

RESEARCH PEER EXCHANGE

FHWA/MT-05-013/6020

Final Report

prepared for
THE STATE OF MONTANA
DEPARTMENT OF TRANSPORTATION

in cooperation with
THE U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

October 2005

prepared by

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RESEARCH PROGRAMS

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16. Abstract The Montana Department of Transportation hosted a research management peer exchange October 3-7, 2005. The objectives of the peer exchange were to: identify strengths, challenges, and opportunities for the information services component of MDT's Research Program; determine most pressing information needs of MDT staff; determine how best to meet these needs; explore potential areas of cooperation regionally and nationally to improve exchange and use of transportation information; discuss progress with the Midwest Transportation Knowledge Network, AASHTO sponsored Transportation Information Policy Study, Transportation Library Connectivity Pooled-Fund Study, and where to go from here; and Identify useful ideas that each member of the peer exchange team can apply practically in his or her own organization. During the exchange, team members identified needs and critical information services issues experienced in their respective organizations and highlighted successful practices used to accomplish information services. The team discussed information needs with MDT staff, and collaboratively with the staff identified a number of pressing needs and considered how to best meet these needs. The team developed observations, strengths, and opportunities for the Montana Department of Transportation. In addition, each team member developed planned actions for their programs.			
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**MONTANA DEPARTMENT OF TRANSPORTATION
RESEARCH, DEVELOPMENT, & TECHNOLOGY TRANSFER PROGRAM
PEER EXCHANGE
October 3-7, 2005**

Introduction

The Montana Department of Transportation hosted a research management peer exchange October 3-7, 2005. Invited members of the peer exchange team were:

- Barbara T. Harder, Principal, B. T. Harder, Inc., team chair
- Frank T. Darmiento, P.E., Manager, Arizona Transportation Research Center, Arizona Department of Transportation
- Sandra L. Tucker, MLIS, Manager, Library and Information Services, Texas Transportation Institute
- Ken Winter, MLIS, Director of Library and Information Services, Virginia Transportation Research Council, Virginia Department of Transportation
- Robert E. Burkhardt, Planning and Program Development Engineer, Federal Highway Administration, Montana Division Office
- Susan C. Sillick, Research Programs Manager, Montana Department of Transportation

Biographical information is in Appendix A.

Objectives

The objectives of the peer exchange were to:

1. Identify strengths, challenges, and opportunities for the information services component of MDT's Research Program.
2. Determine most pressing information needs of MDT staff.
3. Determine how best to meet these needs.
4. Explore potential areas of cooperation regionally and nationally to improve exchange and use of transportation information.
5. Discuss progress with the Midwest Transportation Knowledge Network, AASHTO sponsored Transportation Information Policy Study, Transportation Library Connectivity Pooled-Fund Study, and where to go from here.
6. Identify useful ideas that each member of the peer exchange team can apply practically in his or her own organization.

Panel Activities

To prepare for the peer exchange, the team reviewed documentation describing the Montana Department of Transportation's Research Program and its information services component.

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Furthermore, the team examined materials from a number of strategically important regional and national information services activities that have potential to directly influence delivery of information services provided by the Research Program.

During the exchange, team members identified needs and critical information services issues experienced in their respective organizations and highlighted successful practices used to accomplish information services. The team discussed information needs with MDT staff, and collaboratively with the staff identified a number of pressing needs and considered how to best meet these needs.

The exchange team gathered information through interviews with more than 50 persons representing:

- Executive Management
- Administration Division
- Highways and Engineering Division
- Human Resources Division
- Information Services Division
- Maintenance Division
- Motor Carrier Services Division
- Rail, Transit & Planning Division
- Traffic Safety Office

Interviews followed a free discussion format based on open-ended questions focusing on information services needs and experiences. The exchange team had an opportunity to listen to MDT staff's successes and challenges and to strategize about meeting their information needs. Furthermore, the team responded to questions from the staff and volunteered information pertinent to the discussion on information services.

