MONTANA DEPARTMENT OF TRANSPORTATION
Helena, Montana 59620-1001

MEMORANDUM

To: Kent M. Barnes, P.E./Materials Bureau
Robert E. Burkhardt/FHWA
John D. Craig/Transportation Planning Division
Jim Greil/Aeronautics Division
Dennis A. Hult/Motor Carrier Services Division
James E. Hyatt/Maintenance Division
Joel M. Marshik, P.E./Environmental Services
Stefan Streeter, P.E./Billings District
James A. Walther, P.E./Highways & Engineering Division
Darrel G. Zook/Accounting Services Bureau

From: Susan C. Sillick
Manager, Research Program

Date: March 22, 2001

Subject: Summary of Minutes from Tuesday, January 30, 2001 RRC Meeting

Champion's Presentation of Research Proposals:

Jeff Sillick, Champion – *Transportation Infrastructure Inventory Needs Assessment* – 01.005

MDT needs to come up with a method to establish, maintain, preserve, upgrade, replace and operate a wide variety of transportation infrastructure throughout the state in a timely and cost-effective manner.

The steps proposed include: 1) Survey MDT personnel statewide to discover problems occurring from a lack of a comprehensive infrastructure inventory and determine user needs, 2) Use these identified needs to develop a listing of inventory data to be collected, and 3) Develop an information system to store data.

Nigel Mends, Champion – *Bridge Deck Service Life Prediction Model* – 01.011

Currently the Bridge Bureau has an inventory of 2.5 billion dollars worth of concrete decks on bridges around the state. A primary problem facing these decks is chloride-induced corrosion, which creates spalling and traffic safety problems that end the service life. The application of chloride is being addressed in another study; meanwhile many decks are already plagued with serious problems.

To address these problems the Bridge Bureau would like bridge deck performance prediction model(s) developed.

Cora Helm, Champion – *Feasibility and Reasonableness of Providing Noise Barriers Along I-90/I-15 in Butte* – 01.008

Research proposed for this project involves conducting a complete noise study along the Interstate corridor in Butte. The ambient noise levels measured at key locations in the field will be used to establish a baseline and calibrate the noise model using the FHWA-approved Transportation Noise Model (TNM) 1.1.

This particular corridor was selected because of its accessibility to Helena and wide variety of topography.

The benefits of this research would help MDT develop a protocol for future noise studies and establish consistency in analysis without the pressure and timeline of a project.

The final product will enable MDT to have a defined process to determine if noise walls or berms are feasible, how much they will cost and best placement locations. The process used in Butte would be the template for other studies around the state. If this proposal proves to be reasonable, an MDT project would be programmed to design and build the Noise Abatement, in conjunction with a highway project in the area.

Larry Urban, Champion – *Bat Use of Bridge Structures in the MDT Billings District: A Pilot Study* – 01.016

Joel Marshik made this presentation in the absence of Larry Urban.

This proposed pilot study project would be coordinated with two other regional bat inventories being conducted in the Billings area the summer of 2001 by the Montana Natural Heritage Program for BLM's Billings Field Office and Montana's DEQ Mine Waste Cleanup Bureau.

On the national level, there is currently a lot of attention on bats using bridges as roosts. Additionally there is a lot of interest in advocating increasing bat populations throughout the United States.

Since we know bats are using our bridges for roosts, but not to what extent, the intent of this proposal is to tie into this study. Benefits to MDT would be to obtain necessary data and savings by not having to fund it as a separate project. The work would be original and current and all of the information would be coordinated with MDT's present and future needs.

Phil Johnson, Champion – *Planted Riprap Demonstration and Research for Streambank Stabilization at Bridges, Culverts, Rivers Adjacent to Roads and Outfalls* – 01.019

Streambank stabilization is often necessary at highway crossings and in areas where roads are aligned close to waterways. Riprap is usually used to stabilize streambanks in these areas of high velocity.

At present MDT is under pressure from resource and regulatory agencies to approach stream work in a more environmentally sensitive manner and to maintain the quality of streambank habitat. Currently there is intense pressure averse to using plain riprap.

