

# STATE OF MONTANA

## JOB DESCRIPTION

*Montana state government is an equal opportunity employer. The State shall, upon request, provide reasonable accommodations to otherwise qualified individuals with disabilities.*

**Job Title: Pavement Management Engineer    Position Number: 40080**

**Location: Helena    Department: Transportation**

**Division and Bureau: Engineering Division/Geotechnical and Pavement Bureau**

**Section and Unit: Pavement Analysis Section/Pavement Management Unit**

### **Job Overview:**

This position serves as the Geotech and Pavement Bureau's Pavement Management Engineer and provides pavement research and analysis functions for the Division. This includes planning, overseeing, and/or coordinating advanced pavement analyses; managing project operations, resources, and reporting; and performing a variety of other duties as assigned. The position reports to the Pavement Analysis Engineer and directly supervises a staff of 5.0 FTE.

### **Essential Functions (Major Duties or Responsibilities):**

#### **Pavement Management Administration - 50%**

- Serves as the Department expert for pavement management and is responsible for coordination, oversight, and development of the pavement management program for the strategic planning of highway construction projects.
- Directs and coordinates MDT's pavement management function and individual projects to provide technically defensible information for planning and nominating major highway construction projects. The position is responsible for planning, prioritizing, and providing quality assurances over pavement data collection and analysis procedures and results.
- Develops guidelines and procedures to evaluate the accuracy, efficiency, and overall quality of data collection and analysis projects. Develops, tests, and establishes engineering standards and criteria, specific to MDT methods of data collection and analysis, for assessing the quality of pavement materials.

- Develops and oversees pavement performance models to forecast pavement conditions and determine optimum treatment methods that ensure safety while promoting efficient and cost-effective maintenance and repair. Oversees information systems development and administration related to performance models.
- Develops, implements, and administers customized database and modeling technologies to provide advanced analysis capabilities and compatibility with PvMS. Designs pavement performance models integrating database information, computer-aided modeling functions, and user interface interacting with the PvMS system. Modifies components as necessary to reflect changing data collection and analysis methods and objectives.
- Coordinates and oversees advanced software designs and modifications performed by consultants to ensure that products conform with specifications, provide compatibility with existing MDT information systems, and provide efficiency and cost-effectiveness. Plans and develops new or modified system functions and operations; coordinates with vendors throughout software design and testing phases; and identifies and explains technical problems to ensure effective system operations.
- Evaluates testing equipment and vehicles to develop new research methods and applications. Determines typical and optimum performance of equipment used to measure rutting, ride quality, skid resistance, and other pavement characteristics. Identifies deficiencies associated with test locations, calibrations, error tolerances, operations, and other factors to improve the quality of research projects and analytical results.
- Represents the Bureau on technical research committees, advisory panels, workgroups, and other meetings to provide specialized materials expertise, recommend solutions to engineering problems, develop standards and procedures, conduct collaborative research, and exchange information.

### **Project Management - 35%**

- Establishes research objectives and parameters for pavement management projects to ensure the scientific and technical integrity of research procedures and results, efficiency and cost-effectiveness of project operations, and conformance with engineering standards and MDT requirements.
- Provides ongoing oversight and technical assistance to other civil engineers, electronic and planning technicians, and other staff to resolve complex problems associated with data collection and pavement analyses.
- Directs and coordinates quality assurance measures and audit exercises to assess the quality, efficiency, and cost-effectiveness of field data collection and management. Evaluate work methods, procedures, and results; equipment functions and operations; and project progress to assess deficiencies and develop new methods and procedures to improve field operations.
- Directs and coordinates specialized pavement research and analysis projects. Analyzes pavement condition data to develop technically defensible results and conclusions related to performance of materials under varying influences.

- Develops recommendations and presents comprehensive analytical reports on pavement conditions, influences, trends, and treatments for Montana’s roadways. Anticipates information and project needs of MDT staff and others to compile, analyze, and report on relevant issues.

### **Supervision - 10%**

- Directly supervises professional and technical staff (5.0 total FTE) within the Pavement Management Unit by reviewing and revising overall work plans, priorities, procedures and monitoring progress. Conducts staff meetings, disseminates data, and promotes information exchange for support and advancement of Bureau, Division, and Department goals.

### **Other Duties - 5%**

Performs a variety of special studies, project management activities, and other duties as assigned by supervisors in support of the Department mission and Division objectives.

### **Supervision**

The number of employees supervised is: 5

The position number for each supervised employee is: 40098; 40104; 40087; 44008; 90812

### **Physical and Environmental Demands:**

Work is performed in a typical office environment.

### **Knowledge, Skills and Abilities (Behaviors):**

This position requires knowledge of the concepts and theories of civil engineering, mathematics, statistics, and the physical sciences; computer technology; technical research and analysis methods and procedures; highway economic, safety, and efficiency issues; Engineering Division objectives and Bureau goals; State, federal, AASHTO, and FHWA standards; highway construction methods and techniques; project management and documentation; construction methods and practices; material specifications; and supervisory methods and techniques.

This position requires skill in analyzing and interpreting technical data; operating specialized information systems; project management; planning and organizing the work of others; motivating subordinates; drawing conclusions and making recommendations based upon technical analyses and professional judgments; and communicating complex technical information to varied audiences.

**Minimum Qualifications (Education and Experience):**

The required knowledge and skills are typically acquired through a combination of education and experience equivalent to Bachelor’s Degree in Civil Engineering or a related field.

This position requires a minimum of 5 years of related experience. This position requires a minimum of 1 year of supervision, team lead, or program management experience.

Certifications, licensure, or other credentials include: Fundamentals of Engineering (FE) is required and Professional Engineer (PE) licensure is preferred

Alternative qualifications include: Any combination of additional related work experience and education equivalent to the minimum qualifications.

**Special Requirements:**

*List any other special required information for this position*

- Fingerprint check
- Valid driver’s license
- Background check
- Other; Describe
- Union Code
- Safety Responsibilities

The specific statements shown in each section of this description are not intended to be all inclusive. They represent typical elements and criteria considered necessary to perform the job successfully.

**Signatures**

My signature below indicates the statements in the job description are accurate and complete.

---

<b>Immediate Supervisor</b>	<b>Title</b>	<b>Date</b>
-----------------------------	--------------	-------------

---

<b>Administrative Review</b>	<b>Title</b>	<b>Date</b>
------------------------------	--------------	-------------

My signature below indicates that I have read this job description.

---

<b>Employee</b>	<b>Title</b>	<b>Date</b>
-----------------	--------------	-------------

**Human Resources Review**

**Job Code Title: Civil Engineering Specialist    Job Code Number: 172517    Pay Band: 7**

My signature below indicates that Human Resources has reviewed this job description for completeness and has made the following determinations:

- |   |  |
|---|--|
| <input type="checkbox"/> FLSA Exempt                        | <input checked="" type="checkbox"/> FLSA Non-Exempt    |
| <input type="checkbox"/> Telework Available                 | <input type="checkbox"/> Telework Not Available        |
| <input checked="" type="checkbox"/> Classification Complete | <input type="checkbox"/> Organizational Chart attached |

**Human Resources:**

---

<b>Signature</b>	<b>Title</b>	<b>Date</b>
------------------	--------------	-------------