In addition to conducting interviews in the Central Office, the team connected via Polycom to interview MDT employees in the Districts. The team also participated in a video conference/conference call with information services and research management peers in five additional states/institutions. These participants were:

- Center for Transportation Studies, University of Minnesota
Arlene Mathison, Librarian
- Ohio Department of Transportation
Janet Bix, Librarian
- Washington State Department of Transportation
Leni Oman, Director of Transportation Research

- Wisconsin Department of Transportation
Nina McLawhorn, Research Administrator

- Utah Department of Transportation
Shauna Lindsey, Director of Research
Abdul Wakil, Technology Transfer Engineer

The video conference/conference call addressed current national initiatives in the information services arena that have potential to influence the delivery of information within and among state DOTs and their transportation partners. The exchange team and the additional participants discussed the impact of these national initiatives on their respective programs and identified collaborative approaches for enhancing the effectiveness of these initiatives.

Topics discussed were:

- Midwest Transportation Knowledge Network
- AASHTO sponsored Transportation Information Policy Study
- Transportation Library Connectivity Pooled-Fund Study

Following the national initiatives discussion, the team and the other teleconference participants conducted a valuable best/successful practices exchange on the topic of innovative strategies for delivery of information to DOT personnel.

Observations

- MDT is an information savvy organization. Almost everyone knows how to use the Internet. Many participate in a listserv or online community of practice. However, there is some lack of awareness of transportation-oriented databases that can be easily accessible by transportation practitioners.
- The Internet and personal contacts emerged as important sources of information.
- The MDT is an active user of technology, which is essential for information access.
- MDT staff experiences information overload and most expressed a need for synthesized information.
- There is a strong desire for just-in-time delivery of information.
- There is a commonly expressed desire for a single point of access to transportation information and for preserving access to information that may be needed in the future.

Strengths

- There is an awareness and strong endorsement of the Research Program's services and products from all areas of MDT.
- Research Program staff has set up a great infrastructure for information services with limited resources. They have made the right decisions to go with standards used by the library profession.
- Research Program staff uses knowledge of the major information resources for effective access to information essential for the operation of MDT.
- MDT research staff effectively networks with other libraries, both regionally and nationally, in order to expand local information access.
- The research library serves as a repository for other MDT departmental collections.
- The Research Manager has implemented an agency-wide information resources training course, empowering employees to retrieve essential information to improve their operational efficiency and effectiveness.
- The Research Project Summaries were widely endorsed as an effective communication tool.
- The focus on the provision of information services as a means to implement the products of MDT research efforts and other's research results is impressive.
- Use of technology such as Polycom facilitates training and technology transfer and extends the benefits of the research results.
- The Research Program Manager actively cultivates effective working relationships with MDT staff.

Opportunities

- There is a need for the Research Office to know more about the overall business conducted by the department so that the Office can be proactive in producing information on important topics as the need arises. The Research Office attendance at regularly scheduled management-level meetings would enable the research function to be pre-positioned to provide information to department decision makers.
- MDT Research Program has the capability to provide management-agenda research and information services, which can uniquely support senior management decision making.

- The concept of regularly providing information on very specific topics to individuals as the information becomes available – an alert function – could be a valuable resource for the operating divisions and the district offices. Such an alert system could be particularly effective for senior management staff.
- Employing a trained, professional librarian could substantially multiply the resources currently committed to providing timely, accurate information to MDT employees.
- The Research Office needs to receive reports of studies and research conducted by other MDT areas so those documents can be readily accessible.

Planned Actions:

Peer Exchange team members commit to applying successful practices learned while participating in the MDT Research Program Peer Exchange. Below are listed the specific action items for each team member.

Barbara T. Harder, B. T. Harder, Inc.

In my capacity as a consultant in the transportation research and technology area, I plan to do the following:

- Discuss the content and use of the Wisconsin comprehensive topical synthesis packages with Nina McLawhorn; gain a better understanding of how these packages can be used in other state DOTs with which I do work.
- More effectively use alerts of online information; have focused information sent automatically.
- Get a copy of the materials Sue uses in her Library Training course.
- Pass along a copy of the brochure, “Transportation in the Information Age” to the PennDOT Bureau of Planning and Research
- Be a positive influence in the research community to support the NCHRP project statement addressing implementation of the TRB Information Management Policy Study.
- Seek an avenue to promote the conduct of peer exchanges in other transportation contexts. Discuss the disposition of the draft brochure prepared for RAC several years ago.