Therefore, Katherine Chase, P.E. has proposed this project working with MDT to develop new standard design and specifications using planted riprap defined as graded riprap where the inherent voids are filled with stabilized soil to create an thickness of material that has essentially the same stone mass as plain riprap. Site visits would be made during planting and establishment and during/following various flow events. Two and five year review of performance would also be conducted.

John Moran, Champion – *Rockfall Hazard Classification and Mitigation System* – 01.015

The purpose of this project is to develop a system for classifying and mitigating Rockfall hazards.

This project involves 1) cataloging rockfall areas and 2) develop a monitoring system.

The end product will enable MDT to: 1) Protect citizens who drive on Montana's highways; 2) Protect the State of Montana from excessive liability exposure by addressing this issue; and 3) Categorize, prioritize, and address rockfall hazards along the states roadways so that they can be mitigated in a cost effective and efficient manner.

Barbara Martin, Champion – *Cooperative Highway Construction Industry Training Program* – 01.007

This proposal came out of a discussion between members of the Montana Quality Initiative, Education and Training Committee. The group is charged with identifying training issues and possible solutions for Montana transportation industries. Its membership represents: MDT, Cities, Counties, Construction Industry, Design Industry, and includes both union and non-union employers.

This group felt their most important issues, as addressed by this proposal, are developing a needs assessment to identify training needs, determining areas of common interest for the various groups that form Montana's highway construction industry, and determining the means to meet those training needs that could be used by all sectors of the highway construction industry.

Terry Yarger, Champion – *Limited Work Space, Less than Optimum Employee Productivity, Poor Long-Term Employee Retention* – 01.010

Prior to Terry's presentation, Sue told the RRC that while looking for sponsorship of this proposal she conferred with Jim Currie. Jim indicated that this issue may be addressed elsewhere, but should be left on this agenda in the meantime.

Terry then proceeded with his presentation on developing a telework program. Telework includes the use of computers, faxes, phones, TV cameras, networking, and high-speed software to work from remote locations, usually at home one to three times a week. Telework offers the potential for increasing productivity without an increase in cost and indeed the possibility of less cost incurred for the Department.

It requires a team effort involving Information Technology, Facilities or Personnel and Human Resource Staff.

Dick Turner, Champion – *Impact on the Highway System of Changes in Grain Transportation Operations* – 01.012

Tom Steyaert made this presentation in the absence of Dick Turner.

The purpose of this proposal is to determine the impact of the emerging 110-unit grain-loading facilities will have on Montana's state highways.

The increased efficiency of the 110-unit grain-loading facilities will result in fewer grain elevators throughout the state. It is expected that 6-10, 110-unit grain loading facilities can provide the service of what hundreds of smaller elevators have done previously. Typically the farmer now hauls grain between 26 to 40 miles reaching the super facilities would increase highway travel to 50 to 150 miles.

Transportation Planning is in need of information detailing the kind of impact this increased truck travel would have on Montana's highway system.

1. **Budget Report:** Attached – No comments

2. **Research Project – current listing:** Attached – No comments

   2a. *Crash Test Pin and Loop Connection on the Concrete Median Barrier*
   Carried over to the February 27, 2001 Meeting

3. **Reports:** No comments

   3a. *Performance of Steel Pipe Pile-to-Concrete Bent Cap Connection, Phase II* – Progress Report – 7/1/00 to 12/31/00 - Attached

   3b. *Numerical Modeling and Design Development of Geosynthetic Reinforced Flexible Pavements* –Pooled Fund Study – December 22, 2000 - Attached

3c. *Midwest States Crash Test* - Pooled Fund Study – Fourth Quarter Progress Report – December 4, 2000 – Available Upon Request

4. **Contract Extensions:** None

5. **Proposals:** None

6. **Implementation:** None

cc: Craig Abernathy/Pavement Analysis & Research Section
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Monte N. Brown/Administration Division
D. John Blacker/Maintenance Division
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