David R. Johnson, P.E.

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EDUCATION:

Master of Science – Transportation Engineering
Montana State University – Bozeman
Graduation Date: December, 1999
Thesis: Performance Analysis of an Experimental Field Project Utilizing Asphalt Modifiers.

Bachelor of Science in Civil Engineering
Bio-Resources Option
Minor: History
Montana State University – Bozeman
Graduation Date: May, 1996

EXPERIENCE:

2001 – Present **Regional Pavement Engineer**
Engineering Division
Bureau of Indian Affairs (BIA)
Billings Montana

- Oversees all of the pavements within the Rocky Mountain Region of the BIA.
- Oversees all paving operations within the Rocky Mountain Region of the BIA.
- Procures all materials required for paving operations.
- Performs directly or reviews all pavement structural designs.
- Specifies aggregate gradations for all subbase, base, and asphaltic layers.
- Provides technical assistance to the BIA design department.
- Provides technical assistance to Reservation Highway Engineers.
- Provides technical assistance to Tribal Transportation Planners and Tribal Councils.
- Performs research as regional needs require.
- Provides instruction to Civil Engineering Technologists.
- Served as Regional Design Engineer.
- Served as Regional Construction Engineer.
- Currently serving as Regional Quality Assurance Engineer.
- Member of the BIA's National Steering Committee for the development and evaluation of a Pavement Management System.

1996 – 2001 **Research Associate**
Western Transportation Institute
Civil Engineering Department
Montana State University – Bozeman

- ➢ Developed project proposals
- ➢ Monitored instillation of test sections
- ➢ Produced Quarterly, Annual, and Final Reports
- ➢ Trained and organized personnel in the collection of field data
- ➢ Academic instruction

1993 – 1996 **Laboratory Instructor – Highways Engineering**
Montana State University – Bozeman

1991 – 1996 **Research Assistant – Asphalt Research Laboratory**
Montana State University – Bozeman

1985 – 1989 **Pipefitter**
Westcon Industries
North-Central Construction

Selected Projects:

1. **Evaluation of Full-Depth Reclamation of Flexible Pavements.** Mr. Johnson received a CTIP grant in the amount of $180,000 to study this issue. For this project he designed the study's matrix, evaluation intervals and techniques, oversaw construction, collected field data, and provided analysis and recommendations on the future use of this technique by the BIA.

2. **Evaluation of an Electromagnetic Pavement Density Gauge.** For this project Mr. Johnson designed the study's matrix which compared this newer technology to existing techniques. Upon completion recommendations will be made on the future use of this technology by the BIA.

3. **Long-Term Rutting Study Utilizing Asphalt Modifiers.** For this project, Mr. Johnson served as the final Principal Investigator. He recruited, taught the proper techniques to collect field data, and supervised six students, and managed the budget of approximately $120,000. He reduced the data collected, authored the Final Report for the project, and made recommendations to the Montana Department of Transportation on the future use of polymer modified asphalt cement.

4. **Performance Monitoring and Evaluation of Thin Bonded Overlay and Surface Laminates for Bridge Decks.** Mr. Johnson served as Co-Principal Investigator for this endeavor. He was responsible for the monitoring of construction, evaluation of in-place performance, reduction of data, and the reporting of information via annual and final reports. Mr. Johnson filmed, edited, and narrated a video documenting all phases of the endeavor. The budget for this project was approximately $87,000.

5. **Methods for Remediation of Stripped Asphalt Pavement.** Mr. Johnson served as the Principal Investigator for this research effort. He came on-board during the third year of this five-year project. His responsibilities as part of this $160,000 project included: coordinating with the Montana Department of Transportation's nondestructive testing unit to annually evaluate test and control sections, collecting and reducing field data, authoring annual and final reports for the project, and maintenance of the project's budget.

6. **Crack Sealing Cost-Effectiveness.** Mr. Johnson served as the Principal Investigator for this approximately $123,000 research effort. This effort helped determine the most cost-effective method of crack sealing asphalt pavements in the State of Montana. His responsibilities again included: coordinating with the Montana Department of Transportation's nondestructive testing unit to semi-annually evaluate pavements, collecting and reducing field data, authoring annual and final reports for the project, and maintenance of the project's budget.

7. **Development and Evaluation of Performance-Based Specifications for Highway Construction and Maintenance.** Mr. Johnson communicated with state and provincial departments of transportation to determine the types of projects and the extent to which they have used this contacting method. He assisted in making recommendations to the Montana Department of Transportation on the types of projects they may consider and special provisions for these types of contracts.