**Frank T. Darmiento, P.E., Manager, Arizona Transportation Research Center Arizona
Department of Transportation**

MDT is at a relatively advanced stage in information transfer processes. The ADOT research program needs to take some basic steps before it can catch up to where MDT is. Some of the steps to be considered are listed below.

- Continue the emphasis on meeting with groups throughout the agency about the research program (including quick response options, full research projects, product evaluation and library services).
- Review the status of access to paid and subscription databases.
- Consider preparing video summaries of research projects.
- Set up alerts on the RiP database.
- Revisit technology transfer strategies, including presentations on completed research.
- Add more hot links to the quarterly newsletter to the research web page about research program elements, including completed reports.
- Consider developing more general DOT management topics for the research program.

**Sandra L. Tucker, Manager, Library and Information Services, Texas Transportation
Institute**

- Contact new employees to let them know about services
- Conduct training classes
- Visit urban offices to discuss services needed
- Offer a service to assist researchers in setting up alerts
- Join OCLC and TLCAT
- Share ideas with colleagues in TTI Communications:
 - Two-minute videos to summarize research results
 - Webcasting for conferences
 - Peer exchange model for other groups
 - Packets of synthesized information for particular audiences

For the TRB committee on Library and Information Science for Transportation

- Collect best practices
 - Survey questions
 - Statistics
 - Performance measures for libraries

Ken Winter, Director of Library and Information Services, Virginia Transportation Research Council, Virginia Department of Transportation

Although VTRC's library and information services differ significantly from those at MDT, I found the peer exchange process extremely beneficial. In some cases, discussions confirmed the wisdom of actions we have contemplated or are engaged in now. In other cases, they provided insights for initiating, refining, or focusing actions. On the basis of this peer exchange, I intend to explore:

- Increased visibility for our Library in VDOT's internal publications.
- Creating a quick turnaround, comprehensive synthesis packet program to deliver value-added and synthesized information based on specific topical needs.
- A contact mechanism to inform new employees that they have access to library resources and services.
- Using database alerts as a means to identify, acquire and disseminate key documents and as a mechanism for long-term collection development.
- Explore a series of statewide information training sessions to be delivered to district employees through use of teleconferencing.
- Creating liaisons within VTRC's research teams to be proactive in identifying impending information needs and to promote existing resources more effectively.
- Using my influence as a member of OCLC's Resource Sharing Advisory Committee to recommend enhancements to OCLC products and services identified during the course of this exchange.
- Create a suite of VTRC Library Web pages with links to transportation-focused databases and resources (locally created, subscription, and licensed through the University of Virginia), and services to support the effective use of those resources.

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- Establishing performance measures to help document time and cost savings, possibly through the use of NCHRP Project 20-63 “Performance Measurement Tool Box and Reporting System for Research Programs and Projects.”

Robert E. Burkhardt, Planning and Program Development Engineer, Federal Highway Administration

- Be an active participant on MDT’s Research Review Committee in addressing issues and follow up from this peer exchange.
- Participate in the Research Program’s Internet Search Engine training and keep the FHWA Division Office abreast of the latest MDT Research Program developments.
- Emphasize the commitment of the FHWA Division’s participation on technical panels and the opportunity that the panels offer in understanding MDT needs.
- Keep abreast of the progress as MDT explores the possibility of further enhancing their strategically focused Transportation Program with the Research Program’s information support.

Sue Sillick, Manager, Research Program, Montana Department of Transportation

- Increase the visibility of the Research Programs as a resource for the entire Department.
- Continue to increase the visibility of research program services, products, and results via the Interchange, Research Project Summaries, Annual Research Report, etc.
- Add library resources training to the Research web site.
- Encourage areas outside of Research to send all study/research reports and information on current research in progress to the Research office and the State Library (completed projects only) for cataloging in WorldCat, TRIS, and RiP.
- Investigate ways to solicit, prioritize, and select research projects.
- Investigate procuring various additional databases/subscriptions, such as Lexis Nexis, and possible cost-sharing opportunities.
- Investigate setting up alerts and advertising this service.
- Investigate WISDOT’s technology transfer/synthesis packages and customer assessment as a tool for MDT’s Research Program.

