MEMORANDUM

To: RRC Members
Debbie Alke, Administrator/Aeronautics Division
D. John Blacker, Administrator/Maintenance Division
Monte N. Brown, Administrator/Administration Division
Robert E. Burkhardt/Federal Highway Administration
Dick Clark, Administrator/Information Services Division
Jim Currie, Deputy Director/Department of Transportation
Jeffery M. Ebert, P.E./District Administrator-Butte
Loran Frazier, P.E., Administrator/Highway and Engineering Division
Drew F. Livesay, Administrator/Motor Carrier Services Division
Jim Lynch, Director/Department of Transportation
Priscilla Sinclair/Traffic Safety
Sandra S. Straehl, Administrator/Rail, Transit, and Planning Division

From: Susan C. Sillick, Manager
Research Programs

Date: April 10, 2006

Subject: Summary of Minutes from October 25, 2005 RRC Meeting

The following RRC members were present: Debbie Alke, John Blacker, Bob Burkhardt, Dick Clark, Jeff Ebert, Drew Livesay, Priscilla Sinclair, Sandy Straehl, and Sue Sillick.

1. **Budget Report –** No discussion.

2. **Research Project – current listing –** No discussion.

3. **Reports**: Available Upon Request.

   3a. **Effects of Defensive Vehicle Handling Training on Novice Driver Safety: Phase 1: Preparation for Advanced Driver Training** – Progress Report – June 2005

   3b. **Effects of Defensive Vehicle Handling Training on Novice Driver Safety: Phase 2. Presentation of Advanced Driving Training** – Progress Report – June 2005

   3c. **Montana Air Service Study: Opportunities and Challenges** (04.014) – Progress Report – July 2005

   3d. **Ride Specification Review** (03.003) – Progress Report – August 2005

3e. **Preventive Maintenance Treatments: A Synthesis of Highway Practices** – Progress Reports – July and August 2005

3f. **Fish Passage in Montana Culverts Phase II – Passage Goals** – Progress Report – September 2005

3g. **Warm Water Species Fish Passage in Eastern Montana Culverts** – Progress Report – September 2005

3h. **Pavement Performance Prediction Models (98.003)** – Progress Reports – August and September 2005

3i **Determine the Current Rates of Motor Fuel Tax Evasion in Montana** (03.012) – August 2005

3j. **Bozeman Pass Wildlife Channelization ITS Project –** Progress Report – July, August, and September 2005

3k. **Soil Air Voids Method for Compaction Control** – Final Report – FHWA/MT-05-010/8117-23

3l. **Evaluation of the Engineering Characteristics of RAP/Aggregate Blends** – Final Report – FHWA/MT-05-008/8117-24

3m. **Bat Use of Highway Bridges in South-Central Montana** – Final Report - FHWA/MT-05-007/8159

3n. **Rockfall Hazard Classification and Mitigation System** – Final Report – FHWA/MT-05-011/8174

3o. **Research Peer Exchange –** FHWA/MT-05-013/6020

4. **Contract Extensions:** None

5. **Proposals:**

5a. **Habitat Connectivity and Rural Context Sensitive Design: A Synthesis of Practice**

Sandy Straehl/Rail, Transit, and Planning Division presented this proposal.

The object of this project is to synthesize the abundance of information regarding habitat connectivity and rural context sensitive design. This synthesis will not include recommendation or guidelines, but identify case studies and practices of other states related to sustainable transportation in Montana. Specifically this effort will attempt to answer the following questions:

a) What has been done in other similar rural areas?
b) What character qualities were being "preserved"?
c) What was the methodology for using the solution/design technique?
d) How did they choose areas to implement these ideas?
e) Was the effort successful? And how was "success" defined?
f) Were the costs justifiable?
g) What were the benefits of the project (these may be qualitative)?
h) What products and outcomes were realized?
i) What software tools or planning procedures were used?

Dick Clark made a motion to fund this project for $19,938.23. Jeff Ebert seconded the motion. The motion passed.

5b. **Pacific Northwest Snowfighters (PNS)** – Pooled Fund Study

Mike Bousliman/Maintenance Division attended the meeting to discuss this Pooled Fund Study.

This pooled-fund study was supported in the past through FHWA Technology Transfer funds. These funds are no longer available.

The PNS is a consortium dedicated to the creation and maintenance of specifications for winter maintenance chemicals and the optimization of their application on the roadway. Various research projects are conducted through this pooled-fund study, which will help meet some of our winter maintenance needs.

Debbie Alke made a motion to fund this project for $10,000.00. Drew Livesay seconded the motion. The motion passed.

5c. **Experimental Assessment of Aggregate Surfacing Materials**

Matt Strizich/Materials Bureau met with the RRC to discuss this MPART Research Proposal.

Roadway designers currently have a number of options for specifying the base course material on highway projects. The engineering characteristics of these various options have not been thoroughly investigated or quantified; consequently, the designer must rely on experience and habitual practices.