8. **Development of the Montana Department of Transportation's Long-Term Rest Area Plan.** As the Principal Investigator for this $30,000 project, Mr. Johnson utilized the data collected by two previous phases that inventoried the current facilities and surveyed patrons on their needs and concerns to develop a 20-year plan for the future of Montana's rest areas.

9. **Interstate Highway Sign Inventory.** Mr. Johnson was the Principal Investigator of this $10,000 service for the Montana Department of Transportation. His duties on this project include providing training to student labor on the proper method of collecting and reducing field data according to the database requirements of the Department.

10. **Direct Shear Testing of Geosynthetic Materials.** Mr. Johnson oversaw the testing of various geosythetic membranes and grids for the principal investigator of a Federal Highway Administration project. In this capacity he trained students the proper methods in performing these tests and is reducing the raw data.

Courses Taught:

Construction Engineering Technology 303 – Highway Technology.

Junior level course which provides students an introduction into traffic engineering, geometrics, flexible and rigid pavement design, subgrade stabilization, pavement surface treatments, and pavement mix design.

Civil Engineering 451 – Pavement Engineering.

Senior level course which instructs the students in the principals of design, testing, and construction of asphalt concrete and Portland cement concrete pavements.

SELECTED PUBLICATIONS:

Johnson, D. R.; Jackson, N. M.; and Sauer, T. M. (2006) *Field Evaluation of Pavement Rehabilitation Using Full-Depth Reclamation*, Proceedings of the American Society of Civil Engineers 2006 Airfield and Highway Pavements Symposium, Atlanta, Georgia (pending review).

Cuelho, E. V.; Ganeshan, S. K.; Johnson, D. R.; Freeman, R. B.; and Schillings, P. L. (2003); *Relative Performance of Crack Sealing Materials and Techniques for Asphalt Pavements,* Third International Symposium on Maintenance and Rehabilitation of Pavements and Technological Control, Guimarães, Portugal.

Johnson, D. R. and Freeman, R. B. (2002), *Rehabilitation Techniques for Stripped Asphalt Pavements in Montana – Final Report*, FHWA/MT-002-003/8123 Montana Department of Transportation, Helena, Montana

Stephens, J.; Johnson, D. R.; and Whelan, M. (2002), *Use of Warranties in Roadway Construction Projects*, Final Report FHWA/MT-02-004/8131, Montana Department of Transportation, Helena, Montana.

Johnson, D. R.; Freeman, R. B.; and Stevenson, J. R. (2000), *Cost-Effectiveness of Crack Sealing Materials and Techniques for Asphalt Pavements*, Transportation Research Record 1697, Transportation Research Board, National Research Council, Washington, DC.

Freeman, R. B.; Johnson, D. R.; and Sauer, T. M. (September 1998) *Improving Roadways: Performance Graded Asphalt Binders.* "Public Works," Public Works Journal Corporation, Ridgewood, New Jersey.

Johnson, D. R. and Stephens, J. (1997), *Monitoring and Evaluation of Thin Bonded Overlays and Surface Laminates for Bridge Decks*, FHWA/MT-97/96015-1, Montana Department of Transportation, Helena, Montana.

Johnson, D. R. (1997), *Performance Analysis of an Experimental Field Project Utilizing Asphalt Modifiers – Final Report*, Montana Department of Transportation, Helena, Montana.

PRESENTATIONS:

Johnson, D. R.; Jackson, N. M.; and Sauer, T. M. (2006) *Field Evaluation of Pavement Rehabilitation Using Full-Depth Reclamation*, Proceedings of the American Society of Civil Engineers 2006 Airfield and Highway Pavements Symposium, Atlanta, Georgia (pending review).

Johnson, D. R. and Freeman, R. B. (2000), *Rehabilitation Techniques for Stripped Asphalt Pavements in Montana*, Transportation Research Board – American Association of State Highway and Transportation Officials' Ninth Maintenance Management Conference, Juneau, Alaska.

Johnson, D. R.; Freeman, R. B.; and Stevenson, J. R. (2000), *Cost-Effectiveness of Crack Sealing Materials and Techniques for Asphalt Pavements*, Transportation Research Board, National Research Council, Washington, DC.

Johnson, D. R. and Freeman, R. B. (1999), *Field Performance of Polymer-Modified Asphalt Concrete Designed for Medium Traffic*, Transportation Research Board, National Research Council, Washington, DC.

Johnson, D. R. (1997), Presentation of, *Performance Analysis of an Experimental Field Project Utilizing Asphalt Modifiers – Final Report* to the Montana Department of Transportation, Helena, Montana.

PROFESSIONAL AFFILIATION:

Professional Engineer, State of Montana.

REFERENCES:

Available on request.