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- Investigate the possibility of automating the new employee e-mails.
- Consider adding a literature search section to MDT's Research Problem Statement forms.
- Encourage transportation libraries to create robust MARC records (URL, contents, abstracts). Talk to MSL about our records.

Respectfully Submitted:

Name

Name

Name

Name

Name

Name

APPENDIX A

BARBARA THOMAS HARDER

Principal
B. T. Harder, Inc.
1626 Pine Street
Philadelphia, PA 19103
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Barbara T. Harder specializes in transportation research management, technology transfer and implementation, transportation policy development and analysis, and program and performance assessment. Her company, B. T. Harder, Inc., has been operating since 1988.

Ms. Harder is currently working with the Federal Highway Administration (FHWA) to facilitate the Turner-Fairbank Highway Research Center laboratory expert/peer review panels, which are the focus of a newly instituted laboratory assessment process. With the FHWA, she developed the Expert/Peer Review Handbook used in the process. Ms. Harder is performing a study for the NCHRP, "Analysis and Benchmarking of Hiring and Recruiting Practices of State DOTs," and recently completed for that same group a synthesis study on technology transfer successes, challenges, and needs with Bob Benke. In addition, she is part of a team that is performing implementation of research results and innovations throughout the Pennsylvania Department of Transportation. For the Transportation Research Board Technology Transfer Committee and FHWA, Ms. Harder performed a scoping study to determine the tools of strategic value for technology transfer and implementation (Technology Transfer Toolbox). In the past several years Ms. Harder has done a Scoping Study for a National Strategic Plan for Transportation Information Management for the Research Advisory Committee (RAC) of the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on Research, with Sandy Tucker (Now the topic of a TRB special study); NCHRP Synthesis No. 312, *Facilitating Research Partnerships in Transportation Research*; and co-authored NCHRP Synthesis 280, *Seven Keys to Building a Robust Research Program*. Ms. Harder has participated as a team leader and team member of a variety of state departments of transportation peer review/exchange meetings and prepared reports on that process for the AASHTO RAC including *Peer Exchange, A Value-Added Research Management Tool* and *Documenting Administrative Experiences of the Peer Exchange Process*.

Prior to her work with B. T. Harder, Inc., Ms. Harder was the Director of Research and Special Studies for the Pennsylvania Department of Transportation and worked for a private sector transportation consulting firm and a computer manufacturer. Ms. Harder received her MBA in Technology Management from the University of Phoenix Online Campus, a BA in Mathematics with a concentration in Physics from Arcadia University. Ms. Harder is a member of TRB committees on Technology Transfer, Library and Information Science for Transportation, and Strategic Management, a member of the Women's Transportation Seminar, the Technology Transfer Society, and an associate member of American Society of Civil Engineers.

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EXPERIENCE

Frank T. Darmiento has excelled in a variety of situations where he has successfully managed transportation research and environmental programs. During his 38-year professional career he has managed staffs of professionals, coordinated internal and external committees and groups, and worked closely with executive management both as a staff member and as a consultant. His articles and papers have been published in *The Business Journal* (Phoenix, Arizona), *The National Environmental Journal*, *HAZMAT World*, and numerous professional conference proceedings. He is a seasoned manager of personnel and projects. He has assembled and supervised a professional staff and has managed millions of dollars in budgets and consultant contracts.

Mr. Darmiento currently manages the Arizona Transportation Research Center for the Arizona Department of Transportation (ADOT). The Center includes five professional project managers, a full-time librarian who manages the ADOT library, a field technician and three part-time support staff. Mr. Darmiento also chairs the ADOT Research Council and coordinates two product evaluation committees within ADOT.

A brief overview of Mr. Darmiento's experience is listed below. He has:

- Directs the ADOT research program
- Directs the ADOT Product Resource Investment Deployment and Evaluation (PRIDE) program
- Published the first ADOT research implementation report
- Developed databases for tracking research projects and product evaluation activities
- Directed environmental assessment and remediation projects
- Developed in-house environmental compliance programs
- Performed a comprehensive environmental program review of a major copper company in Arizona and Nevada, that included interviews with the CEO, the entire top management team, field managers and supervisors, and the entire company environmental staff.
- Performed a comprehensive environmental audit and program review for a U.S. Department of Energy contractor in Nevada.