This study will examine the engineering characteristics of the following three materials:

1. CBC Type A Grade 5 – designated in this proposal as CBC 5A
2. CBC Type A Grade 6 – designated in this proposal as CBC 6A
3. CTS Type A Grade 2 – designated in this proposal as CTS 2A

Thus, giving MDT a better understanding of the engineering properties of the various aggregate options and helping to alleviate confusion among designers and District personnel regarding differences in customary practices. It will also provide valuable information to construction personnel when faced with requests by contractors to change or modify aggregate types.

John Blacker made a motion to fund this MPART proposal for $27,392.00. Dick Clark seconded the motion. The motion passed.

6**. Implementation/Technology Transfer**:

6a. **Evaluation of the Engineering Characteristics of RAP/Aggregate Blends**

Matt Strizich/Materials Bureau presented the implementation plan this project.

The purpose of this project was to determine the most critical engineering characteristics of RAP/Aggregate blends. The research determined that somewhere between 50 and 75 percent RAP the engineering characteristics begin to deteriorate.

These findings are based solely on laboratory tests. MDT's Pavement Analysis Section has compiled a list of projects dating back to 1988 where a RAP/Aggregate blend was used for construction of the surfacing section. A review of how the projects over 5 years old are performing will provide a true measure of the performance of these mixtures. Personnel from the Materials Bureau will work with District personnel familiar with the projects to evaluate the performance of these projects. This evaluation will be used to determine whether the reduced strength characteristics shown in the study are translating into problems on the roadway. Problems with overall performance of these roadways have not been documented to this point. Based on this fact, it has been determined the use of the RAP/aggregate blends will continue, as before, until the evaluation can be completed. Once the evaluation has been completed, a determination will be made whether further modifications to MDT practices are necessary.

6b. **Soil Air Voids Methods for Compaction Control**

Matt Strizich presented the implementation plan for this project.

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It was determined that the Zero Air Voids method is a proven tool for controlling compaction in instances when a proctor is not available or multiple materials are being mixed. The Materials Bureau will use this report in conjunction with the results of an ongoing study looking at the Department's Quality Assurance (QA)/ Quality Control (QC) program. The current compaction control specifications will be rewritten to reflect the findings of the two studies. It is anticipated this rewrite will reduce the use of the Zero Air Voids method of compaction control to instances when a proctor is not available or when an accurate proctor cannot be selected because of the mixing of materials.

6c. **Rockfall Hazard Classification and Mitigation System**

Rich Jackson/Materials Bureau presented the implementation plan for this project.

This project developed a rockfall management system to reduce the rockfall hazards faced by the motoring public, gain better tools for managing rockfall costs, and limit MDT's exposure to rockfall litigation by having a recognized rockfall management system in place.

This rockfall management system will be used to allocate rockfall mitigation funds at the most appropriate sites, allowing targeting of mitigation funds where the greatest rockfall hazards score can be realized per dollar invested or where location allows the grouping of sites or mitigation methods.

7. **Research Guidelines**

As one requirement to receive federal funding, the Research Program must have a management process in place.

The Research Guidelines, originally published in 1997, document this management process. These guidelines are in need of revision. Draft revised guidelines were attached to the October 2005 RRC agenda. Comments are due to Sue no later than December 15, 2005.

8. **Technology Transfer Projects**

Since FHWA no longer has funds for technology transfer projects, proposals for these projects will be accepted by the RRC at their regularly scheduled meetings. Funds in the amount of $20,000 will be set aside for these projects.

9. **Strategic Research Focus**

This item has been moved to the next RRC meeting.

10. **RRC Meeting Format**

Based on discussion during the October Research Peer Exchange, it was recommended that each RRC meeting begin with a round table presentation/ discussion of hot topics in each division. This will facilitate research staff prepositioning themselves to respond to these hot topics in a timely fashion, as appropriate.

cc: Craig L.Abernathy/Research Programs
Suzy Althof/Contract Plans Bureau
Kent M. Barnes, P.E./Bridge Bureau
Bruce H. Barrett/District Administrator-Billings
Lisa Durbin/Construction Administration-Bureau
Paul R. Ferry, P.E./Highways Bureau
John Horton/Right-of-Way Bureau
Paul Jagoda, P.E./Construction Engineering Bureau
Jennifer Jensen/Human Resources Division
Michael P. Johnson/District Administrator-Great Falls
Dwane Kailey, P.E./District Administrator-Missoula
Ray Mengel/District Administrator-Glendive
Victoria A. Murphy, CPA, CFE/Highway and Engineering Division
Jeanne Nydegger/Research Programs
Timothy W. Reardon/Legal Services
Jean A. Riley, P.E./Environmental Services Bureau
Matt Strizich, P.E./Materials Bureau
James A. Walther, P.E./Highways and Engineering Division
Duane E. Williams, P.E./Traffic & Safety Bureau
Mark A. Wissinger, P.E./Highways and Engineering Division
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