as TAP members as well.
- The Next TAP meeting will be scheduled for January 2014.

Task 5.1a – Traffic Monitoring Evaluation Methods:

- A draft of the report is complete and has been sent to the TAP for review.
- A TAP meeting (via conf call) is scheduled for 12/19/13 to discuss comments and finalize the report.

Task 5.1b – Traffic Monitoring Field Evaluation:

- A revised version of the draft report is complete and has been sent to the TAP for review.
- A TAP meeting (via conf call) is scheduled for 12/19/13 to discuss comments and finalize the report.
- The report has been sent to the vendors for review by 12/31/13.

- ***Motion: A motion to approve both Traffic Monitoring reports as complete was made Mitch Rasmussen and seconded by Dave Robley. Motion Approved.***

Task 5.2: Sign-Person Training:

- Met with Howard (CH2MHill) 11/4/13 to determine project roles/responsibilities
- TAP meeting held 11/19/13 to review the resource list summary and workshop findings. TAP reviewed and approved the proposed training modules and a sample outline format for module 2:
 - Module 1 General Overview
 - Module 2 MMUTCD
 - Module 3 Sign Placement
 - Module 4 Materials
 - Module 5 Retroreflectivity
 - Module 6 Sign Management
 - Module 7 Sign Policy (including when to install/remove)
 - Module 8 Sign Practice (including general maintenance)
 - Module 9 Special Signing - 911/Emergency Signing
 - Module 10 Safety
- Proposed a new format for scheduling meetings for this task, by scheduling all future TAP meeting ahead of time ~ every 6 weeks thru August 2014.
- Outlines for each of the ten modules are being developed and will be presented to the TAP for review at the next meeting scheduled for 1/6/14.
- A meeting with U of M Instructional Design staff was held 12/12/13 for SRF and CH2MHill staff to learn the process for developing content in a way that is conducive to online learning for students.

Task 6: Outreach:

Web articles:

- October 2013 – An article on the online concrete certification course was submitted to MnDOT RS for approval
- December 2013 – An article on the new Construction Zone Safety YouTube video was submitted to MnDOT RS for approval.
- Web article topics have been identified:
 - February 2014 – LRRB 55 Year Anniversary
 - April 2014 – Flashing LED Stop Signs or Traffic Monitoring
 - June 2014 – Update on newest YouTube videos

National Articles:

- Working to identify a magazine to host a professional article on highlighting the 55th anniversary of the LRRB, benefits of research, city/county working together, research and implementation and collaboration.
- TAP members identified potential magazines to consider: NACE newsletter, LTAP exchange, ASCE Smart Brief, City and County, APWA Reporter and Roads and Bridges.

Newsletter:

- February 2014 newsletter topics have been identified, working to gather data needed for newsletter.

Conference Boards:

- Working with MnDOT RS staff to pull together data needed for a poster for the TERRA Pavement and Dust Control conference in Feb 2014.

Conference Presentations:

- CEAM and MCEA 2013 – The Jeopardy style presentation is being developed by Mike Marti and Renae Kuehl for the CEAM and MCEA annual conferences in January.
- SRF suggested that this year we include a few videos for RIC/LRRB members reading the questions. SRF will work to identify which questions and will send them to RIC/LRRB members to self-record and send back to SRF.

55 Year Anniversary

- Working with outreach committee to develop products highlighting the history and achievements of the LRRB for 55th anniversary:
- Posters/booths for conferences – CEAM, MCEA, Transportation Conference, APWA, others?
- Poster for the Central Office Cafeteria and RS library
- National article highlighting the 55th anniversary of the LRRB, benefits of research, city/county working together, research and implementation and collaboration.

Other topics:

YouTube Video “Why aren’t you working on my road?”

- Renae Kuehl gave a brief overview on the project scope and schedule.

Pavement Preservation Resource Center

- Renae Kuehl gave a brief overview on the project scope and schedule.
- Maureen Jensen asked if this project should focus just on preservation or should be expanded. The board directed SRF to move forward with what was documented in the contract.

Gravel Road Management

- Renae Kuehl gave a brief overview on the project scope and schedule.
- Additional TAP members to invite were suggested by the board:
 - Bruce Hasbargen, Beltrami County
 - Tim Erikson, Lake of the Woods County
 - Rich Sanders, Polk County
 - Ronald Mortenson, Meeker County
 - TBD, St. Louis County
 - David Kramer, Winona County
 - John Sass, Dakota County
 - TBD, Scott County

Round Robin:

Jeff Hulsether – Thanks to Rich Sanders for his service. Congratulations to Jim Grothaus for passing the PE. Welcome Tina Folch to the group.

Hafiz Munir – If you have new ideas for projects use the Idea Scale site to submit.

Maureen Jensen – there was a recent meeting between MnDOT and pavement industry – long discussion on longitudinal joint density cracking.

Rich Sanders – At last meeting in New Ulm Rich mentioned a LRRB Rumble strip noise study that was starting to install a CA Mumble and the PA “Quiet rumble”. One mile of road that will have 4 different rumbles installed. Initial thoughts are that the PA quiet mumble are too quiet.

Merle Earley – Impressed with the two project updates on RAP and timber. Glad to be in the RIC committee.

Farideh Amiri – Thanks to Rich for being on the board. If you have any projects that you want presented at future meetings, please let Farideh know.

Meeting Adjourned

Motion: A motion to adjourn the meeting was made by Klayton Eckles and seconded by Maureen Jensen. Motion Approved.

Action Items

December 18, 2013 RIC Meeting

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ACTION ITEM #2: Joel Ullring will develop a scope, budget and schedule for the “Integrated Pavement Analysis” Project Needs Statement to present to the LRRB.

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