EDUCATION AND PROFESSIONAL DATA

- Registered Professional Engineer (P.E.) - Mechanical, Arizona

- M.S.E. Environmental Engineering, Arizona State University, Tempe, Arizona, 1980
- B.S. Mechanical Engineering, Union College, Schenectady, New York, 1967
- 18 credits toward M.S.A. in Management Engineering, George Washington University, Washington, D.C., 1970 – 1971
- Salt River Project Advanced Management Institute
- 40 Hour OSHA Hazardous Material Training
- Excellent knowledge of Spanish (speaking, reading and writing)
- Represents ADOT on the American Association of State Highway and Transportation Officials (AASHTO) Research Advisory Committee

EMPLOYMENT HISTORY

- Arizona Department of Transportation, Phoenix, Arizona 10/01 – present, Manager, Arizona Transportation Research Center
- A.C.E. Environmental, Inc., and Darmiento Environmental Management, Scottsdale, Arizona 10/91-3/99
President (Environmental Engineering Consulting Company)
- J.F. Sato & Assoc. (Western Area Power Administration), Phoenix, Arizona 7/89-9/91
Environmental Engineering Consultant (in-house services to Western)
- Salt River Project, Phoenix, Arizona 1/73-5/89
Environmental Engineering Supervisor
- AZ-VEST, Phoenix, Arizona 7/72-12/72
Director, Arizona Volunteer Engineers, Scientists and Technicians (self-help, volunteer employment service)
- Environmental Consultant, Scottsdale, Arizona 1/72-6/72
- Irving A. Jennings, Jr. & Associates, Phoenix, Arizona 8/71-12/71
Project Assistant (land developer)
- Naval Ship Systems Command, Washington, D.C. 9/69 - 8/71
Project Engineer
- U.S. Peace Corps, Bolivia 7/67-8/69
Peace Corps Volunteer

PAPERS AND ARTICLES

1995. *Urban Planning Key to Pollution Woes*, Frank T. Darmiento, The Business Journal, Phoenix, Arizona, March 10, 1995.

1995. *Environmental Management Strategies for the '90s*, Frank T. Darmiento, The National Environmental Journal, January/February 1995, Vol. 5, Issue 1, pp. 68-70.

1994. *Managing PCB Risk & Liability*, Frank T. Darmiento, The National Environmental Journal, January/February 1994, Vol. 4, Issue 1, pp. 26-28.

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1993. *A PCB Contamination Assessment Strategy*, Frank T. Darmiento, Presented at Electric Power Research Institute 1993 PCB Seminar, New Orleans, Louisiana.

1993. *Understanding PCB Cleanup Guidelines*, Frank T. Darmiento, Proceedings: 1993 PCB Forum, Houston, Texas, pp. 11-17.

1992. *Top Environmental Problem Is Lack of Information*, Frank T. Darmiento, The Business Journal, Phoenix, Arizona, November 23, 1992.

1992. *Understanding PCB Cleanup Guidelines*, Frank T. Darmiento, HAZMAT WORLD, November 1992, Vol. 5, No 11, pp. 46-47.

1992. *Environmental Management a Crucial Business Consideration*, Frank T. Darmiento, The Business Journal, Phoenix, Arizona, January 20, 1992.

1992. *PCBs Are Where You Find Them*, Frank T. Darmiento, Proceedings: 1991 EPRI PCB Seminar, Electric Power Research Institute, Palo Alto, California, pp. 20-1 to 20-4.

1991. *What's So Tough About Hazardous Waste Management?* Frank T. Darmiento, presented at the HAZWaste 91 Symposium: Current Practices for Hazardous Waste Management in Arizona, Phoenix, Arizona.

1986. *2500 Tons of Prevention is Worth 100 Million Gallons of Cure*, Frank T. Darmiento, presented at the American Water Resources Association conference, Atlanta, Georgia.

1985. *Salt River Pete Goes to Town*, Frank T. Darmiento, presented at the Regional Conference on New Perspectives on Planning in the West, Tempe, Arizona.

1984. *Development of a Corporate Water Quality Policy for a Western Water Resources Manager*, Frank T. Darmiento, presented at the American Water Resources Association conference, Washington, D.C.

1976. *The National Pollutant Discharge Elimination System: Review and Discussion*, Frank T. Darmiento, presented at the American Public Power Association Engineering and Operation Workshop, San Antonio, Texas.

SANDRA L. TUCKER, MLIS
Manager, Library and Information Services
Texas Transportation Institute

Sandy Tucker, who has been a research librarian at TTI since 1988, supervises TTI's Library and Information Services group (library services, Internet development, clearinghouses). She regularly conducts literature searches in support of research projects, using a wide variety of resources available through the Texas A&M University Libraries. She alerts researchers to new publications in their areas of interest and assists them in obtaining documents. Using her knowledge of the transportation field, she works with librarians of the Texas A&M University Libraries to select materials for the transportation collection.

Ms. Tucker has supervised the development of several web sites and clearinghouses related to transportation, including the National Work Zone Safety Information Clearinghouse. She currently manages the Transportation Pooled Fund web site.

Tucker was the chair of the panel for Project 20-32 of the National Cooperative Highway Research Program, "Development of a Comprehensive Thesaurus for Transportation Research." She chaired TTI's process team for intranet development and is a past chair of the Transportation Division of Special Libraries Association. She is currently chair of the Transportation Research Board's Committee on Library and Information Science for Transportation.

KEN WINTER, MLIS
Director of Library and Information Services
Virginia Transportation Research Council
Virginia Department of Transportation

Ken Winter joined the Virginia Transportation Research Council—the research arm of the Virginia Department of Transportation—in September of 2002 as the first professional librarian employed there since the Council was founded on the University of Virginia campus in 1946.

Today he works with a staff that includes two other professional librarians engaged in cataloging and technical services, two student assistants and one volunteer worker pursuing a library science degree. His responsibilities include planning, policy and budgeting, reference services, and library systems management.

Ken's articles on libraries and library technology have appeared in *American Libraries*, *Virginia Libraries*, *Public Services Quarterly*, and *College and Research Libraries*. He has presented on a wide range of topics at *Computers in Libraries*, and the *Special Library Association* and *American Library Association* conferences.

He is a member of the Transportation Research Board's Library and Information Science for Transportation (LIST) Committee and is serving a three-year term on the Online College Library Center's resource sharing advisory committee.

Before joining VTRC, he worked as a reference librarian at the Virginia Military Institute. He holds an MA in Library and Information Studies from the University of North Carolina at Greensboro, and a BA in English from North Carolina State University.

ROBERT E. BURKHARDT
Planning and Program Development Engineer
Federal Highway Administration

Historical Highlights:

- Fall 1980 Graduated from University of Kansas with Civil Engineering Degree
- 1981-1983 Participated in FHWA's Highway Engineering Training Program
- 1983-1985 Region 10 Bridge Engineer Advancement Program (Salem, OR & St. Maries, ID)
- Worked under Division Bridge Engineer in Oregon Division along with assignments in Oregon DOT Bridge Division and two bridge construction assignments in northern Idaho with the WFLHD.
- 1985-1987 Assistant Bridge Engineer in Indiana Division Office
- 1987-1997 Montana Division Bridge Engineer
- 1997 – Montana Planning & Program Development Engineer

Current Position Overview:

Bob's position continues to evolve. He has been assigned as the Division lead for FHWA project development and construction in urban areas where the Local Agency has the direct oversight. Statewide and Urban Planning activities include the State's Long Range Transportation Plan, approval of the Statewide Transportation Improvement Plan (STIP), and responsibility for the MPO's plan updates and conformity determinations. In addition to his extensive workload with Planning and Research, he is also responsible for Montana's Size and Weight program, State and Federal Legislative issues, managing the office's oversight and review program, the Community Transportation Enhancement Program, and the Recreational Trails program. His position is a critical one for the agency since Bob is often the direct contact at urban area planning meetings with the locally elected officials and Directors of Urban Planning Departments.

Background, Hobbies, etc.:

Hobbies: Golf, hiking, skiing. Enjoys working in teams to share each other's skills and input. Values honesty and appreciates humor being mixed in with work tasks and daily interactions. Long-term goal with FHWA is to continue to grow and learn as the Montana Division's Senior Transportation Planning Engineer.

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